3. Hardware Installation

3.1 Common Item of Installation and De-Installation

3.1.1 How to open/close the cover

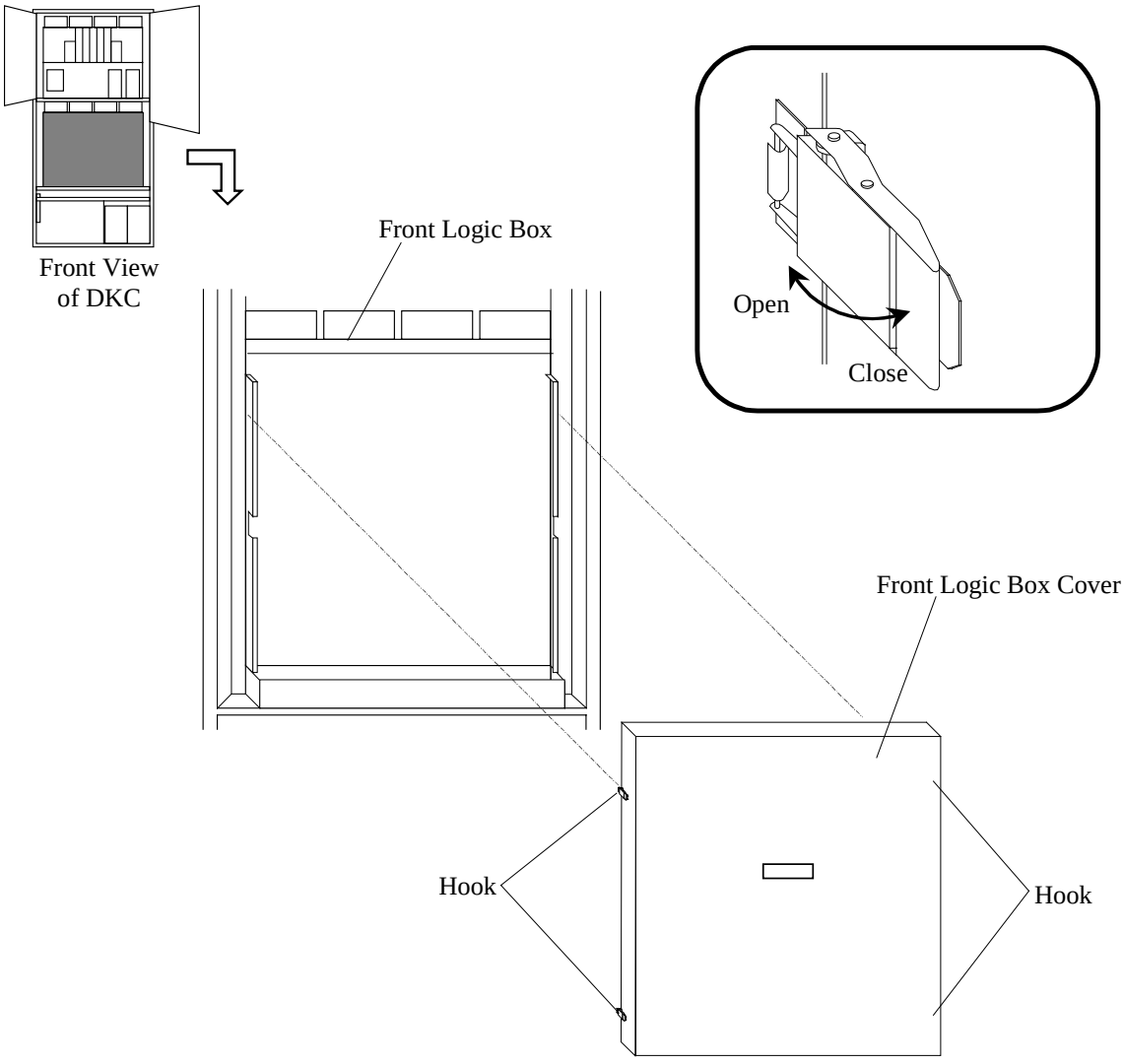
1. Front Logic Box Cover

Attachment

a. Attach the Front Logic Box Cover to the Frame.
b. Close the four hooks.

Removal

a. Open the four hooks.
b. Remove the Front Logic Box Cover from the Frame.



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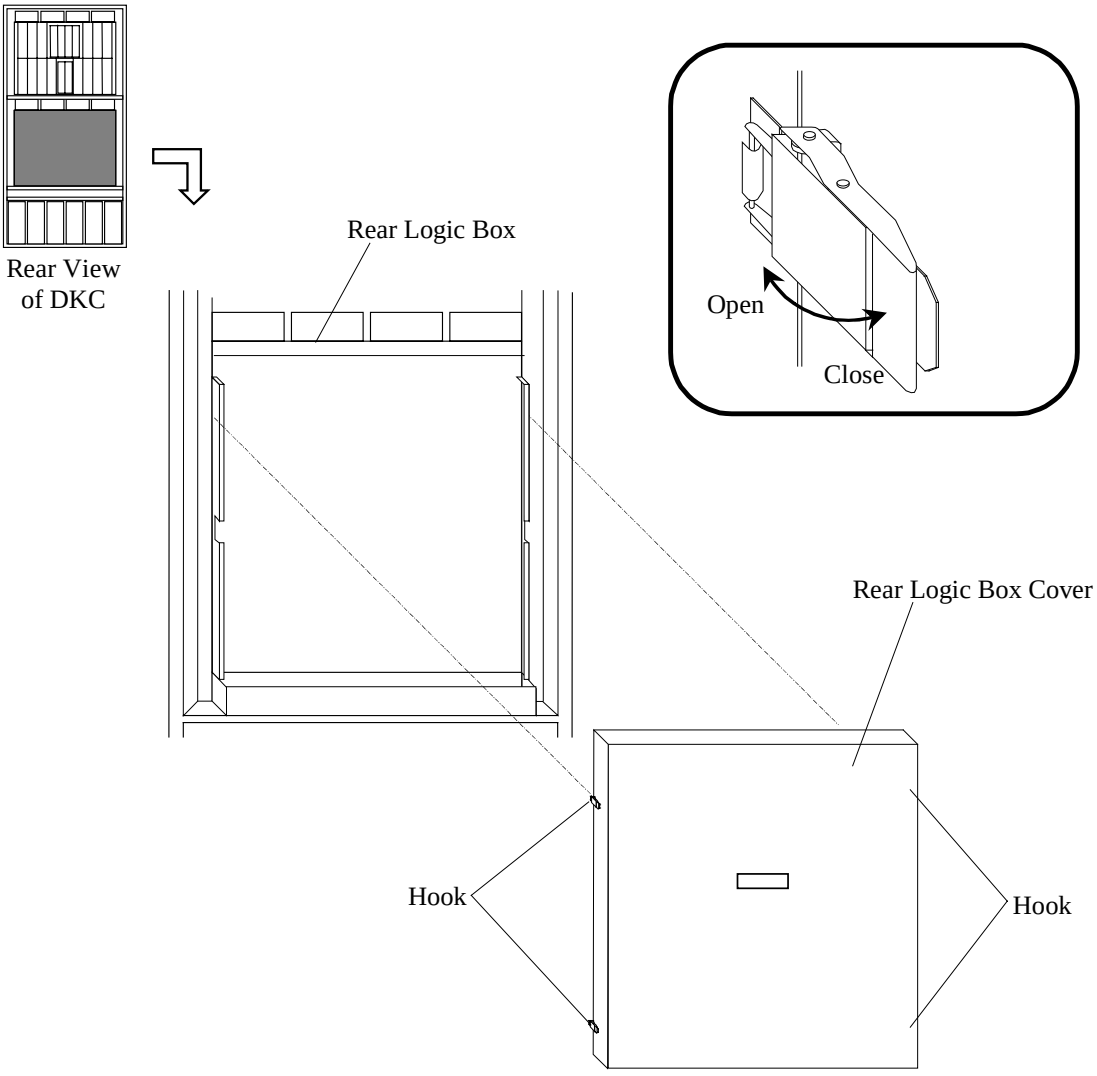
2. Rear Logic Box Cover

Attachment

a. Attach the Rear Logic Box Cover to the Frame.
b. Close the four hooks.

Removal

a. Open the four hooks.
b. Remove the Rear Logic Box Cover from the Frame.



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3. Rear PS Box Cover

Attachment

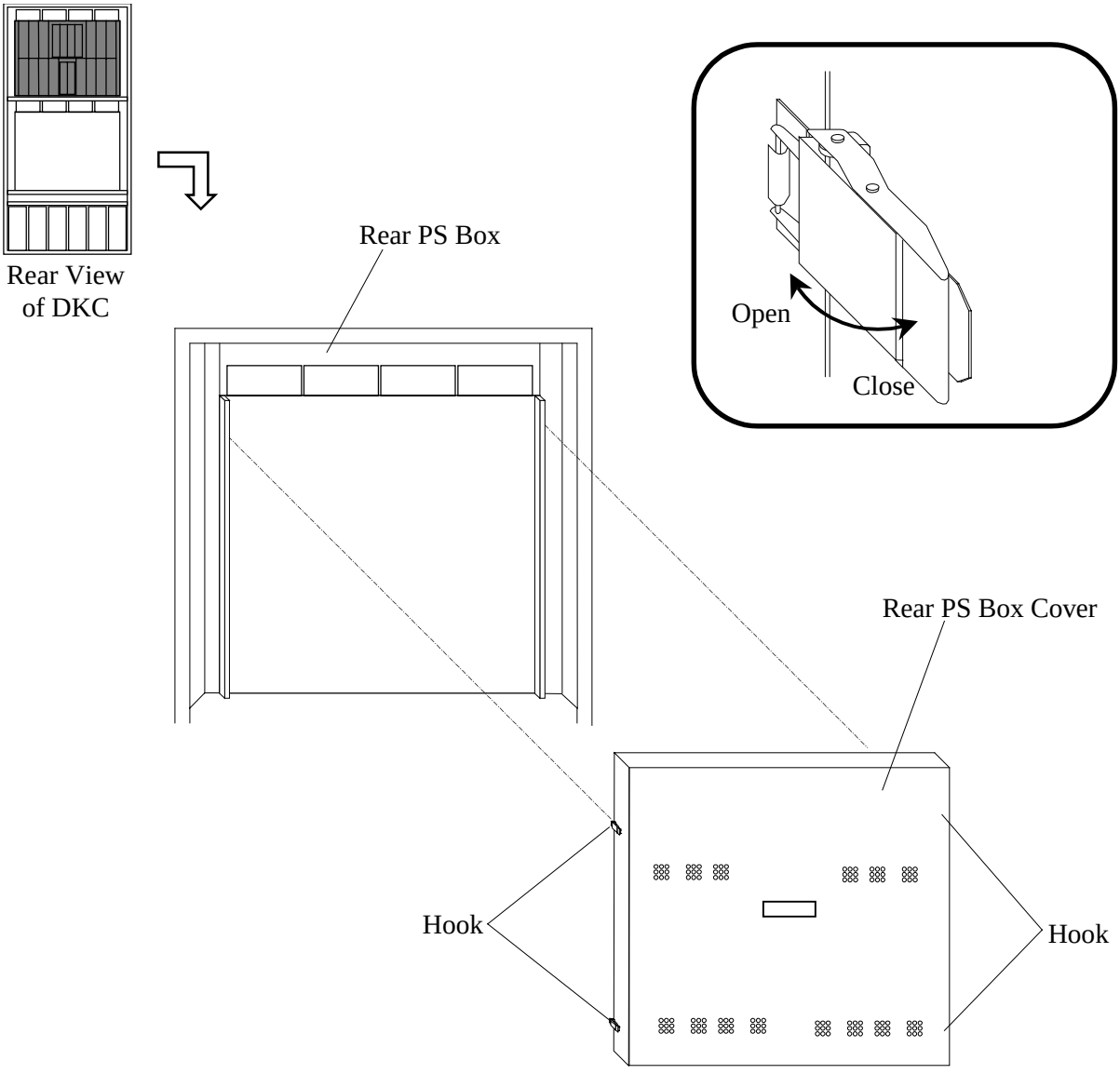
a. Attach the Rear PS Box Cover to the Frame.

b. Close the four hooks.

Removal

a. Open the four hooks.

b. Remove the Rear PS Box Cover from the Frame.



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3.1.2 Attaching the Wrist Strap

(1) To protect the IC and LSI on the PCB from static electricity damage, put on the wrist straps and connect them into the ground wires on the DKU and connect them into the ground wires on the DKC before starting work (see Fig. 3.1.2-1 and 3.1.2-2).

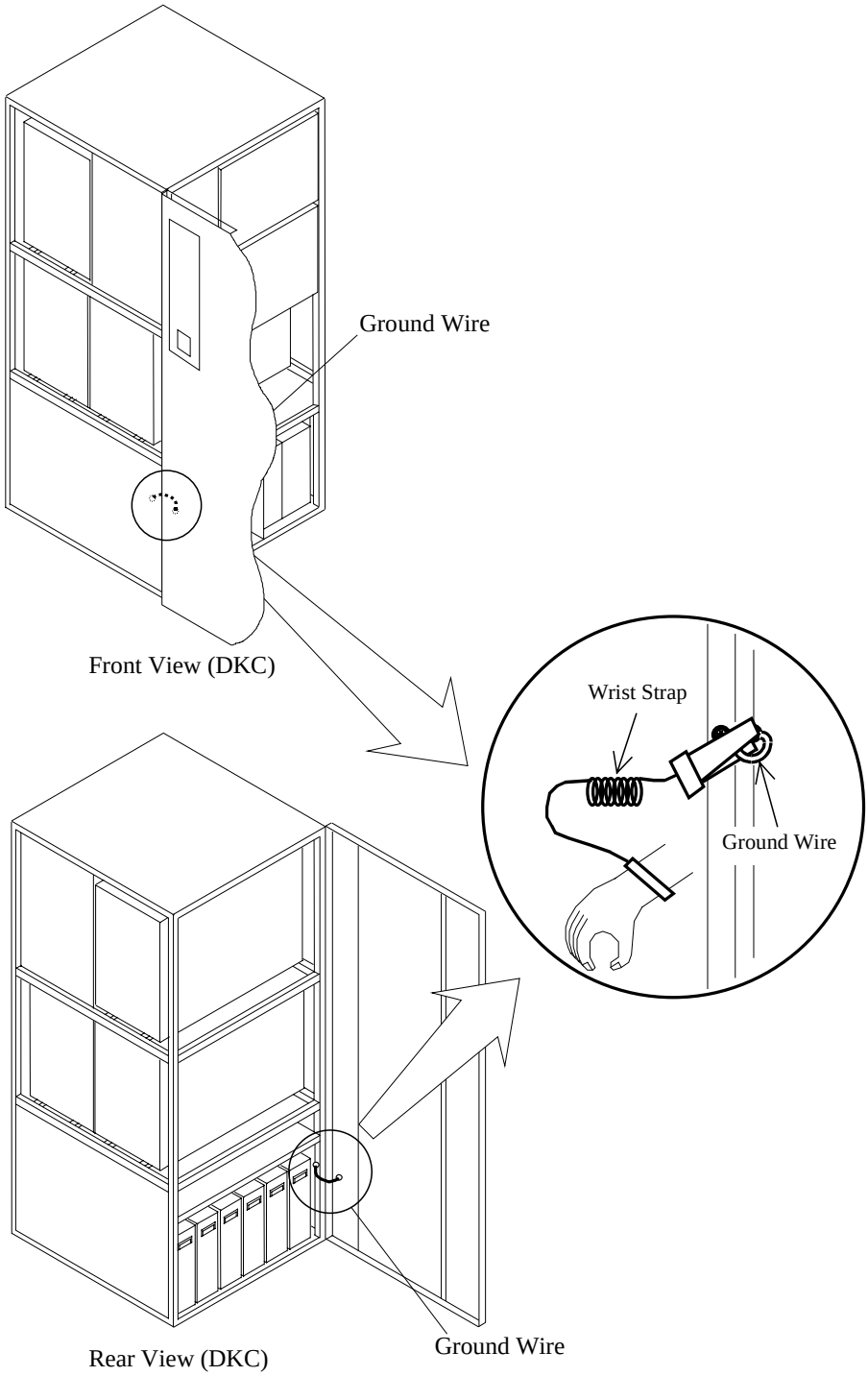

Fig. 3.1.2-1 Location of Ground Wire on the DKC

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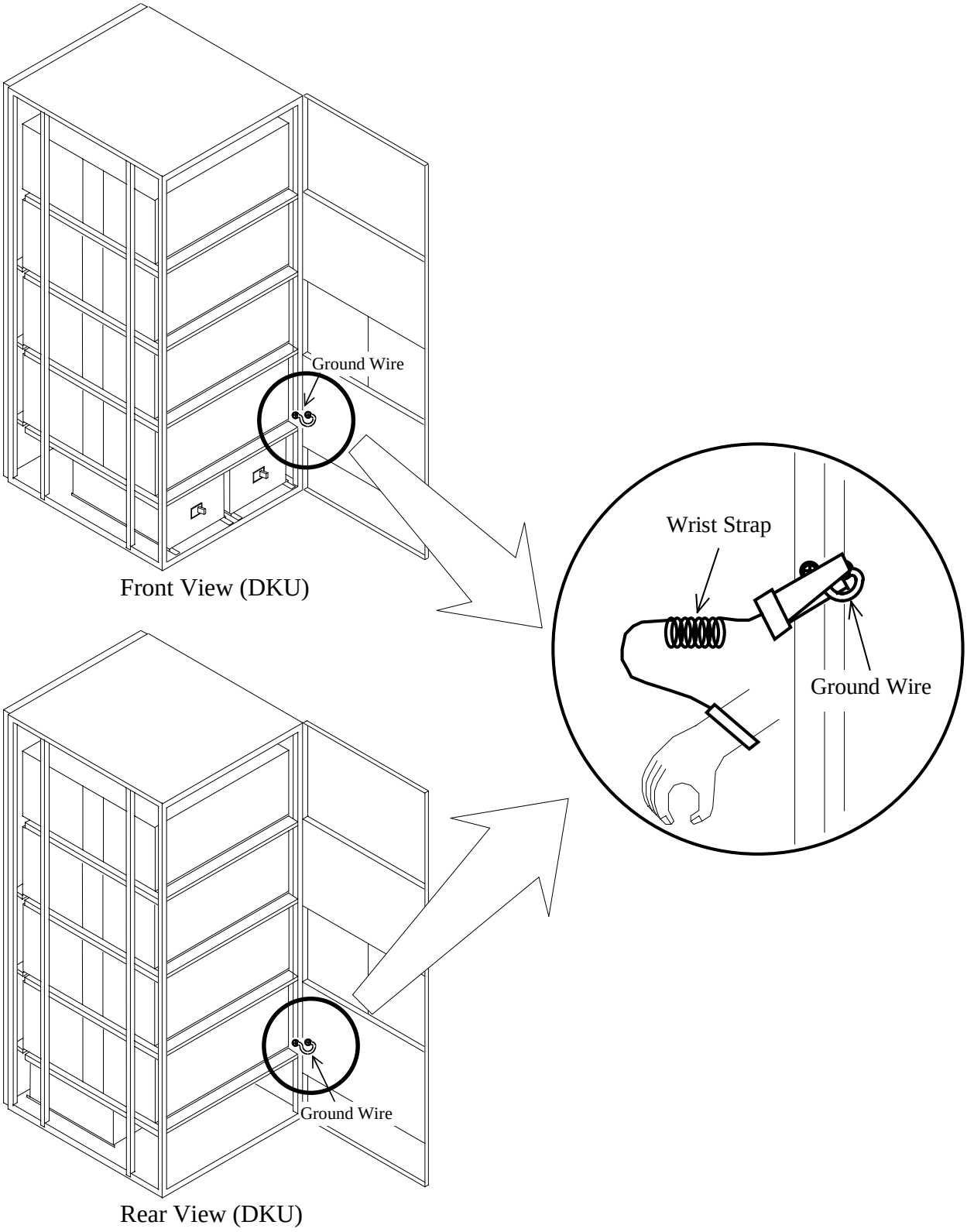

Fig. 3.1.2-2 Location of Ground Wire on the DKU

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3.2 UNPACKING AND INSPECTION

Receiving and Inspection

Before unpacking the unit, check the physical condition of the packed unit.

1. Prior to unpacking, check the container for visible damage or any indication of excessive shock, tilt or anything else abnormal during transportation and handling.

2. Obtain and check shipping manifest for missing units.

3. If anything abnormal is found, appropriate action should be taken before starting an installation.

Unpacking Procedure

NOTICE:
- Be very careful when handling the equipment.
- Do not drop the equipment from a height more than 5 mm (0.2in.) high.
- Floor unevenness must be less than 10 mm (0.4in.). Move slowly and lift the four screw jacks at the bottom of each frame to the highest position to prevent contact with the ramp.

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3.2.1 Unpacking

3.2.1.1 Disk Controller (DKC460I)

1. Card board crate overview is shown in Fig. 3.2.1.1-1.
2. Cut the polyester bands.
3. Remove the nails.

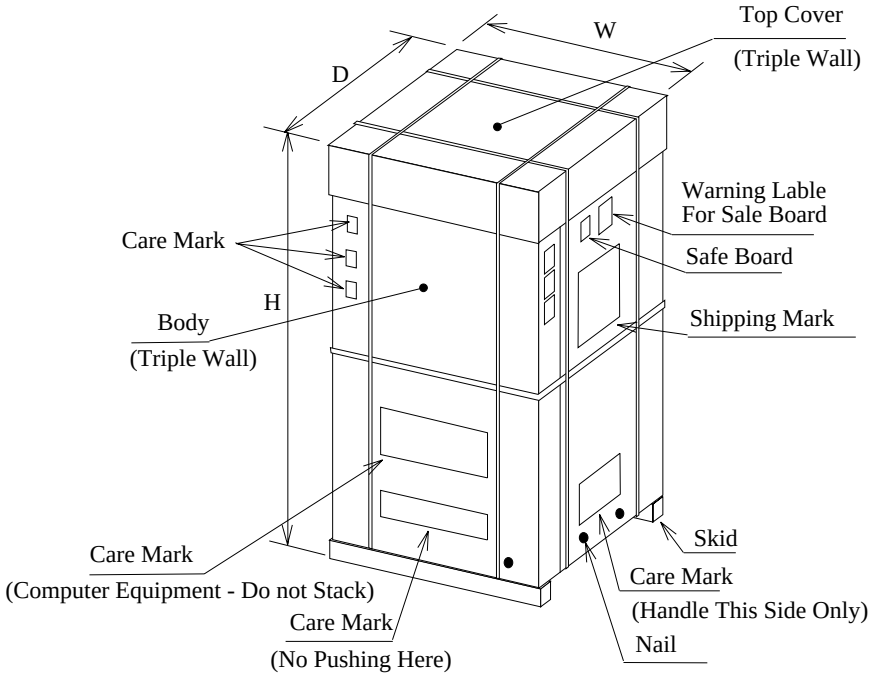

Fig. 3.2.1.1-1 Card Board Crate Overview

4. Remove Top Cover and Side Covers.

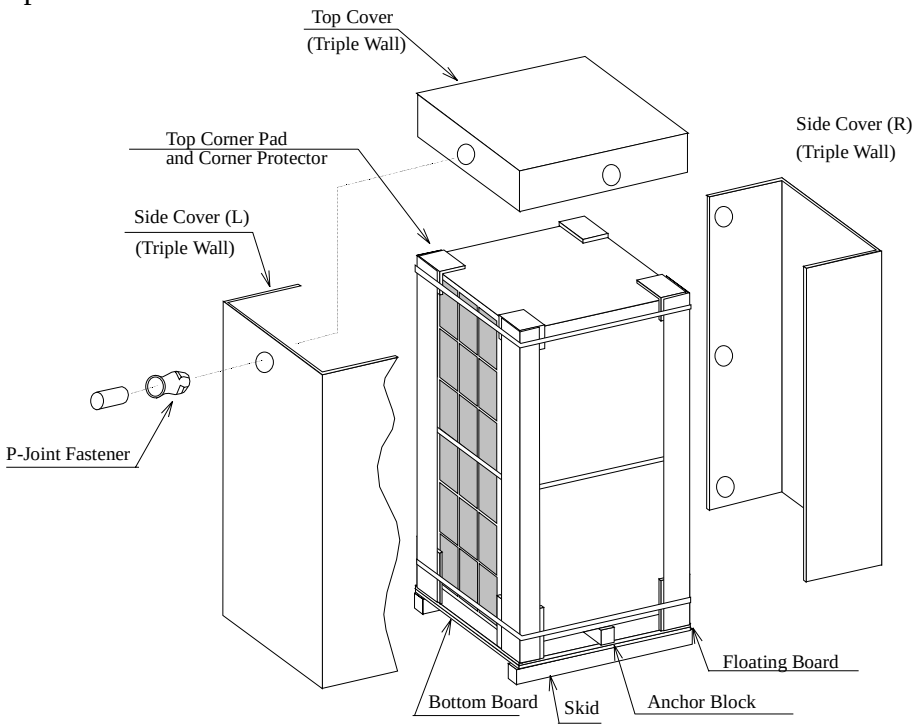

Fig. 3.2.1.1-2 Breakdown of CARD BOARD Crate

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5. Take the equipment down from FLOATER by lifting the equipment with forklift a minimum amount needed to remove the FLOATER/DECK/SKID assembly.
6. Gently lower the equipment onto floor.
7. Remove adhesive tape and corner protectors.

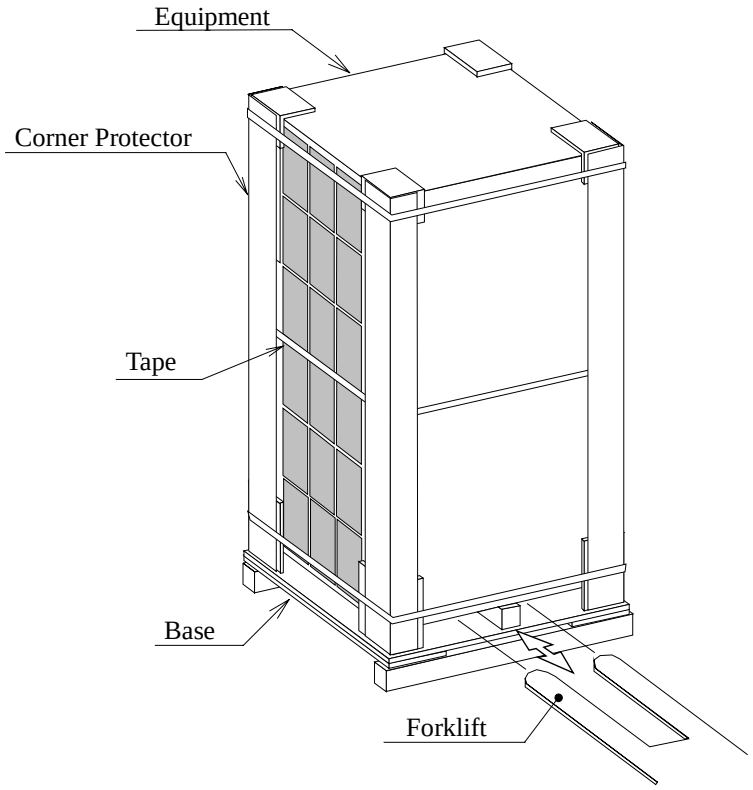

Fig. 3.2.1.1-3 Lift of Equipment

8. Remove the polyethylene bag and adhesive tape.

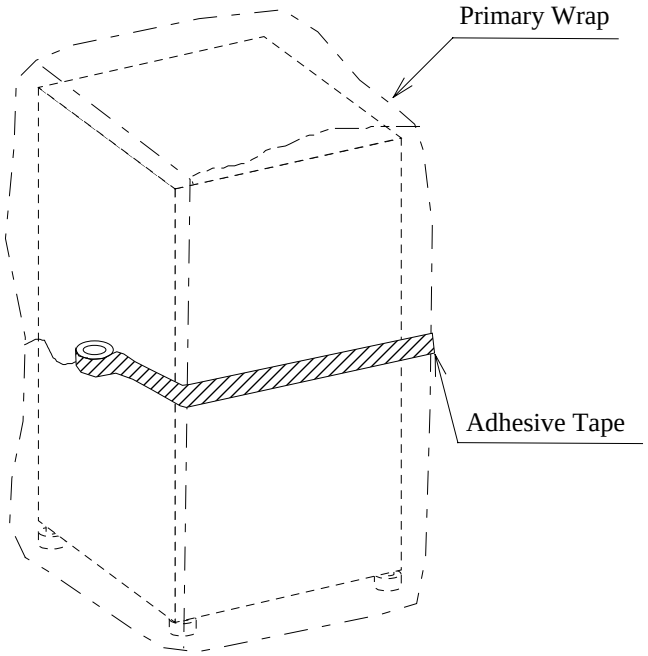

Fig. 3.2.1.1-4 Removal of Wrap Material

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9. Remove the band.
10. Remove the adhesive tape and cushions from Operator Panel Cover.

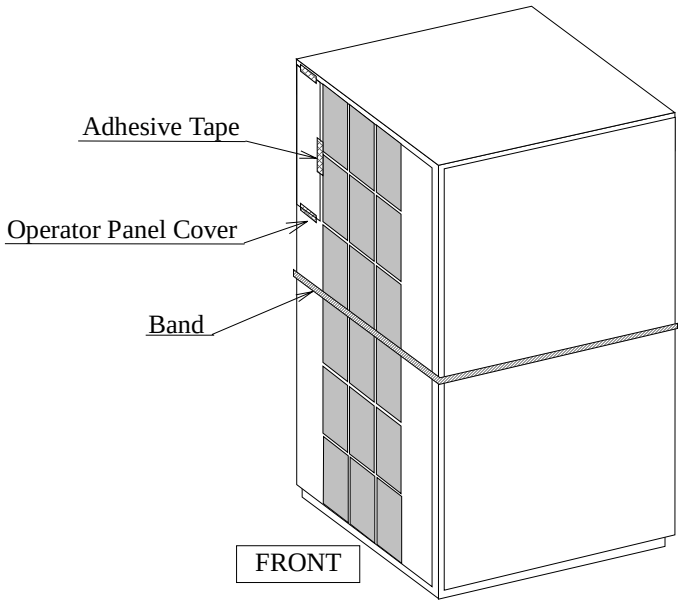

Fig. 3.2.1.1-5 Surface Unpacking

11. Open the front and rear door, remove the shipping cushions and tapes from the container.
12. Visually check the unit for any damage.

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3.2.1.2 Disk Unit (DKU455I)

1. The container overview is shown in Fig. 3.2.1.2-1.
2. Cut the polyester bands.
3. Remove the nails and washers on the lower part of the crate.
4. The container breakdown is shown in Fig. 3.2.1.2-2
5. Unfasten P-JOINT Fasteners.
6. Remove the cap by lifting.
7. Remove the sleeves.
8. Cut polypropylene tapes.
9. Remove the corner protectors.
10. Break the seal of polyethylene bag and open it.
11. Take the unit down from the FLOATER by lifting the unit with forklift a minimum amount needed to remove FLOATER/DECK/SKID assembly.
12. Gently lower the equipment onto floor.
13. Remove adhesive tape and cushions from the unit.
14. Visually check the unit for any damage.

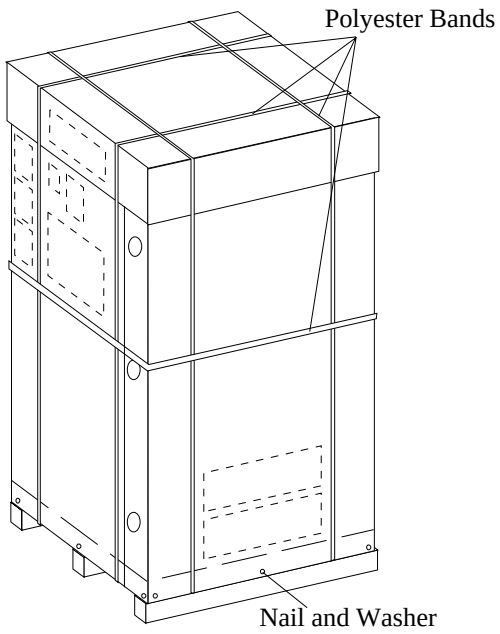

Fig. 3.2.1.2-1 Container Overview

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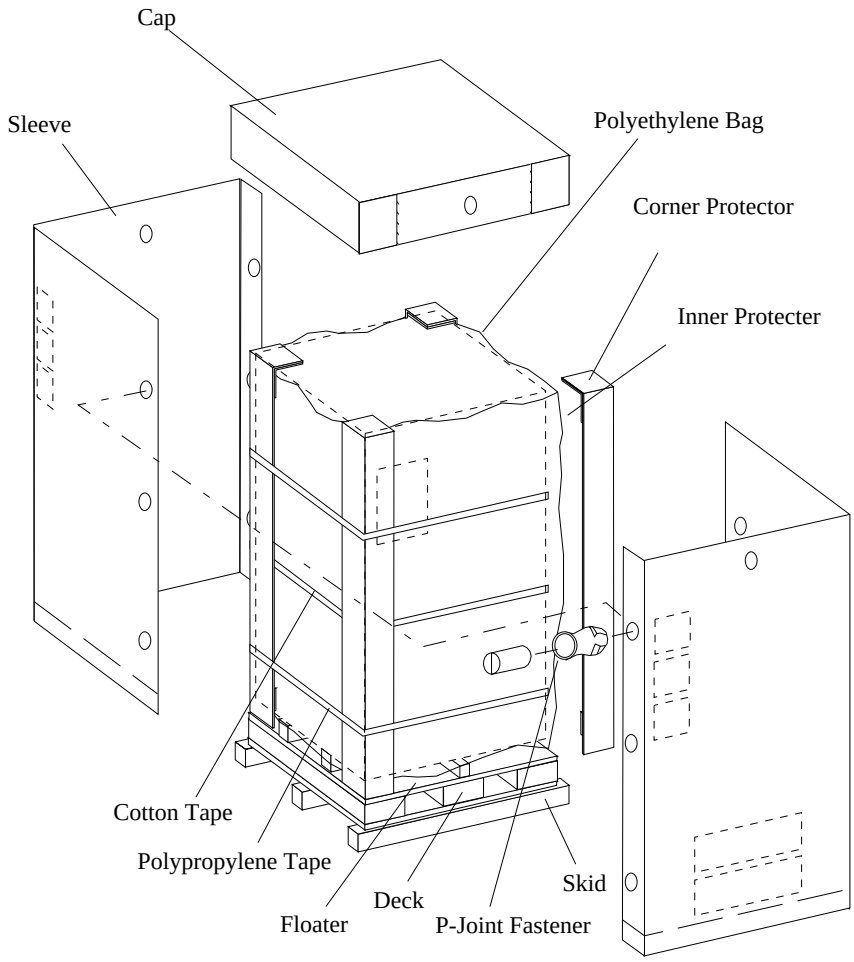

Fig. 3.2.1.2-2 Breakdown of Container

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3.2.2 Inspection of Packaged Parts and Accessories

1. Match the unpacked parts against the parts lists in Tables 3.2.2-1 and 3.2.2-2 to verify that all parts are supplied.

DKC460I

Table 3.2.2-1 List of Packaged Parts and Accessories (Disk Controller)

(Basic)

No.	Name of parts	Parts number	Quantity/Unit	Remarks
1	Disk Controller	---------	1	
2	Kick Plate (Side)	3263389-2	2	
3	Kick Plate (F/R)	3263388-2	2	
4	Screw (Black)	5411531-2	4	
5	Side Cover	3263280-A	1	
6	Screw (M5×36)	SB536N	6	
7	LL-Washer	5513553-532	6	
8	Label (QTY)	3264290-1	1	

DKU455I

Table 3.2.2-2 List of Packaged Parts and Accessories (Disk Unit)

No.	Name of parts	Parts number	Quantity/Unit	Remarks
1	Disk Unit	---------	1	
2	Kick Plate	3263388-2	2	Note 1
3	Connecting Bolt Assy	5437962-A	4	
4	Screw (Black)	5409006-1	7	
5	Connecting Screw Assy	5487372-A	2	
6	Conductive Sheet	5510501-1	10	
7	LABEL (V/HZ/PH.)	2103307-1	1	

Note 1: This is packed with drive unit.

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3.3 Basic Subsystem Installation

See SECTION 3.4 INSTALLATION OF DISK UNIT (DKU455I-18) when there are two or more Disk Units. [INST03-DKU-10]

3.3.1 Flowchart

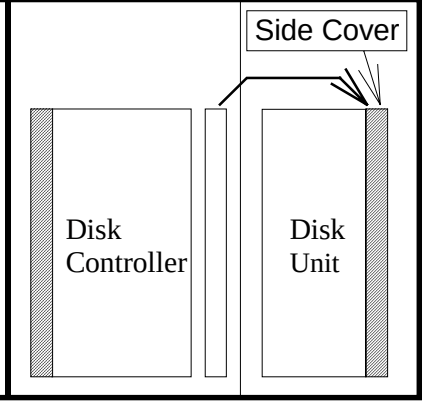
(1) Cabinet Setting [INST03-SUB-10]
↓
(2) Frame Connection [INST03-SUB-90]
↓
(3) Installation of Switches and Jumper Plugs [INST03-SUB-130]
↓
(4) Cabling [INST03-SUB-170]
↓
(5) Labeling [INST03-SUB-240]
↓
(6) Check of Jumper Settings [INST03-SUB-240]

3.3.2 Cabinet Setting

- Refer to Table 3.3.2-1 when laying out the DKU-R1 with respect to the DKC and relocating the side cover.

1. Place the Disk Controller and Disk Unit in the required position.

Table 3.3.2-1 Removal and Re-installation of Side Cover

Configuration	DKC	DKU-R1
Disk Controller (DKC460I) and Disk Unit (DKU455I-18)		

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2. Open the front and rear doors on the DKC and the DKU.
3. Remove the screws for transporting the movable rack, and then fasten the screws.

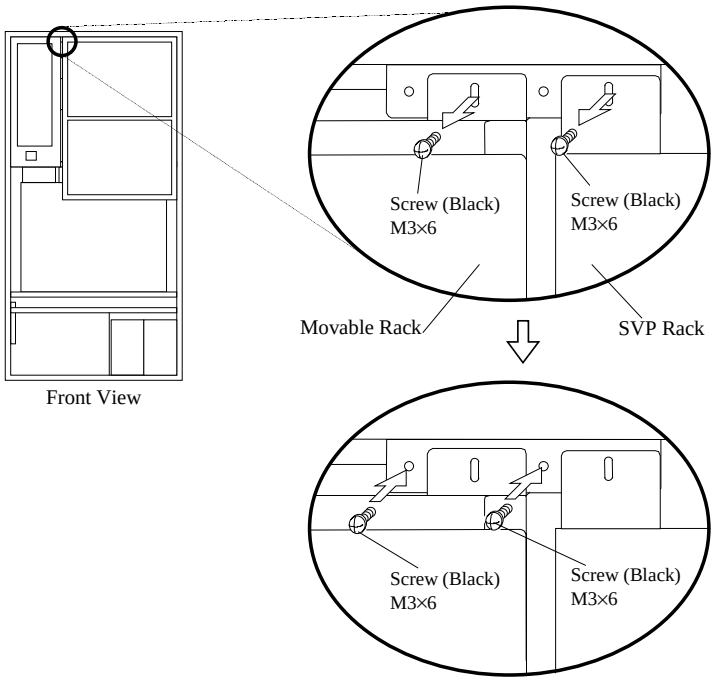

Fig. 3.3.2-1 Removal of Screw for Transporting the Movable Rack

3A. Loosen the screws fastening the SVP stopper, slide the stopper toward the left, and tighten the screws again. When no SVP is to be added, it is not required to shift the stopper.

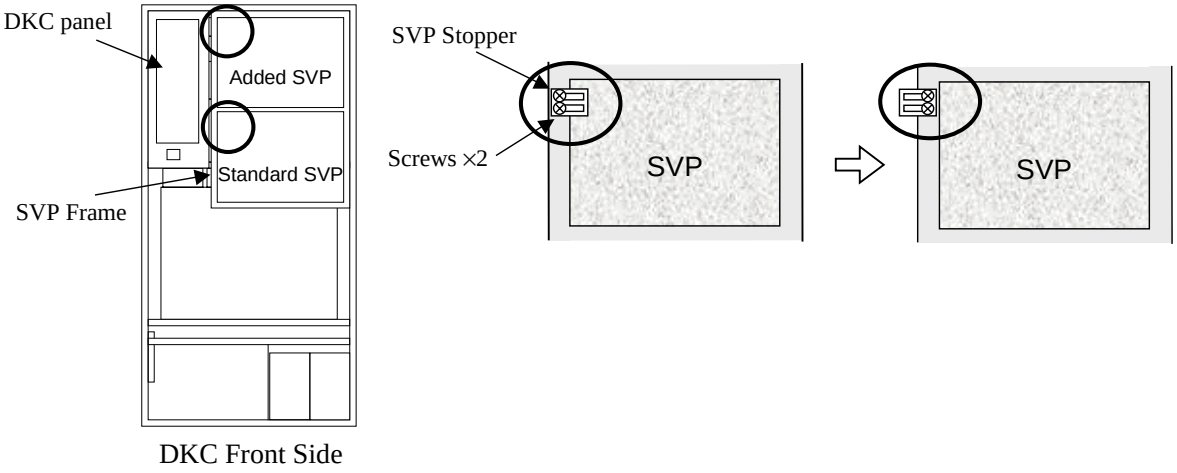

Fig. 3.3.2-1A Shifting SVP Stopper

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3B. Remove the screws fastening the SVP frame.

In the case of the SVP frame type 1

(1) Open the DKC panel.

(2) Remove the screws fastening the SVP frame.

In the case of the SVP frame type 2

(1) Open the SVP ASSY.

(2) Remove the screws fastening the SVP frame.

(3) Close the SVP ASSY.

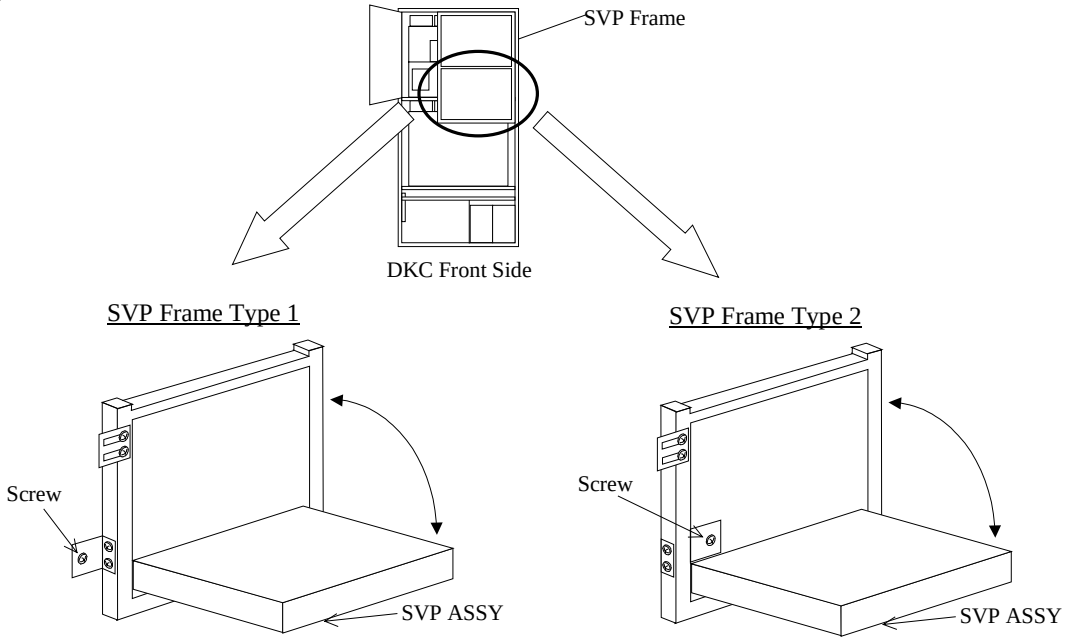

Fig. 3.3.2-1B Removal of Screws Fastening SVP Frame

4. Loosen the repeat binders which secure the DEV interface cables and the AC power cables for the DKC.

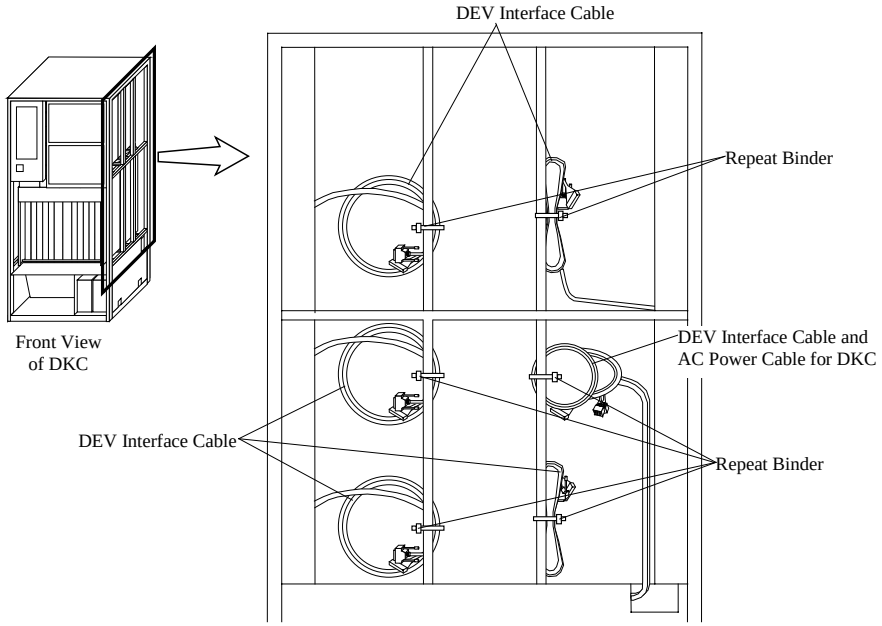

Fig. 3.3.2-2 Removal of Cables

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5. Loosen the screws and remove the cable covers.

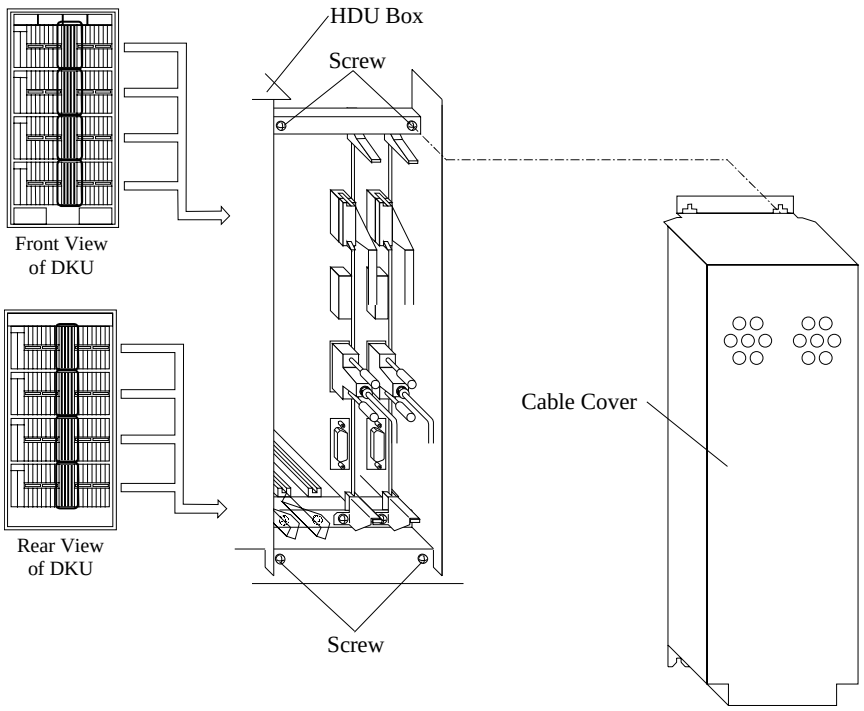

Fig. 3.3.2-3 Removal of Cable Covers

6. Loosen the screws and remove the cable covers.

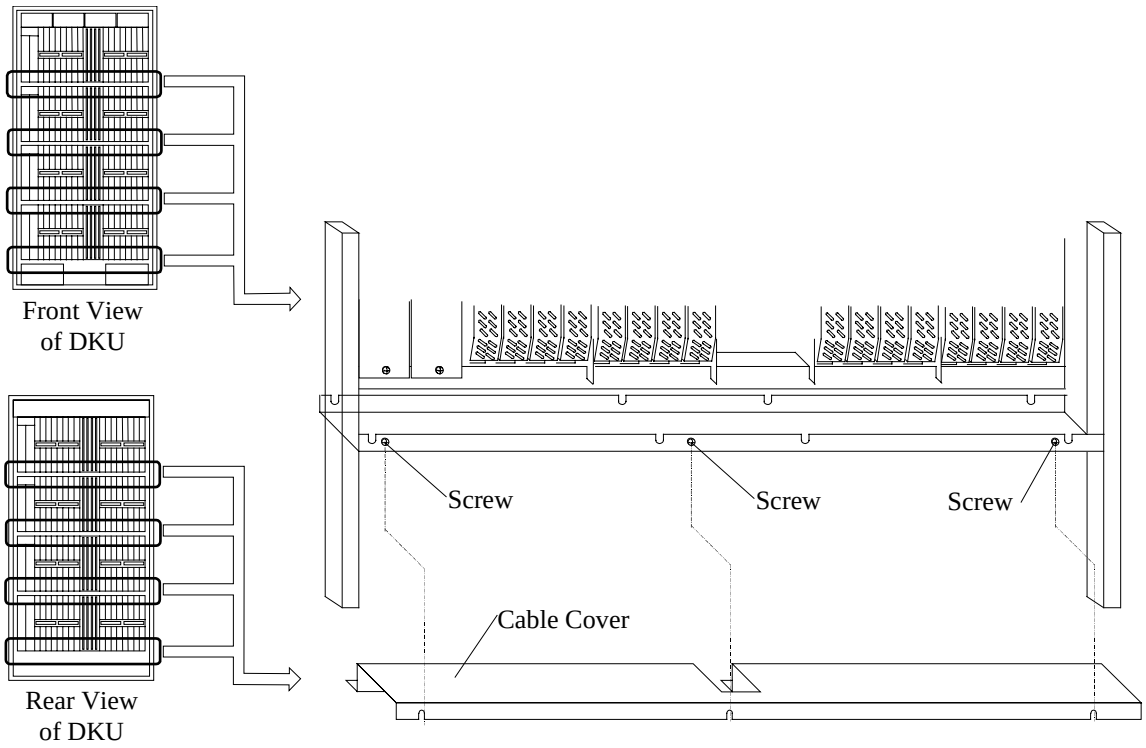

Fig. 3.3.2-4 Removal of Cable Covers

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7. Pass the DEV interface cables and the AC power cables for the DKC through the DKU-R1 frame. Refer to Fig. 3.3.2-5. Be extremely careful not to pinch the inter-frame cable when coupling the frames to each other.

Note: For Locations of FSW PCBs and DEV interface cables, refer to the labels inside the DKU doors.

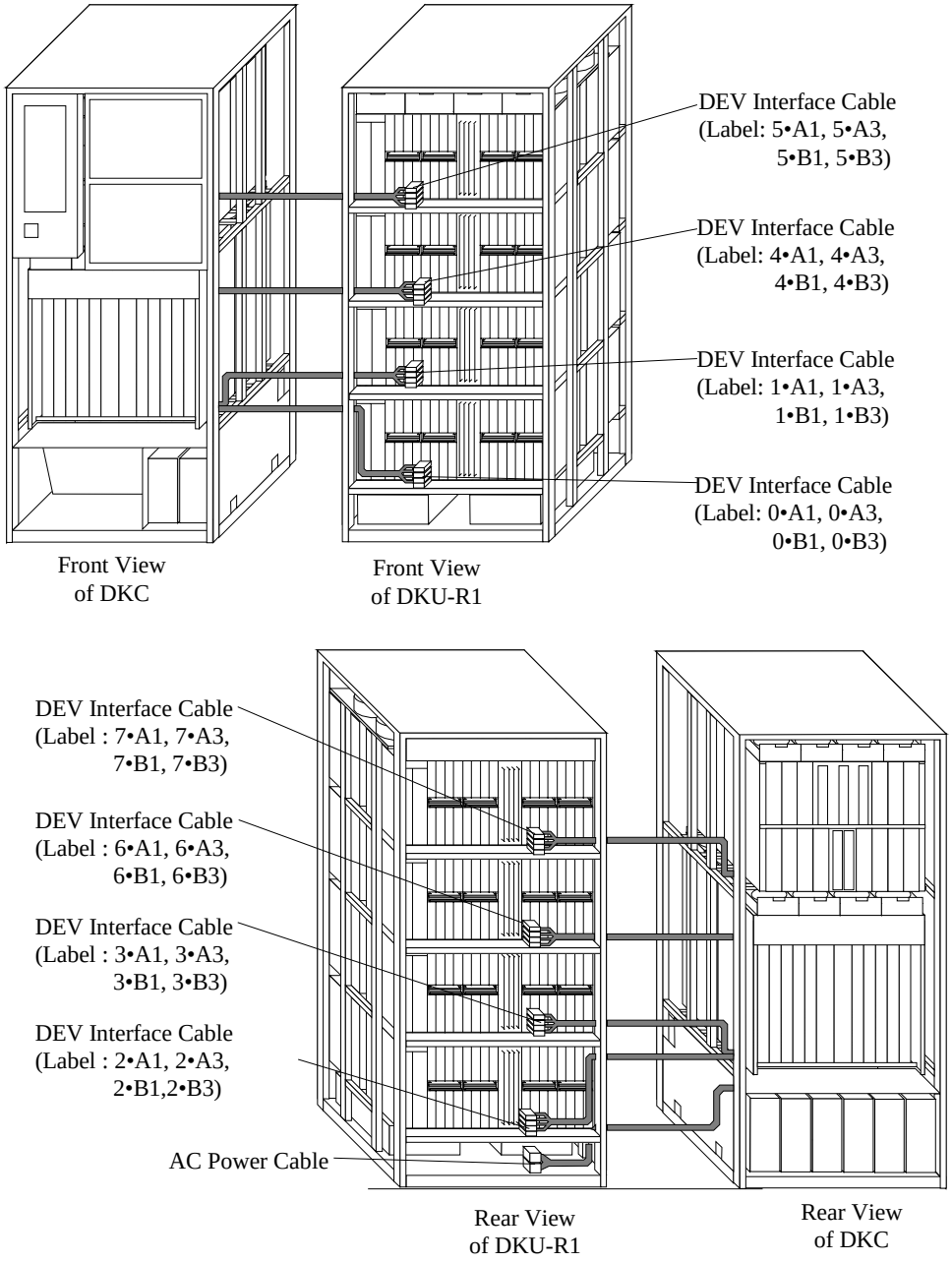

Fig. 3.3.2-5 Attachment of Cables

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8. Attach the conductiove sheets to the DKU frame referring to Fig. 3.3.2-6 and Fig. 3.3.2-7.

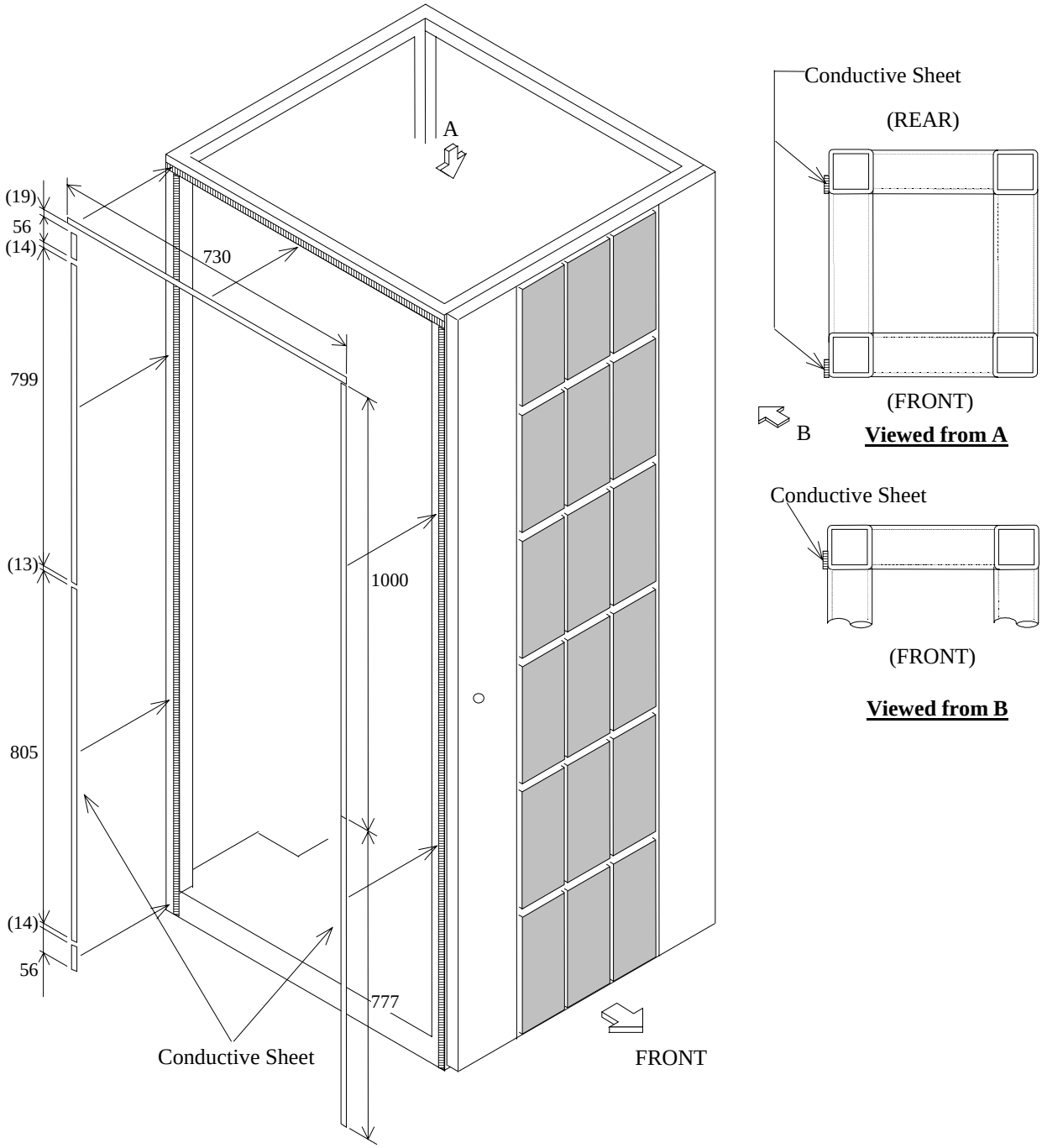

Fig. 3.3.2-6 Attachment of Conductive Sheets

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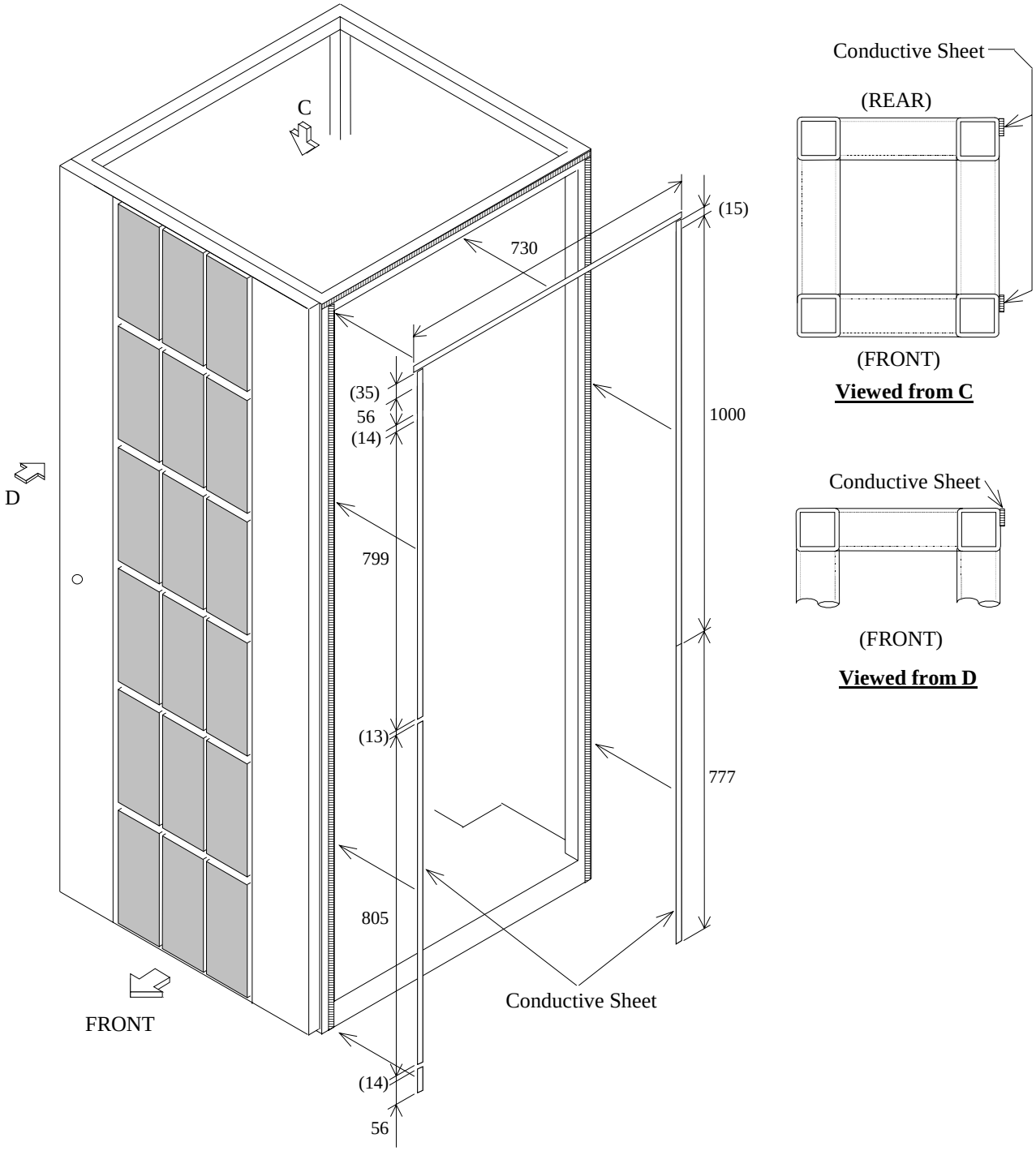

Fig. 3.3.2-7 Attachment of Conductive Sheets

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⚠ CAUTION

Prevention of tumble and screw jack damage.
When adjusting the height of the device, 4 screw jacks must be turned with 1/4 turns for each alternately.

Prevention of screw jack damage.
When the screw jacks are turned, put oil into the screw jacks.

9. Lower the screw jacks until caster is 2.5mm (0.1in.) from the floor before connecting frames.
10. Level the device as shown Fig. 3.3.2-8b.

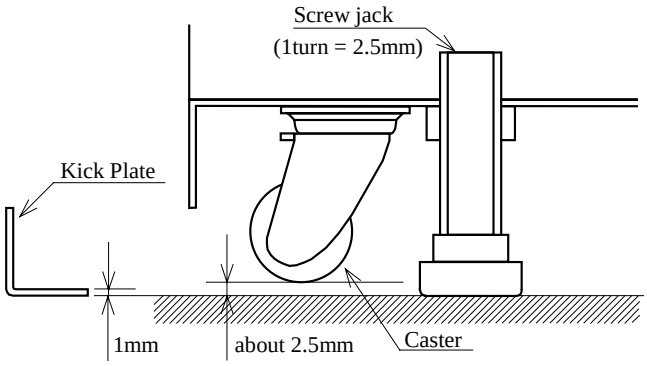

Fig. 3.3.2-8a Gap between Caster and Floor

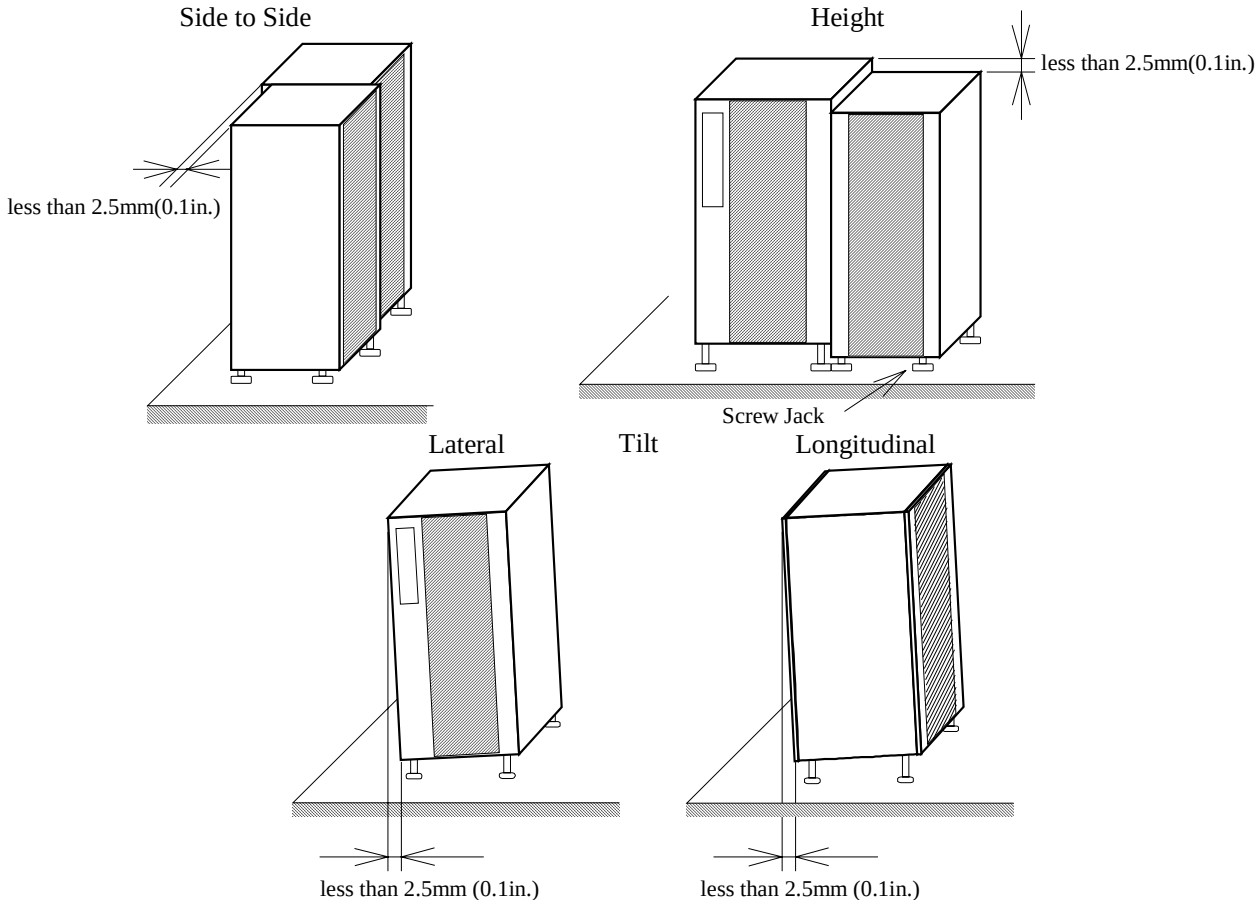

Fig. 3.3.2-8b Unit Layout, Height, and Tilt

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11. Fix the DEV interface cable with clamp.

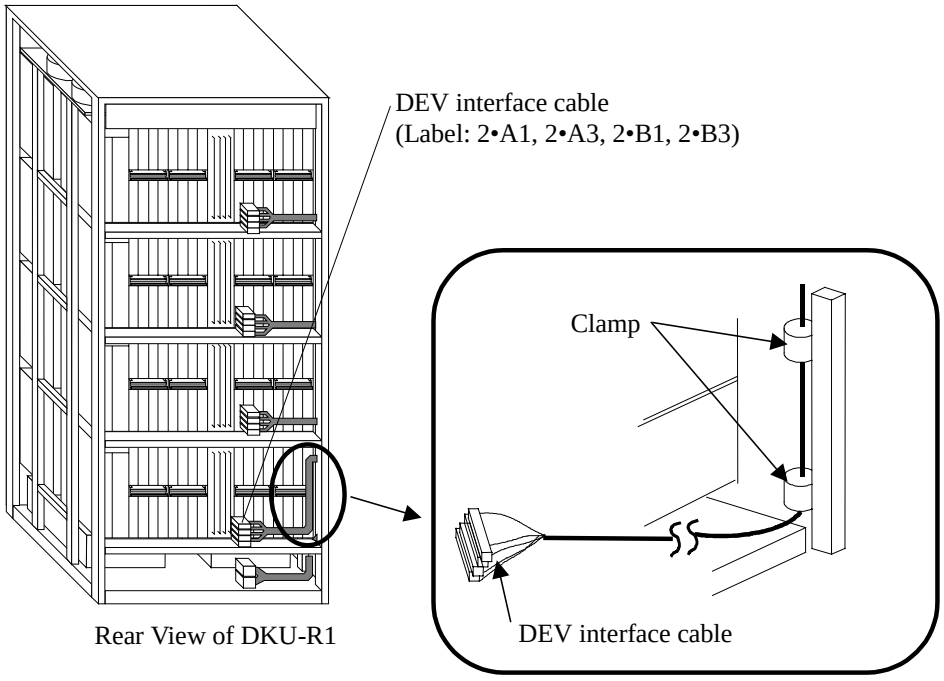

Fig. 3.3.2-9 Fixation of DEV interface cable

12. Remove the Front Logic Box cover from the DKC. (Refer to INST03-COM-10.)
13. Remove the two screws and open the Cable Cover.

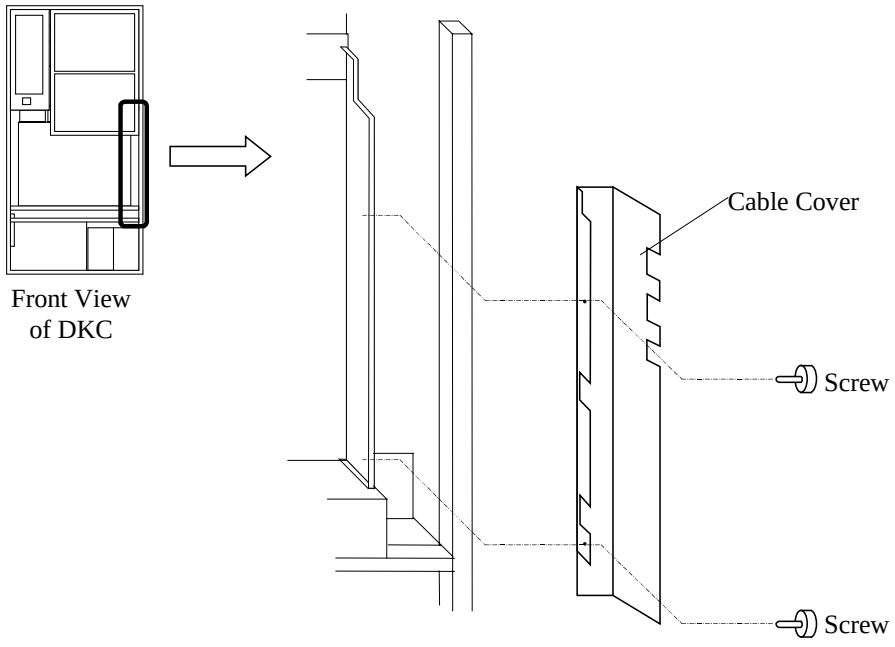

Fig. 3.3.2-10 How to open the Cover (DKC front side)

14. Remove the Rear Logic Box cover. (Refer to INST03-COM-20.)

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3.3.3 Frame Connection

3.3.3.1 Frame Connection

Connect the devices together using six of connecting bolt assemblies, three in front and three in rear. See Fig. 3.3.3.1-1.
The direction of hexagon socket head bolts, binding screws and connecting nuts must be the same as shown in the figure.

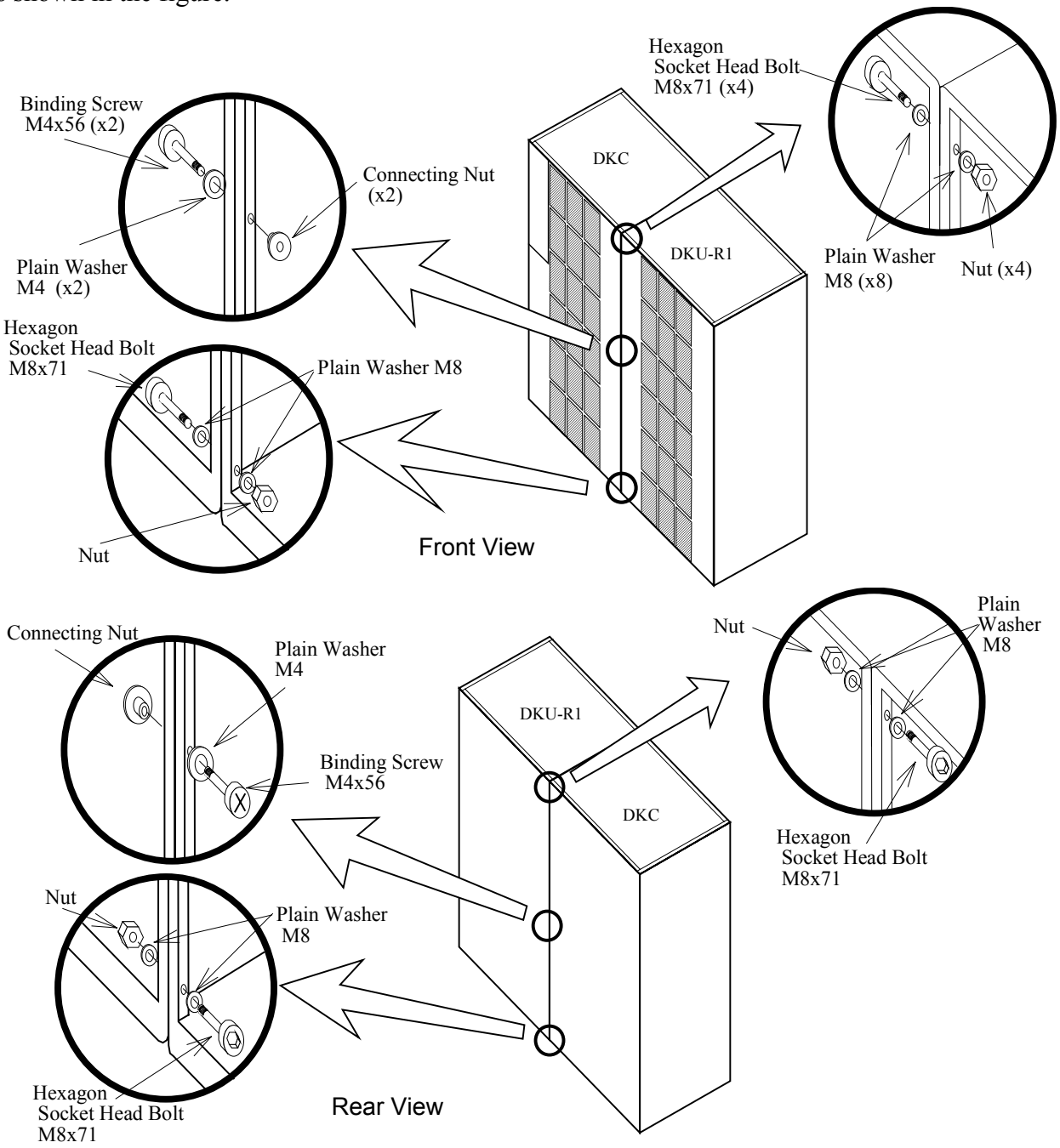

Fig. 3.3.3.1-1 Frame Connection

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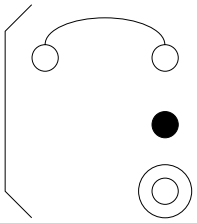
3.3.3.2 Frame Ground Cable Attachment

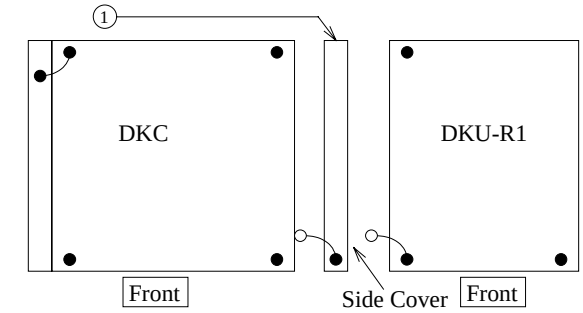
Note



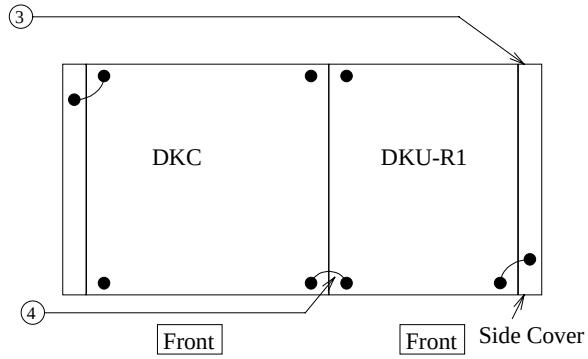
: Frame ground cable

: Screw and washer (lock washer)

: Thread



1. Remove the right side cover of the DKC.
2. Connect the cabinets.



3. Attach the side cover to the DKU. Refer to SECTION 3.3.3.3 Side Cover Re-installation.
4. Attach the frame ground cable with the screw and lock washer.
5. Attach the front and rear logic box covers to the DKC in the reverse order of SECTION 3.3.2 item 12 through 14 [INST03-SUB-80].

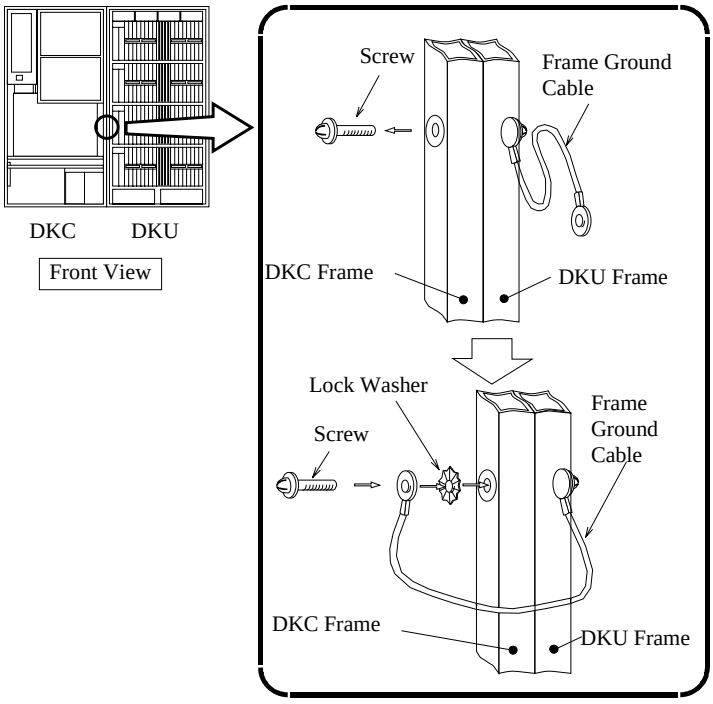


Fig. 3.3.3.2-1 Attachment of Frame Ground Cable

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3.3.3.3 Side Cover Re-installation

Attach the side cover to the end of the string with the four binding screws and washers.

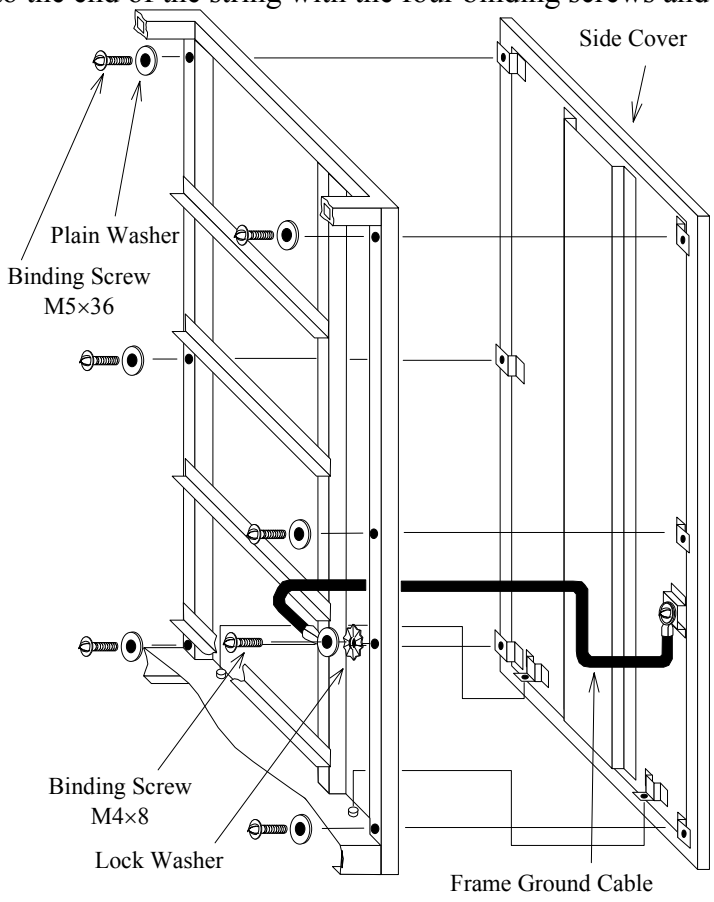

Fig. 3.3.3.3-1 Re-installation of Side Cover

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3.3.3.4 Installation of Kick Plate

Attach the kick plates with the binding screws.

NOTICE:
Contact the kick plate to the floor to prevent static electricity.

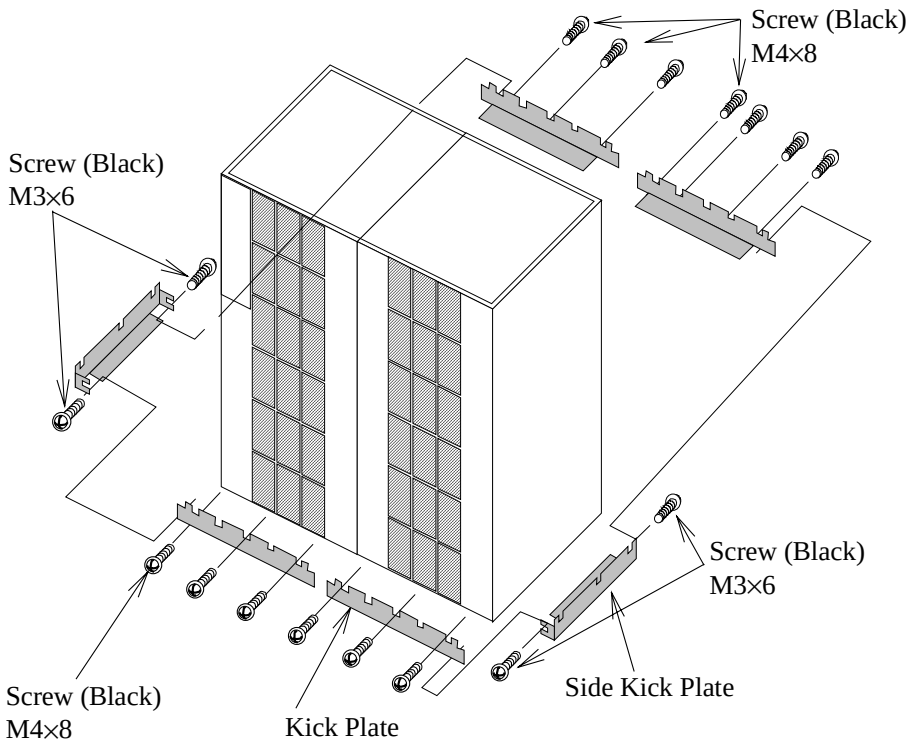

Fig. 3.3.3.4-1 Installation of Kick Plate

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3.3.4 Installation of Switches and Jumper Plugs

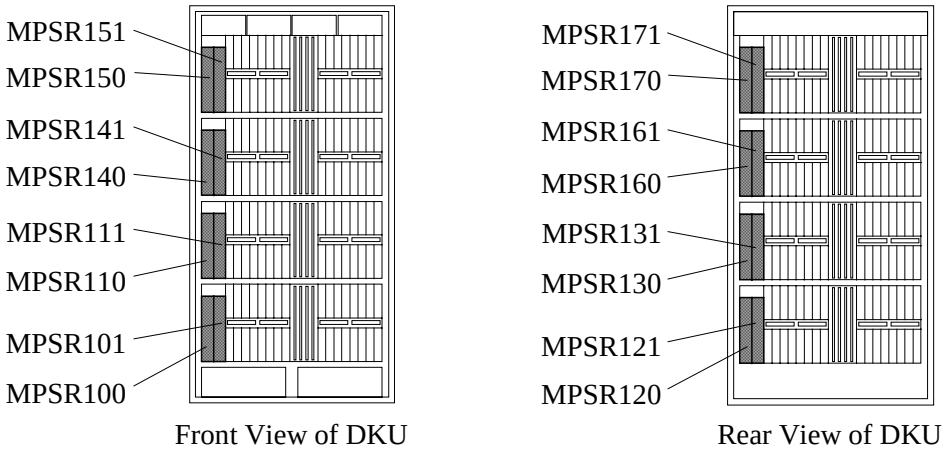
Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

3.3.4.1 Installation of Jumper Plugs in MPS

⚠ CAUTION

A serious failure occurs if a wrong setting is made.
Operate very carefully referring to the setting table not to make a mistake in the setting.

Install the jumper plugs in the MPS as indicated in the Fig. 3.3.4.1-1, Table 3.3.4.1-1 and Table 3.3.4.1-2.



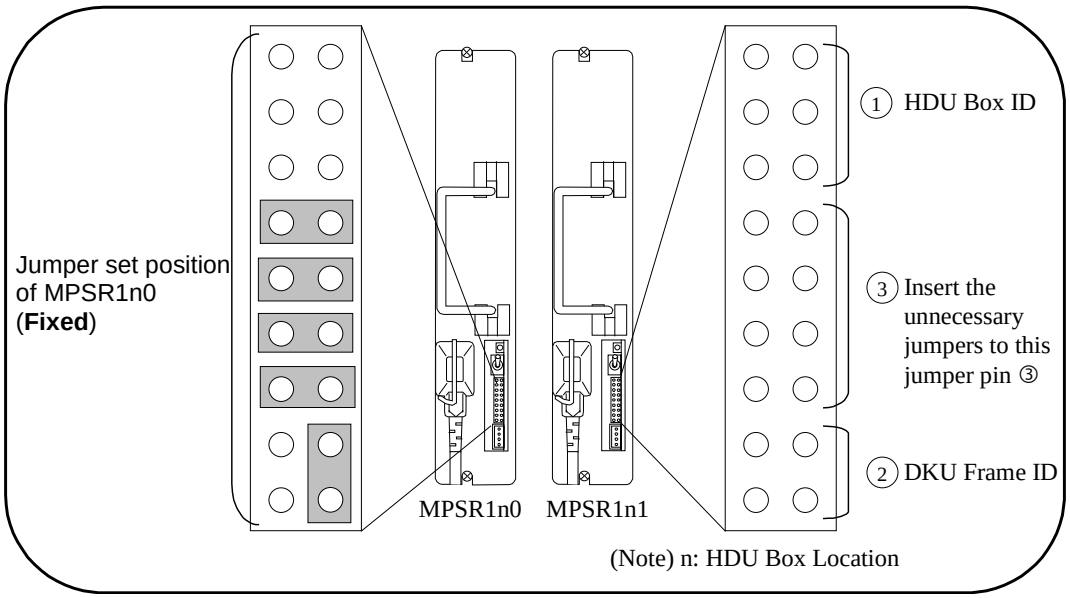


Fig. 3.3.4.1-1 Installation of Jumper Plugs in MPS

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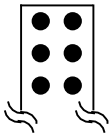
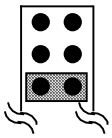
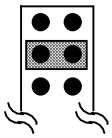
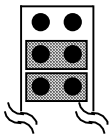
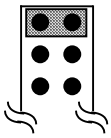
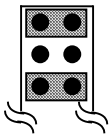
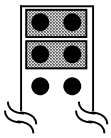
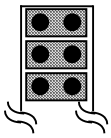
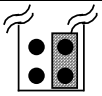
Table 3.3.4.1-1 Specification of HDU Box ID

Setting	MPS Location	HDU BOX Location	Jumper Setting
Specification of HDU Box ID (①) (Switch settings corresponding to ① in Fig. 3.3.4.1-1)	MPSR101	HDU-R10	
	MPSR111	HDU-R11	
	MPSR121	HDU-R12	
	MPSR131	HDU-R13	
	MPSR141	HDU-R14	
	MPSR151	HDU-R15	
	MPSR161	HDU-R16	
	MPSR171	HDU-R17	

(Note) Insert the unnecessary jumpers to this jumper pin ③.

Table 3.3.4.1-2 Specification of DKU Frame ID

Setting	MPS Location	DKU Location	Jumper Setting
Specification of DKU Frame ID (②) (Switch settings corresponding to ② in Fig. 3.3.4.1-1)	MPSR1n1	R1 DKU	

(Note) n: HDU BOX Location (0, 1, 2, …, 7)

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3.3.4.2 Installation of Switch in JMP PCB

CAUTION

A serious failure occurs if a wrong setting is made.
Operate very carefully referring to the setting table not to make a mistake in the setting.

Set the switch in the JMP PCB as indicated in the Fig. 3.3.4.2-1 and Table 3.3.4.2-1.
Switch settings must be made at 32 places in total per frame, that is, at 16 places in the front side and at 16 places in the rear side.

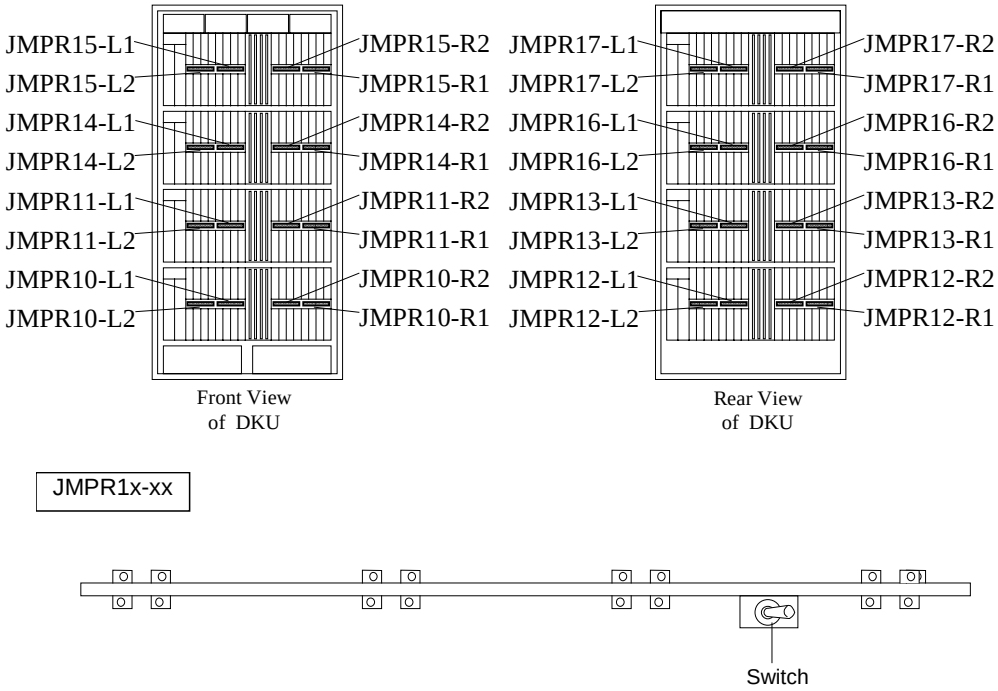
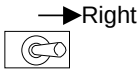


Fig. 3.3.4.2-1 Switch Setting of JMP

Table 3.3.4.2-1 Switch Setting of the JMP PCB

Setting	Function Name	Location	Switch Setting
Specification of DKU Frame ID	JMPR1#-xx	DKU-R1	Set all switches to the right side position in the DKU-R1. 

(Note) JMPR1#-xx
- #: JMP Location: R1, R2, L1, L2
- xx: HDU Box Location: 0, 1, 2, …. 6, 7

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3.3.4.3 Installation of Jumper Plugs in PCI CON PCB

Install the jumper plugs in the PCI CON PCB as indicated in the table below.

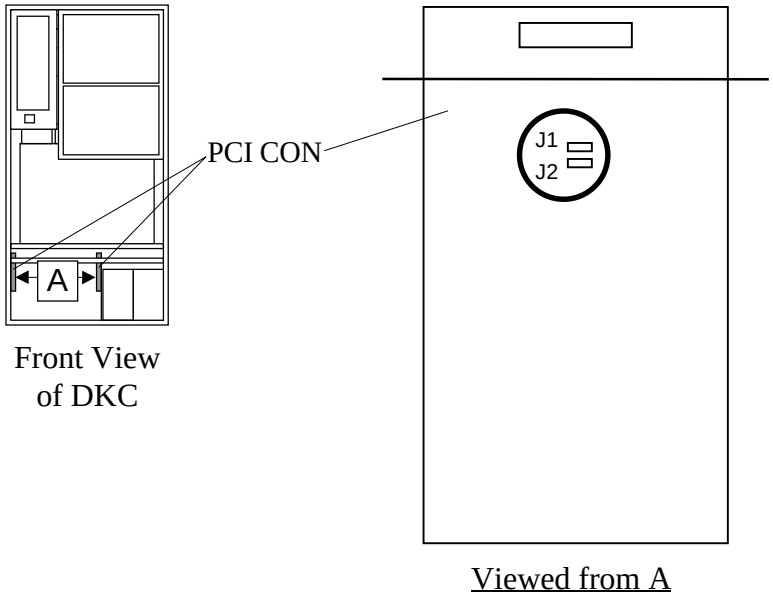
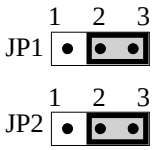
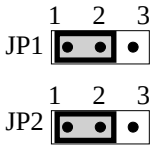


Fig. 3.3.4.3-1 Installation of Jumper Plugs in PCI CON PCB

Table 3.3.4.3-1 Installation of Jumper Plugs in PCI CON PCB

No.	Description	Installing status J1 and J2
1	When power is controlled from the host(at least one PCI cable attached to JP1-JP8 on PCI CON PCB), set the jumpers as shown.	
2	When power is not controlled from the host, no PCI cable attached to JP1-JP8 PCI CON PCB or to disable the EPO of host, set the jumpers as shown.	

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3.3.4.4 Installation of Jumper Connectors in BAT CTR PCB

1. Open the four locking clamps and remove the two jumper connectors.

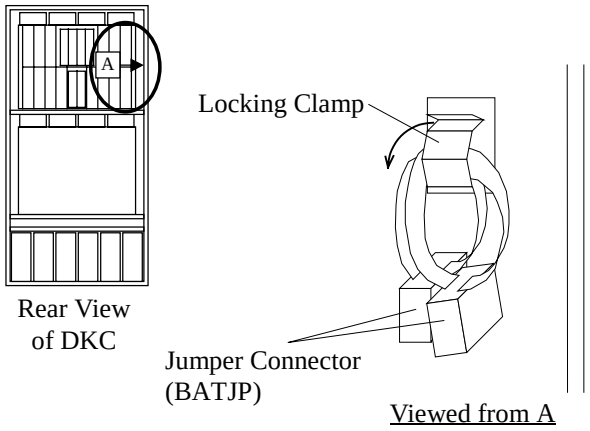

Fig. 3.3.4.4-1 Removal of Jumper Connectors

2. Install the jumper connectors in the BAT CTR PCBs as indicated in the figure below.

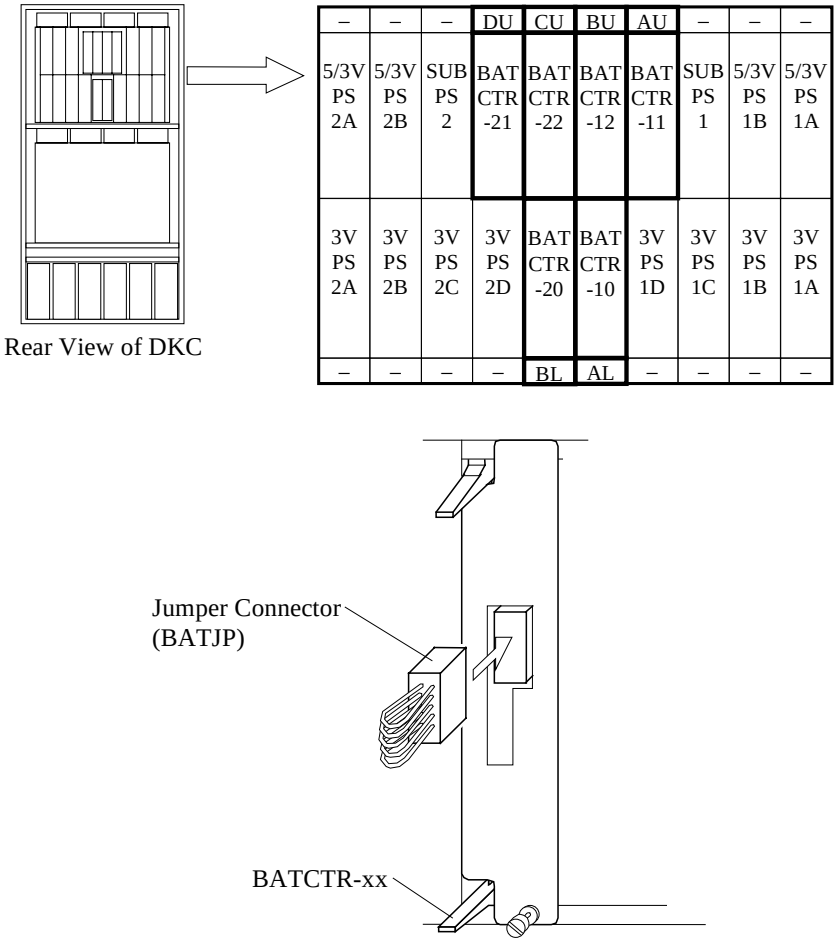

Fig. 3.3.4.4-2 Installation of Jumper Connectors in BAT CTR PCB

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3.3.5 Cabling

3.3.5.1 Cabling Procedure of AC Power Cables for DKC

Connect the AC power cables for DKC. Refer to Table 3.3.5.1-1 and Fig. 3.3.5.1-1.

Table 3.3.5.1-1 Connection of AC Power Cables (3 Phase Model)

No.	DKU-R1			DKC			Remarks
	Location No.	Connector No.	Cable No.	Location No.	Connector No.	Cable No.	
1	AC Box-R10	JC111	PC111-1	Breaker	JIN1	PIN1-1	
2		JC112	PC112-1	Box-1	JIN2	PIN2-1	
3	AC Box-R11	JC111	PC111-2	Breaker	JIN1	PIN1-2	
4		JC112	PC112-2	Box-2	JIN2	PIN2-2	

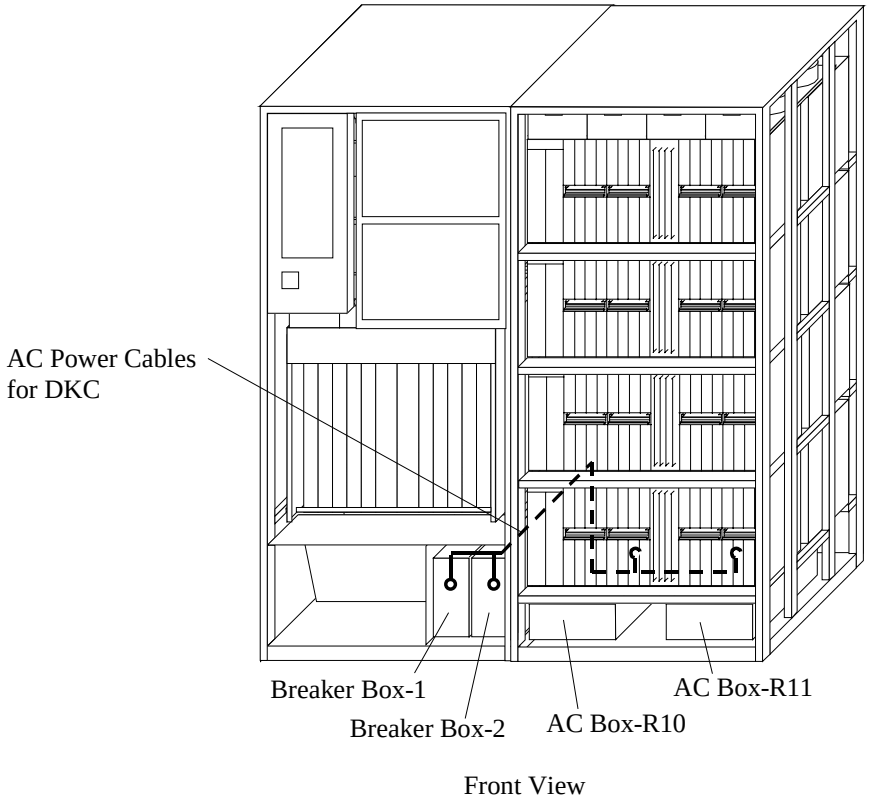

Fig. 3.3.5.1-1 Connection of AC Power Cables for Disk Controller (3 Phase Model)

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1. Fix the power cable assy.
   a. Loose the four screws

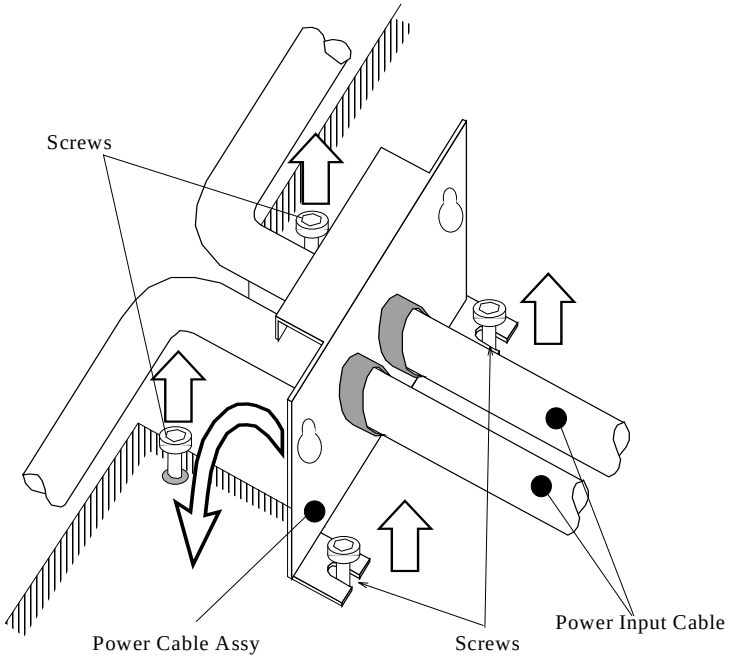

Fig. 3.3.5.1-2 Fixation of Power Cable Assy

b. Fix the power cable Assy with screws.

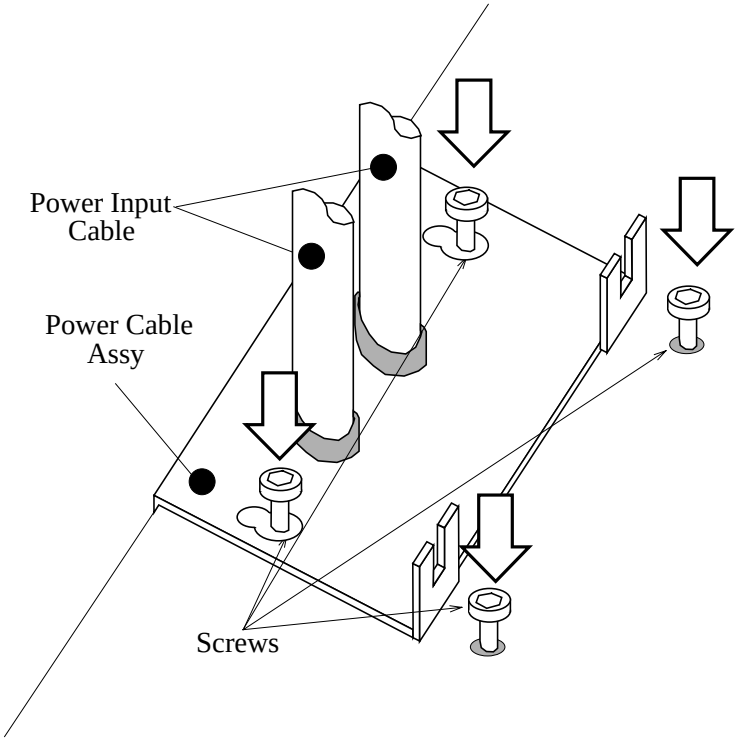

Fig. 3.3.5.1-3 Fixation of Power Cable Assy

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2. When the AC Box Kit for 3 Phase (DKU-F455I-3PS) is installed, connect the AC power cables for Disk Controller.
   When the AC Box Kit for Single Phase (DKU-F455I-1PS) is installed, go to Section 3.3.5.2 Cabling Procedure of DEV Interface Cables.

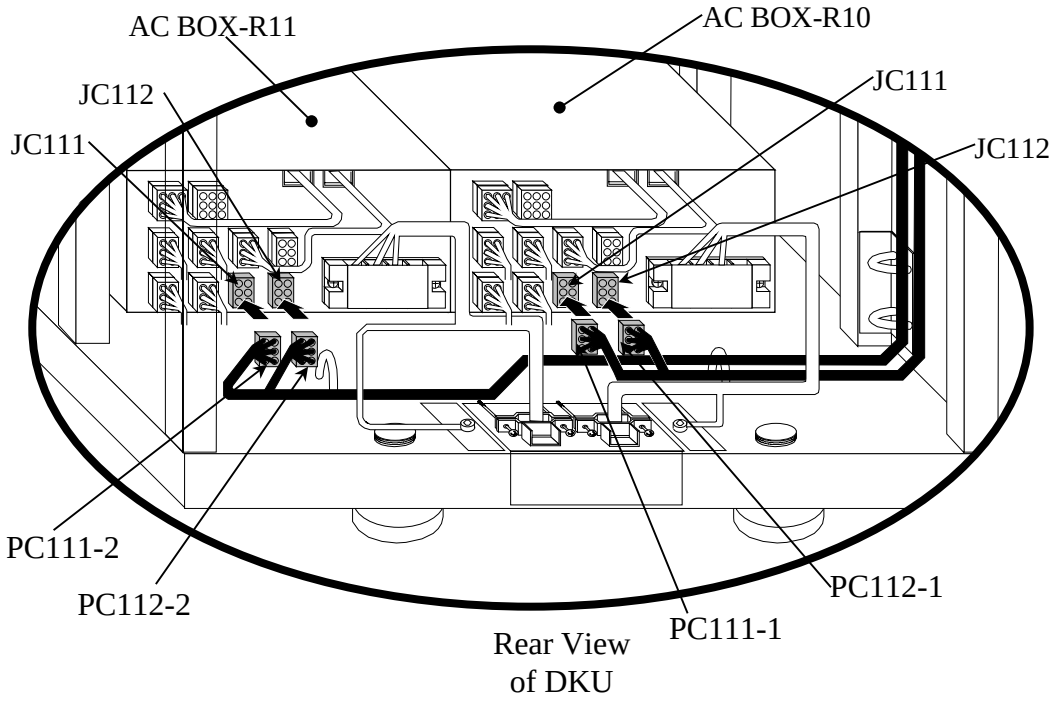

Fig. 3.3.5.1-4 Connection of AC Power Cables for Disk Controller

3. Bind the cables with the repeat binders.

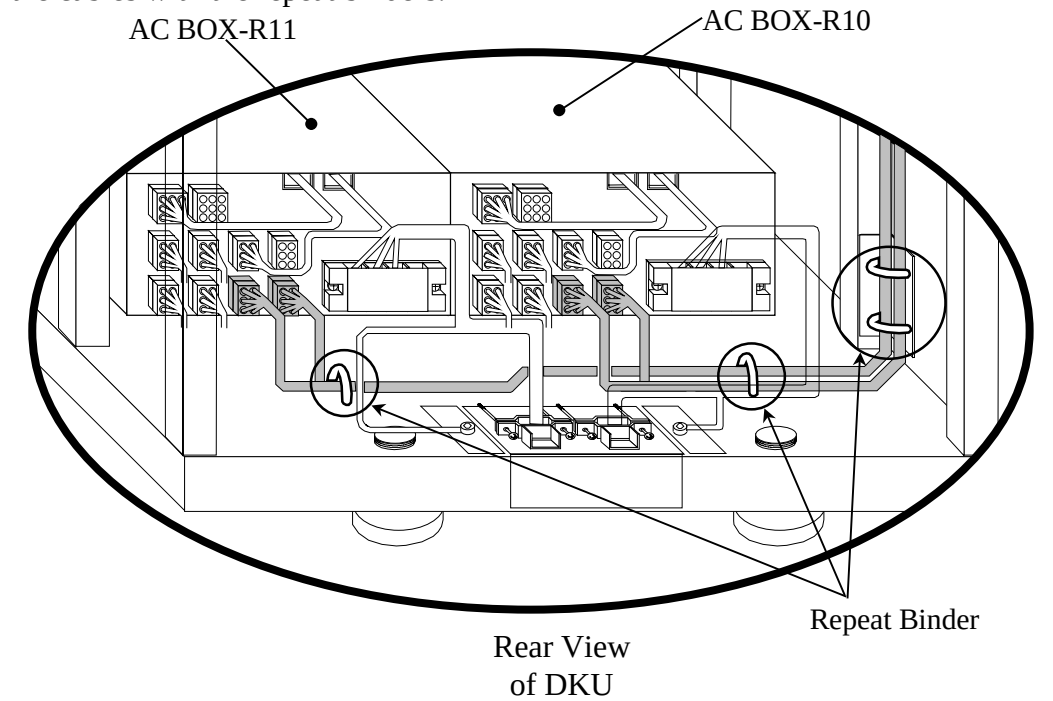

Fig. 3.3.5.1-5 Fastening of AC Power Cables for the Disk Controller

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3.3.5.2 Cabling Procedure of DEV Interface Cables

1. Connect the DEV interface cables to the sub-edges on the FSW PCBs located in the HDU box.

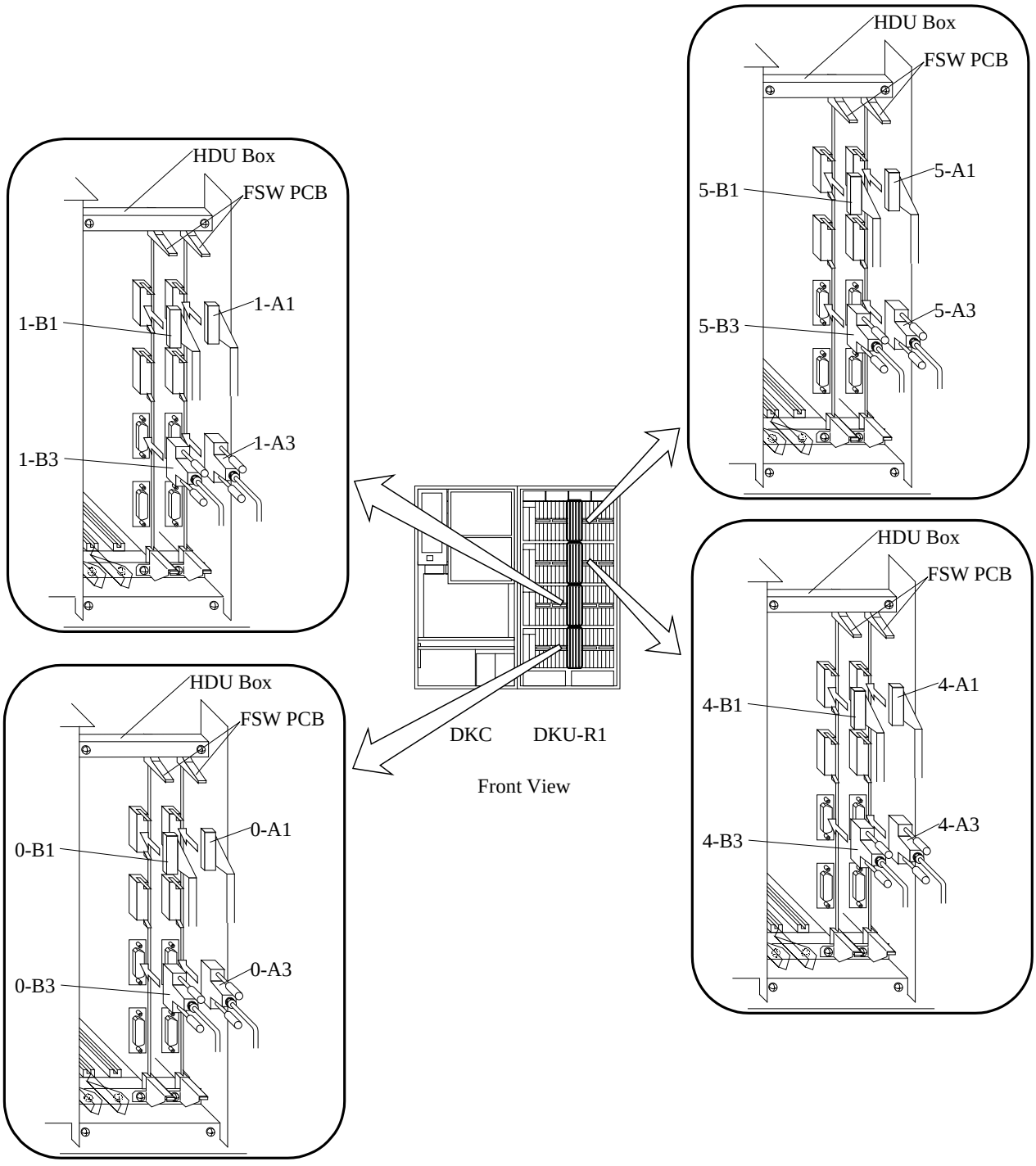

Fig. 3.3.5.2-1 Connection of DEV Interface Cables

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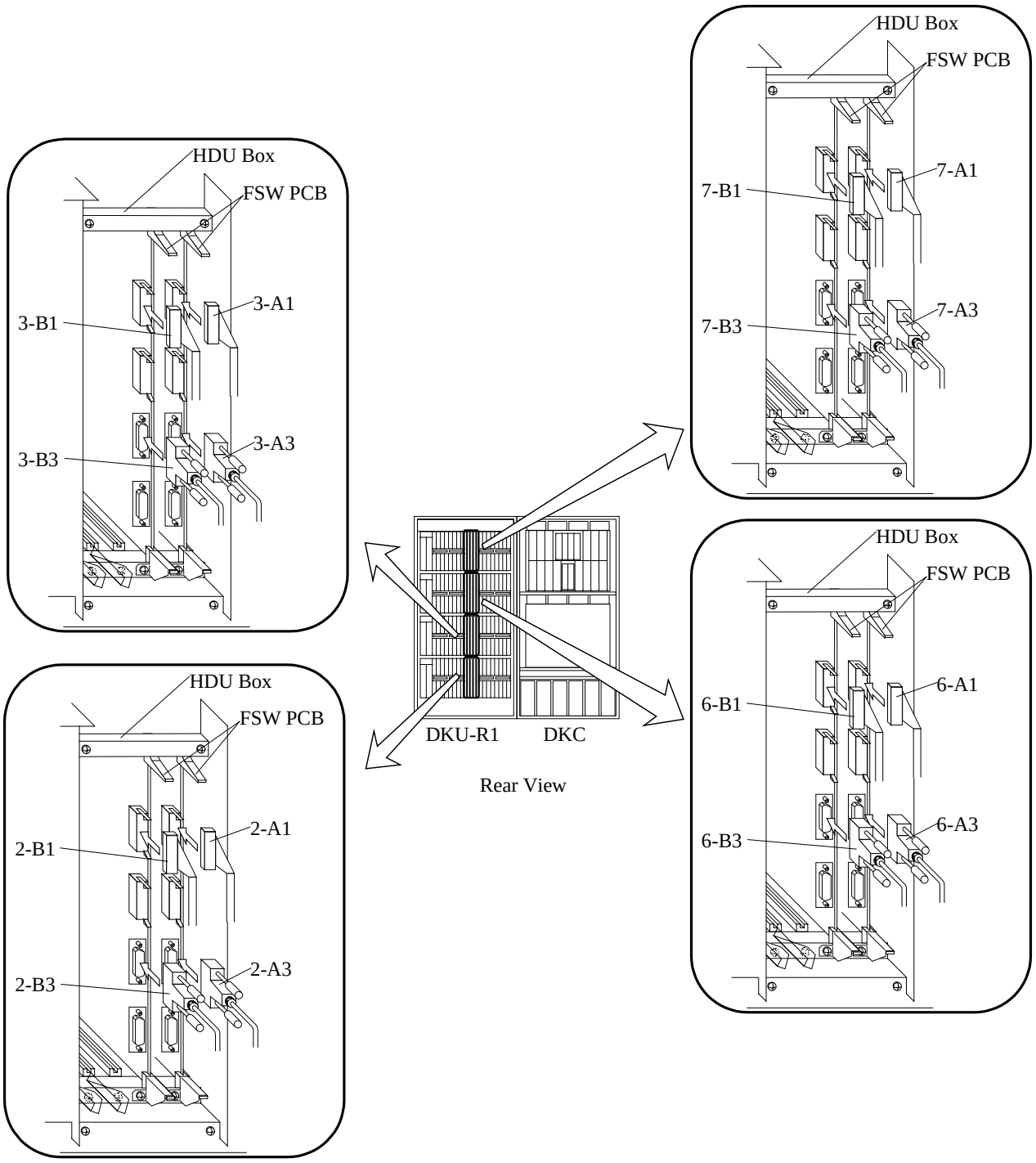

Fig. 3.3.5.2-2 Connection of DEV Interface Cables

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2. Attach the cable covers with the screws.

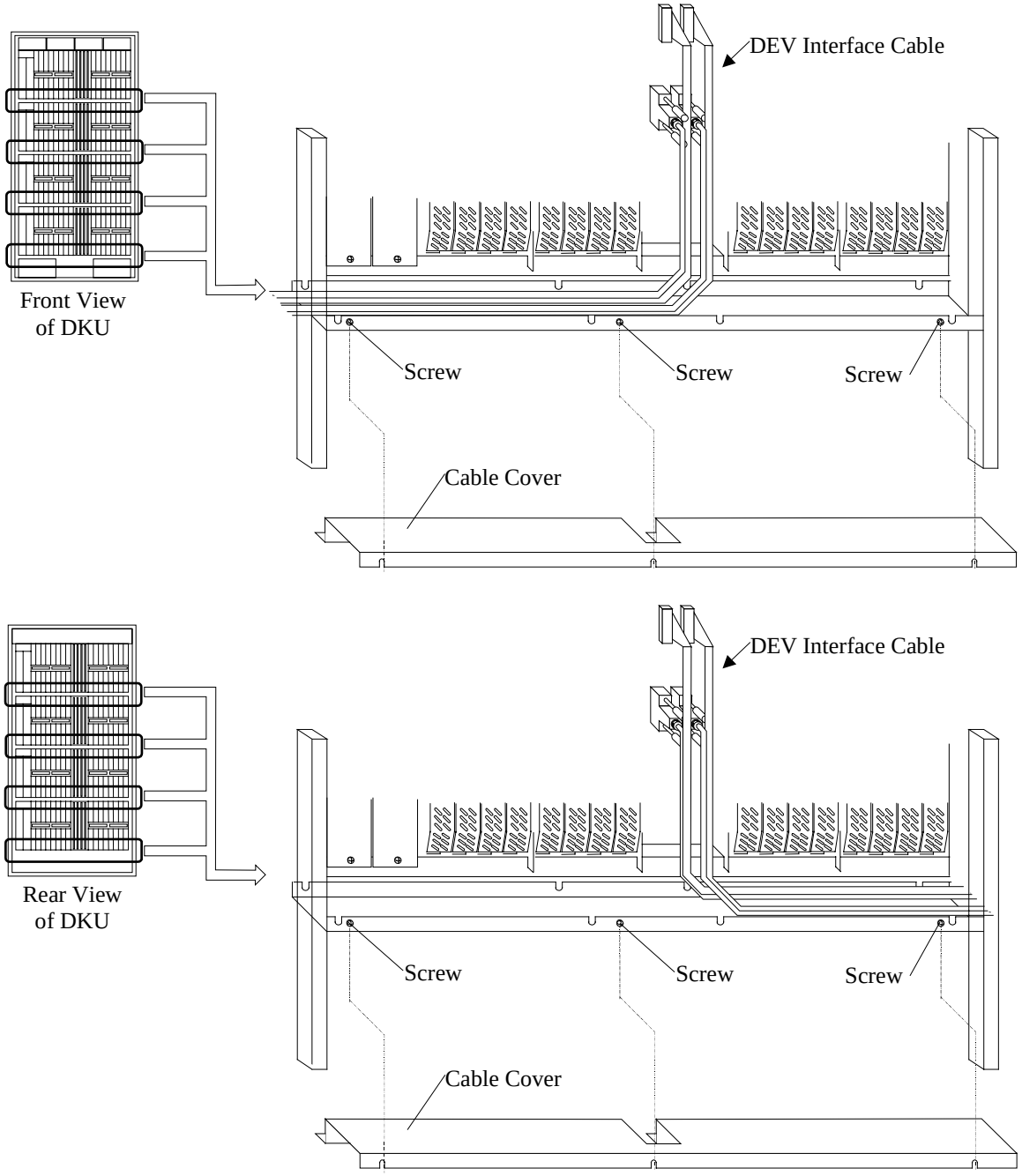

Fig. 3.3.5.2-3 Attachment of Cable Covers

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3. Attach the cable covers with the screws.

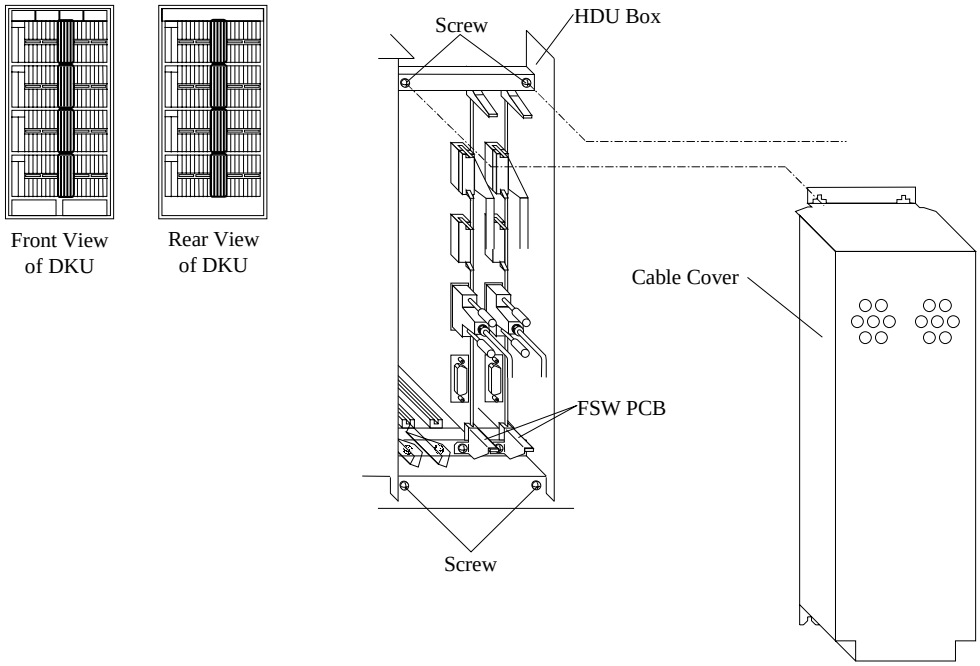

Fig. 3.3.5.2-4 Attachment of Cable Covers

4. Attach the screws fastening the SVP frame.

In the case of the SVP frame type 1

(1) Open the DKC panel.
(2) Attach the screws fastening the SVP frame.

In the case of the SVP frame type 2

(1) Open the SVP ASSY.
(2) Attach the screws fastening the SVP frame.
(3) Close the SVP ASSY.

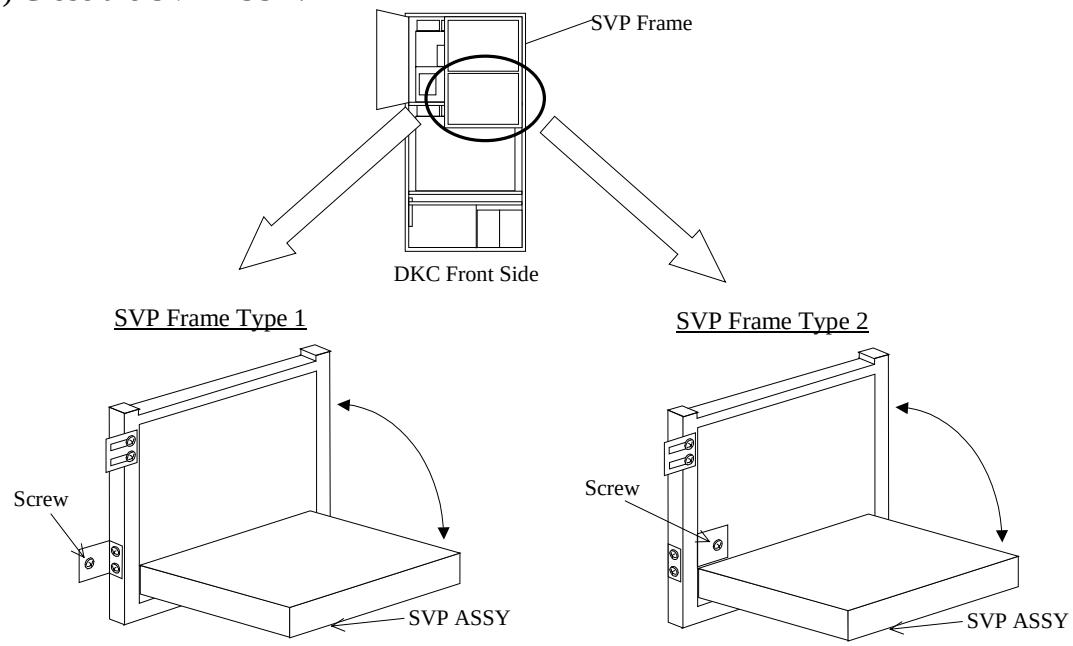

Fig. 3.3.5.2-5 Removal of Screws Fastening SVP Frame

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3.3.6 Labeling

1. Attach the label (V/Hz/PH.) to the DKC. Label (V/Hz/PH.) should be selected among the sheet of Label (V/Hz/PH.) corresponding to the operating voltage and frequency.

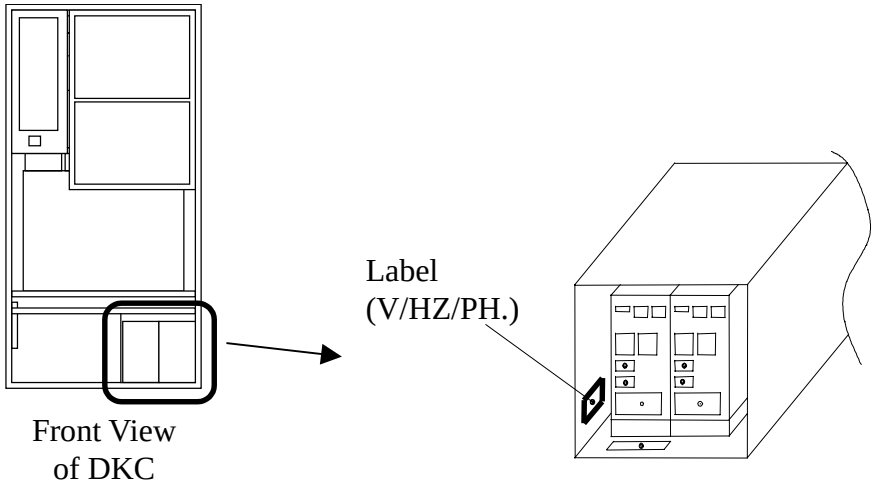

Fig. 3.3.6-1 Attachment of Label (V/Hz/PH.)

2. Attach the label (V/Hz/PH.) to the DKU bottom base of rear side. Label (V/Hz/PH.) should be selected among the sheet of Label (V/Hz/PH.) corresponding to the operating voltage and frequency.

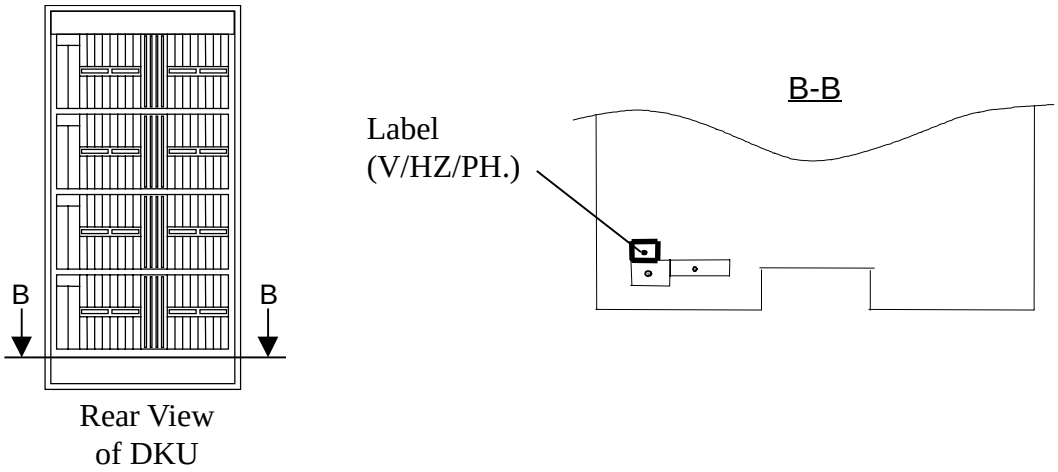

Fig. 3.3.6-2 Attachment of Label (V/Hz/PH.)

3.3.7 Check of Jumper Settings

CAUTION

A serious failure occurs if a wrong setting is made.
Operate very carefully referring to the setting table not to make a mistake in the setting.

1. Check the jumper settings and switches on the PCBs. Refer to Section 3.3.4 Installation of Switches and Jumper Plugs [INST03-SUB-130 through 160].
   When the jumper plugs and switches are not installed to the correct locations, install the jumper plugs and switches to the correct locations.

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3.4 Installation of Disk Unit (DKU455I-18)

3.4.1 Flowchart

(1) Cabinet Setting	[INST03-DKU-20]
↓	
(2) Frame Connection	[INST03-DKU-130]
↓	
(3) Switch and Jumper Plug Installation	[INST03-DKU-220]
↓	
(4) Labeling	[INST03-DKU-240]
↓	
(5) Check of Jumper Settings	[INST03-DKU-240]
↓	
(6) Check and Testing	[INST03-DKU-240]

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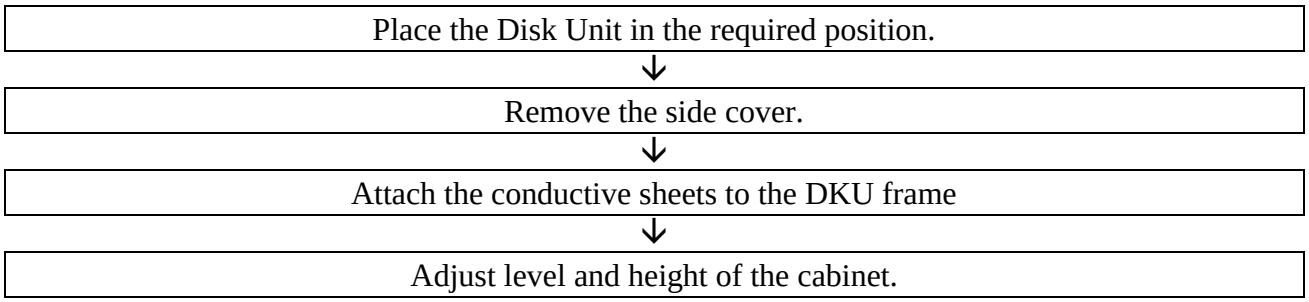
3.4.2 Cabinet Setting (Adjusting the Cabinet Height)

3.4.2.1 Flowchart



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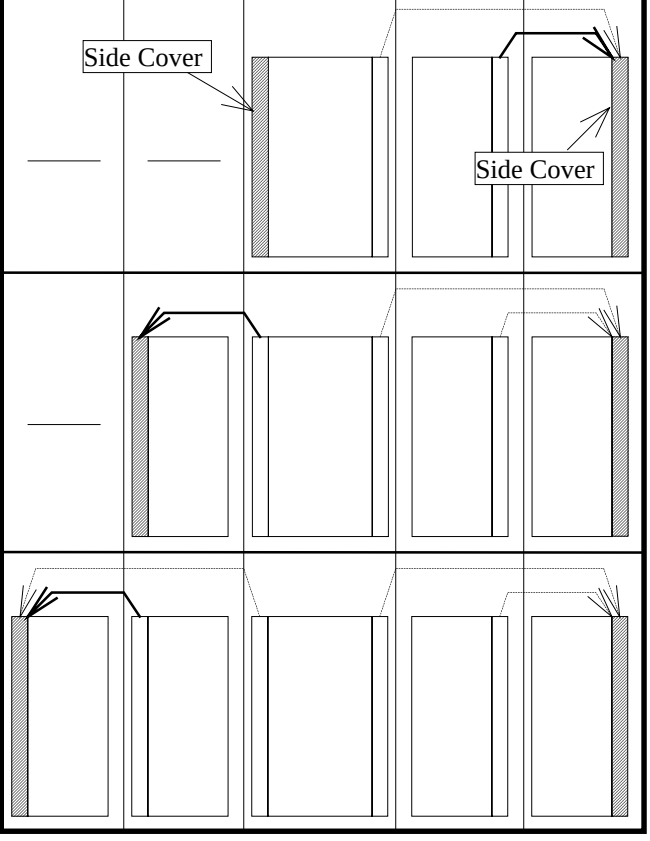
3.4.2.2 Disk Unit(s) Layout

Refer to Table 3.3.2-1 when laying out the DKU-R1 with respect to the DKC and relocating the side cover.
Install the Disk Unit(s) in one of the locations shown in Table 3.4.2.2-1.

Table 3.4.2.2-1 Removal and Re-installation of Side Cover

Configuration	DKU-L2	DKU-L1	DKC	DKU-R1	DKU-R2
Disk Controller and Two Disk Units					
Disk Controller and Three Disk Units					
Disk Controller and Four Disk Units					



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3.4.2.3 Side Cover Removal

Remove the side covers shown in Table 3.4.2.2-1 from the installed DKC or DKU(s).

Note: When the left side cover is removed from the DKC, must be removed the Front and Rear Logic Box Covers beforehand. Refer to SECTION 3.4.2.6 Logic Box Covers Removal.

3.4.2.4 Conductive Sheet Attachment

1. Attach the conductive sheets to the DKU frame referring to Fig. 3.4.2.4-1 and Fig. 3.4.2.4-2.

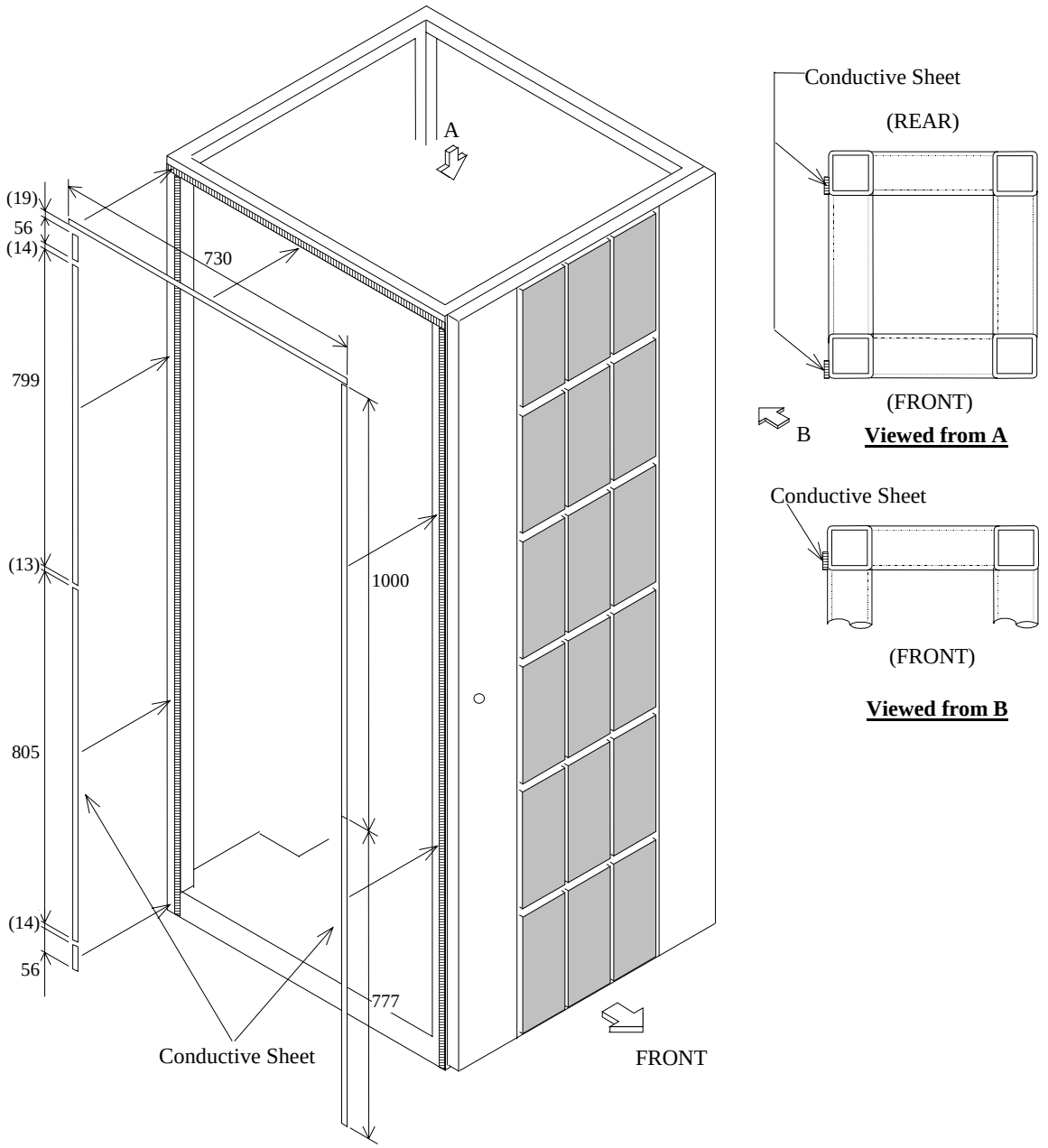

Fig. 3.4.2.4-1 Attachment of Conductive Sheets

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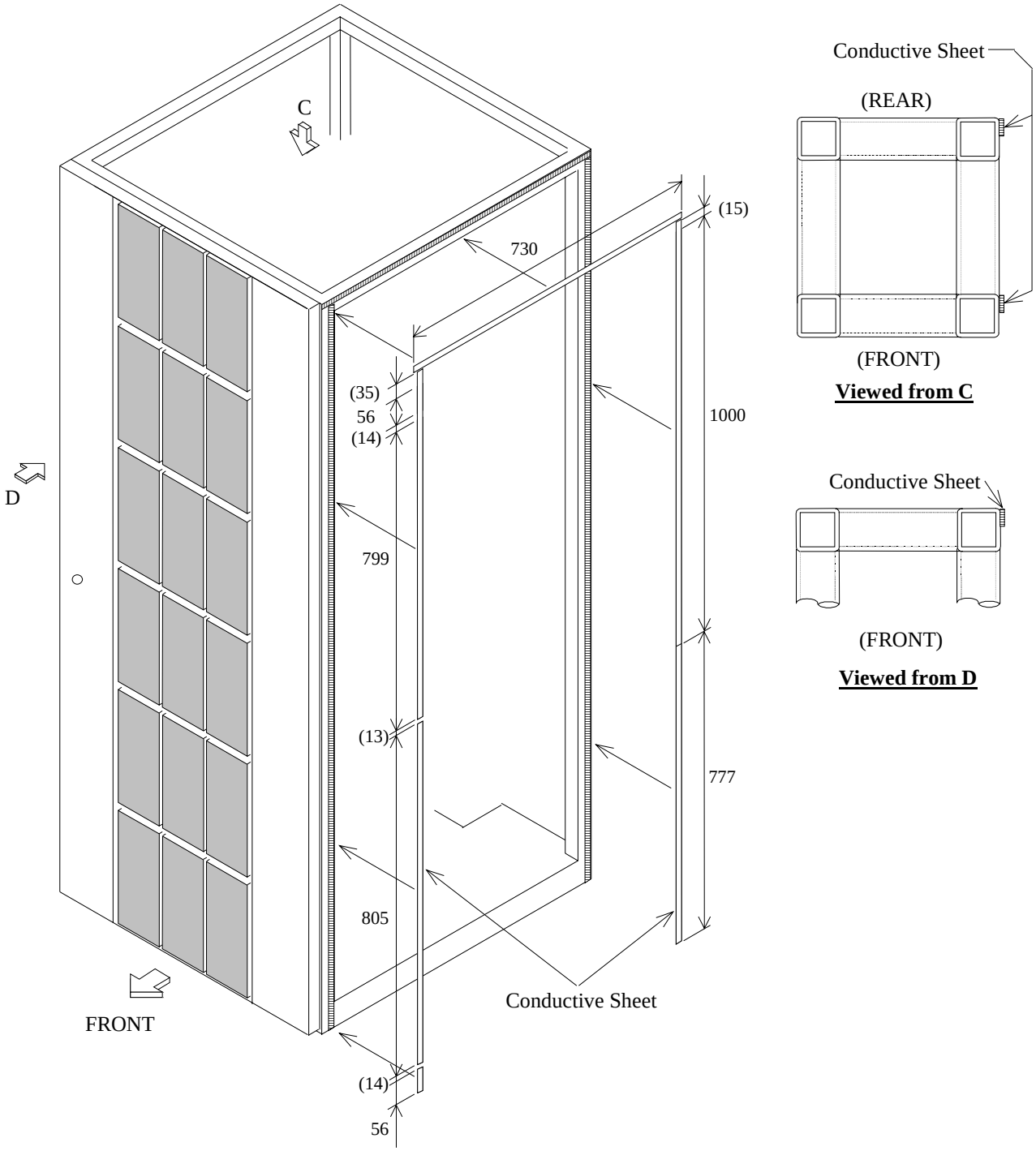

Fig. 3.4.2.4-2 Attachment of Conductive Sheets

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3.4.2.5 Installing DEV interface cable for the DKU-L1

When the frame to be added is other than the DKU-L1, go to Paragraph 3.4.2.6, “Adjusting the Cabinet Height and Level” on page INST03-DKU-120.

1. Removal of Cable Covers
   a. Remove the Front Logic Box cover from the DKC. (Refer to INST03-COM-10.)
   b. Remove the two screws and remove the cable cover.

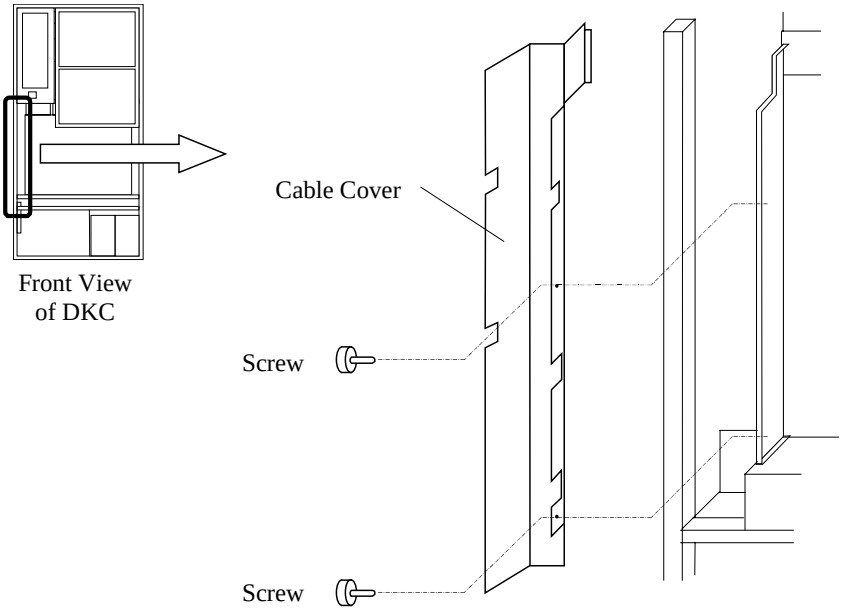

Fig. 3.4.2.5-1 Removal of Cover

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c. Loosen the two screws ① and remove the Upper SH Box covers.
d. Loosen the five screws ② and remove the Lower SH Box covers.
e. Loosen the four screws ③ and remove the SH side plate.

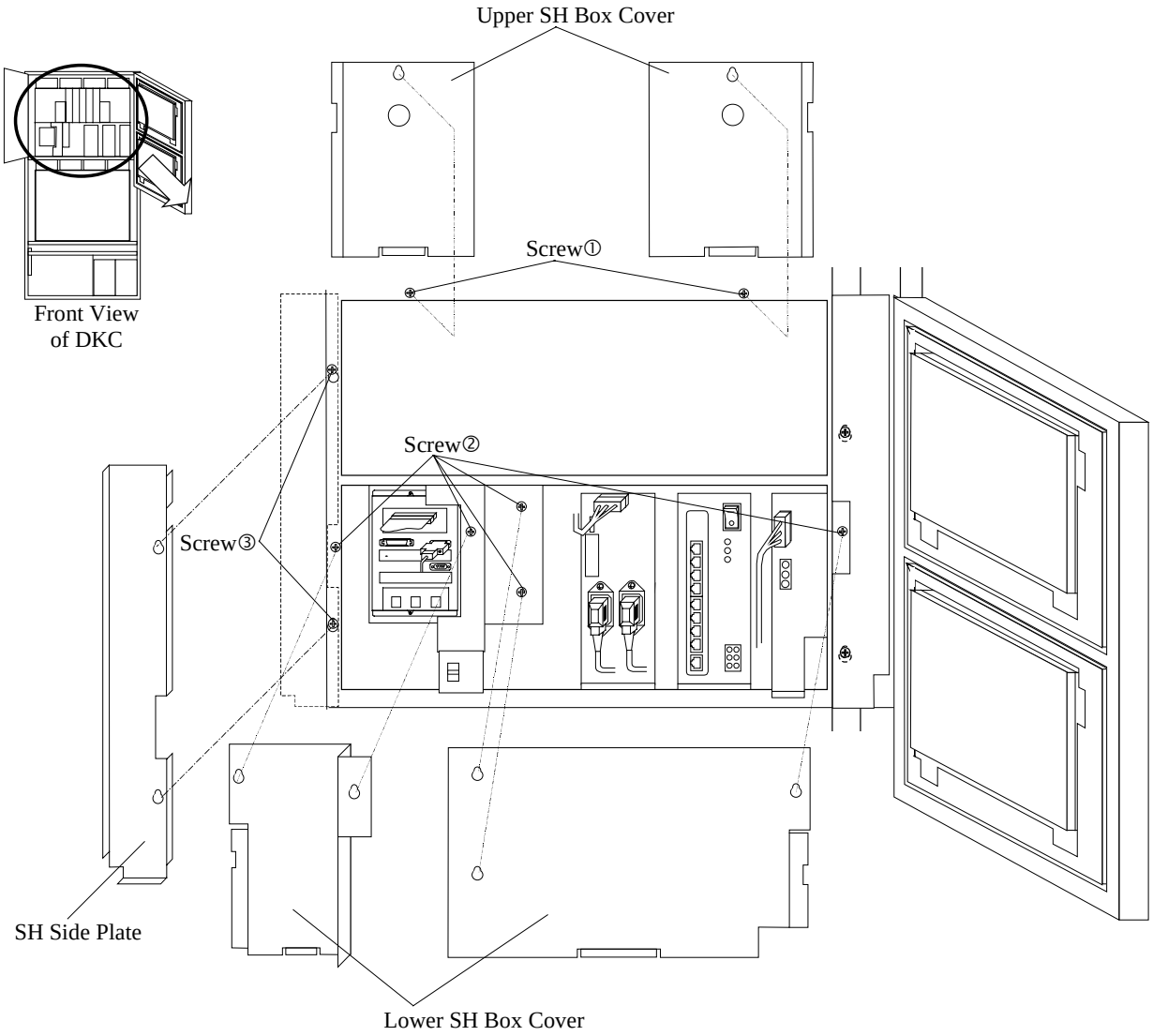

Fig. 3.4.2.5-2 Removal of Covers

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f. Loosen the two screws ① and remove the cable cover ①.
g. Loosen the two screws ② and remove the cable cover ②.
h. Loosen the screw ③ and remove the cable cover ③.
i. Loosen the two screws ④ and remove the cable cover ④.

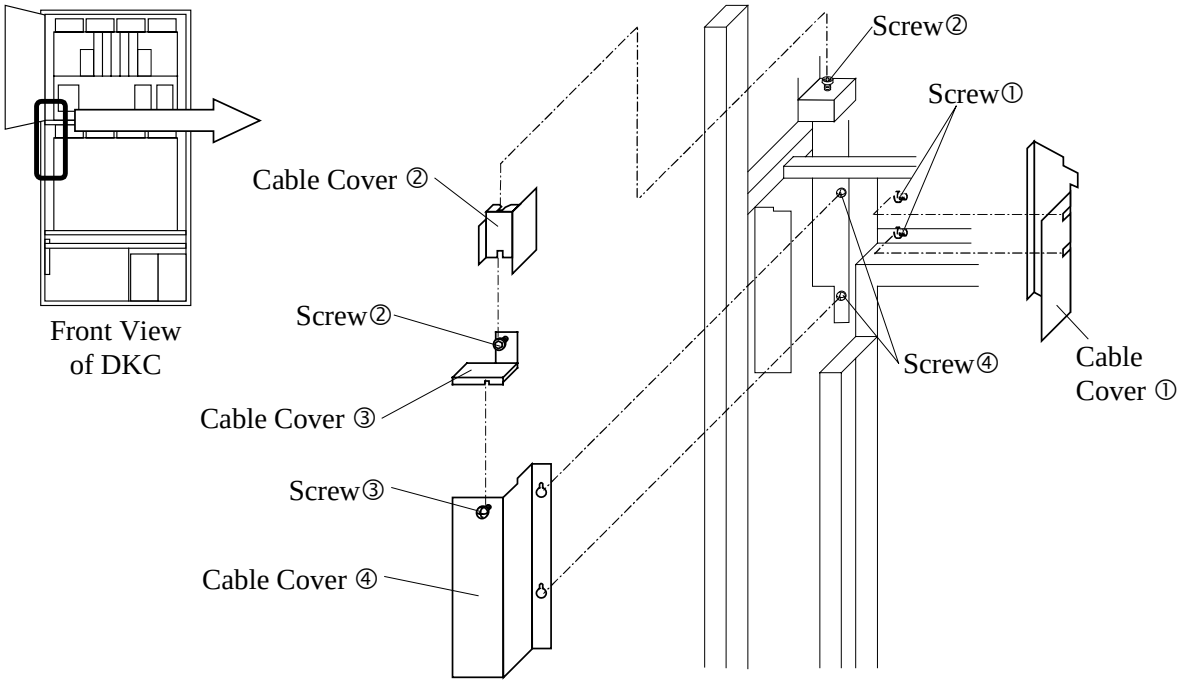

Fig. 3.4.2.5-3 Removal of Covers

j. Loosen the three screws and remove the cable cover.

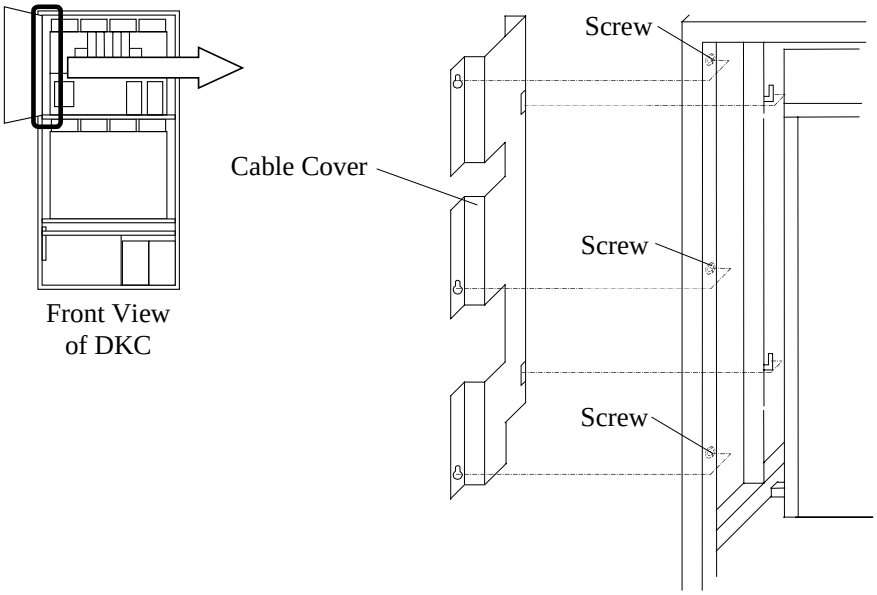

Fig. 3.4.2.5-4 Removal of Cover

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k. Loosen the two screws and remove the cable duct cover.

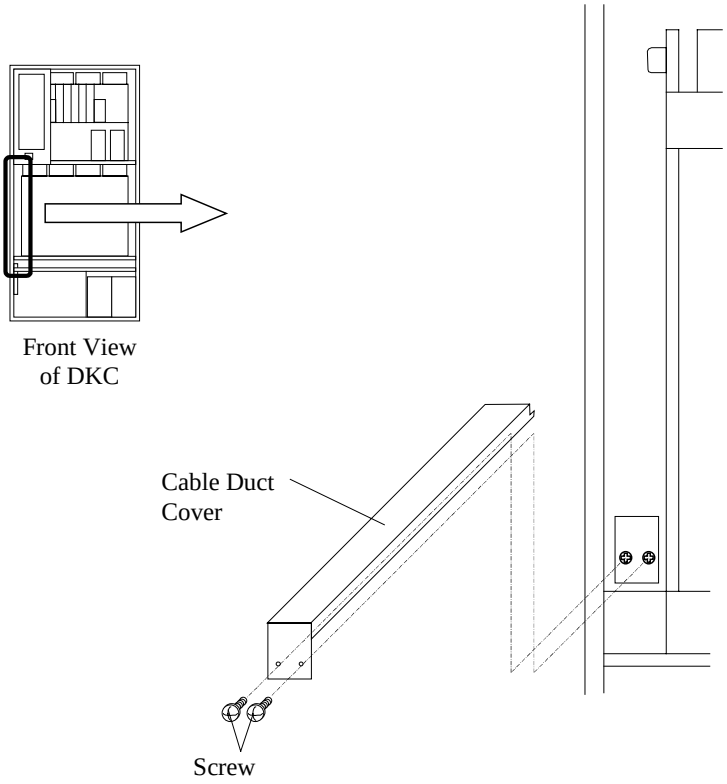

Fig. 3.4.2.5-5 Removal of Covers

m. Remove the Rear Logic Box cover and Rear PS Box cover. (Refer to INST03-COM-20 through 30.)
n. Remove the two screws and remove the cable cover.

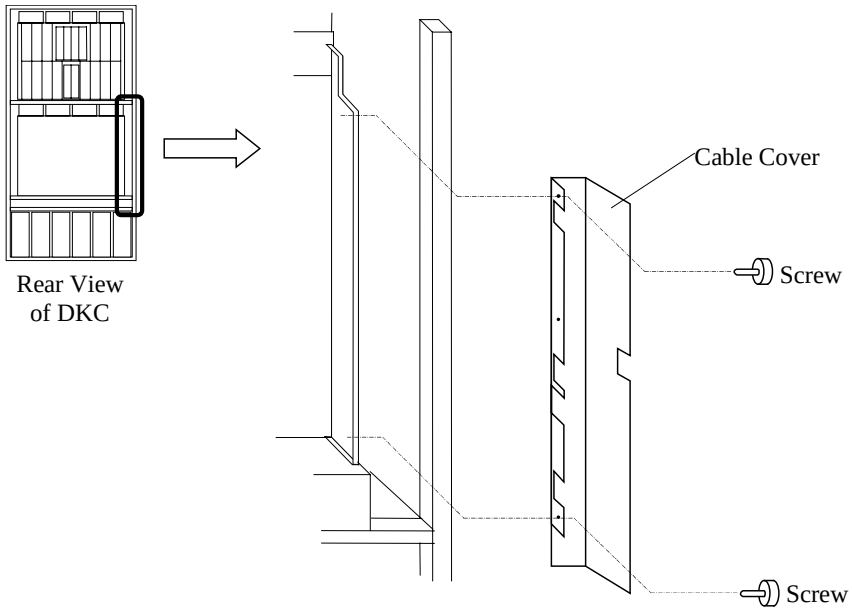

Fig. 3.4.2.5-6 Removal of Cover

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p. Loosen the three screws① and remove the cable cover①. Then, loosen the two screws② and remove the cable cover②.

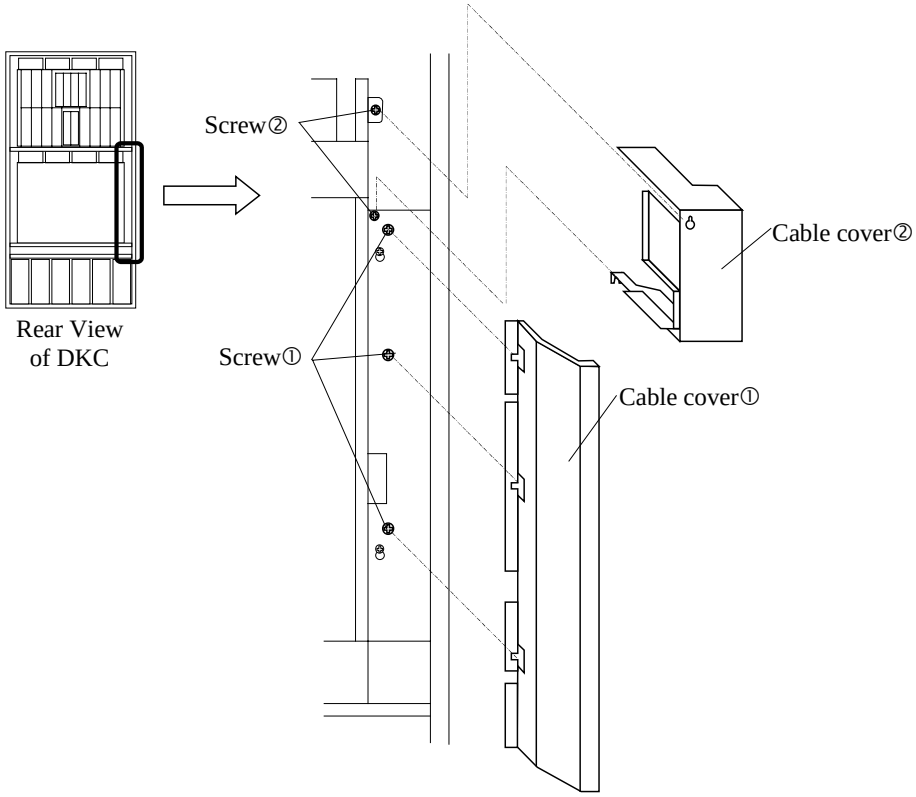

Fig. 3.4.2.5-7 Removal of Cover

q. Loosen the two screws and remove the cable cover.

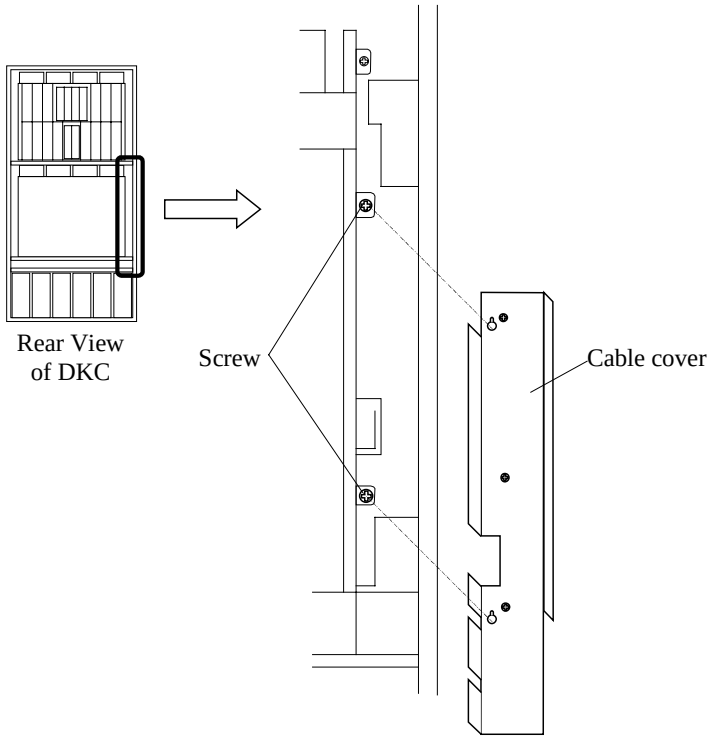

Fig. 3.4.2.5-8 Removal of Cable Cover

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r. Remove the two screws and remove the cable cover.

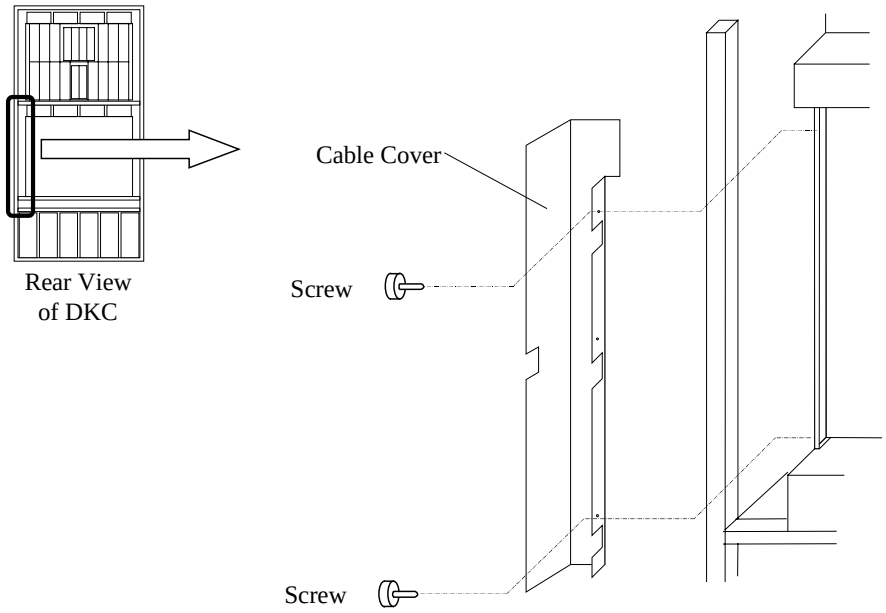

Fig. 3.4.2.5-9 Removal of Cable Cover

s. Loosen the five screws and remove the bracket.

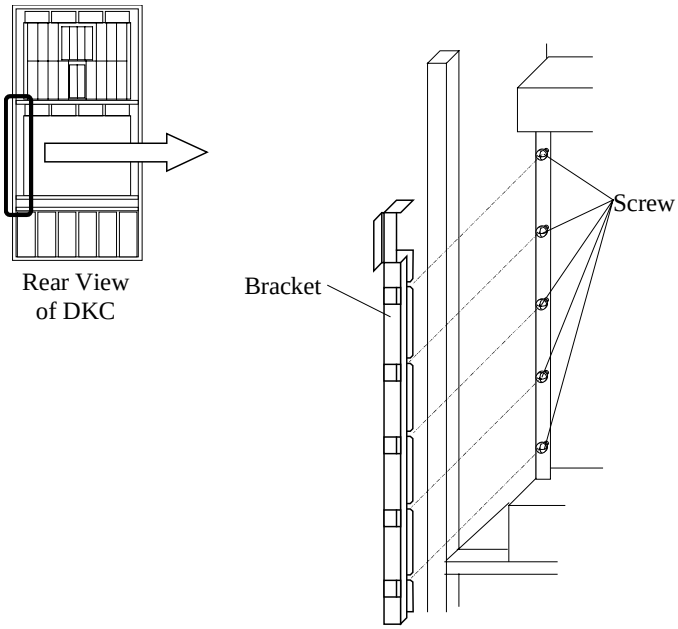

Fig. 3.4.2.5-10 Removal of Bracket

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t. Loosen the three screws and remove the cable cover from the cable clamp located at the top of the Rear Logic Box.

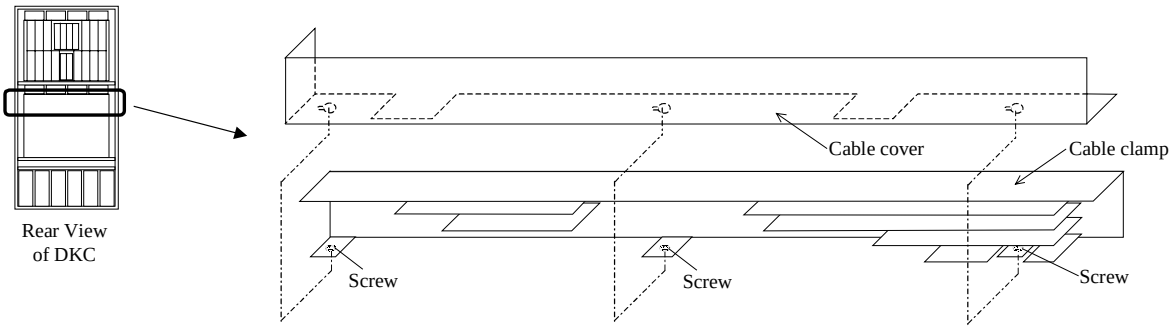

Fig. 3.4.2.5-11 Removal of Cable Cover

u. Loosen the screw and remove the cable duct cover.

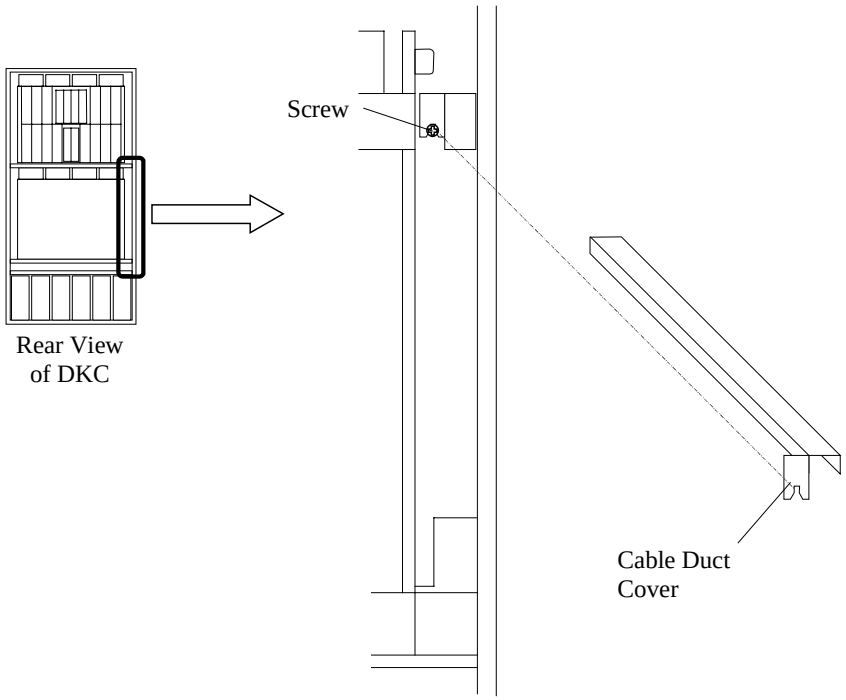

Fig. 3.4.2.5-12 Removal of Cable Duct Cover

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v. Loosen the two screws and remove the cable cover.

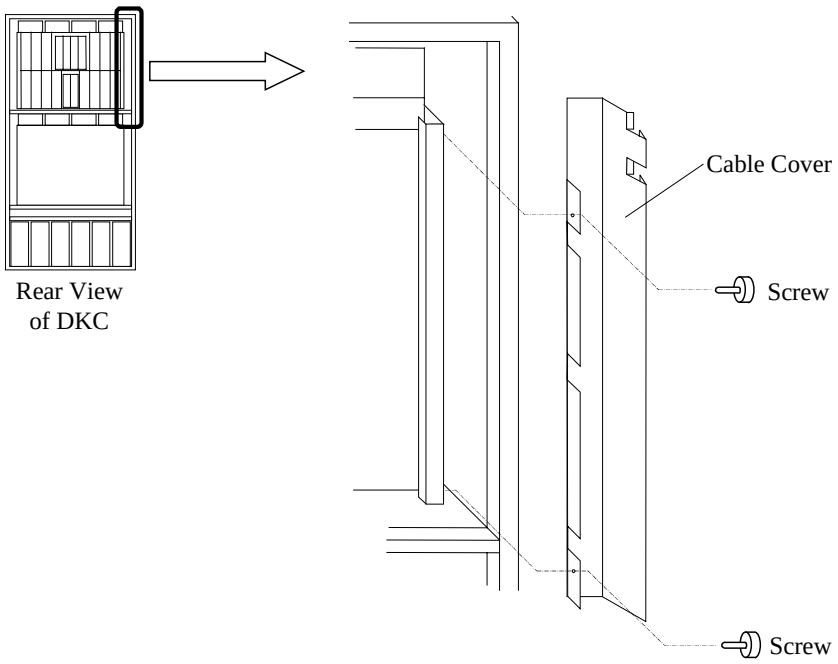

Fig. 3.4.2.5-13 Removal of Cable Cover

w. Loosen the four screws and remove the cable cover. Rotate the cable cover 90 degrees and pull out it forward.

CAUTION

When you rotate the cable cover, don't contact the cable cover to the bus bar.

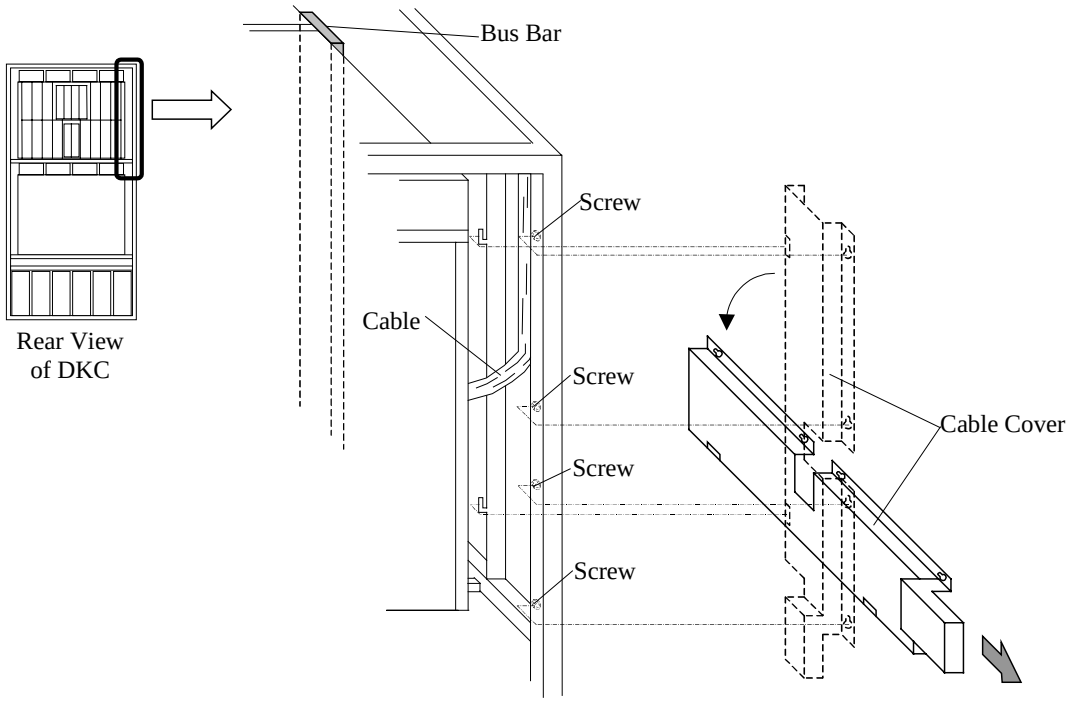

Fig. 3.4.2.5-14 Removal of Cable Cover

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x. Loosen the screws and remove the cable covers from the DKU-L1 frames.

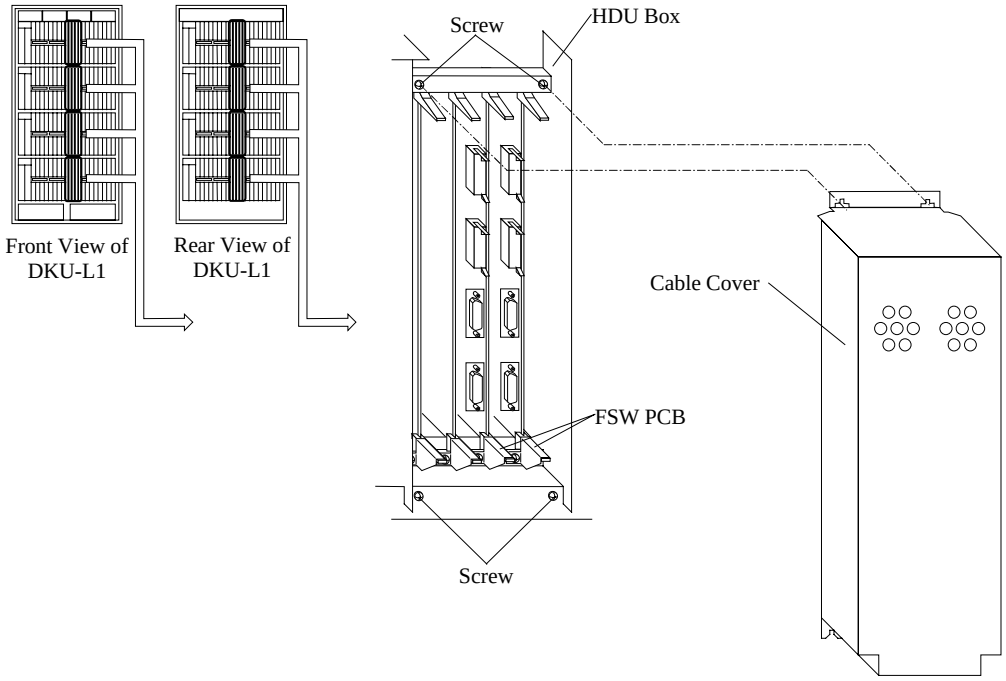

Fig. 3.4.2.5-15 Removal of Cable Covers

y. Loosen the screws and remove the cable covers from the DKU-L1 frames.

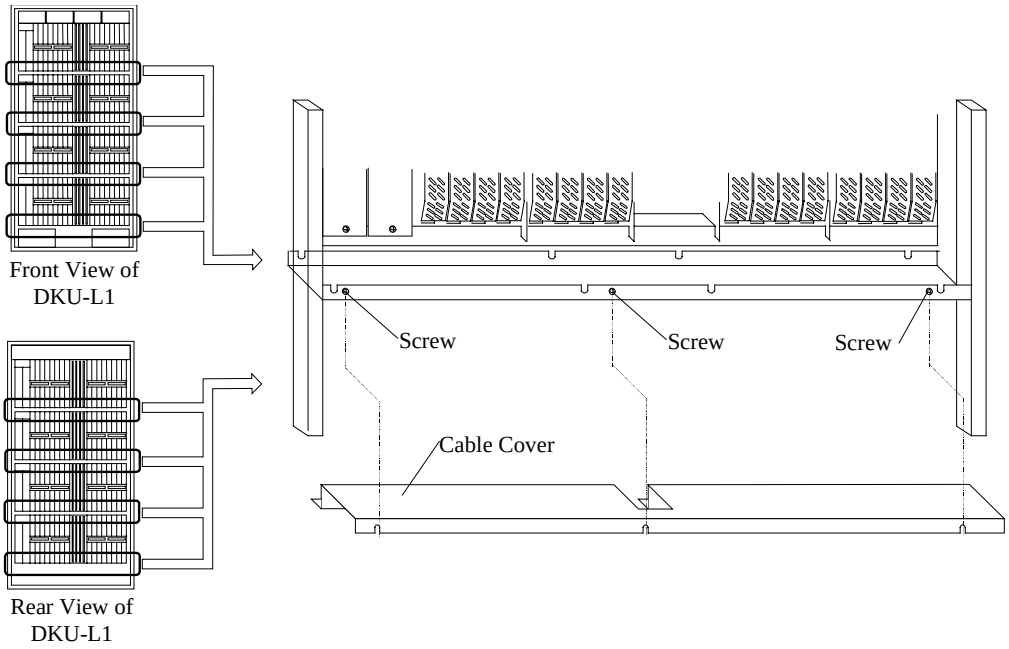

Fig. 3.4.2.5-16 Removal of Cable Covers

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2. Attachment of DEV Interface cables

a. Insert the DEV interface cables for the DKU-L1 into the cable clamp located at the top of the Rear Logic Box. Attach the cable in order of ①, ②, ③ and ④. When doing this, position the binder that bundles the cables at the end of the cable clamp.

Note:
Since a label bearing a connection destination is affixed on each cable/connector, work very carefully referring to it and the wiring diagram.

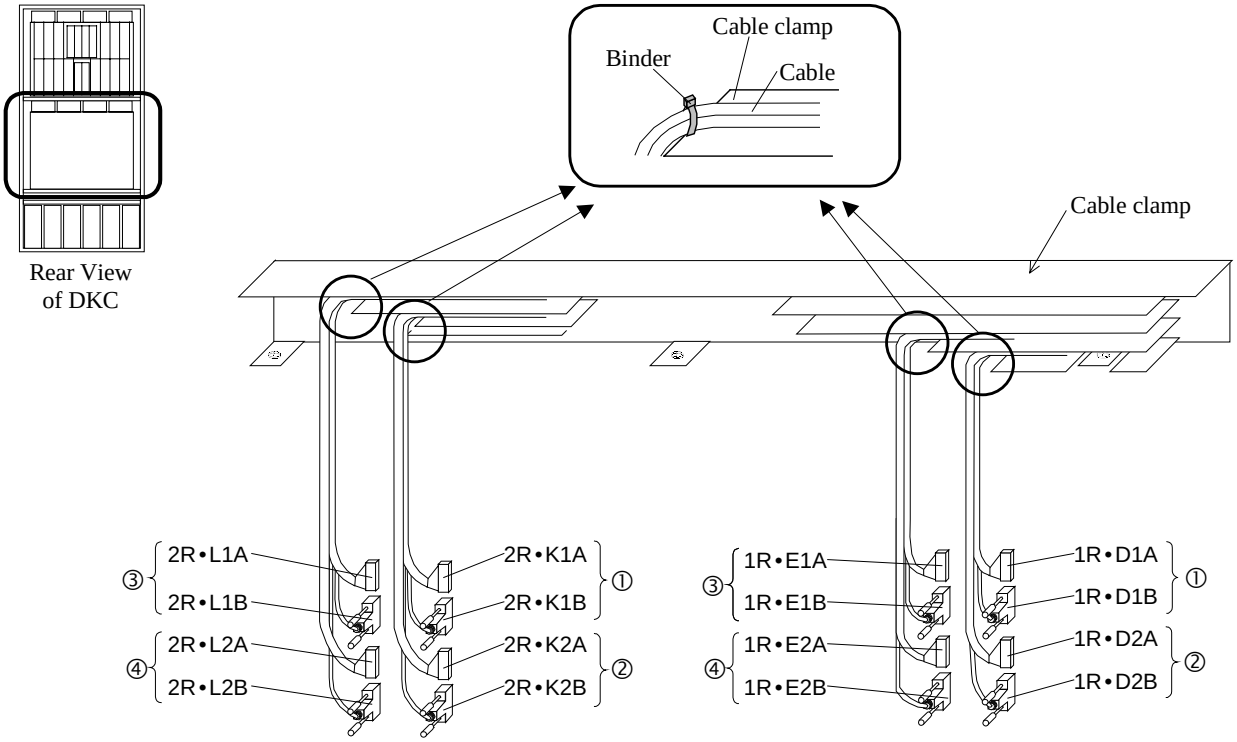

Fig. 3.4.2.5-17 Attachment of DEV Interface Cables

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b. Insert the DEV interface cables for the DKU-L1 into the cable duct. When doing this, position the binder that bundles the DEV interface cables at the cable exit of the cable duct and fix the surplus cables with the repeat binder.

Note:
Do not connect the cable to the connector of the FSW PCB in this procedure. Connect the connector in the procedure explained in "Installation of DEV Interface Cable, Additional Disk Adapter and HDD Canister" on page INST03-DKA-10.

Table 3.4.2.5-1 DEV Interface Cable List

No.	Cable No. (DKA Side)	Cable No. (FSW Side)	Remarks
1	1R-D1A	0-A1	
	1R-D1B	0-A3	
2	2R-K1A	0-B1	
	2R-K1B	0-B3	

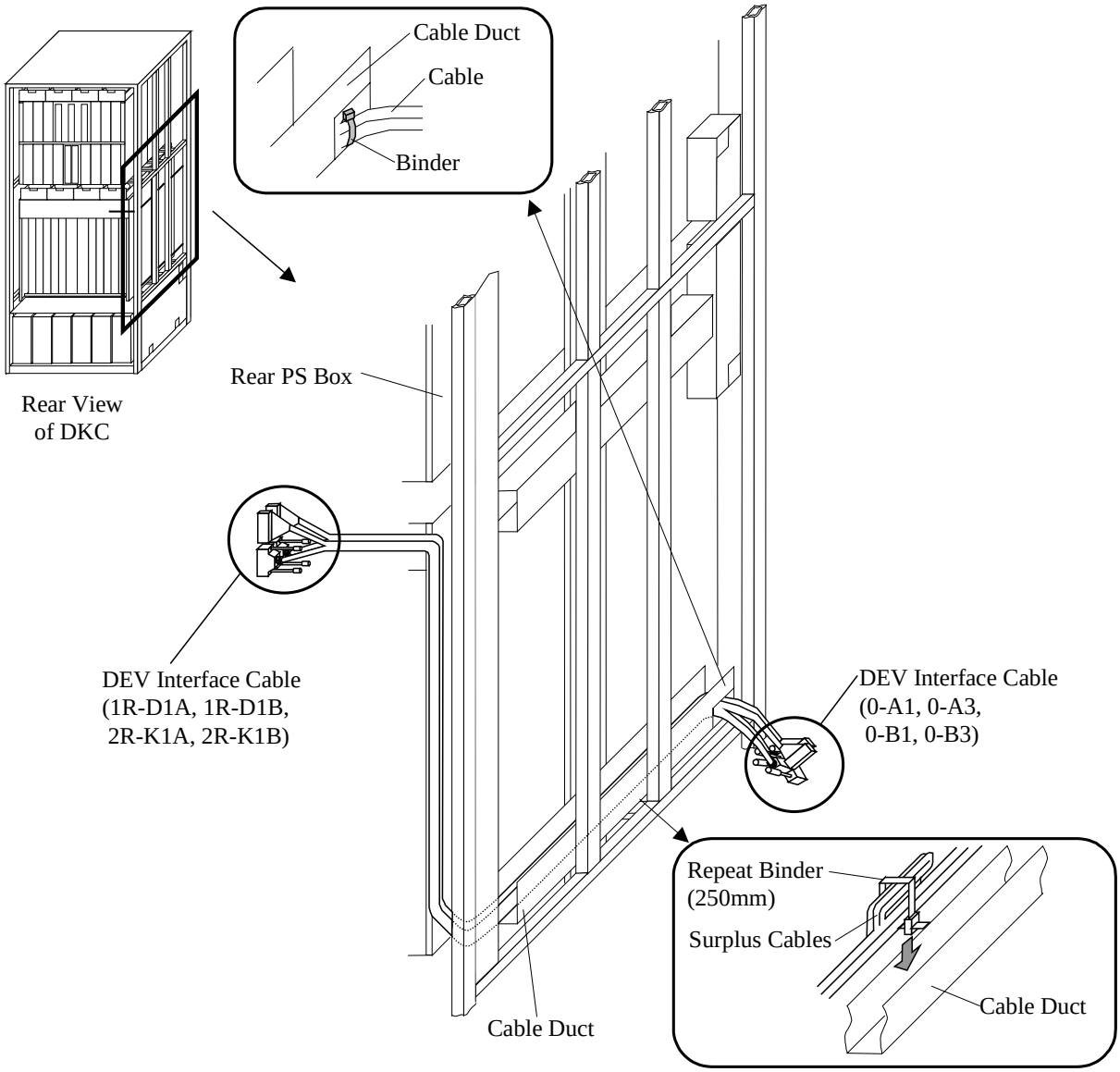

Fig. 3.4.2.5-18 Attachment of DEV Interface Cables

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c. Insert the DEV interface cables for the DKU-L1 into the cable duct. When doing this, position the binder that bundles the DEV interface cables at the cable exit of the cable duct and fix the surplus cables with the repeat binder.

Table 3.4.2.5-2 DEV Interface Cable List

No.	Cable No. (DKA Side)	Cable No. (FSW Side)	Remarks
1	1R-D2A	1-A1	
	1R-D2B	1-A3	
2	2R-K2A	1-B1	
	2R-K2B	1-B3	

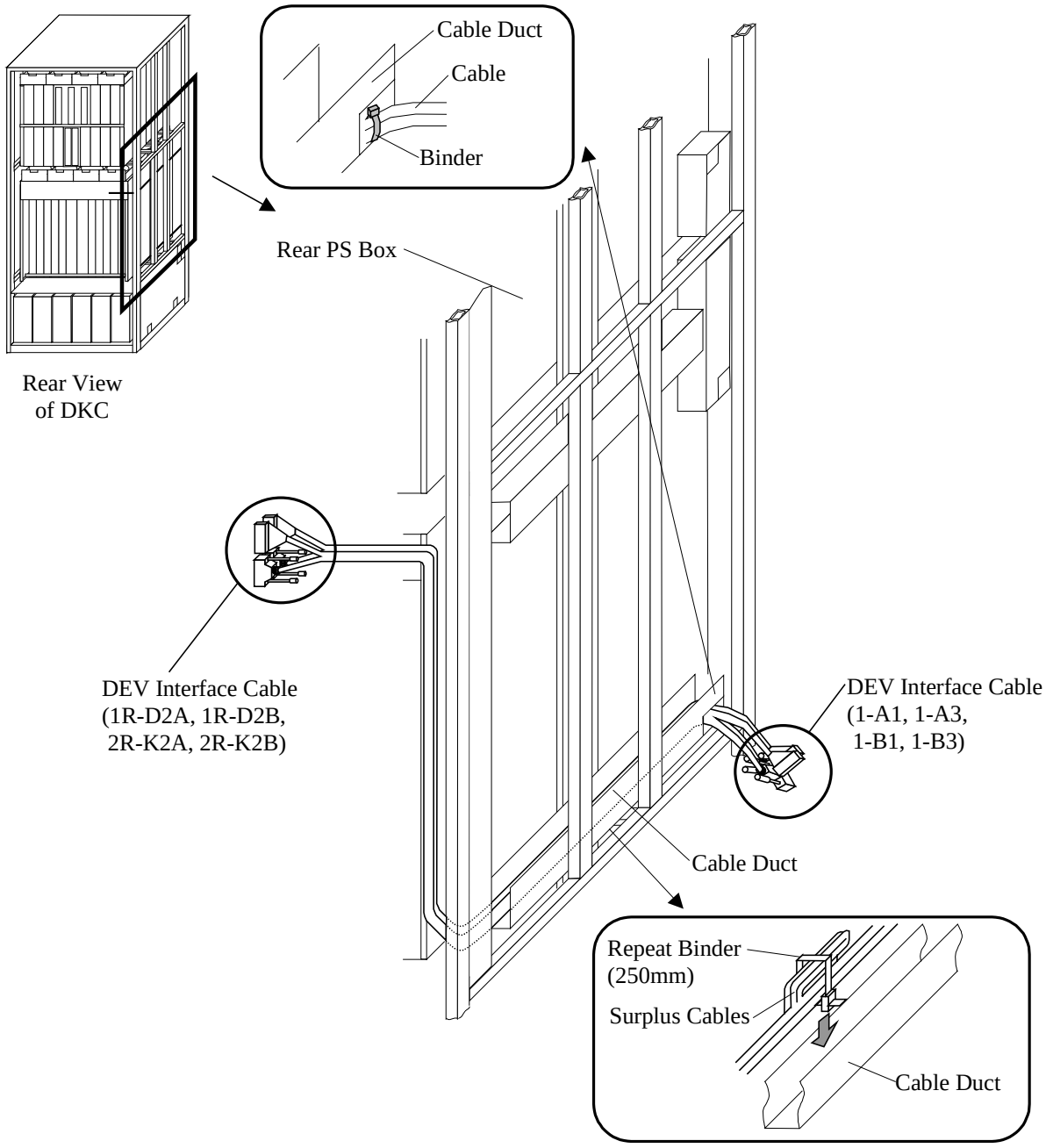

Fig. 3.4.2.5-19 Attachment of DEV Interface Cables

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d. Insert the DEV interface cables for the DKU-L1 into the cable duct. When doing this, position the binder that bundles the DEV interface cables at the cable exit of the cable duct and fix the surplus cables with the repeat binder.

Table 3.4.2.5-3 DEV Interface Cable List

No.	Cable No. (DKA Side)	Cable No. (FSW Side)	Remarks
1	1R-E1A	4-A1	
	1R-E1B	4-A3	
2	2R-L1A	4-B1	
	2R-L1B	4-B3	

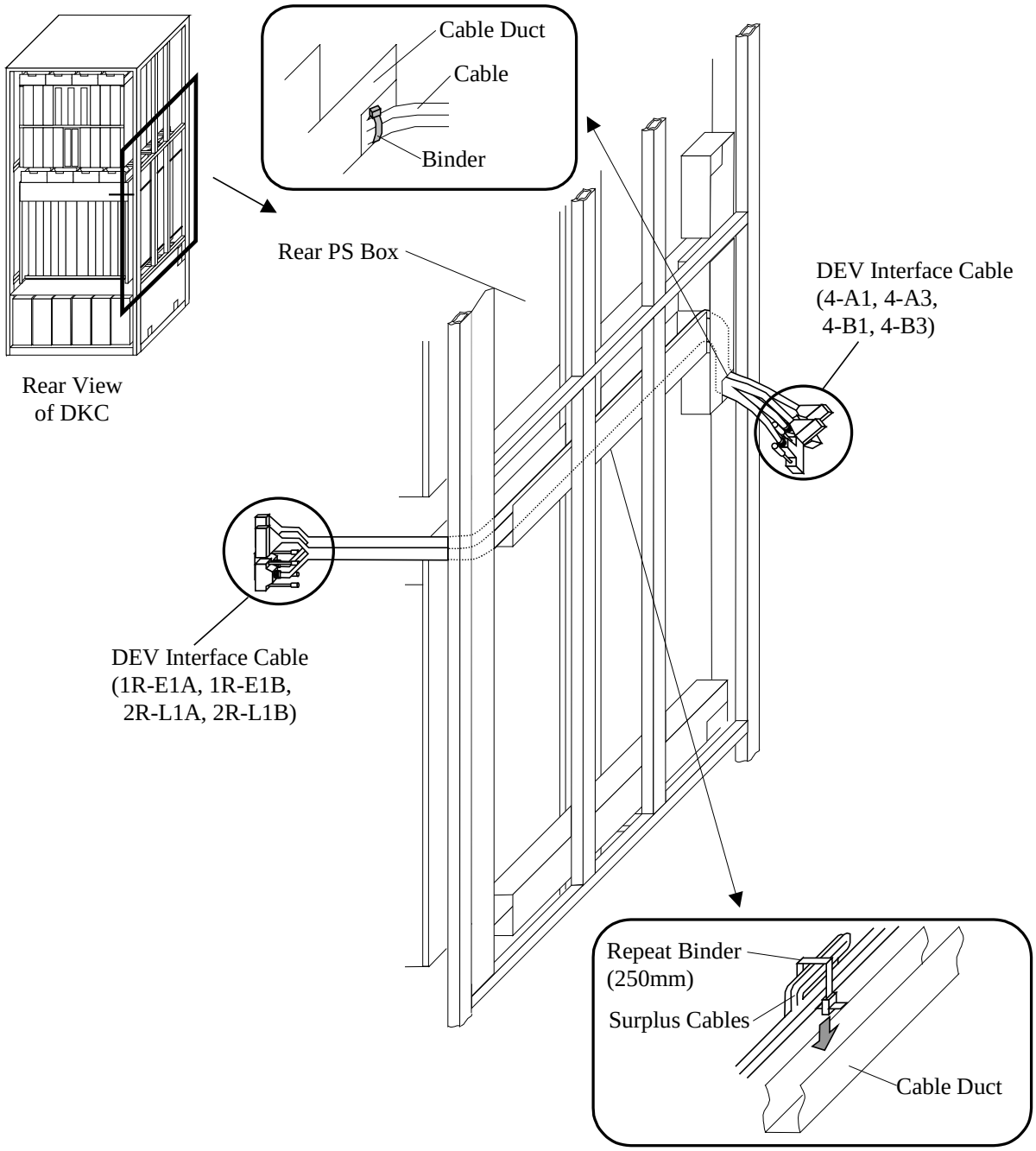

Fig. 3.4.2.5-20 Attachment of DEV Interface Cables

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e. Insert the DEV interface cables for the DKU-L1 into the cable duct. When doing this, position the binder that bundles the DEV interface cables at the cable exit of the cable duct and fix the surplus cables with the repeat binder.

Table 3.4.2.5-4 DEV Interface Cable List

No.	Cable No. (DKA Side)	Cable No. (FSW Side)	Remarks
1	1R-E2A	5-A1	
	1R-E2B	5-A3	
2	2R-L2A	5-B1	
	2R-L2B	5-B3	

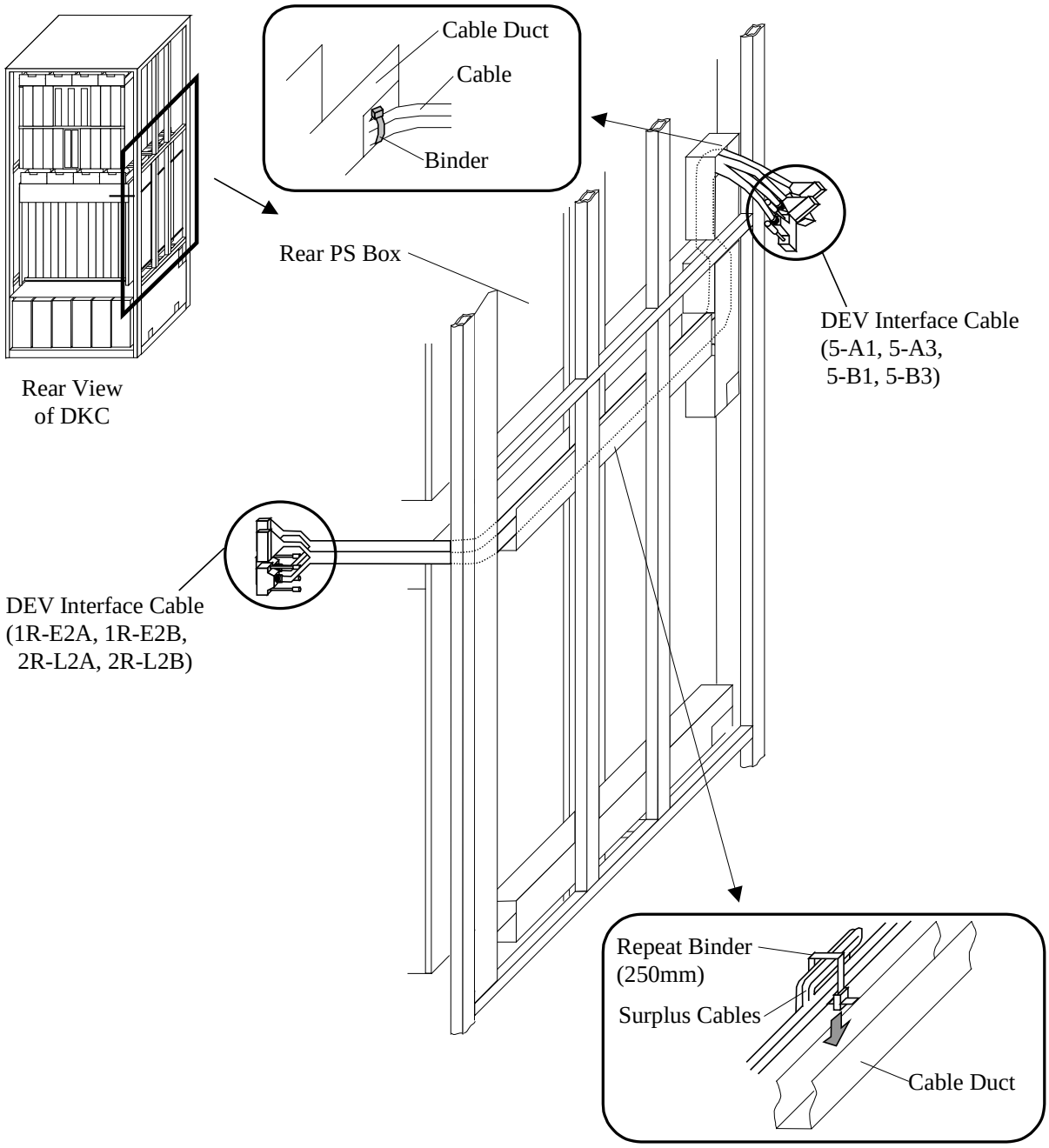

Fig. 3.4.2.5-21 Attachment of DEV Interface Cables

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f. Attach the cable duct cover with the two screws.

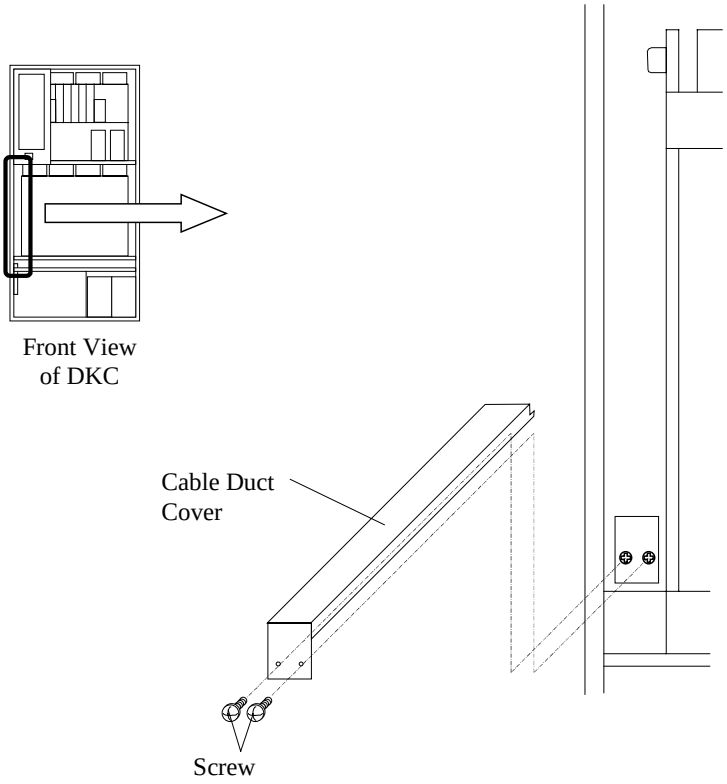

Fig. 3.4.2.5-22 Attachment of Cover

g. Attach the cable duct cover with the screw.

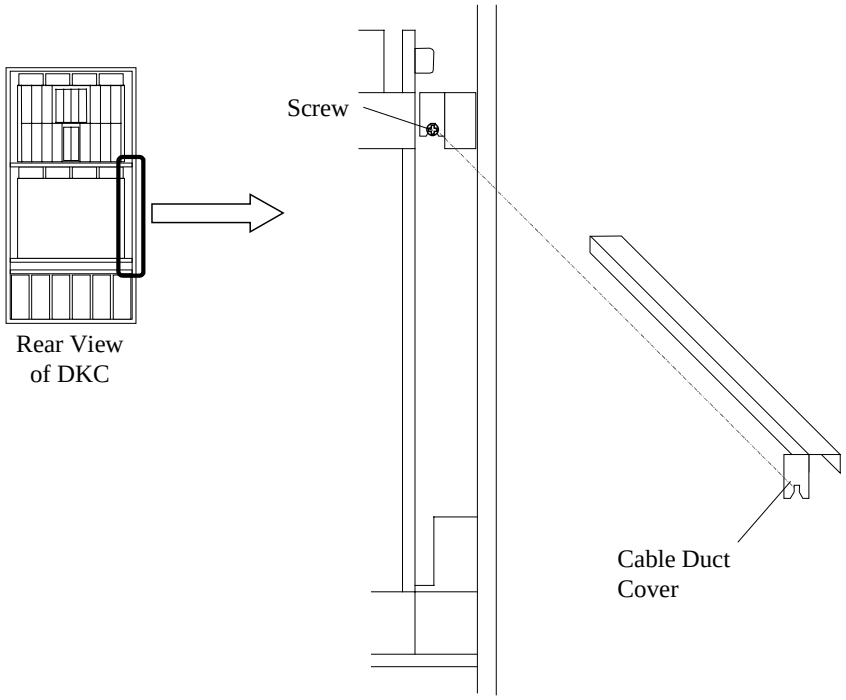

Fig. 3.4.2.5-23 Attachment of Cover

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h. Attach the cable cover with the two screws.

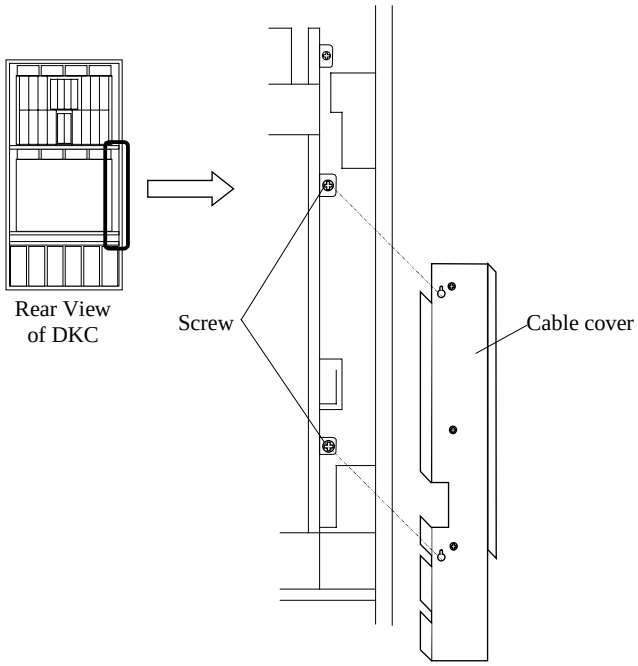

Fig. 3.4.2.5-24 Attachment of Cover

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i. Insert the DEV interface cables for the DKU-L1 into the cable clamp located at the top of the Rear Logic Box. Attach the cable in order of ①, ②, ③ and ④. When doing this, position the binder that bundles the cables at the end of the cable clamp.

Note:
Since a label bearing a connection destination is affixed on each cable/connector, work very carefully referring to it and the wiring diagram.

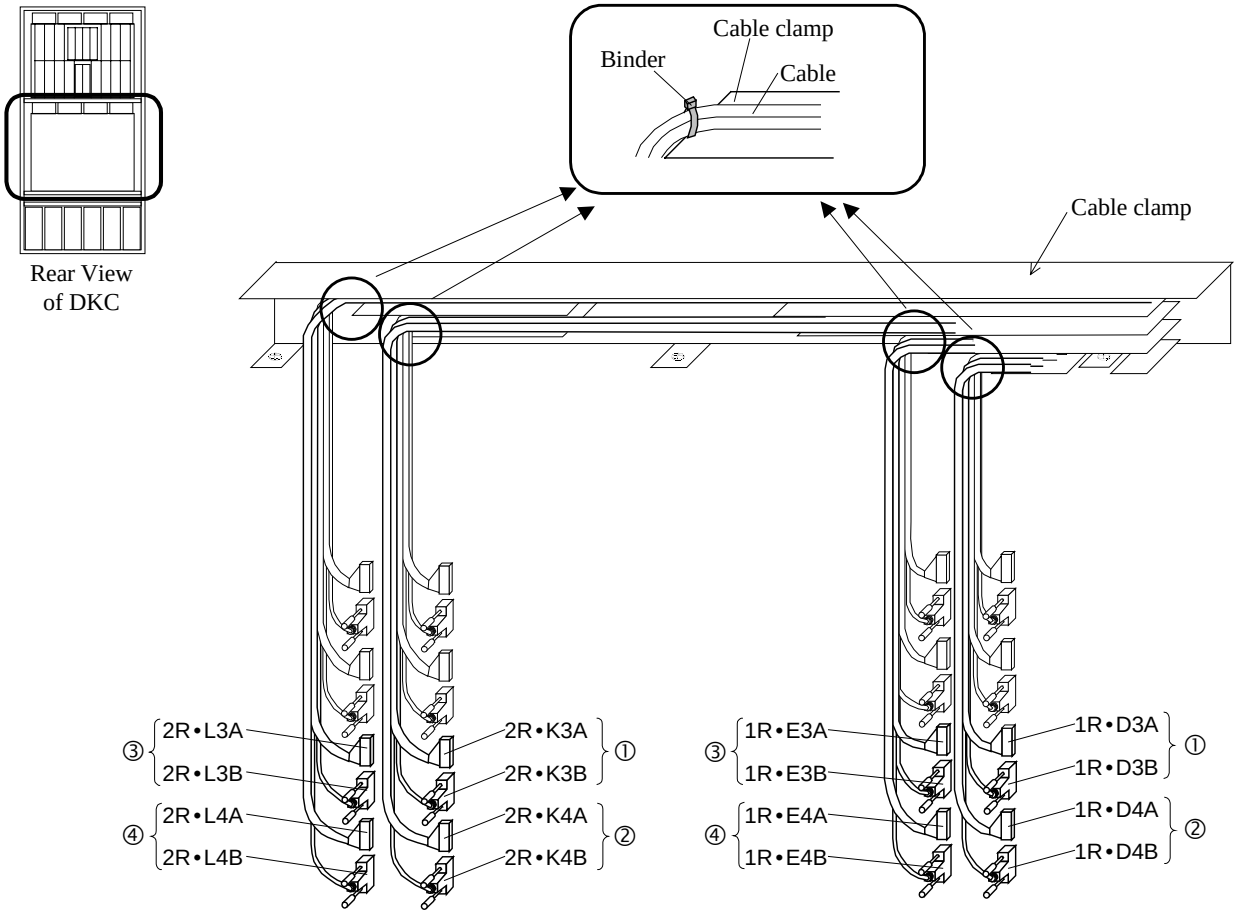

Fig. 3.4.2.5-25 Attachment of DEV Interface Cables

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j. Pass the DEV interface cables for the DKU-L1 through the cable entrance on the sheet steel part. When doing this, position the binder that bundles the DEV interface cables at the cable entrance on the sheet steel part and fix the surplus cables with the repeat binder.

Table 3.4.2.5-5 DEV Interface Cable List

No.	Cable No. (DKA Side)	Cable No. (FSW Side)	Remarks
1	1R-D3A	2-A1	
	1R-D3B	2-A3	
2	2R-K3A	2-B1	
	2R-K3B	2-B3	

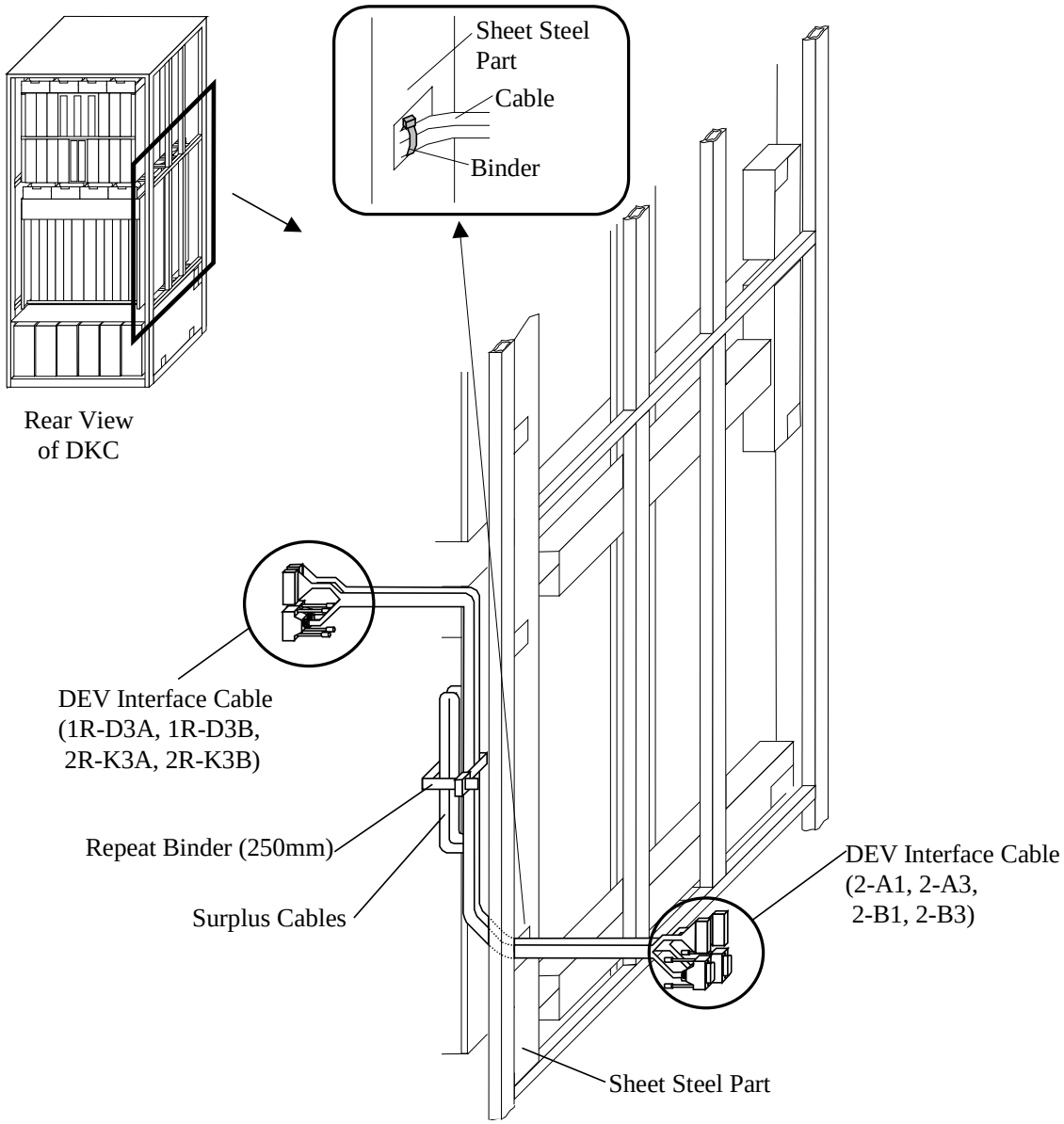

Fig. 3.4.2.5-26 Attachment of DEV Interface Cables

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k. Pass the DEV interface cables for the DKU-L1 through the cable entrance on the sheet steel part. When doing this, position the binder that bundles the DEV interface cables at the cable entrance on the sheet steel part and fix the surplus cables with the repeat binder.

Table 3.4.2.5-6 DEV Interface Cable List

No.	Cable No. (DKA Side)	Cable No. (FSW Side)	Remarks
1	1R-D4A	3-A1	
	1R-D4B	3-A3	
2	2R-K4A	3-B1	
	2R-K4B	3-B3	

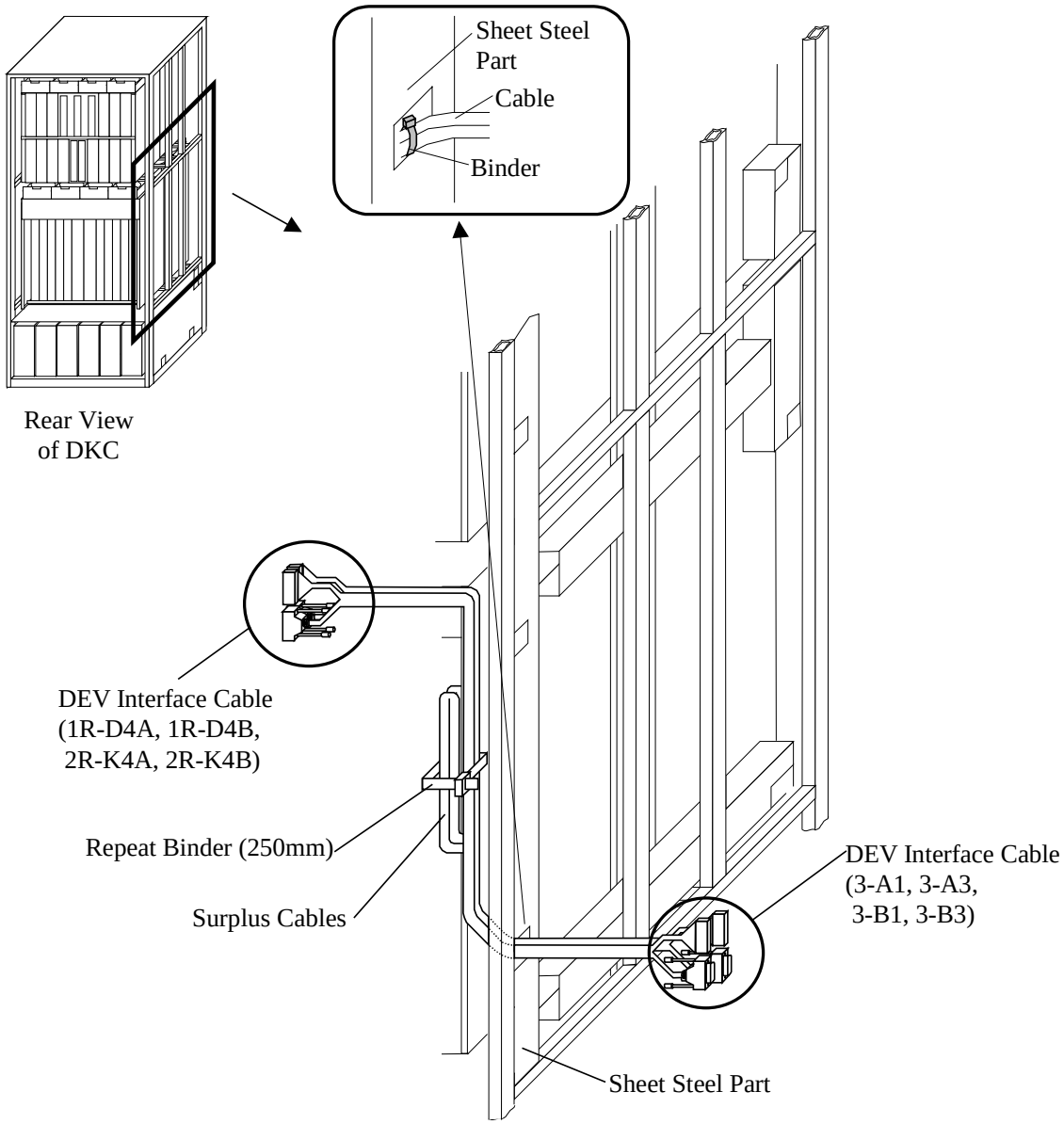

Fig. 3.4.2.5-27 Attachment of DEV Interface Cables

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m. Pass the DEV interface cables for the DKU-L1 through the cable entrance on the sheet steel part. When doing this, position the binder that bundles the DEV interface cables at the cable entrance on the sheet steel part and fix the surplus cables with the repeat binder.

Table 3.4.2.5-7 DEV Interface Cable List

No.	Cable No. (DKA Side)	Cable No. (FSW Side)	Remarks
1	1R-E3A	6-A1	
	1R-E3B	6-A3	
2	2R-L3A	6-B1	
	2R-L3B	6-B3	

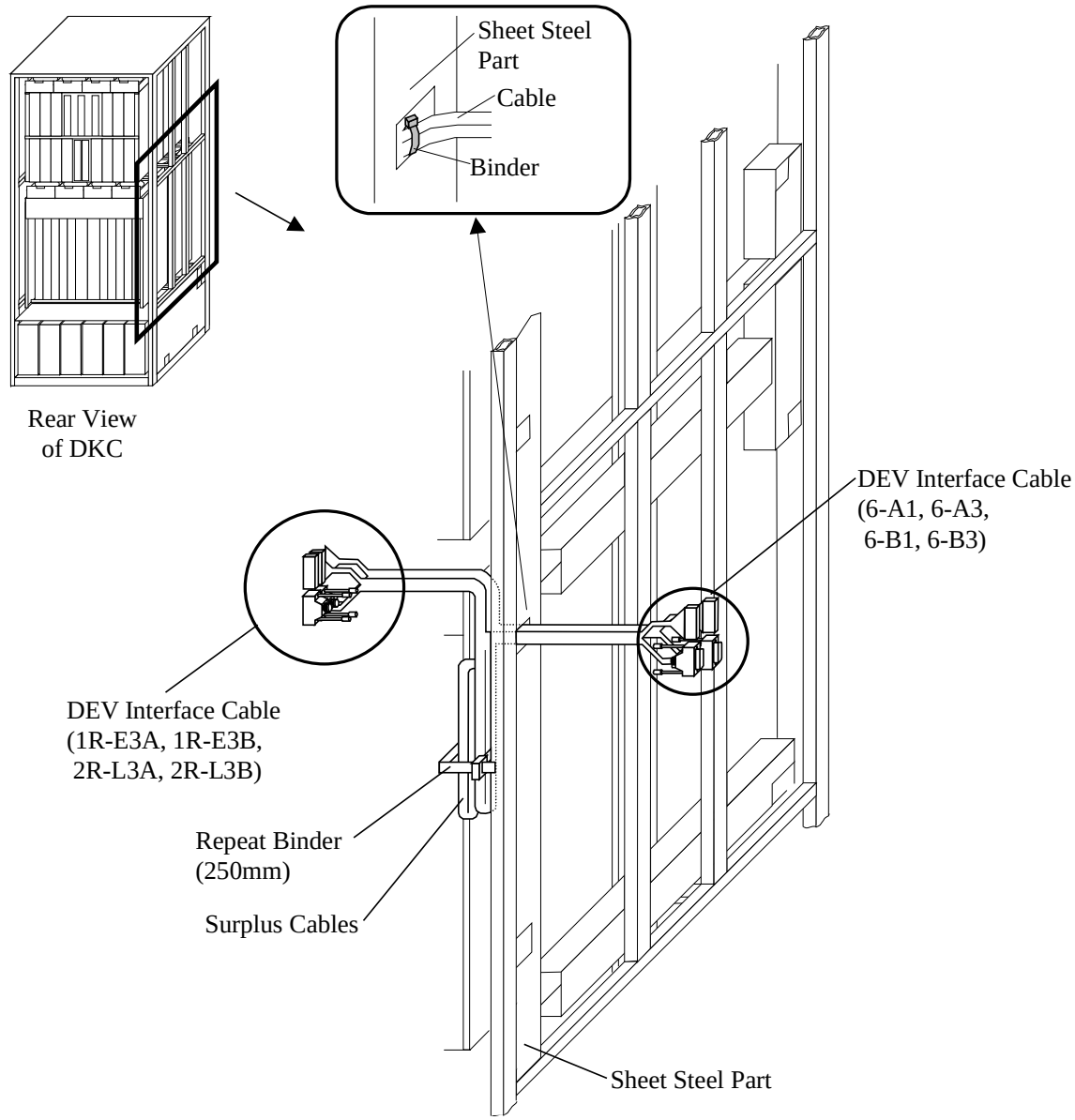

Fig. 3.4.2.5-28 Attachment of DEV Interface Cables

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n. Pass the DEV interface cables for the DKU-L1 through the cable entrance on the sheet steel part. When doing this, position the binder that bundles the DEV interface cables at the cable entrance on the sheet steel part and fix the surplus cables with the repeat binder.

Table 3.4.2.5-8 DEV Interface Cable List

No.	Cable No. (DKA Side)	Cable No. (FSW Side)	Remarks
1	1R-E4A	7-A1	
	1R-E4B	7-A3	
2	2R-L4A	7-B1	
	2R-L4B	7-B3	

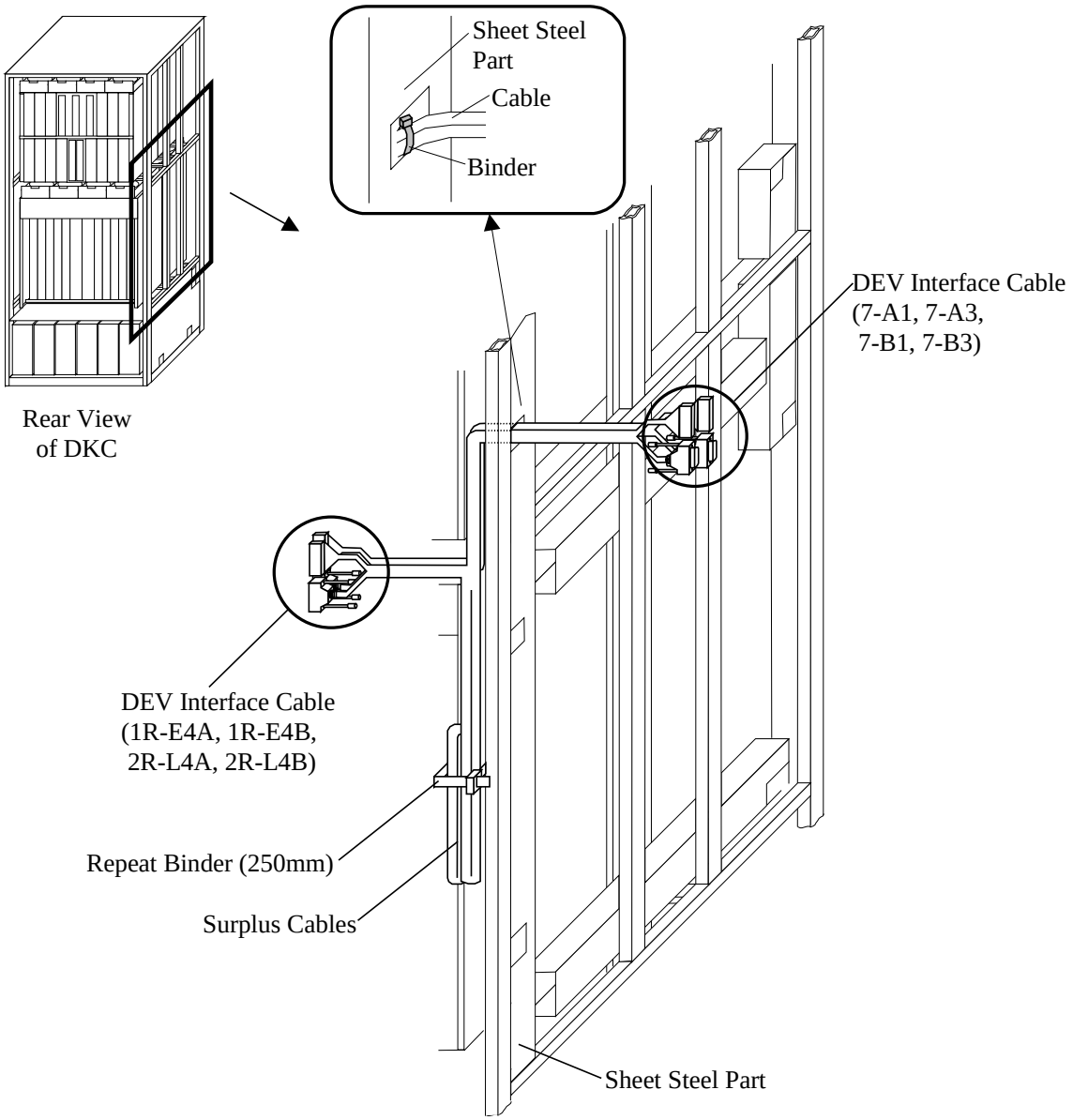

Fig. 3.4.2.5-29 Attachment of DEV Interface Cables

3. Attachment of Cable Covers
   a. Attach the cable covers in the reverse order of step 1.

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4. Insertion of DEV Interface Cables
   a. Get the DEV interface cables into the DKU-L1 and gently move the DKU-L1 close to the DKC. When coupling the frames, fully take care not to have the inter-frame cables caught between the frames.

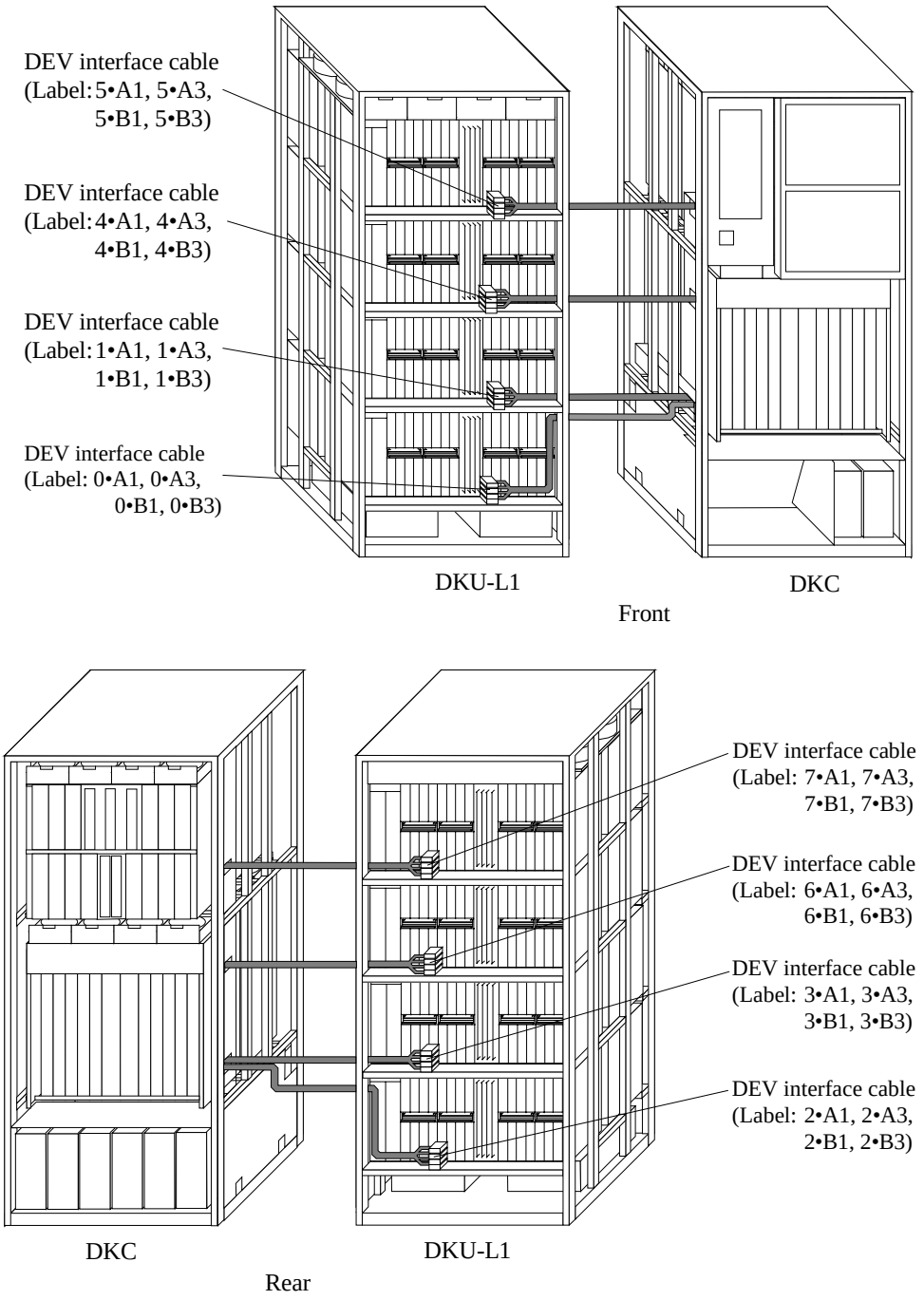

Fig. 3.4.2.5-30 Insertion of Cables

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3.4.2.6 Adjusting the Cabinet Height and Level

1. Lower the screw jacks until the frame is 57 mm (2.25 in.) from the floor before connecting the frames.
2. Level the device as shown on Fig. 3.4.2.6-1.
3. When adjusting the cabinet height, make sure that there is a clearance of approximately 2.5 mm (0.1 in.) between the casters and the floor.

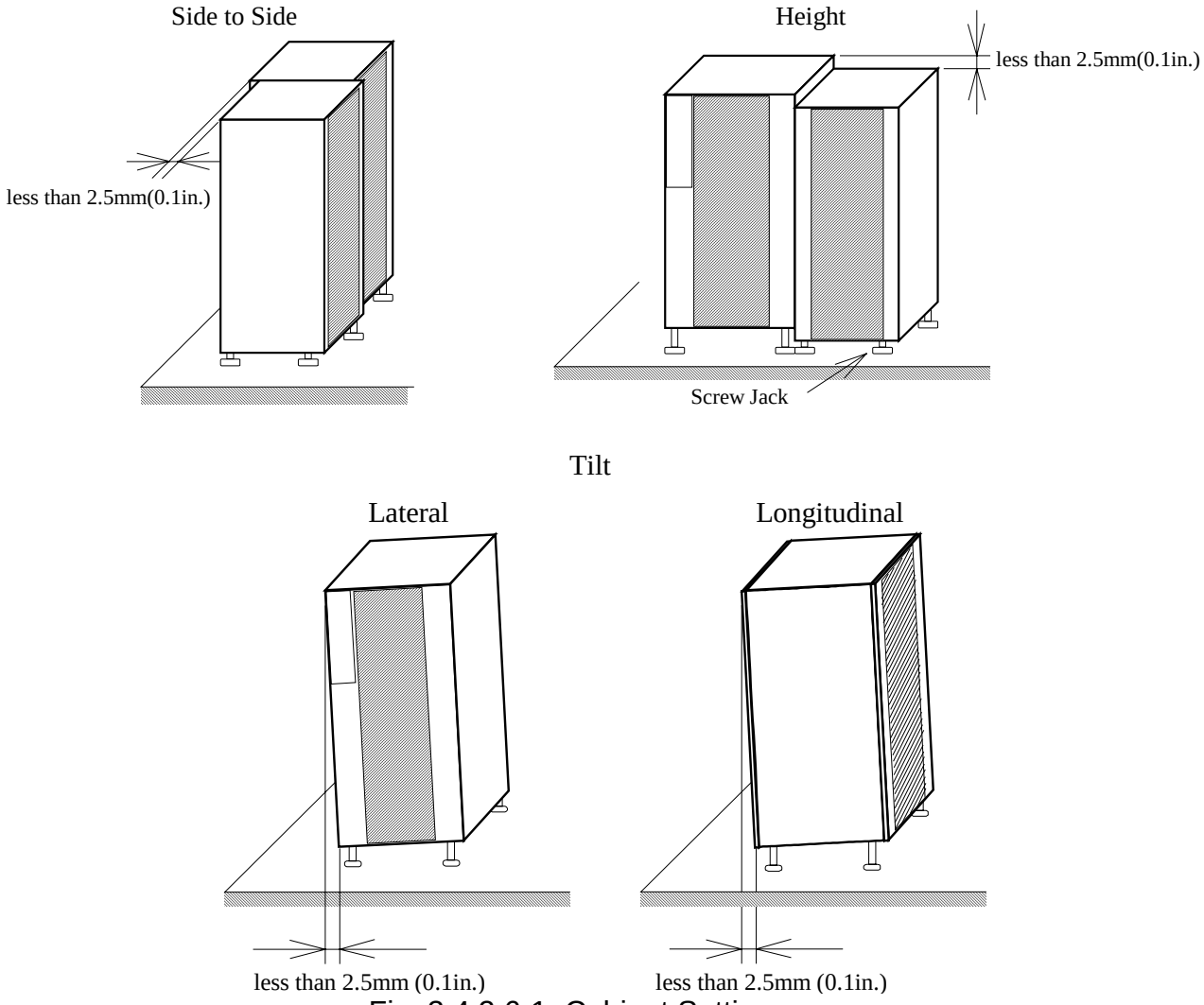

Fig. 3.4.2.6-1 Cabinet Setting

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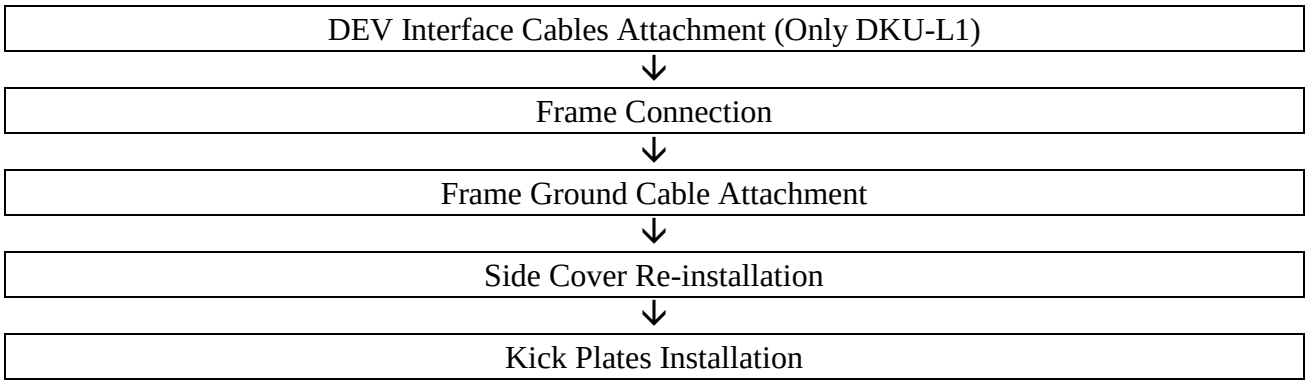
3.4.3 Frame Connection

3.4.3.1 Flowchart



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3.4.3.2 Frame Connection

Connect the devices together using four of the Connecting Bolt Assy. Place two at the front and two at the rear . See figures 3.4.3.2-1 and 3.4.3.2-2. The direction of the hexagon socket head bolts must be the same as shown in the figure.

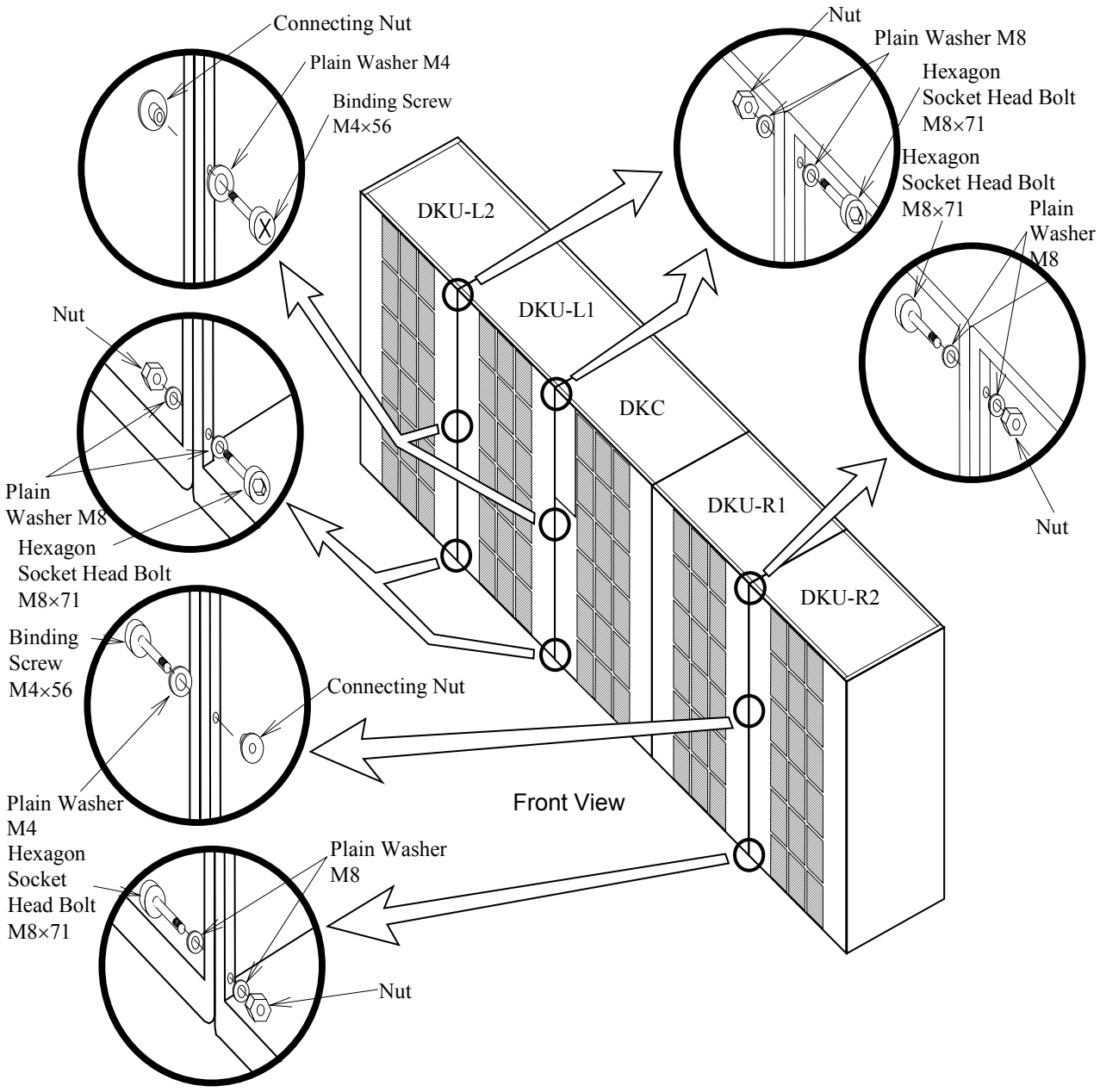

Fig. 3.4.3.2-1 Connection of Frame

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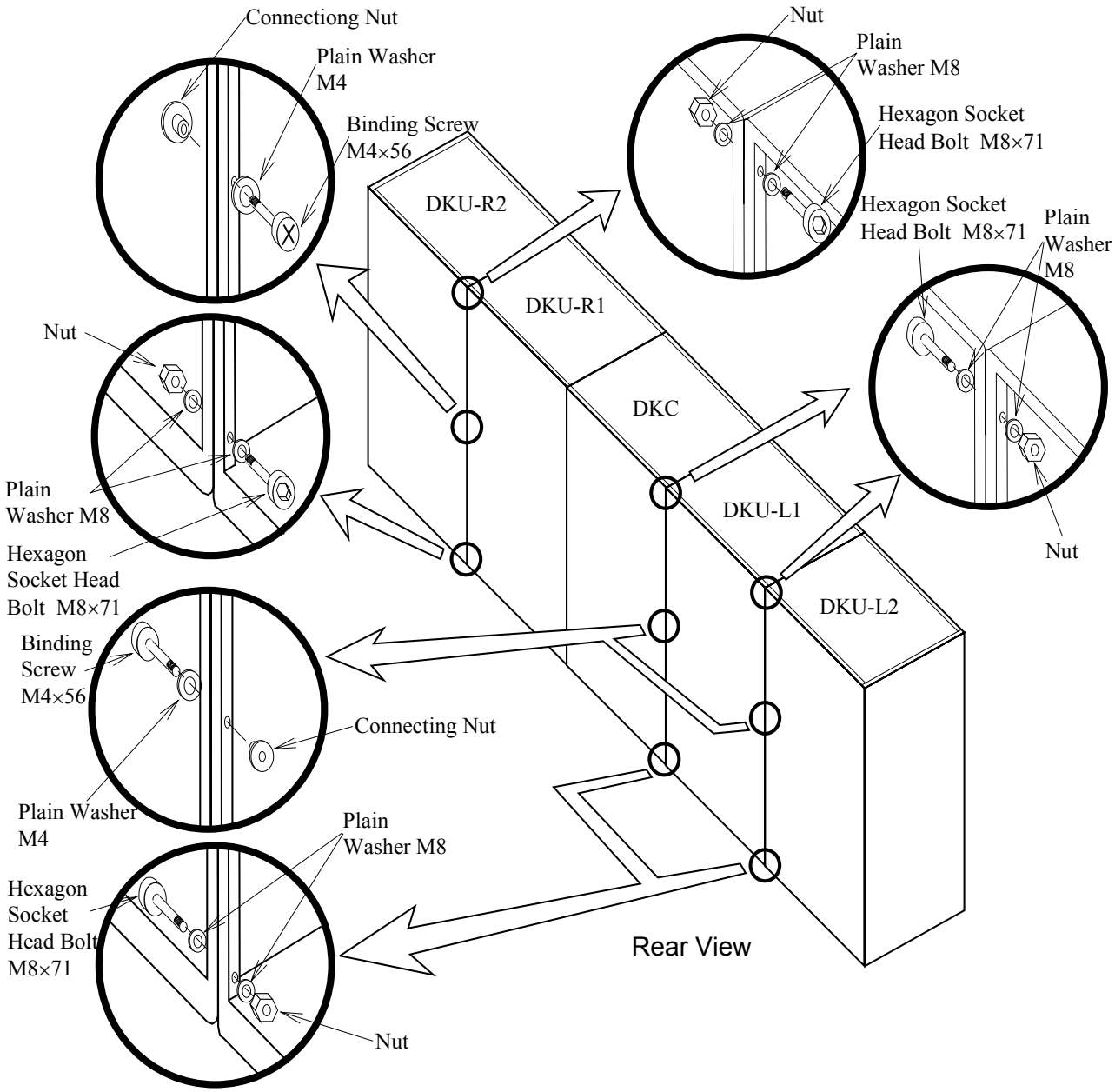

Fig. 3.4.3.2-2 Connection of Frame

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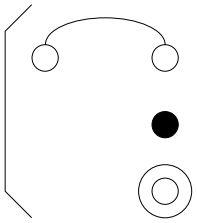
3.4.3.3 Frame Ground Cable Attachment

Note



Frame ground cable

: Screw and washer (lock washer)

: Thread

DKU-R2

1. Attach the Frame Ground Cable with the screw and washer (Lock washer).

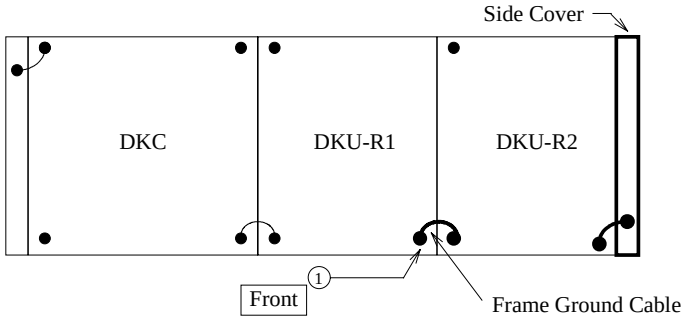


Fig. 3.4.3.3-1 Attachment of Frame Ground Cable

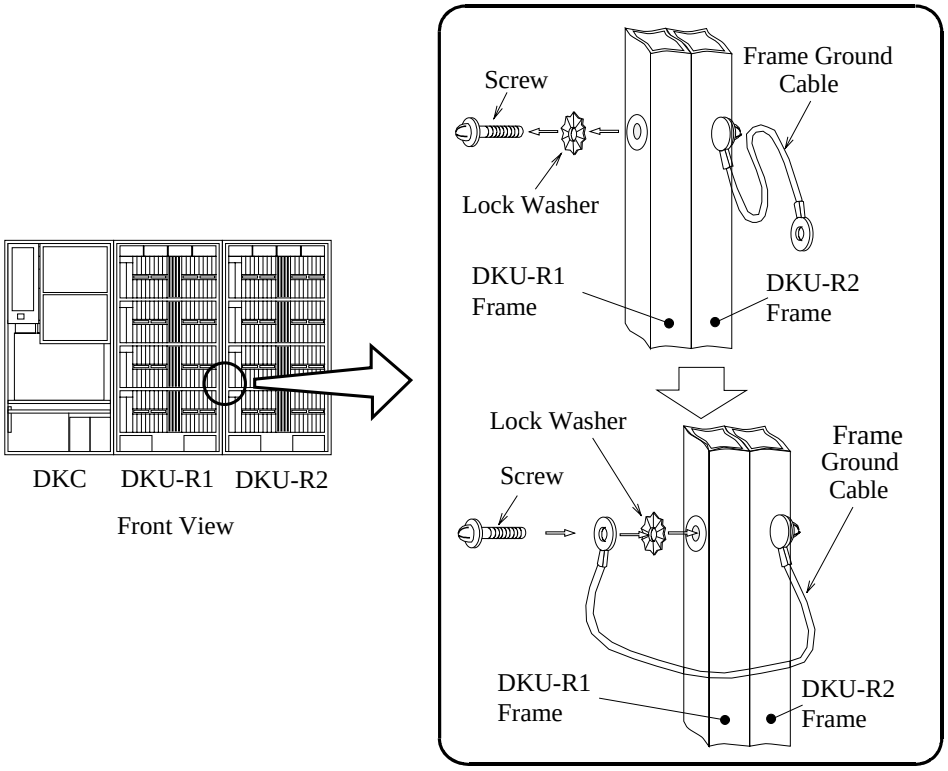


Fig. 3.4.3.3-2 Attachment of Frame Ground Cable

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DKU-L1

1. Remove the frame ground cable from the DKU-L1.
2. Attach frame ground cable with the screw and lock washer between DKC and DKU-L1.
3. Attach the cover to the DKC frame in the reverse order of SECTION 3.4.2.5 Installing DEV interface cable for the DKU-L1.

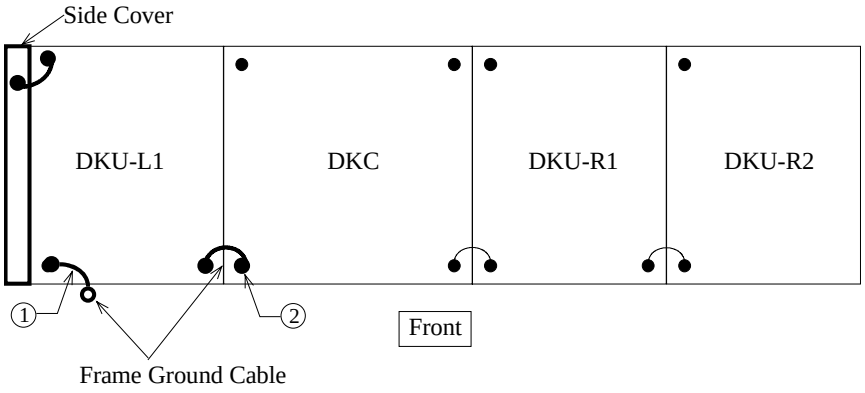

Fig. 3.4.3.3-3 Attachment of Frame Ground Cable

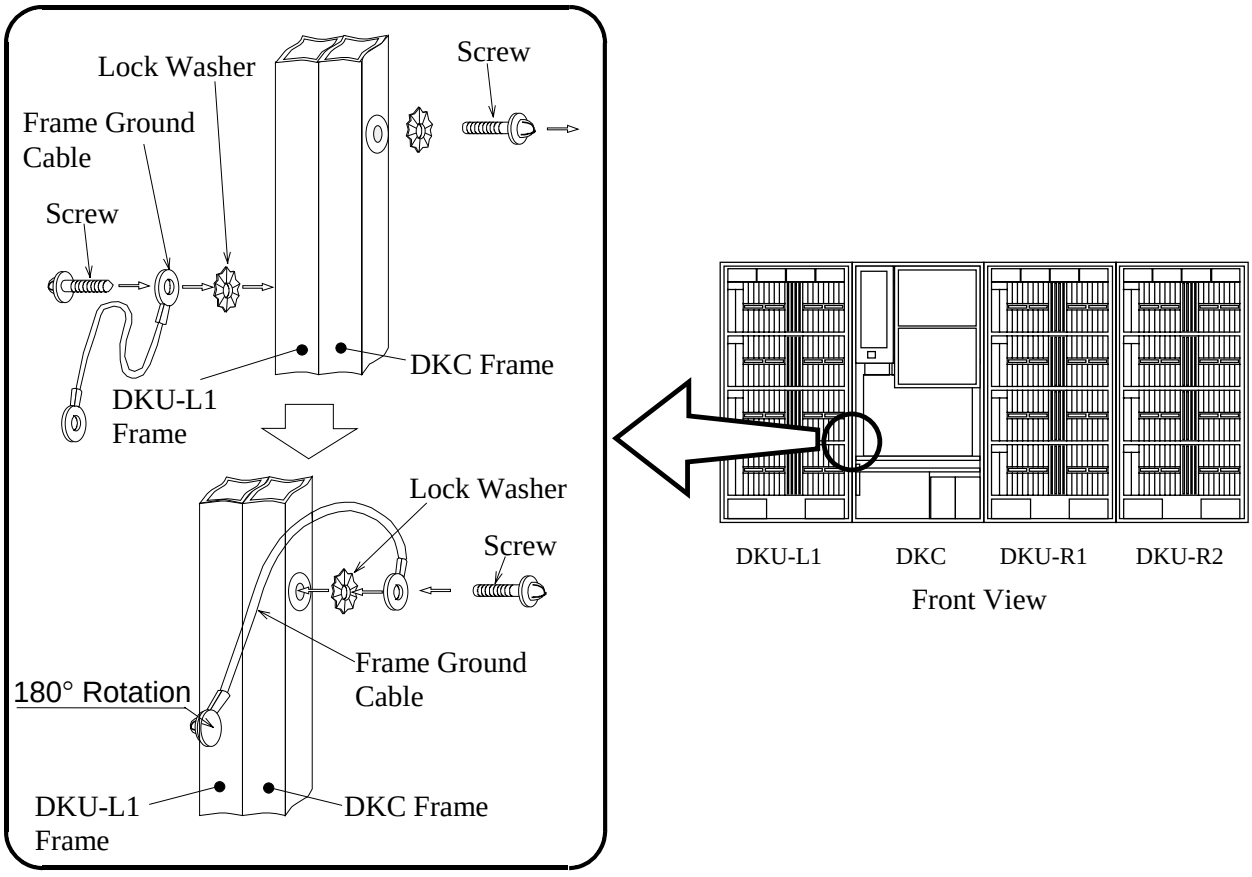

Fig. 3.4.3.3-4 Attachment of Frame Ground Cable

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DKU-L2

1. Remove the frame ground cable from the DKU-L2.
2. Attach the frame ground cable with the screw and lock washer between DKU-L1 and DKU-L2.

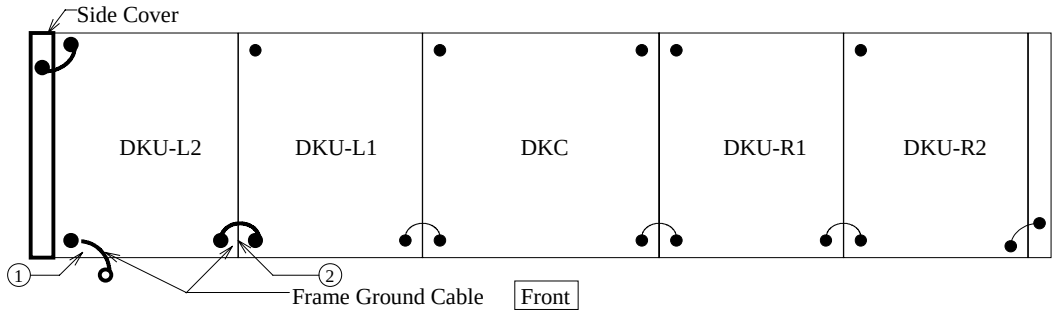

Fig. 3.4.3.3-5 Attachment of Frame Ground Cable

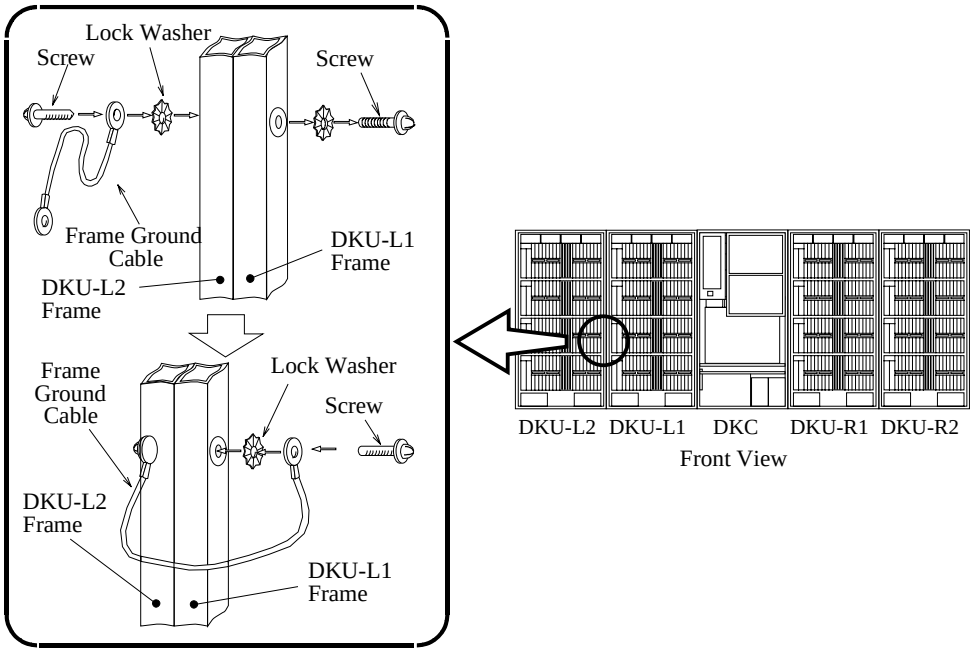

Fig. 3.4.3.3-6 Attachment of Frame Ground Cable

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3.4.3.4 Side Cover Re-Installation

Attach the side cover to the end of the string with the four binding screws and washers. See Fig. 3.4.3.4-1 and Table 3.4.2.2-1.

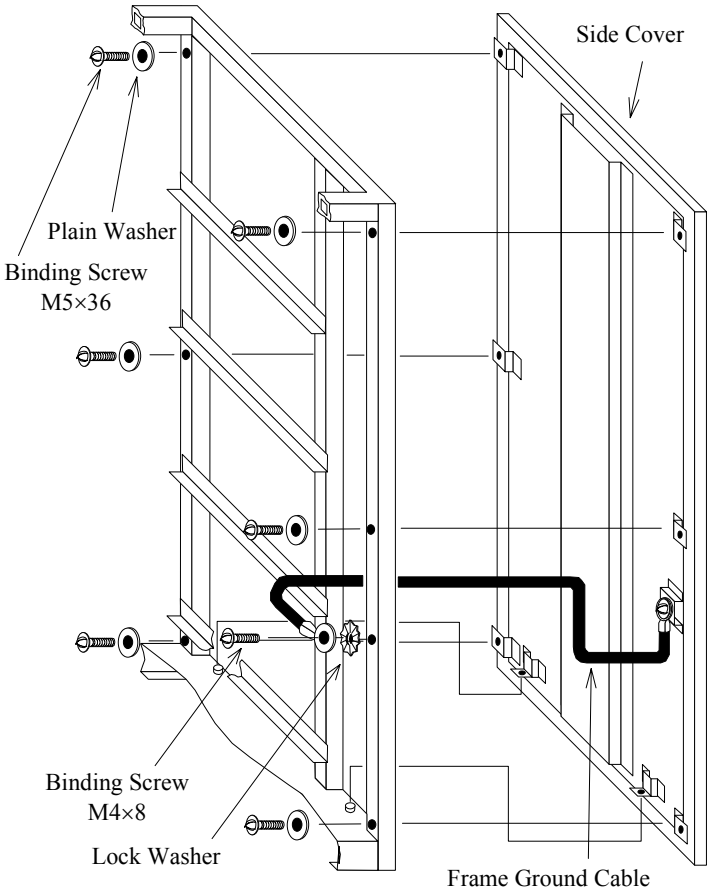

Fig. 3.4.3.4-1 Re-Installation of Side Cover

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3.4.3.5 Kick Plate Installation

Secure the kick plates with screws, as shown in figures. 3.4.3.5-1 through 3.4.3.5-3.
Remove the side kick plates from the Disk Controller and replace them on the cabinets at both ends.

NOTICE:
Contact the Kick Plate to the floor to prevent static electricity.

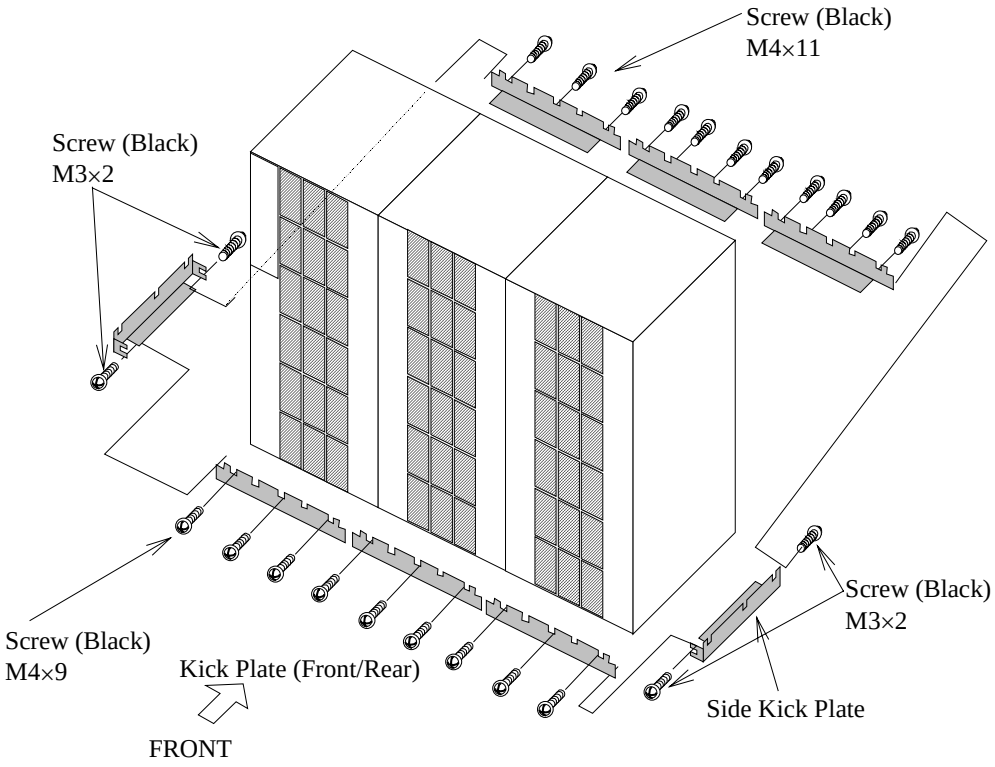

Fig. 3.4.3.5-1 Installation of Kick Plate (Two Disk Units)

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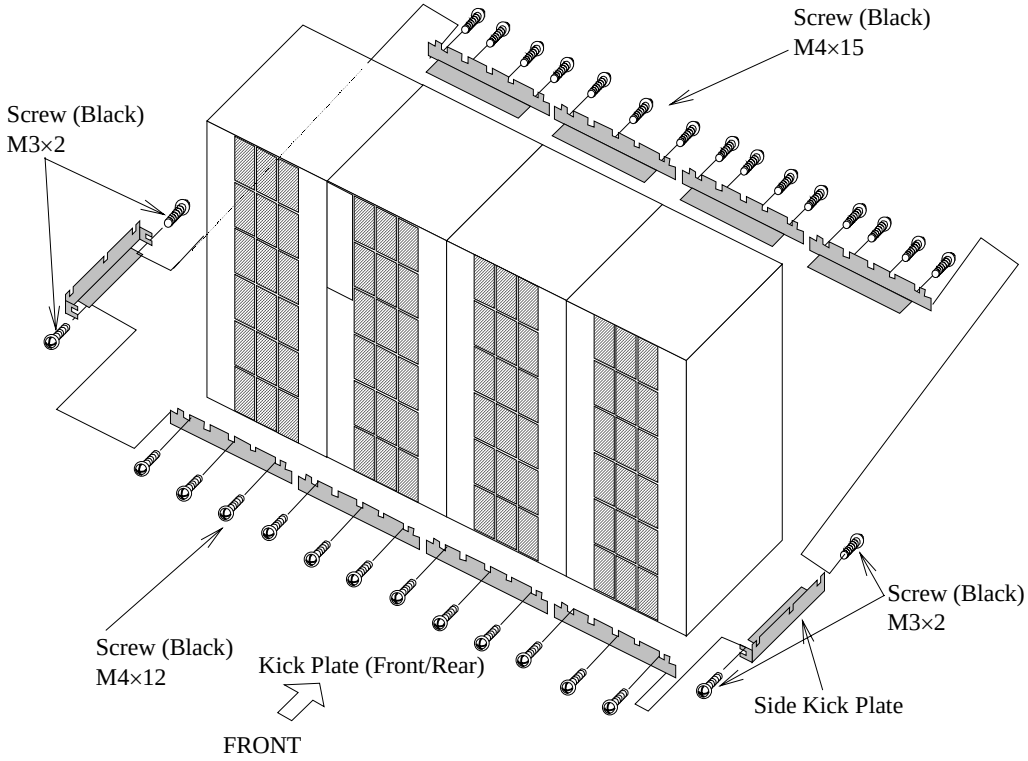

Fig. 3.4.3.5-2 Installation of Kick Plate (Three Disk Units)

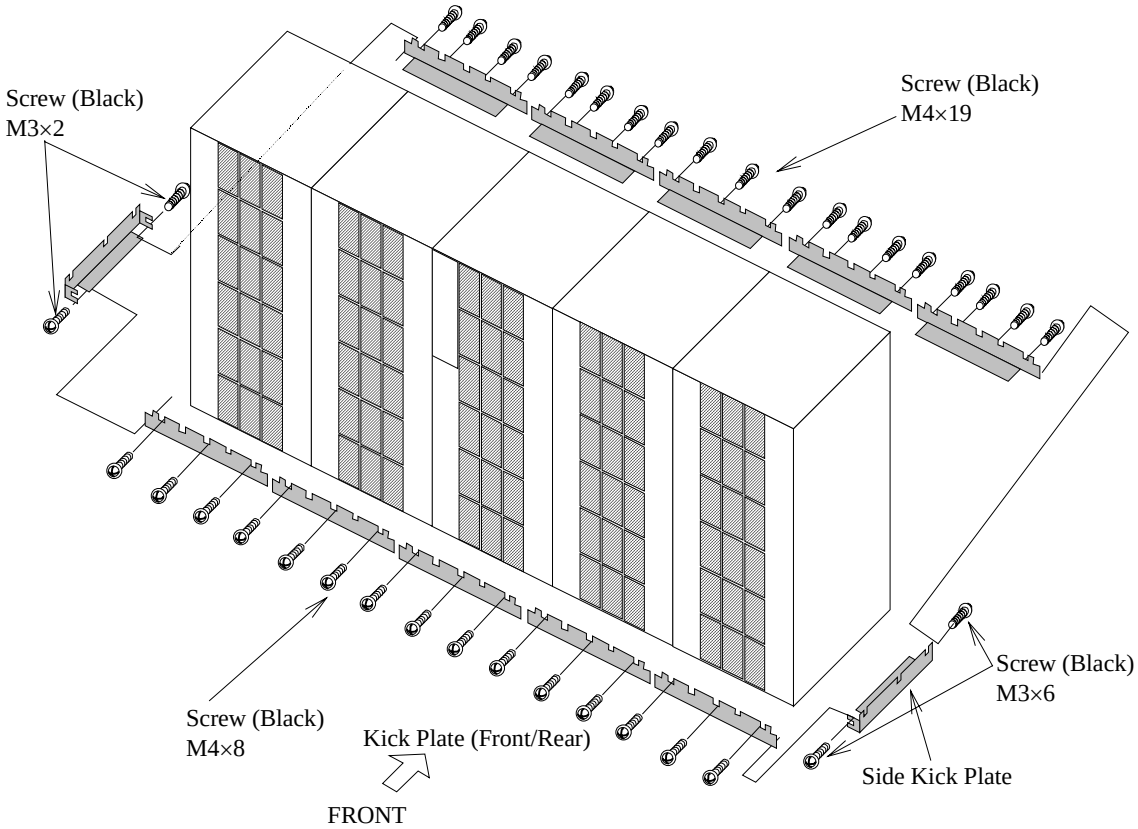

Fig. 3.4.3.5-3 Installation of Kick Plate (Four Disk Units)

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3.4.4 Switch and Jumper Plug Installation

Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

3.4.4.1 MPS Setting

⚠ CAUTION

A serious failure occurs if a wrong setting is made.
Operate very carefully referring to the setting table not to make a mistake in the setting.

Set the switches and install the jumper plugs in the MPSs as indicated in the Fig. 3.4.4.1-1, Table 3.4.4.1-1 and Table 3.4.4.1-2.

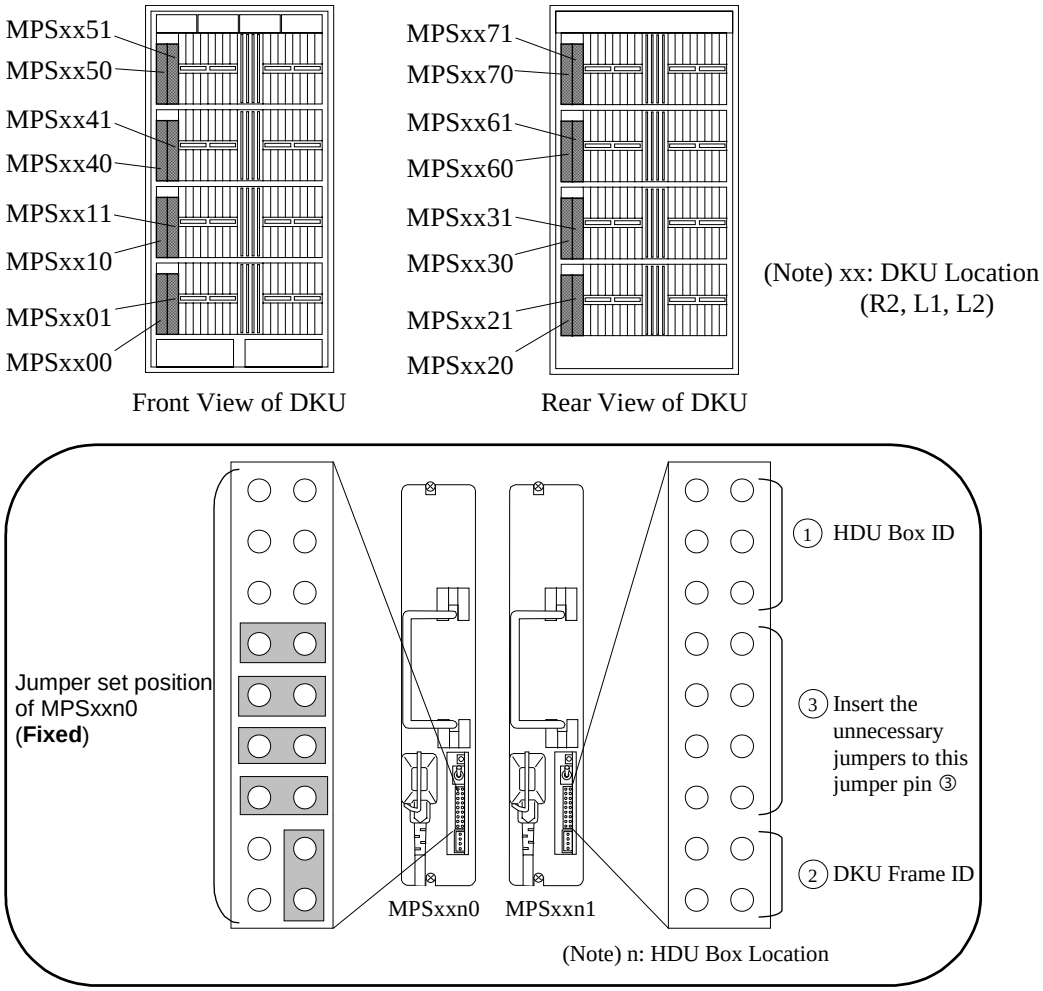

Fig. 3.4.4.1-1 Installation of Jumper Plugs in MPS

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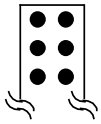
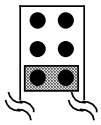
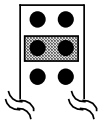
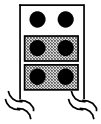
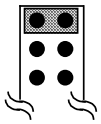
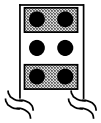
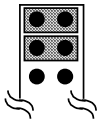
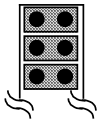
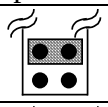
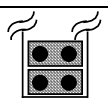
Table 3.4.4.1-1 Specification of HDU Box ID

Setting	MPS Location	HDU BOX Location	Jumper Setting
Specification of HDU Box ID (①) (Switch settings corresponding to ① in Fig. 3.4.4.1-1)	MPSxx01	HDU-xx0	
	MPSxx11	HDU-xx1	
	MPSxx21	HDU-xx2	
	MPSxx31	HDU-xx3	
	MPSxx41	HDU-xx4	
	MPSxx51	HDU-xx5	
	MPSxx61	HDU-xx6	
	MPSxx71	HDU-xx7	

(Note1) xx: DKU Location (R2, L1, L2)
(Note2) Insert the unnecessary jumpers to this jumper pin ③.

Table 3.4.4.1-2 Specification of DKU Frame ID (②)

Setting	MPS Location	DKU Location	Jumper Setting
Specification of DKU Frame ID (②) (Switch settings corresponding to ② in Fig. 3.4.4.1-1)	MPSR2n1	DKU-R2	
	MPSL1n1	DKU-L1	
	MPSL2n1	DKU-L2	

(Note3) n: HDU Box Location (0, 1, 2 ……, 7)

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3.4.4.2 Installation of Switch in JMP PCB

CAUTION

A serious failure occurs if a wrong setting is made.
Operate very carefully referring to the setting table not to make a mistake in the setting.

Set the switch in the JMP PCB as indicated in the Fig. 3.4.4.2-1 and Table 3.4.4.2-1.
Switch settings must be made at 32 places in total per frame, that is, at 16 places in the front side and at 16 places in the rear side.

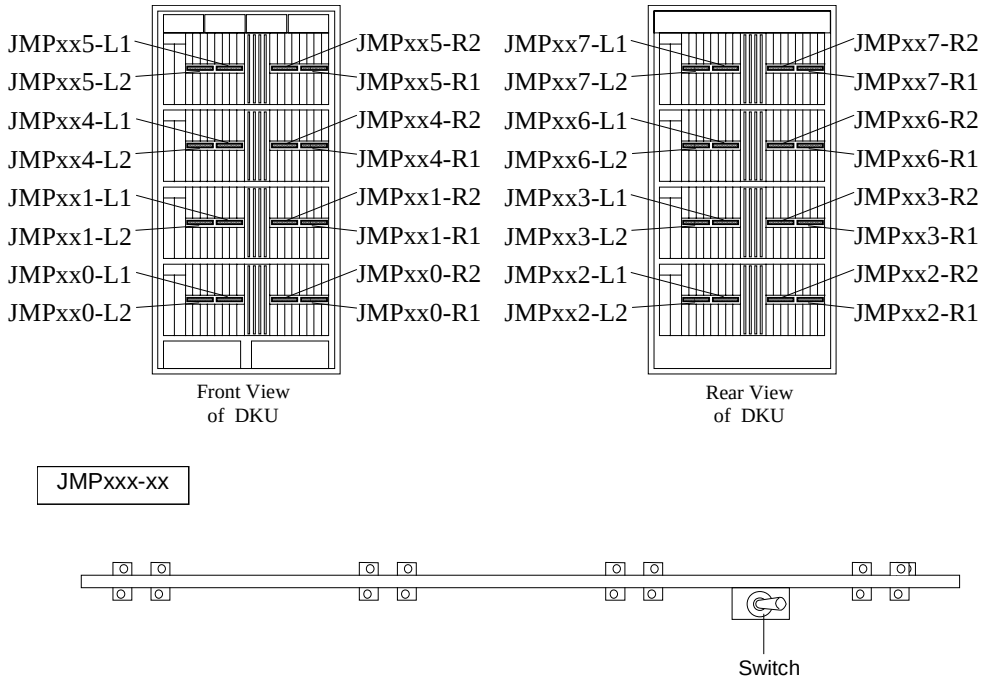
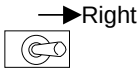


Fig. 3.4.4.2-1 Switch Setting of JMP

Table 3.4.4.2-1 Switch Setting of the JMP PCB

Setting	Function Name	Location	Switch Setting
Specification of DKU Frame ID	JMPR2#-xx	DKU-R2	Set all switches to the left side position in the DKU-R2.
	JMPL1#-xx	DKU-L1	Set all switches to the right side position in the DKU-L1. 
	JMPL2#-xx	DKU-L2	Set all switches to the left side position DKU-L2.

(Note) JMPR1#-xx
- JMP Location: R1, R2, L1, L2
- HDU Box Location: 0, 1, 2, …. 6, 7

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3.4.5 Labeling

1. Attach the Label (V/Hz/PH.) to the DKU bottom base of Rear side.
   Label (V/Hz/PH.) should be selected among the sheet of Label (V/Hz/PH.) corresponding to the operating voltage and frequency.

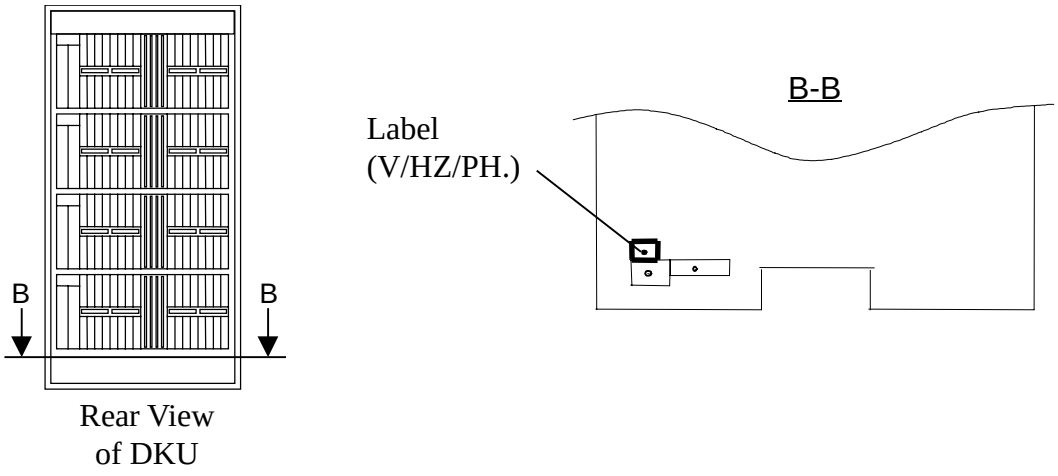

Fig. 3.4.5-1 Attachment of Label (V/Hz/PH.)

3.4.6 Check of Jumper Settings

CAUTION

A serious failure occurs if a wrong setting is made.
Operate very carefully referring to the setting table not to make a mistake in the setting.

1. Check the jumper settings and switches. Refer to Section 3.4.4 Switch and jumper plug Installation [INST03-DKU-220, 230].
   When the jumper plugs and switches are not installed to the correct locations, install the jumper plugs and switches to the correct locations.

3.4.7 Check and Testing

3.4.7.1 AC Input Voltage Check

WARNING

Do not touch the internal parts of the AC power cable, the AC Box, or the Breaker Box.
Line voltage is present even if the circuit breaker is off.

1. Check the AC input voltage using a voltmeter at the customer's AC power source (at the distribution board or receptacle for R & S connectors).

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3.4.7.2 Checking the AC Input Cable, and AC Input Voltage Select Jumper Cable

3 Phase/60A Model

1. Check the input power cable and jumper cables (PU105 and PU113) at the AC Boxes in DKUs. See Table 3.4.7.2-1, Fig. 3.4.7.2-1, and Fig. 3.4.7.2-2 for items.

Table 3.4.7.2-1 AC Input Cable Conductors and Jumper Cables Positions

Input Voltage	AC Input Cable Conductors	Jumper Cables Position	Dummy Connectors Position	Remarks
200-240Vac	4 conductors (R,S,T,FG)	JU105-1	JU105-2	Jumper Cable (PU105)
		JU113-1	JU113-2	Jumper Cable (PU113)
380-415Vac	5 conductors (R,S,T,N,FG)	JU105-2	JU105-1	Jumper Cable (PU105)
		JU113-2	JU113-1	Jumper Cable (PU113)

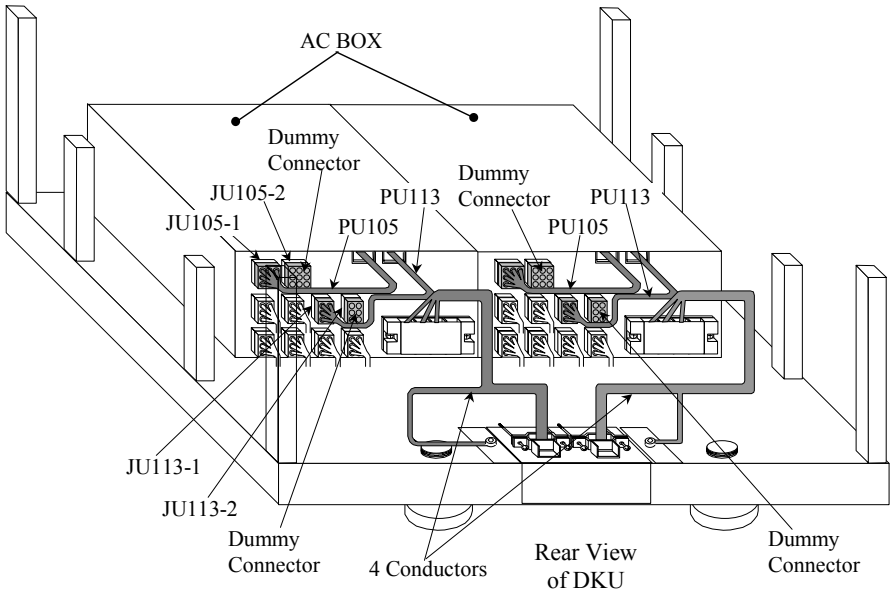

Fig. 3.4.7.2-1 AC Input Cable Conductors and Jumper Cables Positions 200-240Vac

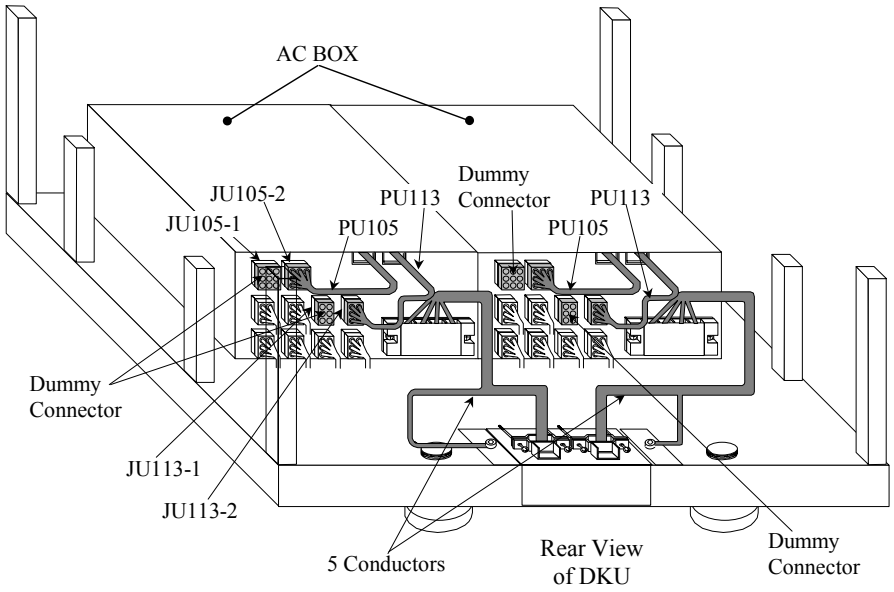

Fig. 3.4.7.2-2 AC Input Cable Conductors and Jumper Cables Positions 380-415Vac

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Single Phase/50A Model

1. Check the input power cable at the AC BOXes in the DKC and DKU. See table 3.4.8.2-2 and figures 3.4.7.2-3 and 3.4.7.2-4 for check items.

Table 3.4.7.2-2 AC Input Cable Conductors

UNIT	AC BOX	Input Voltage	AC Input Cable Conductors	Remarks
DKC	DKC AC BOX (AC BOX-C1, C2)	200-240Vac	3 conductors (U, V, FG)	
DKU	DKU AC BOX (AC BOX-##0, ##1)	200-240Vac	3 conductors (U, V, FG)	

(Note) ## : DKU Location No. (R1, R2, L1, L2)

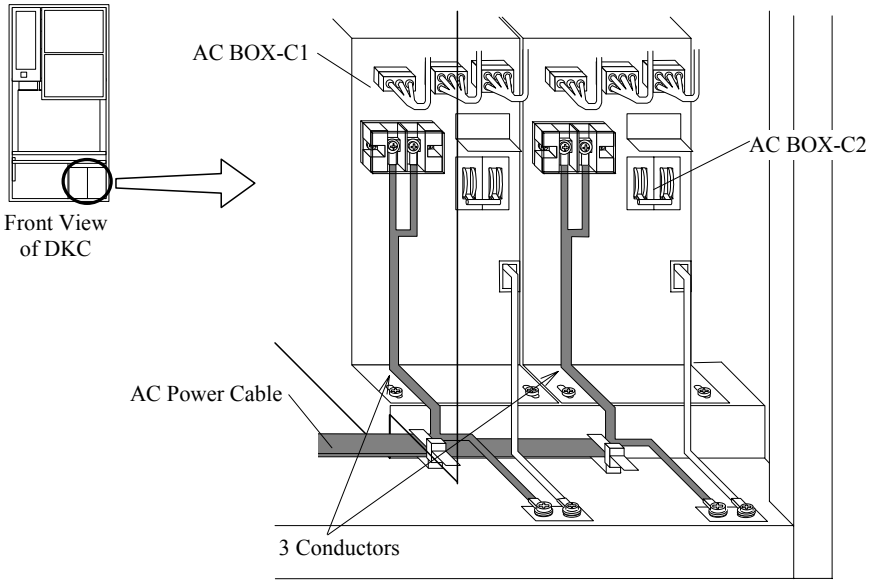

Fig. 3.4.7.2-3 AC Input Cable Conductors (DKC)

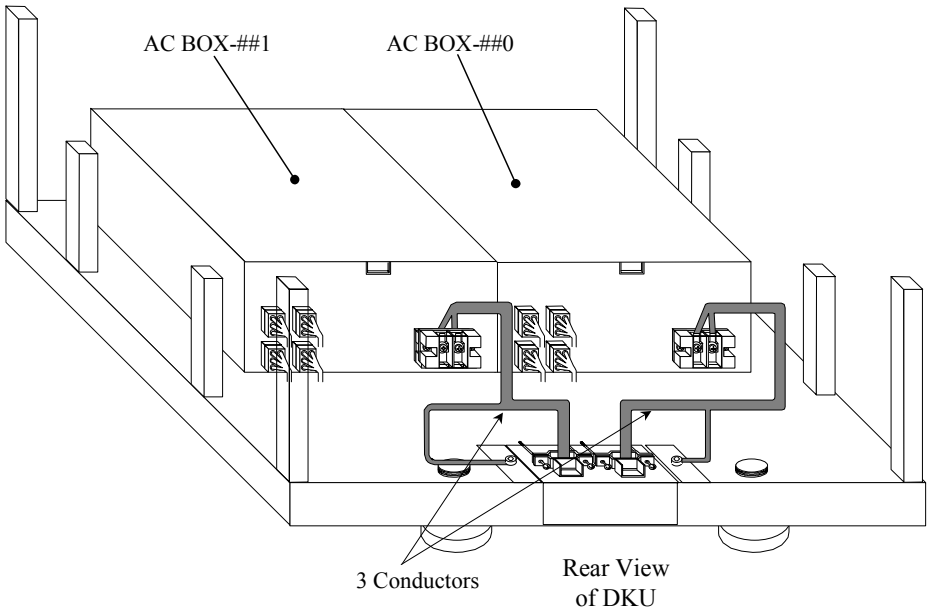

Fig. 3.4.7.2-4 AC Input Cable Conductors (DKU)

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3 Phase/30A Model

1. Check the input power cable and jumper cable (PU105) at the AC BOXes in the DKU. See Table 3.4.7.2-3 and figures 3.4.7.2-5 and 3.4.7.2-6 for check items.

Table 3.4.7.2-3 AC Input Cable Conductors and Jumper Cables Positions

Input Voltage	AC Input Cable Conductors	Jumper Cables Position	Dummy Connectors Position	Remarks
200-240Vac	4 conductors (R,S,T,FG)	JU105-1	JU105-2	Jumper Cable (PU105)
380-415Vac	5 conductors (R,S,T,N,FG)	JU105-2	JU105-1	Jumper Cable (PU105)

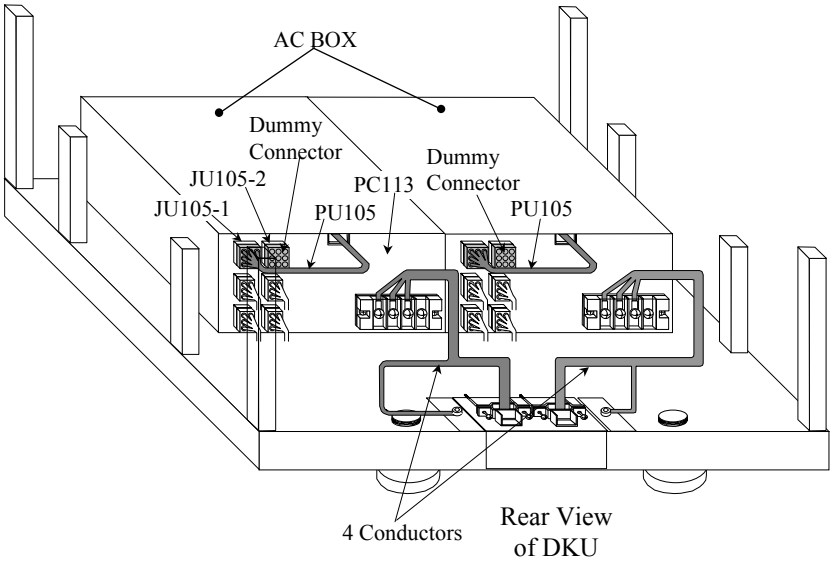

Fig. 3.4.7.2-5 AC Input Cable Conductors and Jumper Cables Positions 200-240Vac

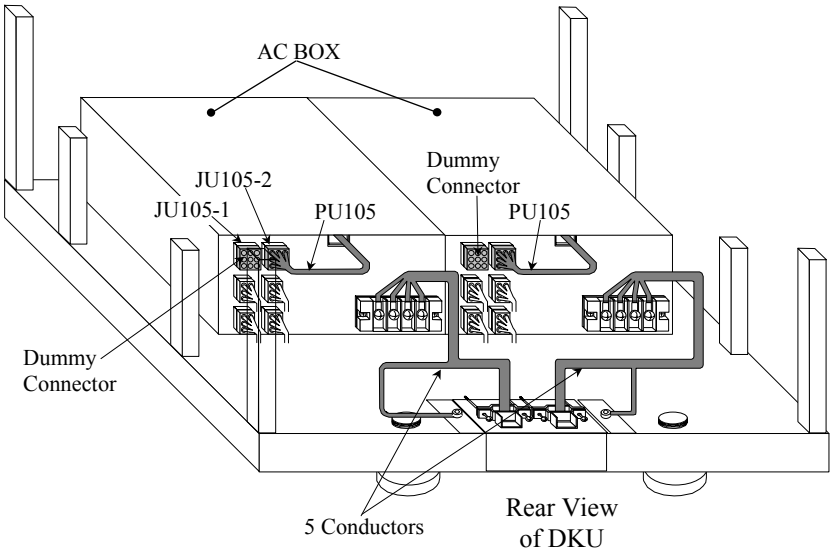

Fig. 3.4.7.2-6 AC Input Cable Conductors and Jumper Cables Positions 380-415Vac

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Single Phase/30A Model

1. Check the input power cables at the AC BOXes in the DKU. See Table 3.4.7.2-5 and figure 3.4.7.2-9 for check items.

Table 3.4.7.2-5 AC Input Cable Conductors and Jumper Cables Positions

Input Voltage	AC Input Cable Conductors	Unit	AC BOX	Remarks
200-240Vac	3 conductors ×2 (U, V, FG)	DKU	AC BOX-##0, AC BOX-##1	

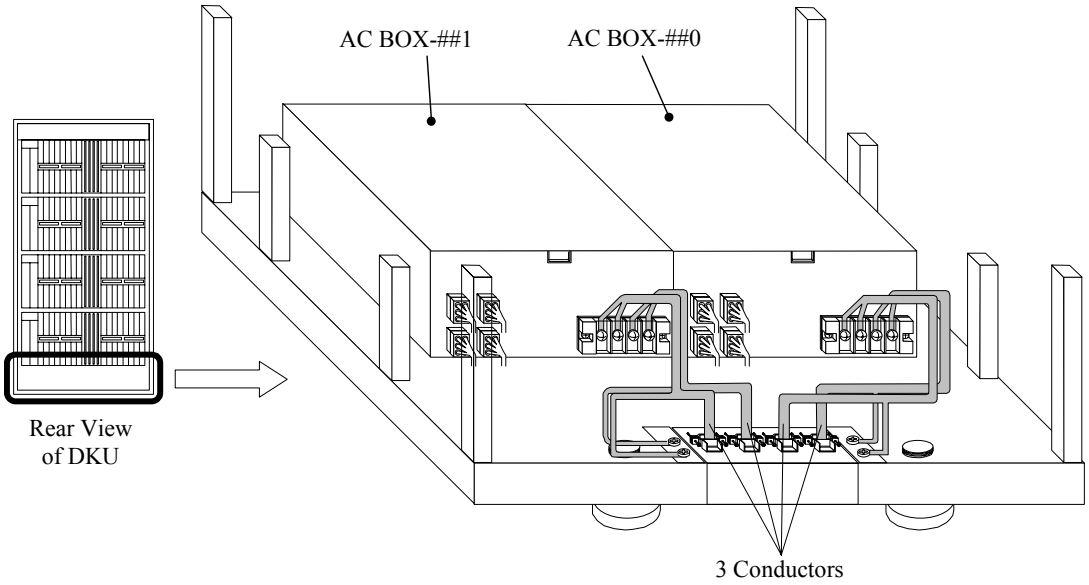

Fig. 3.4.7.2-9 AC Input Cable Conductors 200-240Vac

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3.5 Installation of Breaker Box Kit for 3 Phase (DKC-F460I-3PS)

3.5.1 Flowchart

1. Attach the cables.
↓
2. Attach the Breaker Boxes.
↓
3. Connect the cables to the AC Boxes.
↓
4. Attach the Nameplate.

3.5.2 Parts list

Table 3.5-1 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKC-F460I-3PS	Breaker Box	5513517-A	2	
		Screw	SB306N	4	
		Cable	3261822-A	1	Label: PIN1-1, PC111-1
		Cable	3261822-B	1	Label: PIN2-1, PC112-1
		Cable	3261822-C	1	Label: PIN1-2, PC111-2
		Cable	3261822-D	1	Label: PIN2-2, PC112-2
		Nameplate (HDS)	2105902-122	1	RSD
			2105903-122		HICAM
			2105903-222		HICEF
		Nameplate (HP)	2105902-222	1	RSD
			2105903-322		HICAM
			2105903-422		HICEF

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3.5.3 Installation Procedure of Breaker Box Kit for 3 Phase

1. Attach the cables.
   a. Attach the cables for the Breaker Boxes.

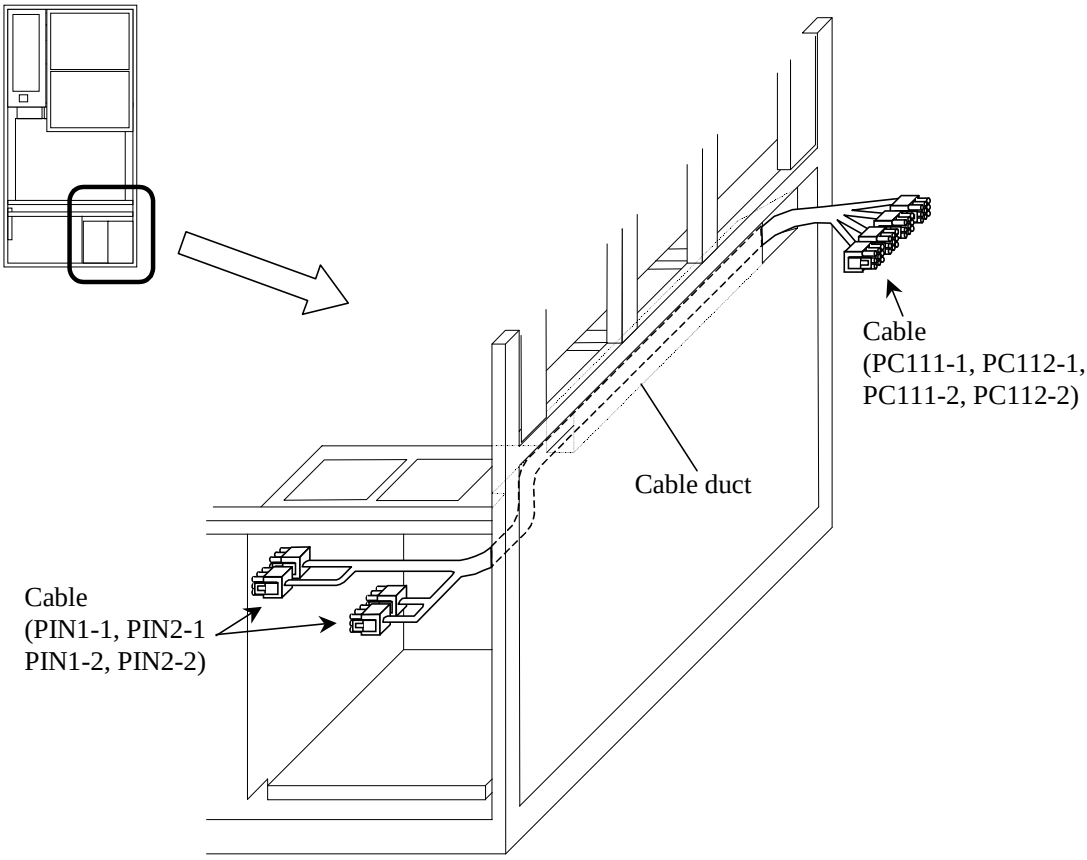

Fig. 3.5.3-1 Attachment of Cables

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2. Attach the Breaker Boxes.
   a. Attach the two Breaker Boxes with the four screws.

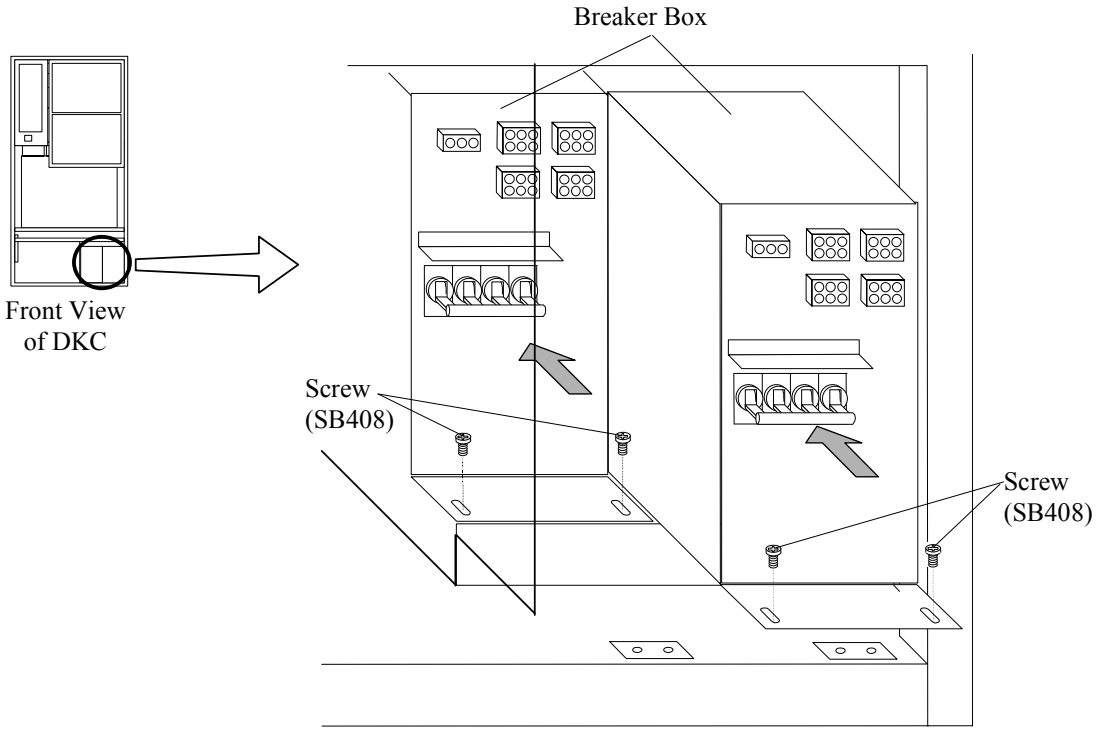

Fig. 3.5.3-2 Attachment of Breaker Boxes

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b. Connect the cables (POUT0-1, POUT1-1, POUT2-1, PIN1-1, PIN2-1, POUT0-2, POUT1-2, POUT2-2, PIN1-2 and PIN2-2) to the Breaker Boxes.

Table 3.5.3-1 Cable Connection of Breaker Boxes

No.	Cable No.		Connector No.	Remarks
	Breaker Box-1	Breaker Box-2		
1	POUT0-1	POUT0-2	JOUT0	
2	POUT1-1	POUT1-2	JOUT1	
3	POUT2-1	POUT2-2	JOUT2	
4	PIN1-1	PIN1-2	JIN1	
5	PIN2-1	PIN2-2	JIN2	

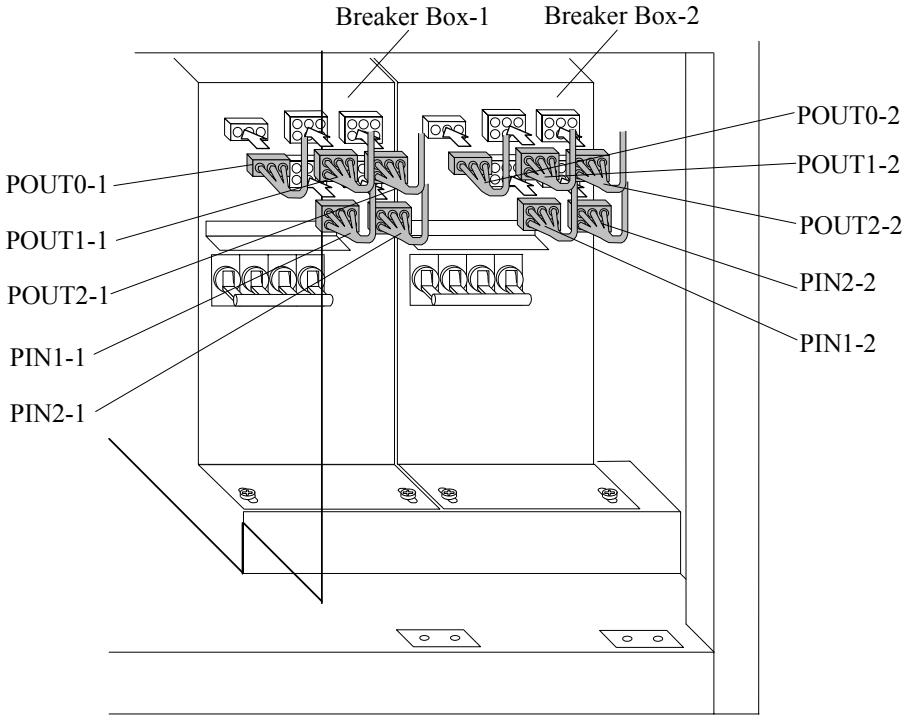

Fig. 3.5.3-3 Connection of Cables

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3. Connect the cables to the AC Boxes.
   a. Connect the cables (PC111-1, PC112-2, PC111-2 and PC112-2) to the DKU AC Boxes.

Table 3.5.3-2 Cable Connection of DKU AC Boxes

No.	Cable No.		Connector No.	Remarks
	AC BOX-R10	AC BOX-R11		
1	PC111-1	PC111-2	JC111	
2	PC112-1	PC112-2	JC112	

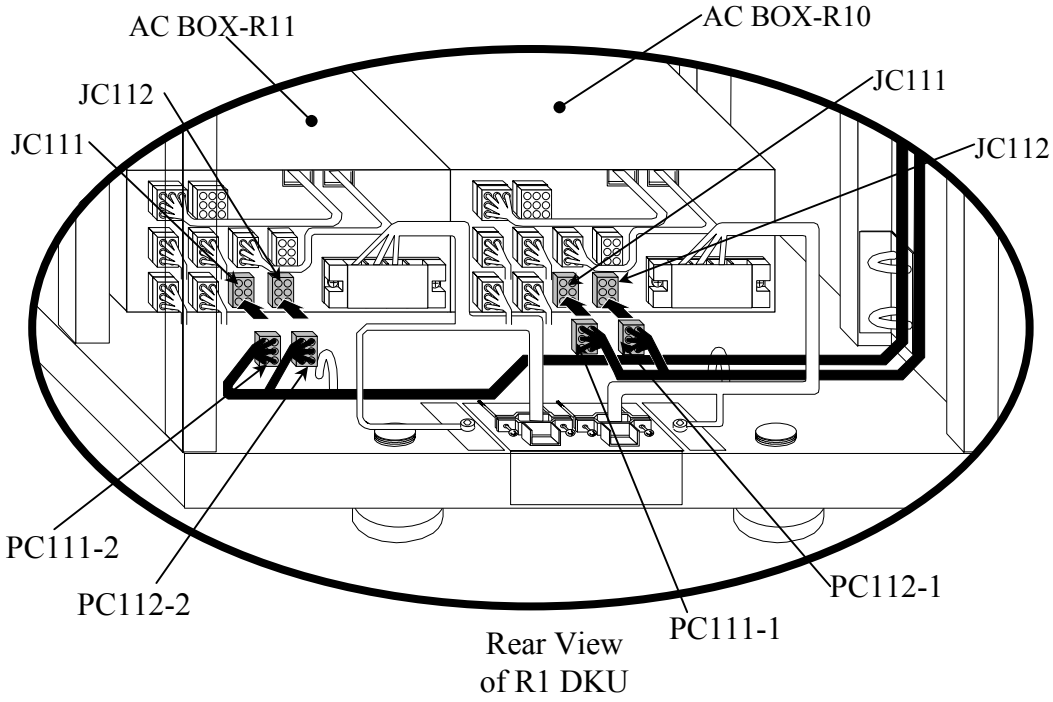

Fig. 3.5.3-4 Connection of Cables for DKC

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b. Bind the cables with the repeat binders.

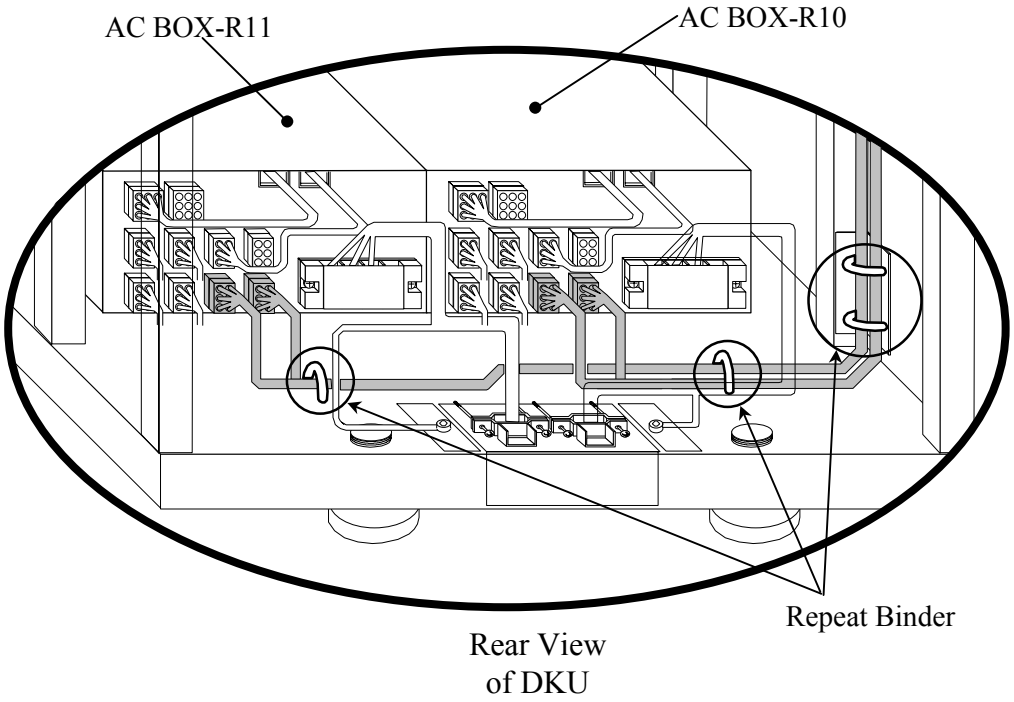

Fig. 3.5.3-5 Fastening of Cables for DKC

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4. Attach the Nameplate.
   a. Attach the nameplate to the Rear Logic Box cover.

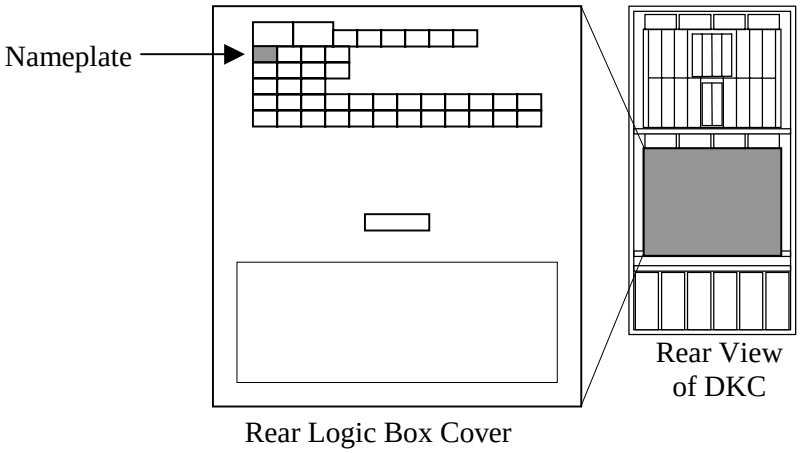

Fig. 3.5.3-6 Attachment of Nameplate

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3.6 Installation of AC Box Kit

3.6.1 Installation of AC Box Kit for 3 Phase/60A or Single Phase/50A (DKU-F455I-3PS/1PS)

Table 3.6.1-1 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKU-F455I-3PS	DKU AC Box	5513851-A	2	
		Nameplate (HDS)	2105912-1/2/3	1	RSD/HICAM/HICEF
		Nameplate (HP)	2105912-7/8/9	1	RSD/HICAM/HICEF
2	DKU-F455I-1PS	DKU AC Box	5513852-A	2	
		Nameplate (HDS)	2105912-21/22/23	1	RSD/HICAM/HICEF
		Nameplate (HP)	2105912-27/28/29	1	RSD/HICAM/HICEF

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1. Remove the plate.
   a. Remove the two screws and remove the plate.

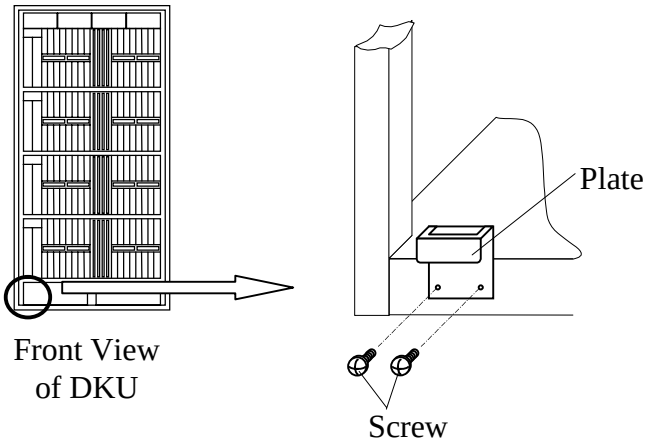

Fig. 3.6.1-1 Remove of Plate

2. Attach the DKU AC Boxes.
   a. Slide the DKU AC Boxes from the front to the rear.

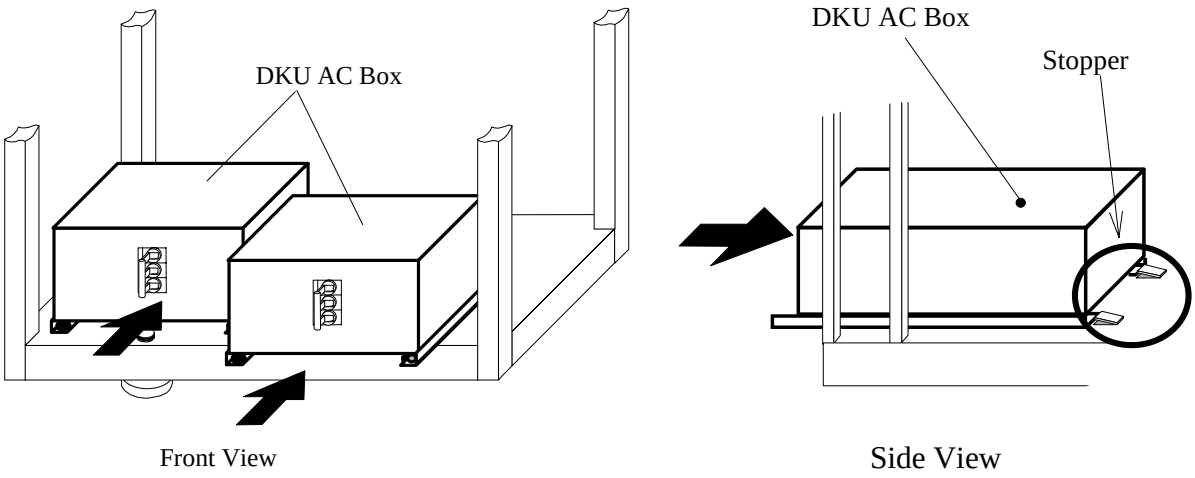

Fig. 3.6.1-2 Attachment of DKU AC Boxes

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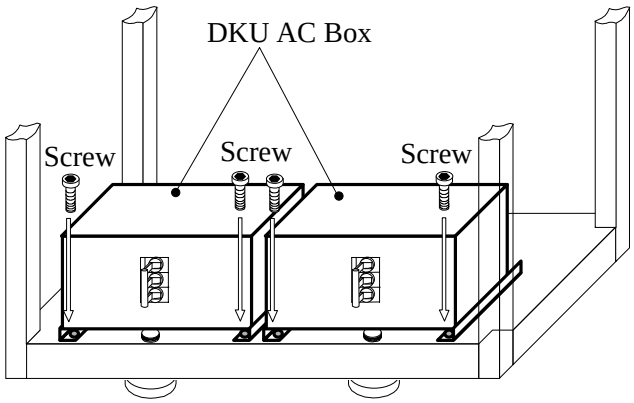
b. Secure the DKU AC Boxes with the screws.



Front View
of DKU

Fig. 3.6.1-3 Attachment of Screws

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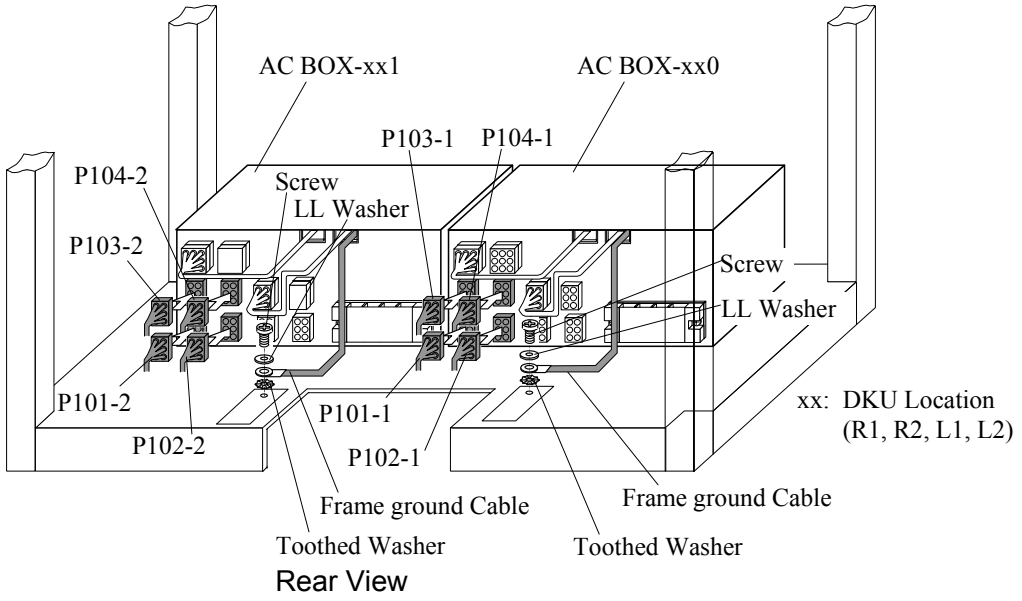
3. Connect the Cables.

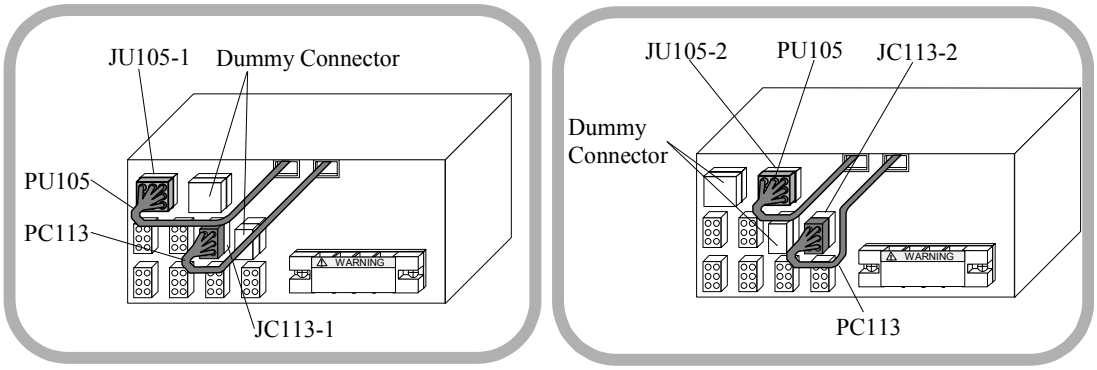
DKU-F455I-3PS

a. Secure the frame ground cables with the screws, LL washers and toothed washers.
b. Connect the cables (P101-1, P102-1, P103-1, P104-1, P101-2, P102-2, P103-2, P104-2, PU105 and PC113) and dummy connectors to the DKU AC Boxes.

Table 3.6.1-2 Cable Connection of DKU AC Boxes

No.	Cable No.		Connector No.	Remarks
	AC BOX-xx0	AC BOX-xx1		
1	P101-1	P101-2	JU101	
2	P102-1	P102-2	JU102	
3	P103-1	P103-2	JU103	
4	P104-1	P104-2	JU104	
5	PU105, PC113		JU105-1, JC113-1	Input AC: 200-240V
			JU105-2, JC113-2	Input AC: 380-415V
6	Dummy Connector		JU105-2, JC113-2	Input AC: 200-240V
			JU105-1, JC113-1	Input AC: 380-415V





Input AC Voltage : 200 - 240V

Input AC Voltage : 380 - 415V

Fig. 3.6.1-4 Connection of Cables

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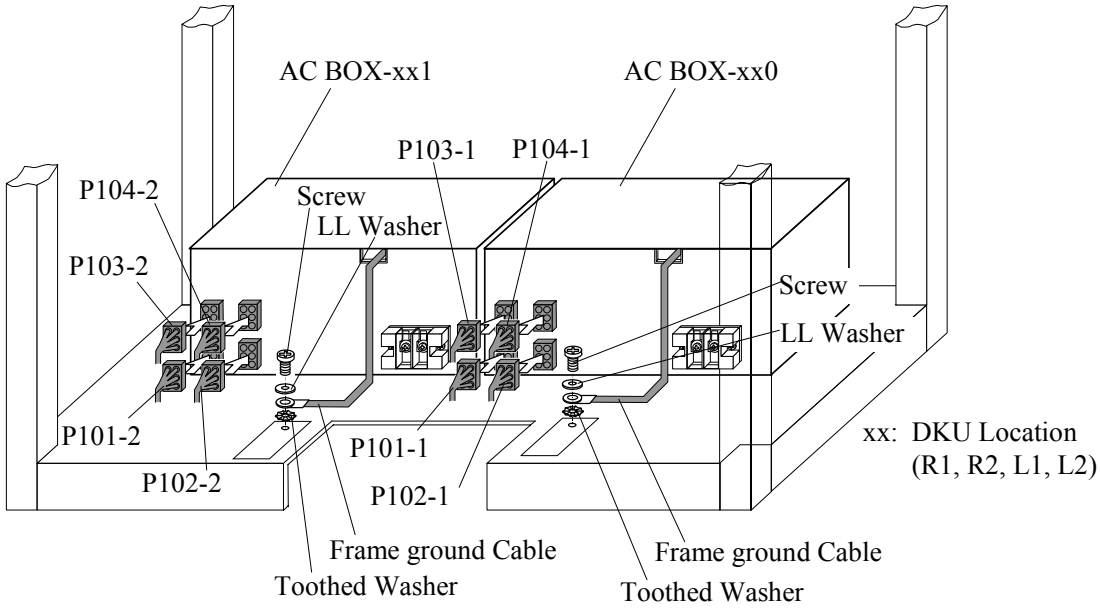
DKU-F455I-1PS

a. Secure the frame ground cables with the screws, LL washers and toothed washers.
b. Connect the cables (P101-1, P102-1, P103-1, P104-1, P101-2, P102-2, P103-2 and P104-2) to the DKU AC Boxes.

Table 3.6.1-3 Cable Connection of DKU AC Boxes

No.	Cable No.		Connector No.	Remarks
	AC BOX-xx0	AC BOX-xx1		
1	P101-1	P101-2	JU101	
2	P102-1	P102-2	JU102	
3	P103-1	P103-2	JU103	
4	P104-1	P104-2	JU104	



Rear View

Fig. 3.6.1-5 Connection of Cables

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4. Attach the plate.
   a. Attach the plate with the two screws. Refer to Fig. 3.6.1.3-1.

5. Attach the Nameplate.
   a. Attach the corresponding nameplate to the left DKU AC Box.

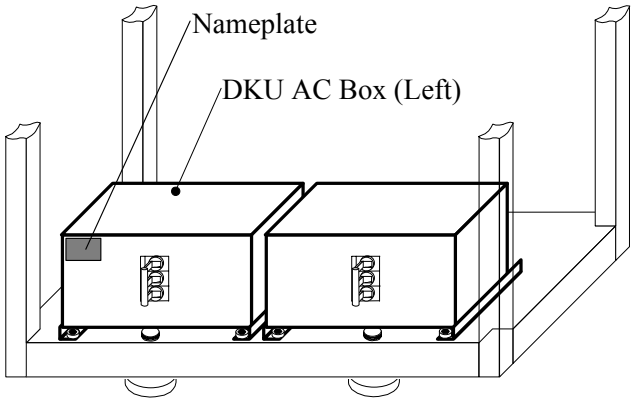

Fig. 3.6.1-6 Attachment of Nameplate

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3.6.2 Installation of AC Box Kit for Single Phase/40A (DKC-F460I-1PS)

Table 3.6.2-1 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKC-F460I-1PS	DKC AC Box	5513519-A	2	
		Screw	SB408N	4	
		Screw	SB510N	4	
		Lock Washer	WT005N	4	Lock Washer
		Label(UL5)	5466325-1	2	
		Nameplate (HDS)	2105902-119	1	RSD
			2105903-119		HICAM
			2105903-219		HICEF
		Nameplate (HP)	2105902-219	1	RSD
			2105903-319		HICAM
			2105903-419		HICEF

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1. Attach the DKC AC Boxes.
   a. Attach the two DKC AC Boxes with the four screws.

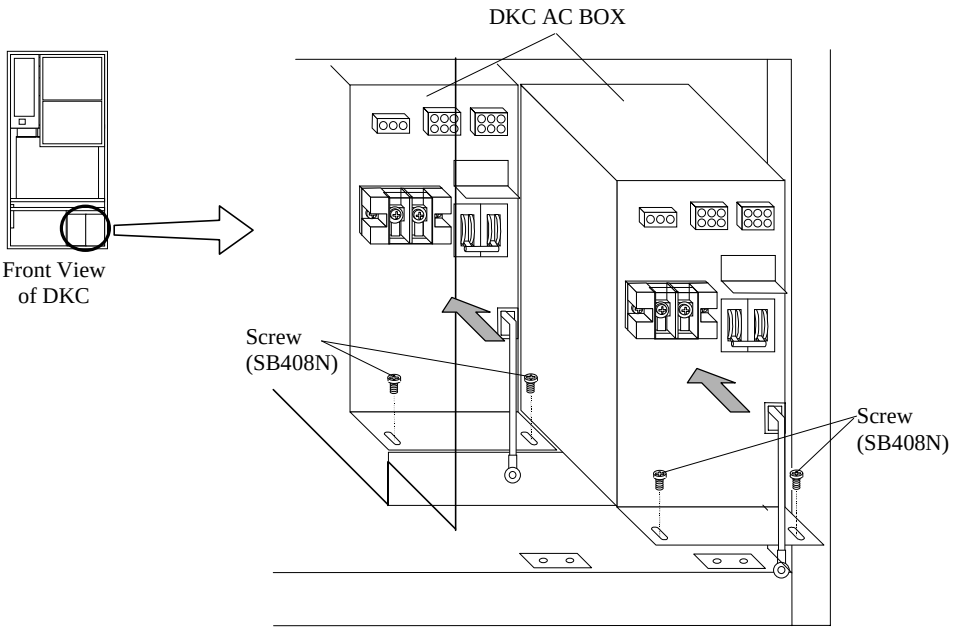

Fig. 3.6.2-1 Attachment of DKC AC Boxes

   b. Attach the frame ground cables with the two screws and the two lock washers. And attach the two screws and the two lock washers for Power Cable Unit.

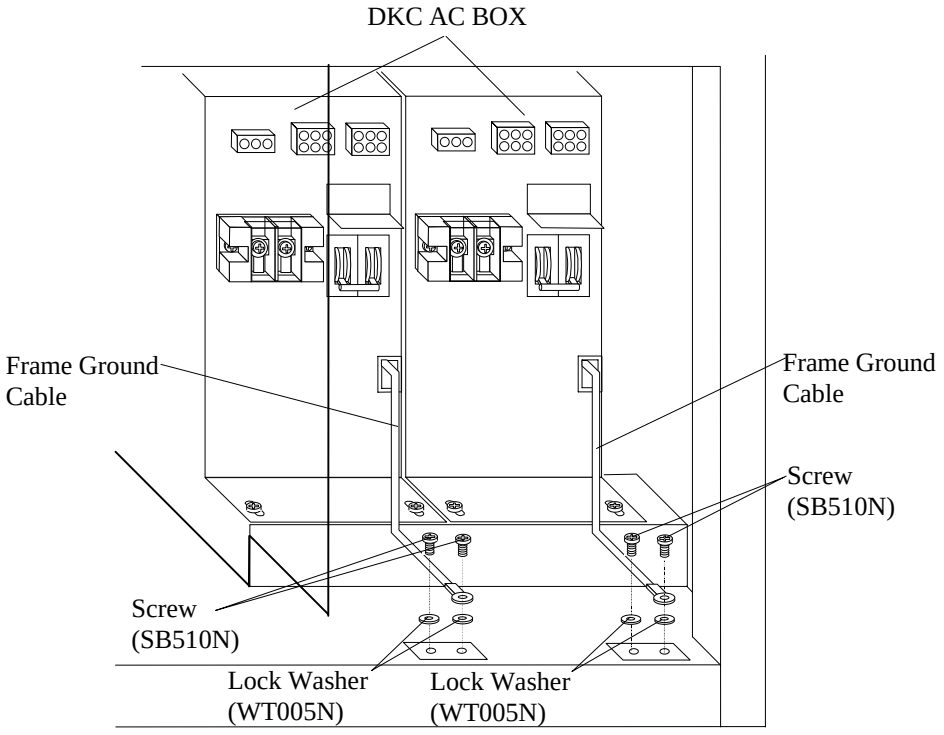

Fig. 3.6.2-2 Attachment of Screws

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c. Connect the cables (POUT0-1, POUT1-1, POUT2-1, POUT0-2, POUT1-2 and POUT2-2) to the DKC AC Boxes.

Table 3.6.2-2 Cable Connection of DKC AC Boxes

No.	Cable No.		Connector No.	Remarks
	AC BOX-C1	AC BOX-C2		
1	POUT0-1	POUT0-2	JOUT0	
2	POUT1-1	POUT1-2	JOUT1	
3	POUT2-1	POUT2-2	JOUT2	

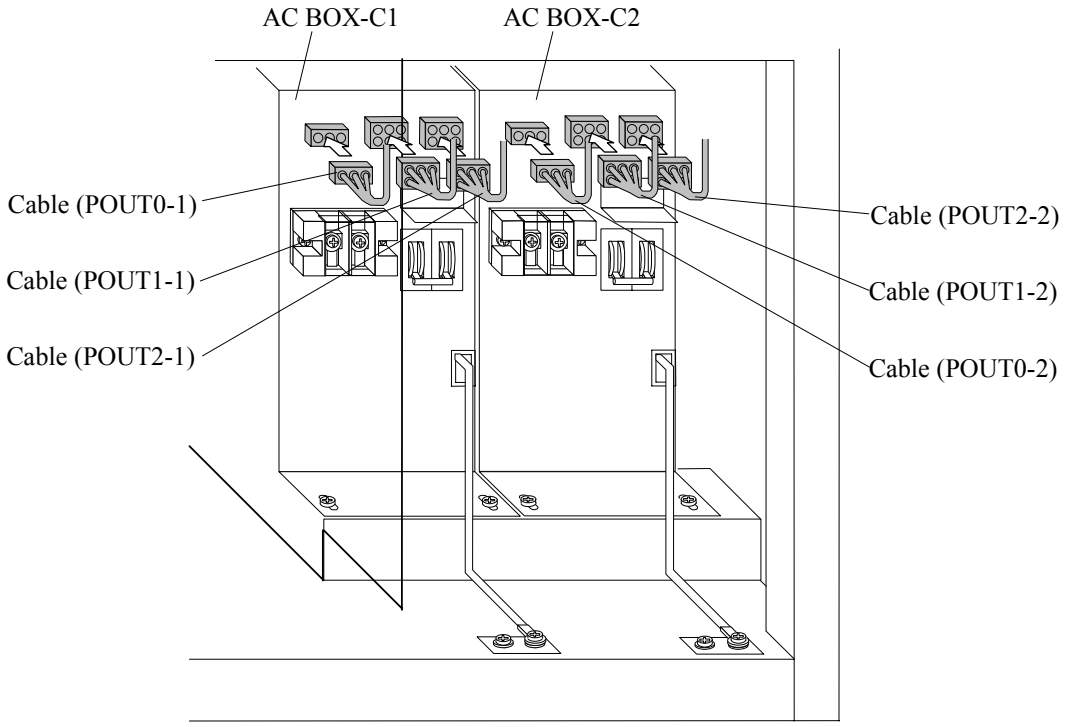

Fig. 3.6.2-3 Connection of Cables

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2. Attach the Nameplate and the Labels.
   a. Attach the nameplate to the Rear Logic Box cover.

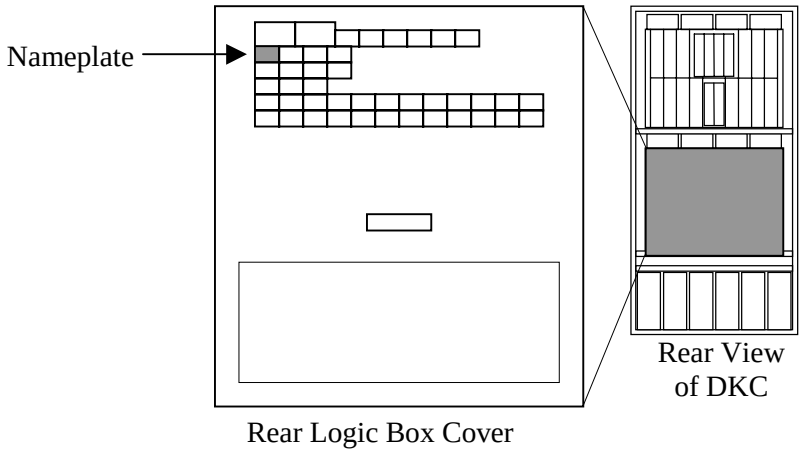

Fig. 3.6.2-4 Attachment of Nameplate

   b. Attach the label (V/Hz/PH.). Label (V/Hz/PH.) should be selected among the sheet of Label (V/Hz/PH.) corresponding to the operating voltage and frequency.
   c. Attach the labels (UL5) to the frame.

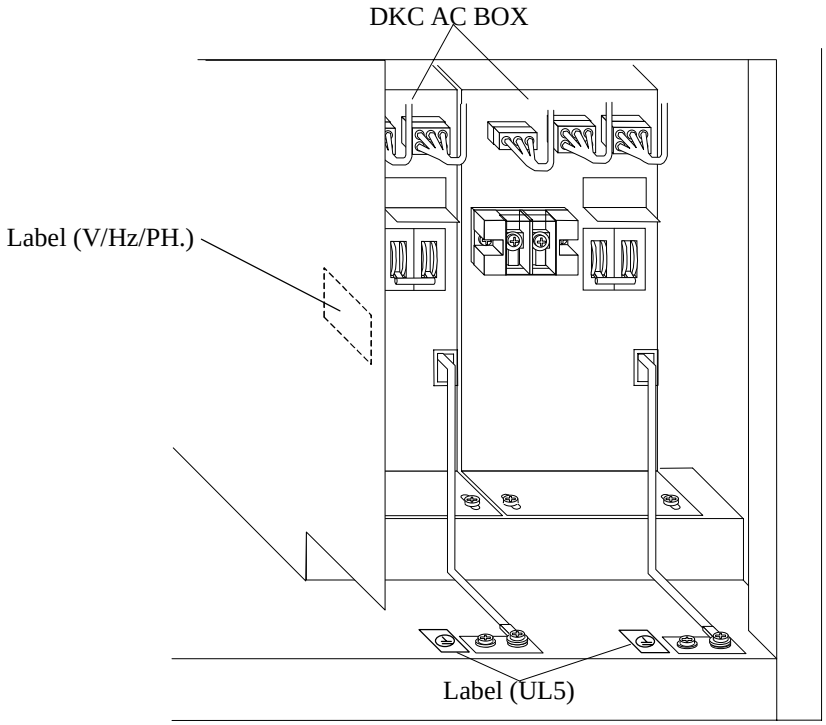

Fig. 3.6.2-5 Attachment of labels

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3.6.3 Installation of AC Box Kit for 3 Phase/30A or Single Phase/30A (DKU-F455I-3PSD/1PSD)

Table 3.6.3-1 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKU-F455I-3PSD	DKU AC Box	5518051-A	2	
		Bracket	3265680-1	1	
		Label(V.Hz.PH.A.W)	2106820-2	1	
		Nameplate (HDS)	2105912-47/48/49	1	RSD/HICAM/HICEF
		Nameplate (HP)	2105912-53/54/55	1	RSD/HICAM/HICEF
2	DKU-F455I-1PSD	DKU AC Box	5518052-A	2	
		Bracket	3265680-1	1	
		Label(V.Hz.PH.A.W)	2106820-2	1	
		Nameplate (HDS)	2105912-67/68/69	1	RSD/HICAM/HICEF
		Nameplate (HP)	2105912-73/74/75	1	RSD/HICAM/HICEF

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1. Remove the plate.
   a. Remove the two screws and remove the plate.

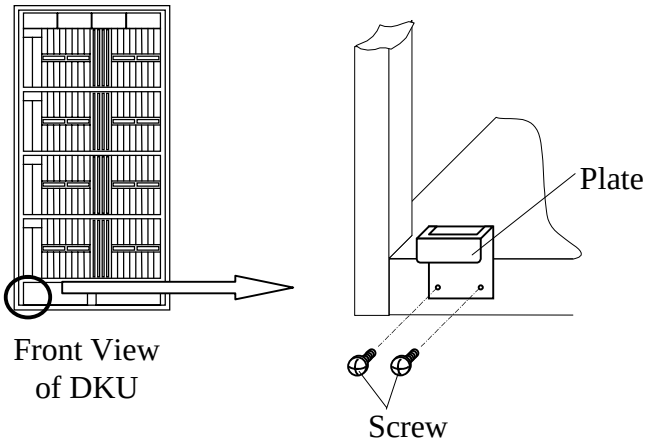

Fig. 3.6.3-1 Remove of Plate

2. Attach the DKU AC Boxes.
   a. Slide the DKU AC Boxes from the front to the rear.

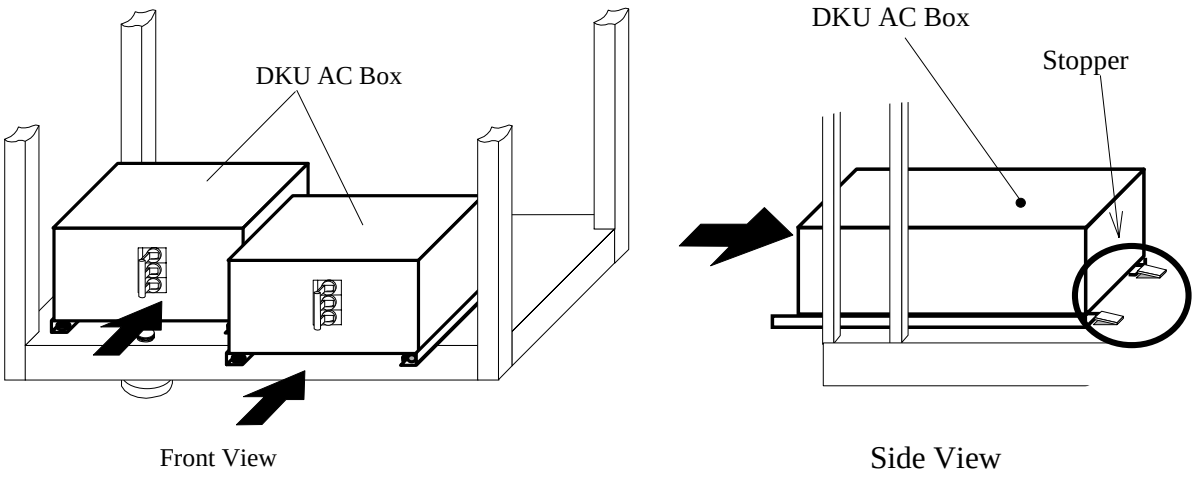

Fig. 3.6.3-2 Attachment of DKU AC Boxes

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b. Secure the DKU AC Boxes with the screws.

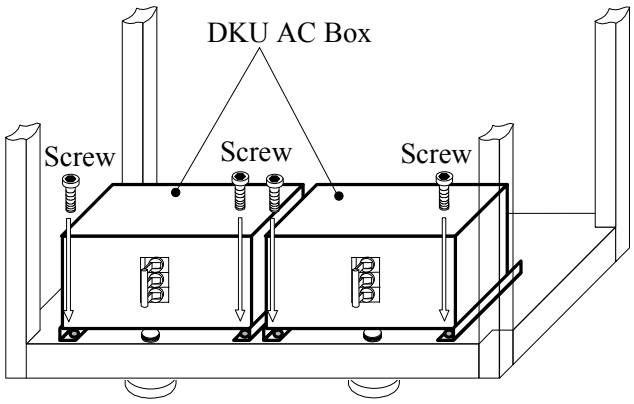

Fig. 3.6.3-3 Attachment of Screws

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3. Connect the Cables.

DKU-F455I-1PSD

a. Secure the frame ground cables with the screws, LL washers and toothed washers.
b. Connect the cables (P101-1, P102-1, P103-1, P104-1, P101-2, P102-2, P103-2 and P104-2) to the DKU AC Boxes.

Table 3.6.3-2 Cable Connection of DKU AC Boxes

No.	Cable No.		Connector No.	Remarks
	AC BOX-xx0	AC BOX-xx1		
1	P101-1	P101-2	JU101	
2	P102-1	P102-2	JU102	
3	P103-1	P103-2	JU103	
4	P104-1	P104-2	JU104	

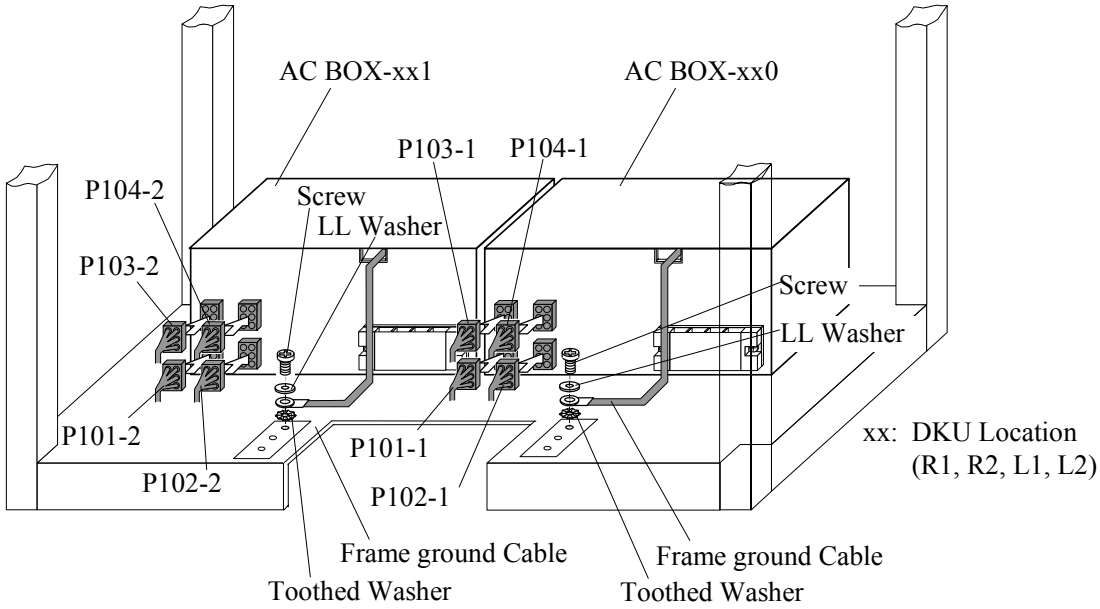

Fig. 3.6.3-4 Connection of Cables

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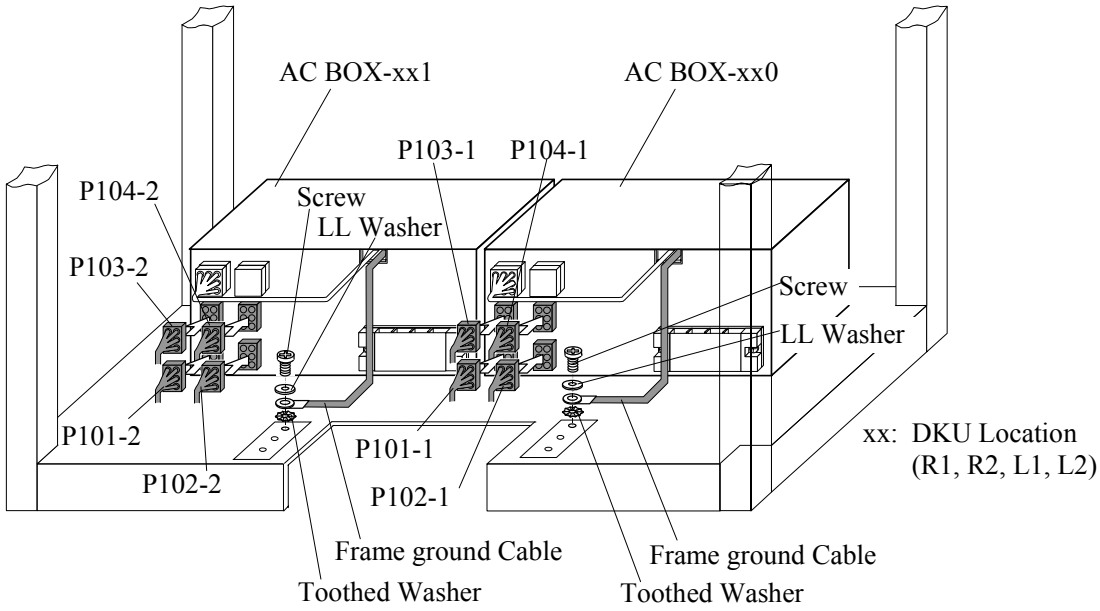
DKU-F455I-3PSD

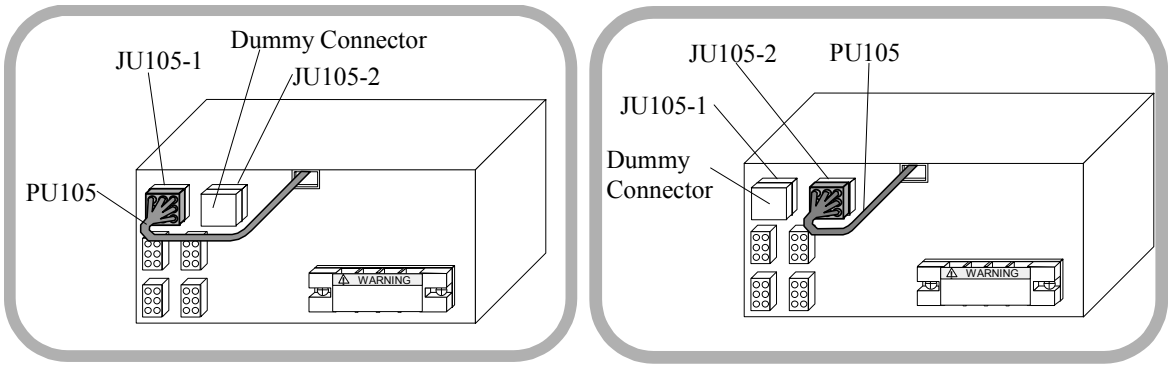
a. Secure the frame ground cables with the screws, LL washers and toothed washers.
b. Connect the cables (P101-1, P102-1, P103-1, P104-1, P101-2, P102-2, P103-2, P104-2 and PU105) and dummy connectors to the DKU AC Boxes.

Table 3.6.3-3 Cable Connection of DKU AC Boxes

No.	Cable No.		Connector No.	Remarks
	AC BOX-xx0	AC BOX-xx1		
1	P101-1	P101-2	JU101	
2	P102-1	P102-2	JU102	
3	P103-1	P103-2	JU103	
4	P104-1	P104-2	JU104	
5	PU105		JU105-1	Input AC: 200-240V
			JU105-2	Input AC: 380-415V
6	Dummy Connector		JU105-2	Input AC: 200-240V
			JU105-1	Input AC: 380-415V



Rear View



Input AC Voltage : 200 - 240V

Input AC Voltage : 380 - 415V

Fig. 3.6.3-5 Connection of Cables

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4. Attach the plate.
   a. Attach the plate with the two screws. Refer to Fig. 3.6.3-1.

5. Attach the Nameplate and Labels.
   a. Attach the corresponding nameplate to the left DKU AC Box.

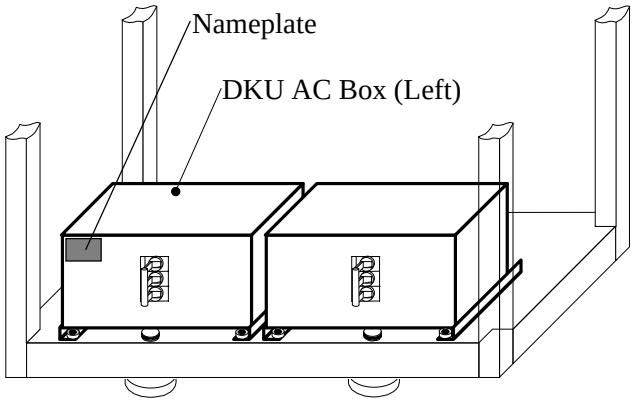

Fig. 3.6.3-6 Attachment of Nameplate

   b. Attach the label (V/Hz/PH.) to the DKU bottom base of rear side. Label (V/Hz/PH.) should be selected among the sheet of Label (V/Hz/PH.) corresponding to the operating voltage and frequency.
   c. Attach the label (V/Hz/PH.A.W) to the DKU bottom base of rear side.

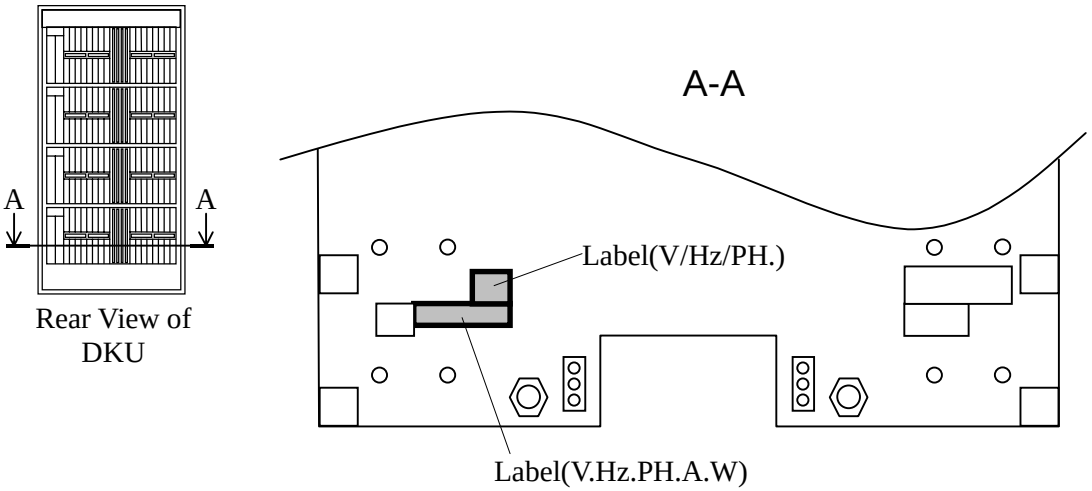

Fig. 3.6.3-7 Attachment of Labels

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6. Attach the Bracket.
   a. Attach the power cable unit to the bracket and fasten the six screws.

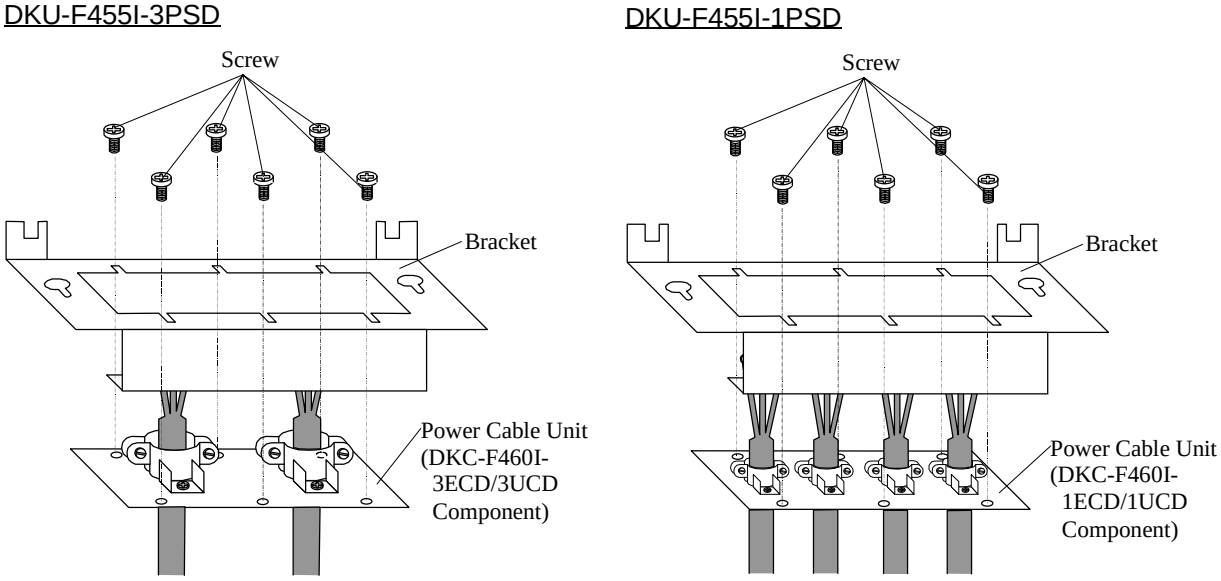

Fig. 3.6.3-8 Attachment of Power Cable Unit

   b. Attach the bracket to the DKU frame and fasten the two screws.

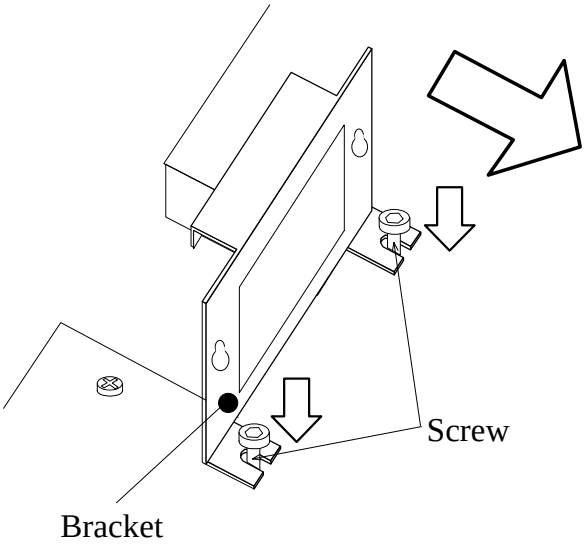

Fig. 3.6.3-9 Attachment of Bracket

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3.6.4 Installation of AC Box Kit for 3 Phase/30A or Single Phase/30A (DKC-F460I-1PSD/3PSD)

Table 3.6.4-1 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKC-F460I-1PSD	DKC AC Box	5517802-C	2	
		Bracket	3265681-1	1	
		Cover	3265679-1	1	
		Screw	SB306N	2	
		Screw	SB408N	6	
		Screw	SB510N	6	
		Lock Washer	WT005N	6	
		Label(UL5)	5466325-1	2	
		Label(V.Hz.PH.A.W)	3265706-1	1	
		Nameplate (HDS)	2105902-129	1	RSD
			2105903-129		HICAM
			2105903-229		HICEF
		Nameplate (HP)	-	1	RSD
			-		HICAM
			-		HICEF
2	DKC-F460I-3PSD	DKC AC Box	5517802-A	2	
		Bracket	2106296-A	1	
		Cover	3264038-1	1	
		Screw	SB306N	2	
		Screw	SB408N	6	
		Screw	SB510N	4	
		Lock Washer	WT005N	4	
		Label(UL5)	5466325-1	2	
		Label(V.Hz.PH.A.W)	3265706-1	1	
		Nameplate (HDS)	2105902-132	1	RSD
			2105903-132		HICAM
			2105903-232		HICEF
		Nameplate (HP)	-	1	RSD
			-		HICAM
			-		HICEF

Notice:
There are some DKCs in which the AC Box Kit for Single Phase/30A (DKC-F460I-1PSD) cannot be installed depending on the serial numbers (S#) of the DKCs because they have no connector for connecting the FG cable.
Serial Numbers of subsystem in which the AC Box Kit above cannot be installed:
10033-10169, 40001-40065, and 60001-60019
Serial Numbers of subsystem in which the AC Box Kit above can be installed:
10170 and over, 40066 and over, and 60020 and over

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1. Attach the DKC AC Boxes.
   a. Attach the two DKC AC Boxes with the four screws.

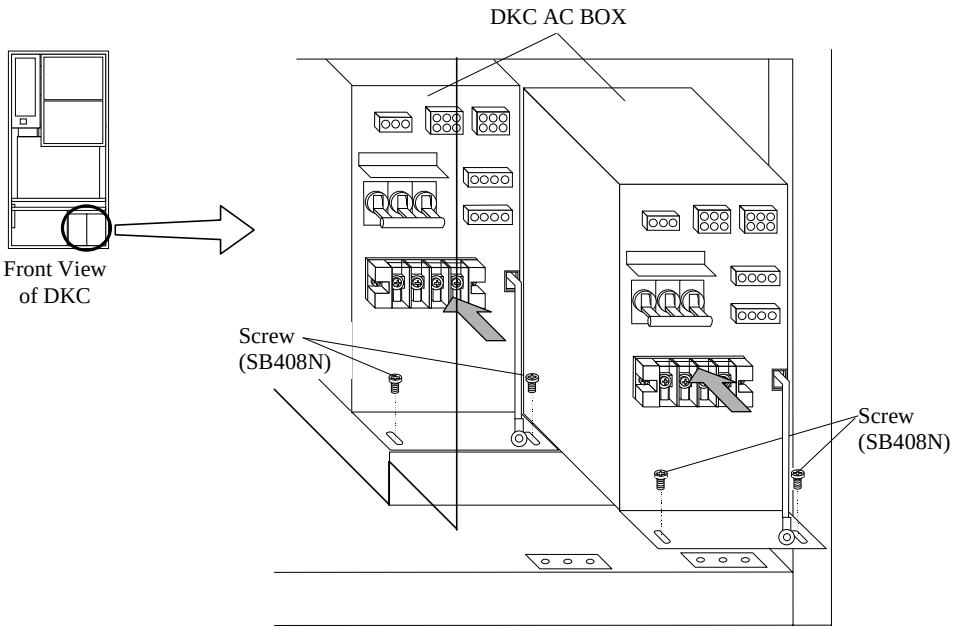

Fig. 3.6.4-1 Attachment of DKC AC Boxes

   b. Attach the frame ground cables with the two screws and the two lock washers. And attach the four screws and the four lock washers for Power Cable Unit.

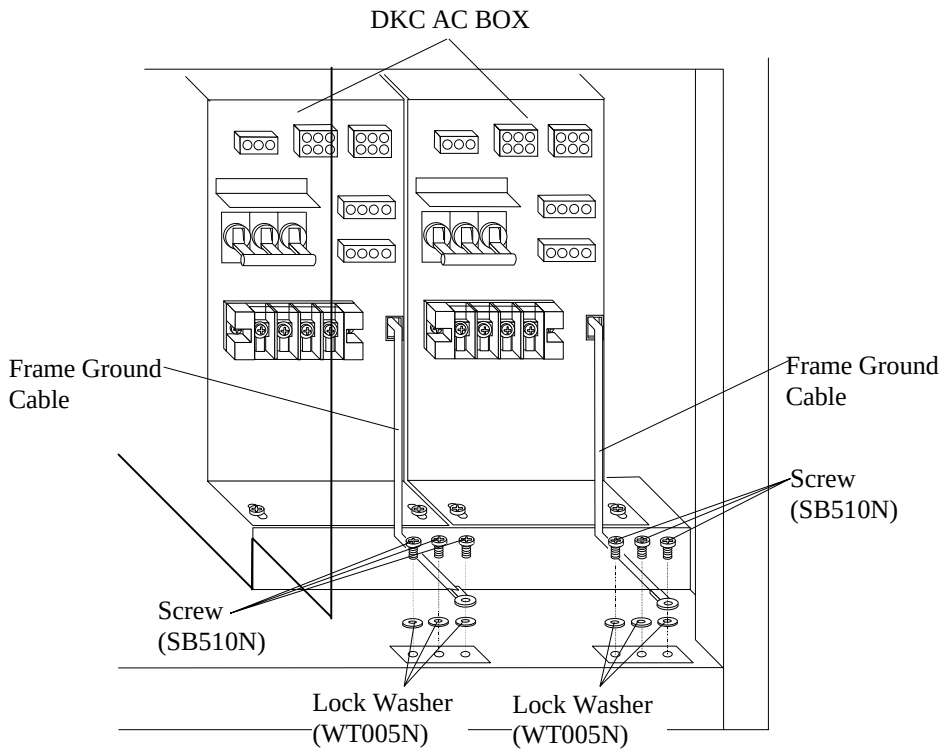

Fig. 3.6.4-2 Attachment of Screws

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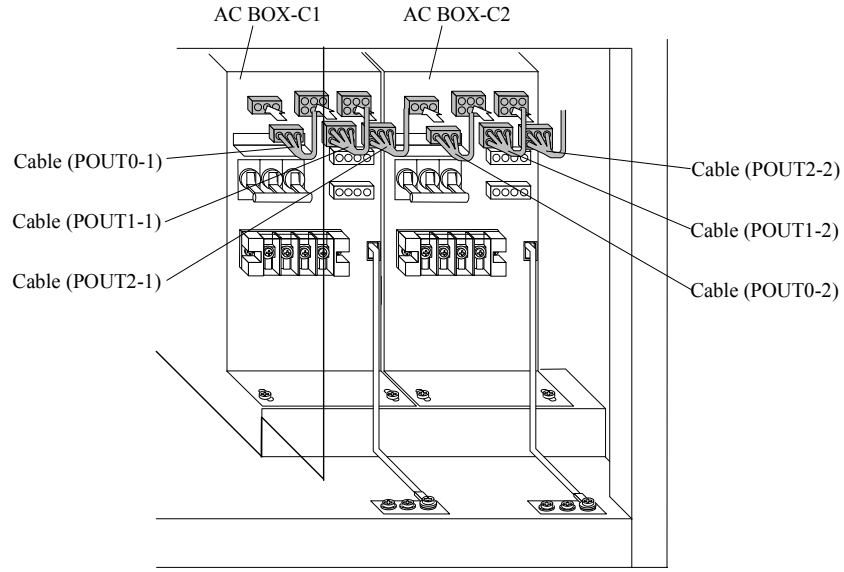
2. Connect the cables.

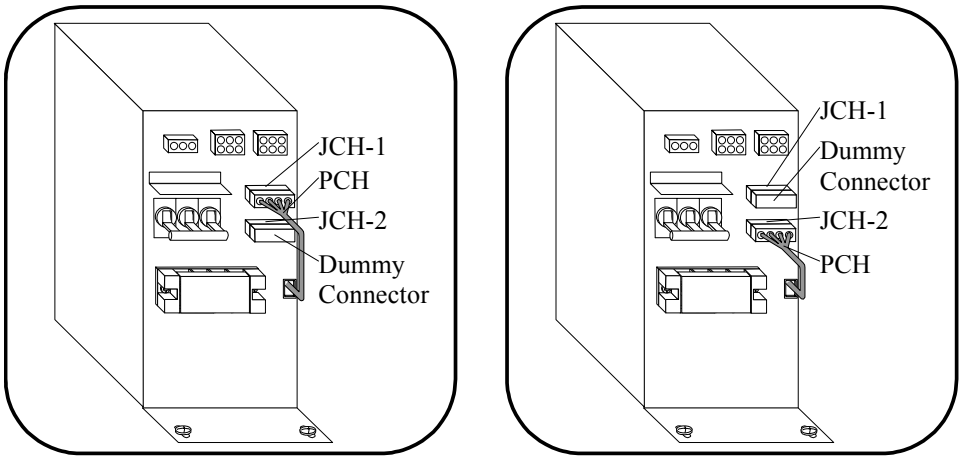
DKC-F460I-3PSD

a. Connect the cables (POUT0-1, POUT1-1, POUT2-1, POUT0-2, POUT1-2, POUT2-2 and PCH) and dummy connectors to the DKC AC Boxes.

Table 3.6.4-2 Cable Connection of DKC AC Boxes

No.	Cable No.		Connector No.	Remarks
	AC BOX-C1	AC BOX-C2		
1	POUT0-1	POUT0-2	JOUT0	
2	POUT1-1	POUT1-2	JOUT1	
3	POUT2-1	POUT2-2	JOUT2	
4	PCH		JCH-1	Input AC: 200-240V
			JCH-2	Input AC: 380-415V
5	Dummy Connector		JCH-2	Input AC: 200-240V
			JCH-1	Input AC: 380-415V





Input AC Voltage: 200-240V Input AC Voltage: 380-415V

Fig. 3.6.4-3 Connection of Cables

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DKC-F460I-1PSD

a. Connect the cables (POUT0-1, POUT1-1, POUT2-1, POUT0-2, POUT1-2 and POUT2-2) to the DKC AC Boxes.

Table 3.6.4-3 Cable Connection of DKC AC Boxes

No.	Cable No.		Connector No.	Remarks
	AC BOX-C1	AC BOX-C2		
1	POUT0-1	POUT0-2	JOUT0	
2	POUT1-1	POUT1-2	JOUT1	
3	POUT2-1	POUT2-2	JOUT2	

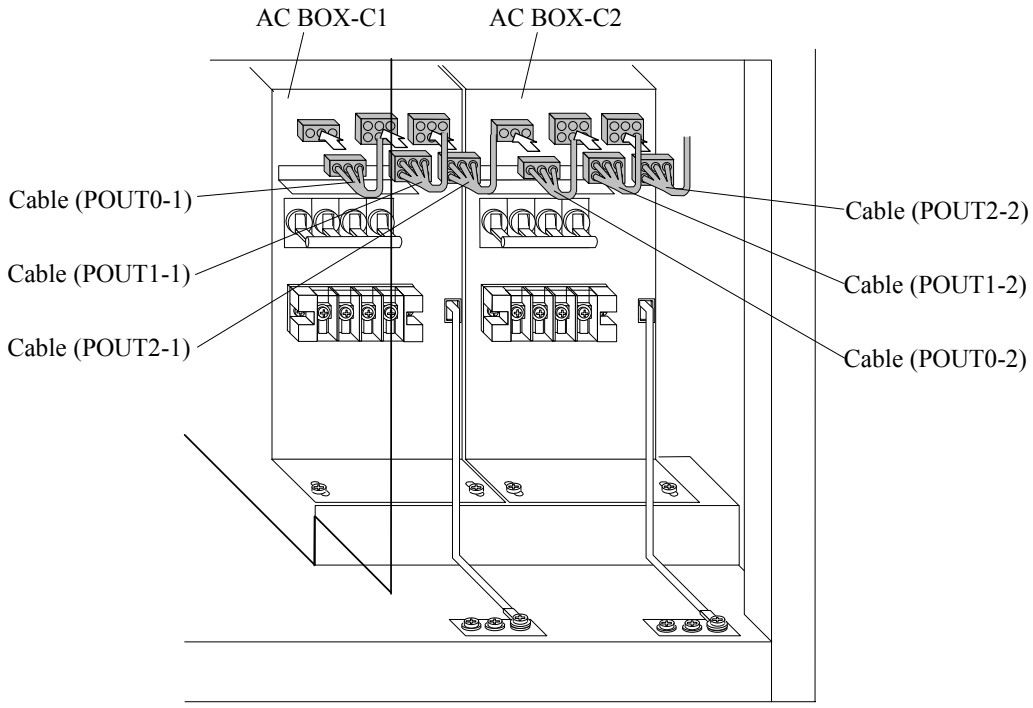

Fig. 3.6.4-4 Connection of Cables

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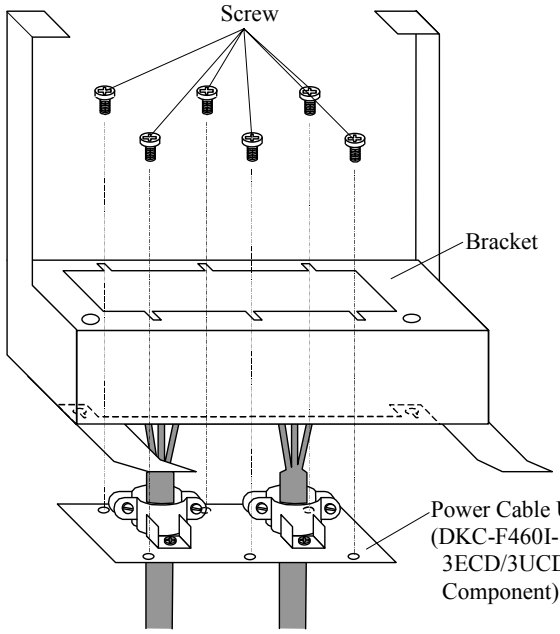
3. Attach the Bracket.
   a. Attach the power cable unit to the bracket and fasten the six screws.

DKC-F460I-3PSD



DKC-F460I-1PSD

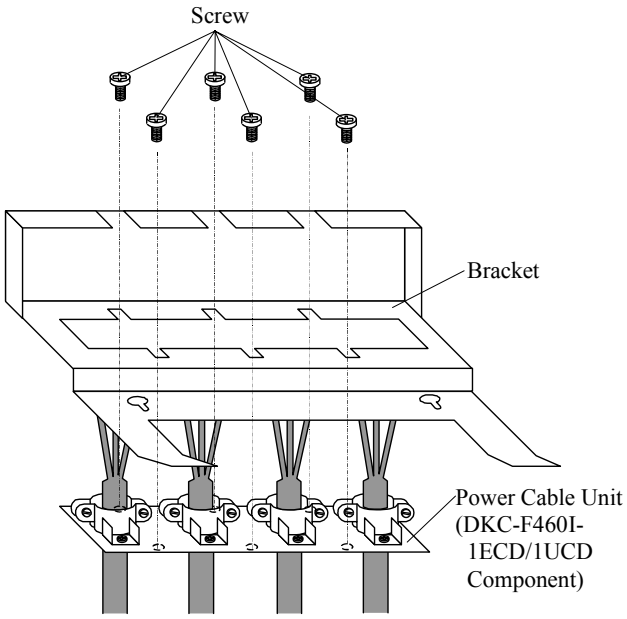


Fig. 3.6.4-5 Attachment of Power Cable Unit

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b. Attach the bracket with the two screws ①.
c. Attach the cover with the two screws ②.

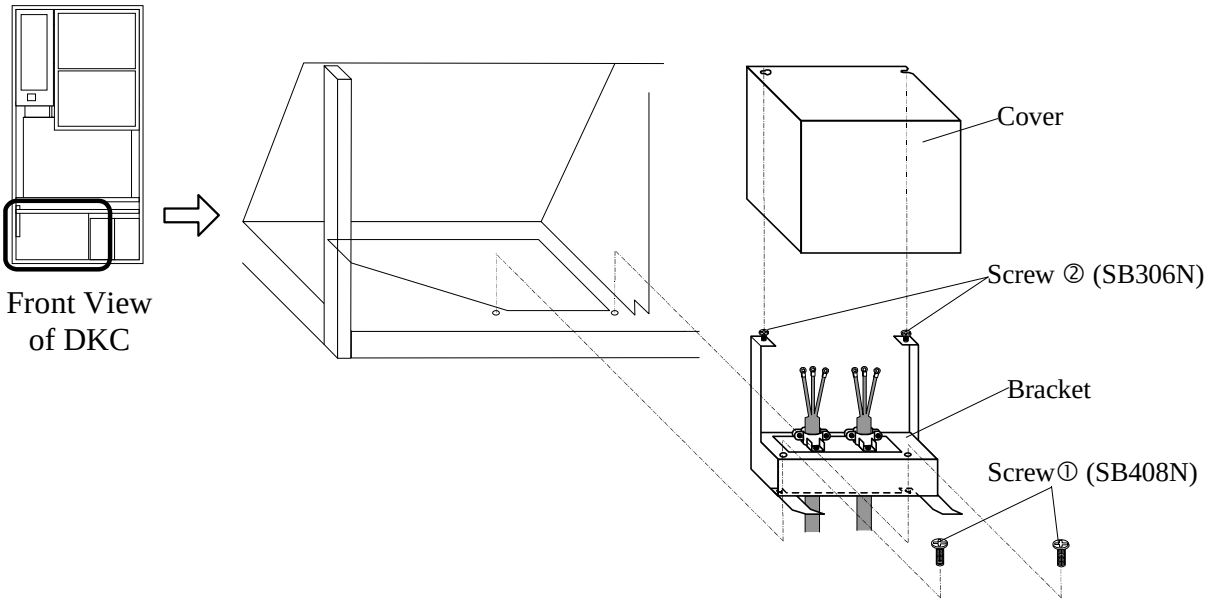

Fig. 3.6.4-6 Attachment of Bracket (DKC-F460I-3PSD)

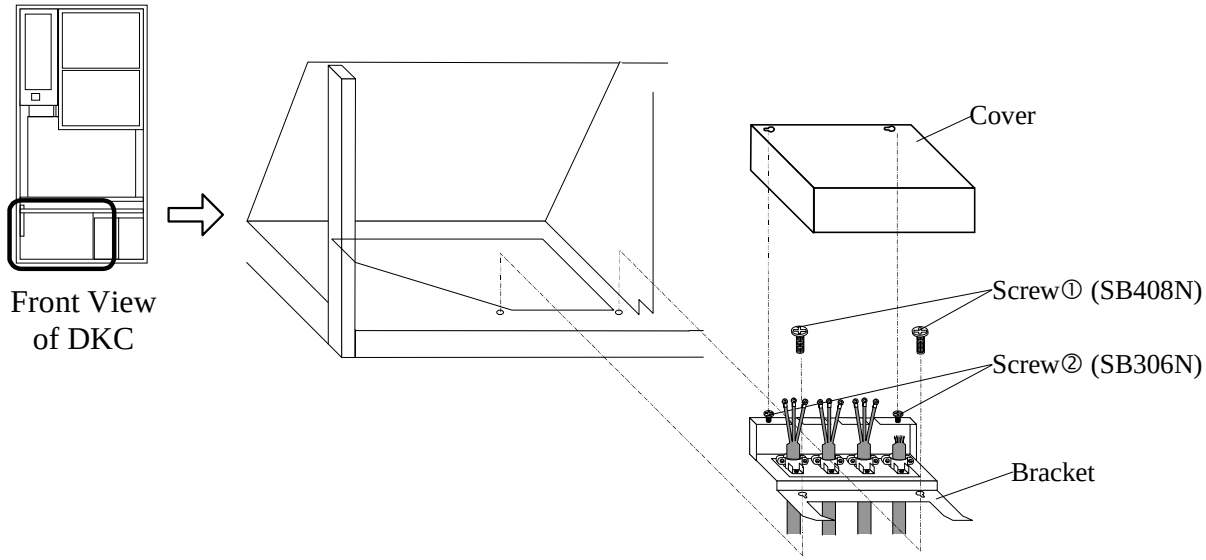

Fig. 3.6.4-7 Attachment of Bracket (DKC-F460I-1PSD)

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4. Attach the Nameplate and the Labels.
   a. Attach the nameplate to the Rear Logic Box cover.

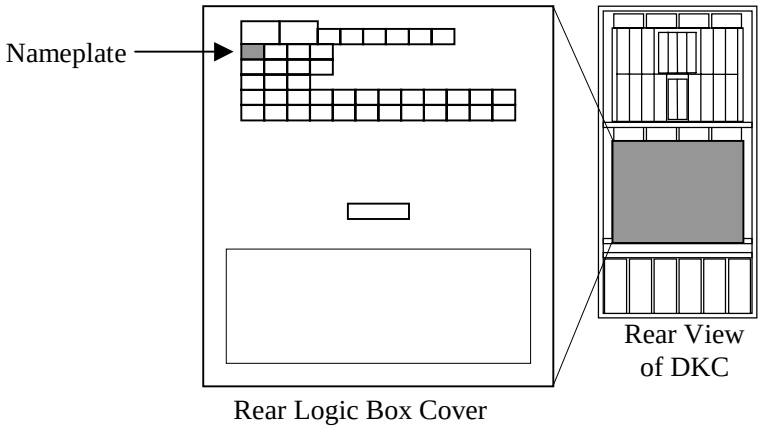

Fig. 3.6.4-8 Attachment of Nameplate

   b. Attach the label (V/Hz/PH.). Label (V/Hz/PH.) should be selected among the sheet of Label (V/Hz/PH.) corresponding to the operating voltage and frequency.
   c. Attach the labels (UL5) and label (V.Hz.PH.A.W) to the frame.

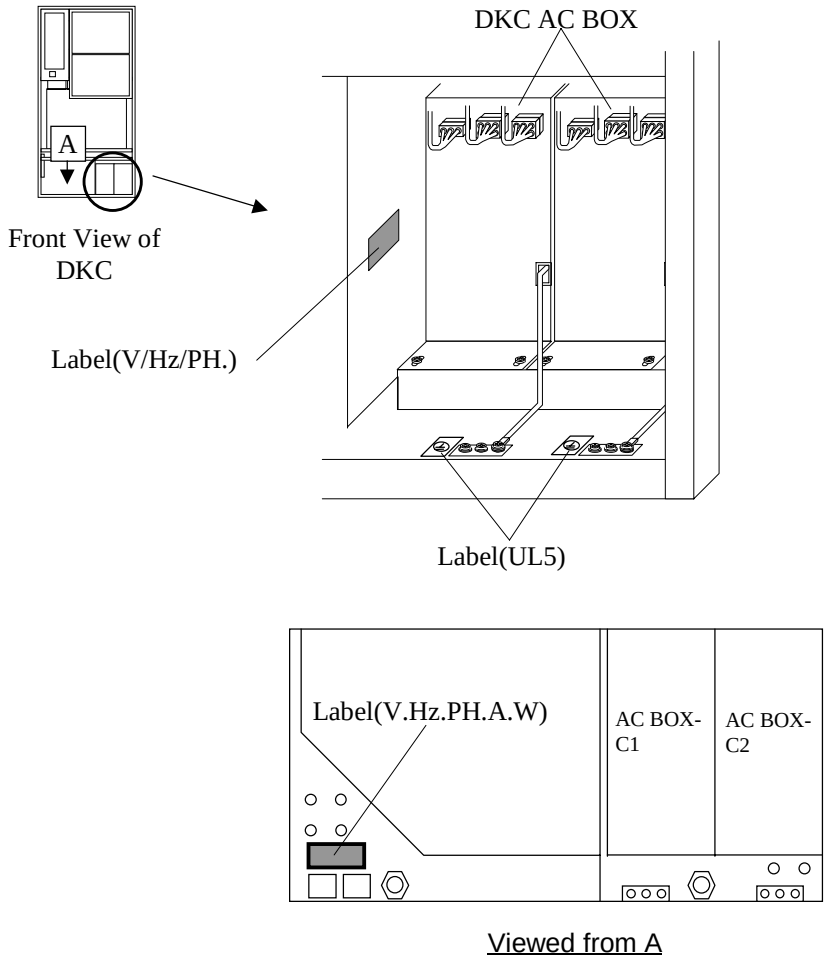

Fig. 3.6.4-9 Attachment of Labels

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3.6.5 AC Box Configuration Setting and Confirmation

1. Confirmation of DKC status

1-1 <Initial screen>

1-2 <Changing the mode>

Change the mode by selecting [Modify Mode].

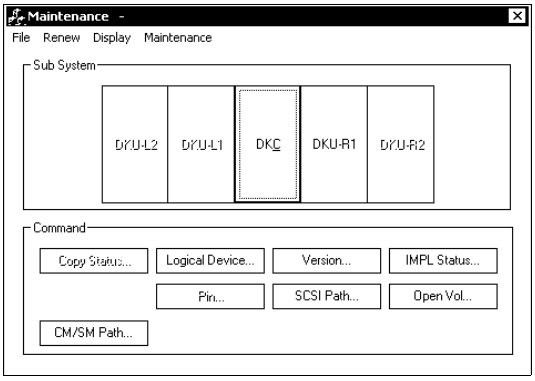
1-3 <Maintenance window>

The 'Maintenance' window is displayed.

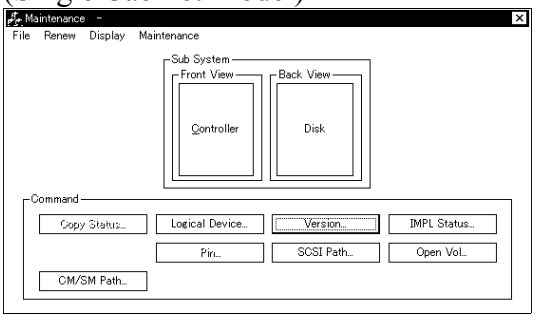
Make sure that all parts are not blinking.

Close the 'Maintenance' window.

(Multi Cabinet Model)



(Single Cabinet Model)



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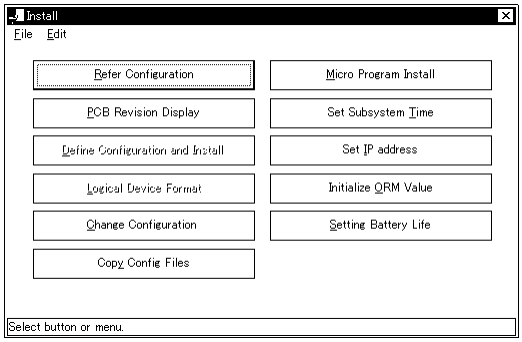
2. Configuration Setting

2-1 <Start [Install]>

Select [Install] from ‘SVP’ (CL).

2-2

Select [Change Configuration] (CL) from ‘Install’.



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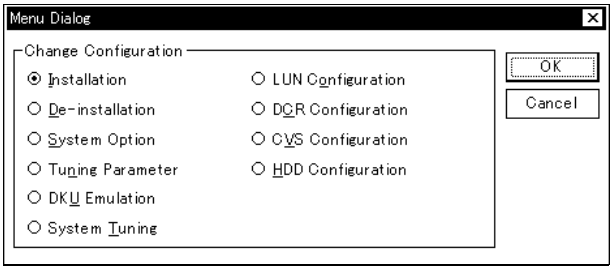
2-3 <Specify the beginning of installation>
Select [System Tuning] from 'Menu Dialog' (CL), and select [OK] (CL).

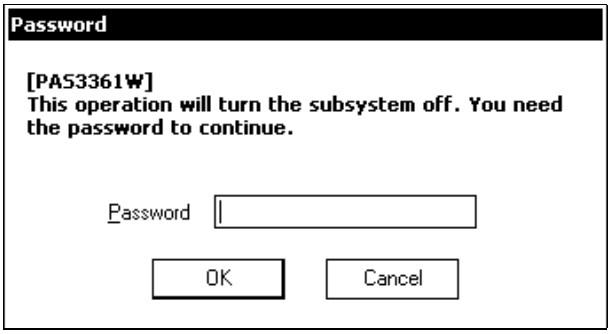


2-4

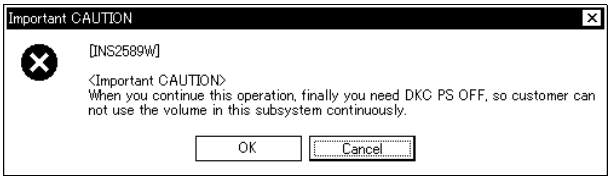
NOTICE
Powering off/on is required owing to the performance of this operation.
Ask the technical support center about the appropriateness of the operation, and input a password after getting an approval of executing the operation.

(1) Enter the password and select [OK] (CL).
Password is needed for this operation.
Please call Technical Support Center to obtain a password and authorization.

If [Cancel] is selected (CL), terminate the installation procedure.
'DKC Configuration' is automatically displayed next.



(2) Select (CL) [OK] in response to the confirmation message "<Important CAUTION>
When you continue this operation, finally you need DKC PS OFF, so customer can not use the volume in this subsystem continuously.".



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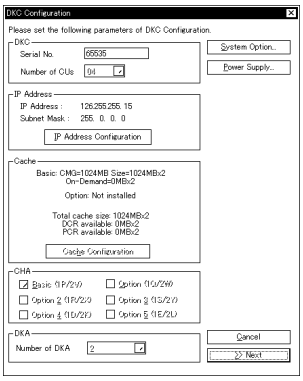
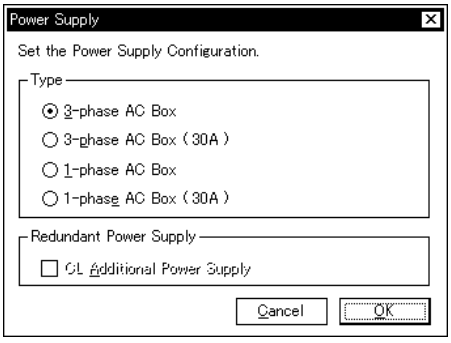
2-5 <DKC Configuration window>

Select (CL) [Power Supply].



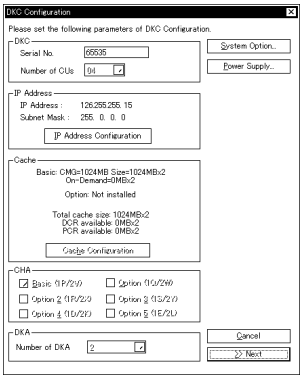
2-6 <Set AC Box Type>

Set the AC Box Type in the 'Power Supply' dialog box, and select (CL) [OK].



2-7 <To the next window>

Select (CL) [>>Next].



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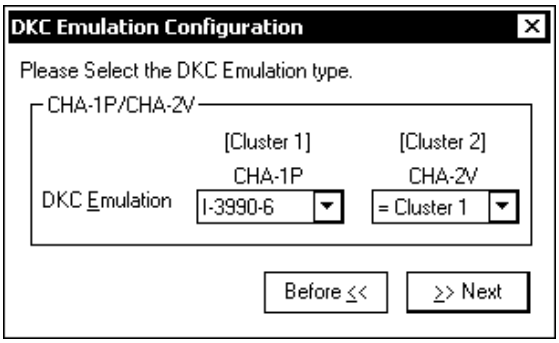
2-8 <To the next window>

Select (CL) [>>Next].

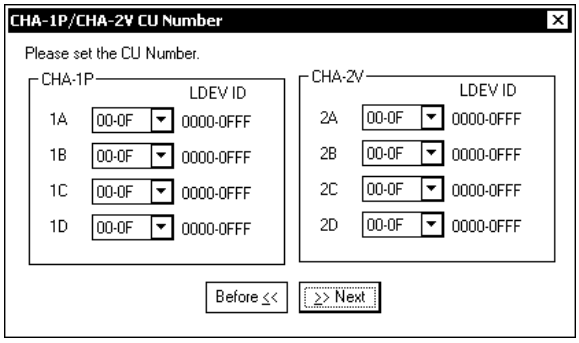
Note: This window is displayed when Serial (8S) Channel or MFibre (8MS/8ML) channel is installed.



2-9 <To the next window>

Select (CL) [>>Next].

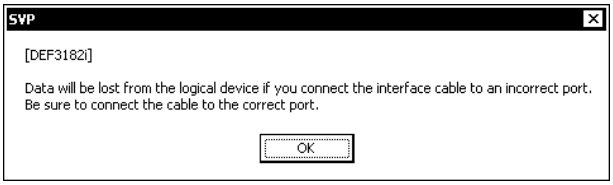
Note: This window is displayed when Serial (8S) Channel is installed.



2-10 <SVP message>

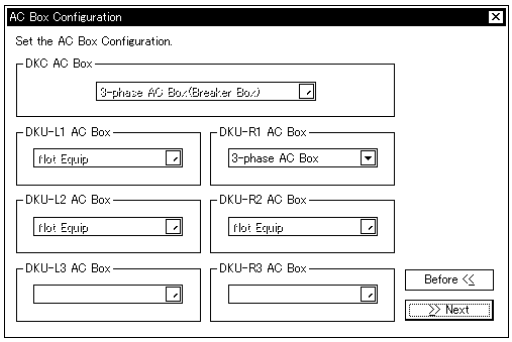
Select (CL) [OK] in response to the confirmation message.

Note: This window is displayed when Serial (8S) Channel is installed.



2-10-1 <Setting the DKU AC Box configuration>

Set the DKU AC Box configuration, select (CL) the [>>Next].



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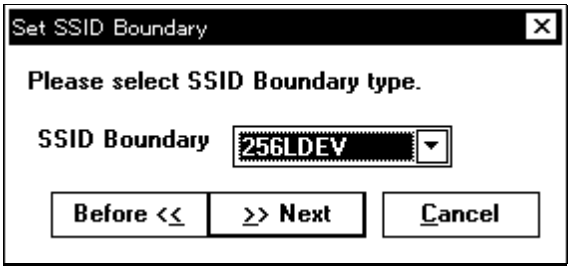
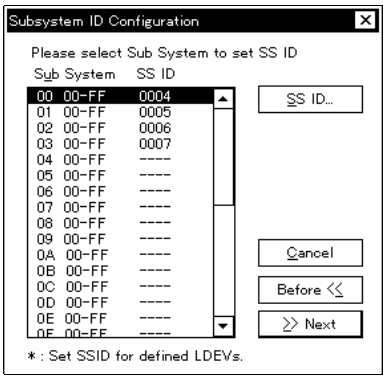
2-11 <To the next window>
Select (CL) [>>Next].



2-12 <To the next window>
Select (CL) [>>Next].



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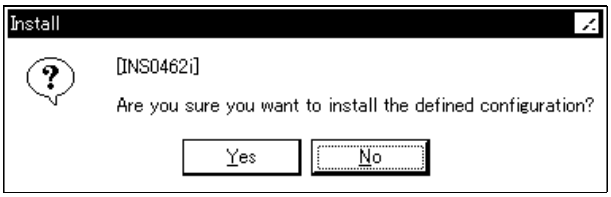
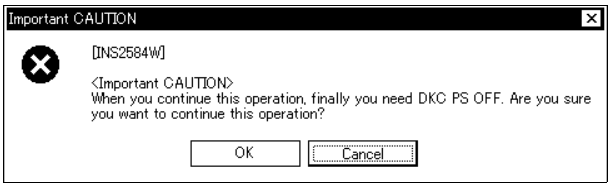
2-13 <Include configuration information>

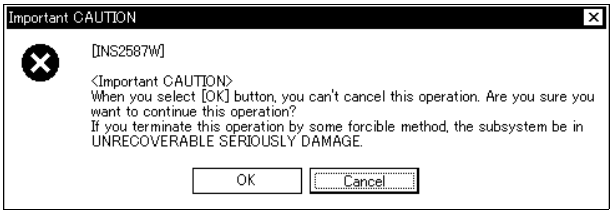
(1) Select (CL) [Yes] in response to the confirmation message “Are you sure you want to install the defined configuration?”. “Wait...” is displayed, then “Turn off the subsystem” is displayed.



(2) Select (CL) [OK] in response to the confirmation message “<Important CAUTION>
When you continue this operation, finally you need DKC PS OFF. Are you sure you want to continue this operation?”.



(3) Select (CL) [OK] in response to the confirmation message “<Important CAUTION>
When you select [OK] button, you can’t cancel this operation. Are you sure you want to continue this operation?
If you terminate this operation by some forcible method, the subsystem be in UNRECOVERABLE SERIOUSLY DAMAGE.”.



(4) Select (CL) [OK] in response to the confirmation message “<Important CAUTION>
You must not RE-BOOT SVP(PC).”.

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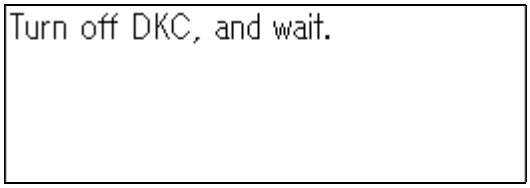
2-14

Make sure that “Turn off DKC, and wait.” is displayed and perform the power-off procedure from the DKC maintenance panel.
After a while, “Wait...” will be displayed.

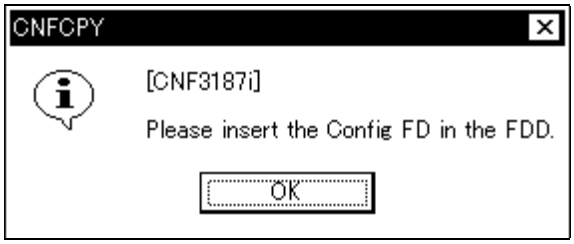


2-15

This step allows the contents of the SVP HD to be loaded into SM and FM.
When this procedure is completed, the message “Please insert config FD in FDD.” is displayed.

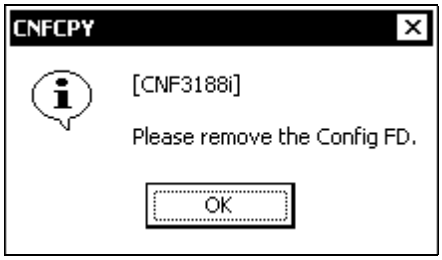
2-16

Insert the configuration FD into FDD, and select [OK].



2-17

When this procedure is completed, the message “Please remove the Config FD.” is displayed.
Remove the FD, and then select [OK].



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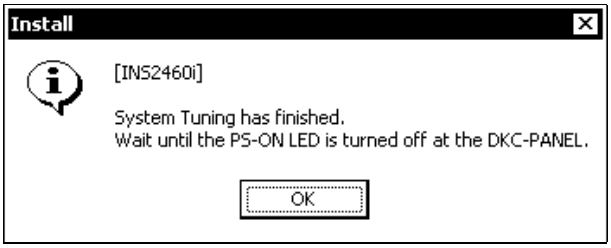
2-18

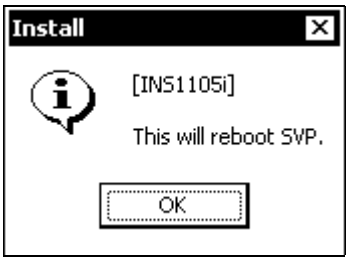
After making sure that the DKC power is turned off, select [OK] (CL) in response to "System Tuning has finished.".

Note : The SVP power will not turn off even when DKC is powered off.



2-19

"This will reboot SVP." is displayed.
Select [OK] (CL).



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3. Confirmation after the setting

3-1 <PS-ON>

Turn on the PS of the DKC
Wait until the READY lamp on the DKC-PANEL is turned on.

3-2 <Initial screen>

3-3 <Changing the mode>

Change the mode by selecting [Modify Mode].

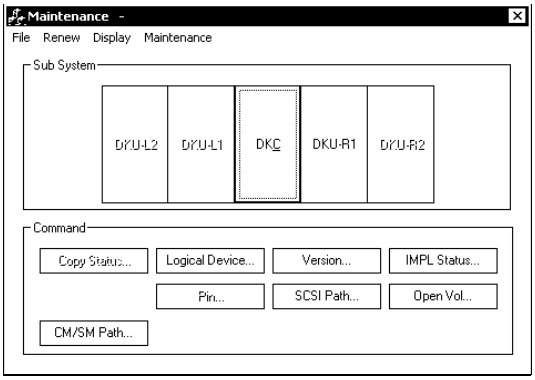
3-4 <Maintenance window>

The 'Maintenance' window is displayed.

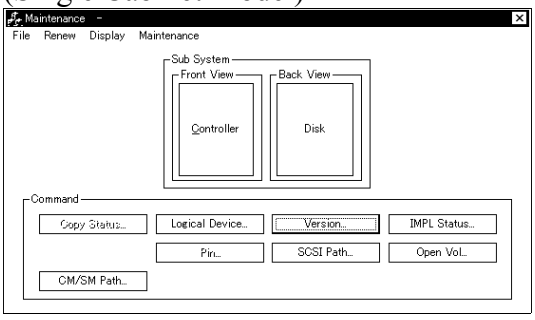
Make sure that all parts are not blinking.

Close the 'Maintenance' window.

(Multi Cabinet Model)



(Single Cabinet Model)



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3-5 <Confirmation of the Log>

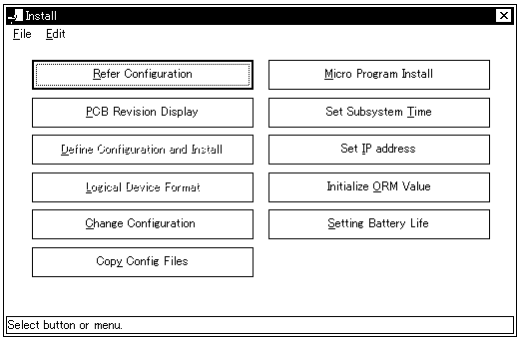
Confirm the normality of the DKC referring to the SIM Log.

3-6 <Start [Install]>

Select (CL) [Install] from 'SVP'.

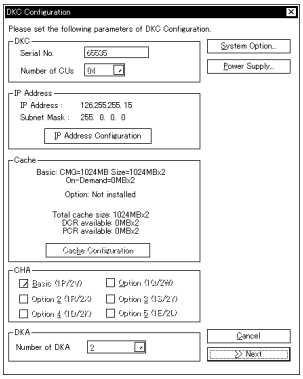
3-7

Select (CL) [Refer Configuration].



3-8 <DKC Configuration window>

Select (CL) [Power Supply...].



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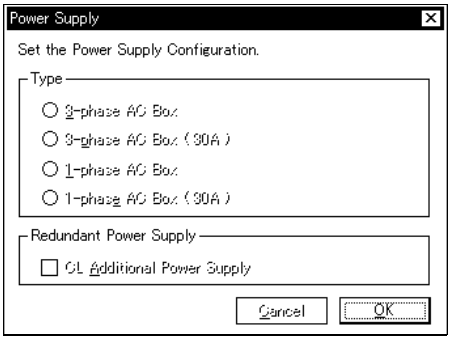
3-9 <Confirmation of the AC Box Type>

Confirm the AC Box Type.
Select (CL) [OK].



3-10 <Close the DKC Configuration window>

Select (CL) [Cancel].

3-11 <Close Install window>

Close Install window.

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3.7 Installation of Power Cable Kit

3.7.1 Installation of Power Cable Kit for 3 Phase/60A or Single Phase/50A (DKU-F455I-3EC/3UC/1EC/1UC)

⚠ CAUTION

Perform The Power Cable Kit with care.
This Power Cable Kit is concerned with Primary Circuit.
Perform this procedure before connecting the Power Cable Assy.
(Turn off the circuit breakers on the power distribution panel)
Turn off the main circuit breaker CB101 located in the AC Box.

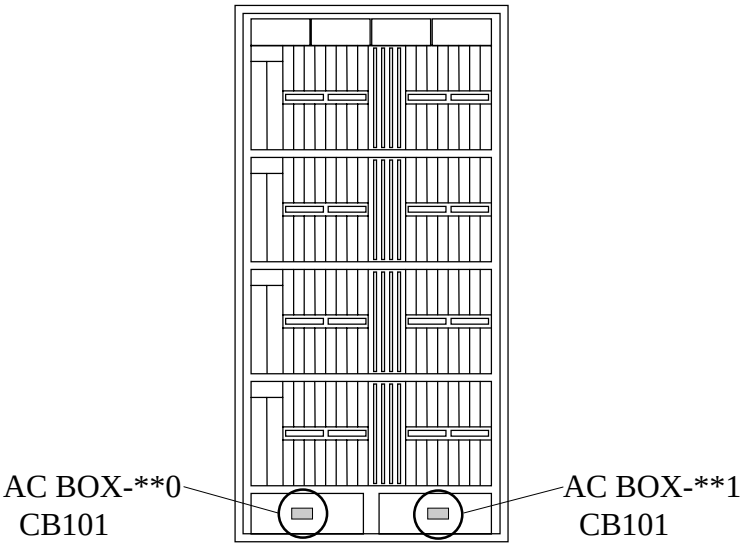

Fig. 3.7.1-1 Location of the Disk Unit Circuit Breakers

Table 3.7.1-1 Disk Unit Circuit Breakers

No.	Location No.	Breaker No.	Remarks
1	AC BOX-**0	CB101	
2	AC BOX-**1	CB101	

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Table 3.7.1-2 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKU-F455I-3UC	Power Cable Assy (IU)	3263010-A	1	
		Nameplate (HDS)	2105913-1/3	1	RSD/HICAM
		Nameplate (HP)	2105913-9/11	1	RSD/HICAM
2	DKU-F455I-3EC	Power Cable Assy (IE)	3263010-B	1	
		Nameplate (HDS)	2105913-2/4	1	RSD/HICEF
		Nameplate (HP)	2105913-10/12	1	RSD/HICEF
3	DKU-F455I-1UC	Power Cable Assy (IU)	3263485-A	1	
		Nameplate (HDS)	2105913-17/19	1	RSD/HICAM
		Nameplate (HP)	2105913-25/27	1	RSD/HICAM
4	DKU-F455I-1EC	Power Cable Assy (IE)	3263485-B	1	
		Nameplate (HDS)	2105913-18/20	1	RSD/HICEF
		Nameplate (HP)	2105913-26/28	1	RSD/HICEF

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1. Remove the terminal block covers.
   a. Remove the terminal block covers and the screws.

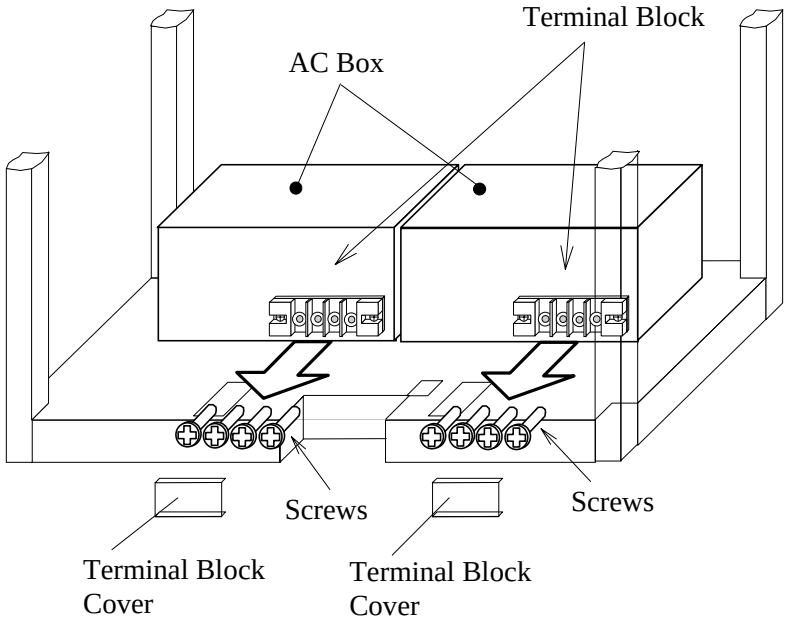

Fig. 3.7.1-2 Removal of Power Cable Assy (DKU-F455I-3EC)

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2. Attach the Nameplate.
   a. Attach the corresponding nameplate to the Power Cable Assy.

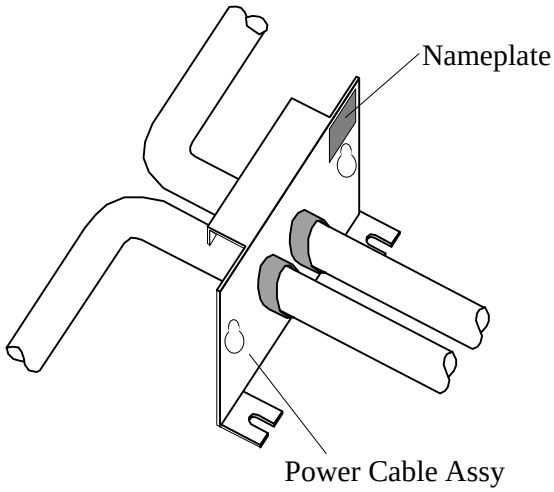

Fig. 3.7.1-3 Attachment of Nameplate

3. Install the Power Cable Assy.
   a. Attach the Power Cable Assy and secure two screws.

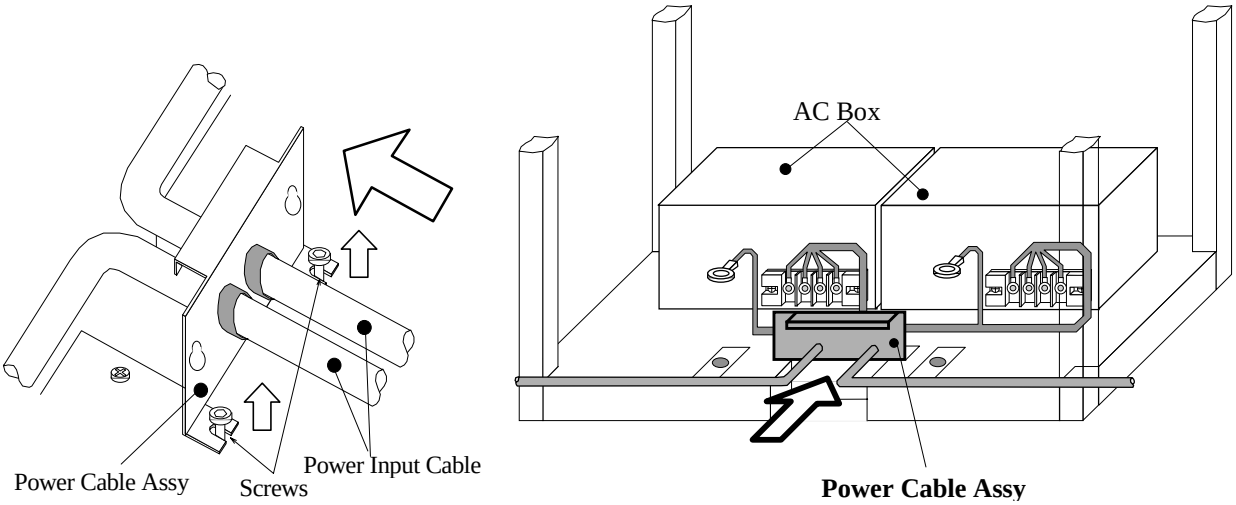

Fig. 3.7.1-4 Installation of Power Cable Assy (DKU-F455I-3EC)

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b. Attach frame ground cable with the screw, plain washer and lock washer.

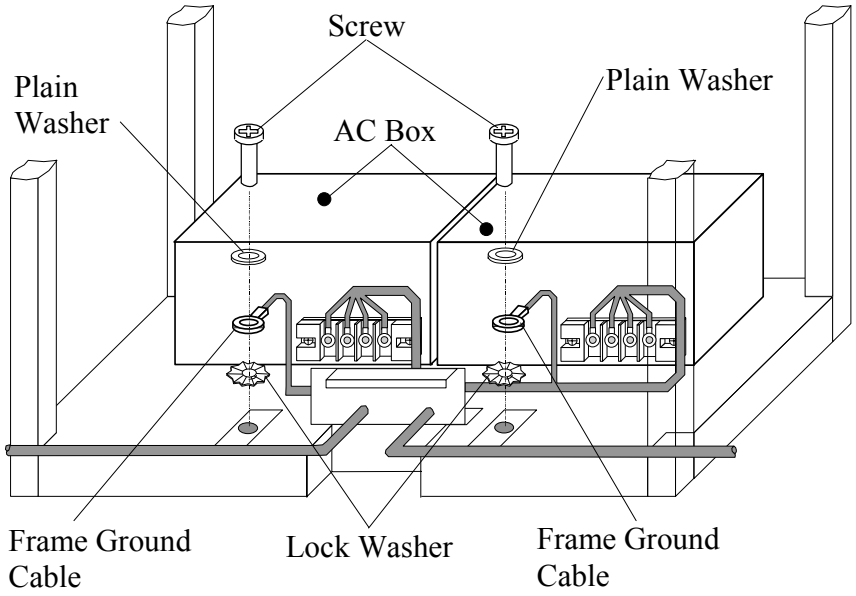

Fig. 3.7.1-5 Attachment of Frame Ground Cable (DKU-F455I-3EC)

c. Connect the AC power cables to the terminal block and attach terminal block cover. Refer to Fig 3.7.1-6, Fig. 3.7.1-7 and Table 3.7.1-2.

Equipment Power Supply CAUTION:
Referring to section 1.5 Connection of External Power Cable (INST01-390), grasp an equipment power supply and its classification well, and connect a power supply cable.

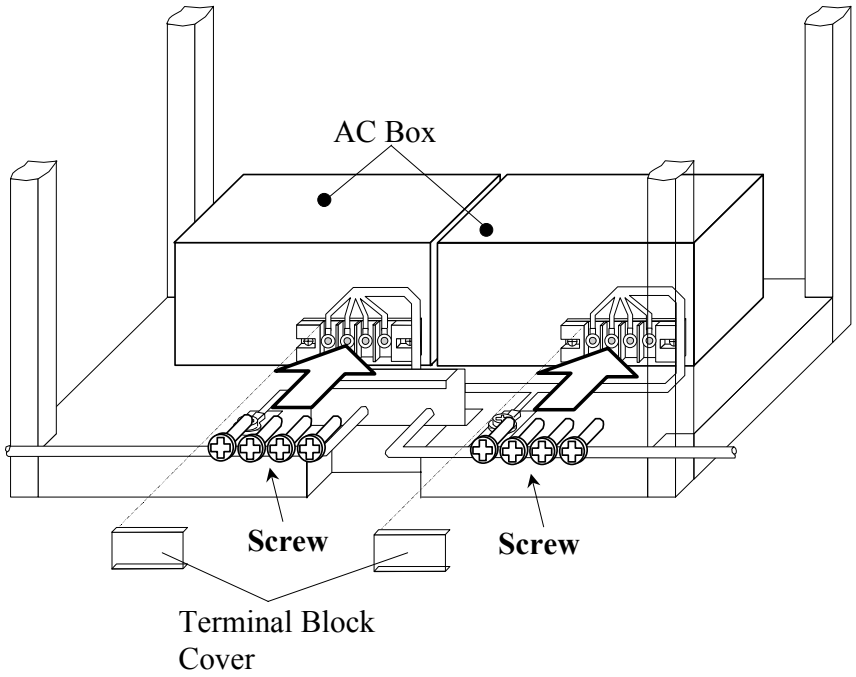

Fig. 3.7.1-6 Connection of AC Power Cable (DKU-F455I-3EC)

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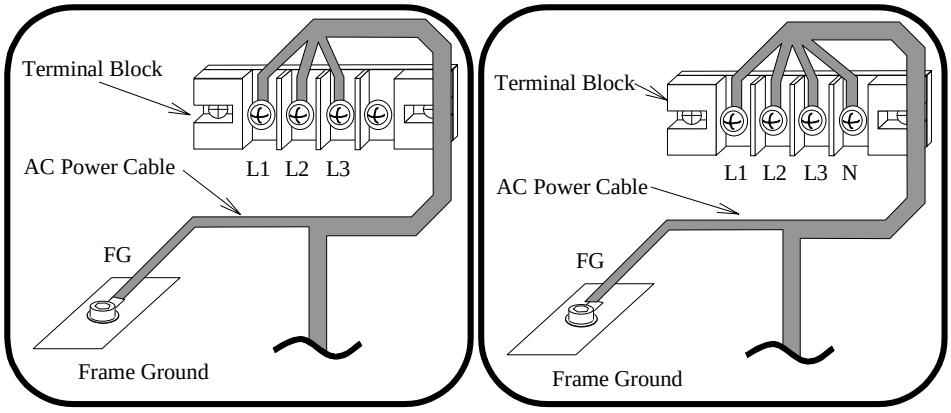
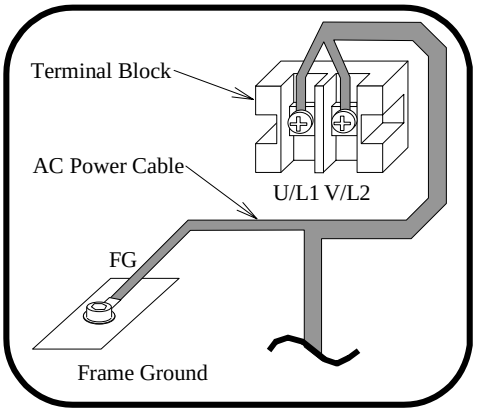
Table 3.7.1-2 AC Power Cable Conductors Numbers

No.	Model Number	Input Voltage	AC Power Cable Conductors	Remarks
1	DKU-F455I-3UC	200-230Vac	4 conductors (L1, L2, L3, FG)	
2	DKU-F455I-3EC	380-415Vac	5 conductors (L1, L2, L3, N, FG)	
3	DKU-F455I-1UC	200-230Vac	3 conductors (U/L1, V/L2, FG)	
4	DKU-F455I-1EC	200-240Vac	3 conductors (U/L1, V/L2, FG)	



DKU-F455I-3UC DKU-F455I-3EC



DKU-F455I-1UC/1EC

Fig. 3.7.1-7 Connection of AC Power Cables to the Terminal Block

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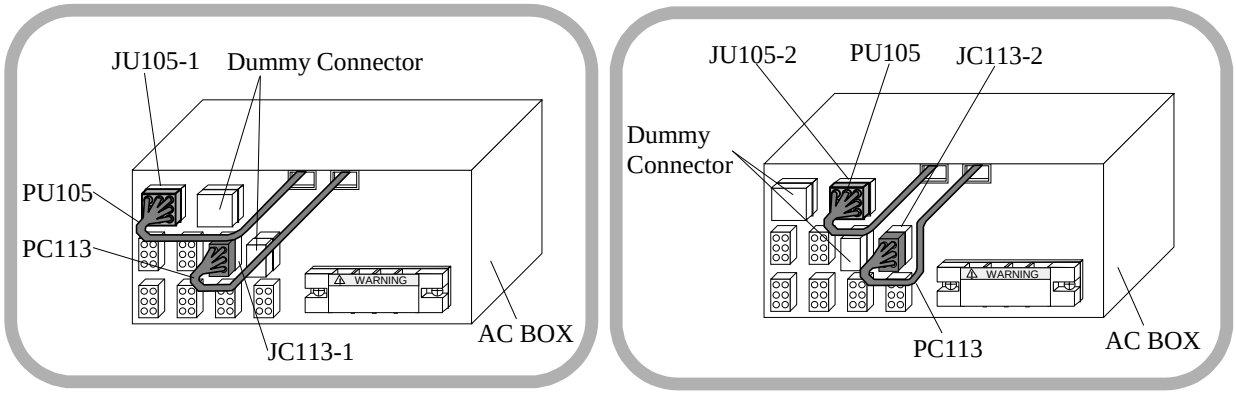
4. Reset the Jumper Cables Setting
   a. When the 3 Phase Model (DKU-F455I-3UC/3EC) is installed, connect the jumper cables (PU105 and PC113) as indicated in the table below.
   When the Single Phase Model (DKU-F455I-1UC/1EC) is installed, go to next procedure.

Table 3.7.1-3 Jumper Cables Locations

No.	Model Number	Input Voltage	Jumper Cable Location		Remarks
			PU105	PC113	
1	DKU-F455I-3UC	200-230Vac	PU105-1	PC113-1	JU105-2, JC113-2: Dummy Connectors
2	DKU-F455I-3EC	380-415Vac	PU105-2	PC113-2	JU105-1, JC113-1: Dummy Connectors



Input AC Voltage : 200 - 240V Input AC Voltage : 380 - 415V

Fig. 3.7.1-8 Jumper Cables Setting

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3.7.2 Installation of Power Cable Kit for Single Phase/50A (DKC-F460I-1EC/1UC)

CAUTION

Perform the Power Cable Kit with care.
This Power Cable Kit is concerned with Primary Circuit.
Perform this procedure before connecting the Power Cable Assy.
(Turn off the circuit breakers on the power distribution panel)
Turn off the main circuit breaker CB200 located in the AC Box.

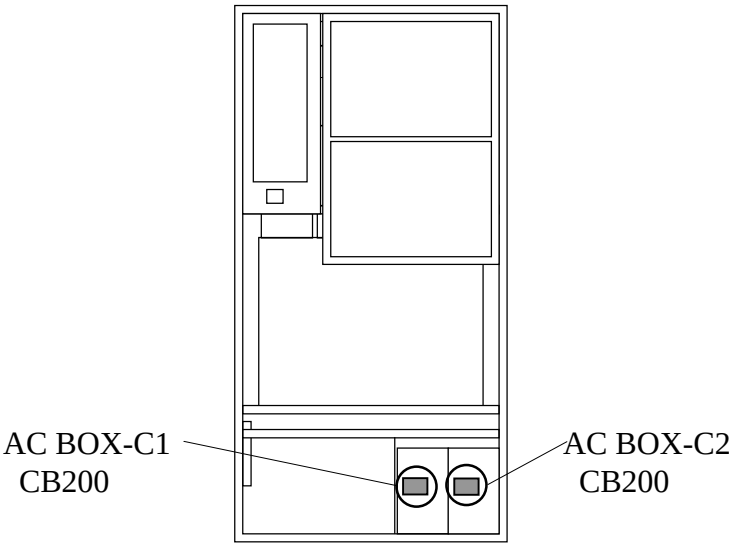

Fig. 3.7.2-1 Location of the DKC Circuit Breakers

Table 3.7.2-1 DKC Circuit Breakers

No.	Location No.	Breaker No.	Remarks
1	AC BOX-C1	CB200	
2	AC BOX-C2	CB200	

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Table 3.7.2-2 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKC-F460I-1UC	Power Cable ASSY	3264044-A	1	
		Screw	SB408N	2	
		Nameplate (HDS)	2105902-121	1	RSD
			2105903-121		HICAM
			2105903-221		HICEF
		Nameplate (HP)	2105902-221	1	RSD
			2105903-321		HICAM
			2105903-421		HICEF
2	DKC-F460I-1EC	Power Cable ASSY	3264044-B	1	
		Screw	SB408N	2	
		Nameplate (HDS)	2105902-120	1	RSD
			2105903-120		HICAM
			2105903-220		HICEF
		Nameplate (HP)	2105902-220	1	RSD
			2105903-320		HICAM
			2105903-420		HICEF

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1. Attach the Power Cable ASSY.
   a. Loosen the two screws and remove the cover form the Power Cable Unit.

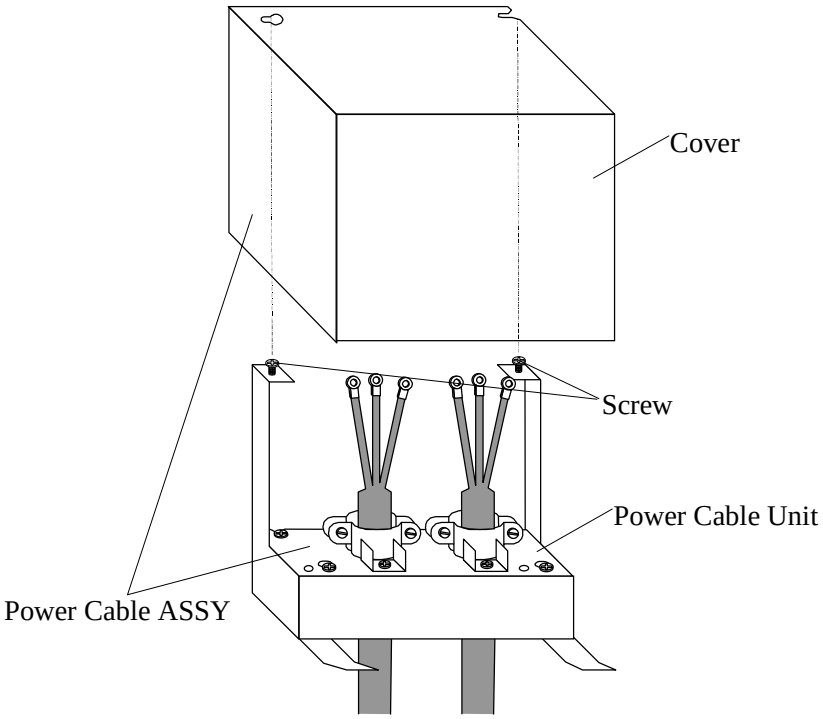

Fig. 3.7.2-2 Removal of Cover

   b. Attach the Power Cable Unit with the two screws.

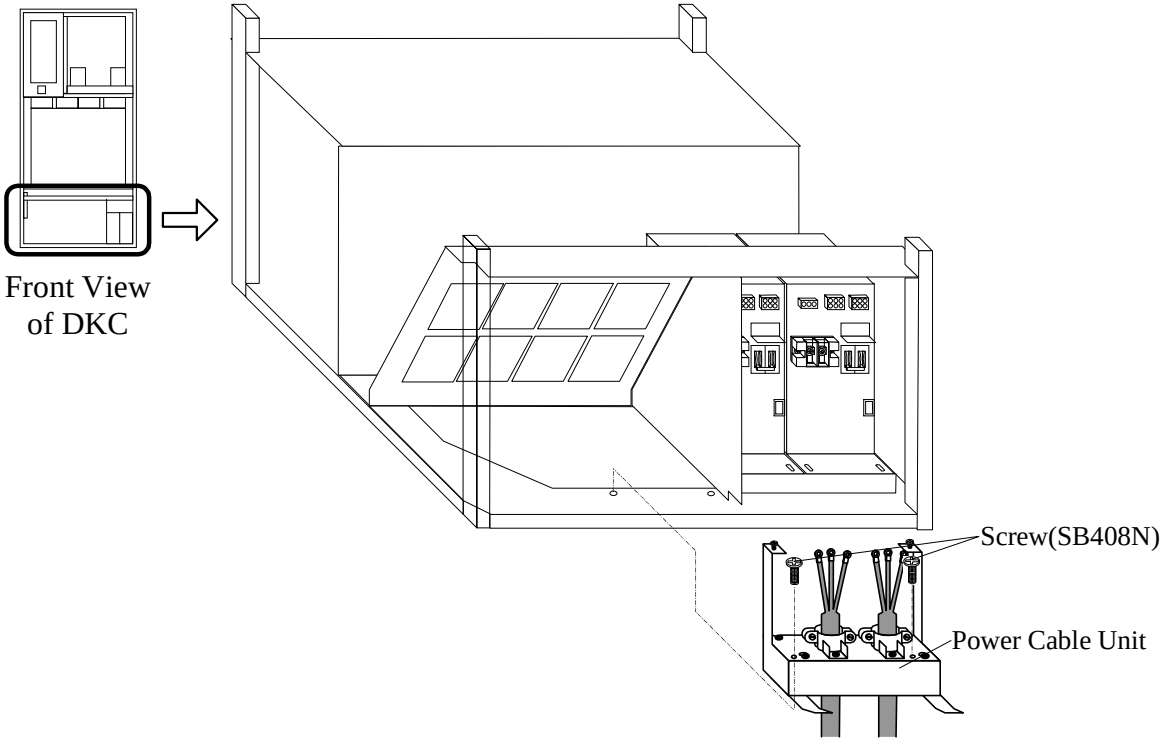

Fig. 3.7.2-3 Attachment of Power Cable Unit

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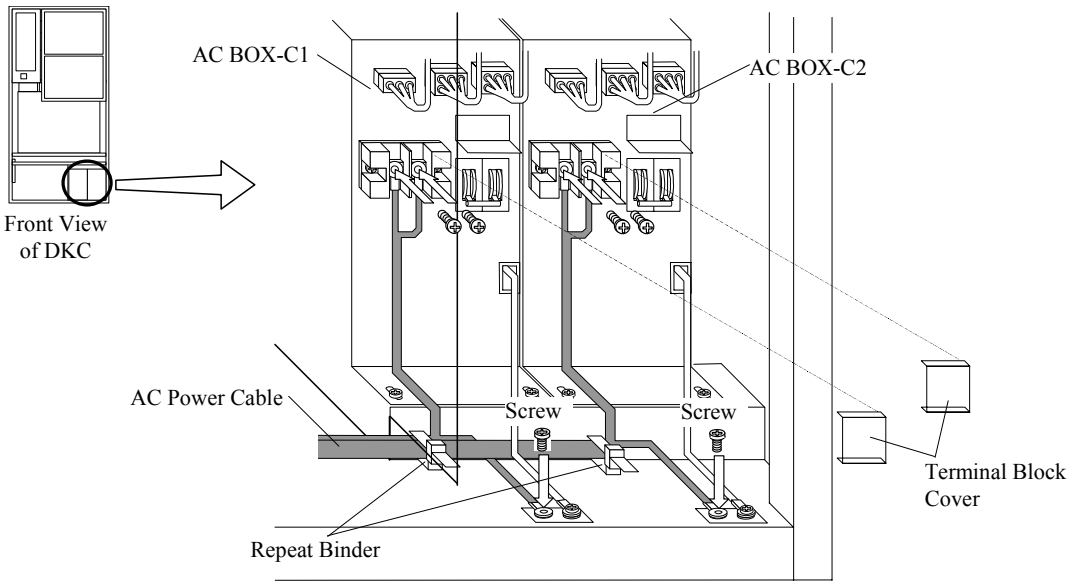
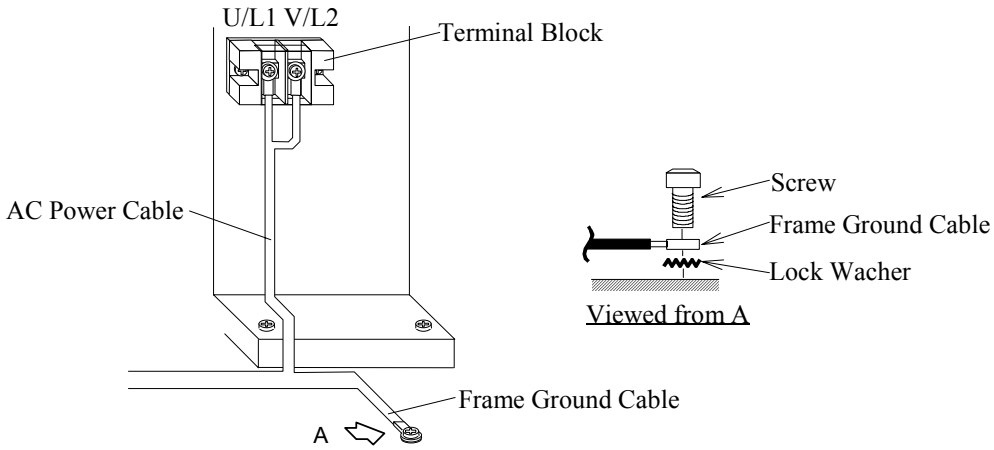
c. Remove terminal block covers.
d. Attach the AC power cables to AC Boxes and fasten the six screws.

Equipment Power Supply CAUTION:
Referring to section 1.5 Connection of External Power Cable (INST01-390), grasp an equipment power supply and its classification well, and connect a power supply cable.

e. Attach the terminal block covers to AC Boxes.
f. Fasten the two repeat binders.





Connection of AC Power Cable

Letters indicated on the terminal block	Connecting LINE	Cable Color	
		DKC-F460I-1UC	DKC-F460I-1EC
U/L1	Phase U	White	Brown
V/L2	Phase V	Black	Blue

Fig. 3.7.2-4 Attachment of AC Power Cables

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g. Attach the cover with the two screws.

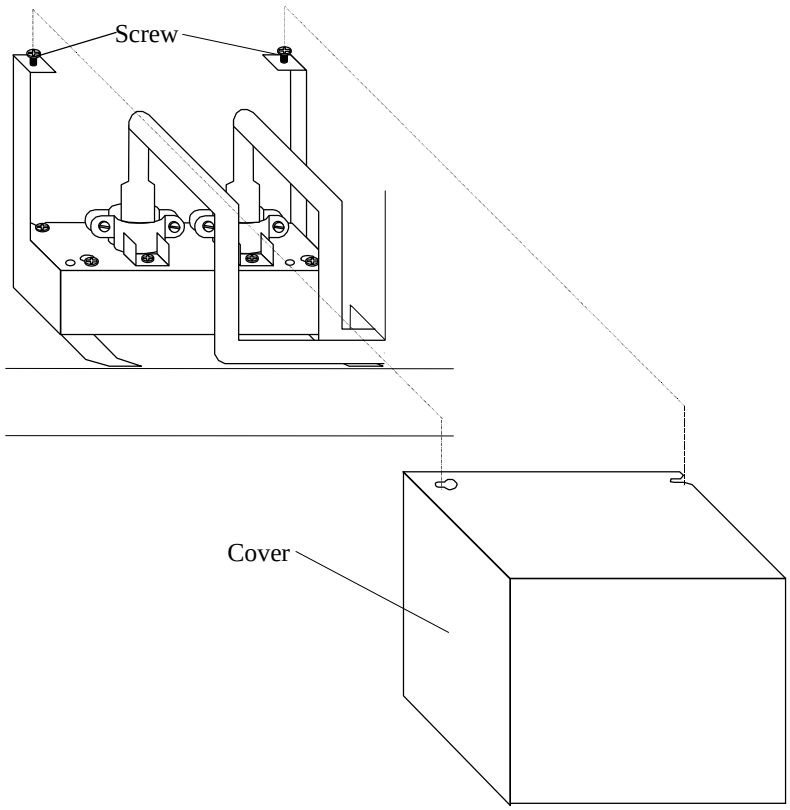

Fig. 3.7.2-5 Attachment of Cover

2. Attach the Nameplate.
   a. Attach the nameplate to the cover.

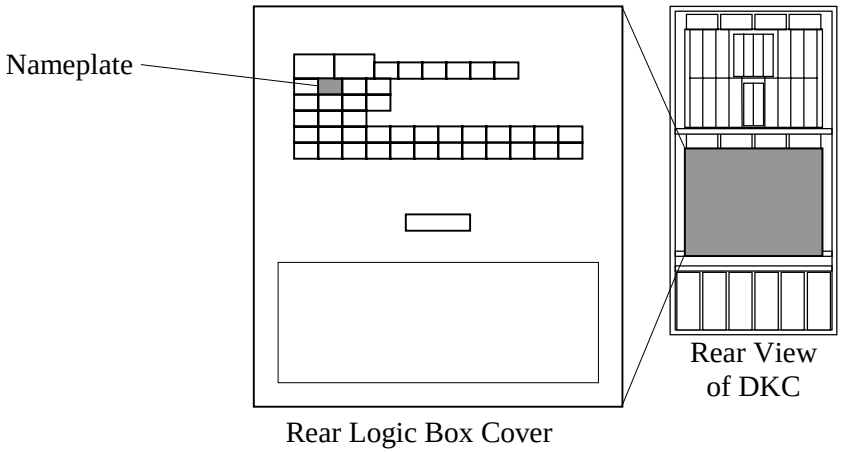

Fig. 3.7.2-6 Attachment of Nameplate

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3.7.3 Installation of Power Cable Kit for Single Phase/30A or 3 Phase/30A (DKC-F460I-3ECD/3UCD/1ECD/1UCD)

Table 3.7.3-1 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKC-F460I-1UCD	Power Cable Unit	3265665-A	1	
		Screw	SB408N	8	
		Screw	SB510N	4	
		Toothed Washer	WT005N	4	
		LL Washer	5513553-532	4	
		Nameplate (HDS)	2105902-131	1	RSD
			2105903-131/231		HICAM/HICEF
		Nameplate (HP)	—	1	RSD
			—		HICAM/HICEF
2	DKC-F460I-1ECD	Power Cable Unit	3265664-A	1	
		Screw	SB408N	8	
		Screw	SB510N	4	
		Toothed Washer	WT005N	4	
		LL Washer	5513553-532	4	
		Nameplate (HDS)	2105902-130	1	RSD
			2105903-130/230		HICAM/HICEF
		Nameplate (HP)	—	1	RSD
			—		HICAM/HICEF
3	DKC-F460I-3UCD	Power Cable Unit	3265683-A	1	
		Screw	SB408N	8	
		Screw	SB510N	2	
		Toothed Washer	WT005N	2	
		LL Washer	5513553-532	2	
		Nameplate (HDS)	2105902-134	1	RSD
			2105903-134/234		HICAM/HICEF
		Nameplate (HP)	—	1	RSD
			—		HICAM/HICEF
4	DKC-F460I-3ECD	Power Cable Unit	3265682-A	1	
		Screw	SB408N	8	
		Screw	SB510N	2	
		Toothed Washer	WT005N	2	
		LL Washer	5513553-532	2	
		Nameplate (HDS)	2105902-133	1	RSD
			2105903-133/233		HICAM/HICEF
		Nameplate (HP)	—	1	RSD
			—		HICAM/HICEF

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3.7.3.1 When the Power Cable Kit is installed in the DKU

CAUTION

Perform The Power Cable Kit with care.
This Power Cable Kit is concerned with Primary Circuit.
Perform this procedure before connecting the Power Cable Assy.
(Turn off the circuit breakers on the power distribution panel)
Turn off the main circuit breaker CB101 located in the AC Box.

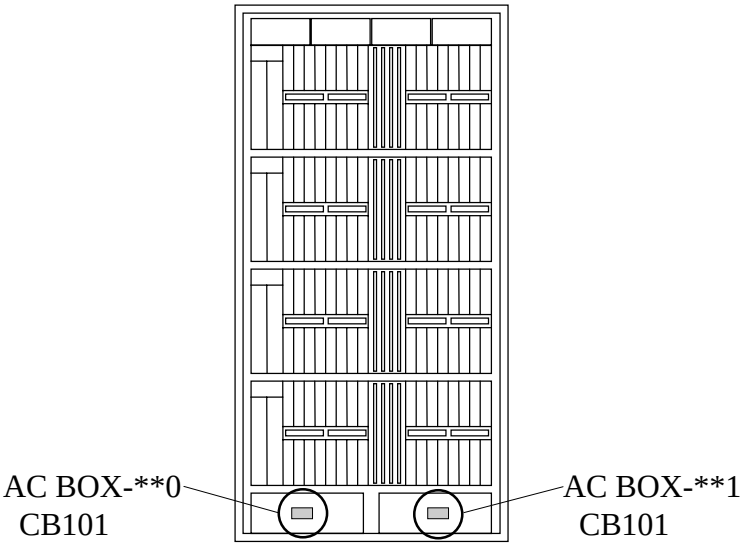

Fig. 3.7.3.1-1 Location of the Disk Unit Circuit Breakers

Table 3.7.3.1-1 Disk Unit Circuit Breakers

No.	Location No.	Breaker No.	Remarks
1	AC BOX-**0	CB101	
2	AC BOX-**1	CB101	

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1. Remove the terminal block covers.
   a. Remove the terminal block covers and the screws.

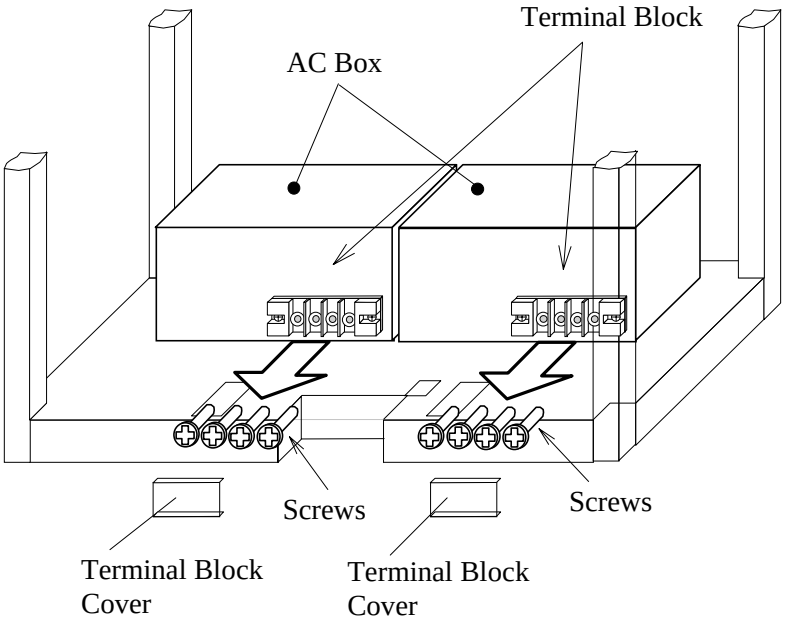

Fig. 3.7.3.1-2 Removal of Power Cable Assy

2. Attach the Nameplate.
   a. Attach the corresponding nameplate to the bracket.

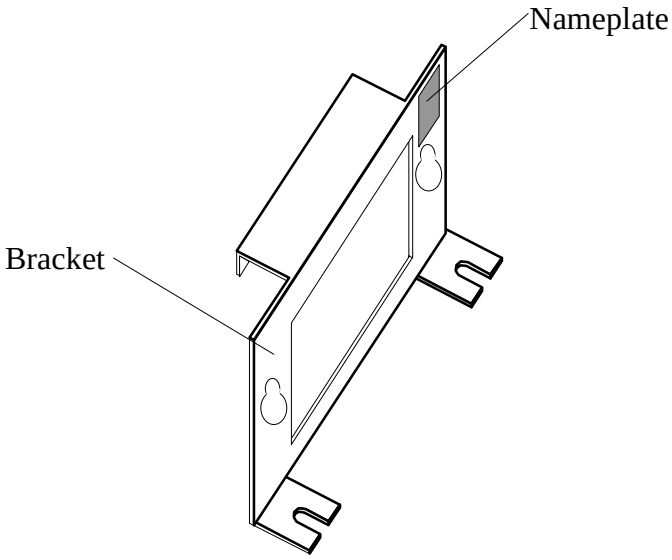

Fig. 3.7.3.1-3 Attachment of Nameplate

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3. Install the Power Cable Unit.
   a. Attach the Power Cable Unit to the bracket and fasten the six screws.

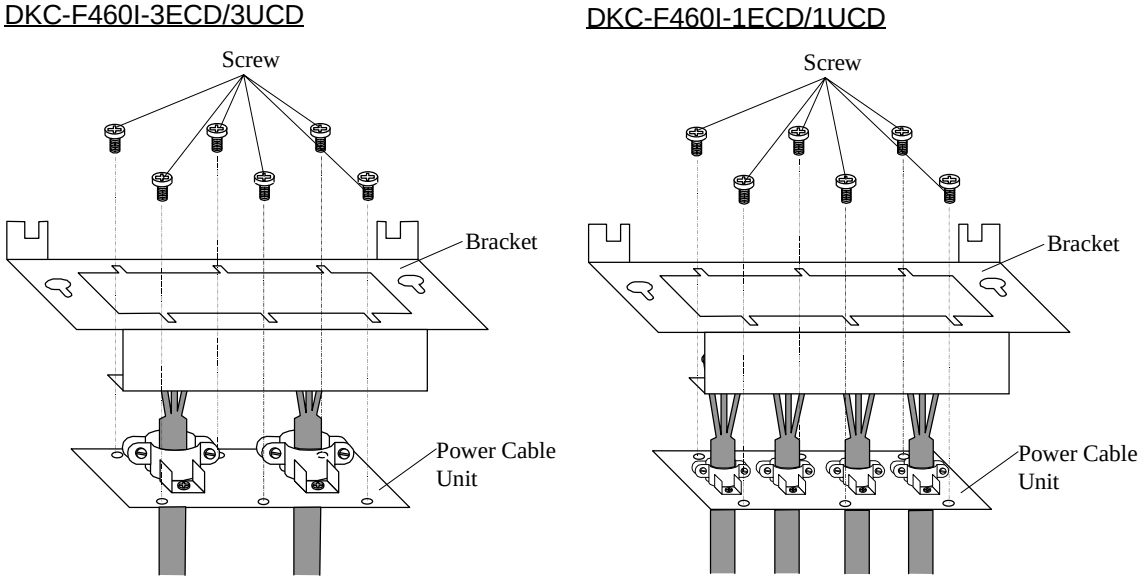

Fig. 3.7.3.1-4 Attachment of Power Cable Unit

   b. Attach the Power Cable Assy and secure two screws.

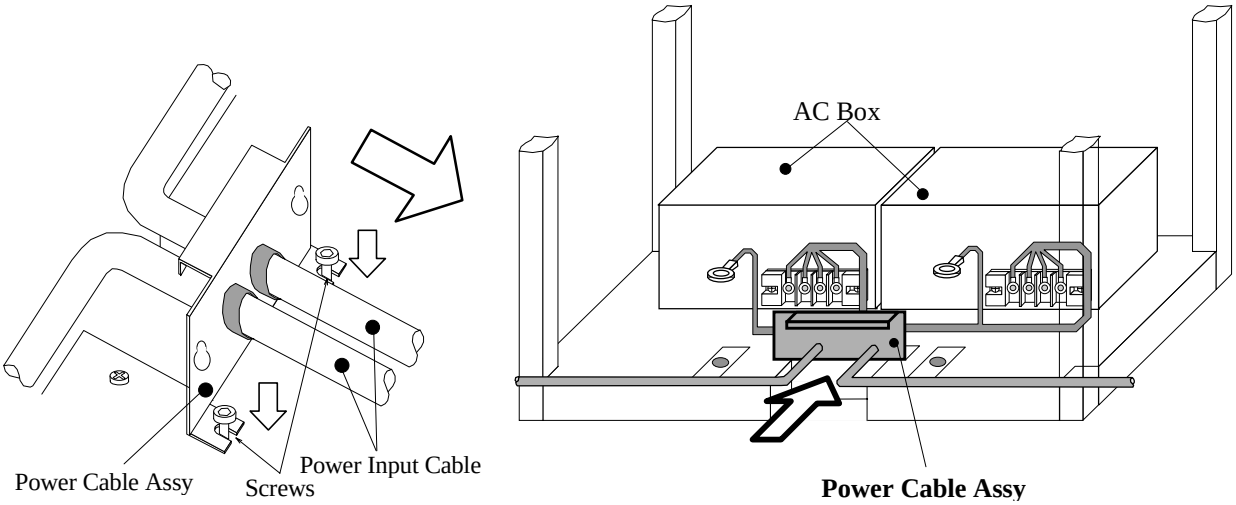

Fig. 3.7.3.1-5 Installation of Power Cable Assy (DKC-F460I-3ECD/3UCD)

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c. Attach frame ground cable with the screw, lock washer and plain washer.

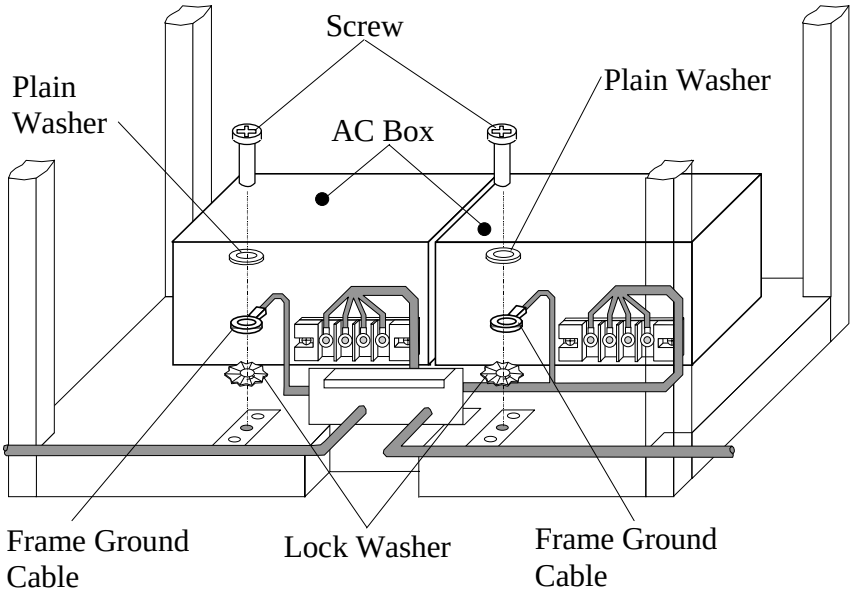

Fig. 3.7.3.1-6 Attachment of Frame Ground Cable (DKC-F460I-3ECD/3UCD)

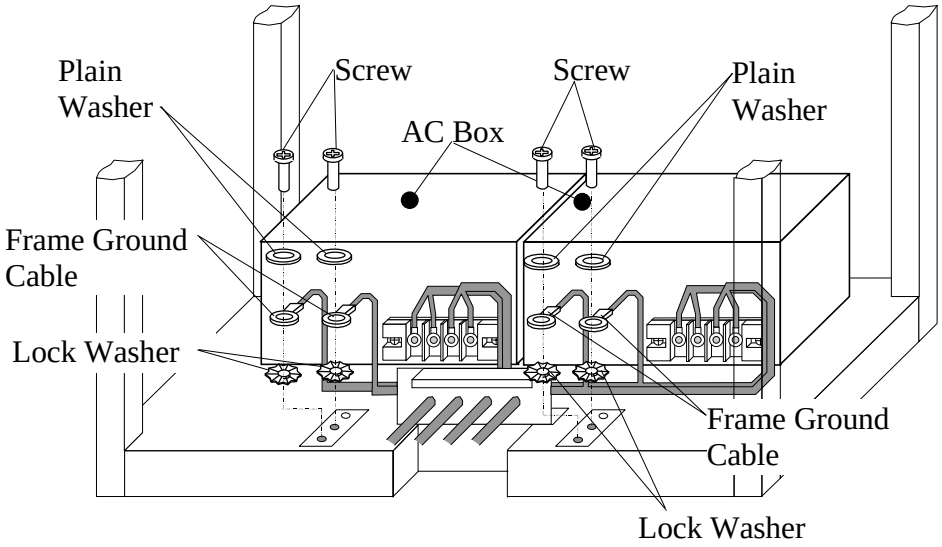

Fig. 3.7.3.1-7 Attachment of Frame Ground Cable (DKC-F460I-1UCD/1ECD)

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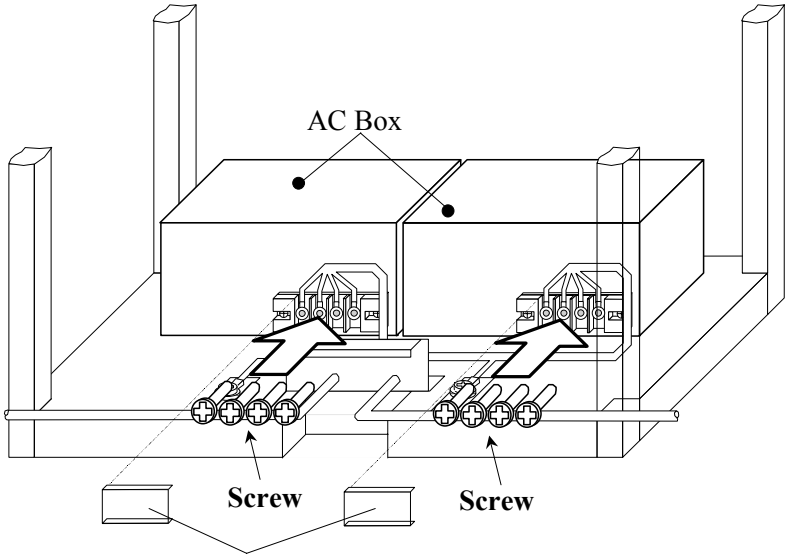
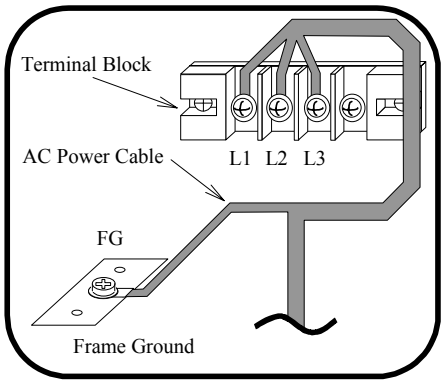
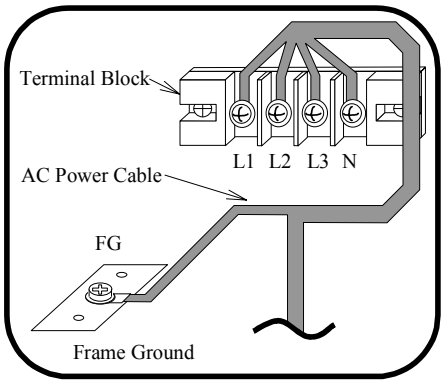
d. Connect the AC power cables to the terminal block and attach terminal block cover. Refer to Fig. 3.7.3.1-8 and Table 3.7.3.1-2.

Equipment Power Supply CAUTION: Referring to section 1.5 Connection of External Power Cable (INST01-390), grasp an equipment power supply and its classification well, and connect a power supply cable.

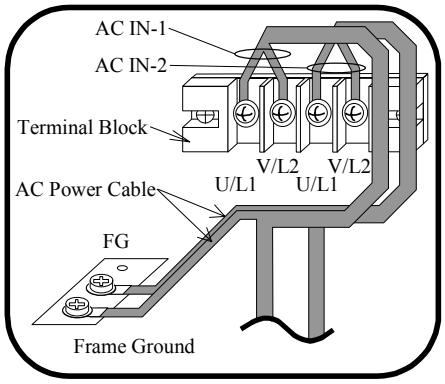




DKC-F460I-3UCD



DKC-F460I-3ECD



DKC-F460I-1UCD/1ECD

Fig. 3.7.3.1-8 Connection of AC Power Cables to the Terminal Block

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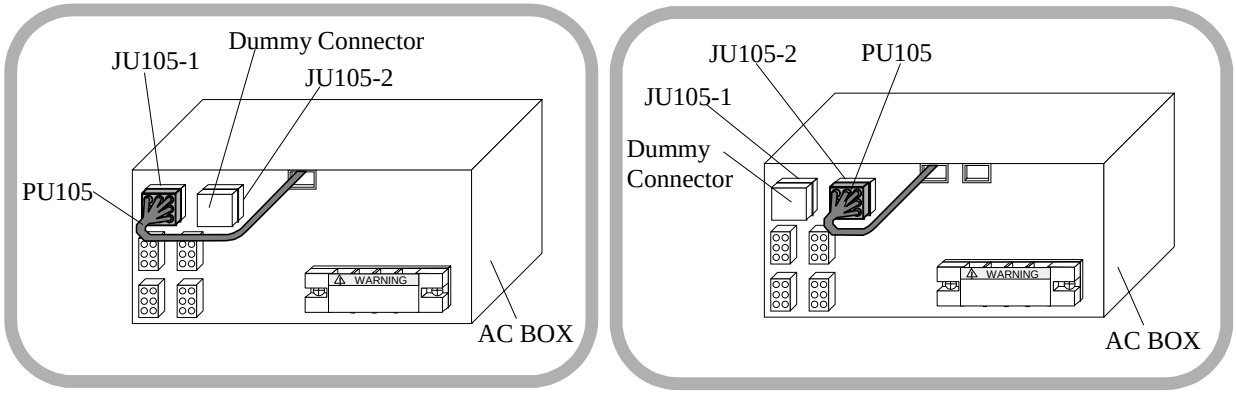
Table 3.7.3.1-2 AC Power Cable Conductors Numbers

No.	Model Number	Input Voltage	AC Power Cable Conductors	Remarks
1	DKC-F460I-3UCD	200-230Vac	4 conductors (L1, L2, L3, FG)	
2	DKC-F460I-3ECD	380-415Vac	5 conductors (L1, L2, L3, N, FG)	
3	DKC-F460I-1UCD	200-230Vac	6 conductors (U/L1, V/L2, FG) ×2	
4	DKC-F460I-1ECD	200-240Vac	6 conductors (U/L1, V/L2, FG) ×2	

4. Reset the Jumper Cables Setting (only DKC-F460I-3UCD/3ECD)
   a. Connect the jumper cable (PU105) as indicated in the table below.

Table 3.7.3.1-3 Jumper Cables Locations

No.	Model Number	Input Voltage	Jumper Cable Location	Remarks
			PU105	
1	DKC-F460I-3UCD	200-230Vac	JU105-1	JU105-2: Dummy Connector
2	DKC-F460I-3ECD	380-415Vac	JU105-2	JU105-1: Dummy Connector



Input AC Voltage : 200 - 240V Input AC Voltage : 380 - 415V

Fig. 3.7.3.1-9 Jumper Cables Setting

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3.7.3.2 When the power cable kit is installed in the DKC

CAUTION

Perform the Power Cable Kit with care.
This Power Cable Kit is concerned with Primary Circuit.
Perform this procedure before connecting the Power Cable Assy.
(Turn off the circuit breakers on the power distribution panel)
Turn off the main circuit breaker CB200 located in the AC Box.

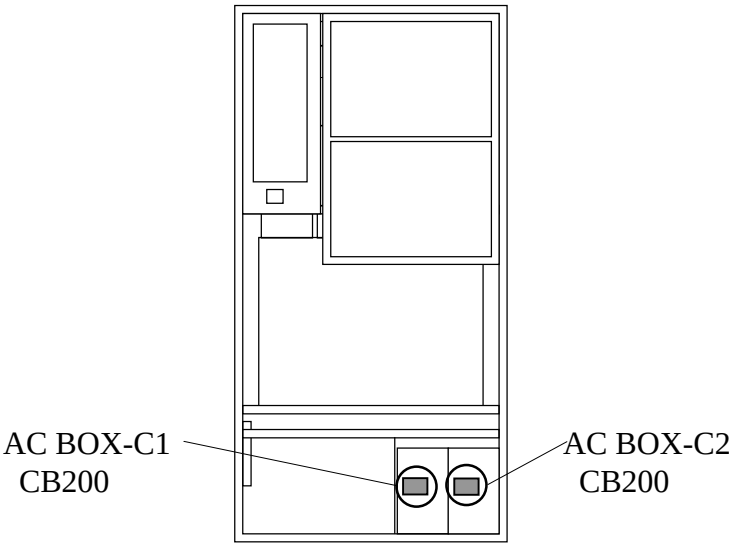

Fig. 3.7.3.2-1 Location of the DKC Circuit Breakers

Table 3.7.3.2-1 DKC Circuit Breakers

No.	Location No.	Breaker No.	Remarks
1	AC BOX-C1	CB200	
2	AC BOX-C2	CB200	

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1. Attach the Power Cable Unit.
   a. Attach the Power Cable Unit to the bracket and fasten the six screws.

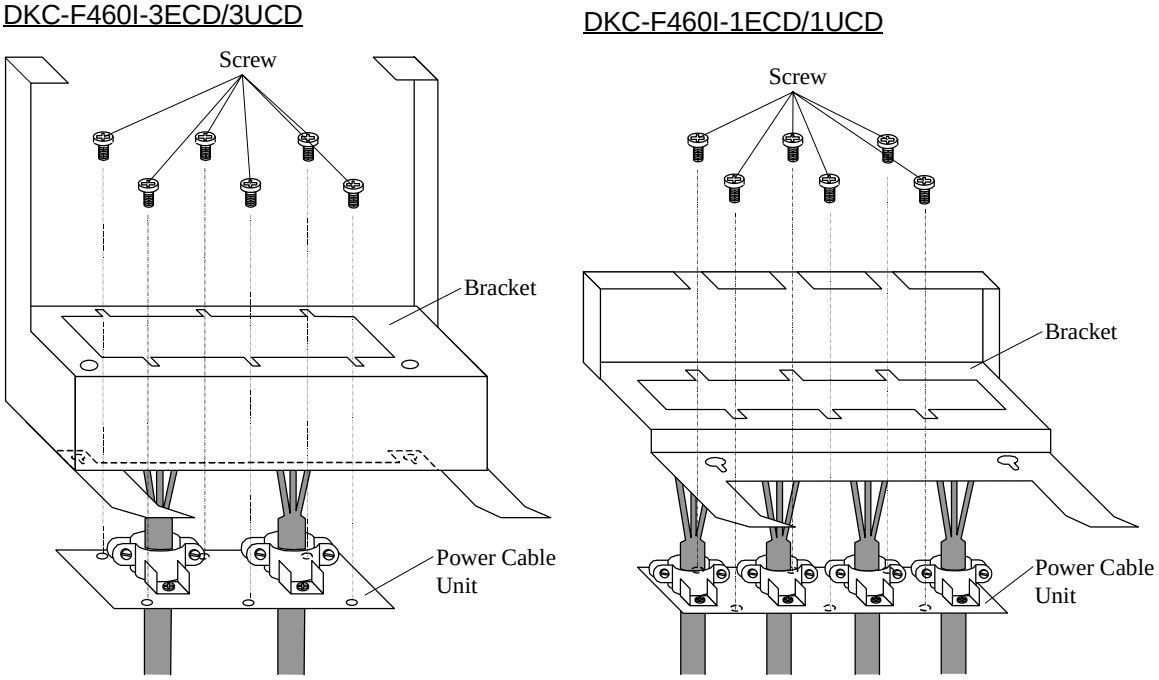

Fig. 3.7.3.2-2 Attachment of Power Cable Unit

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b. Attach the bracket with the two screws.

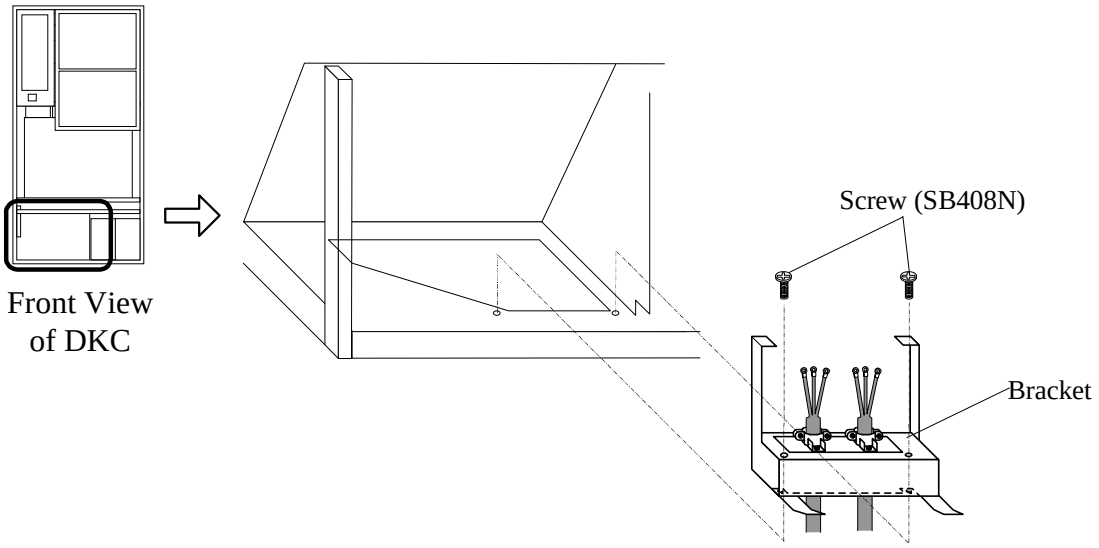

Fig. 3.7.3.2-3 Attachment of Bracket (DKC-F460I-3ECD/3UCD)

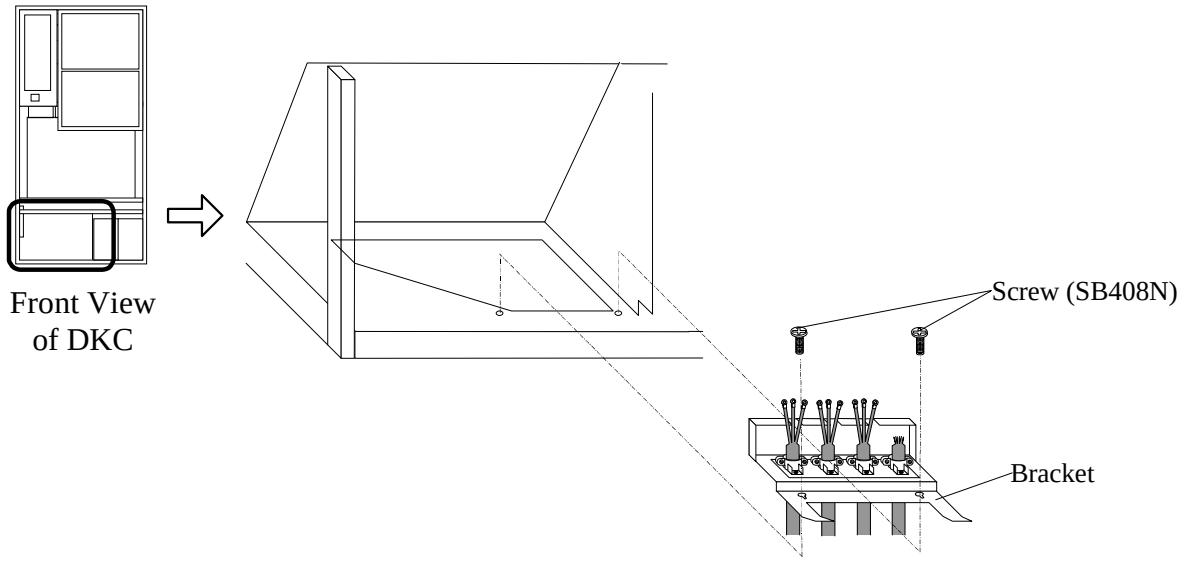

Fig. 3.7.3.2-4 Attachment of Bracket (DKC-F460I-1ECD/1UCD)

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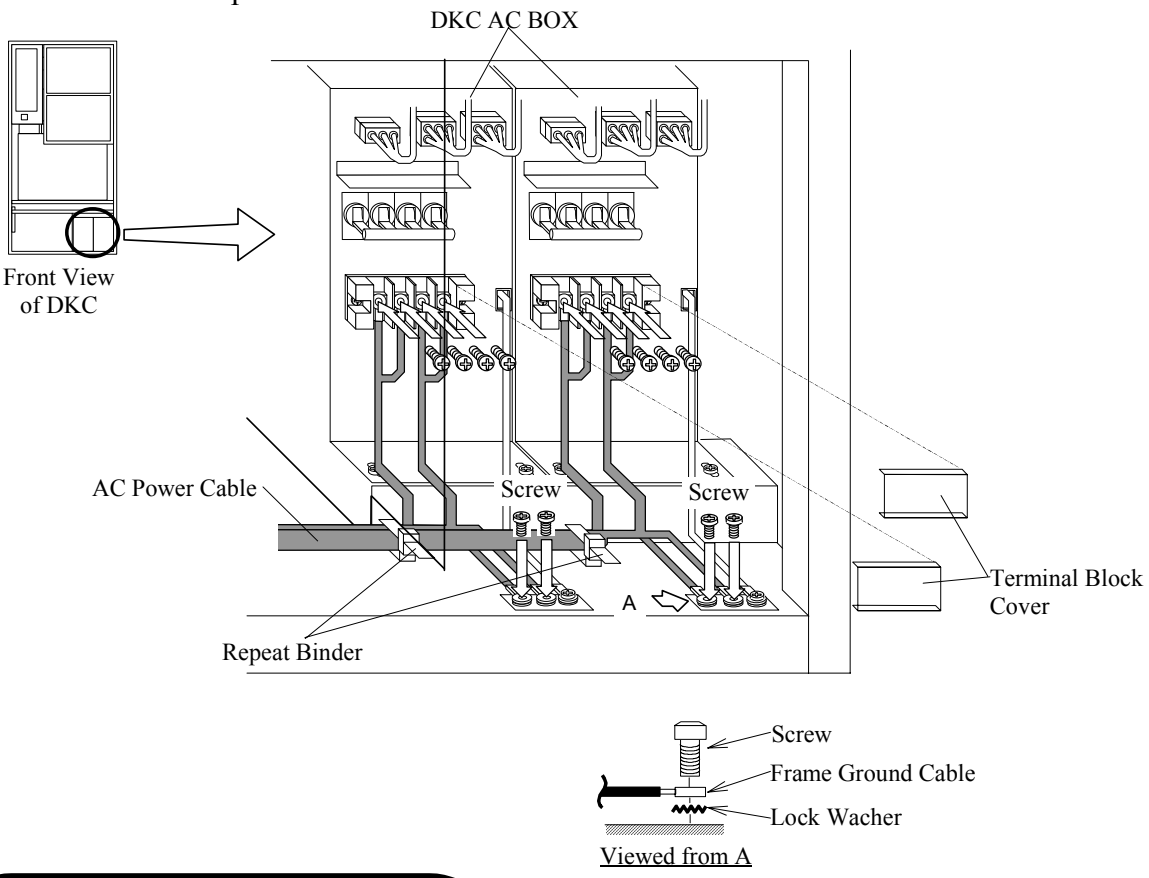
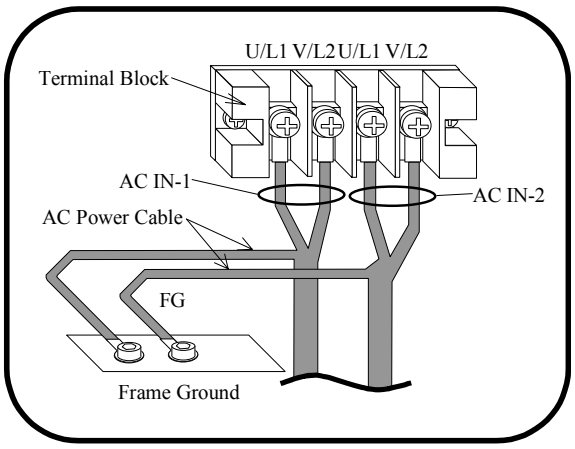
2. Connect the AC Power Cables.

Equipment Power Supply CAUTION:
Referring to section 1.5 Connection of External Power Cable (INST01-390), grasp an equipment power supply and its classification well, and connect a power supply cable.

DKC-F460I-1ECD/1UCD

a. Remove terminal block covers.
b. Attach the AC power cables to AC Boxes and fasten the twelve screws.
c. Attach the terminal block covers to AC Boxes.
d. Fasten the two repeat binders.





DKC-F460I-1UCD/1ECD

Fig. 3.7.3.2-5 Attachment of AC Power Cables

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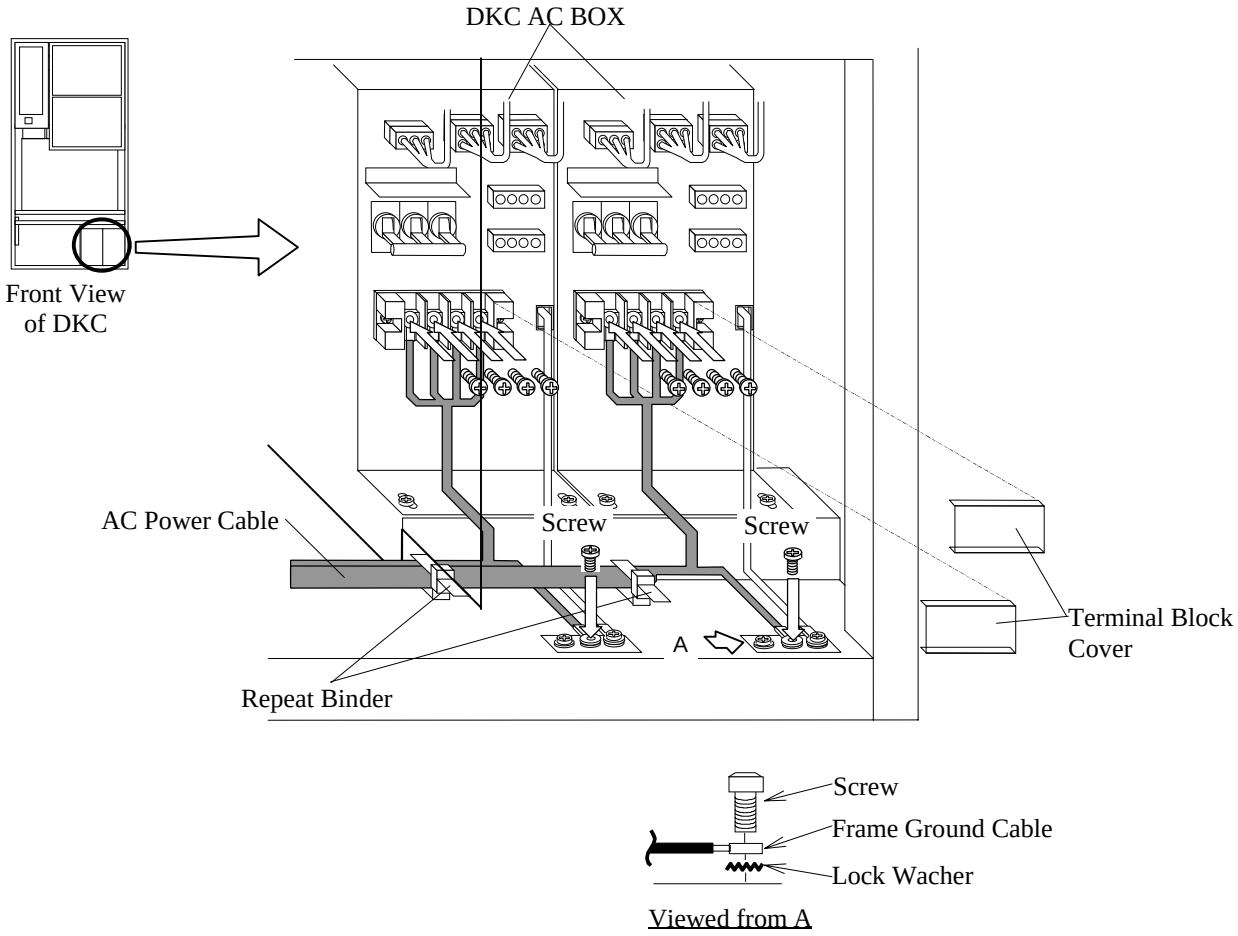
DKC-F460I-3ECD/3UCD

a. Remove terminal block covers.
b. Attach the AC power cables to AC Boxes and fasten the ten screws.
c. Attach the terminal block covers to AC Boxes.
d. Fasten the two repeat binders.



DKC-F460I-3ECD DKC-F460I-3UCD

Fig. 3.7.3.2-6 Attachment of AC Power Cables

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e. Connect the cable (PCH) and dummy connector to the AC Box.

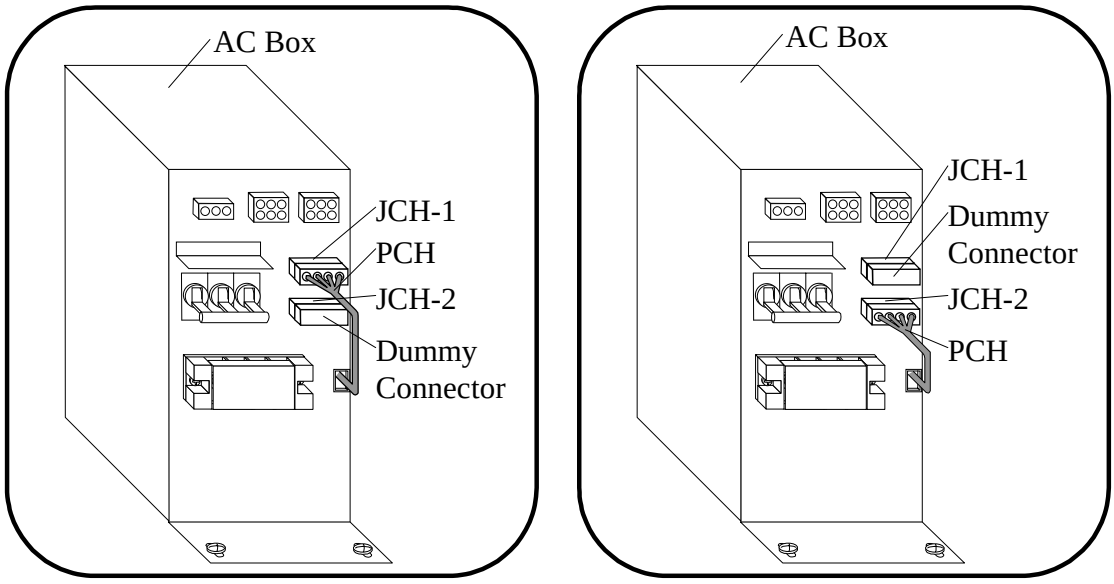

Fig. 3.7.3.2-7 Connection of Cable

3. Attach the Cover.
   a. Attach the cover with the two screws.

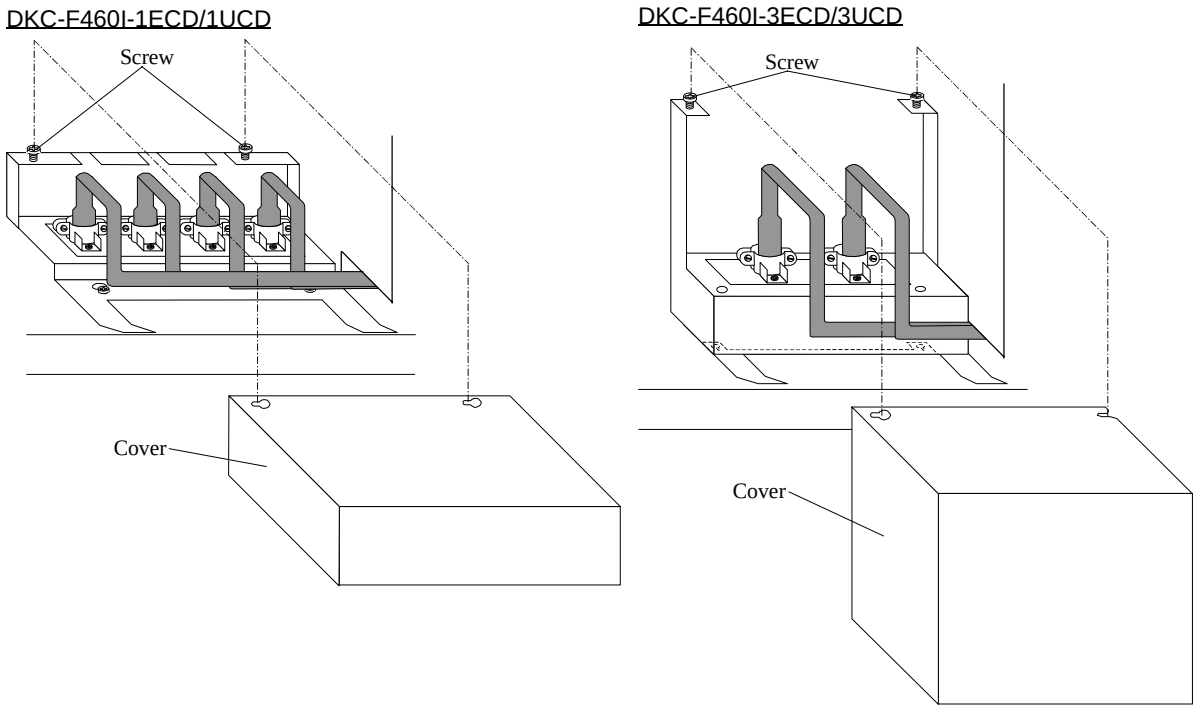

Fig. 3.7.3.2-8 Attachment of Cover

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4. Attach the Nameplate.
   a. Attach the nameplate to the Rear Logic Box cover.

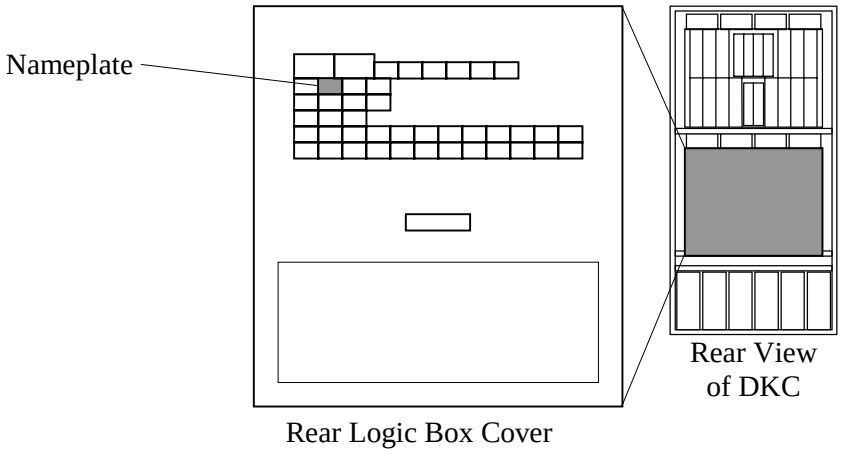

Fig. 3.7.3.2-9 Attachment of Nameplate

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3.8 Installation of Channel Adapter

3.8.1 Installation of Serial 8-port Adapter (DKC-F460I-8S/8SE)

Note: • When a total number of the CHA and DKA options to be installed is four or more, the additional disk controller power supply (DKC-F460I-80) must be installed. Be sure to check it before performing the addition.
• DKC-F460I-8SE can be installed also in the DKA locations. However, the CHA options except DKC-F460I-8SE can not be installed in the DKA locations.

Table 3.8.1-1 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKC-F460I-8S	Serial 4-port Adapter PCB	5513983-A	2	Color of PCB lever: Blue
		Holder	2084816-1	8	
		Cable Clamp	2105506-1	2	
		Nameplate (HDS)	2105902-106	1	RSD
			2105903-106		HICAM
			2105903-206		HICEF
		Nameplate (HP)	2105902-206	1	RSD
			2105903-306		HICAM
			2105903-406		HICEF
2	DKC-F460I-8SE	Serial 4-port Adapter PCB	5513983-B	2	Color of PCB lever: Blue
		Holder	2084816-1	8	
		Cable Clamp	2105506-1	2	
		Nameplate (HDS)	2105902-144	1	RSD
			2105903-144		HICAM
			2105903-244		HICEF
		Nameplate (HP)	2105902-244	1	RSD
			2105903-344		HICAM
			2105903-444		HICEF

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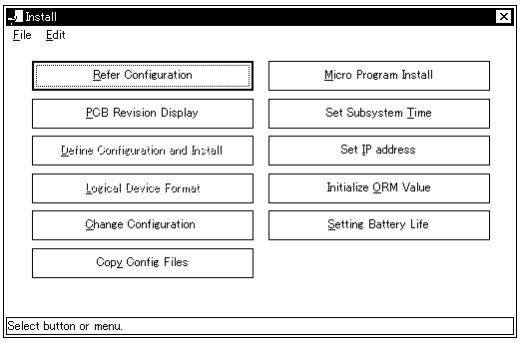
When the DKC-F460I-8S/8SE is installed in CHA locations

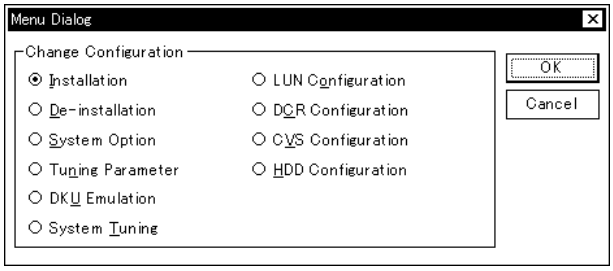
1. Setting up the New Device Structure Information

1. <Mode Change>
   Change the mode to Modify Mode.
   Select (CL) [Install].

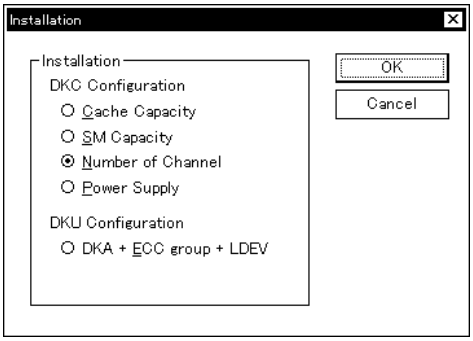
2. <Start the 'Menu Dialog' screen>
   Select (CL) [Change Configuration].



3. <Start Device Structure Setup screen>
   Select (CL) [Installation] in the 'Menu Dialog' dialog box and select (CL) [OK].



4. <Select a part to be changed>
   Select (CL) [Number of Channel], and select (CL) [OK].



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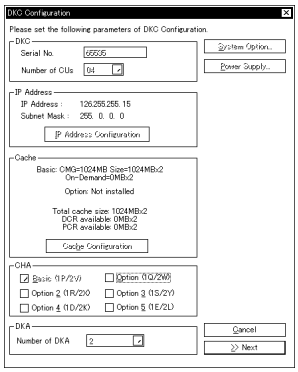
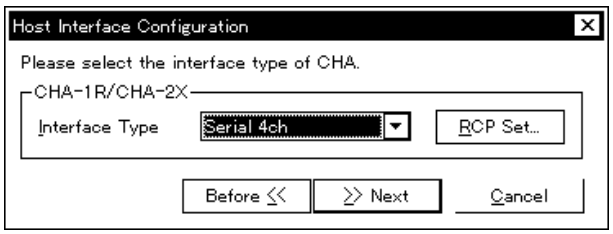
2. SVP pre procedure

1. <Update Configuration Information>
   Enter the item to CHA in the 'DKC Configuration' window.
   Put the mark on the corresponding check box.
   Make sure that the entered item is correct and select (CL) [>>Next].

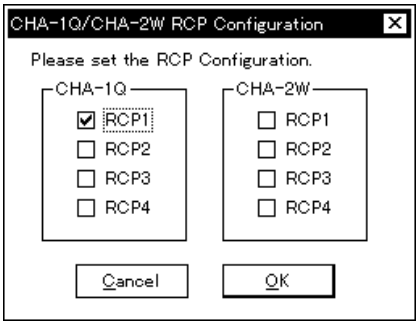


2-1. <Defining channel type>
   Input each item in the "Host Interface Configuration" window.
   Repeat the operation above as many times as the number of channels installed.
   Select (CL) [Serial 4ch]. When setting the HRC/HORC, select (CL) [RCP Set...] and go to step 2-2.

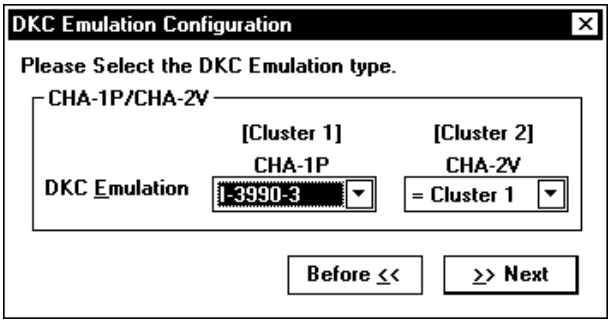


   Verify that the inputted item is correct and select (CL) [>>Next].
   Go to step 3.

2-2. <Defining RCP port>
   When setting the HRC/HORC, select (CL) the item defined as an RCP port and select (CL) [OK].
   The routine returns to step 2-1.
   When [Cancel] is selected (CL), the routine returns to step 2-1.



3. <Defining DKC emulation type>
   Define the DKC emulation type in the "DKC Emulation Configuration" window.
   After the setting is completed, select (CL) [>>Next].



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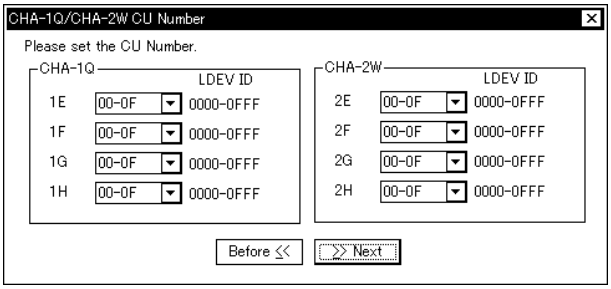
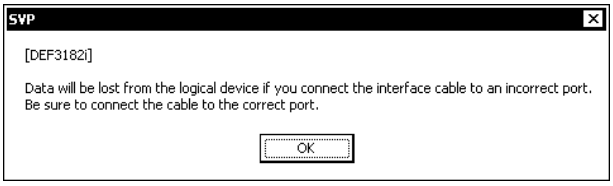
4. <Setting CU number>
   CU number is displayed.
   After the setting is completed, select (CL) [>>Next].

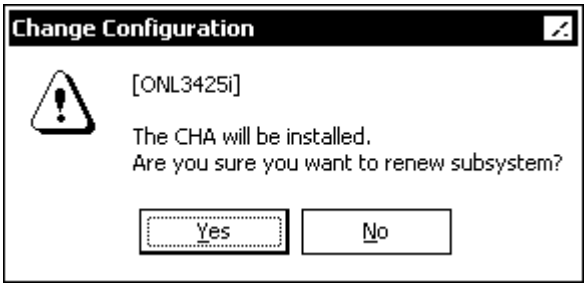


5. <SVP message>
   Select (CL) [OK] in response to the confirmation message “Data will be lost from the logical device if you connect the interface cable to an incorrect port. Be sure to connect the cable to the correct port.”.



6. <Start installation>
   Select (CL) [Yes] in response to “The CHA will be installed. Are you sure you want to renew subsystem?”.

   When [No] is selected (CL), returns to INST03-8S-20 step 3.



7. <Download microprogram>
   Microprograms are automatically downloaded for shared memory.

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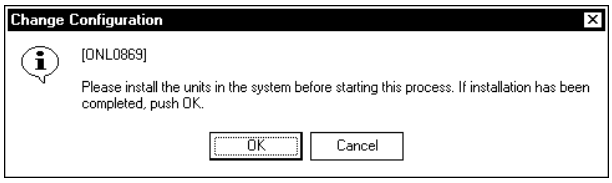
8. <Install CHA >
   "Upgrading of the CHA..."

9. <Check that hardware components are installed>
   "Please install the units in the system before starting this process. If installation has been completed, push OK." is displayed.

   Note: Do not press [OK] before installing additional hardware into the subsystem.



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3. Installation Procedure of Serial 8-port Adapter

Note: Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

3-1 Insertion of the PCBs

Note: Make sure that a color of the levers of the PCB to be installed is blue. Never insert a PCB whose lever is not blue.

a. Remove the dummy plate installed in the installation location referring to the Fig. 3.8.1-1. (Note) Dummy plates should be stored for future use in De-installation.
b. Insert the PCBs to the correct locations in the Logic Box. Refer to Table 3.8.1-2.
c. Fasten the two screws referring to Fig. 3.8.1-2.

Table 3.8.1-2 Inserting Location (Front of the unit)

Cluster	CL1							CL2				
Slot No.	N	P	Q	R	S	T	U	V	W	X	Y	Z
Function	CSW	CHA	CHA	CHA	CHA	CACHE	CACHE	CHA	CHA	CHA	CHA	CSW
Location No.	CSW -1N	CHA -1P	CHA -1Q	CHA -1R	CHA -1S	CACHE -1T	CACHE -1U	CHA -2V	CHA -2W	CHA -2X	CHA -2Y	CSW -2Z
Order of addition		Basic	Add.1	Add.2	Add.3			Basic	Add.1	Add.2	Add.3	

Up to 4 serial 8-port adapters can be installed in the subsystem.

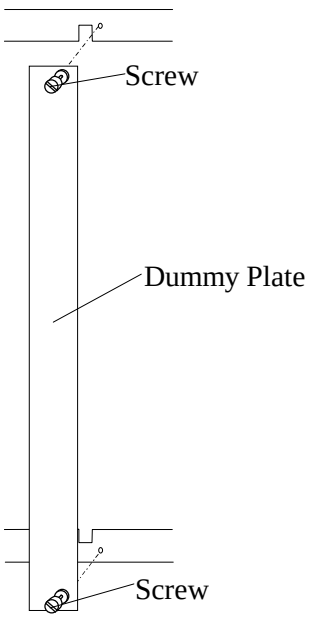

Fig. 3.8.1-1 Removal of Dummy Plate

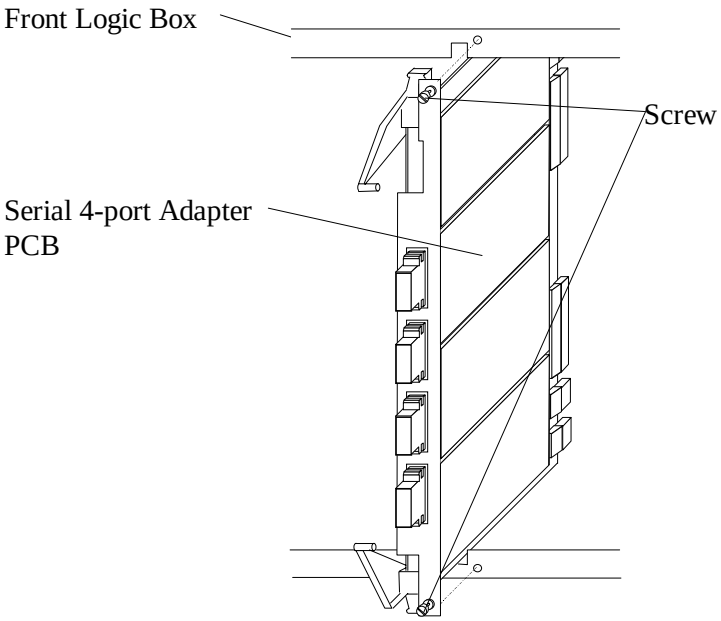

Fig. 3.8.1-2 Insertion of PCB

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3-2 Remove the brackets and fiber cable routing.

a. When the Power Cable Kit (DKC-F460I-1EC, 1UC, 3ECD or 3UCD) is installed, loosen the two screws and remove the cover.
When the Power Cable Kit (DKC-F460I-1EC, 1UC, 3ECD or 3UCD) is not installed, go to step b.

DKC-F460I-1EC/1UC/3ECD/3UCD

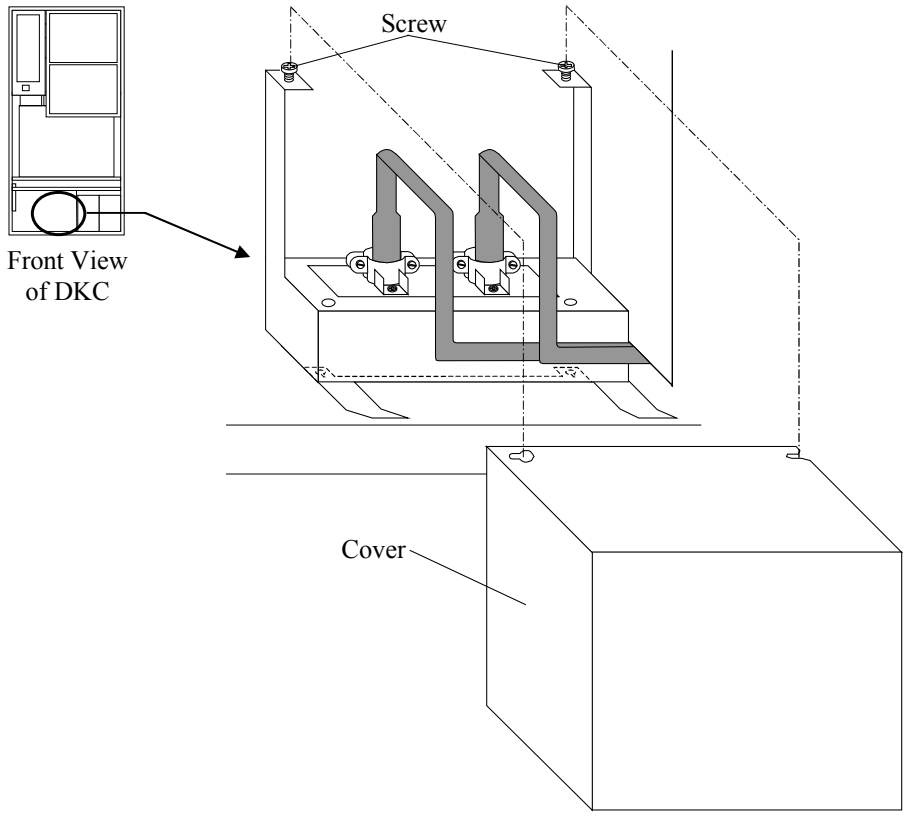

Fig. 3.8.1-3 Attachment of Cover

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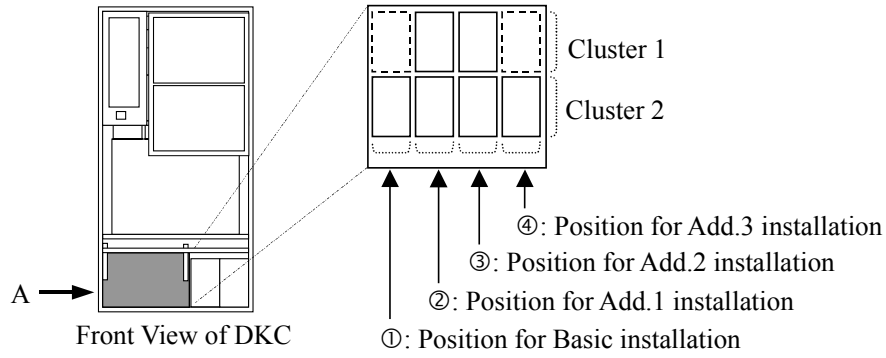
b. Loosen the four screws and remove the two brackets. Refer to Fig. 3.8.1-4.
c. Pull the optical fiber cable into the DKC through the I/F connector panel.



Refer to the following figure for how to attach the cable clamp and cable routing.

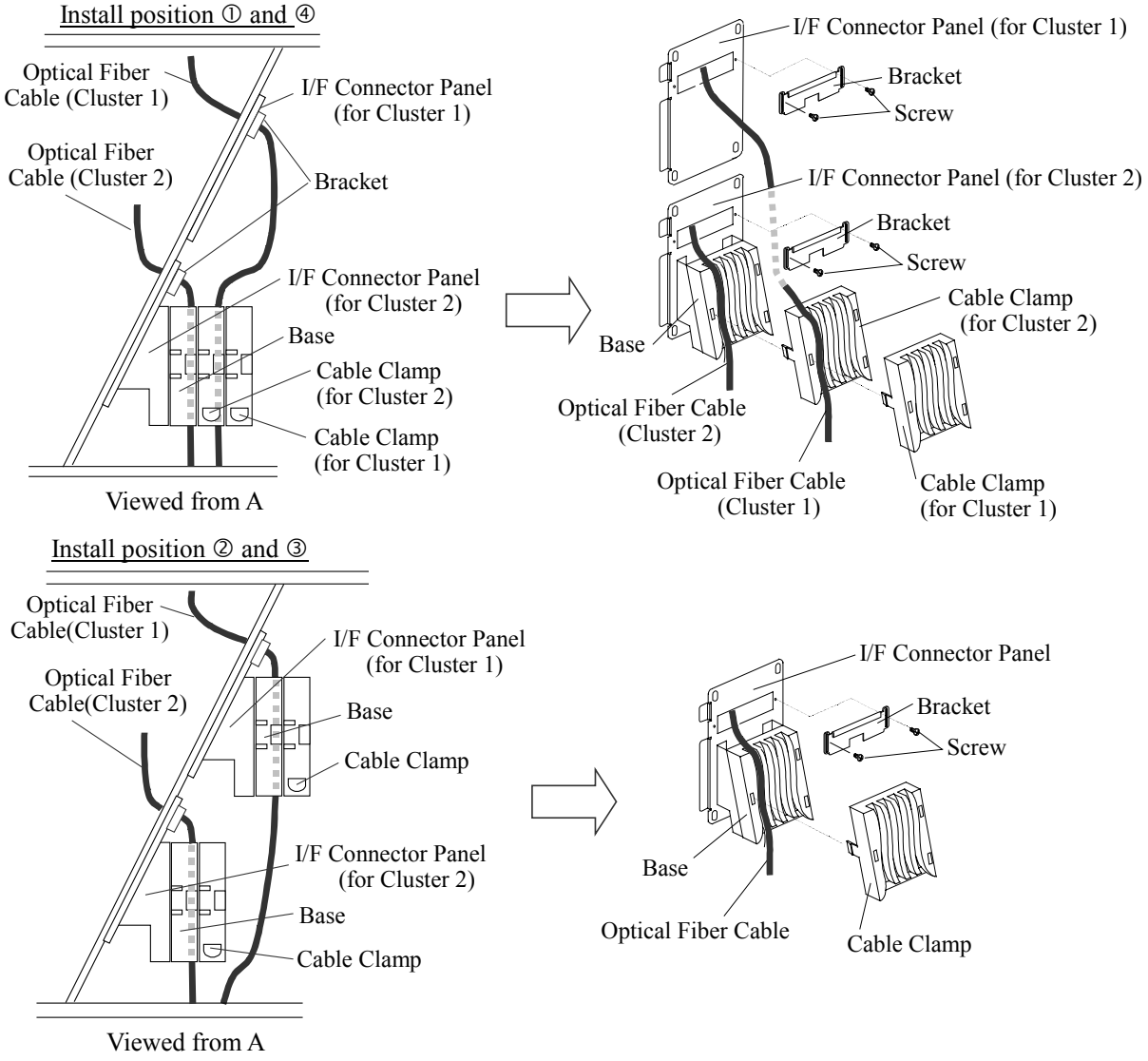


Fig. 3.8.1-4 Installation of Optical Fiber Cable

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d. When the Power Cable Kit (DKC-F460I-1EC, 1UC, 3ECD or 3UCD) is installed, attach the cover with the two screws. Refer to Fig.3.8.1-3.
When the Power Cable Kit (DKC-F460I-1EC, 1UC, 3ECD or 3UCD) is not installed, go to step 3-3.

3-3 Cleaning the fiber cable connectors.

For the tools needed for the cleaning, refer to the tool list on page PARTS07-10.

a. Blow compressed gas against the connector using an air sprayer (for about five seconds).
b. Wipe the connector lightly with a piece of cut gauze wet with ethyl alcohol.
c. Blow compressed air again and check the result of the cleaning. (None of dust, sticking of foreign matter, and dirt must be observed.)

3-4 Connection of the optical fibre cables.

a. Connect the optical fiber cable to the PCB referring to Fig. 3.8.1-5.
b. Fix the cable with Holder.
c. Fix the cable to base and attach the cable clamp and bracket referring to Fig. 3.8.1-4.

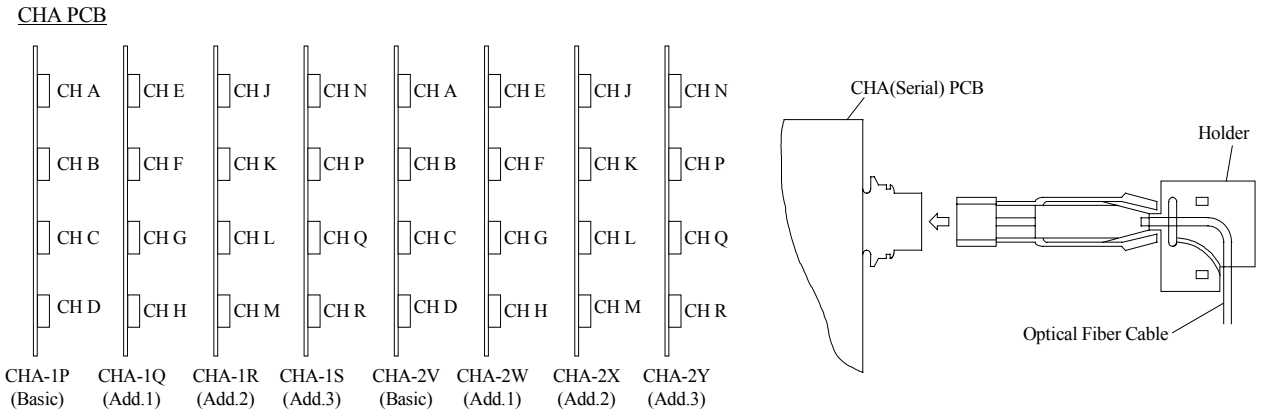

Fig. 3.8.1-5 Connection of Optical Fiber Cable

3-5 Attachment of the nameplate

a. Attach the nameplate referring to Fig. 3.8.1-6.

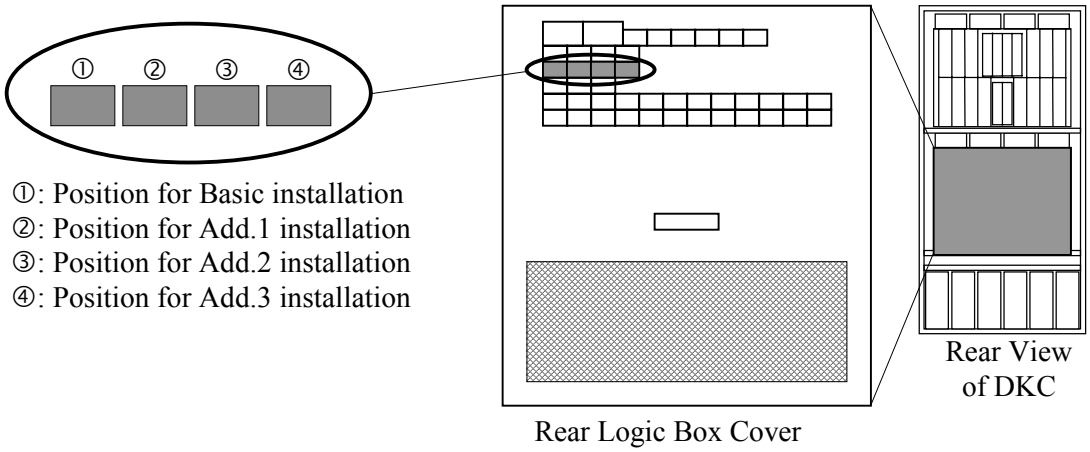

Fig. 3.8.1-6 Attachment of Nameplate

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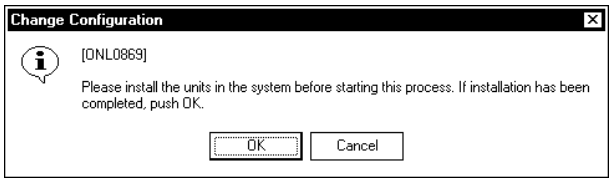
4. SVP post procedure

1. <Check that hardware components are installed>
Select (CL) [OK] after making sure that all hardware components are installed correctly in response to "Please install the units in the system before starting this process. If installation has been completed, push OK.".



When [Cancel] is selected (CL), returns to INST03-8S-20 step 3.

2.
"Waiting for Power Event... Usually, several minutes (maximum 15 minutes)" is displayed.

If [ONL3437E] or [ONL3438E] is displayed, please refer 2.11.1. (INST02-630)

---

3. <DKU PATH INLINE>
When DKA is installed, "DKU PATH INLINE is now running..." is displayed.

---

4. <End of system update processing>
"Renewal process has completed. Please check the subsystem status." is displayed when recovery processing on all installed components is completed. Select (CL) [OK] in response to this message.

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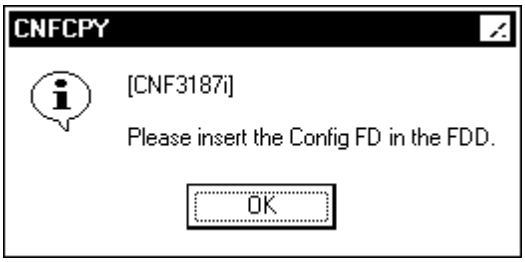
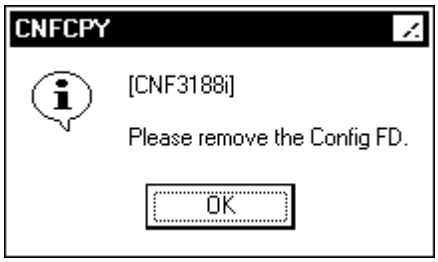
5.

"Reading subsystem configuration data..." is displayed.
"Please insert the Config FD in the FDD." is displayed.
Insert the configuration FD into FDD, and select (CL) [OK].



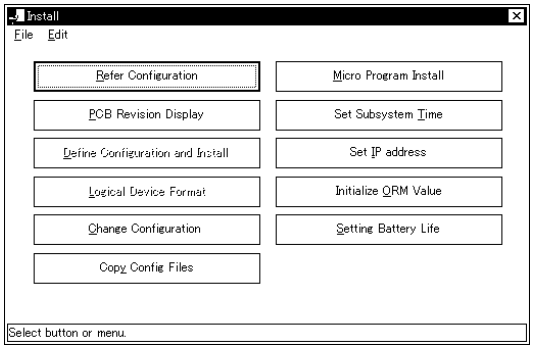
6.

When this procedure is completed, the message "Please remove the Config FD." is displayed.
Remove the FD, select (CL) [OK].



7.

After the procedure is completed, return to "Install".
Select (CL) [File]-[Exit].



8. <Mode Change>
Change the mode to View Mode.

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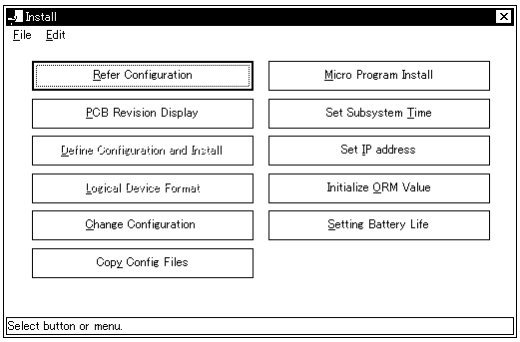
When the DKC-F460I-8SE is installed in DKA locations

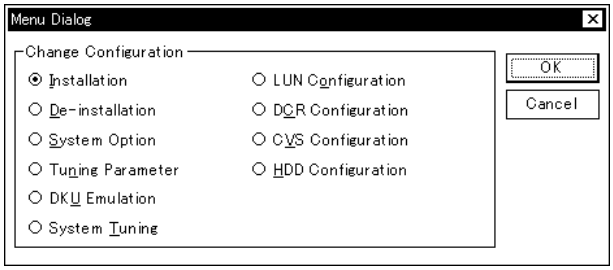
1. Setting up the New Device Structure Information

1. <Mode Change>
   Change the mode to Modify Mode.
   Select (CL) [Install].

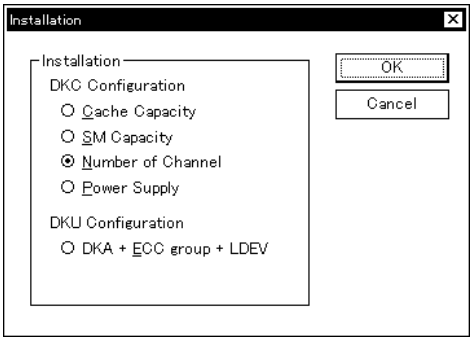
2. <Start the 'Menu Dialog' screen>
   Select (CL) [Change Configuration].



3. <Start Device Structure Setup screen>
   Select (CL) [Installation] in the 'Menu Dialog' dialog box and select (CL) [OK].



4. <Select a part to be changed>
   Select (CL) [Number of Channel], and select (CL) [OK].



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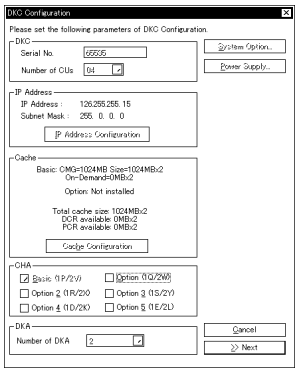
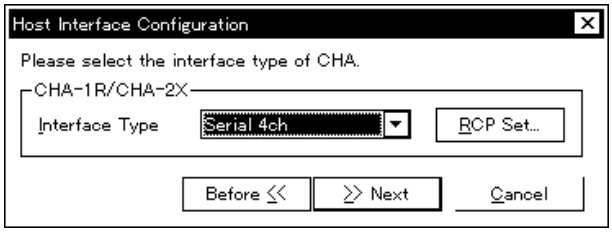
2. SVP pre procedure

1. <Update Configuration Information>
   Enter the item to CHA in the 'DKC Configuration' window.
   Put the mark on the corresponding check box.
   Make sure that the entered item is correct and select (CL) [>>Next].

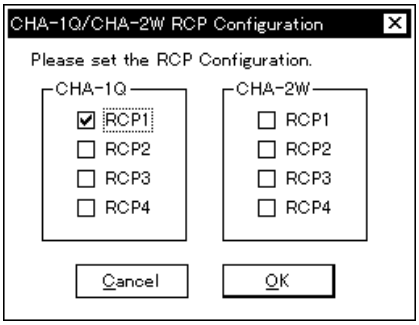


2-1. <Defining channel type>
   Input each item in the "Host Interface Configuration" window.
   Repeat the operation above as many times as the number of channels installed.
   Select (CL) [Serial 4ch]. When setting the HRC/HORC, select (CL) [RCP Set...] and go to step 2-2.

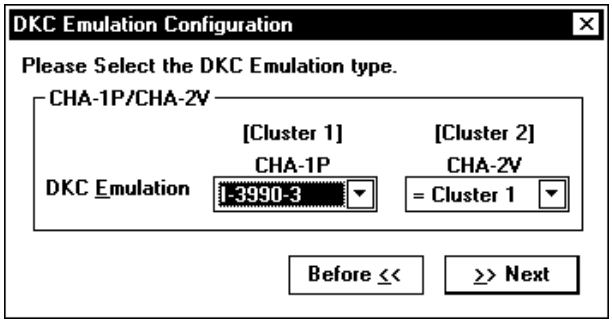


   Verify that the inputted item is correct and select (CL) [>>Next].
   Go to step 3.

2-2. <Defining RCP port>
   When setting the HRC/HORC, select (CL) the item defined as an RCP port and select (CL) [OK].
   The routine returns to step 2-1.
   When [Cancel] is selected (CL), the routine returns to step 2-1.



3. <Defining DKC emulation type>
   Define the DKC emulation type in the "DKC Emulation Configuration" window.
   After the setting is completed, select (CL) [>>Next].



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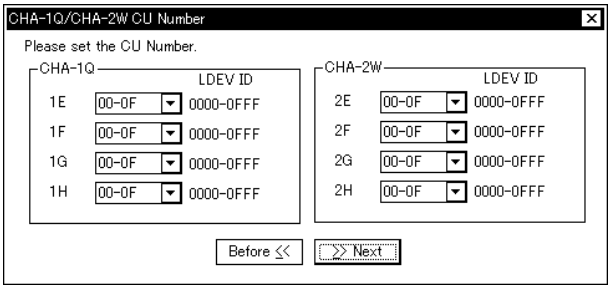
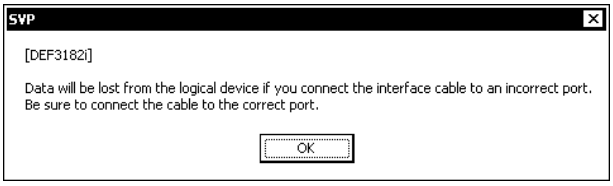
4. <Setting CU number>
   CU number is displayed.
   After the setting is completed, select (CL) [>>Next].

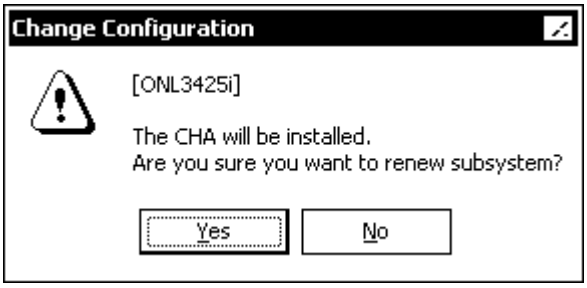


5. <SVP message>
   Select (CL) [OK] in response to the confirmation message “Data will be lost from the logical device if you connect the interface cable to an incorrect port. Be sure to connect the cable to the correct port.”.



6. <Start installation>
   Select (CL) [Yes] in response to “The CHA will be installed. Are you sure you want to renew subsystem?”.

   When [No] is selected (CL), returns to INST03-8S-120 step 3.



7. <Download microprogram>
   Microprograms are automatically downloaded for shared memory.

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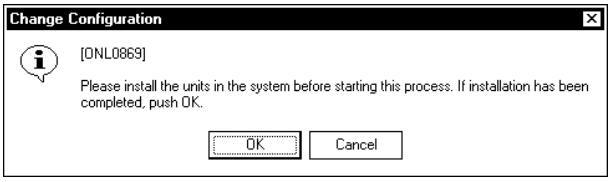
8. <Install CHA >
   "Upgrading of the CHA..."

9. <Check that hardware components are installed>
   "Please install the units in the system before starting this process. If installation has been completed, push OK." is displayed.

   Note: Do not press [OK] before installing additional hardware into the subsystem.



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3. Installation Procedure of Serial 8-port Adapter

Note: Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

3-1 Insertion of the PCBs

Note: Make sure that a color of the levers of the PCB to be installed is blue. Never insert a PCB whose lever is not blue.

a. Remove the dummy plate installed in the installation location referring to the Fig. 3.8.1-7. (Note) Dummy plates should be stored for future use in De-installation.
b. Insert the PCBs to the correct locations in the Logic Box. Refer to Table 3.8.1-3.
c. Fasten the two screws referring to Fig. 3.8.1-8.

Table 3.8.1-3 Inserting Location (Rear of the unit)

Cluster	CL2									CL1						
Slot No.	M	L		K		J	H	G	F	E		D		C	B	A
Function	CSW	CHA	DKA	CHA	DKA	DKA	DKA	CACHE	CACHE	CHA	DKA	CHA	DKA	DKA	DKA	CSW
Location No.	CSW -2M	CHA -2L	DKA -2L	CHA -2K	DKA -2K	DKA -2J	DKA -2H	CACHE -2G	CACHE -2F	CHA -1E	DKA -1E	CHA -1D	DKA -1D	DKA -1C	DKA -1B	CSW -1A
Order of addition		Add.5		Add.4						Add.5		Add.4				

Up to 6 serial 8-port adapters can be installed in the subsystem.

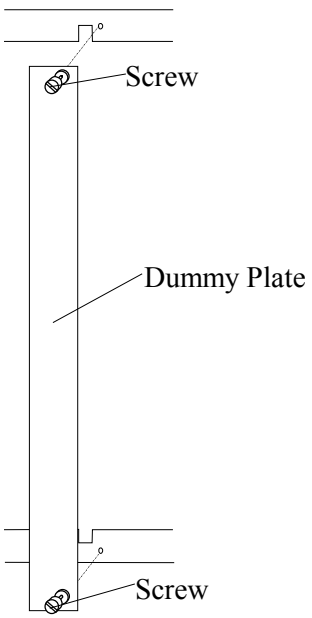

Fig. 3.8.1-7 Removal of Dummy Plate

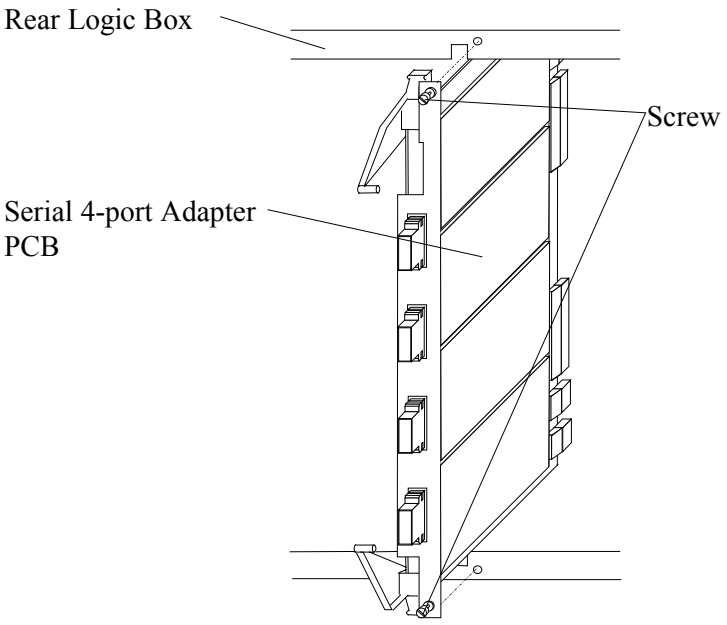

Fig. 3.8.1-8 Insertion of PCB

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3-2 Remove the brackets and fiber cable routing.

a. When the Power Cable Kit (DKC-F460I-1EC, 1UC, 3ECD or 3UCD) is installed, loosen the two screws and remove the cover.
When the Power Cable Kit (DKC-F460I-1EC, 1UC, 3ECD or 3UCD) is not installed, go to step b.

DKC-F460I-1EC/1UC/3ECD/3UCD

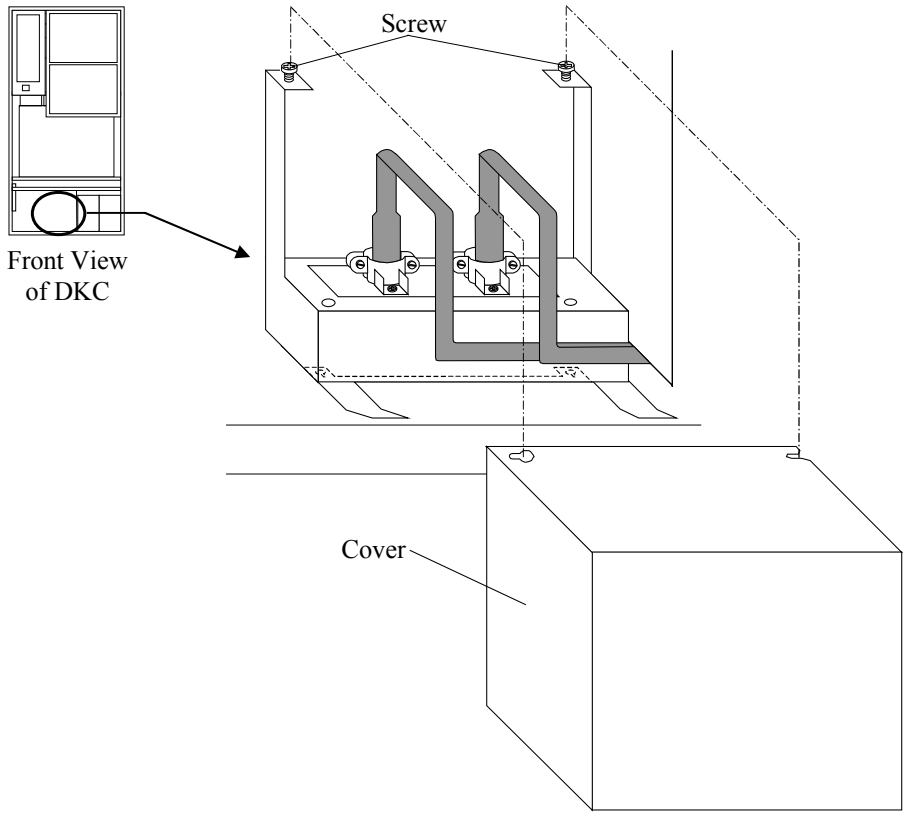

Fig. 3.8.1-9 Attachment of Cover

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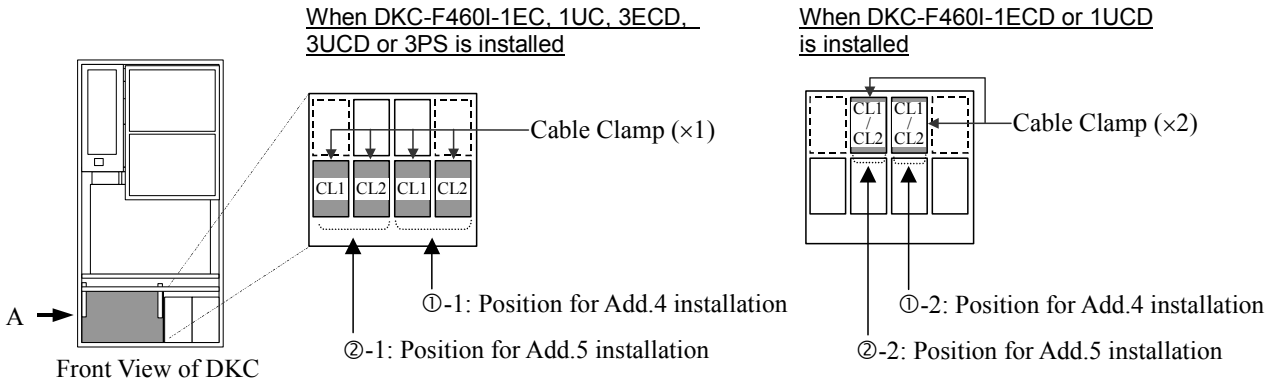
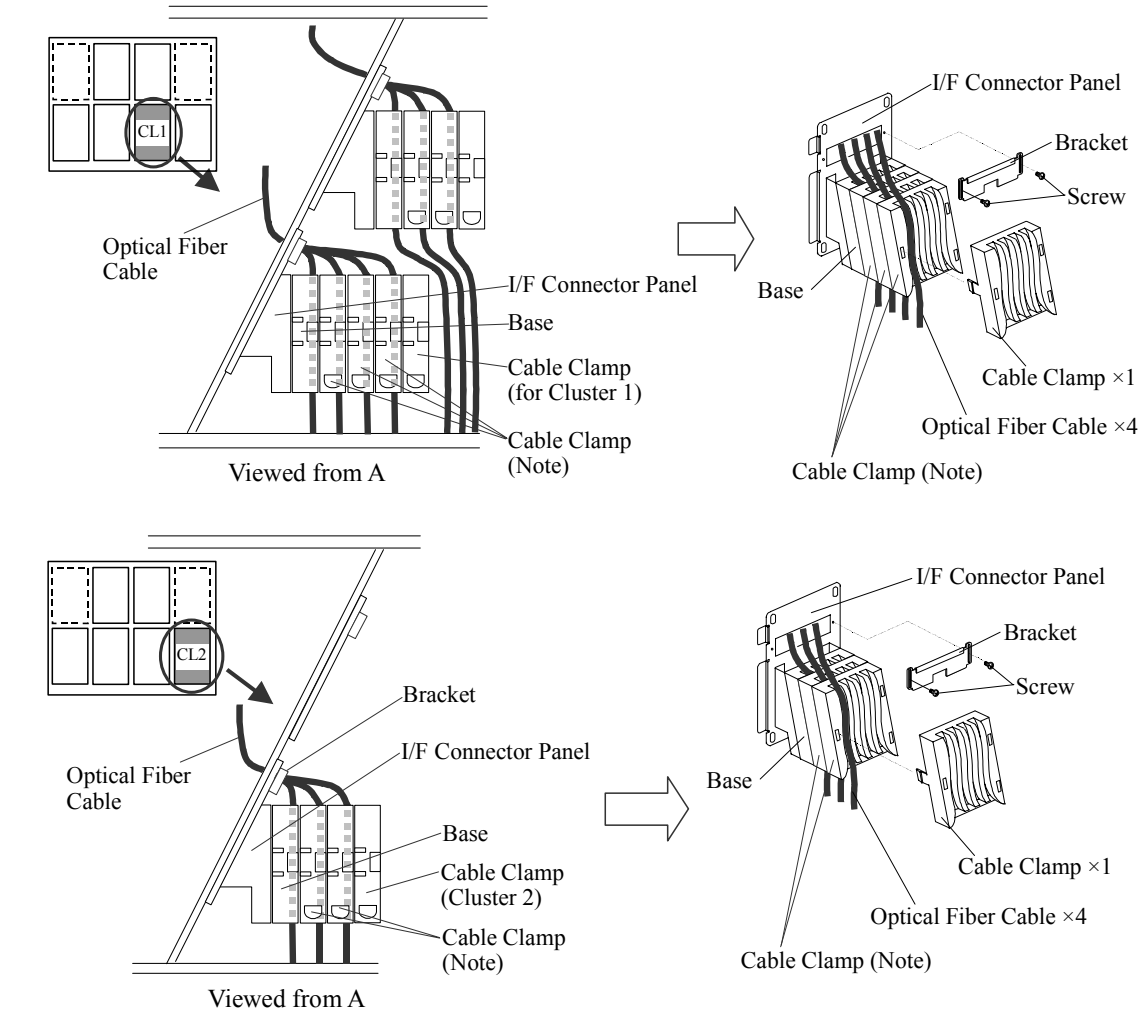
b. Loosen the four screws and remove the two brackets. Refer to Fig. 3.8.1-10.
c. Pull the optical fiber cable into the DKC through the I/F connector panel.



Refer to the following figure for how to attach the cable clamp and cable routing.

Install position ①-1



Note: The number of cable clamps changes according to the kind of installed CHA.

Fig. 3.8.1-10 Installation of Optical Fiber Cable (1/3)

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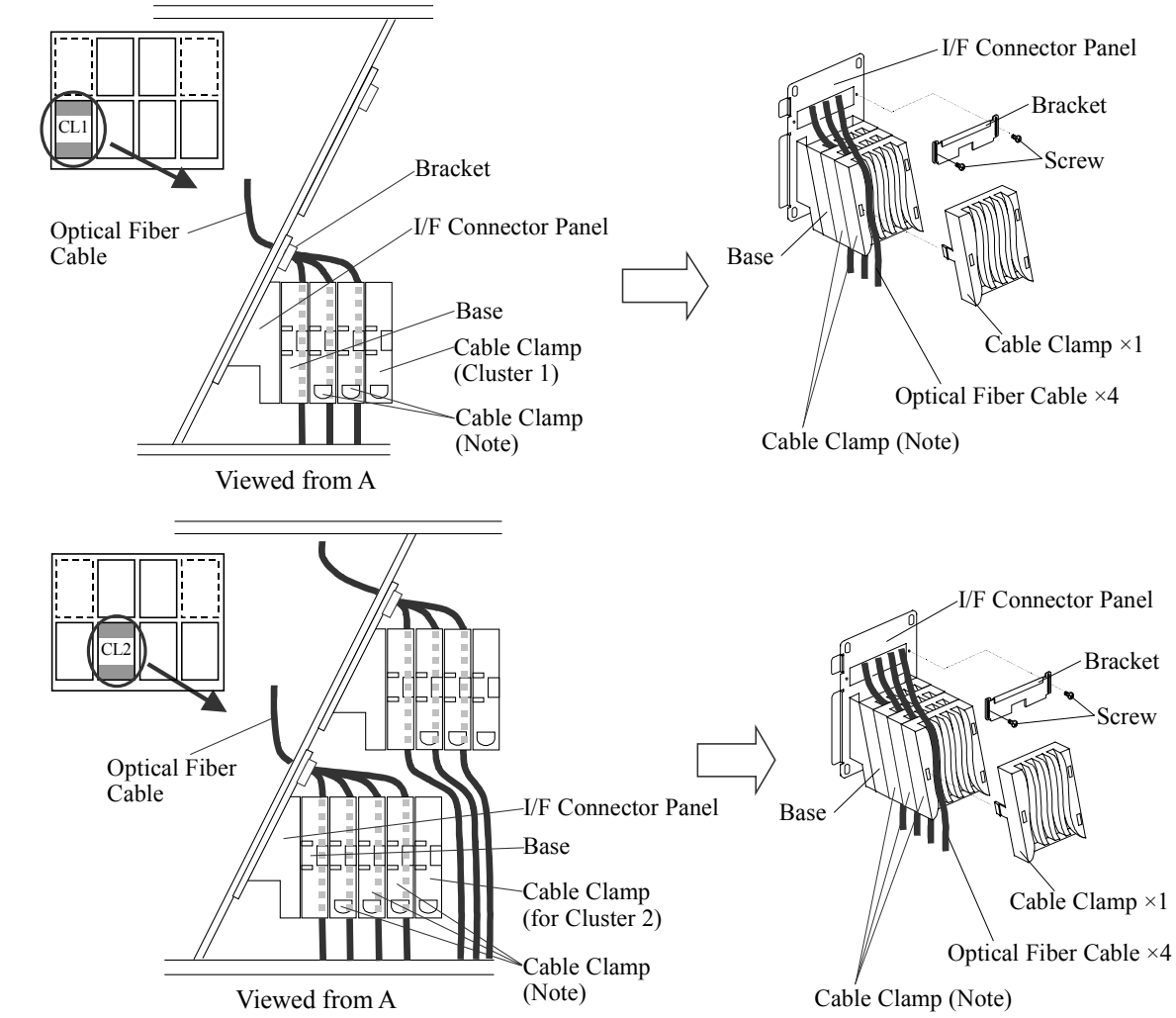
Install position ②-1



Note: The number of cable clamps changes according to the kind of installed CHA.

Fig. 3.8.1-10 Installation of Optical Fiber Cable (2/3)

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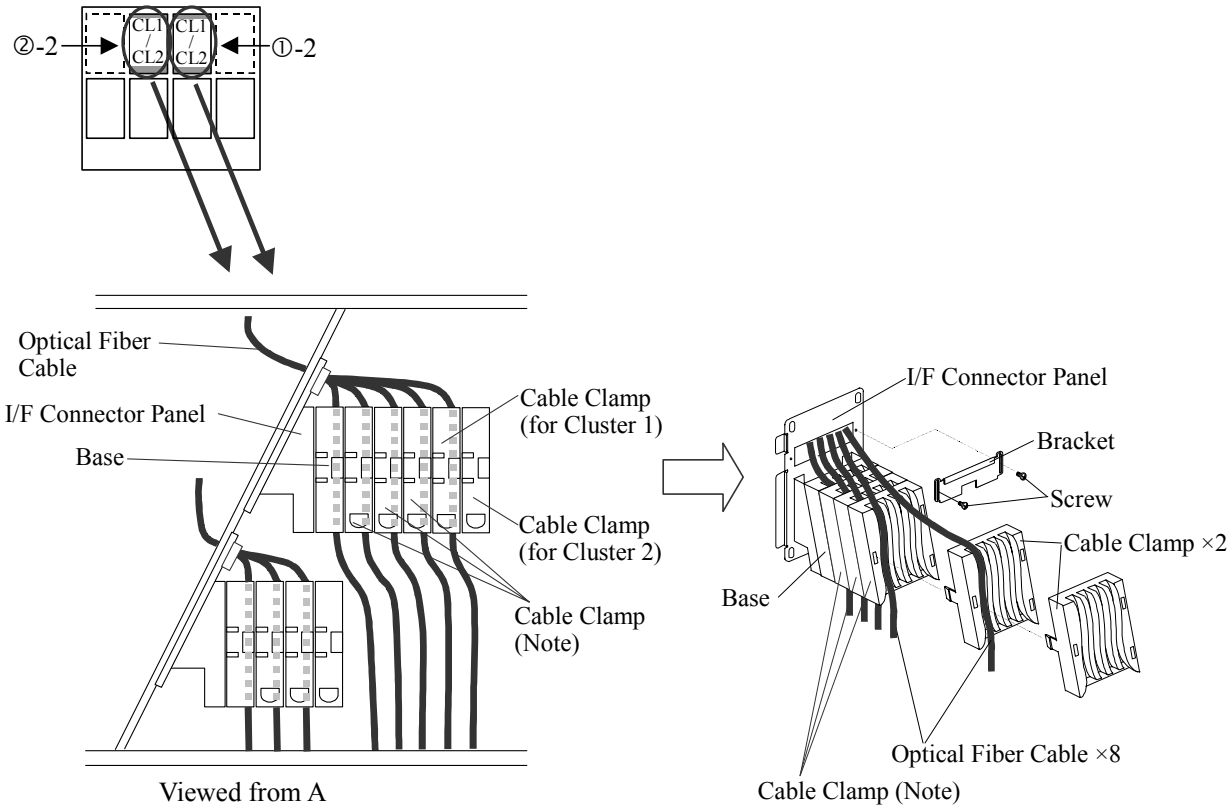
Install position ①-2 and ②-2



Note: The number of cable clamps changes according to the kind of installed CHA.

Fig. 3.8.1-10 Installation of Optical Fiber Cable (3/3)

d. When the Power Cable Kit (DKC-F460I-1EC, 1UC, 3ECD or 3UCD) is installed, attach the cover with the two screws. Refer to Fig.3.8.1-9.
When the Power Cable Kit (DKC-F460I-1EC, 1UC, 3ECD or 3UCD) is not installed, go to step 3-3.

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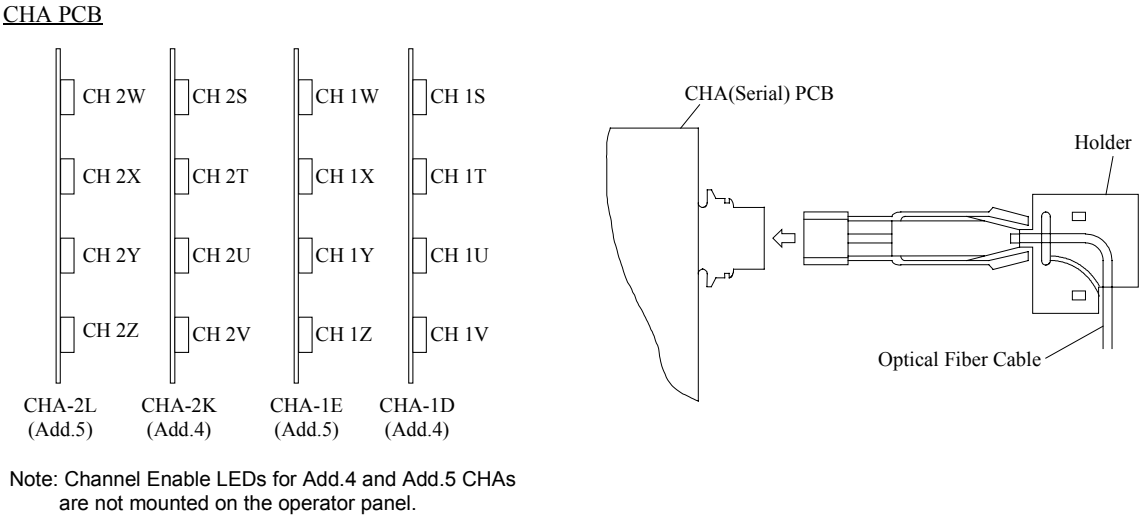
3-3 Cleaning the fiber cable connectors.

For the tools needed for the cleaning, refer to the tool list on page PARTS07-10.

a. Blow compressed gas against the connector using an air sprayer (for about five seconds).
b. Wipe the connector lightly with a piece of cut gauze wet with ethyl alcohol.
c. Blow compressed air again and check the result of the cleaning. (None of dust, sticking of foreign matter, and dirt must be observed.)

3-4 Connection of the optical fibre cables.

a. Connect the optical fiber cable to the PCB referring to Fig. 3.8.1-11.
b. Fix the cable with Holder.
c. Fix the cable to base and attach the cable clamp and bracket referring to Fig. 3.8.1-10.



Note: Channel Enable LEDs for Add.4 and Add.5 CHAs are not mounted on the operator panel.

Fig. 3.8.1-11 Connection of Optical Fiber Cable

3-5 Attachment of the nameplate

a. Attach the nameplate referring to Fig. 3.8.1-12.

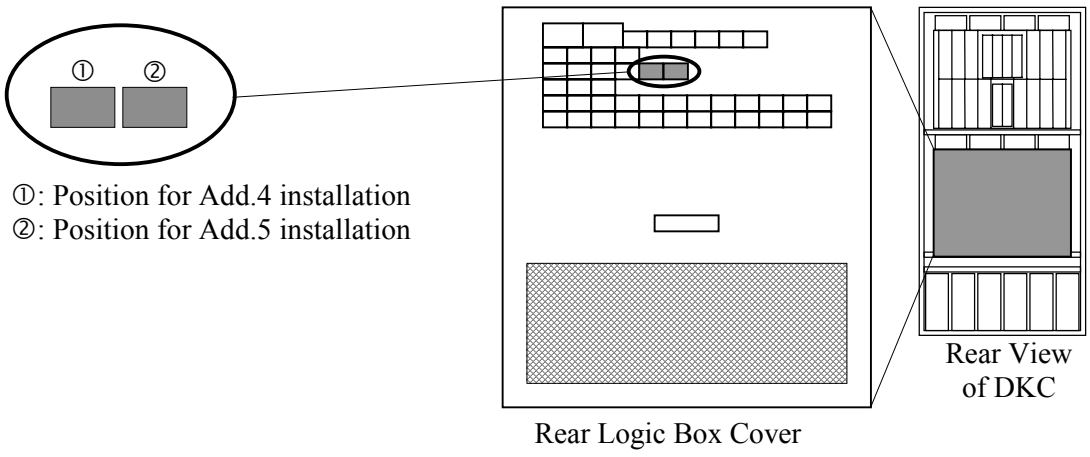


Fig. 3.8.1-12 Attachment of Nameplate

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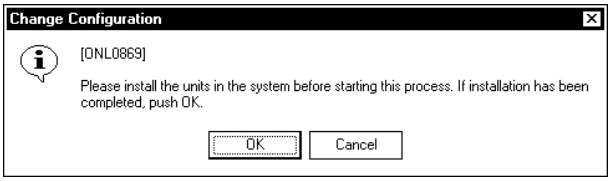
4. SVP post procedure

1. <Check that hardware components are installed>
Select (CL) [OK] after making sure that all hardware components are installed correctly in response to “Please install the units in the system before starting this process. If installation has been completed, push OK.”.



When [Cancel] is selected (CL), returns to INST03-8S-110 step 3.

2.

“Waiting for Power Event... Usually, several minutes (maximum 15 minutes)” is displayed.

If [ONL3437E] or [ONL3438E] is displayed, please refer 2.11.1. (INST02-630)

---

3. <DKU PATH INLINE>
When DKA is installed, “DKU PATH INLINE is now running...” is displayed.

---

4. <End of system update processing>
“Renewal process has completed. Please check the subsystem status.” is displayed when recovery processing on all installed components is completed. Select (CL) [OK] in response to this message.

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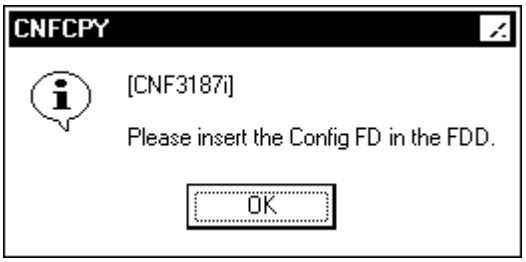
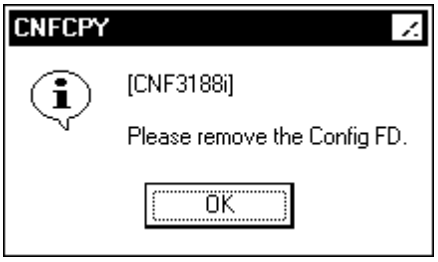
5.

"Reading subsystem configuration data..." is displayed.
"Please insert the Config FD in the FDD." is displayed.
Insert the configuration FD into FDD, and select (CL) [OK].



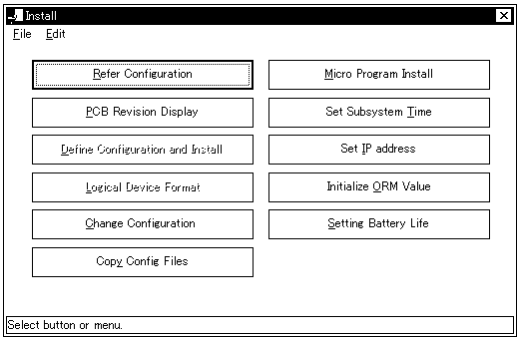
6.

When this procedure is completed, the message "Please remove the Config FD." is displayed.
Remove the FD, select (CL) [OK].



7.

After the procedure is completed, return to "Install".
Select (CL) [File]-[Exit].



8. <Mode Change>
Change the mode to View Mode.

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3.8.2 Installation of Fibre 4/8-port Adapter (DKC-F460I-8GSE/4HSE/8HSE/8HLE/8GSF/4HSF/8HSF/8HLF)

Note: When a total number of the CHA and DKA options to be installed is four or more, the additional disk controller power supply (DKC-F460I-80) must be installed. Be sure to check it before performing the addition.

Table 3.8.2-1 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKC-F460I-8GSE	Fibre 4-port Adapter PCB	5513980-B	2	Color of PCB lever : Blue
		Cable Clamp	2105506-1	2	
		Nameplate (HDS)	2105902-107	1	RSD
			2105903-107		HICAM
			2105903-207		HICEF
		Nameplate (HP)	2105902-207	1	RSD
			2105903-307		HICAM
			2105903-407		HICEF
2	DKC-F460I-4HSE (Short Wavelength)	Fibre 2-port Adapter PCB	5513981-C	2	Color of PCB lever : Blue
		Cable Clamp	2105506-1	2	
		Nameplate (HDS)	2105902-108	1	RSD
			2105903-108		HICAM
			2105903-208		HICEF
		Nameplate (HP)	2105902-208	1	RSD
			2105903-308		HICAM
			2105903-408		HICEF
3	DKC-F460I-8HSE (Short Wavelength)	Fibre 4-port Adapter PCB	5513981-A	2	Color of PCB lever : Blue
		Cable Clamp	2105506-1	2	
		Nameplate (HDS)	2105902-109	1	RSD
			2105903-109		HICAM
			2105903-209		HICEF
		Nameplate (HP)	2105902-209	1	RSD
			2105903-309		HICAM
			2105903-409		HICEF
4	DKC-F460I-8HLE (Long Wavelength)	Fibre 4-port Adapter PCB	5513981-B	2	Color of PCB lever : Blue
		Cable Clamp	2105506-1	2	
		Nameplate (HDS)	2105902-110	1	RSD
			2105903-110		HICAM
			2105903-210		HICEF

(To be continued)

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(Continued from the preceding page)

No.	Model Number	Part Name	Part No.	Quantity	Remarks
5	DKC-F460I-8GSF (DB Validator support)	Fibre 4-port Adapter PCB	5518079-C	2	Color of PCB lever : Blue
		Cable Clamp	2105506-1	2	
		Nameplate (HDS)	2105902-136	1	RSD
			2105903-136		HICAM
			2105903-236		HICEF
		Nameplate (HP)	2105902-236	1	RSD
			2105903-336		HICAM
			2105903-436		HICEF
6	DKC-F460I-4HSF (Short Wavelength, DB Validator support)	Fibre 2-port Adapter PCB	5518079-D	2	Color of PCB lever : Blue
		Cable Clamp	2105506-1	2	
		Nameplate (HDS)	2105902-137	1	RSD
			2105903-137		HICAM
			2105903-237		HICEF
		Nameplate (HP)	2105902-237	1	RSD
			2105903-337		HICAM
			2105903-437		HICEF
7	DKC-F460I-8HSF (Short Wavelength, DB Validator support)	Fibre 4-port Adapter PCB	5518079-A	2	Color of PCB lever : Blue
		Cable Clamp	2105506-1	2	
		Nameplate (HDS)	2105902-138	1	RSD
			2105903-138		HICAM
			2105903-238		HICEF
		Nameplate (HP)	2105902-238	1	RSD
			2105903-338		HICAM
			2105903-438		HICEF
8	DKC-F460I-8HLF (Long Wavelength, DB Validator support)	Fibre 4-port Adapter PCB	5518079-B	2	Color of PCB lever : Blue
		Cable Clamp	2105506-1	2	
		Nameplate (HDS)	2105902-139	1	RSD
			2105903-139		HICAM
			2105903-239		HICEF

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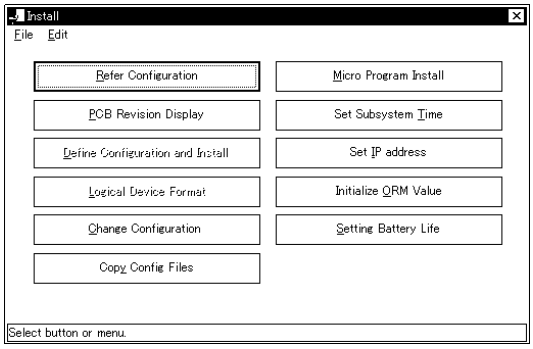
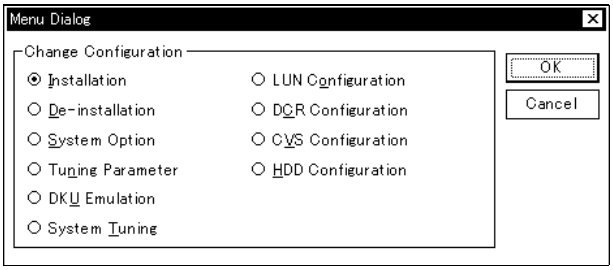
1. Setting up the New Device Structure Information

1. <Mode Change>
   Change the mode to Modify Mode.
   Select (CL) [Install].

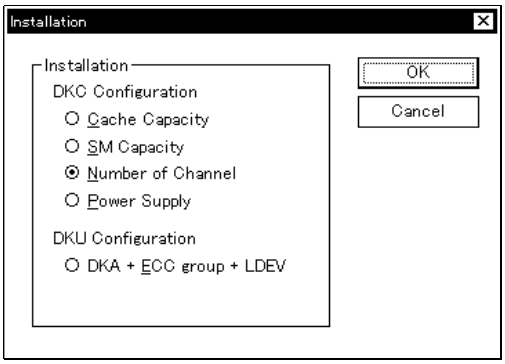
2. <Start the 'Menu Dialog' screen>
   Select (CL) [Change Configuration].



3. <Start Device Structure Setup screen>
   Select (CL) [Installation] in the 'Menu Dialog' dialog box and select (CL) [OK].



4. <Select a part to be changed>
   Select (CL) [Number of Channel], and select (CL) [OK].



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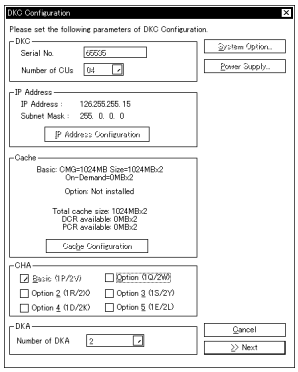
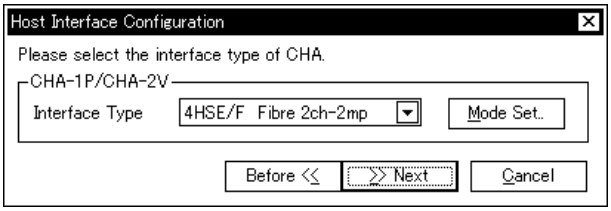
2. SVP pre procedure

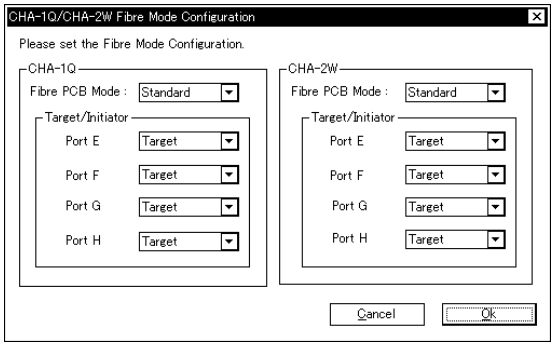
1. <Update Configuration Information>
   Enter the item to CHA in the 'DKC Configuration' window.
   Put the mark on the corresponding check box.
   Make sure that the entered item is correct and select (CL) [>>Next].



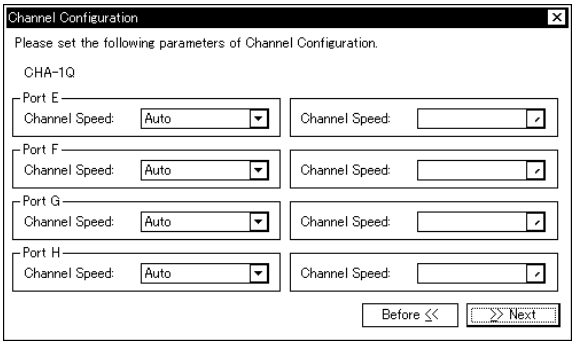
2-1. <Defining channel type>
   Input each item in the "Host Interface Configuration" window.
   Repeat the operation above as many times as the number of channels installed.
   Select (CL) [Fibre *]. When setting the HRC/HORC, select (CL) [Mode Set...] and go to step 2-2.
   Verify that the inputted item is correct and select (CL) [>>Next].
   Go to step 3.



2-2. <Defining Fibre Mode>
   Select (CL) the item defined as an Fibre Mode (set the 'Target/Initiator' only when setting the 'Fibre PCB Mode' or HRC/HORC) and select (CL) [OK].
   The routine returns to step 2-1.
   When [Cancel] is selected (CL), the routine returns to step 2-1.



3. <Setting Channel>
   Set the 'Channel Speed'.
   After setting up, select (CL) [>>Next].



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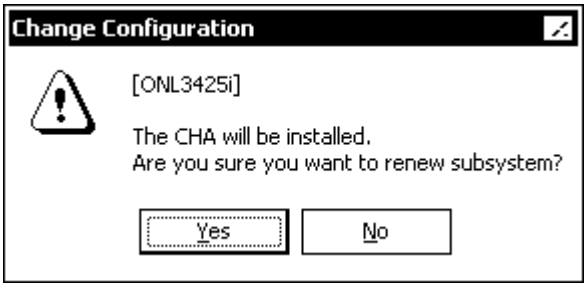
4. <Start installation>
   Select (CL) [Yes] in response to "The CHA will be installed. Are you sure you want to renew subsystem?".

   When [No] is selected (CL), returns to INST03-FIB-20 step 3.

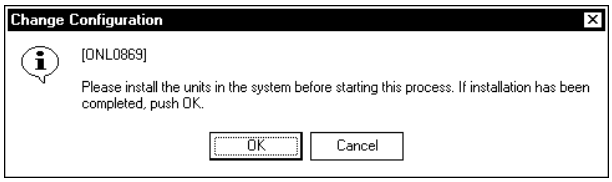


5. <Download microprogram>
   Microprograms are automatically downloaded for shared memory.

6. <Install CHA >
   "Upgrading of the CHA..."

7. <Check that hardware components are installed>
   "Please install the units in the system before starting this process. If installation has been completed, push OK." is displayed.

   Note: Do not press [OK] before installing additional hardware into the subsystem.



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3. Installation Procedure of Fibre 4/8-port Adapter

Note: Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

3-1 Insertion of the PCBs

Note: Make sure that a color of the levers of the PCB to be installed is blue. Never insert a PCB whose lever is not blue.

a. Remove the dummy plate installed in the installation location referring to the Fig. 3.8.2-1. (Note) Dummy plates should be stored for future use in De-installation.
b. Insert the PCBs to the correct locations in the Logic Box. Refer to Table 3.8.2-2.
c. Fasten the two screws referring to Fig. 3.8.2-2.

Table 3.8.2-2 Inserting Location (Front of the unit)

Cluster	CL1							CL2				
Slot No.	N	P	Q	R	S	T	U	V	W	X	Y	Z
Function	CSW	CHA	CHA	CHA	CHA	CACHE	CACHE	CHA	CHA	CHA	CHA	CSW
Location No.	CSW -1N	CHA -1P	CHA -1Q	CHA -1R	CHA -1S	CACHE -1T	CACHE -1U	CHA -2V	CHA -2W	CHA -2X	CHA -2Y	CSW -2Z
Order of addition		Basic	Add.1	Add.2	Add.3			Basic	Add.1	Add.2	Add.3	

Up to 4 Fibre 4/8-port adapters can be installed in the subsystem.

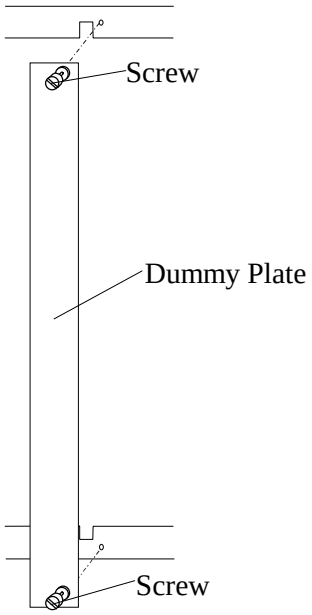

Fig. 3.8.2-1 Removal of Dummy Plate

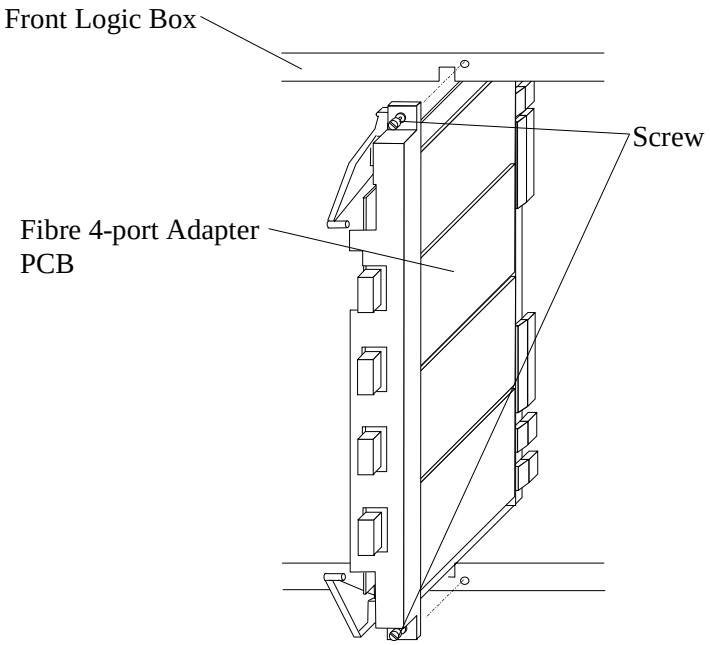

Fig. 3.8.2-2 Insertion of PCB

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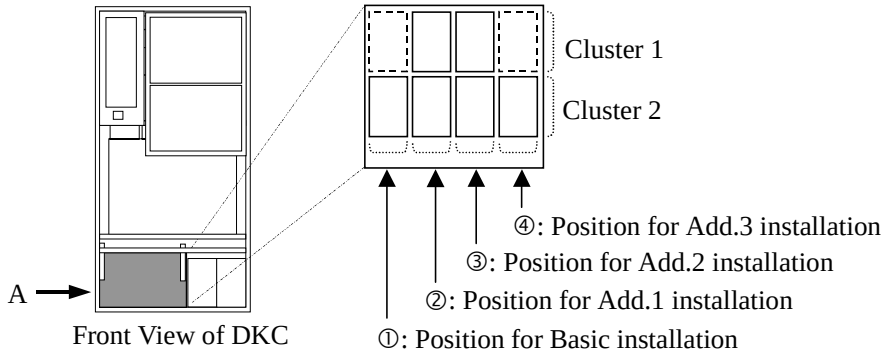
3-2 Remove the brackets and fiber cable routing.

a. Loosen the four screws and remove the two brackets. Refer to Fig. 3.8.2-3.

b. Pull the optical fiber cable into the DKC through the I/F connector panel.



Refer to the following figure for how to attach the cable clamp and cable routing.

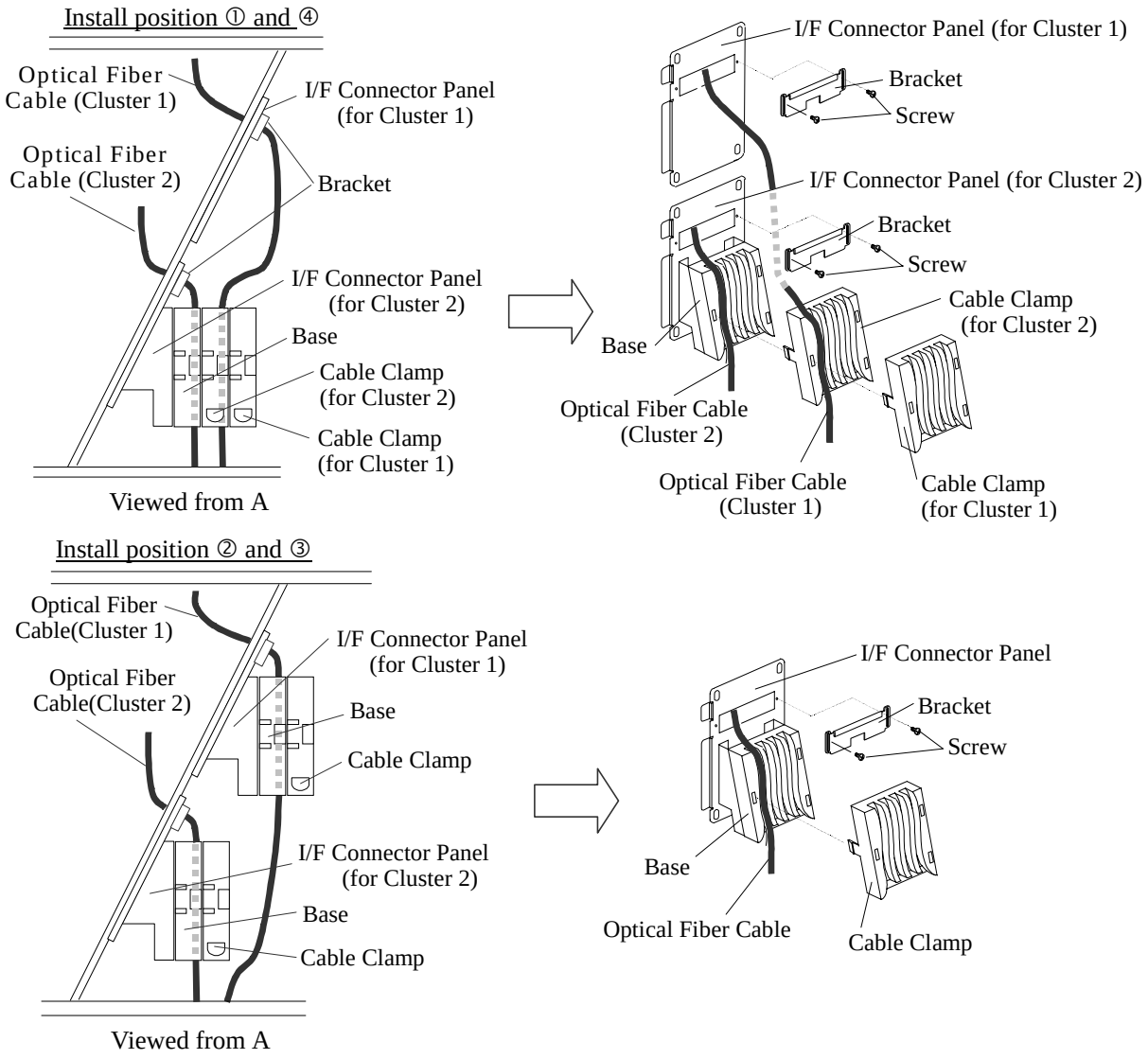


Fig. 3.8.2-3 Installation of Optical Fiber Cable

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3-3 Cleaning the fiber cable connectors.

For the tools needed for the cleaning, refer to the tool list on page PARTS07-10.

a. Blow compressed gas against the connector using an air sprayer (for about five seconds).
b. Wipe the connector lightly with a piece of cut gauze wet with ethyl alcohol.
c. Blow compressed air again and check the result of the cleaning. (None of dust, sticking of foreign matter, and dirt must be observed.)

⚠ CAUTION

When Installation of PCB in HIGH PERFORMANCE MODE, some LOOP ID (FC-AL) volumes of the parts on the PCB may conflict. So you must operate LUN Management (INST05-610) to change the values, and then insert Optical Fibre cable.
If you operate in the reverse order, SIM=2190XY (ALPA conflict) will be logged on SVP.

3-4 Connection of the optical fibre cable

a. Connect the optical fiber cable to the PCB referring to Fig. 3.8.2-4.
b. Fix the cable to base and attach the cable clamp and bracket referring to Fig. 3.8.2-3.

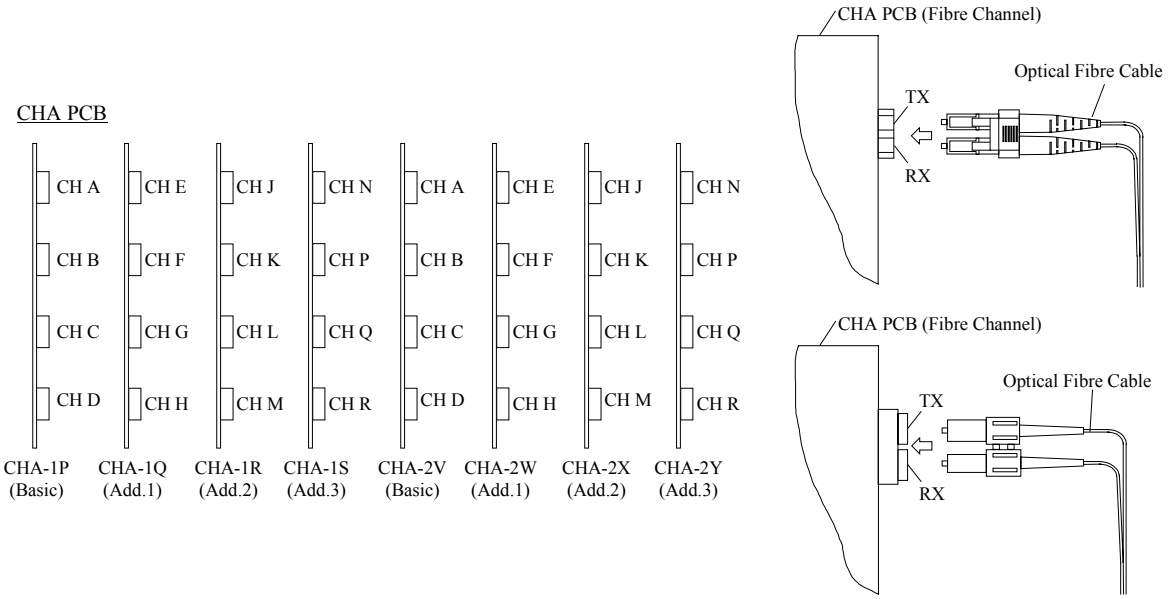

Fig. 3.8.2-4 Connection of Optical Fiber Cable

3-5 Attachment of the nameplate

a. Attach the nameplate referring to Fig. 3.8.2-5.

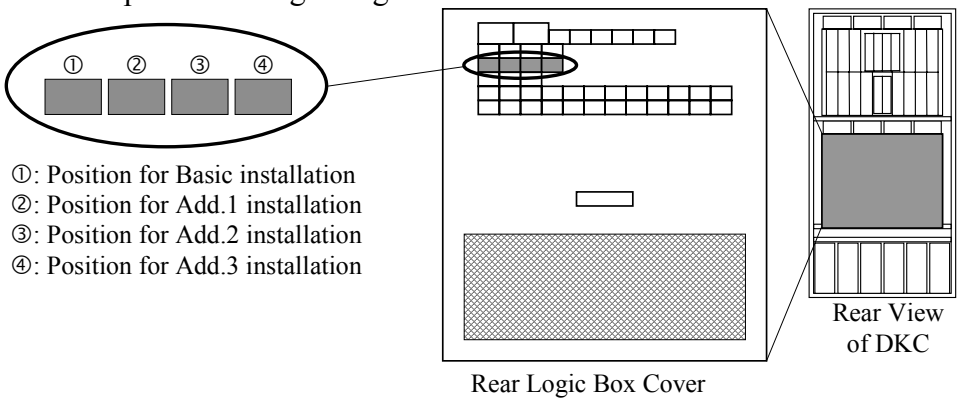

Fig. 3.8.2-5 Attachment of Nameplate

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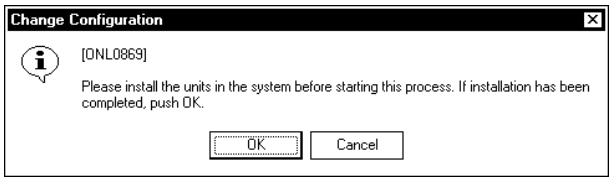
4. SVP post procedure

1. <Check that hardware components are installed>
   Select (CL) [OK] after making sure that all hardware components are installed correctly in response to “Please install the units in the system before starting this process. If installation has been completed, push OK.”.



   When [Cancel] is selected (CL), returns to INST03-FIB-20 step 3.

2.
   “Waiting for Power Event... Usually, several minutes (maximum 15 minutes)” is displayed.

   If [ONL3437E] or [ONL3438E] is displayed, please refer 2.11.1. (INST02-630)

---

3. <DKU PATH INLINE>
   When DKA is installed, “DKU PATH INLINE is now running...” is displayed.

---

4. <End of system update processing>
   “Renewal process has completed. Please check the subsystem status.” is displayed when recovery processing on all installed components is completed. Select (CL) [OK] in response to this message.

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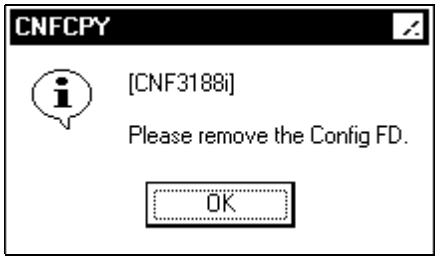
5.

"Reading subsystem configuration data..." is displayed.
"Please insert the Config FD in the FDD." is displayed.
Insert the configuration FD into FDD, and select (CL) [OK].

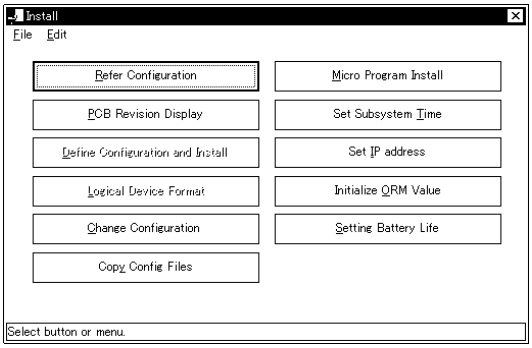
6.

When this procedure is completed, the message "Please remove the Config FD." is displayed.
Remove the FD, select (CL) [OK].



7.

After the procedure is completed, return to "Install".
Select (CL) [File]-[Exit].



8. <Mode Change>
Change the mode to View Mode.

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3.8.3 Installation of Mainframe Fibre 8-port Adapter (DKC-F460I-8MS/8ML)

Note: When a total number of the CHA and DKA options to be installed is four or more, the additional disk controller power supply (DKC-F460I-80) must be installed. Be sure to check it before performing the addition.

Table 3.8.3-1 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKC-F460I-8MS (Short Wavelength)	Fibre 4-port Adapter PCB	5513984-A	2	Color of PCB lever : Blue
		Cable Clamp	2105506-1	2	
		Nameplate (HDS)	2105902-112	1	RSD
			2105903-112		HICAM
			2105903-212		HICEF
2	DKC-F460I-8ML (Long Wavelength)	Fibre 4-port Adapter PCB	5513984-B	2	Color of PCB lever : Blue
		Cable Clamp	2105506-1	2	
		Nameplate (HDS)	2105902-113	1	RSD
			2105903-113		HICAM
			2105903-213		HICEF

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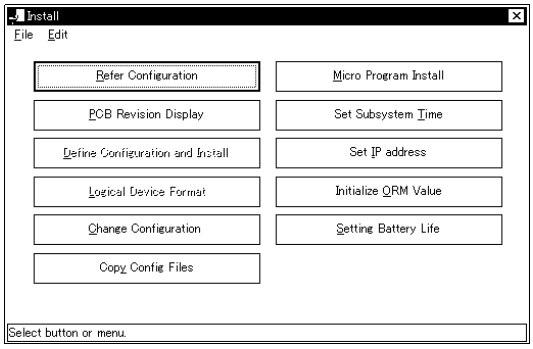
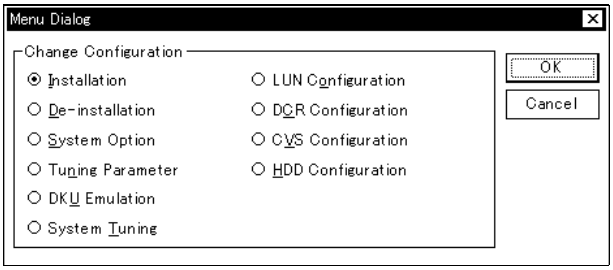
1. Setting up the New Device Structure Information

1. <Mode Change>
   Change the mode to Modify Mode.
   Select (CL) [Install].

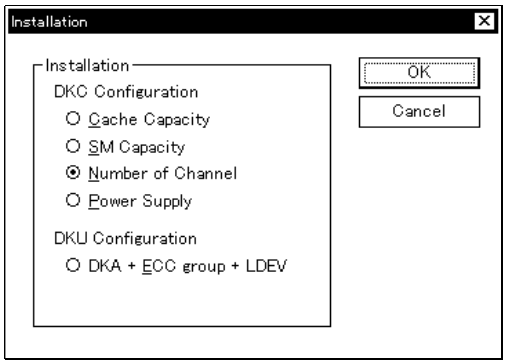
2. <Start the 'Menu Dialog' screen>
   Select (CL) [Change Configuration].



3. <Start Device Structure Setup screen>
   Select (CL) [Installation] in the 'Menu Dialog' dialog box and select (CL) [OK].



4. <Select a part to be changed>
   Select (CL) [Number of Channel], and select (CL) [OK].



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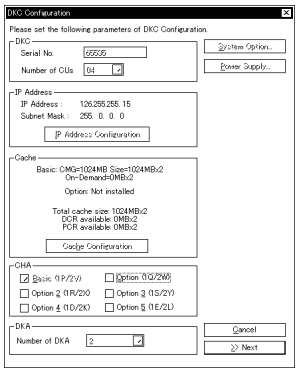
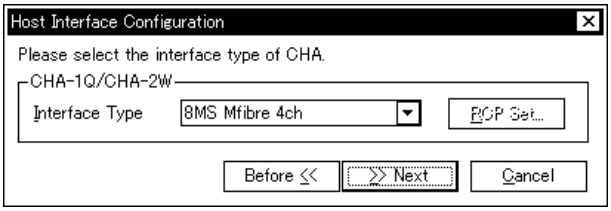
2. SVP pre procedure

1. <Update Configuration Information>
   Enter the item to CHA in the 'DKC Configuration' window.
   Make sure that the entered item is correct and select (CL) [>>Next].

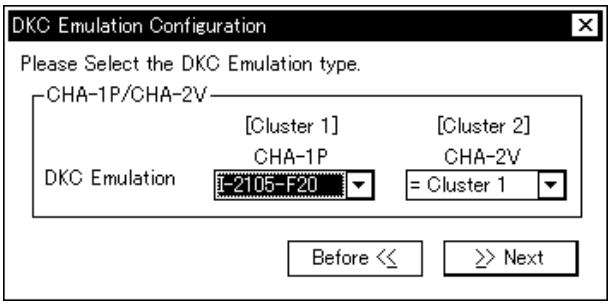


2. <Defining channel type>
   Input each item in the "Host Interface Configuration" window.
   Repeat the operation above as many times as the number of channels installed.
   Select (CL) [Mfibre *].



   Verify that the inputted item is correct and select (CL) [>>Next].
   Go to step 3.

3. <Defining DKC emulation type>
   Define the DKC emulation type in the "DKC Emulation Configuration" window.
   After the setting is completed, select (CL) [>>Next].



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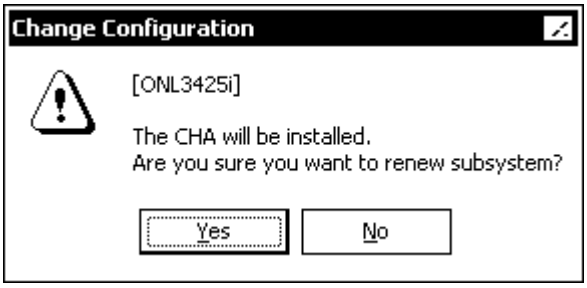
4. <Start installation>
   Select (CL) [Yes] in response to "The CHA will be installed. Are you sure you want to renew subsystem?".

   When [No] is selected (CL), returns to INST03-MF-20 step 3.

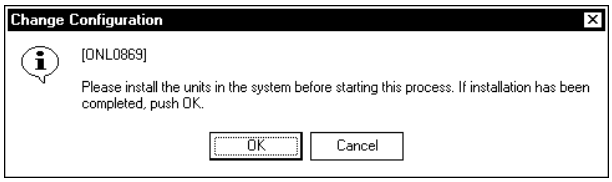


5. <Download microprogram>
   Microprograms are automatically downloaded for shared memory.

6. <Install CHA >
   "Upgrading of the CHA..."

7. <Check that hardware components are installed>
   "Please install the units in the system before starting this process. If installation has been completed, push OK.".
   is displayed.

   Note: Do not press [OK] before installing additional hardware into the subsystem.



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Blank Sheet

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3. Installation Procedure of Mainframe Fibre 8-port Adapter

Note: Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

3-1 Insertion of the PCBs

Note: Make sure that a color of the levers of the PCB to be installed is blue. Never insert a PCB whose lever is not blue.

a. Remove the dummy plate installed in the installation location referring to the Fig. 3.8.3-1. (Note) Dummy plates should be stored for future use in De-installation.
b. Insert the PCBs to the correct locations in the Logic Box. Refer to Table 3.8.3-2.
c. Fasten the two screws referring to Fig. 3.8.3-2.

Table 3.8.3-2 Inserting Location (Front of the unit)

Cluster	CL1							CL2				
Slot No.	N	P	Q	R	S	T	U	V	W	X	Y	Z
Function	CSW	CHA	CHA	CHA	CHA	CACHE	CACHE	CHA	CHA	CHA	CHA	CSW
Location No.	CSW -1N	CHA -1P	CHA -1Q	CHA -1R	CHA -1S	CACHE -1T	CACHE -1U	CHA -2V	CHA -2W	CHA -2X	CHA -2Y	CSW -2Z
Order of addition		Basic	Add.1	Add.2	Add.3			Basic	Add.1	Add.2	Add.3	

Up to 4 Mainframe Fibre 8-port adapters can be installed in the subsystem.

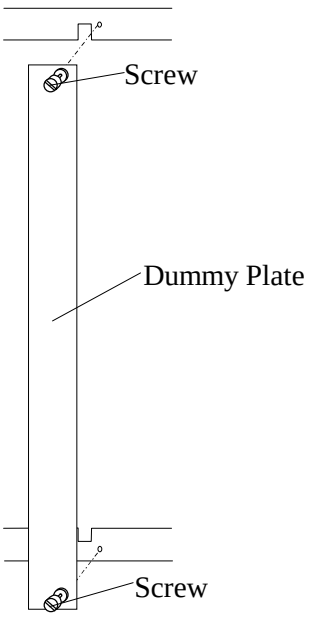

Fig. 3.8.3-1 Removal of Dummy Plate

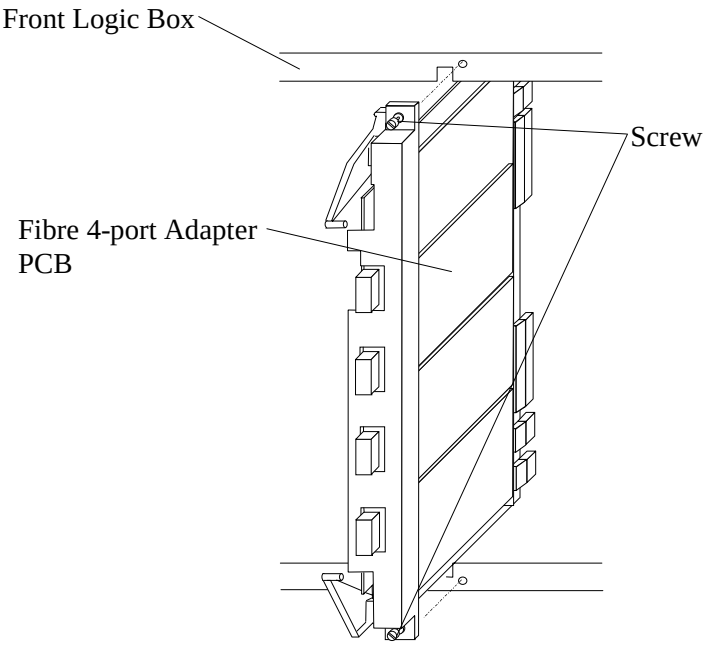

Fig. 3.8.3-2 Insertion of PCB

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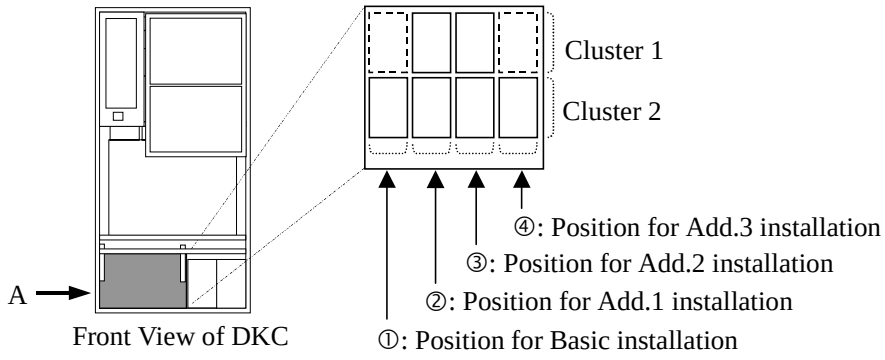
3-2 Remove the brackets and fiber cable routing.

a. Loosen the four screws and remove the two brackets. Refer to Fig. 3.8.3-3.

b. Pull the optical fiber cable into the DKC through the I/F connector panel.



Refer to the following figure for how to attach the cable clamp and cable routing.

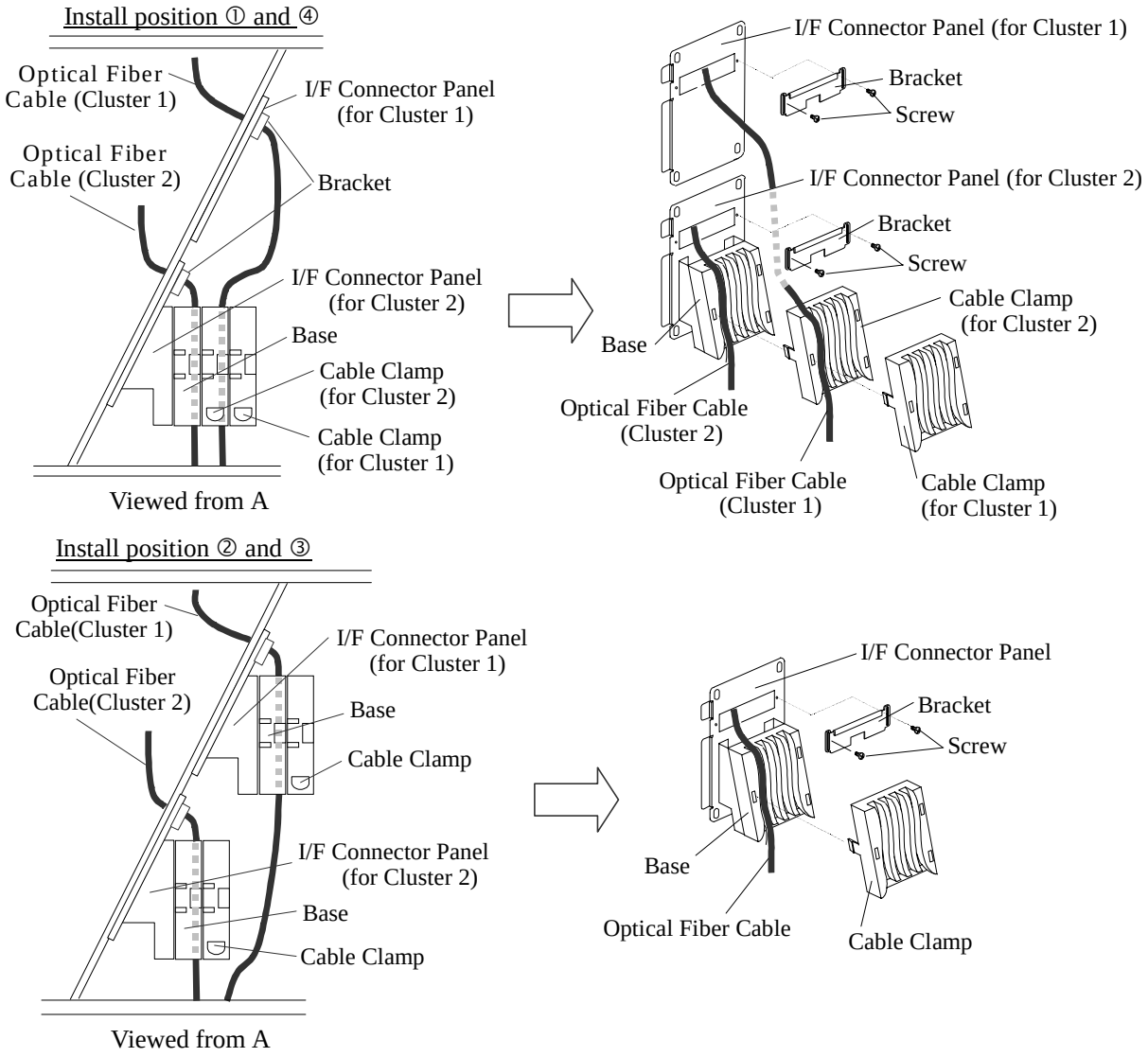


Fig. 3.8.3-3 Installation of Optical Fiber Cable

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3-3 Cleaning the fiber cable connectors.

For the tools needed for the cleaning, refer to the tool list on page PARTS07-10.

a. Blow compressed gas against the connector using an air sprayer (for about five seconds).
b. Wipe the connector lightly with a piece of cut gauze wet with ethyl alcohol.
c. Blow compressed air again and check the result of the cleaning. (None of dust, sticking of foreign matter, and dirt must be observed.)

⚠ CAUTION

When Installation of PCB in HIGH PERFORMANCE MODE, some LOOP ID (FC-AL) volumes of the parts on the PCB may conflict. So you must operate LUN Management (INST05-610) to change the values, and then insert Optical Fibre cable.
If you operate in the reverse order, SIM=2190XY (ALPA conflict) will be logged on SVP.

3-4 Connection of the optical fiber cable.

a. Connect the optical fiber cable to the PCB referring to Fig. 3.8.3-4.
b. Fix the cable to base and attach the cable clamp and bracket referring to Fig. 3.8.3-3.

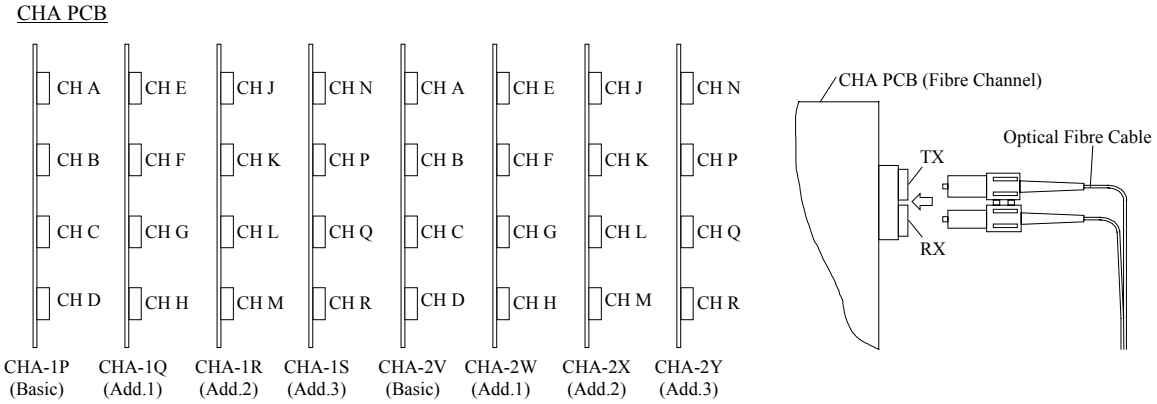

Fig. 3.8.3-4 Connection of Optical Fiber Cable

3-5 Attachment of the nameplate

a. Attach the nameplate referring to Fig. 3.8.3-5.

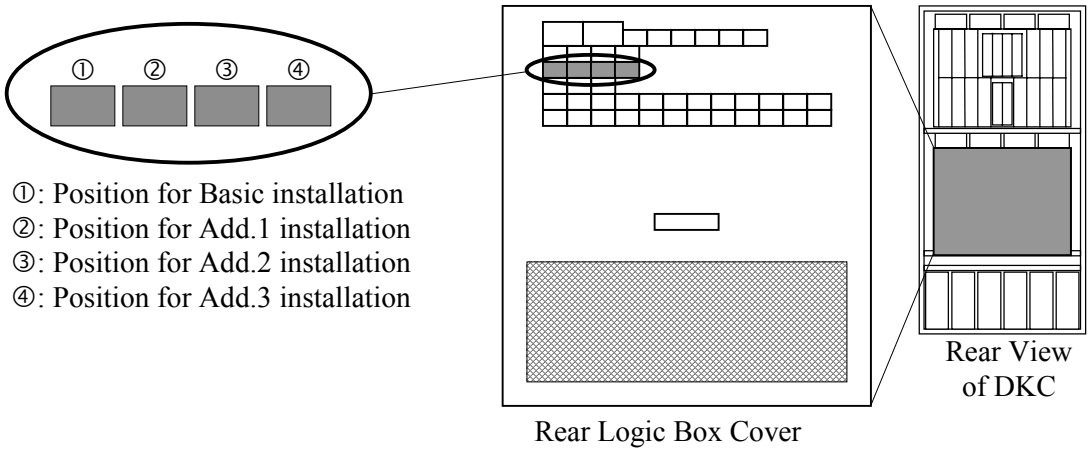

Fig. 3.8.3-5 Attachment of Nameplate

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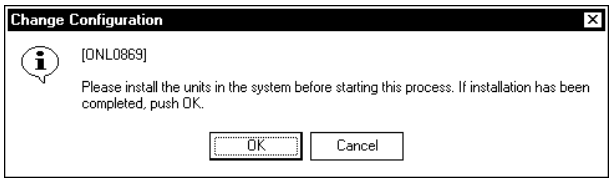
4. SVP post procedure

1. <Check that hardware components are installed>
Select (CL) [OK] after making sure that all hardware components are installed correctly in response to “Please install the units in the system before starting this process. If installation has been completed, push OK.”.



When [Cancel] is selected (CL), returns to INST03-MF-20 step 3.

2.

“Waiting for Power Event... Usually, several minutes (maximum 15 minutes)” is displayed.

If [ONL3437E] or [ONL3438E] is displayed, please refer 2.11.1. (INST02-630)

---

3. <DKU PATH INLINE>
When DKA is installed, “DKU PATH INLINE is now running...” is displayed.

---

4. <End of system update processing>
“Renewal process has completed. Please check the subsystem status.” is displayed when recovery processing on all installed components is completed. Select (CL) [OK] in response to this message.

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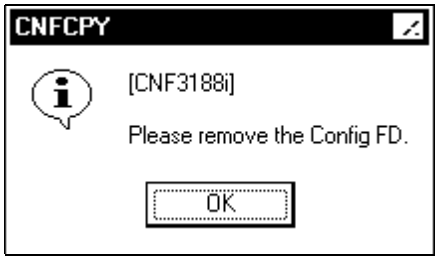
5.

"Reading subsystem configuration data..." is displayed.
"Please insert the Config FD in the FDD." is displayed.
Insert the configuration FD into FDD, and select (CL) [OK].

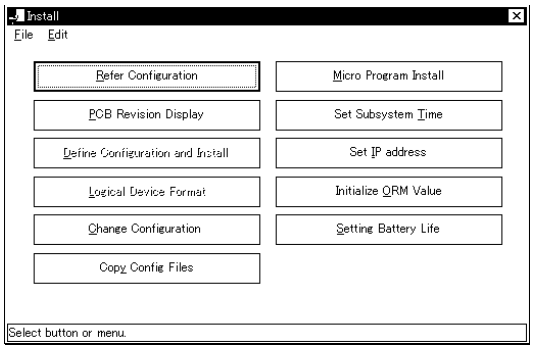
6.

When this procedure is completed, the message "Please remove the Config FD." is displayed.
Remove the FD, select (CL) [OK].



7.

After the procedure is completed, return to "Install".
Select (CL) [File]-[Exit].



8. <Mode Change>
Change the mode to View Mode.

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3.8.4 Installation of Fibre 16-port Adapter for 1-2Gbps Short Wavelength (DKC-F460I-16HSF)

Note: When a total number of the CHA and DKA options to be installed is four or more, the additional disk controller power supply (DKC-F460I-80) must be installed. Be sure to check it before performing the addition.

Table 3.8.4-1 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKC-F460I-16HSF (DB Validator support)	Fibre 8-port Adapter PCB	5518079-E	2	Color of PCB lever : Blue
		Cable Clamp	2105506-1	4	
		Nameplate (HDS)	2105902-140	1	RSD
			2105903-140		HICAM
			2105903-240		HICEF
		Nameplate (HP)	2105902-240	1	RSD
			2105903-340		HICAM
			2105903-440		HICEF

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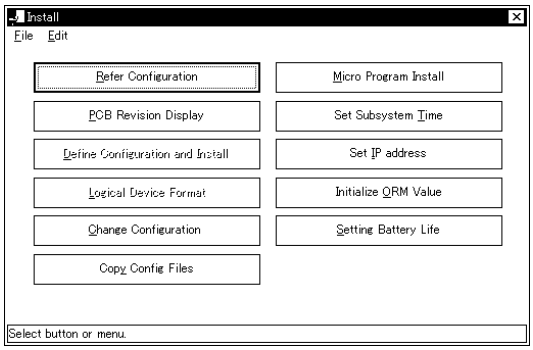
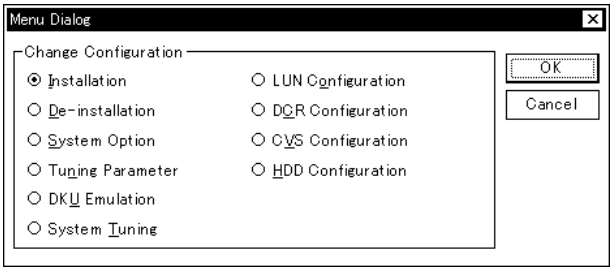
1. Setting up the New Device Structure Information

1. <Mode Change>
   Change the mode to Modify Mode.
   Select (CL) [Install].

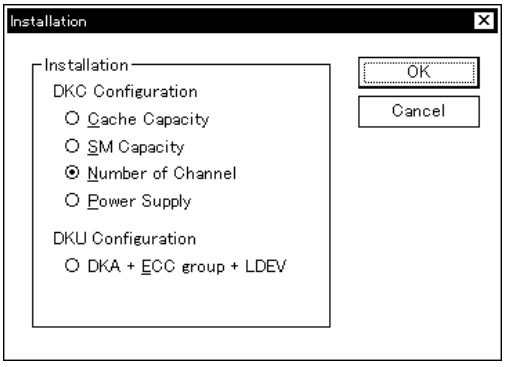


2. <Start the 'Menu Dialog' screen>
   Select (CL) [Change Configuration].

3. <Start Device Structure Setup screen>
   Select (CL) [Installation] in the 'Menu Dialog' dialog box and select (CL) [OK].



4. <Select a part to be changed>
   Select (CL) [Number of Channel], and select (CL) [OK].



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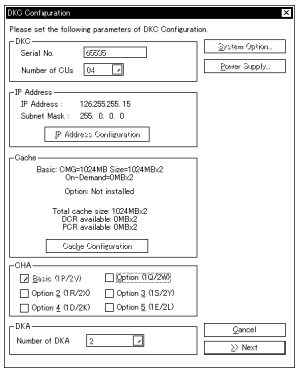
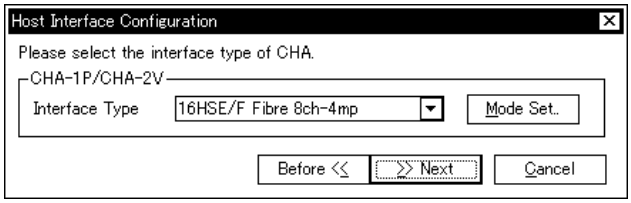
2. SVP pre procedure

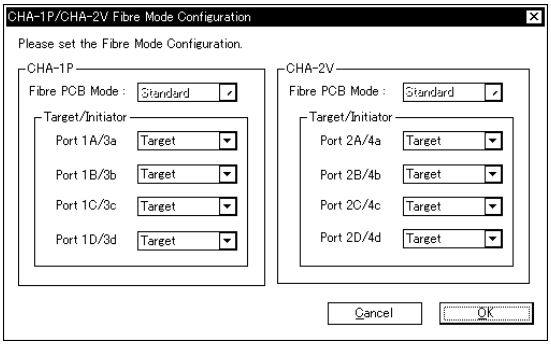
1. <Update Configuration Information>
Enter the item to CHA in the 'DKC Configuration' window.
Make sure that the entered item is correct and select (CL) [>>Next].



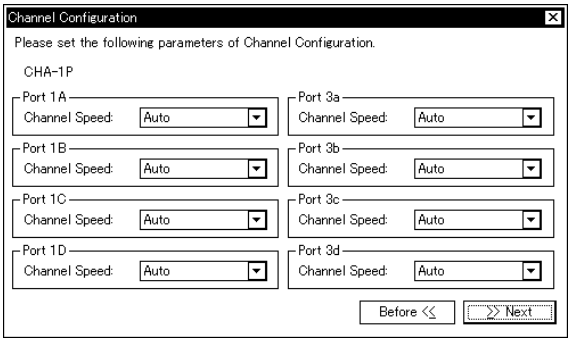
2-1. <Defining channel type>
Input each item in the "Host Interface Configuration" window.
Repeat the operation above as many times as the number of channels installed.
Select (CL) [Fibre *]. When setting the HRC/HORC, select (CL) [Mode Set...] and go to step 2-2.
Verify that the inputted item is correct and select (CL) [>>Next].
Go to step 3.



2-2. <Defining Fibre Mode>
Select (CL) the item defined as an Fibre Mode (set the 'Target/Initiator' only when setting the HRC/HORC) and select (CL) [OK].
The routine returns to step 2-1.
When [Cancel] is selected (CL), the routine returns to step 2-1.
Note1: 'Target/Initiator' setup is changed every 2 port.
Note2: Refer to OPEN14-20 for the Port name.



3. <Setting Channel>
Set the 'Channel Speed'.
After setting up, select (CL) [>>Next].



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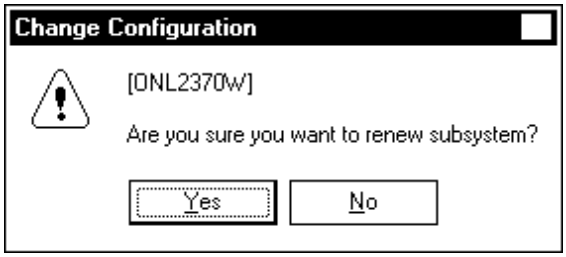
4. <Start installation>
   Select (CL) [Yes] in response to “Are you sure you want to renew subsystem?”.

   When [No] is selected (CL), returns to INST03-16F-20 step 3.

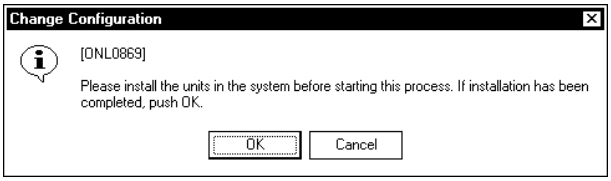


5. <Download microprogram>
   Microprograms are automatically downloaded for shared memory.

6. <Install CHA >
   “Upgrading of the CHA...”

7. <Check that hardware components are installed>
   “Please install the units in the system before starting this process. If installation has been completed, push OK.” is displayed.

   Caution: Do not press [OK] before installing additional hardware into the subsystem.



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3. Installation Procedure of Fibre 16-port Adapter

Note: Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

3-1 Insertion of the PCBs

Note: Make sure that a color of the levers of the PCB to be installed is blue. Never insert a PCB whose lever is not blue.

a. Remove the dummy plate installed in the installation location referring to the Fig. 3.8.4-1. (Note) Dummy plates should be stored for future use in De-installation.
b. Insert the PCBs to the correct locations in the Logic Box. Refer to Table 3.8.4-2.
c. Fasten the two screws referring to Fig. 3.8.4-2.

Table 3.8.4-2 Inserting Location (Front of the unit)

Cluster	CL1							CL2				
Slot No.	N	P	Q	R	S	T	U	V	W	X	Y	Z
Function	CSW	CHA	CHA	CHA	CHA	CACHE	CACHE	CHA	CHA	CHA	CHA	CSW
Location No.	CSW -1N	CHA -1P	CHA -1Q	CHA -1R	CHA -1S	CACHE -1T	CACHE -1U	CHA -2V	CHA -2W	CHA -2X	CHA -2Y	CSW -2Z
Order of addition		Basic	Add.1	Add.2	Add.3			Basic	Add.1	Add.2	Add.3	

Up to 4 Fibre 16-port adapters can be installed in the subsystem.

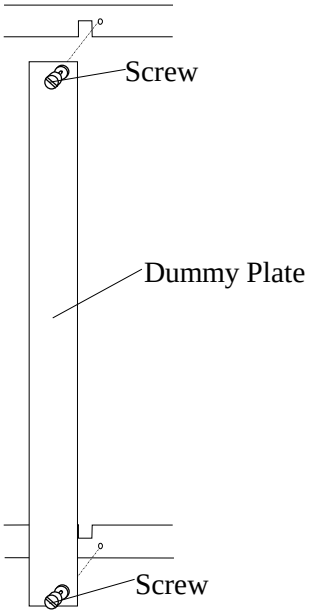

Fig. 3.8.4-1 Removal of Dummy Plate

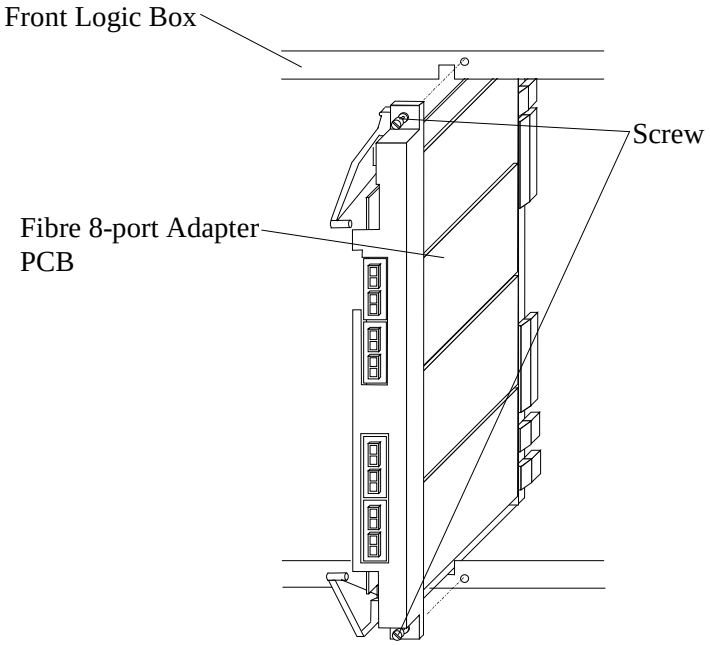

Fig. 3.8.4-2 Insertion of PCB

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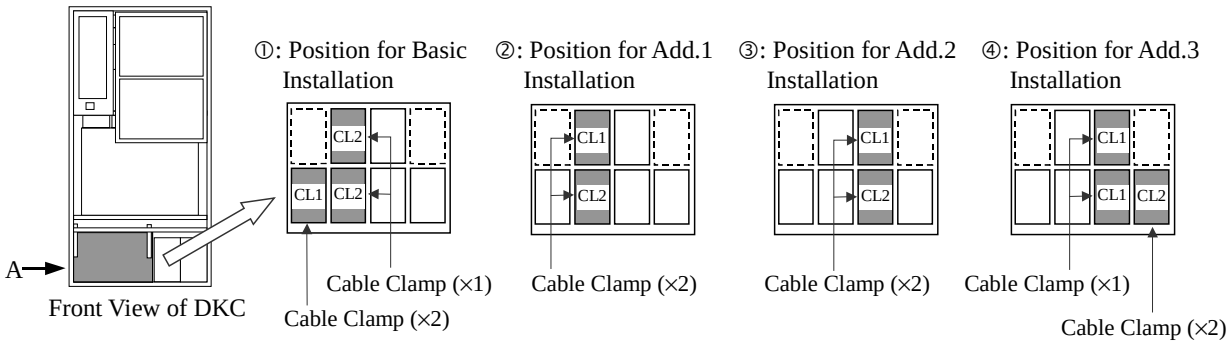
3-2 Remove the brackets and fiber cable routing.

a. Loosen the four screws and remove the two brackets. Refer to Fig. 3.8.4-3.

b. Pull the optical fiber cable into the DKC through the I/F connector panel.



Refer to the following figure for how to attach the cable clamp and cable routing.

① Position for Basic Installation

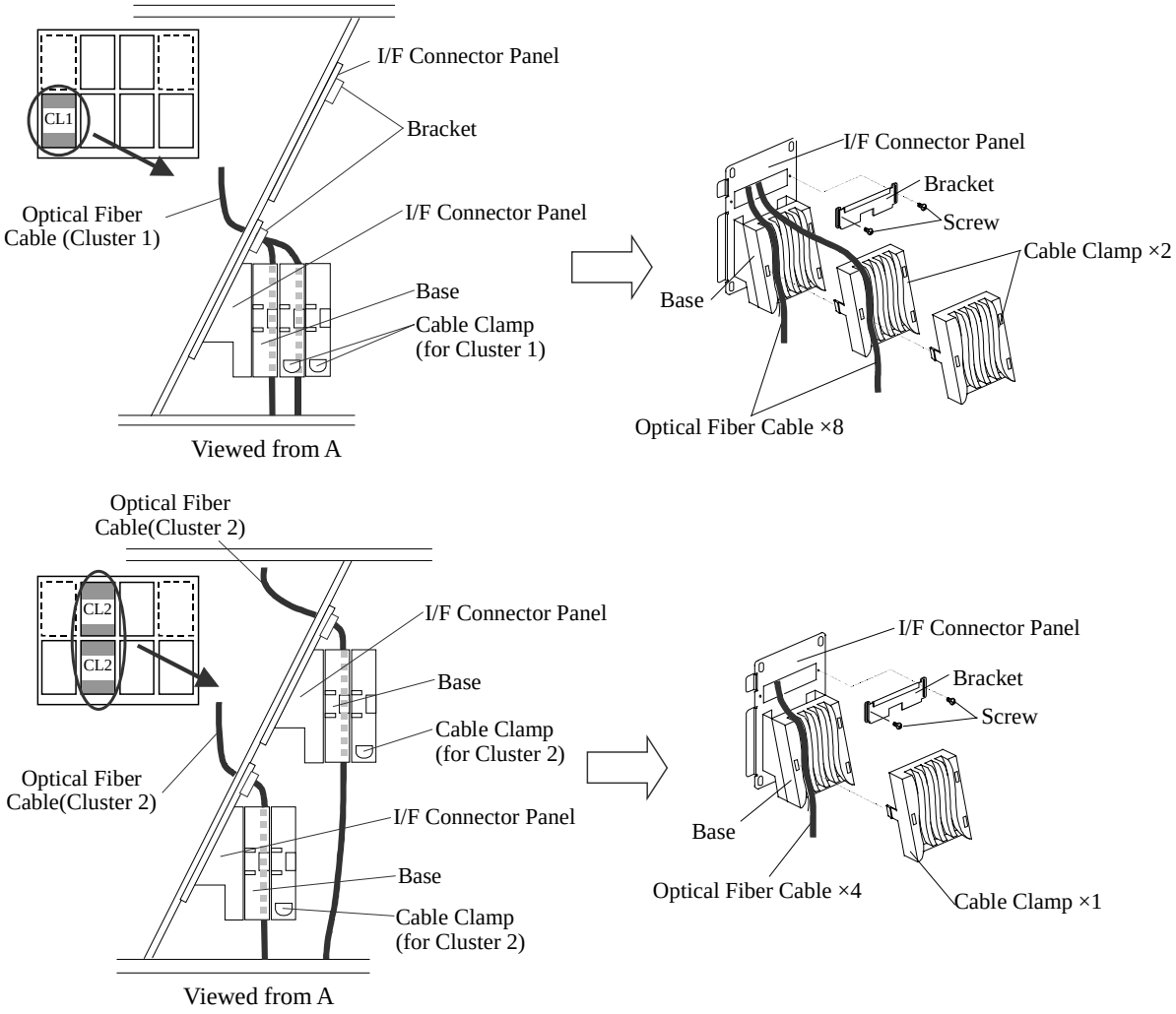


Fig. 3.8.4-3 Installation of Optical Fiber Cable (1/3)

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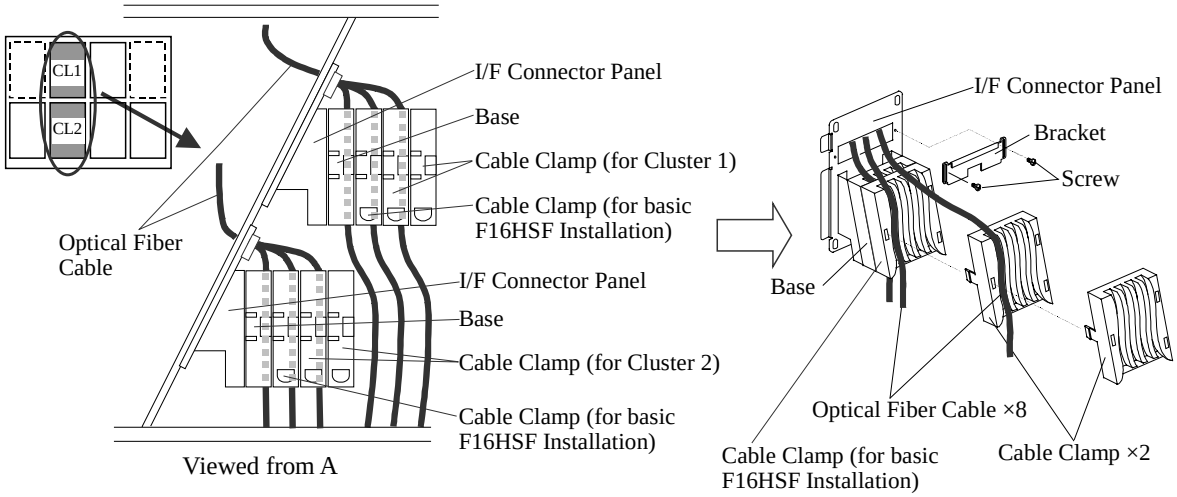
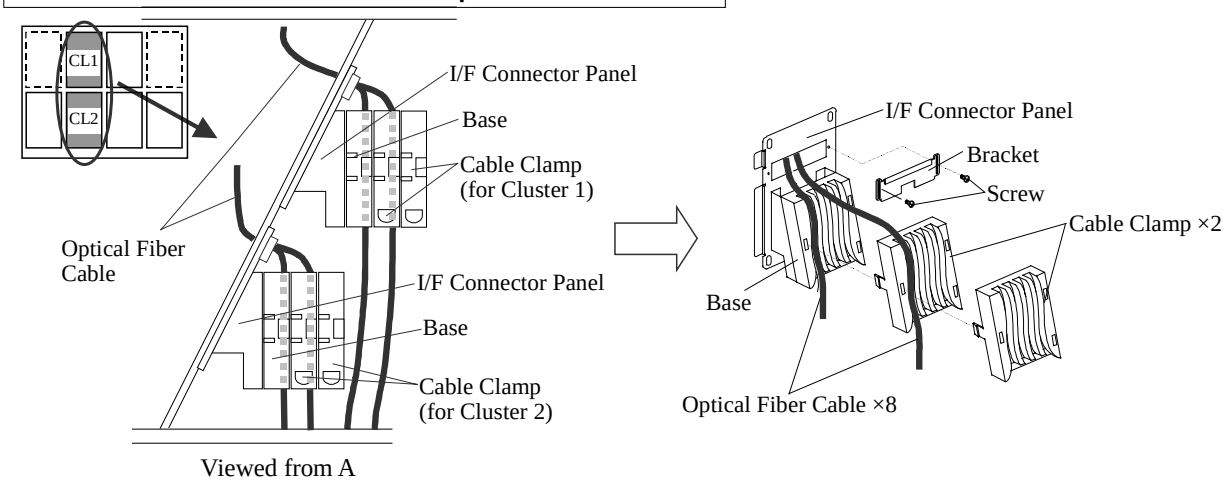
② Position for Add.1 Installation

When the basic DKC-F460I-16HSF is installed



When the basic CHA is installed except DKC-F460I-16HSF



③ Position for Add.2 Installation

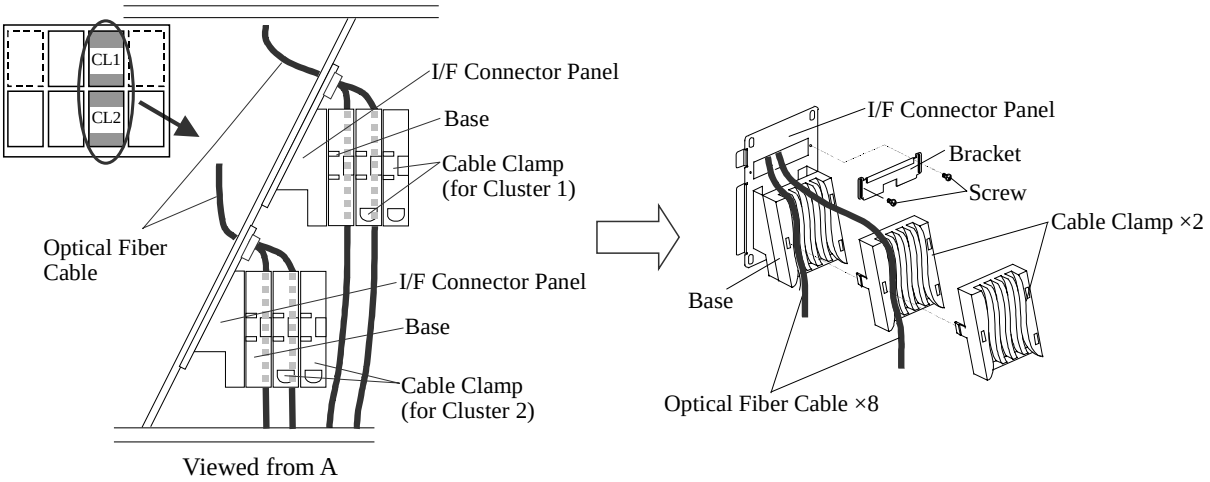


Fig. 3.8.4-3 Installation of Optical Fiber Cable (2/3)

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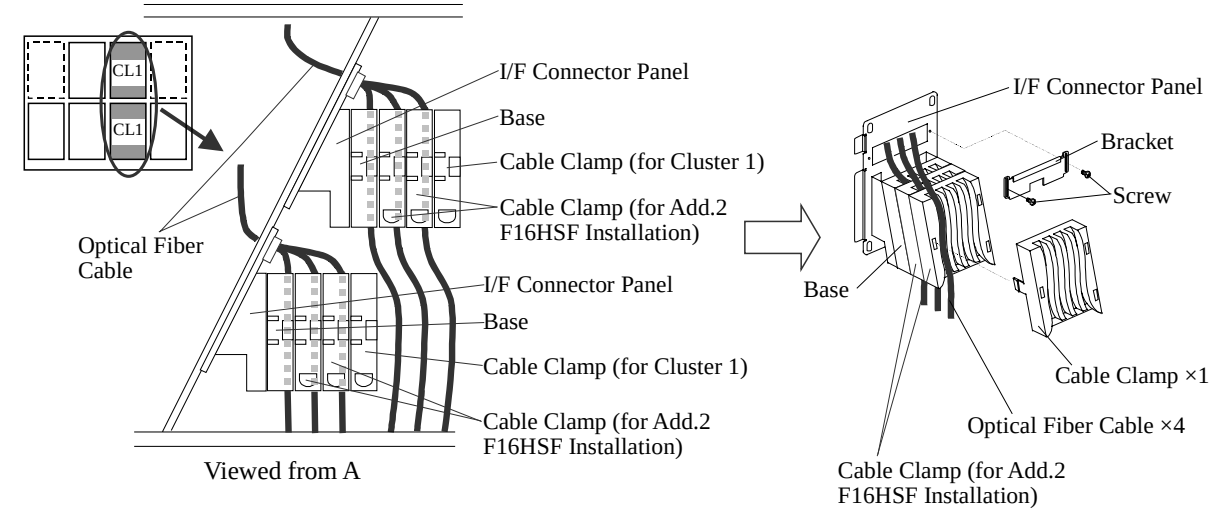
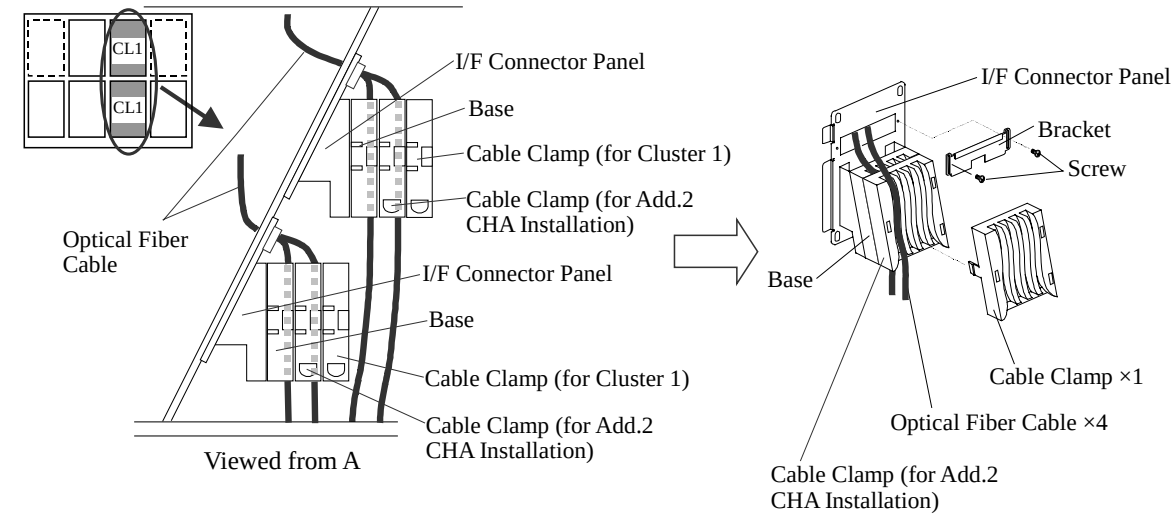
④ Position for Add.3 Installation

When the Add.2 DKC-F460I-16HSF is installed



When the Add.2 CHA is installed except DKC-F460I-16HSF



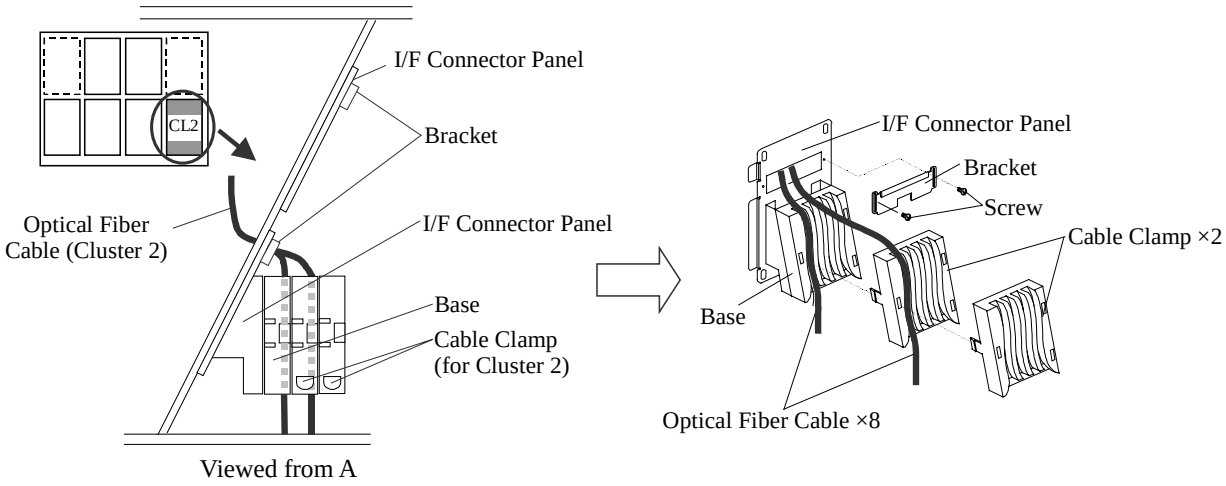


Fig. 3.8.4-3 Installation of Optical Fiber Cable (3/3)

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3-3 Cleaning the fiber cable connectors.

For the tools needed for the cleaning, refer to the tool list on page PARTS07-10.

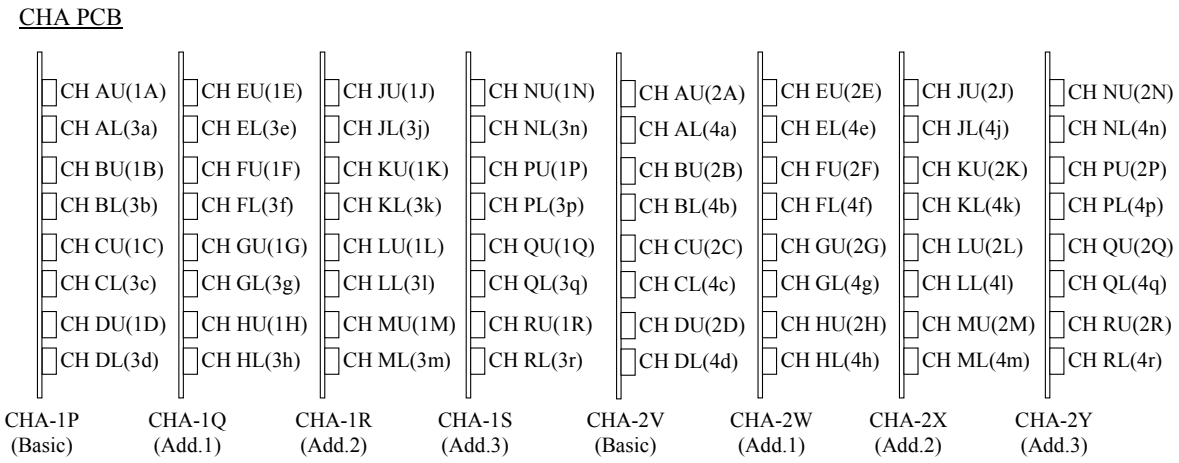
a. Blow compressed gas against the connector using an air sprayer (for about five seconds).
b. Wipe the connector lightly with a piece of cut gauze wet with ethyl alcohol.
c. Blow compressed air again and check the result of the cleaning. (None of dust, sticking of foreign matter, and dirt must be observed.)

⚠ CAUTION

When Installation of PCB in HIGH PERFORMANCE MODE, some LOOP ID (FC-AL) volumes of the parts on the PCB may conflict. So you must operate LUN Management (INST05-610) to change the values, and then insert Optical Fibre cable.
If you operate in the reverse order, SIM=2190XY (ALPA conflict) will be logged on SVP.

3-4 Connection of the optical fibre cable

a. Connect the optical fiber cable to the PCB referring to Fig. 3.8.4-4.
b. Fix the cable to base and attach the cable clamp and bracket referring to Fig. 3.8.4-3.



Note: The numbers in the parentheses in the above figure are port numbers displayed on the SVP screen.

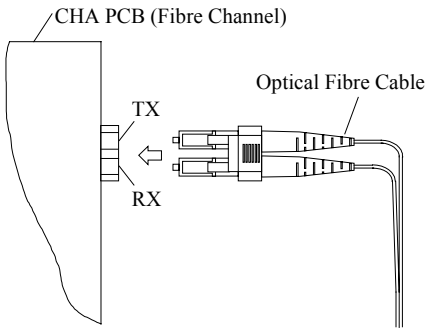


Fig. 3.8.4-4 Connection of Optical Fiber Cable

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3-5 Attachment of the nameplate

a. Attach the nameplate referring to Fig. 3.8.4-5.

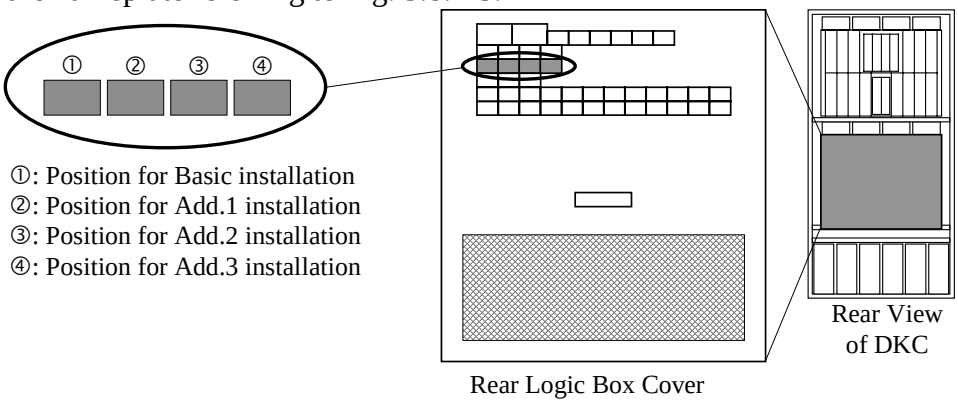

Fig. 3.8.4-5 Attachment of Nameplate

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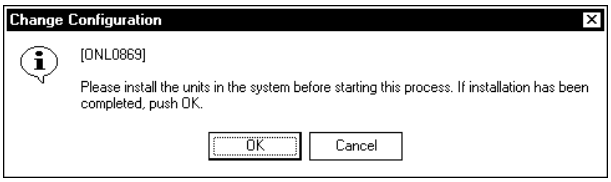
4. SVP post procedure

1. <Check that hardware components are installed>
   Select (CL) [OK] after making sure that all hardware components are installed correctly in response to “Please install the units in the system before starting this process. If installation has been completed, push OK.”.



   When [Cancel] is selected (CL), returns to INST03-16F-20 step 3.

2.
   “Waiting for Power Event... Usually, several minutes (maximum 15 minutes)” is displayed.

   If [ONL3437E] or [ONL3438E] is displayed, please refer 2.11.1. (INST02-630)

---

3. <DKU PATH INLINE>
   When DKA is installed, “DKU PATH INLINE is now running...” is displayed.

---

4. <End of system update processing>
   “Renewal process has completed. Please check the subsystem status.” is displayed when recovery processing on all installed components is completed. Select (CL) [OK] in response to this message.

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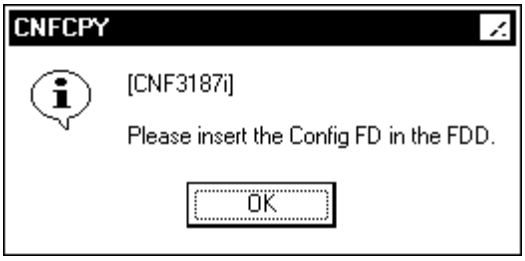
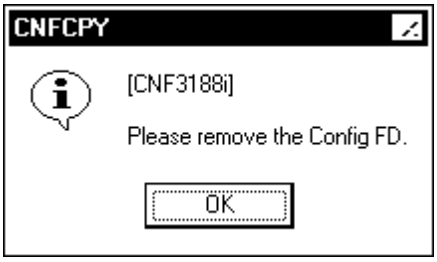
5.

"Reading subsystem configuration data..." is displayed.
"Please insert the Config FD in the FDD." is displayed.
Insert the configuration FD into FDD, and select (CL) [OK].



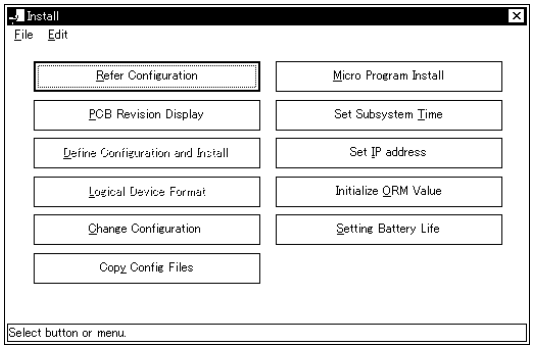
6.

When this procedure is completed, the message "Please remove the Config FD." is displayed.
Remove the FD, select (CL) [OK].



7.

After the procedure is completed, return to "Install".
Select (CL) [File]-[Exit].



8. <Mode Change>
Change the mode to View Mode.

Return to the work table (INST02-40) and perform rest of the works.

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3.8.5 Installation of NAS 4-port Adapter for SX (DKC-F460I-4NS)

Note: When a total number of the CHA and DKA options to be installed is four or more or DKC-F460I-4NS is installed in the CHA slot of 3rd CHA (Add.2) or 4th CHA (Add.4), the NAS Available Additional Power Supply (DKC-F460I-NAPS) must be installed. Be sure to check it before performing the addition.

Table 3.8.5-1 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKC-F460I-4NS	NAS 2-port Adapter PCB	5519714-A	2	Color of PCB lever : Blue
		Cable Clamp	2105506-1	2	
		Nameplate (HDS)	2105902-141	1	RSD
			2105903-141		HICAM
			2105903-241		HICEF
		Nameplate (HP)	2105902-241	1	RSD
			2105903-341		HICAM
			2105903-441		HICEF

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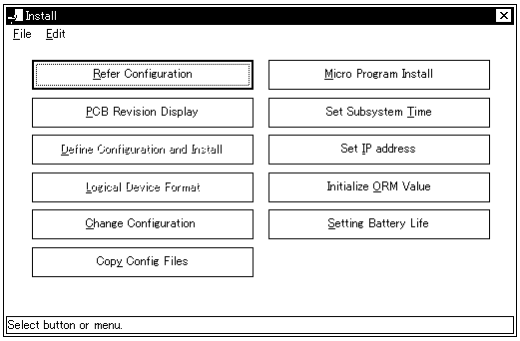
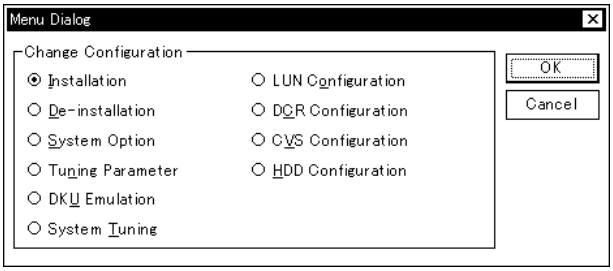
1. Setting up the New Device Structure Information

1. <Mode Change>
   Change the mode to Modify Mode.
   Select (CL) [Install].

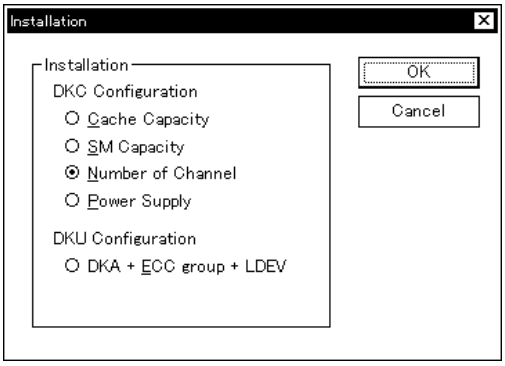
2. <Start the 'Menu Dialog' screen>
   Select (CL) [Change Configuration].



3. <Start Device Structure Setup screen>
   Select (CL) [Installation] in the 'Menu Dialog' dialog box and select (CL) [OK].



4. <Select a part to be changed>
   Select (CL) [Number of Channel], and select (CL) [OK].



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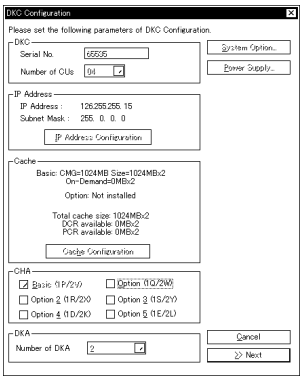
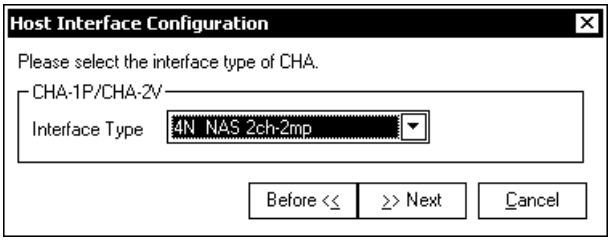
2. SVP pre procedure

1. <Update Configuration Information>
   Enter the item to CHA in the 'DKC Configuration' window.
   Make sure that the entered item is correct and select (CL) [>>Next].
   When you want to install the E-NAS 4 port adapter to option2 or option3, installs additional power supply. (INST03-NAP-10)



2. <Defining channel type>
   Input each item in the "Host Interface Configuration" window.
   Repeat the operation above as many times as the number of channels installed.
   Verify that the inputted item is correct and select (CL) [>>Next].



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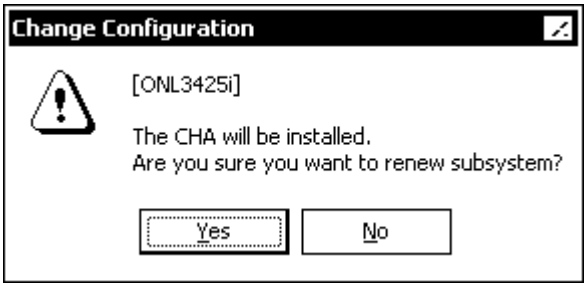
4. <Start installation>
   Select (CL) [Yes] in response to "The CHA will be installed. Are you sure you want to renew subsystem?".

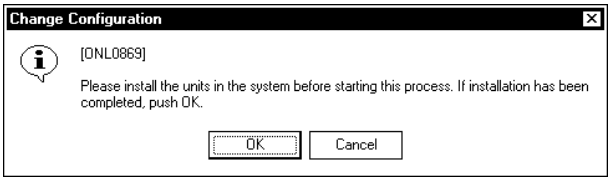
   When [No] is selected (CL), returns to INST03-4NS-20 step 3.



5. <Download microprogram>
   Microprograms are automatically downloaded for shared memory.

6. <Install CHA >
   "Upgrading of the CHA..."

7. <Check that hardware components are installed>
   "Please install the units in the system before starting this process. If installation has been completed, push OK." is displayed.
   Note: Do not press [OK] before installing additional hardware into the subsystem.



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3. Installation Procedure of NAS 4-port Adapter

Note: Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

3-1 Insertion of the PCBs

Note: (1) Make sure that a color of the levers of the PCB to be installed is blue. Never insert a PCB whose lever is not blue.
(2) When installing the CHA PCB for the NAS, be sure to connect the cable after installing the PCB.

a. Remove the dummy plate installed in the installation location referring to the Fig. 3.8.5-1. (Note) Dummy plates should be stored for future use in De-installation.
b. Insert the PCBs to the correct locations in the Logic Box. Refer to Table 3.8.5-2.
c. Fasten the two screws referring to Fig. 3.8.5-2.
d. Connect the 12V power cable to the PCB.

Table 3.8.5-2 Inserting Location (Front of the unit)

Cluster	CL1							CL2				
Slot No.	N	P	Q	R	S	T	U	V	W	X	Y	Z
Function	CSW	CHA	CHA	CHA	CHA	CACHE	CACHE	CHA	CHA	CHA	CHA	CSW
Location No.	CSW -1N	CHA -1P	CHA -1Q	CHA -1R	CHA -1S	CACHE -1T	CACHE -1U	CHA -2V	CHA -2W	CHA -2X	CHA -2Y	CSW -2Z
Order of addition		Basic	Add.1	Add.2	Add.3			Basic	Add.1	Add.2	Add.3	

Up to 4 NAS 4-port adapters can be installed in the subsystem.

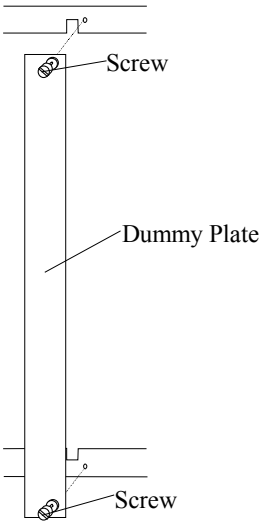

Fig. 3.8.5-1 Removal of Dummy Plate

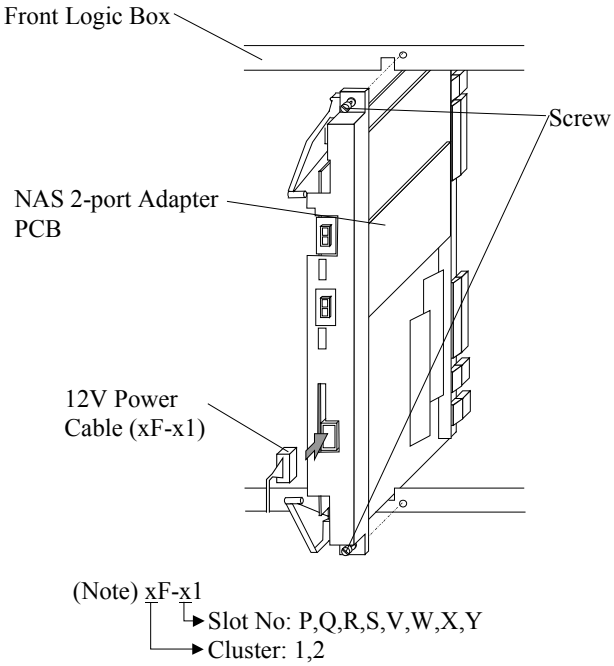

Fig. 3.8.5-2 Insertion of PCB

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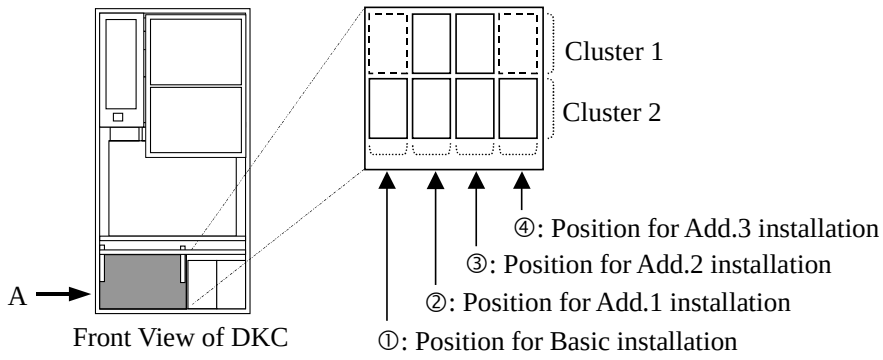
3-2 Remove the brackets and fiber cable routing.

a. Loosen the four screws and remove the two brackets. Refer to Fig. 3.8.5-3.

b. Pull the optical fiber cable into the DKC through the I/F connector panel.



Refer to the following figure for how to attach the cable clamp and cable routing.

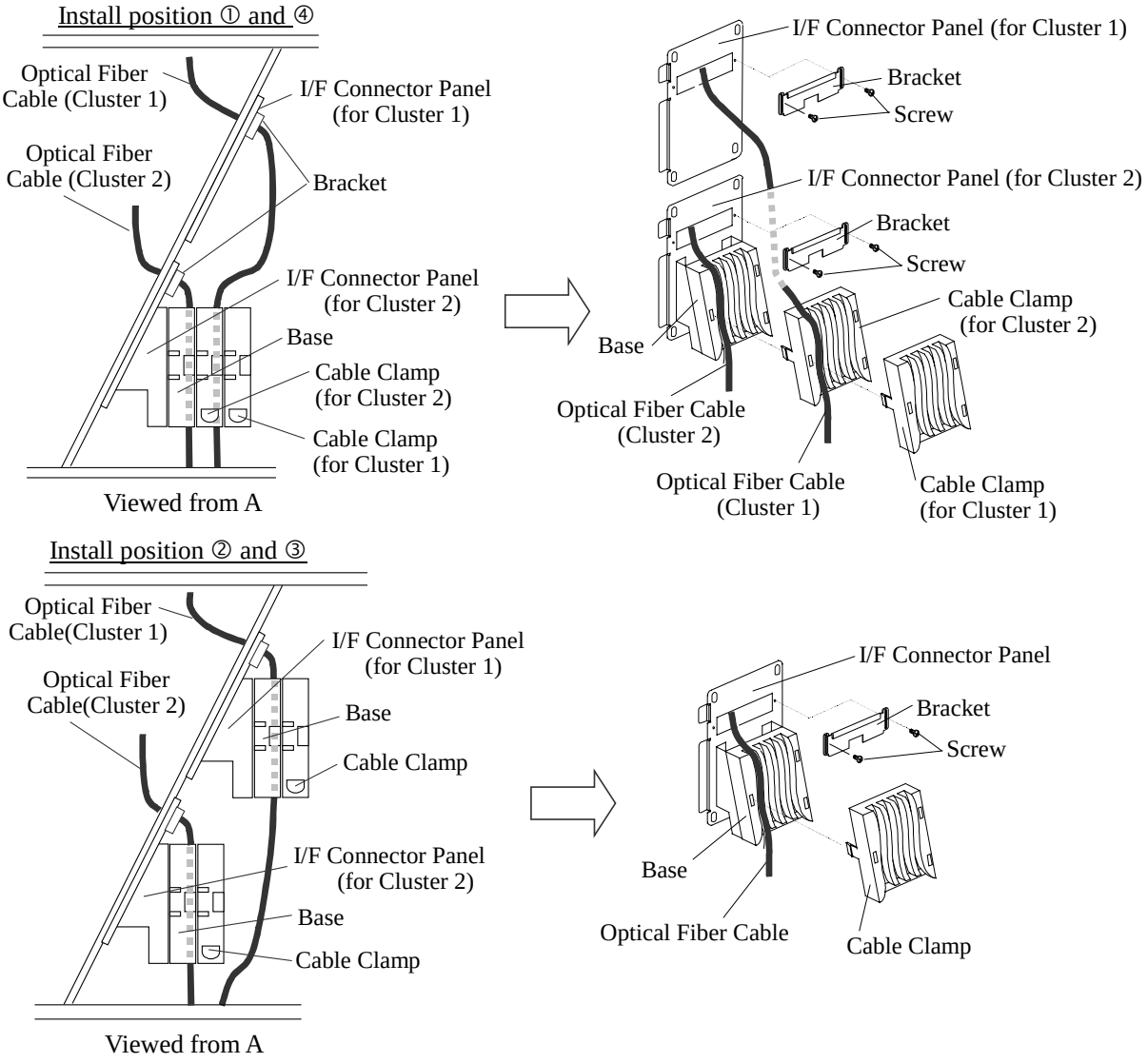


Fig. 3.8.5-3 Installation of Optical Fiber Cable

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3-3 Cleaning the fiber cable connectors.

For the tools needed for the cleaning, refer to the tool list on page PARTS07-10.

a. Blow compressed gas against the connector using an air sprayer (for about five seconds).
b. Wipe the connector lightly with a piece of cut gauze wet with ethyl alcohol.
c. Blow compressed air again and check the result of the cleaning. (None of dust, sticking of foreign matter, and dirt must be observed.)

⚠ CAUTION

When Installation of PCB in HIGH PERFORMANCE MODE, some LOOP ID (FC-AL) volumes of the parts on the PCB may conflict. So you must operate LUN Management (INST05-610) to change the values, and then insert Optical Fibre cable.
If you operate in the reverse order, SIM=2190XY (ALPA conflict) will be logged on SVP.

3-4 Connection of the optical fibre cable

a. Connect the optical fiber cable to the PCB referring to Fig. 3.8.5-4.
b. Fix the cable to base and attach the cable clamp and bracket referring to Fig. 3.8.5-3.

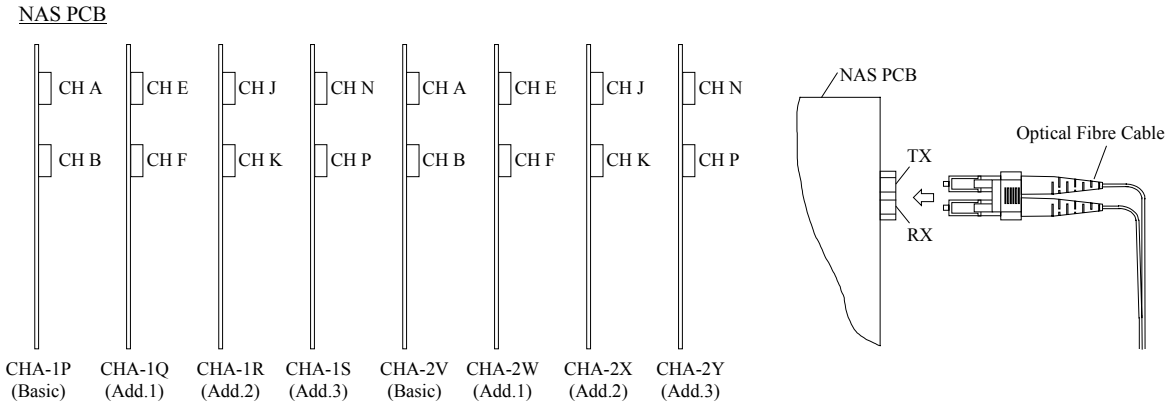

Fig. 3.8.5-4 Connection of Optical Fiber Cable

3-5 Attachment of the nameplate

a. Attach the nameplate referring to Fig. 3.8.5-5.

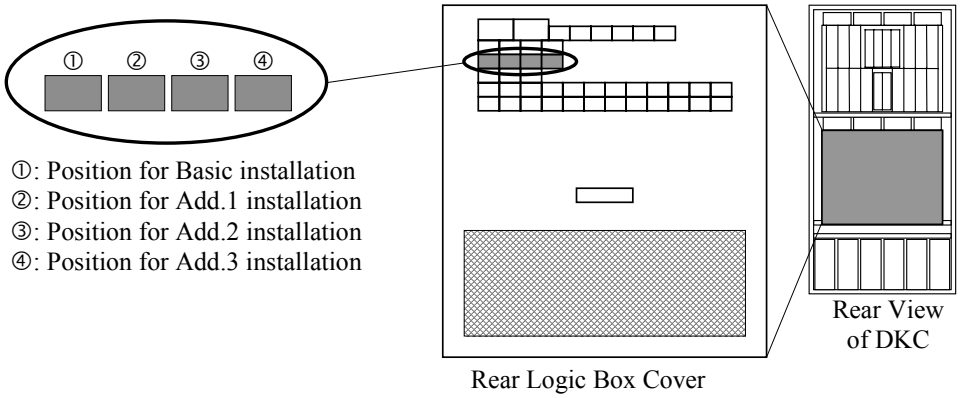

Fig. 3.8.5-5 Attachment of Nameplate

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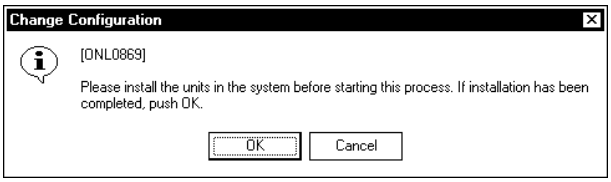
4. SVP post procedure

1. <Check that hardware components are installed>
   Select (CL) [OK] after making sure that all hardware components are installed correctly in response to “Please install the units in the system before starting this process. If installation has been completed, push OK.”.



   When [Cancel] is selected (CL), returns to INST03-4NS-20 step 3.

2.
   “Waiting for Power Event... Usually, several minutes (maximum 15 minutes)” is displayed.

   If [ONL3437E] or [ONL3438E] is displayed, please refer 2.11.1. (INST02-630)

---

3. <DKU PATH INLINE>
   When DKA is installed, “DKU PATH INLINE is now running...” is displayed.

---

4. <End of system update processing>
   “Renewal process has completed. Please check the subsystem status.” is displayed when recovery processing on all installed components is completed. Select (CL) [OK] in response to this message.

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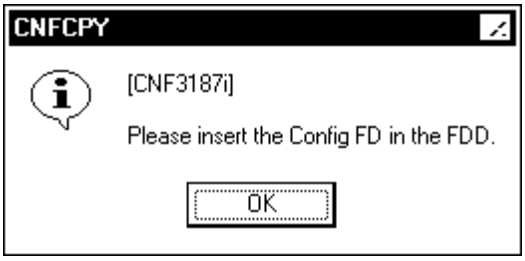
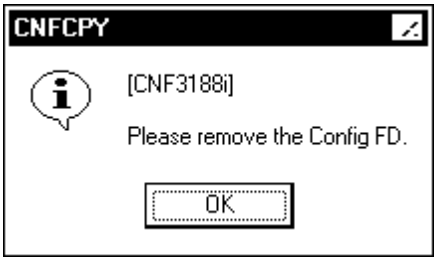
5.

"Reading subsystem configuration data..." is displayed.
"Please insert the Config FD in the FDD." is displayed.
Insert the configuration FD into FDD, and select (CL) [OK].



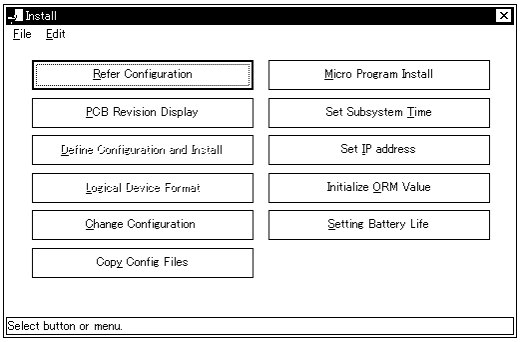
6.

When this procedure is completed, the message "Please remove the Config FD." is displayed.
Remove the FD, select (CL) [OK].



7.

After the procedure is completed, return to "Install".
Select (CL) [File]-[Exit].



8. <Mode Change>
Change the mode to View Mode.

When the CHA PCB for the NAS was newly installed, make sure that the [NAS Setup] button is not displayed in the window of he SVP launcher, and then go to Step 9.
If the [NAS Setup] button is displayed, go to Step 10 because Setup on SVP has already been installed.

When the CHA PCB for the NAS was installed in (added to) a system in which the same PCB has already been installed, make sure that the [NAS Setup] button is displayed in the window of the SVP launcher, and then go to Step 10.
If the [NAS Setup] button is not displayed, go to Step 9 because Setup on SVP is not installed.

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9. <Check the installation status of CHA PCB for the NAS>
   When the subsystem already has the CHA PCBs for the NAS and you are installing additional set(s) of them, go to Step14.
   When the subsystem does not have any CHA BCB for the NAS yet and you are installing first set of them into the subsystem, go to step 10.

10. <Installing Setup on SVP>
    Install the Setup on SVP into Master SVP. (NAS03-110)

11. <Checking the installation status of SVP reliability enhancement kit>
    Check if SVP reliability enhancement kit has been already installed of not.
    If the SVP reliability enhancement kit has been installed, go to Step11.
    If the SVP reliability enhancement kit has not been installed, go to Step13.

12. <Installing Setup on SVP into Standby SVP>
    After switching the SVP (Switch SVP (REP02-525), install the Setup on SVP into the Standby SVP. (NAS03-110)

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13. <Switching the SVP>
    After switching the SVP (Switch SVP (REP02-525)), go back to Master SVP.

14. <Installing the NAS OS>
    Install the NAS OS. (NAS03-290)
    Perform the installation in each of the CHA PCBs for the NAS.

15. <Installing the NAS PP>
    Install the NAS PP (NAS03-290).

    Return to the working table and do the rest of the work. (INST02-40)

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3.8.6 Installation of iSCSI 8-port Adapter (DKC-F460I-8IS)

Note: When a total number of the CHA and DKA options to be installed is four or more, the additional disk controller power supply (DKC-F460I-80) must be installed. Be sure to check it before performing the addition.

Table 3.8.6-1 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKC-F460I-8IS	iSCSI 4-port Adapter PCB	5522913-A	2	Color of PCB lever : Blue
		Cable Clamp	2105506-1	2	
		Nameplate (HDS)	2105902-147	1	RSD
			2105903-147		HICAM
			2105903-247		HICEF
		Nameplate (HP)	2105902-247	1	RSD
			2105903-347		HICAM
			2105903-447		HICEF

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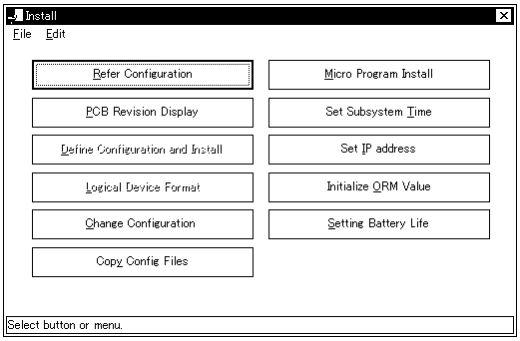
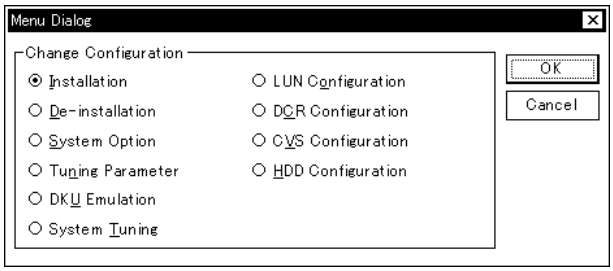
1. Setting up the New Device Structure Information

1. <Mode Change>
   Change the mode to Modify Mode.
   Select (CL) [Install].

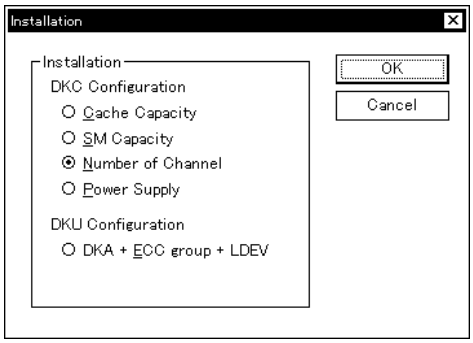
2. <Start the 'Menu Dialog' screen>
   Select (CL) [Change Configuration].



3. <Start Device Structure Setup screen>
   Select (CL) [Installation] in the 'Menu Dialog' dialog box and select (CL) [OK].



4. <Select a part to be changed>
   Select (CL) [Number of Channel], and select (CL) [OK].



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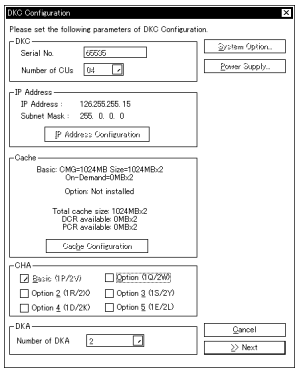
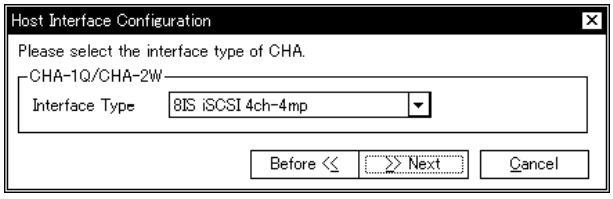
2. SVP pre procedure

1. <Update Configuration Information>
   Enter the item to CHA in the 'DKC Configuration' window.
   Put the mark on the corresponding check box.
   Make sure that the entered item is correct and select (CL) [>>Next].



2. <Defining channel type>
   Input each item in the "Host Interface Configuration" window.
   Repeat the operation above as many times as the number of channels installed.
   Select (CL) [iSCSI *].
   Verify that the inputted item is correct and select (CL) [>>Next].
   Go to step 3.



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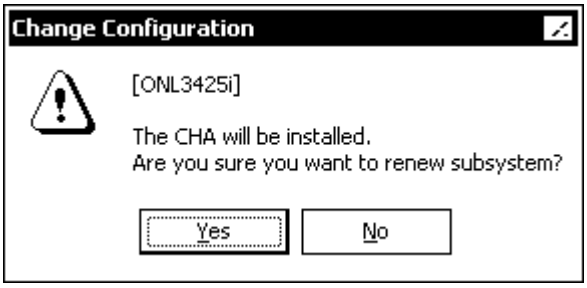
3. <Start installation>
   Select (CL) [Yes] in response to "The CHA will be installed. Are you sure you want to renew subsystem?".

   When [No] is selected (CL), returns to INST03-8IS-20 step 3.

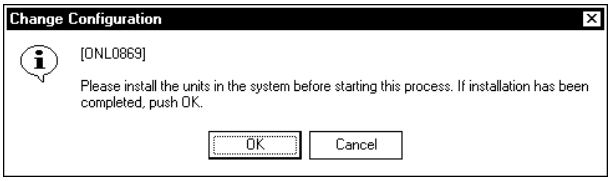


4. <Download microprogram>
   Microprograms are automatically downloaded for shared memory.

5. <Install CHA >
   "Upgrading of the CHA..."

6. <Check that hardware components are installed>
   "Please install the units in the system before starting this process. If installation has been completed, push OK." is displayed.

   Note: Do not press [OK] before installing additional hardware into the subsystem.



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3. Installation Procedure of iSCSI 8-port Adapter

Note: Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

3-1 Insertion of the PCBs

Note: Make sure that a color of the levers of the PCB to be installed is blue. Never insert a PCB whose lever is not blue.

a. Remove the dummy plate installed in the installation location referring to the Fig. 3.8.6-1. (Note) Dummy plates should be stored for future use in De-installation.
b. Insert the PCBs to the correct locations in the Logic Box. Refer to Table 3.8.6-2.
c. Fasten the two screws referring to Fig. 3.8.6-2.

Table 3.8.6-2 Inserting Location (Front of the unit)

Cluster	CL1							CL2				
Slot No.	N	P	Q	R	S	T	U	V	W	X	Y	Z
Function	CSW	CHA	CHA	CHA	CHA	CACHE	CACHE	CHA	CHA	CHA	CHA	CSW
Location No.	CSW -1N	CHA -1P	CHA -1Q	CHA -1R	CHA -1S	CACHE -1T	CACHE -1U	CHA -2V	CHA -2W	CHA -2X	CHA -2Y	CSW -2Z
Order of addition		Basic	Add.1	Add.2	Add.3			Basic	Add.1	Add.2	Add.3	

Up to 4 iSCSI 8-port adapters can be installed in the subsystem.

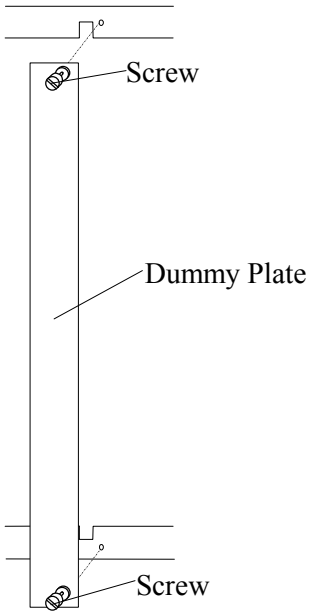

Fig. 3.8.6-1 Removal of Dummy Plate

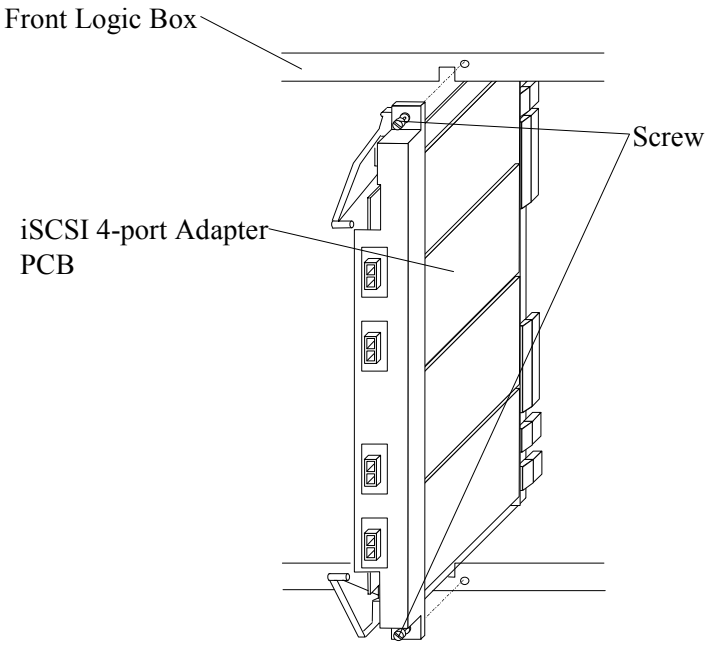

Fig. 3.8.6-2 Insertion of PCB

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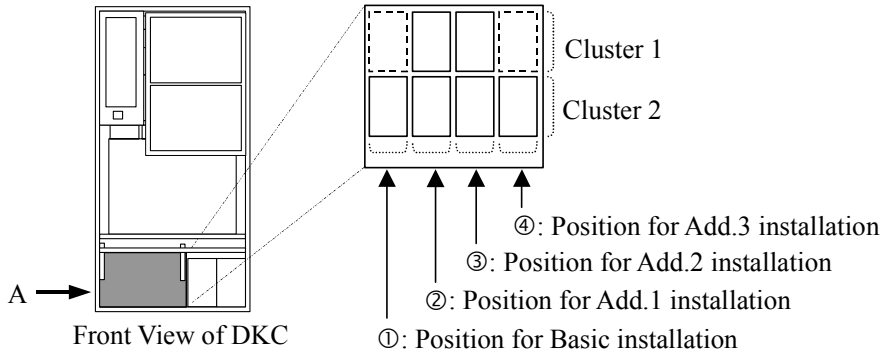
3-2 Remove the brackets and fiber cable routing.

a. Loosen the four screws and remove the two brackets. Refer to Fig. 3.8.6-3.

b. Pull the optical fiber cable into the DKC through the I/F connector panel.



Refer to the following figure for how to attach the cable clamp and cable routing.

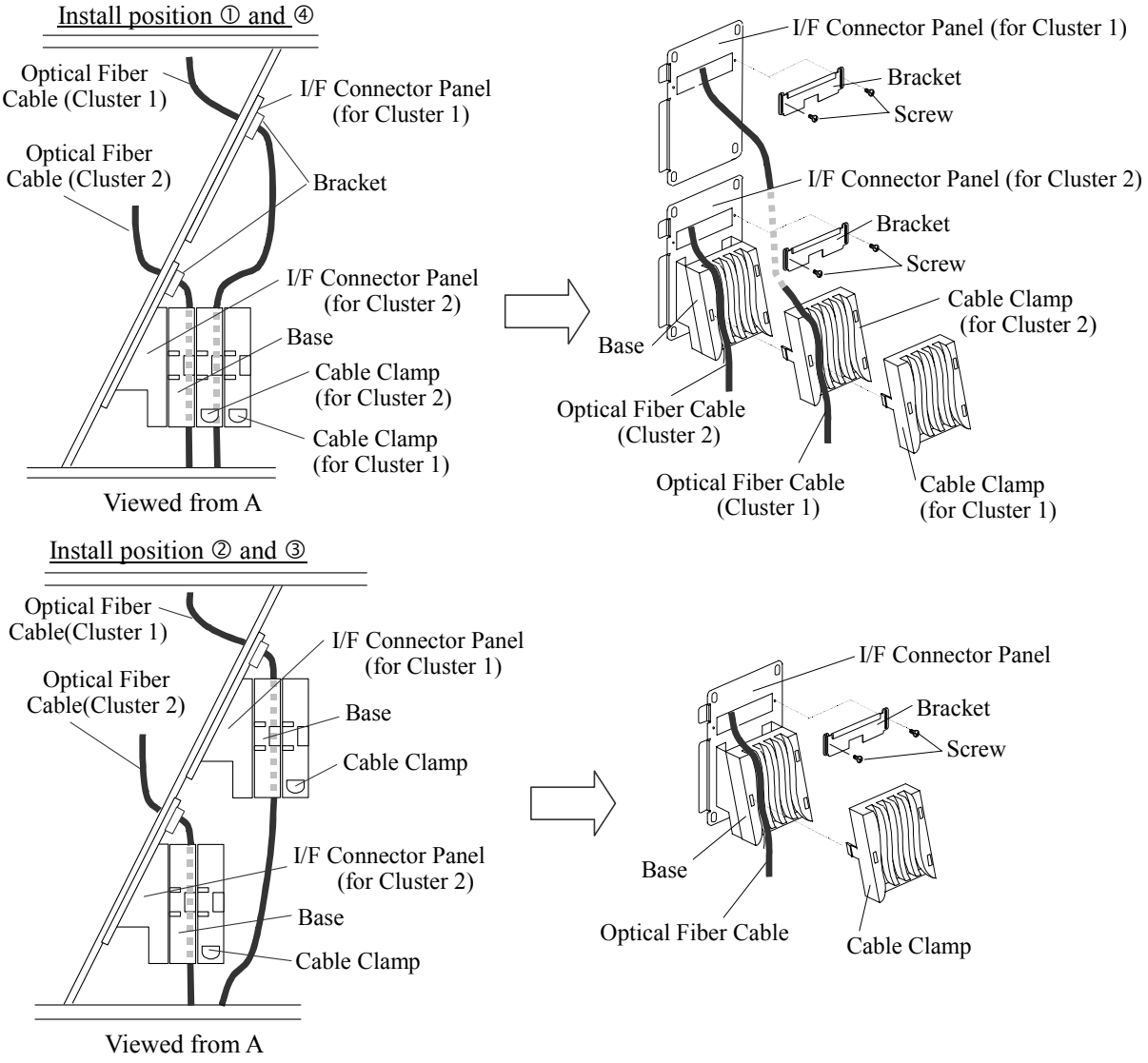


Fig. 3.8.6-3 Installation of Optical Fiber Cable

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3-3 Cleaning the fiber cable connectors.

For the tools needed for the cleaning, refer to the tool list on page PARTS07-10.

a. Blow compressed gas against the connector using an air sprayer (for about five seconds).
b. Wipe the connector lightly with a piece of cut gauze wet with ethyl alcohol.
c. Blow compressed air again and check the result of the cleaning. (None of dust, sticking of foreign matter, and dirt must be observed.)

⚠ CAUTION

When Installation of PCB in HIGH PERFORMANCE MODE, some LOOP ID (FC-AL) volumes of the parts on the PCB may conflict. So you must operate LUN Management (INST05-610) to change the values, and then insert Optical Fibre cable.
If you operate in the reverse order, SIM=2190XY (ALPA conflict) will be logged on SVP.

3-4 Connection of the optical fibre cable

a. Connect the optical fiber cable to the PCB referring to Fig. 3.8.6-4.
b. Fix the cable to base and attach the cable clamp and bracket referring to Fig. 3.8.6-3.

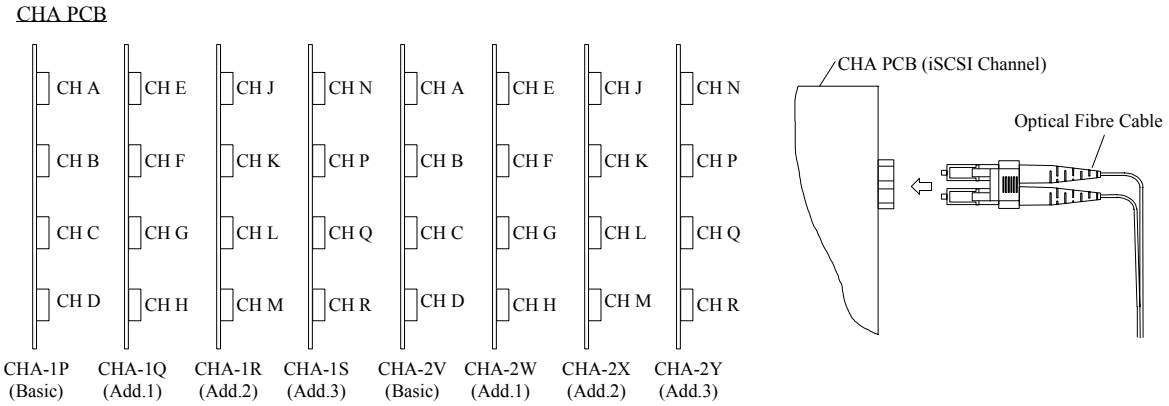

Fig. 3.8.6-4 Connection of Optical Fiber Cable

3-5 Attachment of the nameplate

a. Attach the nameplate referring to Fig. 3.8.6-5.

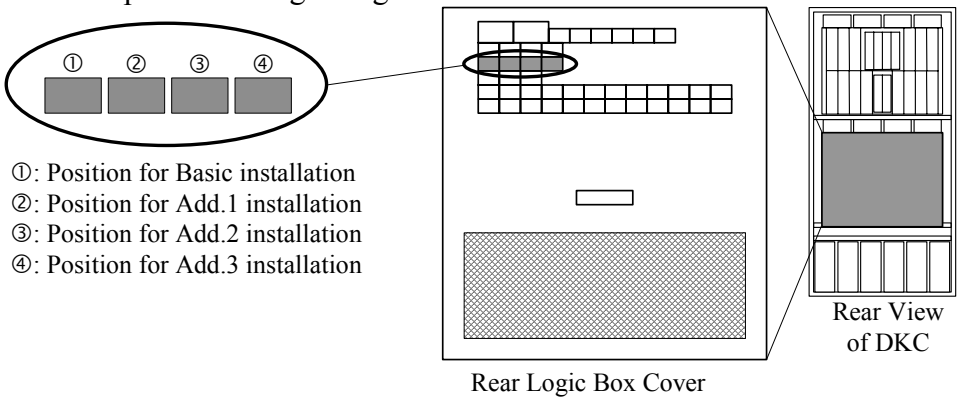

Fig. 3.8.6-5 Attachment of Nameplate

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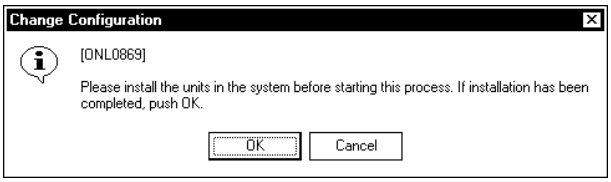
4. SVP post procedure

1. <Check that hardware components are installed>
   Select (CL) [OK] after making sure that all hardware components are installed correctly in response to “Please install the units in the system before starting this process. If installation has been completed, push OK.”.



   When [Cancel] is selected (CL), returns to INST03-8IS-20 step 3.

2.
   “Waiting for Power Event... Usually, several minutes (maximum 15 minutes)” is displayed.

   If [ONL3437E] or [ONL3438E] is displayed, please refer 2.11.1. (INST02-630)

---

3. <DKU PATH INLINE>
   When DKA is installed, “DKU PATH INLINE is now running...” is displayed.

---

4. <End of system update processing>
   “Renewal process has completed. Please check the subsystem status.” is displayed when recovery processing on all installed components is completed. Select (CL) [OK] in response to this message.

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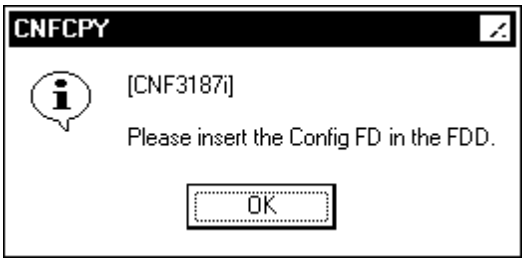
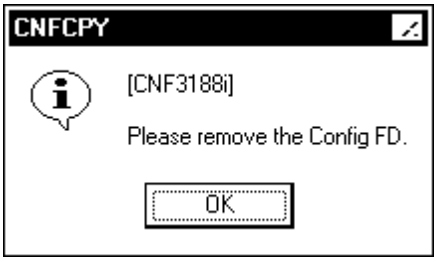
5.

"Reading subsystem configuration data..." is displayed.
"Please insert the Config FD in the FDD." is displayed.
Insert the configuration FD into FDD, and select (CL) [OK].



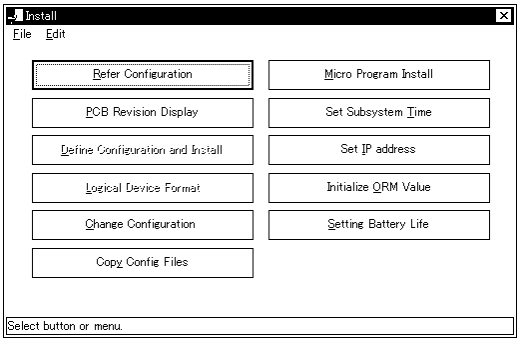
6.

When this procedure is completed, the message "Please remove the Config FD." is displayed.
Remove the FD, select (CL) [OK].



7.

After the procedure is completed, return to "Install".
Select (CL) [File]-[Exit].



8. <Mode Change>
Change the mode to View Mode.

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3.9 Installation of Shared Memory and Cache Memory

NOTICE:
1. When the number of CUs is added accompanying the HDD installation, there is a case that expansion of shared memory is required. If necessary, see INST03-SM-10.
2. The installed Shared Memory capacity and maximum Cache Memory capacity with using HMRCF/HOMRCF/HRC/HORC/HIHSM/ShadowImage-FlashCopy® version2 functions is different from ones without using these functions.

(1) Refer to the "[INST01-80] Table 1.1.2.3-2", "[INST01-84] Table 1.1.2.3-5" or "[INST01-88] Table 1.1.2.3-10" in functions use.
(Note1) When you use these functions, you need to install more Shared Memory.
(Note2) When you use these functions with over 8CUs, the maximum Cache Memory capacity you can install is up to 58GB. (Composed only DKC-F460I-2048)
(Note3) When cache memory capacity is 64GB or less, refer to the table 1.1.2.3-1.

(2) When using the ShadowImage-FlashCopy® version2 function, refer to the "[INST01-81] Table 1.1.2.3-3", "[INST01-85] Table 1.1.2.3-6" or "[INST01-89] Table 1.1.2.3-11.

(3) Refer to the "[INST01-75] Table 1.1.2.3-1", "[INST01-83] Table 1.1.2.3-4" or "[INST01-87] Table 1.1.2.3-9" in these functions non-use.

3.9.1 Installation of Additional Shared Memory (DKC-F460I-S512/S1024)

Table 3.9.1-1 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKC-F460I-S512	SH287-B	5513978-B	2	Shared Memory Module (256MB)
2	DKC-F460I-S1024	SH287-C	5513978-C	2	Shared Memory Module (512MB)
		Nameplate (HDS)	2105902-146	1	RSD
			2105903-146		HICAM
			2105903-246		HICEF
		Nameplate (HP)	2105902-246	1	RSD
			2105903-346		HICAM
			2105903-446		HICEF

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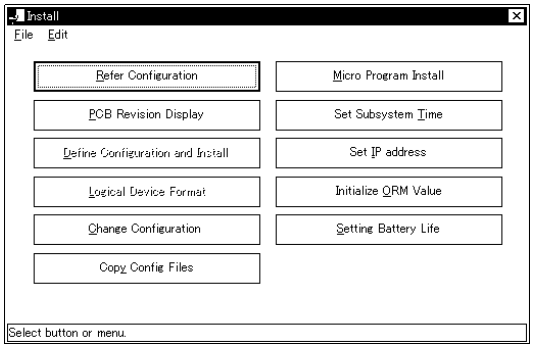
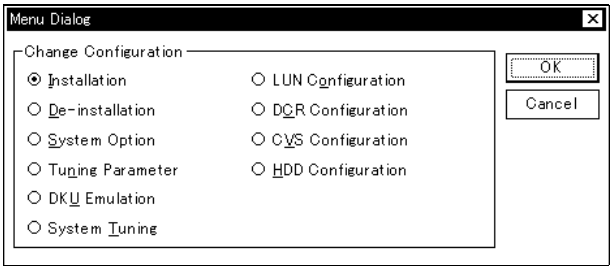
1. Setting up the New Device Structure Information

1. <Mode Change>
   Change the mode to Modify Mode.
   Select (CL) [Install].

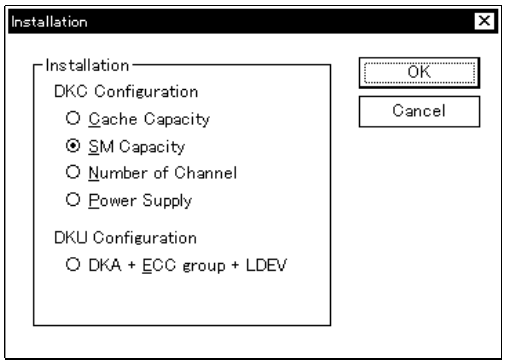
2. <Start the 'Menu Dialog' screen>
   Select (CL) [Change Configuration].



3. <Start Device Structure Setup screen>
   Select (CL) [Installation] in the 'Menu Dialog' dialog box and select (CL) [OK].



4. <Select a part to be changed>
   Select (CL) [SM Capacity], and select (CL) [OK].



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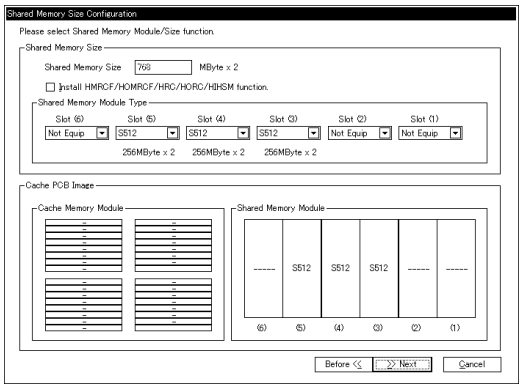
2. SVP pre procedure on the Cluster 1.

(1) <Define Shared Memory Size>
Define the shared memory size in the 'Shared Memory Size Configuration' dialog box.

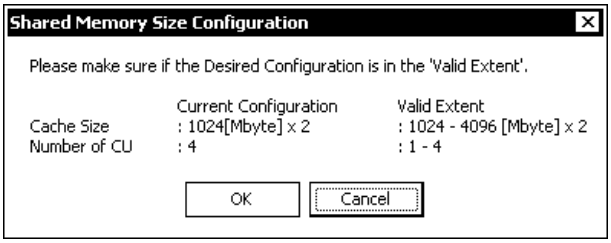


When you want to add the SM for the HMRCF/ HOMRCF/HRC/HORC/HIMSM function, check the "Install HMRCF/HOMRCF/HRC/HORC/HIMSM Function.". (There may be no change in SM capacity.)

Note: Select 'Shared Memory Module Type' in order of "Slot(1) → Slot(2) → Slot(3) → Slot(4) → Slot(5) → Slot(6)".

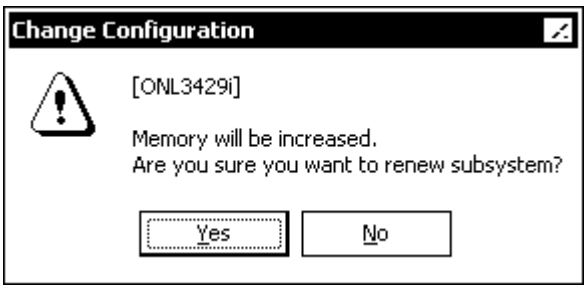
If the installed SM after the addition conforms to that shown in the "Cache PCB Image", select (CL) the [>>Next] button.

(1-1)
Make sure if the desired configuration (Current Configuration) is in the valid extent (Valid Extent).
In the valid extent: Select (CL) [OK].
Out of the valid extent: Select (CL) [Cancel].



---

(2) <Start installation>
Select (CL) [Yes] in response to "Memory will be increased. Are you sure you want to renew subsystem?".



If there is change in SM capacity, go to INST03-SM-35 step 3.
If there is no change in SM capacity, go to INST03-SM-160 step 3.

When [No] is selected (CL), returns to INST03-SM-20 step 2.

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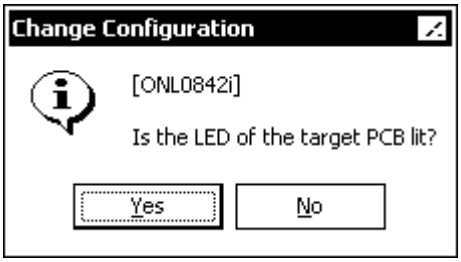
(3)

"The Shared Memory PCB is being blocked..." is displayed.
"Lighting LED of the PCB..." is displayed.

(4) <Check shut down LED>
Select (CL)
* [Yes] if LED is on
* [No] if LED is off
in response to "Is the LED of the target PCB lit?".

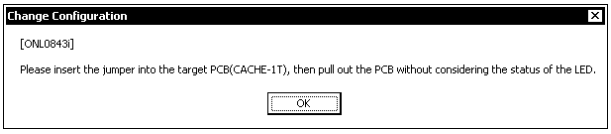


<Forcing shut down LED on>

CAUTION

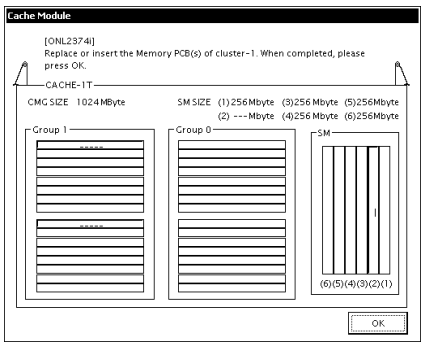
If the jumper is inserted in the wrong PCB, a system down may be caused.

If [No] is selected:
Insert a jumper in response to "Please insert the jumper into the target PCB(CACHE-nn), then pull out the PCB without considering the status of the LED".
(Refer INST03-SM-40)



(5) <Perform cache hardware installation>
At this point refrain from pressing the [OK] button.
When "Replace or insert the Memory PCB(s) of cluster-1. When completed, please press OK." is displayed, install hardware components according to the cache hardware installation procedure.

Make sure of the installation location and size of the module to be added and insert the correct module in the correct location.
(Uninstalled module is displayed as looks depressed.)



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3-1 Install the Shared Memory on the Cluster 1.

Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

3-1. Remove the PCB.

a. While referring to Fig. 3.9.1-1 and Table 3.9.1-2, check the Shut Down LED on the Cache Memory PCB in the Front Logic Box. Connect the Maintenance Jumper to the Shut Down Connector if the Shut Down LED is not on. (This procedure [3-1. a.] is not valid for a New Installation.)

CAUTION

A system down may be caused if the Maintenance jumper is inserted in a PCB other than that to be removed. Make sure that it is a PCB to be added.

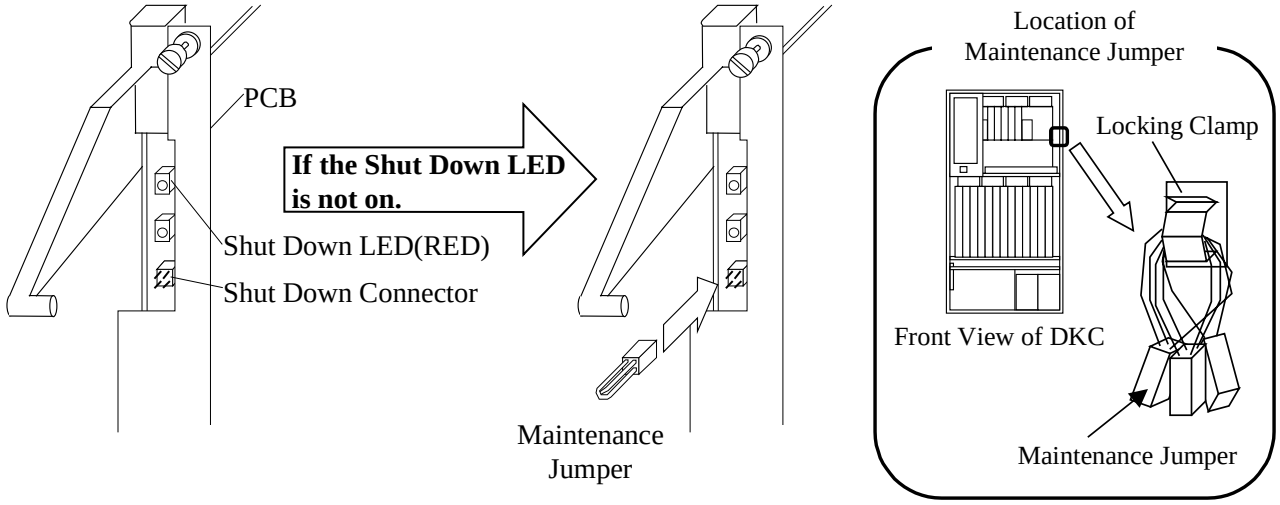

Fig. 3.9.1-1 Location of the Shut Down LED

Table 3.9.1-2 Location of the Cache PCB

Cluster	PCB Name	Box	Slot No.	Location No.	Remarks
1	WP490-A	Front Logic Box	T	CACHE-1T	Cache Memory PCB

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b. Remove the two screws and remove the Cache Memory PCB.

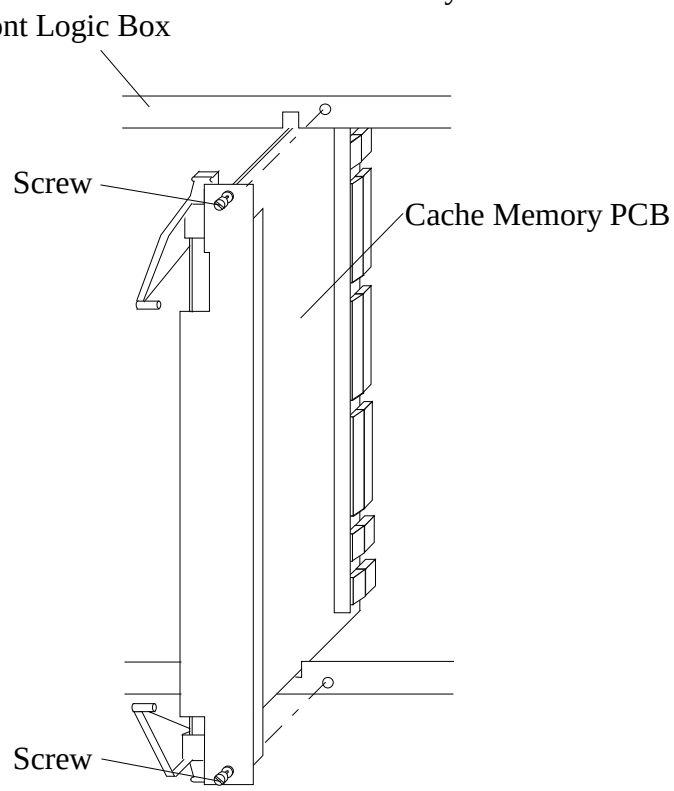

Fig. 3.9.1-2 Removal of the Cache Memory PCB

c. Remove the Maintenance Jumper if it is mounted.

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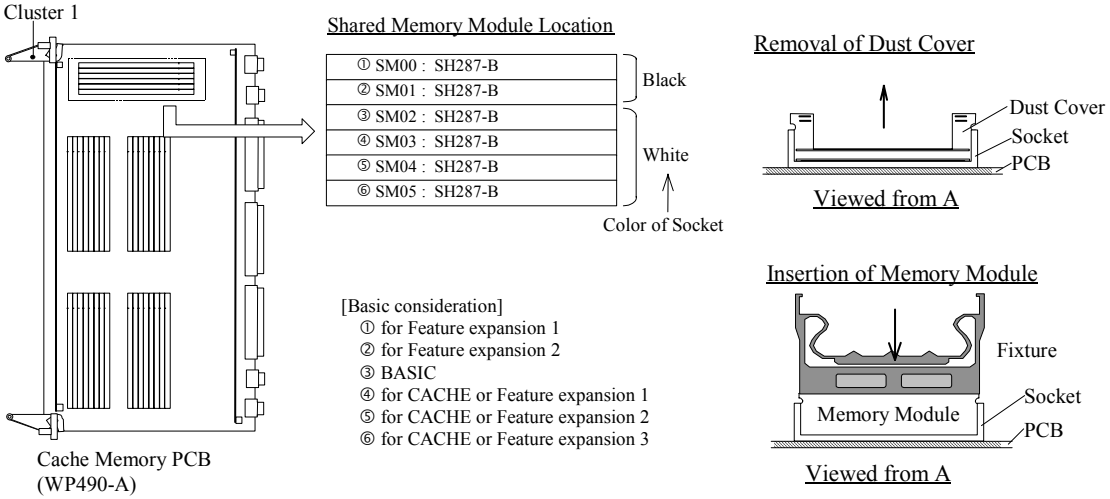
3-2. Insert the Shared Memory Modules.

Notice
The required capacity of the shared memory varies depending on whether the HRC/HORC/HMRCF/HOMRCF/HIHSM/ShadowImage-FlashCopy® version2 function is supported or not.
Calculate the required shared memory capacity referring to Table 3.9.1-31, Table 3.9.1-41 or Table 3.9.1-44 when none of the functions is supported (in the case of basic configuration) or Table 3.9.1-32, Table 3.9.1-42 or Table 3.9.1-45 when at least one of the functions is supported.
When supporting the ShadowImage-FlashCopy® version2 function, calculate the required capacity of the shared memory referring to Table 3.9.1-33, 3.9.1-43, or 3.9.1-46.

a. Remove the dust covers that match the required Shared Memory capacity referring to Fig. 3.9.1-3 and Fig. 3.9.1-4, Table 3.9.1-31, Table 3.9.1-32, Table 3.9.1-33, Table 3.9.1-41, Table 3.9.1-42, Table 3.9.1-43, Table 3.9.1-44 and Table 3.9.1-45.
b. Insert the Shared Memory Modules that match the required Shared Memory capacity.

Composition of only DKC-F460I-S512



Composition of only DKC-F460I-S1024

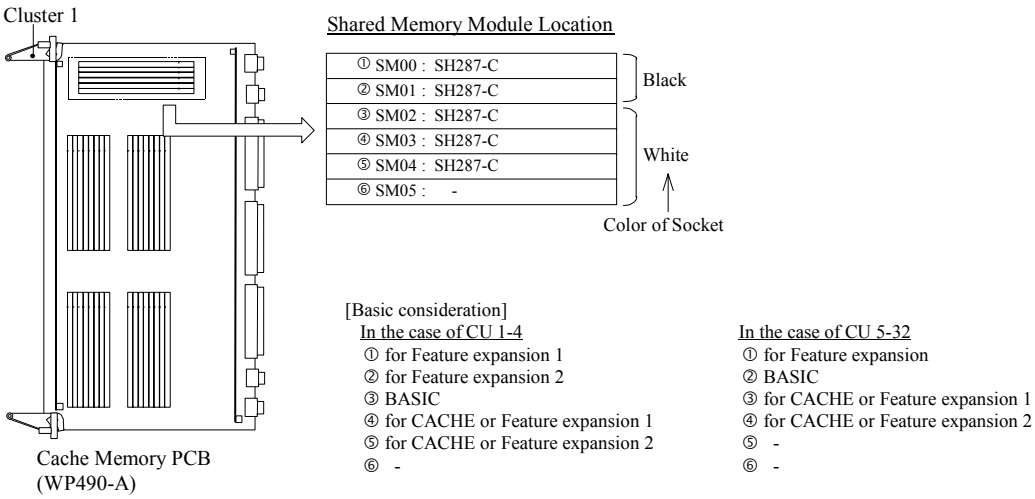


Fig. 3.9.1-3 Inserting Location of the Shared Memory Module

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Table 3.9.1-31 Number of SMs and Corresponding Shared Memory Capacity (DKC-F460I-S512 only installed and HRC/HORC/HMRCF/HOMRCF/HIHSM/ ShadowImage-FlashCopy® version2 not support)

Cache Memory Capacity	Number of CU:1-4 (to 1024LDEV)			Number of CU:5-8 (to 2048LDEV)			Number of CU:9-16 (to 4096LDEV)			Number of CU:17-32 (to 8192LDEV)			
	SM (MB)	S512	Install loc. *1	SM (MB)	S512	Install loc. *1	SM (MB)	S512	Install loc. *1	SM (MB)	S512	Install loc. *1	
2GB	512	1	③	1536	3	③①④	1536	3	③①④	2048	4	③①②④	
4GB	512	1	③	1536	3	③①④	1536	3	③①④	2048	4	③①②④	
6GB	512	1	③	1536	3	③①④	1536	3	③①④	2048	4	③①②④	
8GB	512	1	③	1536	3	③①④	1536	3	③①④	2048	4	③①②④	
10GB	1024	2	③④	1536	3	③①④	1536	3	③①④	2048	4	③①②④	
12GB	1024	2	③④	1536	3	③①④	1536	3	③①④	2048	4	③①②④	
14GB	1024	2	③④	1536	3	③①④	1536	3	③①④	2048	4	③①②④	
16GB	1024	2	③④	1536	3	③①④	1536	3	③①④	2048	4	③①②④	
18GB	1024	2	③④	1536	3	③①④	2048	4	③①④⑤	2560	5	③①②④⑤	
20GB	1024	2	③④	1536	3	③①④	2048	4	③①④⑤	2560	5	③①②④⑤	
22GB	1024	2	③④	1536	3	③①④	2048	4	③①④⑤	2560	5	③①②④⑤	
24GB	1024	2	③④	1536	3	③①④	2048	4	③①④⑤	2560	5	③①②④⑤	
26GB	1024	2	③④	1536	3	③①④	2048	4	③①④⑤	2560	5	③①②④⑤	
28GB	1024	2	③④	1536	3	③①④	2048	4	③①④⑤	2560	5	③①②④⑤	
30GB	1024	2	③④	1536	3	③①④	2048	4	③①④⑤	2560	5	③①②④⑤	
32GB	1024	2	③④	1536	3	③①④	2048	4	③①④⑤	2560	5	③①②④⑤	
34GB	1024	2	③④	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤	
36GB	1024	2	③④	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤	
38GB	1024	2	③④	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤	
40GB	1024	2	③④	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤	
42GB	1024	2	③④	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤	
44GB	1024	2	③④	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤	
46GB	1536	3	③④⑤	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤	
48GB	1536	3	③④⑤	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤	
50GB	1536	3	③④⑤	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤	
52GB	1536	3	③④⑤	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤	
54GB	1536	3	③④⑤	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤	
56GB	1536	3	③④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥	
58GB	1536	3	③④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥	
60GB	1536	3	③④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥	*5
62GB	1536	3	③④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥	
64GB	1536	3	③④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥	
Subsystem Capacity *2	to 18TB			to 72TB			to 144TB			over 144TB			
Number of HDD Canister Options *3	DKU-F455I-36K4: 128 DKU-F455I-72J4/K4: 64 DKU-F455I-146J4/JF/JQ: 32 DKU-F405I-18J4: 256 *4 DKU-F405I-47J4: 98 *4 DKU-F405I-72J4/K4: 64 *4 DKU-F405I-180H4: 24 *4			DKU-F455I-36K4: 256 DKU-F455I-72J4/K4: 256 DKU-F455I-146J4/JF/JQ: 128 DKU-F405I-18J4: 256 *4 DKU-F405I-47J4: 256 *4 DKU-F405I-72J4/K4: 256 *4 DKU-F405I-180H4: 96 *4			DKU-F455I-36K4: 256 DKU-F455I-72J4/K4: 256 DKU-F455I-146J4/JF/JQ: 256 DKU-F405I-18J4: 256 *4 DKU-F405I-47J4: 256 *4 DKU-F405I-72J4/K4: 256 *4 DKU-F405I-180H4: 128 *4			DKU-F455I-36K4: 256 DKU-F455I-72J4/K4: 256 DKU-F455I-146J4/JF/JQ: 256 DKU-F405I-18J4: 256 *4 DKU-F405I-47J4: 256 *4 DKU-F405I-72J4/K4: 256 *4 DKU-F405I-180H4: 128 *4		

Note. *1: Location ① through ⑥ represent the Shared Memory Module locations shown in Fig. 3.9.1-3.

*2: This is raw capacity. You have to increase SM capacity, when subsystem raw capacity exceeds this. When the HDD option is intermixed in one subsystem, subsystem capacity must not exceed this.

*3: The number of HDD canister options controllable by the LDEV numbers and SM capacities. You have to increase SM capacity, when the number of HDD canister options exceeds.

*4: When DKU405I is connected to DKC460I.

*5: When HRC/HMRCF supported, cache memory must be de-installed refer to Table 3.9.1-32.

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Table 3.9.1-32 Number of SMs and Corresponding Shared Memory Capacity (DKC-F460I-S512 only installed and HRC/HORC/HMRCF/HOMRCF/HIHSM supported)

Cache Memory Capacity	Number of CU:1-4 (to 1024LDEV)			Number of CU:5-8 (to 2048LDEV)			Number of CU:9-16 (to 4096LDEV)			Number of CU:17-32 & TPF (to 8192LDEV)			
	SM (MB)	S512	Install loc. *1	SM (MB)	S512	Install loc. *1	SM (MB)	S512	Install loc. *1	SM (MB)	S512	Install loc. *1	
2GB	1024	2	③④	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤	
4GB	1024	2	③④	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤	
6GB	1024	2	③④	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤	
8GB	1024	2	③④	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤	
10GB	1536	3	③④⑤	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤	
12GB	1536	3	③④⑤	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤	
14GB	1536	3	③④⑤	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤	
16GB	1536	3	③④⑤	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤	
18GB	1536	3	③④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥	
20GB	1536	3	③④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥	
22GB	1536	3	③④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥	
24GB	1536	3	③④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥	
26GB	1536	3	③④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥	
28GB	1536	3	③④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥	
30GB	1536	3	③④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥	
32GB	1536	3	③④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥	
34GB	1536	3	③④⑤	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥	
36GB	1536	3	③④⑤	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥	
38GB	1536	3	③④⑤	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥	
40GB	1536	3	③④⑤	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥	
42GB	1536	3	③④⑤	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥	
44GB	1536	3	③④⑤	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥	
46GB	2048	4	③④⑤⑥	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥	
48GB	2048	4	③④⑤⑥	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥	
50GB	2048	4	③④⑤⑥	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥	
52GB	2048	4	③④⑤⑥	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥	
54GB	2048	4	③④⑤⑥	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥	
56GB	2048	4	③④⑤⑥	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥	
58GB	2048	4	③④⑤⑥	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥	
60GB	2048	4	③④⑤⑥	2560	5	③①④⑤⑥	-	-	-	-	-	-	*5
62GB	2048	4	③④⑤⑥	2560	5	③①④⑤⑥	-	-	-	-	-	-	*5
64GB	2048	4	③④⑤⑥	2560	5	③①④⑤⑥	-	-	-	-	-	-	*5
Subsystem Capacity *2	to 18TB			to 72TB			to 144TB			over 144TB			
Number of HDD Canister Options *3	DKU-F455I-36K4: 128 DKU-F455I-72J4/K4: 64 DKU-F455I-146J4/JF/JQ: 32 DKU-F405I-18J4: 256 *4 DKU-F405I-47J4: 98 *4 DKU-F405I-72J4/K4: 64 *4 DKU-F405I-180H4: 24 *4			DKU-F455I-36K4: 256 DKU-F455I-72J4/K4: 256 DKU-F455I-146J4/JF/JQ: 128 DKU-F405I-18J4: 256 *4 DKU-F405I-47J4: 256 *4 DKU-F405I-72J4/K4: 256 *4 DKU-F405I-180H4: 96 *4			DKU-F455I-36K4: 256 DKU-F455I-72J4/K4: 256 DKU-F455I-146J4/JF/JQ: 256 DKU-F405I-18J4: 256 *4 DKU-F405I-47J4: 256 *4 DKU-F405I-72J4/K4: 256 *4 DKU-F405I-180H4: 128 *4			DKU-F455I-36K4: 256 DKU-F455I-72J4/K4: 256 DKU-F455I-146J4/JF/JQ: 256 DKU-F405I-18J4: 256 *4 DKU-F405I-47J4: 256 *4 DKU-F405I-72J4/K4: 256 *4 DKU-F405I-180H4: 128 *4			

Note. *1: Location ① through ⑥ represent the Shared Memory Module locations shown in Fig. 3.9.1-3.

*2: This is raw capacity. You have to increase SM capacity, when subsystem raw capacity exceeds this. When the HDD option is intermixed in one subsystem, subsystem capacity must not exceed this.

*3: The number of HDD canister options controllable by the LDEV numbers and SM capacities. You have to increase SM capacity, when the number of HDD canister options exceeds.

*4: When DKU405I is connected to DKC460I.

*5: When HRC/HMRCF supported, cache memory (over 60 G bytes) can't set up in the '-' mark.

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Table 3.9.1-33 Number of SMs and Corresponding Shared Memory Capacity (DKC-F460I-S512 only installed and ShadowImage-FlashCopy® version2 supported)

Cache Memory Capacity	Number of CU:1-4 (to 1024LDEV)			Number of CU:5-8 (to 2048LDEV)			Number of CU:9-16 (to 4096LDEV)			Number of CU:17-32 & TPF (to 8192LDEV)			
	SM (MB)	S512	Install loc. *1	SM (MB)	S512	Install loc. *1	SM (MB)	S512	Install loc. *1	SM (MB)	S512	Install loc. *1	
2GB	1536	3	③①④	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤	
4GB	1536	3	③①④	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤	
6GB	1536	3	③①④	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤	
8GB	1536	3	③①④	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤	
10GB	2048	4	③①④⑤	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤	
12GB	2048	4	③①④⑤	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤	
14GB	2048	4	③①④⑤	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤	
16GB	2048	4	③①④⑤	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤	
18GB	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥	
20GB	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥	
22GB	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥	
24GB	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥	
26GB	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥	
28GB	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥	
30GB	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥	
32GB	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥	
34GB	2048	4	③①④⑤	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥	
36GB	2048	4	③①④⑤	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥	
38GB	2048	4	③①④⑤	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥	
40GB	2048	4	③①④⑤	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥	
42GB	2048	4	③①④⑤	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥	
44GB	2048	4	③①④⑤	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥	
46GB	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥	
48GB	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥	
50GB	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥	
52GB	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥	
54GB	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥	
56GB	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥	
58GB	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥	
60GB	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	-	-	-	-	-	-	*5
62GB	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	-	-	-	-	-	-	*5
64GB	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	-	-	-	-	-	-	*5
Subsystem Capacity *2	to 18TB			to 72TB			to 144TB			over 144TB			
Number of HDD Canister Options *3	DKU-F455I-36K4: 128 DKU-F455I-72J4/K4: 64 DKU-F455I-146J4/JF/JQ: 32 DKU-F405I-18J4: 256 *4 DKU-F405I-47J4: 98 *4 DKU-F405I-72J4/K4: 64 *4 DKU-F405I-180H4: 24 *4			DKU-F455I-36K4: 256 DKU-F455I-72J4/K4: 256 DKU-F455I-146J4/JF/JQ: 128 DKU-F405I-18J4: 256 *4 DKU-F405I-47J4: 256 *4 DKU-F405I-72J4/K4: 256 *4 DKU-F405I-180H4: 96 *4			DKU-F455I-36K4: 256 DKU-F455I-72J4/K4: 256 DKU-F455I-146J4/JF/JQ: 256 DKU-F405I-18J4: 256 *4 DKU-F405I-47J4: 256 *4 DKU-F405I-72J4/K4: 256 *4 DKU-F405I-180H4: 128 *4			DKU-F455I-36K4: 256 DKU-F455I-72J4/K4: 256 DKU-F455I-146J4/JF/JQ: 256 DKU-F405I-18J4: 256 *4 DKU-F405I-47J4: 256 *4 DKU-F405I-72J4/K4: 256 *4 DKU-F405I-180H4: 128 *4		

Note. *1: Location ① through ⑥ represent the Shared Memory Module locations shown in Fig. 3.9.1-3.

*2: This is raw capacity. You have to increase SM capacity, when subsystem raw capacity exceeds this. When the HDD option is intermixed in one subsystem, subsystem capacity must not exceed this.

*3: The number of HDD canister options controllable by the LDEV numbers and SM capacities. You have to increase SM capacity, when the number of HDD canister options exceeds.

*4: When DKU405I is connected to DKC460I.

*5: When HRC/HMRCF supported, cache memory (over 60 G bytes) can't set up in the '-' mark.

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Table 3.9.1-41 Number of SMs and Corresponding Shared Memory Capacity (DKC-F460I-S1024 only installed and HRC/HORC/HMRCF/HOMRCF/HIHSM/ ShadowImage-FlashCopy® version2 not support)

Cache Memory Capacity *5	Number of CU:1-4 (to 1024LDEV)			Number of CU:5-8 (to 2048LDEV)			Number of CU:9-16 (to 4096LDEV)			Number of CU:17-32 (to 8192LDEV)		
	SM (MB)	S1024	Install loc. *1	SM (MB)	S1024	Install loc. *1	SM (MB)	S1024	Install loc. *1	SM (MB)	S1024	Install loc. *1
68GB	2048	2	③④	3072	3	①②③	3072	3	①②③	3072	3	①②③
72GB	2048	2	③④	3072	3	①②③	3072	3	①②③	3072	3	①②③
76GB	2048	2	③④	3072	3	①②③	3072	3	①②③	3072	3	①②③
80GB	2048	2	③④	3072	3	①②③	3072	3	①②③	3072	3	①②③
84GB	2048	2	③④	3072	3	①②③	3072	3	①②③	3072	3	①②③
88GB	2048	2	③④	3072	3	①②③	3072	3	①②③	3072	3	①②③
92GB	2048	2	③④	3072	3	①②③	3072	3	①②③	3072	3	①②③
96GB	2048	2	③④	3072	3	①②③	4096	4	①②③④	4096	4	①②③④
100GB	2048	2	③④	3072	3	①②③	4096	4	①②③④	4096	4	①②③④
104GB	2048	2	③④	3072	3	①②③	4096	4	①②③④	4096	4	①②③④
108GB	2048	2	③④	3072	3	①②③	4096	4	①②③④	4096	4	①②③④
112GB	2048	2	③④	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
116GB	2048	2	③④	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
120GB	2048	2	③④	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
124GB	3072	3	③④⑤	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
128GB	3072	3	③④⑤	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
Subsystem Capacity *2	to 18TB			to 72TB			to 144TB			over 144TB		
Number of HDD Canister Options *3	DKU-F455I-36K4: 128 DKU-F455I-72J4/K4: 64 DKU-F455I-146J4/JF: 32 DKU-F405I-18J4: 256*4 DKU-F405I-47J4: 98*4 DKU-F405I-72J4: 64*4 DKU-F405I-180H4: 24*4			DKU-F455I-36K4: 256 DKU-F455I-72J4/K4: 256 DKU-F455I-146J4/JF: 128 DKU-F405I-18J4: 256*4 DKU-F405I-47J4: 256*4 DKU-F405I-72J4: 256*4 DKU-F405I-180H4: 96*4			DKU-F455I-36K4: 256 DKU-F455I-72J4/K4: 256 DKU-F455I-146J4/JF: 256 DKU-F405I-18J4: 256*4 DKU-F405I-47J4: 256*4 DKU-F405I-72J4: 256*4 DKU-F405I-180H4: 128*4			DKU-F455I-36K4: 256 DKU-F455I-72J4/K4: 256 DKU-F455I-146J4/JF: 256 DKU-F405I-18J4: 256*4 DKU-F405I-47J4: 256*4 DKU-F405I-72J4: 256*4 DKU-F405I-180H4: 128*4		

Note. *1: Location ① through ⑤ represent the Shared Memory Module locations shown in Fig. 3.9.1-3.

*2: This is raw capacity. You have to increase SM capacity, when subsystem raw capacity exceeds this. When the HDD option is intermixed in one subsystem, subsystem capacity must not exceed this.

*3: The number of HDD canister options controllable by the LDEV numbers and SM capacities. You have to increase SM capacity, when the number of HDD canister options exceeds.

*4: When DKU405I is connected to DKC460I.

*5: When Cache Memory capacity is 64GB or less, refer to the Table 3.9.1-31 or Table 3.9.1-44.

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Table 3.9.1-42 Number of SMs and Corresponding Shared Memory Capacity (DKC-F460I-S1024 only installed and HRC/HORC/HMRCF/HOMRCF/HIHSM supported)

Cache Memory Capacity *5	Number of CU:1-4 (to 1024LDEV)			Number of CU:5-8 (to 2048LDEV)			Number of CU:9-16 (to 4096LDEV)			Number of CU:17-32 & TPF (to 8192LDEV)		
	SM (MB)	S1024	Install loc. *1	SM (MB)	S1024	Install loc. *1	SM (MB)	S1024	Install loc. *1	SM (MB)	S1024	Install loc. *1
68GB	2048	2	③④	3072	3	①②③	4096	4	①②③④	4096	4	①②③④
72GB	2048	2	③④	3072	3	①②③	4096	4	①②③④	4096	4	①②③④
76GB	2048	2	③④	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
80GB	2048	2	③④	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
84GB	2048	2	③④	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
88GB	3072	3	③④⑤	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
92GB	3072	3	③④⑤	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
96GB	3072	3	③④⑤	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
100GB	3072	3	③④⑤	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
104GB	3072	3	③④⑤	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
108GB	3072	3	③④⑤	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
112GB	3072	3	③④⑤	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
116GB	3072	3	③④⑤	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
120GB	3072	3	③④⑤	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
124GB	3072	3	③④⑤	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
128GB	3072	3	③④⑤	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
Subsystem Capacity *2	to 18TB			to 72TB			to 144TB			over 144TB		
Number of HDD Canister Options *3	DKU-F455I-36K4: 128 DKU-F455I-72J4/K4: 64 DKU-F455I-146J4/JF: 32 DKU-F405I-18J4: 256*4 DKU-F405I-47J4: 98*4 DKU-F405I-72J4: 64*4 DKU-F405I-180H4: 24*4			DKU-F455I-36K4: 256 DKU-F455I-72J4/K4: 256 DKU-F455I-146J4/JF: 128 DKU-F405I-18J4: 256*4 DKU-F405I-47J4: 256*4 DKU-F405I-72J4: 256*4 DKU-F405I-180H4: 96*4			DKU-F455I-36K4: 256 DKU-F455I-72J4/K4: 256 DKU-F455I-146J4/JF: 256 DKU-F405I-18J4: 256*4 DKU-F405I-47J4: 256*4 DKU-F405I-72J4: 256*4 DKU-F405I-180H4: 128*4			DKU-F455I-36K4: 256 DKU-F455I-72J4/K4: 256 DKU-F455I-146J4/JF: 256 DKU-F405I-18J4: 256*4 DKU-F405I-47J4: 256*4 DKU-F405I-72J4: 256*4 DKU-F405I-180H4: 128*4		

Note. *1: Location ① through ⑤ represent the Shared Memory Module locations shown in Fig. 3.9.1-3.

*2: This is raw capacity. You have to increase SM capacity, when subsystem raw capacity exceeds this. When the HDD option is intermixed in one subsystem, subsystem capacity must not exceed this.

*3: The number of HDD canister options controllable by the LDEV numbers and SM capacities. You have to increase SM capacity, when the number of HDD canister options exceeds.

*4: When DKU405I is connected to DKC460I.

*5: When Cache Memory capacity is 64GB or less, refer to the Table 3.9.1-32 or Table 3.9.1-45.

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Table 3.9.1-43 Number of SMs and Corresponding Shared Memory Capacity
(DKC-F460I-S1024 only installed and ShadowImage-FlashCopy® version2 supported)

Cache Memory Capacity *5	Number of CU:1-4 (to 1024LDEV)			Number of CU:5-8 (to 2048LDEV)			Number of CU:9-16 (to 4096LDEV)			Number of CU:17-32 & TPF (to 8192LDEV)		
	SM (MB)	S1024	Install loc. *1	SM (MB)	S1024	Install loc. *1	SM (MB)	S1024	Install loc. *1	SM (MB)	S1024	Install loc. *1
68GB	3072	3	①②③	3072	3	①②③	4096	4	①②③④	4096	4	①②③④
72GB	3072	3	①②③	3072	3	①②③	4096	4	①②③④	4096	4	①②③④
76GB	3072	3	①②③	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
80GB	3072	3	①②③	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
84GB	3072	3	①②③	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
88GB	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
92GB	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
96GB	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
100GB	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
104GB	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
108GB	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
112GB	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
116GB	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
120GB	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
124GB	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
128GB	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
Subsystem Capacity *2	to 18TB			to 72TB			to 144TB			over 144TB		
Number of HDD Canister Options *3	DKU-F455I-36K4: 128 DKU-F455I-72J4/K4: 64 DKU-F455I-146J4/JF: 32 DKU-F405I-18J4: 256*4 DKU-F405I-47J4: 98*4 DKU-F405I-72J4: 64*4 DKU-F405I-180H4: 24*4			DKU-F455I-36K4: 256 DKU-F455I-72J4/K4: 256 DKU-F455I-146J4/JF: 128 DKU-F405I-18J4: 256*4 DKU-F405I-47J4: 256*4 DKU-F405I-72J4: 256*4 DKU-F405I-180H4: 96*4			DKU-F455I-36K4: 256 DKU-F455I-72J4/K4: 256 DKU-F455I-146J4/JF: 256 DKU-F405I-18J4: 256*4 DKU-F405I-47J4: 256*4 DKU-F405I-72J4: 256*4 DKU-F405I-180H4: 128*4			DKU-F455I-36K4: 256 DKU-F455I-72J4/K4: 256 DKU-F455I-146J4/JF: 256 DKU-F405I-18J4: 256*4 DKU-F405I-47J4: 256*4 DKU-F405I-72J4: 256*4 DKU-F405I-180H4: 128*4		

Note. *1: Location ① through ⑤ represent the Shared Memory Module locations shown in Fig. 3.9.1-3.
*2: This is raw capacity. You have to increase SM capacity, when subsystem raw capacity exceeds this. When the HDD option is intermixed in one subsystem, subsystem capacity must not exceed this.
*3: The number of HDD canister options controllable by the LDEV numbers and SM capacities. You have to increase SM capacity, when the number of HDD canister options exceeds.
*4: When DKU405I is connected to DKC460I.
*5: When Cache Memory capacity is 64GB or less, refer to the Table 3.9.1-33 or Table 3.9.1-46.

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Mixture composition of DKC-F460I-S512 and DKC-F460I-S1024

The mixture composition of DKC-F460I-S512 and DKC-F460I-S1024 is allowed. However, depending on cache capacity, it may have to constitute from DKC-F460I-S512 or DKC-F460I-S1024 independent one. (Refer to Table 3.9.1-44, 3.9.1-45 and 3.9.1-46 for details.)
The mixture pattern of DKC-F460I-S512 and DKC-F460 I-S1024 is shown in the following table. Since it is decided for every pattern, it must be careful of the installing location of two shared memory modules.
In order to prevent a maintenance mistake, it recommends constituting from DKC-F460I-S512 or DKC-F460I-S1024 independent one. (Refer to Table 3.9.1-43A and 3.9.1-43B)

Table 3.9.1-43A Shared Memory Module Mixture Pattern
(Composition of only DKC-F460I-S512)

Install location	Mixture Pattern											
	A	B	C	D	E	F	G	H	I	J	K	L
①	-	-	-	-	S512	S512	S512	S512	S512	S512	S512	S512
②	-	-	-	-	-	-	-	-	S512	S512	S512	S512
③	S512	S512	S512	S512	S512	S512	S512	S512	S512	S512	S512	S512
④	-	S512	S512	S512	-	S512	S512	S512	-	S512	S512	S512
⑤	-	-	S512	S512	-	-	S512	S512	-	-	S512	S512
⑥	-	-	-	S512	-	-	-	S512	-	-	-	S512
Total SM Capacity	0.5GB	1.0GB	1.5GB	2.0GB	1.0GB	1.5GB	2.0GB	2.5GB	1.5GB	2.0GB	2.5GB	3.0GB

Table 3.9.1-43B Shared Memory Module Mixture Pattern

Install location	Mixture Pattern														
	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
①	-	-	-	-	S512	S512	S512	S512	S512	S512	S512	S1024	S1024	S1024	S1024
②	-	-	-	-	-	-	-	-	S512	S512	S512	S1024	S1024	S1024	S1024
③	S1024	S1024	S1024	S1024	S1024	S1024	S1024	S1024	S1024	S1024	S1024	S512	S1024	S1024	S1024
④	S512	S1024	S1024	S1024	S512	S1024	S1024	S1024	S1024	S1024	S1024	-	-	S512	S1024
⑤	-	-	S512	S1024	-	-	S512	S1024	-	S512	S1024	-	-	-	-
⑥	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total SM Capacity	1.5GB	2.0GB	2.5GB	3.0GB	2.0GB	2.5GB	3.0GB	3.5GB	3.0GB	3.5GB	4.0GB	2.5GB	3.0GB	3.5GB	4.0GB

Note. 1: Location ①-⑥ shows actual location of shared memory module on Cache PCB. (Refer to Fig. 3.9.1-4)
2: S1024 means installing the shared memory module which constitutes DKC-F460I-S1024 option.
3: S512 means installing the shared memory module which constitutes DKC-F460I-S512 option.

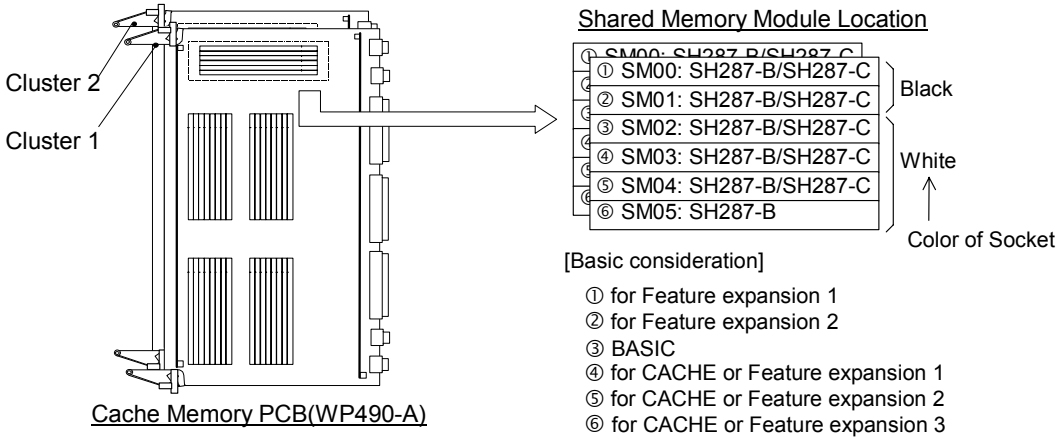

Fig. 3.9.1-4 Actual location of shared memory module

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Table 3.9.1-44 Size of Cache Memory and Shared Memory (TrueCopy/ShadowImage/ ShadowImage-FlashCopy® version2/Cruise Control function not supported)

Cache Memory Capacity	Number of CU:1-4 (to 1024LDEV)				Number of CU:5-8 (to 2048LDEV)				Number of CU:9-16 (to 4096LDEV)				Number of CU:17-32 (to 8192LDEV)			
	SM *1 Cap. (MB)	Number of SM options S1024	Number of SM options S512	Mixture Pattern *5	SM *1 Cap. (MB)	Number of SM options S1024	Number of SM options S512	Mixture Pattern *5	SM *1 Cap. (MB)	Number of SM options S1024	Number of SM options S512	Mixture Pattern *5	SM *1 Cap. (MB)	Number of SM options S1024	Number of SM options S512	Mixture Pattern *5
2GB	512	-	1	A	1536	-	3	F	1536	-	3	F	2048	-	4	J
4GB	512	-	1	A	1536	-	3	F	1536	-	3	F	2048	-	4	J
6GB	512	-	1	A	1536	-	3	F	1536	-	3	F	2048	-	4	J
8GB	512	-	1	A	1536	-	3	F	1536	-	3	F	2048	-	4	J
10GB	1024	-	2	B	1536	-	3	F	1536	-	3	F	2048	-	4	J
12GB	1024	-	2	B	1536	-	3	F	1536	-	3	F	2048	-	4	J
14GB	1024	-	2	B	1536	-	3	F	1536	-	3	F	2048	-	4	J
16GB	1024	-	2	B	1536	-	3	F	1536	-	3	F	2048	-	4	J
18GB	1024	-	2	B	1536	-	3	F	2048 or 2560 or 3072	Refer to mix pattern table *6		G, e, f, l, m	2560 or 3072	Refer to mix pattern table *6		K, i, l, m
20GB	1024	-	2	B	1536	-	3	F								
22GB	1024	-	2	B	1536	-	3	F								
24GB	1024	-	2	B	1536	-	3	F								
26GB	1024	-	2	B	1536	-	3	F								
28GB	1024	-	2	B	1536	-	3	F								
30GB	1024	-	2	B	1536	-	3	F								
32GB	1024	-	2	B	1536	-	3	F								
36GB	1024	-	2	B	2048 or 2560 or 3072	Refer to mix pattern table *6		G, e, f, l, m								
40GB	1024	-	2	B												
44GB	1024	-	2	B												
48GB	1536 or 2048	Refer to mix pattern table *6		a, b												
52GB																
56GB									2560 or 3072	Refer to mix pattern table *6		H, f, m	3072	Refer to mix pattern table *6		L, i, m
60GB																
64GB																
68GB	1536	1	1	a	2048 or 2560	Refer to mix pattern table *6		f, m	3072	3	0	m	3072	2	2	i
72GB	1536	1	1	a					3072	3	0	m	3072	2	2	i
76GB	1536	1	1	a	3072	3	0	m	3072	3	0	m	3072	2	2	i
80GB	1536	1	1	a	3072	3	0	m	3072	3	0	m	3072	2	2	i
84GB	2048	2	0	b	3072	3	0	m	3072	3	0	m	3072	2	2	i
88GB	2048	2	0	b	3072	3	0	m	3072	3	0	m	3072	2	2	i
92GB	2048	2	0	b	3072	3	0	m	3072	3	0	m	3072	2	2	i
96GB	2048	2	0	b	3072	3	0	m	3072 or 3584	Refer to mix. pattern table *6		g, h, n	3584 or 4096	Refer to mix. pattern table *6		j, k, n
100GB	2048	2	0	b	3072	3	0	m				g, h, n				j, k, n
104GB	2048	2	0	b	3072	3	0	m				g, h, n				j, k, n
108GB	2048	2	0	b	3072	3	0	m				g, h, n				j, k, n
112GB	2048	2	0	b	3072 or 3584	Refer to mix. pattern table *6		g, h, n				g, h, n				j, k, n
116GB	2048	2	0	b				g, h, n				g, h, n				j, k, n
120GB	2048	2	0	b				g, h, n				g, h, n				j, k, n
124GB	2560	2	1	c				g, h, n				g, h, n				j, k, n
128GB	2560	2	1	c				g, h, n				g, h, n				j, k, n
Subsystem Capacity *2	to 18TB				to 72TB				to 144TB				over 144TB			
Number of HDD Canister Option *3	DKU-F455I-36K4:			128	DKU-F455I-36K4:			256	DKU-F455I-36K4:			256	DKU-F455I-36K4:			256
	DKU-F455I-72J4/72K4:			64	DKU-F455I-72J4/72K4:			256	DKU-F455I-72J4/72K4:			256	DKU-F455I-72J4/72K4:			256
	DKU-F455I-146J4:			32	DKU-F455I-146J4:			128	DKU-F455I-146J4:			256	DKU-F455I-146J4:			256
	DKU-F405I-18J4:			256 *4	DKU-F405I-18J4:			256 *4	DKU-F405I-18J4:			256 *4	DKU-F405I-18J4:			256 *4
	DKU-F405I-47J4:			98 *4	DKU-F405I-47J4:			256 *4	DKU-F405I-47J4:			256 *4	DKU-F405I-47J4:			256 *4
	DKU-F405I-72J4:			64 *4	DKU-F405I-72J4:			256 *4	DKU-F405I-72J4:			256 *4	DKU-F405I-72J4:			256 *4
	DKU-F405I-180H4:			24 *4	DKU-F405I-180H4:			96 *4	DKU-F405I-180H4:			128 *4	DKU-F405I-180H4:			128 *4

Note. *1: This is required SM capacity, when DKC-F460I-S1024 and DKC-F460I-S512 are intermixed. When constituted only from DKC-F460I-S1024, it differs from required SM capacity.

*2: This is raw capacity. You have to increase SM capacity, when subsystem raw capacity exceeds this. When the HDD option is intermixed in one subsystem, subsystem capacity must not exceed this.

*3: The number of HDD canister options controllable by the LDEV numbers and SM capacities. You have to increase SM capacity, when the number of HDD canister options exceeds.

*4: When DKU405I is connected to DKC460I.

*5: 'A' to 'L' should refer a Table 3.9.1-43A, and refer to the Table 3.9.1-43B for 'o' from 'a'. The memory module corresponding to each mixture pattern is installed in the install locations ①-⑥.

*6: You have to choose one from some mixture patterns.

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Table 3.9.1-45 Size of Cache Memory and Shared Memory (TrueCopy/ShadowImage/Cruise Control function supported)

Cache Memory Capacity	Number of CU:1-4 (to 1024LDEV)				Number of CU:5-8 (to 2048LDEV)				Number of CU:9-16 (to 4096LDEV)				Number of CU:17-32 (to 8192LDEV)			
	SM *1 Cap. (MB)	Number of SM options S1024	Number of SM options S512	Mixture Pattern *5	SM *1 Cap. (MB)	Number of SM options S1024	Number of SM options S512	Mixture Pattern *5	SM *1 Cap. (MB)	Number of SM options S1024	Number of SM options S512	Mixture Pattern *5	SM *1 Cap. (MB)	Number of SM options S1024	Number of SM options S512	Mixture Pattern *5
2GB	1024	-	2	B	2048 or 2560 or 3072	Refer to mix. pattern table *6		G, e, f, l, m	2048 or 2560 or 3072	Refer to mix. pattern table *6		G, e, f, l, m	2560 or 3072	Refer to mix. pattern table *6		K, i, l, m
4GB	1024	-	2	B												
6GB	1024	-	2	B												
8GB	1024	-	2	B												
10GB	1536	-	3	C												
12GB	1536	-	3	C												
14GB	1536	-	3	C												
16GB	1536	-	3	C												
18GB	1536	-	3	C					2560 or 3072	Refer to mix. pattern table *6		H, f,m	3072	Refer to mix. pattern table *6		L, i, m
20GB	1536	-	3	C												
22GB	1536	-	3	C												
24GB	1536	-	3	C												
26GB	1536	-	3	C												
28GB	1536	-	3	C												
30GB	1536	-	3	C												
32GB	1536	-	3	C												
36GB	1536	-	3	C	2560 or 3072	Refer to mix. pattern table *6		H, f, m								
40GB	1536	-	3	C												
44GB	1536	-	3	C												
48GB	2048	Refer to mix. pattern table *6		D, b												
52GB																
56GB																
60GB									3072 or 3584	Refer to mix. pattern table *6		g, h	3584 or 4096	Refer to mix. pattern table *6		j, k, n, o
64GB																
68GB	2048	2	0	b	3072	3	0	m	3072 or 3584	Refer to mix. pattern table *6		g, h, n	3584 or 4096	Refer to mix. pattern table *6		j, k, n
72GB	2048	2	0	b	3072	3	0	m				g, h, n				j, k, n
76GB	2048	2	0	b	3072 or 3584	Refer to mix. pattern table *6		g, h, n				g, h, n				j, k, n
80GB	2048	2	0	b				g, h, n				g, h, n				j, k, n
84GB	2048	2	0	b				g, h, n				g, h, n				j, k, n
88GB	2560	2	1	c				g, h, n				g, h, n				j, k, n
92GB	2560	2	1	c				g, h, n				g, h, n				j, k, n
96GB	2560	2	1	c				g, h, n				g, h, n				j, k, n
100GB	2560	2	1	c				g, h, n	4096	4	0	o	4096	4	0	o
104GB	2560	2	1	c				g, h, n	4096	4	0	o	4096	4	0	o
108GB	2560	2	1	c				g, h, n	4096	4	0	o	4096	4	0	o
112GB	2560	2	1	c				g, h, n	4096	4	0	o	4096	4	0	o
116GB	2560	2	1	c	4096	4	0	o	4096	4	0	o	4096	4	0	o
120GB	2560	2	1	c	4096	4	0	o	4096	4	0	o	4096	4	0	o
124GB	2560	2	1	c	4096	4	0	o	4096	4	0	o	4096	4	0	o
128GB	3072	3	0	d	4096	4	0	o	4096	4	0	o	4096	4	0	o
Subsystem Capacity *2	to 18TB				to 72TB				to 144TB				over 144TB			
Number of HDD Canister Option *3	DKU-F455I-36K4:			128	DKU-F455I-36K4:			256	DKU-F455I-36K4:			256	DKU-F455I-36K4:			256
	DKU-F455I-72J4/72K4:			64	DKU-F455I-72J4/72K4:			256	DKU-F455I-72J4/72K4:			256	DKU-F455I-72J4/72K4:			256
	DKU-F455I-146J4:			32	DKU-F455I-146J4:			128	DKU-F455I-146J4:			256	DKU-F455I-146J4:			256
	DKU-F405I-18J4:			256 *4	DKU-F405I-18J4:			256 *4	DKU-F405I-18J4:			256 *4	DKU-F405I-18J4:			256 *4
	DKU-F405I-47J4:			98 *4	DKU-F405I-47J4:			256 *4	DKU-F405I-47J4:			256 *4	DKU-F405I-47J4:			256 *4
	DKU-F405I-72J4:			64 *4	DKU-F405I-72J4:			256 *4	DKU-F405I-72J4:			256 *4	DKU-F405I-72J4:			256 *4
	DKU-F405I-180H4:			24 *4	DKU-F405I-180H4:			96 *4	DKU-F405I-180H4:			128 *4	DKU-F405I-180H4:			128 *4

Note. *1: This is required SM capacity, when DKC-F460I-S1024 and DKC-F460I-S512 are intermixed. When constituted only from DKC-F460I-S1024, it differs from required SM capacity.

*2: This is raw capacity. You have to increase SM capacity, when subsystem raw capacity exceeds this. When the HDD option is intermixed in one subsystem, subsystem capacity must not exceed this.

*3: The number of HDD canister options controllable by the LDEV numbers and SM capacities. You have to increase SM capacity, when the number of HDD canister options exceeds.

*4: When DKU405I is connected to DKC460I.

*5: 'A' to 'L' should refer a Table 3.9.1-43A, and refer to the Table 3.9.1-43B for 'o' from 'a'. The memory module corresponding to each mixture pattern is installed in the install locations ①-⑥.

*6: You have to choose one from some mixture patterns.

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Table 3.9.1-46 Size of Cache Memory and Shared Memory (ShadowImage-FlashCopy® version2 supported)

Cache Memory Capacity	Number of CU:1-4 (to 1024LDEV)				Number of CU:5-8 (to 2048LDEV)				Number of CU:9-16 (to 4096LDEV)				Number of CU:17-32 (to 8192LDEV)			
	SM *1 Cap. (MB)	Number of SM options S1024	Number of SM options S512	Mixture Pattern *5	SM *1 Cap. (MB)	Number of SM options S1024	Number of SM options S512	Mixture Pattern *5	SM *1 Cap. (MB)	Number of SM options S1024	Number of SM options S512	Mixture Pattern *5	SM *1 Cap. (MB)	Number of SM options S1024	Number of SM options S512	Mixture Pattern *5
2GB	1536	-	3	F	2048 or 2560 or 3072	Refer to mix. pattern table *6		G, e, f, l, m	2048 or 2560 or 3072	Refer to mix. pattern table *6		G, e, f, l, m	2560 or 3072	Refer to mix. pattern table *6		K, i, l, m
4GB	1536	-	3	F												
6GB	1536	-	3	F												
8GB	1536	-	3	F												
10GB	2048	-	4	G												
12GB	2048	-	4	G												
14GB	2048	-	4	G												
16GB	2048	-	4	G												
18GB	2048	-	4	G					2560 or 3072	Refer to mix. pattern table *6		H, f,m	3072	Refer to mix. pattern table *6		L, i, m
20GB	2048	-	4	G												
22GB	2048	-	4	G												
24GB	2048	-	4	G												
26GB	2048	-	4	G												
28GB	2048	-	4	G												
30GB	2048	-	4	G												
32GB	2048	-	4	G												
36GB	2048	-	4	G	2560 or 3072	Refer to mix. pattern table *6		H, f, m								
40GB	2048	-	4	G												
44GB	2048	-	4	G												
48GB	2560	Refer to mix. pattern table *6		H, f												
52GB																
56GB																
60GB									3072 or 3584	Refer to mix. pattern table *6		g, h	3584 or 4096	Refer to mix. pattern table *6		j, k, n, o
64GB																
68GB	2560	2	1	f	3072	3	0	m	3072 or 3584	Refer to mix. pattern table *6		g, h, n	3584 or 4096	Refer to mix. pattern table *6		j, k, n
72GB	2560	2	1	f	3072	3	0	m				g, h, n				j, k, n
76GB	2560	2	1	f	3072 or 3584	Refer to mix. pattern table *6		g, h, n				g, h, n				j, k, n
80GB	2560	2	1	f				g, h, n				g, h, n				j, k, n
84GB	2560	2	1	f				g, h, n				g, h, n				j, k, n
88GB	3072	2	2	g				g, h, n				g, h, n				j, k, n
92GB	3072	2	2	g				g, h, n				g, h, n				j, k, n
96GB	3072	2	2	g				g, h, n				g, h, n				j, k, n
100GB	3072	2	2	g				g, h, n	4096	4	0	o	4096	4	0	o
104GB	3072	2	2	g				g, h, n	4096	4	0	o	4096	4	0	o
108GB	3072	2	2	g				g, h, n	4096	4	0	o	4096	4	0	o
112GB	3072	2	2	g				g, h, n	4096	4	0	o	4096	4	0	o
116GB	3072	2	2	g	4096	4	0	o	4096	4	0	o	4096	4	0	o
120GB	3072	2	2	g	4096	4	0	o	4096	4	0	o	4096	4	0	o
124GB	3072	2	2	g	4096	4	0	o	4096	4	0	o	4096	4	0	o
128GB	3584	3	1	h	4096	4	0	o	4096	4	0	o	4096	4	0	o
Subsystem Capacity *2	to 18TB				to 72TB				to 144TB				over 144TB			
Number of HDD Canister Option *3	DKU-F455I-36K4: 128 DKU-F455I-72J4/72K4: 64 DKU-F455I-146J4: 32 DKU-F405I-18J4: 256 *4 DKU-F405I-47J4: 98 *4 DKU-F405I-72J4: 64 *4 DKU-F405I-180H4: 24 *4				DKU-F455I-36K4: 256 DKU-F455I-72J4/72K4: 256 DKU-F455I-146J4: 128 DKU-F405I-18J4: 256 *4 DKU-F405I-47J4: 256 *4 DKU-F405I-72J4: 256 *4 DKU-F405I-180H4: 96 *4				DKU-F455I-36K4: 256 DKU-F455I-72J4/72K4: 256 DKU-F455I-146J4: 256 DKU-F405I-18J4: 256 *4 DKU-F405I-47J4: 256 *4 DKU-F405I-72J4: 256 *4 DKU-F405I-180H4: 128 *4				DKU-F455I-36K4: 256 DKU-F455I-72J4/72K4: 256 DKU-F455I-146J4: 256 DKU-F405I-18J4: 256 *4 DKU-F405I-47J4: 256 *4 DKU-F405I-72J4: 256 *4 DKU-F405I-180H4: 128 *4			

Note. *1: This is required SM capacity, when DKC-F460I-S1024 and DKC-F460I-S512 are intermixed. When constituted only from DKC-F460I-S1024, it differs from required SM capacity.

*2: This is raw capacity. You have to increase SM capacity, when subsystem raw capacity exceeds this. When the HDD option is intermixed in one subsystem, subsystem capacity must not exceed this.

*3: The number of HDD canister options controllable by the LDEV numbers and SM capacities. You have to increase SM capacity, when the number of HDD canister options exceeds.

*4: When DKU405I is connected to DKC460I.

*5: 'A' to 'L' should refer a Table 3.9.1-43A, and refer to the Table 3.9.1-43B for 'o' from 'a'. The memory module corresponding to each mixture pattern is installed in the install locations ①-⑥.

*6: You have to choose one from some mixture patterns.

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3-3. Insert the PCB.

a. Insert the Cache Memory PCB into the Front Logic Box referring to Table 3.9.1-5.
b. Fasten the two screws.

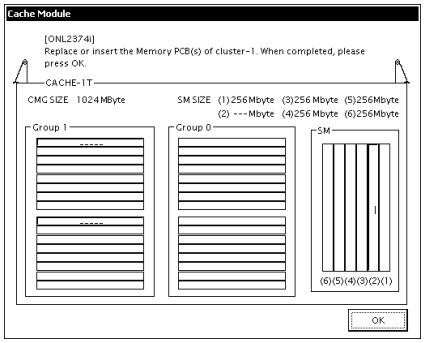
Table 3.9.1-5 Location of the Cache PCB

Cluster	PCB Name	Box	Slot No.	Location No.	Remarks
1	WP490-A	Front Logic Box	T	CACHE-1T	Cache Memory PCB

4. SVP post procedure on the Cluster 1.

(1)

After installation of shared memory on one side is completed, select (CL) [OK] in response to “Replace or insert the Memory PCBs of cluster-1. When completed, please press [OK].”.



(2)

“Changing the configuration date, for equipment of shared/cache memory...” is displayed.
“INLINE CUDG is now running...” is displayed.
“Restoring the Cache Memory PCB...” is displayed.
“Restoring the Shared Memory PCB...” is displayed.

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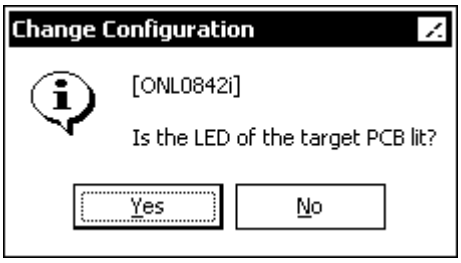
5. SVP pre procedure on the Cluster 2.

(1) <Recover one side of cache>
When recovery processing is completed,
“The Shared Memory PCB is being blocked.” message appears.
Processing proceeds to blocking of the other side of Shared Memory.

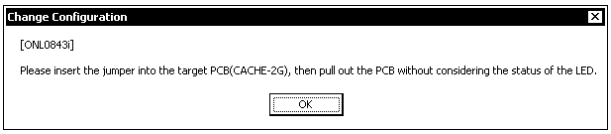
(2) <Check shut down LED>
Select (CL)
* [Yes] if LED is on
* [No] if LED is off
in response to “Is the LED of the target PCB lit?”.



<Forcing shut down LED on>

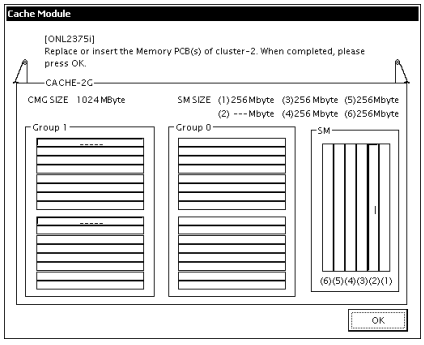
CAUTION
If the jumper is inserted in the wrong PCB, a system down may be caused.

If [No] is selected:
Insert a jumper in response to “Please insert the jumper into the target PCB(CACHE-nn), then pull out the PCB without considering the status of the LED”.
(Refer INST03-SM-110)



(3) <Perform cache hardware installation>
At this point refrain from pressing the [OK] button.
When “Replace or insert the Memory PCB(s) of cluster-2. When completed, please press OK.” is displayed, install hardware components according to the cache hardware installation procedure.

Make sure of the installation location and size of the module to be added and insert the correct module in the correct location.
(Uninstalled module is displayed as looks depressed.)



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6 Install the Shared Memory on the Cluster 2.
Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

6-1. Remove the PCB.

a. While referring to Fig. 3.9.1-4 and Table 3.9.1-6, check the Shut Down LED on the Cache Memory PCB in the Front Logic Box. Connect the Maintenance Jumper to the Shut Down Connector if the Shut Down LED is not on. (This procedure [6-1. a.] is not valid for a New Installation.)

CAUTION

A system down may be caused if the Maintenance jumper is inserted in a PCB other than that to be removed. Make sure that it is a PCB to be added.

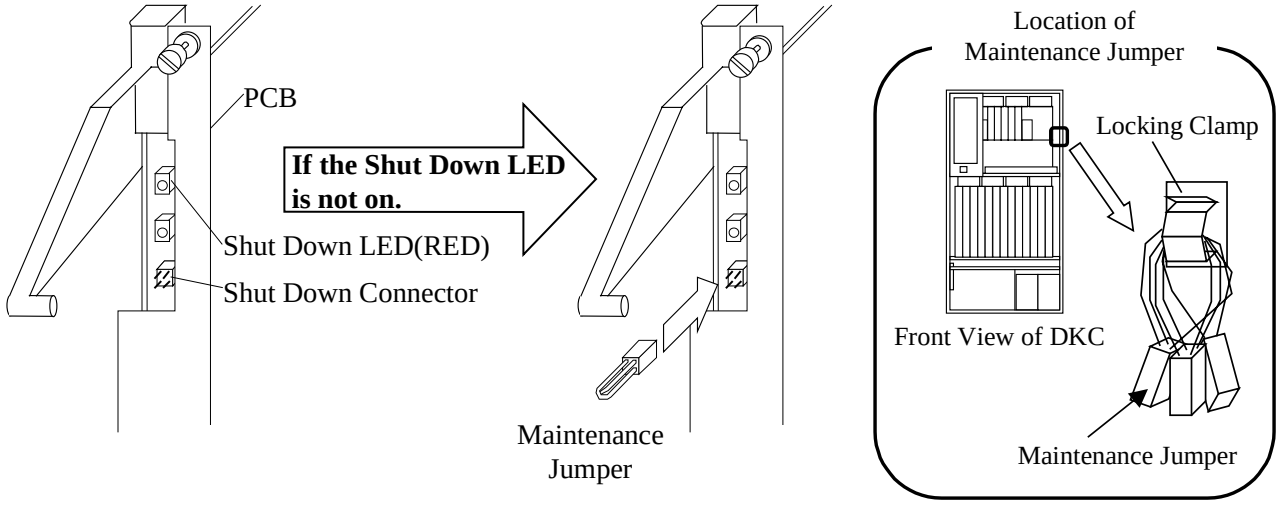

Fig. 3.9.1-4 Location of the Shut Down LED

Table 3.9.1-6 Location of the Cache PCB

Cluster	PCB Name	Box	Slot No.	Location No.	Remarks
2	WP490-A	Rear Logic Box	G	CACHE-2G	Cache Memory PCB

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b. Remove the two screws and remove the Cache Memory PCB.

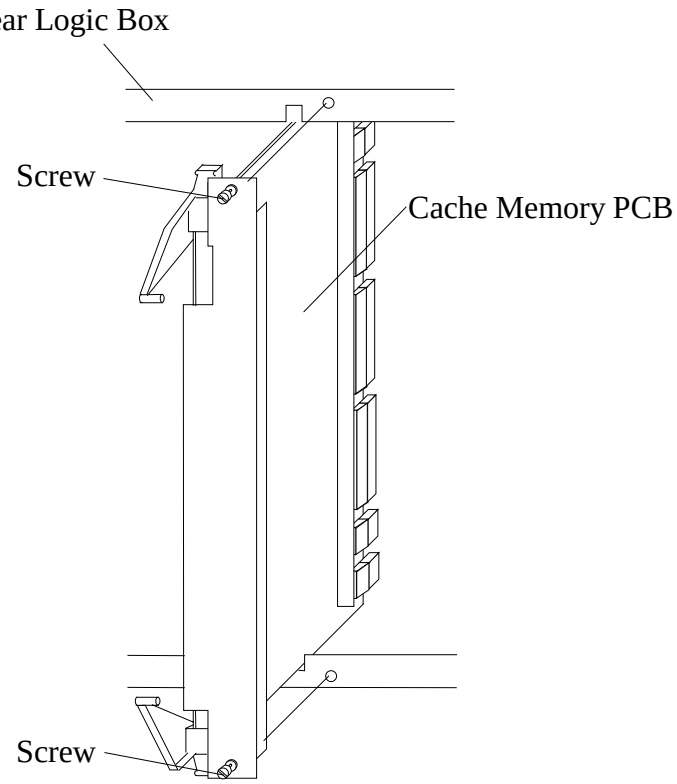

Fig. 3.9.1-5 Removal of the Cache Memory PCB

c. Remove the Maintenance Jumper if it is mounted.

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6-2. Insert the Shared Memory Modules.

Notice
The required capacity of the shared memory varies depending on whether the HRC/HORC/HMRCF/HOMRCF/HIHSM/ShadowImage-FlashCopy® version2 function is supported or not.
Calculate the required shared memory capacity referring to Table 3.9.1-71, Table 3.9.1-81 or Table 3.9.1-84 when none of the functions is supported (in the case of basic configuration) or Table 3.9.1-72, Table 3.9.1-82 or Table 3.9.1-85 when at least one of the functions is supported.
When supporting the ShadowImage-FlashCopy® version2 function, calculate the required capacity of the shared memory referring to Table 3.9.1-73, 3.9.1-83, or 3.9.1-86.

a. Remove the dust covers that match the required Shared Memory capacity referring to Fig. 3.9.1-6 and Fig. 3.9.1-7, Table 3.9.1-71, Table 3.9.1-72, Table 3.9.1-73, Table 3.9.1-81, Table 3.9.1-82, Table, 3.9.1-83, Table 3.9.1-84 and Table 3.9.1-85.
b. Insert the Shared Memory Modules that match the required Shared Memory capacity.

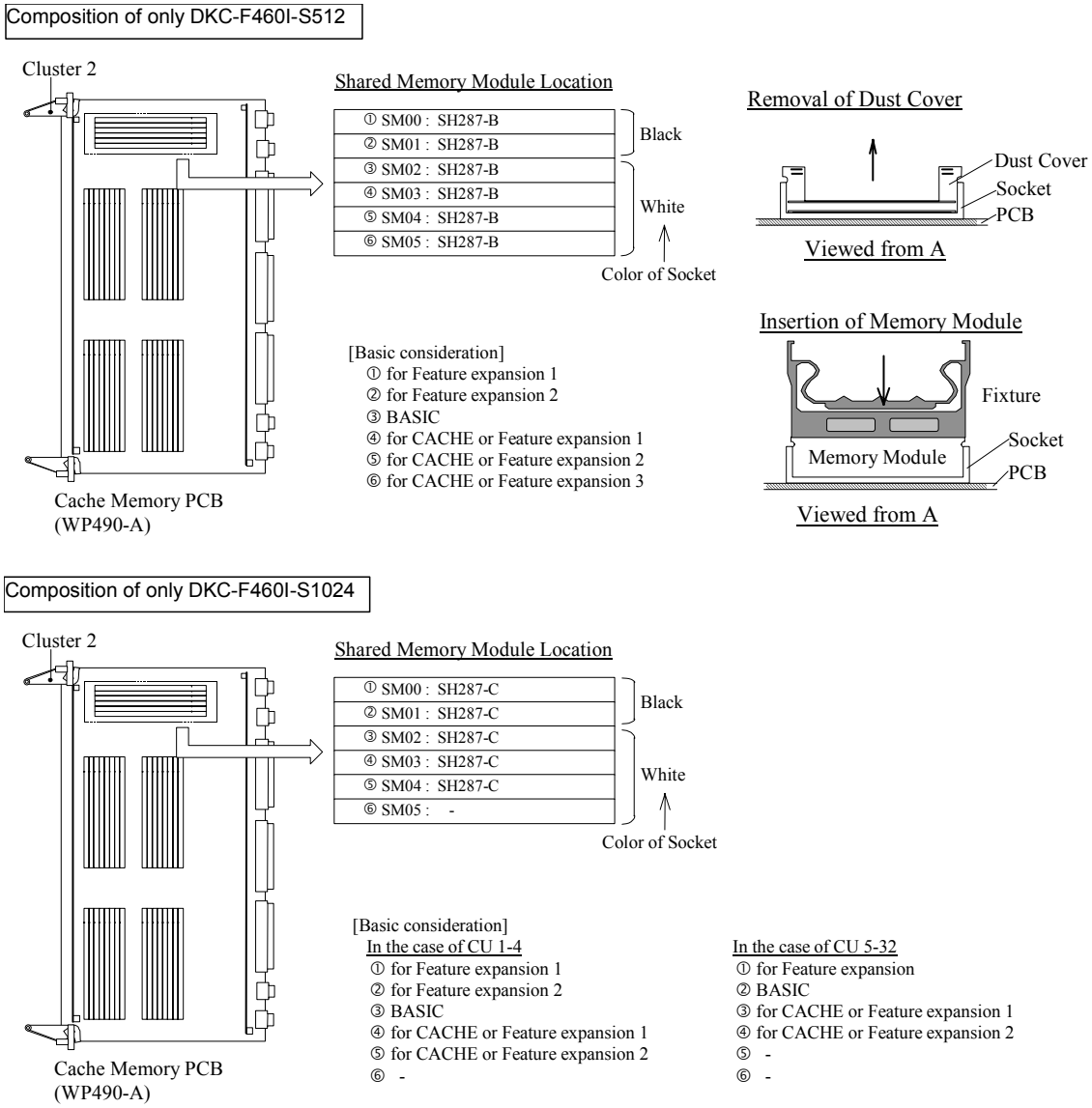

Fig. 3.9.1-6 Inserting Location of the Shared Memory Module

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Table 3.9.1-71 Number of SMs and Corresponding Shared Memory Capacity (DKC-F460I-S512 only installed and HRC/HORC/HMRCF/HOMRCF/HIHSM/ ShadowImage-FlashCopy® version2 not supported)

Cache Memory Capacity	Number of CU:1-4 (to 1024LDEV)			Number of CU:5-8 (to 2048LDEV)			Number of CU:9-16 (to 4096LDEV)			Number of CU:17-32 (to 8192LDEV)		
	SM (MB)	S512	Install loc. *1	SM (MB)	S512	Install loc. *1	SM (MB)	S512	Install loc. *1	SM (MB)	S512	Install loc. *1
2GB	512	1	③	1536	3	③①④	1536	3	③①④	2048	4	③①②④
4GB	512	1	③	1536	3	③①④	1536	3	③①④	2048	4	③①②④
6GB	512	1	③	1536	3	③①④	1536	3	③①④	2048	4	③①②④
8GB	512	1	③	1536	3	③①④	1536	3	③①④	2048	4	③①②④
10GB	1024	2	③④	1536	3	③①④	1536	3	③①④	2048	4	③①②④
12GB	1024	2	③④	1536	3	③①④	1536	3	③①④	2048	4	③①②④
14GB	1024	2	③④	1536	3	③①④	1536	3	③①④	2048	4	③①②④
16GB	1024	2	③④	1536	3	③①④	1536	3	③①④	2048	4	③①②④
18GB	1024	2	③④	1536	3	③①④	2048	4	③①④⑤	2560	5	③①②④⑤
20GB	1024	2	③④	1536	3	③①④	2048	4	③①④⑤	2560	5	③①②④⑤
22GB	1024	2	③④	1536	3	③①④	2048	4	③①④⑤	2560	5	③①②④⑤
24GB	1024	2	③④	1536	3	③①④	2048	4	③①④⑤	2560	5	③①②④⑤
26GB	1024	2	③④	1536	3	③①④	2048	4	③①④⑤	2560	5	③①②④⑤
28GB	1024	2	③④	1536	3	③①④	2048	4	③①④⑤	2560	5	③①②④⑤
30GB	1024	2	③④	1536	3	③①④	2048	4	③①④⑤	2560	5	③①②④⑤
32GB	1024	2	③④	1536	3	③①④	2048	4	③①④⑤	2560	5	③①②④⑤
34GB	1024	2	③④	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤
36GB	1024	2	③④	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤
38GB	1024	2	③④	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤
40GB	1024	2	③④	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤
42GB	1024	2	③④	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤
44GB	1024	2	③④	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤
46GB	1536	3	③④⑤	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤
48GB	1536	3	③④⑤	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤
50GB	1536	3	③④⑤	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤
52GB	1536	3	③④⑤	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤
54GB	1536	3	③④⑤	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤
56GB	1536	3	③④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
58GB	1536	3	③④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
60GB	1536	3	③④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
62GB	1536	3	③④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
64GB	1536	3	③④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
Subsystem Capacity *2	to 18TB			to 72TB			to 144TB			over 144TB		
Number of HDD Canister Options *3	DKU-F455I-36K4: 128 DKU-F455I-72J4/K4: 64 DKU-F455I-146J4/JF/JQ: 32 DKU-F405I-18J4: 256 *4 DKU-F405I-47J4: 98 *4 DKU-F405I-72J4/K4: 64 *4 DKU-F405I-180H4: 24 *4			DKU-F455I-36K4: 256 DKU-F455I-72J4/K4: 256 DKU-F455I-146J4/JF/JQ: 128 DKU-F405I-18J4: 256 *4 DKU-F405I-47J4: 256 *4 DKU-F405I-72J4/K4: 256 *4 DKU-F405I-180H4: 96 *4			DKU-F455I-36K4: 256 DKU-F455I-72J4/K4: 256 DKU-F455I-146J4/JF/JQ: 256 DKU-F405I-18J4: 256 *4 DKU-F405I-47J4: 256 *4 DKU-F405I-72J4/K4: 256 *4 DKU-F405I-180H4: 128 *4			DKU-F455I-36K4: 256 DKU-F455I-72J4/K4: 256 DKU-F455I-146J4/JF/JQ: 256 DKU-F405I-18J4: 256 *4 DKU-F405I-47J4: 256 *4 DKU-F405I-72J4/K4: 256 *4 DKU-F405I-180H4: 128 *4		

Note. *1: Location ① through ⑥ represent the Shared Memory Module locations shown in Fig. 3.9.1-6.

*2: This is raw capacity. You have to increase SM capacity, when subsystem raw capacity exceeds this. When the HDD option is intermixed in one subsystem, subsystem capacity must not exceed this.

*3: The number of HDD canister options controllable by the LDEV numbers and SM capacities. You have to increase SM capacity, when the number of HDD canister options exceeds.

*4: When DKU405I is connected to DKC460I.

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Table 3.9.1-72 Number of SMs and Corresponding Shared Memory Capacity (DKC-F460I-S512 only installed and HRC/HORC/HMRCF/HOMRCF/HIHSM supported)

Cache Memory Capacity	Number of CU:1-4 (to 1024LDEV)			Number of CU:5-8 (to 2048LDEV)			Number of CU:9-16 (to 4096LDEV)			Number of CU:17-32 & TPF (to 8192LDEV)		
	SM (MB)	S512	Install loc. *1	SM (MB)	S512	Install loc. *1	SM (MB)	S512	Install loc. *1	SM (MB)	S512	Install loc. *1
2GB	1024	2	③④	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤
4GB	1024	2	③④	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤
6GB	1024	2	③④	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤
8GB	1024	2	③④	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤
10GB	1536	3	③④⑤	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤
12GB	1536	3	③④⑤	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤
14GB	1536	3	③④⑤	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤
16GB	1536	3	③④⑤	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤
18GB	1536	3	③④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
20GB	1536	3	③④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
22GB	1536	3	③④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
24GB	1536	3	③④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
26GB	1536	3	③④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
28GB	1536	3	③④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
30GB	1536	3	③④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
32GB	1536	3	③④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
34GB	1536	3	③④⑤	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
36GB	1536	3	③④⑤	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
38GB	1536	3	③④⑤	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
40GB	1536	3	③④⑤	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
42GB	1536	3	③④⑤	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
44GB	1536	3	③④⑤	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
46GB	2048	4	③④⑤⑥	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
48GB	2048	4	③④⑤⑥	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
50GB	2048	4	③④⑤⑥	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
52GB	2048	4	③④⑤⑥	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
54GB	2048	4	③④⑤⑥	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
56GB	2048	4	③④⑤⑥	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
58GB	2048	4	③④⑤⑥	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
60GB	2048	4	③④⑤⑥	2560	5	③①④⑤⑥	-	-	-	-	-	-
62GB	2048	4	③④⑤⑥	2560	5	③①④⑤⑥	-	-	-	-	-	-
64GB	2048	4	③④⑤⑥	2560	5	③①④⑤⑥	-	-	-	-	-	-
Subsystem Capacity *2	to 18TB			to 72TB			to 144TB			over 144TB		
Number of HDD Canister Options *3	DKU-F455I-36K4: 128 DKU-F455I-72J4/K4: 64 DKU-F455I-146J4/JF/JQ: 32 DKU-F405I-18J4: 256 *4 DKU-F405I-47J4: 98 *4 DKU-F405I-72J4/K4: 64 *4 DKU-F405I-180H4: 24 *4			DKU-F455I-36K4: 256 DKU-F455I-72J4/K4: 256 DKU-F455I-146J4/JF/JQ: 128 DKU-F405I-18J4: 256 *4 DKU-F405I-47J4: 256 *4 DKU-F405I-72J4/K4: 256 *4 DKU-F405I-180H4: 96 *4			DKU-F455I-36K4: 256 DKU-F455I-72J4/K4: 256 DKU-F455I-146J4/JF/JQ: 256 DKU-F405I-18J4: 256 *4 DKU-F405I-47J4: 256 *4 DKU-F405I-72J4/K4: 256 *4 DKU-F405I-180H4: 128 *4			DKU-F455I-36K4: 256 DKU-F455I-72J4/K4: 256 DKU-F455I-146J4/JF/JQ: 256 DKU-F405I-18J4: 256 *4 DKU-F405I-47J4: 256 *4 DKU-F405I-72J4/K4: 256 *4 DKU-F405I-180H4: 128 *4		

Note. *1: Location ① through ⑥ represent the Shared Memory Module locations shown in Fig. 3.9.1-6.

*2: This is raw capacity. You have to increase SM capacity, when subsystem raw capacity exceeds this. When the HDD option is intermixed in one subsystem, subsystem capacity must not exceed this.

*3: The number of HDD canister options controllable by the LDEV numbers and SM capacities. You have to increase SM capacity, when the number of HDD canister options exceeds.

*4: When DKU405I is connected to DKC460I.

*5: A Shared Memory can't be set up in the '-' mark.

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Table 3.9.1-73 Number of SMs and Corresponding Shared Memory Capacity
(DKC-F460I-S512 only installed and ShadowImage-FlashCopy® version2 supported)

Cache Memory Capacity	Number of CU:1-4 (to 1024LDEV)			Number of CU:5-8 (to 2048LDEV)			Number of CU:9-16 (to 4096LDEV)			Number of CU:17-32 & TPF (to 8192LDEV)		
	SM (MB)	S512	Install loc. *1	SM (MB)	S512	Install loc. *1	SM (MB)	S512	Install loc. *1	SM (MB)	S512	Install loc. *1
2GB	1536	3	③①④	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤
4GB	1536	3	③①④	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤
6GB	1536	3	③①④	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤
8GB	1536	3	③①④	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤
10GB	2048	4	③①④⑤	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤
12GB	2048	4	③①④⑤	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤
14GB	2048	4	③①④⑤	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤
16GB	2048	4	③①④⑤	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤
18GB	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
20GB	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
22GB	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
24GB	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
26GB	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
28GB	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
30GB	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
32GB	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
34GB	2048	4	③①④⑤	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
36GB	2048	4	③①④⑤	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
38GB	2048	4	③①④⑤	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
40GB	2048	4	③①④⑤	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
42GB	2048	4	③①④⑤	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
44GB	2048	4	③①④⑤	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
46GB	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
48GB	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
50GB	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
52GB	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
54GB	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
56GB	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
58GB	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
60GB	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	-	-	-	-	-	-
62GB	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	-	-	-	-	-	-
64GB	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	-	-	-	-	-	-
Subsystem Capacity *2	to 18TB			to 72TB			to 144TB			over 144TB		
Number of HDD Canister Options *3	DKU-F455I-36K4: 128 DKU-F455I-72J4/K4: 64 DKU-F455I-146J4/JF/JQ: 32 DKU-F405I-18J4: 256 *4 DKU-F405I-47J4: 98 *4 DKU-F405I-72J4/K4: 64 *4 DKU-F405I-180H4: 24 *4			DKU-F455I-36K4: 256 DKU-F455I-72J4/K4: 256 DKU-F455I-146J4/JF/JQ: 128 DKU-F405I-18J4: 256 *4 DKU-F405I-47J4: 256 *4 DKU-F405I-72J4/K4: 256 *4 DKU-F405I-180H4: 96 *4			DKU-F455I-36K4: 256 DKU-F455I-72J4/K4: 256 DKU-F455I-146J4/JF/JQ: 256 DKU-F405I-18J4: 256 *4 DKU-F405I-47J4: 256 *4 DKU-F405I-72J4/K4: 256 *4 DKU-F405I-180H4: 128 *4			DKU-F455I-36K4: 256 DKU-F455I-72J4/K4: 256 DKU-F455I-146J4/JF/JQ: 256 DKU-F405I-18J4: 256 *4 DKU-F405I-47J4: 256 *4 DKU-F405I-72J4/K4: 256 *4 DKU-F405I-180H4: 128 *4		

Note. *1: Location ① through ⑥ represent the Shared Memory Module locations shown in Fig. 3.9.1-6.

*2: This is raw capacity. You have to increase SM capacity, when subsystem raw capacity exceeds this. When the HDD option is intermixed in one subsystem, subsystem capacity must not exceed this.

*3: The number of HDD canister options controllable by the LDEV numbers and SM capacities. You have to increase SM capacity, when the number of HDD canister options exceeds.

*4: When DKU405I is connected to DKC460I.

*5: A Shared Memory can't be set up in the '-' mark.

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Table 3.9.1-81 Number of SMs and Corresponding Shared Memory Capacity
(DKC-F460I-S1024 only installed and HRC/HORC/HMRCF/HOMRCF/HIHSM/
ShadowImage-FlashCopy® version2 not support)

Cache Memory Capacity *5	Number of CU:1-4 (to 1024LDEV)			Number of CU:5-8 (to 2048LDEV)			Number of CU:9-16 (to 4096LDEV)			Number of CU:17-32 (to 8192LDEV)		
	SM (MB)	S1024	Install loc. *1	SM (MB)	S1024	Install loc. *1	SM (MB)	S1024	Install loc. *1	SM (MB)	S1024	Install loc. *1
68GB	2048	2	③④	3072	3	①②③	3072	3	①②③	3072	3	①②③
72GB	2048	2	③④	3072	3	①②③	3072	3	①②③	3072	3	①②③
76GB	2048	2	③④	3072	3	①②③	3072	3	①②③	3072	3	①②③
80GB	2048	2	③④	3072	3	①②③	3072	3	①②③	3072	3	①②③
84GB	2048	2	③④	3072	3	①②③	3072	3	①②③	3072	3	①②③
88GB	2048	2	③④	3072	3	①②③	3072	3	①②③	3072	3	①②③
92GB	2048	2	③④	3072	3	①②③	3072	3	①②③	3072	3	①②③
96GB	2048	2	③④	3072	3	①②③	4096	4	①②③④	4096	4	①②③④
100GB	2048	2	③④	3072	3	①②③	4096	4	①②③④	4096	4	①②③④
104GB	2048	2	③④	3072	3	①②③	4096	4	①②③④	4096	4	①②③④
108GB	2048	2	③④	3072	3	①②③	4096	4	①②③④	4096	4	①②③④
112GB	2048	2	③④	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
116GB	2048	2	③④	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
120GB	2048	2	③④	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
124GB	3072	3	③④⑤	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
128GB	3072	3	③④⑤	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
Subsystem Capacity *2	to 18TB			to 72TB			to 144TB			over 144TB		
Number of HDD Canister Options *3	DKU-F455I-36K4: 128 DKU-F455I-72J4/K4: 64 DKU-F455I-146J4/JF: 32 DKU-F405I-18J4: 256*4 DKU-F405I-47J4: 98*4 DKU-F405I-72J4: 64*4 DKU-F405I-180H4: 24*4			DKU-F455I-36K4: 256 DKU-F455I-72J4/K4: 256 DKU-F455I-146J4/JF: 128 DKU-F405I-18J4: 256*4 DKU-F405I-47J4: 256*4 DKU-F405I-72J4: 256*4 DKU-F405I-180H4: 96*4			DKU-F455I-36K4: 256 DKU-F455I-72J4/K4: 256 DKU-F455I-146J4/JF: 256 DKU-F405I-18J4: 256*4 DKU-F405I-47J4: 256*4 DKU-F405I-72J4: 256*4 DKU-F405I-180H4: 128*4			DKU-F455I-36K4: 256 DKU-F455I-72J4/K4: 256 DKU-F455I-146J4/JF: 256 DKU-F405I-18J4: 256*4 DKU-F405I-47J4: 256*4 DKU-F405I-72J4: 256*4 DKU-F405I-180H4: 128*4		

Note. *1: Location ① through ⑤ represent the Shared Memory Module locations shown in Fig. 3.9.1-6.

*2: This is raw capacity. You have to increase SM capacity, when subsystem raw capacity exceeds this. When the HDD option is intermixed in one subsystem, subsystem capacity must not exceed this.

*3: The number of HDD canister options controllable by the LDEV numbers and SM capacities. You have to increase SM capacity, when the number of HDD canister options exceeds.

*4: When DKU405I is connected to DKC460I.

*5: When Cache Memory capacity is 64GB or less, refer to the Table 3.9.1-71 or Table 3.9.1-84.

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Table 3.9.1-82 Number of SMs and Corresponding Shared Memory Capacity (DKC-F460I-S1024 only installed and HRC/HORC/HMRCF/HOMRCF/HIHSM supported)

Cache Memory Capacity *5	Number of CU:1-4 (to 1024LDEV)			Number of CU:5-8 (to 2048LDEV)			Number of CU:9-16 (to 4096LDEV)			Number of CU:17-32 & TPF (to 8192LDEV)		
	SM (MB)	S1024	Install loc. *1	SM (MB)	S1024	Install loc. *1	SM (MB)	S1024	Install loc. *1	SM (MB)	S1024	Install loc. *1
68GB	2048	2	③④	3072	3	①②③	4096	4	①②③④	4096	4	①②③④
72GB	2048	2	③④	3072	3	①②③	4096	4	①②③④	4096	4	①②③④
76GB	2048	2	③④	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
80GB	2048	2	③④	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
84GB	2048	2	③④	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
88GB	3072	3	③④⑤	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
92GB	3072	3	③④⑤	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
96GB	3072	3	③④⑤	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
100GB	3072	3	③④⑤	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
104GB	3072	3	③④⑤	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
108GB	3072	3	③④⑤	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
112GB	3072	3	③④⑤	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
116GB	3072	3	③④⑤	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
120GB	3072	3	③④⑤	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
124GB	3072	3	③④⑤	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
128GB	3072	3	③④⑤	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
Subsystem Capacity *2	to 18TB			to 72TB			to 144TB			over 144TB		
Number of HDD Canister Options *3	DKU-F455I-36K4: 128 DKU-F455I-72J4/K4: 64 DKU-F455I-146J4/JF: 32 DKU-F405I-18J4: 256*4 DKU-F405I-47J4: 98*4 DKU-F405I-72J4: 64*4 DKU-F405I-180H4: 24*4			DKU-F455I-36K4: 256 DKU-F455I-72J4/K4: 256 DKU-F455I-146J4/JF: 128 DKU-F405I-18J4: 256*4 DKU-F405I-47J4: 256*4 DKU-F405I-72J4: 256*4 DKU-F405I-180H4: 96*4			DKU-F455I-36K4: 256 DKU-F455I-72J4/K4: 256 DKU-F455I-146J4/JF: 256 DKU-F405I-18J4: 256*4 DKU-F405I-47J4: 256*4 DKU-F405I-72J4: 256*4 DKU-F405I-180H4: 128*4			DKU-F455I-36K4: 256 DKU-F455I-72J4/K4: 256 DKU-F455I-146J4/JF: 256 DKU-F405I-18J4: 256*4 DKU-F405I-47J4: 256*4 DKU-F405I-72J4: 256*4 DKU-F405I-180H4: 128*4		

Note. *1: Location ① through ⑤ represent the Shared Memory Module locations shown in Fig. 3.9.1-6.

*2: This is raw capacity. You have to increase SM capacity, when subsystem raw capacity exceeds this. When the HDD option is intermixed in one subsystem, subsystem capacity must not exceed this.

*3: The number of HDD canister options controllable by the LDEV numbers and SM capacities. You have to increase SM capacity, when the number of HDD canister options exceeds.

*4: When DKU405I is connected to DKC460I.

*5: When Cache Memory capacity is 64GB or less, refer to the Table 3.9.1-72 or Table 3.9.1-85.

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Table 3.9.1-83 Number of SMs and Corresponding Shared Memory Capacity
(DKC-F460I-S1024 only installed and ShadowImage-FlashCopy® version2 supported)

Cache Memory Capacity *5	Number of CU:1-4 (to 1024LDEV)			Number of CU:5-8 (to 2048LDEV)			Number of CU:9-16 (to 4096LDEV)			Number of CU:17-32 & TPF (to 8192LDEV)		
	SM (MB)	S1024	Install loc. *1	SM (MB)	S1024	Install loc. *1	SM (MB)	S1024	Install loc. *1	SM (MB)	S1024	Install loc. *1
68GB	2048	2	③④	3072	3	①②③	4096	4	①②③④	4096	4	①②③④
72GB	2048	2	③④	3072	3	①②③	4096	4	①②③④	4096	4	①②③④
76GB	2048	2	③④	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
80GB	2048	2	③④	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
84GB	2048	2	③④	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
88GB	3072	3	③④⑤	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
92GB	3072	3	③④⑤	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
96GB	3072	3	③④⑤	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
100GB	3072	3	③④⑤	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
104GB	3072	3	③④⑤	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
108GB	3072	3	③④⑤	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
112GB	3072	3	③④⑤	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
116GB	3072	3	③④⑤	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
120GB	3072	3	③④⑤	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
124GB	3072	3	③④⑤	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
128GB	3072	3	③④⑤	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
Subsystem Capacity *2	to 18TB			to 72TB			to 144TB			over 144TB		
Number of HDD Canister Options *3	DKU-F455I-36K4: 128 DKU-F455I-72J4/K4: 64 DKU-F455I-146J4/JF: 32 DKU-F405I-18J4: 256*4 DKU-F405I-47J4: 98*4 DKU-F405I-72J4: 64*4 DKU-F405I-180H4: 24*4			DKU-F455I-36K4: 256 DKU-F455I-72J4/K4: 256 DKU-F455I-146J4/JF: 128 DKU-F405I-18J4: 256*4 DKU-F405I-47J4: 256*4 DKU-F405I-72J4: 256*4 DKU-F405I-180H4: 96*4			DKU-F455I-36K4: 256 DKU-F455I-72J4/K4: 256 DKU-F455I-146J4/JF: 256 DKU-F405I-18J4: 256*4 DKU-F405I-47J4: 256*4 DKU-F405I-72J4: 256*4 DKU-F405I-180H4: 128*4			DKU-F455I-36K4: 256 DKU-F455I-72J4/K4: 256 DKU-F455I-146J4/JF: 256 DKU-F405I-18J4: 256*4 DKU-F405I-47J4: 256*4 DKU-F405I-72J4: 256*4 DKU-F405I-180H4: 128*4		

Note. *1: Location ① through ⑤ represent the Shared Memory Module locations shown in Fig. 3.9.1-6.
*2: This is raw capacity. You have to increase SM capacity, when subsystem raw capacity exceeds this. When the HDD option is intermixed in one subsystem, subsystem capacity must not exceed this.
*3: The number of HDD canister options controllable by the LDEV numbers and SM capacities. You have to increase SM capacity, when the number of HDD canister options exceeds.
*4: When DKU405I is connected to DKC460I.
*5: When Cache Memory capacity is 64GB or less, refer to the Table 3.9.1-73 or Table 3.9.1-86.

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Mixture composition of DKC-F460I-S512 and DKC-F460I-S1024

The mixture composition of DKC-F460I-S512 and DKC-F460I-S1024 is allowed. However, depending on cache capacity, it may have to constitute from DKC-F460I-S512 or DKC-F460I-S1024 independent one. (Refer to Table 3.9.1-84, 3.9.1-85 and 3.9.1-86 for details.)
The mixture pattern of DKC-F460I-S512 and DKC-F460 I-S1024 is shown in the following table. Since it is decided for every pattern, it must be careful of the installing location of two shared memory modules.
In order to prevent a maintenance mistake, it recommends constituting from DKC-F460I-S512 or DKC-F460I-S1024 independent one. (Refer to Table 3.9.1-83A and 3.9.1-83B)

Table 3.9.1-83A Shared Memory Module Mixture Pattern
(Composition of only DKC-F460I-S512)

Install location	Mixture Pattern											
	A	B	C	D	E	F	G	H	I	J	K	L
①	-	-	-	-	S512	S512	S512	S512	S512	S512	S512	S512
②	-	-	-	-	-	-	-	-	S512	S512	S512	S512
③	S512	S512	S512	S512	S512	S512	S512	S512	S512	S512	S512	S512
④	-	S512	S512	S512	-	S512	S512	S512	-	S512	S512	S512
⑤	-	-	S512	S512	-	-	S512	S512	-	-	S512	S512
⑥	-	-	-	S512	-	-	-	S512	-	-	-	S512
Total SM Capacity	0.5GB	1.0GB	1.5GB	2.0GB	1.0GB	1.5GB	2.0GB	2.5GB	1.5GB	2.0GB	2.5GB	3.0GB

Table 3.9.1-83B Shared Memory Module Mixture Pattern

Install location	Mixture Pattern														
	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
①	-	-	-	-	S512	S512	S512	S512	S512	S512	S512	S1024	S1024	S1024	S1024
②	-	-	-	-	-	-	-	-	S512	S512	S512	S1024	S1024	S1024	S1024
③	S1024	S1024	S1024	S1024	S1024	S1024	S1024	S1024	S1024	S1024	S1024	S512	S1024	S1024	S1024
④	S512	S1024	S1024	S1024	S512	S1024	S1024	S1024	S1024	S1024	S1024	-	-	S512	S1024
⑤	-	-	S512	S1024	-	-	S512	S1024	-	S512	S1024	-	-	-	-
⑥	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total SM Capacity	1.5GB	2.0GB	2.5GB	3.0GB	2.0GB	2.5GB	3.0GB	3.5GB	3.0GB	3.5GB	4.0GB	2.5GB	3.0GB	3.5GB	4.0GB

Note. 1: Location ①-⑥ shows actual location of shared memory module on Cache PCB. (Refer to Fig. 3.9.1-7)
2: S1024 means installing the shared memory module which constitutes DKC-F460I-S1024 option.
3: S512 means installing the shared memory module which constitutes DKC-F460I-S512 option.

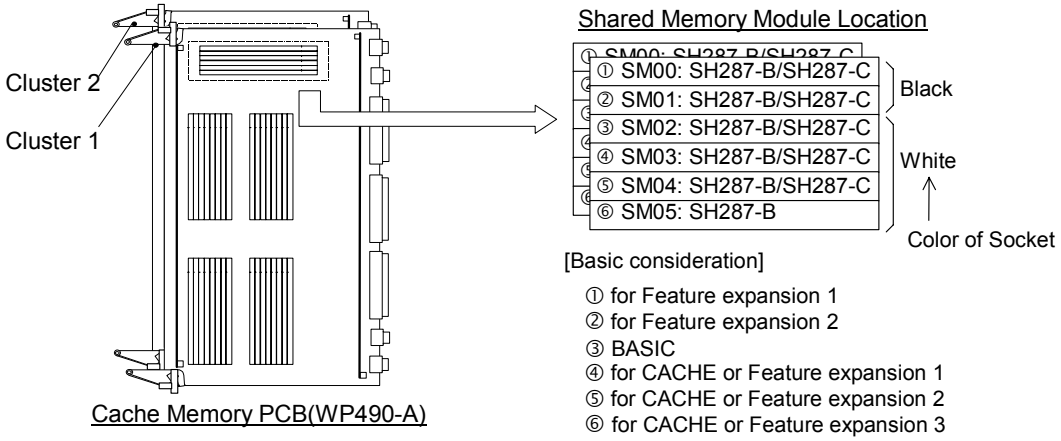

Fig. 3.9.1-7 Actual location of shared memory module

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Table 3.9.1-84 Size of Cache Memory and Shared Memory (TrueCopy/ShadowImage/ ShadowImage-FlashCopy® version2/Cruise Control function not supported)

Cache Memory Capacity	Number of CU:1-4 (to 1024LDEV)				Number of CU:5-8 (to 2048LDEV)				Number of CU:9-16 (to 4096LDEV)				Number of CU:17-32 (to 8192LDEV)			
	SM *1 Cap. (MB)	Number of SM options S1024	Number of SM options S512	Mixture Pattern *5	SM *1 Cap. (MB)	Number of SM options S1024	Number of SM options S512	Mixture Pattern *5	SM *1 Cap. (MB)	Number of SM options S1024	Number of SM options S512	Mixture Pattern *5	SM *1 Cap. (MB)	Number of SM options S1024	Number of SM options S512	Mixture Pattern *5
2GB	512	-	1	A	1536	-	3	F	1536	-	3	F	2048	-	4	J
4GB	512	-	1	A	1536	-	3	F	1536	-	3	F	2048	-	4	J
6GB	512	-	1	A	1536	-	3	F	1536	-	3	F	2048	-	4	J
8GB	512	-	1	A	1536	-	3	F	1536	-	3	F	2048	-	4	J
10GB	1024	-	2	B	1536	-	3	F	1536	-	3	F	2048	-	4	J
12GB	1024	-	2	B	1536	-	3	F	1536	-	3	F	2048	-	4	J
14GB	1024	-	2	B	1536	-	3	F	1536	-	3	F	2048	-	4	J
16GB	1024	-	2	B	1536	-	3	F	1536	-	3	F	2048	-	4	J
18GB	1024	-	2	B	1536	-	3	F	2048 or 2560 or 3072	Refer to mix pattern table *6		G, e, f, l, m	2560 or 3072	Refer to mix pattern table *6		K, i, l, m
20GB	1024	-	2	B	1536	-	3	F								
22GB	1024	-	2	B	1536	-	3	F								
24GB	1024	-	2	B	1536	-	3	F								
26GB	1024	-	2	B	1536	-	3	F								
28GB	1024	-	2	B	1536	-	3	F								
30GB	1024	-	2	B	1536	-	3	F								
32GB	1024	-	2	B	1536	-	3	F								
36GB	1024	-	2	B	2048 or 2560 or 3072	Refer to mix pattern table *6		G, e, f, l, m								
40GB	1024	-	2	B												
44GB	1024	-	2	B												
48GB	1536 or 2048	Refer to mix pattern table *6		a, b												
52GB																
56GB									2560 or 3072	Refer to mix pattern table *6		H, f, m	3072	Refer to mix pattern table *6		L, i, m
60GB																
64GB																
68GB	1536	1	1	a	2048 or 2560	Refer to mix pattern table *6		f, m	3072	3	0	m	3072	2	2	i
72GB	1536	1	1	a					3072	3	0	m	3072	2	2	i
76GB	1536	1	1	a	3072	3	0	m	3072	3	0	m	3072	2	2	i
80GB	1536	1	1	a	3072	3	0	m	3072	3	0	m	3072	2	2	i
84GB	2048	2	0	b	3072	3	0	m	3072	3	0	m	3072	2	2	i
88GB	2048	2	0	b	3072	3	0	m	3072	3	0	m	3072	2	2	i
92GB	2048	2	0	b	3072	3	0	m	3072	3	0	m	3072	2	2	i
96GB	2048	2	0	b	3072	3	0	m	3072 or 3584	Refer to mix. pattern table *6		g, h, n	3584 or 4096	Refer to mix. pattern table *6		j, k, n
100GB	2048	2	0	b	3072	3	0	m				g, h, n				j, k, n
104GB	2048	2	0	b	3072	3	0	m				g, h, n				j, k, n
108GB	2048	2	0	b	3072	3	0	m				g, h, n				j, k, n
112GB	2048	2	0	b	3072 or 3584	Refer to mix. pattern table *6		g, h, n				g, h, n				j, k, n
116GB	2048	2	0	b				g, h, n				g, h, n				j, k, n
120GB	2048	2	0	b				g, h, n				g, h, n				j, k, n
124GB	2560	2	1	c				g, h, n				g, h, n				j, k, n
128GB	2560	2	1	c				g, h, n				g, h, n				j, k, n
Subsystem Capacity *2	to 18TB				to 72TB				to 144TB				over 144TB			
Number of HDD Canister Option *3	DKU-F455I-36K4:			128	DKU-F455I-36K4:			256	DKU-F455I-36K4:			256	DKU-F455I-36K4:			256
	DKU-F455I-72J4/72K4:			64	DKU-F455I-72J4/72K4:			256	DKU-F455I-72J4/72K4:			256	DKU-F455I-72J4/72K4:			256
	DKU-F455I-146J4:			32	DKU-F455I-146J4:			128	DKU-F455I-146J4:			256	DKU-F455I-146J4:			256
	DKU-F405I-18J4:			256 *4	DKU-F405I-18J4:			256 *4	DKU-F405I-18J4:			256 *4	DKU-F405I-18J4:			256 *4
	DKU-F405I-47J4:			98 *4	DKU-F405I-47J4:			256 *4	DKU-F405I-47J4:			256 *4	DKU-F405I-47J4:			256 *4
	DKU-F405I-72J4:			64 *4	DKU-F405I-72J4:			256 *4	DKU-F405I-72J4:			256 *4	DKU-F405I-72J4:			256 *4
	DKU-F405I-180H4:			24 *4	DKU-F405I-180H4:			96 *4	DKU-F405I-180H4:			128 *4	DKU-F405I-180H4:			128 *4

Note. *1: This is required SM capacity, when DKC-F460I-S1024 and DKC-F460I-S512 are intermixed. When constituted only from DKC-F460I-S1024, it differs from required SM capacity.

*2: This is raw capacity. You have to increase SM capacity, when subsystem raw capacity exceeds this. When the HDD option is intermixed in one subsystem, subsystem capacity must not exceed this.

*3: The number of HDD canister options controllable by the LDEV numbers and SM capacities. You have to increase SM capacity, when the number of HDD canister options exceeds.

*4: When DKU405I is connected to DKC460I.

*5: 'A' to 'L' should refer a Table 3.9.1-83A, and refer to the Table 3.9.1-83B for 'o' from 'a'. The memory module corresponding to each mixture pattern is installed in the install locations ①-⑥.

*6: You have to choose one from some mixture patterns.

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Table 3.9.1-85 Size of Cache Memory and Shared Memory (TrueCopy/ShadowImage/Cruise Control function supported)

Cache Memory Capacity	Number of CU:1-4 (to 1024LDEV)				Number of CU:5-8 (to 2048LDEV)				Number of CU:9-16 (to 4096LDEV)				Number of CU:17-32 (to 8192LDEV)			
	SM *1 Cap. (MB)	Number of SM options S1024	Number of SM options S512	Mixture Pattern *5	SM *1 Cap. (MB)	Number of SM options S1024	Number of SM options S512	Mixture Pattern *5	SM *1 Cap. (MB)	Number of SM options S1024	Number of SM options S512	Mixture Pattern *5	SM *1 Cap. (MB)	Number of SM options S1024	Number of SM options S512	Mixture Pattern *5
2GB	1024	-	2	B	2048 or 2560 or 3072	Refer to mix. pattern table *6		G, e, f, l, m	2048 or 2560 or 3072	Refer to mix. pattern table *6		G, e, f, l, m	2560 or 3072	Refer to mix. pattern table *6		K, i, l, m
4GB	1024	-	2	B												
6GB	1024	-	2	B												
8GB	1024	-	2	B												
10GB	1536	-	3	C												
12GB	1536	-	3	C												
14GB	1536	-	3	C												
16GB	1536	-	3	C												
18GB	1536	-	3	C					2560 or 3072	Refer to mix. pattern table *6		H, f,m	3072	Refer to mix. pattern table *6		L, i, m
20GB	1536	-	3	C												
22GB	1536	-	3	C												
24GB	1536	-	3	C												
26GB	1536	-	3	C												
28GB	1536	-	3	C												
30GB	1536	-	3	C												
32GB	1536	-	3	C												
36GB	1536	-	3	C	2560 or 3072	Refer to mix. pattern table *6		H, f, m								
40GB	1536	-	3	C												
44GB	1536	-	3	C												
48GB	2048	Refer to mix. pattern table *6		D, b												
52GB																
56GB																
60GB									3072 or 3584	Refer to mix. pattern table *6		g, h	3584 or 4096	Refer to mix. pattern table *6		j, k, n, o
64GB																
68GB	2048	2	0	b	3072	3	0	m	3072 or 3584	Refer to mix. pattern table *6		g, h, n	3584 or 4096	Refer to mix. pattern table *6		j, k, n
72GB	2048	2	0	b	3072	3	0	m				g, h, n				j, k, n
76GB	2048	2	0	b	3072 or 3584	Refer to mix. pattern table *6		g, h, n				g, h, n				j, k, n
80GB	2048	2	0	b				g, h, n				g, h, n				j, k, n
84GB	2048	2	0	b				g, h, n				g, h, n				j, k, n
88GB	2560	2	1	c				g, h, n				g, h, n				j, k, n
92GB	2560	2	1	c				g, h, n				g, h, n				j, k, n
96GB	2560	2	1	c				g, h, n				g, h, n				j, k, n
100GB	2560	2	1	c				g, h, n	4096	4	0	o	4096	4	0	o
104GB	2560	2	1	c				g, h, n	4096	4	0	o	4096	4	0	o
108GB	2560	2	1	c				g, h, n	4096	4	0	o	4096	4	0	o
112GB	2560	2	1	c				g, h, n	4096	4	0	o	4096	4	0	o
116GB	2560	2	1	c	4096	4	0	o	4096	4	0	o	4096	4	0	o
120GB	2560	2	1	c	4096	4	0	o	4096	4	0	o	4096	4	0	o
124GB	2560	2	1	c	4096	4	0	o	4096	4	0	o	4096	4	0	o
128GB	3072	3	0	d	4096	4	0	o	4096	4	0	o	4096	4	0	o
Subsystem Capacity *2	to 18TB				to 72TB				to 144TB				over 144TB			
Number of HDD Canister Option *3	DKU-F455I-36K4: 128 DKU-F455I-72J4/72K4: 64 DKU-F455I-146J4: 32 DKU-F405I-18J4: 256 *4 DKU-F405I-47J4: 98 *4 DKU-F405I-72J4: 64 *4 DKU-F405I-180H4: 24 *4				DKU-F455I-36K4: 256 DKU-F455I-72J4/72K4: 256 DKU-F455I-146J4: 128 DKU-F405I-18J4: 256 *4 DKU-F405I-47J4: 256 *4 DKU-F405I-72J4: 256 *4 DKU-F405I-180H4: 96 *4				DKU-F455I-36K4: 256 DKU-F455I-72J4/72K4: 256 DKU-F455I-146J4: 256 DKU-F405I-18J4: 256 *4 DKU-F405I-47J4: 256 *4 DKU-F405I-72J4: 256 *4 DKU-F405I-180H4: 128 *4				DKU-F455I-36K4: 256 DKU-F455I-72J4/72K4: 256 DKU-F455I-146J4: 256 DKU-F405I-18J4: 256 *4 DKU-F405I-47J4: 256 *4 DKU-F405I-72J4: 256 *4 DKU-F405I-180H4: 128 *4			

Note. *1: This is required SM capacity, when DKC-F460I-S1024 and DKC-F460I-S512 are intermixed. When constituted only from DKC-F460I-S1024, it differs from required SM capacity.

*2: This is raw capacity. You have to increase SM capacity, when subsystem raw capacity exceeds this. When the HDD option is intermixed in one subsystem, subsystem capacity must not exceed this.

*3: The number of HDD canister options controllable by the LDEV numbers and SM capacities. You have to increase SM capacity, when the number of HDD canister options exceeds.

*4: When DKU405I is connected to DKC460I.

*5: 'A' to 'L' should refer a Table 3.9.1-83A, and refer to the Table 3.9.1-83B for 'o' from 'a'. The memory module corresponding to each mixture pattern is installed in the install locations ①-⑥.

*6: You have to choose one from some mixture patterns.

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Table 3.9.1-86 Size of Cache Memory and Shared Memory (TrueCopy/ShadowImage/Cruise Control function supported)

Cache Memory Capacity	Number of CU:1-4 (to 1024LDEV)				Number of CU:5-8 (to 2048LDEV)				Number of CU:9-16 (to 4096LDEV)				Number of CU:17-32 (to 8192LDEV)			
	SM *1 Cap. (MB)	Number of SM options S1024	Number of SM options S512	Mixture Pattern *5	SM *1 Cap. (MB)	Number of SM options S1024	Number of SM options S512	Mixture Pattern *5	SM *1 Cap. (MB)	Number of SM options S1024	Number of SM options S512	Mixture Pattern *5	SM *1 Cap. (MB)	Number of SM options S1024	Number of SM options S512	Mixture Pattern *5
2GB	1536	-	3	F	2048 or 2560 or 3072	Refer to mix. pattern table *6		G, e, f, l, m	2048 or 2560 or 3072	Refer to mix. pattern table *6		G, e, f, l, m	2560 or 3072	Refer to mix. pattern table *6		K, i, l, m
4GB	1536	-	3	F												
6GB	1536	-	3	F												
8GB	1536	-	3	F												
10GB	2048	-	4	G												
12GB	2048	-	4	G												
14GB	2048	-	4	G												
16GB	2048	-	4	G												
18GB	2048	-	4	G					2560 or 3072	Refer to mix. pattern table *6		H, f,m	3072	Refer to mix. pattern table *6		L, i, m
20GB	2048	-	4	G												
22GB	2048	-	4	G												
24GB	2048	-	4	G												
26GB	2048	-	4	G												
28GB	2048	-	4	G												
30GB	2048	-	4	G												
32GB	2048	-	4	G												
36GB	2048	-	4	G	2560 or 3072	Refer to mix. pattern table *6		H, f, m								
40GB	2048	-	4	G												
44GB	2048	-	4	G												
48GB	2560	Refer to mix. pattern table *6		H, f												
52GB																
56GB																
60GB									3072 or 3584	Refer to mix. pattern table *6		g, h	3584 or 4096	Refer to mix. pattern table *6		j, k, n, o
64GB																
68GB	2560	2	1	f	3072	3	0	m	3072 or 3584	Refer to mix. pattern table *6		g, h, n	3584 or 4096	Refer to mix. pattern table *6		j, k, n
72GB	2560	2	1	f	3072	3	0	m				g, h, n				j, k, n
76GB	2560	2	1	f	3072 or 3584	Refer to mix. pattern table *6		g, h, n				g, h, n				j, k, n
80GB	2560	2	1	f				g, h, n				g, h, n				j, k, n
84GB	2560	2	1	f				g, h, n				g, h, n				j, k, n
88GB	3072	2	2	g				g, h, n				g, h, n				j, k, n
92GB	3072	2	2	g				g, h, n				g, h, n				j, k, n
96GB	3072	2	2	g				g, h, n				g, h, n				j, k, n
100GB	3072	2	2	g				g, h, n	4096	4	0	o	4096	4	0	o
104GB	3072	2	2	g				g, h, n	4096	4	0	o	4096	4	0	o
108GB	3072	2	2	g				g, h, n	4096	4	0	o	4096	4	0	o
112GB	3072	2	2	g				g, h, n	4096	4	0	o	4096	4	0	o
116GB	3072	2	2	g	4096	4	0	o	4096	4	0	o	4096	4	0	o
120GB	3072	2	2	g	4096	4	0	o	4096	4	0	o	4096	4	0	o
124GB	3072	2	2	g	4096	4	0	o	4096	4	0	o	4096	4	0	o
128GB	3584	3	1	h	4096	4	0	o	4096	4	0	o	4096	4	0	o
Subsystem Capacity *2	to 18T1				to 72TB				to 144TB				over 144TB			
Number of HDD Canister Option *3	DKU-F455I-36K4: 128 DKU-F455I-72J4/72K4: 64 DKU-F455I-146J4: 32 DKU-F405I-18J4: 256 *4 DKU-F405I-47J4: 98 *4 DKU-F405I-72J4: 64 *4 DKU-F405I-180H4: 24 *4				DKU-F455I-36K4: 256 DKU-F455I-72J4/72K4: 256 DKU-F455I-146J4: 128 DKU-F405I-18J4: 256 *4 DKU-F405I-47J4: 256 *4 DKU-F405I-72J4: 256 *4 DKU-F405I-180H4: 96 *4				DKU-F455I-36K4: 256 DKU-F455I-72J4/72K4: 256 DKU-F455I-146J4: 256 DKU-F405I-18J4: 256 *4 DKU-F405I-47J4: 256 *4 DKU-F405I-72J4: 256 *4 DKU-F405I-180H4: 128 *4				DKU-F455I-36K4: 256 DKU-F455I-72J4/72K4: 256 DKU-F455I-146J4: 256 DKU-F405I-18J4: 256 *4 DKU-F405I-47J4: 256 *4 DKU-F405I-72J4: 256 *4 DKU-F405I-180H4: 128 *4			

Note. *1: This is required SM capacity, when DKC-F460I-S1024 and DKC-F460I-S512 are intermixed. When constituted only from DKC-F460I-S1024, it differs from required SM capacity.

*2: This is raw capacity. You have to increase SM capacity, when subsystem raw capacity exceeds this. When the HDD option is intermixed in one subsystem, subsystem capacity must not exceed this.

*3: The number of HDD canister options controllable by the LDEV numbers and SM capacities. You have to increase SM capacity, when the number of HDD canister options exceeds.

*4: When DKU405I is connected to DKC460I.

*5: 'A' to 'L' should refer a Table 3.9.1-83A, and refer to the Table 3.9.1-83B for 'o' from 'a'. The memory module corresponding to each mixture pattern is installed in the install locations ①-⑥.

*6: You have to choose one from some mixture patterns.

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6-3. Insert the PCB.

a. Insert the Cache Memory PCB into the Rear Logic Box referring to Table 3.9.1-9.
b. Fasten the two screws.

Table 3.9.1-9 Location of the Cache PCB

Cluster	PCB Name	Box	Slot No.	Location No.	Remarks
2	WP490-A	Rear Logic Box	G	CACHE-2G	Cache Memory PCB

6-4 Change the nameplate.

a. When the Additional Shared Memory Module (DKC-F460I-S1024) is installed, and the nameplate of DKC-F460I-S1024 is not attached, attach it.
When the Additional Shared Memory Module (DKC-F460I-S1024) is not installed, go to step b.
b. Refer to Fig. 3.9.1-7 and Table 3.9.1-10 to paint out necessary numbers on the nameplate.

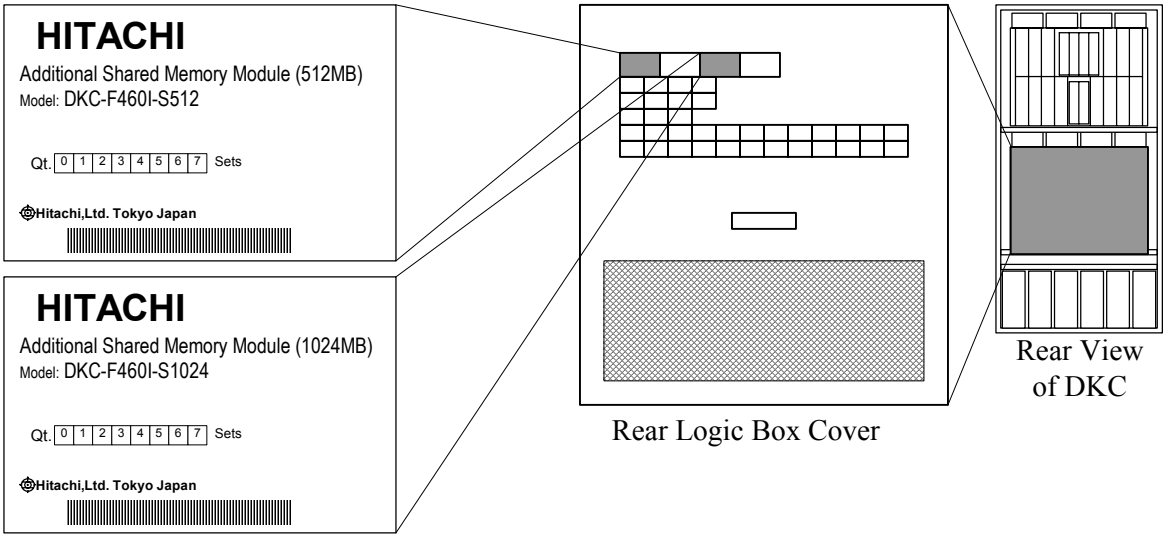

Fig. 3.9.1-7 Location of the Nameplate

Table 3.9.1-10 Quantity Marking

No.	Quantity Marking	
	Number of DKC-F460I-S512 or S1024 sets	Qt.
1	1 set	■ 2 3 4 5 6 7
2	2 sets	■ ■ 3 4 5 6 7
3	3 sets	■ ■ ■ 4 5 6 7
4	4 sets	■ ■ ■ ■ 5 6 7
5	5 sets	■ ■ ■ ■ ■ 6 7
6	6 sets	■ ■ ■ ■ ■ ■ 7

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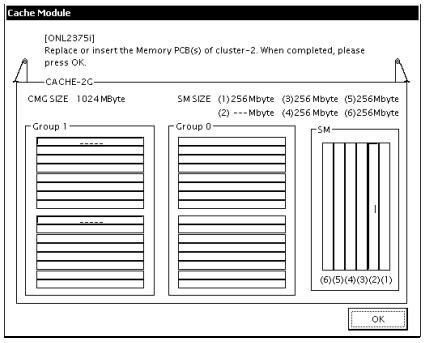
7. SVP post procedure on the Cluster 2.

(1)

After installation of shared memory on one side is completed, select (CL) [OK] in response to “Replace or insert the Memory PCBs of cluster-x. When completed, please press [OK].”.



---

(2)

“Changing the configuration date, for equipment of shared/cache memory...” is displayed.
“INLINE CUDG is now running...” is displayed.
“Restoring the Cache Memory PCB...” is displayed.
“Restoring the Shared Memory PCB...” is displayed.

---

(3) <End of system update processing>
“Renewal process has completed. Please check subsystem status.” is displayed when recovery processing on all installed components is completed. Select (CL) [OK] in response to this message.

---

(4)

“Reading subsystem configuration data...” is displayed.
“Please insert the Config FD in the FDD.” is displayed.
Insert the configuration FD into FDD, and select (CL) [OK].

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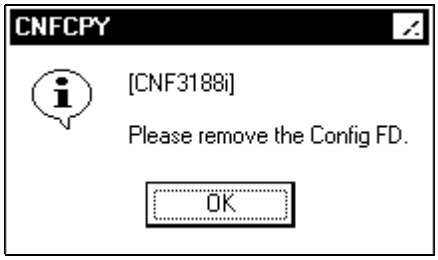
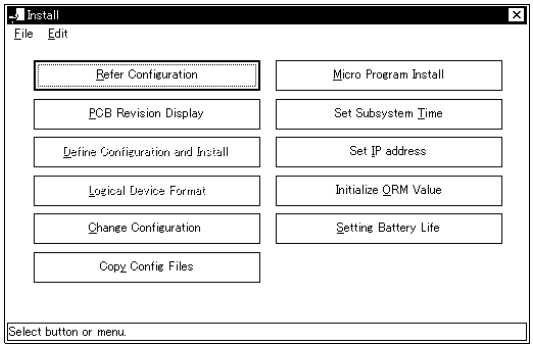
(5)

When this procedure is completed, the message “Please remove the Config FD.” is displayed.
Remove the FD, and select (CL) [OK].



(6)

After the procedure is completed, return to “Install”.
Select (CL) [File]-[Exit].



(7) <Mode Change>
Change the mode to View Mode.

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3.9.2 Installation of Additional Cache Memory (DKC-F460I-41/42/2048/4096)

NOTICE:
The installed Shared Memory capacity and maximum Cache Memory capacity with using HMRCF/HOMRCF/HRC/HORC/HIHSM/ShadowImage-FlashCopy® version2 functions is different from ones without using these functions.

(1) Refer to the "[INST01-80] Table 1.1.2.3-2", "[INST01-84] Table 1.1.2.3-5" or "[INST01-88] Table 1.1.2.3-10" in these functions use.
(Note1) When you use these functions, you need to install more Shared Memory.
(Note2) When you use these functions with over 8CUs, the maximum Cache Memory capacity you can install is up to 58GB.
(Note3) When cache memory capacity is 64GB or less, refer to the Table 1.1.2.3-1.

(2) When using the ShadowImage-FlashCopy® version2 function, refer to the "[INST01-81] Table 1.1.2.3-3", "[INST01-85] Table 1.1.2.3-6" or "[INST01-89] Table 1.1.2.3-11".

(2) Refer to the "[INST01-75] Table 1.1.2.3-1", "[INST01-83] Table 1.1.2.3-4" or "[INST01-87] Table 1.1.2.3-9" in these functions non-use.

When changing to DKC-F460I-4096 from DKC-F460I-2048, Changing CM Modulegroup Size is required. (Refer to SVP02-1230)

Table 3.9.2-1 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKC-F460I-41	WP490-B	5513976-B	2	Cache Memory PCB Color of PCB lever: Blue
		Nameplate (HDS)	2105902-115	1	RSD
			2105903-115/215		HICAM/HICEF
		Nameplate (HP)	2105902-215	1	RSD
			2105903-315/415		HICAM/HICEF
2	DKC-F460I-42	Battery Box	5513990-A	2	
		SH200-A	5509126-A	2	BATCTR PCB
		Nameplate (HDS)	2105902-116	1	RSD
			2105903-116/216		HICAM/HICEF
		Nameplate (HP)	2105902-216	1	RSD
			2105903-316/416		HICAM/HICEF
3	DKC-F460I-2048	SH288-B	5513977-B	4	Cache Memory Module (512 MB)
4	DKC-F460I-4096	SH288-C	5513977-C	4	Cache Memory Module (1024 MB)
		Nameplate (HDS)	2105902-145	1	RSD
			2105903-145/245		HICAM/HICEF
		Nameplate (HP)	2105902-245	1	RSD
			2105903-345/445		HICAM/HICEF

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Matters to be checked before adding the cache memory

Before starting the addition of the cache memory, determine the necessary number of the shared memories by referring to “Relation between Shared Memory and Cache Memory” on pages INST01-70 to INST01-89.

When the shared memory or memories must be added, perform the addition of it (them) beforehand referring to “Installation of Additional Shared Memory (DKC-F460I-S512/S1024)” on page INST03-SM-10.

CAUTION

In case the addition fails, please make sure to perform the recovery by referring to INST02-431 or TRBL05-550 (if DCR & PCR upper limits are changed simultaneously).

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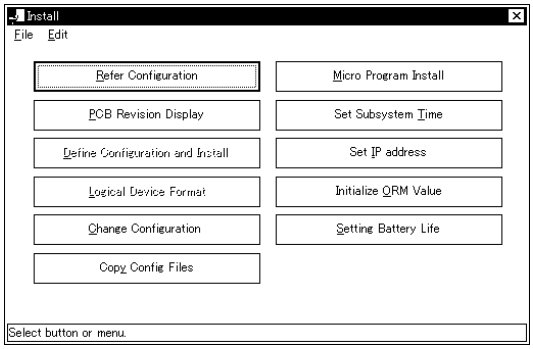
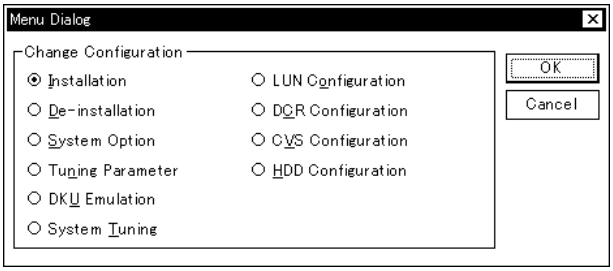
1. Setting up the New Device Structure Information

1. <Mode Change>
   Change the mode to Modify Mode.
   Select (CL) [Install].

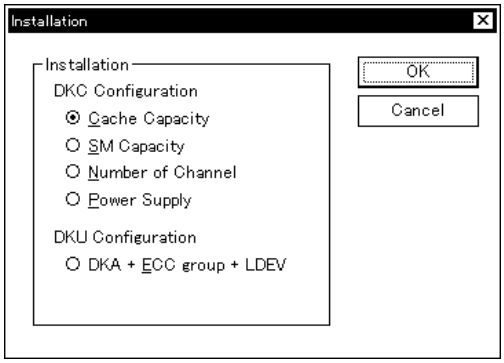
2. <Start the 'Menu Dialog' screen>
   Select (CL) [Change Configuration].



3. <Start Device Structure Setup screen>
   Select (CL) [Installation] in the 'Menu Dialog' dialog box and select (CL) [OK].



4. <Select a part to be changed>
   Select (CL) [Cache Capacity], and select (CL) [OK].



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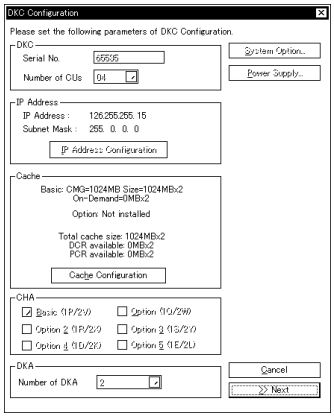
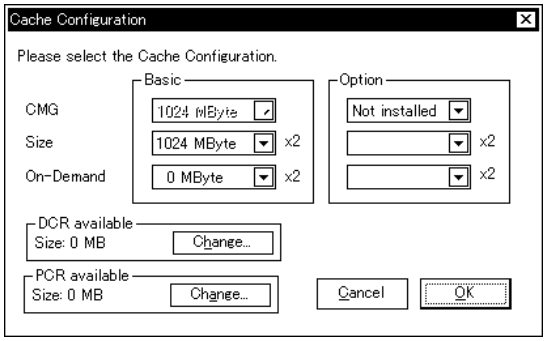
5. <Update Configuration Information>
Select (CL) [Cache Configuration] in the 'DKC Configuration' window. (Go to step 5-1.)



Note: It is not possible to install or de-install plural parts at the same time.

Make sure that all entered items are correct and select (CL) [>>Next].
Go to step 6.

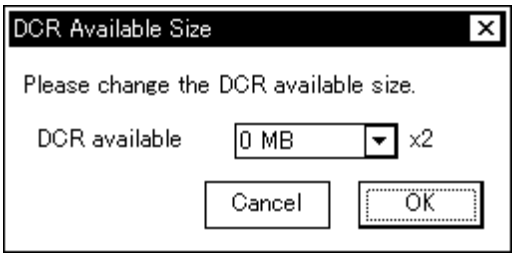
5-1 <Define Cache>
Define each item in the 'Cache Configuration' windows.
When a change in the DCR setting is necessary, select (CL) [Change...] of DCR available.
(Go to step 5-2.)
(See SSD Optional Function Section)
When a change in the PCR setting is necessary, select (CL) [Change...] of PCR available.
(Go to step 5-3.)



Note: For Single Cabinet Model, Option is not displayed.

After setting up all items, select (CL) [OK].
Return to step 5.

5-2 <Setting DCR size>
Set the DCR Available size in the 'DCR Available Size' dialog box and select (CL) the [OK] button.
Return to Step 5-1.



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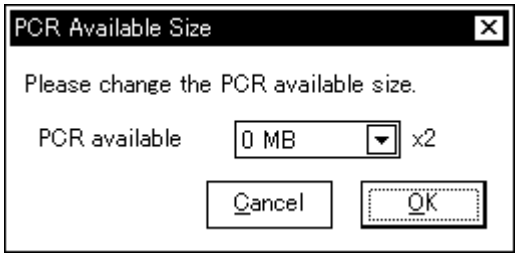
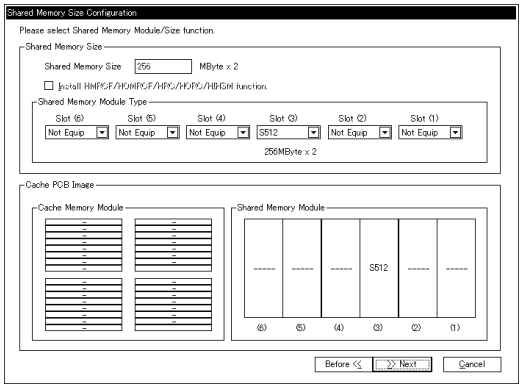
5-3 <Setting PCR size>
Set the PCR Available size in the 'PCR Available Size' dialog box and select (CL) the [OK] button.
Return to Step 5-1.



6. <Display SM size>
The 'Shared Memory size Configuration' dialog box is displayed.

Note: Select 'Shared Memory Module Type' in order of "Slot(1) → Slot(2) → Slot(3) → Slot(4) → Slot(5) → Slot(6)".

Select (CL) [>>Next].



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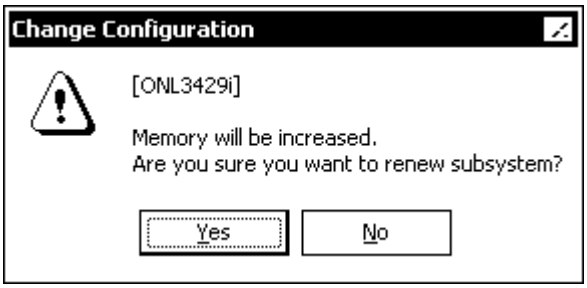
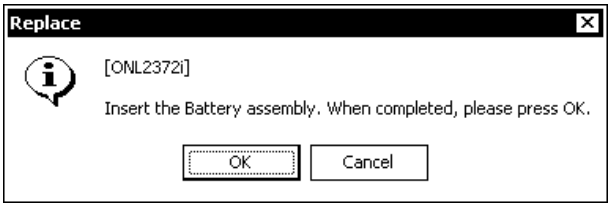
2. SVP pre procedure on the Cluster 1.

1. <Start installation>
   Select (CL) [Yes] in response to “Memory will be increased. Are you sure you want to renew subsystem?”.

   When [No] is selected (CL), returns to INST03-CM-20 step 3.



2. <Perform Battery hardware installation>
   “Insert the Battery assembly. When completed, please press OK.” is displayed, when battery install is required.



   When a message is displayed, perform the install hardware components according to the cache hardware installation procedure.
   When a message is not displayed, go to INST03-CM-65 step 4. SVP pre procedure on the Cluster1.

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3. Install the Additional Battery for Cache Memory

3-1. When Additional Battery for Cache Memory (DKC-F460I-42) is installed, install the Battery Boxes and BATCTR PCBs.
When the Additional Battery for Cache Memory (DKC-F460I-42) is not installed, go to step 4.
SVP pre procedure on the Cluster1.

a. Insert the Battery Boxes (BATTERY-12 and BATTERY-22). Fasten the screws.

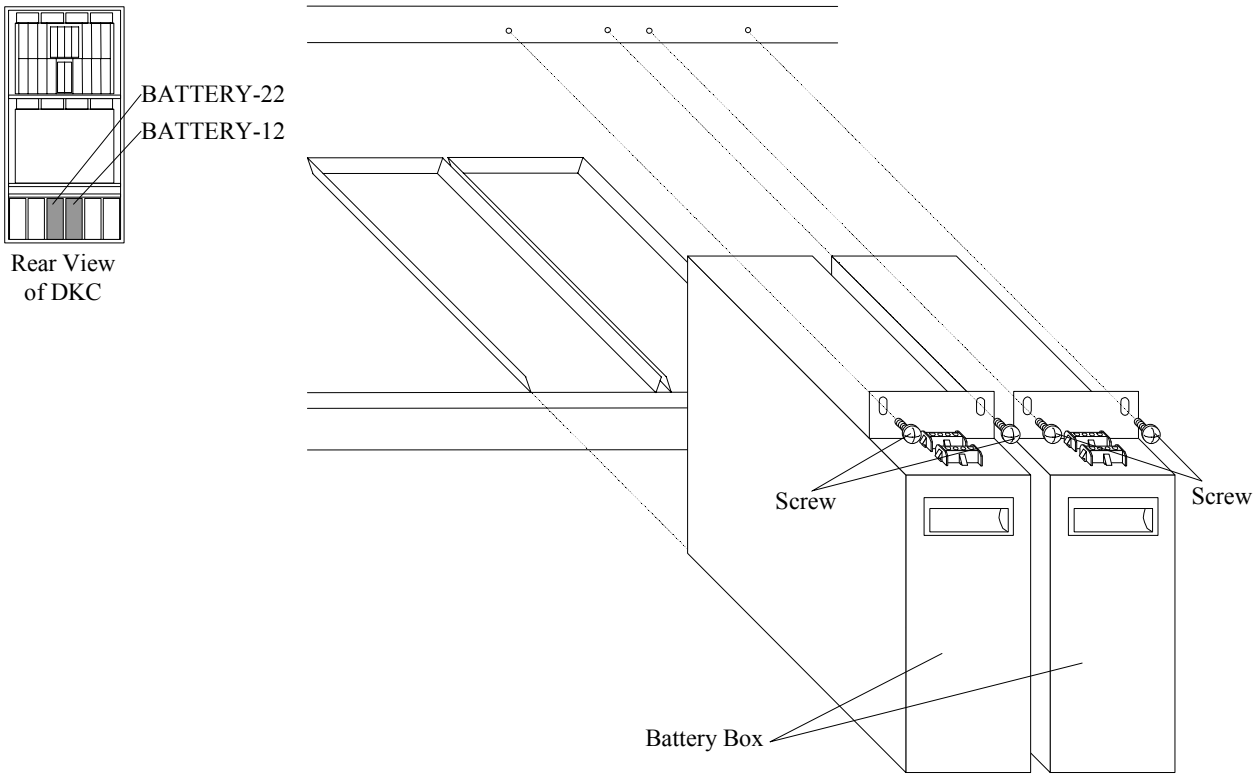

Fig. 3.9.2-1 Insertion of the Battery Box

b. Connect the cables (BT12A, BT12B, BT22A and BT22B) to the Battery Boxes.

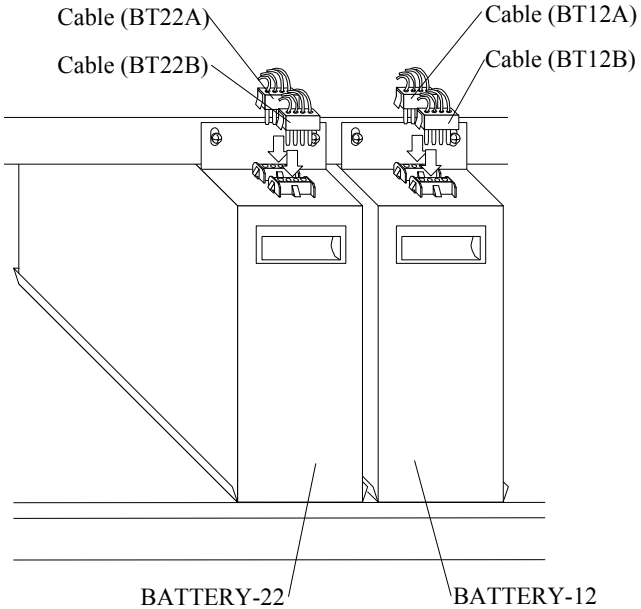

Fig. 3.9.2-2 Connection of the cables

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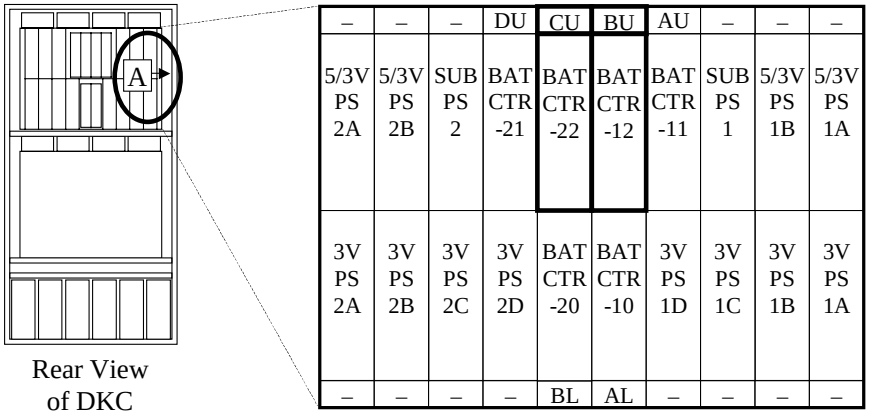
⚠ CAUTION

You must insert the PCB without Jumper Connector and then connect the Jumper Connector. Otherwise the Cache PCB will be blocked.

c. Insert the BATCTR PCBs (BATCTR-12 and BATCTR-22). Fasten the screws.
d. Remove the Jumper Connectors (BATJP) from the locking clamp.
e. Connect the Jumper Connectors (BATJP).



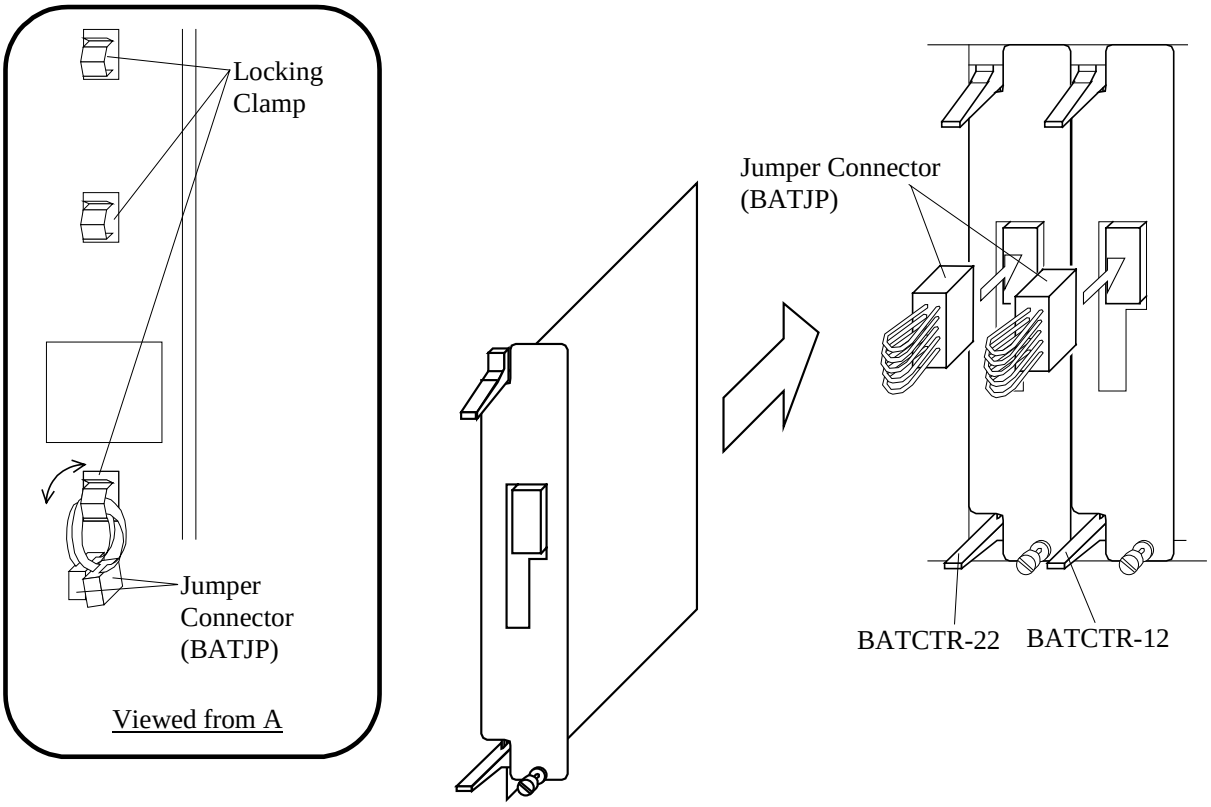


Fig.3.9.2-3 Insertion of the BATCTR

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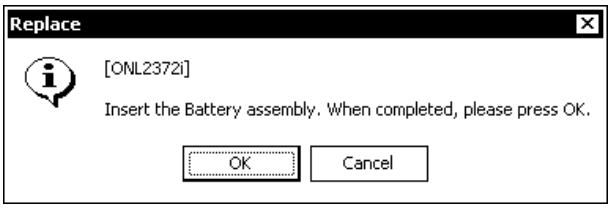
4. SVP pre procedure on the Cluster 1.

1.

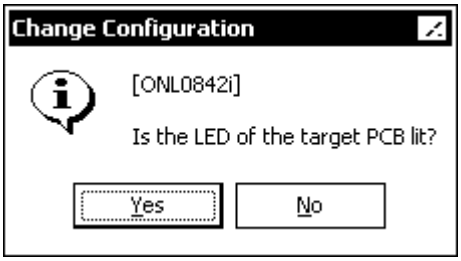
After installation of Battery is completed, select (CL) [OK] in response to “Insert the Battery assembly. When completed, please press OK.”



2.

“The Shared Memory PCB is being blocked...”
“The Cache Memory PCB is being blocked...”
“Lighting LED of the PCB...” is displayed.

3. <Check shut down LED>
Select (CL)
* [Yes] if LED is on
* [No] if LED is off
in response to “Is the LED of the target PCB lit?”.

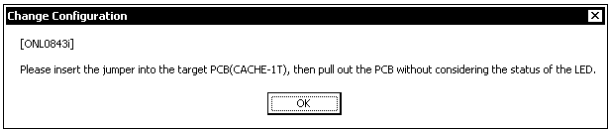


<Forcing shut down LED on>

CAUTION

If the jumper is inserted in the wrong PCB, a system down may be caused.

If [No] is selected:
Insert a jumper in response to “Please insert the jumper into the target PCB(CACHE-nn), then pull out the PCB without considering the status of the LED”.
(Refer INST03-CM-70)



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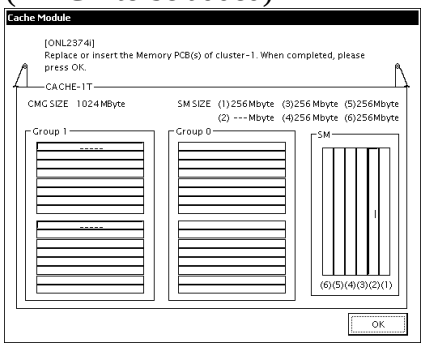
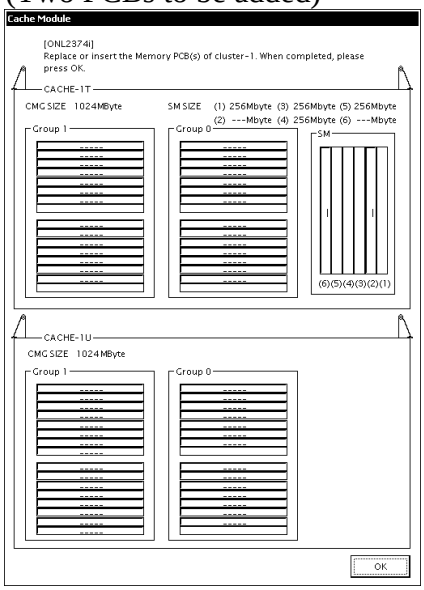
4. <Perform cache hardware installation>
   At this point refrain from pressing the [OK] button.
   When “Replace or insert the Memory PCB(s) of cluster-x. When completed, please press OK.” is displayed, install hardware components according to the cache hardware installation procedure.

   Make sure of the installation location and size of the module to be added and insert the correct module in the correct location.
   (Uninstalled module is displayed as looks depressed.)

(A PCB to be added)



(Two PCBs to be added)



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5. Install the Cache Memory on the cluster 1.
   Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

   5-1. Remove the PCB.
   a. While referring to Fig. 3.9.2-4, Table 3.9.2-2 and Table 3.9.2-3, check the Shut Down LED on the Cache Memory PCB. Connect the Maintenance Jumper to the Shut Down Connector if the Shut Down LED is not on. (This procedure [5-1 a.] is not valid for a New Installation.)

⚠ CAUTION

A system down may be caused if the Maintenance jumper is inserted in a PCB other than that to be removed. Make sure that it is a PCB to be added.

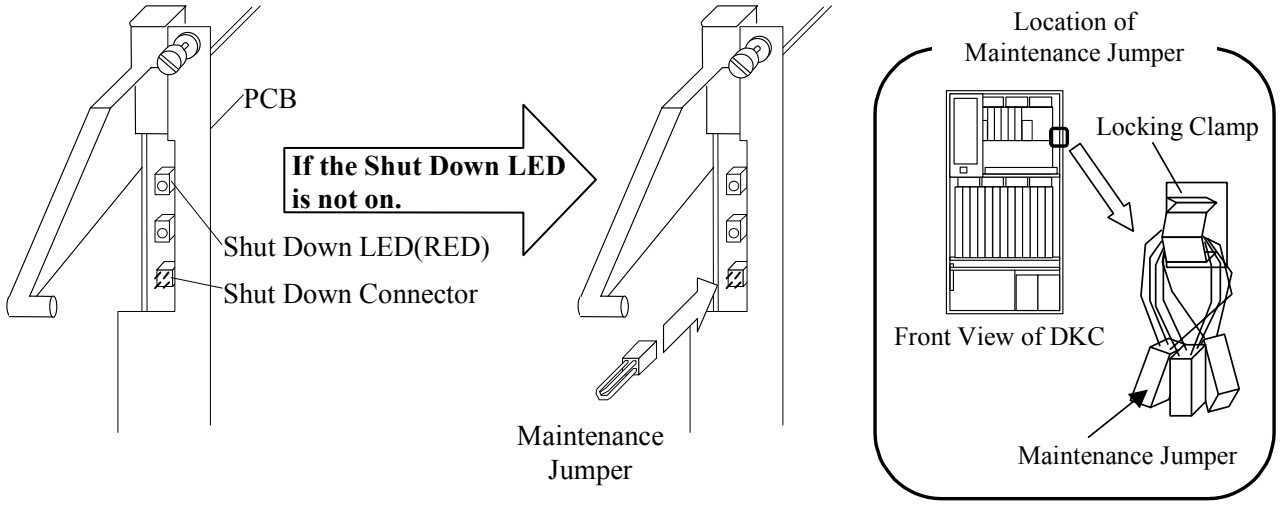

Fig. 3.9.2-4 Location of the Shut Down LED

Table 3.9.2-2 Location of the Cache Memory PCB (Standard Model Installation)

Cluster	PCB Name	Box	Slot No.	Location No.	Remarks
1	WP490-A	Front Logic Box	T	CACHE-1T	Cache Memory PCB (Note 1)
	WP490-B	Front Logic Box	U	CACHE-1U	Cache Memory PCB (Note 2)

Note 1: No PCB needs to be removed if 16 or more DKC-F460I-2048 or 4096 sets are installed, except when installing DKC-F460I-S512 or S1024 sets.
Note 2: Remove the PCB only when it is installed.

Table 3.9.2-3 Location of the Cache Memory PCB (High Performance Model Installation)

Cluster	PCB Name	Box	Slot No.	Location No.	Remarks
1	WP490-A	Front Logic Box	T	CACHE-1T	Cache Memory PCB
	WP490-B	Front Logic Box	U	CACHE-1U	Cache Memory PCB

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b. Remove the two screws and remove the Cache Memory PCB.

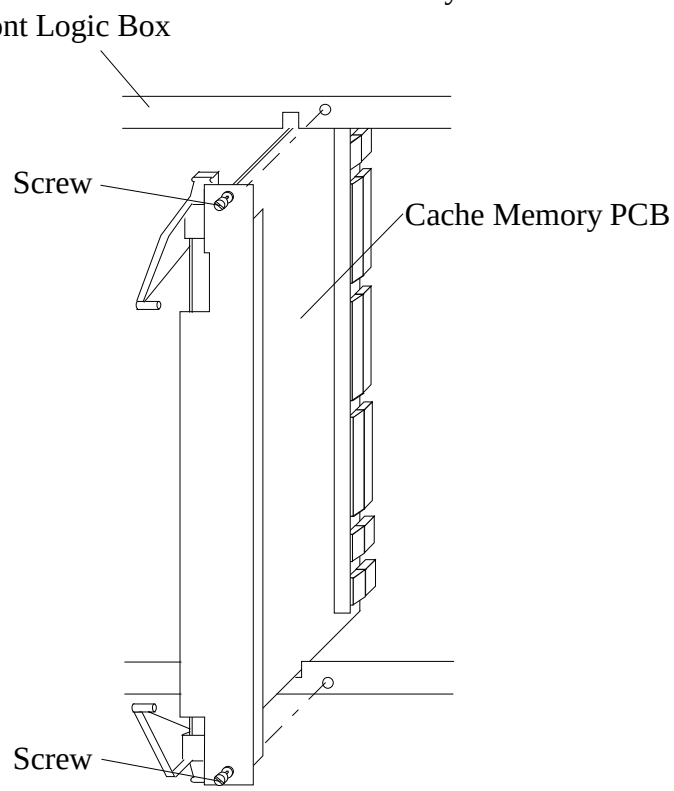

Fig. 3.9.2-5 Removal of the Cache Memory PCB

c. Remove the Maintenance Jumper if it is mounted.

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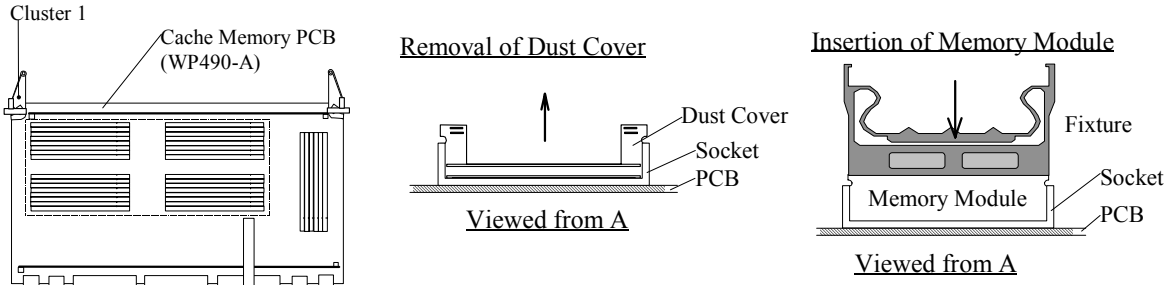
5-2. Insert the Cache Memory Modules.

a. Remove the dust covers that match the required Cache Memory capacity referring to Fig. 3.9.2-6, Table 3.9.2-4, Table 3.9.2-4A and Table 3.9.2-4B.

b. Insert the Cache Memory Modules that match the required Cache Memory capacity.

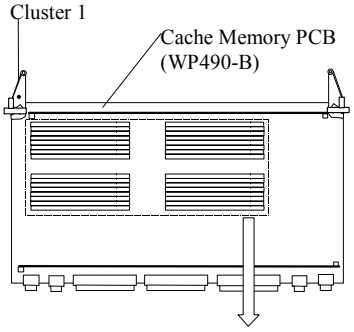


(Note) The Cache Memory Module location *1 through *Y correspond to the CM Location listed in Table 3.9.2-4, Table 3.9.2-4A or Table 3.9.2-4B.

Cache Memory Module Location

BCM007 (MG#15) : SH288-B or SH288-C *G	ACM007 (MG#14) : SH288-B or SH288-C *F
BCM006 (MG#13) : SH288-B or SH288-C *E	ACM006 (MG#12) : SH288-B or SH288-C *D
BCM005 (MG#11) : SH288-B or SH288-C *C	ACM005 (MG#10) : SH288-B or SH288-C *B
BCM004 (MG#9) : SH288-B or SH288-C *A	ACM004 (MG#8) : SH288-B or SH288-C *9
BCM003 (MG#7) : SH288-B or SH288-C *8	ACM003 (MG#6) : SH288-B or SH288-C *7
BCM002 (MG#5) : SH288-B or SH288-C *6	ACM002 (MG#4) : SH288-B or SH288-C *5
BCM001 (MG#3) : SH288-B or SH288-C *4	ACM001 (MG#2) : SH288-B or SH288-C *3
BCM000 (MG#1) : SH288-B or SH288-C *2	ACM000 (MG#0) : SH288-B or SH288-C *1

BCM107 (MG#15) : SH288-B or SH288-C *G	ACM107 (MG#14) : SH288-B or SH288-C *F
BCM106 (MG#13) : SH288-B or SH288-C *E	ACM106 (MG#12) : SH288-B or SH288-C *D
BCM105 (MG#11) : SH288-B or SH288-C *C	ACM105 (MG#10) : SH288-B or SH288-C *B
BCM104 (MG#9) : SH288-B or SH288-C *A	ACM104 (MG#8) : SH288-B or SH288-C *9
BCM103 (MG#7) : SH288-B or SH288-C *8	ACM103 (MG#6) : SH288-B or SH288-C *7
BCM102 (MG#5) : SH288-B or SH288-C *6	ACM102 (MG#4) : SH288-B or SH288-C *5
BCM101 (MG#3) : SH288-B or SH288-C *4	ACM101 (MG#2) : SH288-B or SH288-C *3
BCM100 (MG#1) : SH288-B or SH288-C *2	ACM100 (MG#0) : SH288-B or SH288-C *1



Cache Memory Module Location

BCM007 (MG#15) : SH288-B or SH288-C *Y	ACM007 (MG#14) : SH288-B or SH288-C *X
BCM006 (MG#13) : SH288-B or SH288-C *W	ACM006 (MG#12) : SH288-B or SH288-C *V
BCM005 (MG#11) : SH288-B or SH288-C *U	ACM005 (MG#10) : SH288-B or SH288-C *T
BCM004 (MG#9) : SH288-B or SH288-C *S	ACM004 (MG#8) : SH288-B or SH288-C *R
BCM003 (MG#7) : SH288-B or SH288-C *Q	ACM003 (MG#6) : SH288-B or SH288-C *P
BCM002 (MG#5) : SH288-B or SH288-C *N	ACM002 (MG#4) : SH288-B or SH288-C *M
BCM001 (MG#3) : SH288-B or SH288-C *L	ACM001 (MG#2) : SH288-B or SH288-C *K
BCM000 (MG#1) : SH288-B or SH288-C *J	ACM000 (MG#0) : SH288-B or SH288-C *H

BCM107 (MG#15) : SH288-B or SH288-C *Y	ACM107 (MG#14) : SH288-B or SH288-C *X
BCM106 (MG#13) : SH288-B or SH288-C *W	ACM106 (MG#12) : SH288-B or SH288-C *V
BCM105 (MG#11) : SH288-B or SH288-C *U	ACM105 (MG#10) : SH288-B or SH288-C *T
BCM104 (MG#9) : SH288-B or SH288-C *S	ACM104 (MG#8) : SH288-B or SH288-C *R
BCM103 (MG#7) : SH288-B or SH288-C *Q	ACM103 (MG#6) : SH288-B or SH288-C *P
BCM102 (MG#5) : SH288-B or SH288-C *N	ACM102 (MG#4) : SH288-B or SH288-C *M
BCM101 (MG#3) : SH288-B or SH288-C *L	ACM101 (MG#2) : SH288-B or SH288-C *K
BCM100 (MG#1) : SH288-B or SH288-C *J	ACM100 (MG#0) : SH288-B or SH288-C *H

Fig. 3.9.2-6 Inserting Location of the Cache Memory Module

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Table 3.9.2-4 Number of CMs and Corresponding Cache Memory Capacity
(Composition of only DKC-F460I-2048)

Cache Memory Capacity	Standard Model				High Performance Model				DKC-F460I-42 Additional Battery
	DKC-F460I-2048			DKC-F460I-41	DKC-F460I-2048			DKC-F460I-41	
	Install PCB		CM Location (Note 1)		Install PCB		CM Location (Note 1)		
	Basic PCB	Add. PCB			Basic PCB	Add. PCB			
2GB	1	0	*1	0	-	-	-	-	0
4GB	2	0	*2	0	1	1	*1, *H	1	0
6GB	3	0	*3	0	-	-	-	1	0
8GB	4	0	*4	0	2	2	*2, *J	1	0
10GB	5	0	*5	0	-	-	-	1	0
12GB	6	0	*6	0	3	3	*3, *K	1	0
14GB	7	0	*7	0	-	-	-	1	0
16GB	8	0	*8	0	4	4	*4, *L	1	0
18GB	9	0	*9	0	-	-	-	1	0
20GB	10	0	*A	0	5	5	*5, *M	1	0
22GB	11	0	*B	0	-	-	-	1	0
24GB	12	0	*C	0	6	6	*6, *N	1	0
26GB	13	0	*D	0	-	-	-	1	0
28GB	14	0	*E	0	7	7	*7, *P	1	0
30GB	15	0	*F	0	-	-	-	1	0
32GB	16	0	*G	0	8	8	*8, *Q	1	0
34GB	16	1	*H	1	-	-	-	1	1
36GB	16	2	*J	1	9	9	*9, *R	1	1
38GB	16	3	*K	1	-	-	-	1	1
40GB	16	4	*L	1	10	10	*A, *S	1	1
42GB	16	5	*M	1	-	-	-	1	1
44GB	16	6	*N	1	11	11	*B, *T	1	1
46GB	16	7	*P	1	-	-	-	1	1
48GB	16	8	*Q	1	12	12	*C, *U	1	1
50GB	16	9	*R	1	-	-	-	1	1
52GB	16	10	*S	1	13	13	*D, *V	1	1
54GB	16	11	*T	1	-	-	-	1	1
56GB	16	12	*U	1	14	14	*E, *W	1	1
58GB	16	13	*V	1	-	-	-	1	1
60GB	16	14	*W	1	15	15	*F, *X	1	1
62GB	16	15	*X	1	-	-	-	1	1
64GB	16	16	*Y	1	16	16	*G, *Y	1	1

Note 1: The CM locations (*1 through *Y) represent the Cache Memory Module locations shown in Fig. 3.9.2-3.

Note 2: A cache memory can't be set up in the '–' mark.

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Table 3.9.2-4A Number of CMs and Corresponding Cache Memory Capacity
(Composition of only DKC-F460I-4096)

Cache Memory Capacity	Standard Model				High Performance Model				DKC-F460I-42 Additional Battery
	DKC-F460I-4096			DKC-F460I-41	DKC-F460I-4096			DKC-F460I-41	
	Install PCB		CM Location (Note 1)		Install PCB		CM Location (Note 1)		
	Basic PCB	Add. PCB			Basic PCB	Add. PCB			
4GB	1	0	*1	0	-	-	-	-	0
8GB	2	0	*2	0	1	1	*1, *H	1	0
12GB	3	0	*3	0	-	-	-	1	0
16GB	4	0	*4	0	2	2	*2, *J	1	0
20GB	5	0	*5	0	-	-	-	1	0
24GB	6	0	*6	0	3	3	*3, *K	1	0
28GB	7	0	*7	0	-	-	-	1	0
32GB	8	0	*8	0	4	4	*4, *L	1	0
36GB	9	0	*9	0	-	-	-	1	0
40GB	10	0	*A	0	5	5	*5, *M	1	0
44GB	11	0	*B	0	-	-	-	1	0
48GB	12	0	*C	0	6	6	*6, *N	1	0
52GB	13	0	*D	0	-	-	-	1	0
56GB	14	0	*E	0	7	7	*7, *P	1	0
60GB	15	0	*F	0	-	-	-	1	0
64GB	16	0	*G	0	8	8	*8, *Q	1	0
68GB	16	1	*H	1	-	-	-	-	1
72GB	16	2	*J	1	9	9	*9, *R	1	1
76GB	16	3	*K	1	-	-	-	-	1
80GB	16	4	*L	1	10	10	*A, *S	1	1
84GB	16	5	*M	1	-	-	-	-	1
88GB	16	6	*N	1	11	11	*B, *T	1	1
92GB	16	7	*P	1	-	-	-	-	1
96GB	16	8	*Q	1	12	12	*C, *U	1	1
100GB	16	9	*R	1	-	-	-	-	1
104GB	16	10	*S	1	13	13	*D, *V	1	1
108GB	16	11	*T	1	-	-	-	-	1
112GB	16	12	*U	1	14	14	*E, *W	1	1
116GB	16	13	*V	1	-	-	-	-	1
120GB	16	14	*W	1	15	15	*F, *X	1	1
124GB	16	15	*X	1	-	-	-	-	1
128GB	16	16	*Y	1	16	16	*G, *Y	1	1

Note 1: The CM locations (*1 through *Y) represent the Cache Memory Module locations shown in Fig. 3.9.2-6.

Note 2: A cache memory can't be set up in the '–' mark.
High Performance model is effective when the cache memory is installed 16GB or more, and recommend the addition of 16GB.

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Table 3.9.2-4B Number of CMs and Corresponding Cache Memory Capacity
(Intermix Composition of DKC-F460I-2048 and DKC-F460I-4096)

Cache Memory Capacity	Pattern 1					Pattern 2				
	Install PCB		CM Location (Note 1)	DKC-F460I-41	DKC-F460I-42	Install PCB		CM Location (Note 1)	DKC-F460I-41	DKC-F460I-42
	Basic PCB	Add. PCB				Basic PCB	Add. PCB			
	F2048	F4096				F4096	F2048			
2GB	1	0	*1	0	0	-	-	-	-	-
4GB	2	0	*2	0	0	1	0	*1	0	0
6GB	3	0	*3	0	0	-	-	-	-	-
8GB	4	0	*4	0	0	2	0	*2	0	0
10GB	5	0	*5	0	0	-	-	-	-	-
12GB	6	0	*6	0	0	3	0	*3	0	0
14GB	7	0	*7	0	0	-	-	-	-	-
16GB	8	0	*8	0	0	4	0	*4	0	0
18GB	9	0	*9	0	0	-	-	-	-	-
20GB	10	0	*A	0	0	5	0	*5	0	0
22GB	11	0	*B	0	0	-	-	-	-	-
24GB	12	0	*C	0	0	6	0	*6	0	0
26GB	13	0	*D	0	0	-	-	-	-	-
28GB	14	0	*E	0	0	7	0	*7	0	0
30GB	15	0	*F	0	0	-	-	-	-	-
32GB	16	0	*G	0	0	8	0	*8	0	0
34GB	-	-	-	-	-	-	-	-	-	-
36GB	16	1	*H	1	1	9	0	*9	0	0
38GB	-	-	-	-	-	-	-	-	-	-
40GB	16	2	*J	1	1	10	0	*A	0	0
42GB	-	-	-	-	-	-	-	-	-	-
44GB	16	3	*K	1	1	11	0	*B	0	0
46GB	-	-	-	-	-	-	-	-	-	-
48GB	16	4	*L	1	1	12	0	*C	0	0
50GB	-	-	-	-	-	-	-	-	-	-
52GB	16	5	*M	1	1	13	0	*D	0	0
54GB	-	-	-	-	-	-	-	-	-	-
56GB	16	6	*N	1	1	14	0	*E	0	0
58GB	-	-	-	-	-	-	-	-	-	-
60GB	16	7	*P	1	1	15	0	*F	0	0
62GB	-	-	-	-	-	-	-	-	-	-
64GB	16	8	*Q	1	1	16	0	*G	0	0
66GB	-	-	-	-	-	16	1	*H	1	1
68GB	16	9	*R	1	1	16	2	*J	1	1
70GB	-	-	-	-	-	16	3	*K	1	1
72GB	16	10	*S	1	1	16	4	*L	1	1
74GB	-	-	-	-	-	16	5	*M	1	1
76GB	16	11	*T	1	1	16	6	*N	1	1
78GB	-	-	-	-	-	16	7	*P	1	1
80GB	16	12	*U	1	1	16	8	*Q	1	1
82GB	-	-	-	-	-	16	9	*R	1	1
84GB	16	13	*V	1	1	16	10	*S	1	1
86GB	-	-	-	-	-	16	11	*T	1	1
88GB	16	14	*W	1	1	16	12	*U	1	1
90GB	-	-	-	-	-	16	13	*V	1	1
92GB	16	15	*X	1	1	16	14	*W	1	1
94GB	-	-	-	-	-	16	15	*X	1	1
96GB	16	16	*Y	1	1	16	16	*Y	1	1

Note 1: The CM locations (*1 through *Y) represent the Cache Memory Module locations shown in Fig. 3.9.2-6.

Note 2: A cache memory can't be set up in the '–' mark.

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5-3. Insert the PCB.

Note: Make sure that a color of the levers of the PCB to be installed is blue.
Never insert a PCB whose lever is not blue.

a. If the Cache Access Throughput Expansion Kit (DKC-F460I-41) is installed, remove the two screws and remove the dummy plate. Refer to Fig. 3.9.2-7.
If not, go to step b.
b. Install the Cache Memory PCB referring to Table 3.9.2-5.
c. Fasten the two screws.
Note: Dummy plate should be stored for future use in De-installation.

Table 3.9.2-5 Location of the Cache Memory PCB

Cluster	PCB Name	Box	Slot No.	Location No.	Remarks
1	WP490-A	Front Logic Box	T	CACHE-1T	Cache Memory PCB
	WP490-B	Front Logic Box	U	CACHE-1U	Cache Memory PCB (Note)

Note : Insert the PCB when DKC-F460I-41 is installed.

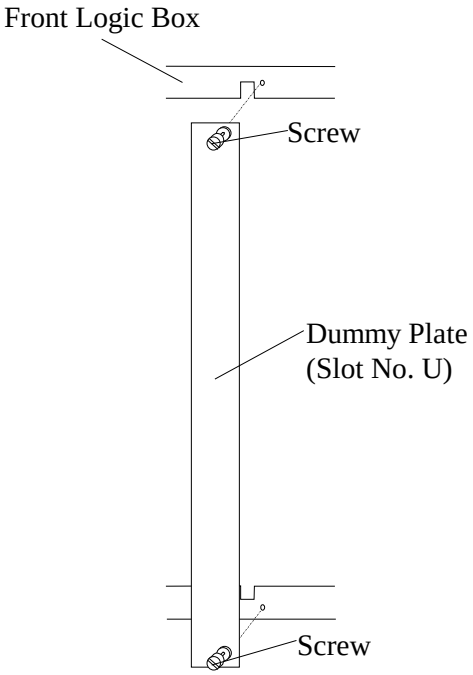

Fig. 3.9.2-7 Removal of the Dummy Plate

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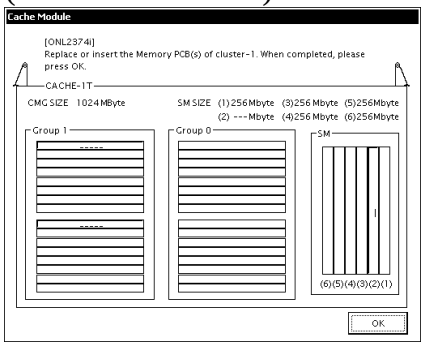
6. SVP post procedure on the Cluster 1.

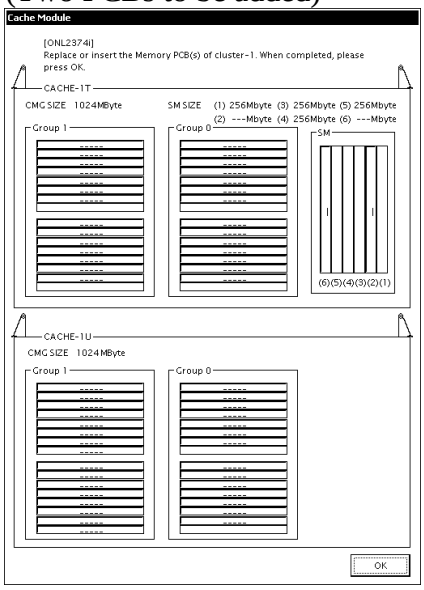
1.

After installation of cache memory on one side is completed, select (CL) [OK] in response to “Replace or insert the Memory PCBs of cluster-1. When completed, please press [OK].”.

(A PCB to be added)



(Two PCBs to be added)



2. <Cache CUDG executes>
“INLINE CUDG is now running...” is displayed.

3.

“Changing the configuration date, for equipment of shared/cache memory...”
“Restoring the Cache Memory PCB...”
“Restoring the Shared Memory PCB...” is displayed.

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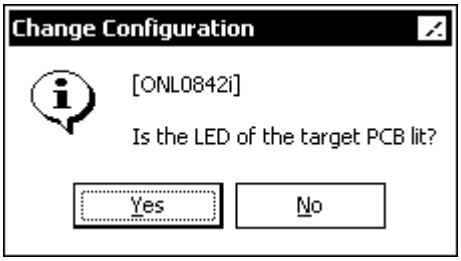
7. SVP pre procedure on the Cluster 2.

1. <Recover one side of cache>
   When recovery processing is completed,
   “The Cache Memory PCB is being blocked...”
   “The Shared Memory PCB is being blocked...”
   “Lighting LED of the PCB...” message appears.
   Processing proceeds to blocking of the other side of Cache Memory.

2. <Check shut down LED>
   Select (CL)
   * [Yes] if LED is on
   * [No] if LED is off
   in response to “Is the LED of the target PCB lit?”.

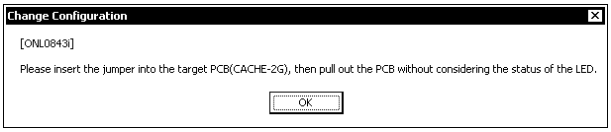


<Forcing shut down LED on>

CAUTION

If the jumper is inserted in the wrong PCB, a system down may be caused.

If [No] is selected:
Insert a jumper in response to “Please insert the jumper into the target PCB(CACHE-nn), then pull out the PCB without considering the status of the LED”.
(Refer INST03-CM-140)



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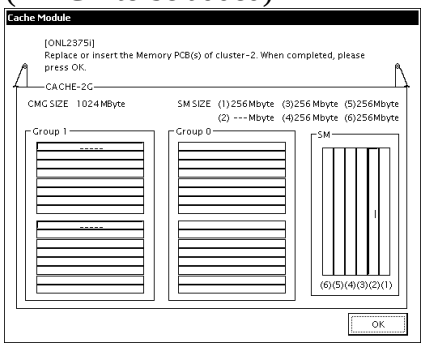
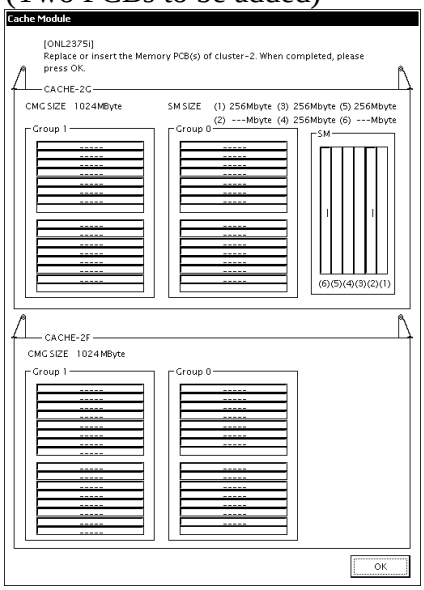
3. <Perform cache hardware installation>
   At this point refrain from pressing the [OK] button.
   When “Replace or insert the Memory PCB(s) of cluster-2. When completed, please press OK.” is displayed, install hardware components according to the cache hardware installation procedure.

   Make sure of the installation location and size of the module to be added and insert the correct module in the correct location.
   (Uninstalled module is displayed as looks depressed.)

(A PCB to be added)



(Two PCBs to be added)



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8. Install the Cache Memory on the cluster 2.
   Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

   8-1. Remove the PCB.
   a. While referring to Fig. 3.9.2-8, Table 3.9.2-6 and Table 3.9.2-7, check the Shut Down LED on the Cache Memory PCB. Connect the Maintenance Jumper to the Shut Down Connector if the Shut Down LED is not on. (This procedure [8-1. a.] is not valid for a New Installation.)

⚠ CAUTION

A system down may be caused if the Maintenance jumper is inserted in a PCB other than that to be removed. Make sure that it is a PCB to be added.

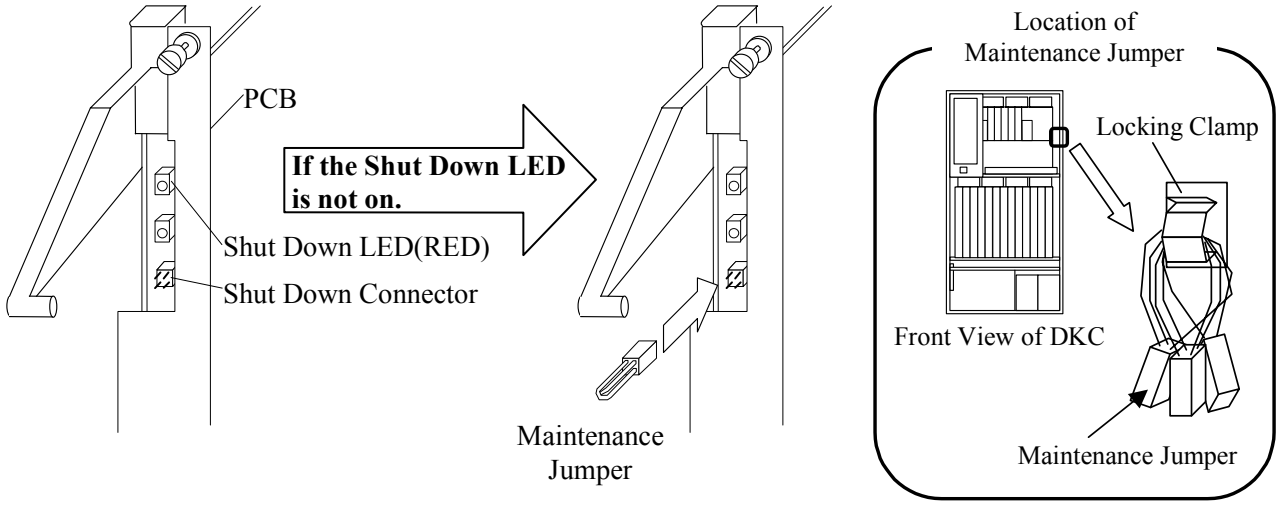

Fig. 3.9.2-8 Location of the Shut Down LED

Table 3.9.2-6 Location of the Cache Memory PCB (Standard Model Installation)

Cluster	PCB Name	Box	Slot No.	Location No.	Remarks
2	WP490-A	Rear Logic Box	G	CACHE-2G	Cache Memory PCB (Note 1)
	WP490-B	Rear Logic Box	F	CACHE-2F	Cache Memory PCB (Note 2)

Note 1: No PCB needs to be removed if 16 or more DKC-F460I-2048 or 4096 sets are installed, except when installing DKC-F460I-S512 or S1024 sets.
Note 2: Remove the PCB only when it is installed.

Table 3.9.2-7 Location of the Cache Memory PCB (High Performance Model Installation)

Cluster	PCB Name	Box	Slot No.	Location No.	Remarks
2	WP490-A	Rear Logic Box	G	CACHE-2G	Cache Memory PCB
	WP490-B	Rear Logic Box	F	CACHE-2F	Cache Memory PCB

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b. Remove the two screws and remove the Cache Memory PCB.

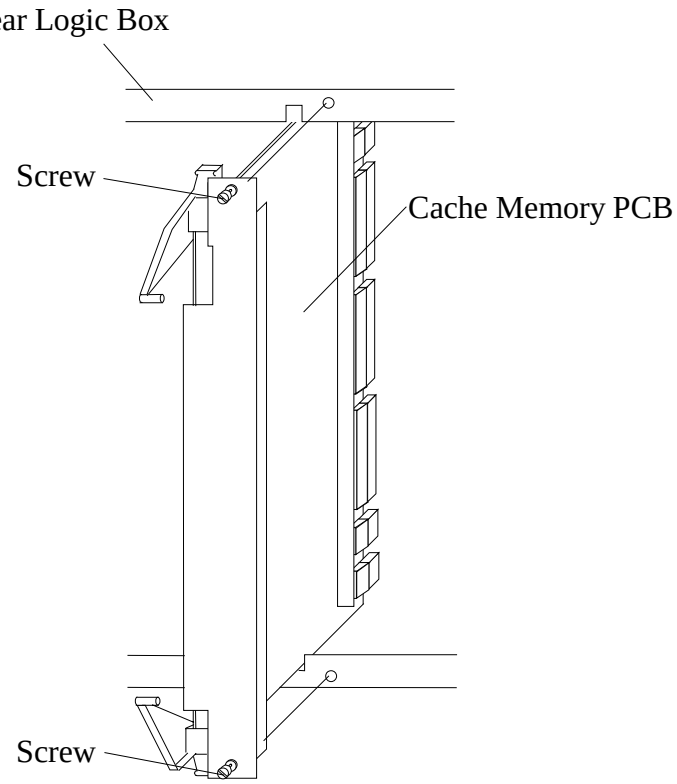

Fig. 3.9.2-9 Removal of the Cache Memory PCB

c. Remove the Maintenance Jumper if it is mounted.

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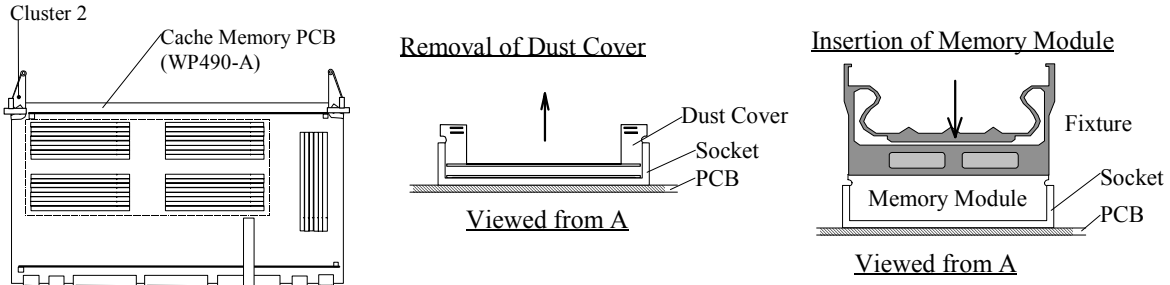
8-2. Insert the Cache Memory Modules.

a. Remove the dust covers that match the required Cache Memory capacity referring to Fig. 3.9.2-10, Table 3.9.2-8, Table 3.9.2-8A and Table 3.9.2-8B.

b. Insert the Cache Memory Modules that match the required Cache Memory capacity.

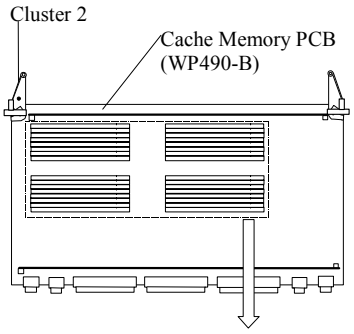


(Note) The Cache Memory Module location *1 through *Y correspond to the CM Location listed in Table 3.9.2-8, Table 3.9.2-8A or Table 3.9.2-8B.

Cache Memory Module Location

BCM007 (MG#15) : SH288-B or SH288-C *G	ACM007 (MG#14) : SH288-B or SH288-C *F
BCM006 (MG#13) : SH288-B or SH288-C *E	ACM006 (MG#12) : SH288-B or SH288-C *D
BCM005 (MG#11) : SH288-B or SH288-C *C	ACM005 (MG#10) : SH288-B or SH288-C *B
BCM004 (MG#9) : SH288-B or SH288-C *A	ACM004 (MG#8) : SH288-B or SH288-C *9
BCM003 (MG#7) : SH288-B or SH288-C *8	ACM003 (MG#6) : SH288-B or SH288-C *7
BCM002 (MG#5) : SH288-B or SH288-C *6	ACM002 (MG#4) : SH288-B or SH288-C *5
BCM001 (MG#3) : SH288-B or SH288-C *4	ACM001 (MG#2) : SH288-B or SH288-C *3
BCM000 (MG#1) : SH288-B or SH288-C *2	ACM000 (MG#0) : SH288-B or SH288-C *1

BCM107 (MG#15) : SH288-B or SH288-C *G	ACM107 (MG#14) : SH288-B or SH288-C *F
BCM106 (MG#13) : SH288-B or SH288-C *E	ACM106 (MG#12) : SH288-B or SH288-C *D
BCM105 (MG#11) : SH288-B or SH288-C *C	ACM105 (MG#10) : SH288-B or SH288-C *B
BCM104 (MG#9) : SH288-B or SH288-C *A	ACM104 (MG#8) : SH288-B or SH288-C *9
BCM103 (MG#7) : SH288-B or SH288-C *8	ACM103 (MG#6) : SH288-B or SH288-C *7
BCM102 (MG#5) : SH288-B or SH288-C *6	ACM102 (MG#4) : SH288-B or SH288-C *5
BCM101 (MG#3) : SH288-B or SH288-C *4	ACM101 (MG#2) : SH288-B or SH288-C *3
BCM100 (MG#1) : SH288-B or SH288-C *2	ACM100 (MG#0) : SH288-B or SH288-C *1



Cache Memory Module Location

BCM007 (MG#15) : SH288-B or SH288-C *Y	ACM007 (MG#14) : SH288-B or SH288-C *X
BCM006 (MG#13) : SH288-B or SH288-C *W	ACM006 (MG#12) : SH288-B or SH288-C *V
BCM005 (MG#11) : SH288-B or SH288-C *U	ACM005 (MG#10) : SH288-B or SH288-C *T
BCM004 (MG#9) : SH288-B or SH288-C *S	ACM004 (MG#8) : SH288-B or SH288-C *R
BCM003 (MG#7) : SH288-B or SH288-C *Q	ACM003 (MG#6) : SH288-B or SH288-C *P
BCM002 (MG#5) : SH288-B or SH288-C *N	ACM002 (MG#4) : SH288-B or SH288-C *M
BCM001 (MG#3) : SH288-B or SH288-C *L	ACM001 (MG#2) : SH288-B or SH288-C *K
BCM000 (MG#1) : SH288-B or SH288-C *J	ACM000 (MG#0) : SH288-B or SH288-C *H

BCM107 (MG#15) : SH288-B or SH288-C *Y	ACM107 (MG#14) : SH288-B or SH288-C *X
BCM106 (MG#13) : SH288-B or SH288-C *W	ACM106 (MG#12) : SH288-B or SH288-C *V
BCM105 (MG#11) : SH288-B or SH288-C *U	ACM105 (MG#10) : SH288-B or SH288-C *T
BCM104 (MG#9) : SH288-B or SH288-C *S	ACM104 (MG#8) : SH288-B or SH288-C *R
BCM103 (MG#7) : SH288-B or SH288-C *Q	ACM103 (MG#6) : SH288-B or SH288-C *P
BCM102 (MG#5) : SH288-B or SH288-C *N	ACM102 (MG#4) : SH288-B or SH288-C *M
BCM101 (MG#3) : SH288-B or SH288-C *L	ACM101 (MG#2) : SH288-B or SH288-C *K
BCM100 (MG#1) : SH288-B or SH288-C *J	ACM100 (MG#0) : SH288-B or SH288-C *H

Fig. 3.9.2-10 Inserting Location of the Cache Memory Module

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Table 3.9.2-8 Number of CMs and Corresponding Cache Memory Capacity
(Composition of only DKC-F460I-2048)

Cache Memory Capacity	Standard Model				High Performance Model				DKC-F460I-42 Additional Battery
	DKC-F460I-2048			DKC-F460I-41	DKC-F460I-2048			DKC-F460I-41	
	Install PCB		CM Location (Note 1)		Install PCB		CM Location (Note 1)		
	Basic PCB	Add. PCB			Basic PCB	Add. PCB			
2GB	1	0	*1	0	-	-	-	-	0
4GB	2	0	*2	0	1	1	*1, *H	1	0
6GB	3	0	*3	0	-	-	-	1	0
8GB	4	0	*4	0	2	2	*2, *J	1	0
10GB	5	0	*5	0	-	-	-	1	0
12GB	6	0	*6	0	3	3	*3, *K	1	0
14GB	7	0	*7	0	-	-	-	1	0
16GB	8	0	*8	0	4	4	*4, *L	1	0
18GB	9	0	*9	0	-	-	-	1	0
20GB	10	0	*A	0	5	5	*5, *M	1	0
22GB	11	0	*B	0	-	-	-	1	0
24GB	12	0	*C	0	6	6	*6, *N	1	0
26GB	13	0	*D	0	-	-	-	1	0
28GB	14	0	*E	0	7	7	*7, *P	1	0
30GB	15	0	*F	0	-	-	-	1	0
32GB	16	0	*G	0	8	8	*8, *Q	1	0
34GB	16	1	*H	1	-	-	-	1	1
36GB	16	2	*J	1	9	9	*9, *R	1	1
38GB	16	3	*K	1	-	-	-	1	1
40GB	16	4	*L	1	10	10	*A, *S	1	1
42GB	16	5	*M	1	-	-	-	1	1
44GB	16	6	*N	1	11	11	*B, *T	1	1
46GB	16	7	*P	1	-	-	-	1	1
48GB	16	8	*Q	1	12	12	*C, *U	1	1
50GB	16	9	*R	1	-	-	-	1	1
52GB	16	10	*S	1	13	13	*D, *V	1	1
54GB	16	11	*T	1	-	-	-	1	1
56GB	16	12	*U	1	14	14	*E, *W	1	1
58GB	16	13	*V	1	-	-	-	1	1
60GB	16	14	*W	1	15	15	*F, *X	1	1
62GB	16	15	*X	1	-	-	-	1	1
64GB	16	16	*Y	1	16	16	*G, *Y	1	1

Note 1: The CM locations (*1 through *Y) represent the Cache Memory Module locations shown in Fig. 3.9.2-10.

Note 2: A cache memory can't be set up in the '–' mark.

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Table 3.9.2-8A Number of CMs and Corresponding Cache Memory Capacity
(Composition of only DKC-F460I-4096)

Cache Memory Capacity	Standard Model				High Performance Model				DKC-F460I -42 Additional Battery
	DKC-F460I-4096			DKC-F460I -41	DKC-F460I-4096			DKC-F460I -41	
	Install PCB		CM Location (Note 1)		Install PCB		CM Location (Note 1)		
	Basic PCB	Add. PCB			Basic PCB	Add. PCB			
4GB	1	0	*1	0	-	-	-	-	0
8GB	2	0	*2	0	1	1	*1, *H	1	0
12GB	3	0	*3	0	-	-	-	1	0
16GB	4	0	*4	0	2	2	*2, *J	1	0
20GB	5	0	*5	0	-	-	-	1	0
24GB	6	0	*6	0	3	3	*3, *K	1	0
28GB	7	0	*7	0	-	-	-	1	0
32GB	8	0	*8	0	4	4	*4, *L	1	0
36GB	9	0	*9	0	-	-	-	1	0
40GB	10	0	*A	0	5	5	*5, *M	1	0
44GB	11	0	*B	0	-	-	-	1	0
48GB	12	0	*C	0	6	6	*6, *N	1	0
52GB	13	0	*D	0	-	-	-	1	0
56GB	14	0	*E	0	7	7	*7, *P	1	0
60GB	15	0	*F	0	-	-	-	1	0
64GB	16	0	*G	0	8	8	*8, *Q	1	0
68GB	16	1	*H	1	-	-	-	-	1
72GB	16	2	*J	1	9	9	*9, *R	1	1
76GB	16	3	*K	1	-	-	-	-	1
80GB	16	4	*L	1	10	10	*A, *S	1	1
84GB	16	5	*M	1	-	-	-	-	1
88GB	16	6	*N	1	11	11	*B, *T	1	1
92GB	16	7	*P	1	-	-	-	-	1
96GB	16	8	*Q	1	12	12	*C, *U	1	1
100GB	16	9	*R	1	-	-	-	-	1
104GB	16	10	*S	1	13	13	*D, *V	1	1
108GB	16	11	*T	1	-	-	-	-	1
112GB	16	12	*U	1	14	14	*E, *W	1	1
116GB	16	13	*V	1	-	-	-	-	1
120GB	16	14	*W	1	15	15	*F, *X	1	1
124GB	16	15	*X	1	-	-	-	-	1
128GB	16	16	*Y	1	16	16	*G, *Y	1	1

Note 1: The CM locations (*1 through *Y) represent the Cache Memory Module locations shown in Fig. 3.9.2-10.

Note 2: A cache memory can't be set up in the '–' mark.
High Performance model is effective when the cache memory is installed 16GB or more, and recommend the addition of 16GB.

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Table 3.9.2-8B Number of CMs and Corresponding Cache Memory Capacity
(Intermix Composition of DKC-F460I-2048 and DKC-F460I-4096)

Cache Memory Capacity	Pattern 1					Pattern 2				
	Install PCB		CM Location (Note 1)	DKC-F460I-41	DKC-F460I-42	Install PCB		CM Location (Note 1)	DKC-F460I-41	DKC-F460I-42
	Basic PCB	Add. PCB				Basic PCB	Add. PCB			
	F2048	F4096				F4096	F2048			
2GB	1	0	*1	0	0	-	-	-	-	-
4GB	2	0	*2	0	0	1	0	*1	0	0
6GB	3	0	*3	0	0	-	-	-	-	-
8GB	4	0	*4	0	0	2	0	*2	0	0
10GB	5	0	*5	0	0	-	-	-	-	-
12GB	6	0	*6	0	0	3	0	*3	0	0
14GB	7	0	*7	0	0	-	-	-	-	-
16GB	8	0	*8	0	0	4	0	*4	0	0
18GB	9	0	*9	0	0	-	-	-	-	-
20GB	10	0	*A	0	0	5	0	*5	0	0
22GB	11	0	*B	0	0	-	-	-	-	-
24GB	12	0	*C	0	0	6	0	*6	0	0
26GB	13	0	*D	0	0	-	-	-	-	-
28GB	14	0	*E	0	0	7	0	*7	0	0
30GB	15	0	*F	0	0	-	-	-	-	-
32GB	16	0	*G	0	0	8	0	*8	0	0
34GB	-	-	-	-	-	-	-	-	-	-
36GB	16	1	*H	1	1	9	0	*9	0	0
38GB	-	-	-	-	-	-	-	-	-	-
40GB	16	2	*J	1	1	10	0	*A	0	0
42GB	-	-	-	-	-	-	-	-	-	-
44GB	16	3	*K	1	1	11	0	*B	0	0
46GB	-	-	-	-	-	-	-	-	-	-
48GB	16	4	*L	1	1	12	0	*C	0	0
50GB	-	-	-	-	-	-	-	-	-	-
52GB	16	5	*M	1	1	13	0	*D	0	0
54GB	-	-	-	-	-	-	-	-	-	-
56GB	16	6	*N	1	1	14	0	*E	0	0
58GB	-	-	-	-	-	-	-	-	-	-
60GB	16	7	*P	1	1	15	0	*F	0	0
62GB	-	-	-	-	-	-	-	-	-	-
64GB	16	8	*Q	1	1	16	0	*G	0	0
66GB	-	-	-	-	-	16	1	*H	1	1
68GB	16	9	*R	1	1	16	2	*J	1	1
70GB	-	-	-	-	-	16	3	*K	1	1
72GB	16	10	*S	1	1	16	4	*L	1	1
74GB	-	-	-	-	-	16	5	*M	1	1
76GB	16	11	*T	1	1	16	6	*N	1	1
78GB	-	-	-	-	-	16	7	*P	1	1
80GB	16	12	*U	1	1	16	8	*Q	1	1
82GB	-	-	-	-	-	16	9	*R	1	1
84GB	16	13	*V	1	1	16	10	*S	1	1
86GB	-	-	-	-	-	16	11	*T	1	1
88GB	16	14	*W	1	1	16	12	*U	1	1
90GB	-	-	-	-	-	16	13	*V	1	1
92GB	16	15	*X	1	1	16	14	*W	1	1
94GB	-	-	-	-	-	16	15	*X	1	1
96GB	16	16	*Y	1	1	16	16	*Y	1	1

Note 1: The CM locations (*1 through *Y) represent the Cache Memory Module locations shown in Fig. 3.9.2-10.

Note 2: A cache memory can't be set up in the '–' mark.

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8-3. Insert the PCB.

Note: Make sure that a color of the levers of the PCB to be installed is blue.
Never insert a PCB whose lever is not blue.

a. If the Cache Access Throughput Expansion Kit (DKC-F460I-41) is installed, remove the two screws and remove the dummy plate. Refer to Fig. 3.9.2-11.
If not, go to step b.
b. Install the Cache Memory PCB referring to Table 3.9.2-9.
c. Fasten the two screws.

Note : Dummy plate should be stored for future use in De-installation.

Table 3.9.2-9 Location of the Cache Memory PCB

Cluster	PCB Name	Box	Slot No.	Location No.	Remarks
2	WP490-A	Rear Logic Box	G	CACHE-2G	Cache Memory PCB
	WP490-B	Rear Logic Box	F	CACHE-2F	Cache Memory PCB (Note)

Note : Insert the PCB when DKC-F460I-41 is installed.

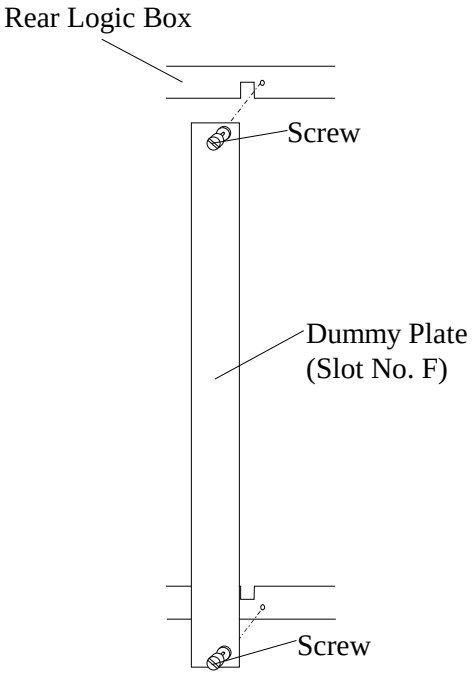

Fig. 3.9.2-11 Removal of the Dummy Plate

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8-4. Change the nameplate.

a. When the Additional Cache Memory Module (DKC-F460I-4096) is installed, and the nameplate of DKC-F460I-4096 is not attached, attach it.
When the Additional Cache Memory Module (DKC-F460I-4096) is not installed, go to step b.

b. Refer to Fig. 3.9.2-12 to paint out mounting numbers of the nameplate.

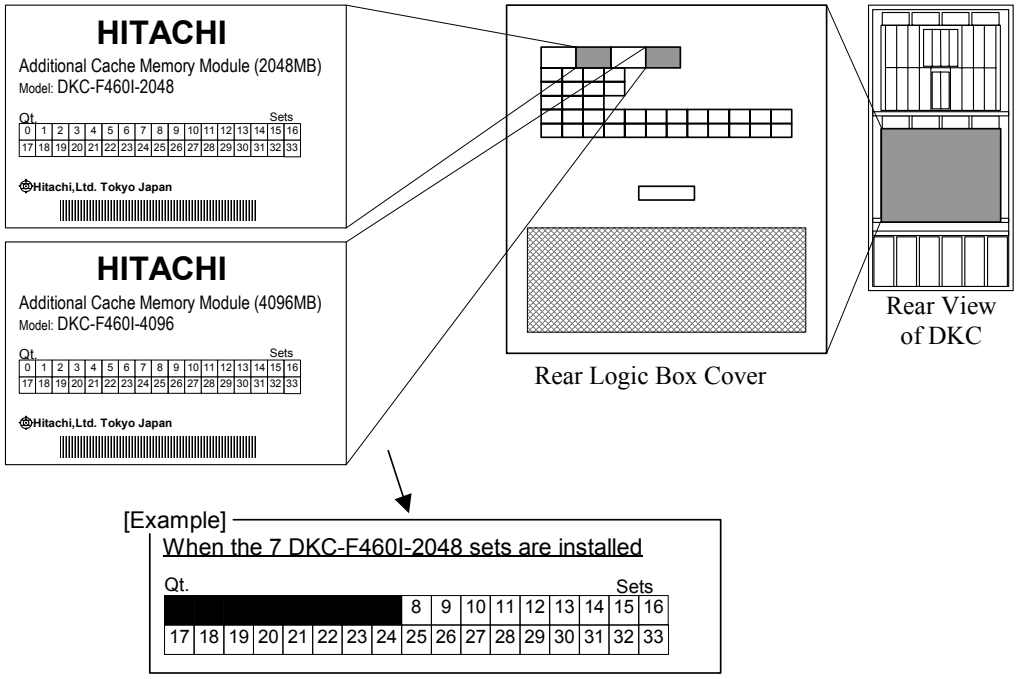

Fig. 3.9.2-12 Location of the Nameplate

c. When the Cache Access Throughput Expansion Kit (DKC-F460I-41) is installed, attach the DKC-F460I-41 nameplate regardless of the model number from the left of the cover.
When the Cache Access Throughput Expansion Kit (DKC-F460I-41) is not installed, go to step d.

d. When the Additional Battery for Cache Memory (DKC-F460I-42) is installed, attach the DKC-F460I-42 nameplate regardless of the model number from the left of the cover.
When the Additional Battery for Cache Memory (DKC-F460I-42) is not installed, go to step 9. SVP post procedure on the Cluster2.

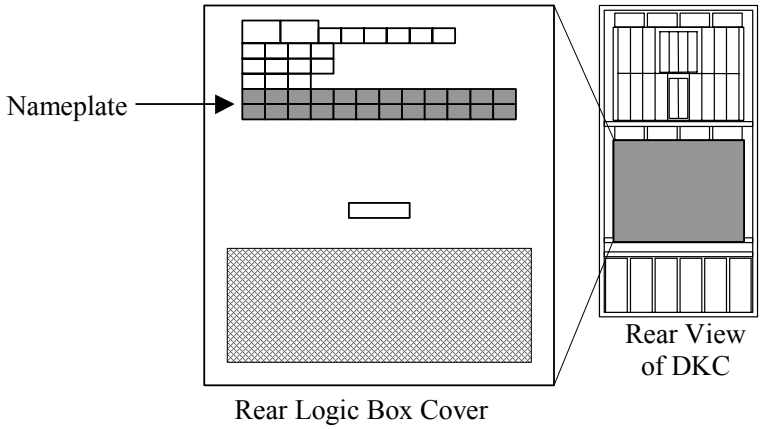

Fig. 3.9.2-13 Location of the Nameplate

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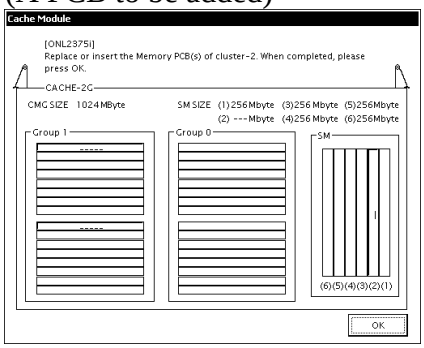
9. SVP post procedure on the Cluster 2.

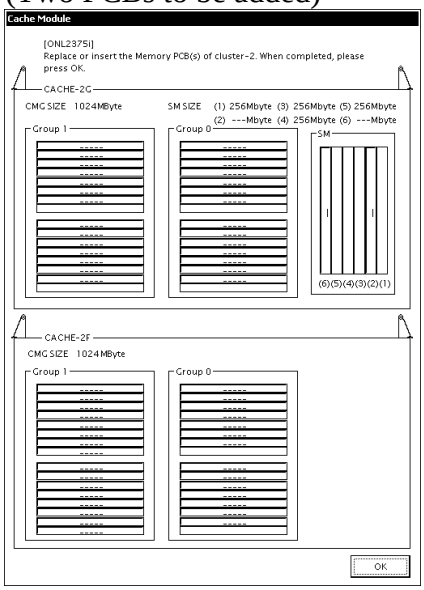
1.

After installation of cache memory on one side is completed, select (CL) [OK] in response to “Replace or insert the Memory PCBs of cluster-2. When completed, please press [OK].”.

(A PCB to be added)



(Two PCBs to be added)



2. <Cache CUDG executes>
“INLINE CUDG is now running...” is displayed.

3.

“Changing the configuration date, for equipment of shared/cache memory...”
“Restoring the Cache Memory PCB...”
“Restoring the Shared Memory PCB...” is displayed.

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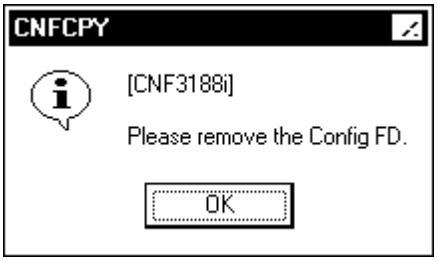
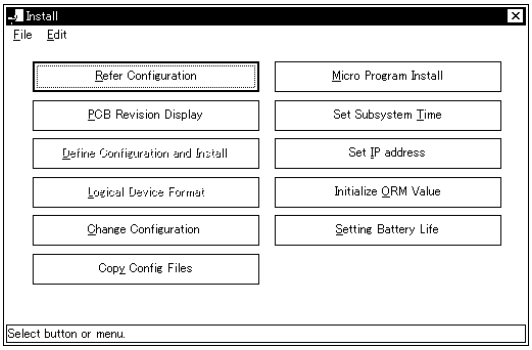
4. <End of system update processing>
"Renewal process has completed. Please check subsystem status." is displayed when recovery processing on all installed components is completed. Select (CL) [OK] in response to this message.

5.
"Reading subsystem configuration data..." is displayed.
"Please insert the Config FD in the FDD." is displayed.
Insert the configuration FD into FDD, and select (CL) [OK].

6.
When this procedure is completed, the message "Please remove the Config FD." is displayed.
Remove the FD, and select (CL) [OK].



7
After the procedure is completed, return to "Install".
Select (CL) [File]-[Exit].



8 <Mode Change>
Change the mode to View Mode.

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3.10 Installation of the DKC Additional Power Supply (DKC-F460I-80)

Table 3.10-1 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKC-F460I-80	3VPS	5513969-A	4	PPD03130
					HS0429
		Nameplate (HDS)	2105902-123	1	RSD
			2105903-123		HICAM
			2105903-223		HICEF
		Nameplate (HP)	2105902-223	1	RSD
			2105903-323		HICAM
			2105903-423		HICEF

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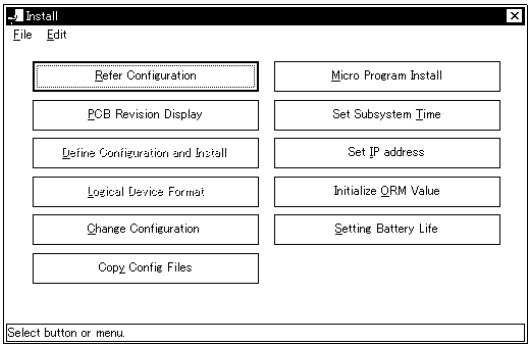
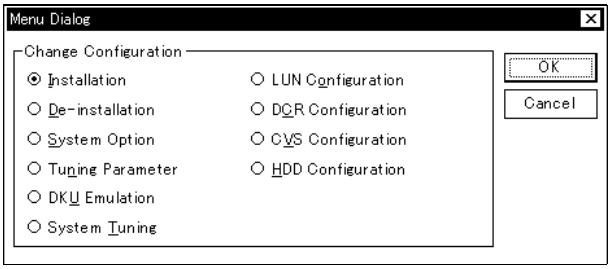
1. Setting up the New Device Structure Information

1. <Mode Change>
   Change the mode to Modify Mode.
   Select (CL) [Install].

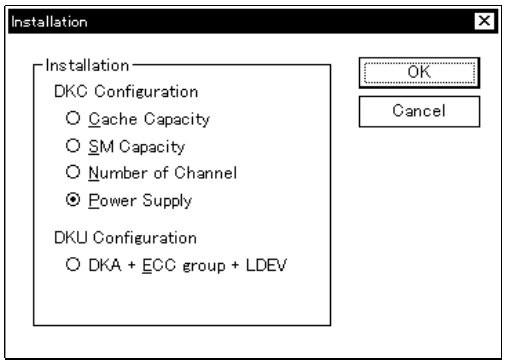
2. <Start the 'Menu Dialog' screen>
   Select (CL) [Change Configuration].



3. <Start Device Structure Setup screen>
   Select (CL) [Installation] in the 'Menu Dialog' dialog box and select (CL) [OK].



4. <Select a part to be changed>
   Select (CL) [Power Supply], and select (CL) [OK].



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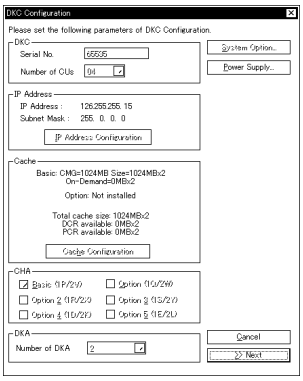
2. SVP pre procedure

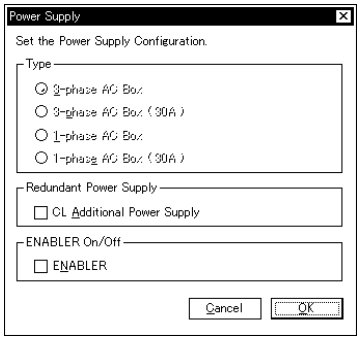
1. <Update Configuration Information>
   Select (CL) [Power Supply] in the 'DKC Configuration' screen.
   Make sure that the entered item is correct and select (CL) [>>Next].

   Note: In case of Single Cabinet Model, [Power Supply] is not displayed.

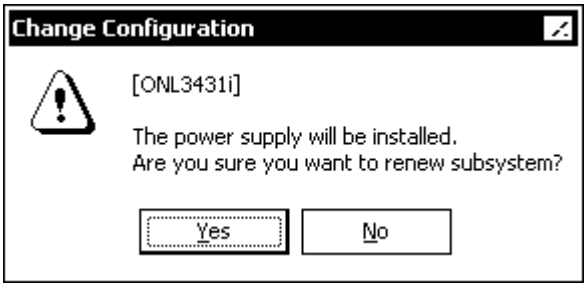


2. <Define Redundant Power Supply>
   Select (CL) redundant power supply to be added in the 'Redundant Power Supply'.
   Select (CL) [OK]. Return to step (1).

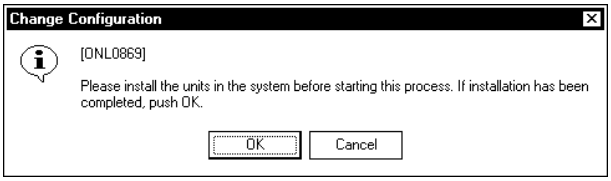
   Note: If entered item is wrong, the part not to be installed or d e-installed may be blocked.



3. <Start installation>
   Select (CL) [Yes] in response to "The power supply will be installed. Are you sure you want to renew subsystem?".



4. The message shown in the right figure is displayed.
   At this point refrain from pressing the [OK] button.



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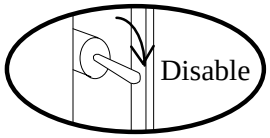
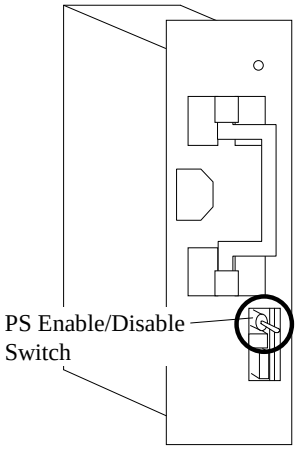
1. Installation Procedure of the DKC Additional Power Supply

1-1 Confirmation of the PS Enable/Disable Switch

a. Confirm the PS Enable/Disable Switch is turned to (DOWN) **Disable**. Refer to Fig. 3.10-1.



PS Enable/Disable Switch



3V PS

Fig. 3.10-1 Switch

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1-2 Installation of the additional power supply

a. Open the locking clamps and remove the inlet cables from the inserting locations. Refer to Table 3.10-1, Fig. 3.10-2, and Fig. 3.10-3.
b. Loosen the screws and remove the dummy plates.
c. Install the additional power supplies in the correct locations and fasten the screws. Refer to Table 3.10-1, Fig. 3.10-2, and Fig. 3.10-4.

Note: Dummy plates should be stored for future use in De-installation.

Table 3.10-2 Inserting Location

No.	Part Name	PS Location		Remarks
		Cluster 1	Cluster 2	
1	3V Power Supply	3VPS1C	3VPS2C	
2	3V Power Supply	3VPS1D	3VPS2D	

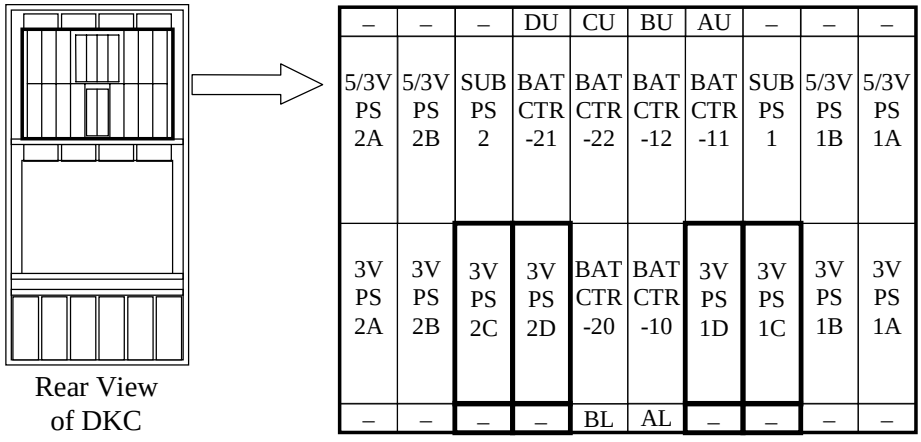

Fig. 3.10-2 Inserting Location

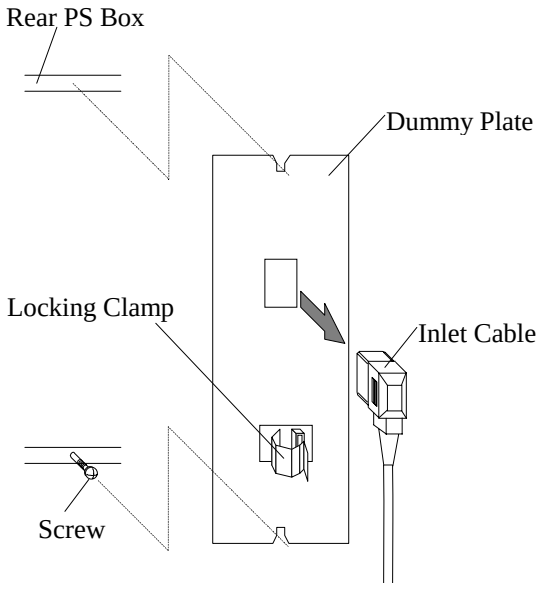

Fig. 3.10-3 Removal of Dummy Plate

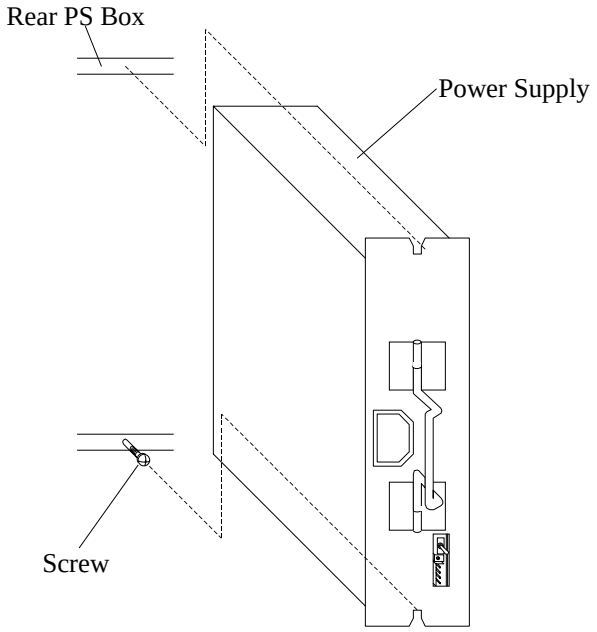

Fig. 3.10-4 Installation of Power Supply

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1-3 Connection of the inlet cable

a. Connect the inlet cables to the power supply and fix them with the lever. Refer to Fig. 3.10-5.

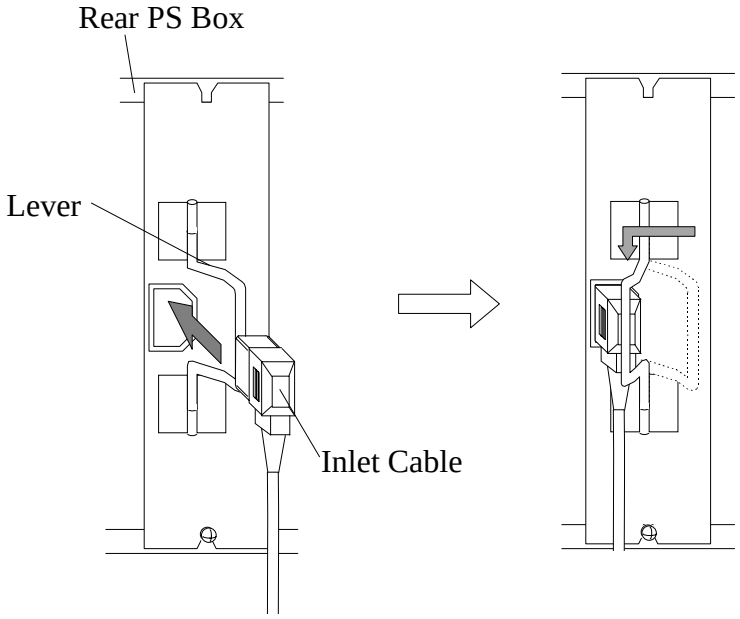

Fig. 3.10-5 Connection of Inlet Cable

1-4 Turn on the Additional Power Supply

a. Turn the PS Enable/Disable Switch to (UP) **Enable**. Refer to Fig. 3.10-6.

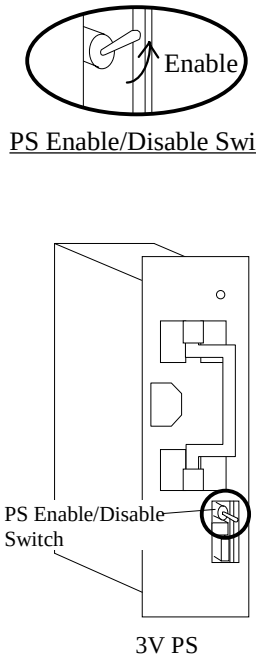

Fig. 3.10-6 Switch

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1-5 Attachment of the nameplate

a. Attach the nameplate regardless of the model number from the left of the cover.

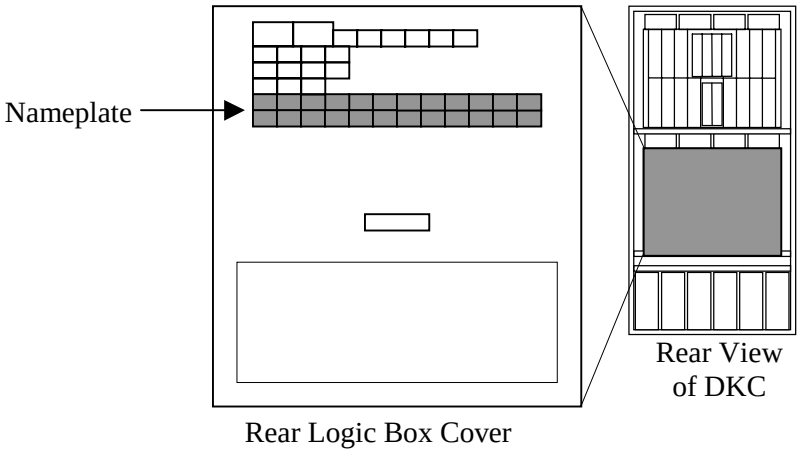

Fig. 3.10-7 Attachment of Nameplate

1-6 Check of DC voltage

a. See CHECK OF DC VOLTAGE in PERIODIC SECTION.

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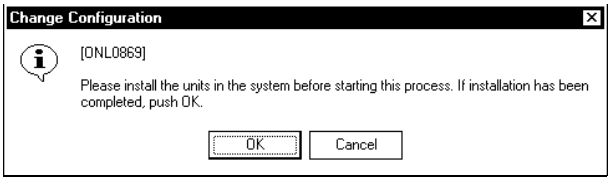
5. SVP post procedure

1. <Check that hardware components are installed>
   Select (CL) [OK] after making sure that all hardware components are installed correctly in response to “Please install the units in the system before starting this process.

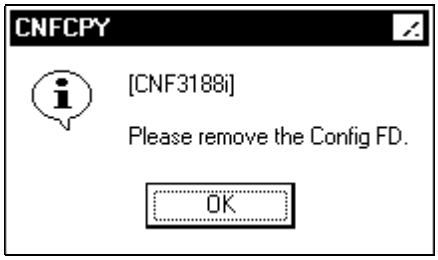
   If installation has been completed, push OK.”.



2. <End of system update processing>
   “Renewal process has completed. Please check subsystem status.” is displayed when recovery processing on all installed components is completed. Select (CL) [OK] in response to this message.

3.
   “Reading subsystem configuration data...” is displayed.
   “Please insert the Config FD in the FDD.” is displayed.
   Insert the configuration FD into FDD, select (CL) [OK].

4.
   When this procedure is completed, message “Please remove the Config FD.” is displayed.
   Remove the FD, select (CL) [OK].



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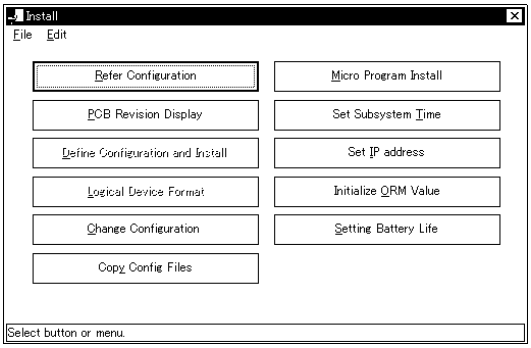
5.

After the procedure is completed, return to “Install”.
Select (CL) [File]-[Exit].



6. <Mode Change>
Change the mode to View Mode.

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3.11 Installation of DEV Interface Cable, Additional Disk Adapter and HDD Canister (DKC-F460I-200/L1C, DKU-F455I-36K4/36K1/72J4/72J1/72K4/72K1/146J4/146J1/146JF/146JS/146JQ/146JM/EXC)

Table 3.11-1 Parts List

No.	Model Number	Parts Name	Parts No.	Quantity	Remarks
1	DKC-F460I-200	Disk Adapter PCB	5513979-B	2	Color of PCB Lever: Blue
		Nameplate (HDS)	2105902-103	1	RSD
			2105903-103/203		HICAM/HICEF
		Nameplate (HP)	2105902-203	1	RSD
			2105903-303/403		HICAM/HICEF
2	DKC-F460I-L1C	DEV Interface Cable	5513878-A-R	16	
		Repeat Binder	5409042-3	8	250mm
		Nameplate (HDS)	2105902-118	1	RSD
			2105903-118/218		HICAM/HICEF
		Nameplate (HP)	2105902-218	1	RSD
			2105903-318/418		HICAM/HICEF
3	DKU-F455I-36K4	HDU450-36K1FC	5515544-A	4	
		Nameplate(HDS)	2105914-6/14/22	1	RSD/HICAM/HICEF
		Nameplate(HP)	2105914-50/54/58	1	RSD/HICAM/HICEF
4	DKU-F455I-36K1	HDU450-36K1FC	5515544-A	1	
		Nameplate(HDS)	2105914-5/13/21	1	RSD/HICAM/HICEF
		Nameplate(HP)	2105914-49/53/57	1	RSD/HICAM/HICEF
5	DKU-F455I-72J4	HDU450-72J1FC	5513873-A	4	
		Nameplate(HDS)	2105914-8/16/24	1	RSD/HICAM/HICEF
		Nameplate(HP)	2105914-52/56/60	1	RSD/HICAM/HICEF
6	DKU-F455I-72J1	HDU450-72J1FC	5513873-A	1	
		Nameplate(HDS)	2105914-7/15/23	1	RSD/HICAM/HICEF
		Nameplate(HP)	2105914-51/55/59	1	RSD/HICAM/HICEF
7	DKU-F455I-72K4	HDU450-72K1FC	5518492-A	4	
		Nameplate (HDS)	2105914-130/–/–	1	RSD/HICAM/HICEF
		Nameplate (HP)	2105914-174/–/–	1	RSD/HICAM/HICEF
8	DKU-F455I-72K1	HDU450-72K1FC	5518492-A	1	
		Nameplate (HDS)	2105914-129/–/–	1	RSD/HICAM/HICEF
		Nameplate (HP)	2105914-173/–/–	1	RSD/HICAM/HICEF
9	DKU-F455I-146J4	HDU450-146J1FC	5518491-A	4	
		Nameplate (HDS)	2105914-128/166/168	1	RSD/HICAM/HICEF
		Nameplate (HP)	2105914-160/162/164	1	RSD/HICAM/HICEF
10	DKU-F455I-146J1	HDU450-146J1FC	5518491-A	1	
		Nameplate (HDS)	2105914-127/165/167	1	RSD/HICAM/HICEF
		Nameplate (HP)	2105914-159/161/163	1	RSD/HICAM/HICEF

(To be continued.)

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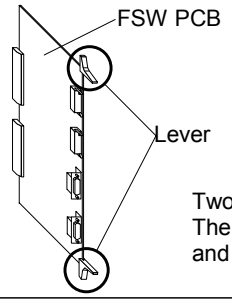
(Continued from preceding sheet.)

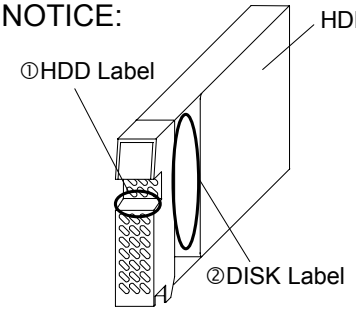
No.	Model Number	Parts Name	Parts No.	Quantity	Remarks
11	DKU-F455I-146JF	HDU450-146JSFC	5522731-A	4	
		Nameplate(HDS)	2105914-176/200/202	1	RSD/HICAM/HICEF
		Nameplate(HP)	2105914-194/196/198	1	RSD/HICAM/HICEF
12	DKU-F455I-146JS	HDU450-146JSFC	5522731-A	1	
		Nameplate(HDS)	2105914-175/199/201	1	RSD/HICAM/HICEF
		Nameplate(HP)	2105914-193/195/197	1	RSD/HICAM/HICEF
13	DKU-F455I-146JQ	HDU450-146JMFC	5522976-A	4	
		Nameplate(HDS)	2105914-204/222/224	1	RSD/HICAM/HICEF
		Nameplate(HP)	2105914-226/228/230	1	RSD/HICAM/HICEF
14	DKU-F455I-146JM	HDU450-146JMFC	5522976-A	1	
		Nameplate(HDS)	2105914-203/221/223	1	RSD/HICAM/HICEF
		Nameplate(HP)	2105914-225/227/229	1	RSD/HICAM/HICEF
15	DKU-F455I-EXC	DEV I/F Cable 2	5513860-A-R	16	
		Nameplate(HDS)	2105913-33/34/35	1	RSD/HICAM/HICEF
		Nameplate(HP)	2105913-39/40/41	1	RSD/HICAM/HICEF

NOTICE:



Two types of levers for inserting/ removing the FSW, large and small ones, are used.
The levers were enlarged to make the operation easier, accordingly their performance and function are the same.

NOTICE:



① HDD Label
Refer to the HDD label for the name of HDD canister.

② DISK Label
Although the DISK label may differ from the HDD label in capacity, there is no problem. This label should be disregarded.

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3.11.1 Flowchart

NOTICE:
When the number of CUs is added accompanying the HDD installation, there is a case that expansion of shared memory is required. If necessary, see INST03-SM-10.

There are ten cases (① to ⑩) of these addition works as shown in the following table because two or more options are to be added at the same time. Perform the work referring to the flowchart of each work.

Case	Option Installation Procedure	Page
①	When performing addition of the data/spare HDD canister (DKU-F455I-36K1/36K4/72J1/72J4/72K1/72K4/146J1/146J4/146JS/146JF/146JM/146JQ)	INST03-DKA-30
②	When performing addition of the DKA (DKC-F460I-200)	INST03-DKA-30
③	When performing addition of the data/spare HDD and DKA (DKC-F460I-200, DKU-F455I-36K1/36K4/72J1/72J4/72K1/72K4/146J1/146J4/146JS/146JF/146JM/146JQ)	INST03-DKA-30
④	When performing addition of the data/spare HDD canister, DKA, and DEV interface cable that accompanies the addition of the DKU-R2 frame (DKC-F460I-200, DKU-F455I-36K1/36K4/72J1/72J4/72K1/72K4/146J1/146J4/146JS/146JF/146JM/146JQ/EXC)	INST03-DKA-40
⑤	When performing addition of the data/spare HDD canister, DKA, and DEV interface cable that accompanies the addition of the DKU-L1 frame (DKC-F460I-200/L1C, DKU-F455I-36K1/36K4/72J1/72J4/72K1/72K4/146J1/146J4/146JS/146JF/146JM/146JQ)	INST03-DKA-40
⑥	When performing addition of the data/spare HDD canister, DKA, and DEV interface cable that accompanies the addition of the DKU-L2 frame (DKC-F460I-200, DKU-F455I-36K1/36K4/72J1/72J4/72K1/72K4/146J1/146J4/146JS/146JF/146JM/146JQ/EXC)	INST03-DKA-50
⑦	When performing addition of the data/spare HDD canister, DKA, and DEV interface cable that accompanies the addition of the DKU-R2 and DKU-L1 frames (DKC-F460I-200/L1C, DKU-F455I-36K1/36K4/72J1/72J4/72K1/72K4/146J1/146J4/146JS/146JF/146JM/146JQ/EXC)	INST03-DKA-60
⑧	When performing addition of the data/spare HDD canister, DKA, and DEV interface cable that accompanies the addition of the DKU-R2 and DKU-L2 frames (DKC-F460I-200, DKU-F455I-36K1/36K4/72J1/72J4/72K1/72K4/146J1/146J4/146JS/146JF/146JM/146JQ/EXC)	INST03-DKA-70
⑨	When performing addition of the data/spare HDD canister, DKA, and DEV interface cable that accompanies the addition of the DKU-L1 and DKU-L2 frames (DKC-F460I-200/L1C, DKU-F455I-36K1/36K4/72J1/72J4/72K1/72K4/146J1/146J4/146JS/146JF/146JM/146JQ/EXC)	INST03-DKA-80
⑩	When performing addition of the data/spare HDD canister, DKA, and DEV interface cable that accompanies the addition of the DKU-R2, DKU-L1, and DKU-L2 frames (DKC-F460I-200/L1C, DKU-F455I-36K1/36K4/72J1/72J4/72K1/72K4/146J1/146J4/146JS/146JF/146JM/146JQ/EXC)	INST03-DKA-90

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① When performing addition of the data/spare HDD canister -- [INST03-DKA-100 through 270]

1. Setting up the New Device Structure Information
↓
2. Installation Procedure of HDD Canister
↓
3. SVP post procedure

② When performing addition of the DKA ---------- [INST03-DKA-280 through 390]

Note: When a total number of the channel and DKA options to be installed is four or more, the additional disk controller power supply (DKC-F460I-80) must be installed. Be sure to check it before performing the addition.

1. Setting up the New Device Structure Information
↓
2. Installation Procedure of Additional Disk Adapter
↓
3. SVP post procedure

③ When performing addition of the data/spare HDD and DKA
---------- [INST03-DKA-400 through 600]

Note: When a total number of the channel and DKA options to be installed is four or more, the additional disk controller power supply (DKC-F460I-80) must be installed. Be sure to check it before performing the addition.

1. Setting up the New Device Structure Information
↓
2. Installation Procedure of Additional Disk Adapter
↓
3. Installation Procedure of HDD Canister
↓
4. SVP post procedure

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④ When performing addition of the data/spare HDD canister, DKA, and DEV interface cable that accompanies the addition of the DKU-R2 frame ---------- [INST03-DKA-610 through 900]

Note: When a total number of the channel and DKA options to be installed is four or more, the additional disk controller power supply (DKC-F460I-80) must be installed. Be sure to check it before performing the addition.

1. Installation Procedure of DEV Interface Cable 2 (1/3) (DKU-F455I-EXC)
   (Note 1) Connect the DEV interface cable only with installed Disk Unit (DKU455I-18).
   *** In this step, do not connect the DEV interface cable with operating DKU.**

↓

2. Setting up the New Device Structure Information

↓

3. Installation Procedure of Additional Disk Adapter

↓

4. Installation Procedure of HDD Canister

↓

5. Installation Procedure of DEV Interface Cable 2 (2/3) (DKU-F455I-EXC)
   (Note 2) Connect the DEV interface cable with operating DKU.

↓

6. SVP post procedure

↓

7. Installation Procedure of DEV Interface Cable 2 (3/3) (DKU-F455I-EXC)
   (Note 3) Attach the cable covers for DEV interface cable.

⑤ When performing addition of the data/spare HDD canister, DKA, and DEV interface cable that accompanies the addition of the DKU-L1 frame ---------[INST03-DKA-910 through 1160]

Note: When a total number of the channel and DKA options to be installed is four or more, the additional disk controller power supply (DKC-F460I-80) must be installed. Be sure to check it before performing the addition.

1. Installation Procedure of DEV Interface Cable 1 (DKC-F460I-L1C)

↓

2. Setting up the New Device Structure Information

↓

3. Installation Procedure of Additional Disk Adapter

↓

4. Installation Procedure of HDD Canister

↓

5. SVP post procedure

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⑥ When performing addition of the data/spare HDD canister, DKA, and DEV interface cable that accompanies the addition of the DKU-L2 frame ------- [INST03-DKA-1170 through 1460]

Note: When a total number of the channel and DKA options to be installed is four or more, the additional disk controller power supply (DKC-F460I-80) must be installed. Be sure to check it before performing the addition.

1. Installation Procedure of DEV Interface Cable 2 (1/3) (DKU-F455I-EXC)
   (Note 1) Connect the DEV interface cable only with installed Disk Unit (DKU455I-18).
   *** In this step, do not connect the DEV interface cable with operating DKU.**

↓

2. Setting up the New Device Structure Information

↓

3. Installation Procedure of Additional Disk Adapter

↓

4. Installation Procedure of HDD Canister

↓

5. Installation Procedure of DEV Interface Cable 2 (2/3) (DKU-F455I-EXC)
   (Note 2) Connect the DEV interface cable with operating DKU.

↓

6. SVP post procedure

↓

7. Installation Procedure of DEV Interface Cable 2 (3/3) (DKU-F455I-EXC)
   (Note 3) Attach the cable covers for DEV interface cable.

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⑦ When performing addition of the data/spare HDD canister, DKA, and DEV interface cable that accompanies the addition of the DKU-R2 and DKU-L1 frames

---------- [INST03-DKA-1470 through 1810]

Note: When a total number of the channel and DKA options to be installed is four or more, the additional disk controller power supply (DKC-F460I-80) must be installed. Be sure to check it before performing the addition.

1. Installation Procedure of DEV Interface Cable 1 (DKC-F460I-L1C)

↓

2. Installation Procedure of DEV Interface Cable 2 (1/3) (DKU-F455I-EXC)
   (Note 1) Connect the DEV interface cable only with installed Disk Unit (DKU455I-18).
   *** In this step, do not connect the DEV interface cable with operating DKU.**

↓

3. Setting up the New Device Structure Information

↓

4. Installation Procedure of Additional Disk Adapter

↓

5. Installation Procedure of HDD Canister

↓

6. Installation Procedure of DEV Interface Cable 2 (2/3) (DKU-F455I-EXC)
   (Note 2) Connect the DEV interface cable with operating DKU.

↓

7. SVP post procedure

↓

8. Installation Procedure of DEV Interface Cable 2 (3/3) (DKU-F455I-EXC)
   (Note 3) Attach the cable covers for DEV interface cable.

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⑧ When performing addition of the data/spare HDD canister, DKA, and DEV interface cable that accompanies the addition of the DKU-R2 and DKU-L2 frames

---------- [INST03-DKA-1820 through 2200]

Note: When a total number of the channel and DKA options to be installed is four or more, the additional disk controller power supply (DKC-F460I-80) must be installed. Be sure to check it before performing the addition.

1. Installation Procedure of DEV Interface Cable 2 (1/3) (DKU-F455I-EXC)
   (Note 1) Connect the DEV interface cable only with installed Disk Unit (DKU455I-18).
   *** In this step, do not connect the DEV interface cable with operating DKU.**

↓

2. Setting up the New Device Structure Information

↓

3. Installation Procedure of Additional Disk Adapter

↓

4. Installation Procedure of HDD Canister

↓

5. Installation Procedure of DEV Interface Cable 2 (2/3) (DKU-F455I-EXC)
   (Note 2) Connect the DEV interface cable with operating DKU.

↓

6. SVP post procedure

↓

7. Installation Procedure of DEV Interface Cable 2 (3/3) (DKU-F455I-EXC)
   (Note 3) Attach the cable covers for DEV interface cable.

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⑨ When performing addition of the data/spare HDD canister, DKA, and DEV interface cable that accompanies the addition of the DKU-L1 and DKU-L2 frames

---------- [INST03-DKA-2210 through 2550]

Note: When a total number of the channel and DKA options to be installed is four or more, the additional disk controller power supply (DKC-F460I-80) must be installed. Be sure to check it before performing the addition.

1. Installation Procedure of DEV Interface Cable 1 (DKC-F460I-L1C)

↓

2. Installation Procedure of DEV Interface Cable 2 (1/3) (DKU-F455I-EXC)
   (Note 1) Connect the DEV interface cable only with installed Disk Unit (DKU455I-18).
   *** In this step, do not connect the DEV interface cable with operating DKU.**

↓

3. Setting up the New Device Structure Information

↓

4. Installation Procedure of Additional Disk Adapter

↓

5. Installation Procedure of HDD Canister

↓

6. Installation Procedure of DEV Interface Cable 2 (2/3) (DKU-F455I-EXC)
   (Note 2) Connect the DEV interface cable with operating DKU.

↓

7. SVP post procedure

↓

8. Installation Procedure of DEV Interface Cable 2 (3/3) (DKU-F455I-EXC)
   (Note 3) Attach the cable covers for DEV interface cable.

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⑩ When performing addition of the data/spare HDD canister, DKA, and DEV interface cable that accompanies the addition of the DKU-R2, DKU-L1, and DKU-L2 frames
---------- [INST03-DKA-2560 through 2990]

Note: When a total number of the channel and DKA options to be installed is four or more, the additional disk controller power supply (DKC-F460I-80) must be installed. Be sure to check it before performing the addition.

1. Installation Procedure of DEV Interface Cable 1 (DKC-F460I-L1C)

↓

2. Installation Procedure of DEV Interface Cable 2 (1/3) (DKU-F455I-EXC)
(Note 1) Connect the DEV interface cable only with installed Disk Unit (DKU455I-18).
*** In this step, do not connect the DEV interface cable with operating DKU.**

↓

3. Setting up the New Device Structure Information

↓

4. Installation Procedure of Additional Disk Adapter

↓

5. Installation Procedure of HDD Canister

↓

6. Installation Procedure of DEV Interface Cable 2 (2/3) (DKU-F455I-EXC)
(Note 2) Connect the DEV interface cable with operating DKU.

↓

7. SVP post procedure

↓

8. Installation Procedure of DEV Interface Cable 2 (3/3) (DKU-F455I-EXC)
(Note 3) Attach the cable covers for DEV interface cable.

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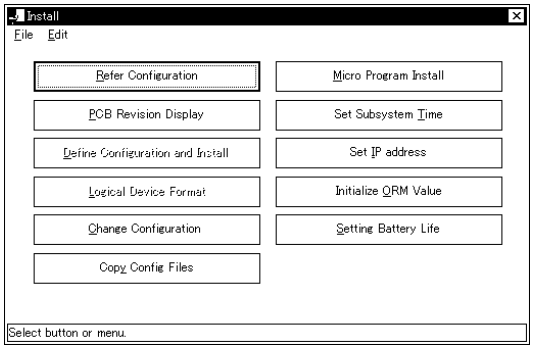
3.11.2 When performing addition of the data/spare HDD canister (DKU-F455I-36K4/36K1/72J4/72J1/72K4/72K1/146J4/146J1/146JF/146JS/146JQ/146JM)

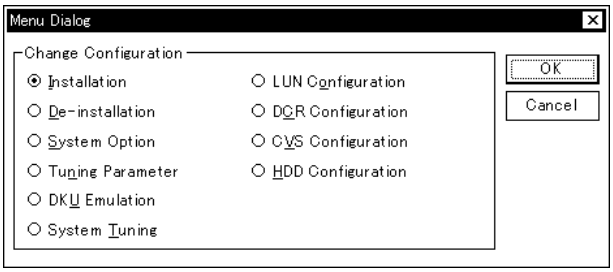
1. Setting up the New Device Structure Information

1. <Mode Change>
   Change the mode to Modify Mode.
   Select (CL) [Install].

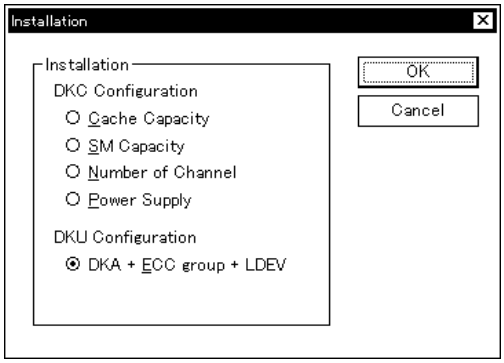
2. <Start the 'Menu Dialog' screen>
   Select (CL) [Change Configuration].



3. <Start Device Structure Setup screen>
   Select (CL) [Installation] in the 'Menu Dialog' dialog box and select (CL) [OK].



4. <Select a part to be changed>
   Select (CL) [DKA + ECC group + LDEV], and select (CL) [OK].



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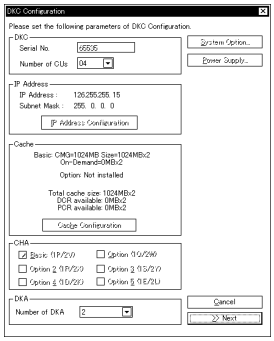
5. <Update Configuration Information>
   Define the number of CU in DKC in the 'DKC Configuration' window.

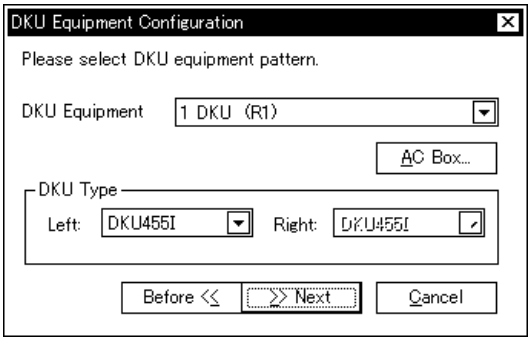
   Make sure that the entered item is correct and select (CL) [>>Next].

   Note: There may be a case where an addition of the SM is required to add the CU.
   When adding the SM, refer to page INST03-SM-10.



6.

7. <DKU Equipment>
   The DKU equipment pattern and DKU type is displayed in the 'DKU Equipment' configuration window.
   Select (CL) [>>Next].



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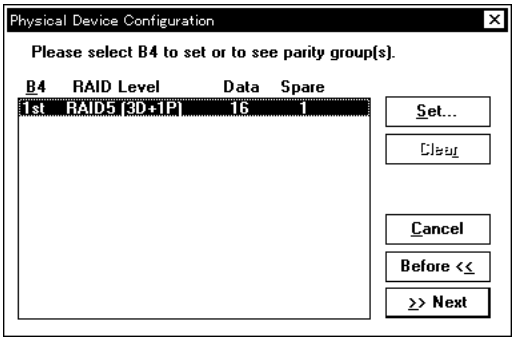
8. <Change Drive Configuration Information>
Define drive configuration according to the 'Physical Device Configuration' screen.
Detailed procedure is shown below.
[Set...]: Defines the parity group or spare disk. The routine proceeds to Step 8-1.
[Clear...]: Cancels the setting of the B4.
After setting up all items, select (CL) [>>Next]. Go to step 9.



Selecting (CL) [Before<<] returns you to the previous screen.

[Multi Cabinet Model]

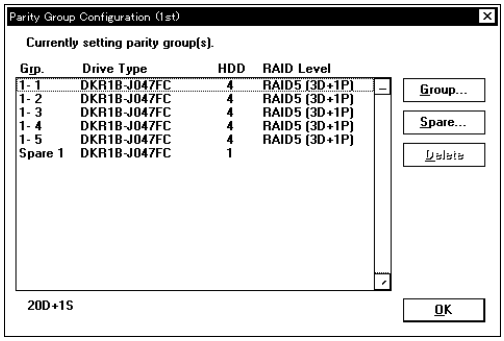
B4	Location	B4	Location
1st	HDU-R10, 11, 12, 13	7th	HDU-L20, 21, 22, 23
2nd	HDU-R14, 15, 16, 17	8th	HDU-L24, 25, 26, 27
3rd	HDU-L10, 11, 12, 13	9th	HDU-R30, 31, 32, 33
4th	HDU-L14, 15, 16, 17	10th	HDU-R34, 35, 36, 37
5th	HDU-R20, 21, 22, 23	11th	HDU-L30, 31, 32, 33
6th	HDU-R24, 25, 26, 27	12th	HDU-L34, 35, 36, 37

Note: The 9th to 12th of the B4 are valid only when the DKUs for the RAID 400 are connected.

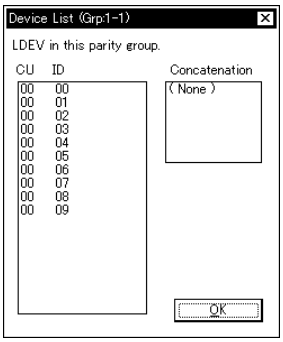
[Single Cabinet Model]

B4	Location	Comment
1st	HDU-0, 1, 2, 3	HDD-X00 ~ X0F
2nd	HDU-0, 1, 2, 3	HDD-X10 ~ X1F

8-1. <Define Parity Group>
[Group...]: Defines the parity group. See Step 8-1-1.
[Spare...]: Defines the spare drive. See Step 8-1-2.
[Delete]: Deletes the added parity group or spare drive.
Grp*: A parity group where RAID Concatenation is installed.
Note: If you want to set any Spare Drive in B4, please define the Spare Drive first.
After setting up all items, select (CL) [OK]. Return to step 8.



- To display LDEV ID in Parity group, select an item to be displayed and select (DC) this item on list box. The 'Device List' dialog box will appear.
"(no LDEV)" is displayed for the added parity group.



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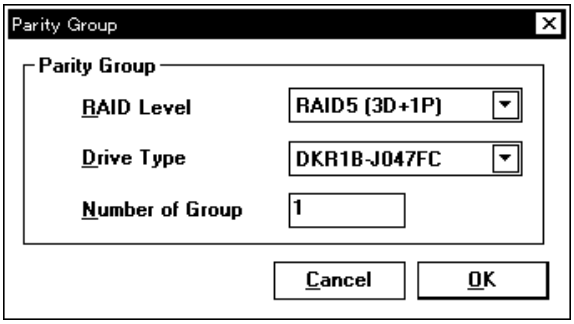
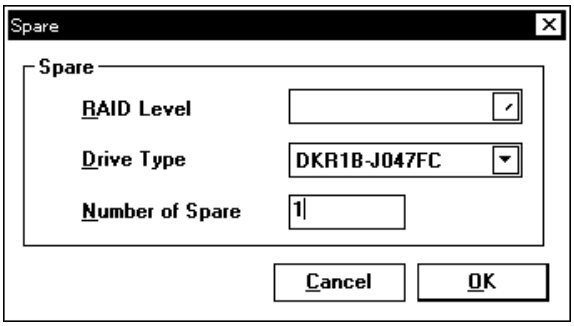
8-1-1.

Define the RAID Level and the Drive Type and the Number of Group in the 'Parity Group' dialog box.
Then select (CL) [OK]. Return to step 8-1.



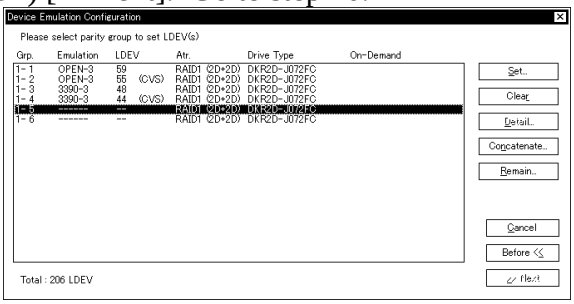
8-1-2.

Define the RAID Level and the Drive Type and the Number of Spare in the 'Spare' dialog box.
Then select (CL) [OK]. Return to step 8-1.



9. <Define Device Emulation>

After setting up all items for definition of Device Emulation, select (CL) [>>Next].
Selecting (CL) [Before<<] returns you to the previous screen.
In the case of only spare drive installation, select (CL) [>>Next]. Go to step 10.



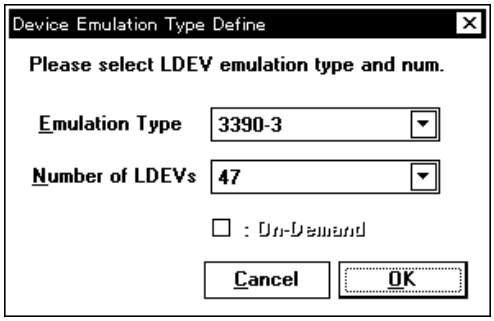
For defining Device Emulation:
Select (CL) parity group and select (CL) [Set...].
Go to step 9-1

For detailed display:
Select (CL) parity group and select (CL) [Detail...].
The detailed information is displayed.
(CVS): A parity group where CVS is installed.
Grp*: A parity group where RAID Concatenation is installed.

9-1.

After setting up all items in the 'Device Emulation Type Define' dialog box, select (CL) [OK].

Selecting (CL) [Cancel] returns you to step 9.



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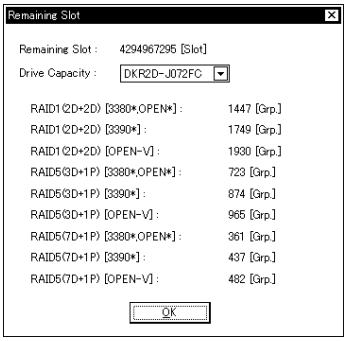
9-2. <Displaying remaining slot(s)>

The Remaining Slot window is displayed.
An allowable number of times of PDEV addition corresponding to the specified drive type is displayed.



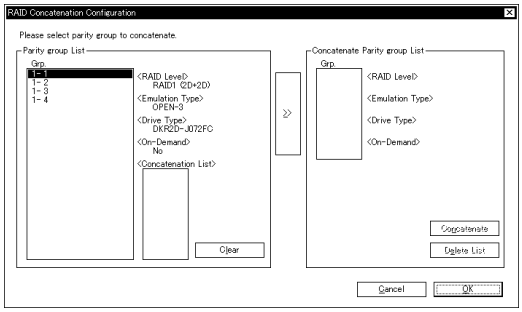
Select (CL) the [OK]. The routine returns to Step 9.

9-3. <Setting RAID concatenation>

Select (CL) [Concatenate...].
When you do not perform the RAID concatenation, return to Step 9.

9-4.

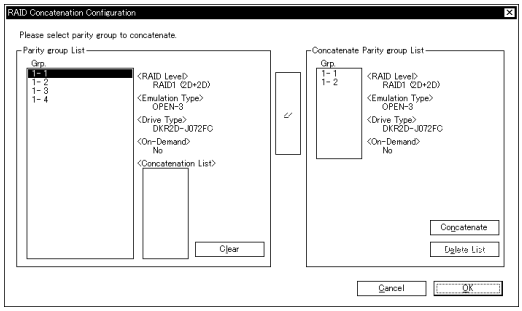
Parity groups to which the RAID concatenation can be applied are displayed in the Parity group List. Select (CL) parity groups to which you want to apply the RAID concatenation and press (CL) the [>>] button.



Note: Only the parity groups, which have been added and to which the RAID concatenation can be applied are displayed in the Parity group List.

9-5.

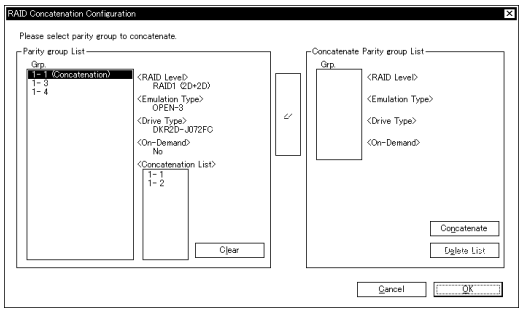
The selected parity groups are registered in the Concatenate Parity group List. Then press (CL) the [Concatenate] button.



Note: The [Concatenate] button cannot be pressed if the concatenation does not meet a condition of the RAID concatenation. Adjust the number of the parity groups in the Concatenate Parity group List.

9-6.

When the RAID concatenation is completed, "(Concatenation)" is displayed in the Parity group List. Selecting the "(Concatenation)" displays the concatenated parity groups in the Concatenation List. Pressing the [Clear] button cancels the RAID concatenation.



When all the settings of the RAID concatenation are completed, press (CL) the [OK] button.
Pressing (CL) the [Cancel] button returns the routine to Step 9.

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10. <Define LDEV ID>

Definition Screen for LDEV ID.

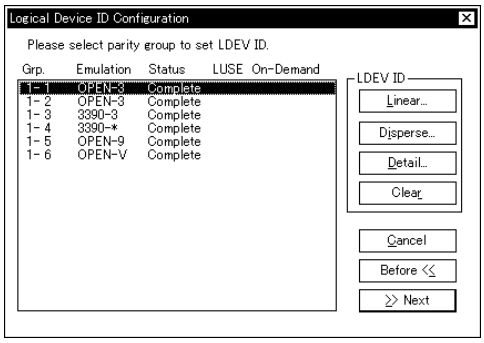
Select (CL) the parity group to be defined and select (CL) a function from the [LDEV ID] list box.

[Linear...]: LDEV ID is assigned to LDEV in the order of parity groups. See step 10-1.

[Disperse...]: LDEV is assigned discretely in the order of parity groups. See step 10-1.

[Detail...]: A screen to define LDEV in detail is displayed. See step 10-2. (When plural groups are selected (CL), it is invalid.)

[Clear]: Select (CL) [Clear] to delete.



Grp*: The top parity group where RAID Concatenation is installed.

- '-----' is displayed in the Status area for the parity group to which LDEV ID is not assigned.

After setting up all items, select (CL) [>>Next]. Go to Step 11.

10-1. Detailed Definition Screen for LDEV ID

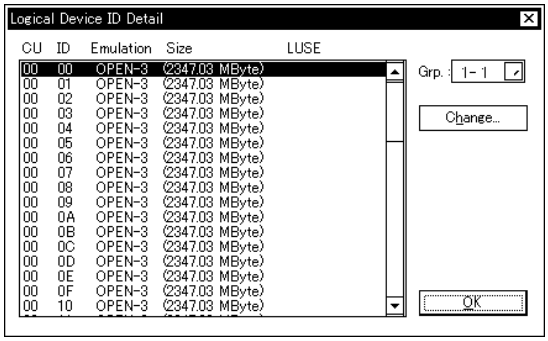
LDEV ID is defined in detail for each LDEV in the parity group.

Select (CL) LDEV from the list box and select (CL) [Change...].

The screen for LDEV ID input is displayed.

After setting, select (CL) [OK]. Return to step 10

- '-----' is displayed in the CU area and the ID area for the LDEV to which LDEV ID is not assigned.



Note: In the case of a RAID Concatenation Group, LDEV of the parity group selected by the "Grp List" is displayed.

10-2. Input LDEV ID

Select CU ID in the CU combo box.

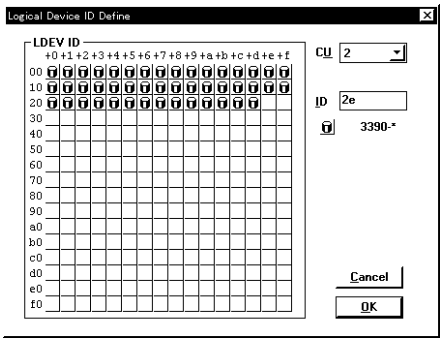
The status of usage of ID in the CU is displayed in the LDEV ID panel.

White disk of panel: not used

Patterned disk of panel: using

Input LDEV ID you want to set or the head LDEV ID in the ID Edit box.

After setting, select (CL) [OK]. Return to step 10-1



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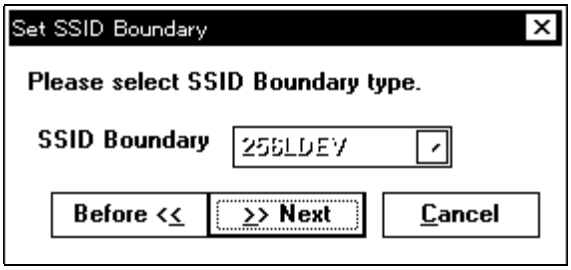
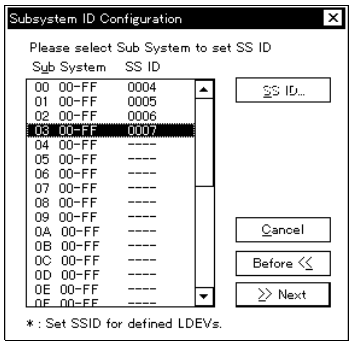
11. <Define Subsystem ID Boundary>
Press (CL) the [>>Next] button to change the screen to the “Set SSID Boundary” screen.

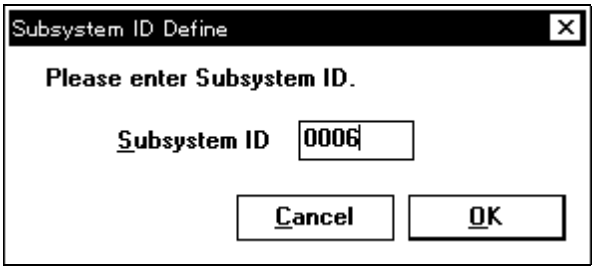


12. <Define Subsystem ID>
To define Subsystem ID, select (CL) the item from the list box and select (CL) [SSID]. See step 12-1.

After setting, select (CL) [>>Next].

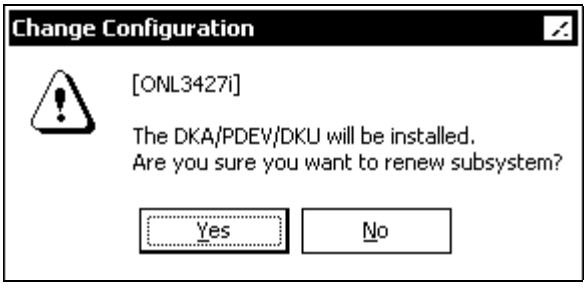


12-1. Define Subsystem ID and select (CL) [OK].
Return to step 12.



13. <Start installation>
Select (CL) [Yes] in response to “The DKA/PDEV/DKU will be installed. Are you sure you want to renew subsystem?”.

When [No] is selected (CL), returns to INST03-DKA-100 step 3.



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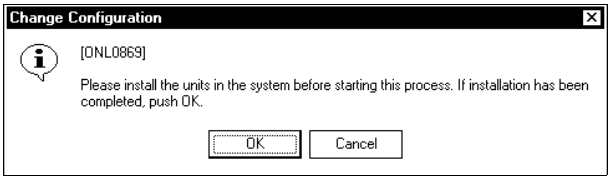
14. <Download microprogram>
    Microprograms are automatically downloaded for each processor.

15. <Install DKA>
    “Upgrading of the DKA...”

16. <Check that hardware components are installed>
    At this point refrain from pressing the [OK] button.
    “Please install the units in the system before starting this process. If installation has been completed, push OK.” is displayed.



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2. Installation Procedure of HDD Canister

2-1 Confirmation of position to install HDD canister

(i) RAID5(3D+1P)/RAID1(2D+2D)

Relations between the installation locations of the RAID groups and the RAID group numbers set through the SVP are shown in Table 3.11.2-1.

Table 3.11.2-1 Relation between HDDs installation order and RAID group number (3D+1P/2D+2D)

	L2 DKU		L1 DKU		DKC		R1 DKU		R2 DKU	
	Installation Order	RAID Group No.	Installation Order	RAID Group No.			Installation Order	RAID Group No.	Installation Order	RAID Group No.
Upper	223	8-1	159	4-1	4th DKA Pair	2nd DKA Pair	032	2-1	096	6-1
	224	8-2	160	4-2			033	2-2	097	6-2
	225	8-3	161	4-3			034	2-3	098	6-3
	226	8-4	162	4-4			035	2-4	099	6-4
	227	8-5	163	4-5			036	2-5	100	6-5
	228	8-6	164	4-6			037	2-6	101	6-6
	229	8-7	165	4-7			038	2-7	102	6-7
	230	8-8	166	4-8			039	2-8	103	6-8
	231	8-9	167	4-9			040	2-9	104	6-9
	232	8-10	168	4-10			041	2-10	105	6-10
	233	8-11	169	4-11			042	2-11	106	6-11
	234	8-12	170	4-12			043	2-12	107	6-12
	235	8-13	171	4-13			044	2-13	108	6-13
	236	8-14	172	4-14			045	2-14	109	6-14
	237	8-15	173	4-15			046	2-15	110	6-15
	238	8-16	174(Spare) *2	4-16			047(Spare) *2	2-16	111	6-16
	239	8-17	175	4-17			048	2-17	112	6-17
	240	8-18	176	4-18			049	2-18	113	6-18
	241	8-19	177	4-19			050	2-19	114	6-19
	242	8-20	178	4-20			051	2-20	115	6-20
	243	8-21	179	4-21			052	2-21	116	6-21
	244	8-22	180	4-22			053	2-22	117	6-22
	245	8-23	181	4-23			054	2-23	118	6-23
	246	8-24	182	4-24			055	2-24	119	6-24
	247	8-25	183	4-25			056	2-25	120	6-25
	248	8-26	184	4-26			057	2-26	121	6-26
	249	8-27	185	4-27			058	2-27	122	6-27
	250	8-28	186	4-28			059	2-28	123	6-28
	251	8-29	187	4-29			060	2-29	124	6-29
	252	8-30	188	4-30			061	2-30	125	6-30
	253	8-31	189	4-31			062	2-31	126	6-31
	254	8-32	190	4-32			063	2-32	127	6-32
Lower	191	7-1	128	3-1	3rd DKA Pair	1st DKA Pair	001	1-1	064	5-1
	192	7-2	129	3-2			002	1-2	065	5-2
	193	7-3	130	3-3			003	1-3	066	5-3
	194	7-4	131	3-4			004	1-4	067	5-4
	195	7-5	132	3-5			005	1-5	068	5-5
	196	7-6	133	3-6			006	1-6	069	5-6
	197	7-7	134	3-7			007	1-7	070	5-7
	198	7-8	135	3-8			008	1-8	071	5-8
	199	7-9	136	3-9			009	1-9	072	5-9
	200	7-10	137	3-10			010	1-10	073	5-10
	201	7-11	138	3-11			011	1-11	074	5-11
	202	7-12	139	3-12			012	1-12	075	5-12
	203	7-13	140	3-13			013	1-13	076	5-13
	204	7-14	141	3-14			014	1-14	077	5-14
	205	7-15	142	3-15			015	1-15	078	5-15
	206	7-16	Spare *1	3-16			Spare *1	1-16	079	5-16
	207	7-17	143	3-17			016	1-17	080	5-17
	208	7-18	144	3-18			017	1-18	081	5-18
	209	7-19	145	3-19			018	1-19	082	5-19
	210	7-20	146	3-20			019	1-20	083	5-20
	211	7-21	147	3-21			020	1-21	084	5-21
	212	7-22	148	3-22			021	1-22	085	5-22
	213	7-23	149	3-23			022	1-23	086	5-23
	214	7-24	150	3-24			023	1-24	087	5-24
	215	7-25	151	3-25			024	1-25	088	5-25
	216	7-26	152	3-26			025	1-26	089	5-26
	217	7-27	153	3-27			026	1-27	090	5-27
	218	7-28	154	3-28			027	1-28	091	5-28
	219	7-29	155	3-29			028	1-29	092	5-29
	220	7-30	156	3-30			029	1-30	093	5-30
	221	7-31	157	3-31			030	1-31	094	5-31
	222	7-32	158	3-32			031	1-32	095	5-32

*1: To be left vacant or a spare disk is to be installed. *2: A data or spare disk is to be installed.

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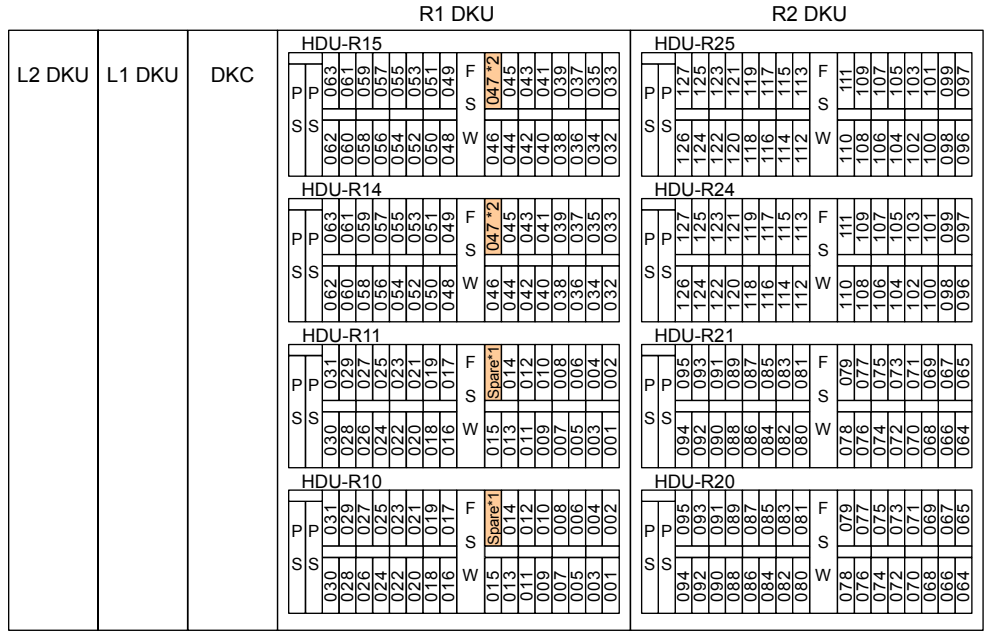
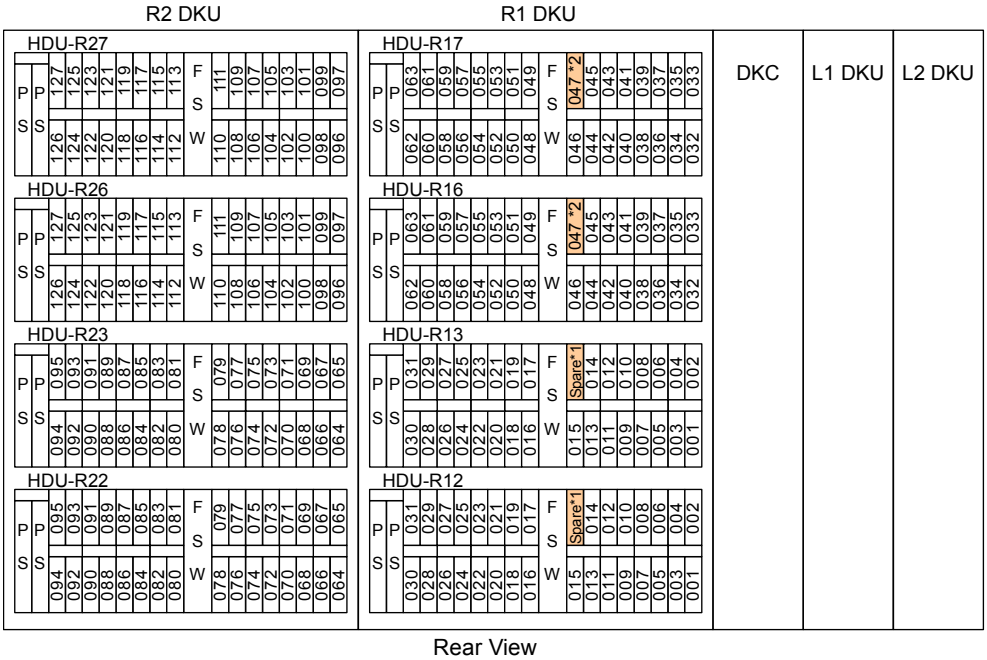
(1) Make sure of the location where the RAID group is installed and that where the HDD canister is to be added.

No.	Model Number	Model Name	Data and Parity
1	DKU-F455I-36K4/72J4/72K4/146J4/146JF/146JQ	4 HDD Canisters	Data and Parity Drive





*1:To be left vacant or a spare disk is to be installed.

*2:A data or spare disk is to be installed.

Fig. 3.11.2-1 (3D+1P) or (2D+2P) Data Drive/Parity Drive Expansion Sequence (1/2)

The relationship between HDDs installation order and RAID group number is shown in the Table 3.11.2-1.

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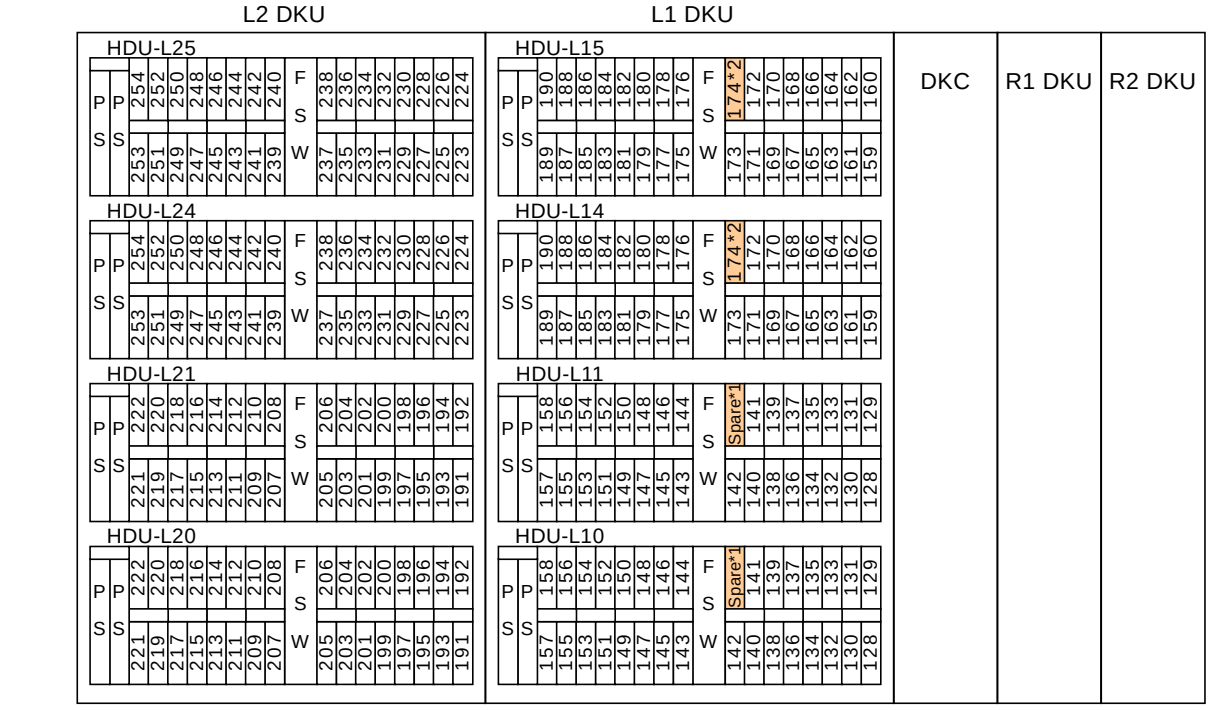

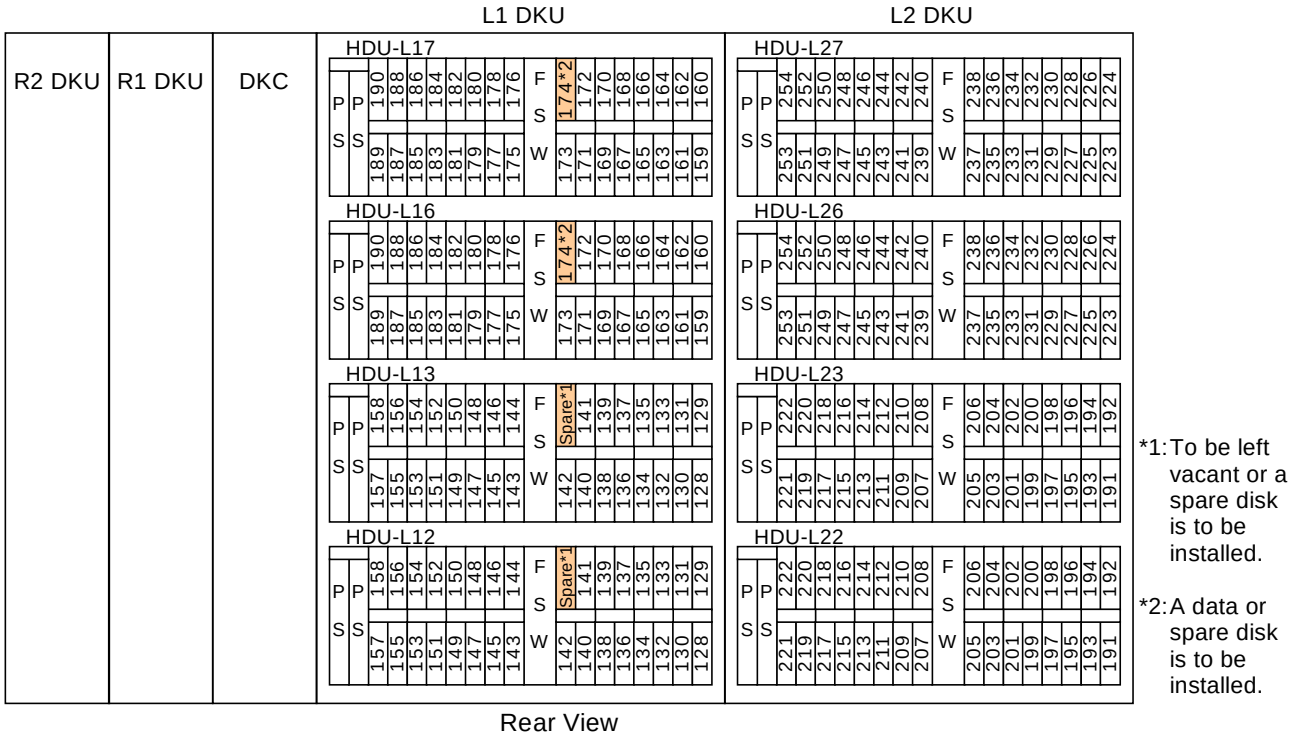

Fig. 3.11.2-1 (3D+1P) or (2D+2P) Data Drive/Parity Drive Expansion Sequence (2/2)

The relationship between HDDs installation order and RAID group number is shown in the Table 3.11.2-1.

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(ii) RAID5 (7D+1P)

Relations between the installation locations of the RAID groups and the RAID group numbers set through the SVP are shown in Table 3.11.2-2.

Table 3.11.2-2 Relation between HDDs installation order and RAID group number (7D+1P)

L2 DKU		L1 DKU		DKC		R1 DKU		R2 DKU	
Installation Order	RAID Group No.	Installation Order	RAID Group No.			Installation Order	RAID Group No.	Installation Order	RAID Group No.
095	7-1 , (8-1)	064	3-1 , (4-1)			001	1-1 , (2-1)	032	5-1 , (6-1)
096	7-2 , (8-2)	065	3-2 , (4-2)			002	1-2 , (2-2)	033	5-2 , (6-2)
097	7-3 , (8-3)	066	3-3 , (4-3)			003	1-3 , (2-3)	034	5-3 , (6-3)
098	7-4 , (8-4)	067	3-4 , (4-4)			004	1-4 , (2-4)	035	5-4 , (6-4)
099	7-5 , (8-5)	068	3-5 , (4-5)			005	1-5 , (2-5)	036	5-5 , (6-5)
100	7-6 , (8-6)	069	3-6 , (4-6)			006	1-6 , (2-6)	037	5-6 , (6-6)
101	7-7 , (8-7)	070	3-7 , (4-7)			007	1-7 , (2-7)	038	5-7 , (6-7)
102	7-8 , (8-8)	071	3-8 , (4-8)			008	1-8 , (2-8)	039	5-8 , (6-8)
103	7-9 , (8-9)	072	3-9 , (4-9)			009	1-9 , (2-9)	040	5-9 , (6-9)
104	7-10 , (8-10)	073	3-10 , (4-10)			010	1-10 , (2-10)	041	5-10 , (6-10)
105	7-11 , (8-11)	074	3-11 , (4-11)			011	1-11 , (2-11)	042	5-11 , (6-11)
106	7-12 , (8-12)	075	3-12 , (4-12)			012	1-12 , (2-12)	043	5-12 , (6-12)
107	7-13 , (8-13)	076	3-13 , (4-13)			013	1-13 , (2-13)	044	5-13 , (6-13)
108	7-14 , (8-14)	077	3-14 , (4-14)			014	1-14 , (2-14)	045	5-14 , (6-14)
109	7-15 , (8-15)	078	3-15 , (4-15)	3rd / 4th	1st / 2nd	015	1-15 , (2-15)	046	5-15 , (6-15)
110	7-16 , (8-16)	(Spare)*1	3-16 , (4-16)	DKA	DKA	(Spare)*1	1-16 , (2-16)	047	5-16 , (6-16)
111	7-17 , (8-17)	079	3-17 , (4-17)	Pairs	Pairs	016	1-17 , (2-17)	048	5-17 , (6-17)
112	7-18 , (8-18)	080	3-18 , (4-18)			017	1-18 , (2-18)	049	5-18 , (6-18)
113	7-19 , (8-19)	081	3-19 , (4-19)			018	1-19 , (2-19)	050	5-19 , (6-19)
114	7-20 , (8-20)	082	3-20 , (4-20)			019	1-20 , (2-20)	051	5-20 , (6-20)
115	7-21 , (8-21)	083	3-21 , (4-21)			020	1-21 , (2-21)	052	5-21 , (6-21)
116	7-22 , (8-22)	084	3-22 , (4-22)			021	1-22 , (2-22)	053	5-22 , (6-22)
117	7-23 , (8-23)	085	3-23 , (4-23)			022	1-23 , (2-23)	054	5-23 , (6-23)
118	7-24 , (8-24)	086	3-24 , (4-24)			023	1-24 , (2-24)	055	5-24 , (6-24)
119	7-25 , (8-25)	087	3-25 , (4-25)			024	1-25 , (2-25)	056	5-25 , (6-25)
120	7-26 , (8-26)	088	3-26 , (4-26)			025	1-26 , (2-26)	057	5-26 , (6-26)
121	7-27 , (8-27)	089	3-27 , (4-27)			026	1-27 , (2-27)	058	5-27 , (6-27)
122	7-28 , (8-28)	090	3-28 , (4-28)			027	1-28 , (2-28)	059	5-28 , (6-28)
123	7-29 , (8-29)	091	3-29 , (4-29)			028	1-29 , (2-29)	060	5-29 , (6-29)
124	7-30 , (8-30)	092	3-30 , (4-30)			029	1-30 , (2-30)	061	5-30 , (6-30)
125	7-31 , (8-31)	093	3-31 , (4-31)			030	1-31 , (2-31)	062	5-31 , (6-31)
126	7-32 , (8-32)	094	3-32 , (4-32)			031	1-32 , (2-32)	063	5-32 , (6-32)

*1: To be left vacant or a spare disk is to be installed.

- Install RAID 5 (7D+1P) forming pairs using the same number of the two RAID groups (RAID groups 1 and 2, 3 and 4, 5 and 6, and 7 and 8) of RAID 5 (3D+1P).
  (Example: RAID group numbers 1-1 and 2-1)
  The types of HDDs to be installed in each pair must be the same.
- In the case of RAID 5 (7D+1P), only odd RAID numbers are displayed on the SVP. (Group numbers shown in parentheses in the table above are not displayed.)
- When RAID 5 (3D+1P) or RAID 1 (2D+2D) and RAID 5 (7D+1P) are configured mixture, note that duplicated group numbers are excluded.
  Example: When Group No. 1-1 is configured for RAID 5 (7D+1P), Group No. 2-1 is excluded and cannot be configure for RAID 5 (3D+1P).

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(1) Make sure of the location where the RAID group is installed and that where the HDD canister is to be added.

No.	Model Number	Model Name	Data and Parity
1	DKU-F455I-36K4/72J4/72K4/146J4/146JF/146JQ	4 HDD Canisters x 2sets	Data and Parity Drive

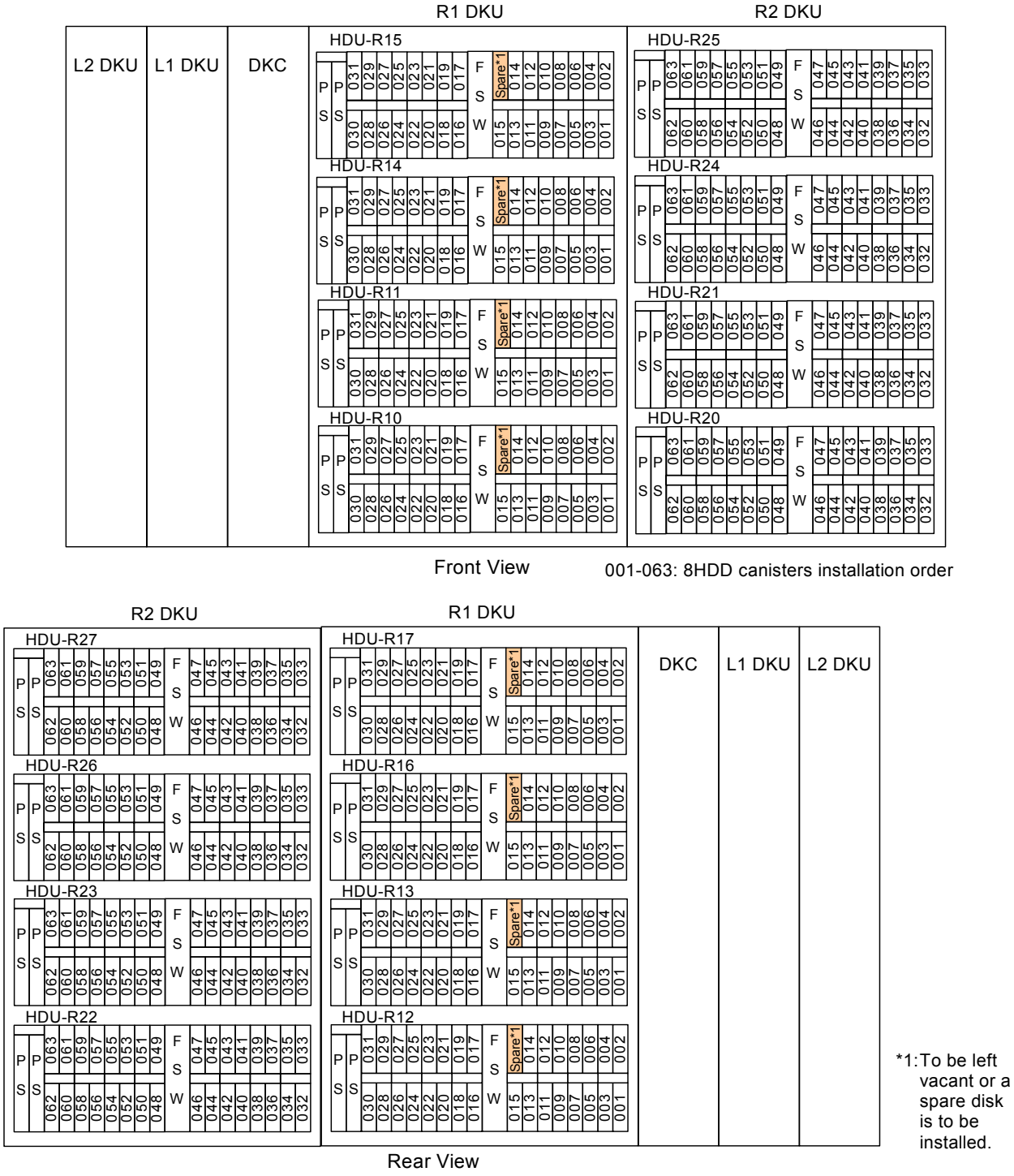

Fig. 3.11.2-2 (7D+1P) Data Drive/Parity Drive Expansion Sequence (1/2)

The relationship between HDDs installation order and RAID group number is shown in the Table 3.11.2-2.

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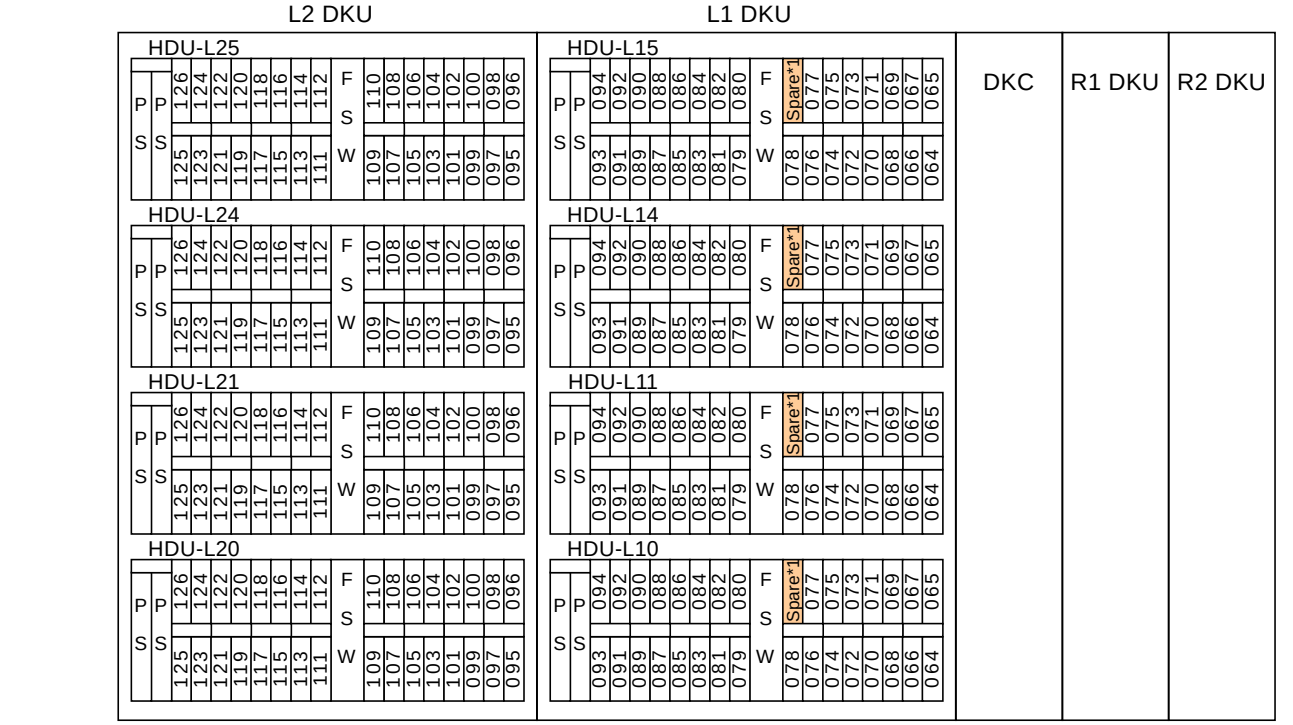

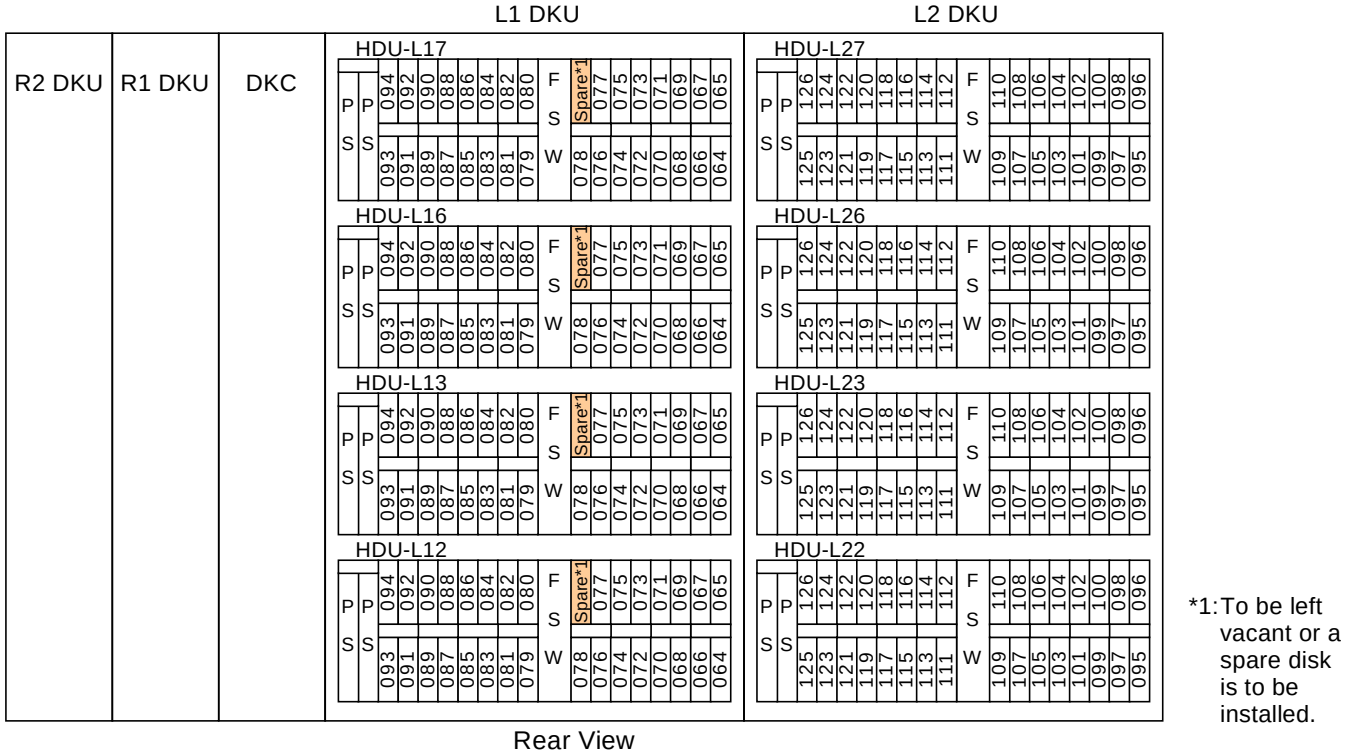

Fig. 3.11.2-2 (7D+1P) Data Drive/Parity Drive Expansion Sequence (2/2)

The relationship between HDDs installation order and RAID group number is shown in the Table 3.11.2-2.

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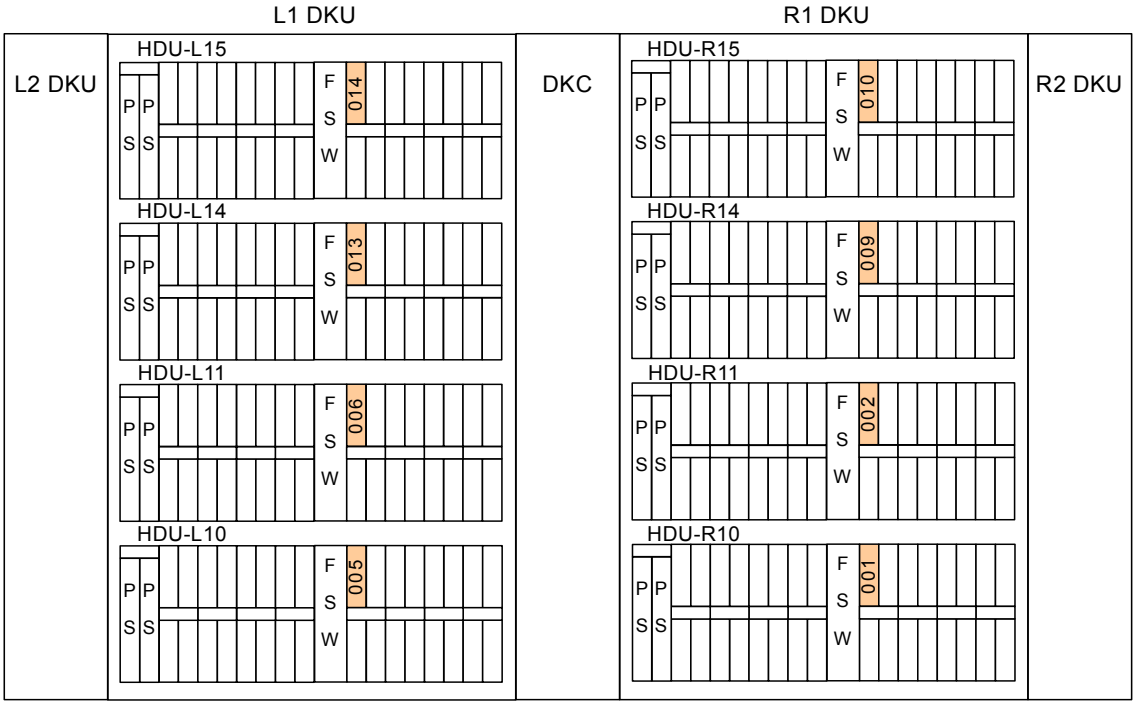
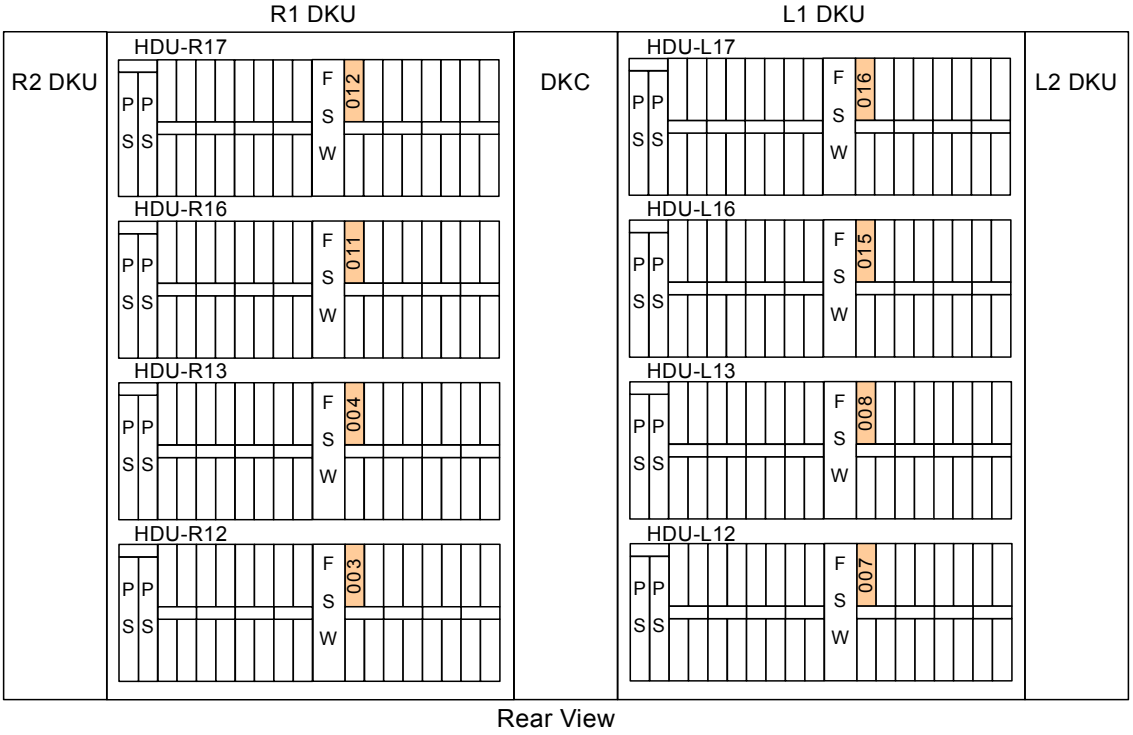
(iii) Spare HDD

No.	Model Number	Model Name	Data and Parity
1	DKU-F455I-36K1/72J1/72K1/146J1/146JS/146JM	1 HDD Canister	Spare Drive



Front View

001-016: Spare HDD canister installation order



Rear View

Fig. 3.11.2-3 Spare Drive Expansion Sequence

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2-2 Installation of the HDD Canister.

Notice:
(1) Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.
(2) Since the HDD is a precision component, handle it very carefully not to apply a vibration or shock to it.

a. Remove the dummy canister from the HDU Box.
When the dummy canister cannot be removed by pulling of it only, remove it referring to page INST03-DKA-3000.
b. Install the HDD canister. (For the detailed procedure for installation, refer to the procedure for installing HDD canister on page INST03-DKA-3010.)

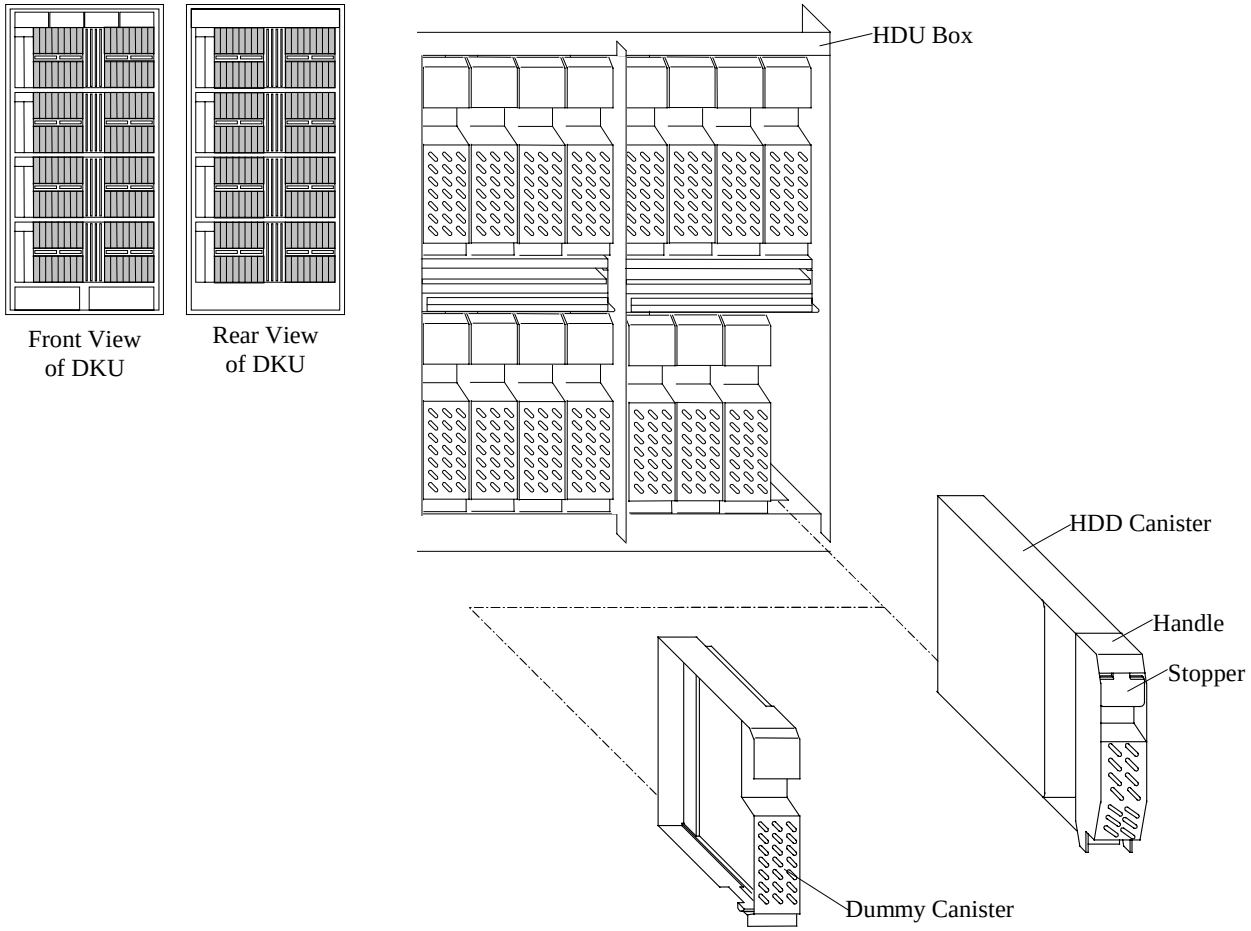

Fig. 3.11.2-4 Installation of HDD Canister

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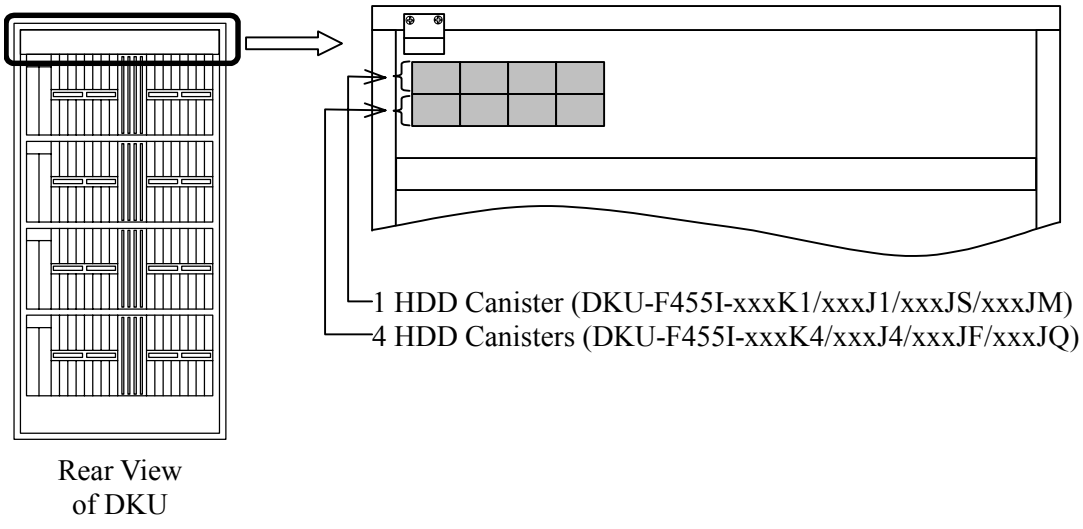
2-3 Attachment of the nameplate.

a. When the nameplate is not attached, attach the nameplate regardless of the model number from the left of the unit. Paint out mounting numbers on the nameplate.



[Example]

When the 7 DKU-F455I-72J4 sets are installed

							8	9	10	11	12	13	14	15	16
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64

Fig. 3.11.2-5 Attachment of Nameplate

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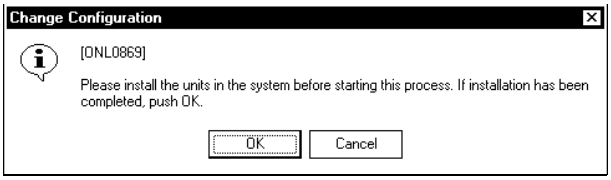
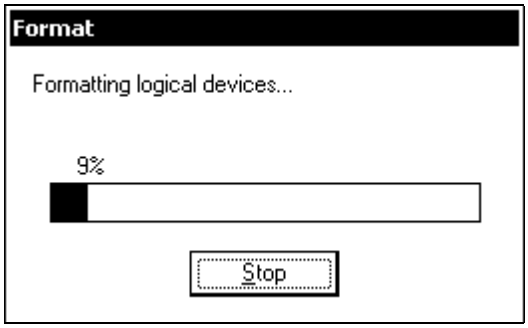
3. SVP post procedure

1. <Check that hardware components are installed>
   Select (CL) [OK] after making sure that all hardware components are installed correctly in response to “Please install the units in the system before starting this process. If installation has been completed, push OK.”.



2. <DKU PATH INLINE>
   When DKA is installed, “DKU PATH INLINE is now running...” is displayed.

3. <LDEV FORMAT>
   “Formatting the logical device...” is displayed when Parity Group is defined.



4. <End of system update processing>
   “Renewal process has completed. Please check the subsystem status.” is displayed when recovery processing on all installed components is completed. Select (CL) [OK] in response to this message.

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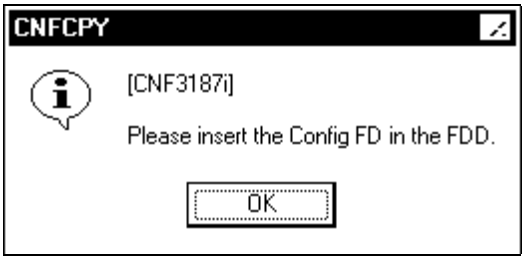
5.

"Reading subsystem configuration data..." is displayed.
"Please insert the Config FD in the FDD." is displayed.
Insert the configuration FD into FDD, and select (CL) [OK].

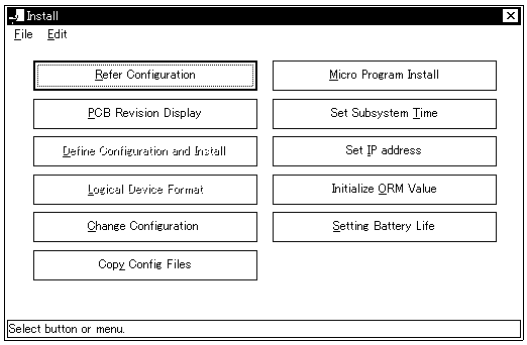


6.

When this procedure is completed, the message "Please remove the Config FD." is displayed.
Remove the FD, select (CL) [OK].

7.

After the procedure is completed, return to 'Install'.
Select (CL) [File]-[Exit].



8. <Mode Change>
Change the mode to View Mode.

Return to the work table (INST02-50) and perform rest of the works.

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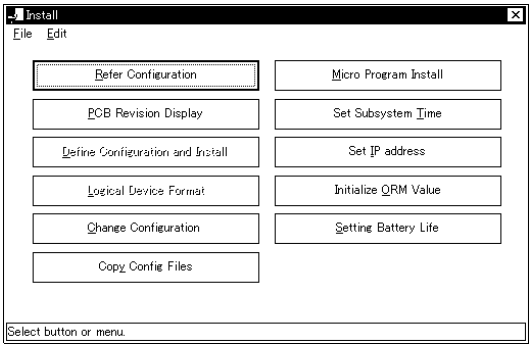
3.11.3 When performing addition of the DKA (DKC-F460I-200)

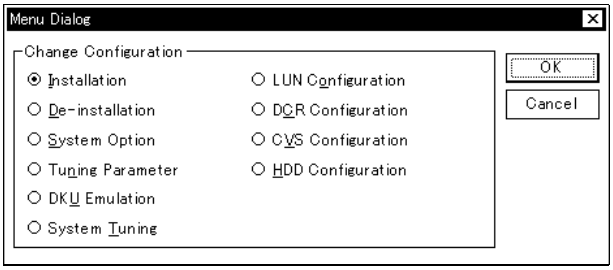
1. Setting up the New Device Structure Information

1. <Mode Change>
   Change the mode to Modify Mode.
   Select (CL) [Install].

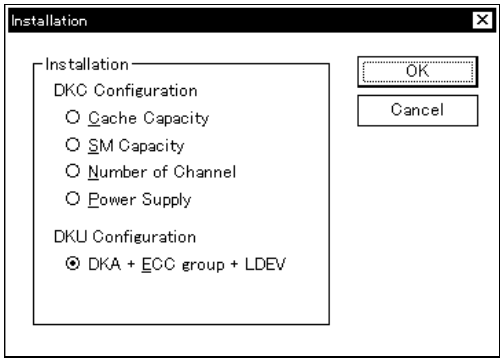
2. <Start the 'Menu Dialog' screen>
   Select (CL) [Change Configuration].



3. <Start Device Structure Setup screen>
   Select (CL) [Installation] in the 'Menu Dialog' dialog box and select (CL) [OK].



4. <Select a part to be changed>
   Select (CL) [DKA + ECC group + LDEV], and select (CL) [OK].



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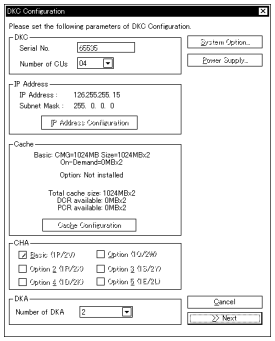
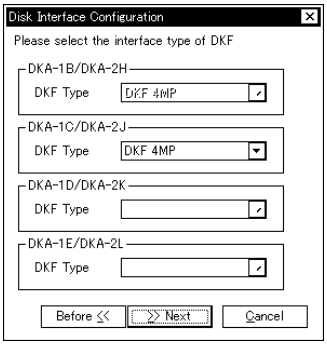
5. <Update Configuration Information>
Define the number of DKA in DKC in the 'DKC Configuration' window.



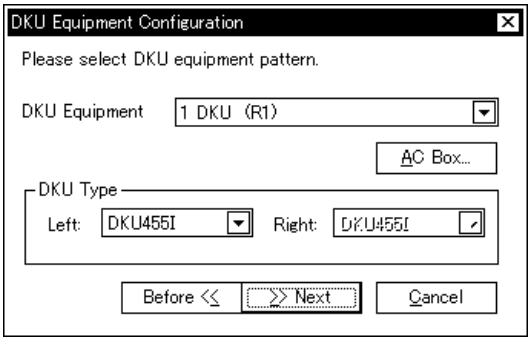
Make sure that the entered item is correct and select (CL) [>>Next].

Note: There may be a case where an addition of the SM is required to add the CU.
When adding the SM, refer to page INST03-SM-10.

6. <Setting DKA type>
Define the DKA type in the 'Disk Interface Configuration' dialog box. After setting it, select (CL) the [>>Next] button.



7. <DKU Equipment>
The DKU equipment pattern and DKU type is displayed in the 'DKU Equipment' configuration window.
Select (CL) [>>Next].



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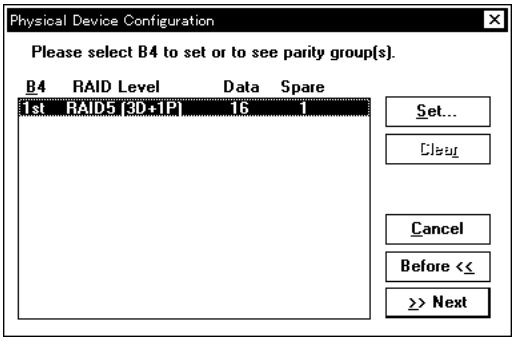
8. <Change Drive Configuration Information>
Define drive configuration according to the 'Physical Device Configuration' screen.
In the case of only DKA installation, select (CL) [>>Next]. Go to step 9.
Detailed procedure is shown below.
[Set...]: Defines the parity group or spare disk. The routine proceeds to Step 8-1.
[Clear...]: Cancels the setting of the B4.
After setting up all items, select (CL) [>>Next]. Go to step 9.



Selecting (CL) [Before<<] returns you to the previous screen.

[Multi Cabinet Model]

B4	Location	B4	Location
1st	HDU-R10, 11, 12, 13	7th	HDU-L20, 21, 22, 23
2nd	HDU-R14, 15, 16, 17	8th	HDU-L24, 25, 26, 27
3rd	HDU-L10, 11, 12, 13	9th	HDU-R30, 31, 32, 33
4th	HDU-L14, 15, 16, 17	10th	HDU-R34, 35, 36, 37
5th	HDU-R20, 21, 22, 23	11th	HDU-L30, 31, 32, 33
6th	HDU-R24, 25, 26, 27	12th	HDU-L34, 35, 36, 37

Note: The 9th to 12th of the B4 are valid only when the DKUs for the RAID 400 are connected.

[Single Cabinet Model]

B4	Location	Comment
1st	HDU-0, 1, 2, 3	HDD-X00 ~ X0F
2nd	HDU-0, 1, 2, 3	HDD-X10 ~ X1F

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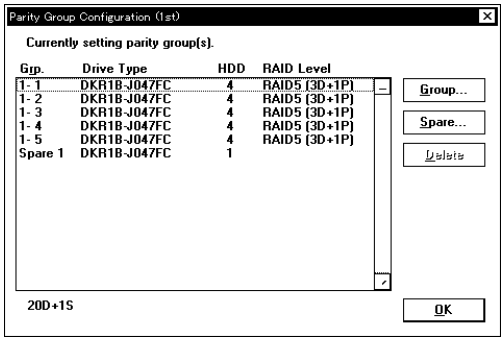
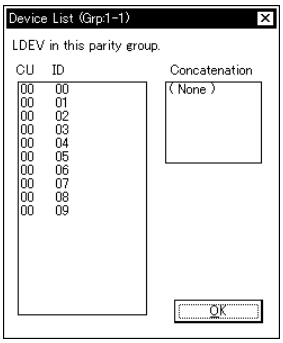
8-1. <Define Parity Group>

[Group...]: Defines the parity group. See Step 8-1-1.
[Spare...]: Defines the spare drive. See Step 8-1-2.
[Delete]: Deletes the added parity group or spare drive.
Grp*: A parity group where RAID Concatenation is installed.
Note: If you want to set any Spare Drive in B4, please define the Spare Drive first.
After setting up all items, select (CL) [OK]. Return to step 8.



- To display LDEV ID in Parity group, select an item to be displayed and select (DC) this item on list box. The 'Device List' dialog box will appear.
  "(no LDEV)" is displayed for the added parity group.



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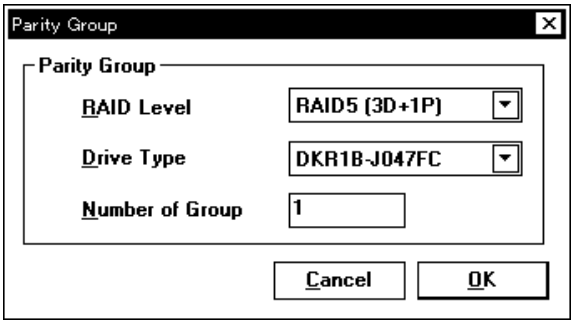
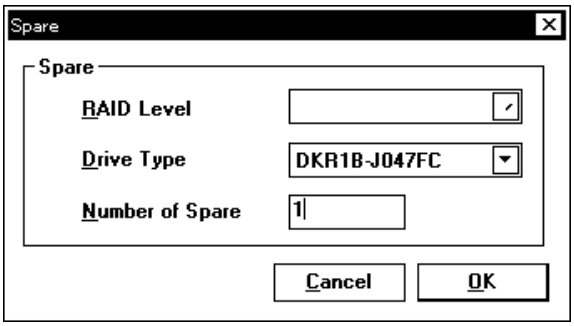
8-1-1.

Define the RAID Level and the Drive Type and the Number of Group in the 'Parity Group' dialog box.
Then select (CL) [OK]. Return to step 8-1.



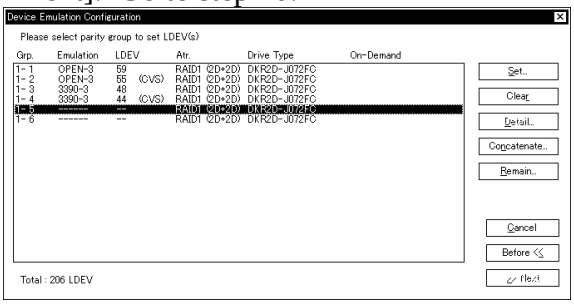
8-1-2.

Define the RAID Level and the Drive Type and the Number of Spare in the 'Spare' dialog box.
Then select (CL) [OK]. Return to step 8-1.



9. <Define Device Emulation>

After setting up all items for definition of Device Emulation, select (CL) [>>Next].
Selecting (CL) [Before<<] returns you to the previous screen.
In the case of only DKA installation, select (CL) [>>Next]. Go to step 10.



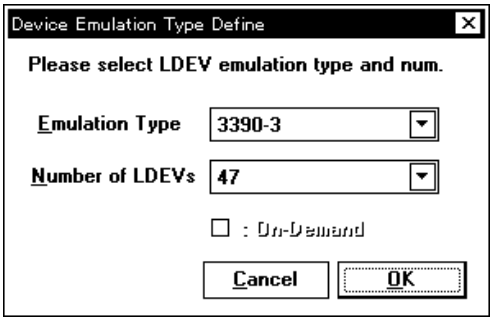
For defining Device Emulation:
Select (CL) parity group and select (CL) [Set...].
Go to step 9-1

For detailed display:
Select (CL) parity group and select (CL) [Detail...].
The detailed information is displayed.
(CVS): A parity group where CVS is installed.
Grp*: A parity group where RAID Concatenation is installed.

9-1.

After setting up all items in the 'Device Emulation Type Define' dialog box, select (CL) [OK].

Selecting (CL) [Cancel] returns you to step 9.



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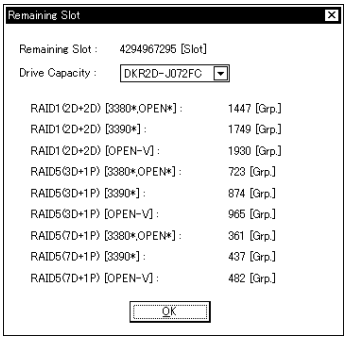
9-2. <Displaying remaining slot(s)>

The Remaining Slot window is displayed.
An allowable number of times of PDEV addition corresponding to the specified drive type is displayed.



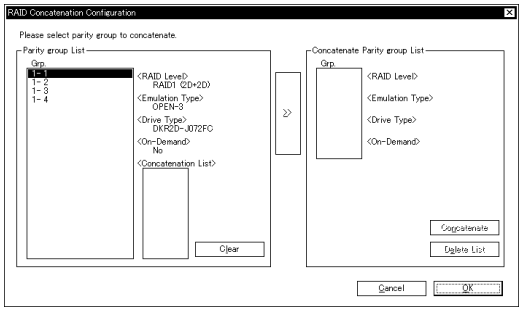
Select (CL) the [OK]. The routine returns to Step 9.

9-3. <Setting RAID concatenation>

Select (CL) [Concatenate...].
When you do not perform the RAID concatenation, return to Step 9.

9-4.

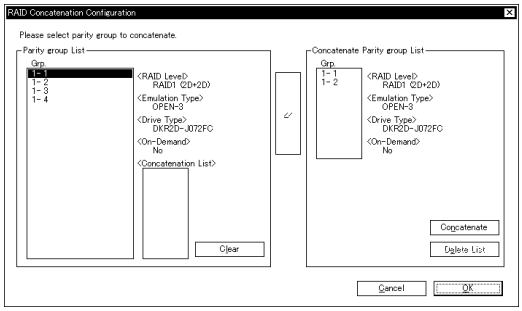
Parity groups to which the RAID concatenation can be applied are displayed in the Parity group List. Select (CL) parity groups to which you want to apply the RAID concatenation and press (CL) the [>>] button.



Note: Only the parity groups, which have been added and to which the RAID concatenation can be applied are displayed in the Parity group List.

9-5.

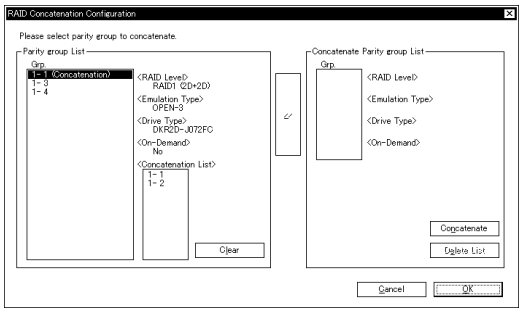
The selected parity groups are registered in the Concatenate Parity group List. Then press (CL) the [Concatenate] button.



Note: The [Concatenate] button cannot be pressed if the concatenation does not meet a condition of the RAID concatenation. Adjust the number of the parity groups in the Concatenate Parity group List.

9-6.

When the RAID concatenation is completed, "(Concatenation)" is displayed in the Parity group List. Selecting the "(Concatenation)" displays the concatenated parity groups in the Concatenation List. Pressing the [Clear] button cancels the RAID concatenation.



When all the settings of the RAID concatenation are completed, press (CL) the [OK] button.
Pressing (CL) the [Cancel] button returns the routine to Step 9.

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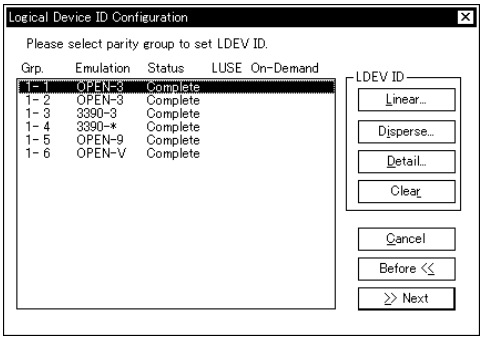
10. <Define LDEV ID>

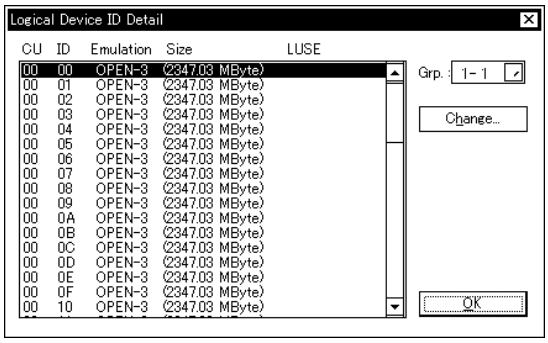


Definition Screen for LDEV ID.
Select (CL) the parity group to be defined and select (CL) a function from the [LDEV ID] list box.
In the case of only DKA installation, select (CL) [>>Next]. Go to step 11.
[Linear...]: LDEV ID is assigned to LDEV in the order of parity groups. See step 10-1.
[Disperse...]: LDEV is assigned discretely in the order of parity groups. See step 10-1.
[Detail...]: A screen to define LDEV in detail is displayed. See step 10-2. (When plural groups are selected (CL), it is invalid.)
[Clear]: Select (CL) [Clear] to delete.
Grp*: The top parity group where RAID Concatenation is installed.

- '-----' is displayed in the Status area for the parity group to which LDEV ID is not assigned.

After setting up all items, select (CL) [>>Next].

10-1. Detailed Definition Screen for LDEV ID

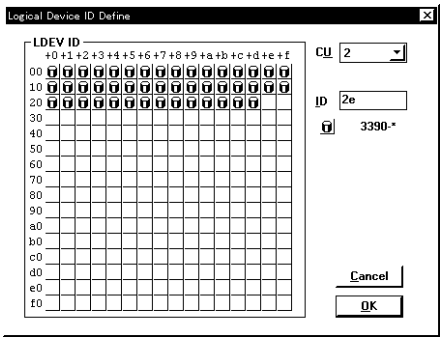


Select (CL) LDEV from the list box and select (CL) [Change...].
The screen for LDEV ID input is displayed.
After setting, select (CL) [OK]. Return to step 10

- '-----' is displayed in the CU area and the ID area for the LDEV to which LDEV ID is not assigned.

Note: In the case of a RAID Concatenation Group, LDEV of the parity group selected by the "Grp List" is displayed.

10-2. Input LDEV ID



Select CU ID in the CU combo box.
The status of usage of ID in the CU is displayed in the LDEV ID panel.
White disk of panel: not used
Patterned disk of panel: using
Input LDEV ID you want to set or the head LDEV ID in the ID Edit box.
After setting, select (CL) [OK]. Return to step 10-1

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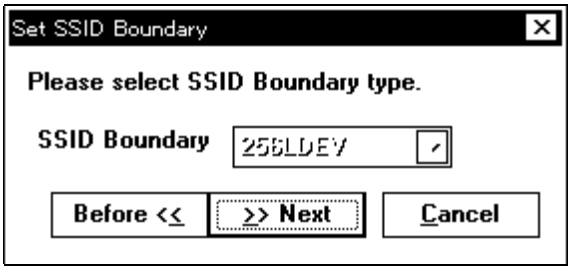
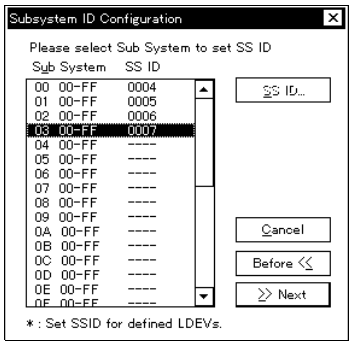
11. <Define Subsystem ID Boundary>
Press (CL) the [>>Next] button to change the screen to the “Set SSID Boundary” screen.

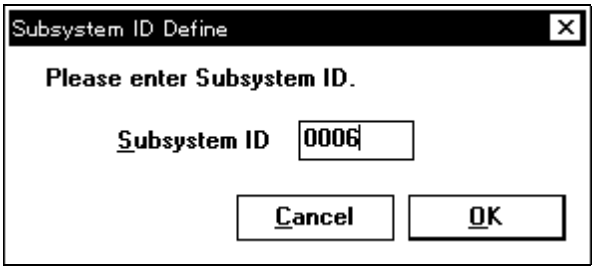


12. <Define Subsystem ID>
To define Subsystem ID, select (CL) the item from the list box and select (CL) [SSID]. See step 12-1.

After setting, select (CL) [>>Next].

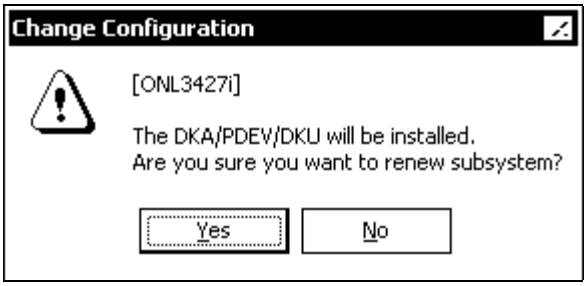


12-1. Define Subsystem ID and select (CL) [OK].
Return to step 12.



13. <Start installation>
Select (CL) [Yes] in response to “The DKA/PDEV/DKU will be installed. Are you sure you want to renew subsystem?”.

When [No] is selected (CL), returns to INST03-DKA-280 step 3.



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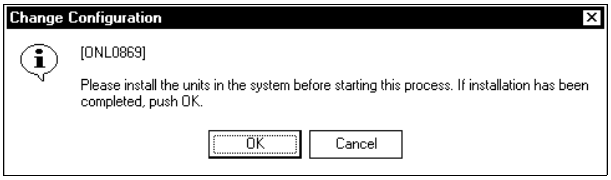
14. <Download microprogram>
    Microprograms are automatically downloaded for each processor.

15. <Install DKA>
    "Upgrading of the DKA..."

16. <Check that hardware components are installed>
    At this point refrain from pressing the [OK] button.
    "Please install the units in the system before starting this process. If installation has been completed, push OK." is displayed.



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2 Installation Procedure of Additional Disk Adapter (DKC-F460I-200)

Note: Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

2-1 Insertion of the PCBs

Note: Make sure that a color of the levers of the PCB to be installed is blue. Never insert a PCB whose lever is not blue.

a. Remove the dummy plate installed in the installation location referring to the Fig. 3.11.3-1. (Note) Dummy plates should be stored for future use in De-installation.
b. Insert the PCBs to the correct locations in the Logic Box. Refer to Table 3.11.3-1.
c. Fasten the two screws referring to Fig. 3.11.3-2.

Table 3.11.3-1 Inserting Location (Rear of the unit)

Cluster	CL2							CL1				
Slot No.	M	L	K	J	H	G	F	E	D	C	B	A
Function	CSW	DKA	DKA	DKA	DKA	CACHE	CACHE	DKA	DKA	DKA	DKA	CSW
Location No.	CSW -2M	DKA -2L	DKA -2K	DKA -2J	DKA -2H	CACHE -2G	CACHE -2F	DKA -1E	DKA -1D	DKA -1C	DKA -1B	CSW -1A
Order of addition		Add.3	Add.2	Add.1	Basic			Add.3	Add.2	Add.1	Basic	
Number of DKAs set through the SVP		–	–	–	2			–	–	–	2	
		–	–	4				–	–	4		
		–	6					–	6			
		8						8				

Up to 4 disk adapters can be installed in the subsystem.

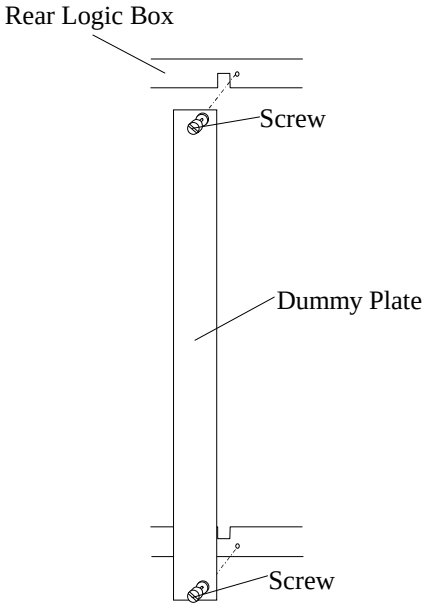

Fig. 3.11.3-1 Removal of Dummy Plate

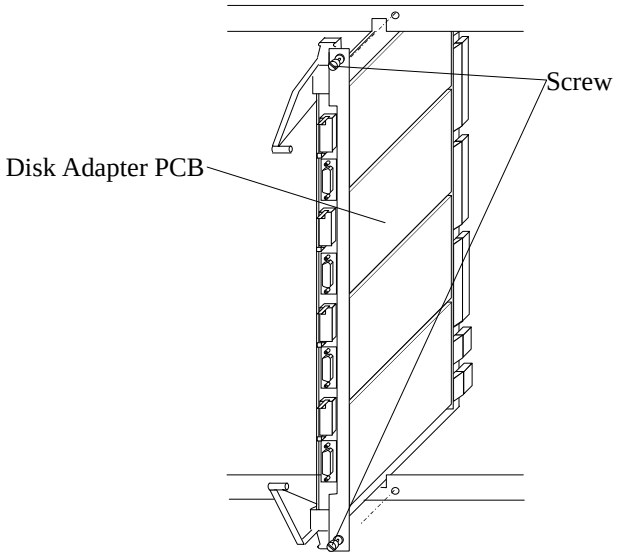

Fig. 3.11.3-2 Insertion of PCB

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2-2 Connection of cables

In case of Add.1

CAUTION

A serious failure occurs if any of cables/connectors is wrongly connected.
Since a label bearing a connection destination is affixed on each cable/connector, work very carefully referring to it and the wiring diagram.

- Colors of the labels of the subsystem shipped from the factory from June of 2002 and on are as follows. Labels on the cluster1 (CL1) side and the cluster2 (CL2) side are white and yellow respectively.

a. Connect the cables to the sub-edge of PCBs. (Refer to Fig. 3.11.3-3.)

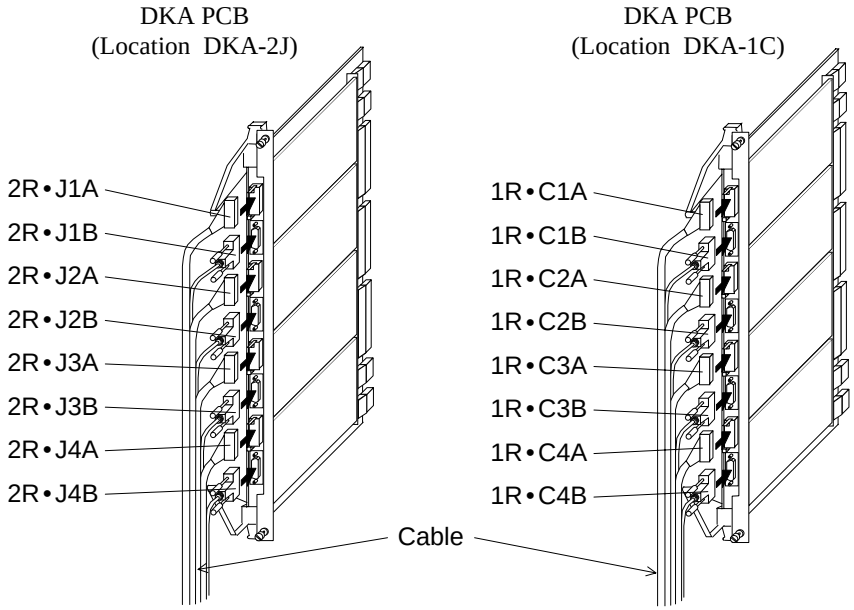

Fig.3.11.3-3 Connection of cable (Add.1)

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In case of Add.2

Caution:
Make sure that the AC power is applied to the added DKUs (DKU-L1 and DKU-L2) and the main breakers of the DKUs (DKU-L1 and DKU-L2) are turned on.
The DKU is automatically powered on when the DEV interface cable is connected to the DKA.

⚠ CAUTION

A serious failure occurs if any of cables/connectors is wrongly connected.
Since a label bearing a connection destination is affixed on each cable/connector, work very carefully referring to it and the wiring diagram.

- Colors of the labels of the subsystem shipped from the factory from June of 2002 and on are as follows. Labels on the cluster1 (CL1) side and the cluster2 (CL2) side are white and yellow respectively.

a. Connect the cables to the sub-edge of PCBs.

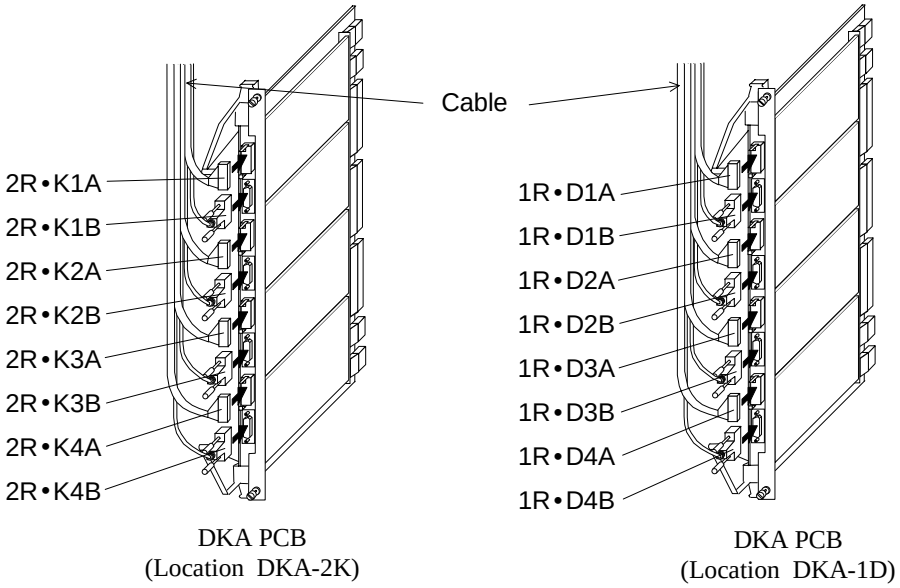

Fig.3.11.3-4 Connection of cable (Add.2)

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In case of Add.3

Caution:
Make sure that the AC power is applied to the added DKUs (DKU-L1 and DKU-L2) and the main breakers of the DKUs (DKU-L1 and DKU-L2) are turned on.
The DKU is automatically powered on when the DEV interface cable is connected to the DKA.

⚠ CAUTION

A serious failure occurs if any of cables/connectors is wrongly connected.
Since a label bearing a connection destination is affixed on each cable/connector, work very carefully referring to it and the wiring diagram.

- Colors of the labels of the subsystem shipped from the factory from June of 2002 and on are as follows. Labels on the cluster1 (CL1) side and the cluster2 (CL2) side are white and yellow respectively.

a. Connect the cables to the sub-edge of PCBs.

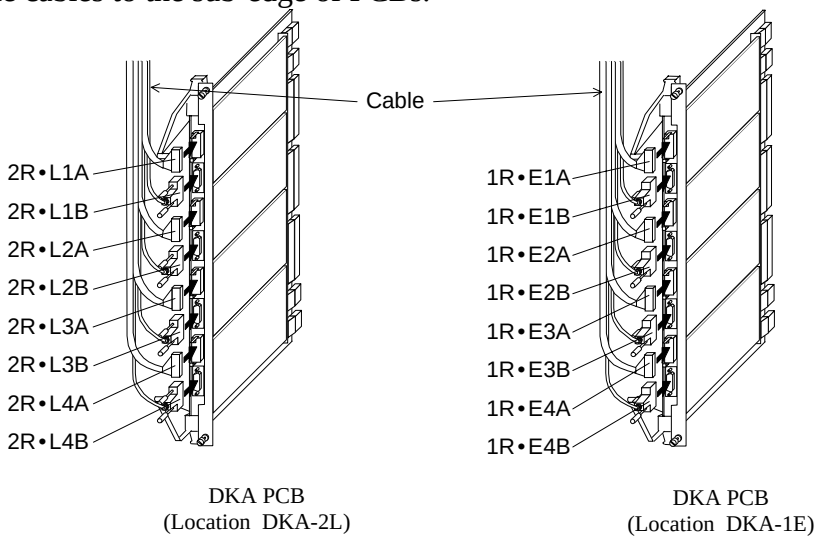

Fig.3.11.3-5 Connection of cable (Add.3)

2-3 Attachment of the nameplate

a. Attach the nameplate referring to Fig. 3.11.3-6.

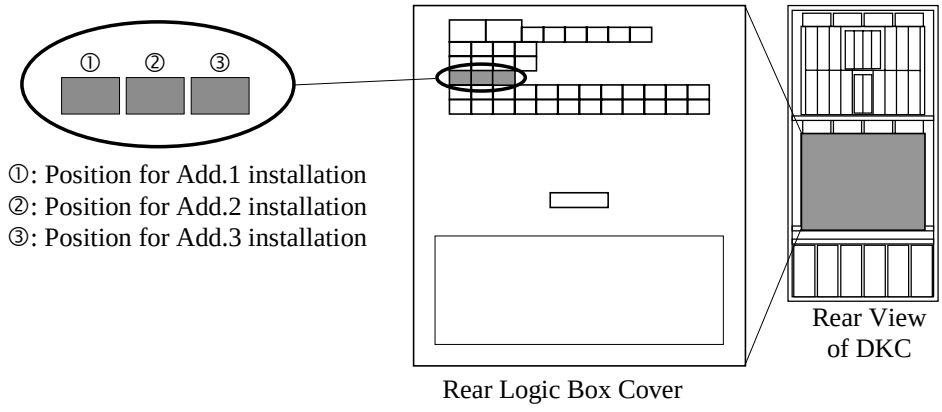

Fig. 3.11.3-6 Attachment of Nameplate

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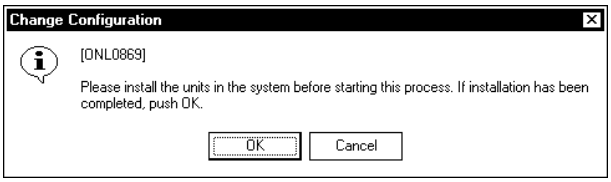
3. SVP post procedure

1. <Check that hardware components are installed>
   Select (CL) [OK] after making sure that all hardware components are installed correctly in response to “Please install the units in the system before starting this process. If installation has been completed, push OK.”.



---

2. “Waiting for Power Event... Usually, several minutes (maximum 15 minutes)” is displayed.

   If [ONL3437E] or [ONL3438E] is displayed, please refer 2.11.1. (INST02-630)

---

3. <DKU PATH INLINE>
   When DKA is installed, “DKU PATH INLINE is now running...” is displayed.

---

4. <End of system update processing>
   “Renewal process has completed. Please check the subsystem status.” is displayed when recovery processing on all installed components is completed. Select (CL) [OK] in response to this message.

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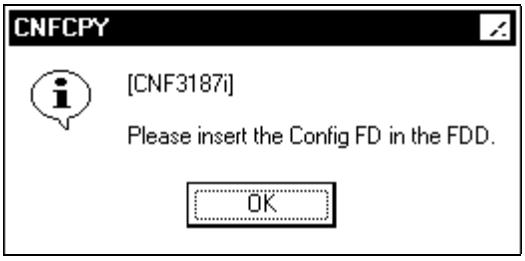
5.

"Reading subsystem configuration data..." is displayed.
"Please insert the Config FD in the FDD." is displayed.
Insert the configuration FD into FDD, and select (CL) [OK].

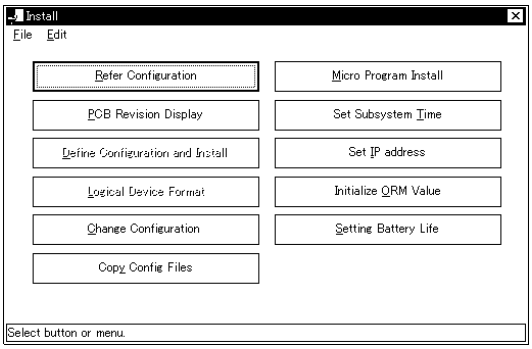


6.

When this procedure is completed, the message "Please remove the Config FD." is displayed.
Remove the FD, select (CL) [OK].

7.

After the procedure is completed, return to 'Install'.
Select (CL) [File]-[Exit].



8. <Mode Change>
Change the mode to View Mode.

Return to the work table (INST02-50) and perform rest of the works.

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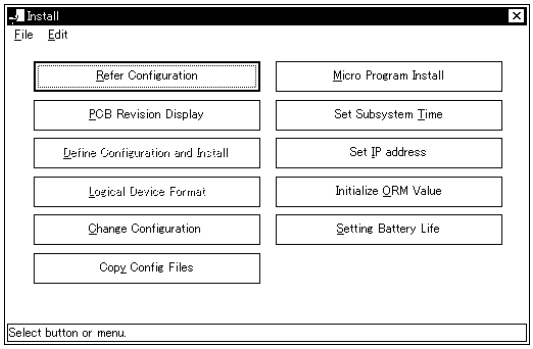
3.11.4 When performing addition of the data/spare HDD and DKA (DKC-F460I-200, DKU-F455I-36K4/36K1/72J4/72J1/72K4/72K1/146J4/146J1/146JF/146JS/146JQ/146JM)

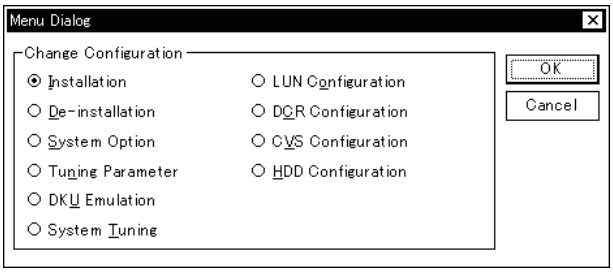
1. Setting up the New Device Structure Information

1. <Mode Change>
   Change the mode to Modify Mode.
   Select (CL) [Install].

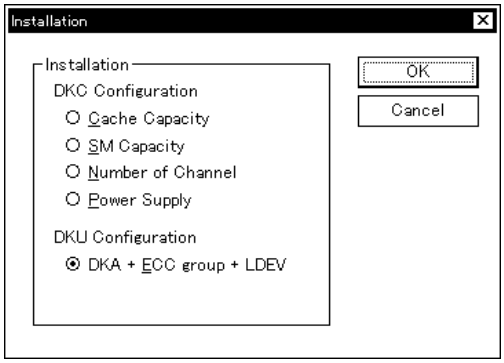
2. <Start the 'Menu Dialog' screen>
   Select (CL) [Change Configuration].



3. <Start Device Structure Setup screen>
   Select (CL) [Installation] in the 'Menu Dialog' dialog box and select (CL) [OK].



4. <Select a part to be changed>
   Select (CL) [DKA + ECC group + LDEV], and select (CL) [OK].



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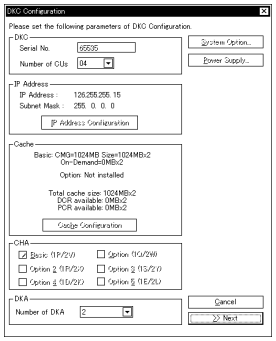
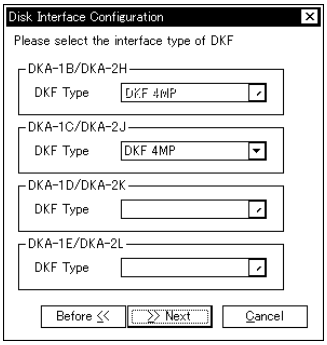
5. <Update Configuration Information>
   Define the number of CU in DKC and the number of DKA in the 'DKC Configuration' window.

   Make sure that the entered item is correct and select (CL) [>>Next].

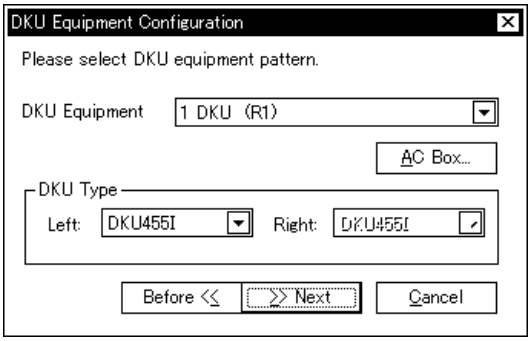
   Note: There may be a case where an addition of the SM is required to add the CU.
   When adding the SM, refer to page INST03-SM-10.



6. <Setting DKA type>
   Define the DKA type in the 'Disk Interface Configuration' dialog box. After setting it, select (CL) the [>>Next] button.



7. <DKU Equipment>
   The DKU equipment pattern and DKU type is displayed in the 'DKU Equipment' configuration window.
   Select (CL) [>>Next].



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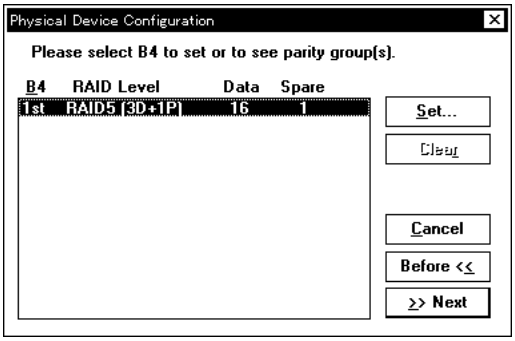
8. <Change Drive Configuration Information>
Define drive configuration according to the 'Physical Device Configuration' screen.
Detailed procedure is shown below.
[Set...]: Defines the parity group or spare disk. The routine proceeds to Step 8-1.
[Clear...]: Cancels the setting of the B4.
After setting up all items, select (CL) [>>Next]. Go to step 9.



Selecting (CL) [Before<<] returns you to the previous screen.

[Multi Cabinet Model]

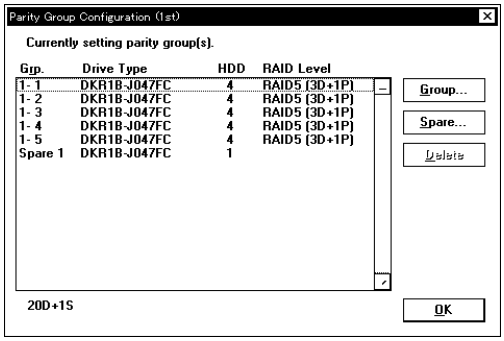
B4	Location	B4	Location
1st	HDU-R10, 11, 12, 13	7th	HDU-L20, 21, 22, 23
2nd	HDU-R14, 15, 16, 17	8th	HDU-L24, 25, 26, 27
3rd	HDU-L10, 11, 12, 13	9th	HDU-R30, 31, 32, 33
4th	HDU-L14, 15, 16, 17	10th	HDU-R34, 35, 36, 37
5th	HDU-R20, 21, 22, 23	11th	HDU-L30, 31, 32, 33
6th	HDU-R24, 25, 26, 27	12th	HDU-L34, 35, 36, 37

Note: The 9th to 12th of the B4 are valid only when the DKUs for the RAID 400 are connected.

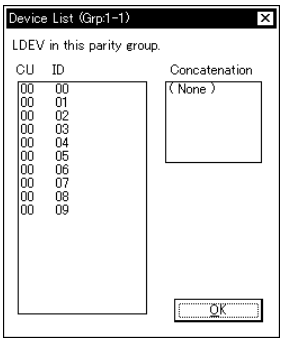
[Single Cabinet Model]

B4	Location	Comment
1st	HDU-0, 1, 2, 3	HDD-X00 ~ X0F
2nd	HDU-0, 1, 2, 3	HDD-X10 ~ X1F

8-1. <Define Parity Group>
[Group...]: Defines the parity group. See Step 8-1-1.
[Spare...]: Defines the spare drive. See Step 8-1-2.
[Delete]: Deletes the added parity group or spare drive.
Grp*: A parity group where RAID Concatenation is installed.
Note: If you want to set any Spare Drive in B4, please define the Spare Drive first.
After setting up all items, select (CL) [OK]. Return to step 8.



- To display LDEV ID in Parity group, select an item to be displayed and select (DC) this item on list box. The 'Device List' dialog box will appear.
"(no LDEV)" is displayed for the added parity group.



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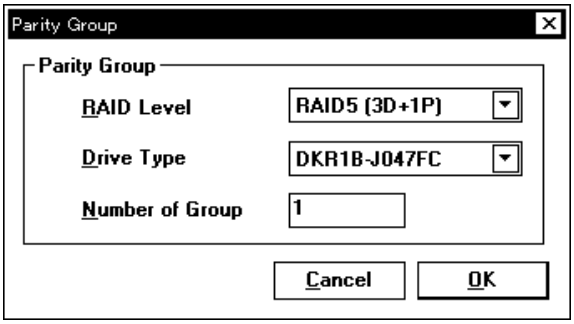
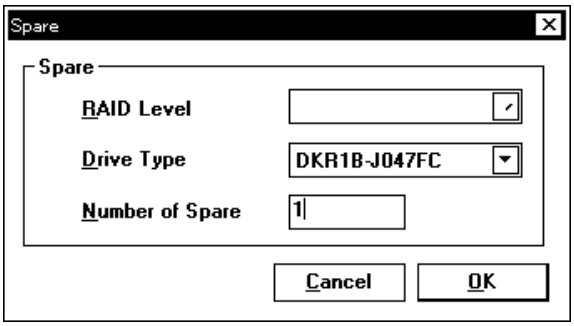
8-1-1.

Define the RAID Level and the Drive Type and the Number of Group in the 'Parity Group' dialog box.
Then select (CL) [OK]. Return to step 8-1.



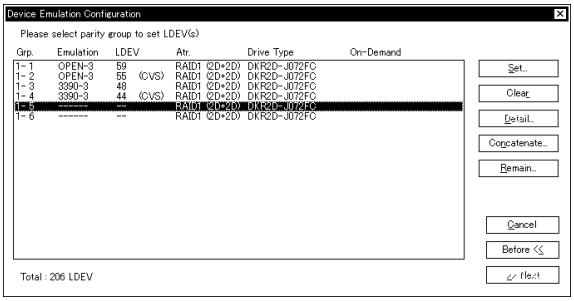
8-1-2.

Define the RAID Level and the Drive Type and the Number of Spare in the 'Spare' dialog box.
Then select (CL) [OK]. Return to step 8-1.



9. <Define Device Emulation>

After setting up all items for definition of Device Emulation, select (CL) [>>Next].
Selecting (CL) [Before<<] returns you to the previous screen.



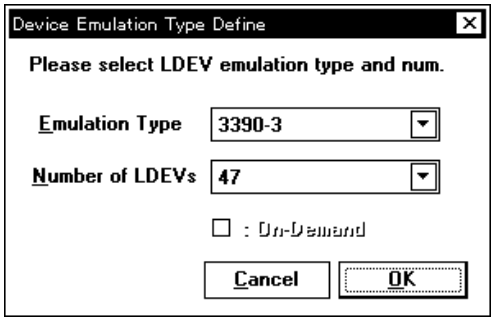
For defining Device Emulation:
Select (CL) parity group and select (CL) [Set...].
Go to step 9-1

For detailed display:
Select (CL) parity group and select (CL) [Detail...].
The detailed information is displayed.
(CVS): A parity group where CVS is installed.
Grp*: A parity group where RAID Concatenation is installed.

9-1.

After setting up all items in the 'Device Emulation Type Define' dialog box, select (CL) [OK].

Selecting (CL) [Cancel] returns you to step 9.



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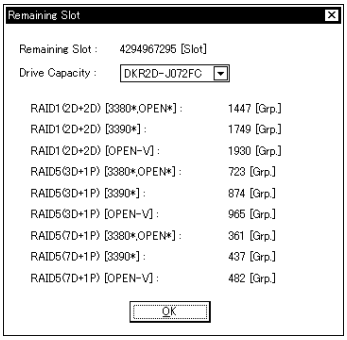
9-2. <Displaying remaining slot(s)>

The Remaining Slot window is displayed.
An allowable number of times of PDEV addition corresponding to the specified drive type is displayed.



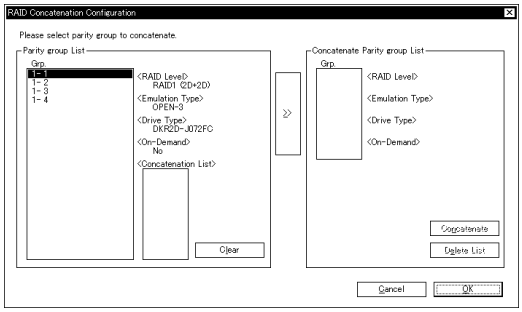
Select (CL) the [OK]. The routine returns to Step 9.

9-3. <Setting RAID concatenation>

Select (CL) [Concatenate...].
When you do not perform the RAID concatenation, return to Step 9.

9-4.

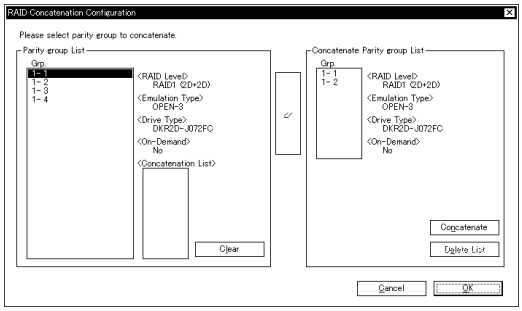
Parity groups to which the RAID concatenation can be applied are displayed in the Parity group List.
Select (CL) parity groups to which you want to apply the RAID concatenation and press (CL) the [>>] button.



Note: Only the parity groups, which have been added and to which the RAID concatenation can be applied are displayed in the Parity group List.

9-5.

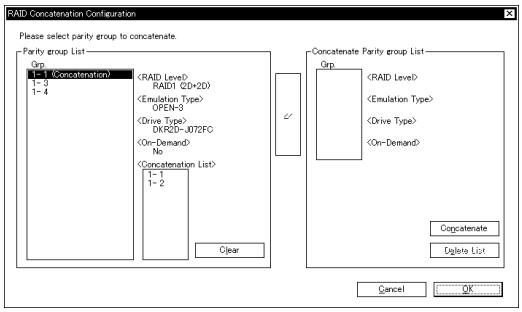
The selected parity groups are registered in the Concatenate Parity group List. Then press (CL) the [Concatenate] button.



Note: The [Concatenate] button cannot be pressed if the concatenation does not meet a condition of the RAID concatenation. Adjust the number of the parity groups in the Concatenate Parity group List.

9-6.

When the RAID concatenation is completed, "(Concatenation)" is displayed in the Parity group List. Selecting the "(Concatenation)" displays the concatenated parity groups in the Concatenation List.
Pressing the [Clear] button cancels the RAID concatenation.



When all the settings of the RAID concatenation are completed, press (CL) the [OK] button.
Pressing (CL) the [Cancel] button returns the routine to Step 9.

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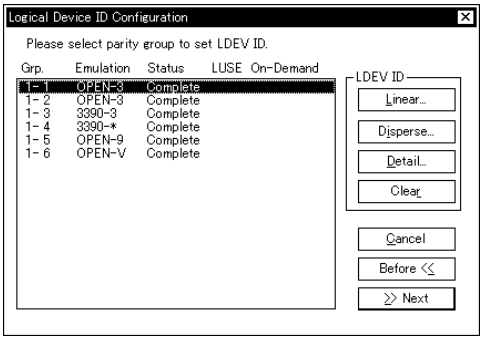
10. <Define LDEV ID>

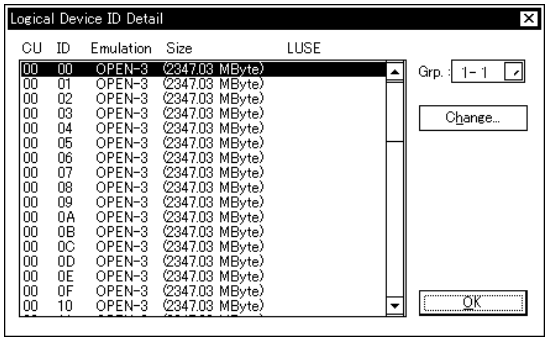


Definition Screen for LDEV ID.
Select (CL) the parity group to be defined and select (CL) a function from the [LDEV ID] list box.
[Linear...]: LDEV ID is assigned to LDEV in the order of parity groups. See step 10-1.
[Disperse...]: LDEV is assigned discretely in the order of parity groups. See step 10-1.
[Detail...]: A screen to define LDEV in detail is displayed. See step 10-2. (When plural groups are selected (CL), it is invalid.)
[Clear]: Select (CL) [Clear] to delete.
Grp*: The top parity group where RAID Concatenation is installed.

- '-----' is displayed in the Status area for the parity group to which LDEV ID is not assigned.

After setting up all items, select (CL) [>>Next]. (Go to Step 11)

10-1. Detailed Definition Screen for LDEV ID

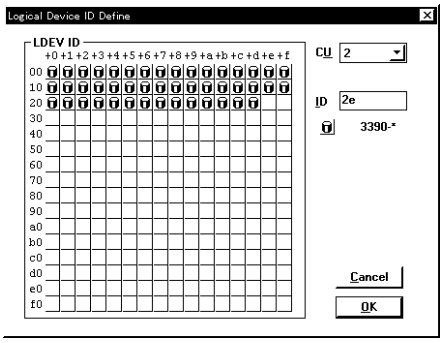


LDEV ID is defined in detail for each LDEV in the parity group.
Select (CL) LDEV from the list box and select (CL) [Change...].
The screen for LDEV ID input is displayed.
After setting, select (CL) [OK]. Return to step 10

- '-----' is displayed in the CU area and the ID area for the LDEV to which LDEV ID is not assigned.

Note: In the case of a RAID Concatenation Group, LDEV of the parity group selected by the "Grp List" is displayed.

10-2. Input LDEV ID



Select CU ID in the CU combo box.
The status of usage of ID in the CU is displayed in the LDEV ID panel.
White disk of panel: not used
Patterned disk of panel: using
Input LDEV ID you want to set or the head LDEV ID in the ID Edit box.
After setting, select (CL) [OK]. Return to step 10-1

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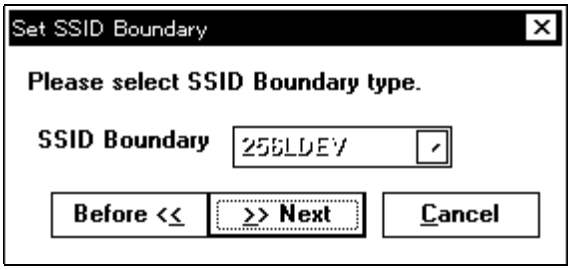
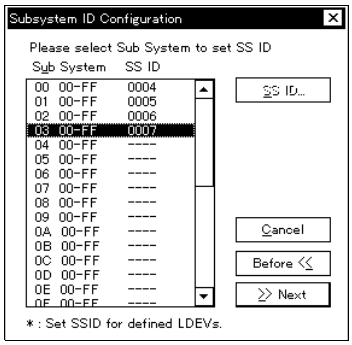
11. <Define Subsystem ID Boundary>
Press (CL) the [>>Next] button to change the screen to the “Set SSID Boundary” screen.

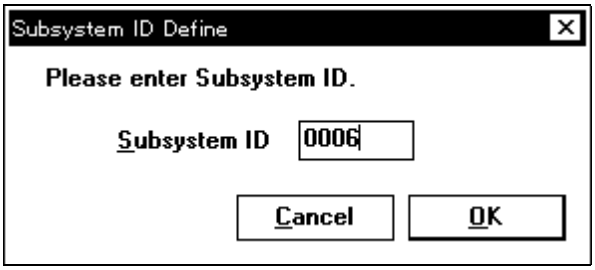


12. <Define Subsystem ID>
To define Subsystem ID, select (CL) the item from the list box and select (CL) [SSID]. See step 12-1.

After setting, select (CL) [>>Next].

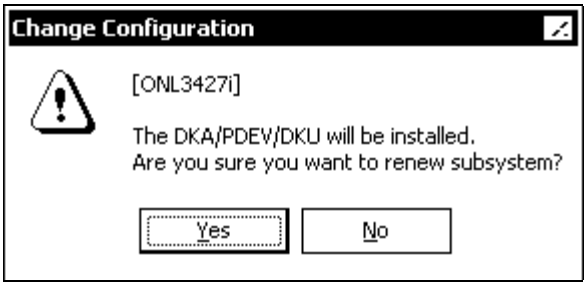


12-1. Define Subsystem ID and select (CL) [OK].
Return to step 12.



13. <Start installation>
Select (CL) [Yes] in response to “The DKA/PDEV/DKU will be installed. Are you sure you want to renew subsystem?”.

When [No] is selected (CL), returns to INST03-DKA-400 step 3.



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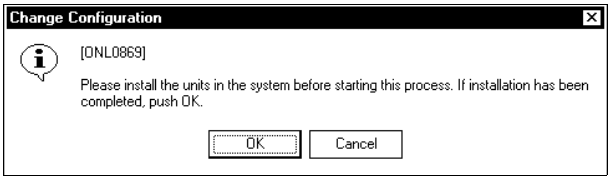
14. <Download microprogram>
    Microprograms are automatically downloaded for each processor.

15. <Install DKA>
    “Upgrading of the DKA...”

16. <Check that hardware components are installed>
    At this point refrain from pressing the [OK] button.
    “Please install the units in the system before starting this process. If installation has been completed, push OK.” is displayed.



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2 Installation Procedure of Additional Disk Adapter (DKC-F460I-200)

Note: Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

2-1 Insertion of the PCBs

Note: Make sure that a color of the levers of the PCB to be installed is blue. Never insert a PCB whose lever is not blue.

a. Remove the dummy plate installed in the installation location referring to the Fig. 3.11.4-1. (Note) Dummy plates should be stored for future use in De-installation.
b. Insert the PCBs to the correct locations in the Logic Box. Refer to Table 3.11.4-1.
c. Fasten the two screws referring to Fig. 3.11.4-2.

Table 3.11.4-1 Inserting Location (Rear of the unit)

Cluster	CL2							CL1				
Slot No.	M	L	K	J	H	G	F	E	D	C	B	A
Function	CSW	DKA	DKA	DKA	DKA	CACHE	CACHE	DKA	DKA	DKA	DKA	CSW
Location No.	CSW -2M	DKA -2L	DKA -2K	DKA -2J	DKA -2H	CACHE -2G	CACHE -2F	DKA -1E	DKA -1D	DKA -1C	DKA -1B	CSW -1A
Order of addition		Add.3	Add.2	Add.1	Basic			Add.3	Add.2	Add.1	Basic	
Number of DKAs set through the SVP		–	–	–	2			–	–	–	2	
		–	–	4				–	–	4		
		–	6					–	6			
		8						8				

Up to 4 disk adapters can be installed in the subsystem.

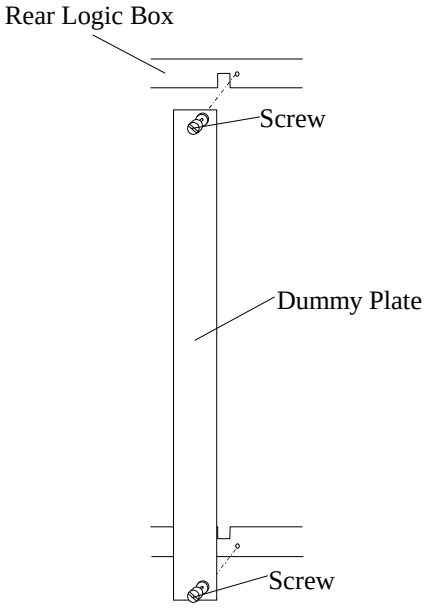

Fig. 3.11.4-1 Removal of Dummy Plate

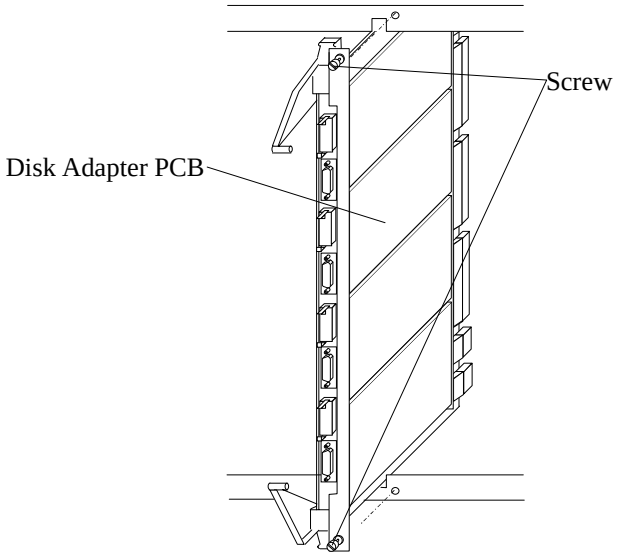

Fig. 3.11.4-2 Insertion of PCB

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2-2 Connection of cables

In case of Add.1

CAUTION

A serious failure occurs if any of cables/connectors is wrongly connected.
Since a label bearing a connection destination is affixed on each cable/connector, work very carefully referring to it and the wiring diagram.

- Colors of the labels of the subsystem shipped from the factory from June of 2002 and on are as follows. Labels on the cluster1 (CL1) side and the cluster2 (CL2) side are white and yellow respectively.

a. Connect the cables to the sub-edge of PCBs. (Refer to Fig. 3.11.4-3.)

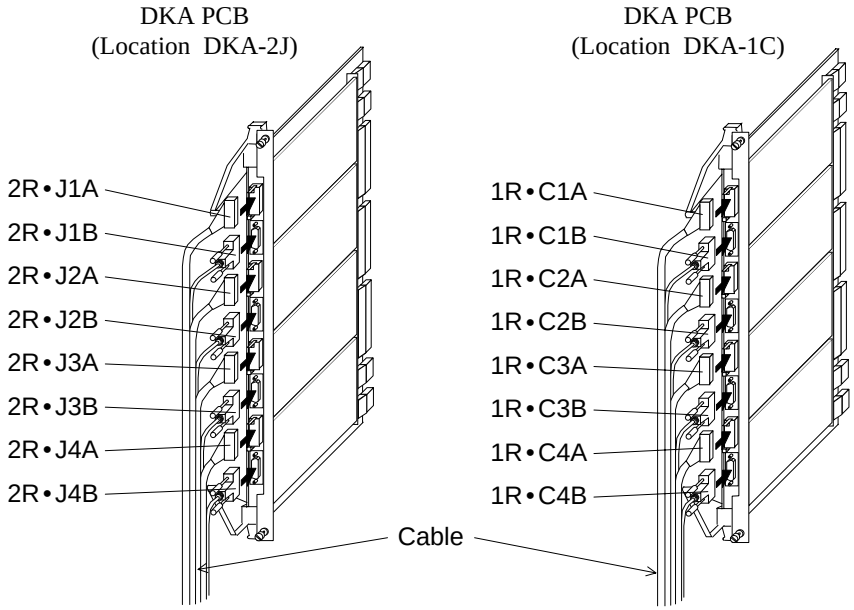

Fig.3.11.4-3 Connection of cable (Add.1)

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In case of Add.2

Caution:
Make sure that the AC power is applied to the added DKUs (DKU-L1 and DKU-L2) and the main breakers of the DKUs (DKU-L1 and DKU-L2) are turned on.
The DKU is automatically powered on when the DEV interface cable is connected to the DKA.

⚠ CAUTION

A serious failure occurs if any of cables/connectors is wrongly connected.
Since a label bearing a connection destination is affixed on each cable/connector, work very carefully referring to it and the wiring diagram.

- Colors of the labels of the subsystem shipped from the factory from June of 2002 and on are as follows. Labels on the cluster1 (CL1) side and the cluster2 (CL2) side are white and yellow respectively.

a. Connect the cables to the sub-edge of PCBs.

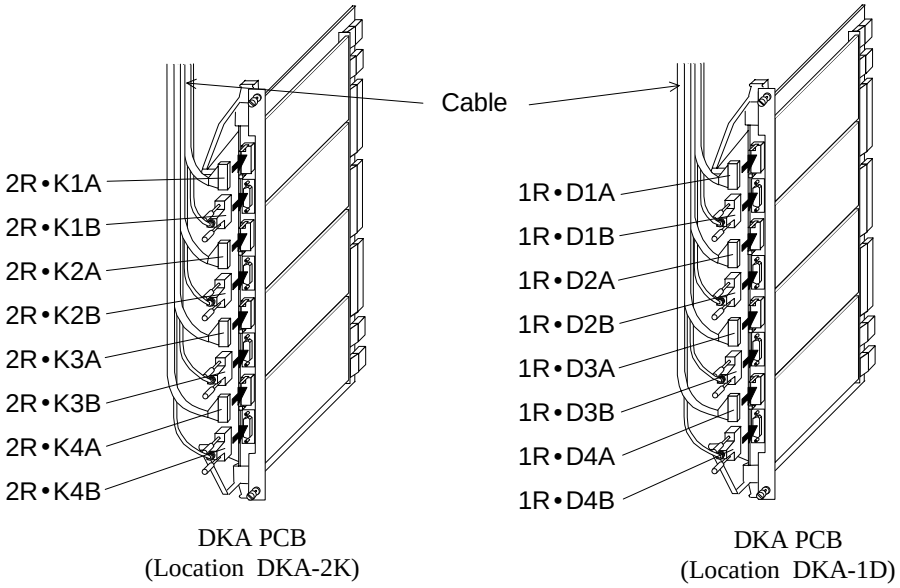

Fig.3.11.4-4 Connection of cable (Add.2)

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In case of Add.3

Caution:
Make sure that the AC power is applied to the added DKUs (DKU-L1 and DKU-L2) and the main breakers of the DKUs (DKU-L1 and DKU-L2) are turned on.
The DKU is automatically powered on when the DEV interface cable is connected to the DKA.

⚠ CAUTION

A serious failure occurs if any of cables/connectors is wrongly connected.
Since a label bearing a connection destination is affixed on each cable/connector, work very carefully referring to it and the wiring diagram.

- Colors of the labels of the subsystem shipped from the factory from June of 2002 and on are as follows. Labels on the cluster1 (CL1) side and the cluster2 (CL2) side are white and yellow respectively.

a. Connect the cables to the sub-edge of PCBs.

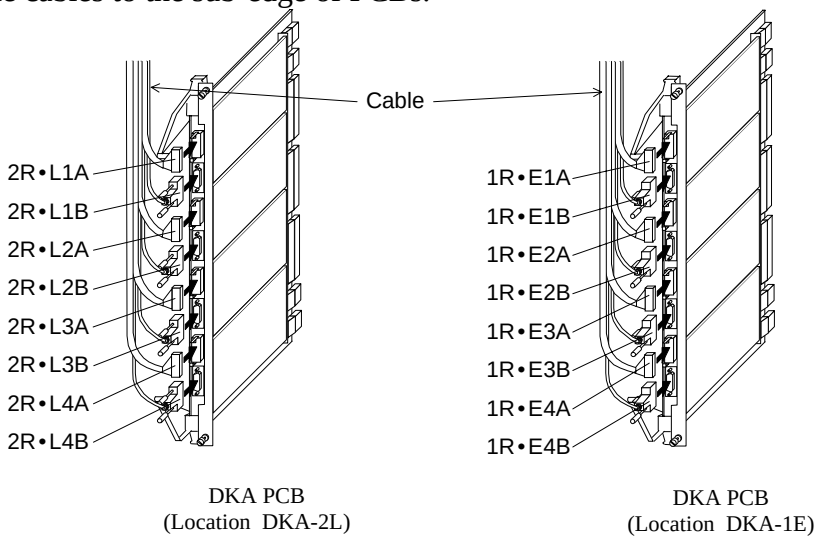

Fig.3.11.4-5 Connection of cable (Add.3)

2-3Attachment of the nameplate

a. Attach the nameplate referring to Fig. 3.11.4-6.

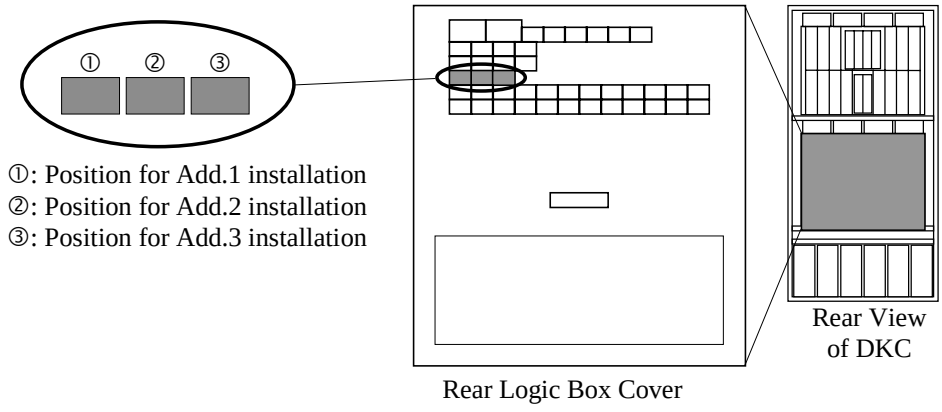

Fig. 3.11.4-6 Attachment of Nameplate

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3. Installation Procedure of HDD Canister

3-1 Confirmation of position to install HDD canister

(i) RAID5(3D+1P)/RAID1(2D+2D)

Relations between the installation locations of the RAID groups and the RAID group numbers set through the SVP are shown in Table 3.11.4-2.

Table 3.11.4-2 Relation between HDDs installation order and RAID group number (3D+1P/2D+2D)

	L2 DKU		L1 DKU		DKC		R1 DKU		R2 DKU	
	Installation Order	RAID Group No.	Installation Order	RAID Group No.			Installation Order	RAID Group No.	Installation Order	RAID Group No.
Upper	223	8-1	159	4-1	4th DKA Pair	2nd DKA Pair	032	2-1	096	6-1
	224	8-2	160	4-2			033	2-2	097	6-2
	225	8-3	161	4-3			034	2-3	098	6-3
	226	8-4	162	4-4			035	2-4	099	6-4
	227	8-5	163	4-5			036	2-5	100	6-5
	228	8-6	164	4-6			037	2-6	101	6-6
	229	8-7	165	4-7			038	2-7	102	6-7
	230	8-8	166	4-8			039	2-8	103	6-8
	231	8-9	167	4-9			040	2-9	104	6-9
	232	8-10	168	4-10			041	2-10	105	6-10
	233	8-11	169	4-11			042	2-11	106	6-11
	234	8-12	170	4-12			043	2-12	107	6-12
	235	8-13	171	4-13			044	2-13	108	6-13
	236	8-14	172	4-14			045	2-14	109	6-14
	237	8-15	173	4-15			046	2-15	110	6-15
	238	8-16	174(Spare) *2	4-16			047(Spare) *2	2-16	111	6-16
	239	8-17	175	4-17			048	2-17	112	6-17
	240	8-18	176	4-18			049	2-18	113	6-18
	241	8-19	177	4-19			050	2-19	114	6-19
	242	8-20	178	4-20			051	2-20	115	6-20
	243	8-21	179	4-21			052	2-21	116	6-21
	244	8-22	180	4-22			053	2-22	117	6-22
	245	8-23	181	4-23			054	2-23	118	6-23
	246	8-24	182	4-24			055	2-24	119	6-24
	247	8-25	183	4-25			056	2-25	120	6-25
	248	8-26	184	4-26			057	2-26	121	6-26
	249	8-27	185	4-27			058	2-27	122	6-27
	250	8-28	186	4-28			059	2-28	123	6-28
	251	8-29	187	4-29			060	2-29	124	6-29
	252	8-30	188	4-30			061	2-30	125	6-30
	253	8-31	189	4-31			062	2-31	126	6-31
	254	8-32	190	4-32			063	2-32	127	6-32
Lower	191	7-1	128	3-1	3rd DKA Pair	1st DKA Pair	001	1-1	064	5-1
	192	7-2	129	3-2			002	1-2	065	5-2
	193	7-3	130	3-3			003	1-3	066	5-3
	194	7-4	131	3-4			004	1-4	067	5-4
	195	7-5	132	3-5			005	1-5	068	5-5
	196	7-6	133	3-6			006	1-6	069	5-6
	197	7-7	134	3-7			007	1-7	070	5-7
	198	7-8	135	3-8			008	1-8	071	5-8
	199	7-9	136	3-9			009	1-9	072	5-9
	200	7-10	137	3-10			010	1-10	073	5-10
	201	7-11	138	3-11			011	1-11	074	5-11
	202	7-12	139	3-12			012	1-12	075	5-12
	203	7-13	140	3-13			013	1-13	076	5-13
	204	7-14	141	3-14			014	1-14	077	5-14
	205	7-15	142	3-15			015	1-15	078	5-15
	206	7-16	Spare *1	3-16			Spare *1	1-16	079	5-16
	207	7-17	143	3-17			016	1-17	080	5-17
	208	7-18	144	3-18			017	1-18	081	5-18
	209	7-19	145	3-19			018	1-19	082	5-19
	210	7-20	146	3-20			019	1-20	083	5-20
	211	7-21	147	3-21			020	1-21	084	5-21
	212	7-22	148	3-22			021	1-22	085	5-22
	213	7-23	149	3-23			022	1-23	086	5-23
	214	7-24	150	3-24			023	1-24	087	5-24
	215	7-25	151	3-25			024	1-25	088	5-25
	216	7-26	152	3-26			025	1-26	089	5-26
	217	7-27	153	3-27			026	1-27	090	5-27
	218	7-28	154	3-28			027	1-28	091	5-28
	219	7-29	155	3-29			028	1-29	092	5-29
	220	7-30	156	3-30			029	1-30	093	5-30
	221	7-31	157	3-31			030	1-31	094	5-31
	222	7-32	158	3-32			031	1-32	095	5-32

*1: To be left vacant or a spare disk is to be installed. *2: A data or spare disk is to be installed.

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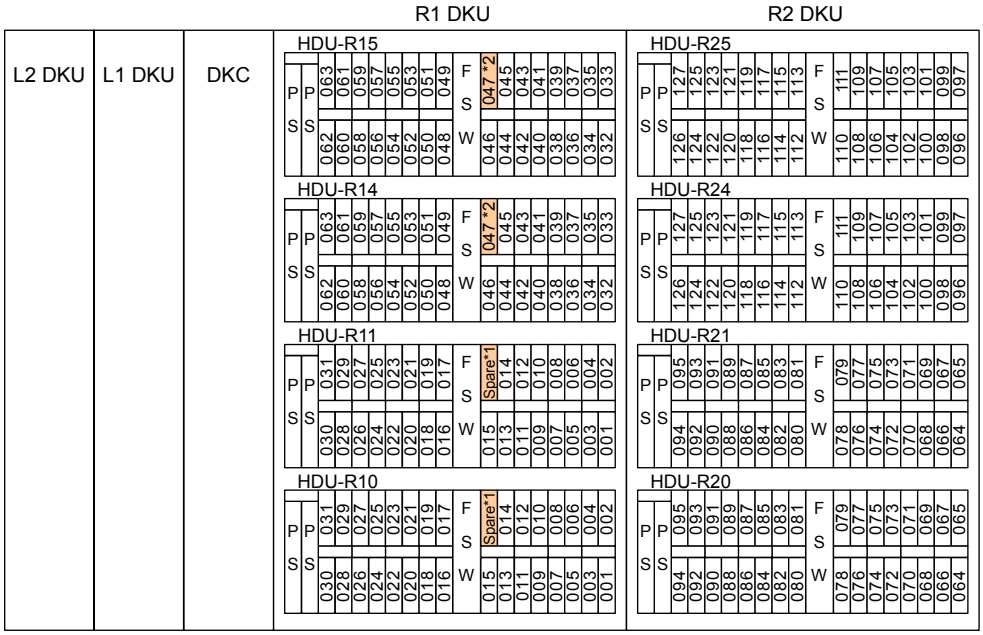
(1) Make sure of the location where the RAID group is installed and that where the HDD canister is to be added.

No.	Model Number	Model Name	Data and Parity
1	DKU-F455I-36K4/72J4/72K4/146J4/146JF/146JQ	4 HDD Canisters	Data and Parity Drive



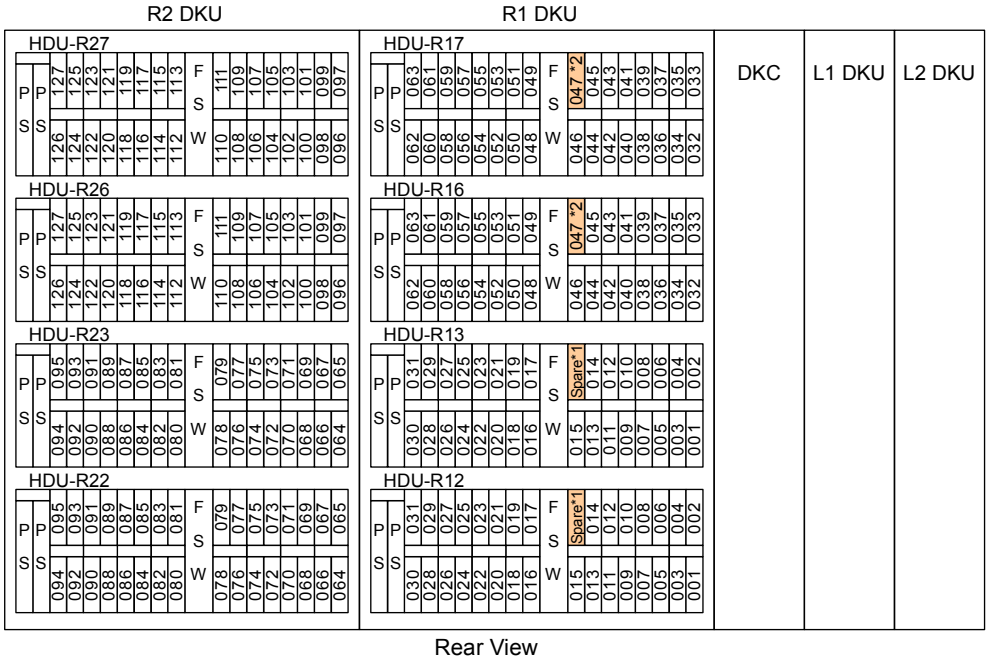


Fig. 3.11.4-7 (3D+1P) or (2D+2P) Data Drive/Parity Drive Expansion Sequence (1/2)

The relationship between HDDs installation order and RAID group number is shown in the Table 3.11.4-2.

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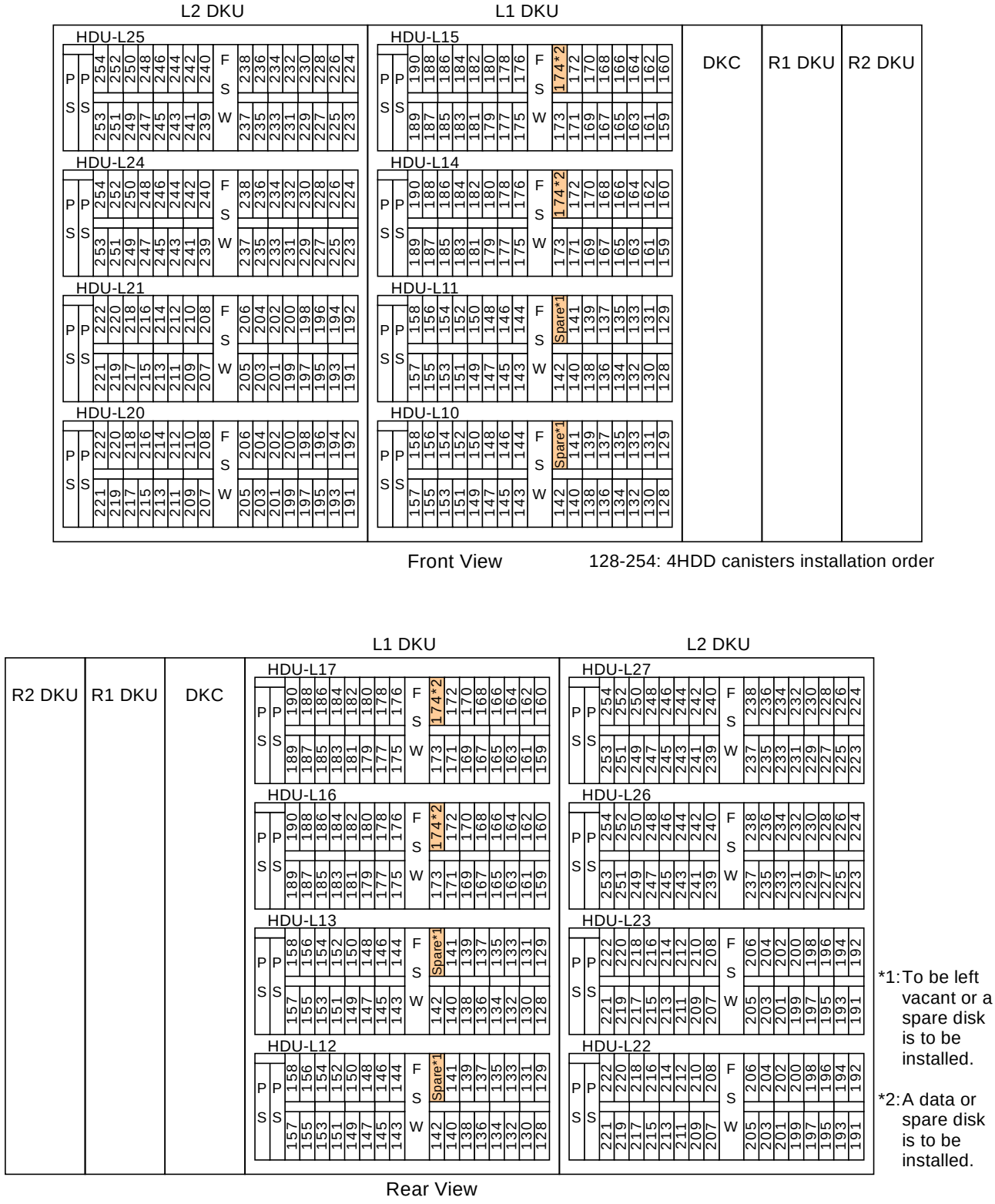

Fig. 3.11.4-7 (3D+1P) or (2D+2P) Data Drive/Parity Drive Expansion Sequence (2/2)

The relationship between HDDs installation order and RAID group number is shown in the Table 3.11.4-2.

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(ii) RAID5 (7D+1P)

Relations between the installation locations of the RAID groups and the RAID group numbers set through the SVP are shown in Table 3.11.4-3.

Table 3.11.4-3 Relation between HDDs installation order and RAID group number (7D+1P)

L2 DKU		L1 DKU		DKC		R1 DKU		R2 DKU	
Installation Order	RAID Group No.	Installation Order	RAID Group No.			Installation Order	RAID Group No.	Installation Order	RAID Group No.
095	7-1 , (8-1)	064	3-1 , (4-1)			001	1-1 , (2-1)	032	5-1 , (6-1)
096	7-2 , (8-2)	065	3-2 , (4-2)			002	1-2 , (2-2)	033	5-2 , (6-2)
097	7-3 , (8-3)	066	3-3 , (4-3)			003	1-3 , (2-3)	034	5-3 , (6-3)
098	7-4 , (8-4)	067	3-4 , (4-4)			004	1-4 , (2-4)	035	5-4 , (6-4)
099	7-5 , (8-5)	068	3-5 , (4-5)			005	1-5 , (2-5)	036	5-5 , (6-5)
100	7-6 , (8-6)	069	3-6 , (4-6)			006	1-6 , (2-6)	037	5-6 , (6-6)
101	7-7 , (8-7)	070	3-7 , (4-7)			007	1-7 , (2-7)	038	5-7 , (6-7)
102	7-8 , (8-8)	071	3-8 , (4-8)			008	1-8 , (2-8)	039	5-8 , (6-8)
103	7-9 , (8-9)	072	3-9 , (4-9)			009	1-9 , (2-9)	040	5-9 , (6-9)
104	7-10 , (8-10)	073	3-10 , (4-10)			010	1-10 , (2-10)	041	5-10 , (6-10)
105	7-11 , (8-11)	074	3-11 , (4-11)			011	1-11 , (2-11)	042	5-11 , (6-11)
106	7-12 , (8-12)	075	3-12 , (4-12)			012	1-12 , (2-12)	043	5-12 , (6-12)
107	7-13 , (8-13)	076	3-13 , (4-13)			013	1-13 , (2-13)	044	5-13 , (6-13)
108	7-14 , (8-14)	077	3-14 , (4-14)			014	1-14 , (2-14)	045	5-14 , (6-14)
109	7-15 , (8-15)	078	3-15 , (4-15)	3rd / 4th	1st / 2nd	015	1-15 , (2-15)	046	5-15 , (6-15)
110	7-16 , (8-16)	(Spare)*1	3-16 , (4-16)	DKA	DKA	(Spare)*1	1-16 , (2-16)	047	5-16 , (6-16)
111	7-17 , (8-17)	079	3-17 , (4-17)	Pairs	Pairs	016	1-17 , (2-17)	048	5-17 , (6-17)
112	7-18 , (8-18)	080	3-18 , (4-18)			017	1-18 , (2-18)	049	5-18 , (6-18)
113	7-19 , (8-19)	081	3-19 , (4-19)			018	1-19 , (2-19)	050	5-19 , (6-19)
114	7-20 , (8-20)	082	3-20 , (4-20)			019	1-20 , (2-20)	051	5-20 , (6-20)
115	7-21 , (8-21)	083	3-21 , (4-21)			020	1-21 , (2-21)	052	5-21 , (6-21)
116	7-22 , (8-22)	084	3-22 , (4-22)			021	1-22 , (2-22)	053	5-22 , (6-22)
117	7-23 , (8-23)	085	3-23 , (4-23)			022	1-23 , (2-23)	054	5-23 , (6-23)
118	7-24 , (8-24)	086	3-24 , (4-24)			023	1-24 , (2-24)	055	5-24 , (6-24)
119	7-25 , (8-25)	087	3-25 , (4-25)			024	1-25 , (2-25)	056	5-25 , (6-25)
120	7-26 , (8-26)	088	3-26 , (4-26)			025	1-26 , (2-26)	057	5-26 , (6-26)
121	7-27 , (8-27)	089	3-27 , (4-27)			026	1-27 , (2-27)	058	5-27 , (6-27)
122	7-28 , (8-28)	090	3-28 , (4-28)			027	1-28 , (2-28)	059	5-28 , (6-28)
123	7-29 , (8-29)	091	3-29 , (4-29)			028	1-29 , (2-29)	060	5-29 , (6-29)
124	7-30 , (8-30)	092	3-30 , (4-30)			029	1-30 , (2-30)	061	5-30 , (6-30)
125	7-31 , (8-31)	093	3-31 , (4-31)			030	1-31 , (2-31)	062	5-31 , (6-31)
126	7-32 , (8-32)	094	3-32 , (4-32)			031	1-32 , (2-32)	063	5-32 , (6-32)

*1: To be left vacant or a spare disk is to be installed.

- Install RAID 5 (7D+1P) forming pairs using the same number of the two RAID groups (RAID groups 1 and 2, 3 and 4, 5 and 6, and 7 and 8) of RAID 5 (3D+1P).
  (Example: RAID group numbers 1-1 and 2-1)
  The types of HDDs to be installed in each pair must be the same.
- In the case of RAID 5 (7D+1P), only odd RAID numbers are displayed on the SVP. (Group numbers shown in parentheses in the table above are not displayed.)
- When RAID 5 (3D+1P) or RAID 1 (2D+2D) and RAID 5 (7D+1P) are configured mixture, note that duplicated group numbers are excluded.
  Example: When Group No. 1-1 is configured for RAID 5 (7D+1P), Group No. 2-1 is excluded and cannot be configure for RAID 5 (3D+1P).

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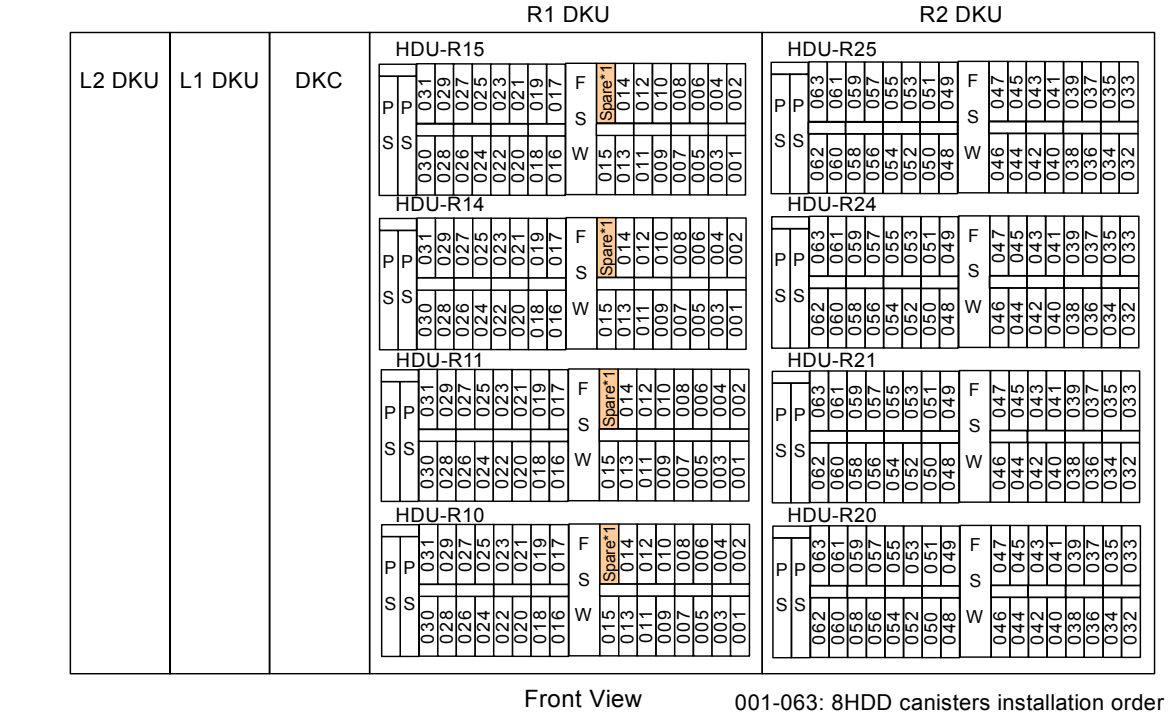
(1) Make sure of the location where the RAID group is installed and that where the HDD canister is to be added.

No.	Model Number	Model Name	Data and Parity
1	DKU-F455I-36K4/72J4/72K4/146J4/146JF/146JQ	4 HDD Canisters x 2sets	Data and Parity Drive



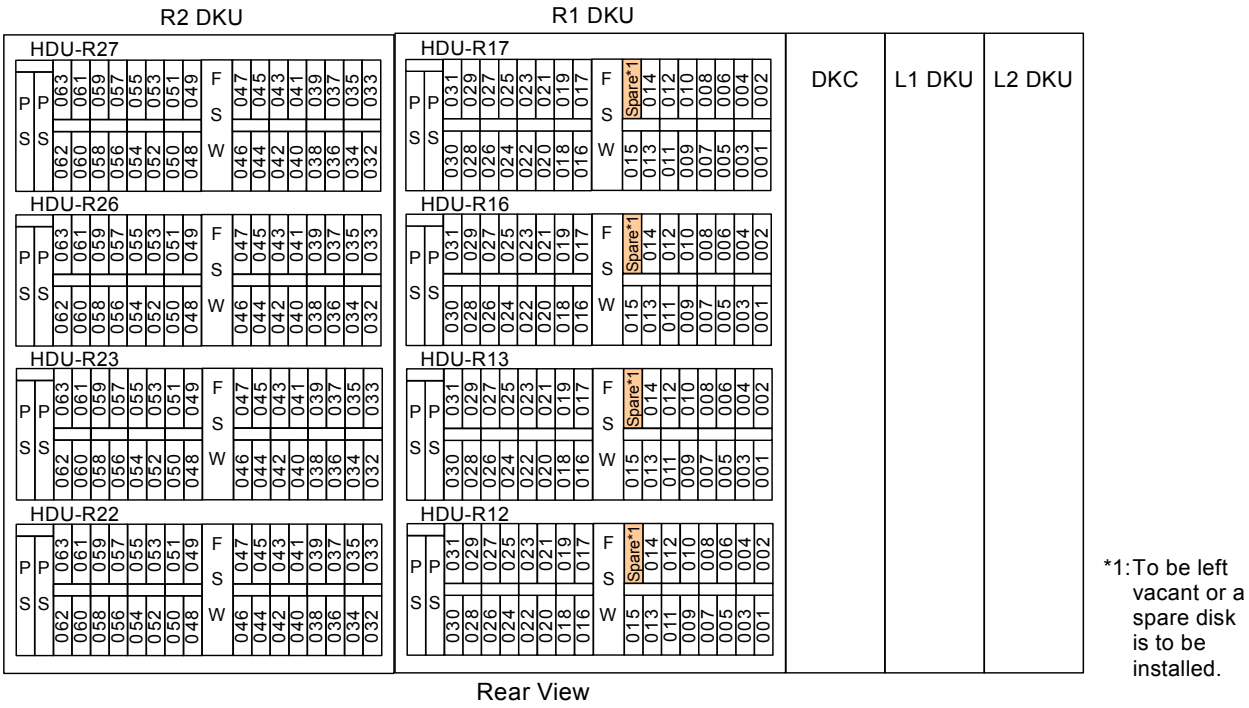


Fig. 3.11.4-8 (7D+1P) Data Drive/Parity Drive Expansion Sequence (1/2)

The relationship between HDDs installation order and RAID group number is shown in the Table 3.11.4-3.

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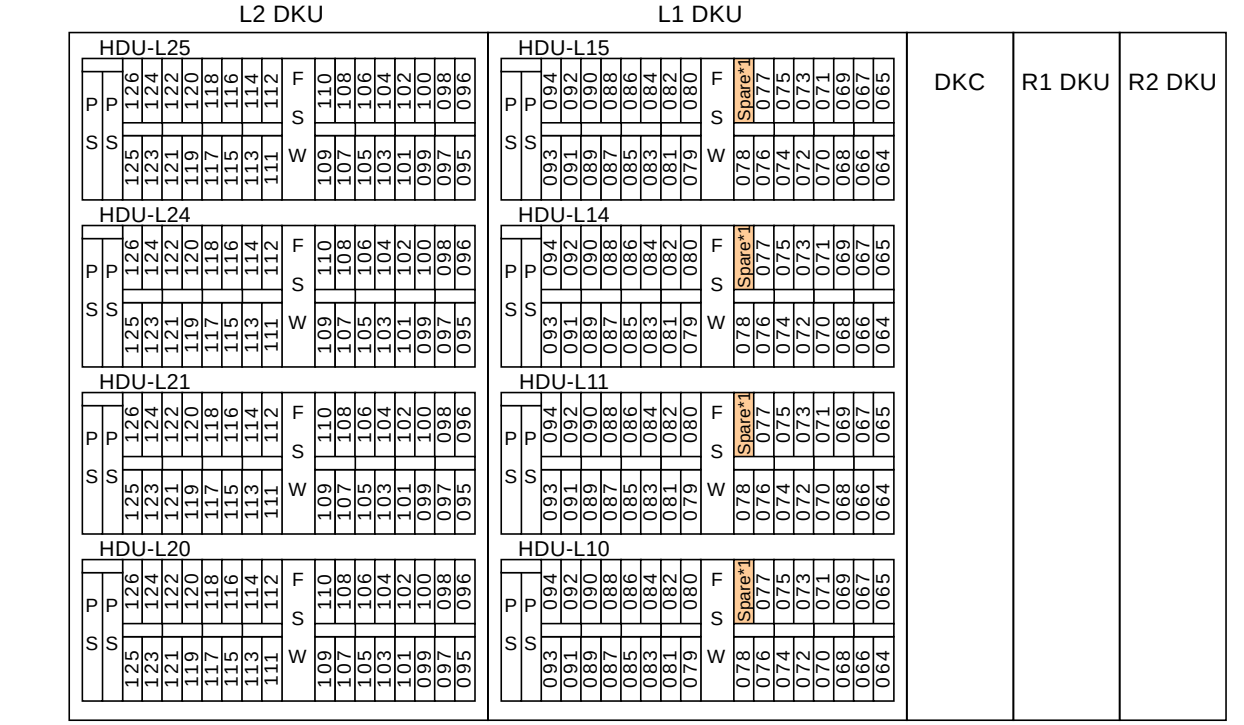

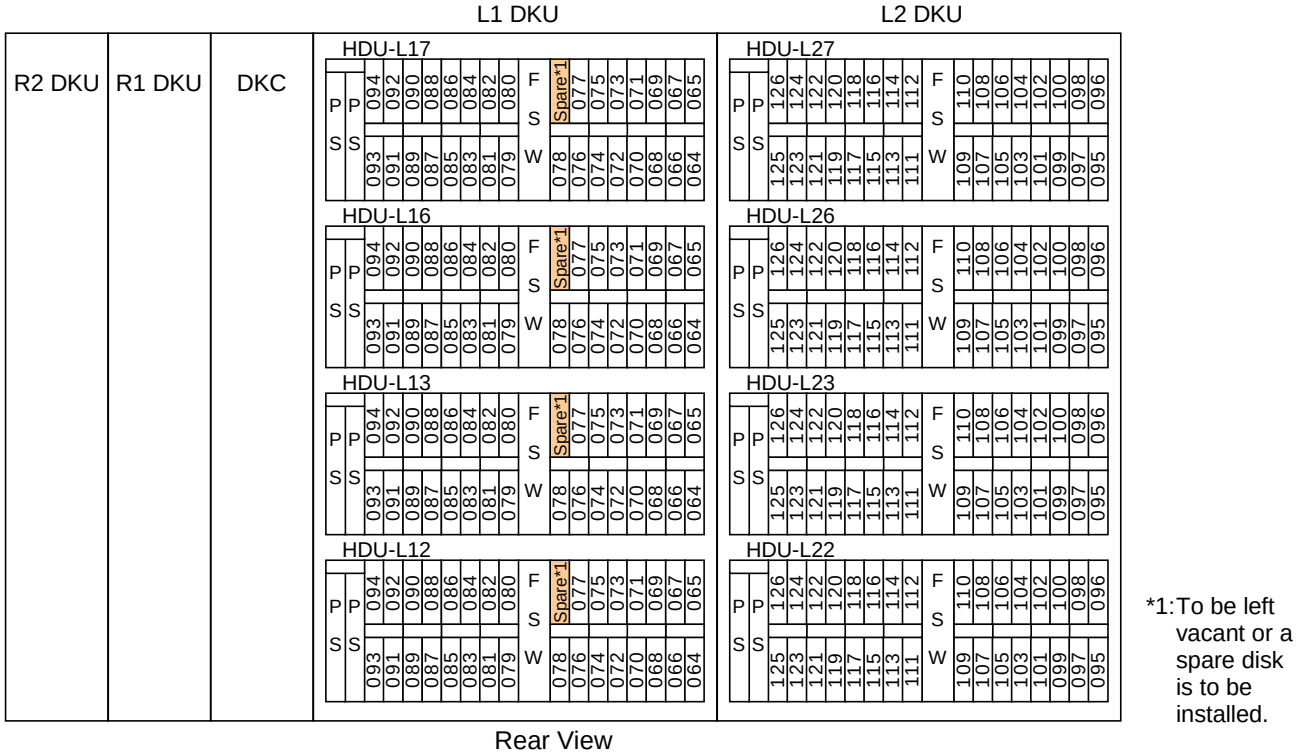

Fig. 3.11.4-8 (7D+1P) Data Drive/Parity Drive Expansion Sequence (2/2)

The relationship between HDDs installation order and RAID group number is shown in the Table 3.11.4-3.

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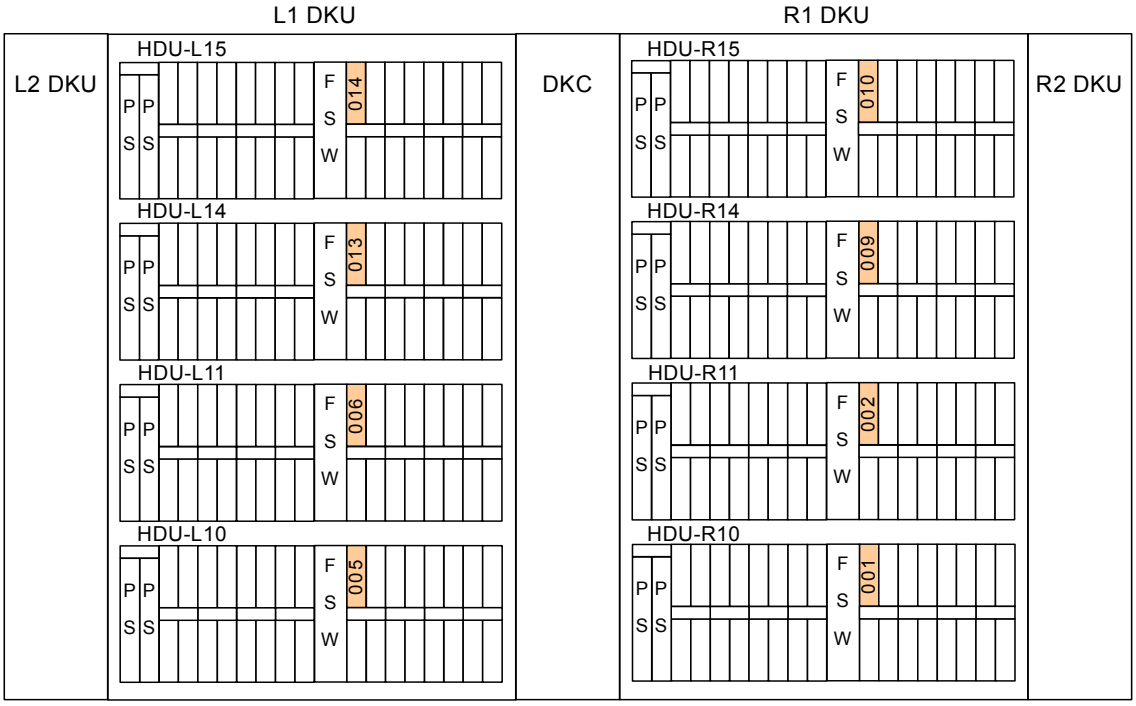
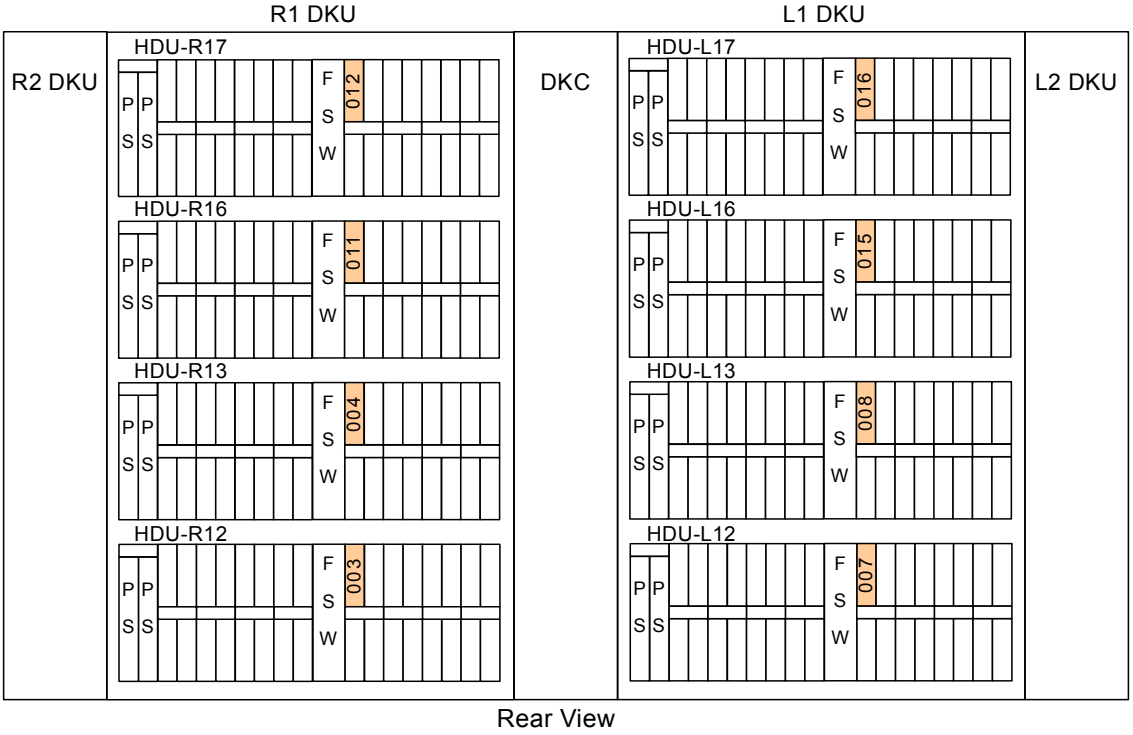
(iii) Spare HDD

No.	Model Number	Model Name	Data and Parity
1	DKU-F455I-36K1/72J1/72K1/146J1/146JS/146JM	1 HDD Canister	Spare Drive



Front View

001-016: Spare HDD canister installation order



Rear View

Fig. 3.11.4-9 Spare Drive Expansion Sequence

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3-2 Installation of the HDD Canister.

Notice:
(1) Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.
(2) Since the HDD is a precision component, handle it very carefully not to apply a vibration or shock to it.

a. Remove the dummy canister from the HDU Box.
When the dummy canister cannot be removed by pulling of it only, remove it referring to page INST03-DKA-3000.
b. Install the HDD canister. (For the detailed procedure for installation, refer to the procedure for installing HDD canister on page INST03-DKA-3010.)

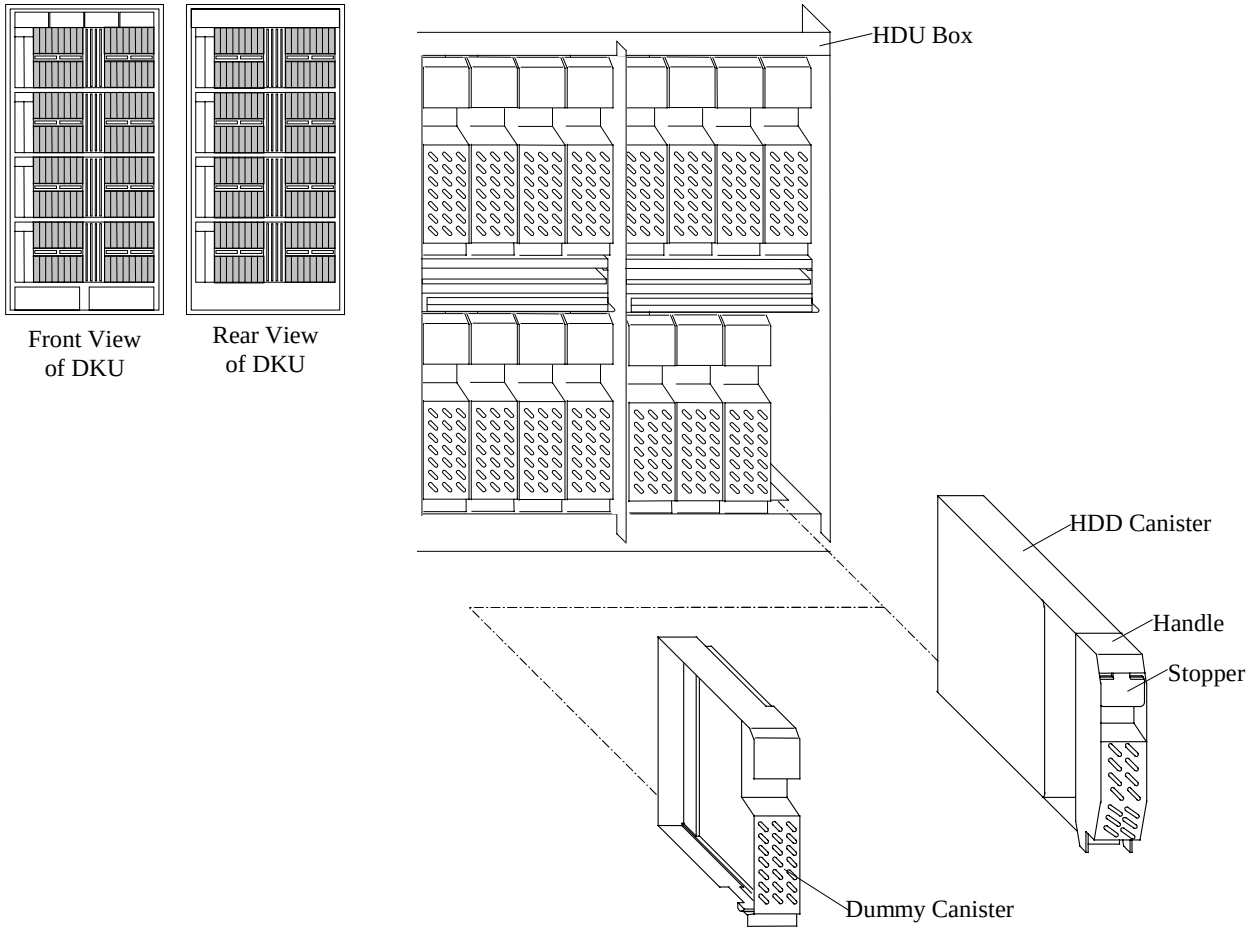

Fig. 3.11.4-10 Installation of HDD Canister

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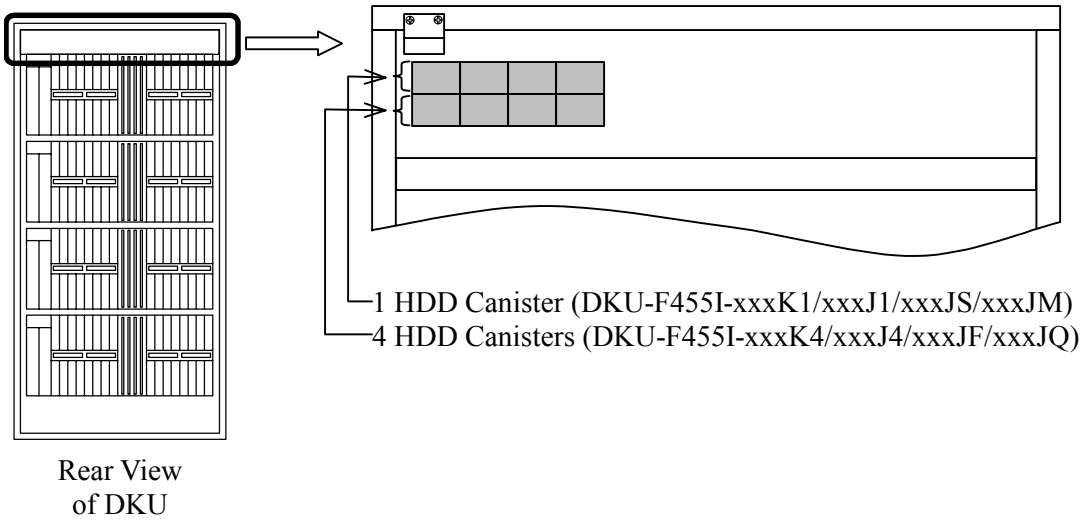
3-3 Attachment of the nameplate.

a. When the nameplate is not attached, attach the nameplate regardless of the model number from the left of the unit. Paint out mounting numbers on the nameplate.



[Example]

When the 7 DKU-F455I-72J4 sets are installed

							8	9	10	11	12	13	14	15	16
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64

Fig. 3.11.4-11 Attachment of Nameplate

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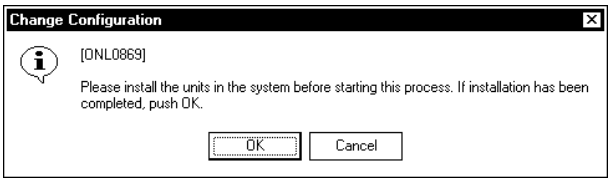
4. SVP post procedure

1. <Check that hardware components are installed>
   Select (CL) [OK] after making sure that all hardware components are installed correctly in response to “Please install the units in the system before starting this process. If installation has been completed, push OK.”.

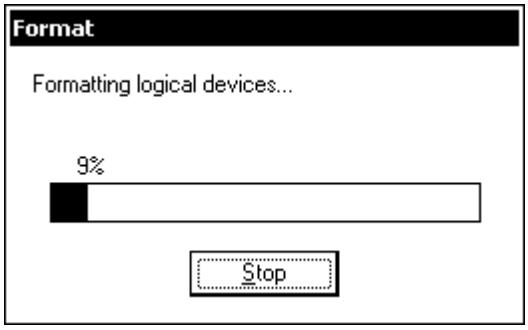


2. “Waiting for Power Event... Usually, several minutes (maximum 15 minutes)” is displayed.

   If [ONL3437E] or [ONL3438E] is displayed, please refer 2.11.1. (INST02-630)

3. <DKU PATH INLINE>
   When DKA is installed, “DKU PATH INLINE is now running...” is displayed.

4. <LDEV FORMAT>
   “Formatting the logical device...” is displayed when Parity Group is defined.



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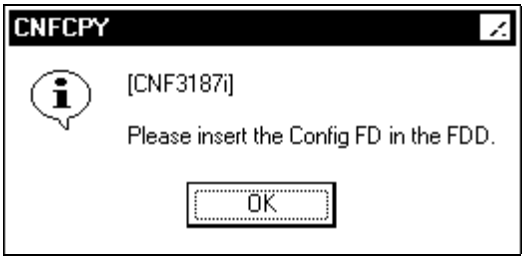
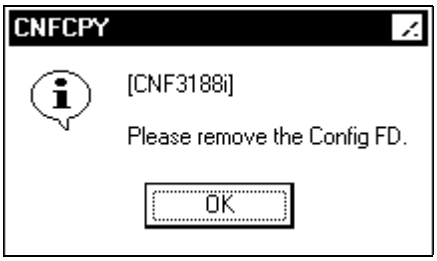
5. <End of system update processing>
"Renewal process has completed. Please check the subsystem status." is displayed when recovery processing on all installed components is completed. Select (CL) [OK] in response to this message.

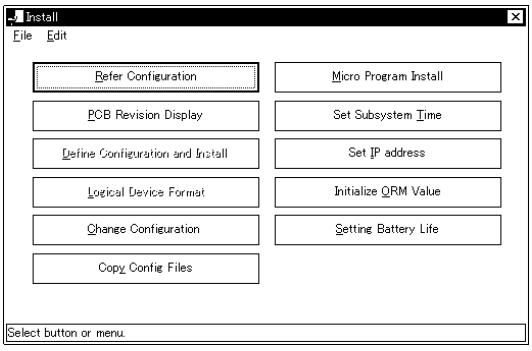
6.
"Reading subsystem configuration data..." is displayed.
"Please insert the Config FD in the FDD." is displayed.
Insert the configuration FD into FDD, and select (CL) [OK].



7.
When this procedure is completed, the message "Please remove the Config FD." is displayed.
Remove the FD, select (CL) [OK].



8.
After the procedure is completed, return to 'Install'.
Select (CL) [File]-[Exit].



9. <Mode Change>
Change the mode to View Mode.

Return to the work table (INST02-50) and perform rest of the works.

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3.11.5 When performing addition of the data/spare HDD canister, DKA, and DEV interface cable that accompanies the addition of the DKU-R2 frame (DKC-F460I-200, DKU-F455I-36K4/36K1/72J4/72J1/72K4/72K1/146J4/146J1/146JF/146JS/146JQ/146JM/EXC)

1. Installation Procedure of DEV Interface Cable 2 (DKU-F455I-EXC)

Between HDU-R10-R17 and HDU-R20-R27

Note:
1. When the DEV interface cable is connected to the FSW in the state in which the subsystem power is on, the each HDU Box is powered on at the same time of the connection.
2. When the DEV interface cable is connected in the state in which the main circuit breaker of the DKU is not turned on, the DKU Voltage Alarm is detected (the ALARM LED on the operator panel comes on and the SIM=BF20XX or BF22XX is issued). Therefore, turn on the main circuit breaker of the DKU before connecting the DEV interface cable.

Matters to be checked:
Check the settings of the switches on the JMP PCB and multi power supply (MPS) and the jumper socket. (Refer to Subsection 3.4.4, "Switch and Jumper Plug Installation" on pages INST03-DKU-220 and INST03-DKU-230.)
If any of the switches and jumper socket is not set correctly, reset it correctly.

a. Loosen the screws and remove the cable covers from the DKU frames.

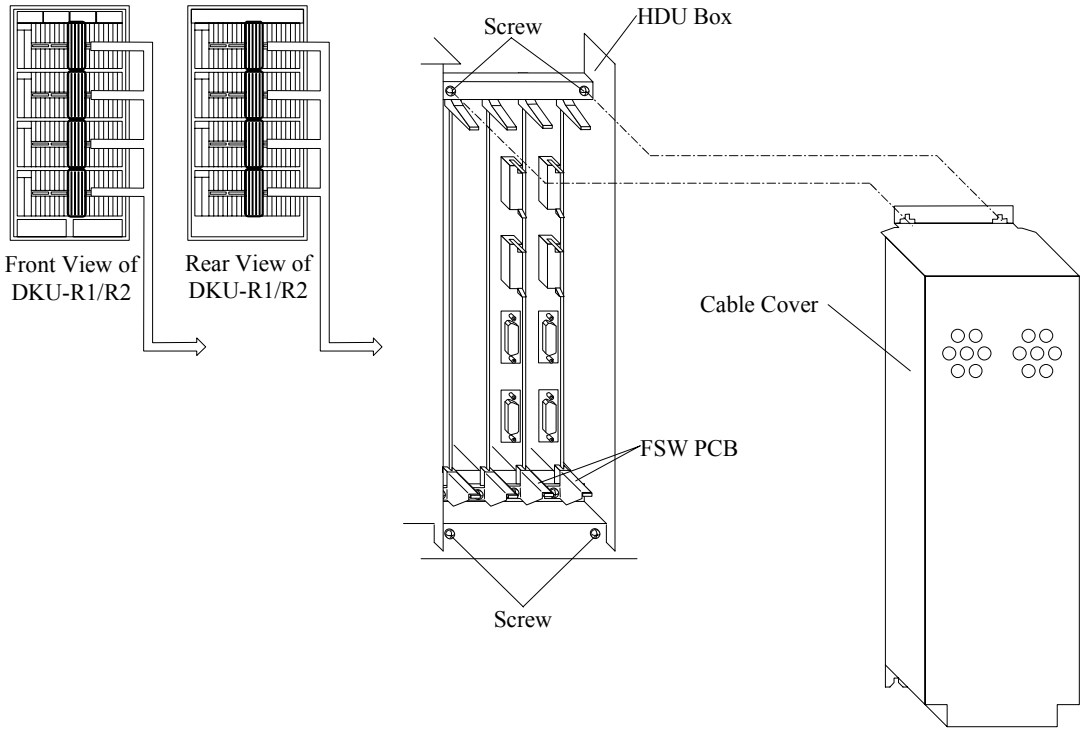

Fig. 3.11.5-1 Removal of Cable Covers

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b. Loosen the screws and remove the cable covers from the DKU frames.

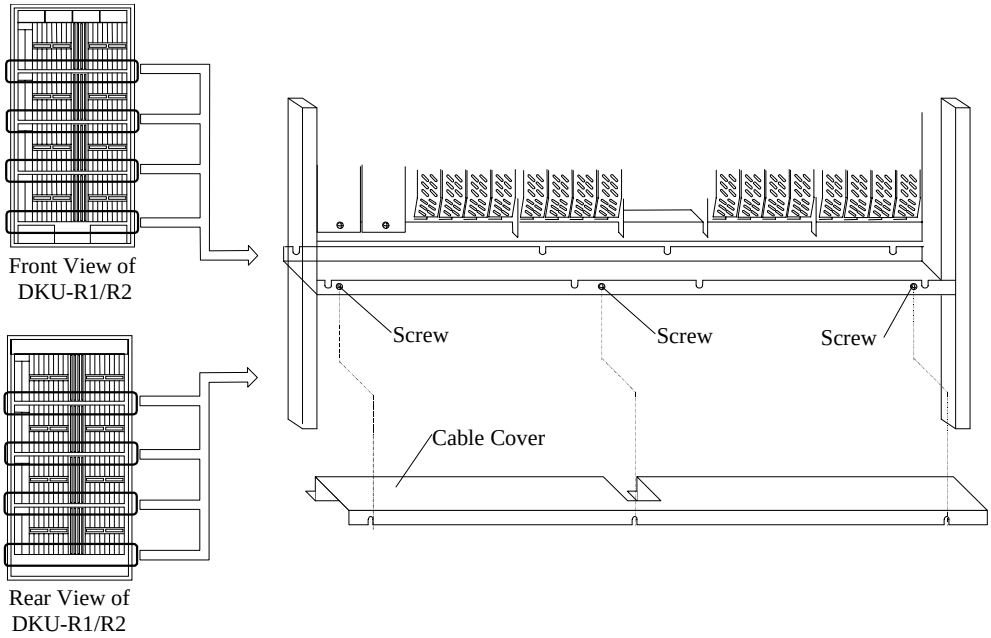

Fig. 3.11.5-2 Removal of Cable Covers

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c. Connect the DEV interface cables to the FSW PCBs in the DKU-R2 frame referring to Fig. 3.11.5-3 through Fig. 3.11.5-6.

Caution:
1. Do not perform the work unless the AC power is supplied to the additional DKU and the main breaker of the DKU is not turned on.
2. Do not connect the DEV interface cable to the operating DKU in this procedure. The cable is to be connected later in another procedure.

CAUTION

A serious failure occurs if any of cables/connectors is wrongly connected.
Since a label bearing a connection destination is affixed on each cable/connector, work very carefully referring to it and the wiring diagram.
- Colors of the labels of the subsystem shipped from the factory from June of 2002 and on are as follows. Labels on the cluster1 (CL1) side and the cluster2 (CL2) side are white and yellow respectively.

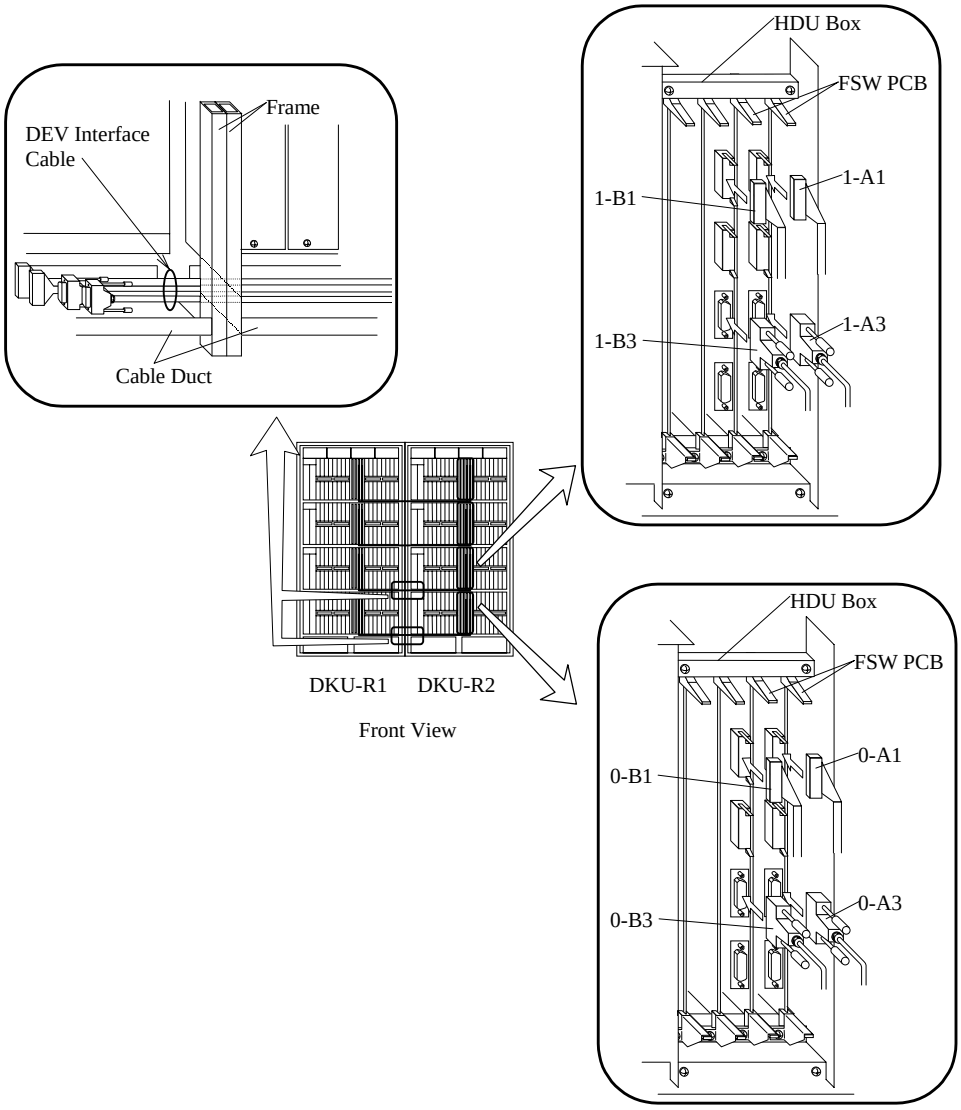

Fig. 3.11.5-3 Connection of the DEV Interface Cables

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CAUTION

A serious failure occurs if any of cables/connectors is wrongly connected.
Since a label bearing a connection destination is affixed on each cable/connector, work very carefully referring to it and the wiring diagram.

- Colors of the labels of the subsystem shipped from the factory from June of 2002 and on are as follows. Labels on the cluster1 (CL1) side and the cluster2 (CL2) side are white and yellow respectively.

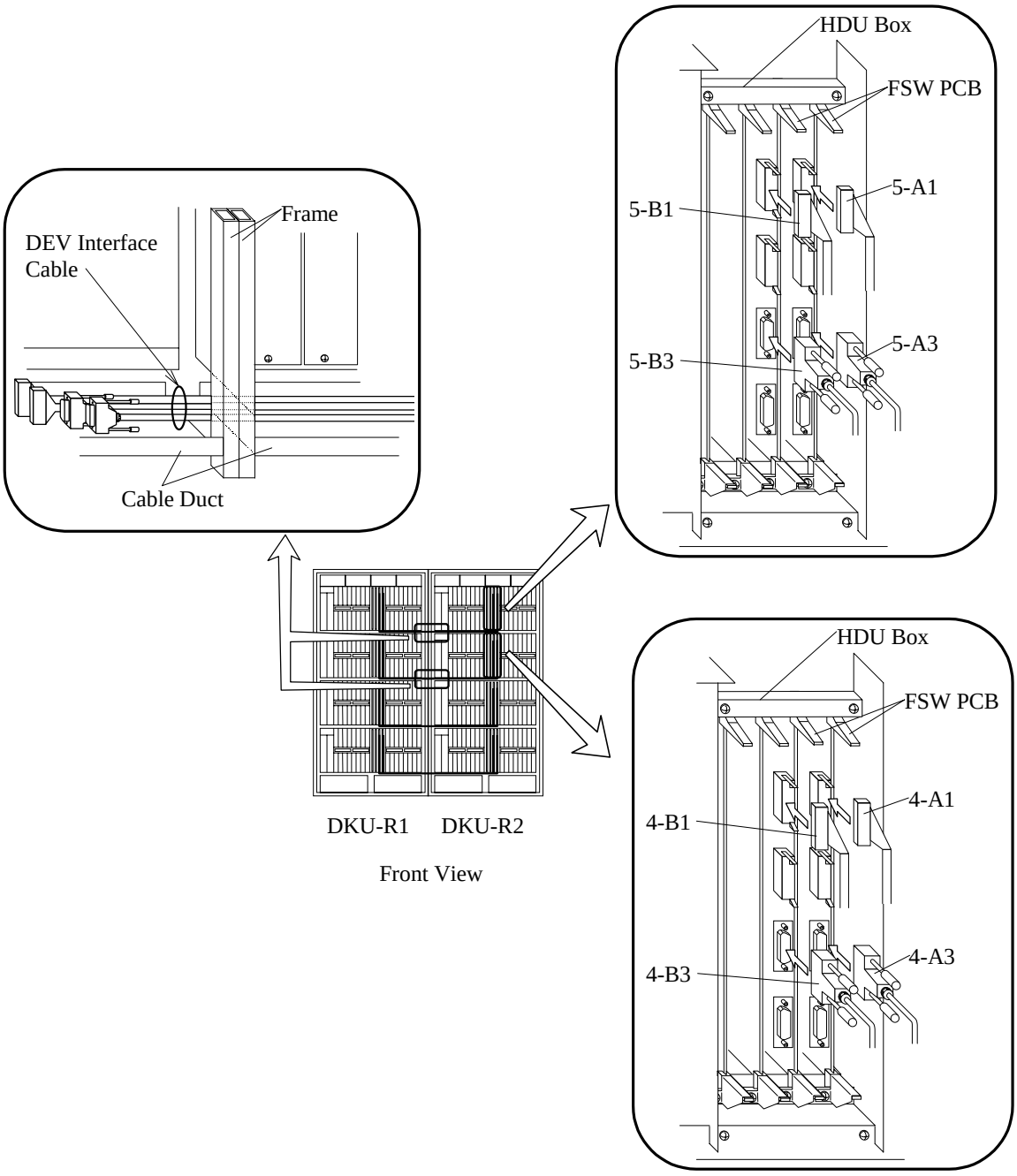

Fig. 3.11.5-4 Connection of the DEV Interface Cables

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CAUTION

A serious failure occurs if any of cables/connectors is wrongly connected.
Since a label bearing a connection destination is affixed on each cable/connector, work very carefully referring to it and the wiring diagram.

- Colors of the labels of the subsystem shipped from the factory from June of 2002 and on are as follows. Labels on the cluster1 (CL1) side and the cluster2 (CL2) side are white and yellow respectively.

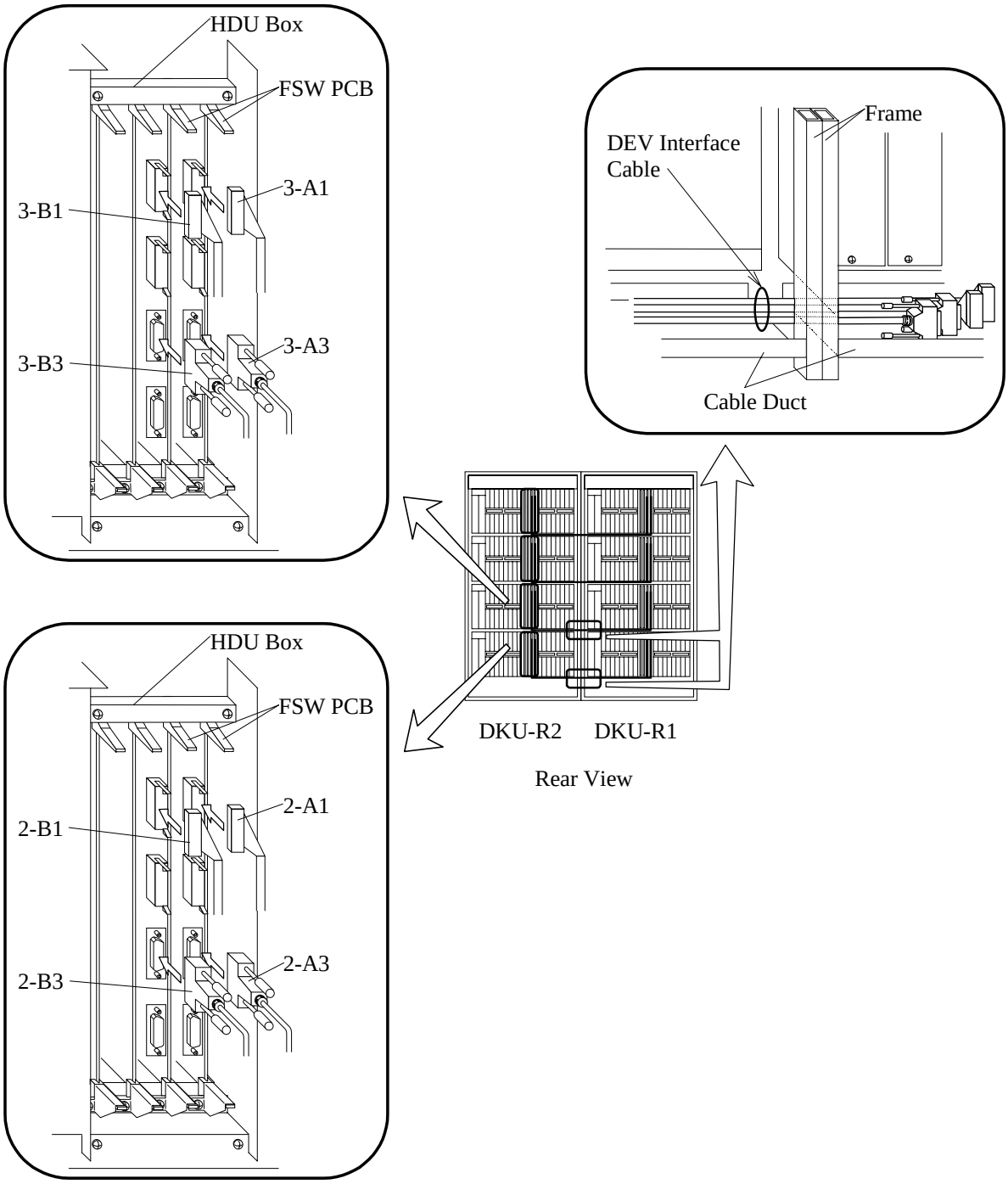

Fig. 3.11.5-5 Connection of the DEV Interface Cables

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CAUTION

A serious failure occurs if any of cables/connectors is wrongly connected.
Since a label bearing a connection destination is affixed on each cable/connector, work very carefully referring to it and the wiring diagram.

- Colors of the labels of the subsystem shipped from the factory from June of 2002 and on are as follows. Labels on the cluster1 (CL1) side and the cluster2 (CL2) side are white and yellow respectively.

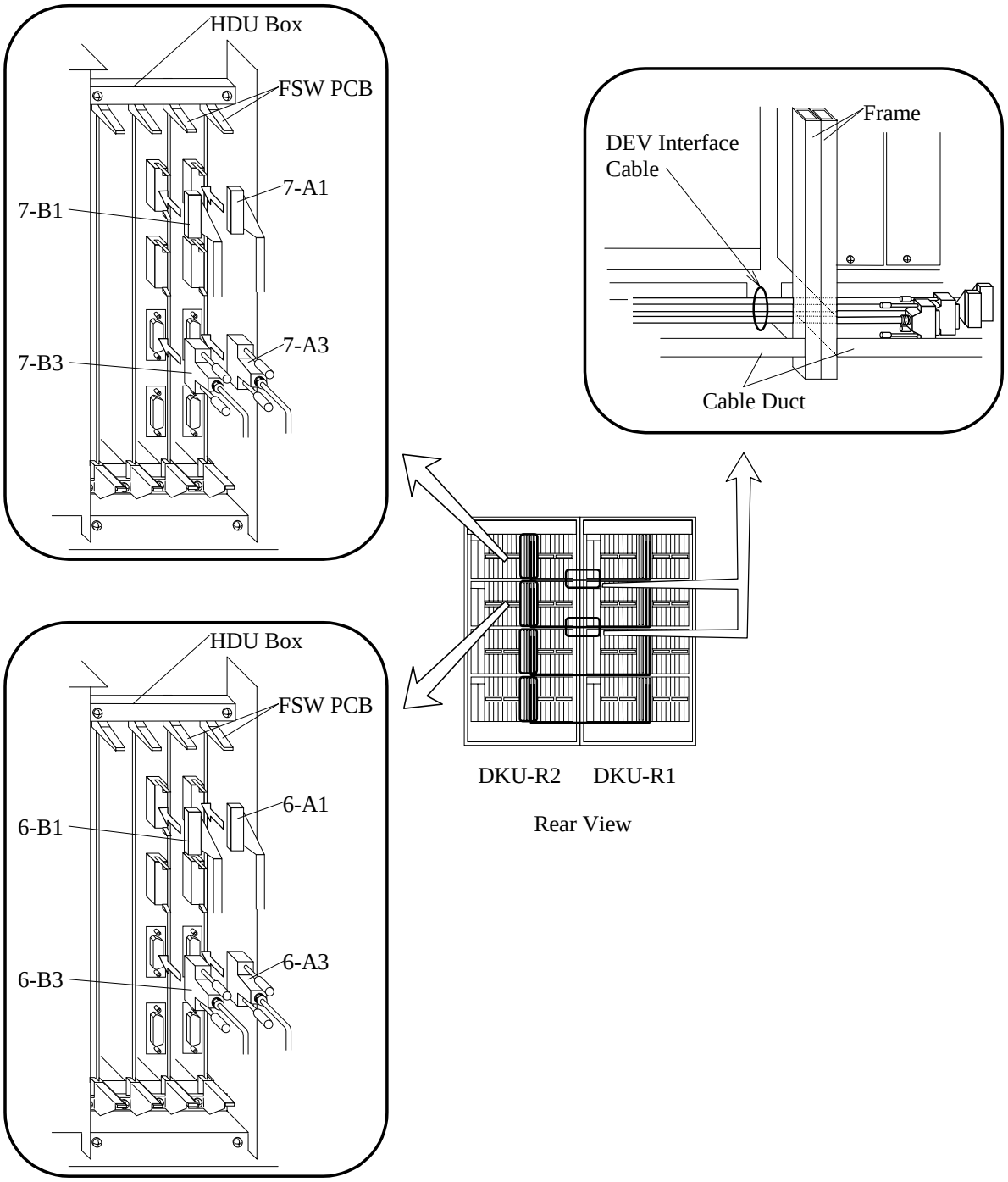

Fig. 3.11.5-6 Connection of the DEV Interface Cables

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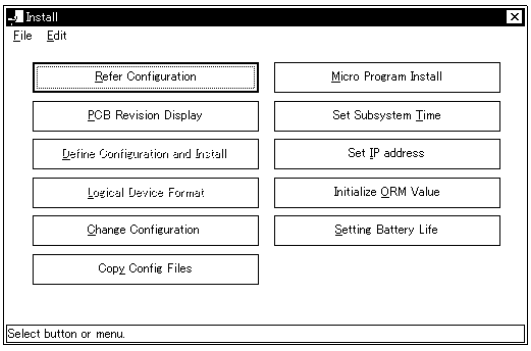
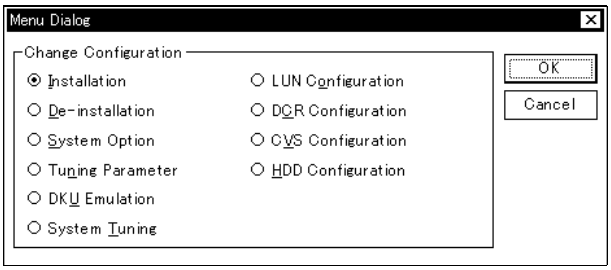
2. Setting up the New Device Structure Information

1. <Mode Change>
   Change the mode to Modify Mode.
   Select (CL) [Install].

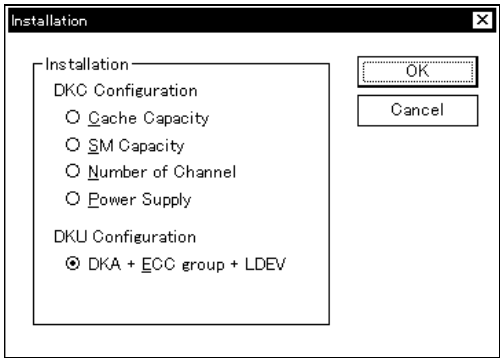
2. <Start the 'Menu Dialog' screen>
   Select (CL) [Change Configuration].



3. <Start Device Structure Setup screen>
   Select (CL) [Installation] in the 'Menu Dialog' dialog box and select (CL) [OK].



4. <Select a part to be changed>
   Select (CL) [DKA + ECC group + LDEV], and select (CL) [OK].



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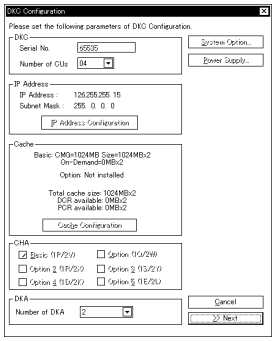
5. <Update Configuration Information>
Define the number of CU in DKC and the number of DKA in the 'DKC Configuration' window.

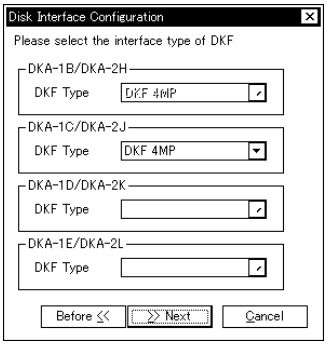
Make sure that the entered item is correct and select (CL) [>>Next].

Note: There may be a case where an addition of the SM is required to add the CU.
When adding the SM, refer to page INST03-SM-10.



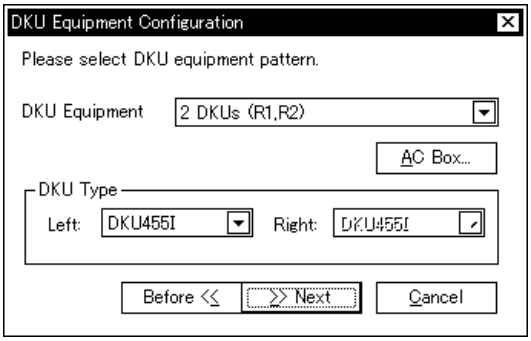
6. <Setting DKA type>
Define the DKA type in the 'Disk Interface Configuration' dialog box. After setting it, select (CL) the [>>Next] button.

Note: When no DKA is to be added, the 'Disk Interface Configuration' dialog box is not displayed.



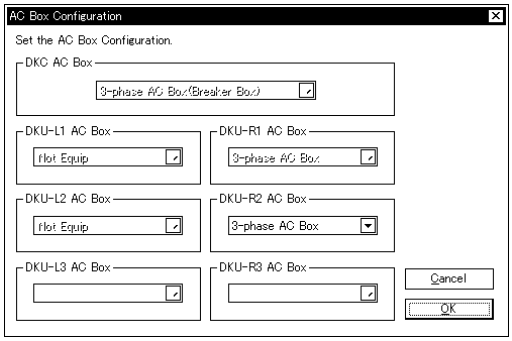
7. <DKU Equipment>
The DKU equipment pattern and DKU type is displayed in the 'DKU Equipment' configuration window.
Make an altered setting in which the DKU-R2 is added to the DKUs currently set.

Current setting	Altered setting
1DKU (R1)	2DKUs (R1, R2)
2DKUs (R1, L1)	3DKUs (R1, L1, R2)
3DKUs (R1, L1, L2)	4DKUs (R1, L1, R2, L2)



[AC Box...]: Set the DKU AC Box configuration. (Refer to step 7-1.)
Select (CL) the [>>Next].

7-1. <Setting the DKU AC Box configuration>
Set the installation AC Box configuration, select (CL) the [OK]. Return to step 7.



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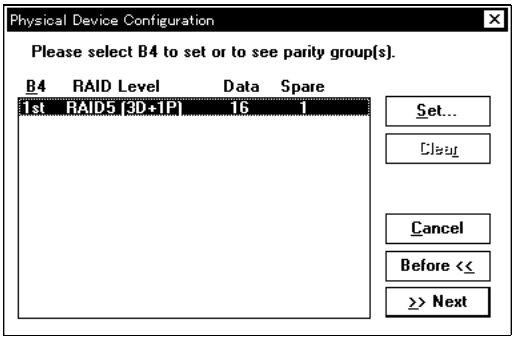
8. <Change Drive Configuration Information>
Define drive configuration according to the 'Physical Device Configuration' screen.
Detailed procedure is shown below.
[Set...]: Defines the parity group or spare disk. The routine proceeds to Step 8-1.
[Clear...]: Cancels the setting of the B4.
After setting up all items, select (CL) [>>Next]. Go to step 9.



Selecting (CL) [Before<<] returns you to the previous screen.

[Multi Cabinet Model]

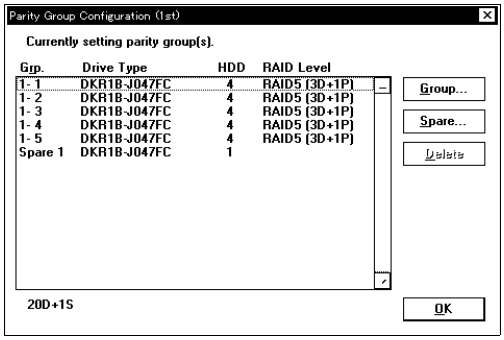
B4	Location	B4	Location
1st	HDU-R10, 11, 12, 13	7th	HDU-L20, 21, 22, 23
2nd	HDU-R14, 15, 16, 17	8th	HDU-L24, 25, 26, 27
3rd	HDU-L10, 11, 12, 13	9th	HDU-R30, 31, 32, 33
4th	HDU-L14, 15, 16, 17	10th	HDU-R34, 35, 36, 37
5th	HDU-R20, 21, 22, 23	11th	HDU-L30, 31, 32, 33
6th	HDU-R24, 25, 26, 27	12th	HDU-L34, 35, 36, 37

Note: The 9th to 12th of the B4 are valid only when the DKUs for the RAID 400 are connected.

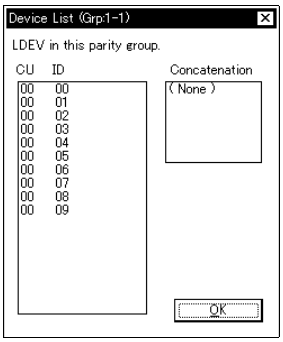
[Single Cabinet Model]

B4	Location	Comment
1st	HDU-0, 1, 2, 3	HDD-X00 ~ X0F
2nd	HDU-0, 1, 2, 3	HDD-X10 ~ X1F

8-1. <Define Parity Group>
[Group...]: Defines the parity group. See Step 8-1-1.
[Spare...]: Defines the spare drive. See Step 8-1-2.
[Delete]: Deletes the added parity group or spare drive.
Grp*: A parity group where RAID Concatenation is installed.
Note: If you want to set any Spare Drive in B4, please define the Spare Drive first.
After setting up all items, select (CL) [OK]. Return to step 8.



- To display LDEV ID in Parity group, select an item to be displayed and select (DC) this item on list box. The 'Device List' dialog box will appear.
"(no LDEV)" is displayed for the added parity group.



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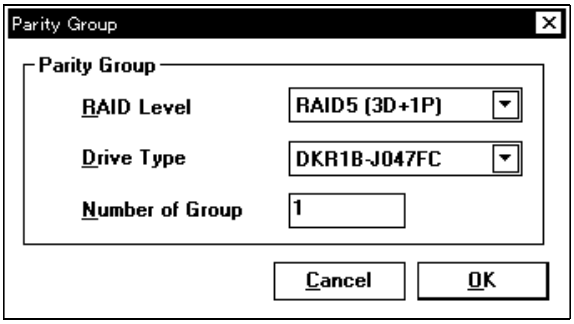
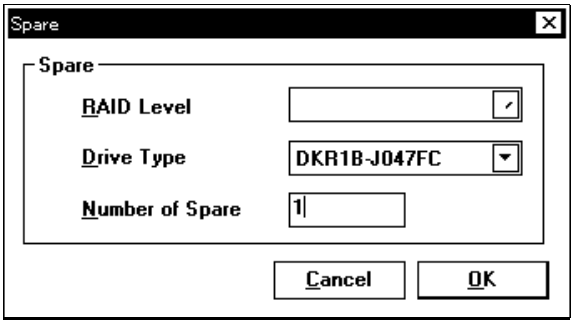
8-1-1.

Define the RAID Level and the Drive Type and the Number of Group in the 'Parity Group' dialog box.
Then select (CL) [OK]. Return to step 8-1.



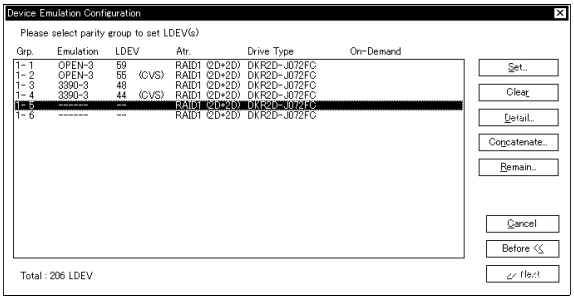
8-1-2.

Define the RAID Level and the Drive Type and the Number of Spare in the 'Spare' dialog box.
Then select (CL) [OK]. Return to step 8-1.



9. <Define Device Emulation>

After setting up all items for definition of Device Emulation, select (CL) [>>Next].
Selecting (CL) [Before<<] returns you to the previous screen.



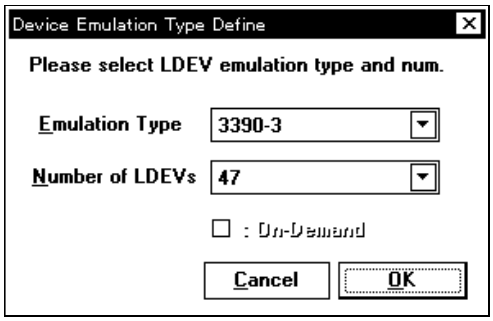
For defining Device Emulation:
Select (CL) parity group and select (CL) [Set...].
Go to step 9-1

For detailed display:
Select (CL) parity group and select (CL) [Detail...].
The detailed information is displayed.
(CVS): A parity group where CVS is installed.
Grp*: A parity group where RAID Concatenation is installed.

9-1.

After setting up all items in the 'Device Emulation Type Define' dialog box, select (CL) [OK].

Selecting (CL) [Cancel] returns you to step 9.



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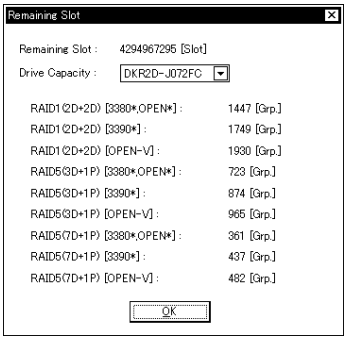
9-2. <Displaying remaining slot(s)>

The Remaining Slot window is displayed.
An allowable number of times of PDEV addition corresponding to the specified drive type is displayed.



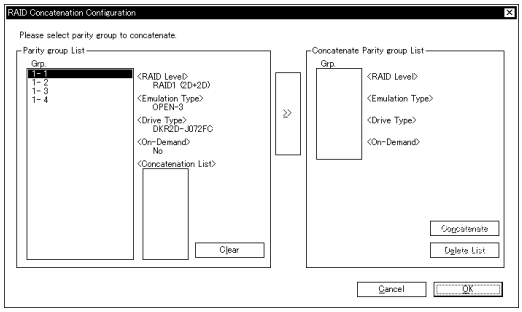
Select (CL) the [OK]. The routine returns to Step 9.

9-3. <Setting RAID concatenation>

Select (CL) [Concatenate...].
When you do not perform the RAID concatenation, return to Step 9.

9-4.

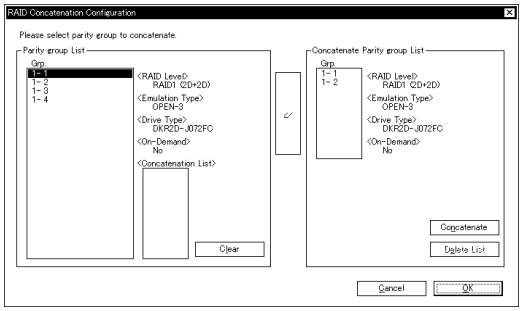
Parity groups to which the RAID concatenation can be applied are displayed in the Parity group List. Select (CL) parity groups to which you want to apply the RAID concatenation and press (CL) the [>>] button.



Note: Only the parity groups, which have been added and to which the RAID concatenation can be applied are displayed in the Parity group List.

9-5.

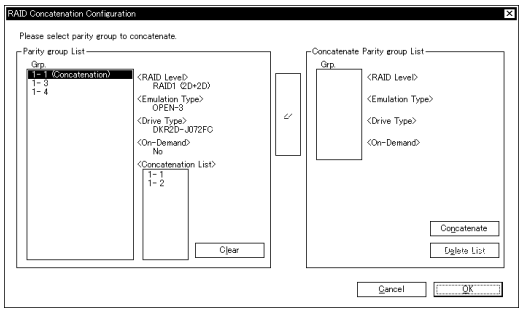
The selected parity groups are registered in the Concatenate Parity group List. Then press (CL) the [Concatenate] button.



Note: The [Concatenate] button cannot be pressed if the concatenation does not meet a condition of the RAID concatenation. Adjust the number of the parity groups in the Concatenate Parity group List.

9-6.

When the RAID concatenation is completed, "(Concatenation)" is displayed in the Parity group List. Selecting the "(Concatenation)" displays the concatenated parity groups in the Concatenation List. Pressing the [Clear] button cancels the RAID concatenation.



When all the settings of the RAID concatenation are completed, press (CL) the [OK] button.
Pressing (CL) the [Cancel] button returns the routine to Step 9.

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10. <Define LDEV ID>

Definition Screen for LDEV ID.

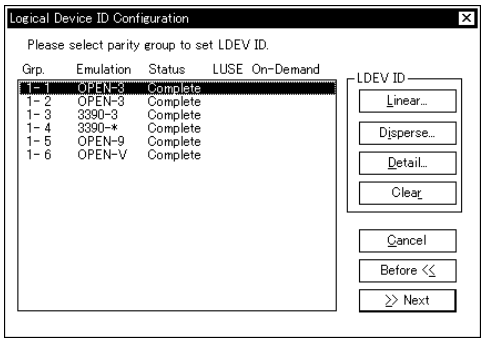
Select (CL) the parity group to be defined and select (CL) a function from the [LDEV ID] list box.

[Linear...]: LDEV ID is assigned to LDEV in the order of parity groups. See step 10-1.

[Disperse...]: LDEV is assigned discretely in the order of parity groups. See step 10-1.

[Detail...]: A screen to define LDEV in detail is displayed. See step 10-2. (When plural groups are selected (CL), it is invalid.)

[Clear]: Select (CL) [Clear] to delete.



Grp*: The top parity group where RAID Concatenation is installed.

- '-----' is displayed in the Status area for the parity group to which LDEV ID is not assigned.

After setting up all items, select (CL) [>>Next]. (Go to Step 11)

10-1. Detailed Definition Screen for LDEV ID

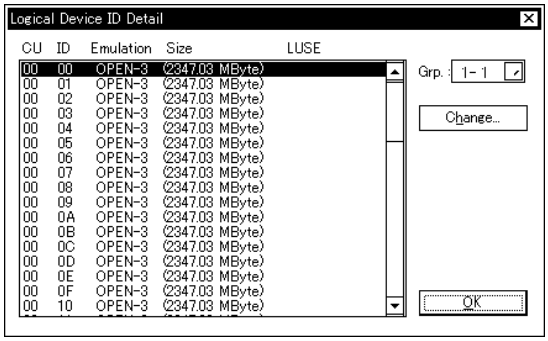
LDEV ID is defined in detail for each LDEV in the parity group.

Select (CL) LDEV from the list box and select (CL) [Change...].

The screen for LDEV ID input is displayed.

After setting, select (CL) [OK]. Return to step 10

- '-----' is displayed in the CU area and the ID area for the LDEV to which LDEV ID is not assigned.



Note: In the case of a RAID Concatenation Group, LDEV of the parity group selected by the "Grp List" is displayed.

10-2. Input LDEV ID

Select CU ID in the CU combo box.

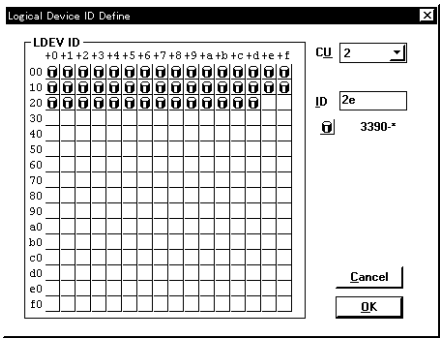
The status of usage of ID in the CU is displayed in the LDEV ID panel.

White disk of panel: not used

Patterned disk of panel: using

Input LDEV ID you want to set or the head LDEV ID in the ID Edit box.

After setting, select (CL) [OK]. Return to step 10-1



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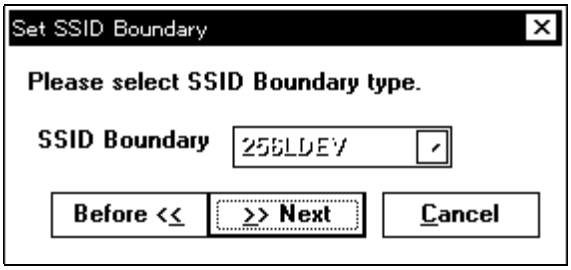
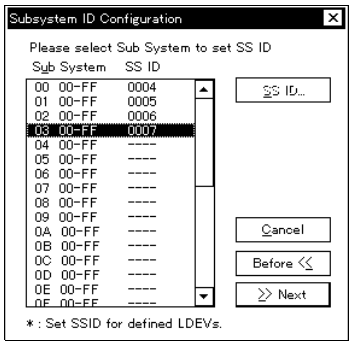
11. <Define Subsystem ID Boundary>
Press (CL) the [>>Next] button to change the screen to the “Set SSID Boundary” screen.

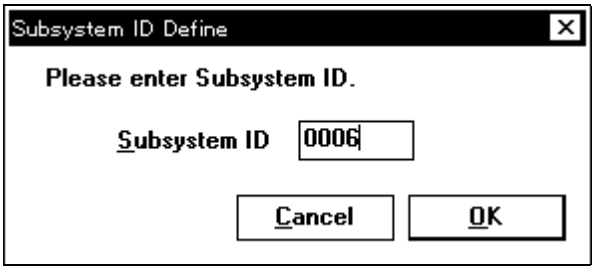


12. <Define Subsystem ID>
To define Subsystem ID, select (CL) the item from the list box and select (CL) [SSID]. See step 12-1.

After setting, select (CL) [>>Next].

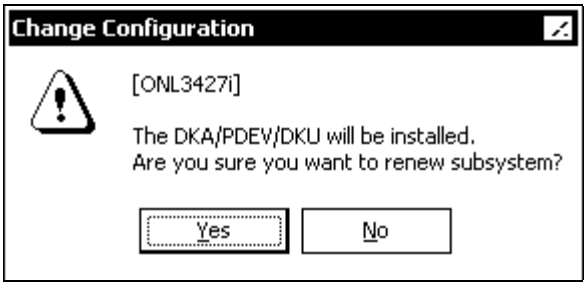


12-1. Define Subsystem ID and select (CL) [OK].
Return to step 12.



13. <Start installation>
Select (CL) [Yes] in response to “The DKA/PDEV/DKU will be installed. Are you sure you want to renew subsystem?”.

When [No] is selected (CL), returns to INST03-DKA-660 step 3.



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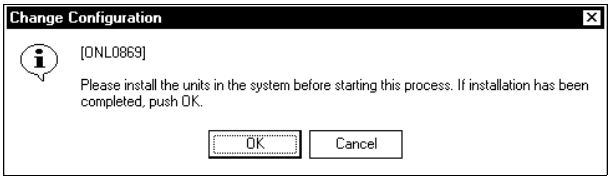
14. <Download microprogram>
    Microprograms are automatically downloaded for each processor.

15. <Install DKA>
    “Upgrading of the DKA...”

16. <Check that hardware components are installed>
    At this point refrain from pressing the [OK] button.
    “Please install the units in the system before starting this process. If installation has been completed, push OK.” is displayed.



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3 Installation Procedure of Additional Disk Adapter (DKC-F460I-200)

When the additional disk adapter is not to be added, go to Step 4, “Installation Procedure of HDD Canister”.

Note: Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

3-1 Insertion of the PCBs

Note: Make sure that a color of the levers of the PCB to be installed is blue. Never insert a PCB whose lever is not blue.

a. Remove the dummy plate installed in the installation location referring to the Fig. 3.11.5-7. (Note) Dummy plates should be stored for future use in De-installation.
b. Insert the PCBs to the correct locations in the Logic Box. Refer to Table 3.11.5-1.
c. Fasten the two screws referring to Fig. 3.11.5-8.

Table 3.11.5-1 Inserting Location (Rear of the unit)

Cluster	CL2							CL1				
Slot No.	M	L	K	J	H	G	F	E	D	C	B	A
Function	CSW	DKA	DKA	DKA	DKA	CACHE	CACHE	DKA	DKA	DKA	DKA	CSW
Location No.	CSW -2M	DKA -2L	DKA -2K	DKA -2J	DKA -2H	CACHE -2G	CACHE -2F	DKA -1E	DKA -1D	DKA -1C	DKA -1B	CSW -1A
Order of addition		Add.3	Add.2	Add.1	Basic			Add.3	Add.2	Add.1	Basic	
Number of DKAs set through the SVP		–	–	–	2			–	–	–	2	
		–	–	4				–	–	4		
		–	6					–	6			
		8						8				

Up to 4 disk adapters can be installed in the subsystem.

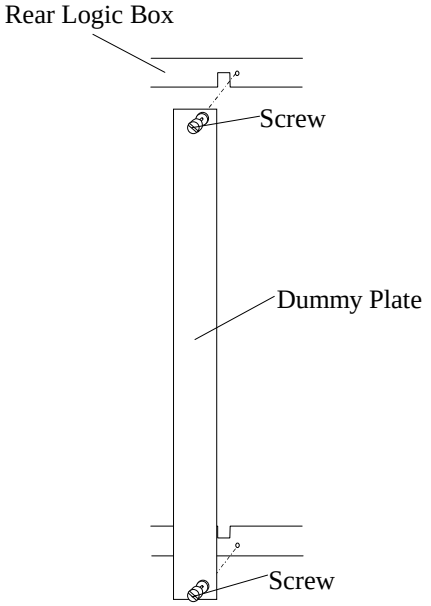

Fig. 3.11.5-7 Removal of Dummy Plate

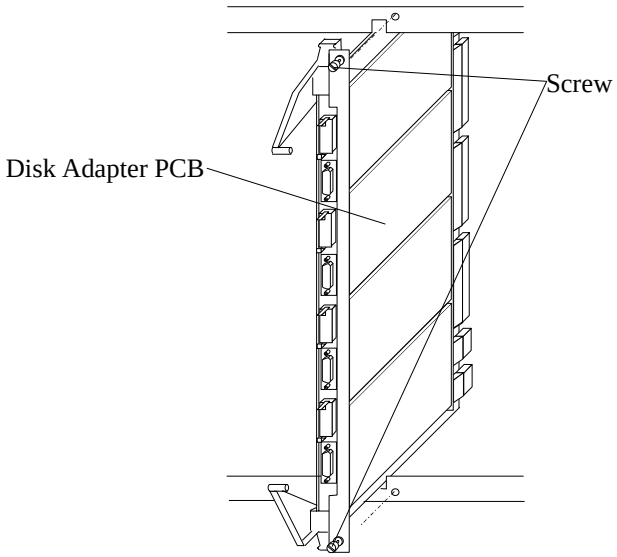

Fig. 3.11.5-8 Insertion of PCB

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3-2 Connection of cables

In case of Add.1

CAUTION

A serious failure occurs if any of cables/connectors is wrongly connected.
Since a label bearing a connection destination is affixed on each cable/connector, work very carefully referring to it and the wiring diagram.

- Colors of the labels of the subsystem shipped from the factory from June of 2002 and on are as follows. Labels on the cluster1 (CL1) side and the cluster2 (CL2) side are white and yellow respectively.

a. Connect the cables to the sub-edge of PCBs. (Refer to Fig. 3.11.5-9.)

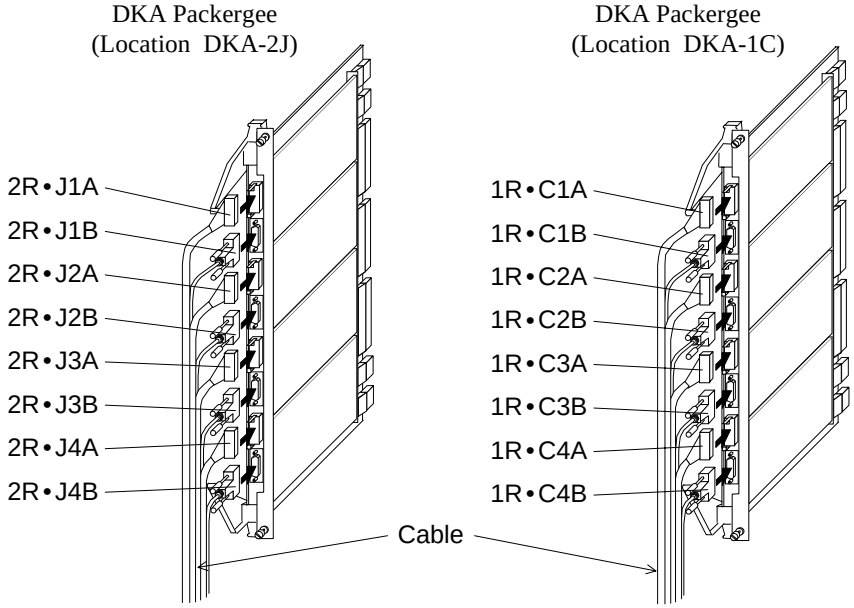

Fig.3.11.5-9 Connection of cable (Add.1)

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In case of Add.2

Caution:
Make sure that the AC power is applied to the added DKUs (DKU-L1 and DKU-L2) and the main breakers of the DKUs (DKU-L1 and DKU-L2) are turned on.
The DKU is automatically powered on when the DEV interface cable is connected to the DKA.

⚠ CAUTION

A serious failure occurs if any of cables/connectors is wrongly connected.
Since a label bearing a connection destination is affixed on each cable/connector, work very carefully referring to it and the wiring diagram.

- Colors of the labels of the subsystem shipped from the factory from June of 2002 and on are as follows. Labels on the cluster1 (CL1) side and the cluster2 (CL2) side are white and yellow respectively.

a. Connect the cables to the sub-edge of PCBs.

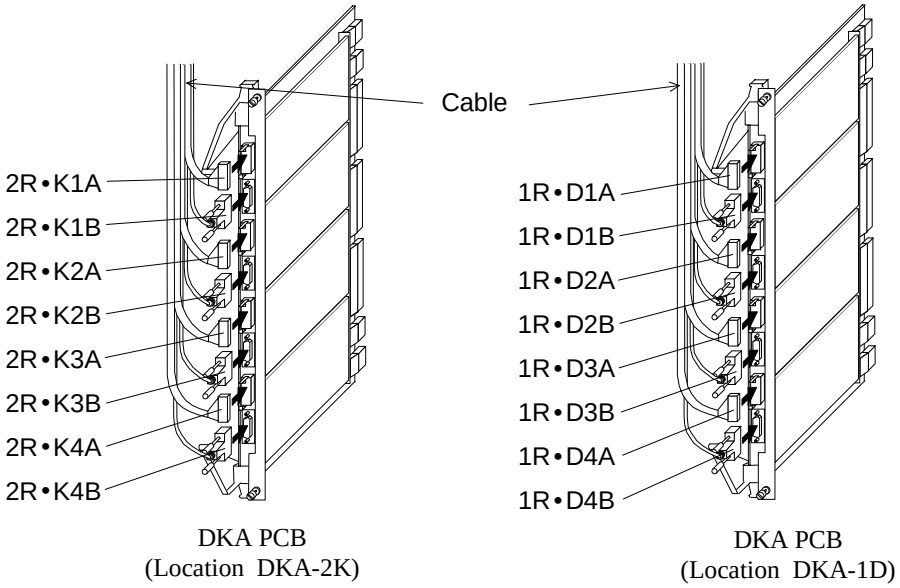

Fig.3.11.5-10 Connection of cable (Add.2)

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In case of Add.3

Caution:
Make sure that the AC power is applied to the added DKUs (DKU-L1 and DKU-L2) and the main breakers of the DKUs (DKU-L1 and DKU-L2) are turned on.
The DKU is automatically powered on when the DEV interface cable is connected to the DKA.

⚠ CAUTION

A serious failure occurs if any of cables/connectors is wrongly connected.
Since a label bearing a connection destination is affixed on each cable/connector, work very carefully referring to it and the wiring diagram.

- Colors of the labels of the subsystem shipped from the factory from June of 2002 and on are as follows. Labels on the cluster1 (CL1) side and the cluster2 (CL2) side are white and yellow respectively.

a. Connect the cables to the sub-edge of PCBs.

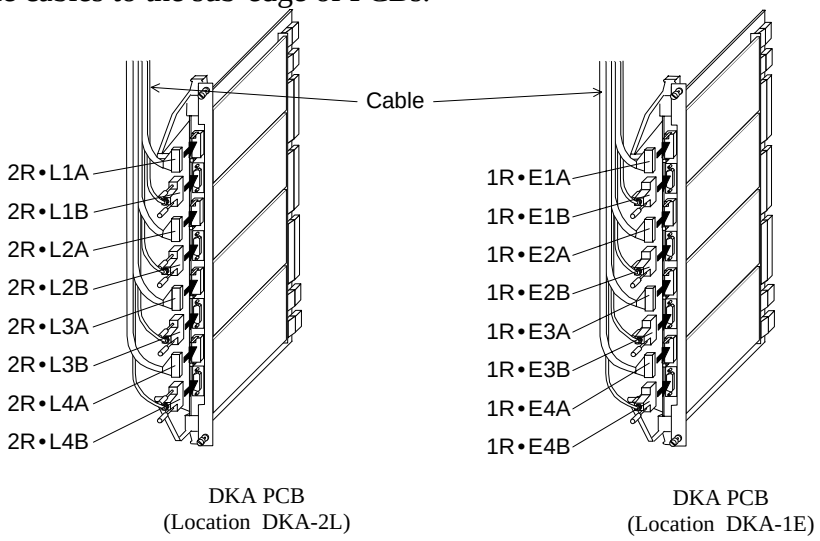

Fig.3.11.5-11 Connection of cable (Add.3)

3-3 Attachment of the nameplate

a. Attach the nameplate referring to Fig. 3.11.5-12.

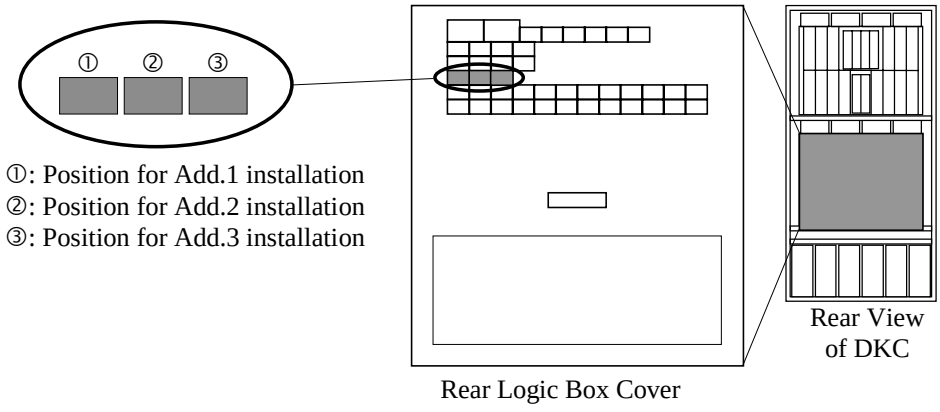

Fig. 3.11.5-12 Attachment of Nameplate

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4. Installation Procedure of HDD Canister

4-1 Confirmation of position to install HDD canister

(i) RAID5(3D+1P)/RAID1(2D+2D)

Relations between the installation locations of the RAID groups and the RAID group numbers set through the SVP are shown in Table 3.11.5-2.

Table 3.11.5-2 Relation between HDDs installation order and RAID group number (3D+1P/2D+2D)

	L2 DKU		L1 DKU		DKC		R1 DKU		R2 DKU	
	Installation Order	RAID Group No.	Installation Order	RAID Group No.			Installation Order	RAID Group No.	Installation Order	RAID Group No.
Upper	223	8-1	159	4-1	4th DKA Pair	2nd DKA Pair	032	2-1	096	6-1
	224	8-2	160	4-2			033	2-2	097	6-2
	225	8-3	161	4-3			034	2-3	098	6-3
	226	8-4	162	4-4			035	2-4	099	6-4
	227	8-5	163	4-5			036	2-5	100	6-5
	228	8-6	164	4-6			037	2-6	101	6-6
	229	8-7	165	4-7			038	2-7	102	6-7
	230	8-8	166	4-8			039	2-8	103	6-8
	231	8-9	167	4-9			040	2-9	104	6-9
	232	8-10	168	4-10			041	2-10	105	6-10
	233	8-11	169	4-11			042	2-11	106	6-11
	234	8-12	170	4-12			043	2-12	107	6-12
	235	8-13	171	4-13			044	2-13	108	6-13
	236	8-14	172	4-14			045	2-14	109	6-14
	237	8-15	173	4-15			046	2-15	110	6-15
	238	8-16	174(Spare) *2	4-16			047(Spare) *2	2-16	111	6-16
	239	8-17	175	4-17			048	2-17	112	6-17
	240	8-18	176	4-18			049	2-18	113	6-18
	241	8-19	177	4-19			050	2-19	114	6-19
	242	8-20	178	4-20			051	2-20	115	6-20
	243	8-21	179	4-21			052	2-21	116	6-21
	244	8-22	180	4-22			053	2-22	117	6-22
	245	8-23	181	4-23			054	2-23	118	6-23
	246	8-24	182	4-24			055	2-24	119	6-24
	247	8-25	183	4-25			056	2-25	120	6-25
	248	8-26	184	4-26			057	2-26	121	6-26
	249	8-27	185	4-27			058	2-27	122	6-27
	250	8-28	186	4-28			059	2-28	123	6-28
	251	8-29	187	4-29			060	2-29	124	6-29
	252	8-30	188	4-30			061	2-30	125	6-30
	253	8-31	189	4-31			062	2-31	126	6-31
	254	8-32	190	4-32			063	2-32	127	6-32
Lower	191	7-1	128	3-1	3rd DKA Pair	1st DKA Pair	001	1-1	064	5-1
	192	7-2	129	3-2			002	1-2	065	5-2
	193	7-3	130	3-3			003	1-3	066	5-3
	194	7-4	131	3-4			004	1-4	067	5-4
	195	7-5	132	3-5			005	1-5	068	5-5
	196	7-6	133	3-6			006	1-6	069	5-6
	197	7-7	134	3-7			007	1-7	070	5-7
	198	7-8	135	3-8			008	1-8	071	5-8
	199	7-9	136	3-9			009	1-9	072	5-9
	200	7-10	137	3-10			010	1-10	073	5-10
	201	7-11	138	3-11			011	1-11	074	5-11
	202	7-12	139	3-12			012	1-12	075	5-12
	203	7-13	140	3-13			013	1-13	076	5-13
	204	7-14	141	3-14			014	1-14	077	5-14
	205	7-15	142	3-15			015	1-15	078	5-15
	206	7-16	Spare *1	3-16			Spare *1	1-16	079	5-16
	207	7-17	143	3-17			016	1-17	080	5-17
	208	7-18	144	3-18			017	1-18	081	5-18
	209	7-19	145	3-19			018	1-19	082	5-19
	210	7-20	146	3-20			019	1-20	083	5-20
	211	7-21	147	3-21			020	1-21	084	5-21
	212	7-22	148	3-22			021	1-22	085	5-22
	213	7-23	149	3-23			022	1-23	086	5-23
	214	7-24	150	3-24			023	1-24	087	5-24
	215	7-25	151	3-25			024	1-25	088	5-25
	216	7-26	152	3-26			025	1-26	089	5-26
	217	7-27	153	3-27			026	1-27	090	5-27
	218	7-28	154	3-28			027	1-28	091	5-28
	219	7-29	155	3-29			028	1-29	092	5-29
	220	7-30	156	3-30			029	1-30	093	5-30
	221	7-31	157	3-31			030	1-31	094	5-31
	222	7-32	158	3-32			031	1-32	095	5-32

*1: To be left vacant or a spare disk is to be installed. *2: A data or spare disk is to be installed.

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(1) Make sure of the location where the RAID group is installed and that where the HDD canister is to be added.

No.	Model Number	Model Name	Data and Parity
1	DKU-F455I-36K4/72J4/72K4/146J4/146JF/146JQ	4 HDD Canisters	Data and Parity Drive

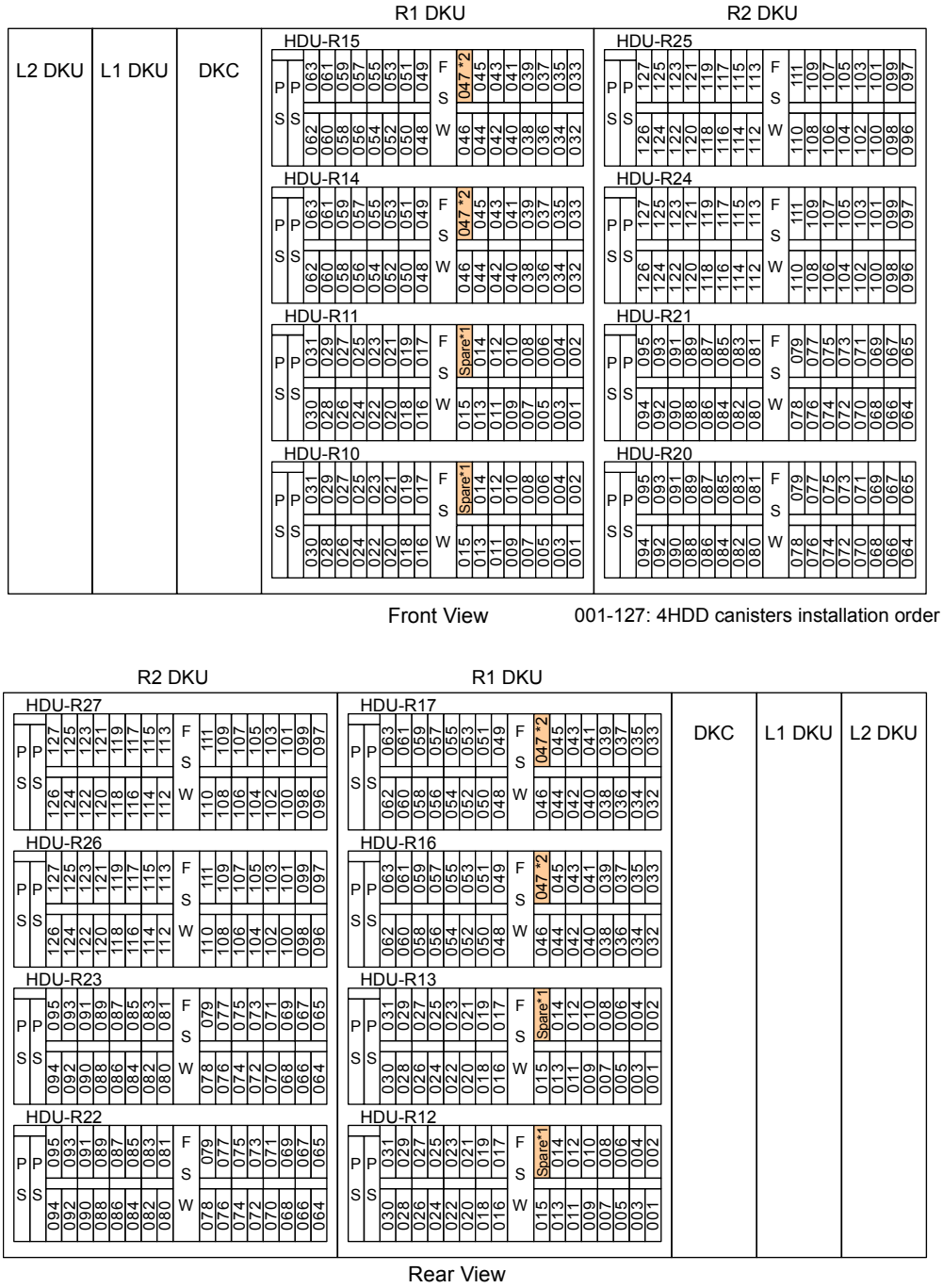

Fig. 3.11.5-13 (3D+1P) or (2D+2P) Data Drive/Parity Drive Expansion Sequence (1/2)

The relationship between HDDs installation order and RAID group number is shown in the Table 3.11.5-2.

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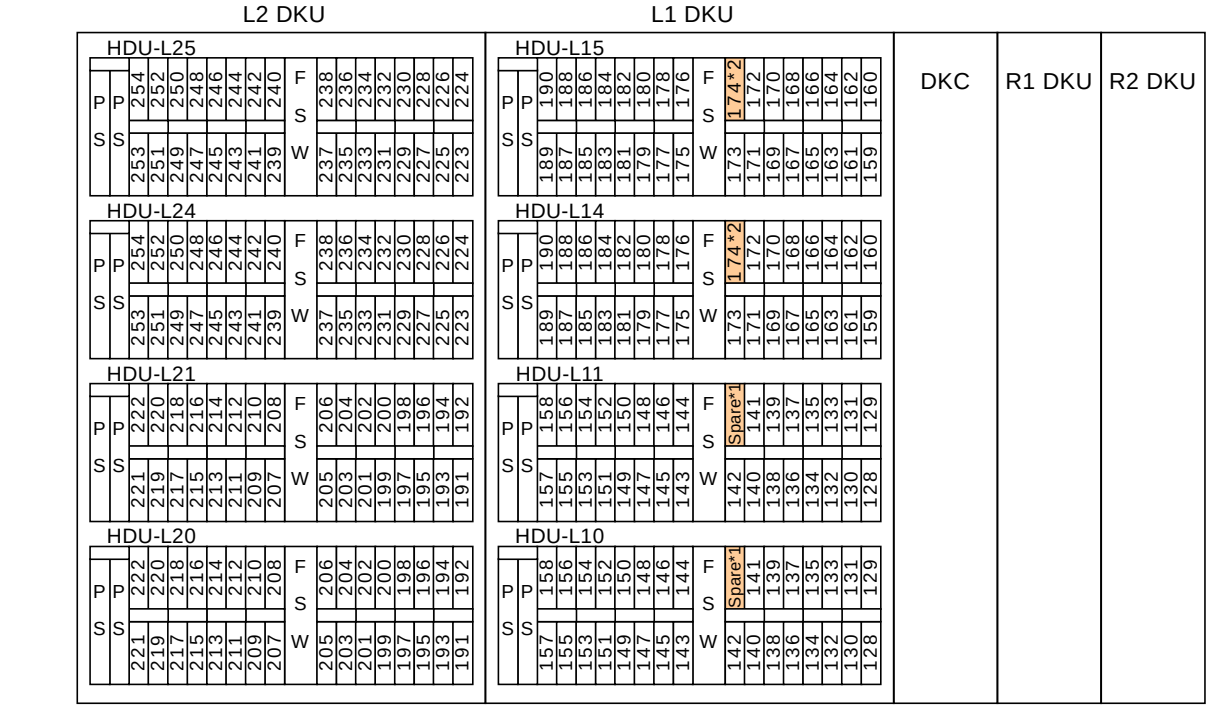

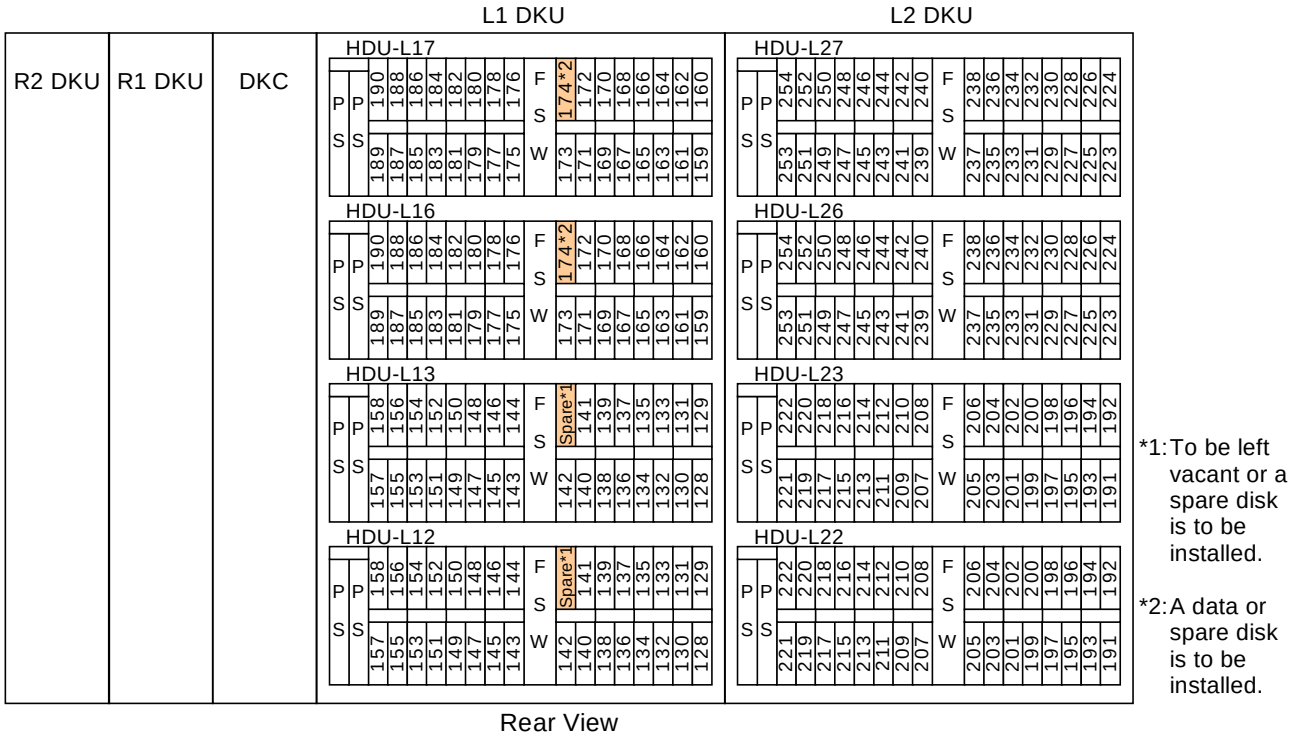

Fig. 3.11.5-13 (3D+1P) or (2D+2P) Data Drive/Parity Drive Expansion Sequence (2/2)

The relationship between HDDs installation order and RAID group number is shown in the Table 3.11.5-2.

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(ii) RAID5 (7D+1P)

Relations between the installation locations of the RAID groups and the RAID group numbers set through the SVP are shown in Table 3.11.5-3.

Table 3.11.5-3 Relation between HDDs installation order and RAID group number (7D+1P)

L2 DKU		L1 DKU		DKC		R1 DKU		R2 DKU	
Installation Order	RAID Group No.	Installation Order	RAID Group No.			Installation Order	RAID Group No.	Installation Order	RAID Group No.
095	7-1 , (8-1)	064	3-1 , (4-1)			001	1-1 , (2-1)	032	5-1 , (6-1)
096	7-2 , (8-2)	065	3-2 , (4-2)			002	1-2 , (2-2)	033	5-2 , (6-2)
097	7-3 , (8-3)	066	3-3 , (4-3)			003	1-3 , (2-3)	034	5-3 , (6-3)
098	7-4 , (8-4)	067	3-4 , (4-4)			004	1-4 , (2-4)	035	5-4 , (6-4)
099	7-5 , (8-5)	068	3-5 , (4-5)			005	1-5 , (2-5)	036	5-5 , (6-5)
100	7-6 , (8-6)	069	3-6 , (4-6)			006	1-6 , (2-6)	037	5-6 , (6-6)
101	7-7 , (8-7)	070	3-7 , (4-7)			007	1-7 , (2-7)	038	5-7 , (6-7)
102	7-8 , (8-8)	071	3-8 , (4-8)			008	1-8 , (2-8)	039	5-8 , (6-8)
103	7-9 , (8-9)	072	3-9 , (4-9)			009	1-9 , (2-9)	040	5-9 , (6-9)
104	7-10 , (8-10)	073	3-10 , (4-10)			010	1-10 , (2-10)	041	5-10 , (6-10)
105	7-11 , (8-11)	074	3-11 , (4-11)			011	1-11 , (2-11)	042	5-11 , (6-11)
106	7-12 , (8-12)	075	3-12 , (4-12)			012	1-12 , (2-12)	043	5-12 , (6-12)
107	7-13 , (8-13)	076	3-13 , (4-13)			013	1-13 , (2-13)	044	5-13 , (6-13)
108	7-14 , (8-14)	077	3-14 , (4-14)			014	1-14 , (2-14)	045	5-14 , (6-14)
109	7-15 , (8-15)	078	3-15 , (4-15)	3rd / 4th	1st / 2nd	015	1-15 , (2-15)	046	5-15 , (6-15)
110	7-16 , (8-16)	(Spare)*1	3-16 , (4-16)	DKA	DKA	(Spare)*1	1-16 , (2-16)	047	5-16 , (6-16)
111	7-17 , (8-17)	079	3-17 , (4-17)	Pairs	Pairs	016	1-17 , (2-17)	048	5-17 , (6-17)
112	7-18 , (8-18)	080	3-18 , (4-18)			017	1-18 , (2-18)	049	5-18 , (6-18)
113	7-19 , (8-19)	081	3-19 , (4-19)			018	1-19 , (2-19)	050	5-19 , (6-19)
114	7-20 , (8-20)	082	3-20 , (4-20)			019	1-20 , (2-20)	051	5-20 , (6-20)
115	7-21 , (8-21)	083	3-21 , (4-21)			020	1-21 , (2-21)	052	5-21 , (6-21)
116	7-22 , (8-22)	084	3-22 , (4-22)			021	1-22 , (2-22)	053	5-22 , (6-22)
117	7-23 , (8-23)	085	3-23 , (4-23)			022	1-23 , (2-23)	054	5-23 , (6-23)
118	7-24 , (8-24)	086	3-24 , (4-24)			023	1-24 , (2-24)	055	5-24 , (6-24)
119	7-25 , (8-25)	087	3-25 , (4-25)			024	1-25 , (2-25)	056	5-25 , (6-25)
120	7-26 , (8-26)	088	3-26 , (4-26)			025	1-26 , (2-26)	057	5-26 , (6-26)
121	7-27 , (8-27)	089	3-27 , (4-27)			026	1-27 , (2-27)	058	5-27 , (6-27)
122	7-28 , (8-28)	090	3-28 , (4-28)			027	1-28 , (2-28)	059	5-28 , (6-28)
123	7-29 , (8-29)	091	3-29 , (4-29)			028	1-29 , (2-29)	060	5-29 , (6-29)
124	7-30 , (8-30)	092	3-30 , (4-30)			029	1-30 , (2-30)	061	5-30 , (6-30)
125	7-31 , (8-31)	093	3-31 , (4-31)			030	1-31 , (2-31)	062	5-31 , (6-31)
126	7-32 , (8-32)	094	3-32 , (4-32)			031	1-32 , (2-32)	063	5-32 , (6-32)

*1: To be left vacant or a spare disk is to be installed.

- Install RAID 5 (7D+1P) forming pairs using the same number of the two RAID groups (RAID groups 1 and 2, 3 and 4, 5 and 6, and 7 and 8) of RAID 5 (3D+1P).
  (Example: RAID group numbers 1-1 and 2-1)
  The types of HDDs to be installed in each pair must be the same.
- In the case of RAID 5 (7D+1P), only odd RAID numbers are displayed on the SVP. (Group numbers shown in parentheses in the table above are not displayed.)
- When RAID 5 (3D+1P) or RAID 1 (2D+2D) and RAID 5 (7D+1P) are configured mixture, note that duplicated group numbers are excluded.
  Example: When Group No. 1-1 is configured for RAID 5 (7D+1P), Group No. 2-1 is excluded and cannot be configure for RAID 5 (3D+1P).

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(1) Make sure of the location where the RAID group is installed and that where the HDD canister is to be added.

No.	Model Number	Model Name	Data and Parity
1	DKU-F455I-36K4/72J4/72K4/146J4/146JF/146JQ	4 HDD Canisters x 2sets	Data and Parity Drive

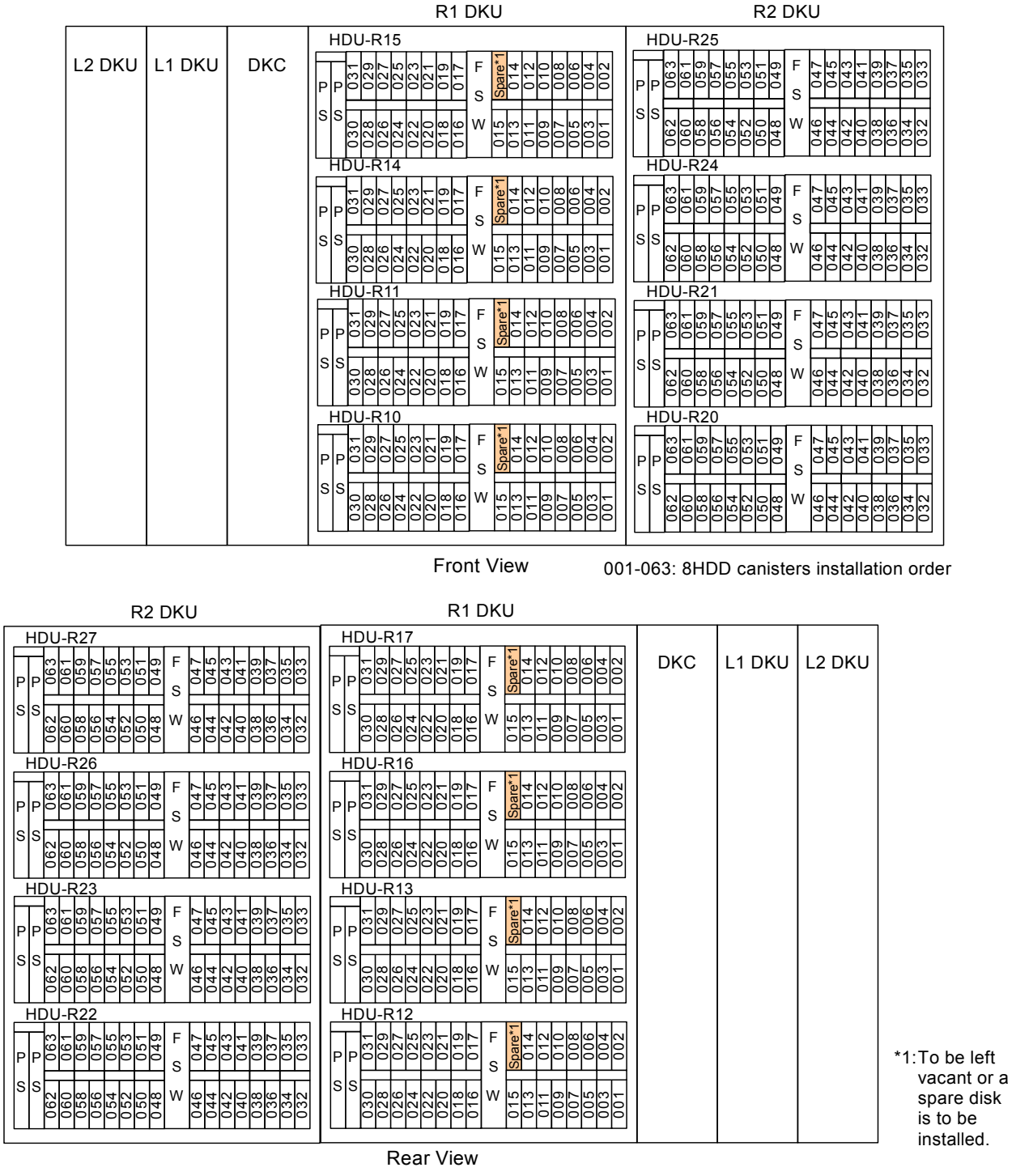

Fig. 3.11.5-14 (7D+1P) Data Drive/Parity Drive Expansion Sequence (1/2)

The relationship between HDDs installation order and RAID group number is shown in the Table 3.11.5-3.

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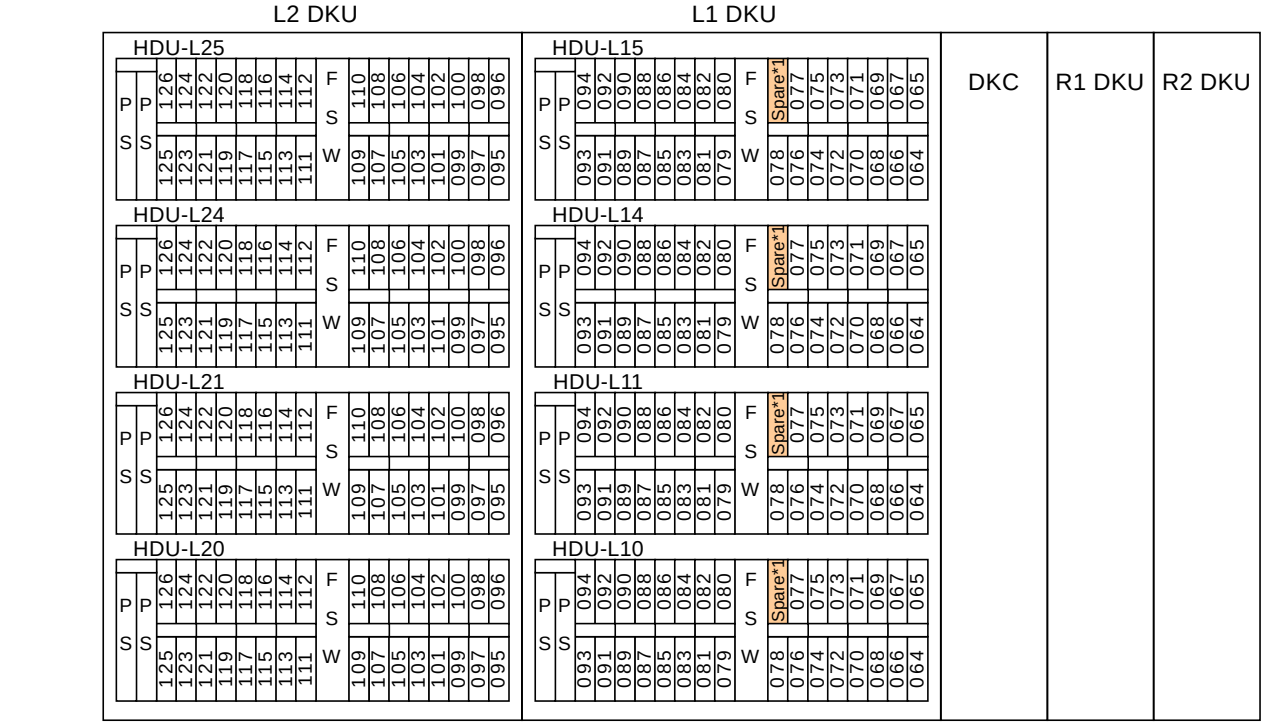

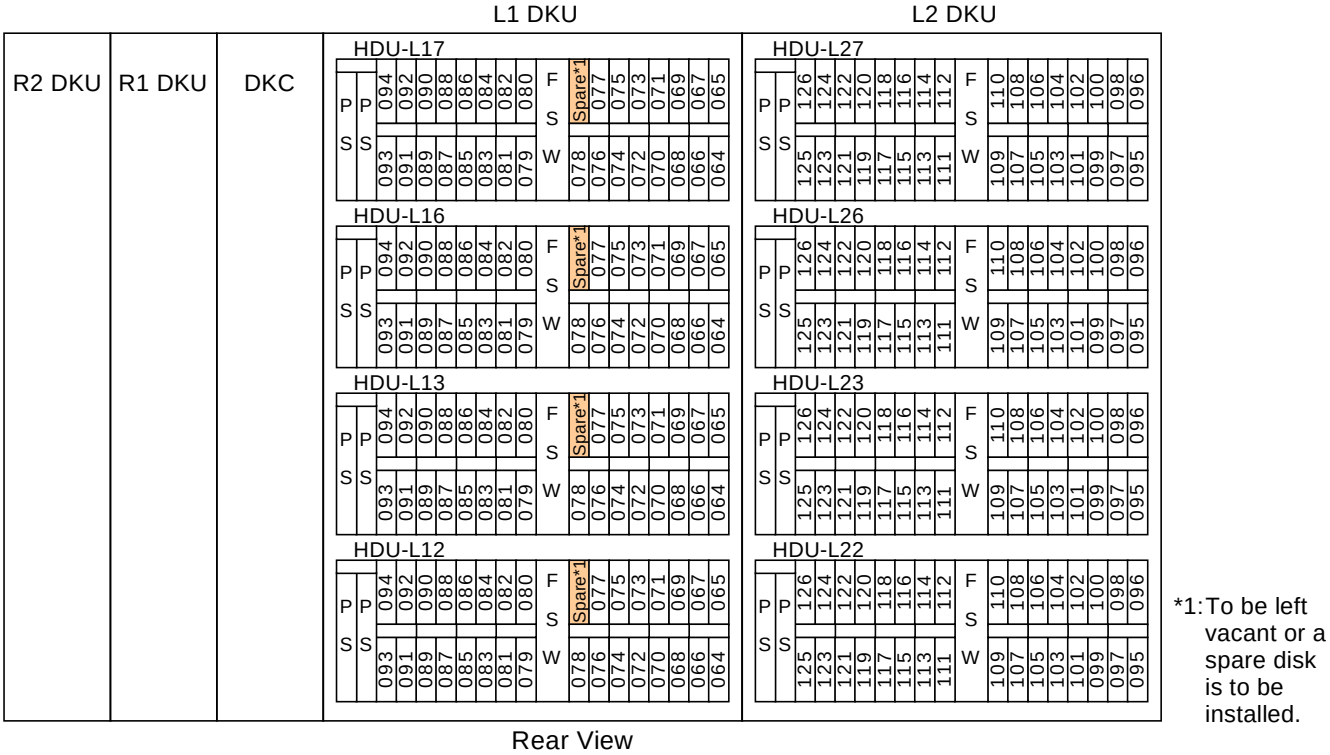

Fig. 3.11.5-14 (7D+1P) Data Drive/Parity Drive Expansion Sequence (2/2)

The relationship between HDDs installation order and RAID group number is shown in the Table 3.11.5-3.

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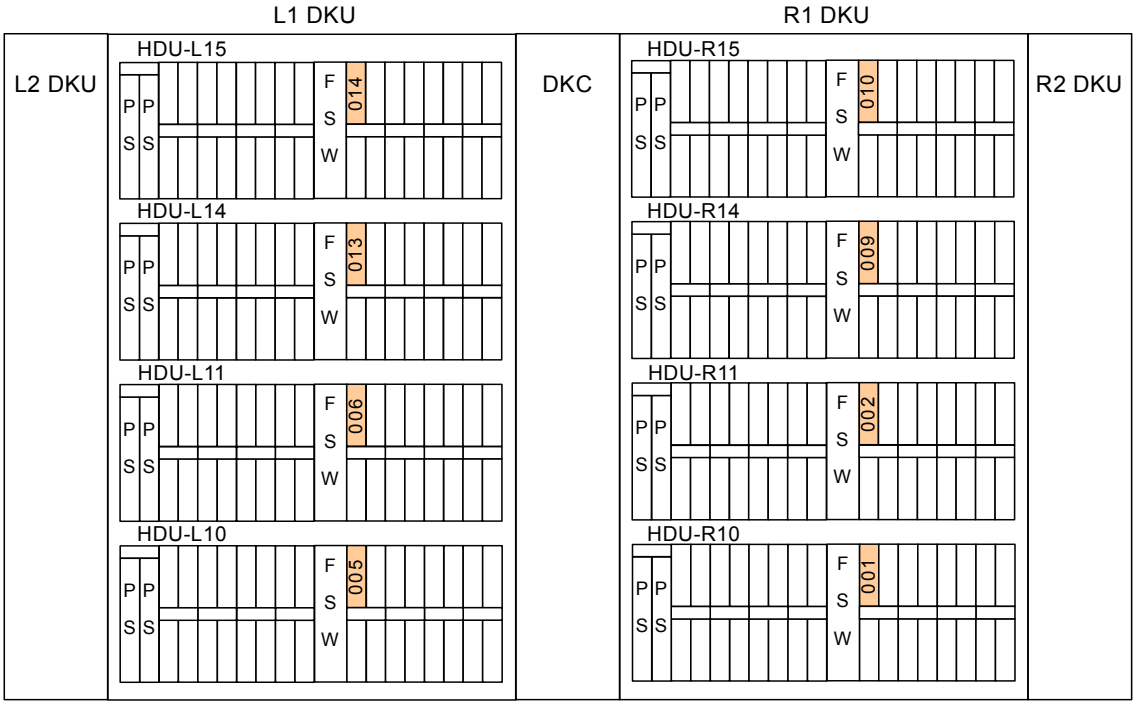
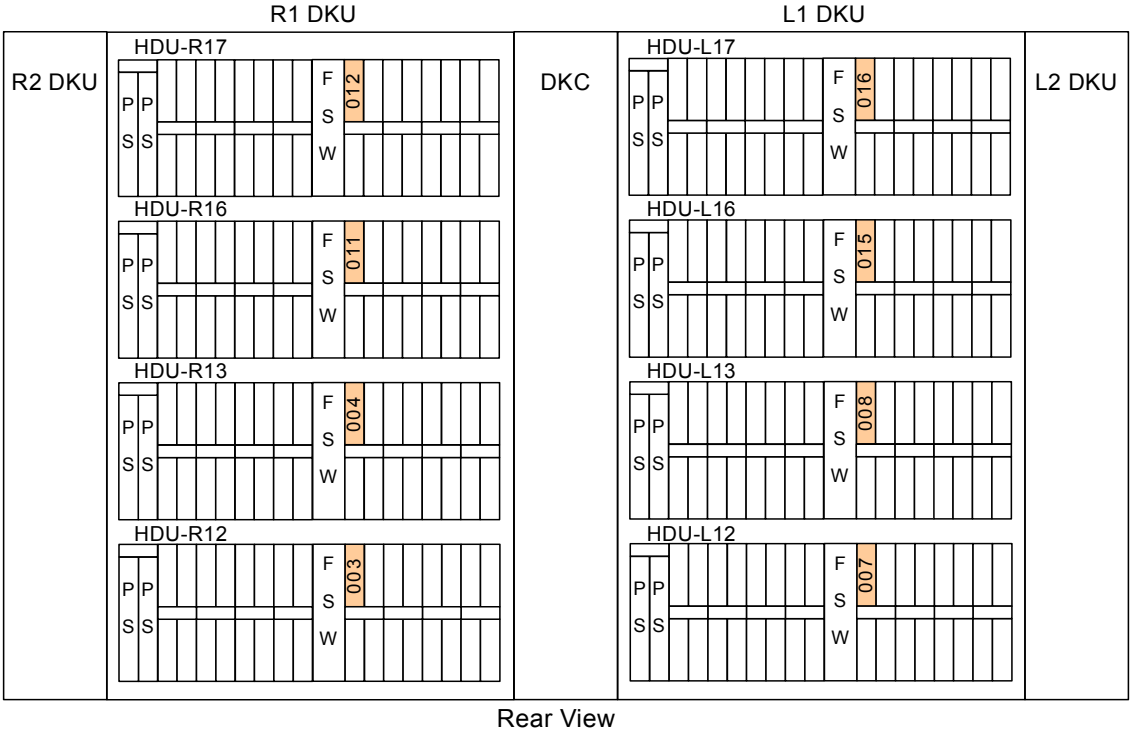
(iii) Spare HDD

No.	Model Number	Model Name	Data and Parity
1	DKU-F455I-36K1/72J1/72K1/146J1/146JS/146JM	1 HDD Canister	Spare Drive



Front View

001-016: Spare HDD canister installation order



Rear View

Fig. 3.11.5-15 Spare Drive Expansion Sequence

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4-2 Installation of the HDD Canister.

Notice:
(1) Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.
(2) Since the HDD is a precision component, handle it very carefully not to apply a vibration or shock to it.

a. Remove the dummy canister from the HDU Box.
When the dummy canister cannot be removed by pulling of it only, remove it referring to page INST03-DKA-3000.
b. Install the HDD canister. (For the detailed procedure for installation, refer to the procedure for installing HDD canister on page INST03-DKA-3010.)

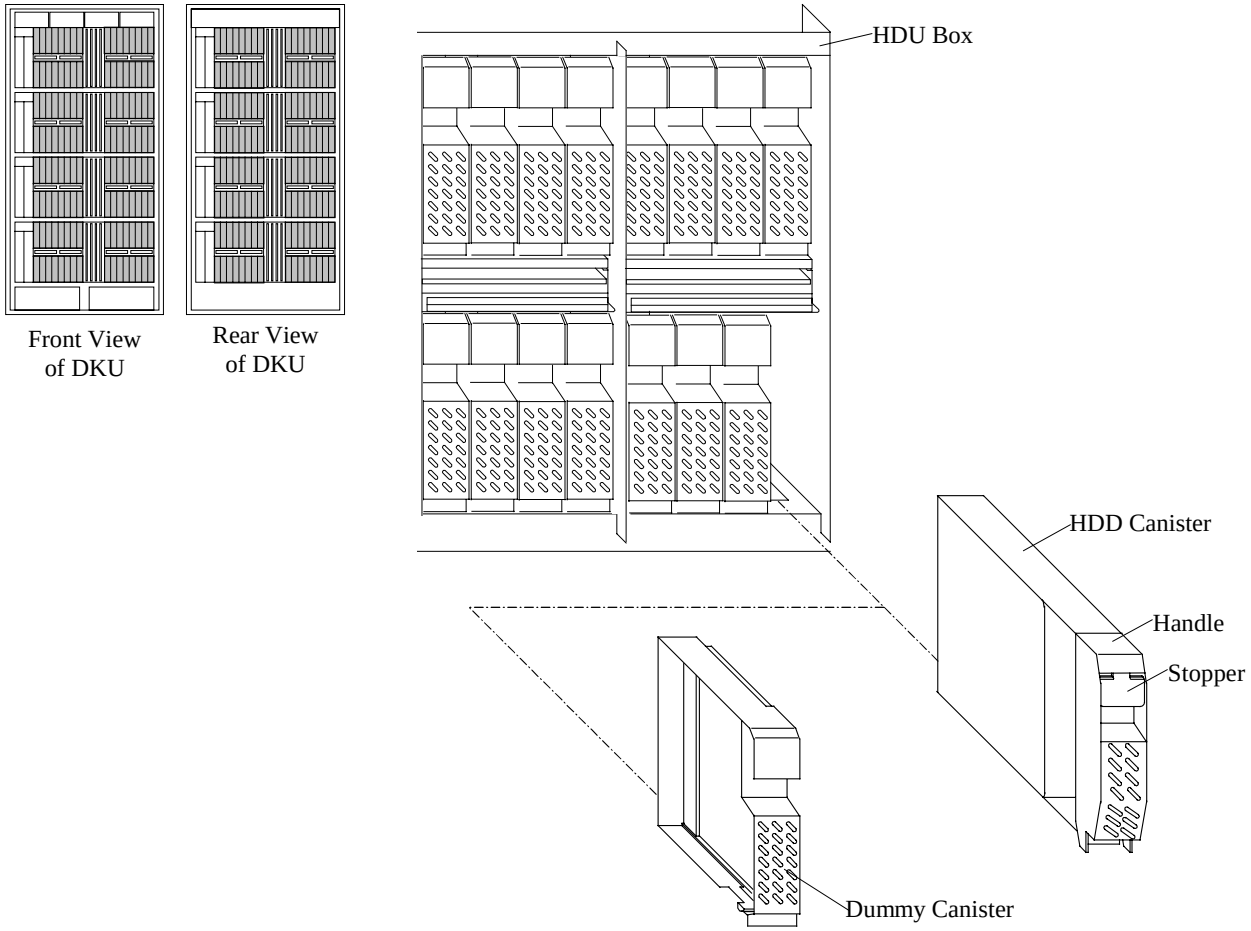

Fig. 3.11.5-16 Installation of HDD Canister

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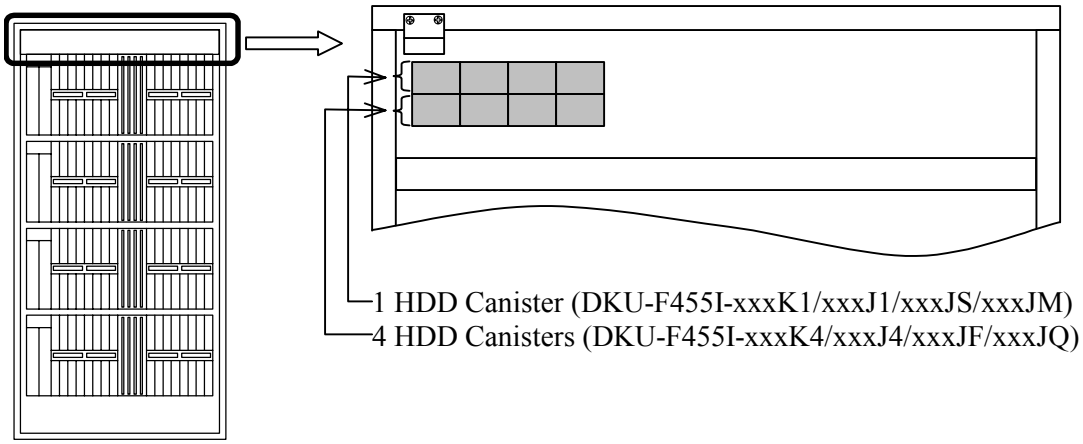
4-3 Attachment of the nameplate.

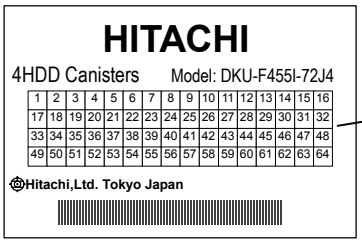
a. When the nameplate is not attached, attach the nameplate regardless of the model number from the left of the unit. Paint out mounting numbers on the nameplate.



Rear View
of DKU

[Example]

When the 7 DKU-F455I-72J4 sets are installed



							8	9	10	11	12	13	14	15	16
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64

Fig. 3.11.5-17 Attachment of Nameplate

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5. Installation Procedure of DEV Interface Cable 2 (DKU-F455I-EXC)

Caution:
The addition cannot be done unless the AC power is applied to the added DKU and the main breaker of the DKU is turned on.

Between HDU-R10-R17 and HDU-R20-R27

a. Connect the DEV interface cables to the FSW PCBs in the DKU-R1 frame referring to figures 3.11.5-18 and 3.11.5-19.

⚠ CAUTION

A serious failure occurs if any of cables/connectors is wrongly connected.
Since a label bearing a connection destination is affixed on each cable/connector, work very carefully referring to it and the wiring diagram.

- Colors of the labels of the subsystem shipped from the factory from June of 2002 and on are as follows. Labels on the cluster1 (CL1) side and the cluster2 (CL2) side are white and yellow respectively.

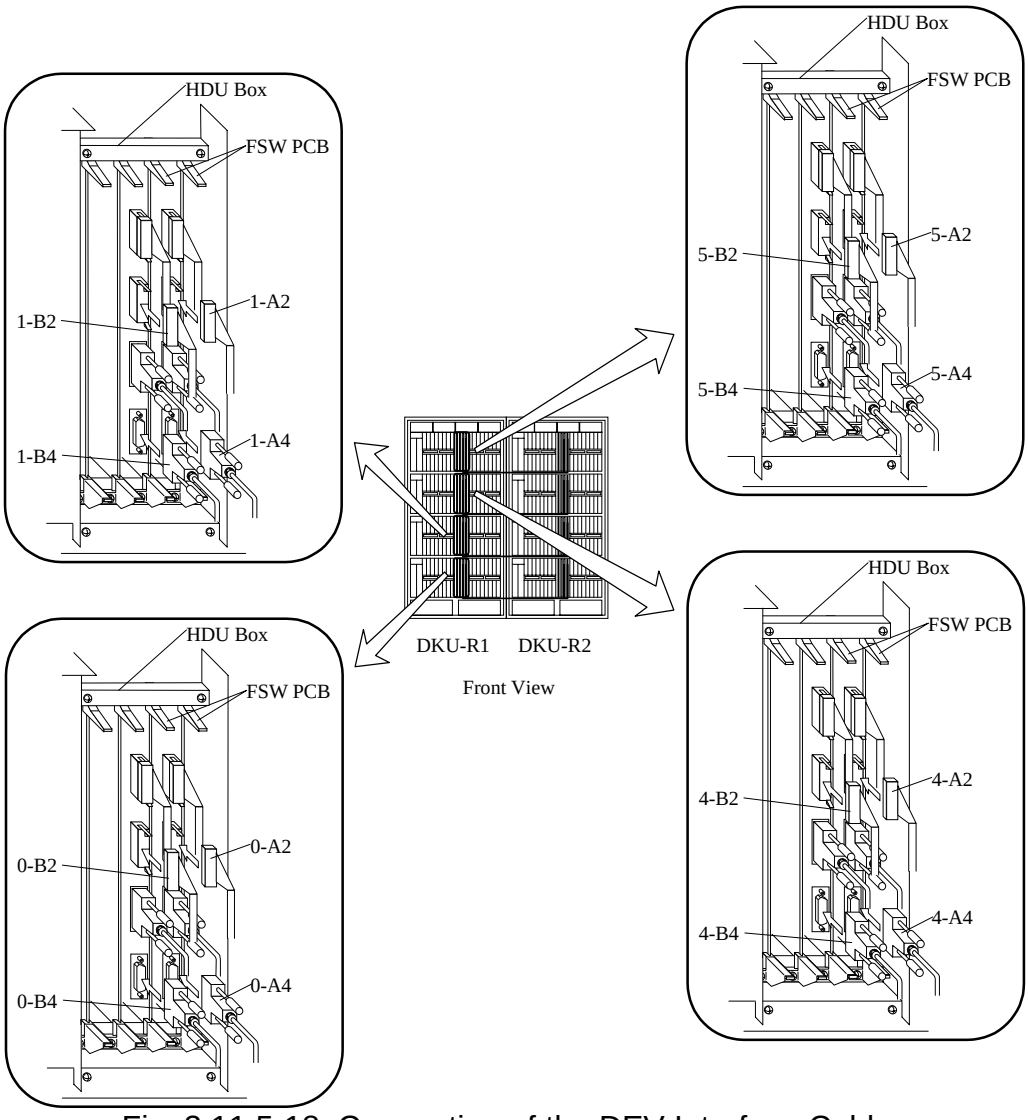

Fig. 3.11.5-18 Connection of the DEV Interface Cables

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⚠ CAUTION

A serious failure occurs if any of cables/connectors is wrongly connected.
Since a label bearing a connection destination is affixed on each cable/connector, work very carefully referring to it and the wiring diagram.

- Colors of the labels of the subsystem shipped from the factory from June of 2002 and on are as follows. Labels on the cluster1 (CL1) side and the cluster2 (CL2) side are white and yellow respectively.

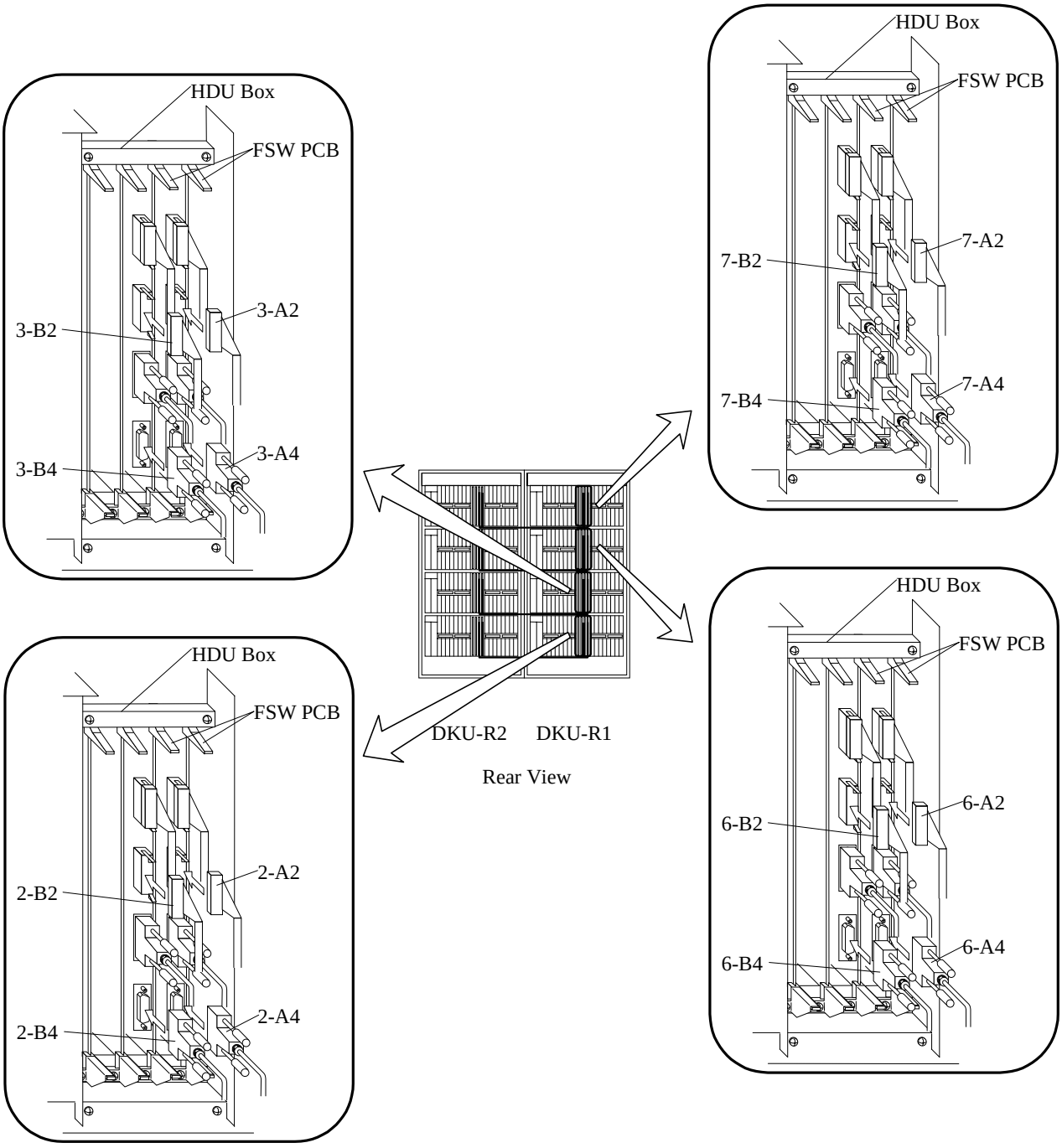

Fig. 3.11.5-19 Connection of the DEV Interface Cables

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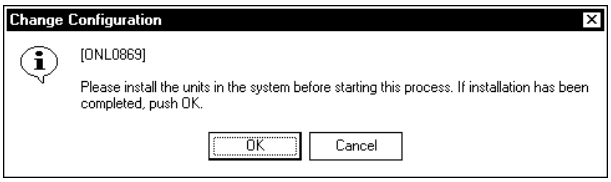
6. SVP post procedure

1. <Check that hardware components are installed>
   Select (CL) [OK] after making sure that all hardware components are installed correctly in response to “Please install the units in the system before starting this process. If installation has been completed, push OK.”.



2.
   When DKA is installed, “Waiting for Power Event... Usually, several minutes (maximum 15 minutes)” is displayed.

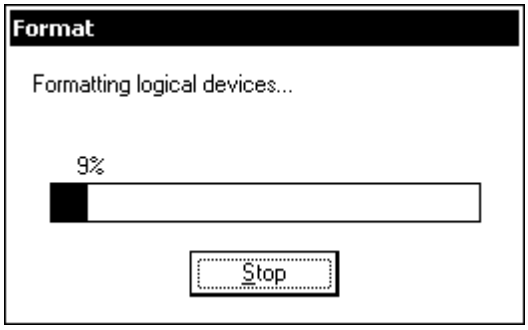
   If [ONL3437E] or [ONL3438E] is displayed, please refer 2.11.1. (INST02-630)
   If [ONL3441E] or [ONL2841W] is displayed, please refer 2.11.2. (INST02-640)

---

3. <DKU PATH INLINE>
   When DKA is installed, “DKU PATH INLINE is now running...” is displayed.

---

4. <LDEV FORMAT>
   “Formatting the logical device...” is displayed when Parity Group is defined.



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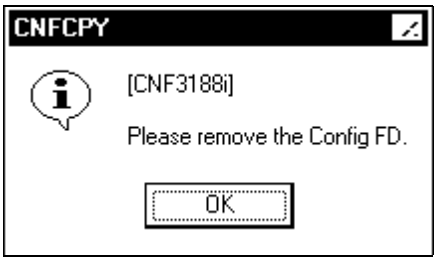
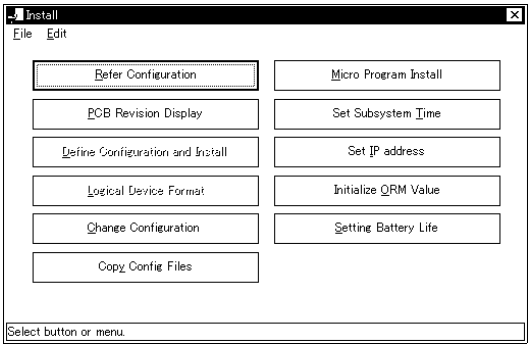
5. <End of system update processing>
"Renewal process has completed. Please check the subsystem status." is displayed when recovery processing on all installed components is completed. Select (CL) [OK] in response to this message.

6.
"Reading subsystem configuration data..." is displayed.
"Please insert the Config FD in the FDD." is displayed.
Insert the configuration FD into FDD, and select (CL) [OK].

7.
When this procedure is completed, the message "Please remove the Config FD." is displayed.
Remove the FD, select (CL) [OK].



8.
After the procedure is completed, return to 'Install'.
Select (CL) [File]-[Exit].



9. <Mode Change>
Change the mode to View Mode.

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7. Installation Procedure of DEV Interface Cable 2 (DKU-F455I-EXC)

Between HDU-R10-R17 and HDU-R20-R27

a. Attach the cable covers with the screw to fix the DEV Interface Cables.

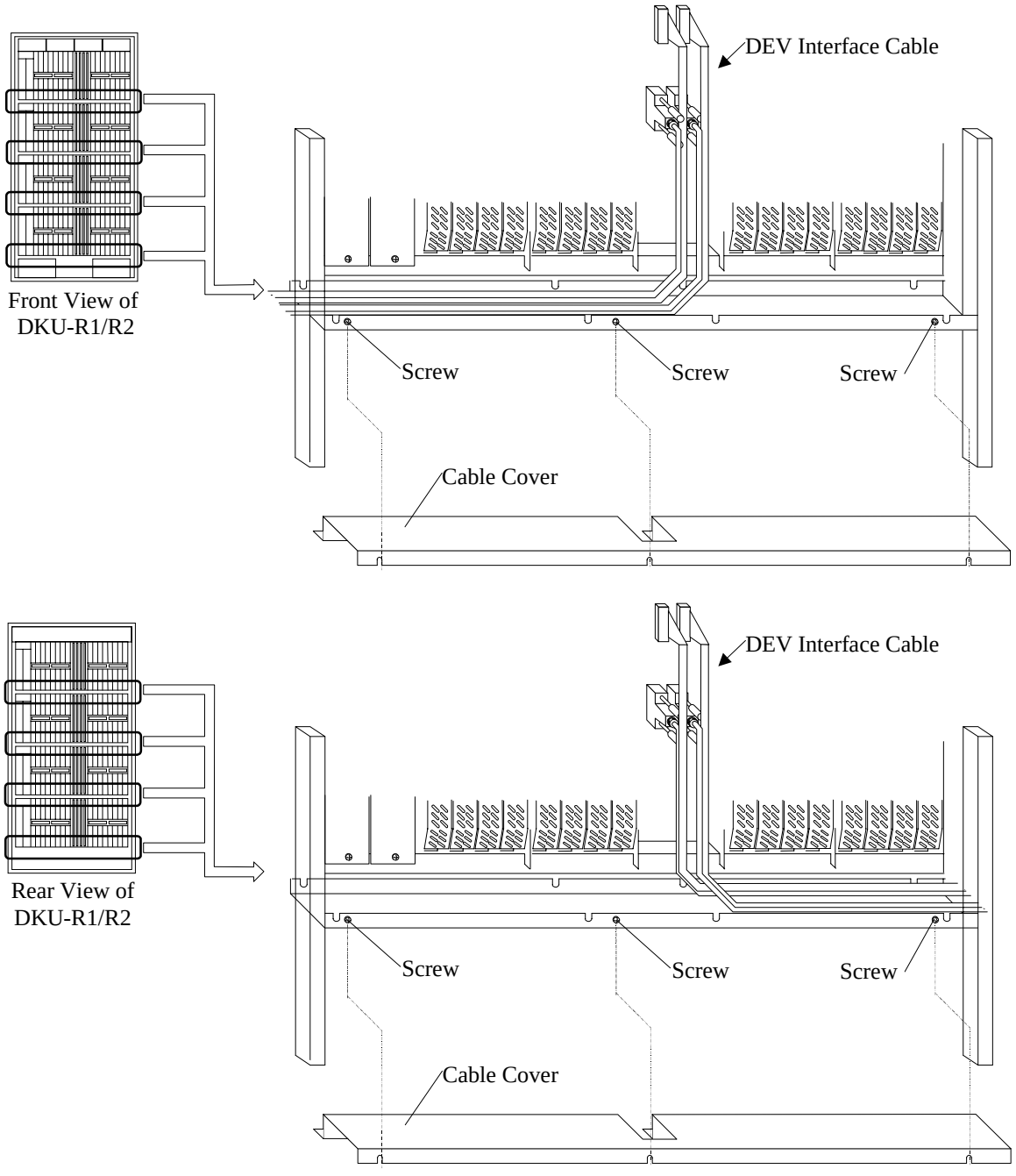

Fig. 3.11.5-20 Fixation of the DEV Interface Cables

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b. Attach the cable covers with the screw to fix the DEV Interface Cables.

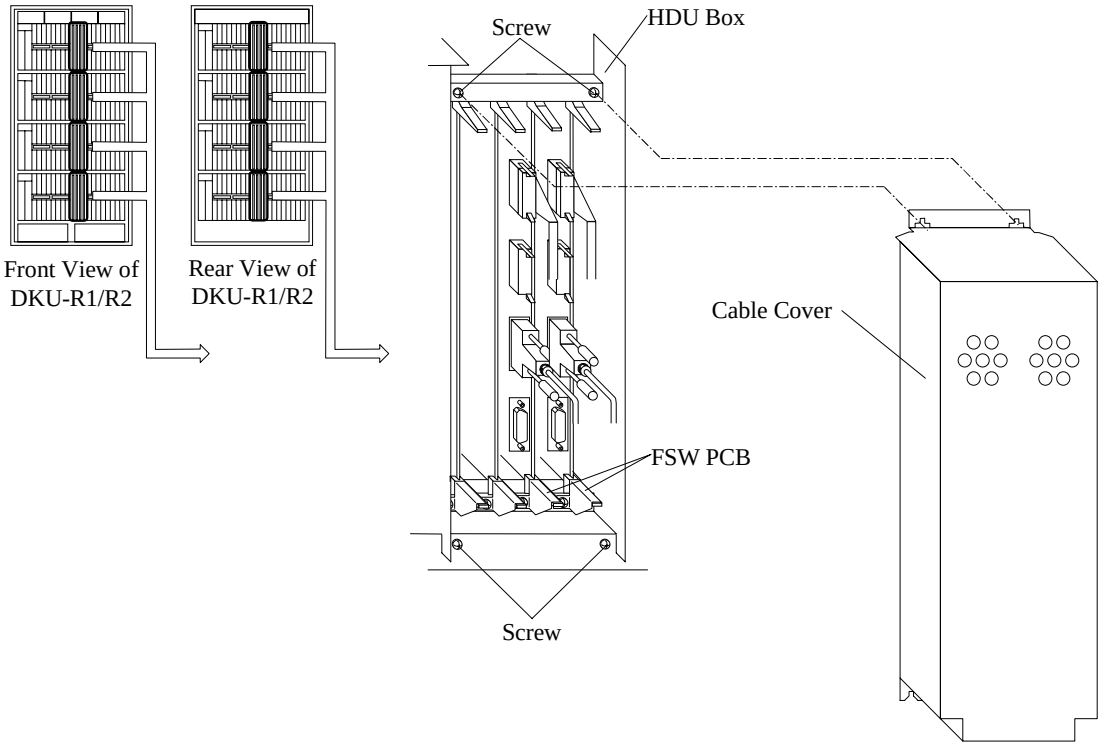

Fig. 3.11.5-21 Fixation of the DEV Interface Cables

c. Attach the nameplate to the DKU-R2 frame.

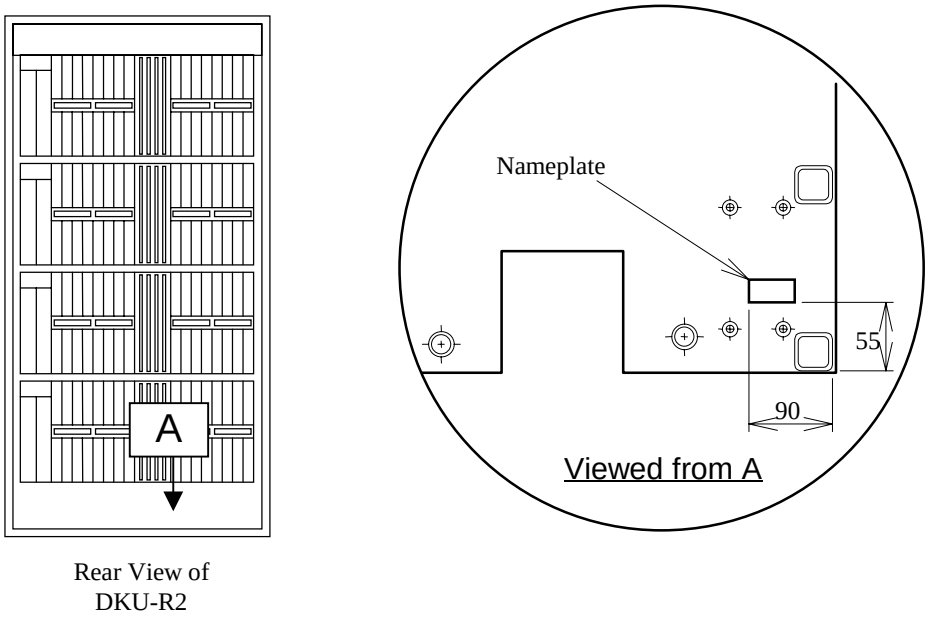

Fig. 3.11.5-22 Attachment of the Nameplate

d. Return to the work table (INST02-50) and perform rest of the works.

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3.11.6 When performing addition of the data/spare HDD canister, DKA, and DEV interface cable that accompanies the addition of the DKU-L1 frame (DKC-F460I-200/L1C, DKU-F455I-36K4/36K1/72J4/72J1/72K4/72K1/146J4/146J1/146JF/146JS/146JQ/146JM)

1. Installation Procedure of DEV Interface Cable 1 (DKC-F460I-L1C)

1-1 Connect the DEV Interface cables to the FSW.

Note:
1. When the DEV interface cable is connected to the FSW in the state in which the subsystem power is on, the each HDU Box is powered on at the same time of the connection.
2. When the DEV interface cable is connected in the state in which the main circuit breaker of the DKU is not turned on, the DKU Voltage Alarm is detected (the ALARM LED on the operator panel comes on and the SIM=BF20XX or BF22XX is issued). Therefore, turn on the main circuit breaker of the DKU before connecting the DEV interface cable.

Matters to be checked:
Check the settings of the switches on the JMP PCB and multi power supply (MPS) and the jumper socket. (Refer to Subsection 3.4.4, "Switch and Jumper Plug Installation" on pages INST03-DKU-220 and INST03-DKU-230.)
If any of the switches and jumper socket is not set correctly, reset it correctly.

a. Loosen the screws and remove the cable covers from the DKU frames.

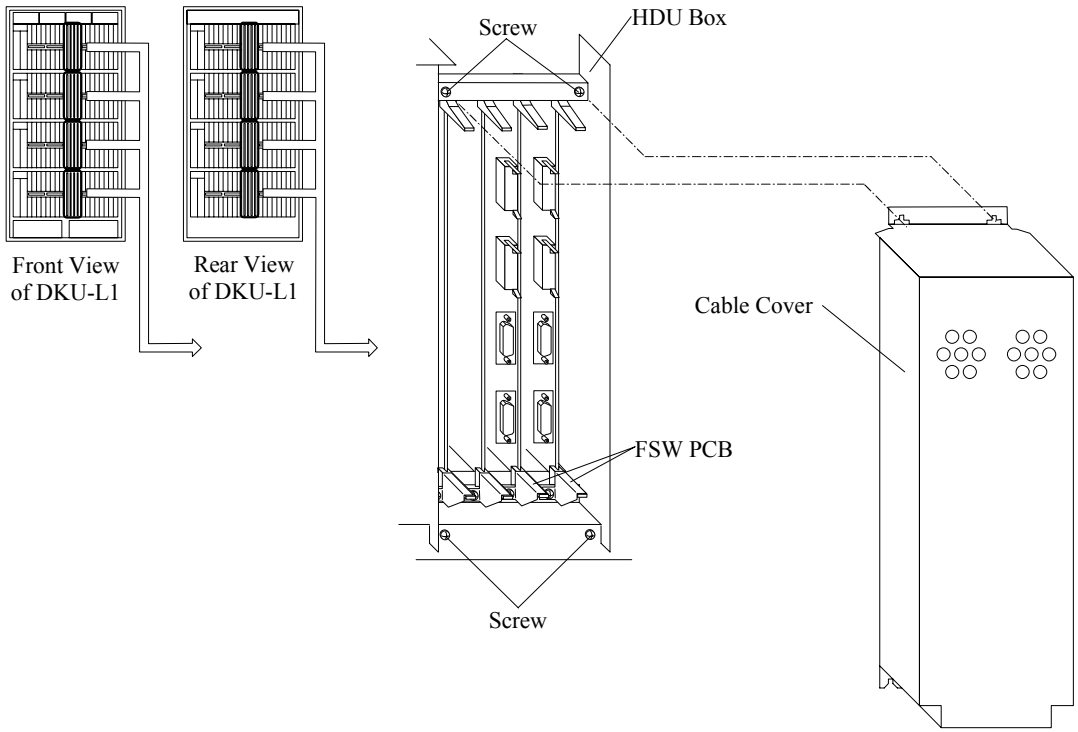

Fig. 3.11.6-1 Removal of Cable Covers

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b. Loosen the screws and remove the cable covers from the DKU frames.

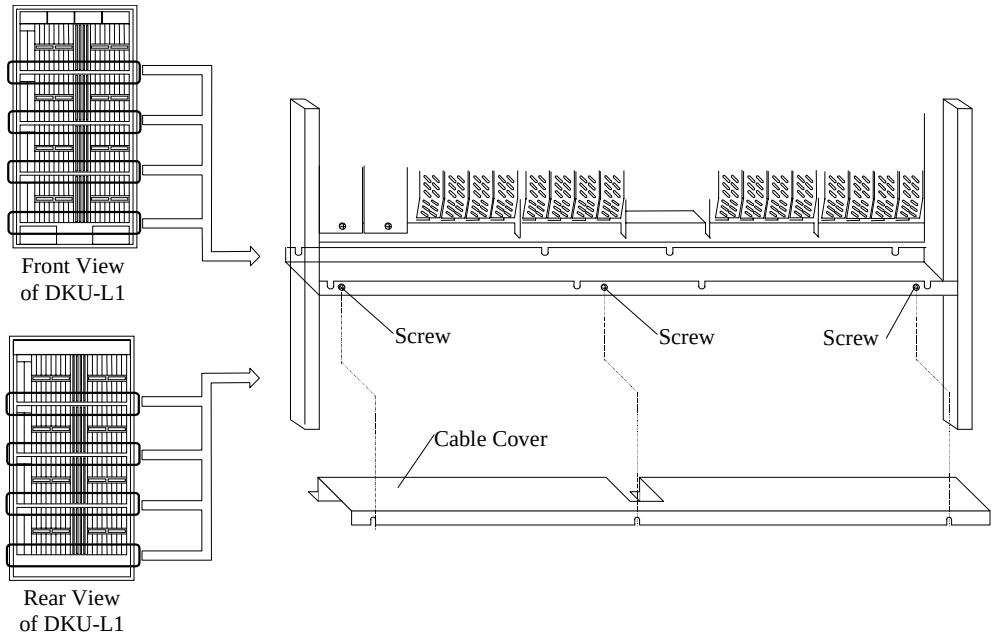

Fig. 3.11.6-2 Removal of Cable Covers

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c. Refer to Fig. 3.11.6-3 and Fig. 3.11.6-4. Connect the DEV interface cables to the sub-edges on the FSW PCBs in the HDU box.

Caution:
1. Do not perform the work unless the AC power is supplied to the additional DKU and the main breaker of the DKU is not turned on.
2. Do not connect the DEV interface cable to the DKA in this procedure. The cable is to be connected later in another procedure.

⚠ CAUTION

A serious failure occurs if any of cables/connectors is wrongly connected.
Since a label bearing a connection destination is affixed on each cable/connector, work very carefully referring to it and the wiring diagram.

- Colors of the labels of the subsystem shipped from the factory from June of 2002 and on are as follows. Labels on the cluster1 (CL1) side and the cluster2 (CL2) side are white and yellow respectively.

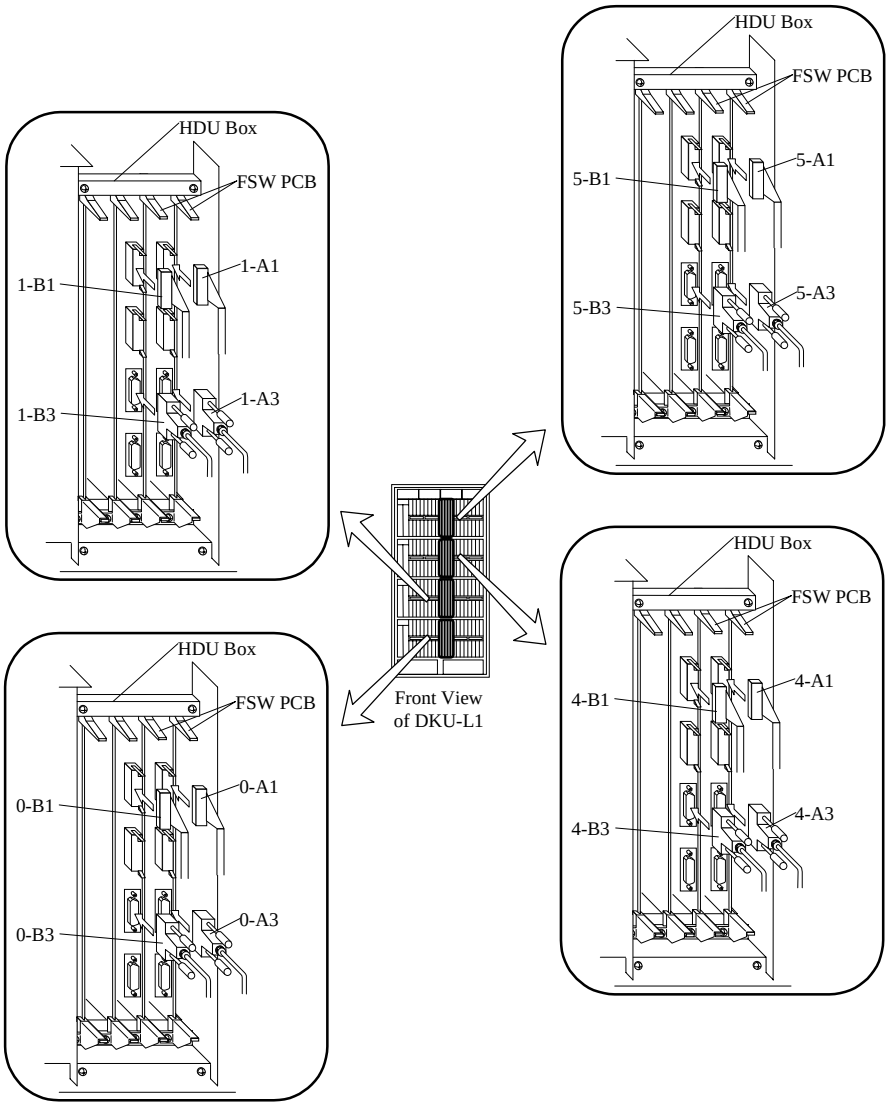

Fig. 3.11.6-3 DEV Interface Cabling Diagram (FSW PCB Side)

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⚠ CAUTION

A serious failure occurs if any of cables/connectors is wrongly connected.
Since a label bearing a connection destination is affixed on each cable/connector, work very carefully referring to it and the wiring diagram.

- Colors of the labels of the subsystem shipped from the factory from June of 2002 and on are as follows. Labels on the cluster1 (CL1) side and the cluster2 (CL2) side are white and yellow respectively.

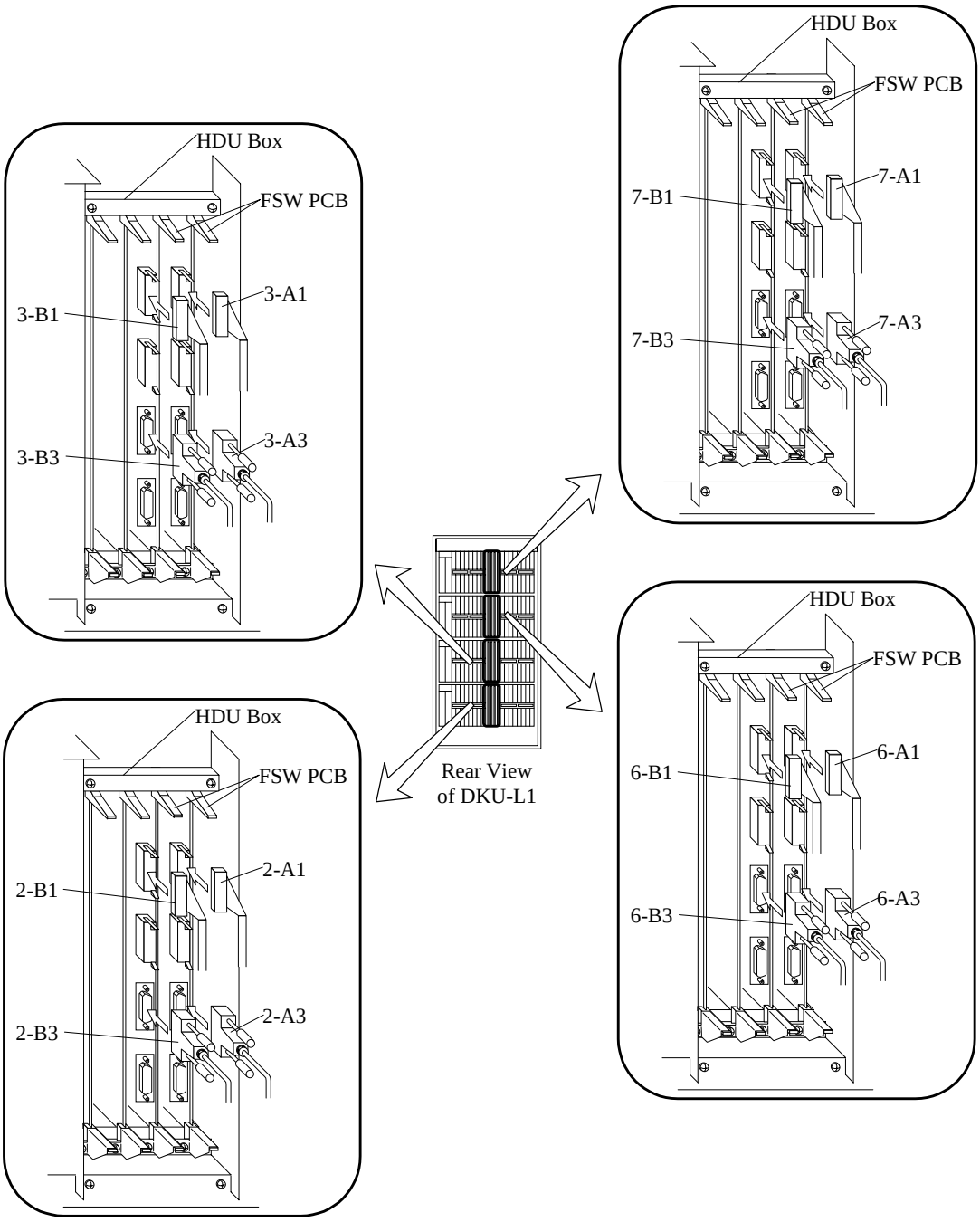

Fig. 3.11.6-4 DEV Interface Cabling Diagram (FSW PCB Side)

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d. Attach the cable covers with the screw to fix the DEV Interface Cables.

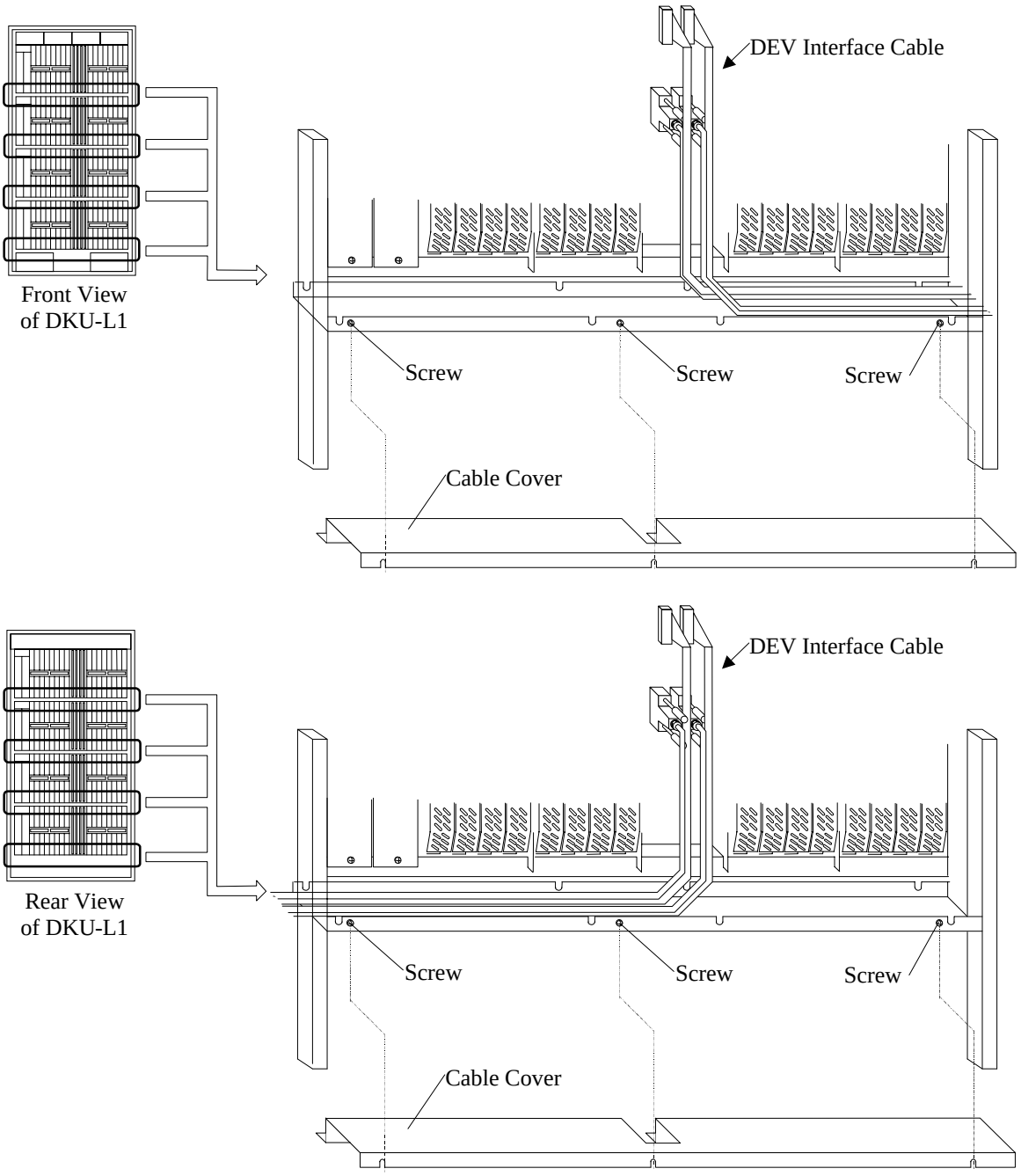

Fig. 3.11.6-5 Fixation of the DEV Interface Cables

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e. Attach the cable covers with the screw to fix the DEV Interface Cables.

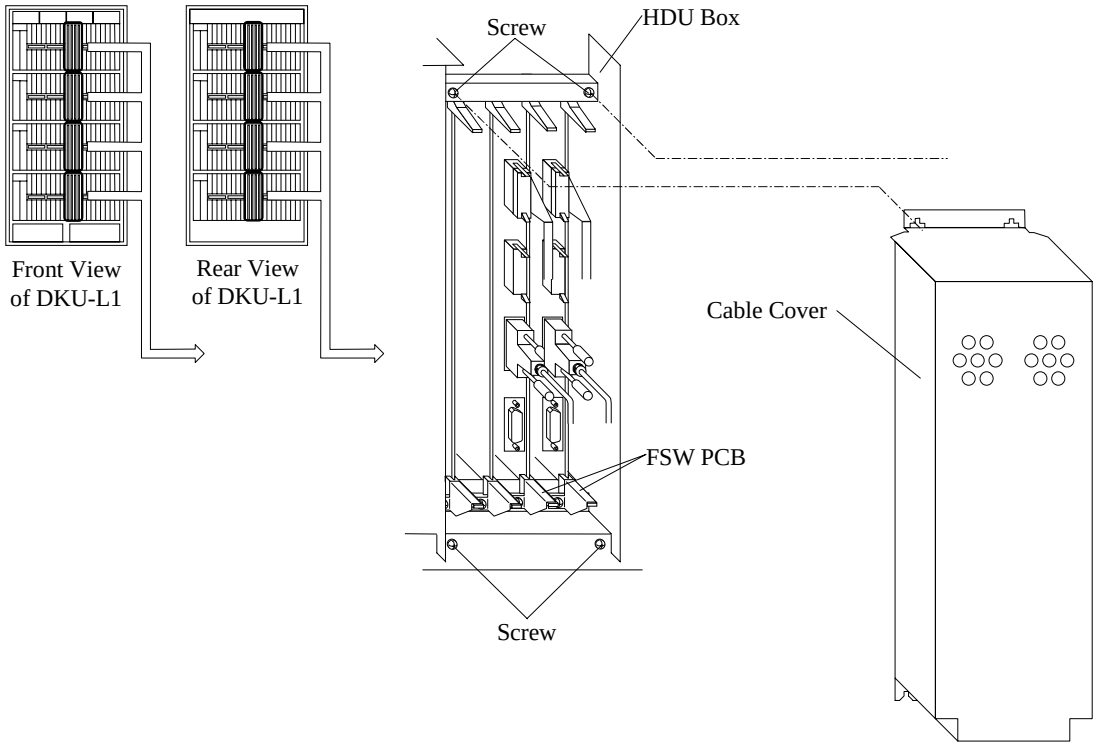

Fig. 3.11.6-6 Fixation of the DEV Interface Cables

1-2 Attach the nameplate.

a. Attach the nameplate regardless of the model number from the left of the cover.

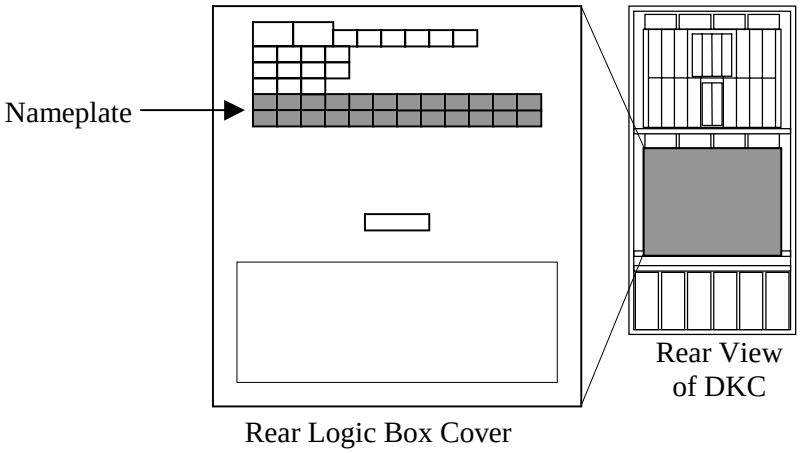

Fig. 3.11.6-7 Attachment of Nameplate

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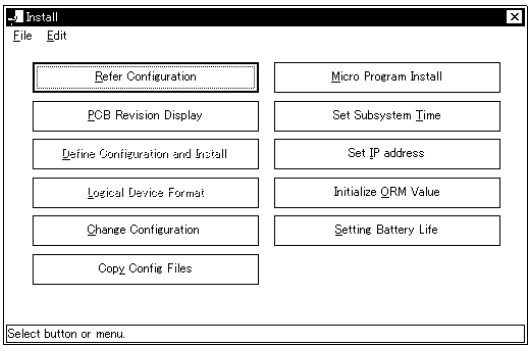
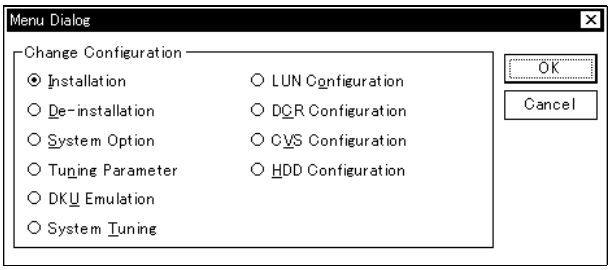
2. Setting up the New Device Structure Information

1. <Mode Change>
   Change the mode to Modify Mode.
   Select (CL) [Install].

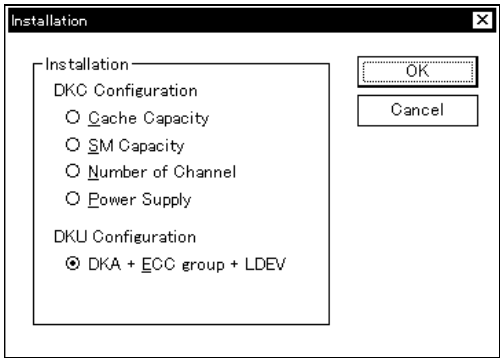
2. <Start the 'Menu Dialog' screen>
   Select (CL) [Change Configuration].



3. <Start Device Structure Setup screen>
   Select (CL) [Installation] in the 'Menu Dialog' dialog box and select (CL) [OK].



4. <Select a part to be changed>
   Select (CL) [DKA + ECC group + LDEV], and select (CL) [OK].



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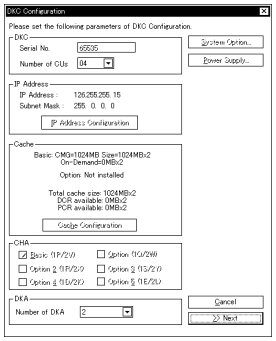
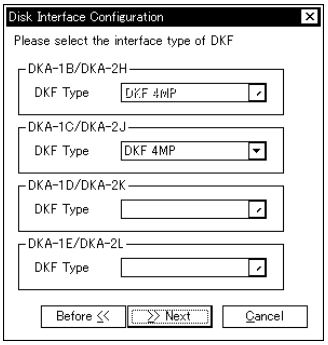
5. <Update Configuration Information>
Define the number of CU in DKC and the number of DKA in the 'DKC Configuration' window.



Make sure that the entered item is correct and select (CL) [>>Next].

Note1: To add the DKU-L1, the six or more DKAs are required.
Note2: There may be a case where an addition of the SM is required to add the CU.
When adding the SM, refer to page INST03-SM-10.

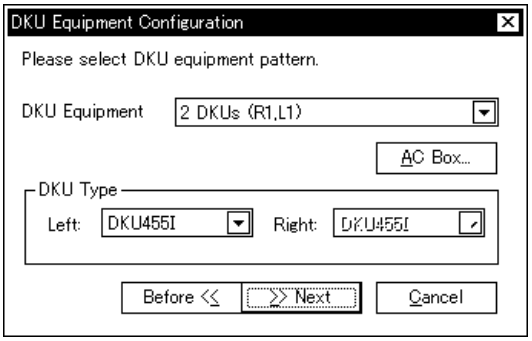
6. <Setting DKA type>
Define the DKA type in the 'Disk Interface Configuration' dialog box. After setting it, select (CL) the [>>Next] button.



Note: When no DKA is to be added, the 'Disk Interface Configuration' dialog box is not displayed.

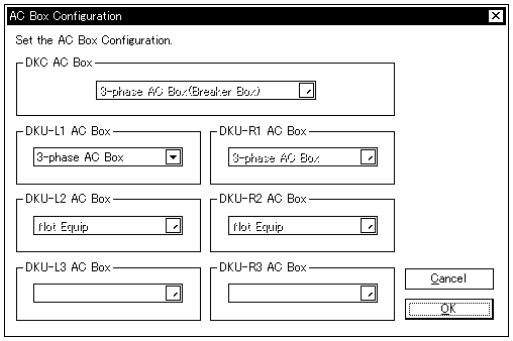
7. <DKU Equipment>
The DKU equipment pattern and DKU type is displayed in the 'DKU Equipment' configuration window.
Make an altered setting in which the DKU-L1 is added to the DKUs currently set.

Current setting	Altered setting
1DKU (R1)	2DKUs (R1, L1)
2DKUs (R1, R2)	3DKUs (R1, L1, R2)



[AC Box...]: Set the DKU AC Box configuration. (Refer to step 7-1.)
Select (CL) the [>>Next].

7-1. <Setting the DKU AC Box configuration>
Set the installation AC Box configuration, select (CL) the [OK]. Return to step 7.



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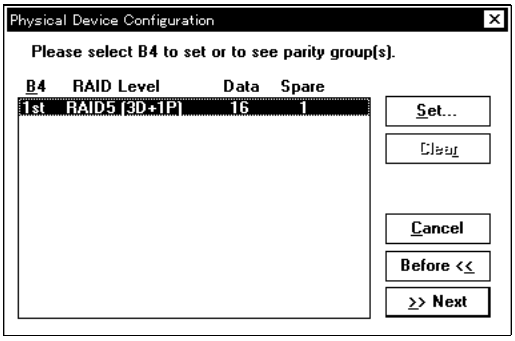
8. <Change Drive Configuration Information>
Define drive configuration according to the 'Physical Device Configuration' screen.
Detailed procedure is shown below.
[Set...]: Defines the parity group or spare disk. The routine proceeds to Step 8-1.
[Clear...]: Cancels the setting of the B4.
After setting up all items, select (CL) [>>Next]. Go to step 9.



Selecting (CL) [Before<<] returns you to the previous screen.

[Multi Cabinet Model]

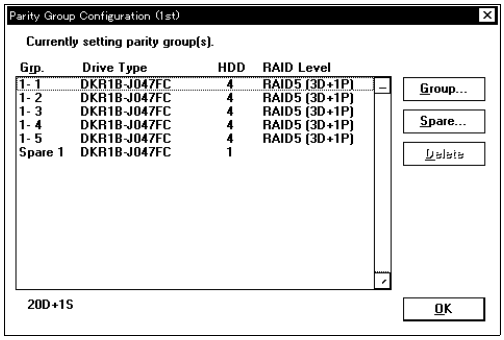
B4	Location	B4	Location
1st	HDU-R10, 11, 12, 13	7th	HDU-L20, 21, 22, 23
2nd	HDU-R14, 15, 16, 17	8th	HDU-L24, 25, 26, 27
3rd	HDU-L10, 11, 12, 13	9th	HDU-R30, 31, 32, 33
4th	HDU-L14, 15, 16, 17	10th	HDU-R34, 35, 36, 37
5th	HDU-R20, 21, 22, 23	11th	HDU-L30, 31, 32, 33
6th	HDU-R24, 25, 26, 27	12th	HDU-L34, 35, 36, 37

Note: The 9th to 12th of the B4 are valid only when the DKUs for the RAID 400 are connected.

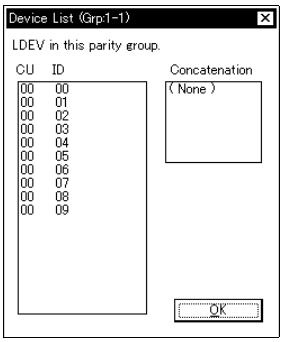
[Single Cabinet Model]

B4	Location	Comment
1st	HDU-0, 1, 2, 3	HDD-X00 ~ X0F
2nd	HDU-0, 1, 2, 3	HDD-X10 ~ X1F

8-1. <Define Parity Group>
[Group...]: Defines the parity group. See Step 8-1-1.
[Spare...]: Defines the spare drive. See Step 8-1-2.
[Delete]: Deletes the added parity group or spare drive.
Grp*: A parity group where RAID Concatenation is installed.
Note: If you want to set any Spare Drive in B4, please define the Spare Drive first.
After setting up all items, select (CL) [OK]. Return to step 8.



- To display LDEV ID in Parity group, select an item to be displayed and select (DC) this item on list box. The 'Device List' dialog box will appear.
"(no LDEV)" is displayed for the added parity group.



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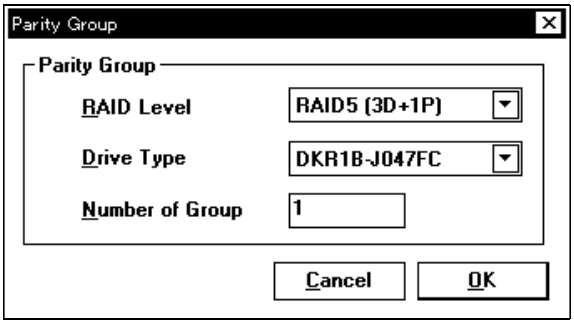
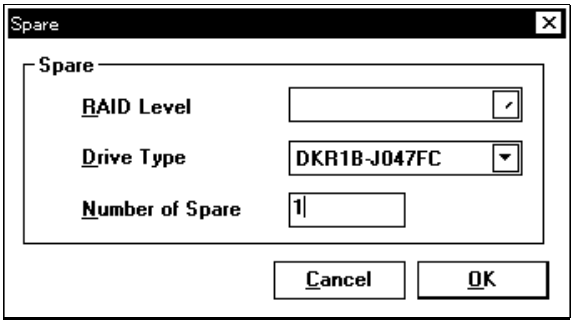
8-1-1.

Define the RAID Level and the Drive Type and the Number of Group in the 'Parity Group' dialog box.
Then select (CL) [OK]. Return to step 8-1.



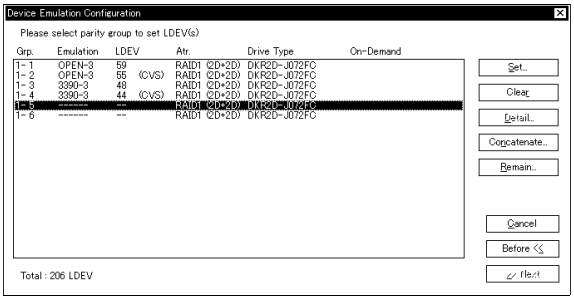
8-1-2.

Define the RAID Level and the Drive Type and the Number of Spare in the 'Spare' dialog box.
Then select (CL) [OK]. Return to step 8-1.



9. <Define Device Emulation>

After setting up all items for definition of Device Emulation, select (CL) [>>Next].
Selecting (CL) [Before<<] returns you to the previous screen.



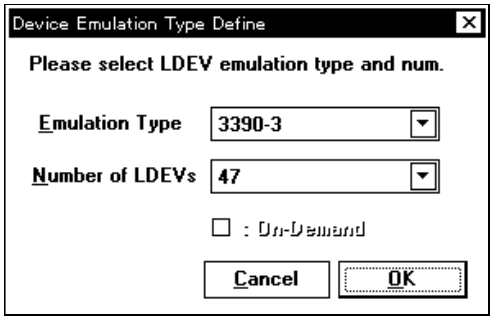
For defining Device Emulation:
Select (CL) parity group and select (CL) [Set...].
Go to step 9-1

For detailed display:
Select (CL) parity group and select (CL) [Detail...].
The detailed information is displayed.
(CVS): A parity group where CVS is installed.
Grp*: A parity group where RAID Concatenation is installed.

9-1.

After setting up all items in the 'Device Emulation Type Define' dialog box, select (CL) [OK].

Selecting (CL) [Cancel] returns you to step 9.



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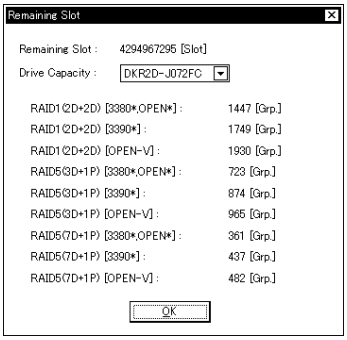
9-2. <Displaying remaining slot(s)>

The Remaining Slot window is displayed.
An allowable number of times of PDEV addition corresponding to the specified drive type is displayed.



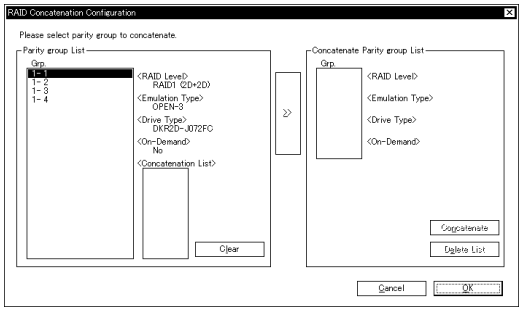
Select (CL) the [OK]. The routine returns to Step 9.

9-3. <Setting RAID concatenation>

Select (CL) [Concatenate...].
When you do not perform the RAID concatenation, return to Step 9.

9-4.

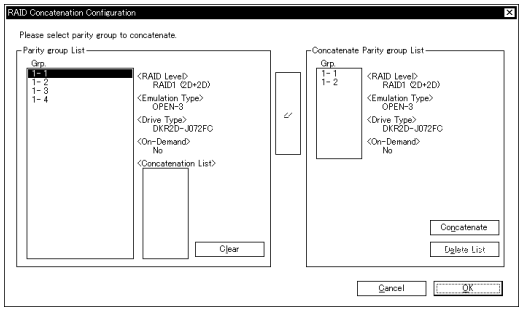
Parity groups to which the RAID concatenation can be applied are displayed in the Parity group List. Select (CL) parity groups to which you want to apply the RAID concatenation and press (CL) the [>>] button.



Note: Only the parity groups, which have been added and to which the RAID concatenation can be applied are displayed in the Parity group List.

9-5.

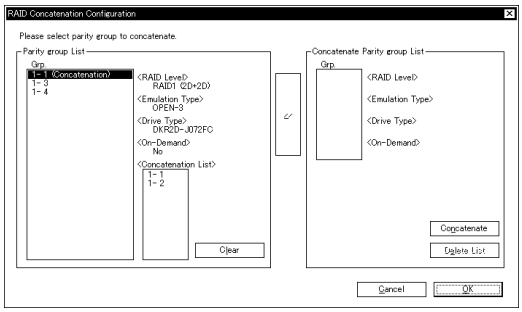
The selected parity groups are registered in the Concatenate Parity group List. Then press (CL) the [Concatenate] button.



Note: The [Concatenate] button cannot be pressed if the concatenation does not meet a condition of the RAID concatenation. Adjust the number of the parity groups in the Concatenate Parity group List.

9-6.

When the RAID concatenation is completed, "(Concatenation)" is displayed in the Parity group List. Selecting the "(Concatenation)" displays the concatenated parity groups in the Concatenation List. Pressing the [Clear] button cancels the RAID concatenation.



When all the settings of the RAID concatenation are completed, press (CL) the [OK] button.
Pressing (CL) the [Cancel] button returns the routine to Step 9.

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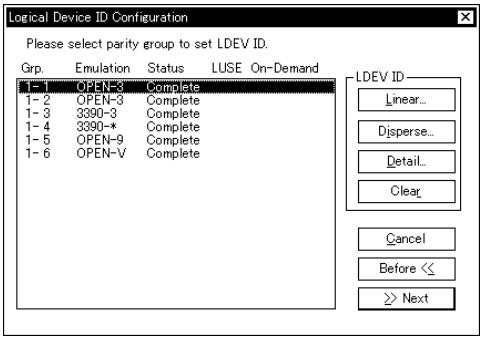
10. <Define LDEV ID>

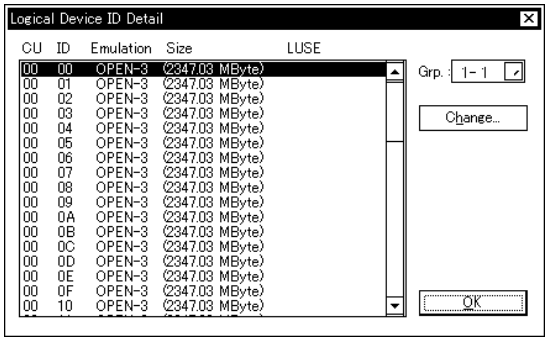


Definition Screen for LDEV ID.
Select (CL) the parity group to be defined and select (CL) a function from the [LDEV ID] list box.
[Linear...]: LDEV ID is assigned to LDEV in the order of parity groups. See step 10-1.
[Disperse...]: LDEV is assigned discretely in the order of parity groups. See step 10-1.
[Detail...]: A screen to define LDEV in detail is displayed. See step 10-2. (When plural groups are selected (CL), it is invalid.)
[Clear]: Select (CL) [Clear] to delete.
Grp*: The top parity group where RAID Concatenation is installed.

- '-----' is displayed in the Status area for the parity group to which LDEV ID is not assigned.

After setting up all items, select (CL) [>>Next]. (Go to Step 11)

10-1. Detailed Definition Screen for LDEV ID

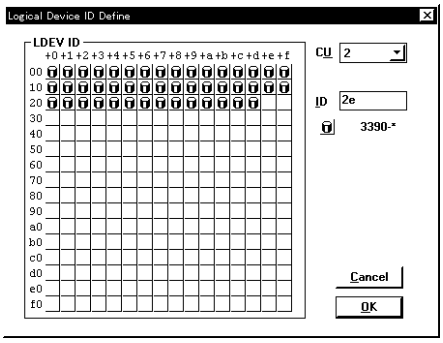


LDEV ID is defined in detail for each LDEV in the parity group.
Select (CL) LDEV from the list box and select (CL) [Change...].
The screen for LDEV ID input is displayed.
After setting, select (CL) [OK]. Return to step 10

- '-----' is displayed in the CU area and the ID area for the LDEV to which LDEV ID is not assigned.

Note: In the case of a RAID Concatenation Group, LDEV of the parity group selected by the "Grp List" is displayed.

10-2. Input LDEV ID



Select CU ID in the CU combo box.
The status of usage of ID in the CU is displayed in the LDEV ID panel.
White disk of panel: not used
Patterned disk of panel: using
Input LDEV ID you want to set or the head LDEV ID in the ID Edit box.
After setting, select (CL) [OK]. Return to step 10-1

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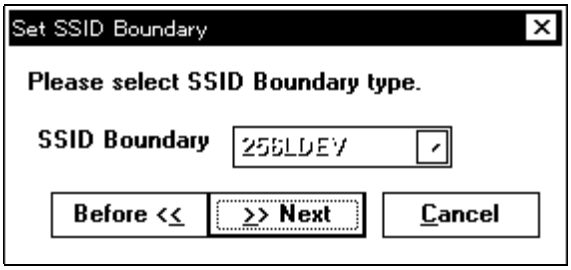
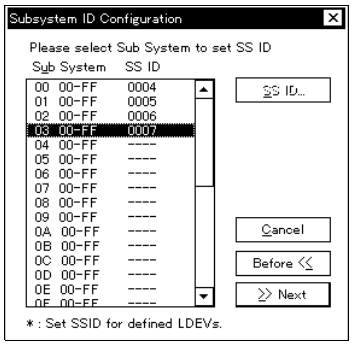
11. <Define Subsystem ID Boundary>
Press (CL) the [>>Next] button to change the screen to the “Set SSID Boundary” screen.

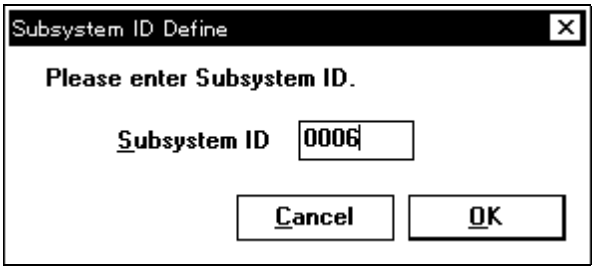


12. <Define Subsystem ID>
To define Subsystem ID, select (CL) the item from the list box and select (CL) [SSID]. See step 12-1.

After setting, select (CL) [>>Next].

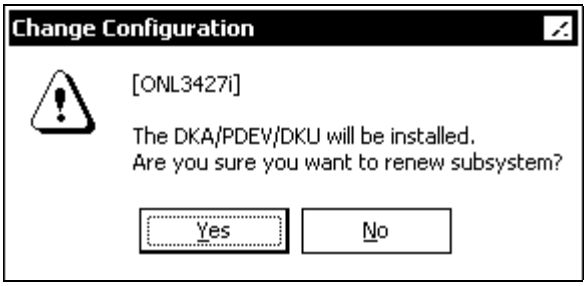


12-1. Define Subsystem ID and select (CL) [OK].
Return to step 12.



13. <Start installation>
Select (CL) [Yes] in response to “The DKA/PDEV/DKU will be installed. Are you sure you want to renew subsystem?”.

When [No] is selected (CL), returns to INST03-DKA-960 step 3.



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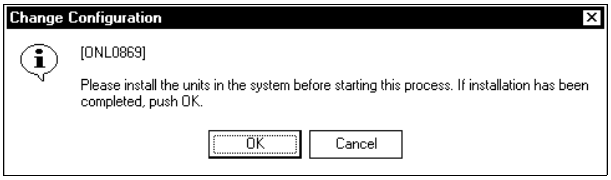
14. <Download microprogram>
    Microprograms are automatically downloaded for each processor.

15. <Install DKA>
    “Upgrading of the DKA...”

16. <Check that hardware components are installed>
    At this point refrain from pressing the [OK] button.
    “Please install the units in the system before starting this process. If installation has been completed, push OK.” is displayed.



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3. Installation Procedure of Additional Disk Adapter (DKC-F460I-200)

Note: Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

3-1 Insertion of the PCBs

Note: Make sure that a color of the levers of the PCB to be installed is blue. Never insert a PCB whose lever is not blue.

a. Remove the dummy plate installed in the installation location referring to the Fig. 3.11.6-8. (Note) Dummy plates should be stored for future use in De-installation.
b. Insert the PCBs to the correct locations in the Logic Box. Refer to Table 3.11.6-1.
c. Fasten the two screws referring to Fig. 3.11.6-9.

Table 3.11.6-1 Inserting Location (Rear of the unit)

Cluster	CL2							CL1				
Slot No.	M	L	K	J	H	G	F	E	D	C	B	A
Function	CSW	DKA	DKA	DKA	DKA	CACHE	CACHE	DKA	DKA	DKA	DKA	CSW
Location No.	CSW -2M	DKA -2L	DKA -2K	DKA -2J	DKA -2H	CACHE -2G	CACHE -2F	DKA -1E	DKA -1D	DKA -1C	DKA -1B	CSW -1A
Order of addition		Add.3	Add.2	Add.1	Basic			Add.3	Add.2	Add.1	Basic	
Number of DKAs set through the SVP		–	–	–	2			–	–	–	2	
		–	–	4				–	–	4		
		–	6					–	6			
		8						8				

Up to 4 disk adapters can be installed in the subsystem.

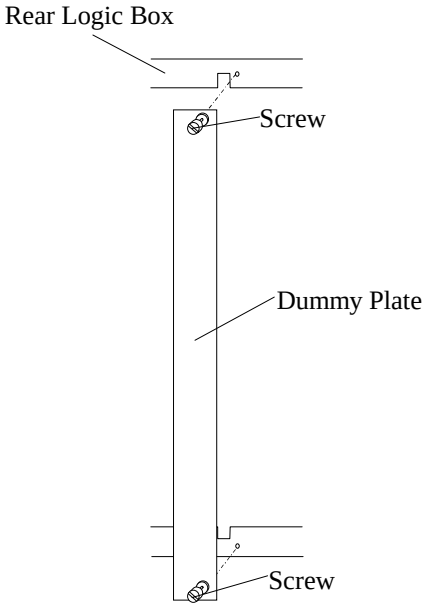

Fig. 3.11.6-8 Removal of Dummy Plate

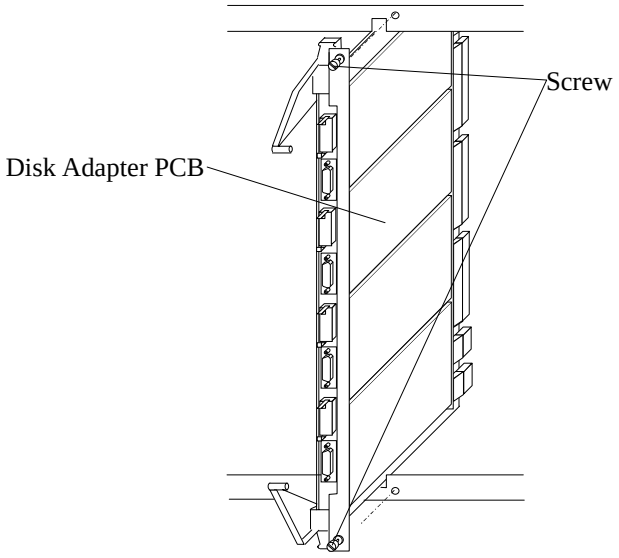

Fig. 3.11.6-9 Insertion of PCB

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3-2 Connection of cables

In case of Add.1

CAUTION

A serious failure occurs if any of cables/connectors is wrongly connected.
Since a label bearing a connection destination is affixed on each cable/connector, work very carefully referring to it and the wiring diagram.

- Colors of the labels of the subsystem shipped from the factory from June of 2002 and on are as follows. Labels on the cluster1 (CL1) side and the cluster2 (CL2) side are white and yellow respectively.

a. Connect the cables to the sub-edge of PCBs. (Refer to Fig. 3.11.6-10.)

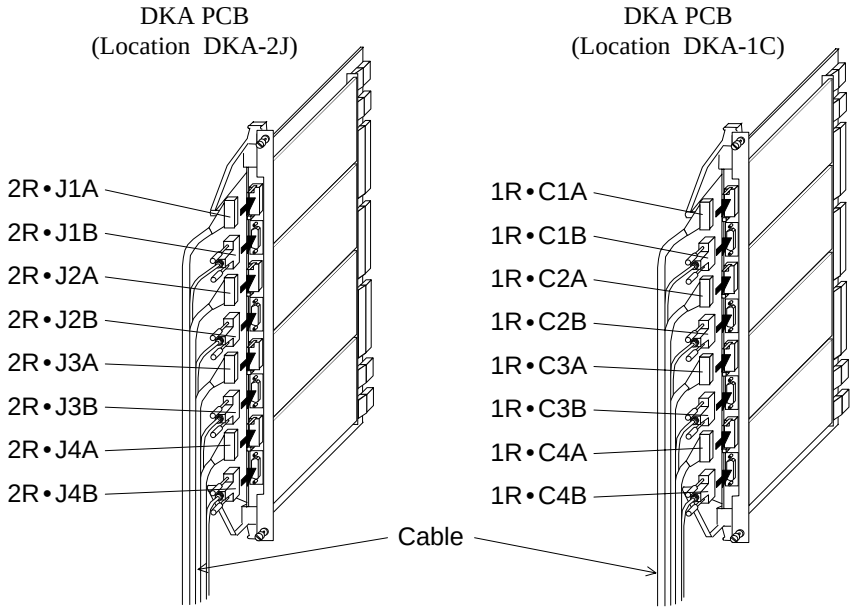

Fig.3.11.6-10 Connection of cable (Add.1)

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In case of Add.2

Caution:
Make sure that the AC power is applied to the added DKUs (DKU-L1 and DKU-L2) and the main breakers of the DKUs (DKU-L1 and DKU-L2) are turned on.
The DKU is automatically powered on when the DEV interface cable is connected to the DKA.

⚠ CAUTION

A serious failure occurs if any of cables/connectors is wrongly connected.
Since a label bearing a connection destination is affixed on each cable/connector, work very carefully referring to it and the wiring diagram.

- Colors of the labels of the subsystem shipped from the factory from June of 2002 and on are as follows. Labels on the cluster1 (CL1) side and the cluster2 (CL2) side are white and yellow respectively.

a. Connect the cables to the sub-edge of PCBs.

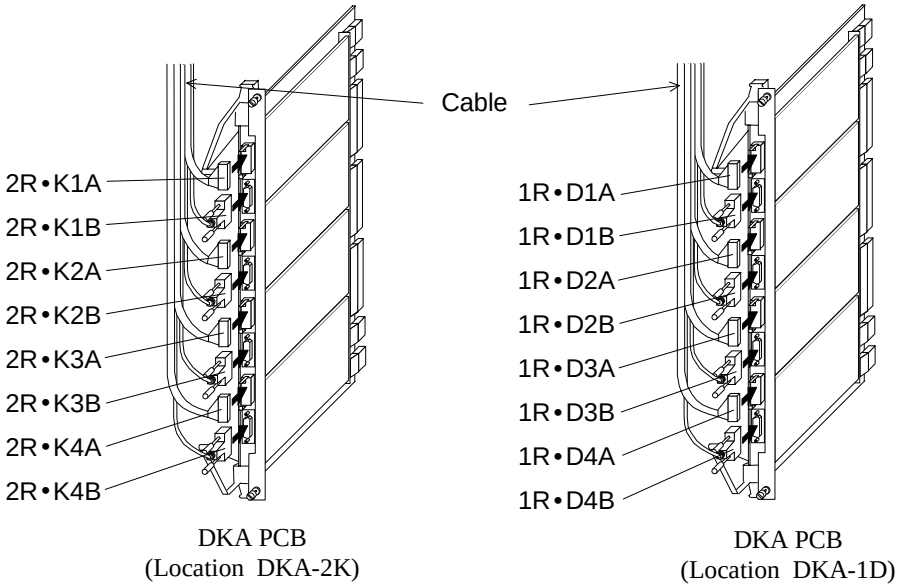

Fig.3.11.6-11 Connection of cable (Add.2)

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In case of Add.3

Caution:
Make sure that the AC power is applied to the added DKUs (DKU-L1 and DKU-L2) and the main breakers of the DKUs (DKU-L1 and DKU-L2) are turned on.
The DKU is automatically powered on when the DEV interface cable is connected to the DKA.

⚠ CAUTION

A serious failure occurs if any of cables/connectors is wrongly connected.
Since a label bearing a connection destination is affixed on each cable/connector, work very carefully referring to it and the wiring diagram.

- Colors of the labels of the subsystem shipped from the factory from June of 2002 and on are as follows. Labels on the cluster1 (CL1) side and the cluster2 (CL2) side are white and yellow respectively.

a. Connect the cables to the sub-edge of PCBs.

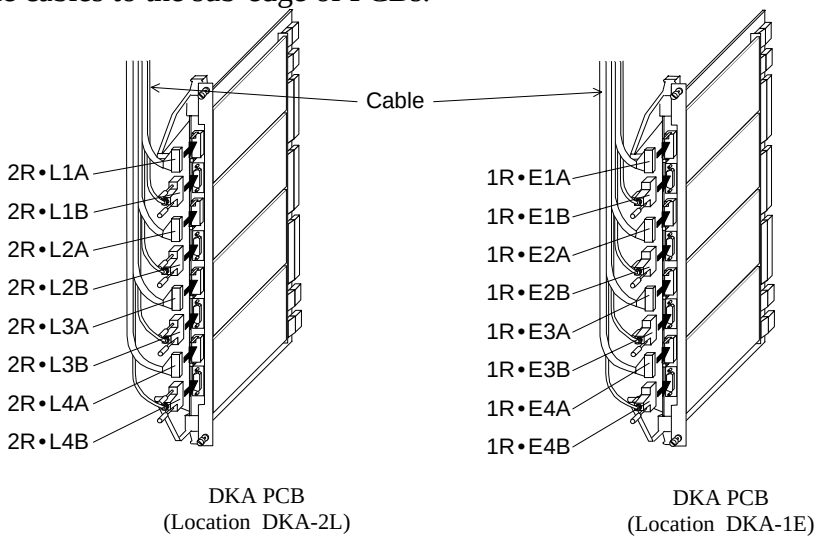

Fig.3.11.6-12 Connection of cable (Add.3)

3-3 Attachment of the nameplate

a. Attach the nameplate referring to Fig. 3.11.6-13.

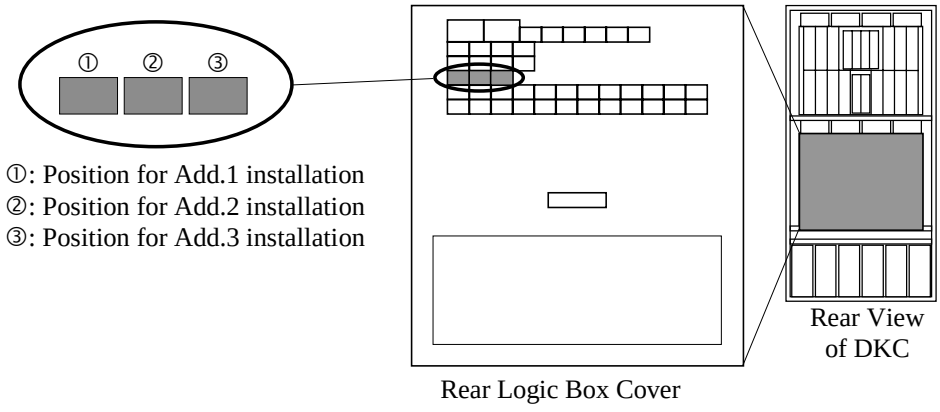

Fig. 3.11.6-13 Attachment of Nameplate

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4. Installation Procedure of HDD Canister

4-1 Confirmation of position to install HDD canister

(i) RAID5(3D+1P)/RAID1(2D+2D)

Relations between the installation locations of the RAID groups and the RAID group numbers set through the SVP are shown in Table 3.11.6-2.

Table 3.11.6-2 Relation between HDDs installation order and RAID group number (3D+1P/2D+2D)

	L2 DKU		L1 DKU		DKC		R1 DKU		R2 DKU	
	Installation Order	RAID Group No.	Installation Order	RAID Group No.			Installation Order	RAID Group No.	Installation Order	RAID Group No.
Upper	223	8-1	159	4-1	4th DKA Pair	2nd DKA Pair	032	2-1	096	6-1
	224	8-2	160	4-2			033	2-2	097	6-2
	225	8-3	161	4-3			034	2-3	098	6-3
	226	8-4	162	4-4			035	2-4	099	6-4
	227	8-5	163	4-5			036	2-5	100	6-5
	228	8-6	164	4-6			037	2-6	101	6-6
	229	8-7	165	4-7			038	2-7	102	6-7
	230	8-8	166	4-8			039	2-8	103	6-8
	231	8-9	167	4-9			040	2-9	104	6-9
	232	8-10	168	4-10			041	2-10	105	6-10
	233	8-11	169	4-11			042	2-11	106	6-11
	234	8-12	170	4-12			043	2-12	107	6-12
	235	8-13	171	4-13			044	2-13	108	6-13
	236	8-14	172	4-14			045	2-14	109	6-14
	237	8-15	173	4-15			046	2-15	110	6-15
	238	8-16	174(Spare) *2	4-16			047(Spare) *2	2-16	111	6-16
	239	8-17	175	4-17			048	2-17	112	6-17
	240	8-18	176	4-18			049	2-18	113	6-18
	241	8-19	177	4-19			050	2-19	114	6-19
	242	8-20	178	4-20			051	2-20	115	6-20
	243	8-21	179	4-21			052	2-21	116	6-21
	244	8-22	180	4-22			053	2-22	117	6-22
	245	8-23	181	4-23			054	2-23	118	6-23
	246	8-24	182	4-24			055	2-24	119	6-24
	247	8-25	183	4-25			056	2-25	120	6-25
	248	8-26	184	4-26			057	2-26	121	6-26
	249	8-27	185	4-27			058	2-27	122	6-27
	250	8-28	186	4-28			059	2-28	123	6-28
	251	8-29	187	4-29			060	2-29	124	6-29
	252	8-30	188	4-30			061	2-30	125	6-30
	253	8-31	189	4-31			062	2-31	126	6-31
	254	8-32	190	4-32			063	2-32	127	6-32
Lower	191	7-1	128	3-1	3rd DKA Pair	1st DKA Pair	001	1-1	064	5-1
	192	7-2	129	3-2			002	1-2	065	5-2
	193	7-3	130	3-3			003	1-3	066	5-3
	194	7-4	131	3-4			004	1-4	067	5-4
	195	7-5	132	3-5			005	1-5	068	5-5
	196	7-6	133	3-6			006	1-6	069	5-6
	197	7-7	134	3-7			007	1-7	070	5-7
	198	7-8	135	3-8			008	1-8	071	5-8
	199	7-9	136	3-9			009	1-9	072	5-9
	200	7-10	137	3-10			010	1-10	073	5-10
	201	7-11	138	3-11			011	1-11	074	5-11
	202	7-12	139	3-12			012	1-12	075	5-12
	203	7-13	140	3-13			013	1-13	076	5-13
	204	7-14	141	3-14			014	1-14	077	5-14
	205	7-15	142	3-15			015	1-15	078	5-15
	206	7-16	Spare *1	3-16			Spare *1	1-16	079	5-16
	207	7-17	143	3-17			016	1-17	080	5-17
	208	7-18	144	3-18			017	1-18	081	5-18
	209	7-19	145	3-19			018	1-19	082	5-19
	210	7-20	146	3-20			019	1-20	083	5-20
	211	7-21	147	3-21			020	1-21	084	5-21
	212	7-22	148	3-22			021	1-22	085	5-22
	213	7-23	149	3-23			022	1-23	086	5-23
	214	7-24	150	3-24			023	1-24	087	5-24
	215	7-25	151	3-25			024	1-25	088	5-25
	216	7-26	152	3-26			025	1-26	089	5-26
	217	7-27	153	3-27			026	1-27	090	5-27
	218	7-28	154	3-28			027	1-28	091	5-28
	219	7-29	155	3-29			028	1-29	092	5-29
	220	7-30	156	3-30			029	1-30	093	5-30
	221	7-31	157	3-31			030	1-31	094	5-31
	222	7-32	158	3-32			031	1-32	095	5-32

*1: To be left vacant or a spare disk is to be installed. *2: A data or spare disk is to be installed.

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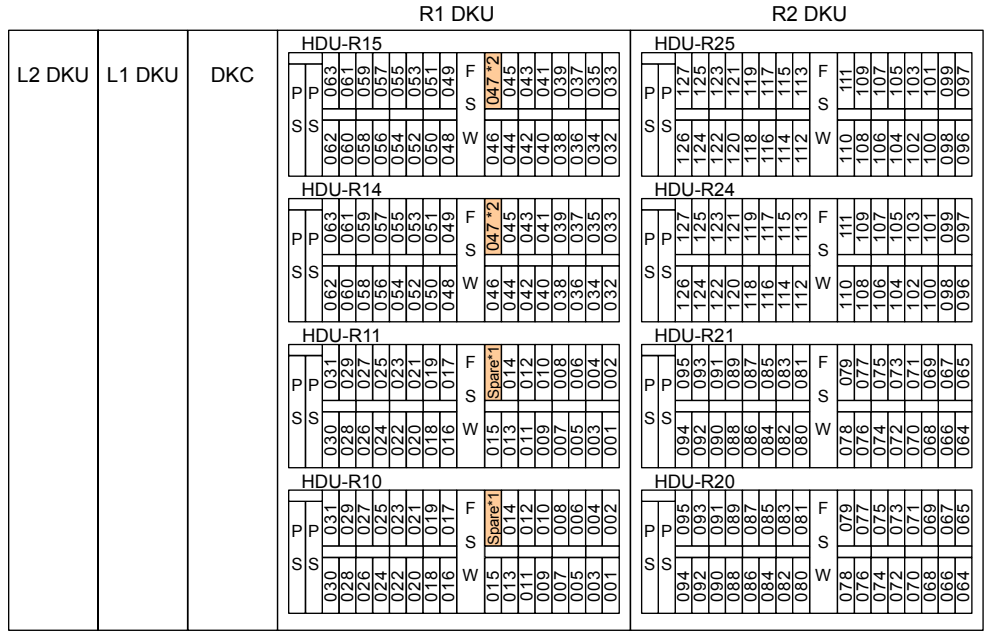
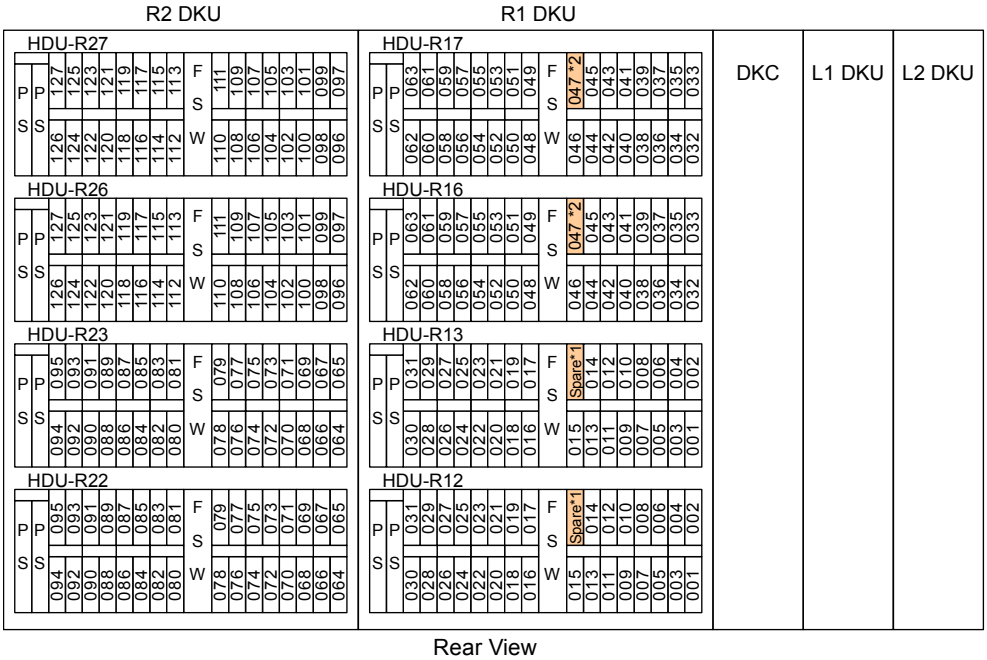
(1) Make sure of the location where the RAID group is installed and that where the HDD canister is to be added.

No.	Model Number	Model Name	Data and Parity
1	DKU-F455I-36K4/72J4/72K4/146J4/146JF/146JQ	4 HDD Canisters	Data and Parity Drive





*1:To be left vacant or a spare disk is to be installed.

*2:A data or spare disk is to be installed.

Fig. 3.11.6-14 (3D+1P) or (2D+2P) Data Drive/Parity Drive Expansion Sequence (1/2)

The relationship between HDDs installation order and RAID group number is shown in the Table 3.11.6-2.

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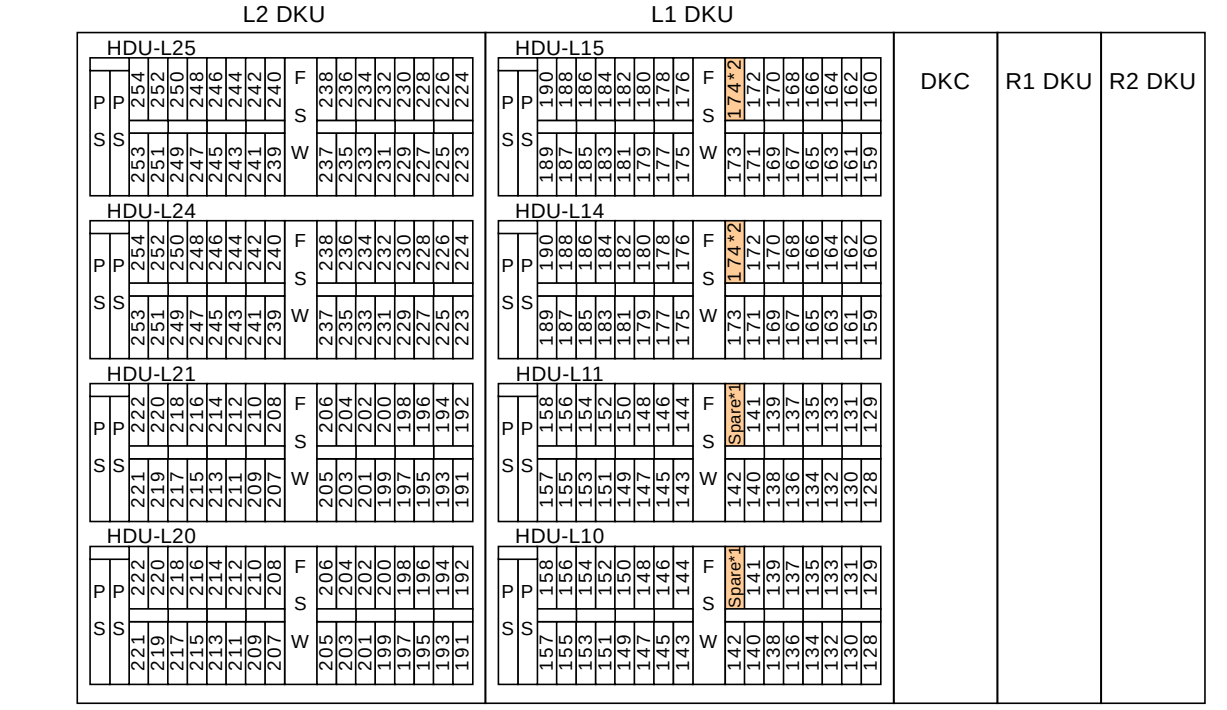

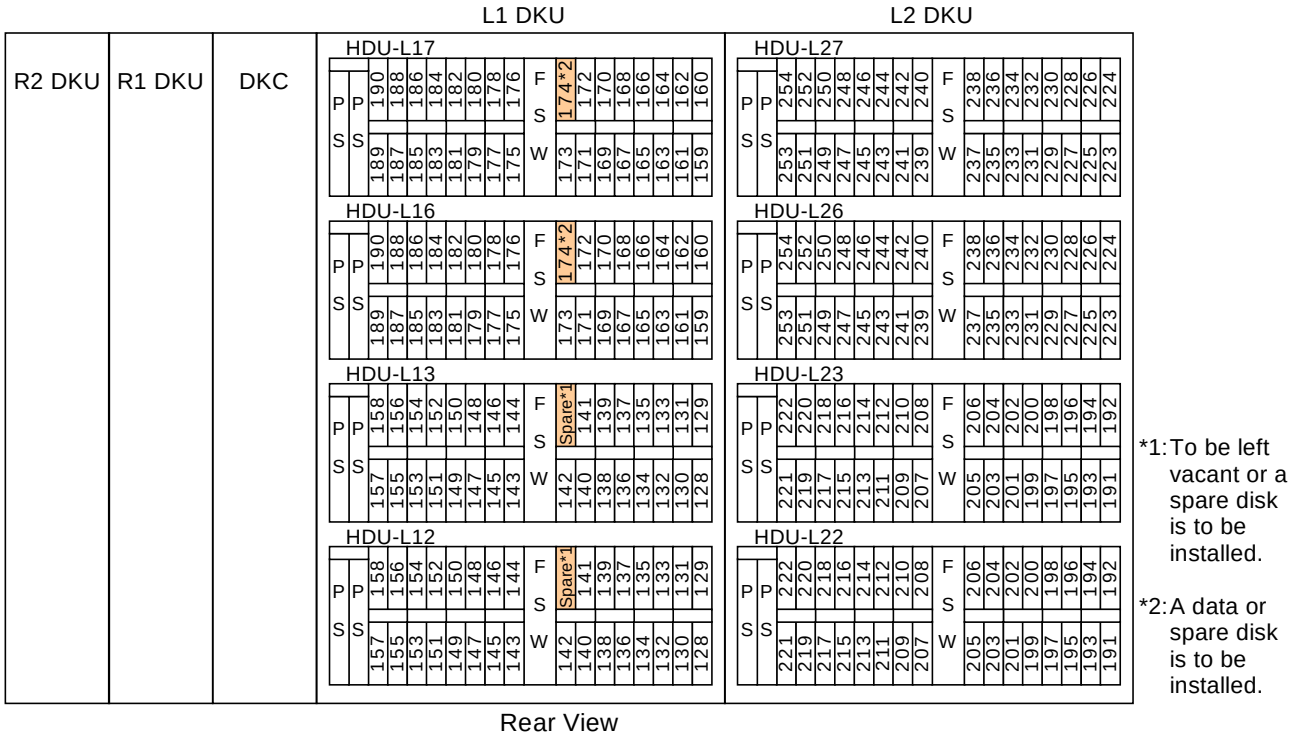

Fig. 3.11.6-14 (3D+1P) or (2D+2P) Data Drive/Parity Drive Expansion Sequence (2/2)

The relationship between HDDs installation order and RAID group number is shown in the Table 3.11.6-2.

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(ii) RAID5 (7D+1P)

Relations between the installation locations of the RAID groups and the RAID group numbers set through the SVP are shown in Table 3.11.6-3.

Table 3.11.6-3 Relation between HDDs installation order and RAID group number (7D+1P)

L2 DKU		L1 DKU		DKC		R1 DKU		R2 DKU	
Installation Order	RAID Group No.	Installation Order	RAID Group No.			Installation Order	RAID Group No.	Installation Order	RAID Group No.
095	7-1 , (8-1)	064	3-1 , (4-1)			001	1-1 , (2-1)	032	5-1 , (6-1)
096	7-2 , (8-2)	065	3-2 , (4-2)			002	1-2 , (2-2)	033	5-2 , (6-2)
097	7-3 , (8-3)	066	3-3 , (4-3)			003	1-3 , (2-3)	034	5-3 , (6-3)
098	7-4 , (8-4)	067	3-4 , (4-4)			004	1-4 , (2-4)	035	5-4 , (6-4)
099	7-5 , (8-5)	068	3-5 , (4-5)			005	1-5 , (2-5)	036	5-5 , (6-5)
100	7-6 , (8-6)	069	3-6 , (4-6)			006	1-6 , (2-6)	037	5-6 , (6-6)
101	7-7 , (8-7)	070	3-7 , (4-7)			007	1-7 , (2-7)	038	5-7 , (6-7)
102	7-8 , (8-8)	071	3-8 , (4-8)			008	1-8 , (2-8)	039	5-8 , (6-8)
103	7-9 , (8-9)	072	3-9 , (4-9)			009	1-9 , (2-9)	040	5-9 , (6-9)
104	7-10 , (8-10)	073	3-10 , (4-10)			010	1-10 , (2-10)	041	5-10 , (6-10)
105	7-11 , (8-11)	074	3-11 , (4-11)			011	1-11 , (2-11)	042	5-11 , (6-11)
106	7-12 , (8-12)	075	3-12 , (4-12)			012	1-12 , (2-12)	043	5-12 , (6-12)
107	7-13 , (8-13)	076	3-13 , (4-13)			013	1-13 , (2-13)	044	5-13 , (6-13)
108	7-14 , (8-14)	077	3-14 , (4-14)			014	1-14 , (2-14)	045	5-14 , (6-14)
109	7-15 , (8-15)	078	3-15 , (4-15)	3rd / 4th	1st / 2nd	015	1-15 , (2-15)	046	5-15 , (6-15)
110	7-16 , (8-16)	(Spare)*1	3-16 , (4-16)	DKA	DKA	(Spare)*1	1-16 , (2-16)	047	5-16 , (6-16)
111	7-17 , (8-17)	079	3-17 , (4-17)	Pairs	Pairs	016	1-17 , (2-17)	048	5-17 , (6-17)
112	7-18 , (8-18)	080	3-18 , (4-18)			017	1-18 , (2-18)	049	5-18 , (6-18)
113	7-19 , (8-19)	081	3-19 , (4-19)			018	1-19 , (2-19)	050	5-19 , (6-19)
114	7-20 , (8-20)	082	3-20 , (4-20)			019	1-20 , (2-20)	051	5-20 , (6-20)
115	7-21 , (8-21)	083	3-21 , (4-21)			020	1-21 , (2-21)	052	5-21 , (6-21)
116	7-22 , (8-22)	084	3-22 , (4-22)			021	1-22 , (2-22)	053	5-22 , (6-22)
117	7-23 , (8-23)	085	3-23 , (4-23)			022	1-23 , (2-23)	054	5-23 , (6-23)
118	7-24 , (8-24)	086	3-24 , (4-24)			023	1-24 , (2-24)	055	5-24 , (6-24)
119	7-25 , (8-25)	087	3-25 , (4-25)			024	1-25 , (2-25)	056	5-25 , (6-25)
120	7-26 , (8-26)	088	3-26 , (4-26)			025	1-26 , (2-26)	057	5-26 , (6-26)
121	7-27 , (8-27)	089	3-27 , (4-27)			026	1-27 , (2-27)	058	5-27 , (6-27)
122	7-28 , (8-28)	090	3-28 , (4-28)			027	1-28 , (2-28)	059	5-28 , (6-28)
123	7-29 , (8-29)	091	3-29 , (4-29)			028	1-29 , (2-29)	060	5-29 , (6-29)
124	7-30 , (8-30)	092	3-30 , (4-30)			029	1-30 , (2-30)	061	5-30 , (6-30)
125	7-31 , (8-31)	093	3-31 , (4-31)			030	1-31 , (2-31)	062	5-31 , (6-31)
126	7-32 , (8-32)	094	3-32 , (4-32)			031	1-32 , (2-32)	063	5-32 , (6-32)

*1: To be left vacant or a spare disk is to be installed.

- Install RAID 5 (7D+1P) forming pairs using the same number of the two RAID groups (RAID groups 1 and 2, 3 and 4, 5 and 6, and 7 and 8) of RAID 5 (3D+1P).
  (Example: RAID group numbers 1-1 and 2-1)
  The types of HDDs to be installed in each pair must be the same.
- In the case of RAID 5 (7D+1P), only odd RAID numbers are displayed on the SVP. (Group numbers shown in parentheses in the table above are not displayed.)
- When RAID 5 (3D+1P) or RAID 1 (2D+2D) and RAID 5 (7D+1P) are configured mixture, note that duplicated group numbers are excluded.
  Example: When Group No. 1-1 is configured for RAID 5 (7D+1P), Group No. 2-1 is excluded and cannot be configure for RAID 5 (3D+1P).

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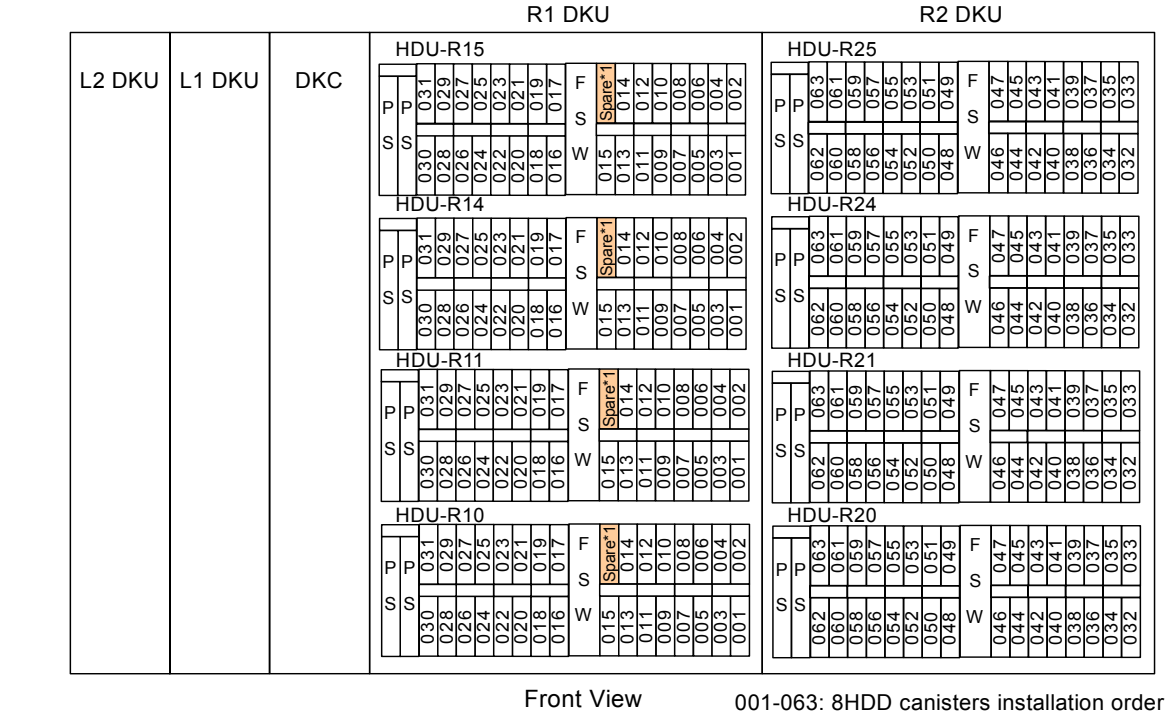
(1) Make sure of the location where the RAID group is installed and that where the HDD canister is to be added.

No.	Model Number	Model Name	Data and Parity
1	DKU-F455I-36K4/72J4/72K4/146J4/146JF/146JQ	4 HDD Canisters x 2sets	Data and Parity Drive



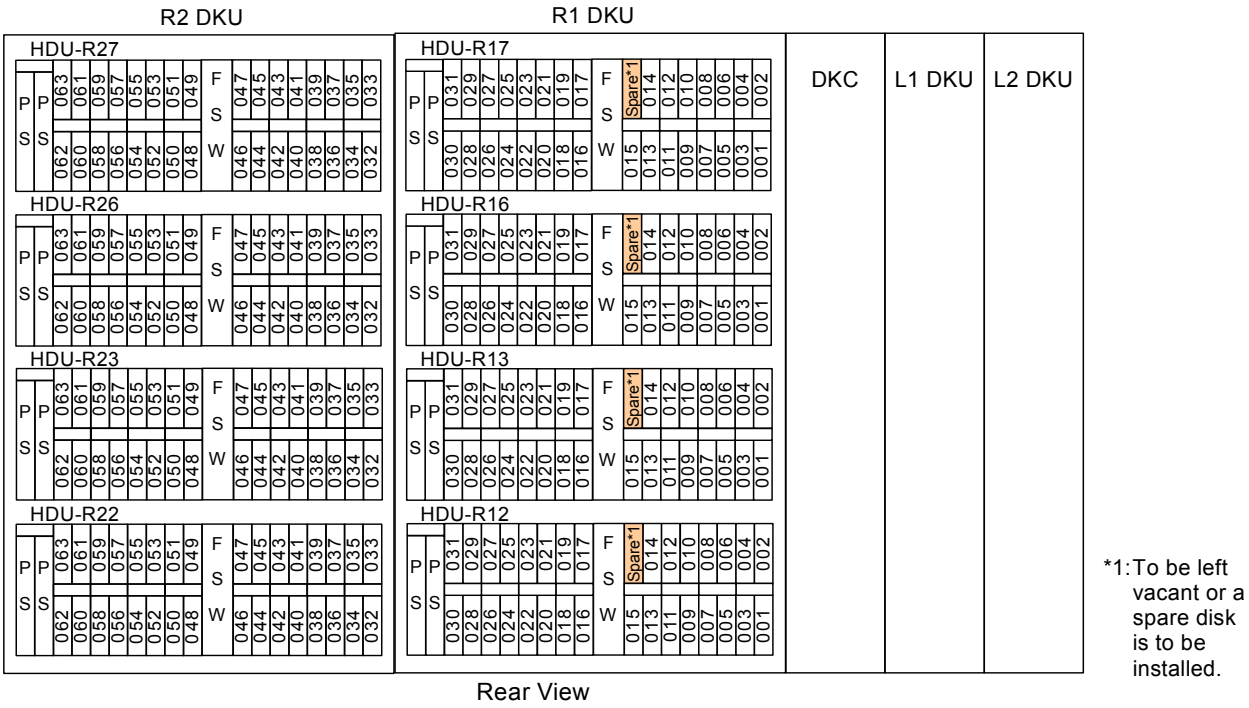


Fig. 3.11.6-15 (7D+1P) Data Drive/Parity Drive Expansion Sequence (1/2)

The relationship between HDDs installation order and RAID group number is shown in the Table 3.11.6-3.

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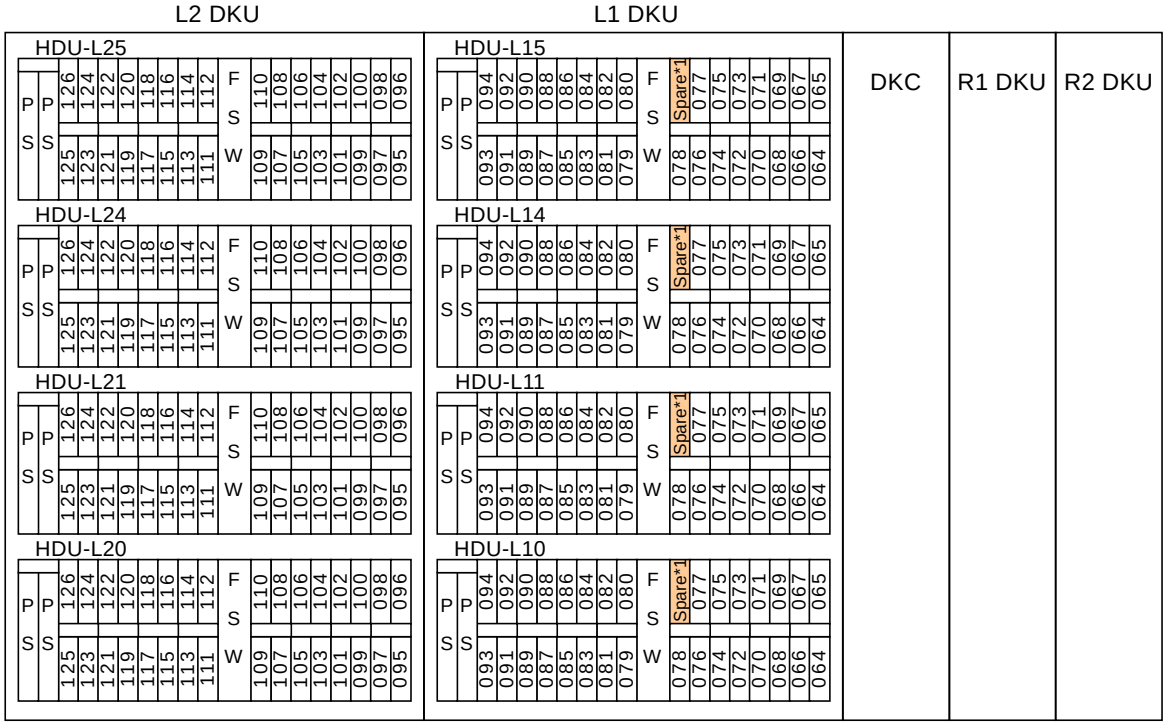

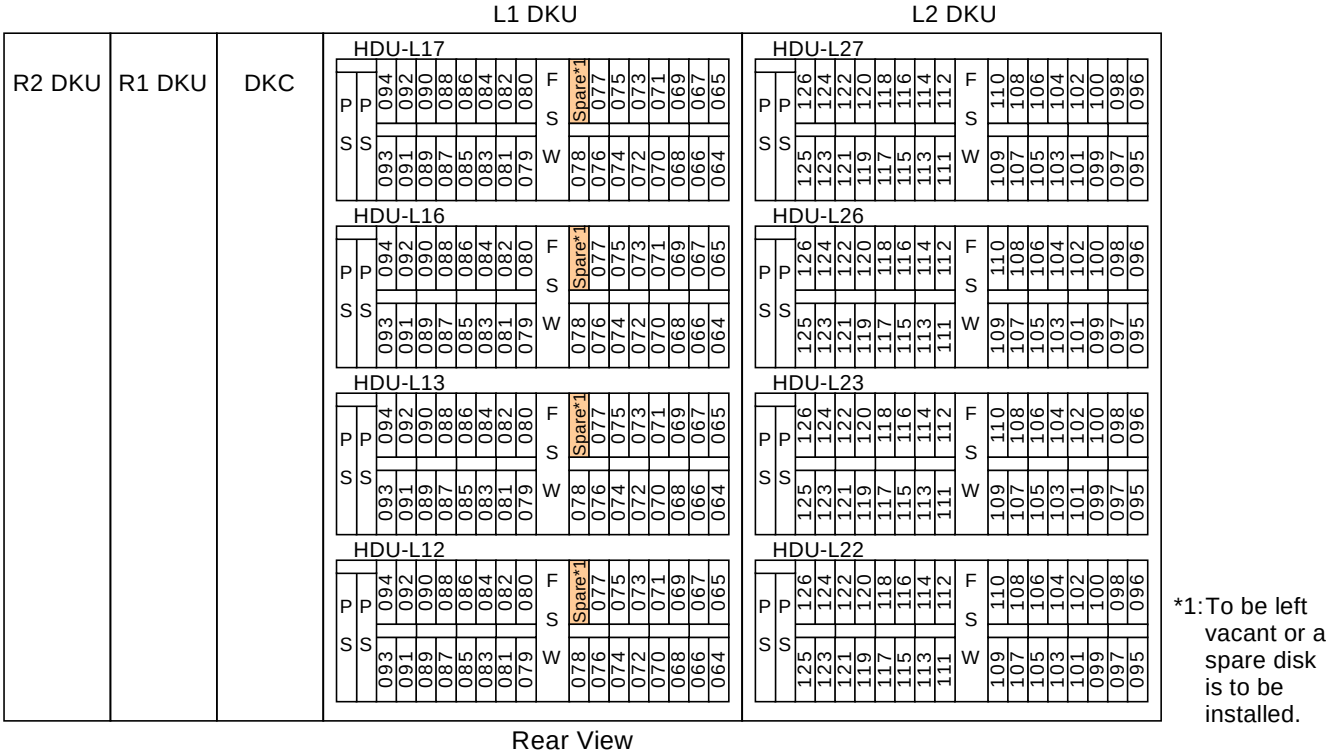

Fig. 3.11.6-15 (7D+1P) Data Drive/Parity Drive Expansion Sequence (2/2)

The relationship between HDDs installation order and RAID group number is shown in the Table 3.11.6-3.

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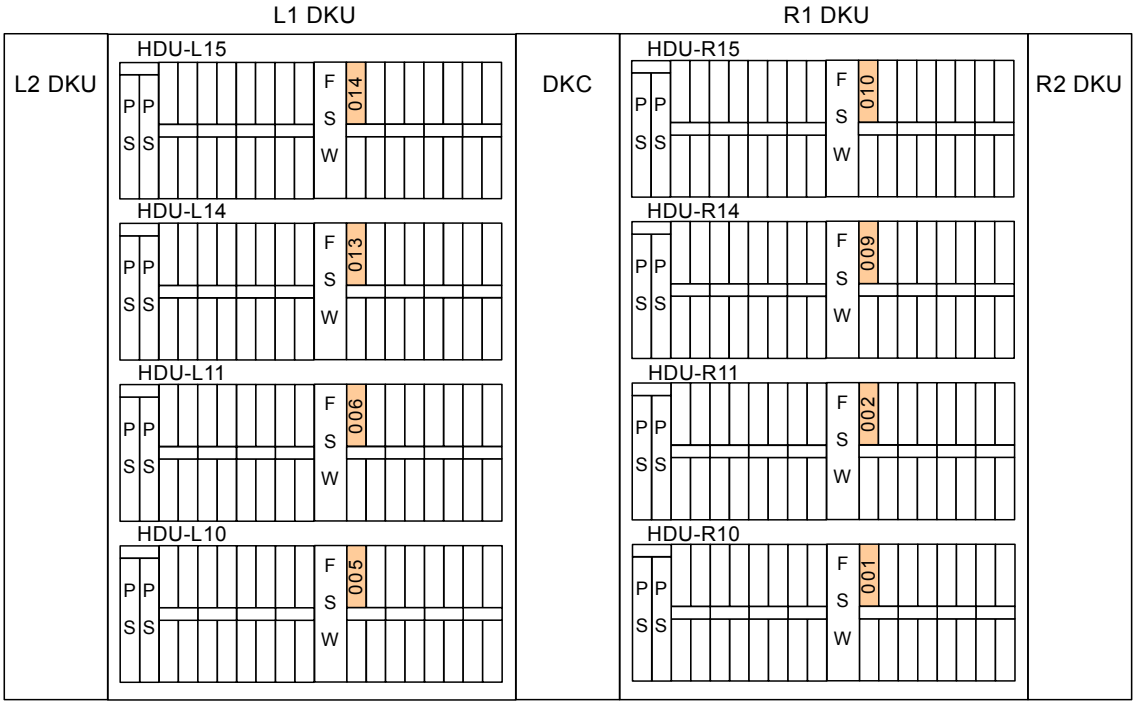
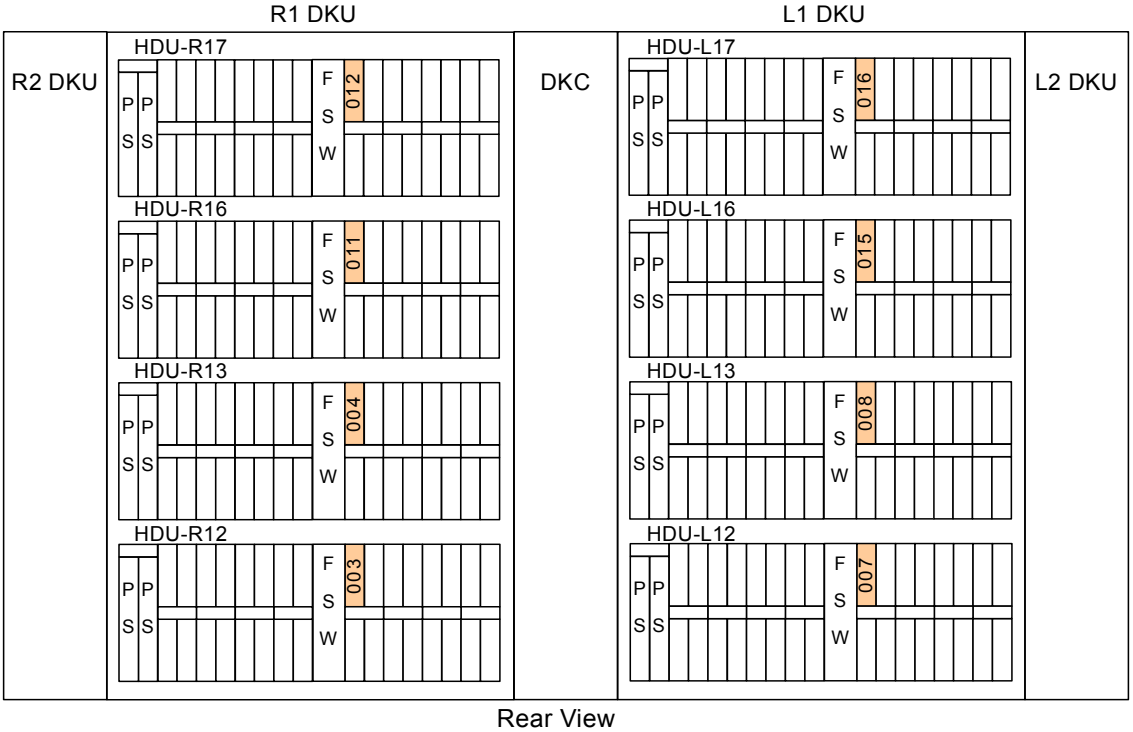
(iii) Spare HDD

No.	Model Number	Model Name	Data and Parity
1	DKU-F455I-36K1/72J1/72K1/146J1/146JS/146JM	1 HDD Canister	Spare Drive



Front View

001-016: Spare HDD canister installation order



Rear View

Fig. 3.11.6-16 Spare Drive Expansion Sequence

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4-2 Installation of the HDD Canister.

Notice:
(1) Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.
(2) Since the HDD is a precision component, handle it very carefully not to apply a vibration or shock to it.

a. Remove the dummy canister from the HDU Box.
When the dummy canister cannot be removed by pulling of it only, remove it referring to page INST03-DKA-3000.
b. Install the HDD canister. (For the detailed procedure for installation, refer to the procedure for installing HDD canister on page INST03-DKA-3010.)

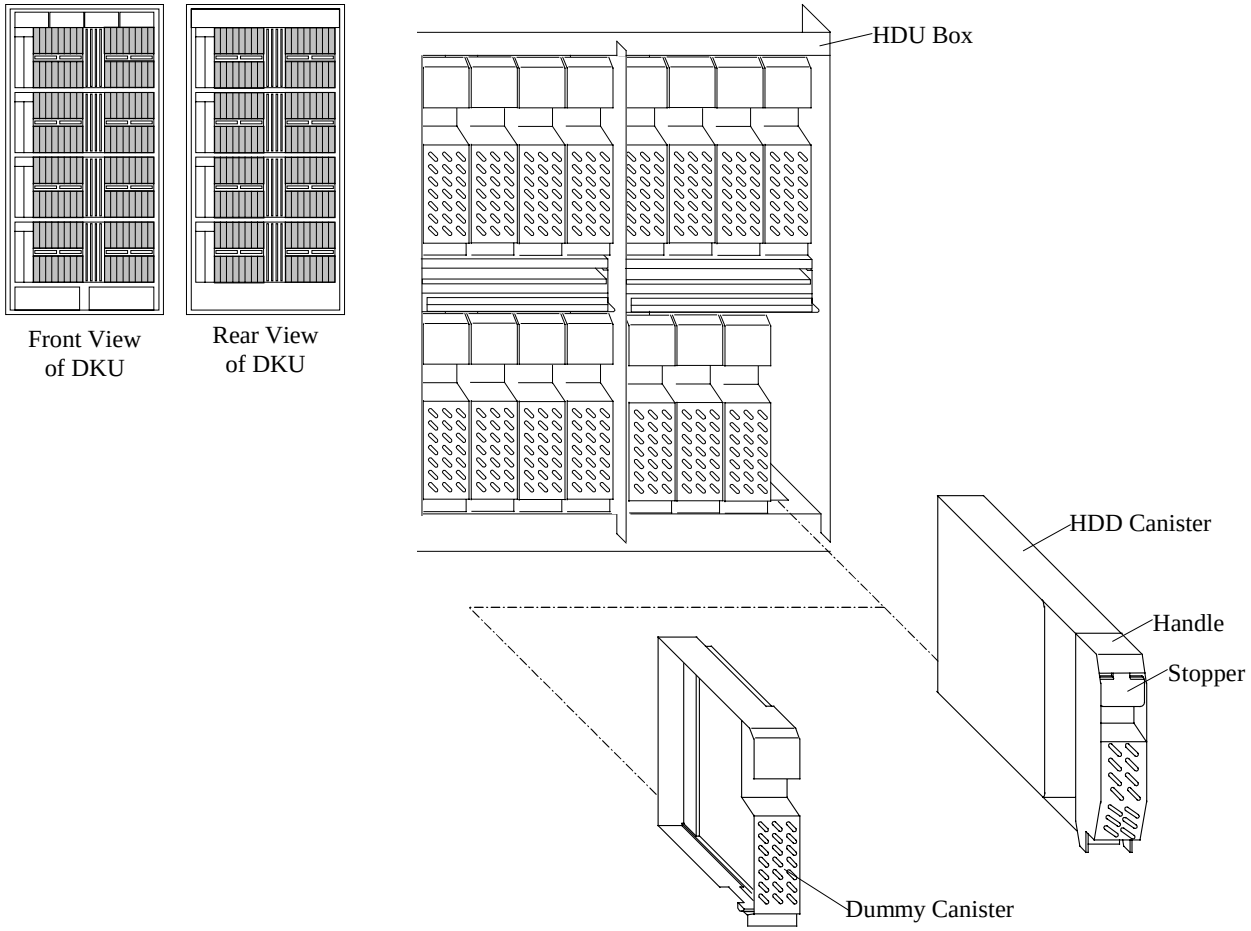

Fig. 3.11.6-17 Installation of HDD Canister

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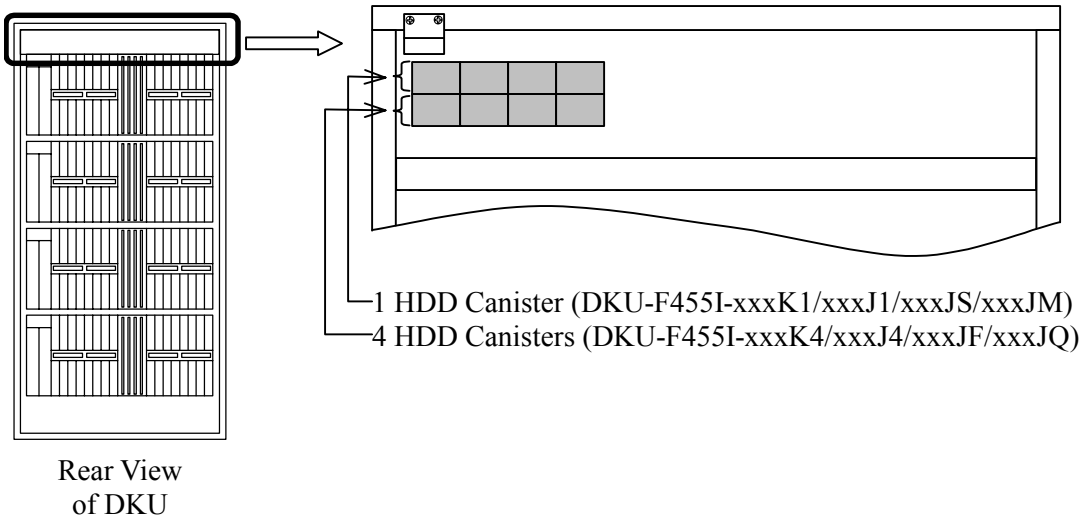
4-3 Attachment of the nameplate.

a. When the nameplate is not attached, attach the nameplate regardless of the model number from the left of the unit. Paint out mounting numbers on the nameplate.



[Example]

When the 7 DKU-F455I-72J4 sets are installed

							8	9	10	11	12	13	14	15	16
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64

Fig. 3.11.6-18 Attachment of Nameplate

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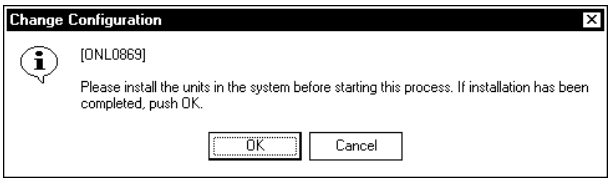
5. SVP post procedure

1. <Check that hardware components are installed>
   Select (CL) [OK] after making sure that all hardware components are installed correctly in response to “Please install the units in the system before starting this process. If installation has been completed, push OK.”.



2.
   When DKA is installed, “Waiting for Power Event... Usually, several minutes (maximum 15 minutes)” is displayed.

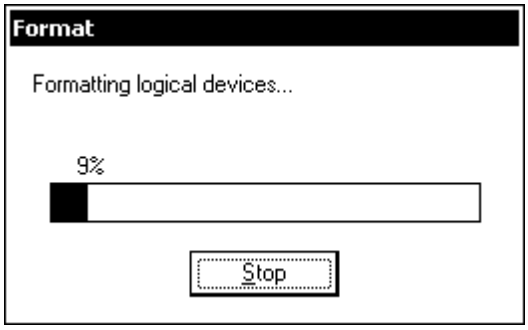
   If [ONL3437E] or [ONL3438E] is displayed, please refer 2.11.1. (INST02-630)
   If [ONL3441E] or [ONL2841W] is displayed, please refer 2.11.2. (INST02-640)

---

3. <DKU PATH INLINE>
   When DKA is installed, “DKU PATH INLINE is now running...” is displayed.

---

4. <LDEV FORMAT>
   “Formatting the logical device...” is displayed when Parity Group is defined.



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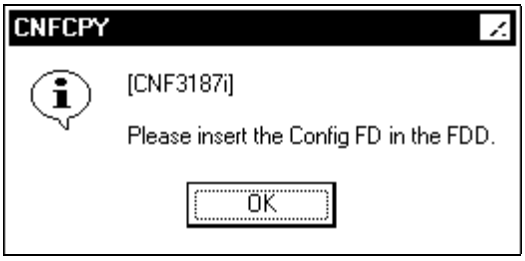
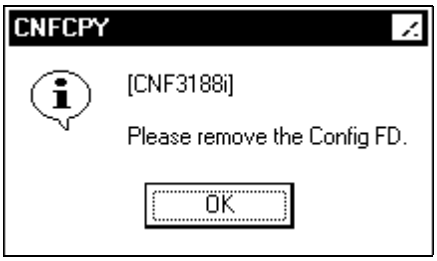
5. <End of system update processing>
"Renewal process has completed. Please check the subsystem status." is displayed when recovery processing on all installed components is completed. Select (CL) [OK] in response to this message.

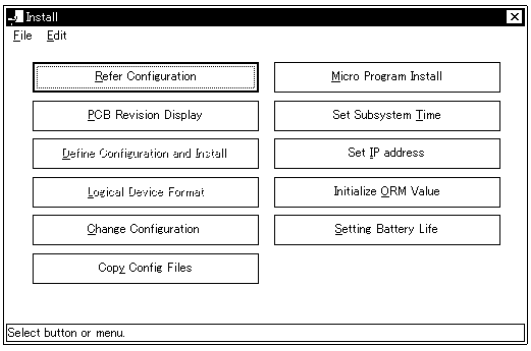
6.
"Reading subsystem configuration data..." is displayed.
"Please insert the Config FD in the FDD." is displayed.
Insert the configuration FD into FDD, and select (CL) [OK].



7.
When this procedure is completed, the message "Please remove the Config FD." is displayed.
Remove the FD, select (CL) [OK].



8.
After the procedure is completed, return to 'Install'.
Select (CL) [File]-[Exit].



9. <Mode Change>
Change the mode to View Mode.

Return to the work table (INST02-50) and perform rest of the works.

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3.11.7 When performing addition of the data/spare HDD canister, DKA, and DEV interface cable that accompanies the addition of the DKU-L2 frame (DKC-F460I-200, DKU-F455I-36K4/36K1/72J4/72J1/72K4/72K1/146J4/146J1/146JF/146JS/146JQ/146JM/EXC)

1. Installation Procedure of DEV Interface Cable 2 (DKU-F455I-EXC)

Between HDU-L10-L17 and HDU-L20-L27

Note: 1. When the DEV interface cable is connected with the FSW while the subsystem (DKC460I-5) is powered on, each HDU Box is powered on at the same time of the connection.
2. When the DEV interface cable is connected in the state in which the main circuit breaker of the disk unit is not turned on, the "DKU Voltage Alarm" is detected (the ALARM LED on the OP panel comes on; SIM = BF20XX or BF22XX).
Therefore, power on the disk unit before connecting the DEV interface cable.

a. Loosen the screws and remove the cable covers from the DKU frames.

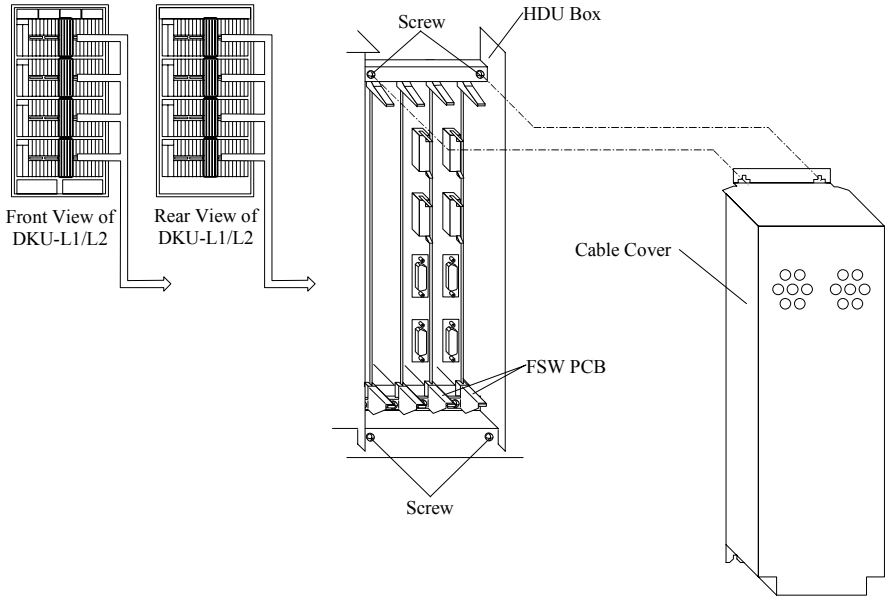

Fig. 3.11.7-1 Removal of Cable Covers

b. Loosen the screws and remove the cable covers from the DKU frames.

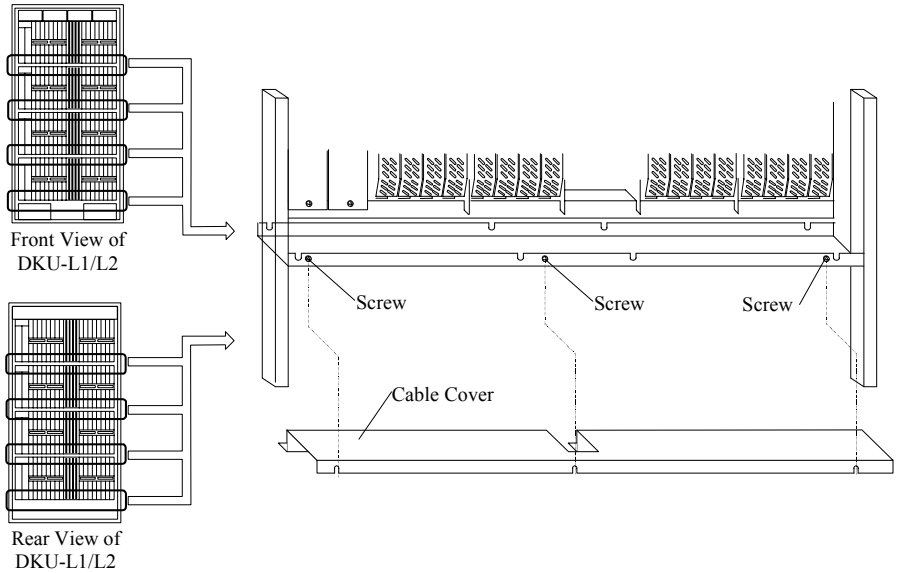

Fig. 3.11.7-2 Removal of Cable Covers

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c. Connect the DEV interface cables to the FSW PCBs in the DKU-L2 frame referring to Fig. 3.11.7-3 through Fig. 3.11.7-6.

⚠ CAUTION

A serious failure occurs if any of cables/connectors is wrongly connected.
Since a label bearing a connection destination is affixed on each cable/connector, work very carefully referring to it and the wiring diagram.

- Colors of the labels of the subsystem shipped from the factory from June of 2002 and on are as follows. Labels on the cluster1 (CL1) side and the cluster2 (CL2) side are white and yellow respectively.

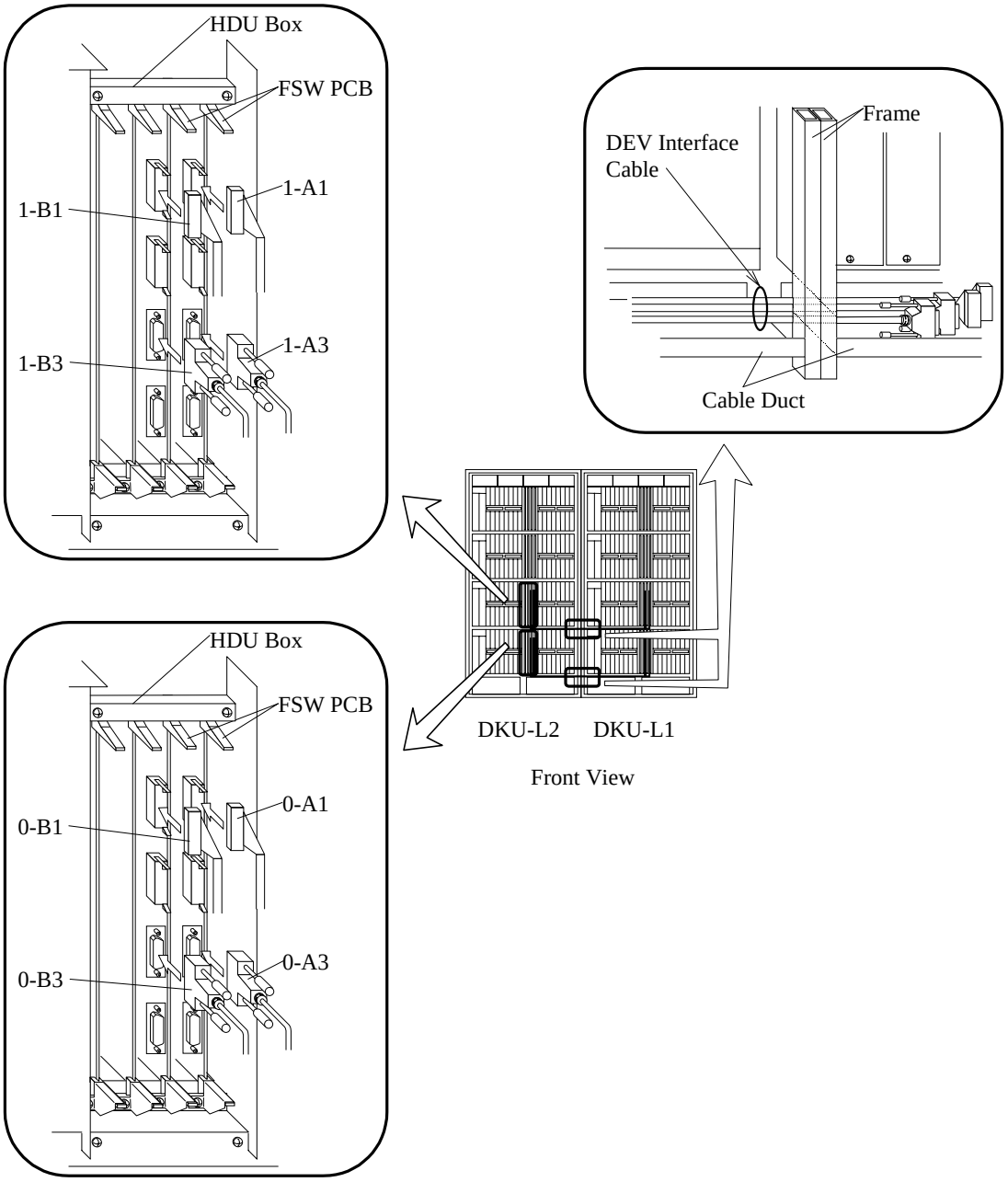

Fig. 3.11.7-3 Connection of the DEV Interface Cables

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CAUTION

A serious failure occurs if any of cables/connectors is wrongly connected.
Since a label bearing a connection destination is affixed on each cable/connector, work very carefully referring to it and the wiring diagram.

- Colors of the labels of the subsystem shipped from the factory from June of 2002 and on are as follows. Labels on the cluster1 (CL1) side and the cluster2 (CL2) side are white and yellow respectively.

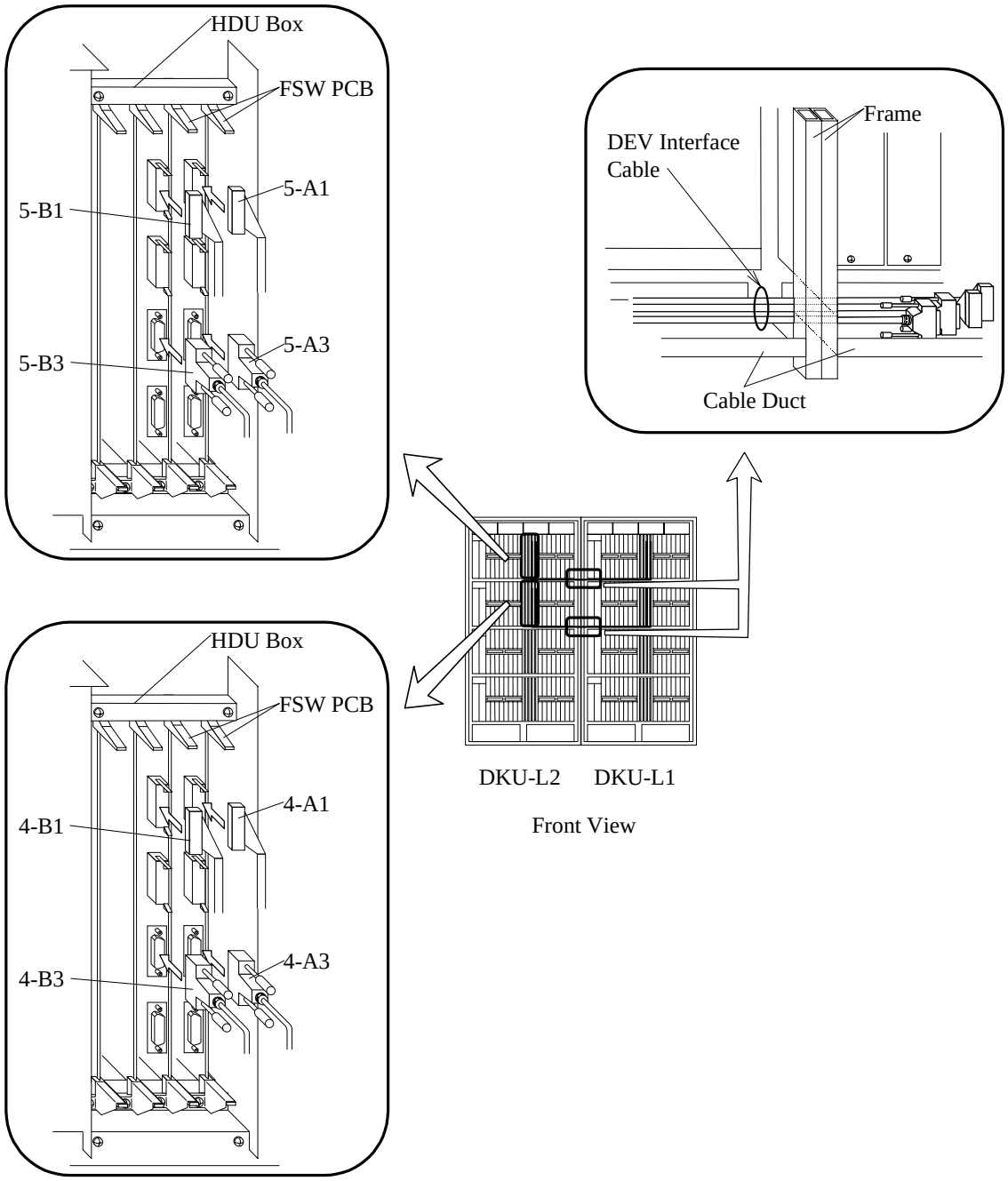

Fig. 3.11.7-4 Connection of the DEV Interface Cables

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⚠ CAUTION

A serious failure occurs if any of cables/connectors is wrongly connected.
Since a label bearing a connection destination is affixed on each cable/connector, work very carefully referring to it and the wiring diagram.

- Colors of the labels of the subsystem shipped from the factory from June of 2002 and on are as follows. Labels on the cluster1 (CL1) side and the cluster2 (CL2) side are white and yellow respectively.

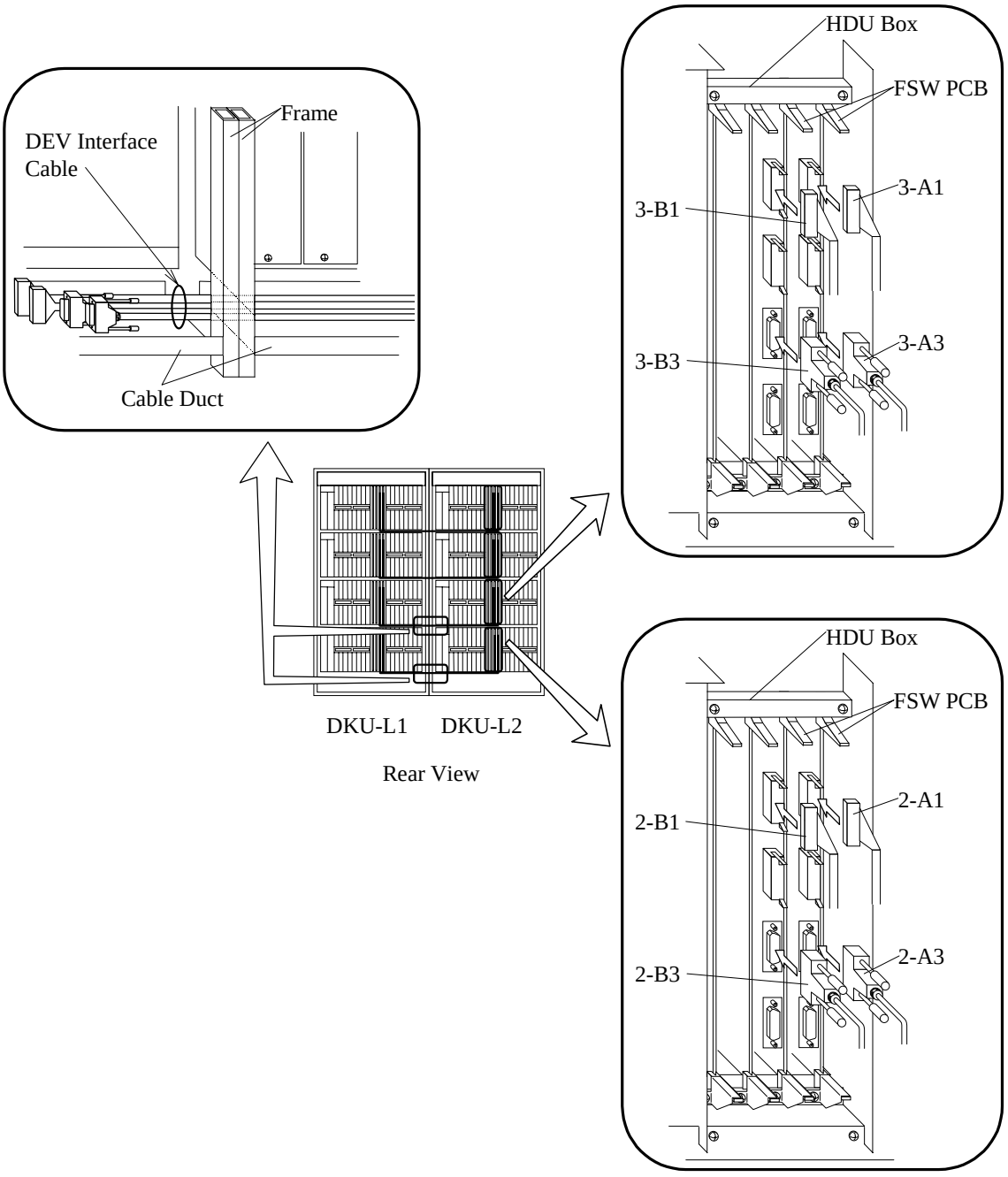

Fig. 3.11.7-5 Connection of the DEV Interface Cables

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⚠ CAUTION

A serious failure occurs if any of cables/connectors is wrongly connected.
Since a label bearing a connection destination is affixed on each cable/connector, work very carefully referring to it and the wiring diagram.

- Colors of the labels of the subsystem shipped from the factory from June of 2002 and on are as follows. Labels on the cluster1 (CL1) side and the cluster2 (CL2) side are white and yellow respectively.

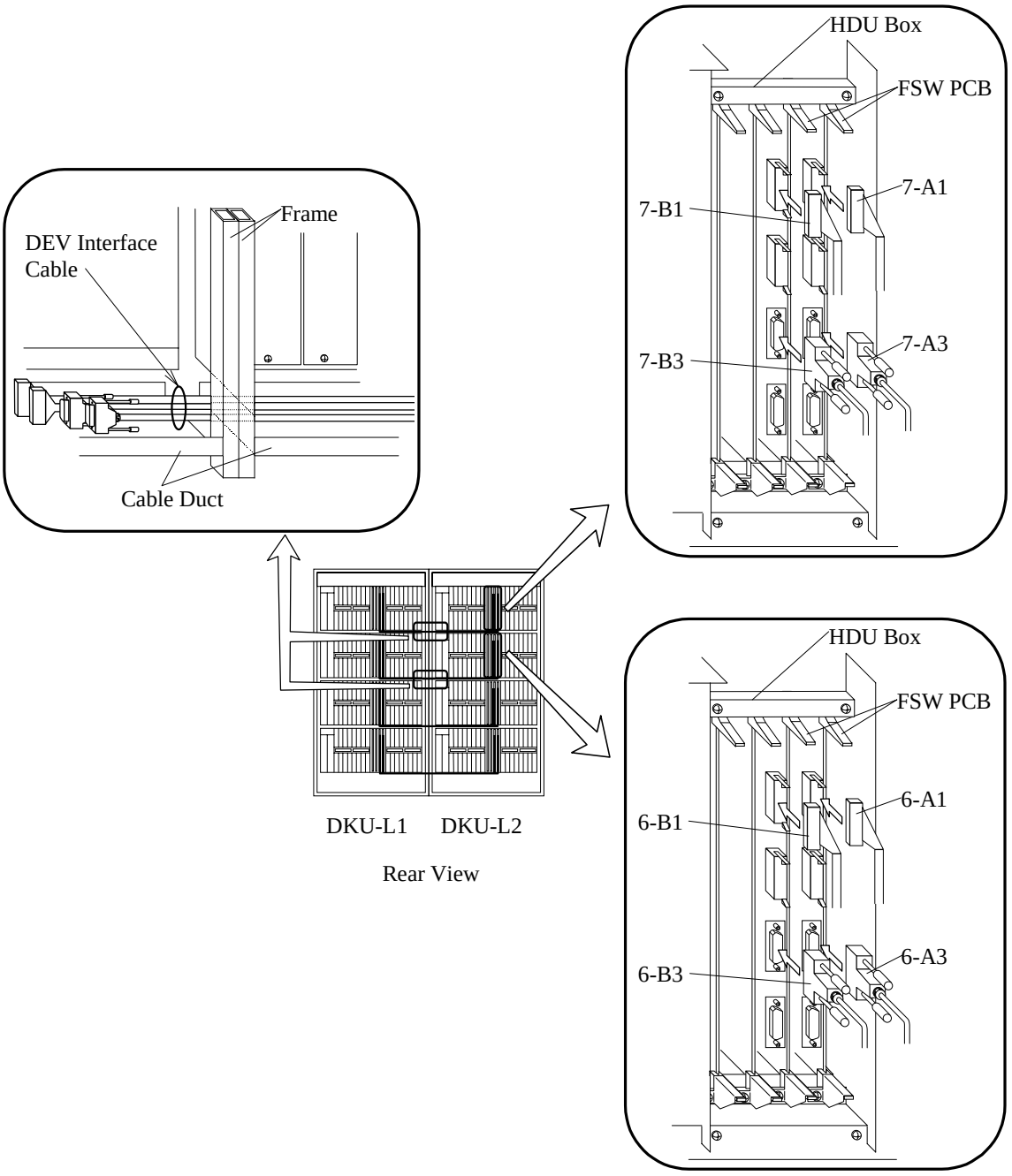

Fig. 3.11.7-6 Connection of the DEV Interface Cables

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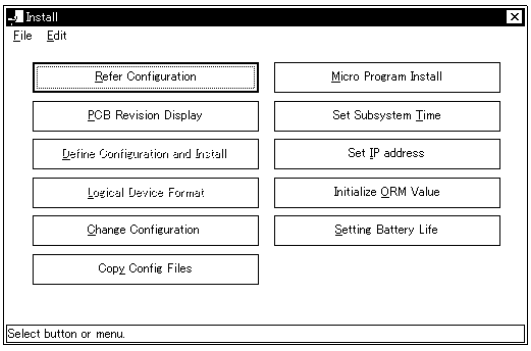
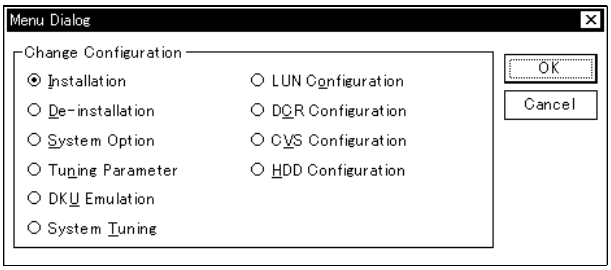
2. Setting up the New Device Structure Information

1. <Mode Change>
   Change the mode to Modify Mode.
   Select (CL) [Install].

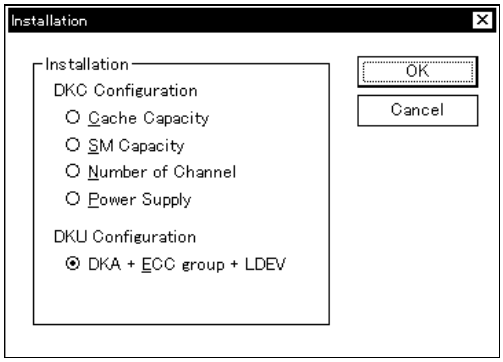
2. <Start the 'Menu Dialog' screen>
   Select (CL) [Change Configuration].



3. <Start Device Structure Setup screen>
   Select (CL) [Installation] in the 'Menu Dialog' dialog box and select (CL) [OK].



4. <Select a part to be changed>
   Select (CL) [DKA + ECC group + LDEV], and select (CL) [OK].



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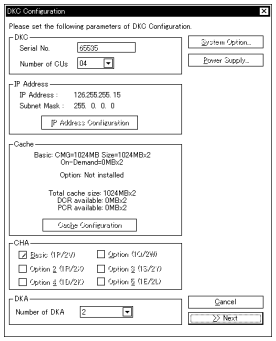
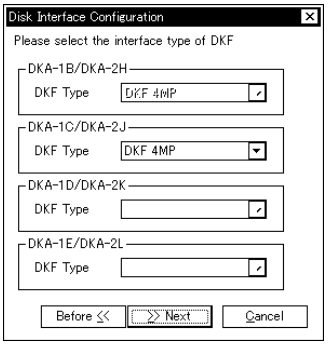
5. <Update Configuration Information>
Define the number of CU in DKC in the 'DKC Configuration' window.



Make sure that the entered item is correct and select (CL) [>>Next].

Note: There may be a case where an addition of the SM is required to add the CU.
When adding the SM, refer to page INST03-SM-10.

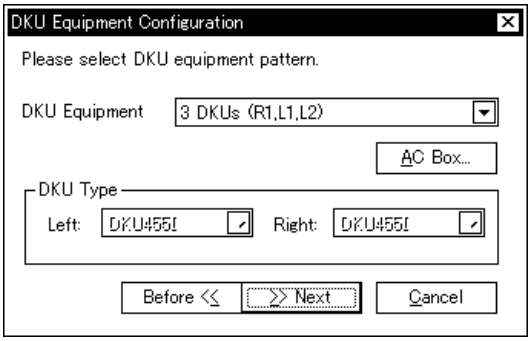
6. <Setting DKA type>
Define the DKA type in the 'Disk Interface Configuration' dialog box. After setting it, select (CL) the [>>Next] button.



Note: When no DKA is to be added, the 'Disk Interface Configuration' dialog box is not displayed.

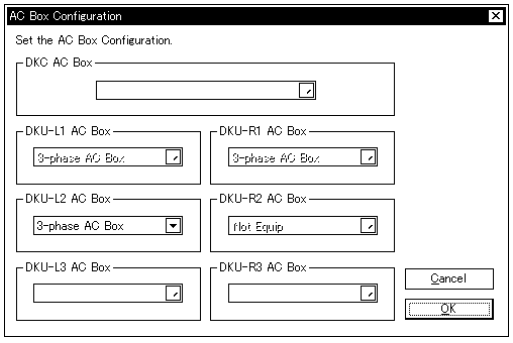
7. <DKU Equipment>
The DKU equipment pattern and DKU type is displayed in the 'DKU Equipment' configuration window.
Make an altered setting in which the DKU-L2 is added to the DKUs currently set.

Current setting	Altered setting
2DKUs (R1, L1)	3DKUs (R1, L1, L2)
3DKUs (R1, L1, R2)	4DKUs (R1, L1, R2, L2)



[AC Box...]: Set the DKU AC Box configuration. (Refer to step 7-1.)
Select (CL) the [>>Next].

7-1. <Setting the DKU AC Box configuration>
Set the installation AC Box configuration, select (CL) the [OK]. Return to step 7.



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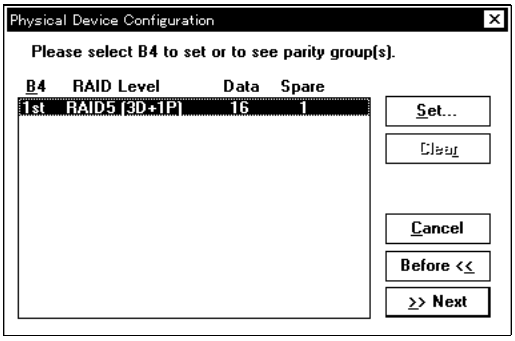
8. <Change Drive Configuration Information>
Define drive configuration according to the 'Physical Device Configuration' screen.
Detailed procedure is shown below.
[Set...]: Defines the parity group or spare disk. The routine proceeds to Step 8-1.
[Clear...]: Cancels the setting of the B4.
After setting up all items, select (CL) [>>Next]. Go to step 9.



Selecting (CL) [Before<<] returns you to the previous screen.

[Multi Cabinet Model]

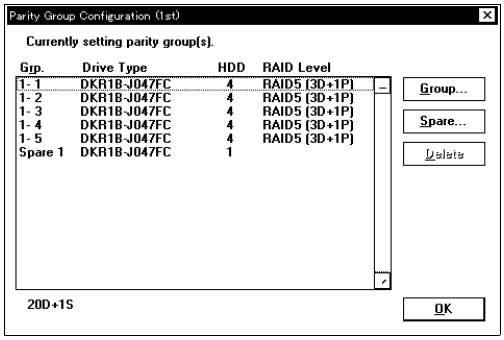
B4	Location	B4	Location
1st	HDU-R10, 11, 12, 13	7th	HDU-L20, 21, 22, 23
2nd	HDU-R14, 15, 16, 17	8th	HDU-L24, 25, 26, 27
3rd	HDU-L10, 11, 12, 13	9th	HDU-R30, 31, 32, 33
4th	HDU-L14, 15, 16, 17	10th	HDU-R34, 35, 36, 37
5th	HDU-R20, 21, 22, 23	11th	HDU-L30, 31, 32, 33
6th	HDU-R24, 25, 26, 27	12th	HDU-L34, 35, 36, 37

Note: The 9th to 12th of the B4 are valid only when the DKUs for the RAID 400 are connected.

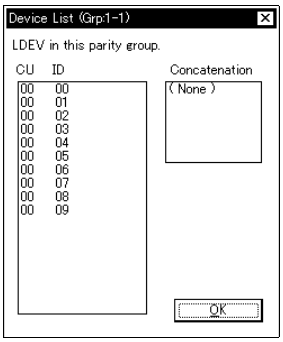
[Single Cabinet Model]

B4	Location	Comment
1st	HDU-0, 1, 2, 3	HDD-X00 ~ X0F
2nd	HDU-0, 1, 2, 3	HDD-X10 ~ X1F

8-1. <Define Parity Group>
[Group...]: Defines the parity group. See Step 8-1-1.
[Spare...]: Defines the spare drive. See Step 8-1-2.
[Delete]: Deletes the added parity group or spare drive.
Grp*: A parity group where RAID Concatenation is installed.
Note: If you want to set any Spare Drive in B4, please define the Spare Drive first.
After setting up all items, select (CL) [OK]. Return to step 8.



- To display LDEV ID in Parity group, select an item to be displayed and select (DC) this item on list box. The 'Device List' dialog box will appear.
"(no LDEV)" is displayed for the added parity group.



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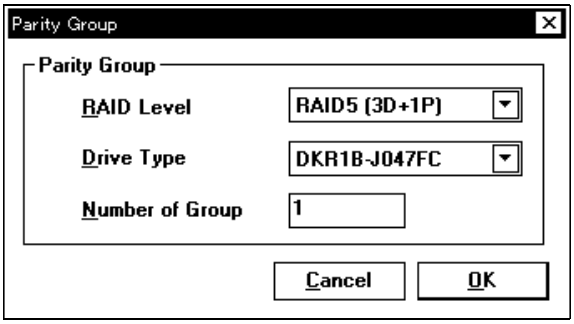
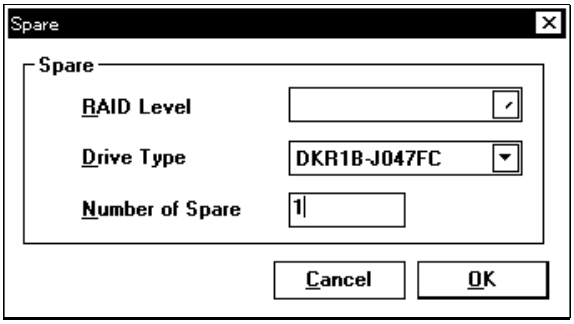
8-1-1.

Define the RAID Level and the Drive Type and the Number of Group in the 'Parity Group' dialog box.
Then select (CL) [OK]. Return to step 8-1.



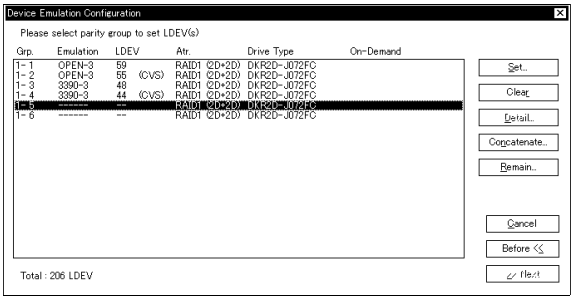
8-1-2.

Define the RAID Level and the Drive Type and the Number of Spare in the 'Spare' dialog box.
Then select (CL) [OK]. Return to step 8-1.



9. <Define Device Emulation>

After setting up all items for definition of Device Emulation, select (CL) [>>Next].
Selecting (CL) [Before<<] returns you to the previous screen.



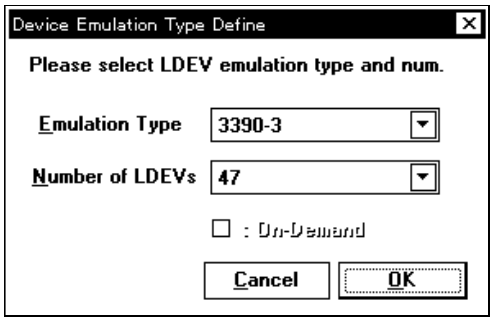
For defining Device Emulation:
Select (CL) parity group and select (CL) [Set...].
Go to step 9-1

For detailed display:
Select (CL) parity group and select (CL) [Detail...].
The detailed information is displayed.
(CVS): A parity group where CVS is installed.
Grp*: A parity group where RAID Concatenation is installed.

9-1.

After setting up all items in the 'Device Emulation Type Define' dialog box, select (CL) [OK].

Selecting (CL) [Cancel] returns you to step 9.



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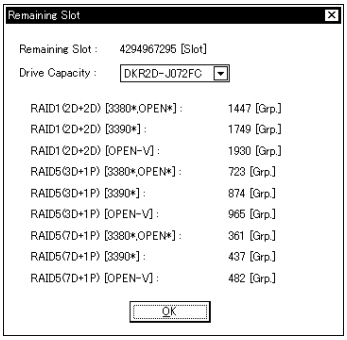
9-2. <Displaying remaining slot(s)>

The Remaining Slot window is displayed.
An allowable number of times of PDEV addition corresponding to the specified drive type is displayed.



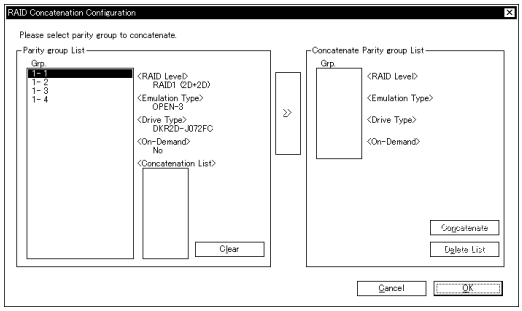
Select (CL) the [OK]. The routine returns to Step 9.

9-3. <Setting RAID concatenation>

Select (CL) [Concatenate...].
When you do not perform the RAID concatenation, return to Step 9.

9-4.

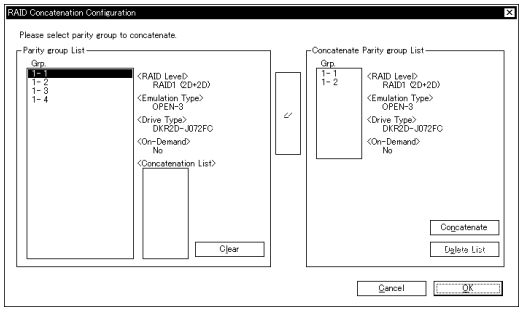
Parity groups to which the RAID concatenation can be applied are displayed in the Parity group List.
Select (CL) parity groups to which you want to apply the RAID concatenation and press (CL) the [>>] button.



Note: Only the parity groups, which have been added and to which the RAID concatenation can be applied are displayed in the Parity group List.

9-5.

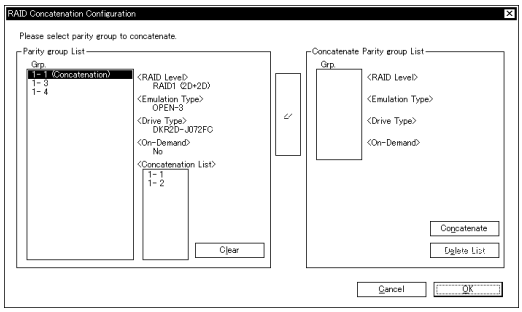
The selected parity groups are registered in the Concatenate Parity group List. Then press (CL) the [Concatenate] button.



Note: The [Concatenate] button cannot be pressed if the concatenation does not meet a condition of the RAID concatenation. Adjust the number of the parity groups in the Concatenate Parity group List.

9-6.

When the RAID concatenation is completed, "(Concatenation)" is displayed in the Parity group List. Selecting the "(Concatenation)" displays the concatenated parity groups in the Concatenation List.
Pressing the [Clear] button cancels the RAID concatenation.



When all the settings of the RAID concatenation are completed, press (CL) the [OK] button.
Pressing (CL) the [Cancel] button returns the routine to Step 9.

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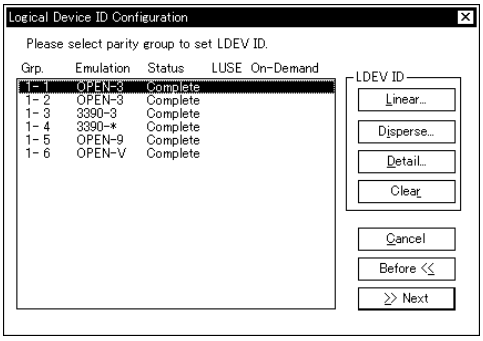
10. <Define LDEV ID>

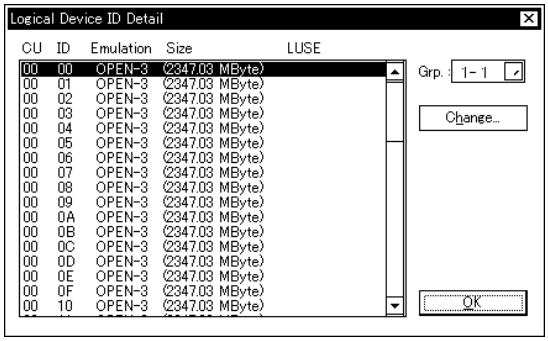


Definition Screen for LDEV ID.
Select (CL) the parity group to be defined and select (CL) a function from the [LDEV ID] list box.
[Linear...]: LDEV ID is assigned to LDEV in the order of parity groups. See step 10-1.
[Disperse...]: LDEV is assigned discretely in the order of parity groups. See step 10-1.
[Detail...]: A screen to define LDEV in detail is displayed. See step 10-2. (When plural groups are selected (CL), it is invalid.)
[Clear]: Select (CL) [Clear] to delete.
Grp*: The top parity group where RAID Concatenation is installed.

- '-----' is displayed in the Status area for the parity group to which LDEV ID is not assigned.

After setting up all items, select (CL) [>>Next]. (Go to Step 11)

10-1. Detailed Definition Screen for LDEV ID

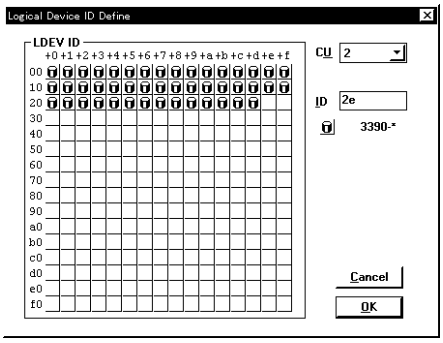


LDEV ID is defined in detail for each LDEV in the parity group.
Select (CL) LDEV from the list box and select (CL) [Change...].
The screen for LDEV ID input is displayed.
After setting, select (CL) [OK]. Return to step 10

- '-----' is displayed in the CU area and the ID area for the LDEV to which LDEV ID is not assigned.

Note: In the case of a RAID Concatenation Group, LDEV of the parity group selected by the "Grp List" is displayed.

10-2. Input LDEV ID



Select CU ID in the CU combo box.
The status of usage of ID in the CU is displayed in the LDEV ID panel.
White disk of panel: not used
Patterned disk of panel: using
Input LDEV ID you want to set or the head LDEV ID in the ID Edit box.
After setting, select (CL) [OK]. Return to step 10-1

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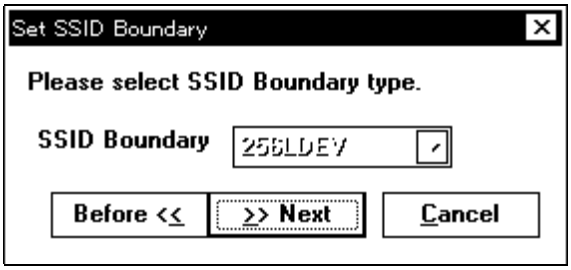
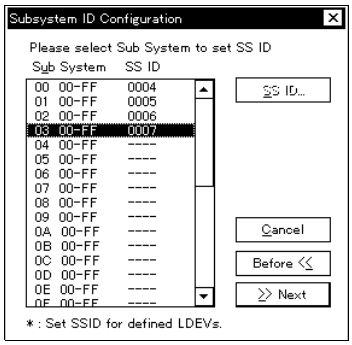
11. <Define Subsystem ID Boundary>
Press (CL) the [>>Next] button to change the screen to the “Set SSID Boundary” screen.

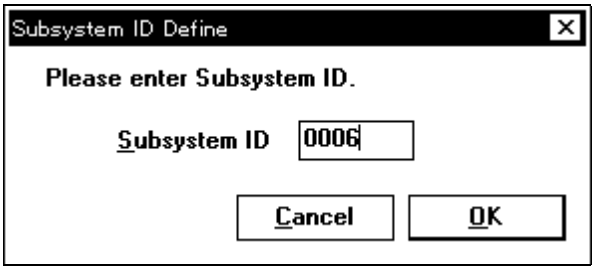


12. <Define Subsystem ID>
To define Subsystem ID, select (CL) the item from the list box and select (CL) [SSID]. See step 12-1.

After setting, select (CL) [>>Next].

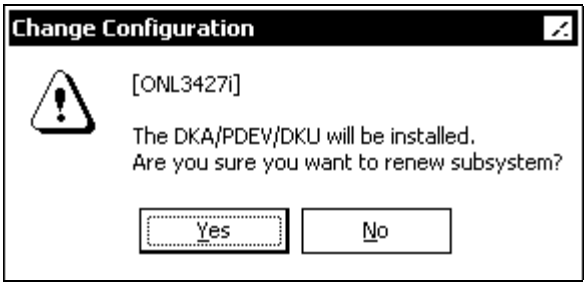


12-1. Define Subsystem ID and select (CL) [OK].
Return to step 12.



13. <Start installation>
Select (CL) [Yes] in response to “The DKA/PDEV/DKU will be installed. Are you sure you want to renew subsystem?”.

When [No] is selected (CL), returns to INST03-DKA-1220 step 3.



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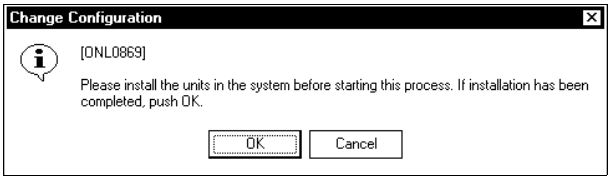
14. <Download microprogram>
    Microprograms are automatically downloaded for each processor.

15. <Install DKA>
    “Upgrading of the DKA...”

16. <Check that hardware components are installed>
    At this point refrain from pressing the [OK] button.
    “Please install the units in the system before starting this process. If installation has been completed, push OK.” is displayed.



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3 Installation Procedure of Additional Disk Adapter (DKC-F460I-200)

When the additional disk adapter is not to be added, go to Step 4, “Installation Procedure of HDD Canister”.

Note: Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

3-1 Insertion of the PCBs

Note: Make sure that a color of the levers of the PCB to be installed is blue. Never insert a PCB whose lever is not blue.

a. Remove the dummy plate installed in the installation location referring to the Fig. 3.11.7-7. (Note) Dummy plates should be stored for future use in De-installation.
b. Insert the PCBs to the correct locations in the Logic Box. Refer to Table 3.11.7-1.
c. Fasten the two screws referring to Fig. 3.11.7-8.

Table 3.11.7-1 Inserting Location (Rear of the unit)

Cluster	CL2							CL1				
Slot No.	M	L	K	J	H	G	F	E	D	C	B	A
Function	CSW	DKA	DKA	DKA	DKA	CACHE	CACHE	DKA	DKA	DKA	DKA	CSW
Location No.	CSW -2M	DKA -2L	DKA -2K	DKA -2J	DKA -2H	CACHE -2G	CACHE -2F	DKA -1E	DKA -1D	DKA -1C	DKA -1B	CSW -1A
Order of addition		Add.3	Add.2	Add.1	Basic			Add.3	Add.2	Add.1	Basic	
Number of DKAs set through the SVP		–	–	–	2			–	–	–	2	
		–	–	4				–	–	4		
		–	6					–	6			
		8						8				

Up to 4 disk adapters can be installed in the subsystem.

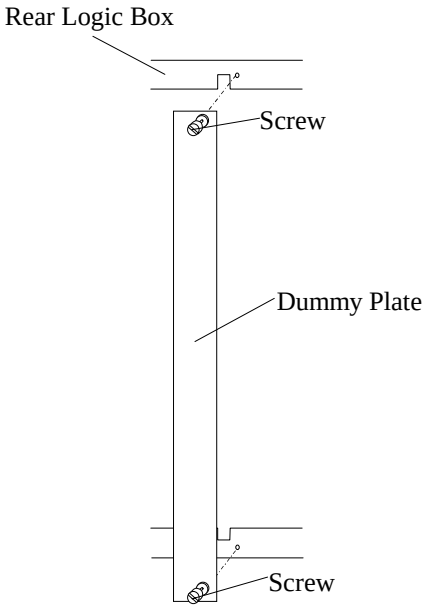

Fig. 3.11.7-7 Removal of Dummy Plate

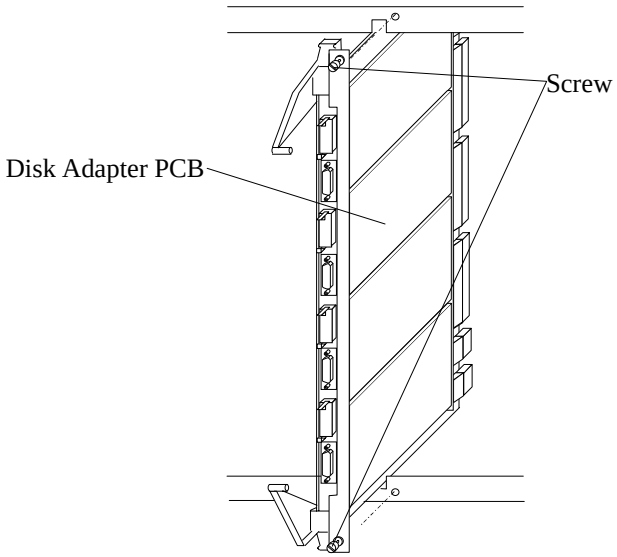

Fig. 3.11.7-8 Insertion of PCB

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3-2 Connection of cables

In case of Add.1

CAUTION

A serious failure occurs if any of cables/connectors is wrongly connected.
Since a label bearing a connection destination is affixed on each cable/connector, work very carefully referring to it and the wiring diagram.

- Colors of the labels of the subsystem shipped from the factory from June of 2002 and on are as follows. Labels on the cluster1 (CL1) side and the cluster2 (CL2) side are white and yellow respectively.

a. Connect the cables to the sub-edge of PCBs. (Refer to Fig. 3.11.7-9.)

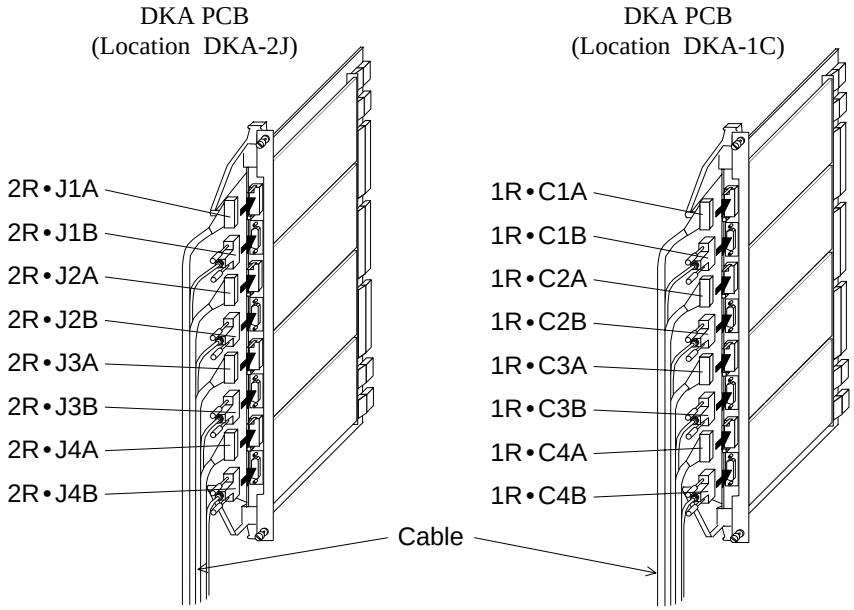

Fig.3.11.7-9 Connection of cable (Add.1)

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In case of Add.2

Caution:
Make sure that the AC power is applied to the added DKUs (DKU-L1 and DKU-L2) and the main breakers of the DKUs (DKU-L1 and DKU-L2) are turned on.
The DKU is automatically powered on when the DEV interface cable is connected to the DKA.

⚠ CAUTION

A serious failure occurs if any of cables/connectors is wrongly connected.
Since a label bearing a connection destination is affixed on each cable/connector, work very carefully referring to it and the wiring diagram.

- Colors of the labels of the subsystem shipped from the factory from June of 2002 and on are as follows. Labels on the cluster1 (CL1) side and the cluster2 (CL2) side are white and yellow respectively.

a. Connect the cables to the sub-edge of PCBs.

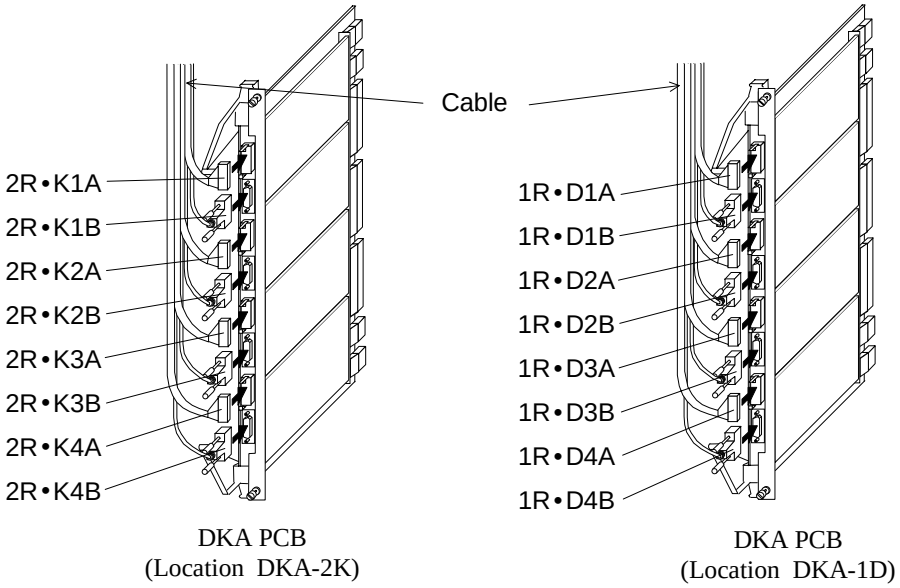

Fig.3.11.7-10 Connection of cable (Add.2)

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In case of Add.3

Caution:
Make sure that the AC power is applied to the added DKUs (DKU-L1 and DKU-L2) and the main breakers of the DKUs (DKU-L1 and DKU-L2) are turned on.
The DKU is automatically powered on when the DEV interface cable is connected to the DKA.

⚠ CAUTION

A serious failure occurs if any of cables/connectors is wrongly connected.
Since a label bearing a connection destination is affixed on each cable/connector, work very carefully referring to it and the wiring diagram.

- Colors of the labels of the subsystem shipped from the factory from June of 2002 and on are as follows. Labels on the cluster1 (CL1) side and the cluster2 (CL2) side are white and yellow respectively.

a. Connect the cables to the sub-edge of PCBs.

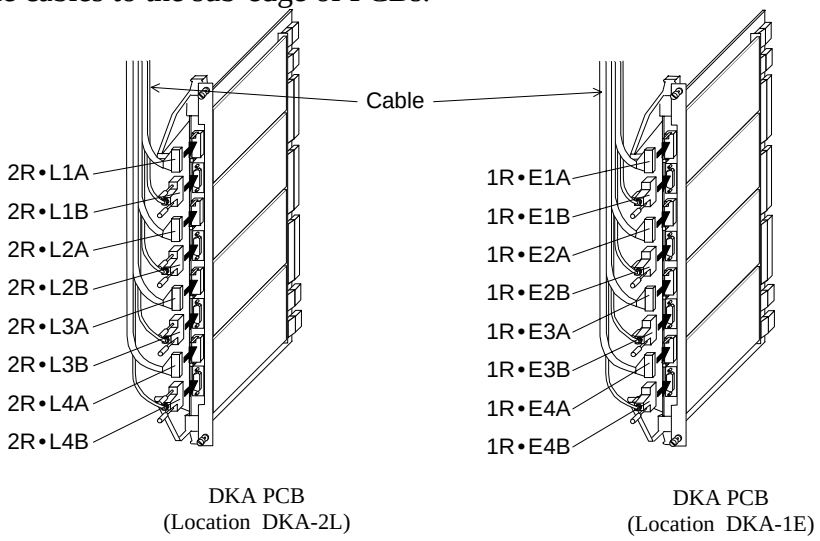

Fig.3.11.7-11 Connection of cable (Add.3)

3-3 Attachment of the nameplate

a. Attach the nameplate referring to Fig. 3.11.7-12.

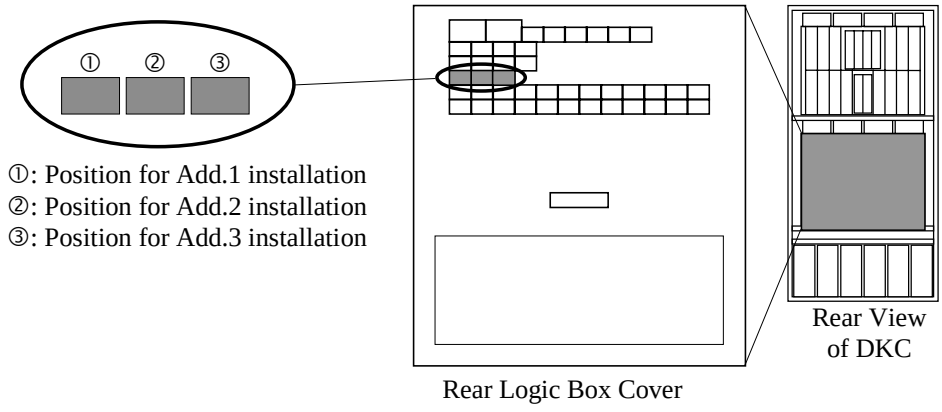

Fig. 3.11.7-12 Attachment of Nameplate

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4. Installation Procedure of HDD Canister

4-1 Confirmation of position to install HDD canister

(i) RAID5(3D+1P)/RAID1(2D+2D)

Relations between the installation locations of the RAID groups and the RAID group numbers set through the SVP are shown in Table 3.11.7-2.

Table 3.11.7-2 Relation between HDDs installation order and RAID group number (3D+1P/2D+2D)

	L2 DKU		L1 DKU		DKC		R1 DKU		R2 DKU	
	Installation Order	RAID Group No.	Installation Order	RAID Group No.			Installation Order	RAID Group No.	Installation Order	RAID Group No.
Upper	223	8-1	159	4-1	4th DKA Pair	2nd DKA Pair	032	2-1	096	6-1
	224	8-2	160	4-2			033	2-2	097	6-2
	225	8-3	161	4-3			034	2-3	098	6-3
	226	8-4	162	4-4			035	2-4	099	6-4
	227	8-5	163	4-5			036	2-5	100	6-5
	228	8-6	164	4-6			037	2-6	101	6-6
	229	8-7	165	4-7			038	2-7	102	6-7
	230	8-8	166	4-8			039	2-8	103	6-8
	231	8-9	167	4-9			040	2-9	104	6-9
	232	8-10	168	4-10			041	2-10	105	6-10
	233	8-11	169	4-11			042	2-11	106	6-11
	234	8-12	170	4-12			043	2-12	107	6-12
	235	8-13	171	4-13			044	2-13	108	6-13
	236	8-14	172	4-14			045	2-14	109	6-14
	237	8-15	173	4-15			046	2-15	110	6-15
	238	8-16	174(Spare)	4-16			047(Spare)	2-16	111	6-16
	239	8-17	175	4-17			048	2-17	112	6-17
	240	8-18	176	4-18			049	2-18	113	6-18
	241	8-19	177	4-19			050	2-19	114	6-19
	242	8-20	178	4-20			051	2-20	115	6-20
	243	8-21	179	4-21			052	2-21	116	6-21
	244	8-22	180	4-22			053	2-22	117	6-22
	245	8-23	181	4-23			054	2-23	118	6-23
	246	8-24	182	4-24			055	2-24	119	6-24
	247	8-25	183	4-25			056	2-25	120	6-25
	248	8-26	184	4-26			057	2-26	121	6-26
	249	8-27	185	4-27			058	2-27	122	6-27
	250	8-28	186	4-28			059	2-28	123	6-28
	251	8-29	187	4-29			060	2-29	124	6-29
	252	8-30	188	4-30			061	2-30	125	6-30
	253	8-31	189	4-31			062	2-31	126	6-31
	254	8-32	190	4-32			063	2-32	127	6-32
Lower	191	7-1	128	3-1	3rd DKA Pair	1st DKA Pair	001	1-1	064	5-1
	192	7-2	129	3-2			002	1-2	065	5-2
	193	7-3	130	3-3			003	1-3	066	5-3
	194	7-4	131	3-4			004	1-4	067	5-4
	195	7-5	132	3-5			005	1-5	068	5-5
	196	7-6	133	3-6			006	1-6	069	5-6
	197	7-7	134	3-7			007	1-7	070	5-7
	198	7-8	135	3-8			008	1-8	071	5-8
	199	7-9	136	3-9			009	1-9	072	5-9
	200	7-10	137	3-10			010	1-10	073	5-10
	201	7-11	138	3-11			011	1-11	074	5-11
	202	7-12	139	3-12			012	1-12	075	5-12
	203	7-13	140	3-13			013	1-13	076	5-13
	204	7-14	141	3-14			014	1-14	077	5-14
	205	7-15	142	3-15			015	1-15	078	5-15
	206	7-16	Spare	3-16			Spare	1-16	079	5-16
	207	7-17	143	3-17			016	1-17	080	5-17
	208	7-18	144	3-18			017	1-18	081	5-18
	209	7-19	145	3-19			018	1-19	082	5-19
	210	7-20	146	3-20			019	1-20	083	5-20
	211	7-21	147	3-21			020	1-21	084	5-21
	212	7-22	148	3-22			021	1-22	085	5-22
	213	7-23	149	3-23			022	1-23	086	5-23
	214	7-24	150	3-24			023	1-24	087	5-24
	215	7-25	151	3-25			024	1-25	088	5-25
	216	7-26	152	3-26			025	1-26	089	5-26
	217	7-27	153	3-27			026	1-27	090	5-27
	218	7-28	154	3-28			027	1-28	091	5-28
	219	7-29	155	3-29			028	1-29	092	5-29
	220	7-30	156	3-30			029	1-30	093	5-30
	221	7-31	157	3-31			030	1-31	094	5-31
	222	7-32	158	3-32			031	1-32	095	5-32

*1: To be left vacant or a spare disk is to be installed. *2: A data or spare disk is to be installed.

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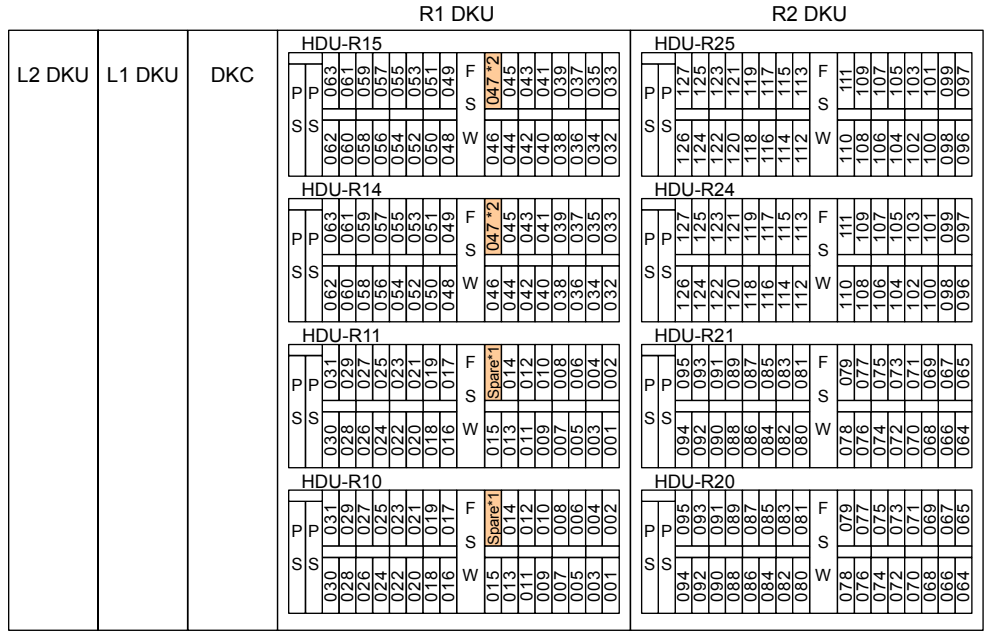
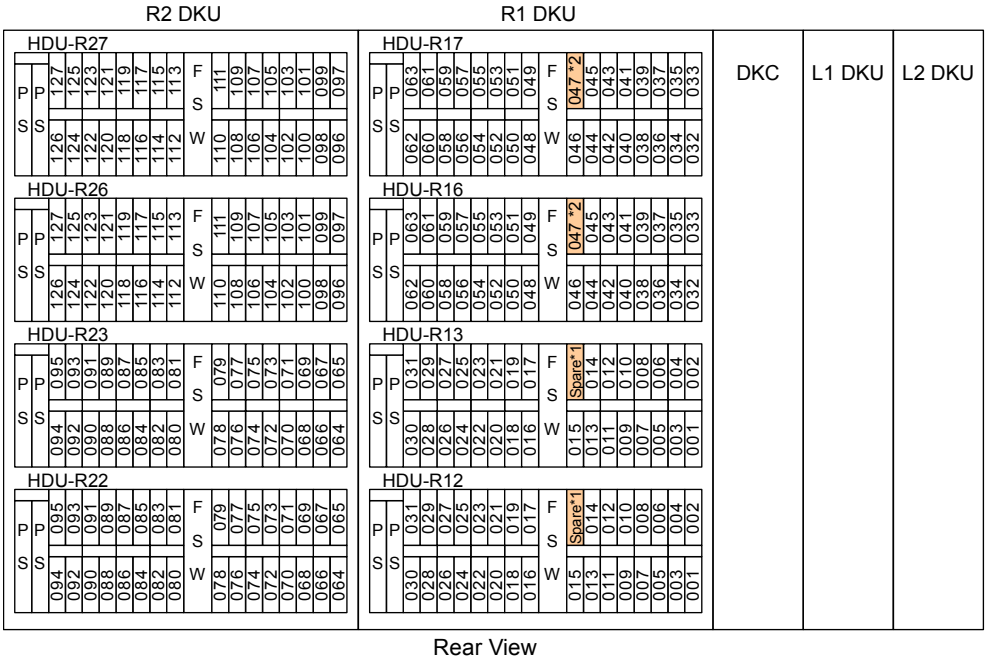
(1) Make sure of the location where the RAID group is installed and that where the HDD canister is to be added.

No.	Model Number	Model Name	Data and Parity
1	DKU-F455I-36K4/72J4/72K4/146J4/146JF/146JQ	4 HDD Canisters	Data and Parity Drive





*1:To be left vacant or a spare disk is to be installed.

*2:A data or spare disk is to be installed.

Fig. 3.11.7-13 (3D+1P) or (2D+2P) Data Drive/Parity Drive Expansion Sequence (1/2)

The relationship between HDDs installation order and RAID group number is shown in the Table 3.11.7-2.

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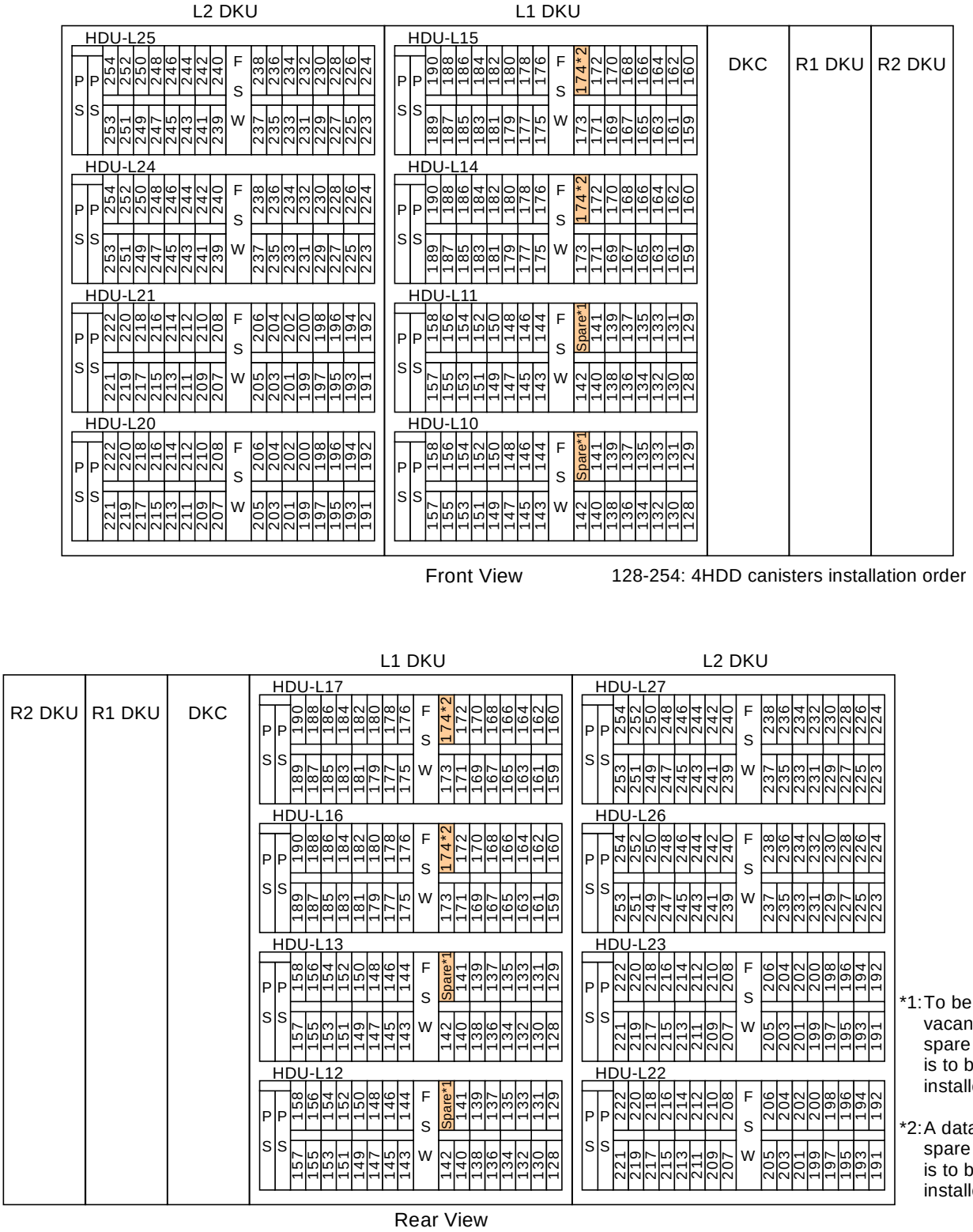

Fig. 3.11.7-13 (3D+1P) or (2D+2P) Data Drive/Parity Drive Expansion Sequence (2/2)

The relationship between HDDs installation order and RAID group number is shown in the Table 3.11.7-2.

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(ii) RAID5 (7D+1P)

Relations between the installation locations of the RAID groups and the RAID group numbers set through the SVP are shown in Table 3.11.7-3.

Table 3.11.7-3 Relation between HDDs installation order and RAID group number (7D+1P)

L2 DKU		L1 DKU		DKC		R1 DKU		R2 DKU	
Installation Order	RAID Group No.	Installation Order	RAID Group No.			Installation Order	RAID Group No.	Installation Order	RAID Group No.
095	7-1 , (8-1)	064	3-1 , (4-1)			001	1-1 , (2-1)	032	5-1 , (6-1)
096	7-2 , (8-2)	065	3-2 , (4-2)			002	1-2 , (2-2)	033	5-2 , (6-2)
097	7-3 , (8-3)	066	3-3 , (4-3)			003	1-3 , (2-3)	034	5-3 , (6-3)
098	7-4 , (8-4)	067	3-4 , (4-4)			004	1-4 , (2-4)	035	5-4 , (6-4)
099	7-5 , (8-5)	068	3-5 , (4-5)			005	1-5 , (2-5)	036	5-5 , (6-5)
100	7-6 , (8-6)	069	3-6 , (4-6)			006	1-6 , (2-6)	037	5-6 , (6-6)
101	7-7 , (8-7)	070	3-7 , (4-7)			007	1-7 , (2-7)	038	5-7 , (6-7)
102	7-8 , (8-8)	071	3-8 , (4-8)			008	1-8 , (2-8)	039	5-8 , (6-8)
103	7-9 , (8-9)	072	3-9 , (4-9)			009	1-9 , (2-9)	040	5-9 , (6-9)
104	7-10 , (8-10)	073	3-10 , (4-10)			010	1-10 , (2-10)	041	5-10 , (6-10)
105	7-11 , (8-11)	074	3-11 , (4-11)			011	1-11 , (2-11)	042	5-11 , (6-11)
106	7-12 , (8-12)	075	3-12 , (4-12)			012	1-12 , (2-12)	043	5-12 , (6-12)
107	7-13 , (8-13)	076	3-13 , (4-13)			013	1-13 , (2-13)	044	5-13 , (6-13)
108	7-14 , (8-14)	077	3-14 , (4-14)			014	1-14 , (2-14)	045	5-14 , (6-14)
109	7-15 , (8-15)	078	3-15 , (4-15)	3rd / 4th	1st / 2nd	015	1-15 , (2-15)	046	5-15 , (6-15)
110	7-16 , (8-16)	(Spare)*1	3-16 , (4-16)	DKA	DKA	(Spare)*1	1-16 , (2-16)	047	5-16 , (6-16)
111	7-17 , (8-17)	079	3-17 , (4-17)	Pairs	Pairs	016	1-17 , (2-17)	048	5-17 , (6-17)
112	7-18 , (8-18)	080	3-18 , (4-18)			017	1-18 , (2-18)	049	5-18 , (6-18)
113	7-19 , (8-19)	081	3-19 , (4-19)			018	1-19 , (2-19)	050	5-19 , (6-19)
114	7-20 , (8-20)	082	3-20 , (4-20)			019	1-20 , (2-20)	051	5-20 , (6-20)
115	7-21 , (8-21)	083	3-21 , (4-21)			020	1-21 , (2-21)	052	5-21 , (6-21)
116	7-22 , (8-22)	084	3-22 , (4-22)			021	1-22 , (2-22)	053	5-22 , (6-22)
117	7-23 , (8-23)	085	3-23 , (4-23)			022	1-23 , (2-23)	054	5-23 , (6-23)
118	7-24 , (8-24)	086	3-24 , (4-24)			023	1-24 , (2-24)	055	5-24 , (6-24)
119	7-25 , (8-25)	087	3-25 , (4-25)			024	1-25 , (2-25)	056	5-25 , (6-25)
120	7-26 , (8-26)	088	3-26 , (4-26)			025	1-26 , (2-26)	057	5-26 , (6-26)
121	7-27 , (8-27)	089	3-27 , (4-27)			026	1-27 , (2-27)	058	5-27 , (6-27)
122	7-28 , (8-28)	090	3-28 , (4-28)			027	1-28 , (2-28)	059	5-28 , (6-28)
123	7-29 , (8-29)	091	3-29 , (4-29)			028	1-29 , (2-29)	060	5-29 , (6-29)
124	7-30 , (8-30)	092	3-30 , (4-30)			029	1-30 , (2-30)	061	5-30 , (6-30)
125	7-31 , (8-31)	093	3-31 , (4-31)			030	1-31 , (2-31)	062	5-31 , (6-31)
126	7-32 , (8-32)	094	3-32 , (4-32)			031	1-32 , (2-32)	063	5-32 , (6-32)

*1: To be left vacant or a spare disk is to be installed.

- Install RAID 5 (7D+1P) forming pairs using the same number of the two RAID groups (RAID groups 1 and 2, 3 and 4, 5 and 6, and 7 and 8) of RAID 5 (3D+1P).
  (Example: RAID group numbers 1-1 and 2-1)
  The types of HDDs to be installed in each pair must be the same.
- In the case of RAID 5 (7D+1P), only odd RAID numbers are displayed on the SVP. (Group numbers shown in parentheses in the table above are not displayed.)
- When RAID 5 (3D+1P) or RAID 1 (2D+2D) and RAID 5 (7D+1P) are configured mixture, note that duplicated group numbers are excluded.
  Example: When Group No. 1-1 is configured for RAID 5 (7D+1P), Group No. 2-1 is excluded and cannot be configure for RAID 5 (3D+1P).

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(1) Make sure of the location where the RAID group is installed and that where the HDD canister is to be added.

No.	Model Number	Model Name	Data and Parity
1	DKU-F455I-36K4/72J4/72K4/146J4/146JF/146JQ	4 HDD Canisters x 2sets	Data and Parity Drive

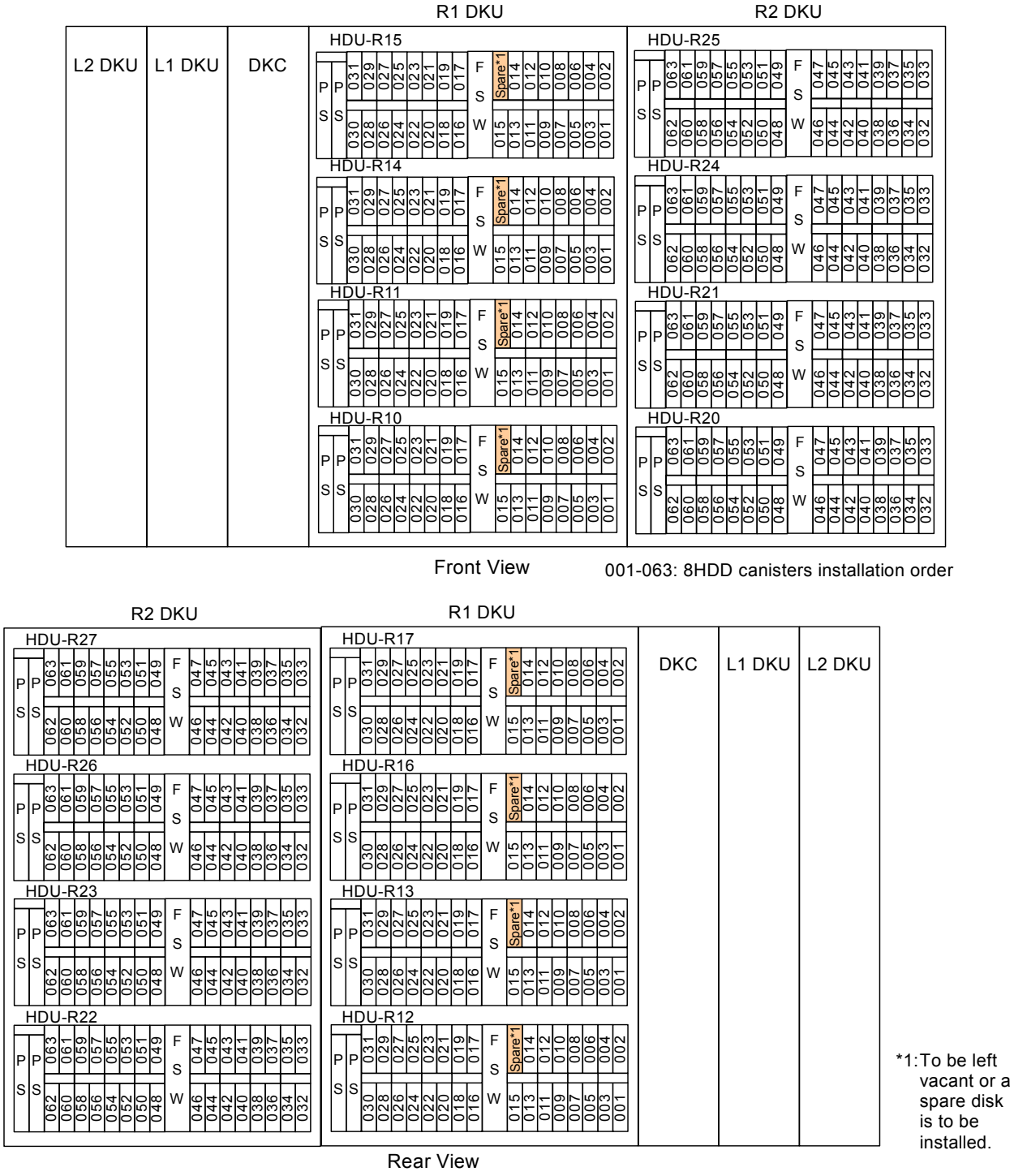

Fig. 3.11.7-14 (7D+1P) Data Drive/Parity Drive Expansion Sequence (1/2)

The relationship between HDDs installation order and RAID group number is shown in the Table 3.11.7-3.

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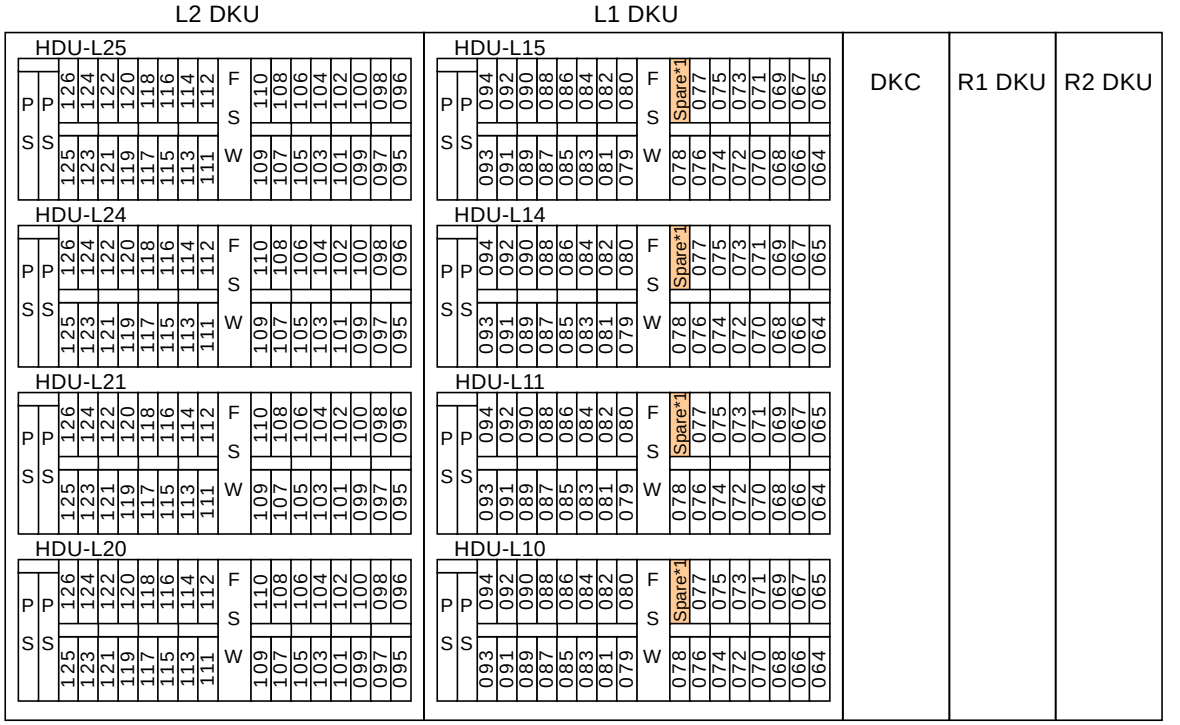

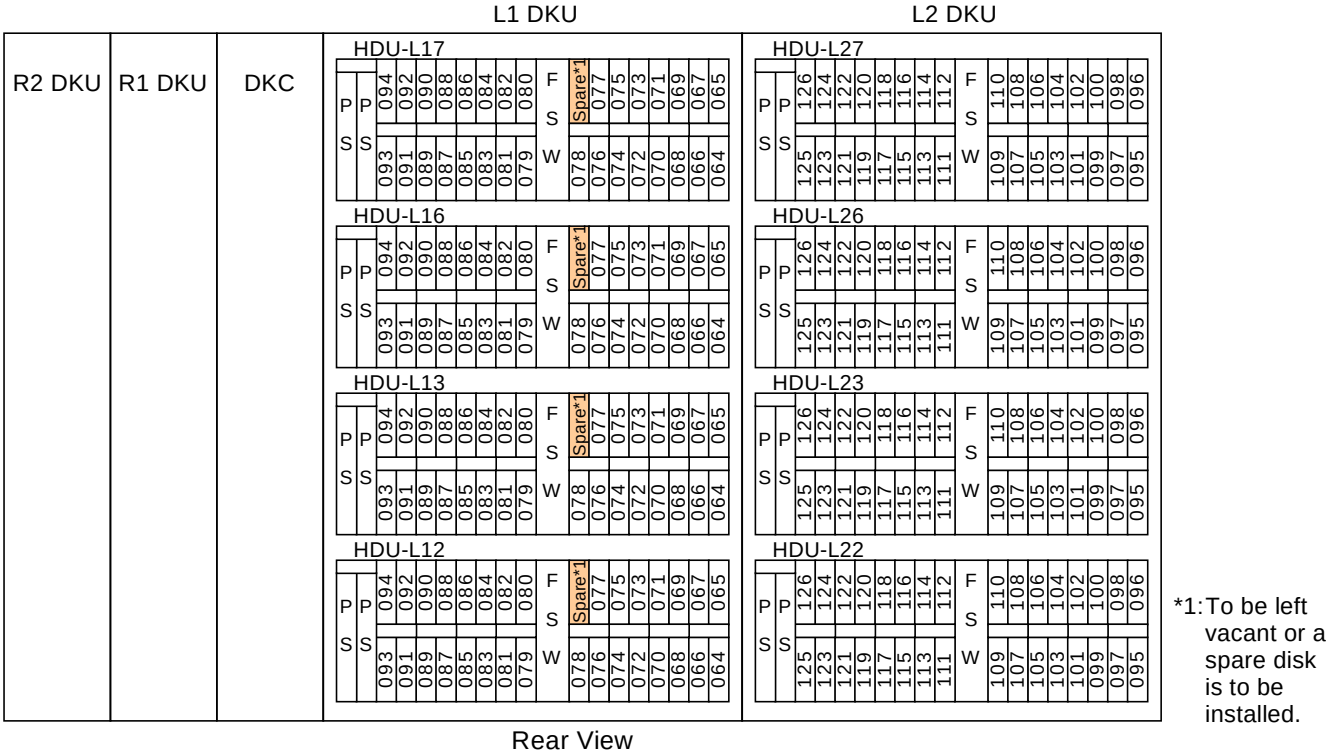

Fig. 3.11.7-14 (7D+1P) Data Drive/Parity Drive Expansion Sequence (2/2)

The relationship between HDDs installation order and RAID group number is shown in the Table 3.11.7-3.

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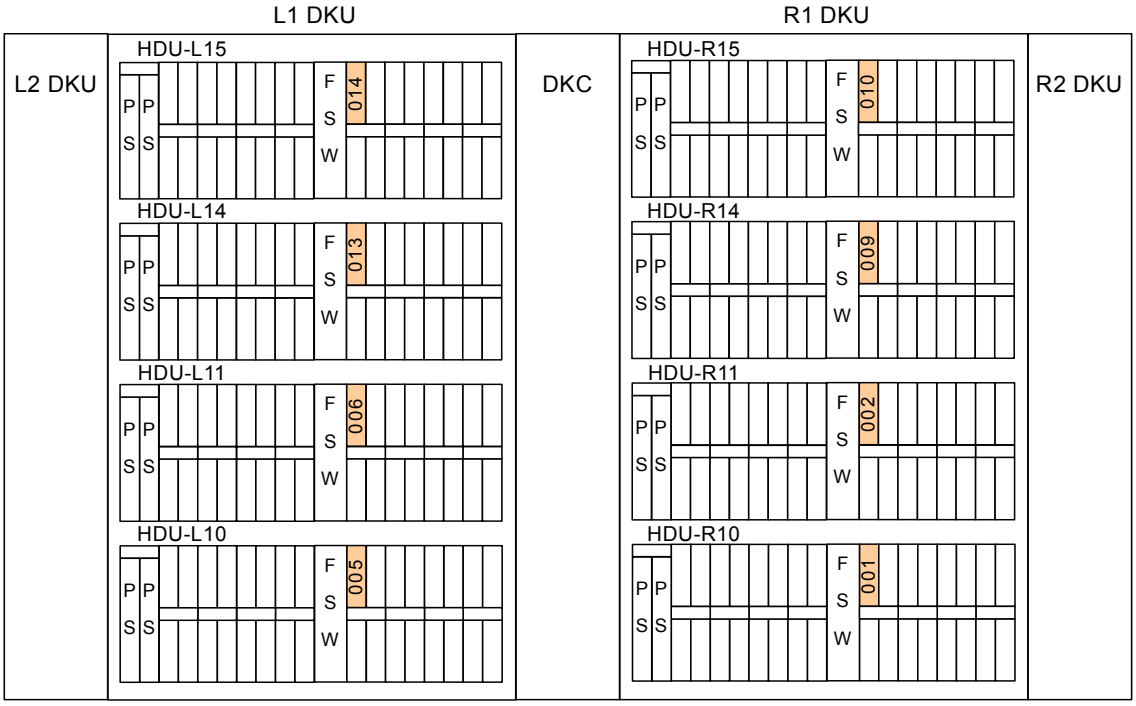
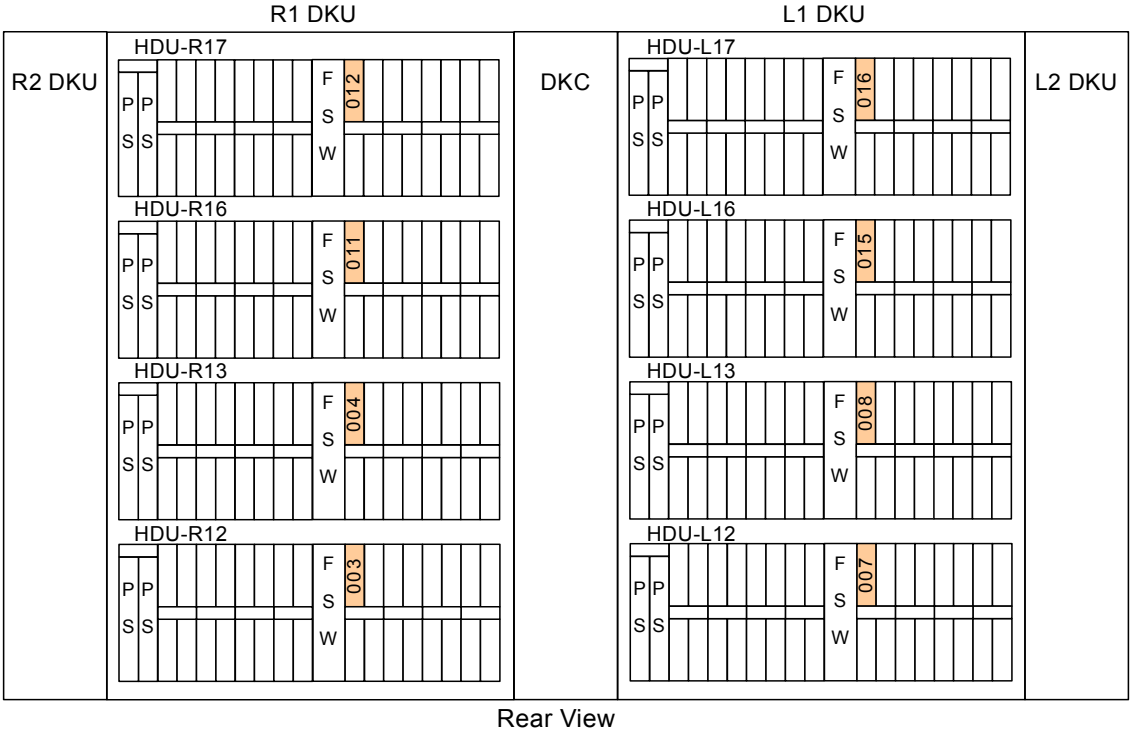
(iii) Spare HDD

No.	Model Number	Model Name	Data and Parity
1	DKU-F455I-36K1/72J1/72K1/146J1/146JS/146JM	1 HDD Canister	Spare Drive



Front View

001-016: Spare HDD canister installation order



Rear View

Fig. 3.11.7-15 Spare Drive Expansion Sequence

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4-2 Installation of the HDD Canister.

Notice:
(1) Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.
(2) Since the HDD is a precision component, handle it very carefully not to apply a vibration or shock to it.

a. Remove the dummy canister from the HDU Box.
When the dummy canister cannot be removed by pulling of it only, remove it referring to page INST03-DKA-3000.
b. Install the HDD canister. (For the detailed procedure for installation, refer to the procedure for installing HDD canister on page INST03-DKA-3010.)

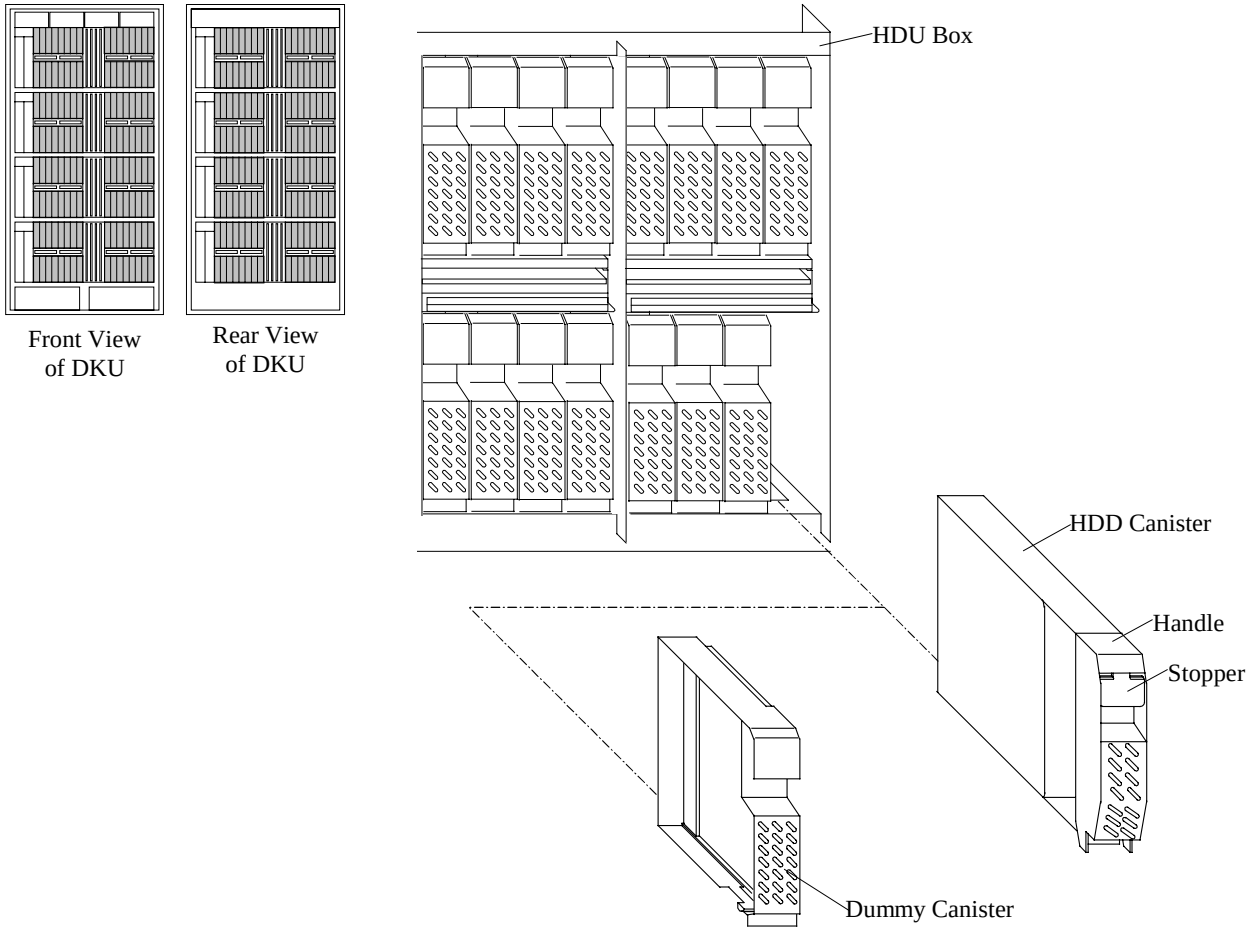

Fig. 3.11.7-16 Installation of HDD Canister

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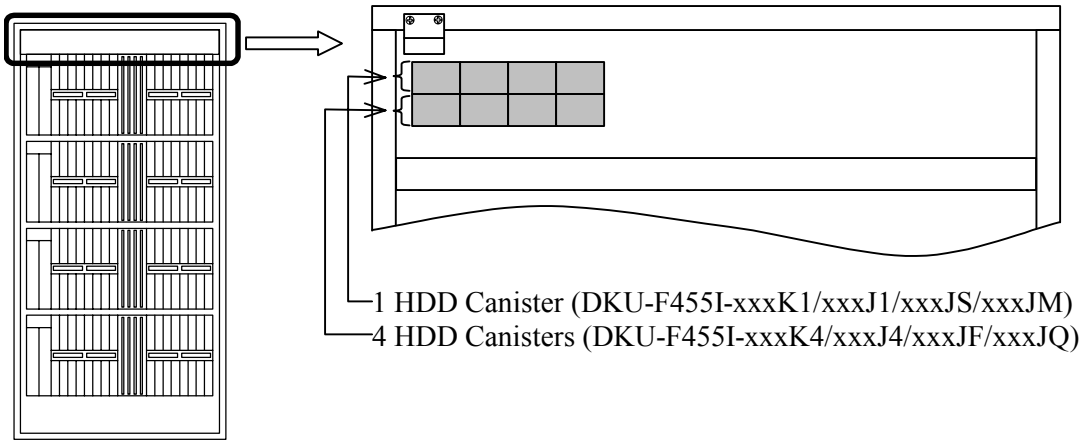
4-3 Attachment of the nameplate.

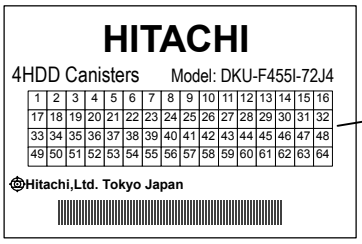
a. When the nameplate is not attached, attach the nameplate regardless of the model number from the left of the unit. Paint out mounting numbers on the nameplate.



Rear View
of DKU

[Example]

When the 7 DKU-F455I-72J4 sets are installed



							8	9	10	11	12	13	14	15	16
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64

Fig. 3.11.7-17 Attachment of Nameplate

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6. Installation Procedure of DEV Interface Cable 2 (DKU-F455I-EXC)

Between HDU-L10-L17 and HDU-L20-L27

a. Connect the DEV interface cables to the FSW PCBs in the DKU-L1 frame referring to figures 3.11.7-17 and 3.11.7-18.

⚠ CAUTION

A serious failure occurs if any of cables/connectors is wrongly connected.
Since a label bearing a connection destination is affixed on each cable/connector, work very carefully referring to it and the wiring diagram.

- Colors of the labels of the subsystem shipped from the factory from June of 2002 and on are as follows. Labels on the cluster1 (CL1) side and the cluster2 (CL2) side are white and yellow respectively.

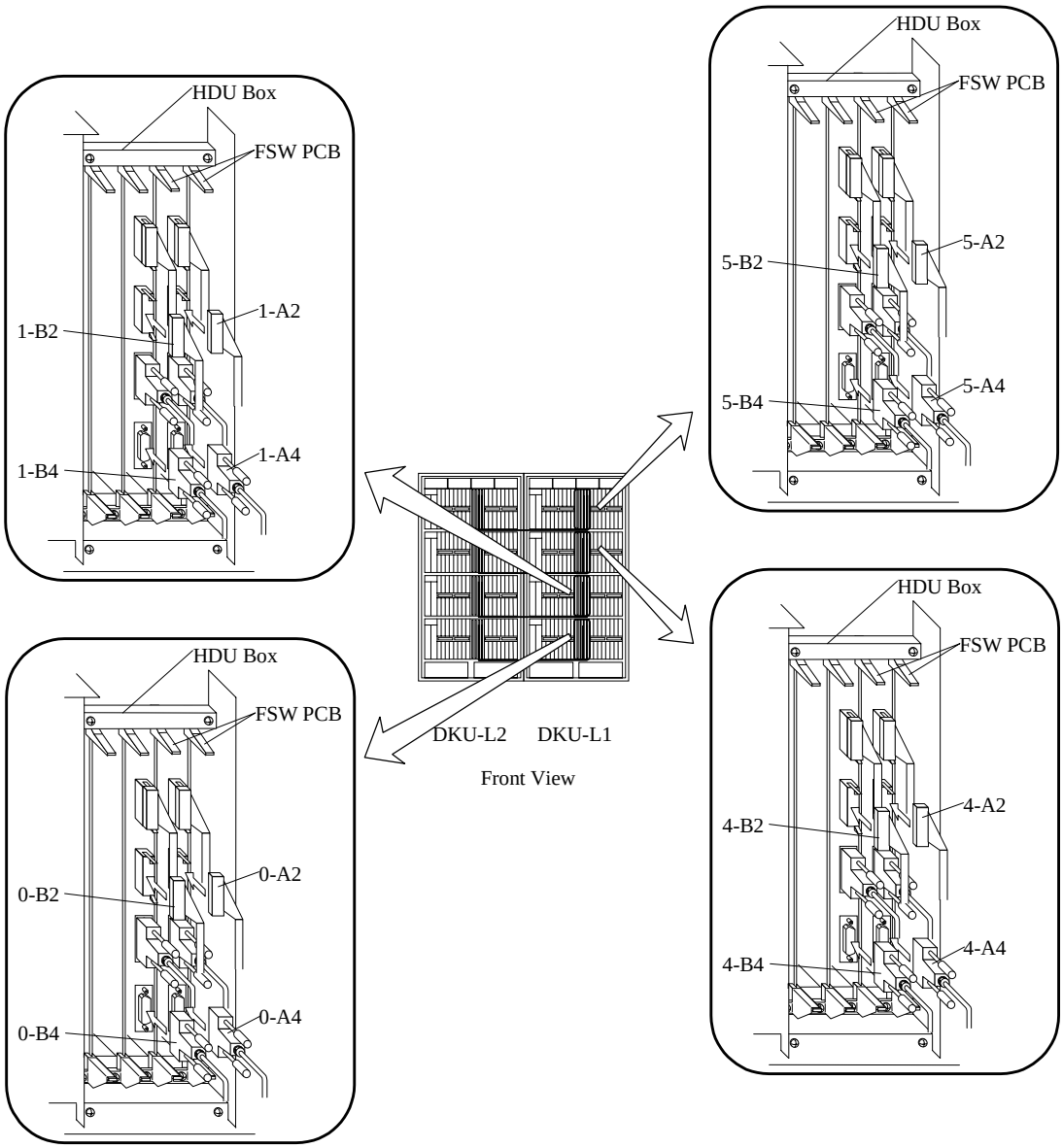

Fig. 3.11.7-18 Connection of the DEV Interface Cables

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⚠ CAUTION

A serious failure occurs if any of cables/connectors is wrongly connected.
Since a label bearing a connection destination is affixed on each cable/connector, work very carefully referring to it and the wiring diagram.

- Colors of the labels of the subsystem shipped from the factory from June of 2002 and on are as follows. Labels on the cluster1 (CL1) side and the cluster2 (CL2) side are white and yellow respectively.

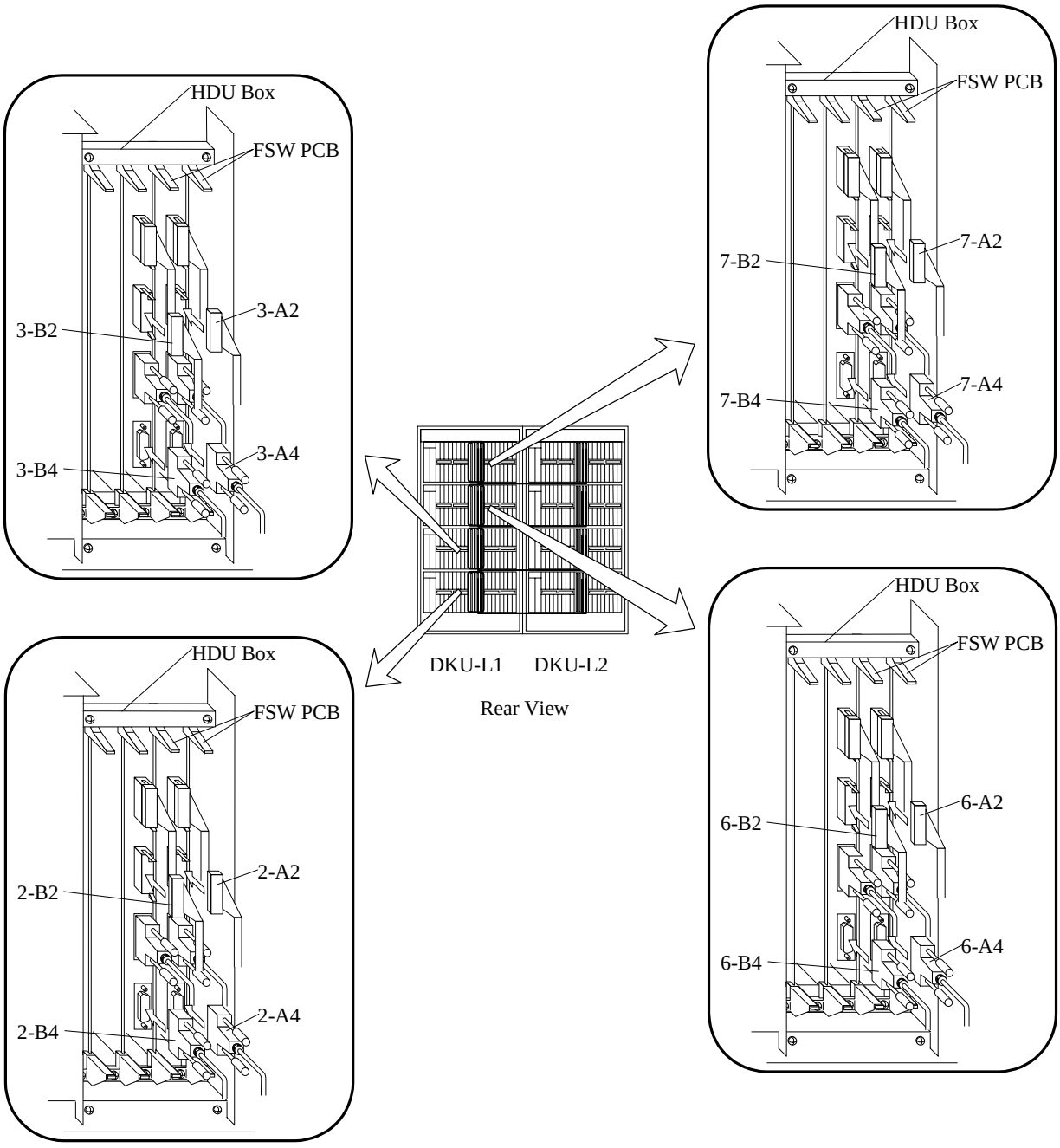

Fig. 3.11.7-19 Connection of the DEV Interface Cables

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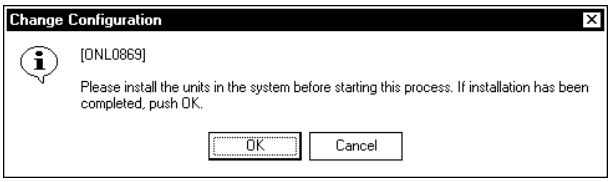
7. SVP post procedure

1. <Check that hardware components are installed>
   Select (CL) [OK] after making sure that all hardware components are installed correctly in response to “Please install the units in the system before starting this process. If installation has been completed, push OK.”.



2.
   When DKA is installed, “Waiting for Power Event... Usually, several minutes (maximum 15 minutes)” is displayed.

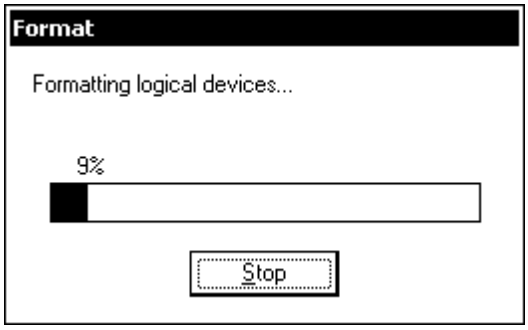
   If [ONL3437E] or [ONL3438E] is displayed, please refer 2.11.1. (INST02-630)
   If [ONL3441E] or [ONL2841W] is displayed, please refer 2.11.2. (INST02-640)

---

3. <DKU PATH INLINE>
   When DKA is installed, “DKU PATH INLINE is now running...” is displayed.

---

4. <LDEV FORMAT>
   “Formatting the logical device...” is displayed when Parity Group is defined.



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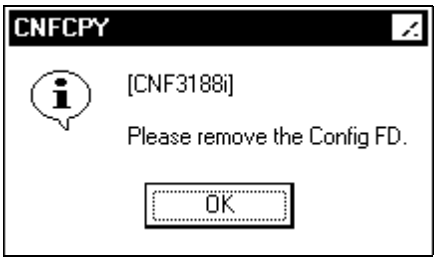
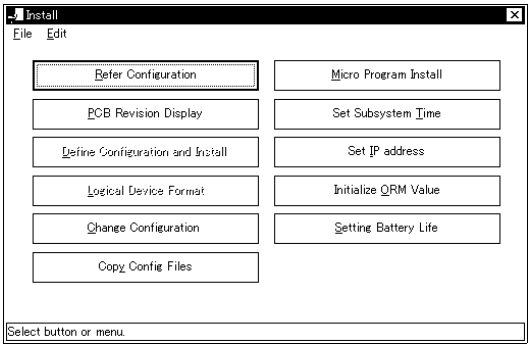
5. <End of system update processing>
"Renewal process has completed. Please check the subsystem status." is displayed when recovery processing on all installed components is completed. Select (CL) [OK] in response to this message.

6.
"Reading subsystem configuration data..." is displayed.
"Please insert the Config FD in the FDD." is displayed.
Insert the configuration FD into FDD, and select (CL) [OK].

7.
When this procedure is completed, the message "Please remove the Config FD." is displayed.
Remove the FD, select (CL) [OK].



8.
After the procedure is completed, return to 'Install'.
Select (CL) [File]-[Exit].



9. <Mode Change>
Change the mode to View Mode.

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8. Installation Procedure of DEV Interface Cable 2 (DKU-F455I-EXC)

Between HDU-L10-L17 and HDU-L20-L27

a. Attach the cable covers with the screw to fix the DEV Interface Cables.

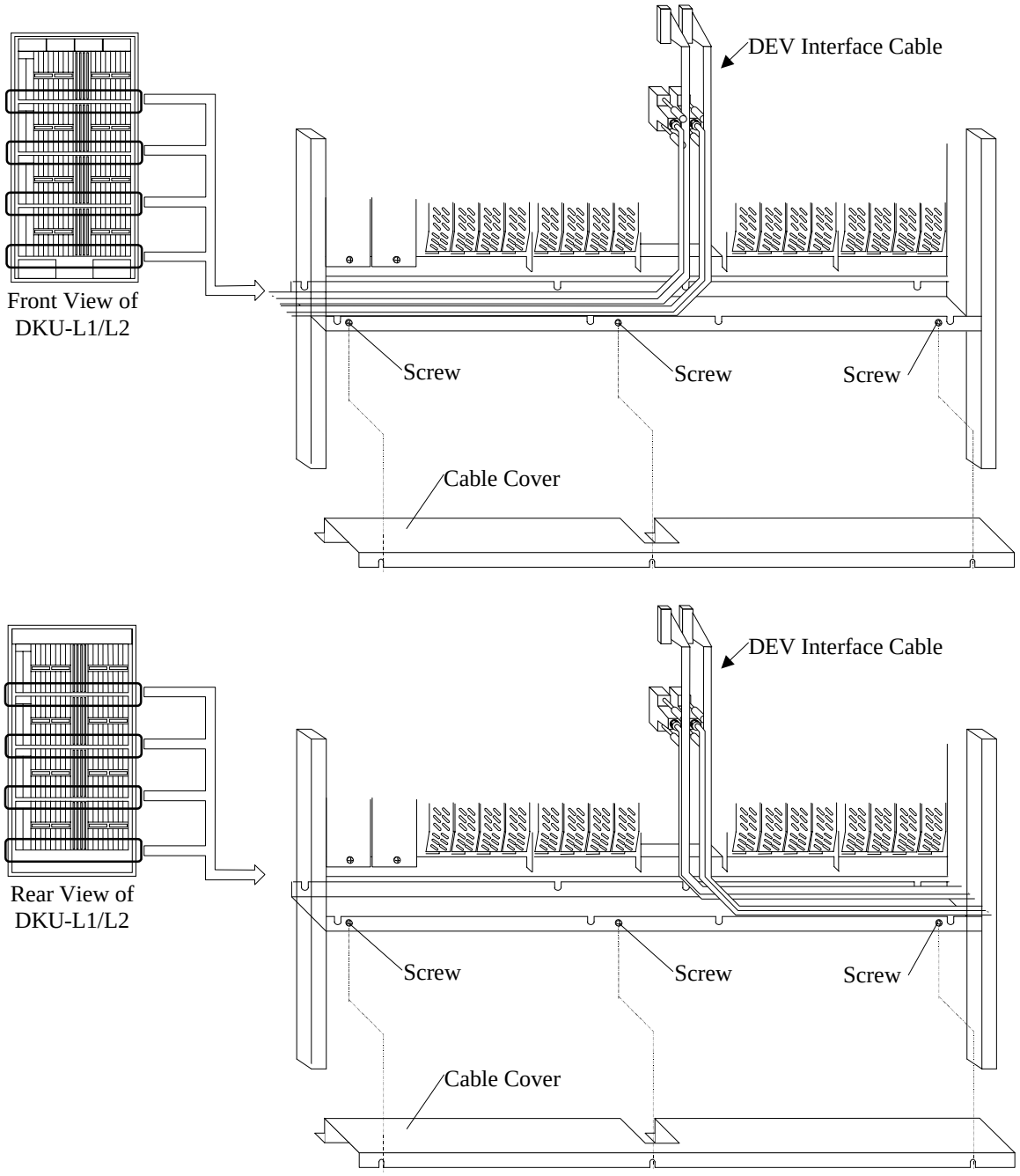

Fig. 3.11.7-20 Fixation of the DEV Interface Cables

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b. Attach the cable covers with the screw to fix the DEV Interface Cables.

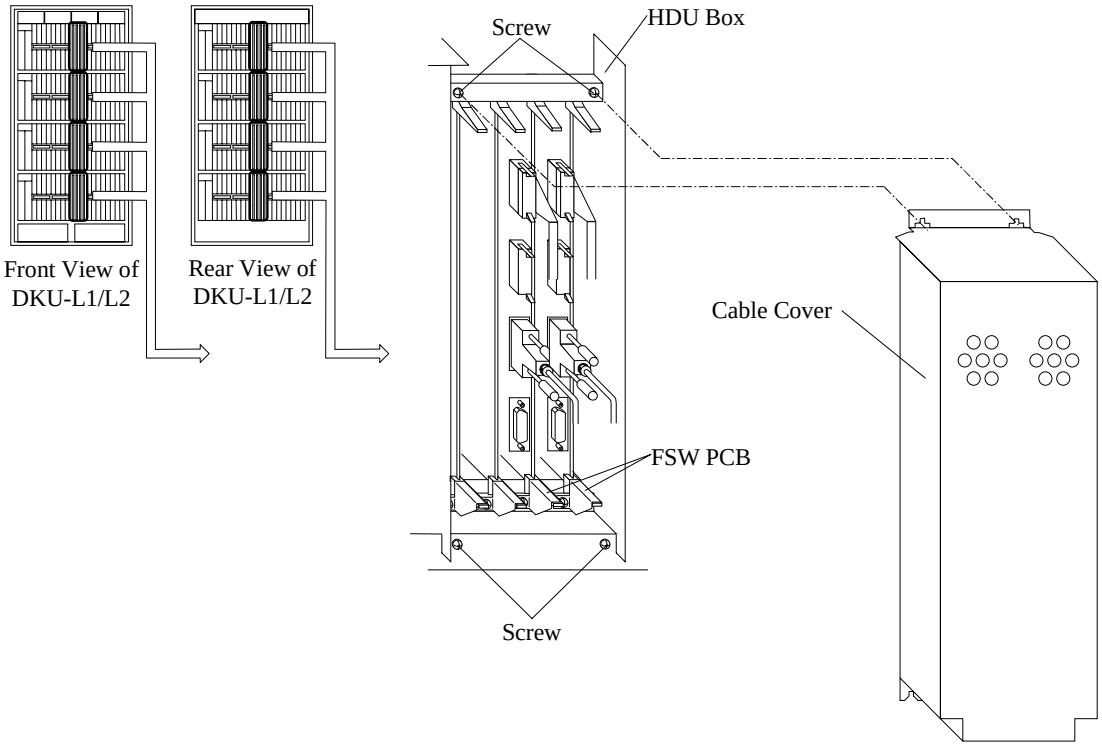

Fig. 3.11.7-21 Fixation of the DEV Interface Cables

c. Attach the nameplate to the DKU-L2 frame.

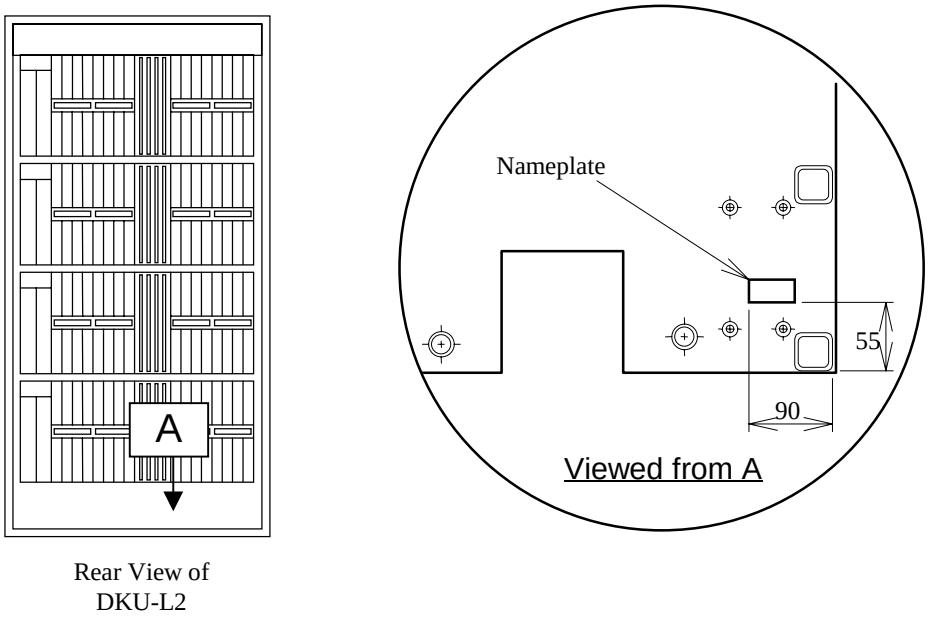

Fig. 3.11.7-22 Attachment of the Nameplate

d. Return to the work table (INST02-50) and perform rest of the works.

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3.11.8 When performing addition of the data/spare HDD canister, DKA, and DEV interface cable that accompanies the addition of the DKU-R2 and DKU-L1 frames (DKC-F460I-200/L1C, DKU-F455I-36K4/36K1/72J4/72J1/72K4/72K1/ 146J4/146J1/146JF/146JS/146JQ/146JM/EXC)

1. Installation Procedure of DEV Interface Cable 1 (DKC-F460I-L1C)

1-1 Connect the DEV Interface cables to the FSW.

Note:
1. When the DEV interface cable is connected to the FSW in the state in which the subsystem power is on, the each HDU Box is powered on at the same time of the connection.
2. When the DEV interface cable is connected in the state in which the main circuit breaker of the DKU is not turned on, the DKU Voltage Alarm is detected (the ALARM LED on the operator panel comes on and the SIM=BF20XX or BF22XX is issued). Therefore, turn on the main circuit breaker of the DKU before connecting the DEV interface cable.

Matters to be checked:
Check the settings of the switches on the JMP PCB and multi power supply (MPS) and the jumper socket. (Refer to Subsection 3.4.4, "Switch and Jumper Plug Installation" on pages INST03-DKU-220 and INST03-DKU-230.)
If any of the switches and jumper socket is not set correctly, reset it correctly.

a. Loosen the screws and remove the cable covers from the DKU frames.

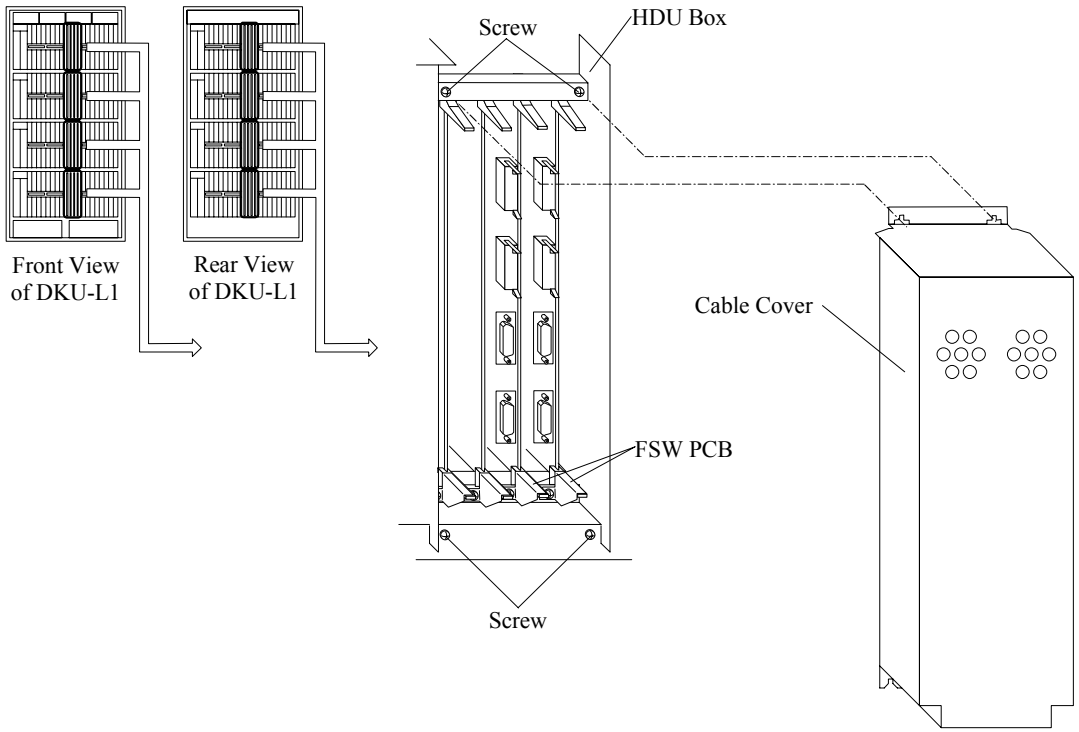

Fig. 3.11.8-1 Removal of Cable Covers

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b. Loosen the screws and remove the cable covers from the DKU frames.

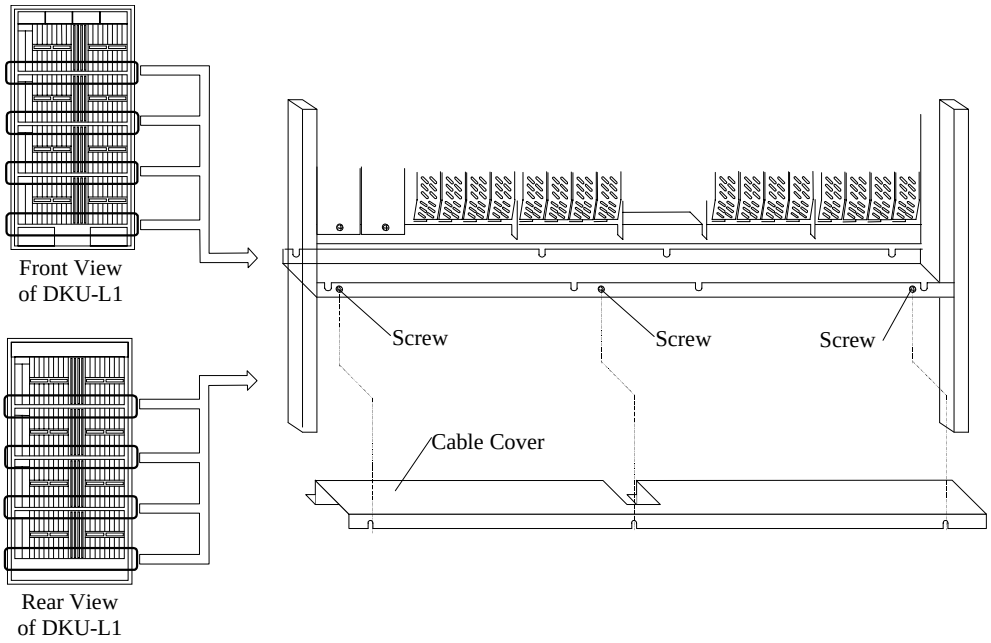

Fig. 3.11.8-2 Removal of Cable Covers

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c. Refer to Fig. 3.11.8-3 and Fig. 3.11.8-4. Connect the DEV interface cables to the sub-edges on the FSW PCBs in the HDU box.

Caution:
1. Do not perform the work unless the AC power is supplied to the additional DKU and the main breaker of the DKU is not turned on.
2. Do not connect the DEV interface cable to the DKA in this procedure. The cable is to be connected later in another procedure.

⚠ CAUTION

A serious failure occurs if any of cables/connectors is wrongly connected.
Since a label bearing a connection destination is affixed on each cable/connector, work very carefully referring to it and the wiring diagram.

- Colors of the labels of the subsystem shipped from the factory from June of 2002 and on are as follows. Labels on the cluster1 (CL1) side and the cluster2 (CL2) side are white and yellow respectively.

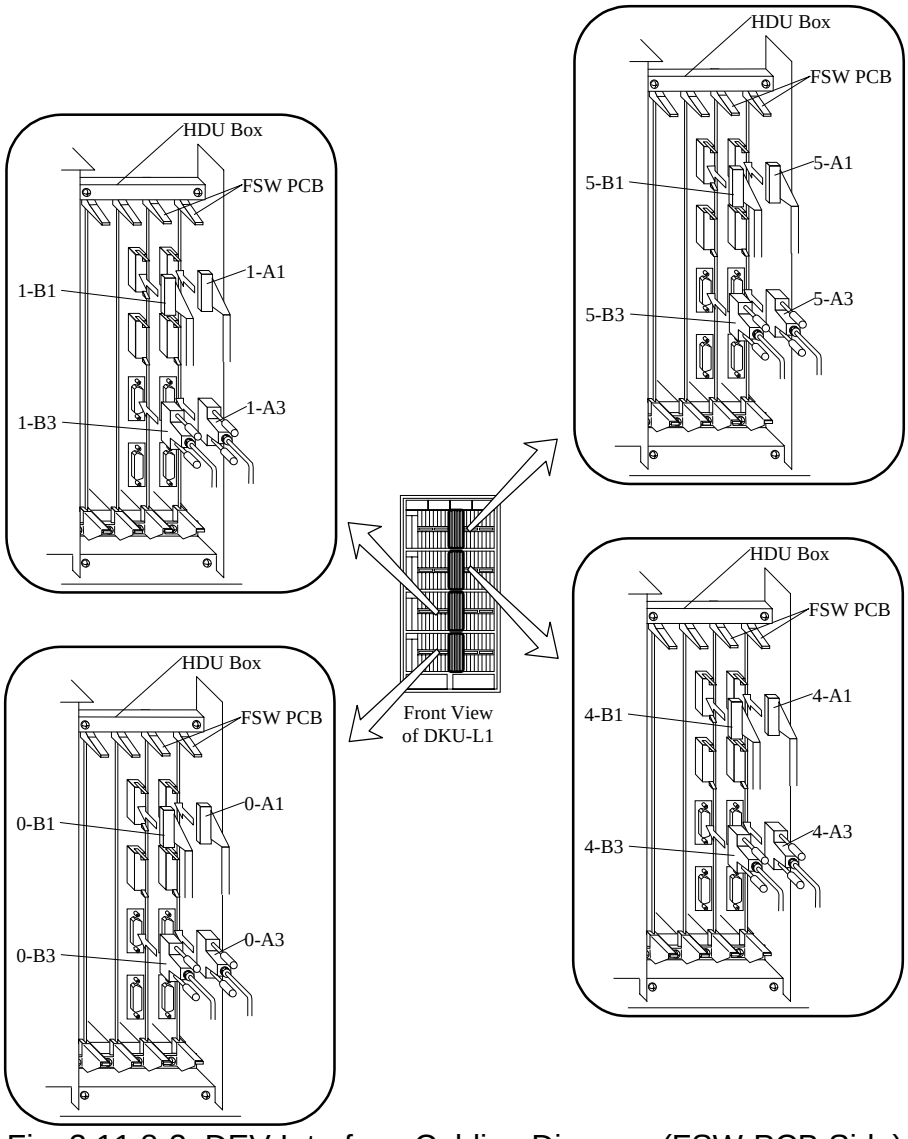

Fig. 3.11.8-3 DEV Interface Cabling Diagram (FSW PCB Side)

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⚠ CAUTION

A serious failure occurs if any of cables/connectors is wrongly connected.
Since a label bearing a connection destination is affixed on each cable/connector, work very carefully referring to it and the wiring diagram.

- Colors of the labels of the subsystem shipped from the factory from June of 2002 and on are as follows. Labels on the cluster1 (CL1) side and the cluster2 (CL2) side are white and yellow respectively.

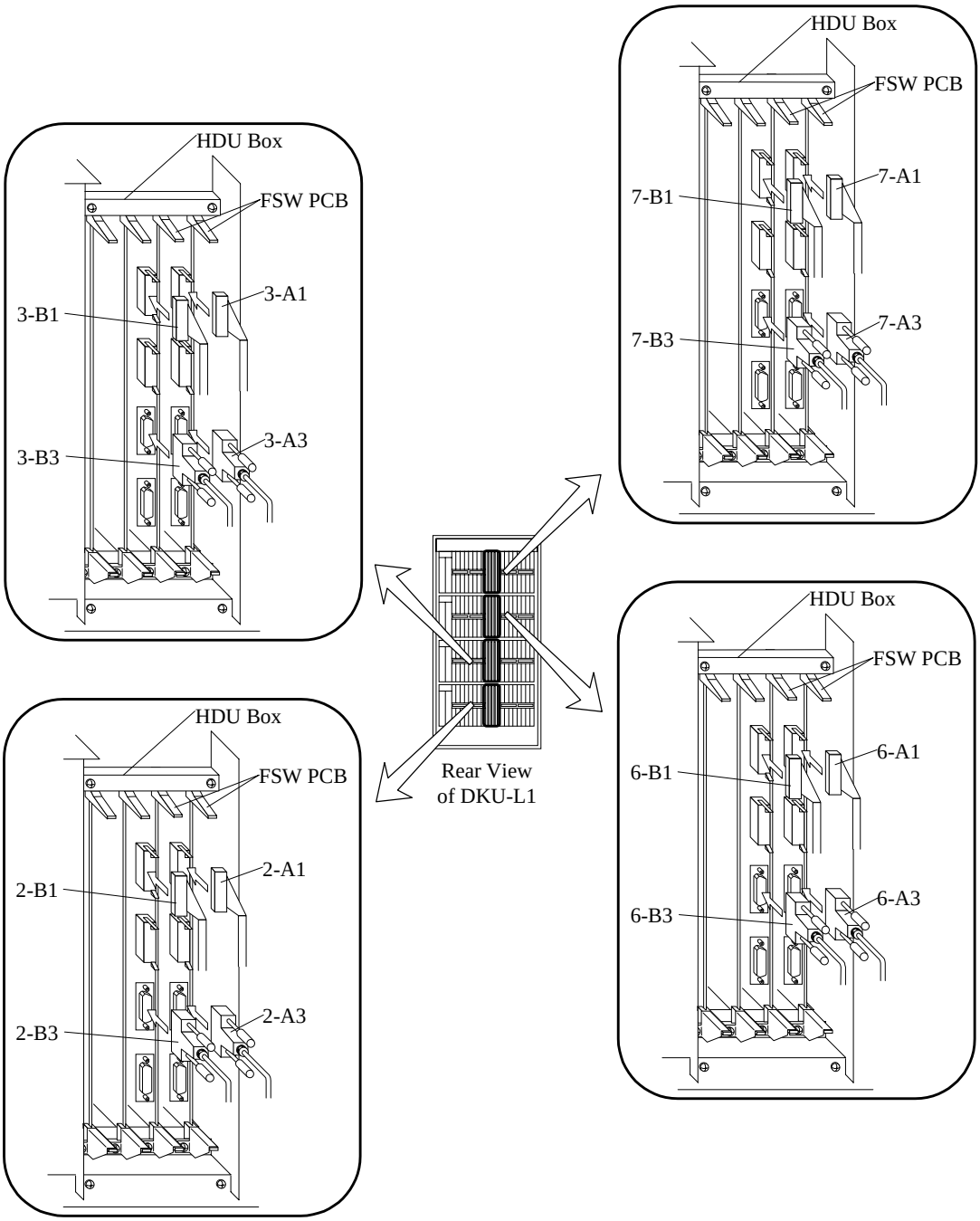

Fig. 3.11.8-4 DEV Interface Cabling Diagram (FSW PCB Side)

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d. Attach the cable covers with the screw to fix the DEV Interface Cables.

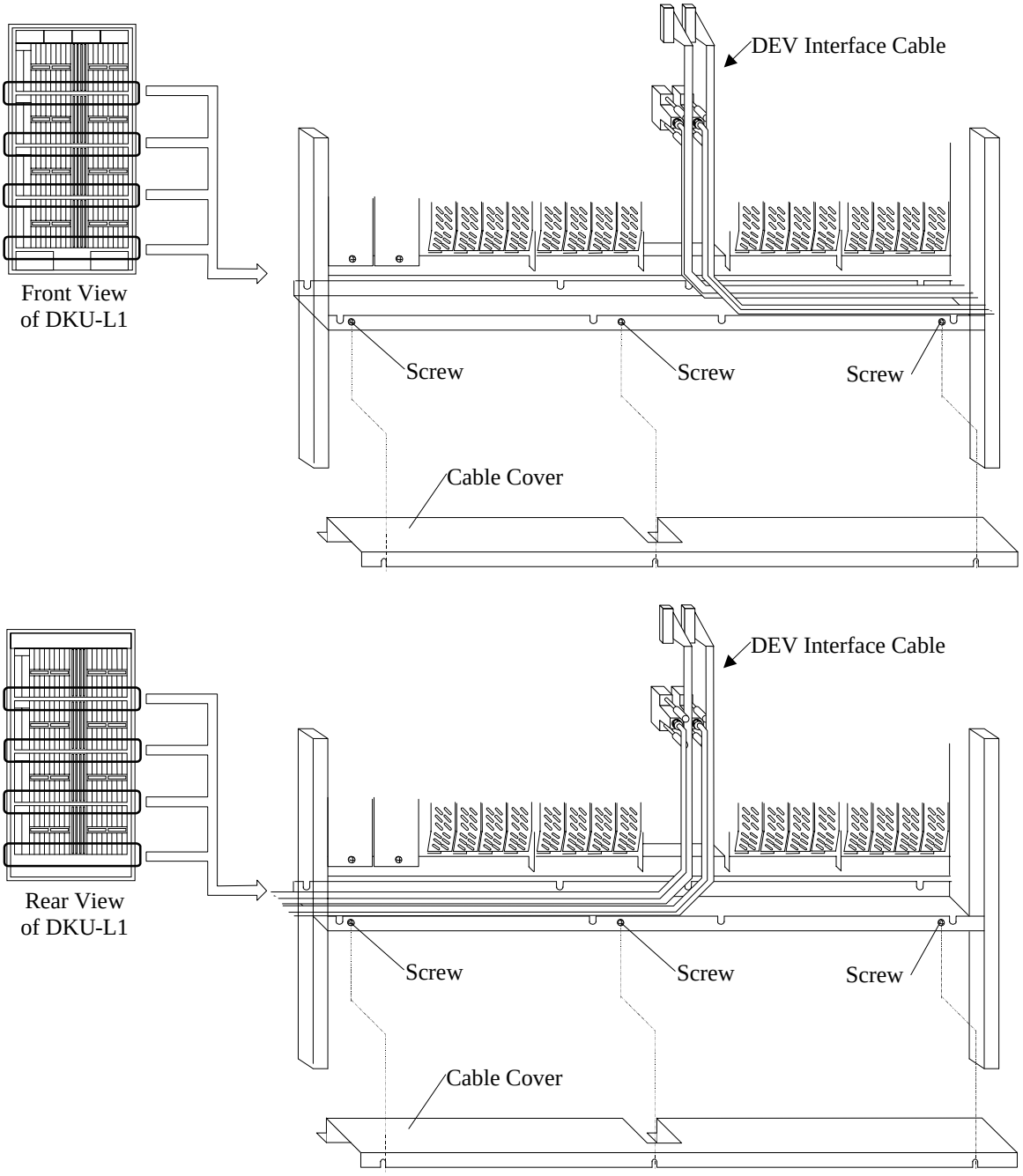

Fig. 3.11.8-5 Fixation of the DEV Interface Cables

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e. Attach the cable covers with the screw to fix the DEV Interface Cables.

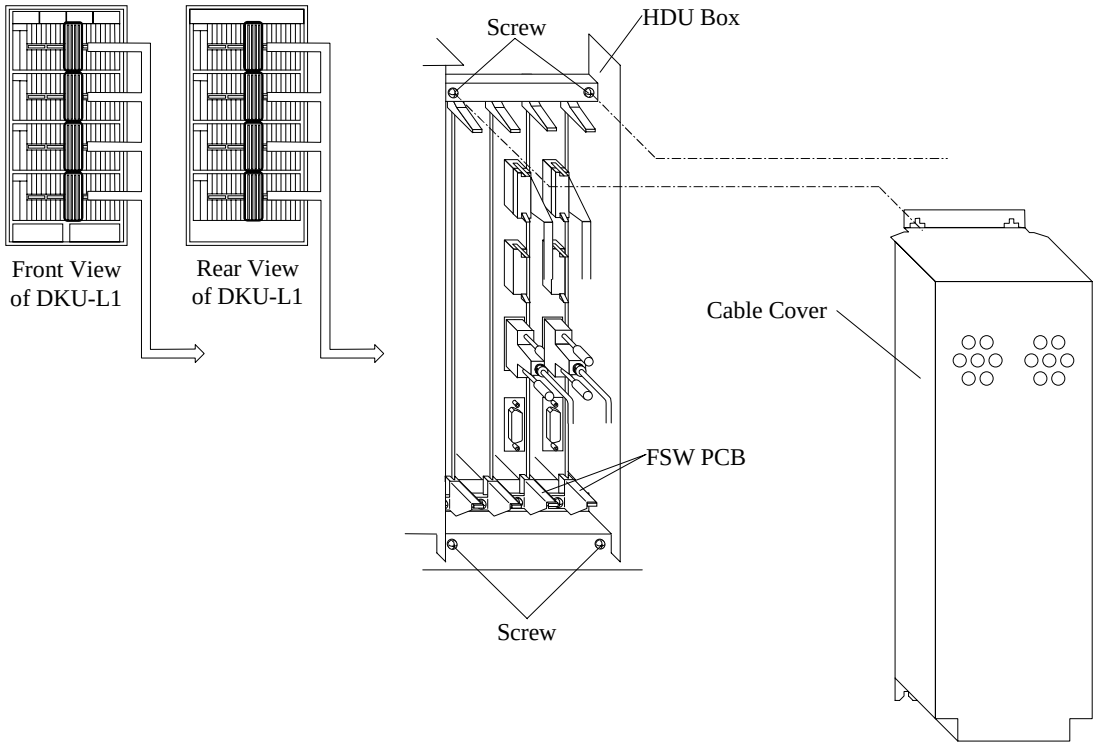

Fig. 3.11.8-6 Fixation of the DEV Interface Cables

1-2 Attach the nameplate.

a. Attach the nameplate regardless of the model number from the left of the cover.

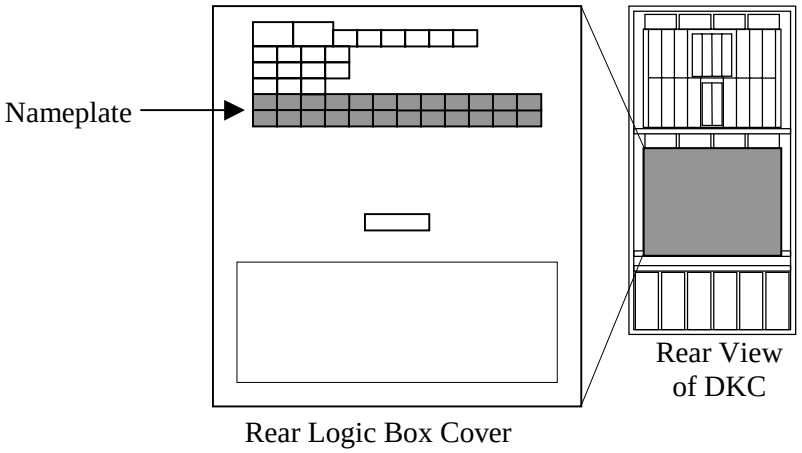

Fig. 3.11.8-7 Attachment of Nameplate

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2. Installation Procedure of DEV Interface Cable 2 (DKU-F455I-EXC)

Between HDU-R10-R17 and HDU-R20-R27

a. Loosen the screws and remove the cable covers from the DKU frames.

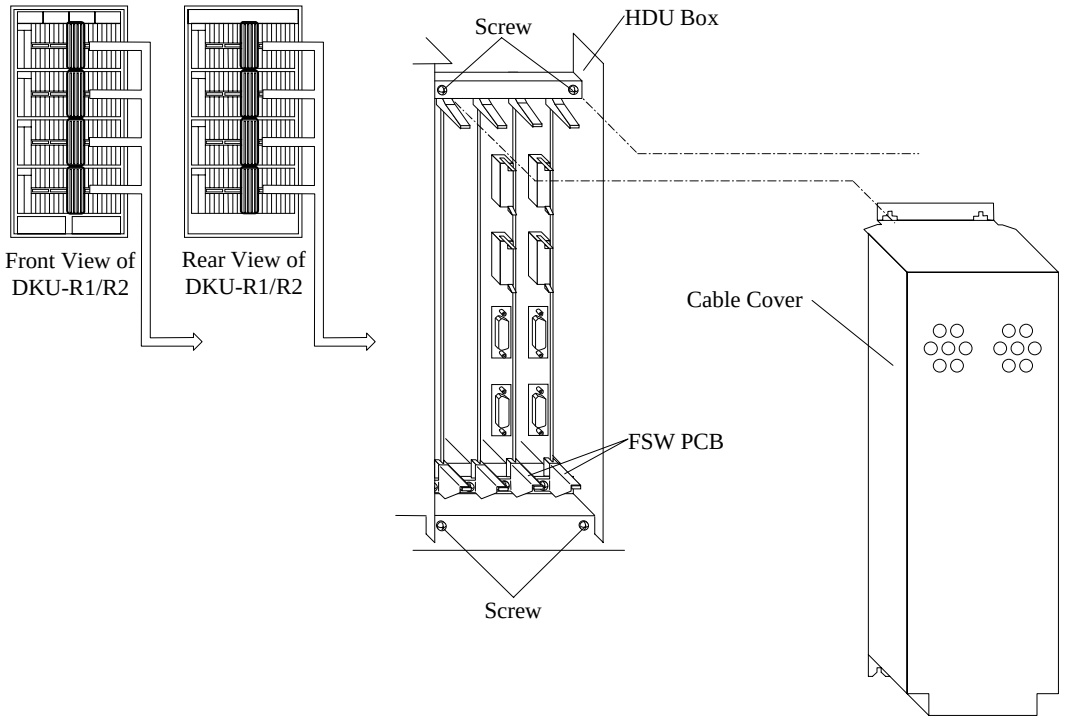

Fig. 3.11.8-8 Removal of Cable Covers

b. Loosen the screws and remove the cable covers from the DKU frames.

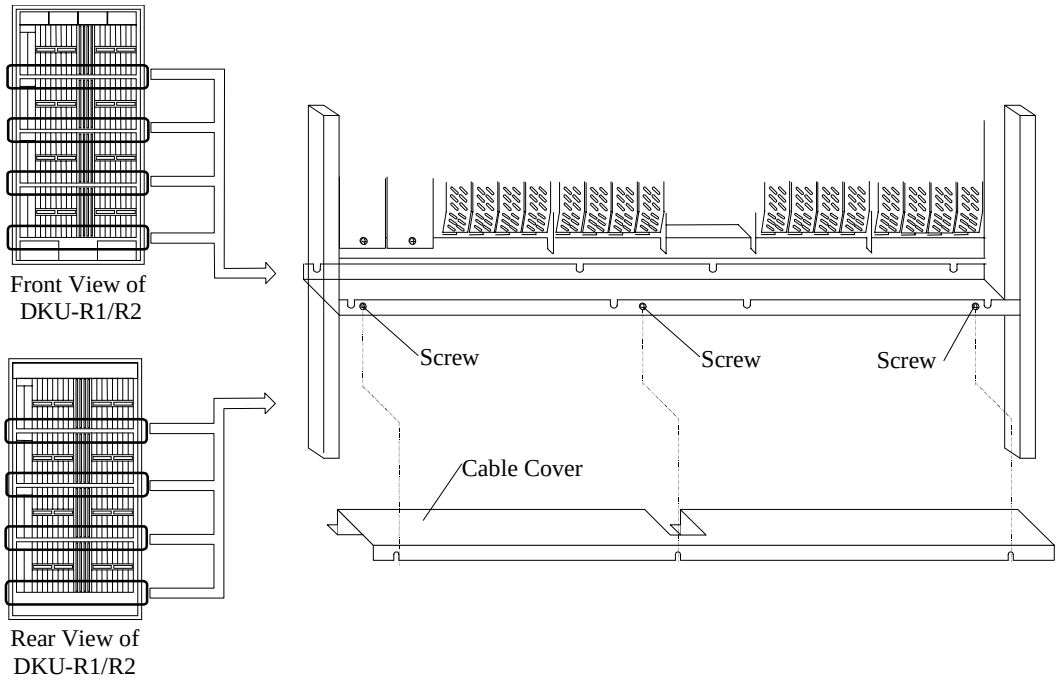

Fig. 3.11.8-9 Removal of Cable Covers

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c. Connect the DEV interface cables to the FSW PCBs in the DKU-R2 frame referring to Fig. 3.11.8-10 through Fig. 3.11.8-13.

Caution:
1. Do not perform the work unless the AC power is supplied to the additional DKU and the main breaker of the DKU is not turned on.
2. Do not connect the DEV interface cable to the operating DKU in this procedure. The cable is to be connected later in another procedure.

CAUTION

A serious failure occurs if any of cables/connectors is wrongly connected.
Since a label bearing a connection destination is affixed on each cable/connector, work very carefully referring to it and the wiring diagram.
- Colors of the labels of the subsystem shipped from the factory from June of 2002 and on are as follows. Labels on the cluster1 (CL1) side and the cluster2 (CL2) side are white and yellow respectively.

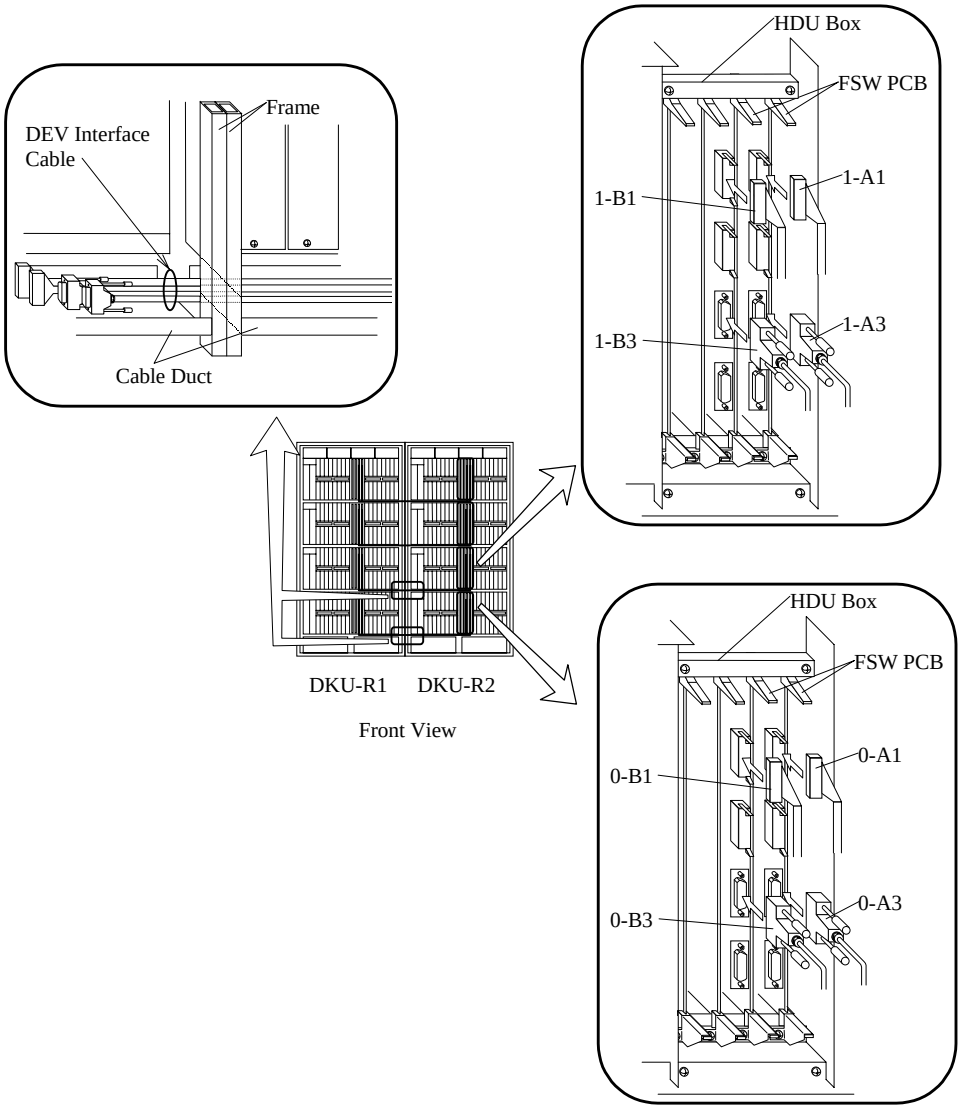

Fig. 3.11.8-10 Connection of the DEV Interface Cables

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CAUTION

A serious failure occurs if any of cables/connectors is wrongly connected.
Since a label bearing a connection destination is affixed on each cable/connector, work very carefully referring to it and the wiring diagram.

- Colors of the labels of the subsystem shipped from the factory from June of 2002 and on are as follows. Labels on the cluster1 (CL1) side and the cluster2 (CL2) side are white and yellow respectively.

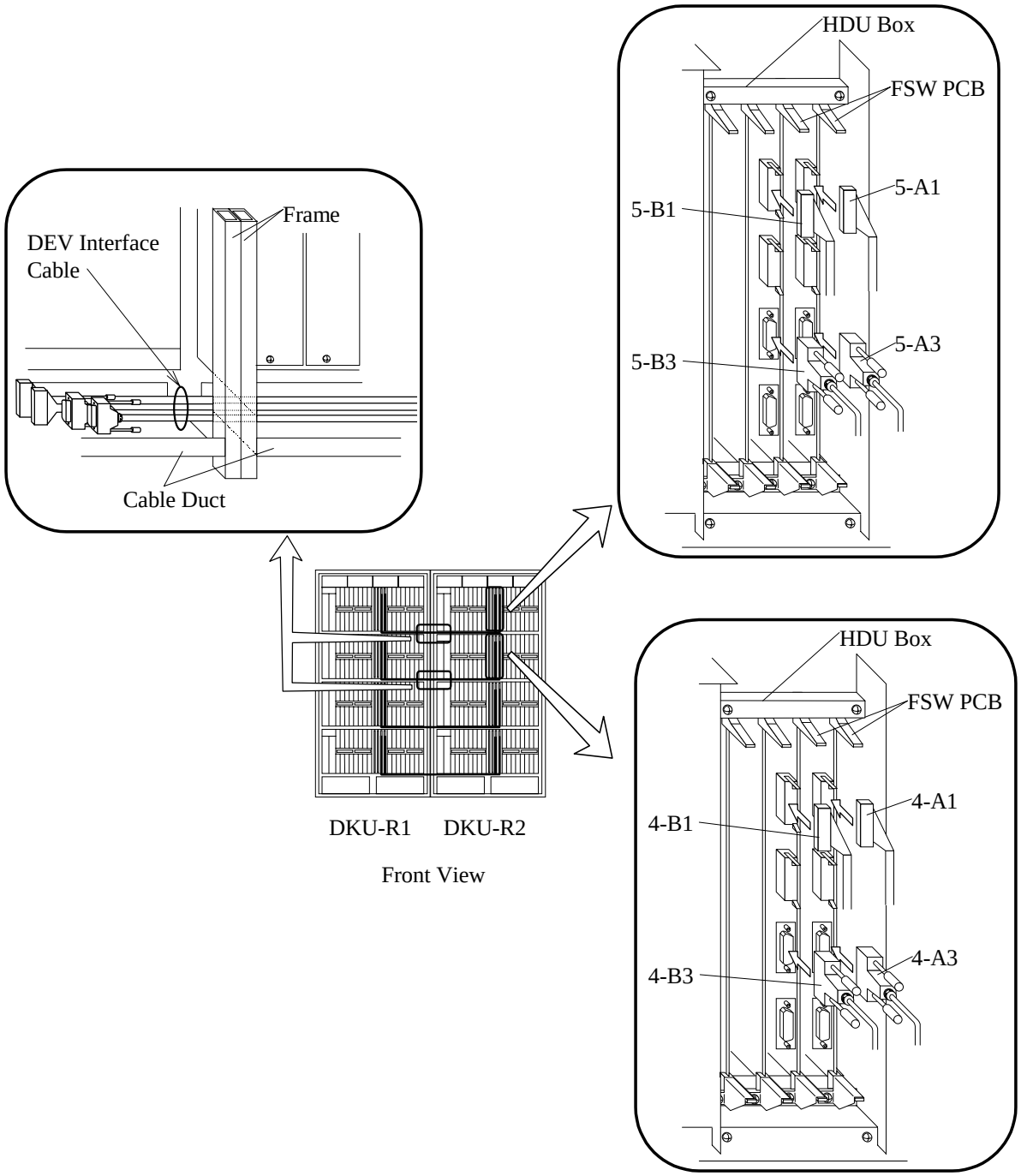

Fig. 3.11.8-11 Connection of the DEV Interface Cables

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CAUTION

A serious failure occurs if any of cables/connectors is wrongly connected.
Since a label bearing a connection destination is affixed on each cable/connector, work very carefully referring to it and the wiring diagram.

- Colors of the labels of the subsystem shipped from the factory from June of 2002 and on are as follows. Labels on the cluster1 (CL1) side and the cluster2 (CL2) side are white and yellow respectively.

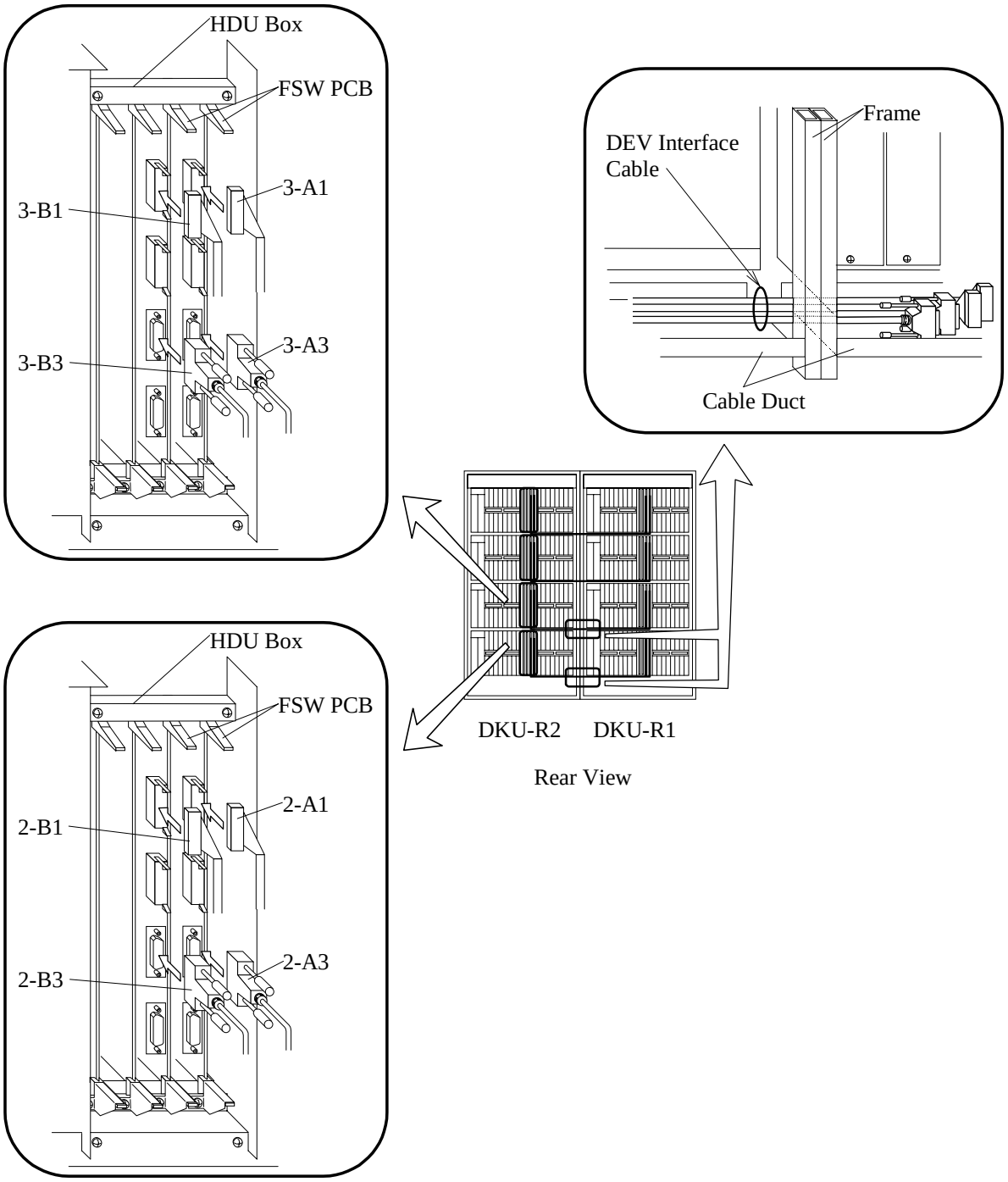

Fig. 3.11.8-12 Connection of the DEV Interface Cables

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CAUTION

A serious failure occurs if any of cables/connectors is wrongly connected.
Since a label bearing a connection destination is affixed on each cable/connector, work very carefully referring to it and the wiring diagram.

- Colors of the labels of the subsystem shipped from the factory from June of 2002 and on are as follows. Labels on the cluster1 (CL1) side and the cluster2 (CL2) side are white and yellow respectively.

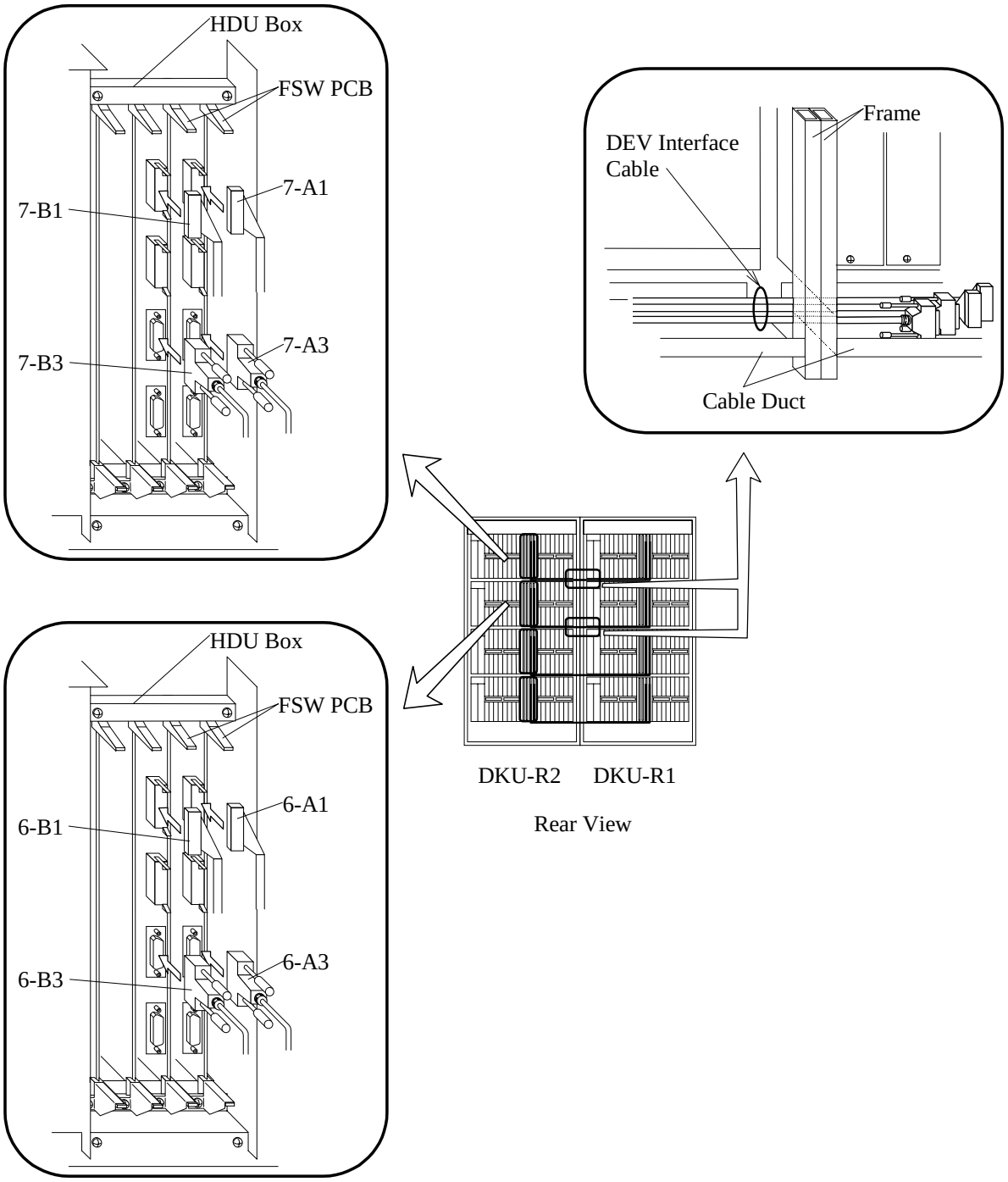

Fig. 3.11.8-13 Connection of the DEV Interface Cables

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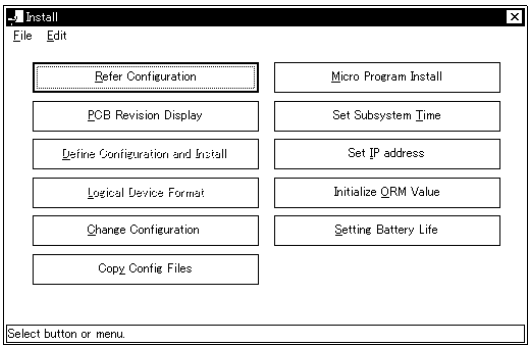
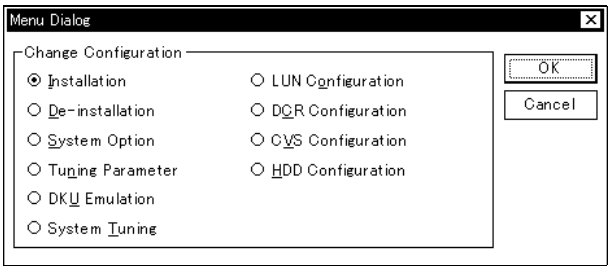
3. Setting up the New Device Structure Information

1. <Mode Change>
   Change the mode to Modify Mode.
   Select (CL) [Install].

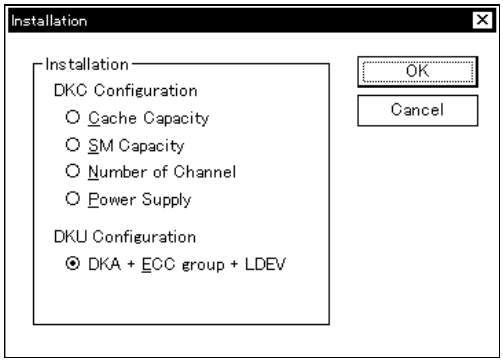
2. <Start the 'Menu Dialog' screen>
   Select (CL) [Change Configuration].



3. <Start Device Structure Setup screen>
   Select (CL) [Installation] in the 'Menu Dialog' dialog box and select (CL) [OK].



4. <Select a part to be changed>
   Select (CL) [DKA + ECC group + LDEV], and select (CL) [OK].



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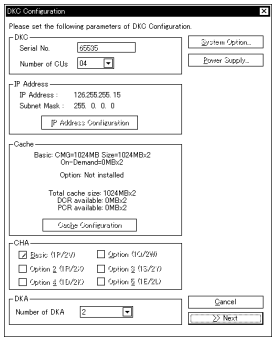
5. <Update Configuration Information>
Define the number of CU in DKC and the number of DKA in the 'DKC Configuration' window.

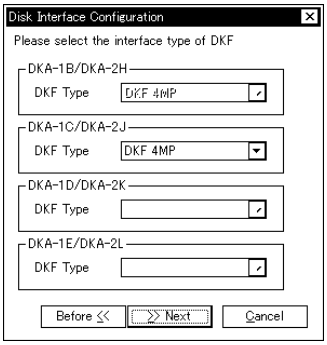
Make sure that the entered item is correct and select (CL) [>>Next].

Note1: To add the DKU-L1, the six or more DKAs are required.
Note2: There may be a case where an addition of the SM is required to add the CU.
When adding the SM, refer to page INST03-SM-10.



6. <Setting DKA type>
Define the DKA type in the 'Disk Interface Configuration' dialog box. After setting it, select (CL) the [>>Next] button.

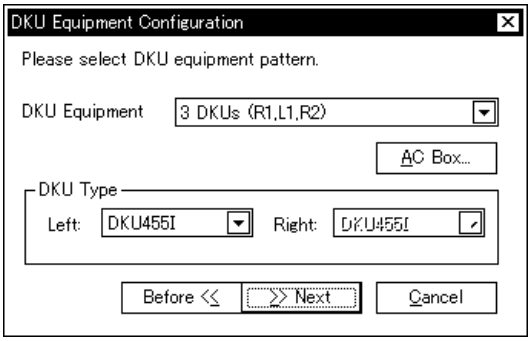
Note: When no DKA is to be added, the 'Disk Interface Configuration' dialog box is not displayed.



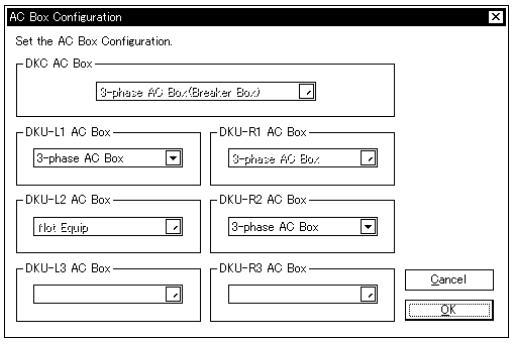
7. <DKU Equipment>
The DKU equipment pattern and DKU type is displayed in the 'DKU Equipment' configuration window.
Make an altered setting in which the DKU-R2 and DKU-L1 is added to the DKUs currently set.

Current setting	Altered setting
1DKU (R1)	3DKUs (R1, L1, R2)

[AC Box...]: Set the DKU AC Box configuration.
(Refer to step 7-1.)
Select (CL) the [>>Next].



7-1. <Setting the DKU AC Box configuration>
Set the installation AC Box configuration, select (CL) the [OK]. Return to step 7.



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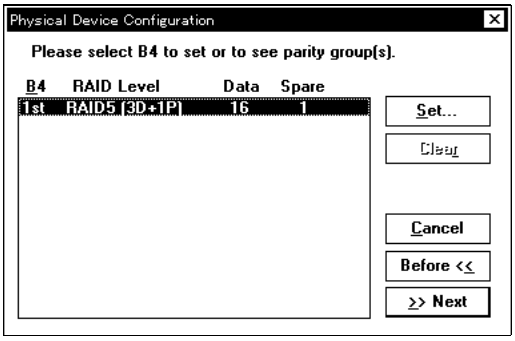
8. <Change Drive Configuration Information>
Define drive configuration according to the 'Physical Device Configuration' screen.
Detailed procedure is shown below.
[Set...]: Defines the parity group or spare disk. The routine proceeds to Step 8-1.
[Clear...]: Cancels the setting of the B4.
After setting up all items, select (CL) [>>Next]. Go to step 9.



Selecting (CL) [Before<<] returns you to the previous screen.

[Multi Cabinet Model]

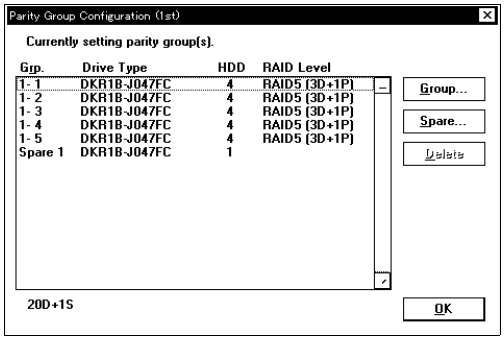
B4	Location	B4	Location
1st	HDU-R10, 11, 12, 13	7th	HDU-L20, 21, 22, 23
2nd	HDU-R14, 15, 16, 17	8th	HDU-L24, 25, 26, 27
3rd	HDU-L10, 11, 12, 13	9th	HDU-R30, 31, 32, 33
4th	HDU-L14, 15, 16, 17	10th	HDU-R34, 35, 36, 37
5th	HDU-R20, 21, 22, 23	11th	HDU-L30, 31, 32, 33
6th	HDU-R24, 25, 26, 27	12th	HDU-L34, 35, 36, 37

Note: The 9th to 12th of the B4 are valid only when the DKUs for the RAID 400 are connected.

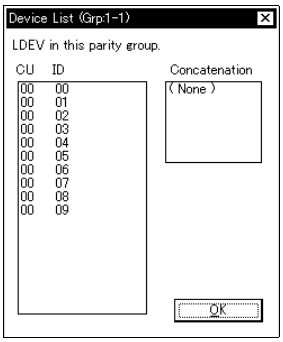
[Single Cabinet Model]

B4	Location	Comment
1st	HDU-0, 1, 2, 3	HDD-X00 ~ X0F
2nd	HDU-0, 1, 2, 3	HDD-X10 ~ X1F

8-1. <Define Parity Group>
[Group...]: Defines the parity group. See Step 8-1-1.
[Spare...]: Defines the spare drive. See Step 8-1-2.
[Delete]: Deletes the added parity group or spare drive.
Grp*: A parity group where RAID Concatenation is installed.
Note: If you want to set any Spare Drive in B4, please define the Spare Drive first.
After setting up all items, select (CL) [OK]. Return to step 8.



- To display LDEV ID in Parity group, select an item to be displayed and select (DC) this item on list box. The 'Device List' dialog box will appear.
"(no LDEV)" is displayed for the added parity group.



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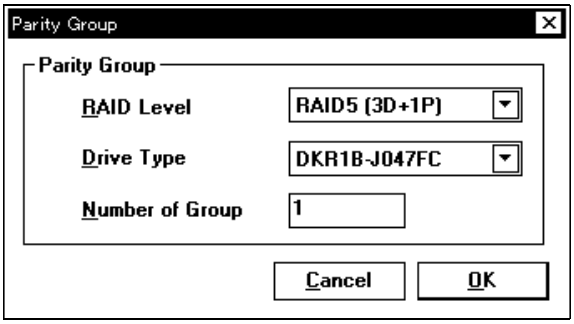
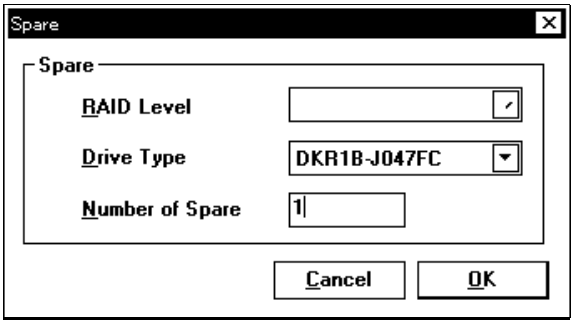
8-1-1.

Define the RAID Level and the Drive Type and the Number of Group in the 'Parity Group' dialog box.
Then select (CL) [OK]. Return to step 8-1.



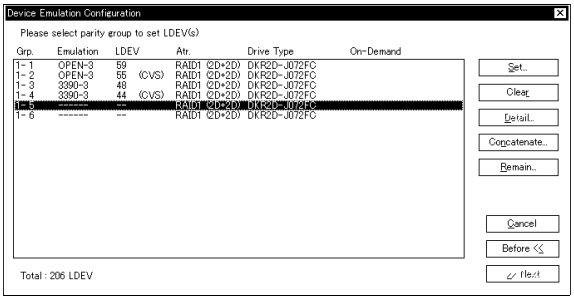
8-1-2.

Define the RAID Level and the Drive Type and the Number of Spare in the 'Spare' dialog box.
Then select (CL) [OK]. Return to step 8-1.



9. <Define Device Emulation>

After setting up all items for definition of Device Emulation, select (CL) [>>Next].
Selecting (CL) [Before<<] returns you to the previous screen.



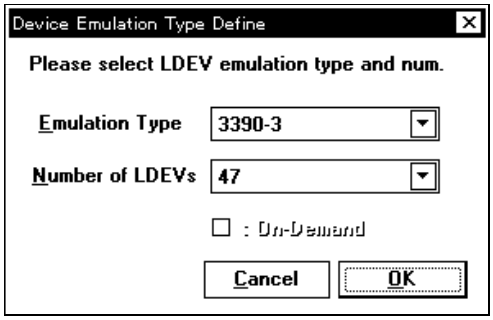
For defining Device Emulation:
Select (CL) parity group and select (CL) [Set...].
Go to step 9-1

For detailed display:
Select (CL) parity group and select (CL) [Detail...].
The detailed information is displayed.
(CVS): A parity group where CVS is installed.
Grp*: A parity group where RAID Concatenation is installed.

9-1.

After setting up all items in the 'Device Emulation Type Define' dialog box, select (CL) [OK].

Selecting (CL) [Cancel] returns you to step 9.



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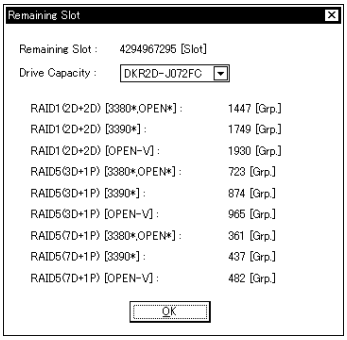
9-2. <Displaying remaining slot(s)>

The Remaining Slot window is displayed.
An allowable number of times of PDEV addition corresponding to the specified drive type is displayed.



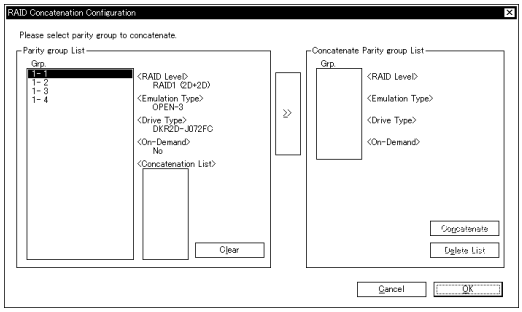
Select (CL) the [OK]. The routine returns to Step 9.

9-3. <Setting RAID concatenation>

Select (CL) [Concatenate...].
When you do not perform the RAID concatenation, return to Step 9.

9-4.

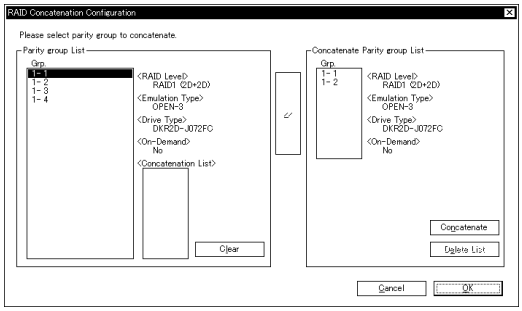
Parity groups to which the RAID concatenation can be applied are displayed in the Parity group List. Select (CL) parity groups to which you want to apply the RAID concatenation and press (CL) the [>>] button.



Note: Only the parity groups, which have been added and to which the RAID concatenation can be applied are displayed in the Parity group List.

9-5.

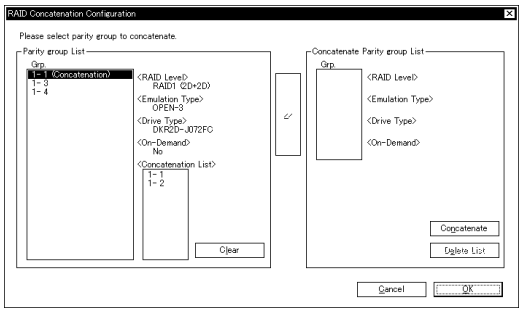
The selected parity groups are registered in the Concatenate Parity group List. Then press (CL) the [Concatenate] button.



Note: The [Concatenate] button cannot be pressed if the concatenation does not meet a condition of the RAID concatenation. Adjust the number of the parity groups in the Concatenate Parity group List.

9-6.

When the RAID concatenation is completed, "(Concatenation)" is displayed in the Parity group List. Selecting the "(Concatenation)" displays the concatenated parity groups in the Concatenation List. Pressing the [Clear] button cancels the RAID concatenation.



When all the settings of the RAID concatenation are completed, press (CL) the [OK] button.
Pressing (CL) the [Cancel] button returns the routine to Step 9.

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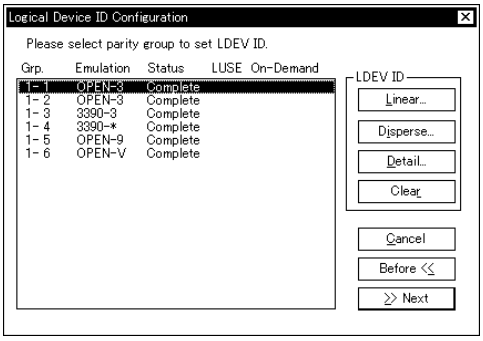
10. <Define LDEV ID>

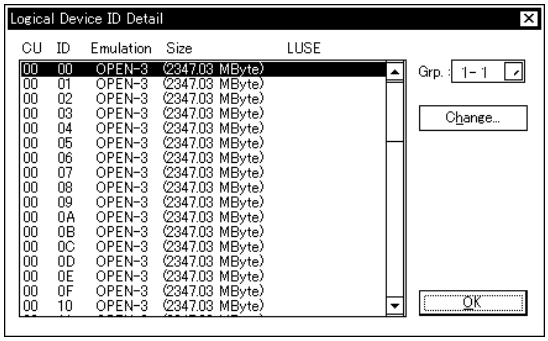


Definition Screen for LDEV ID.
Select (CL) the parity group to be defined and select (CL) a function from the [LDEV ID] list box.
[Linear...]: LDEV ID is assigned to LDEV in the order of parity groups. See step 10-1.
[Disperse...]: LDEV is assigned discretely in the order of parity groups. See step 10-1.
[Detail...]: A screen to define LDEV in detail is displayed. See step 10-2. (When plural groups are selected (CL), it is invalid.)
[Clear]: Select (CL) [Clear] to delete.
Grp*: The top parity group where RAID Concatenation is installed.

- '-----' is displayed in the Status area for the parity group to which LDEV ID is not assigned.

After setting up all items, select (CL) [>>Next]. (Go to Step 11)

10-1. Detailed Definition Screen for LDEV ID

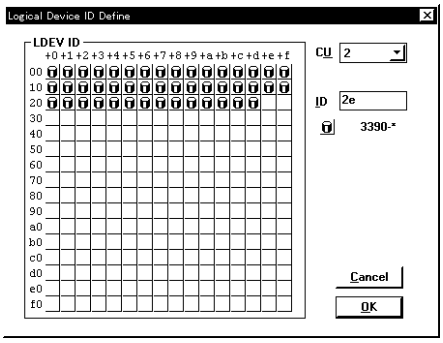


Select (CL) LDEV from the list box and select (CL) [Change...].
The screen for LDEV ID input is displayed.
After setting, select (CL) [OK]. Return to step 10

- '-----' is displayed in the CU area and the ID area for the LDEV to which LDEV ID is not assigned.

Note: In the case of a RAID Concatenation Group, LDEV of the parity group selected by the "Grp List" is displayed.

10-2. Input LDEV ID



Select CU ID in the CU combo box.
The status of usage of ID in the CU is displayed in the LDEV ID panel.
White disk of panel: not used
Patterned disk of panel: using
Input LDEV ID you want to set or the head LDEV ID in the ID Edit box.
After setting, select (CL) [OK]. Return to step 10-1

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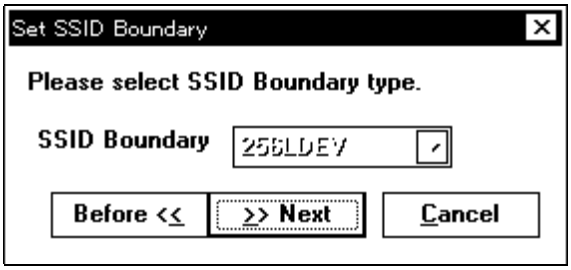
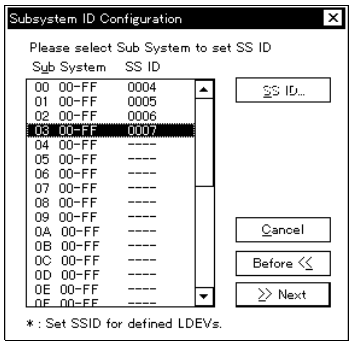
11. <Define Subsystem ID Boundary>
Press (CL) the [>>Next] button to change the screen to the “Set SSID Boundary” screen.

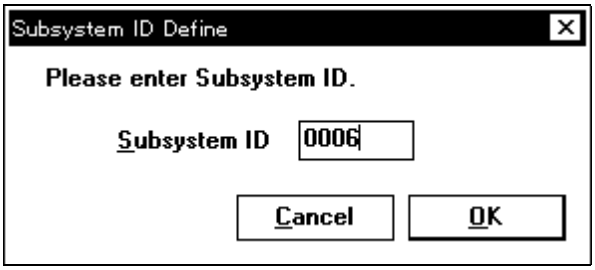


12. <Define Subsystem ID>
To define Subsystem ID, select (CL) the item from the list box and select (CL) [SSID]. See step 12-1.

After setting, select (CL) [>>Next].

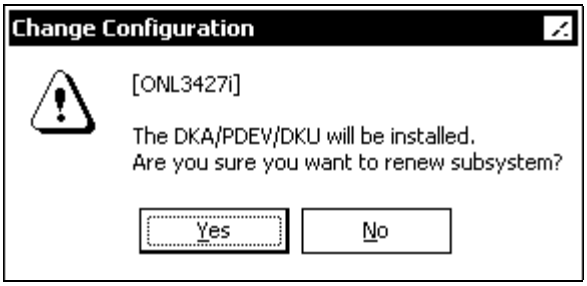


12-1. Define Subsystem ID and select (CL) [OK].
Return to step 12.



13. <Start installation>
Select (CL) [Yes] in response to “The DKA/PDEV/DKU will be installed. Are you sure you want to renew subsystem?”.

When [No] is selected (CL), returns to INST03-DKA-1570 step 3.



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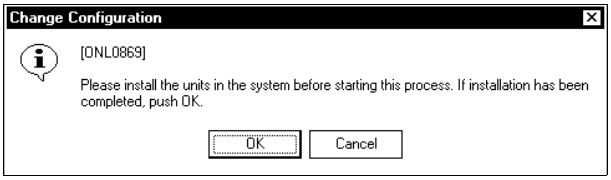
14. <Download microprogram>
    Microprograms are automatically downloaded for each processor.

15. <Install DKA>
    “Upgrading of the DKA...”

16. <Check that hardware components are installed>
    At this point refrain from pressing the [OK] button.
    “Please install the units in the system before starting this process. If installation has been completed, push OK.” is displayed.



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4 Installation Procedure of Additional Disk Adapter (DKC-F460I-200)

Note: Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

4-1 Insertion of the PCBs

Note: Make sure that a color of the levers of the PCB to be installed is blue. Never insert a PCB whose lever is not blue.

a. Remove the dummy plate installed in the installation location referring to the Fig. 3.11.8-14. (Note) Dummy plates should be stored for future use in De-installation.
b. Insert the PCBs to the correct locations in the Logic Box. Refer to Table 3.11.8-1.
c. Fasten the two screws referring to Fig. 3.11.8-15.

Table 3.11.8-1 Inserting Location (Rear of the unit)

Cluster	CL2							CL1				
Slot No.	M	L	K	J	H	G	F	E	D	C	B	A
Function	CSW	DKA	DKA	DKA	DKA	CACHE	CACHE	DKA	DKA	DKA	DKA	CSW
Location No.	CSW -2M	DKA -2L	DKA -2K	DKA -2J	DKA -2H	CACHE -2G	CACHE -2F	DKA -1E	DKA -1D	DKA -1C	DKA -1B	CSW -1A
Order of addition		Add.3	Add.2	Add.1	Basic			Add.3	Add.2	Add.1	Basic	
Number of DKAs set through the SVP		–	–	–	2			–	–	–	2	
		–	–	4				–	–	4		
		–	6					–	6			
		8						8				

Up to 4 disk adapters can be installed in the subsystem.

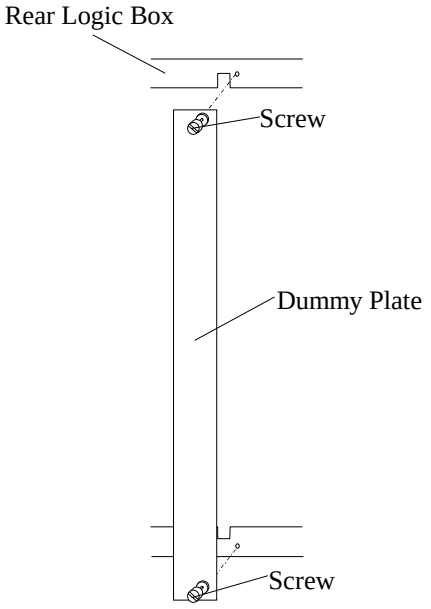

Fig. 3.11.8-14 Removal of Dummy Plate

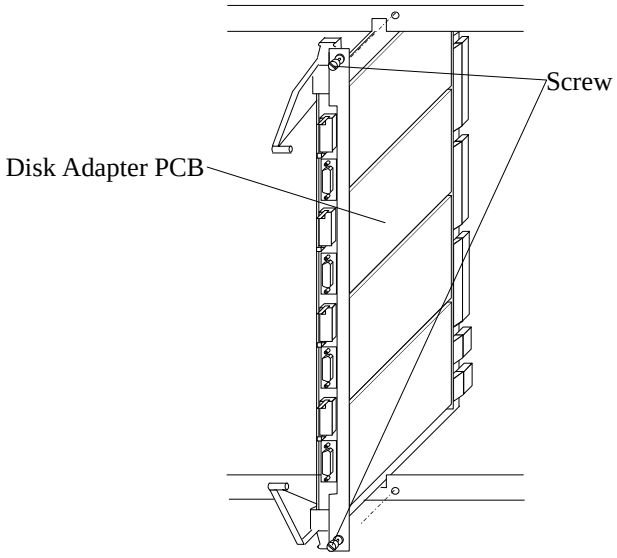

Fig. 3.11.8-15 Insertion of PCB

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4-2 Connection of cables

In case of Add.1

CAUTION

A serious failure occurs if any of cables/connectors is wrongly connected.
Since a label bearing a connection destination is affixed on each cable/connector, work very carefully referring to it and the wiring diagram.

- Colors of the labels of the subsystem shipped from the factory from June of 2002 and on are as follows. Labels on the cluster1 (CL1) side and the cluster2 (CL2) side are white and yellow respectively.

a. Connect the cables to the sub-edge of PCBs. (Refer to Fig. 3.11.8-16.)

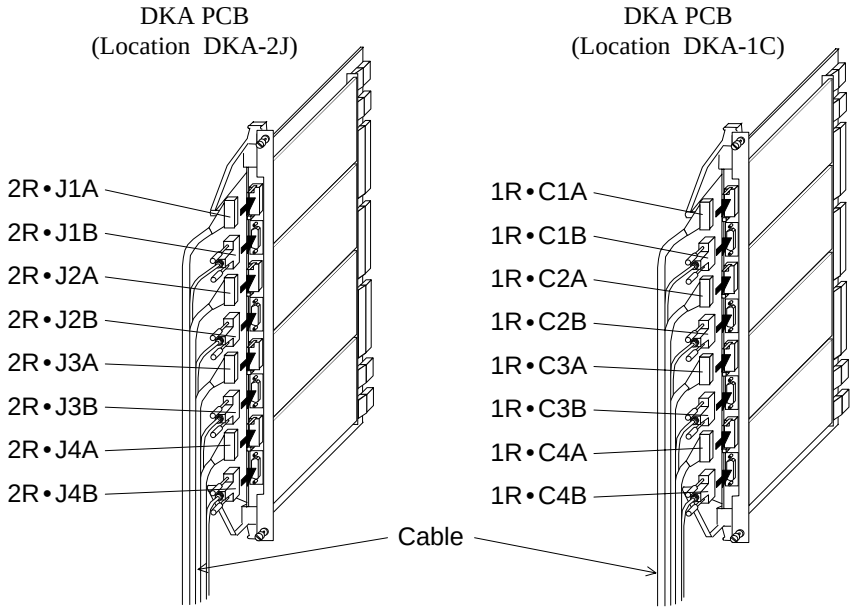

Fig.3.11.8-16 Connection of cable (Add.1)

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In case of Add.2

Caution:
Make sure that the AC power is applied to the added DKUs (DKU-L1 and DKU-L2) and the main breakers of the DKUs (DKU-L1 and DKU-L2) are turned on.
The DKU is automatically powered on when the DEV interface cable is connected to the DKA.

CAUTION

A serious failure occurs if any of cables/connectors is wrongly connected.
Since a label bearing a connection destination is affixed on each cable/connector, work very carefully referring to it and the wiring diagram.

- Colors of the labels of the subsystem shipped from the factory from June of 2002 and on are as follows. Labels on the cluster1 (CL1) side and the cluster2 (CL2) side are white and yellow respectively.

a. Connect the cables to the sub-edge of PCBs.

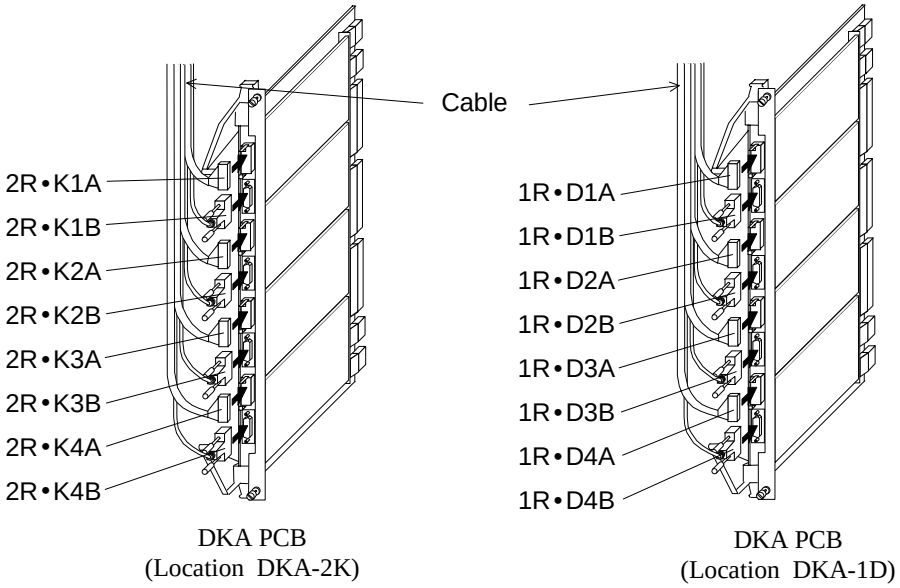

Fig.3.11.8-17 Connection of cable (Add.2)

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In case of Add.3

Caution:
Make sure that the AC power is applied to the added DKUs (DKU-L1 and DKU-L2) and the main breakers of the DKUs (DKU-L1 and DKU-L2) are turned on.
The DKU is automatically powered on when the DEV interface cable is connected to the DKA.

⚠ CAUTION

A serious failure occurs if any of cables/connectors is wrongly connected.
Since a label bearing a connection destination is affixed on each cable/connector, work very carefully referring to it and the wiring diagram.

- Colors of the labels of the subsystem shipped from the factory from June of 2002 and on are as follows. Labels on the cluster1 (CL1) side and the cluster2 (CL2) side are white and yellow respectively.

a. Connect the cables to the sub-edge of PCBs.

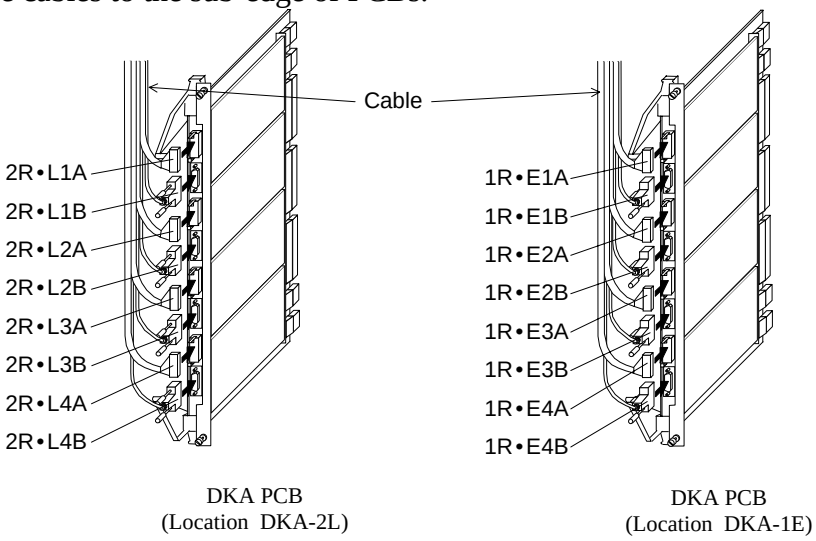

Fig.3.11.8-18 Connection of cable (Add.3)

4-3 Attachment of the nameplate

a. Attach the nameplate referring to Fig. 3.11.8-19.

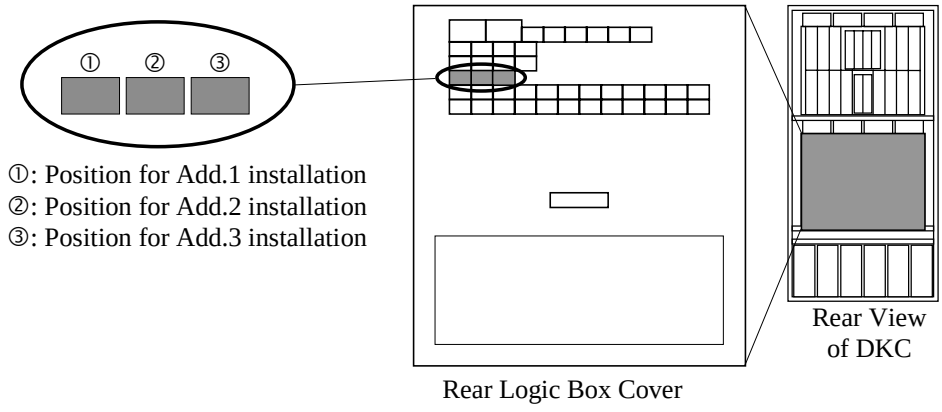

Fig. 3.11.8-19 Attachment of Nameplate

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5. Installation Procedure of HDD Canister

5-1 Confirmation of position to install HDD canister

(i) RAID5(3D+1P)/RAID1(2D+2D)

Relations between the installation locations of the RAID groups and the RAID group numbers set through the SVP are shown in Table 3.11.8-2.

Table 3.11.8-2 Relation between HDDs installation order and RAID group number (3D+1P/2D+2D)

	L2 DKU		L1 DKU		DKC		R1 DKU		R2 DKU	
	Installation Order	RAID Group No.	Installation Order	RAID Group No.			Installation Order	RAID Group No.	Installation Order	RAID Group No.
Upper	223	8-1	159	4-1	4th DKA Pair	2nd DKA Pair	032	2-1	096	6-1
	224	8-2	160	4-2			033	2-2	097	6-2
	225	8-3	161	4-3			034	2-3	098	6-3
	226	8-4	162	4-4			035	2-4	099	6-4
	227	8-5	163	4-5			036	2-5	100	6-5
	228	8-6	164	4-6			037	2-6	101	6-6
	229	8-7	165	4-7			038	2-7	102	6-7
	230	8-8	166	4-8			039	2-8	103	6-8
	231	8-9	167	4-9			040	2-9	104	6-9
	232	8-10	168	4-10			041	2-10	105	6-10
	233	8-11	169	4-11			042	2-11	106	6-11
	234	8-12	170	4-12			043	2-12	107	6-12
	235	8-13	171	4-13			044	2-13	108	6-13
	236	8-14	172	4-14			045	2-14	109	6-14
	237	8-15	173	4-15			046	2-15	110	6-15
	238	8-16	174(Spare) *2	4-16			047(Spare) *2	2-16	111	6-16
	239	8-17	175	4-17			048	2-17	112	6-17
	240	8-18	176	4-18			049	2-18	113	6-18
	241	8-19	177	4-19			050	2-19	114	6-19
	242	8-20	178	4-20			051	2-20	115	6-20
	243	8-21	179	4-21			052	2-21	116	6-21
	244	8-22	180	4-22			053	2-22	117	6-22
	245	8-23	181	4-23			054	2-23	118	6-23
	246	8-24	182	4-24			055	2-24	119	6-24
	247	8-25	183	4-25			056	2-25	120	6-25
	248	8-26	184	4-26			057	2-26	121	6-26
	249	8-27	185	4-27			058	2-27	122	6-27
	250	8-28	186	4-28			059	2-28	123	6-28
	251	8-29	187	4-29			060	2-29	124	6-29
	252	8-30	188	4-30			061	2-30	125	6-30
	253	8-31	189	4-31			062	2-31	126	6-31
	254	8-32	190	4-32			063	2-32	127	6-32
Lower	191	7-1	128	3-1	3rd DKA Pair	1st DKA Pair	001	1-1	064	5-1
	192	7-2	129	3-2			002	1-2	065	5-2
	193	7-3	130	3-3			003	1-3	066	5-3
	194	7-4	131	3-4			004	1-4	067	5-4
	195	7-5	132	3-5			005	1-5	068	5-5
	196	7-6	133	3-6			006	1-6	069	5-6
	197	7-7	134	3-7			007	1-7	070	5-7
	198	7-8	135	3-8			008	1-8	071	5-8
	199	7-9	136	3-9			009	1-9	072	5-9
	200	7-10	137	3-10			010	1-10	073	5-10
	201	7-11	138	3-11			011	1-11	074	5-11
	202	7-12	139	3-12			012	1-12	075	5-12
	203	7-13	140	3-13			013	1-13	076	5-13
	204	7-14	141	3-14			014	1-14	077	5-14
	205	7-15	142	3-15			015	1-15	078	5-15
	206	7-16	Spare *1	3-16			Spare *1	1-16	079	5-16
	207	7-17	143	3-17			016	1-17	080	5-17
	208	7-18	144	3-18			017	1-18	081	5-18
	209	7-19	145	3-19			018	1-19	082	5-19
	210	7-20	146	3-20			019	1-20	083	5-20
	211	7-21	147	3-21			020	1-21	084	5-21
	212	7-22	148	3-22			021	1-22	085	5-22
	213	7-23	149	3-23			022	1-23	086	5-23
	214	7-24	150	3-24			023	1-24	087	5-24
	215	7-25	151	3-25			024	1-25	088	5-25
	216	7-26	152	3-26			025	1-26	089	5-26
	217	7-27	153	3-27			026	1-27	090	5-27
	218	7-28	154	3-28			027	1-28	091	5-28
	219	7-29	155	3-29			028	1-29	092	5-29
	220	7-30	156	3-30			029	1-30	093	5-30
	221	7-31	157	3-31			030	1-31	094	5-31
	222	7-32	158	3-32			031	1-32	095	5-32

*1: To be left vacant or a spare disk is to be installed. *2: A data or spare disk is to be installed.

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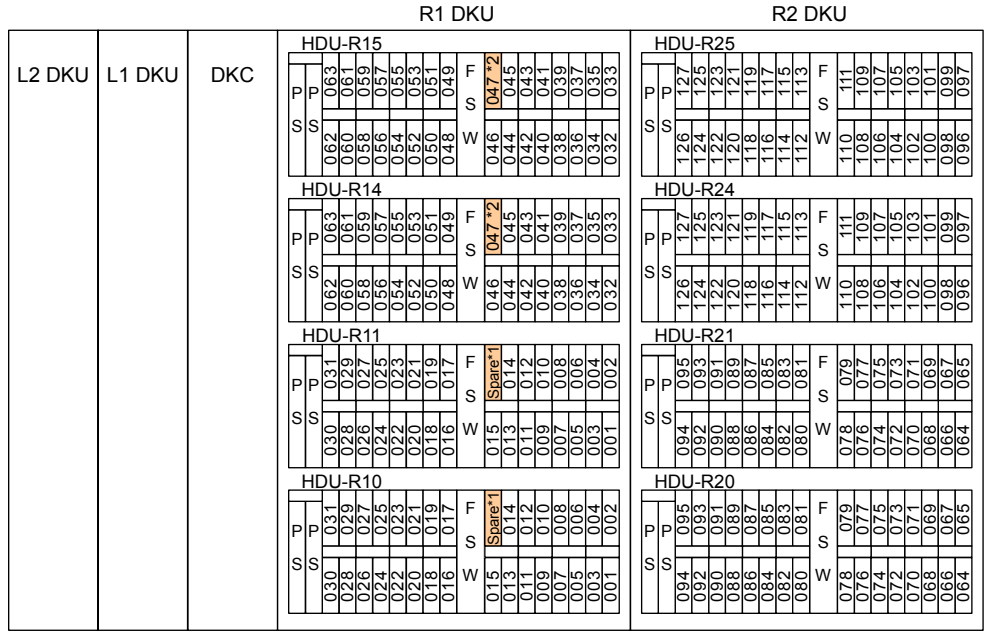
(1) Make sure of the location where the RAID group is installed and that where the HDD canister is to be added.

No.	Model Number	Model Name	Data and Parity
1	DKU-F455I-36K4/72J4/72K4/146J4/146JF/146JQ	4 HDD Canisters	Data and Parity Drive



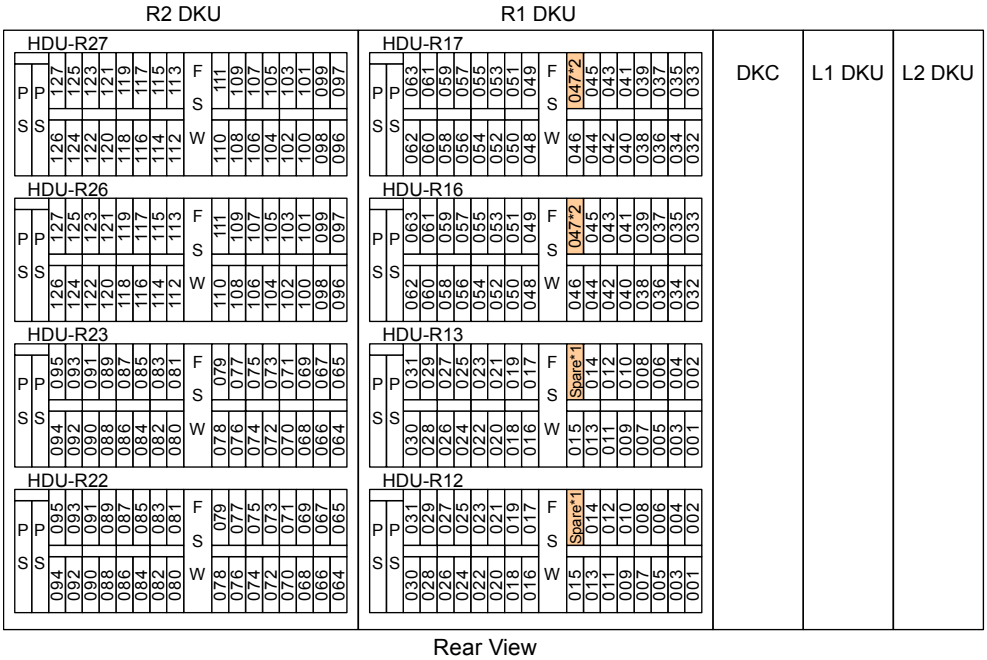


Fig. 3.11.8-20 (3D+1P) or (2D+2P) Data Drive/Parity Drive Expansion Sequence (1/2)

The relationship between HDDs installation order and RAID group number is shown in the Table 3.11.8-2.

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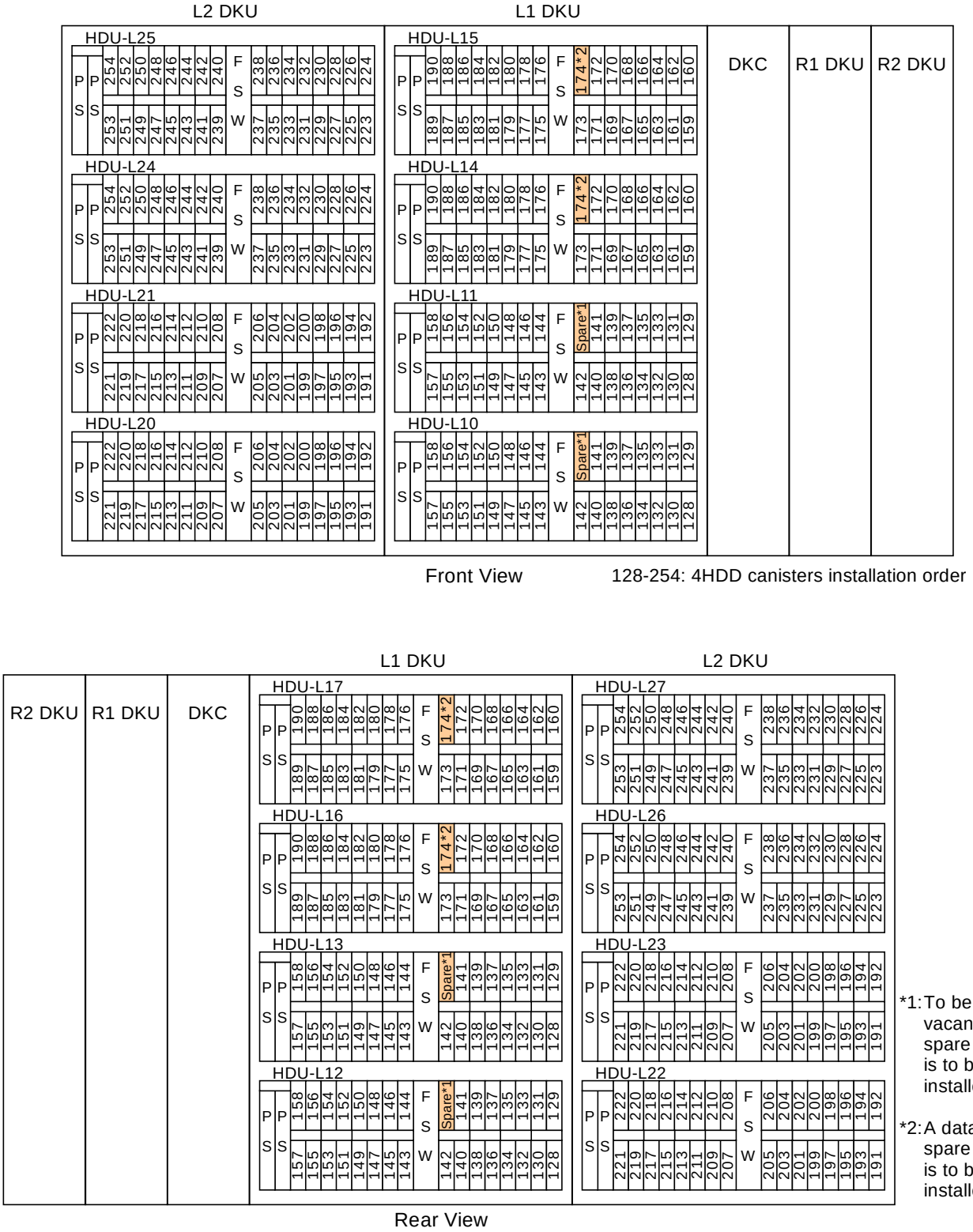

Fig. 3.11.8-20 (3D+1P) or (2D+2P) Data Drive/Parity Drive Expansion Sequence (2/2)

The relationship between HDDs installation order and RAID group number is shown in the Table 3.11.8-2.

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(ii) RAID5 (7D+1P)

Relations between the installation locations of the RAID groups and the RAID group numbers set through the SVP are shown in Table 3.11.8-3.

Table 3.11.8-3 Relation between HDDs installation order and RAID group number (7D+1P)

L2 DKU		L1 DKU		DKC		R1 DKU		R2 DKU	
Installation Order	RAID Group No.	Installation Order	RAID Group No.			Installation Order	RAID Group No.	Installation Order	RAID Group No.
095	7-1 , (8-1)	064	3-1 , (4-1)			001	1-1 , (2-1)	032	5-1 , (6-1)
096	7-2 , (8-2)	065	3-2 , (4-2)			002	1-2 , (2-2)	033	5-2 , (6-2)
097	7-3 , (8-3)	066	3-3 , (4-3)			003	1-3 , (2-3)	034	5-3 , (6-3)
098	7-4 , (8-4)	067	3-4 , (4-4)			004	1-4 , (2-4)	035	5-4 , (6-4)
099	7-5 , (8-5)	068	3-5 , (4-5)			005	1-5 , (2-5)	036	5-5 , (6-5)
100	7-6 , (8-6)	069	3-6 , (4-6)			006	1-6 , (2-6)	037	5-6 , (6-6)
101	7-7 , (8-7)	070	3-7 , (4-7)			007	1-7 , (2-7)	038	5-7 , (6-7)
102	7-8 , (8-8)	071	3-8 , (4-8)			008	1-8 , (2-8)	039	5-8 , (6-8)
103	7-9 , (8-9)	072	3-9 , (4-9)			009	1-9 , (2-9)	040	5-9 , (6-9)
104	7-10 , (8-10)	073	3-10 , (4-10)			010	1-10 , (2-10)	041	5-10 , (6-10)
105	7-11 , (8-11)	074	3-11 , (4-11)			011	1-11 , (2-11)	042	5-11 , (6-11)
106	7-12 , (8-12)	075	3-12 , (4-12)			012	1-12 , (2-12)	043	5-12 , (6-12)
107	7-13 , (8-13)	076	3-13 , (4-13)			013	1-13 , (2-13)	044	5-13 , (6-13)
108	7-14 , (8-14)	077	3-14 , (4-14)			014	1-14 , (2-14)	045	5-14 , (6-14)
109	7-15 , (8-15)	078	3-15 , (4-15)	3rd / 4th	1st / 2nd	015	1-15 , (2-15)	046	5-15 , (6-15)
110	7-16 , (8-16)	(Spare)*1	3-16 , (4-16)	DKA	DKA	(Spare)*1	1-16 , (2-16)	047	5-16 , (6-16)
111	7-17 , (8-17)	079	3-17 , (4-17)	Pairs	Pairs	016	1-17 , (2-17)	048	5-17 , (6-17)
112	7-18 , (8-18)	080	3-18 , (4-18)			017	1-18 , (2-18)	049	5-18 , (6-18)
113	7-19 , (8-19)	081	3-19 , (4-19)			018	1-19 , (2-19)	050	5-19 , (6-19)
114	7-20 , (8-20)	082	3-20 , (4-20)			019	1-20 , (2-20)	051	5-20 , (6-20)
115	7-21 , (8-21)	083	3-21 , (4-21)			020	1-21 , (2-21)	052	5-21 , (6-21)
116	7-22 , (8-22)	084	3-22 , (4-22)			021	1-22 , (2-22)	053	5-22 , (6-22)
117	7-23 , (8-23)	085	3-23 , (4-23)			022	1-23 , (2-23)	054	5-23 , (6-23)
118	7-24 , (8-24)	086	3-24 , (4-24)			023	1-24 , (2-24)	055	5-24 , (6-24)
119	7-25 , (8-25)	087	3-25 , (4-25)			024	1-25 , (2-25)	056	5-25 , (6-25)
120	7-26 , (8-26)	088	3-26 , (4-26)			025	1-26 , (2-26)	057	5-26 , (6-26)
121	7-27 , (8-27)	089	3-27 , (4-27)			026	1-27 , (2-27)	058	5-27 , (6-27)
122	7-28 , (8-28)	090	3-28 , (4-28)			027	1-28 , (2-28)	059	5-28 , (6-28)
123	7-29 , (8-29)	091	3-29 , (4-29)			028	1-29 , (2-29)	060	5-29 , (6-29)
124	7-30 , (8-30)	092	3-30 , (4-30)			029	1-30 , (2-30)	061	5-30 , (6-30)
125	7-31 , (8-31)	093	3-31 , (4-31)			030	1-31 , (2-31)	062	5-31 , (6-31)
126	7-32 , (8-32)	094	3-32 , (4-32)			031	1-32 , (2-32)	063	5-32 , (6-32)

*1: To be left vacant or a spare disk is to be installed.

- Install RAID 5 (7D+1P) forming pairs using the same number of the two RAID groups (RAID groups 1 and 2, 3 and 4, 5 and 6, and 7 and 8) of RAID 5 (3D+1P).
  (Example: RAID group numbers 1-1 and 2-1)
  The types of HDDs to be installed in each pair must be the same.
- In the case of RAID 5 (7D+1P), only odd RAID numbers are displayed on the SVP. (Group numbers shown in parentheses in the table above are not displayed.)
- When RAID 5 (3D+1P) or RAID 1 (2D+2D) and RAID 5 (7D+1P) are configured mixture, note that duplicated group numbers are excluded.
  Example: When Group No. 1-1 is configured for RAID 5 (7D+1P), Group No. 2-1 is excluded and cannot be configure for RAID 5 (3D+1P).

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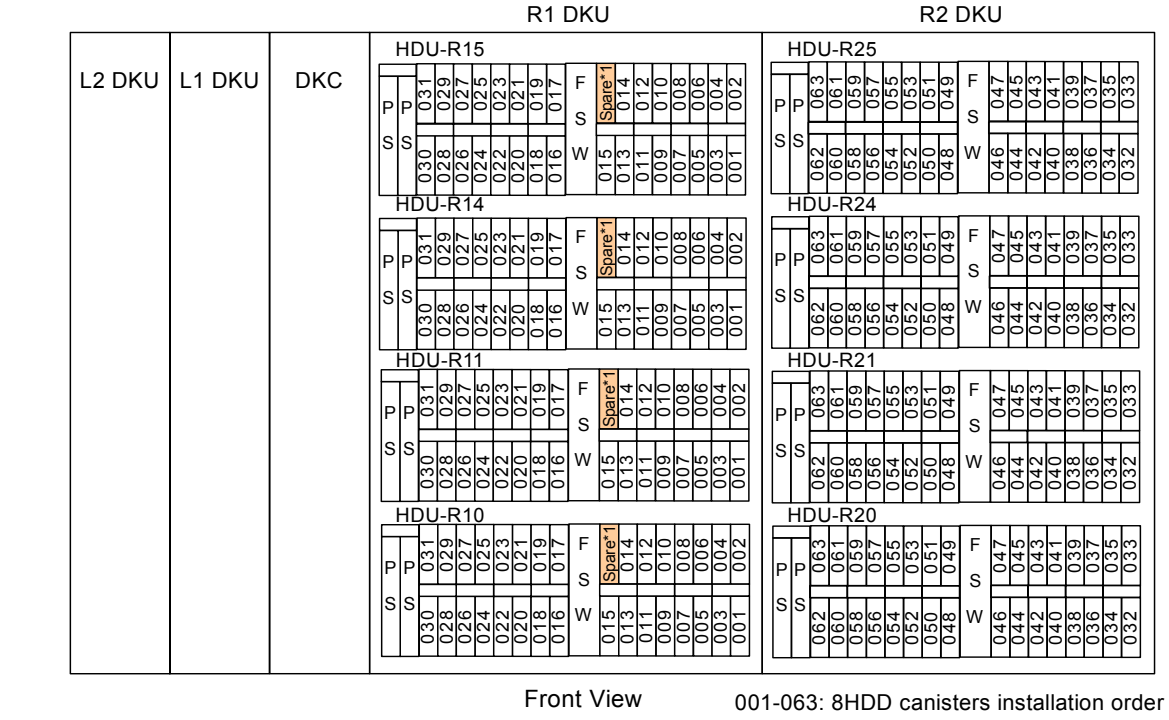
(1) Make sure of the location where the RAID group is installed and that where the HDD canister is to be added.

No.	Model Number	Model Name	Data and Parity
1	DKU-F455I-36K4/72J4/72K4/146J4/146JF/146JQ	4 HDD Canisters x 2sets	Data and Parity Drive



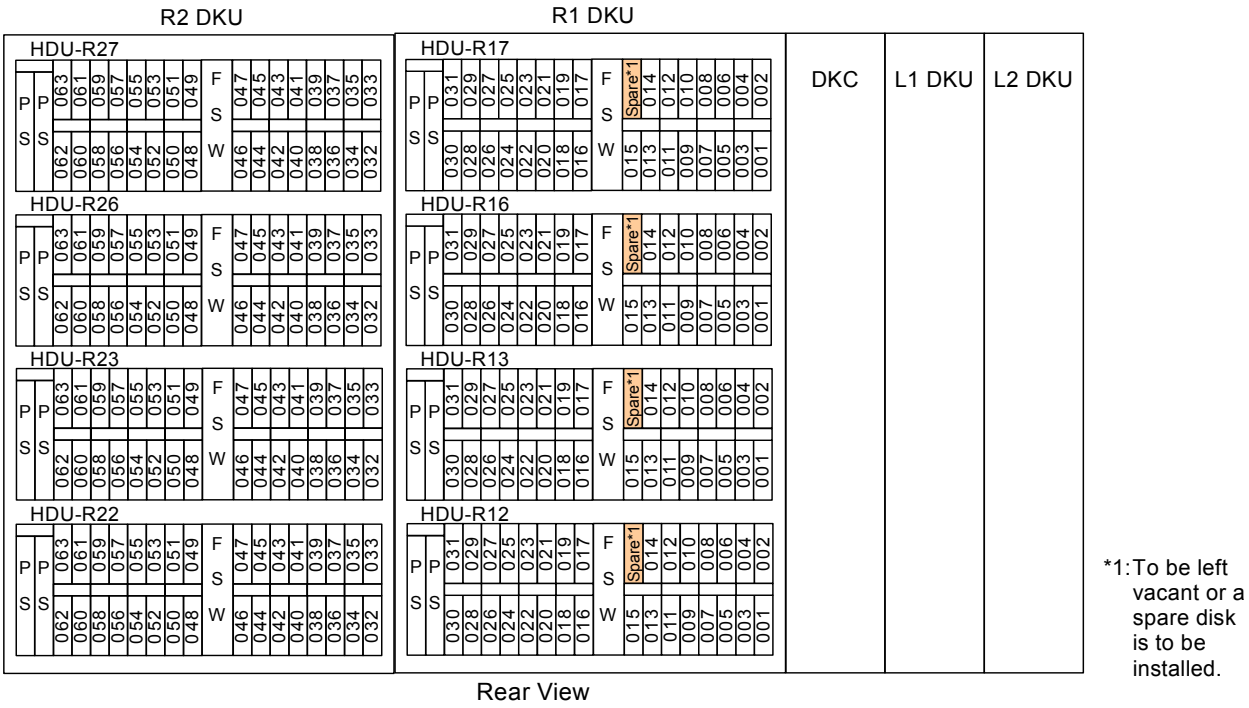


Fig. 3.11.8-21 (7D+1P) Data Drive/Parity Drive Expansion Sequence (1/2)

The relationship between HDDs installation order and RAID group number is shown in the Table 3.11.8-3.

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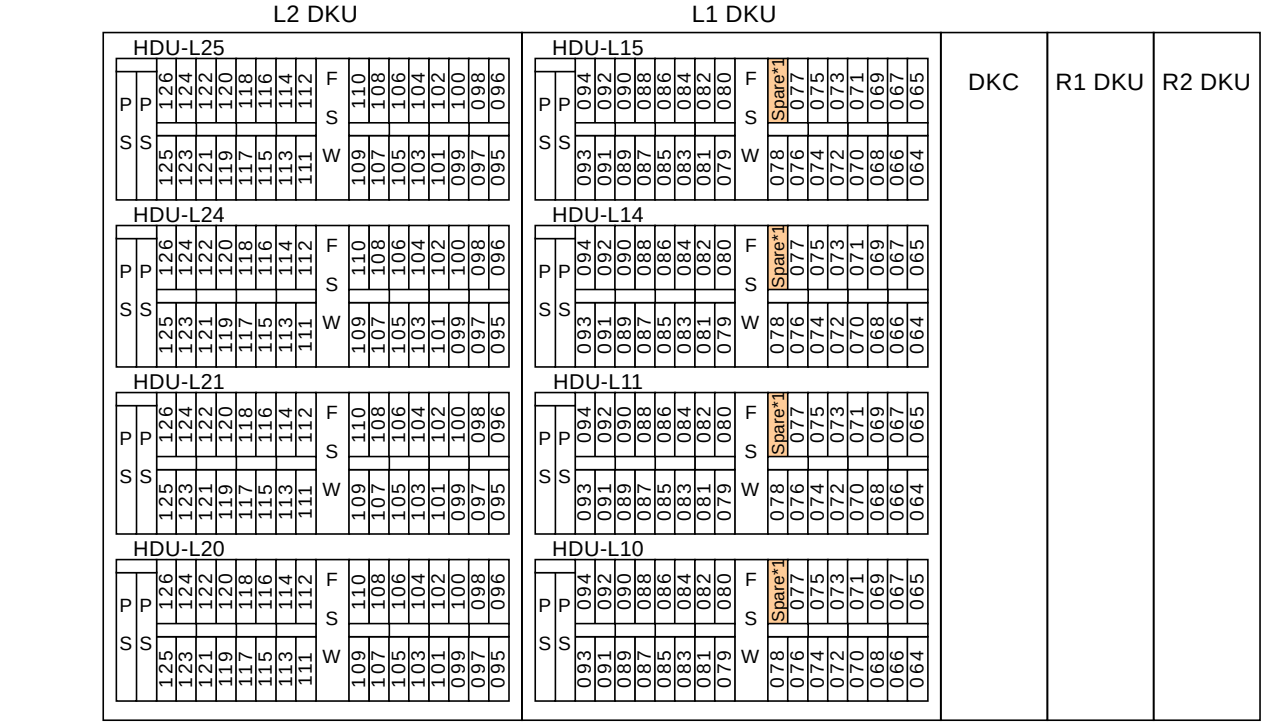

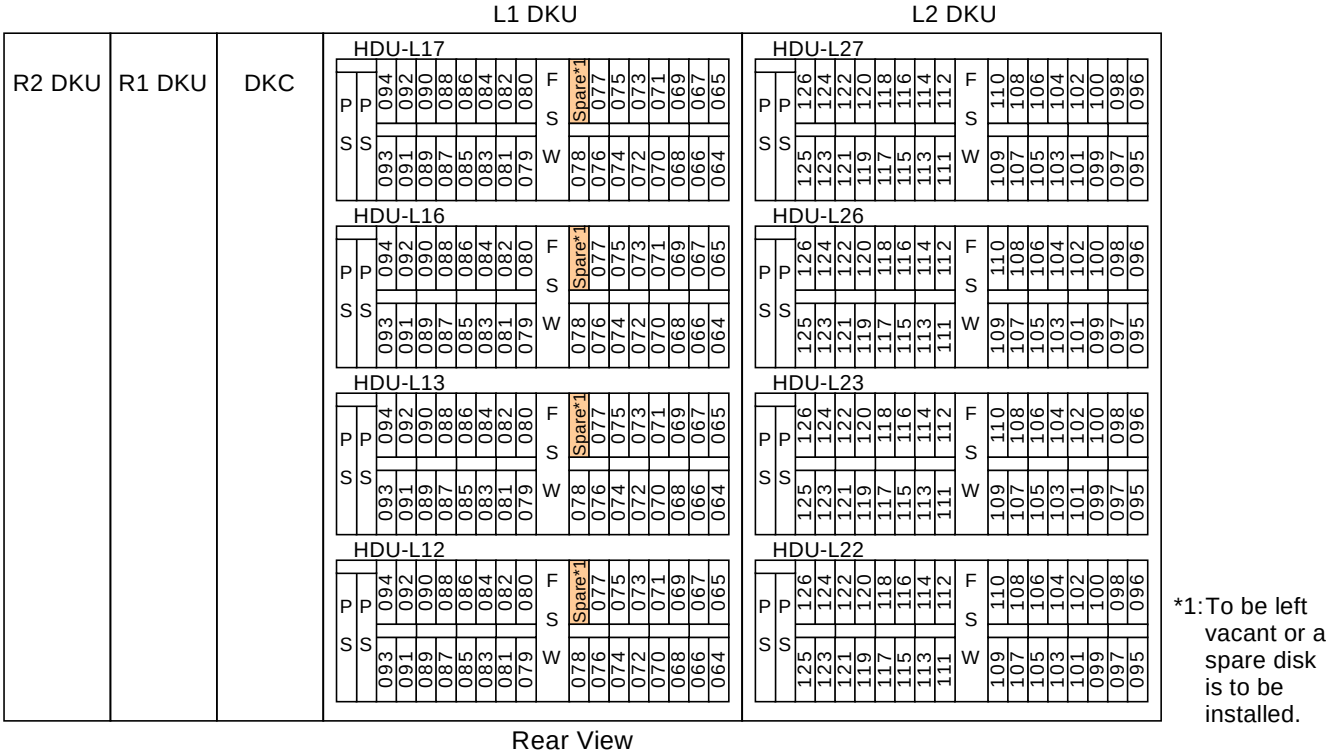

Fig. 3.11.8-21 (7D+1P) Data Drive/Parity Drive Expansion Sequence (2/2)

The relationship between HDDs installation order and RAID group number is shown in the Table 3.11.8-3.

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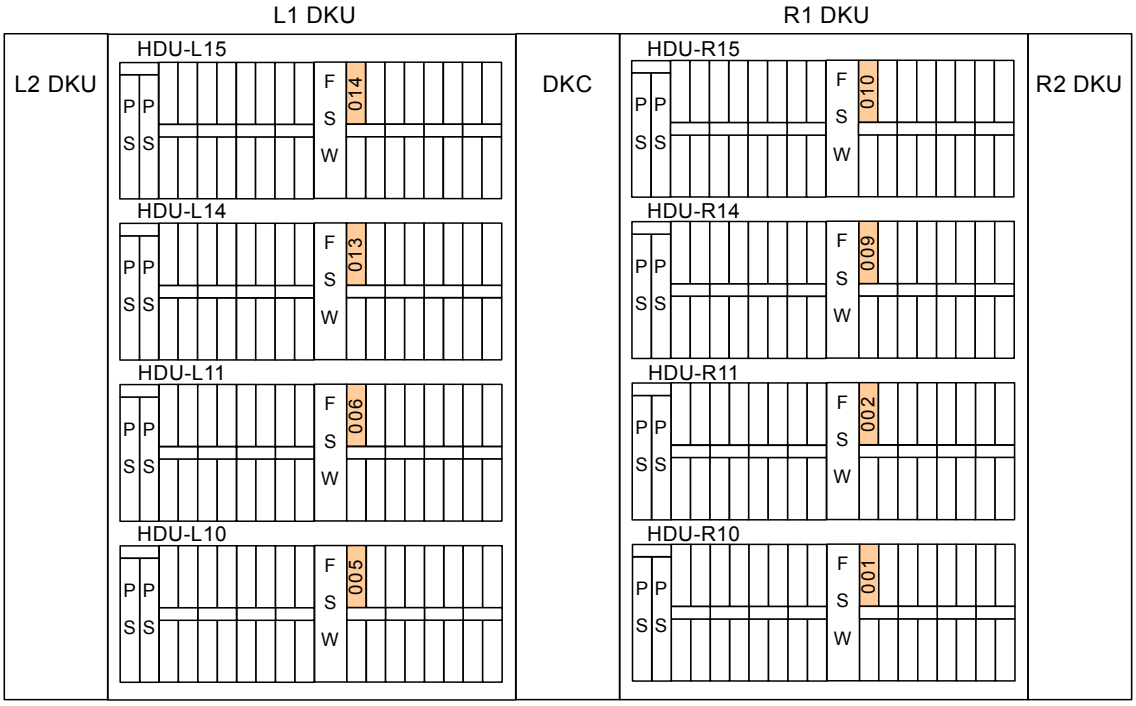
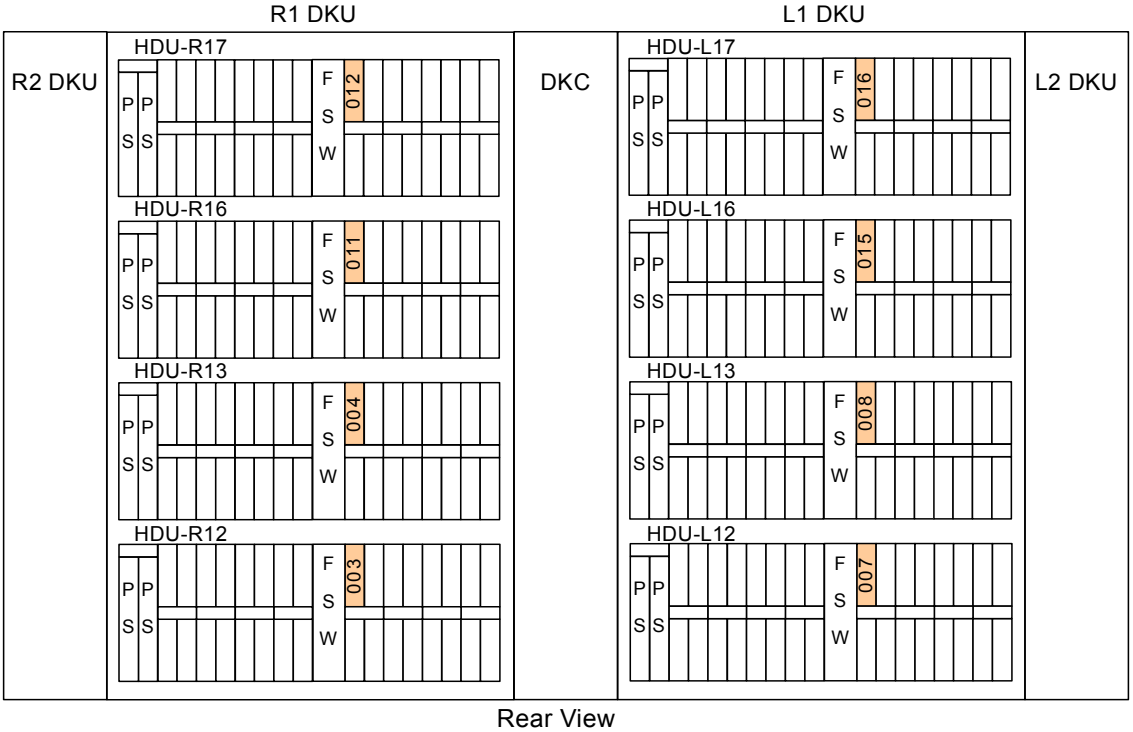
(iii) Spare HDD

No.	Model Number	Model Name	Data and Parity
1	DKU-F455I-36K1/72J1/72K1/146J1/146JS/146JM	1 HDD Canister	Spare Drive



Front View

001-016: Spare HDD canister installation order



Rear View

Fig. 3.11.8-22 Spare Drive Expansion Sequence

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5-2 Installation of the HDD Canister.

Notice:
(1) Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.
(2) Since the HDD is a precision component, handle it very carefully not to apply a vibration or shock to it.

a. Remove the dummy canister from the HDU Box.
When the dummy canister cannot be removed by pulling of it only, remove it referring to page INST03-DKA-3000.
b. Install the HDD canister. (For the detailed procedure for installation, refer to the procedure for installing HDD canister on page INST03-DKA-3010.)

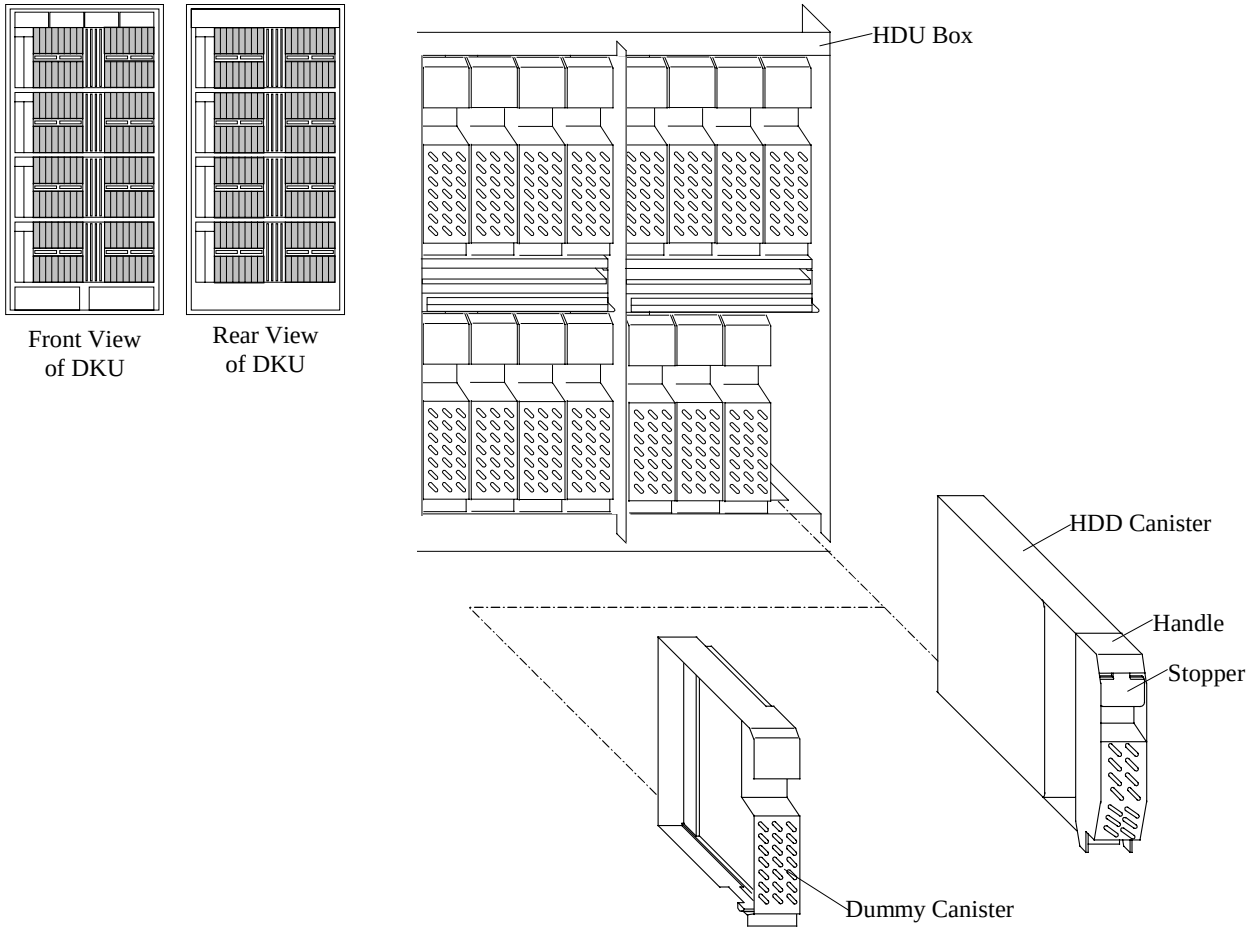

Fig. 3.11.8-23 Installation of HDD Canister

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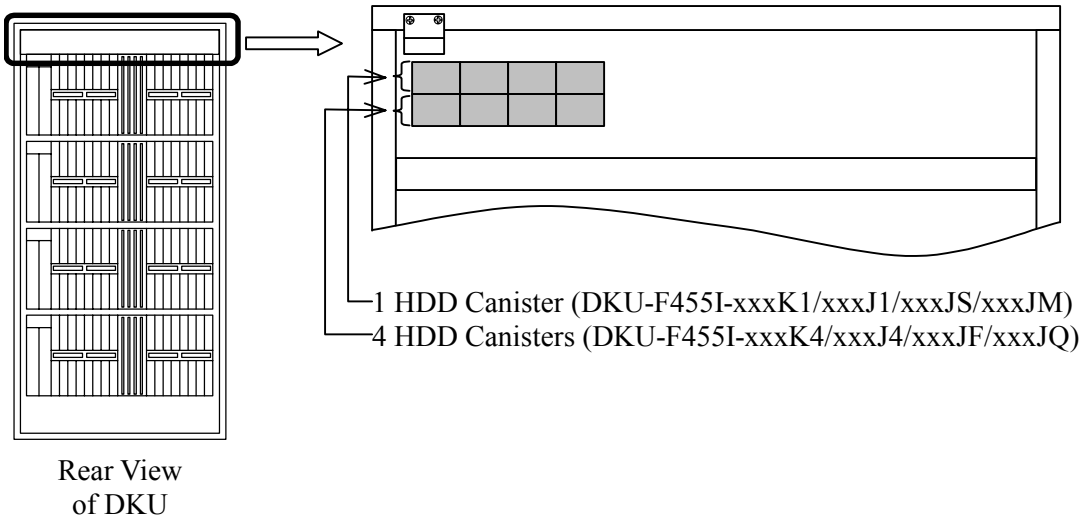
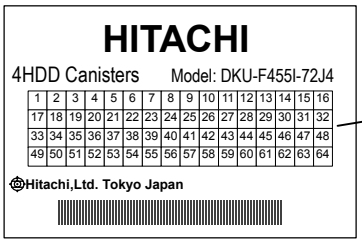
5-3 Attachment of the nameplate.

a. When the nameplate is not attached, attach the nameplate regardless of the model number from the left of the unit. Paint out mounting numbers on the nameplate.



[Example]

When the 7 DKU-F455I-72J4 sets are installed



							8	9	10	11	12	13	14	15	16
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64

Fig. 3.11.8-24 Attachment of Nameplate

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6. Installation Procedure of DEV Interface Cable 2 (DKU-F455I-EXC)

Caution:
The addition cannot be done unless the AC power is applied to the added DKU and the main breaker of the DKU is turned on.

Between HDU-R10-R17 and HDU-R20-R27

a. Connect the DEV interface cables to the FSW PCBs in the DKU-R1 frame referring to figures 3.11.8-25 and 3.11.8-26.

⚠ CAUTION

A serious failure occurs if any of cables/connectors is wrongly connected.
Since a label bearing a connection destination is affixed on each cable/connector, work very carefully referring to it and the wiring diagram.

- Colors of the labels of the subsystem shipped from the factory from June of 2002 and on are as follows. Labels on the cluster1 (CL1) side and the cluster2 (CL2) side are white and yellow respectively.

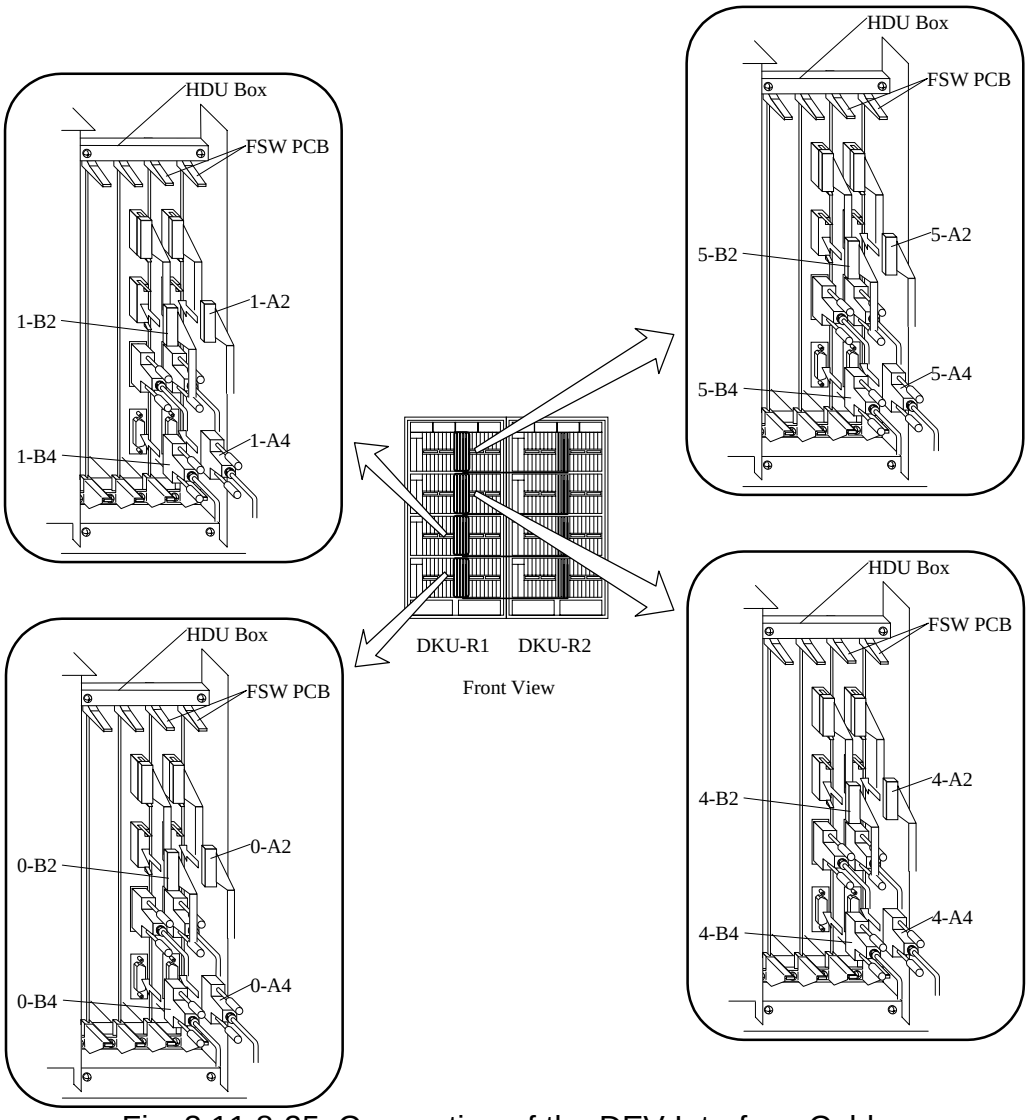

Fig. 3.11.8-25 Connection of the DEV Interface Cables

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CAUTION

A serious failure occurs if any of cables/connectors is wrongly connected.
Since a label bearing a connection destination is affixed on each cable/connector, work very carefully referring to it and the wiring diagram.

- Colors of the labels of the subsystem shipped from the factory from June of 2002 and on are as follows. Labels on the cluster1 (CL1) side and the cluster2 (CL2) side are white and yellow respectively.

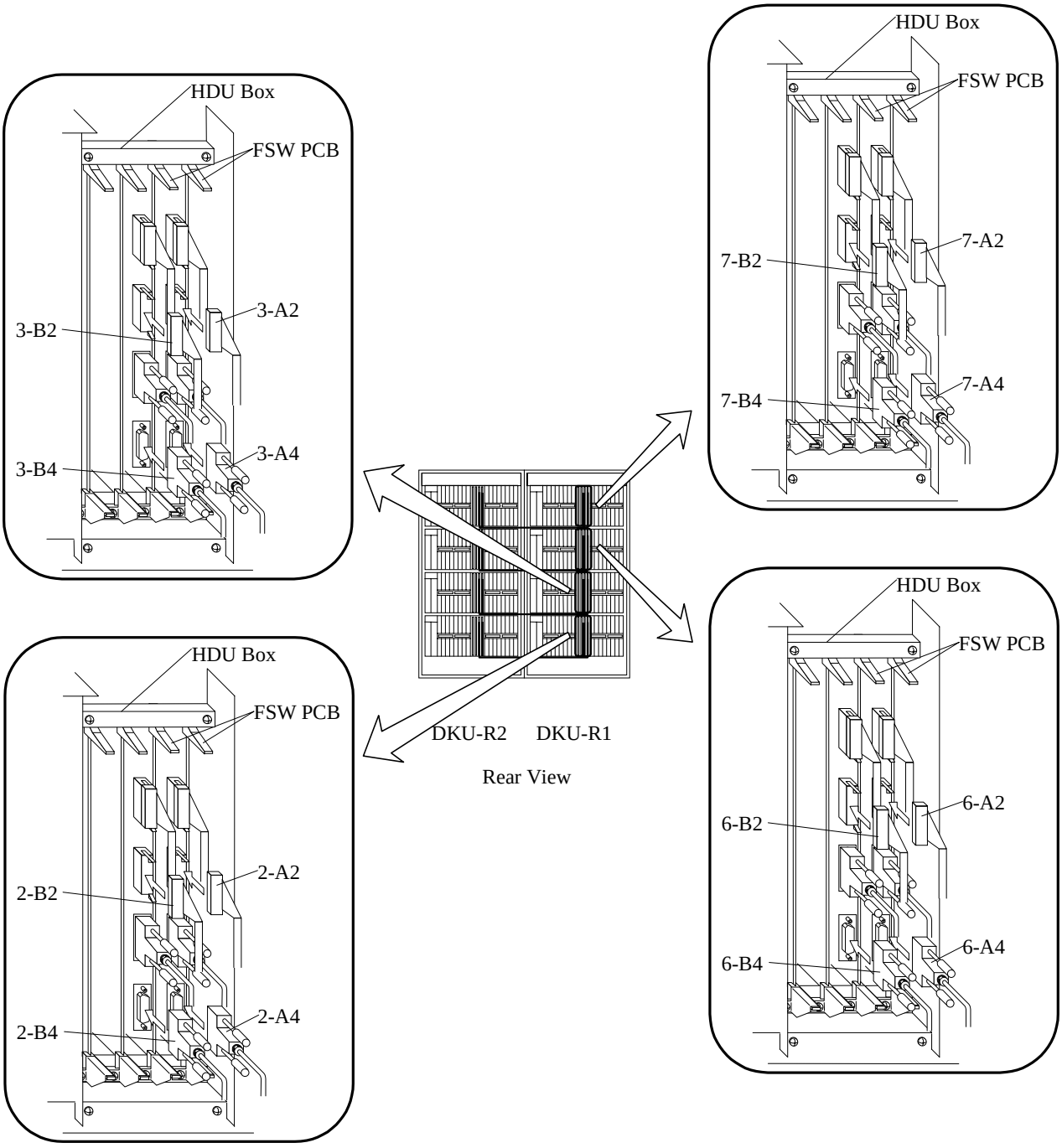

Fig. 3.11.8-26 Connection of the DEV Interface Cables

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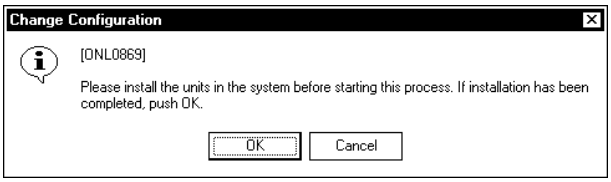
7. SVP post procedure

1. <Check that hardware components are installed>
   Select (CL) [OK] after making sure that all hardware components are installed correctly in response to “Please install the units in the system before starting this process. If installation has been completed, push OK.”.



2.
   When DKA is installed, “Waiting for Power Event... Usually, several minutes (maximum 15 minutes)” is displayed.

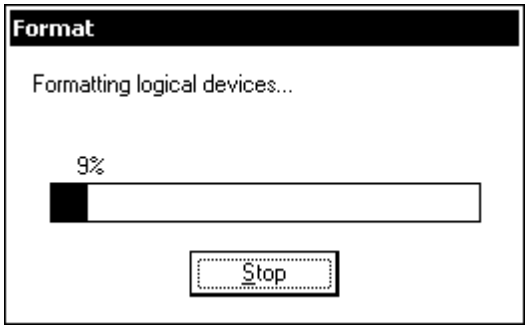
   If [ONL3437E] or [ONL3438E] is displayed, please refer 2.11.1. (INST02-630)
   If [ONL3441E] or [ONL2841W] is displayed, please refer 2.11.2. (INST02-640)

---

3. <DKU PATH INLINE>
   When DKA is installed, “DKU PATH INLINE is now running...” is displayed.

---

4. <LDEV FORMAT>
   “Formatting the logical device...” is displayed when Parity Group is defined.



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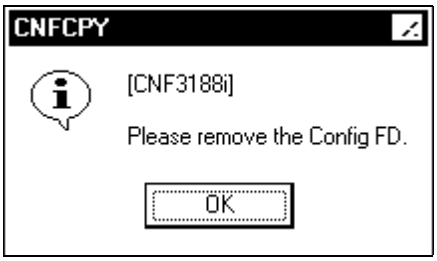
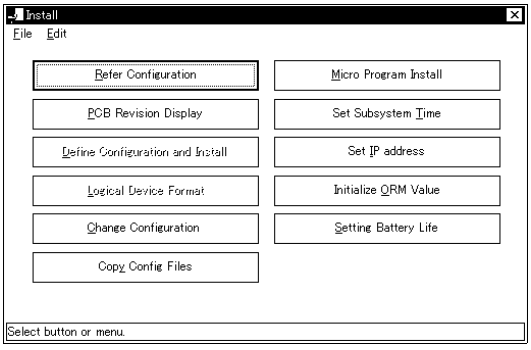
5. <End of system update processing>
"Renewal process has completed. Please check the subsystem status." is displayed when recovery processing on all installed components is completed. Select (CL) [OK] in response to this message.

6.
"Reading subsystem configuration data..." is displayed.
"Please insert the Config FD in the FDD." is displayed.
Insert the configuration FD into FDD, and select (CL) [OK].

7.
When this procedure is completed, the message "Please remove the Config FD." is displayed.
Remove the FD, select (CL) [OK].



8.
After the procedure is completed, return to 'Install'.
Select (CL) [File]-[Exit].



9. <Mode Change>
Change the mode to View Mode.

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8. Installation Procedure of DEV Interface Cable 2 (DKU-F455I-EXC)

Between HDU-R10-R17 and HDU-R20-R27

a. Attach the cable covers with the screw to fix the DEV Interface Cables.

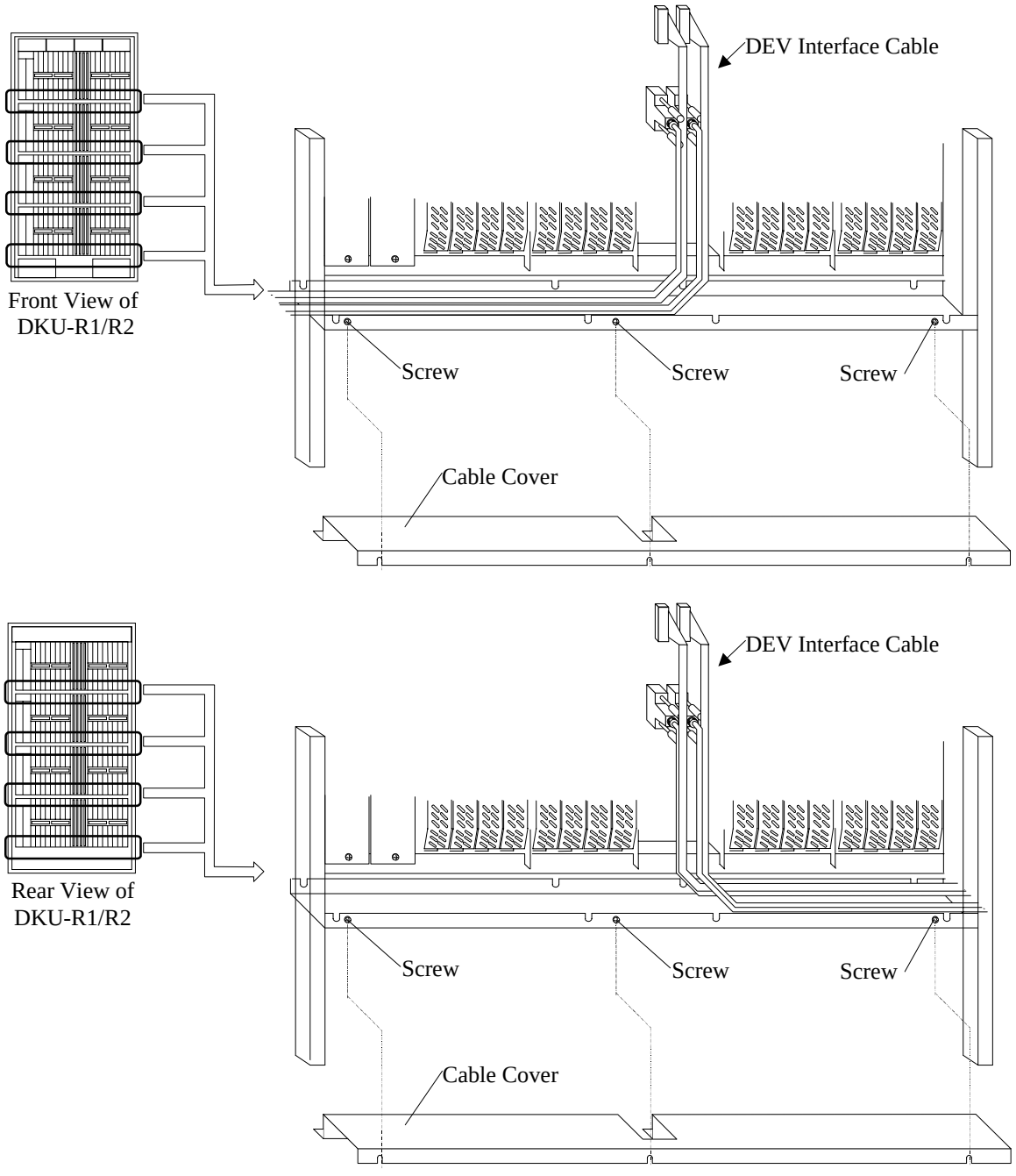

Fig. 3.11.8-27 Fixation of the DEV Interface Cables

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b. Attach the cable covers with the screw to fix the DEV Interface Cables.

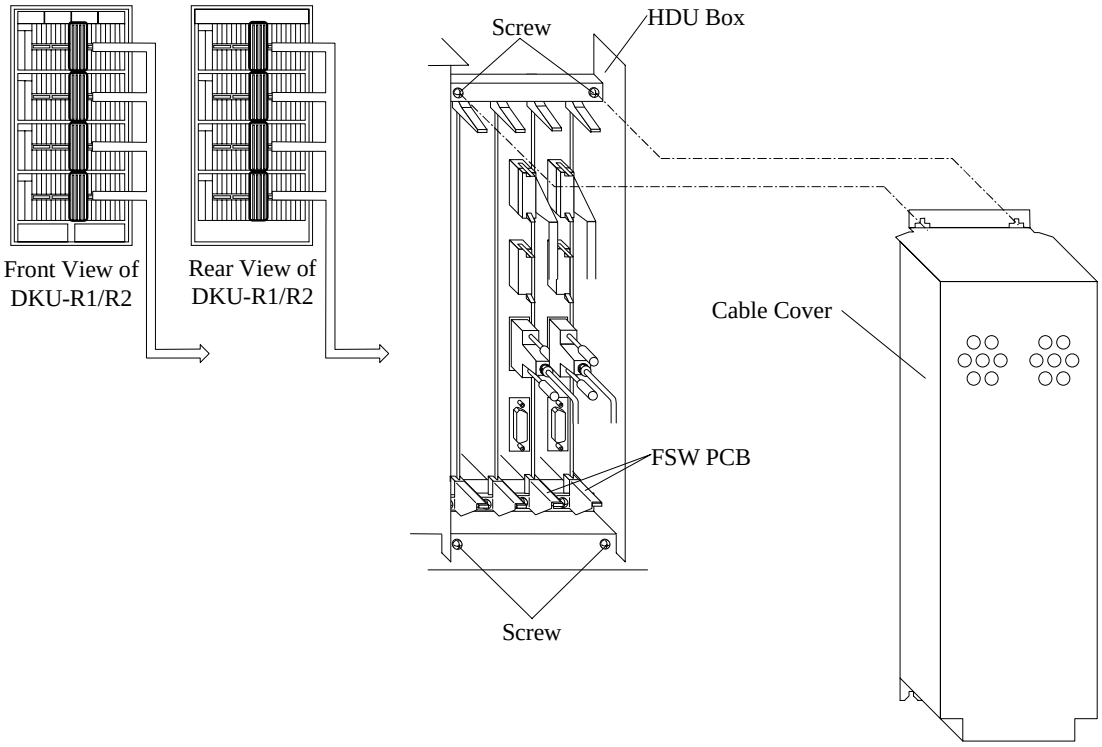

Fig. 3.11.8-28 Fixation of the DEV Interface Cables

c. Attach the nameplate to the DKU-R2 frame.

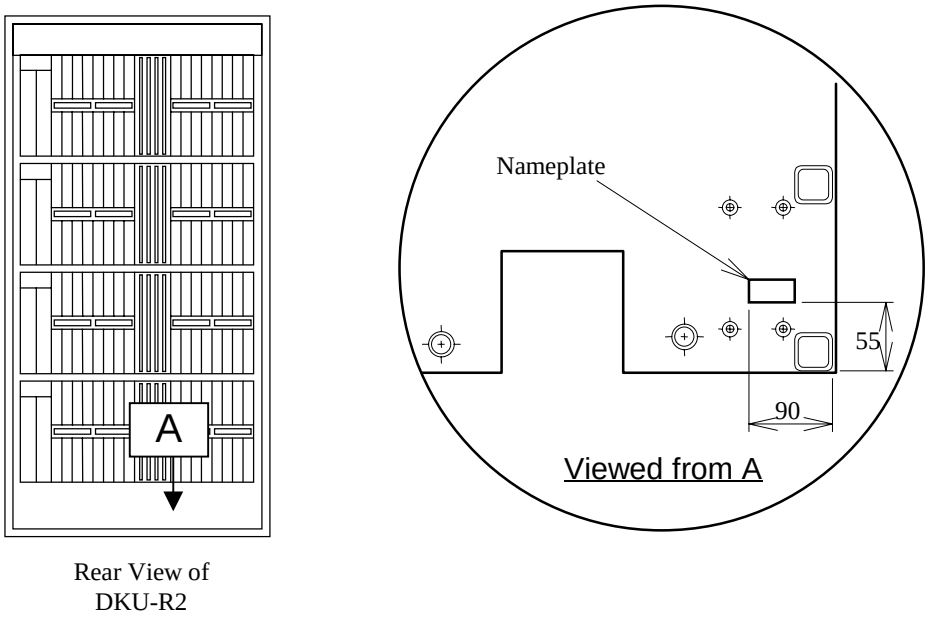

Fig. 3.11.8-29 Attachment of the Nameplate

d. Return to the work table (INST02-50) and perform rest of the works.

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3.11.9 When performing addition of the data/spare HDD canister, DKA, and DEV interface cable that accompanies the addition of the DKU-R2 and DKU-L2 frames (DKC-F460I-200, DKU-F455I-36K4/36K1/72J4/72J1/72K4/72K1/146J4/146J1/146JF/146JS/146JQ/146JM/EXC)

1. Installation Procedure of DEV Interface Cable 2 (DKU-F455I-EXC)

Between HDU-R10-R17 and HDU-R20-R27

Note:
1. When the DEV interface cable is connected to the FSW in the state in which the subsystem power is on, the each HDU Box is powered on at the same time of the connection.
2. When the DEV interface cable is connected in the state in which the main circuit breaker of the DKU is not turned on, the DKU Voltage Alarm is detected (the ALARM LED on the operator panel comes on and the SIM=BF20XX or BF22XX is issued). Therefore, turn on the main circuit breaker of the DKU before connecting the DEV interface cable.

Matters to be checked:
Check the settings of the switches on the JMP PCB and multi power supply (MPS) and the jumper socket. (Refer to Subsection 3.4.4, "Switch and Jumper Plug Installation" on pages INST03-DKU-220 and INST03-DKU-230.)
If any of the switches and jumper socket is not set correctly, reset it correctly.

a. Loosen the screws and remove the cable covers from the DKU frames.

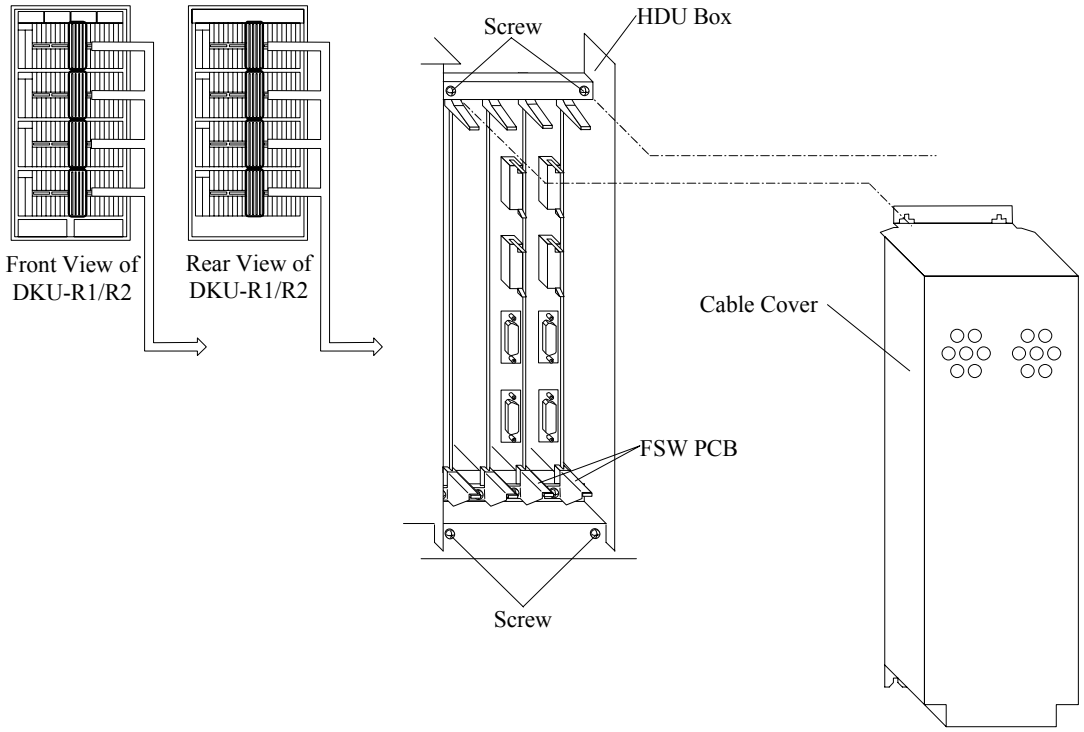

Fig. 3.11.9-1 Removal of Cable Covers

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b. Loosen the screws and remove the cable covers from the DKU frames.

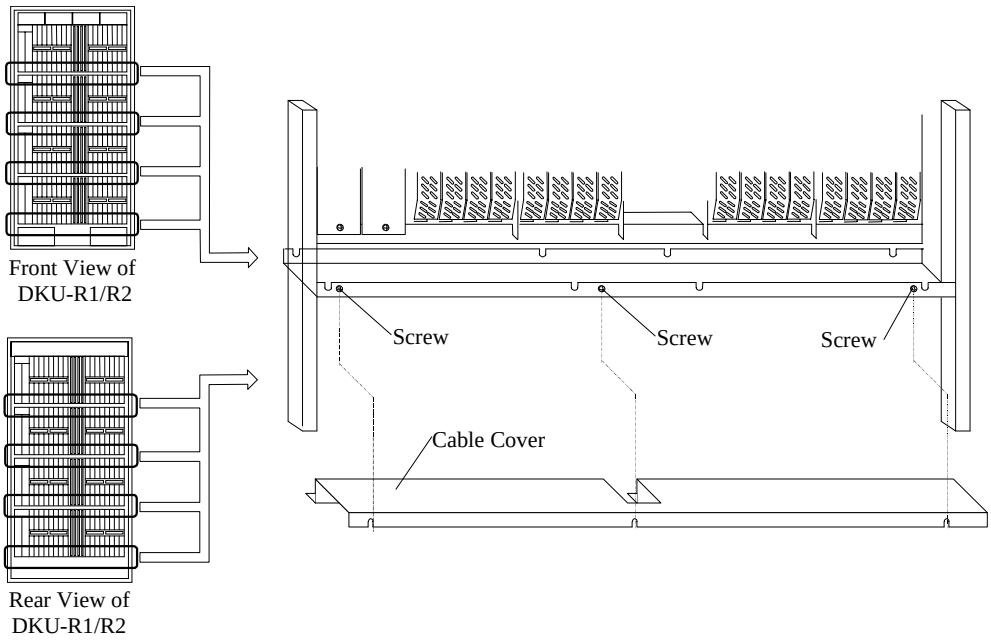

Fig. 3.11.9-2 Removal of Cable Covers

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c. Connect the DEV interface cables to the FSW PCBs in the DKU-R2 frame referring to Fig. 3.11.9-3 through Fig. 3.11.9-6.

Caution:
1. Do not perform the work unless the AC power is supplied to the additional DKU and the main breaker of the DKU is not turned on.
2. Do not connect the DEV interface cable to the operating DKU in this procedure. The cable is to be connected later in another procedure.

CAUTION

A serious failure occurs if any of cables/connectors is wrongly connected.
Since a label bearing a connection destination is affixed on each cable/connector, work very carefully referring to it and the wiring diagram.
- Colors of the labels of the subsystem shipped from the factory from June of 2002 and on are as follows. Labels on the cluster1 (CL1) side and the cluster2 (CL2) side are white and yellow respectively.

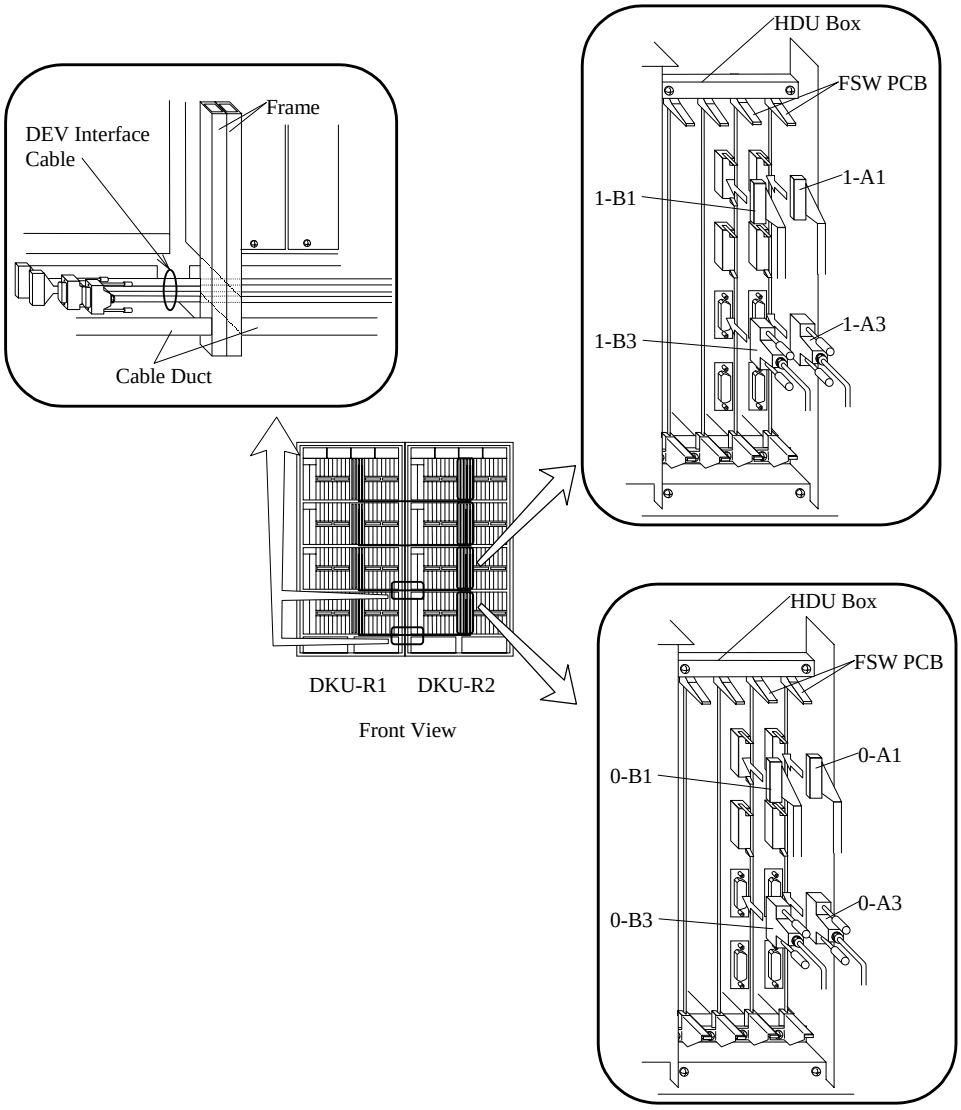

Fig. 3.11.9-3 Connection of the DEV Interface Cables

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CAUTION

A serious failure occurs if any of cables/connectors is wrongly connected.
Since a label bearing a connection destination is affixed on each cable/connector, work very carefully referring to it and the wiring diagram.

- Colors of the labels of the subsystem shipped from the factory from June of 2002 and on are as follows. Labels on the cluster1 (CL1) side and the cluster2 (CL2) side are white and yellow respectively.

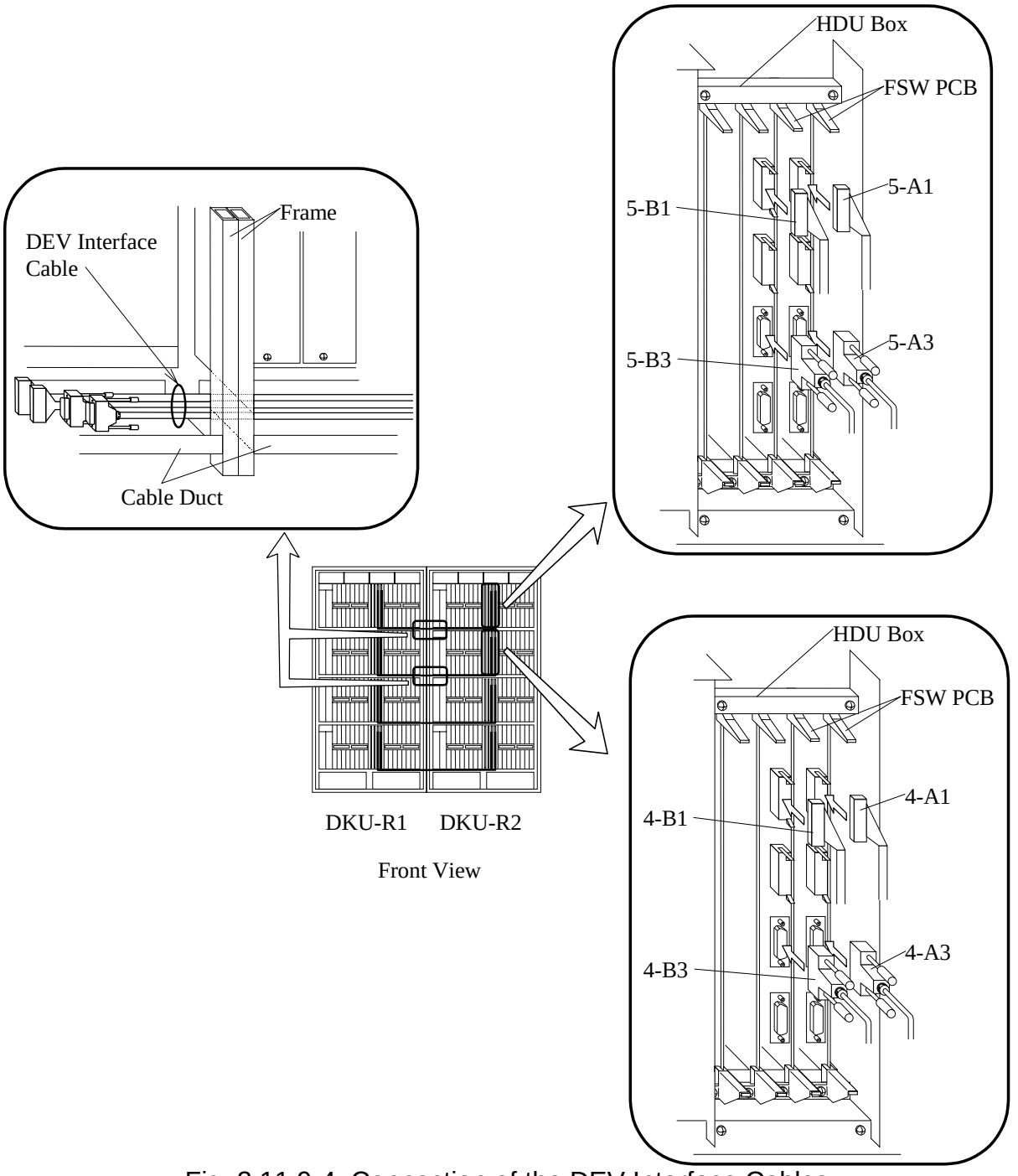

Fig. 3.11.9-4 Connection of the DEV Interface Cables

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CAUTION

A serious failure occurs if any of cables/connectors is wrongly connected.
Since a label bearing a connection destination is affixed on each cable/connector, work very carefully referring to it and the wiring diagram.

- Colors of the labels of the subsystem shipped from the factory from June of 2002 and on are as follows. Labels on the cluster1 (CL1) side and the cluster2 (CL2) side are white and yellow respectively.

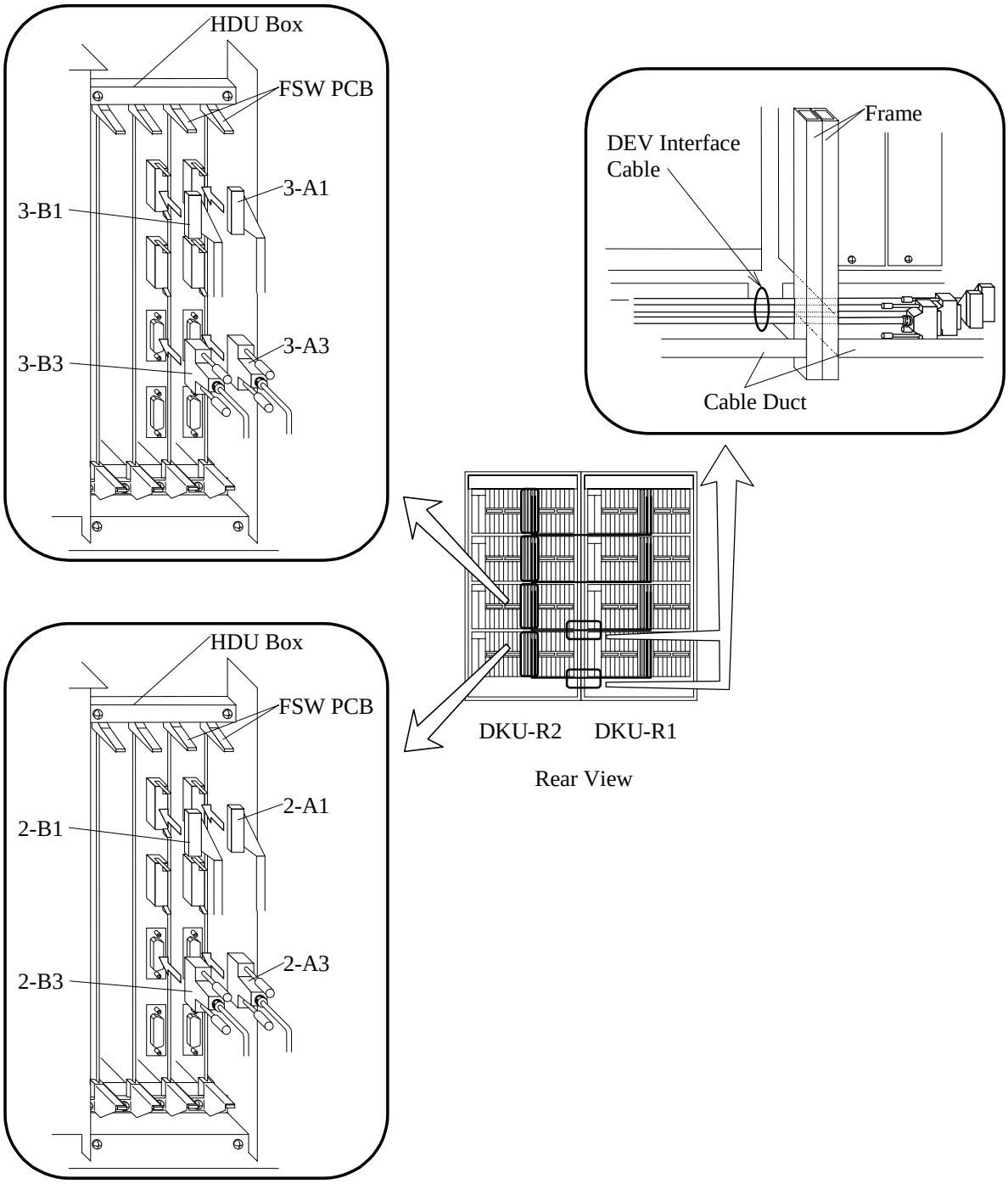

Fig. 3.11.9-5 Connection of the DEV Interface Cables

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CAUTION

A serious failure occurs if any of cables/connectors is wrongly connected.
Since a label bearing a connection destination is affixed on each cable/connector, work very carefully referring to it and the wiring diagram.

- Colors of the labels of the subsystem shipped from the factory from June of 2002 and on are as follows. Labels on the cluster1 (CL1) side and the cluster2 (CL2) side are white and yellow respectively.

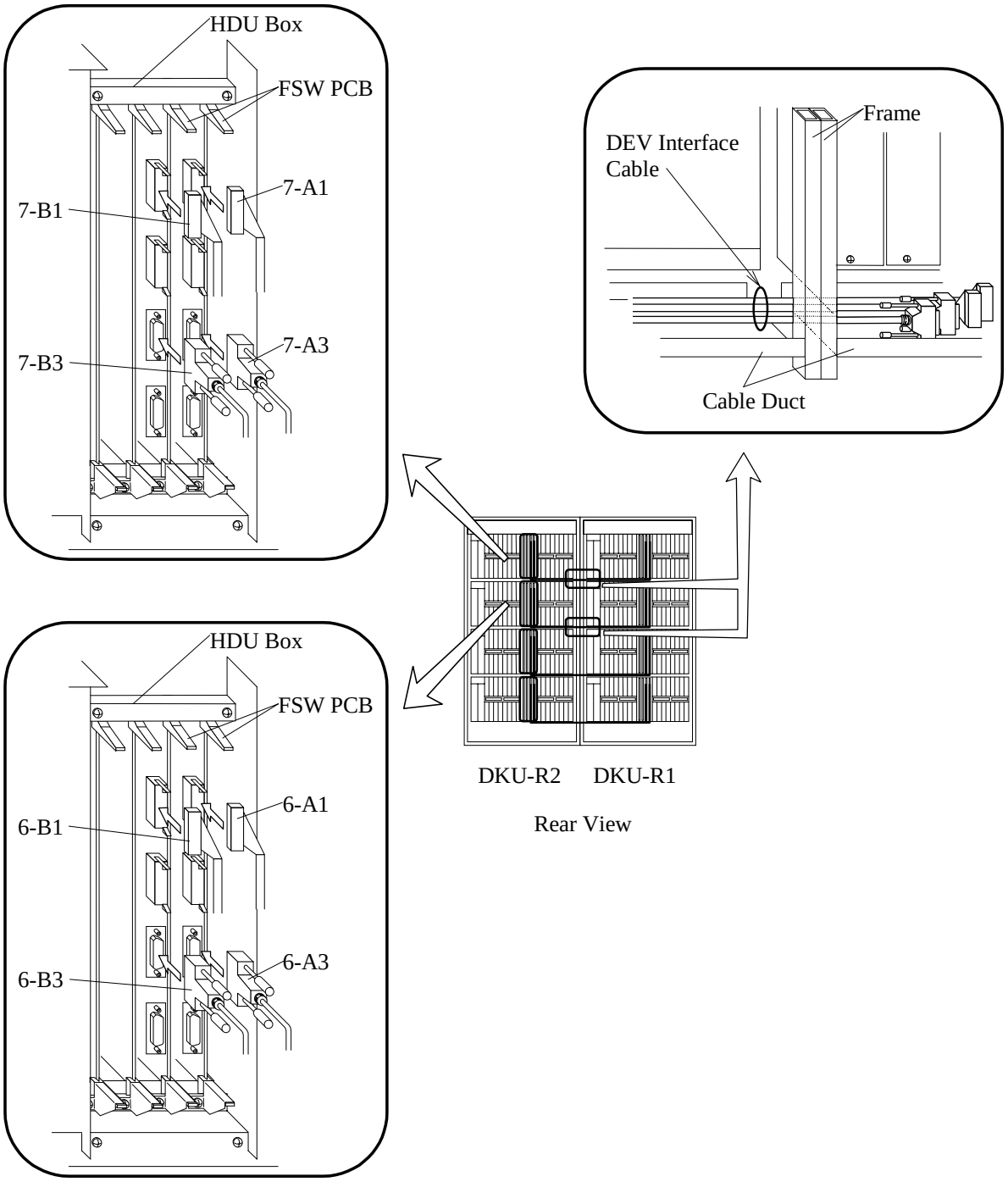

Fig. 3.11.9-6 Connection of the DEV Interface Cables

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Between HDU-L10-L17 and HDU-L20-L27

a. Loosen the screws and remove the cable covers from the DKU frames.

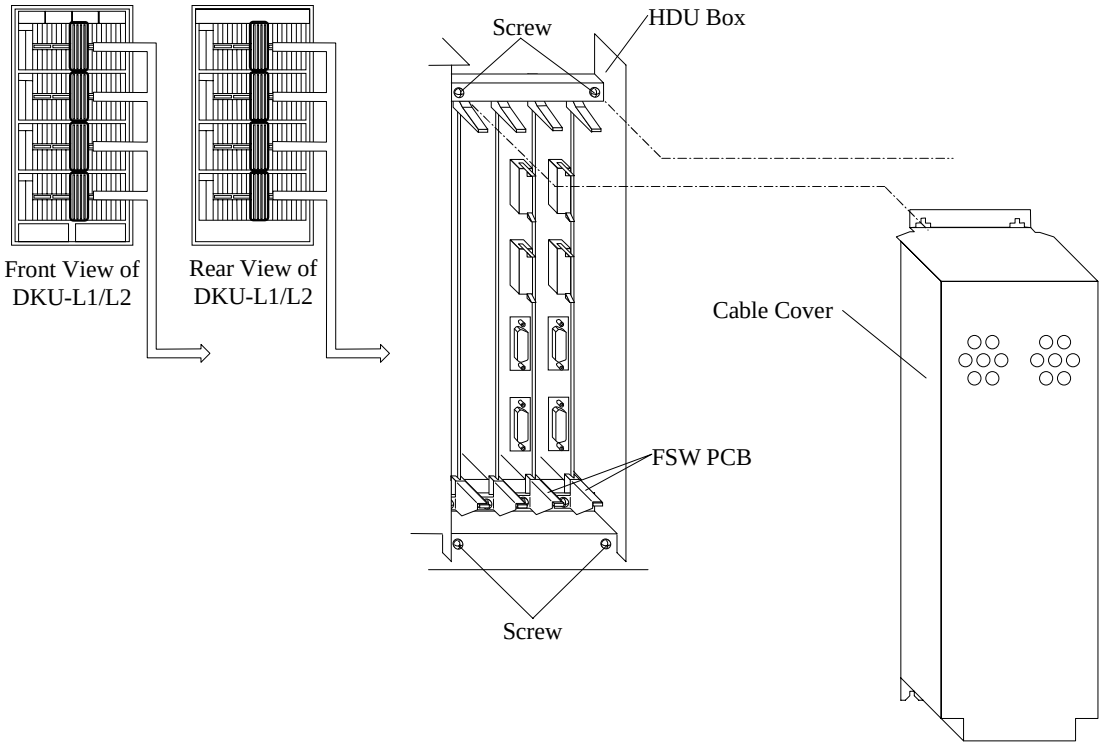

Fig. 3.11.9-7 Removal of Cable Covers

b. Loosen the screws and remove the cable covers from the DKU frames.

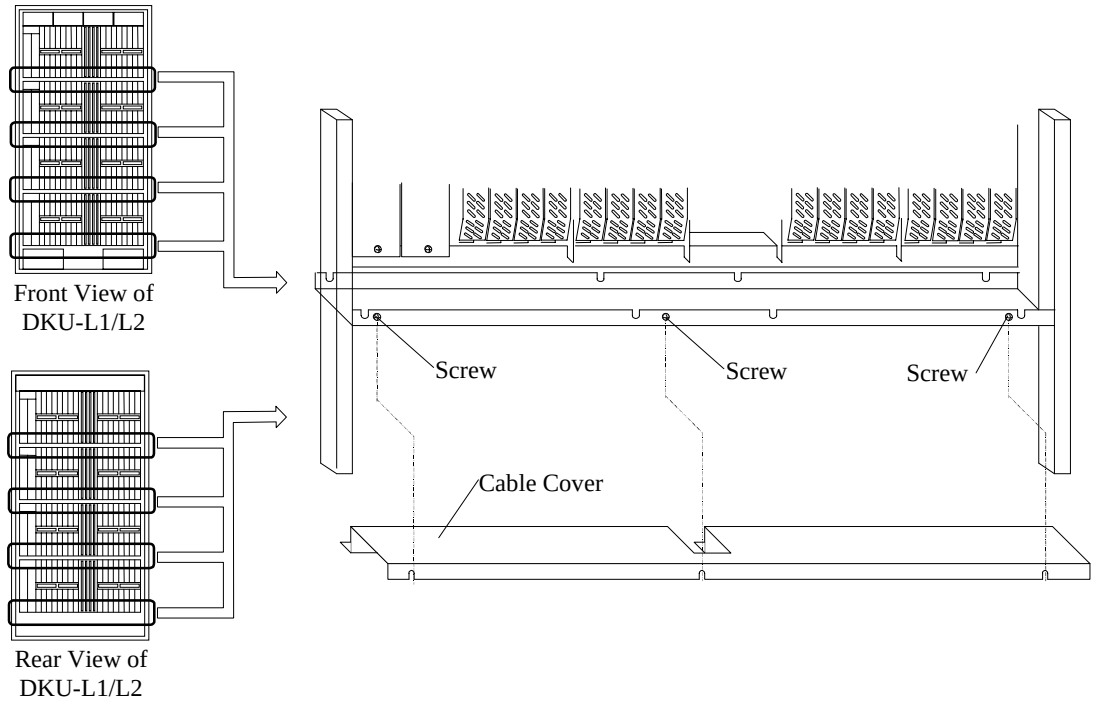

Fig. 3.11.9-8 Removal of Cable Covers

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c. Connect the DEV interface cables to the FSW PCBs in the DKU-L2 frame referring to Fig. 3.11.9-9 through Fig. 3.11.9-12.

⚠ CAUTION

A serious failure occurs if any of cables/connectors is wrongly connected.
Since a label bearing a connection destination is affixed on each cable/connector, work very carefully referring to it and the wiring diagram.

- Colors of the labels of the subsystem shipped from the factory from June of 2002 and on are as follows. Labels on the cluster1 (CL1) side and the cluster2 (CL2) side are white and yellow respectively.

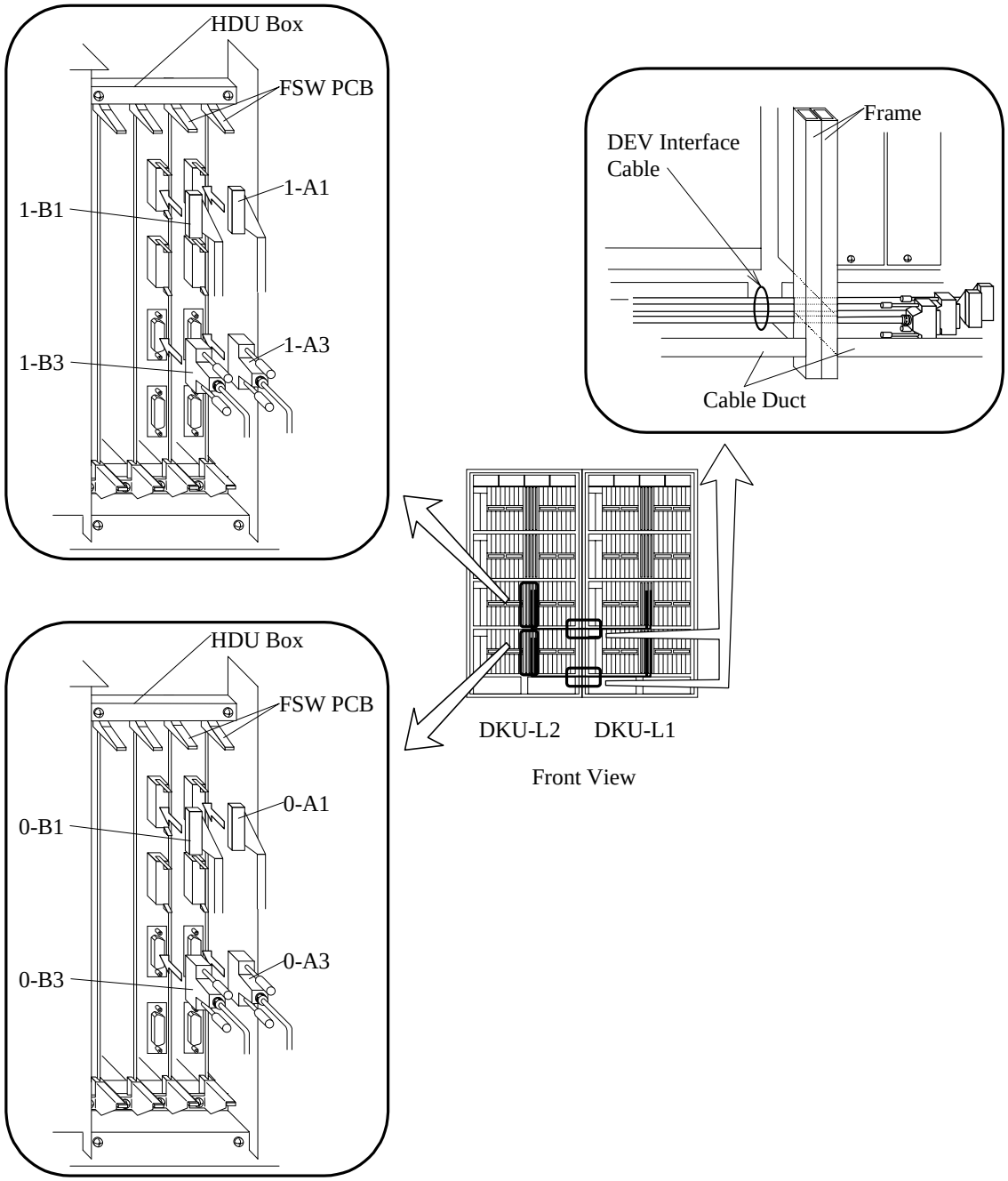

Fig. 3.11.9-9 Connection of the DEV Interface Cables

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CAUTION

A serious failure occurs if any of cables/connectors is wrongly connected.
Since a label bearing a connection destination is affixed on each cable/connector, work very carefully referring to it and the wiring diagram.

- Colors of the labels of the subsystem shipped from the factory from June of 2002 and on are as follows. Labels on the cluster1 (CL1) side and the cluster2 (CL2) side are white and yellow respectively.

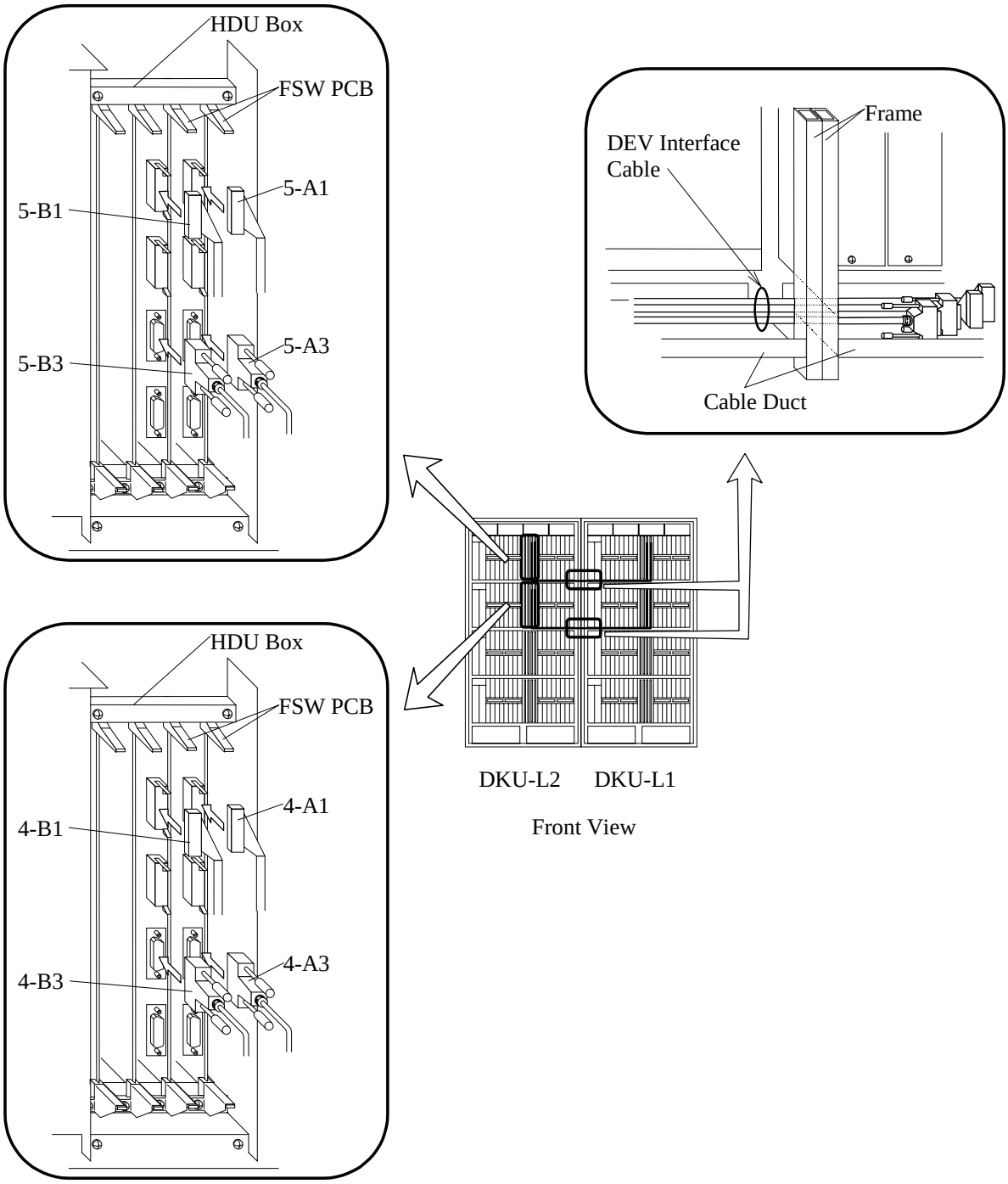

Fig. 3.11.9-10 Connection of the DEV Interface Cables

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⚠ CAUTION

A serious failure occurs if any of cables/connectors is wrongly connected.
Since a label bearing a connection destination is affixed on each cable/connector, work very carefully referring to it and the wiring diagram.

- Colors of the labels of the subsystem shipped from the factory from June of 2002 and on are as follows. Labels on the cluster1 (CL1) side and the cluster2 (CL2) side are white and yellow respectively.

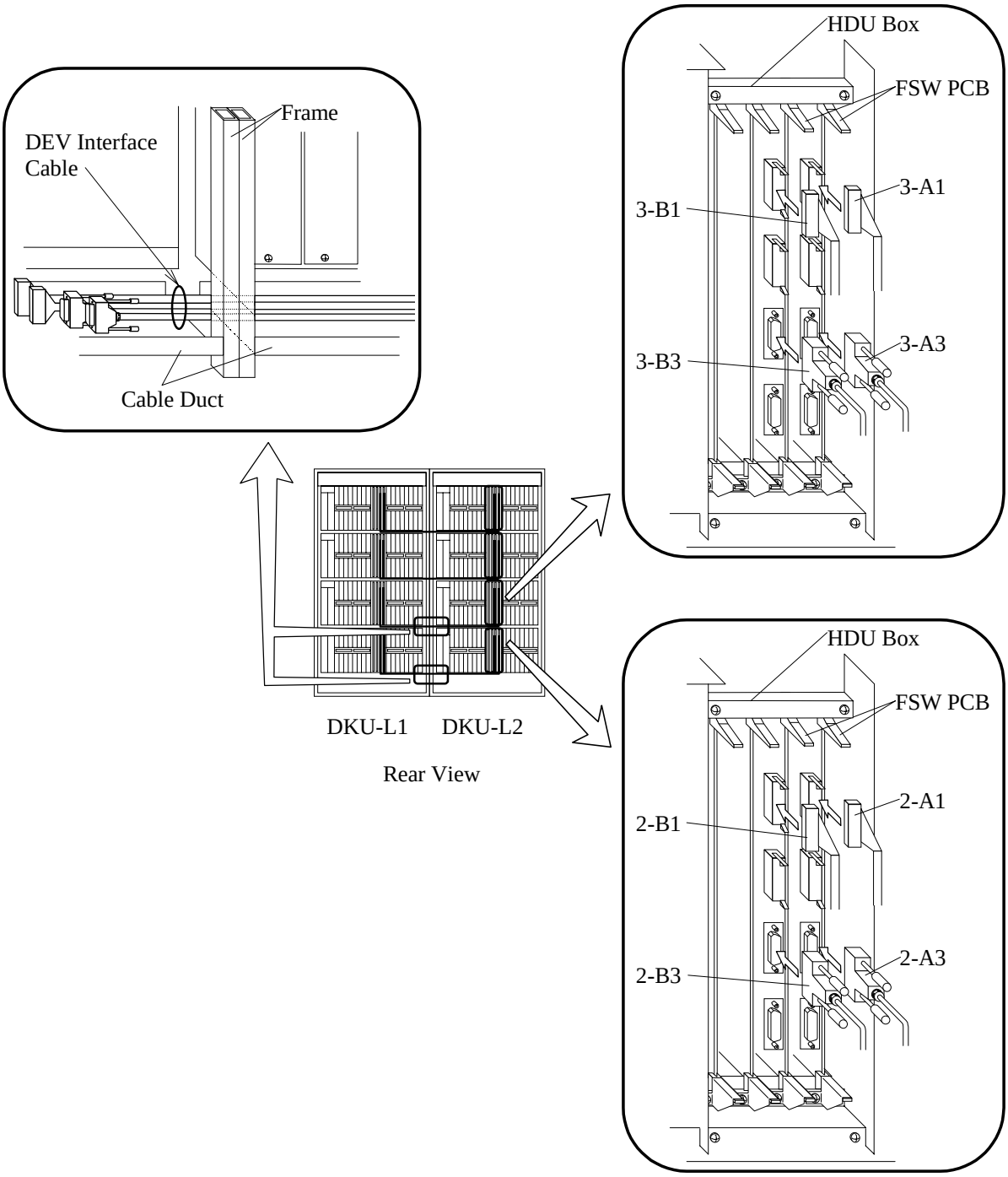

Fig. 3.11.9-11 Connection of the DEV Interface Cables

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⚠ CAUTION

A serious failure occurs if any of cables/connectors is wrongly connected.
Since a label bearing a connection destination is affixed on each cable/connector, work very carefully referring to it and the wiring diagram.

- Colors of the labels of the subsystem shipped from the factory from June of 2002 and on are as follows. Labels on the cluster1 (CL1) side and the cluster2 (CL2) side are white and yellow respectively.

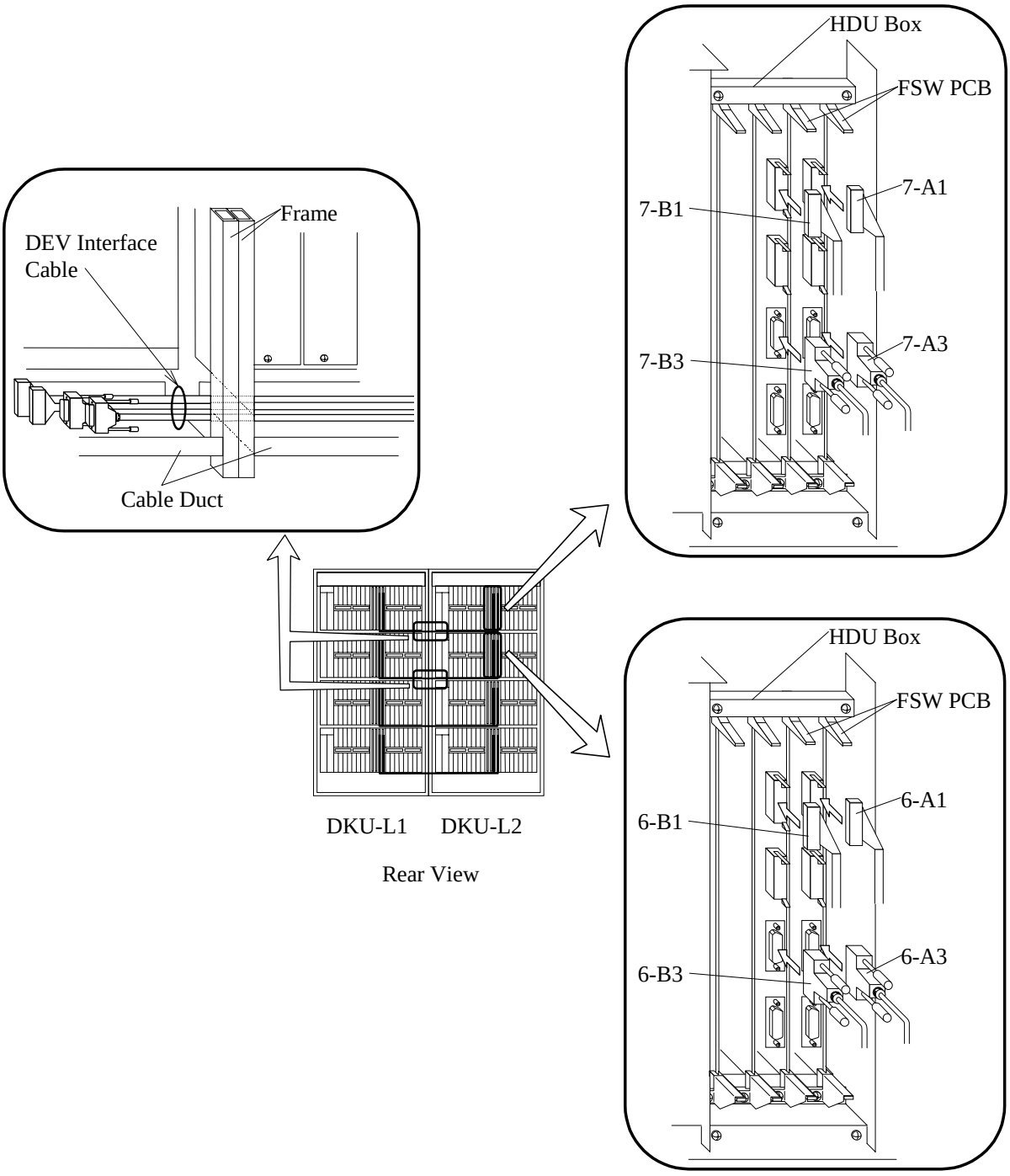

Fig. 3.11.9-12 Connection of the DEV Interface Cables

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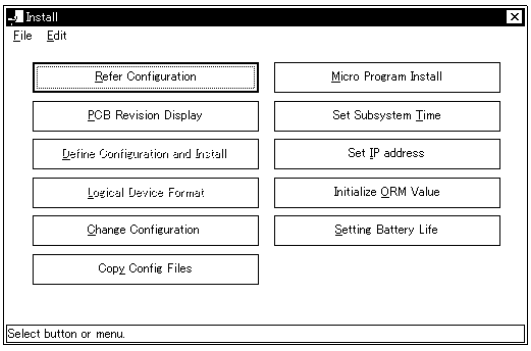
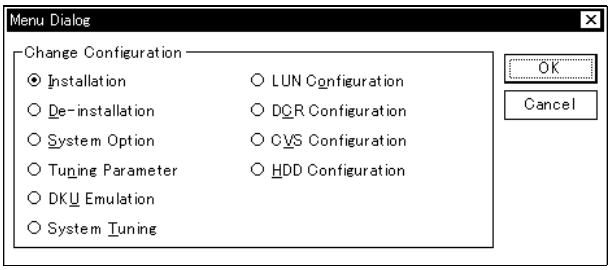
2. Setting up the New Device Structure Information

1. <Mode Change>
   Change the mode to Modify Mode.
   Select (CL) [Install].

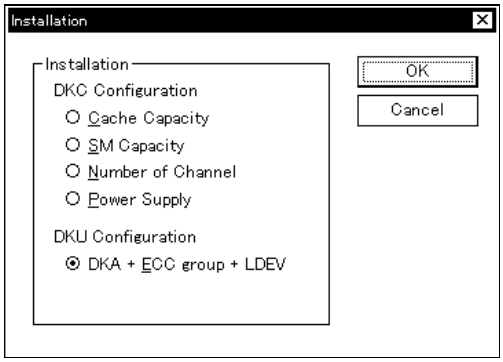
2. <Start the 'Menu Dialog' screen>
   Select (CL) [Change Configuration].



3. <Start Device Structure Setup screen>
   Select (CL) [Installation] in the 'Menu Dialog' dialog box and select (CL) [OK].



4. <Select a part to be changed>
   Select (CL) [DKA + ECC group + LDEV], and select (CL) [OK].



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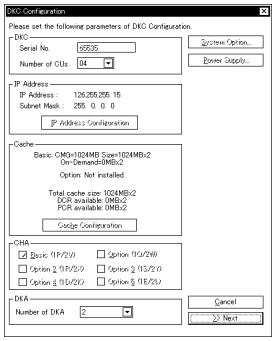
5. <Update Configuration Information>
Define the number of CU in DKC and the number of DKA in the 'DKC Configuration' window.

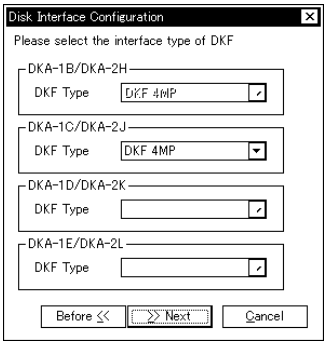
Make sure that the entered item is correct and select (CL) [>>Next].

Note: There may be a case where an addition of the SM is required to add the CU.
When adding the SM, refer to page INST03-SM-10.



6. <Setting DKA type>
Define the DKA type in the 'Disk Interface Configuration' dialog box. After setting it, select (CL) the [>>Next] button.

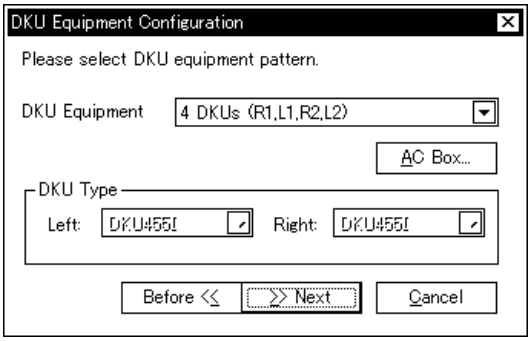
Note: When no DKA is to be added, the 'Disk Interface Configuration' dialog box is not displayed.



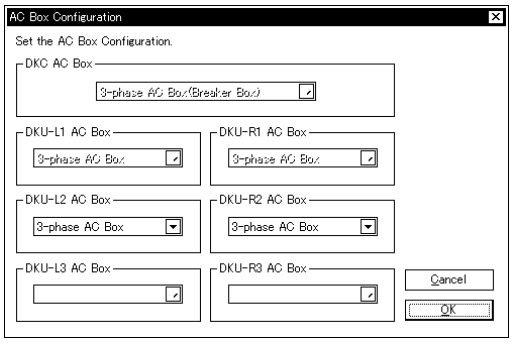
7. <DKU Equipment>
The DKU equipment pattern and DKU type is displayed in the 'DKU Equipment' configuration window.
Make an altered setting in which the DKU-R2 and DKU-L2 are added to the DKUs currently set.

Current setting	Altered setting
2DKUs (R1, L1)	4DKUs (R1, L1, R2, L2)

[AC Box...]: Set the DKU AC Box configuration.
(Refer to step 7-1.)
Select (CL) the [>>Next].



7-1. <Setting the DKU AC Box configuration>
Set the installation AC Box configuration, select (CL) the [OK]. Return to step 7.



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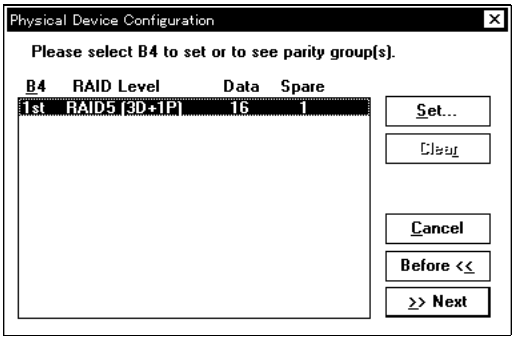
8. <Change Drive Configuration Information>
Define drive configuration according to the 'Physical Device Configuration' screen.
Detailed procedure is shown below.
[Set...]: Defines the parity group or spare disk. The routine proceeds to Step 8-1.
[Clear...]: Cancels the setting of the B4.
After setting up all items, select (CL) [>>Next]. Go to step 9.



Selecting (CL) [Before<<] returns you to the previous screen.

[Multi Cabinet Model]

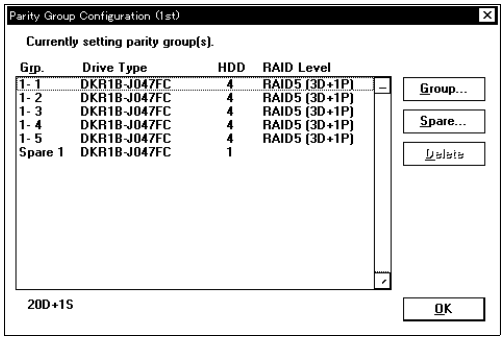
B4	Location	B4	Location
1st	HDU-R10, 11, 12, 13	7th	HDU-L20, 21, 22, 23
2nd	HDU-R14, 15, 16, 17	8th	HDU-L24, 25, 26, 27
3rd	HDU-L10, 11, 12, 13	9th	HDU-R30, 31, 32, 33
4th	HDU-L14, 15, 16, 17	10th	HDU-R34, 35, 36, 37
5th	HDU-R20, 21, 22, 23	11th	HDU-L30, 31, 32, 33
6th	HDU-R24, 25, 26, 27	12th	HDU-L34, 35, 36, 37

Note: The 9th to 12th of the B4 are valid only when the DKUs for the RAID 400 are connected.

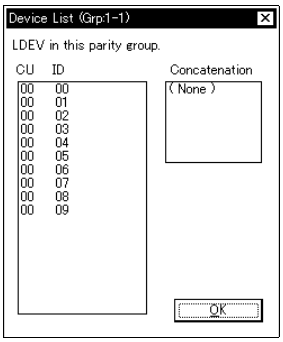
[Single Cabinet Model]

B4	Location	Comment
1st	HDU-0, 1, 2, 3	HDD-X00 ~ X0F
2nd	HDU-0, 1, 2, 3	HDD-X10 ~ X1F

8-1. <Define Parity Group>
[Group...]: Defines the parity group. See Step 8-1-1.
[Spare...]: Defines the spare drive. See Step 8-1-2.
[Delete]: Deletes the added parity group or spare drive.
Grp*: A parity group where RAID Concatenation is installed.
Note: If you want to set any Spare Drive in B4, please define the Spare Drive first.
After setting up all items, select (CL) [OK]. Return to step 8.



- To display LDEV ID in Parity group, select an item to be displayed and select (DC) this item on list box. The 'Device List' dialog box will appear.
"(no LDEV)" is displayed for the added parity group.



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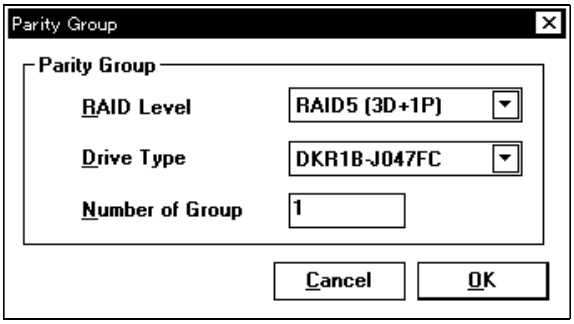
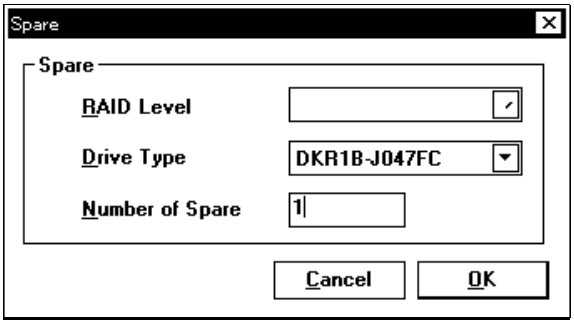
8-1-1.

Define the RAID Level and the Drive Type and the Number of Group in the 'Parity Group' dialog box.
Then select (CL) [OK]. Return to step 8-1.



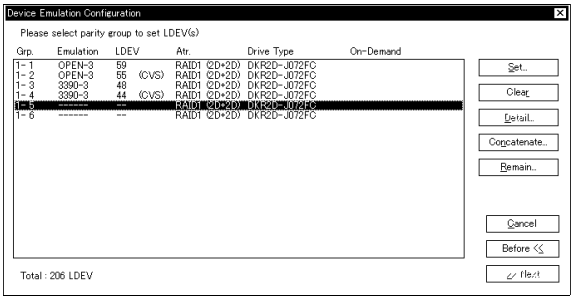
8-1-2.

Define the RAID Level and the Drive Type and the Number of Spare in the 'Spare' dialog box.
Then select (CL) [OK]. Return to step 8-1.



9. <Define Device Emulation>

After setting up all items for definition of Device Emulation, select (CL) [>>Next].
Selecting (CL) [Before<<] returns you to the previous screen.



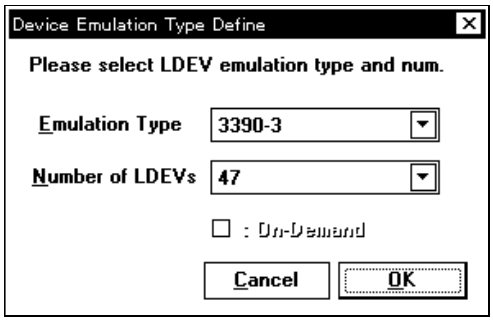
For defining Device Emulation:
Select (CL) parity group and select (CL) [Set...].
Go to step 9-1

For detailed display:
Select (CL) parity group and select (CL) [Detail...].
The detailed information is displayed.
(CVS): A parity group where CVS is installed.
Grp*: A parity group where RAID Concatenation is installed.

9-1.

After setting up all items in the 'Device Emulation Type Define' dialog box, select (CL) [OK].

Selecting (CL) [Cancel] returns you to step 9.



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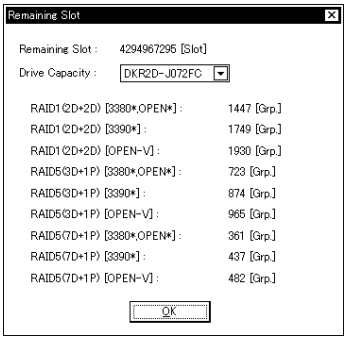
9-2. <Displaying remaining slot(s)>

The Remaining Slot window is displayed.
An allowable number of times of PDEV addition corresponding to the specified drive type is displayed.



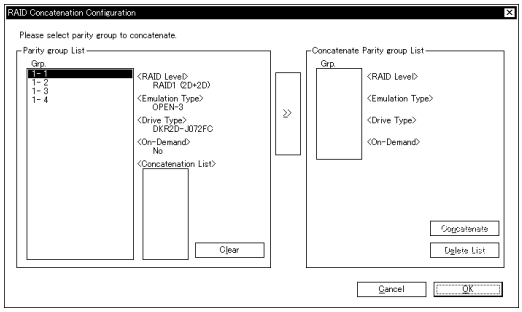
Select (CL) the [OK]. The routine returns to Step 9.

9-3. <Setting RAID concatenation>

Select (CL) [Concatenate...].
When you do not perform the RAID concatenation, return to Step 9.

9-4.

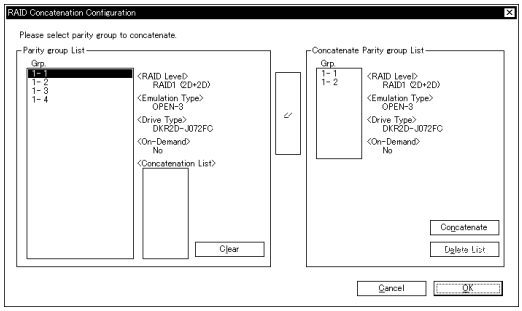
Parity groups to which the RAID concatenation can be applied are displayed in the Parity group List. Select (CL) parity groups to which you want to apply the RAID concatenation and press (CL) the [>>] button.



Note: Only the parity groups, which have been added and to which the RAID concatenation can be applied are displayed in the Parity group List.

9-5.

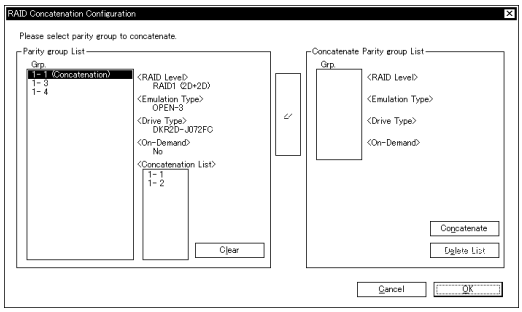
The selected parity groups are registered in the Concatenate Parity group List. Then press (CL) the [Concatenate] button.



Note: The [Concatenate] button cannot be pressed if the concatenation does not meet a condition of the RAID concatenation. Adjust the number of the parity groups in the Concatenate Parity group List.

9-6.

When the RAID concatenation is completed, "(Concatenation)" is displayed in the Parity group List. Selecting the "(Concatenation)" displays the concatenated parity groups in the Concatenation List. Pressing the [Clear] button cancels the RAID concatenation.



When all the settings of the RAID concatenation are completed, press (CL) the [OK] button.
Pressing (CL) the [Cancel] button returns the routine to Step 9.

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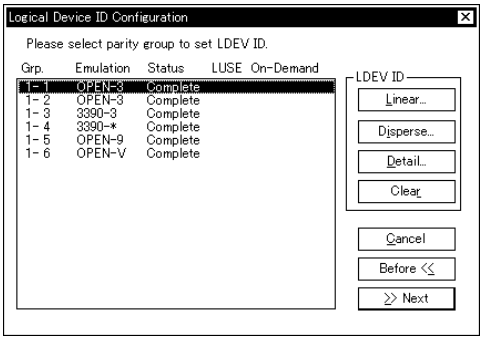
10. <Define LDEV ID>

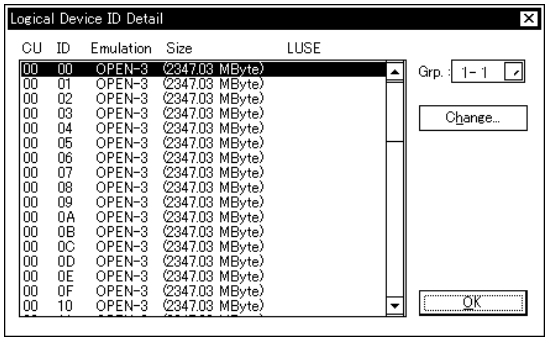


Definition Screen for LDEV ID.
Select (CL) the parity group to be defined and select (CL) a function from the [LDEV ID] list box.
[Linear...]: LDEV ID is assigned to LDEV in the order of parity groups. See step 10-1.
[Disperse...]: LDEV is assigned discretely in the order of parity groups. See step 10-1.
[Detail...]: A screen to define LDEV in detail is displayed. See step 10-2. (When plural groups are selected (CL), it is invalid.)
[Clear]: Select (CL) [Clear] to delete.
Grp*: The top parity group where RAID Concatenation is installed.

- '-----' is displayed in the Status area for the parity group to which LDEV ID is not assigned.

After setting up all items, select (CL) [>>Next]. (Go to Step 11)

10-1. Detailed Definition Screen for LDEV ID

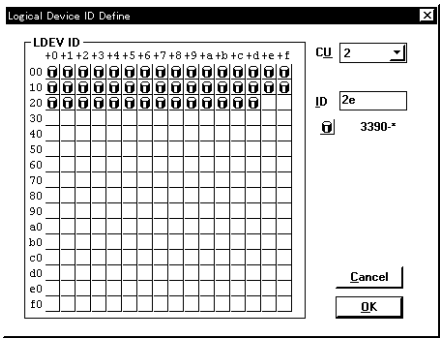


LDEV ID is defined in detail for each LDEV in the parity group.
Select (CL) LDEV from the list box and select (CL) [Change...].
The screen for LDEV ID input is displayed.
After setting, select (CL) [OK]. Return to step 10

- '-----' is displayed in the CU area and the ID area for the LDEV to which LDEV ID is not assigned.

Note: In the case of a RAID Concatenation Group, LDEV of the parity group selected by the "Grp List" is displayed.

10-2. Input LDEV ID



Select CU ID in the CU combo box.
The status of usage of ID in the CU is displayed in the LDEV ID panel.
White disk of panel: not used
Patterned disk of panel: using
Input LDEV ID you want to set or the head LDEV ID in the ID Edit box.
After setting, select (CL) [OK]. Return to step 10-1

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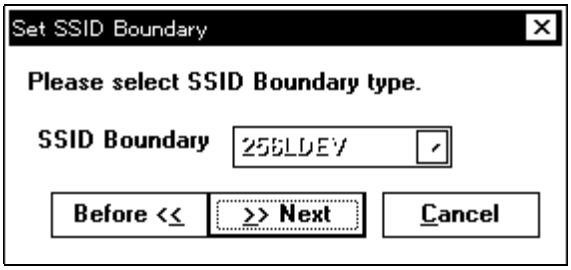
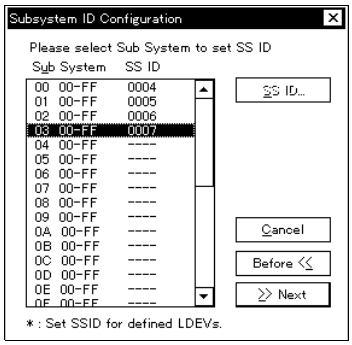
11. <Define Subsystem ID Boundary>
Press (CL) the [>>Next] button to change the screen to the “Set SSID Boundary” screen.

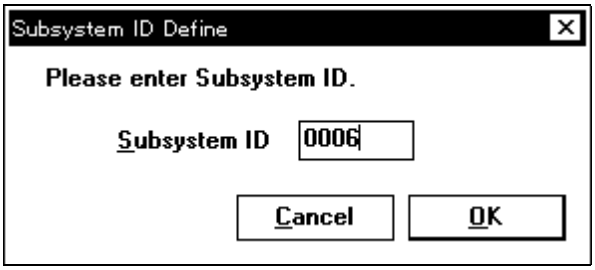


12. <Define Subsystem ID>
To define Subsystem ID, select (CL) the item from the list box and select (CL) [SSID]. See step 12-1.

After setting, select (CL) [>>Next].

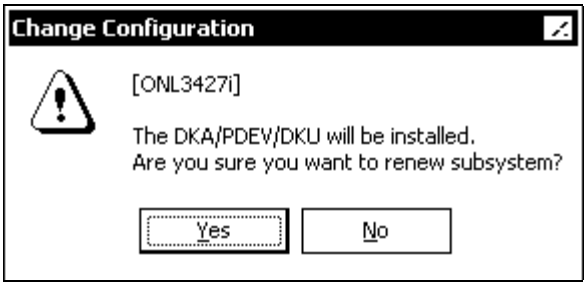


12-1. Define Subsystem ID and select (CL) [OK].
Return to step 12.



13. <Start installation>
Select (CL) [Yes] in response to “The DKA/PDEV/DKU will be installed. Are you sure you want to renew subsystem?”.

When [No] is selected (CL), returns to INST03-DKA-1920 step 3.



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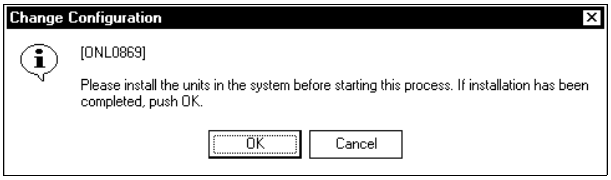
14. <Download microprogram>
    Microprograms are automatically downloaded for each processor.

15. <Install DKA>
    “Upgrading of the DKA...”

16. <Check that hardware components are installed>
    At this point refrain from pressing the [OK] button.
    “Please install the units in the system before starting this process. If installation has been completed, push OK.” is displayed.



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3. Installation Procedure of Additional Disk Adapter (DKC-F460I-200)

When the additional disk adapter is not to be added, go to Step 4, “Installation Procedure of HDD Canister”.

Note: Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

3-1 Insertion of the PCBs

Note: Make sure that a color of the levers of the PCB to be installed is blue. Never insert a PCB whose lever is not blue.

a. Remove the dummy plate installed in the installation location referring to the Fig. 3.11.9-13. (Note) Dummy plates should be stored for future use in De-installation.
b. Insert the PCBs to the correct locations in the Logic Box. Refer to Table 3.11.9-1.
c. Fasten the two screws referring to Fig. 3.11.9-14.

Table 3.11.9-1 Inserting Location (Rear of the unit)

Cluster	CL2							CL1				
Slot No.	M	L	K	J	H	G	F	E	D	C	B	A
Function	CSW	DKA	DKA	DKA	DKA	CACHE	CACHE	DKA	DKA	DKA	DKA	CSW
Location No.	CSW -2M	DKA -2L	DKA -2K	DKA -2J	DKA -2H	CACHE -2G	CACHE -2F	DKA -1E	DKA -1D	DKA -1C	DKA -1B	CSW -1A
Order of addition		Add.3	Add.2	Add.1	Basic			Add.3	Add.2	Add.1	Basic	
Number of DKAs set through the SVP		–	–	–	2			–	–	–	2	
		–	–	4				–	–	4		
		–	6					–	6			
		8						8				

Up to 4 disk adapters can be installed in the subsystem.

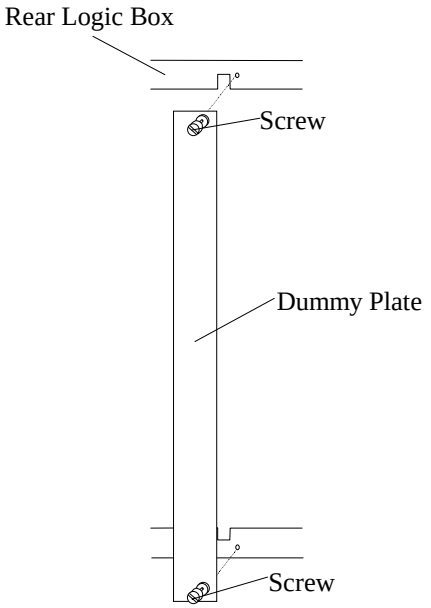

Fig. 3.11.9-13 Removal of Dummy Plate

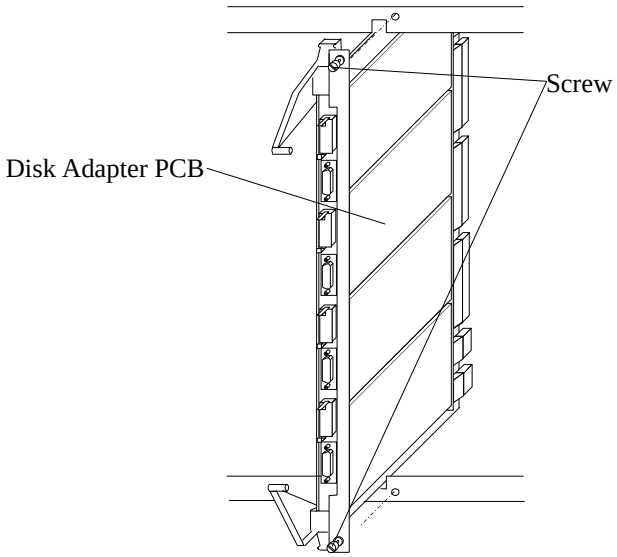

Fig. 3.11.9-14 Insertion of PCB

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3-2 Connection of cables

In case of Add.1

CAUTION

A serious failure occurs if any of cables/connectors is wrongly connected.
Since a label bearing a connection destination is affixed on each cable/connector, work very carefully referring to it and the wiring diagram.

- Colors of the labels of the subsystem shipped from the factory from June of 2002 and on are as follows. Labels on the cluster1 (CL1) side and the cluster2 (CL2) side are white and yellow respectively.

a. Connect the cables to the sub-edge of PCBs. (Refer to Fig. 3.11.9-15.)

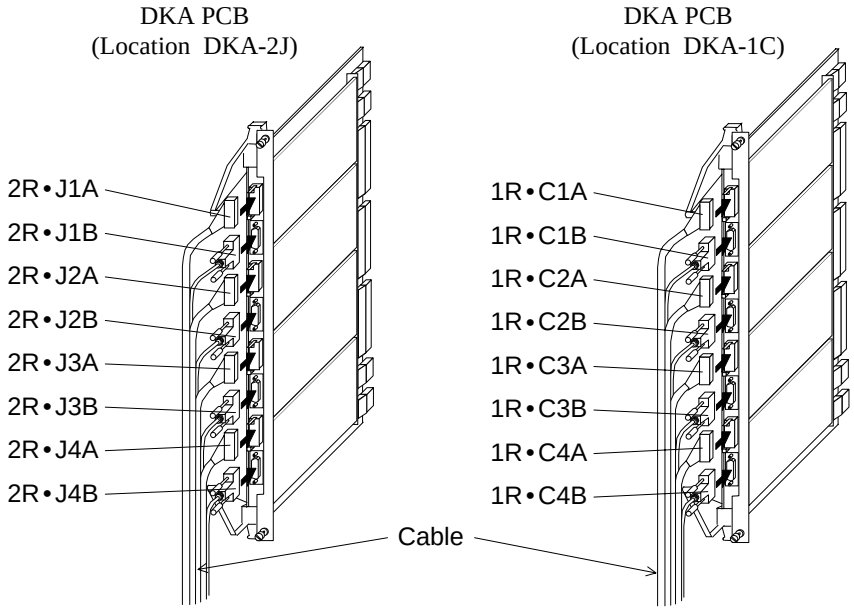

Fig.3.11.9-15 Connection of cable (Add.1)

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In case of Add.2

Caution:
Make sure that the AC power is applied to the added DKUs (DKU-L1 and DKU-L2) and the main breakers of the DKUs (DKU-L1 and DKU-L2) are turned on.
The DKU is automatically powered on when the DEV interface cable is connected to the DKA.

⚠ CAUTION

A serious failure occurs if any of cables/connectors is wrongly connected.
Since a label bearing a connection destination is affixed on each cable/connector, work very carefully referring to it and the wiring diagram.

- Colors of the labels of the subsystem shipped from the factory from June of 2002 and on are as follows. Labels on the cluster1 (CL1) side and the cluster2 (CL2) side are white and yellow respectively.

a. Connect the cables to the sub-edge of PCBs.

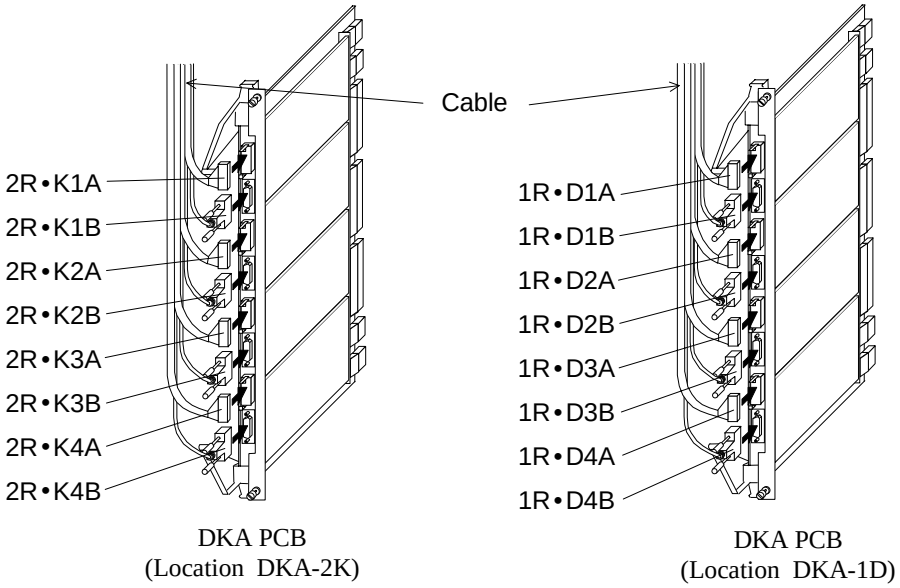

Fig.3.11.9-16 Connection of cable (Add.2)

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In case of Add.3

Caution:
Make sure that the AC power is applied to the added DKUs (DKU-L1 and DKU-L2) and the main breakers of the DKUs (DKU-L1 and DKU-L2) are turned on.
The DKU is automatically powered on when the DEV interface cable is connected to the DKA.

⚠ CAUTION

A serious failure occurs if any of cables/connectors is wrongly connected.
Since a label bearing a connection destination is affixed on each cable/connector, work very carefully referring to it and the wiring diagram.

- Colors of the labels of the subsystem shipped from the factory from June of 2002 and on are as follows. Labels on the cluster1 (CL1) side and the cluster2 (CL2) side are white and yellow respectively.

a. Connect the cables to the sub-edge of PCBs.

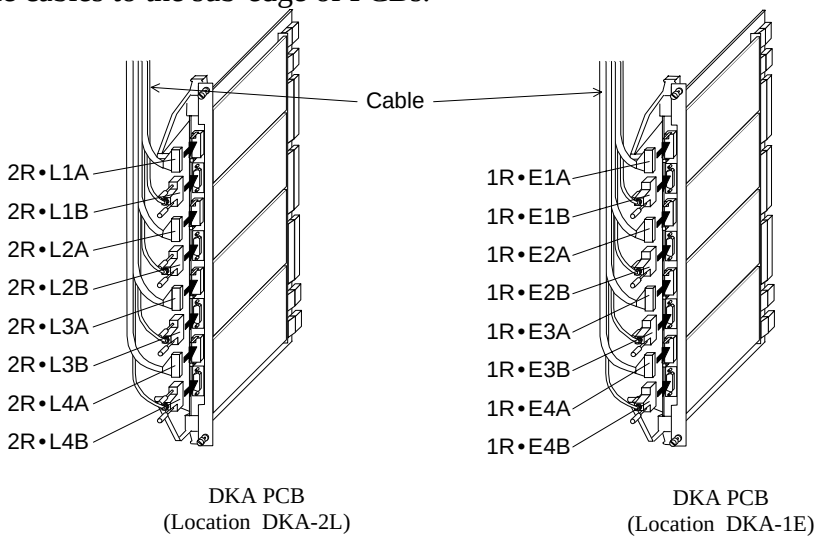

Fig.3.11.9-17 Connection of cable (Add.3)

3-3 Attachment of the nameplate

a. Attach the nameplate referring to Fig. 3.11.9-18.

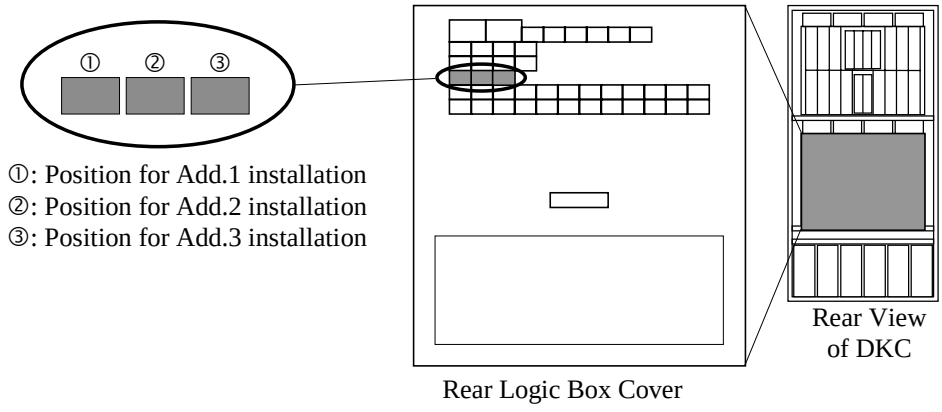

Fig. 3.11.9-18 Attachment of Nameplate

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4. Installation Procedure of HDD Canister

4-1 Confirmation of position to install HDD canister

(i) RAID5(3D+1P)/RAID1(2D+2D)

Relations between the installation locations of the RAID groups and the RAID group numbers set through the SVP are shown in Table 3.11.9-2.

Table 3.11.9-2 Relation between HDDs installation order and RAID group number (3D+1P/2D+2D)

	L2 DKU		L1 DKU		DKC		R1 DKU		R2 DKU	
	Installation Order	RAID Group No.	Installation Order	RAID Group No.			Installation Order	RAID Group No.	Installation Order	RAID Group No.
Upper	223	8-1	159	4-1	4th DKA Pair	2nd DKA Pair	032	2-1	096	6-1
	224	8-2	160	4-2			033	2-2	097	6-2
	225	8-3	161	4-3			034	2-3	098	6-3
	226	8-4	162	4-4			035	2-4	099	6-4
	227	8-5	163	4-5			036	2-5	100	6-5
	228	8-6	164	4-6			037	2-6	101	6-6
	229	8-7	165	4-7			038	2-7	102	6-7
	230	8-8	166	4-8			039	2-8	103	6-8
	231	8-9	167	4-9			040	2-9	104	6-9
	232	8-10	168	4-10			041	2-10	105	6-10
	233	8-11	169	4-11			042	2-11	106	6-11
	234	8-12	170	4-12			043	2-12	107	6-12
	235	8-13	171	4-13			044	2-13	108	6-13
	236	8-14	172	4-14			045	2-14	109	6-14
	237	8-15	173	4-15			046	2-15	110	6-15
	238	8-16	174(Spare) *2	4-16			047(Spare) *2	2-16	111	6-16
	239	8-17	175	4-17			048	2-17	112	6-17
	240	8-18	176	4-18			049	2-18	113	6-18
	241	8-19	177	4-19			050	2-19	114	6-19
	242	8-20	178	4-20			051	2-20	115	6-20
	243	8-21	179	4-21			052	2-21	116	6-21
	244	8-22	180	4-22			053	2-22	117	6-22
	245	8-23	181	4-23			054	2-23	118	6-23
	246	8-24	182	4-24			055	2-24	119	6-24
	247	8-25	183	4-25			056	2-25	120	6-25
	248	8-26	184	4-26			057	2-26	121	6-26
	249	8-27	185	4-27			058	2-27	122	6-27
	250	8-28	186	4-28			059	2-28	123	6-28
	251	8-29	187	4-29			060	2-29	124	6-29
	252	8-30	188	4-30			061	2-30	125	6-30
	253	8-31	189	4-31			062	2-31	126	6-31
	254	8-32	190	4-32			063	2-32	127	6-32
Lower	191	7-1	128	3-1	3rd DKA Pair	1st DKA Pair	001	1-1	064	5-1
	192	7-2	129	3-2			002	1-2	065	5-2
	193	7-3	130	3-3			003	1-3	066	5-3
	194	7-4	131	3-4			004	1-4	067	5-4
	195	7-5	132	3-5			005	1-5	068	5-5
	196	7-6	133	3-6			006	1-6	069	5-6
	197	7-7	134	3-7			007	1-7	070	5-7
	198	7-8	135	3-8			008	1-8	071	5-8
	199	7-9	136	3-9			009	1-9	072	5-9
	200	7-10	137	3-10			010	1-10	073	5-10
	201	7-11	138	3-11			011	1-11	074	5-11
	202	7-12	139	3-12			012	1-12	075	5-12
	203	7-13	140	3-13			013	1-13	076	5-13
	204	7-14	141	3-14			014	1-14	077	5-14
	205	7-15	142	3-15			015	1-15	078	5-15
	206	7-16	Spare *1	3-16			Spare *1	1-16	079	5-16
	207	7-17	143	3-17			016	1-17	080	5-17
	208	7-18	144	3-18			017	1-18	081	5-18
	209	7-19	145	3-19			018	1-19	082	5-19
	210	7-20	146	3-20			019	1-20	083	5-20
	211	7-21	147	3-21			020	1-21	084	5-21
	212	7-22	148	3-22			021	1-22	085	5-22
	213	7-23	149	3-23			022	1-23	086	5-23
	214	7-24	150	3-24			023	1-24	087	5-24
	215	7-25	151	3-25			024	1-25	088	5-25
	216	7-26	152	3-26			025	1-26	089	5-26
	217	7-27	153	3-27			026	1-27	090	5-27
	218	7-28	154	3-28			027	1-28	091	5-28
	219	7-29	155	3-29			028	1-29	092	5-29
	220	7-30	156	3-30			029	1-30	093	5-30
	221	7-31	157	3-31			030	1-31	094	5-31
	222	7-32	158	3-32			031	1-32	095	5-32

*1: To be left vacant or a spare disk is to be installed. *2: A data or spare disk is to be installed.

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(1) Make sure of the location where the RAID group is installed and that where the HDD canister is to be added.

No.	Model Number	Model Name	Data and Parity
1	DKU-F455I-36K4/72J4/72K4/146J4/146JF/146JQ	4 HDD Canisters	Data and Parity Drive

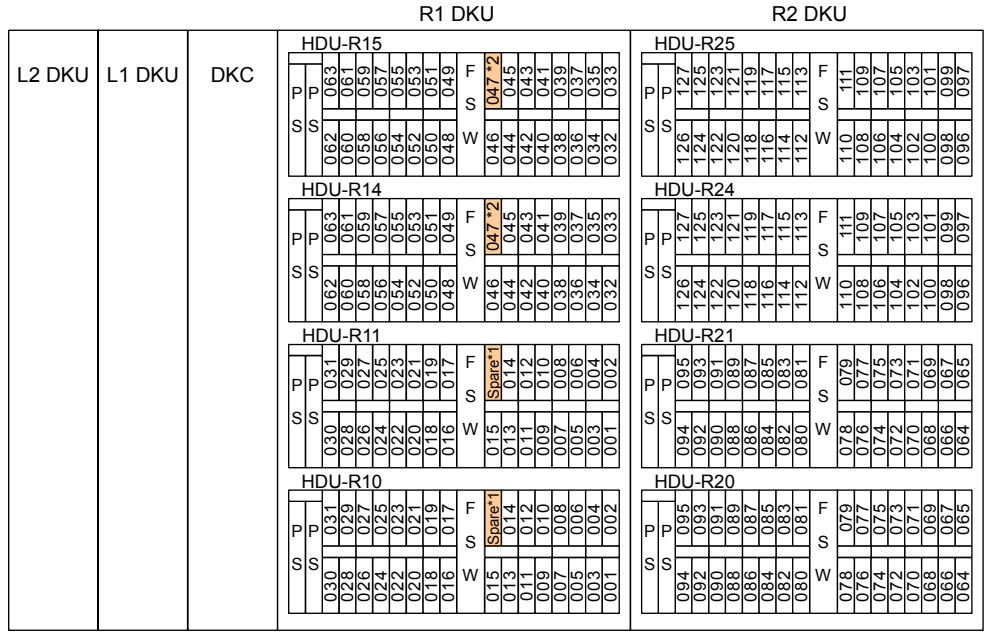

Fig. 3.11.9-19 (3D+1P) or (2D+2P) Data Drive/Parity Drive Expansion Sequence (1/2)

The relationship between HDDs installation order and RAID group number is shown in the Table 3.11.9-2.

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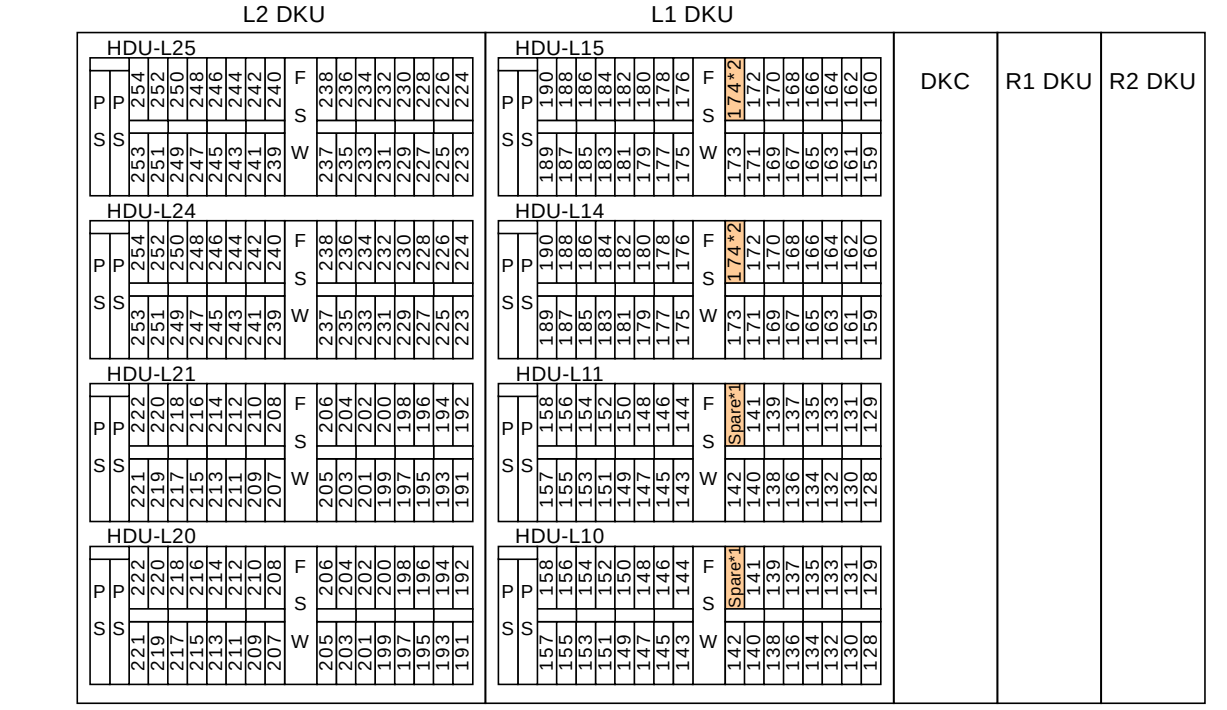

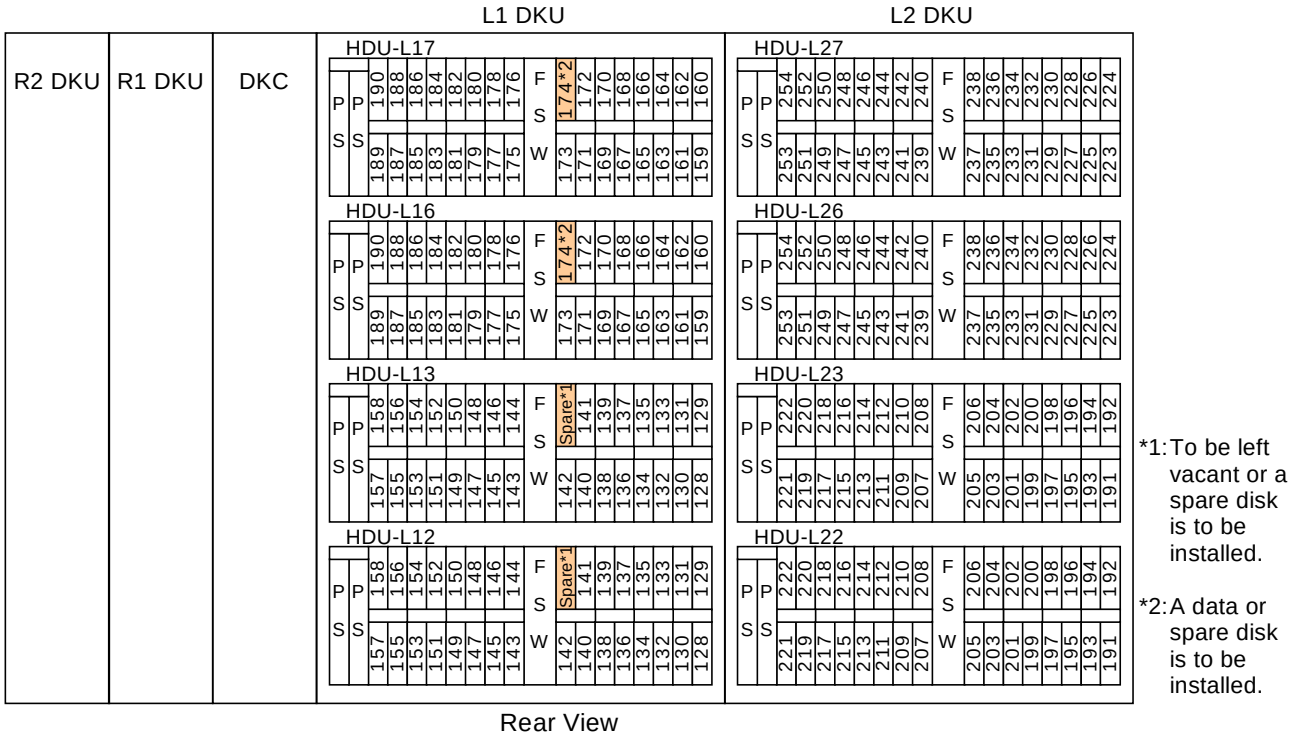

Fig. 3.11.9-19 (3D+1P) or (2D+2P) Data Drive/Parity Drive Expansion Sequence (2/2)

The relationship between HDDs installation order and RAID group number is shown in the Table 3.11.9-2.

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(ii) RAID5 (7D+1P)

Relations between the installation locations of the RAID groups and the RAID group numbers set through the SVP are shown in Table 3.11.9-3.

Table 3.11.9-3 Relation between HDDs installation order and RAID group number (7D+1P)

L2 DKU		L1 DKU		DKC		R1 DKU		R2 DKU	
Installation Order	RAID Group No.	Installation Order	RAID Group No.			Installation Order	RAID Group No.	Installation Order	RAID Group No.
095	7-1 , (8-1)	064	3-1 , (4-1)			001	1-1 , (2-1)	032	5-1 , (6-1)
096	7-2 , (8-2)	065	3-2 , (4-2)			002	1-2 , (2-2)	033	5-2 , (6-2)
097	7-3 , (8-3)	066	3-3 , (4-3)			003	1-3 , (2-3)	034	5-3 , (6-3)
098	7-4 , (8-4)	067	3-4 , (4-4)			004	1-4 , (2-4)	035	5-4 , (6-4)
099	7-5 , (8-5)	068	3-5 , (4-5)			005	1-5 , (2-5)	036	5-5 , (6-5)
100	7-6 , (8-6)	069	3-6 , (4-6)			006	1-6 , (2-6)	037	5-6 , (6-6)
101	7-7 , (8-7)	070	3-7 , (4-7)			007	1-7 , (2-7)	038	5-7 , (6-7)
102	7-8 , (8-8)	071	3-8 , (4-8)			008	1-8 , (2-8)	039	5-8 , (6-8)
103	7-9 , (8-9)	072	3-9 , (4-9)			009	1-9 , (2-9)	040	5-9 , (6-9)
104	7-10 , (8-10)	073	3-10 , (4-10)			010	1-10 , (2-10)	041	5-10 , (6-10)
105	7-11 , (8-11)	074	3-11 , (4-11)			011	1-11 , (2-11)	042	5-11 , (6-11)
106	7-12 , (8-12)	075	3-12 , (4-12)			012	1-12 , (2-12)	043	5-12 , (6-12)
107	7-13 , (8-13)	076	3-13 , (4-13)			013	1-13 , (2-13)	044	5-13 , (6-13)
108	7-14 , (8-14)	077	3-14 , (4-14)			014	1-14 , (2-14)	045	5-14 , (6-14)
109	7-15 , (8-15)	078	3-15 , (4-15)	3rd / 4th	1st / 2nd	015	1-15 , (2-15)	046	5-15 , (6-15)
110	7-16 , (8-16)	(Spare)*1	3-16 , (4-16)	DKA	DKA	(Spare)*1	1-16 , (2-16)	047	5-16 , (6-16)
111	7-17 , (8-17)	079	3-17 , (4-17)	Pairs	Pairs	016	1-17 , (2-17)	048	5-17 , (6-17)
112	7-18 , (8-18)	080	3-18 , (4-18)			017	1-18 , (2-18)	049	5-18 , (6-18)
113	7-19 , (8-19)	081	3-19 , (4-19)			018	1-19 , (2-19)	050	5-19 , (6-19)
114	7-20 , (8-20)	082	3-20 , (4-20)			019	1-20 , (2-20)	051	5-20 , (6-20)
115	7-21 , (8-21)	083	3-21 , (4-21)			020	1-21 , (2-21)	052	5-21 , (6-21)
116	7-22 , (8-22)	084	3-22 , (4-22)			021	1-22 , (2-22)	053	5-22 , (6-22)
117	7-23 , (8-23)	085	3-23 , (4-23)			022	1-23 , (2-23)	054	5-23 , (6-23)
118	7-24 , (8-24)	086	3-24 , (4-24)			023	1-24 , (2-24)	055	5-24 , (6-24)
119	7-25 , (8-25)	087	3-25 , (4-25)			024	1-25 , (2-25)	056	5-25 , (6-25)
120	7-26 , (8-26)	088	3-26 , (4-26)			025	1-26 , (2-26)	057	5-26 , (6-26)
121	7-27 , (8-27)	089	3-27 , (4-27)			026	1-27 , (2-27)	058	5-27 , (6-27)
122	7-28 , (8-28)	090	3-28 , (4-28)			027	1-28 , (2-28)	059	5-28 , (6-28)
123	7-29 , (8-29)	091	3-29 , (4-29)			028	1-29 , (2-29)	060	5-29 , (6-29)
124	7-30 , (8-30)	092	3-30 , (4-30)			029	1-30 , (2-30)	061	5-30 , (6-30)
125	7-31 , (8-31)	093	3-31 , (4-31)			030	1-31 , (2-31)	062	5-31 , (6-31)
126	7-32 , (8-32)	094	3-32 , (4-32)			031	1-32 , (2-32)	063	5-32 , (6-32)

*1: To be left vacant or a spare disk is to be installed.

- Install RAID 5 (7D+1P) forming pairs using the same number of the two RAID groups (RAID groups 1 and 2, 3 and 4, 5 and 6, and 7 and 8) of RAID 5 (3D+1P).
  (Example: RAID group numbers 1-1 and 2-1)
  The types of HDDs to be installed in each pair must be the same.
- In the case of RAID 5 (7D+1P), only odd RAID numbers are displayed on the SVP. (Group numbers shown in parentheses in the table above are not displayed.)
- When RAID 5 (3D+1P) or RAID 1 (2D+2D) and RAID 5 (7D+1P) are configured mixture, note that duplicated group numbers are excluded.
  Example: When Group No. 1-1 is configured for RAID 5 (7D+1P), Group No. 2-1 is excluded and cannot be configure for RAID 5 (3D+1P).

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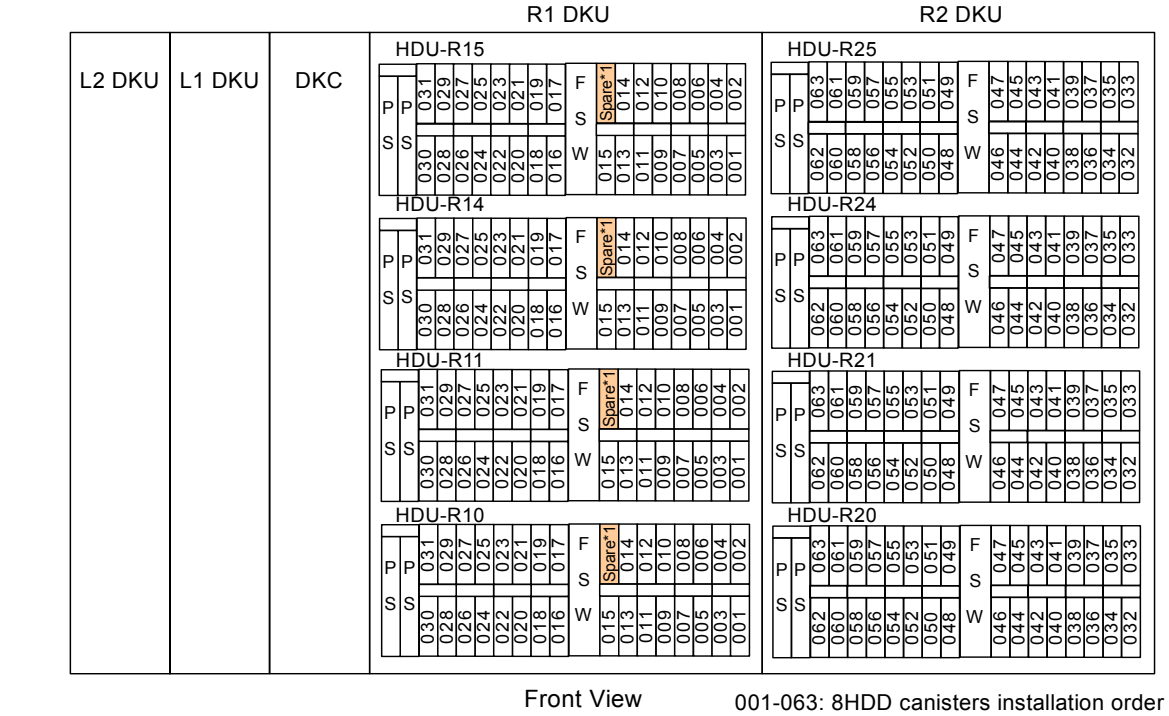
(1) Make sure of the location where the RAID group is installed and that where the HDD canister is to be added.

No.	Model Number	Model Name	Data and Parity
1	DKU-F455I-36K4/72J4/72K4/146J4/146JF/146JQ	4 HDD Canisters x 2sets	Data and Parity Drive



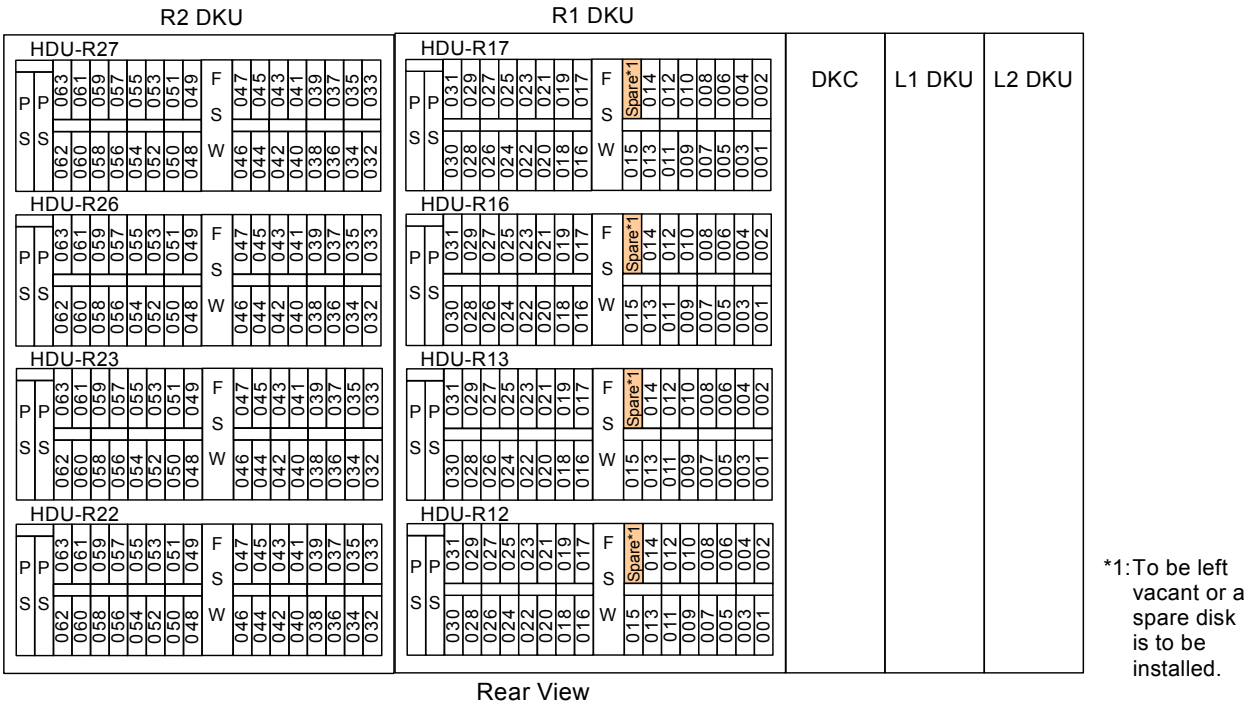


Fig. 3.11.9-20 (7D+1P) Data Drive/Parity Drive Expansion Sequence (1/2)

The relationship between HDDs installation order and RAID group number is shown in the Table 3.11.9-3.

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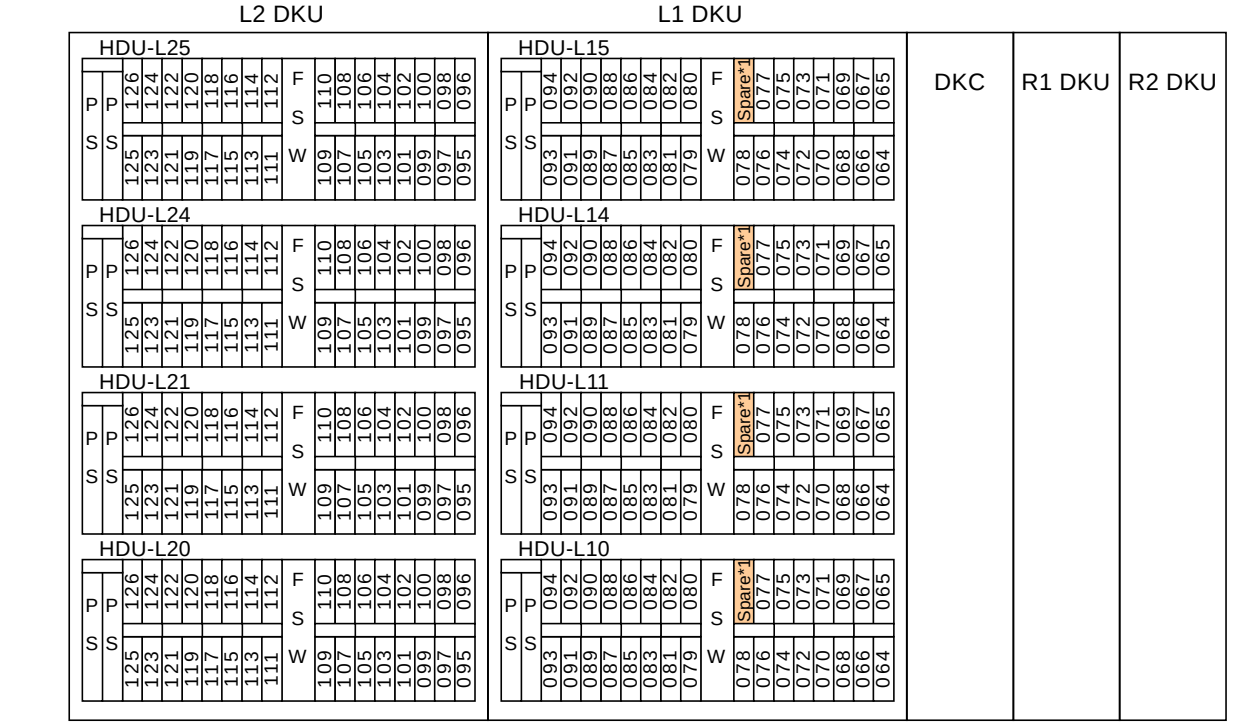

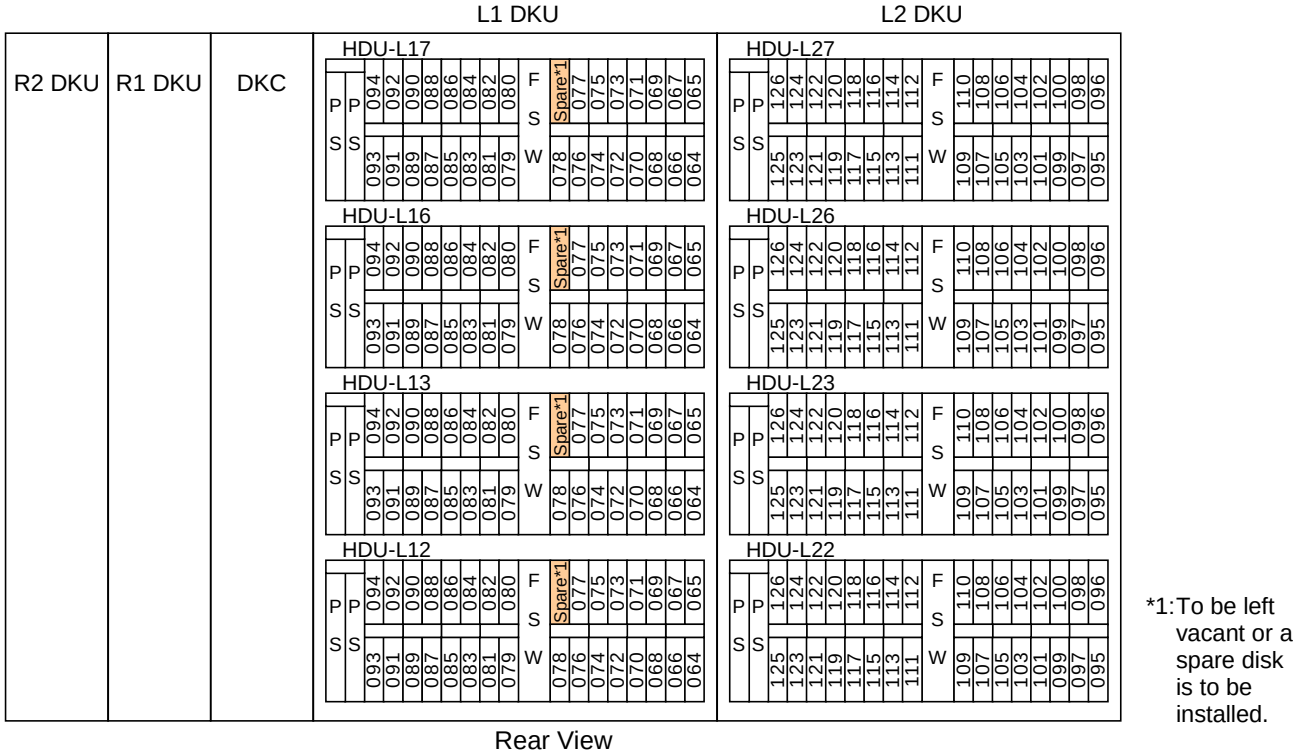

Fig. 3.11.9-20 (7D+1P) Data Drive/Parity Drive Expansion Sequence (2/2)

The relationship between HDDs installation order and RAID group number is shown in the Table 3.11.9-3.

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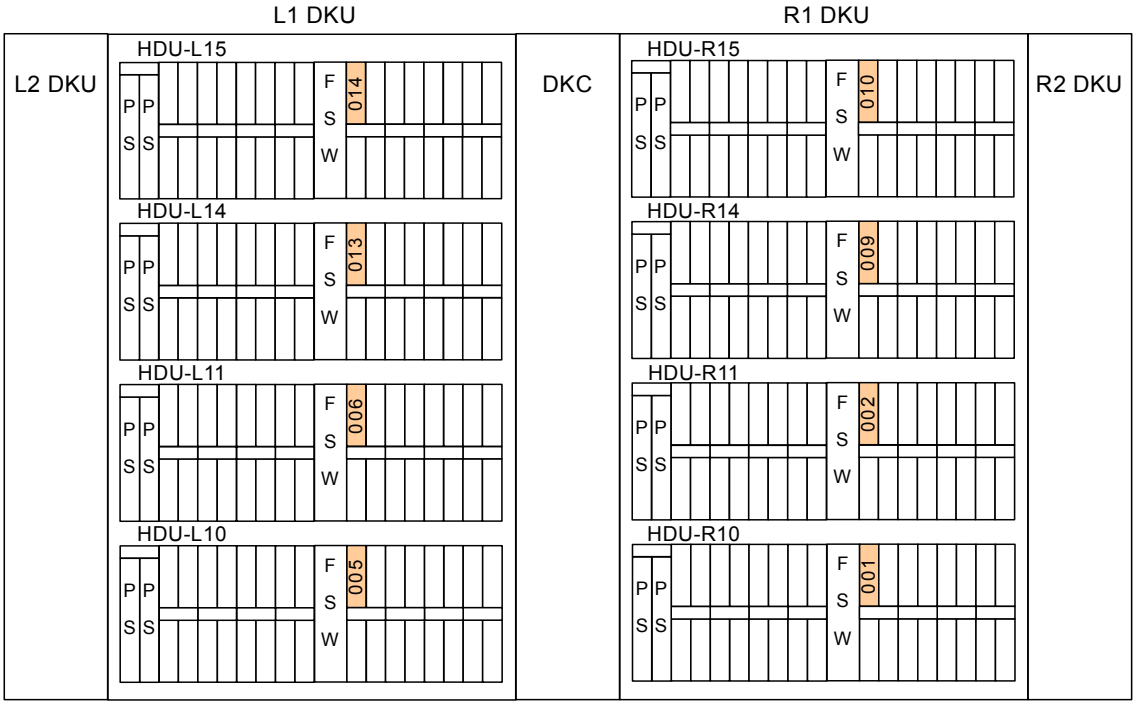
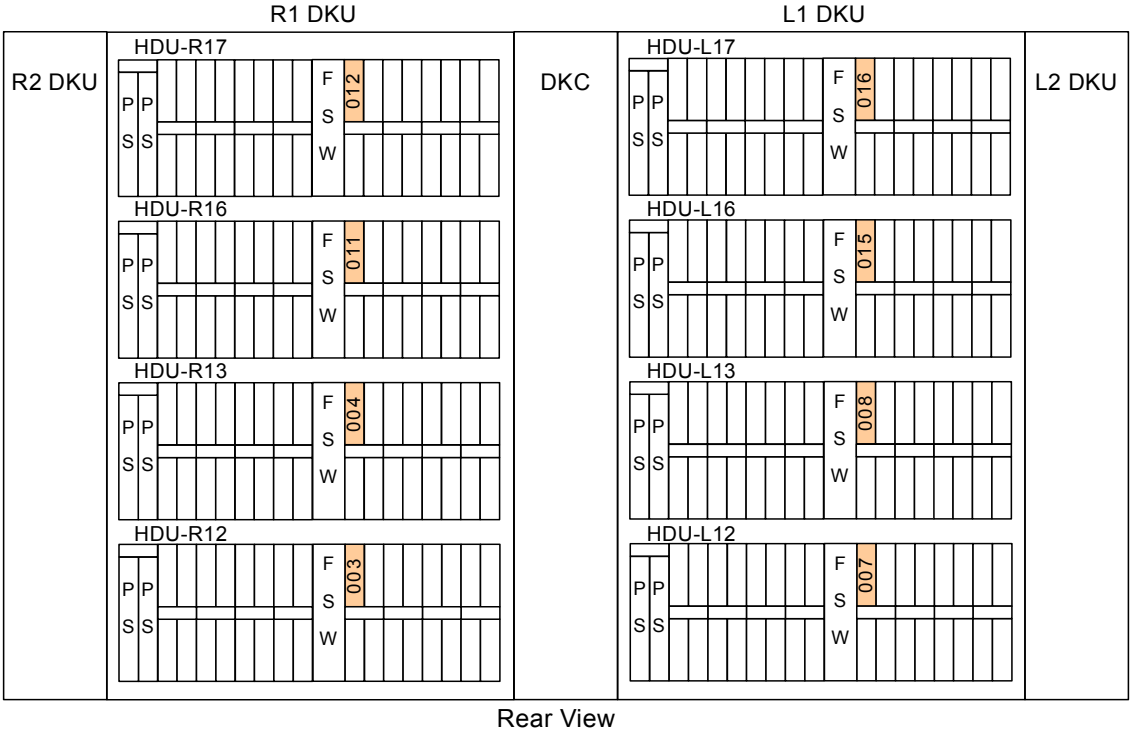
(iii) Spare HDD

No.	Model Number	Model Name	Data and Parity
1	DKU-F455I-36K1/72J1/72K1/146J1/146JS/146JM	1 HDD Canister	Spare Drive



Front View

001-016: Spare HDD canister installation order



Rear View

Fig. 3.11.9-21 Spare Drive Expansion Sequence

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4-2 Installation of the HDD Canister.

Notice:
(1) Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.
(2) Since the HDD is a precision component, handle it very carefully not to apply a vibration or shock to it.

a. Remove the dummy canister from the HDU Box.
When the dummy canister cannot be removed by pulling of it only, remove it referring to page INST03-DKA-3000.
b. Install the HDD canister. (For the detailed procedure for installation, refer to the procedure for installing HDD canister on page INST03-DKA-3010.)

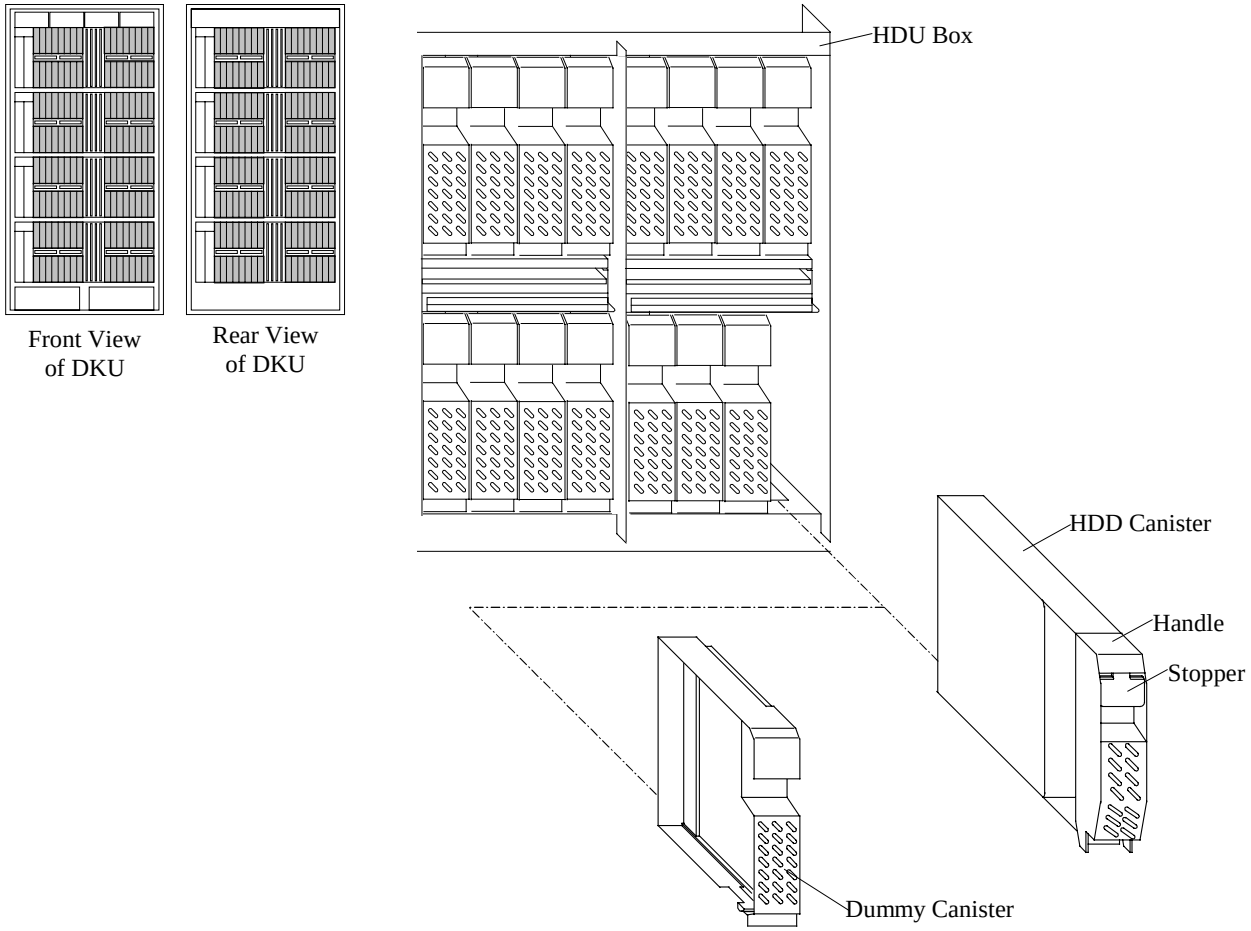

Fig. 3.11.9-22 Installation of HDD Canister

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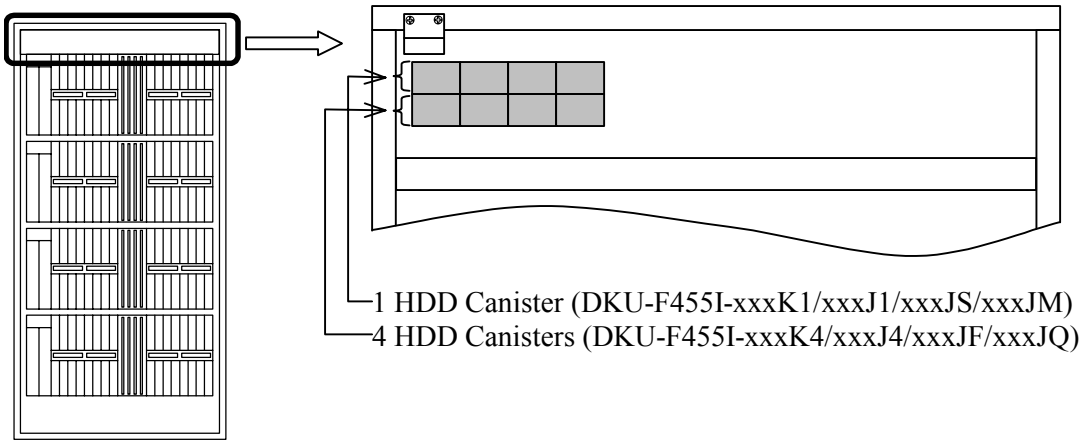
4-3 Attachment of the nameplate.

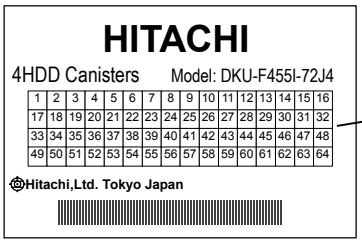
a. When the nameplate is not attached, attach the nameplate regardless of the model number from the left of the unit. Paint out mounting numbers on the nameplate.



Rear View
of DKU

[Example]

When the 7 DKU-F455I-72J4 sets are installed



							8	9	10	11	12	13	14	15	16
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64

Fig. 3.11.9-23 Attachment of Nameplate

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5. Installation Procedure of DEV Interface Cable 2 (DKU-F455I-EXC)

Caution:
The addition cannot be done unless the AC power is applied to the added DKU and the main breaker of the DKU is turned on.

Between HDU-R10-R17 and HDU-R20-R27

a. Connect the DEV interface cables to the FSW PCBs in the DKU-R1 frame referring to figures 3.11.9-24 and 3.11.9-25.

⚠ CAUTION

A serious failure occurs if any of cables/connectors is wrongly connected.
Since a label bearing a connection destination is affixed on each cable/connector, work very carefully referring to it and the wiring diagram.

- Colors of the labels of the subsystem shipped from the factory from June of 2002 and on are as follows. Labels on the cluster1 (CL1) side and the cluster2 (CL2) side are white and yellow respectively.

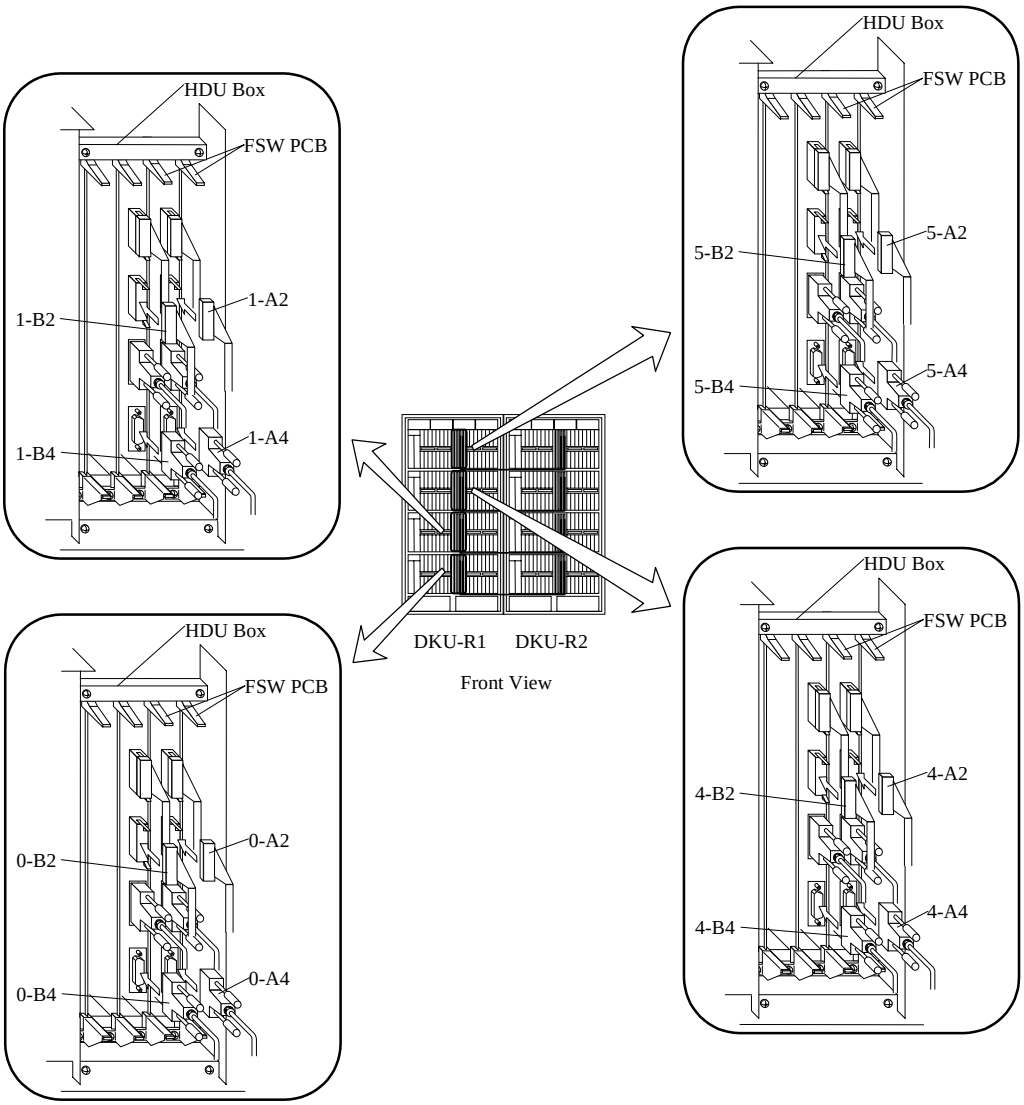

Fig. 3.11.9-24 Connection of the DEV Interface Cables

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⚠ CAUTION

A serious failure occurs if any of cables/connectors is wrongly connected.
Since a label bearing a connection destination is affixed on each cable/connector, work very carefully referring to it and the wiring diagram.

- Colors of the labels of the subsystem shipped from the factory from June of 2002 and on are as follows. Labels on the cluster1 (CL1) side and the cluster2 (CL2) side are white and yellow respectively.

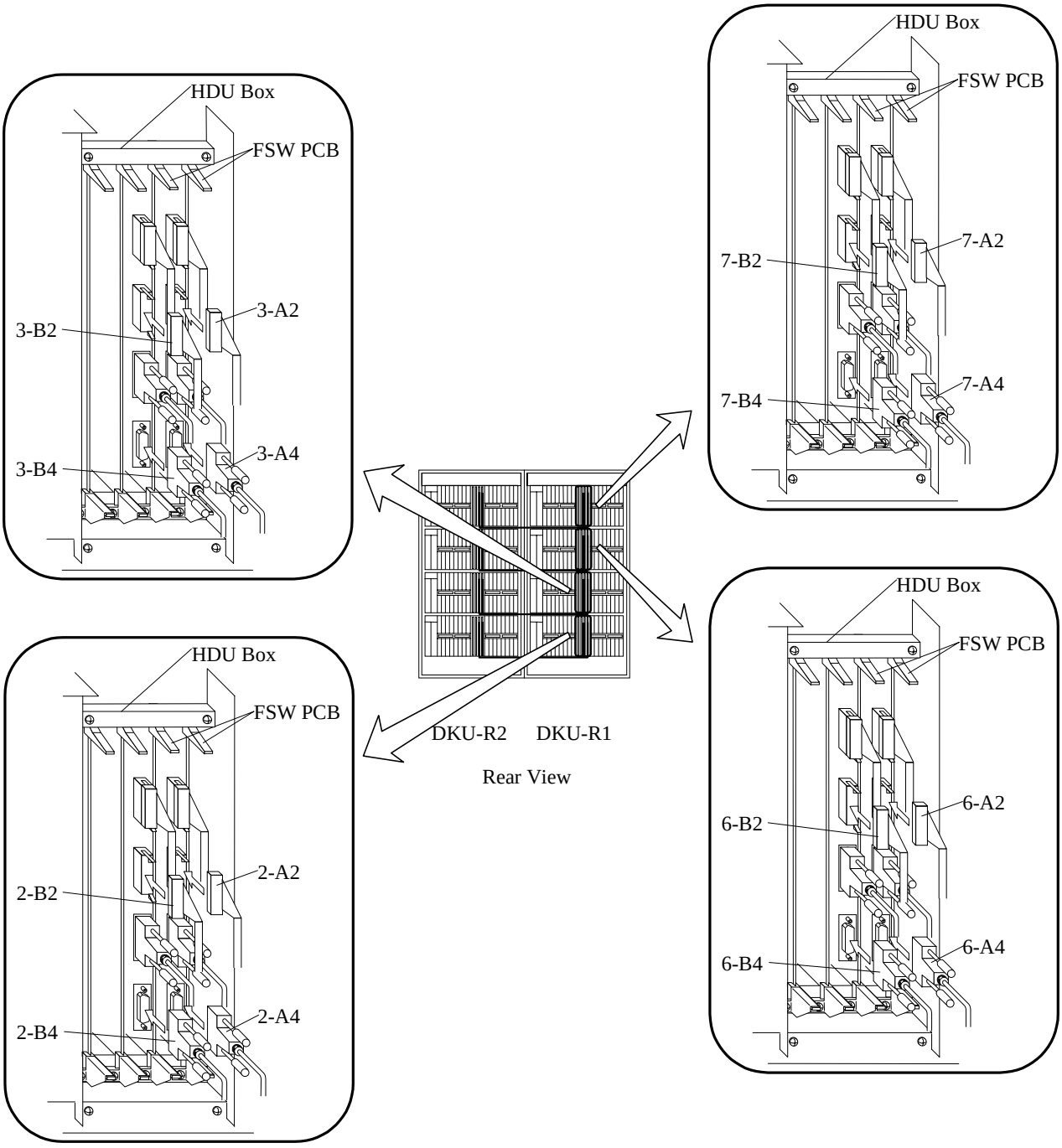

Fig. 3.11.9-25 Connection of the DEV Interface Cables

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Between HDU-L10-L17 and HDU-L20-L27

a. Connect the DEV interface cables to the FSW PCBs in the DKU-L1 frame referring to figures 3.11.9-26 and 3.11.9-27.

⚠ CAUTION

A serious failure occurs if any of cables/connectors is wrongly connected.
Since a label bearing a connection destination is affixed on each cable/connector, work very carefully referring to it and the wiring diagram.

- Colors of the labels of the subsystem shipped from the factory from June of 2002 and on are as follows. Labels on the cluster1 (CL1) side and the cluster2 (CL2) side are white and yellow respectively.

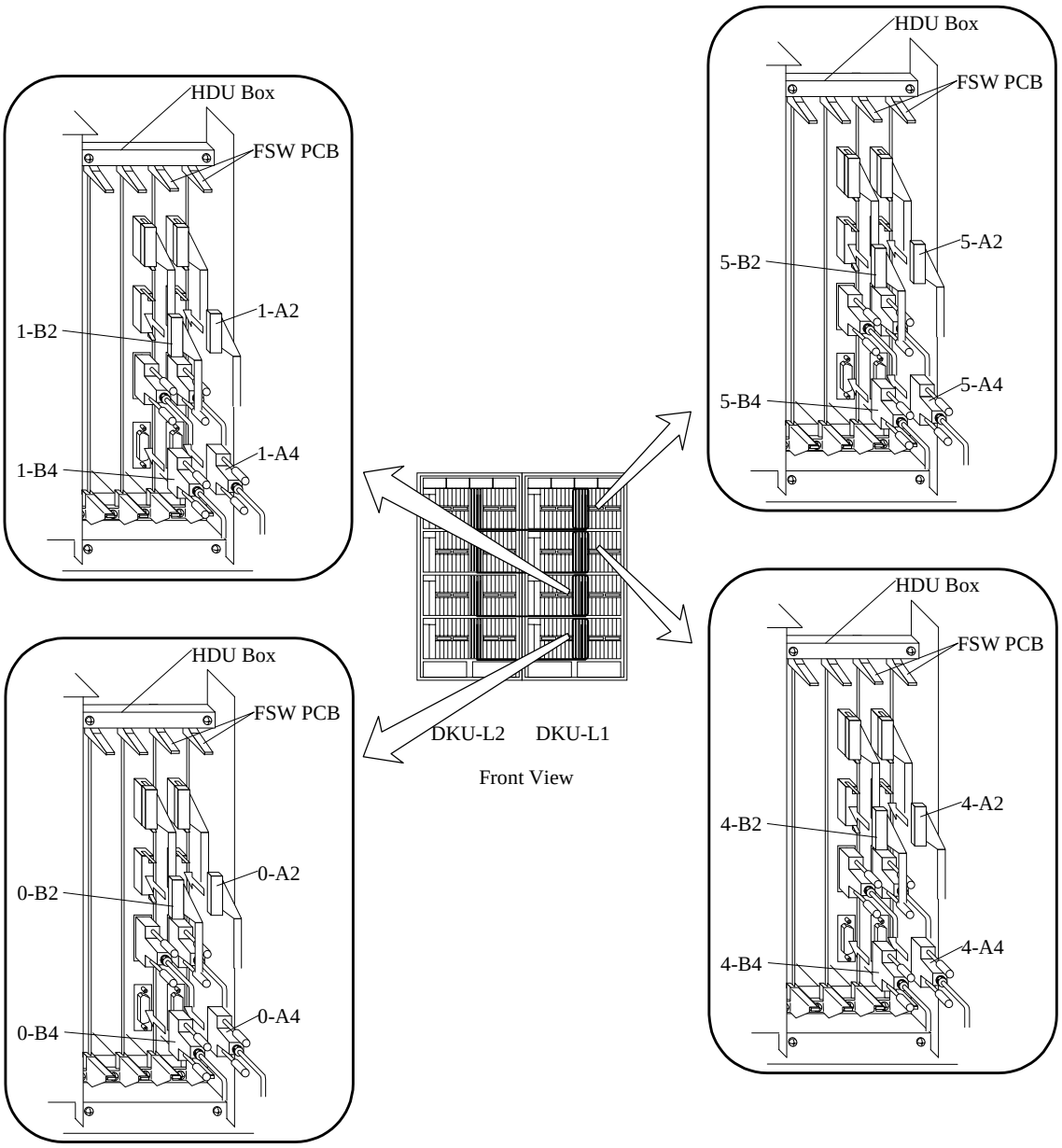

Fig. 3.11.9-26 Connection of the DEV Interface Cables

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CAUTION

A serious failure occurs if any of cables/connectors is wrongly connected.
Since a label bearing a connection destination is affixed on each cable/connector, work very carefully referring to it and the wiring diagram.

- Colors of the labels of the subsystem shipped from the factory from June of 2002 and on are as follows. Labels on the cluster1 (CL1) side and the cluster2 (CL2) side are white and yellow respectively.

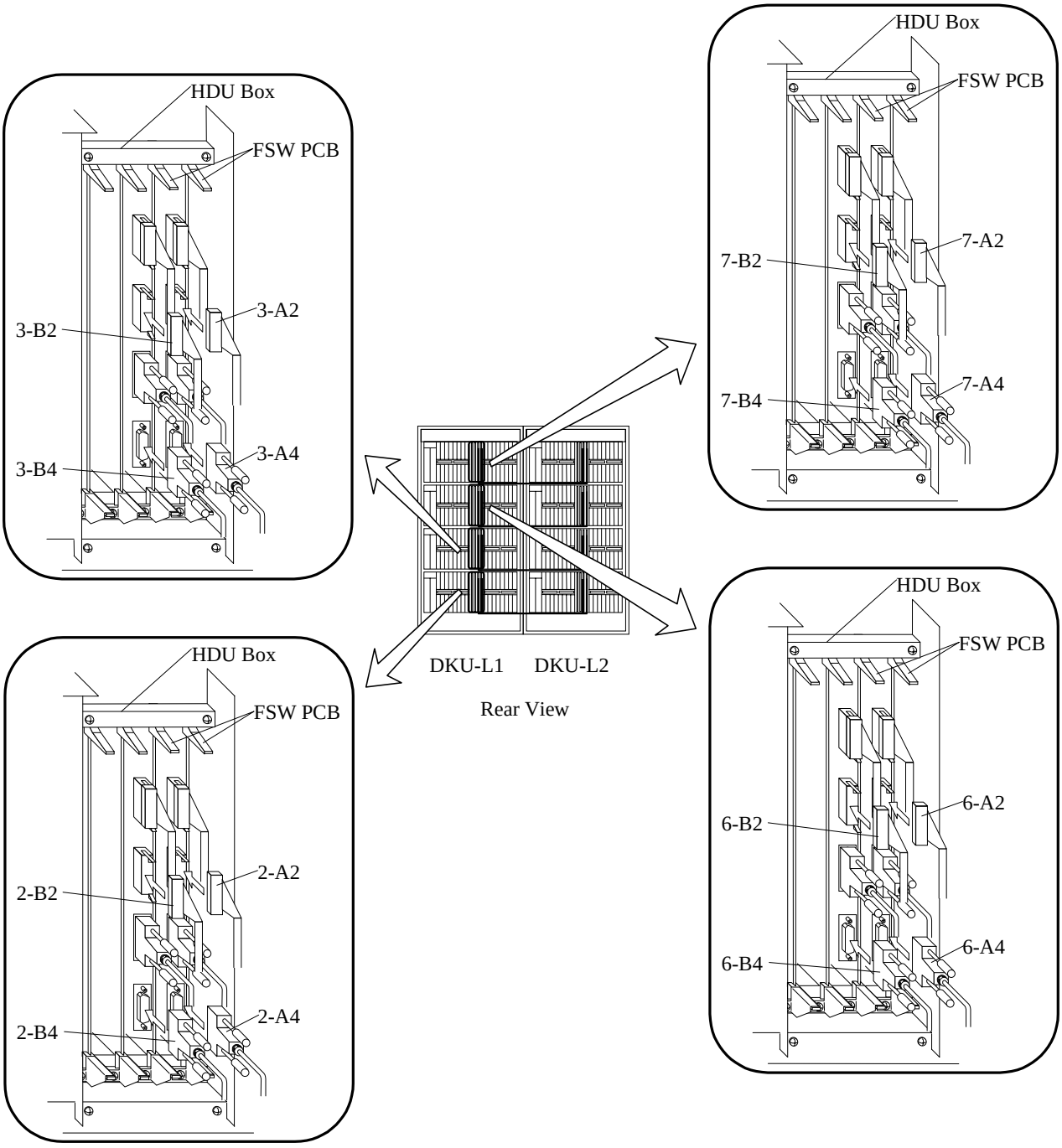

Fig. 3.11.9-27 Connection of the DEV Interface Cables

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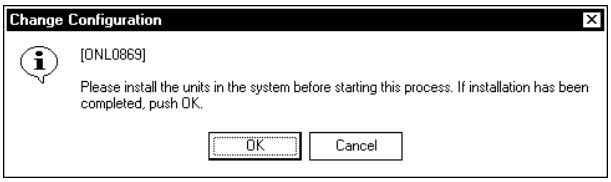
6. SVP post procedure

1. <Check that hardware components are installed>
   Select (CL) [OK] after making sure that all hardware components are installed correctly in response to “Please install the units in the system before starting this process. If installation has been completed, push OK.”.



2.
   When DKA is installed, “Waiting for Power Event... Usually, several minutes (maximum 15 minutes)” is displayed.

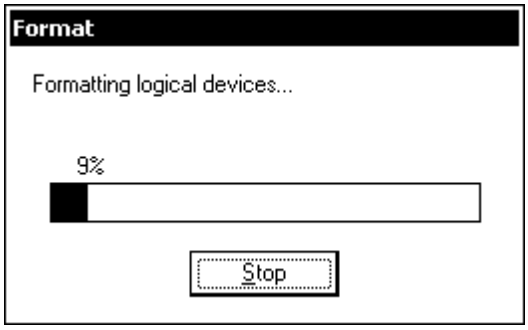
   If [ONL3437E] or [ONL3438E] is displayed, please refer 2.11.1. (INST02-630)
   If [ONL3441E] or [ONL2841W] is displayed, please refer 2.11.2. (INST02-640)

---

3. <DKU PATH INLINE>
   When DKA is installed, “DKU PATH INLINE is now running...” is displayed.

---

4. <LDEV FORMAT>
   “Formatting the logical device...” is displayed when Parity Group is defined.



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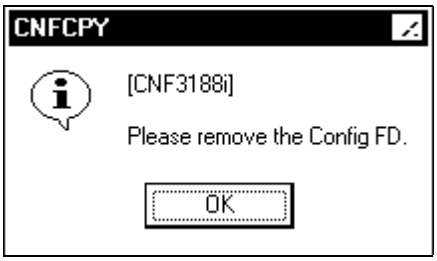
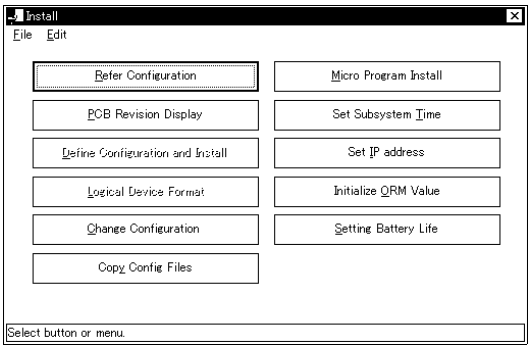
5. <End of system update processing>
"Renewal process has completed. Please check the subsystem status." is displayed when recovery processing on all installed components is completed. Select (CL) [OK] in response to this message.

6.
"Reading subsystem configuration data..." is displayed.
"Please insert the Config FD in the FDD." is displayed.
Insert the configuration FD into FDD, and select (CL) [OK].

7.
When this procedure is completed, the message "Please remove the Config FD." is displayed.
Remove the FD, select (CL) [OK].



8.
After the procedure is completed, return to 'Install'.
Select (CL) [File]-[Exit].



9. <Mode Change>
Change the mode to View Mode.

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7. Installation Procedure of DEV Interface Cable 2 (DKU-F455I-EXC)

Between HDU-R10-R17 and HDU-R20-R27

a. Attach the cable covers with the screw to fix the DEV Interface Cables.

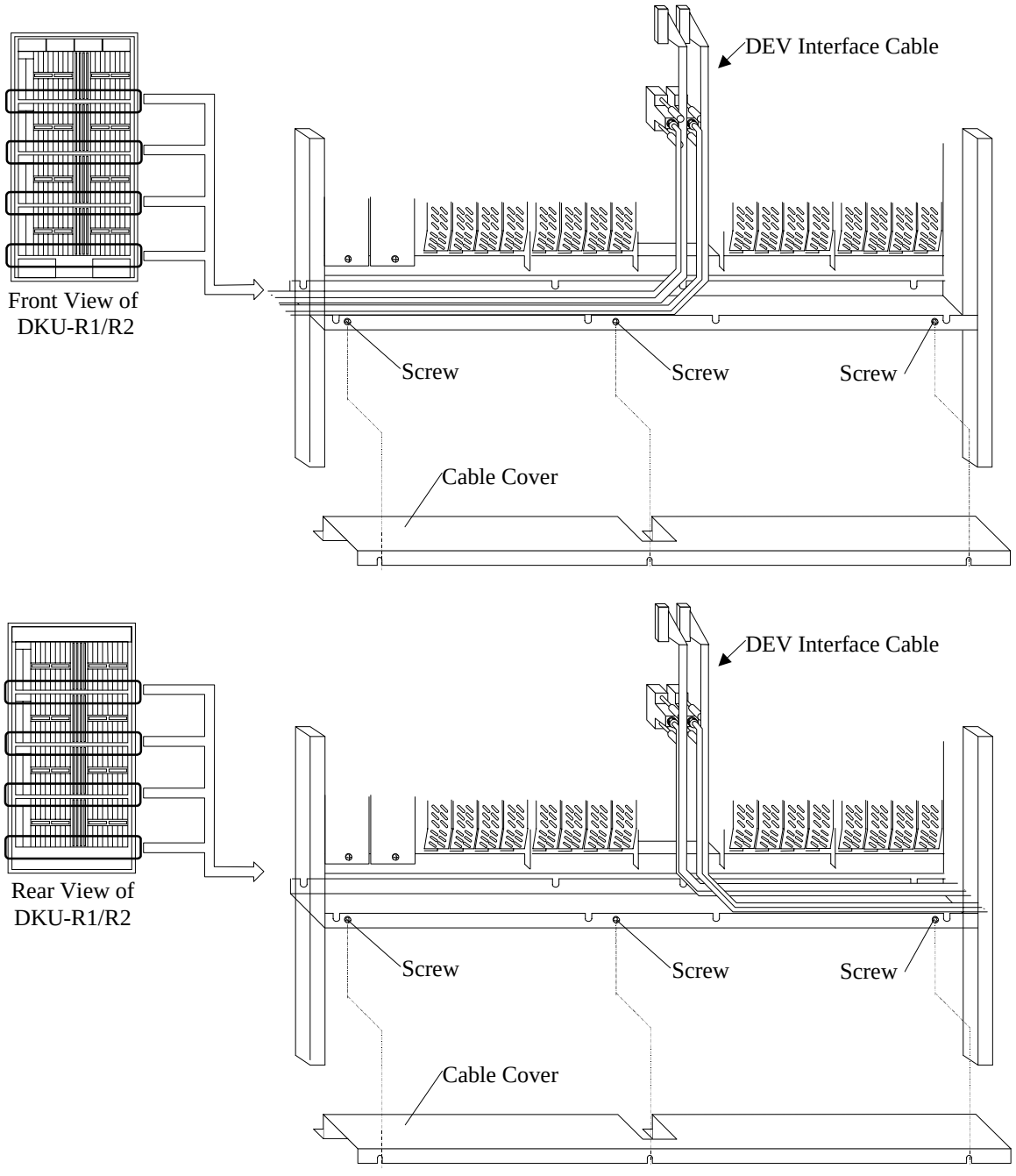

Fig. 3.11.9-28 Fixation of the DEV Interface Cables

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b. Attach the cable covers with the screw to fix the DEV Interface Cables.

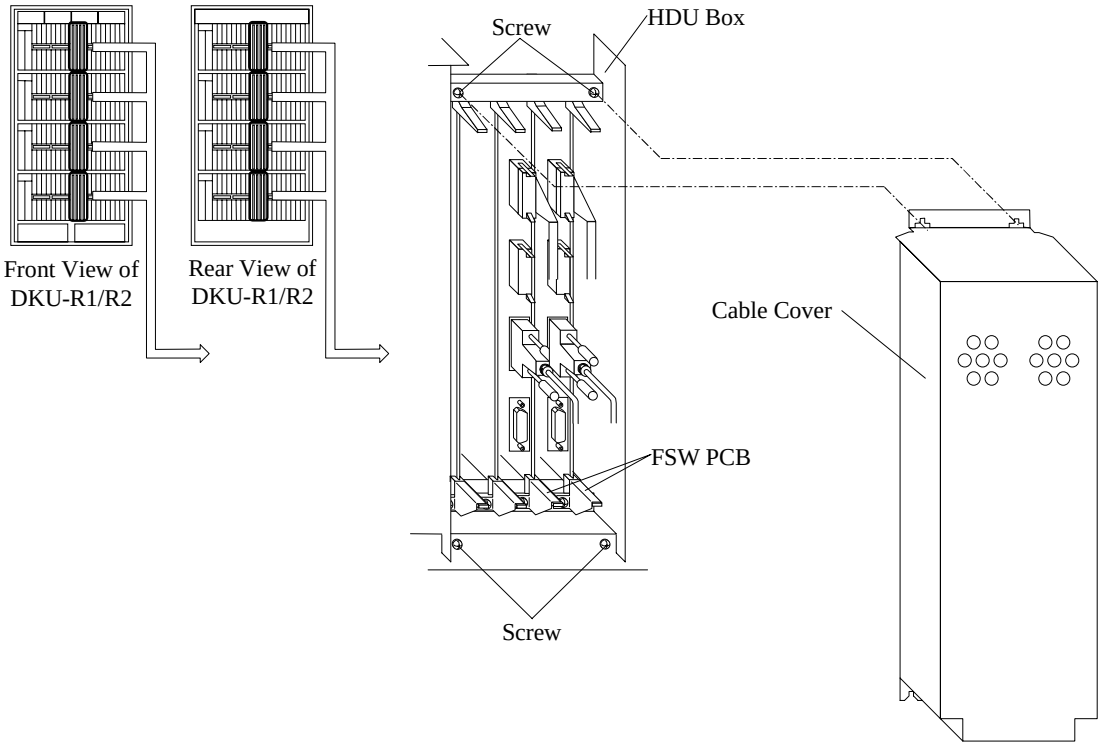

Fig. 3.11.9-29 Fixation of the DEV Interface Cables

c. Attach the nameplate to the DKU-R2 frame.

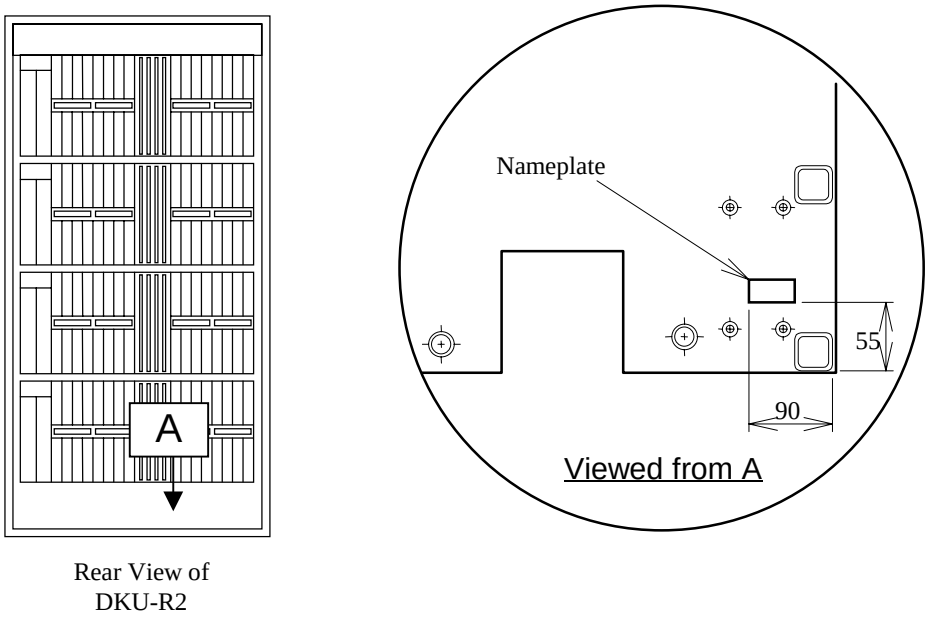

Fig. 3.11.9-30 Attachment of the Nameplate

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Between HDU-L10-L17 and HDU-L20-L27

a. Attach the cable covers with the screw to fix the DEV Interface Cables.

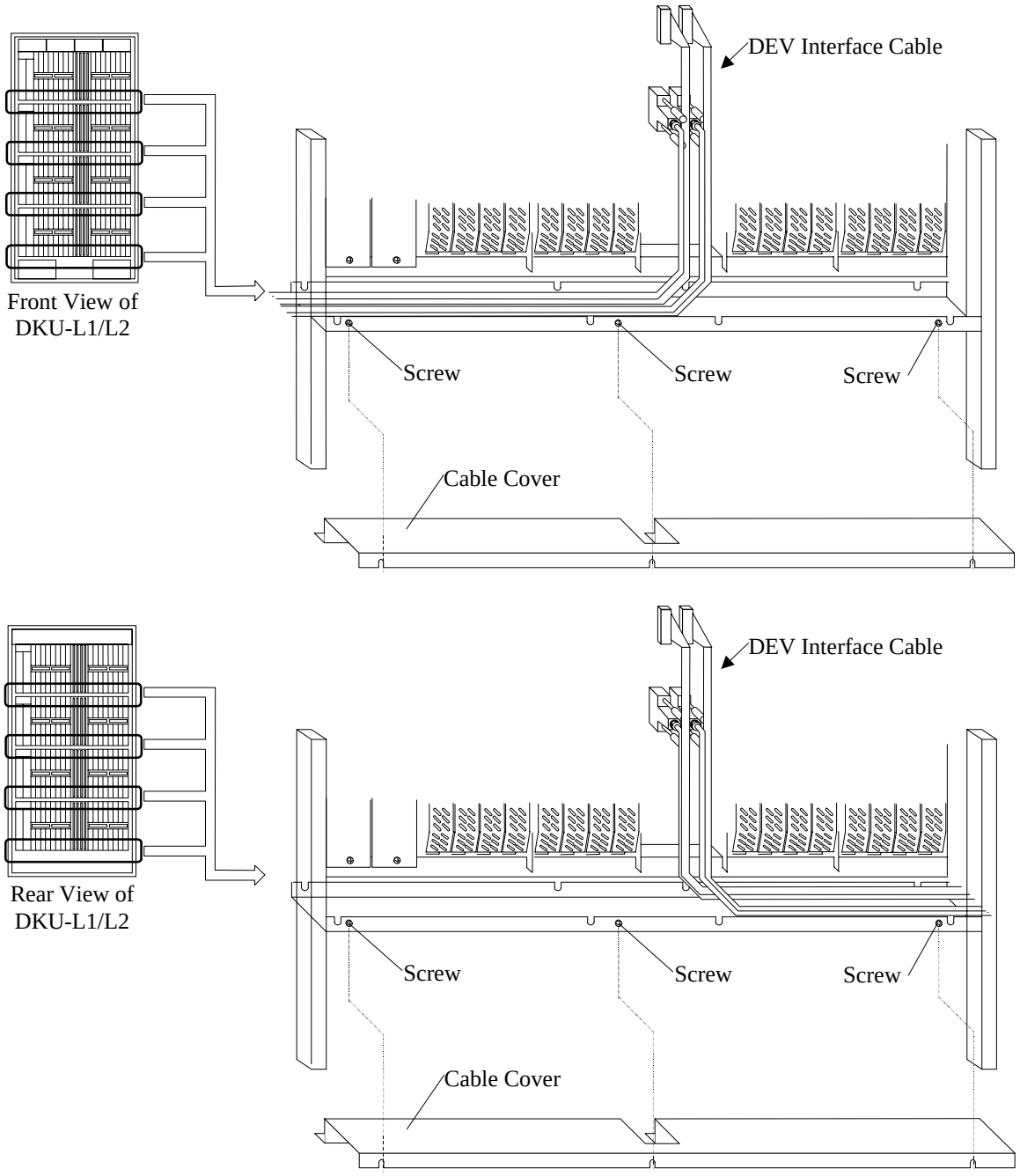

Fig. 3.11.9-31 Fixation of the DEV Interface Cables

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b. Attach the cable covers with the screw to fix the DEV Interface Cables.

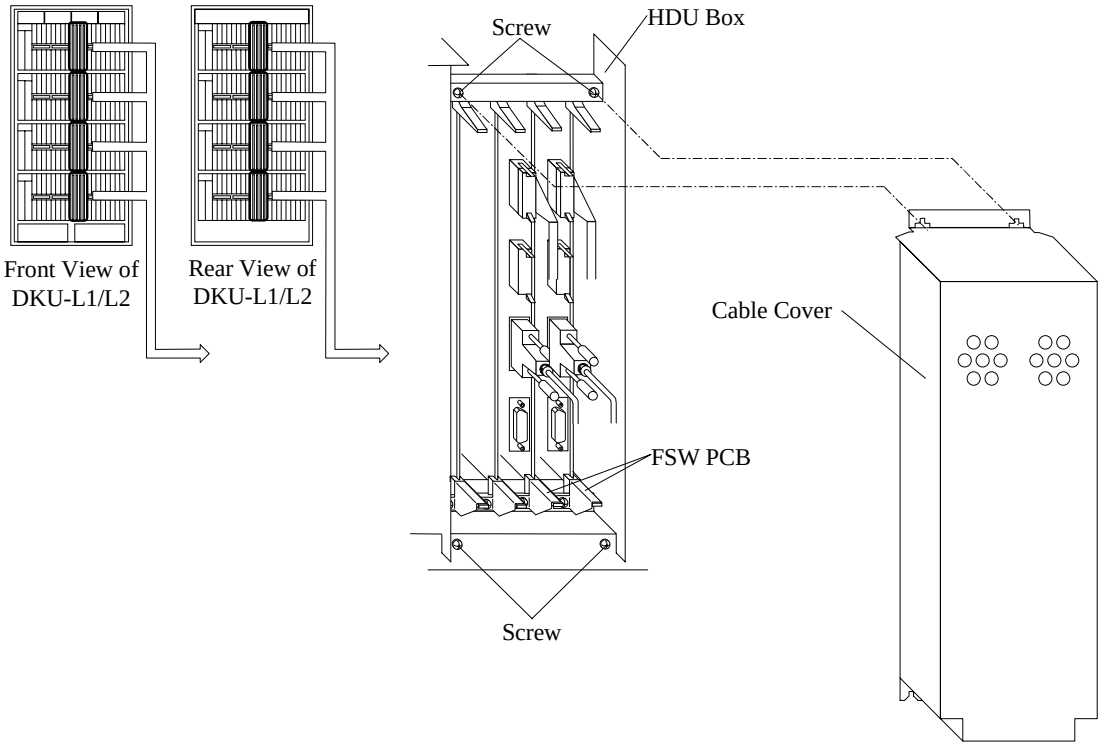

Fig. 3.11.9-32 Fixation of the DEV Interface Cables

c. Attach the nameplate to the DKU-L2 frame.

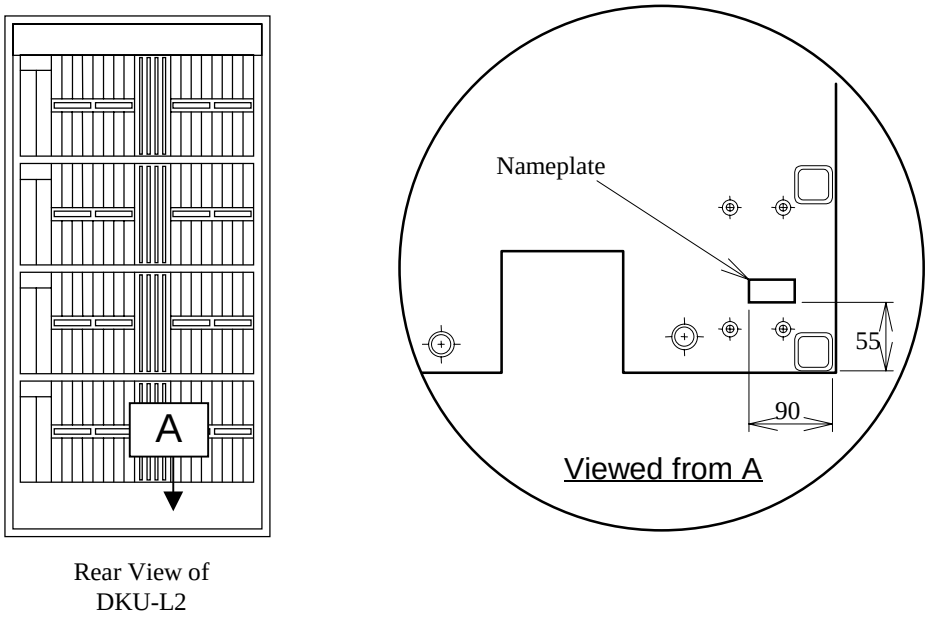

Fig. 3.11.9-33 Attachment of the Nameplate

d. Return to the work table (INST02-50) and perform rest of the works.

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3.11.10 When performing addition of the data/spare HDD canister, DKA, and DEV interface cable that accompanies the addition of the DKU-L1 and DKU-L2 frames (DKC-F460I-200/L1C, DKU-F455I-36K4/36K1/72J4/72J1/72K4/72K1/146J4/146J1/146JF/146JS/146JQ/146JM/EXC)

1. Installation Procedure of DEV Interface Cable 1 (DKC-F460I-L1C)

1-1 Connect the DEV Interface cables to the FSW.

Note:
1. When the DEV interface cable is connected to the FSW in the state in which the subsystem power is on, the each HDU Box is powered on at the same time of the connection.
2. When the DEV interface cable is connected in the state in which the main circuit breaker of the DKU is not turned on, the DKU Voltage Alarm is detected (the ALARM LED on the operator panel comes on and the SIM=BF20XX or BF22XX is issued). Therefore, turn on the main circuit breaker of the DKU before connecting the DEV interface cable.

Matters to be checked:
Check the settings of the switches on the JMP PCB and multi power supply (MPS) and the jumper socket. (Refer to Subsection 3.4.4, "Switch and Jumper Plug Installation" on pages INST03-DKU-220 and INST03-DKU-230.)
If any of the switches and jumper socket is not set correctly, reset it correctly.

a. Loosen the screws and remove the cable covers from the DKU frames.

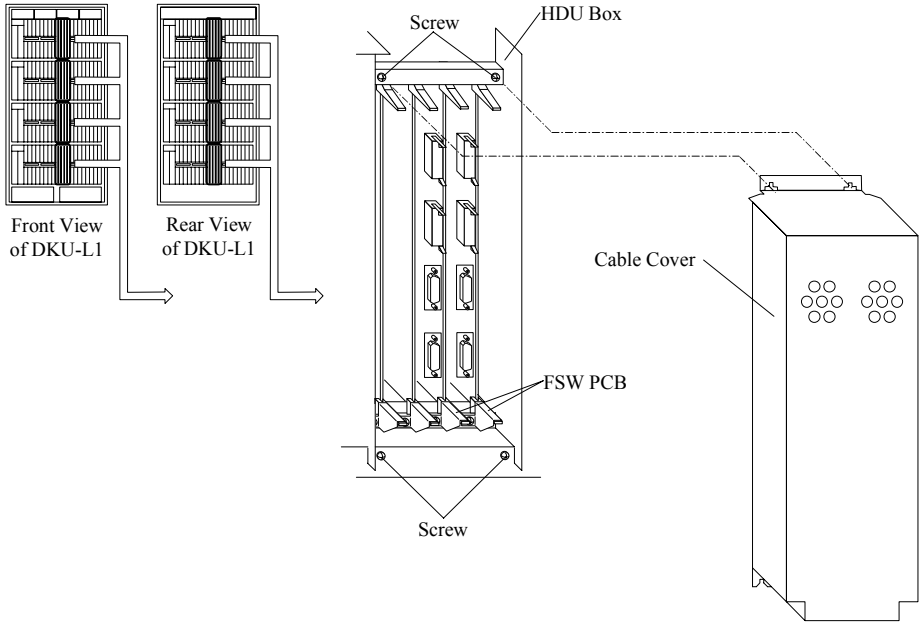

Fig. 3.11.10-1 Removal of Cable Covers

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b. Loosen the screws and remove the cable covers from the DKU frames.

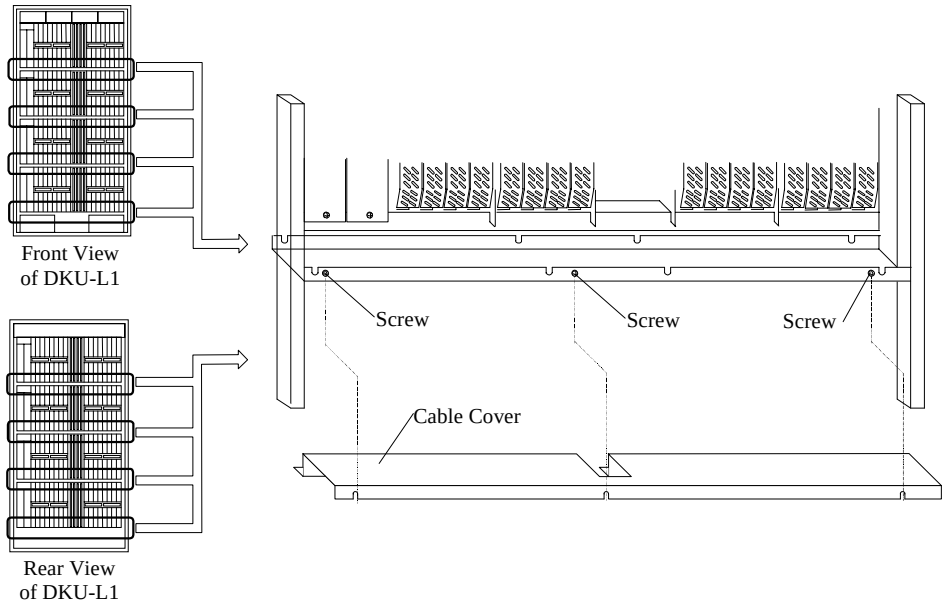

Fig. 3.11.10-2 Removal of Cable Covers

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c. Refer to Fig. 3.11.10-3 and Fig. 3.11.10-4. Connect the DEV interface cables to the sub-edges on the FSW PCBs in the HDU box.

Caution:
1. Do not perform the work unless the AC power is supplied to the additional DKU and the main breaker of the DKU is not turned on.
2. Do not connect the DEV interface cable to the DKA in this procedure. The cable is to be connected later in another procedure.

CAUTION

A serious failure occurs if any of cables/connectors is wrongly connected.
Since a label bearing a connection destination is affixed on each cable/connector, work very carefully referring to it and the wiring diagram.

- Colors of the labels of the subsystem shipped from the factory from June of 2002 and on are as follows. Labels on the cluster1 (CL1) side and the cluster2 (CL2) side are white and yellow respectively.

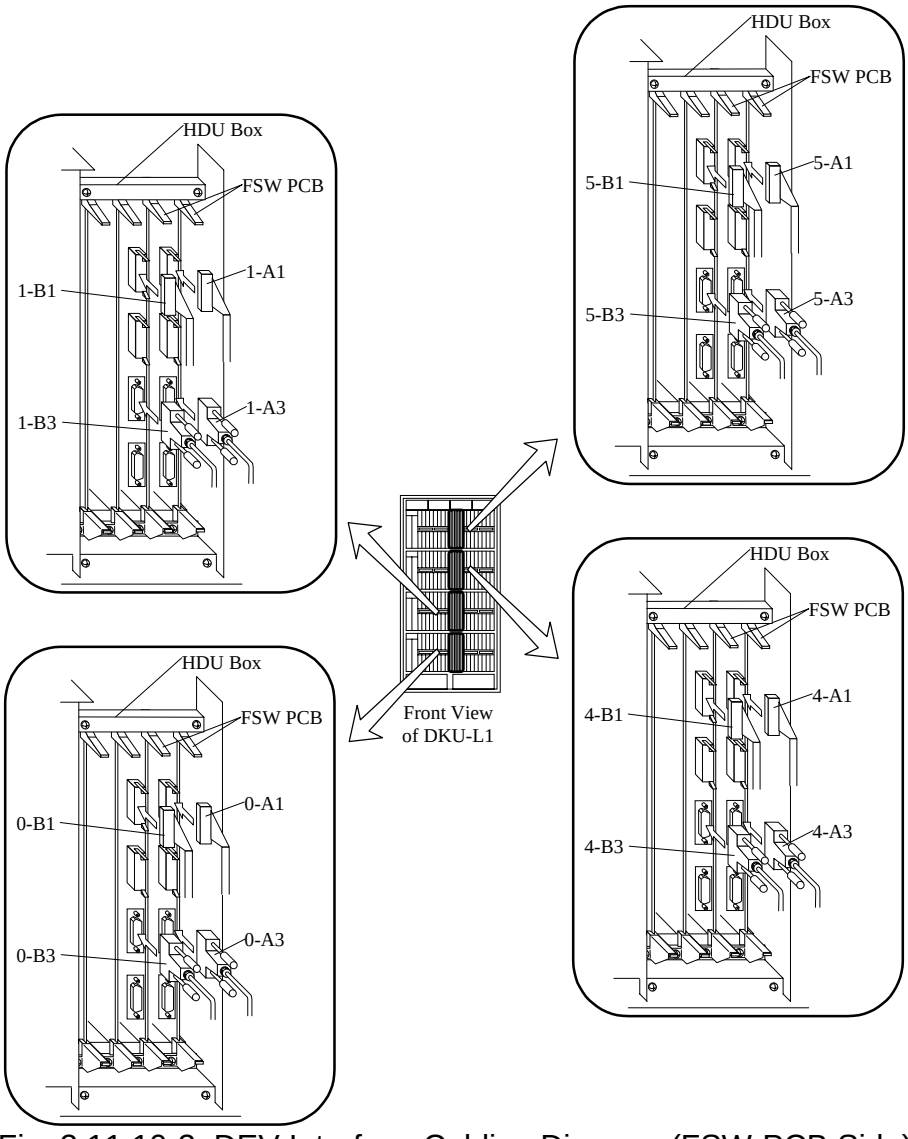

Fig. 3.11.10-3 DEV Interface Cabling Diagram (FSW PCB Side)

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⚠ CAUTION

A serious failure occurs if any of cables/connectors is wrongly connected.
Since a label bearing a connection destination is affixed on each cable/connector, work very carefully referring to it and the wiring diagram.

- Colors of the labels of the subsystem shipped from the factory from June of 2002 and on are as follows. Labels on the cluster1 (CL1) side and the cluster2 (CL2) side are white and yellow respectively.

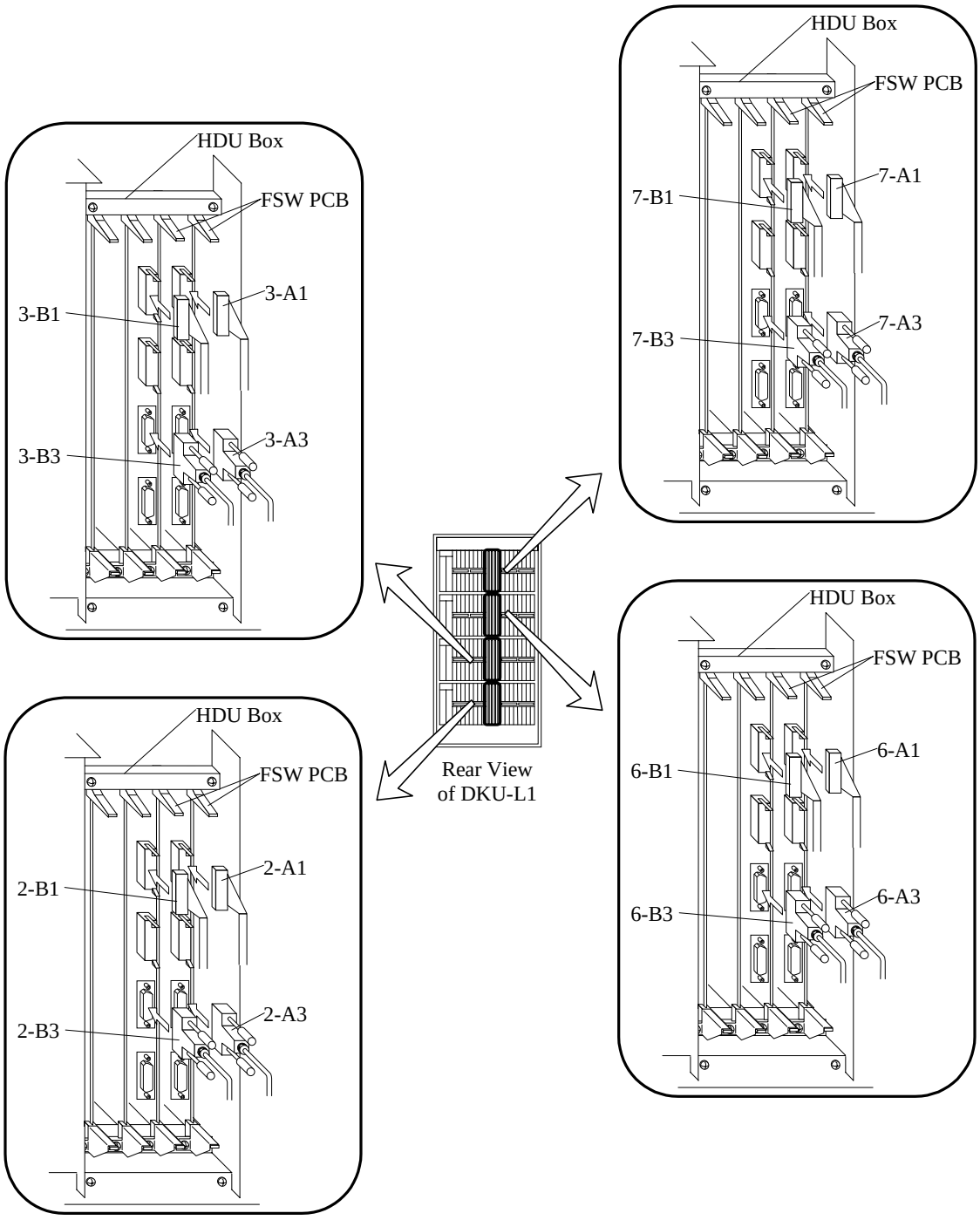

Fig. 3.11.10-4 DEV Interface Cabling Diagram (FSW PCB Side)

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d. Attach the cable covers with the screw to fix the DEV Interface Cables.

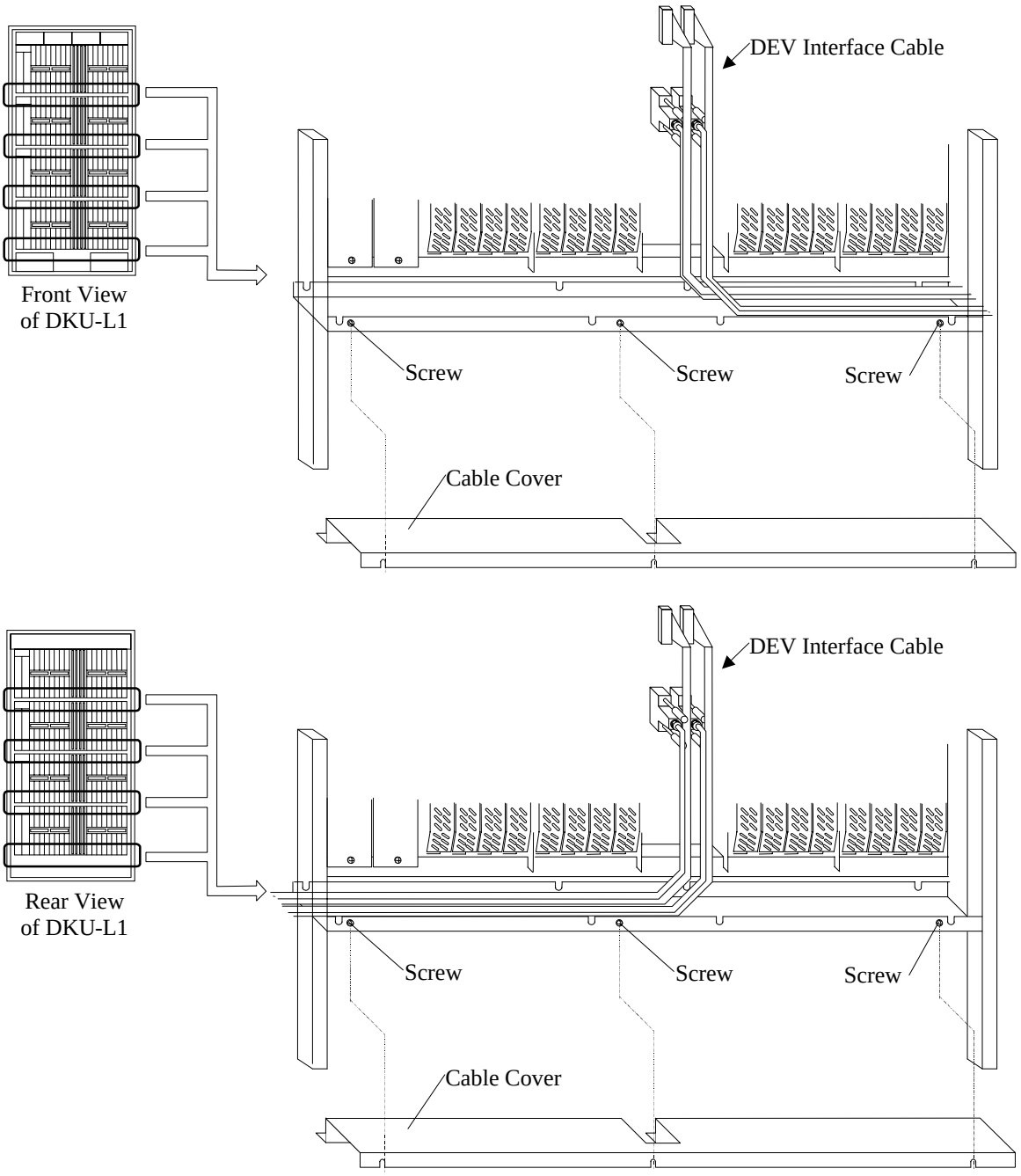

Fig. 3.11.10-5 Fixation of the DEV Interface Cables

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e. Attach the cable covers with the screw to fix the DEV Interface Cables.

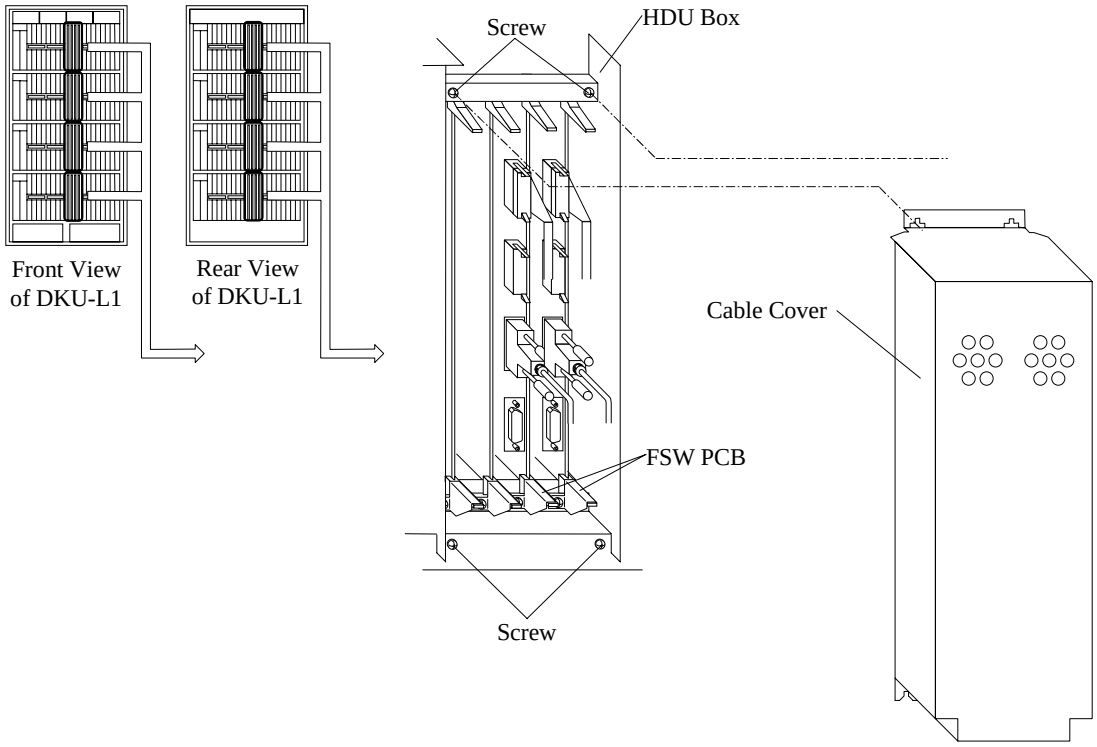

Fig. 3.11.10-6 Fixation of the DEV Interface Cables

1-2 Attach the nameplate.

a. Attach the nameplate regardless of the model number from the left of the cover.

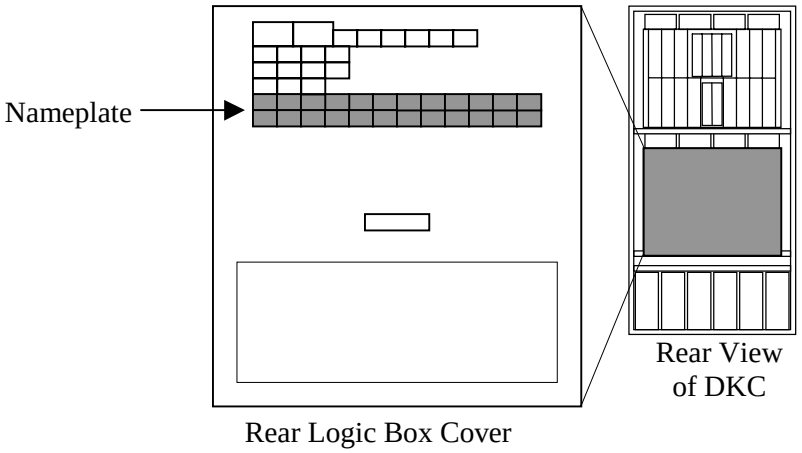

Fig. 3.11.10-7 Attachment of Nameplate

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2. Installation Procedure of DEV Interface Cable 2 (DKU-F455I-EXC)

Between HDU-L10-L17 and HDU-L20-L27

a. Loosen the screws and remove the cable covers from the DKU frames.

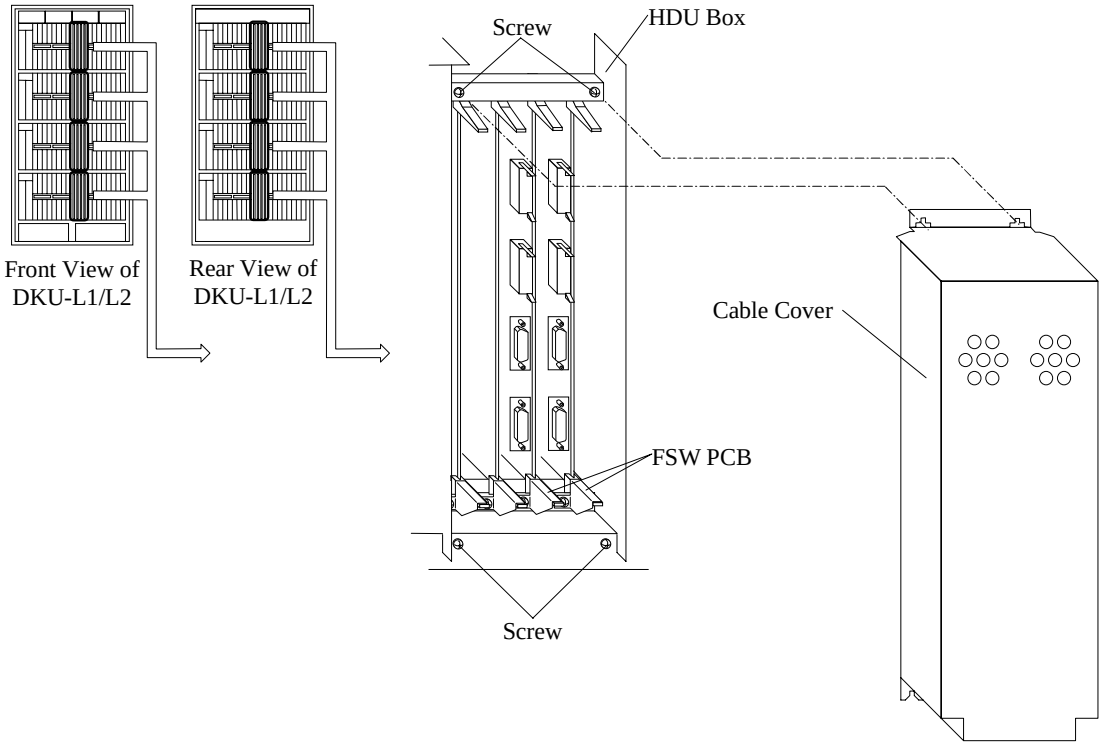

Fig. 3.11.10-8 Removal of Cable Covers

b. Loosen the screws and remove the cable covers from the DKU frames.

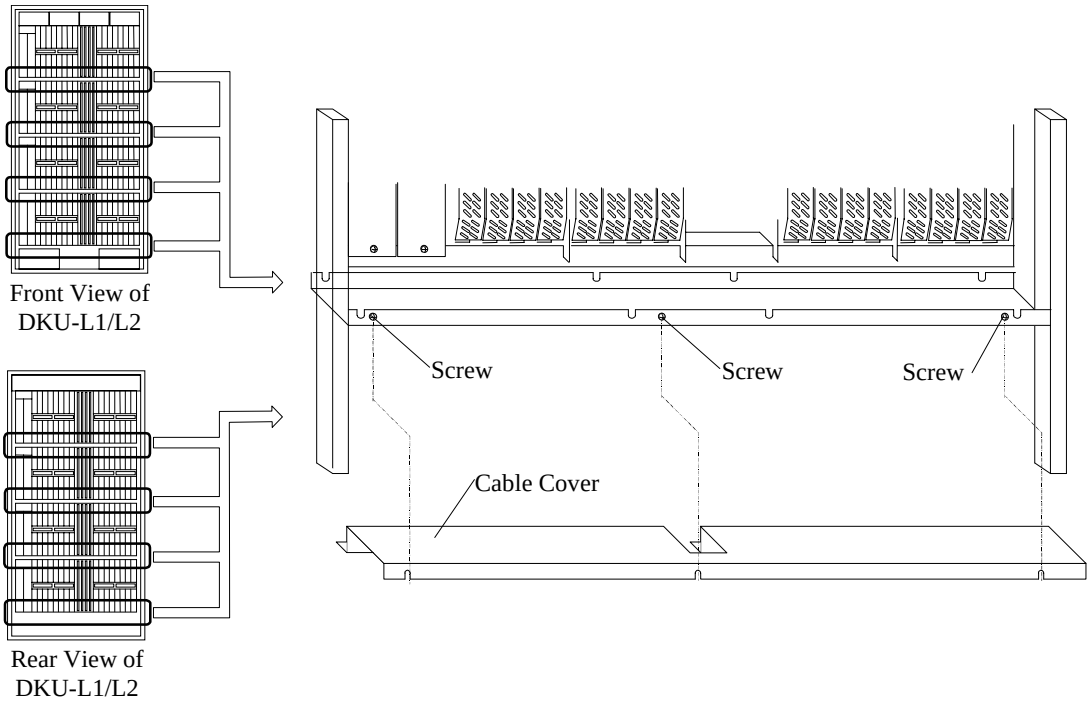

Fig. 3.11.10-9 Removal of Cable Covers

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c. Connect the DEV interface cables to the FSW PCBs in the DKU-L2 frame referring to Fig. 3.11.10-10 through Fig. 3.11.10-13.

Caution:
1. Do not perform the work unless the AC power is supplied to the additional DKU and the main breaker of the DKU is not turned on.
2. Do not connect the DEV interface cable to the operating DKU in this procedure. The cable is to be connected later in another procedure.

⚠ CAUTION

A serious failure occurs if any of cables/connectors is wrongly connected.
Since a label bearing a connection destination is affixed on each cable/connector, work very carefully referring to it and the wiring diagram.

- Colors of the labels of the subsystem shipped from the factory from June of 2002 and on are as follows. Labels on the cluster1 (CL1) side and the cluster2 (CL2) side are white and yellow respectively.

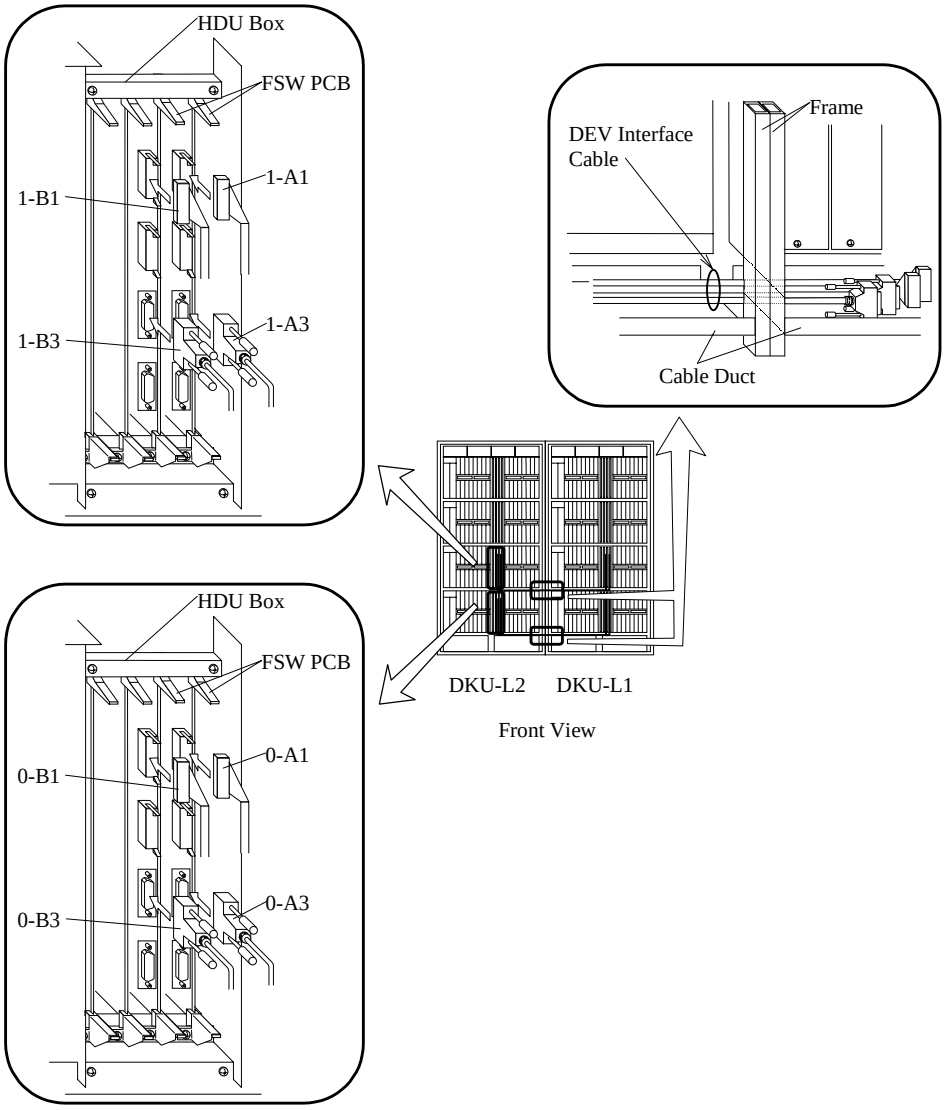

Fig. 3.11.10-10 Connection of the DEV Interface Cables

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CAUTION

A serious failure occurs if any of cables/connectors is wrongly connected.
Since a label bearing a connection destination is affixed on each cable/connector, work very carefully referring to it and the wiring diagram.

- Colors of the labels of the subsystem shipped from the factory from June of 2002 and on are as follows. Labels on the cluster1 (CL1) side and the cluster2 (CL2) side are white and yellow respectively.

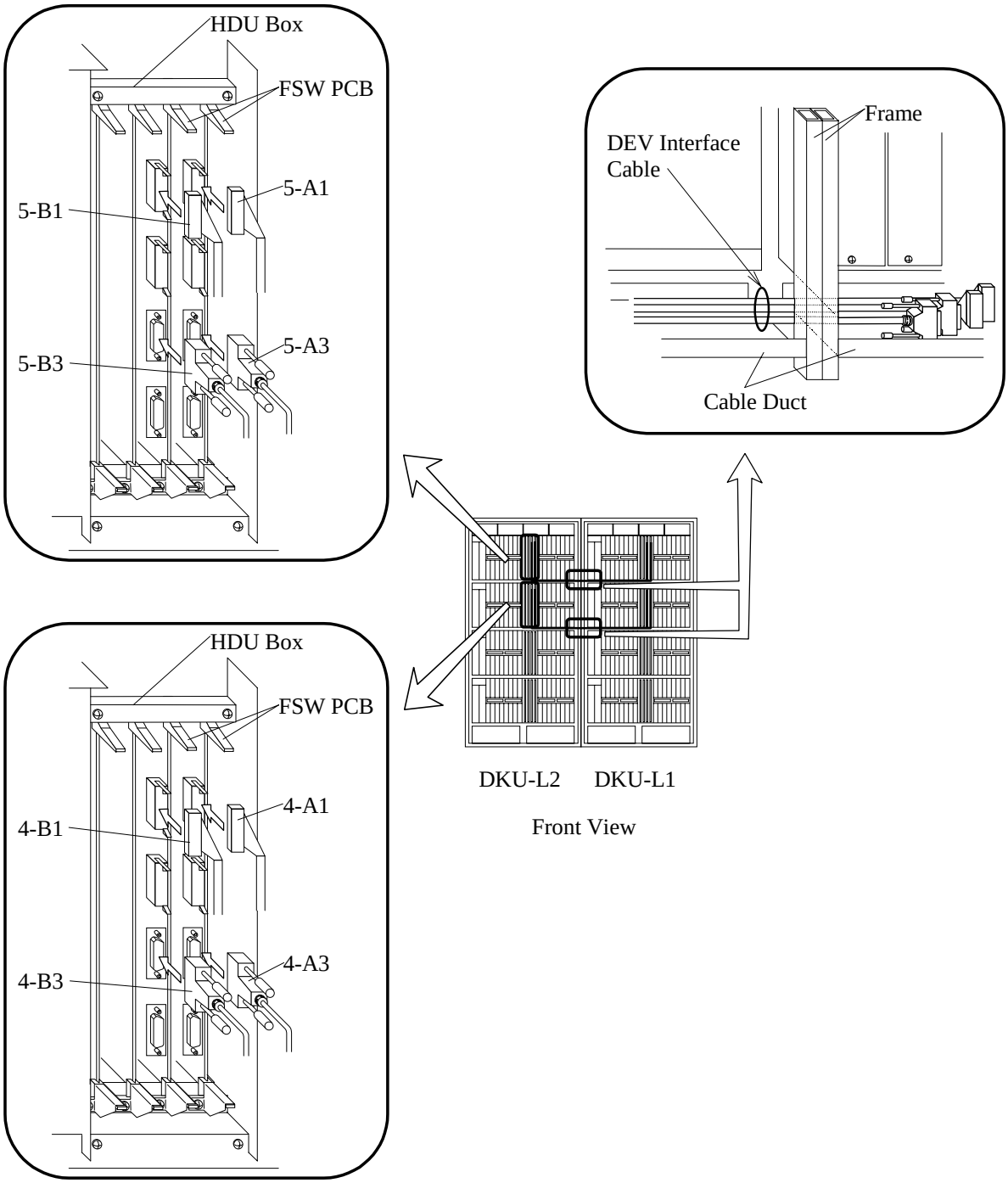

Fig. 3.11.10-11 Connection of the DEV Interface Cables

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⚠ CAUTION

A serious failure occurs if any of cables/connectors is wrongly connected.
Since a label bearing a connection destination is affixed on each cable/connector, work very carefully referring to it and the wiring diagram.

- Colors of the labels of the subsystem shipped from the factory from June of 2002 and on are as follows. Labels on the cluster1 (CL1) side and the cluster2 (CL2) side are white and yellow respectively.

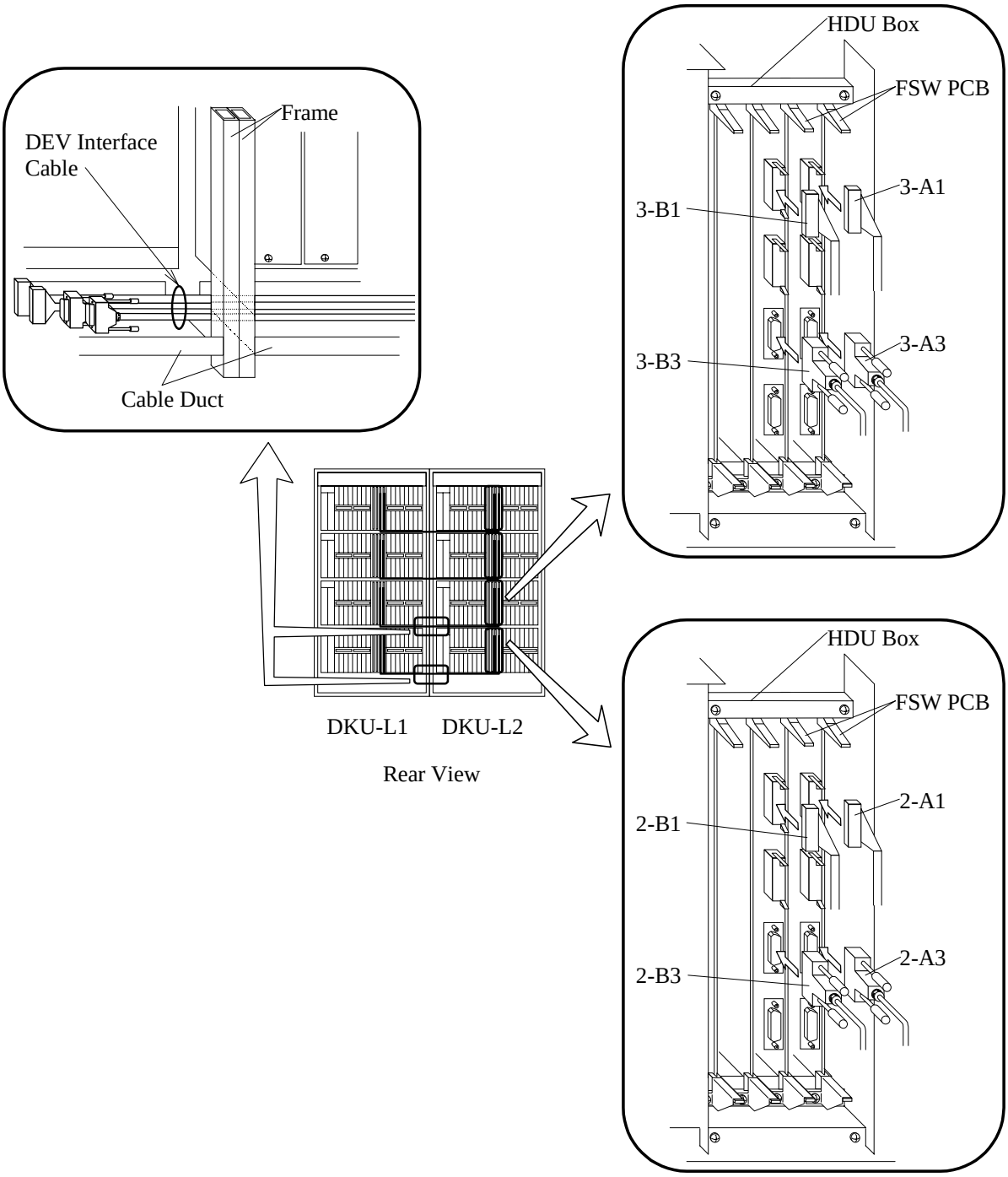

Fig. 3.11.10-12 Connection of the DEV Interface Cables

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⚠ CAUTION

A serious failure occurs if any of cables/connectors is wrongly connected.
Since a label bearing a connection destination is affixed on each cable/connector, work very carefully referring to it and the wiring diagram.

- Colors of the labels of the subsystem shipped from the factory from June of 2002 and on are as follows. Labels on the cluster1 (CL1) side and the cluster2 (CL2) side are white and yellow respectively.

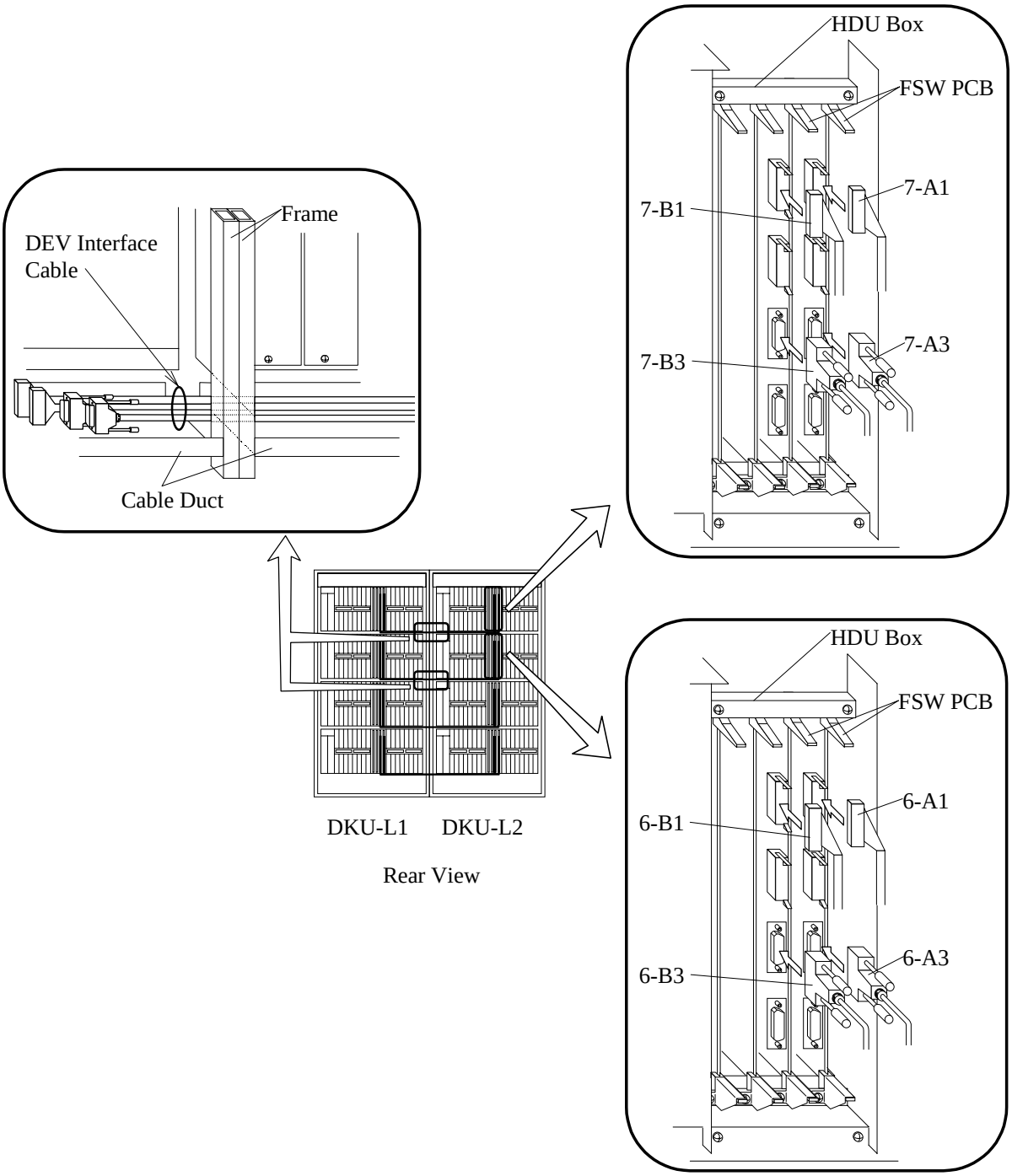

Fig. 3.11.10-13 Connection of the DEV Interface Cables

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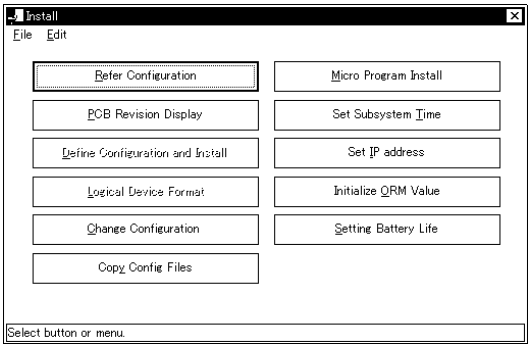
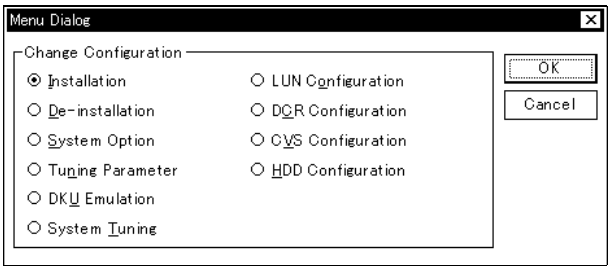
3. Setting up the New Device Structure Information

1. <Mode Change>
   Change the mode to Modify Mode.
   Select (CL) [Install].

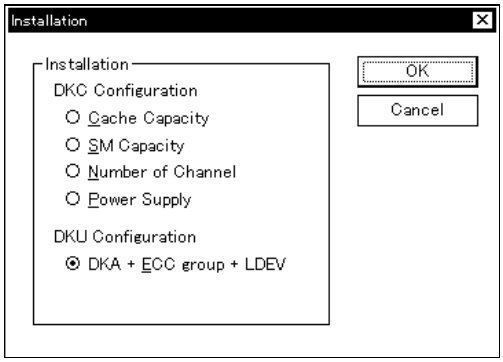
2. <Start the 'Menu Dialog' screen>
   Select (CL) [Change Configuration].



3. <Start Device Structure Setup screen>
   Select (CL) [Installation] in the 'Menu Dialog' dialog box and select (CL) [OK].



4. <Select a part to be changed>
   Select (CL) [DKA + ECC group + LDEV], and select (CL) [OK].



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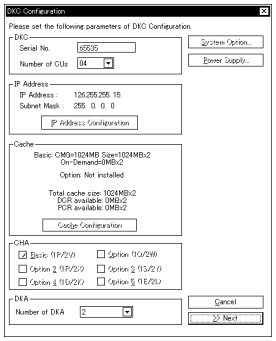
5. <Update Configuration Information>
Define the number of CU in DKC and the number of DKA in the 'DKC Configuration' window.

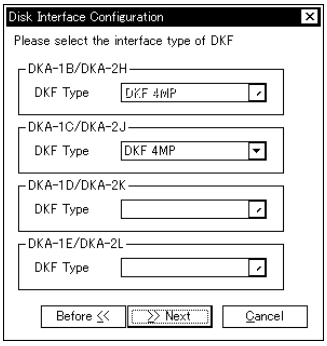
Make sure that the entered item is correct and select (CL) [>>Next].

Note1: To add the DKU-L1, the six or more DKAs are required.
Note2: There may be a case where an addition of the SM is required to add the CU.
When adding the SM, refer to page INST03-SM-10.



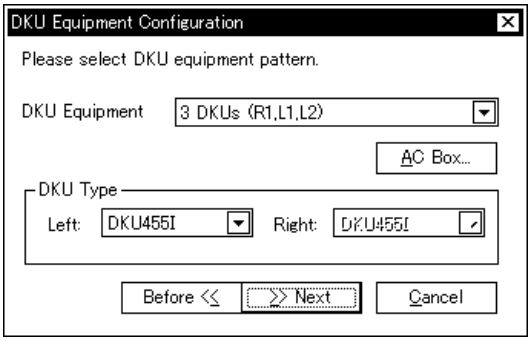
6. <Setting DKA type>
Define the DKA type in the 'Disk Interface Configuration' dialog box. After setting it, select (CL) the [>>Next] button.

Note: When no DKA is to be added, the 'Disk Interface Configuration' dialog box is not displayed.



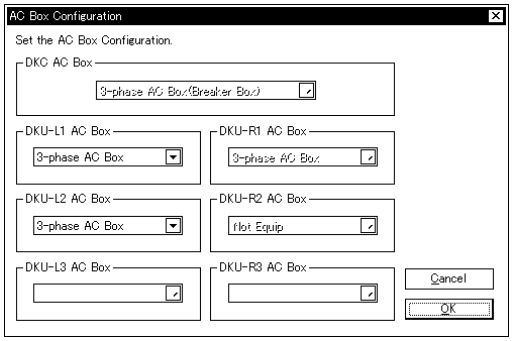
7. <DKU Equipment>
The DKU equipment pattern and DKU type is displayed in the 'DKU Equipment' configuration window.
Make an altered setting in which the DKU-L1 and DKU-L2 are added to the DKUs currently set.

Current setting	Altered setting
1DKU (R1)	3DKUs (R1, L1, L2)
2DKUs (R1, R2)	4DKUs (R1, L1, R2, L2)



[AC Box...]: Set the DKU AC Box configuration. (Refer to step 7-1.)
Select (CL) the [>>Next].

7-1. <Setting the DKU AC Box configuration>
Set the installation AC Box configuration, select (CL) the [OK]. Return to step 7.



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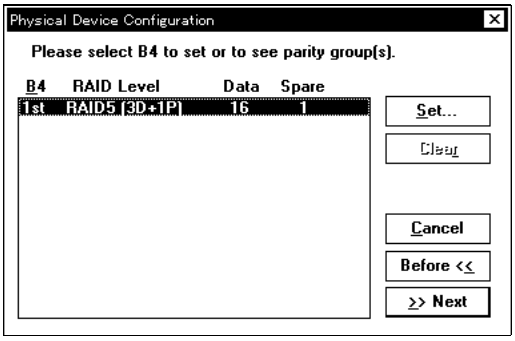
8. <Change Drive Configuration Information>
Define drive configuration according to the 'Physical Device Configuration' screen.
Detailed procedure is shown below.
[Set...]: Defines the parity group or spare disk. The routine proceeds to Step 8-1.
[Clear...]: Cancels the setting of the B4.
After setting up all items, select (CL) [>>Next]. Go to step 9.



Selecting (CL) [Before<<] returns you to the previous screen.

[Multi Cabinet Model]

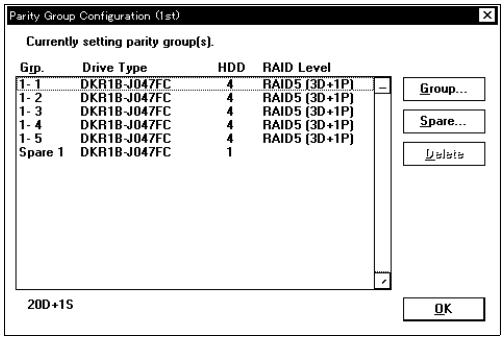
B4	Location	B4	Location
1st	HDU-R10, 11, 12, 13	7th	HDU-L20, 21, 22, 23
2nd	HDU-R14, 15, 16, 17	8th	HDU-L24, 25, 26, 27
3rd	HDU-L10, 11, 12, 13	9th	HDU-R30, 31, 32, 33
4th	HDU-L14, 15, 16, 17	10th	HDU-R34, 35, 36, 37
5th	HDU-R20, 21, 22, 23	11th	HDU-L30, 31, 32, 33
6th	HDU-R24, 25, 26, 27	12th	HDU-L34, 35, 36, 37

Note: The 9th to 12th of the B4 are valid only when the DKUs for the RAID 400 are connected.

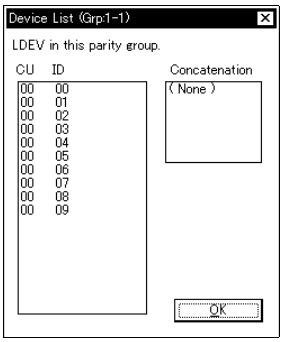
[Single Cabinet Model]

B4	Location	Comment
1st	HDU-0, 1, 2, 3	HDD-X00 ~ X0F
2nd	HDU-0, 1, 2, 3	HDD-X10 ~ X1F

8-1. <Define Parity Group>
[Group...]: Defines the parity group. See Step 8-1-1.
[Spare...]: Defines the spare drive. See Step 8-1-2.
[Delete]: Deletes the added parity group or spare drive.
Grp*: A parity group where RAID Concatenation is installed.
Note: If you want to set any Spare Drive in B4, please define the Spare Drive first.
After setting up all items, select (CL) [OK]. Return to step 8.



- To display LDEV ID in Parity group, select an item to be displayed and select (DC) this item on list box. The 'Device List' dialog box will appear.
"(no LDEV)" is displayed for the added parity group.



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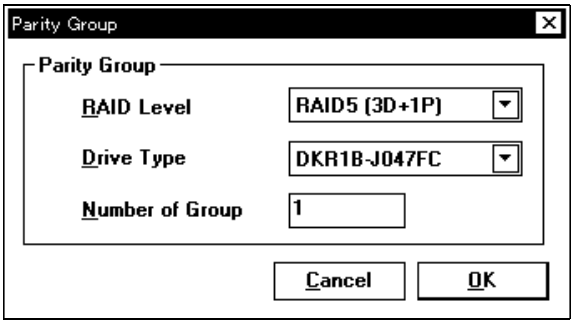
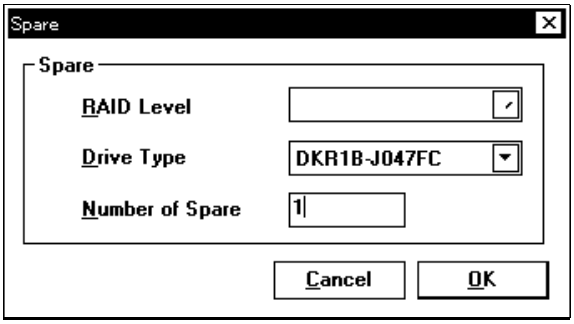
8-1-1.

Define the RAID Level and the Drive Type and the Number of Group in the 'Parity Group' dialog box.
Then select (CL) [OK]. Return to step 8-1.



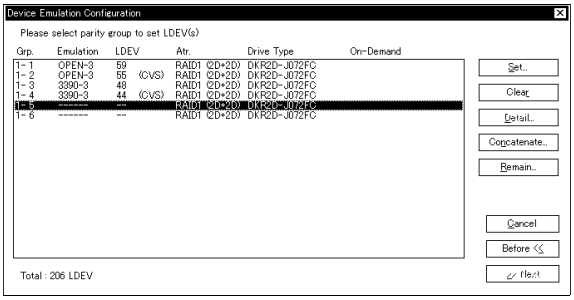
8-1-2.

Define the RAID Level and the Drive Type and the Number of Spare in the 'Spare' dialog box.
Then select (CL) [OK]. Return to step 8-1.



9. <Define Device Emulation>

After setting up all items for definition of Device Emulation, select (CL) [>>Next].
Selecting (CL) [Before<<] returns you to the previous screen.



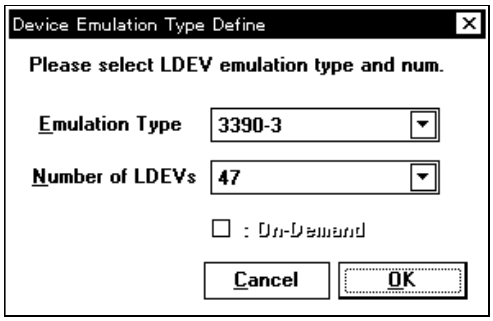
For defining Device Emulation:
Select (CL) parity group and select (CL) [Set...].
Go to step 9-1

For detailed display:
Select (CL) parity group and select (CL) [Detail...].
The detailed information is displayed.
(CVS): A parity group where CVS is installed.
Grp*: A parity group where RAID Concatenation is installed.

9-1.

After setting up all items in the 'Device Emulation Type Define' dialog box, select (CL) [OK].

Selecting (CL) [Cancel] returns you to step 9.



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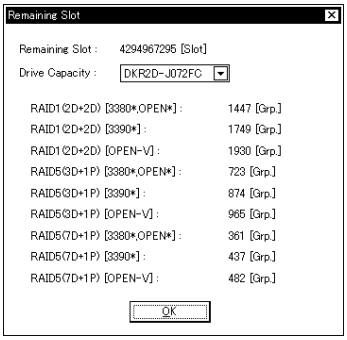
9-2. <Displaying remaining slot(s)>

The Remaining Slot window is displayed.
An allowable number of times of PDEV addition corresponding to the specified drive type is displayed.



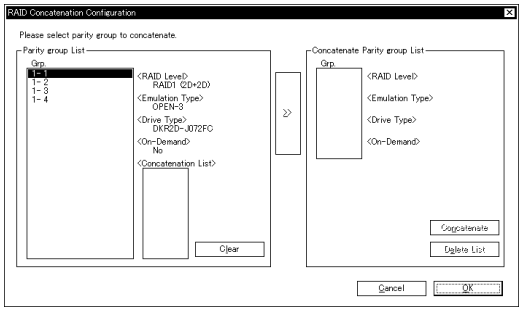
Select (CL) the [OK]. The routine returns to Step 9.

9-3. <Setting RAID concatenation>

Select (CL) [Concatenate...].
When you do not perform the RAID concatenation, return to Step 9.

9-4.

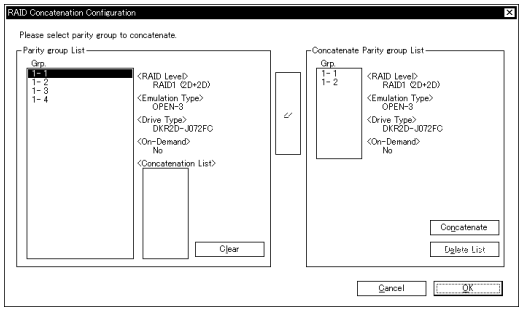
Parity groups to which the RAID concatenation can be applied are displayed in the Parity group List.
Select (CL) parity groups to which you want to apply the RAID concatenation and press (CL) the [>>] button.



Note: Only the parity groups, which have been added and to which the RAID concatenation can be applied are displayed in the Parity group List.

9-5.

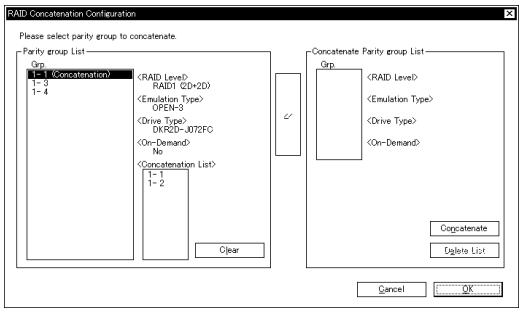
The selected parity groups are registered in the Concatenate Parity group List. Then press (CL) the [Concatenate] button.



Note: The [Concatenate] button cannot be pressed if the concatenation does not meet a condition of the RAID concatenation. Adjust the number of the parity groups in the Concatenate Parity group List.

9-6.

When the RAID concatenation is completed, "(Concatenation)" is displayed in the Parity group List. Selecting the "(Concatenation)" displays the concatenated parity groups in the Concatenation List.
Pressing the [Clear] button cancels the RAID concatenation.



When all the settings of the RAID concatenation are completed, press (CL) the [OK] button.
Pressing (CL) the [Cancel] button returns the routine to Step 9.

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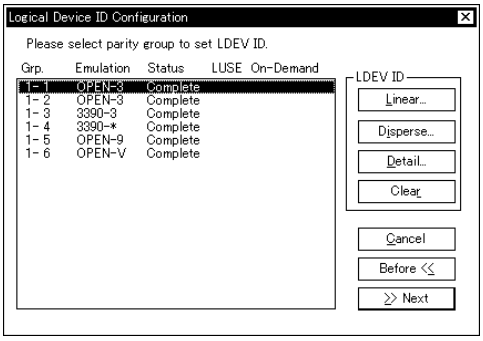
10. <Define LDEV ID>

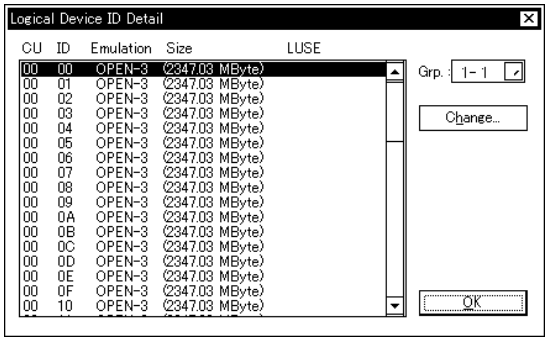


Definition Screen for LDEV ID.
Select (CL) the parity group to be defined and select (CL) a function from the [LDEV ID] list box.
[Linear...]: LDEV ID is assigned to LDEV in the order of parity groups. See step 10-1.
[Disperse...]: LDEV is assigned discretely in the order of parity groups. See step 10-1.
[Detail...]: A screen to define LDEV in detail is displayed. See step 10-2. (When plural groups are selected (CL), it is invalid.)
[Clear]: Select (CL) [Clear] to delete.
Grp*: The top parity group where RAID Concatenation is installed.

- '-----' is displayed in the Status area for the parity group to which LDEV ID is not assigned.

After setting up all items, select (CL) [>>Next]. (Go to Step 11)

10-1. Detailed Definition Screen for LDEV ID

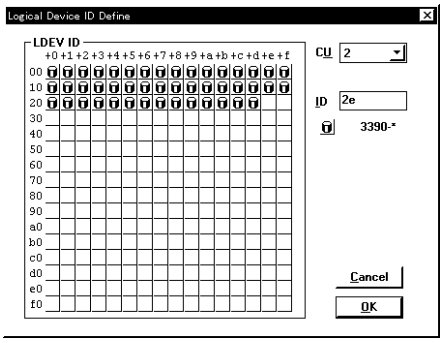


LDEV ID is defined in detail for each LDEV in the parity group.
Select (CL) LDEV from the list box and select (CL) [Change...].
The screen for LDEV ID input is displayed.
After setting, select (CL) [OK]. Return to step 10

- '-----' is displayed in the CU area and the ID area for the LDEV to which LDEV ID is not assigned.

Note: In the case of a RAID Concatenation Group, LDEV of the parity group selected by the "Grp List" is displayed.

10-2. Input LDEV ID



Select CU ID in the CU combo box.
The status of usage of ID in the CU is displayed in the LDEV ID panel.
White disk of panel: not used
Patterned disk of panel: using
Input LDEV ID you want to set or the head LDEV ID in the ID Edit box.
After setting, select (CL) [OK]. Return to step 10-1

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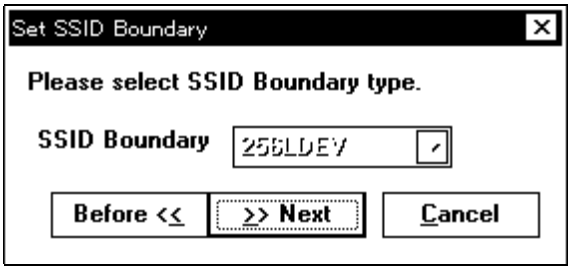
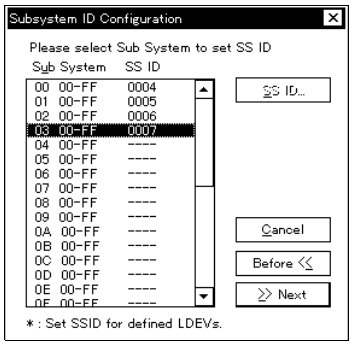
11. <Define Subsystem ID Boundary>
Press (CL) the [>>Next] button to change the screen to the “Set SSID Boundary” screen.

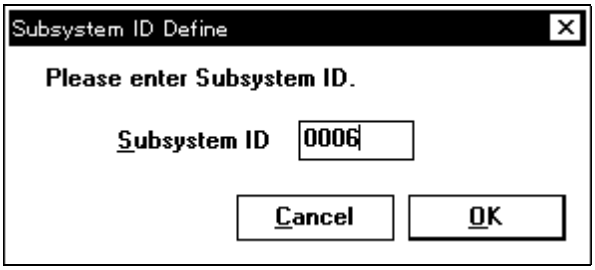


12. <Define Subsystem ID>
To define Subsystem ID, select (CL) the item from the list box and select (CL) [SSID]. See step 12-1.

After setting, select (CL) [>>Next].

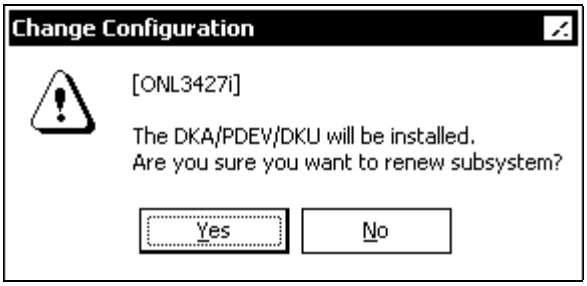


12-1. Define Subsystem ID and select (CL) [OK].
Return to step 12.



13. <Start installation>
Select (CL) [Yes] in response to “The DKA/PDEV/DKU will be installed. Are you sure you want to renew subsystem?”.

When [No] is selected (CL), returns to INST03-DKA-2310 step 3.



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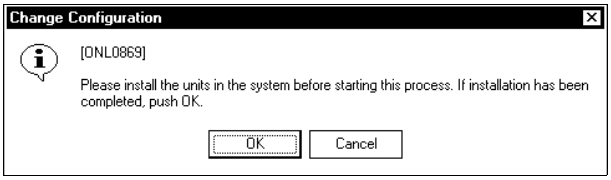
14. <Download microprogram>
    Microprograms are automatically downloaded for each processor.

15. <Install DKA>
    “Upgrading of the DKA...”

16. <Check that hardware components are installed>
    At this point refrain from pressing the [OK] button.
    “Please install the units in the system before starting this process. If installation has been completed, push OK.” is displayed.



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4 Installation Procedure of Additional Disk Adapter (DKC-F460I-200)

Note: Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

4-1 Insertion of the PCBs

Note: Make sure that a color of the levers of the PCB to be installed is blue. Never insert a PCB whose lever is not blue.

a. Remove the dummy plate installed in the installation location referring to the Fig. 3.11.10-14. (Note) Dummy plates should be stored for future use in De-installation.
b. Insert the PCBs to the correct locations in the Logic Box. Refer to Table 3.11.10-1.
c. Fasten the two screws referring to Fig. 3.11.10-15.

Table 3.11.10-1 Inserting Location (Rear of the unit)

Cluster	CL2							CL1				
Slot No.	M	L	K	J	H	G	F	E	D	C	B	A
Function	CSW	DKA	DKA	DKA	DKA	CACHE	CACHE	DKA	DKA	DKA	DKA	CSW
Location No.	CSW -2M	DKA -2L	DKA -2K	DKA -2J	DKA -2H	CACHE -2G	CACHE -2F	DKA -1E	DKA -1D	DKA -1C	DKA -1B	CSW -1A
Order of addition		Add.3	Add.2	Add.1	Basic			Add.3	Add.2	Add.1	Basic	
Number of DKAs set through the SVP		–	–	–	2			–	–	–	2	
		–	–	4				–	–	4		
		–	6					–	6			
		8						8				

Up to 4 disk adapters can be installed in the subsystem.

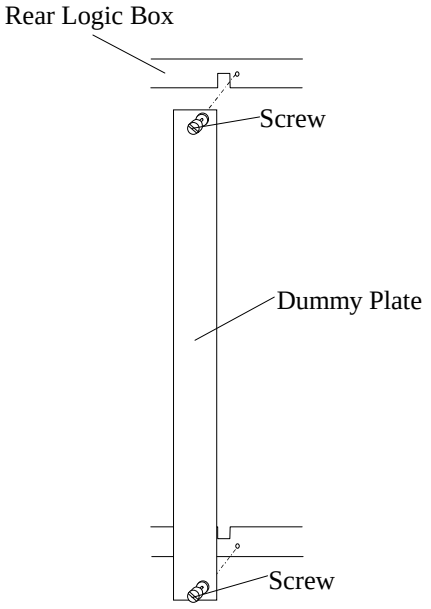

Fig. 3.11.10-14 Removal of Dummy Plate

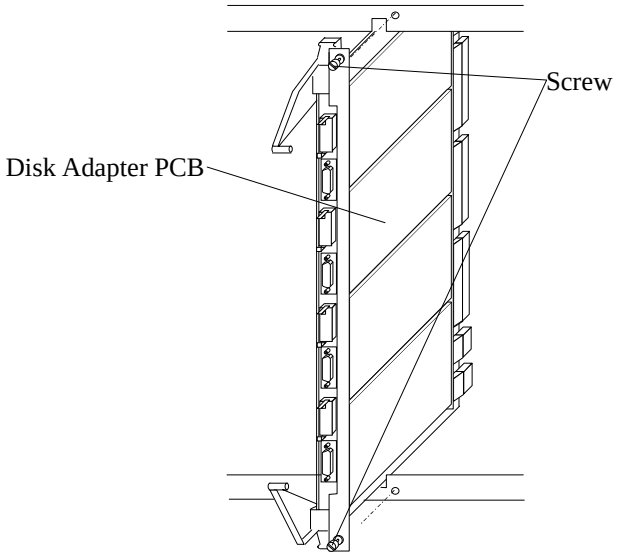

Fig. 3.11.10-15 Insertion of PCB

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4-2 Connection of cables

In case of Add.1

CAUTION

A serious failure occurs if any of cables/connectors is wrongly connected.
Since a label bearing a connection destination is affixed on each cable/connector, work very carefully referring to it and the wiring diagram.

- Colors of the labels of the subsystem shipped from the factory from June of 2002 and on are as follows. Labels on the cluster1 (CL1) side and the cluster2 (CL2) side are white and yellow respectively.

a. Connect the cables to the sub-edge of PCBs. (Refer to Fig. 3.11.10-16.)

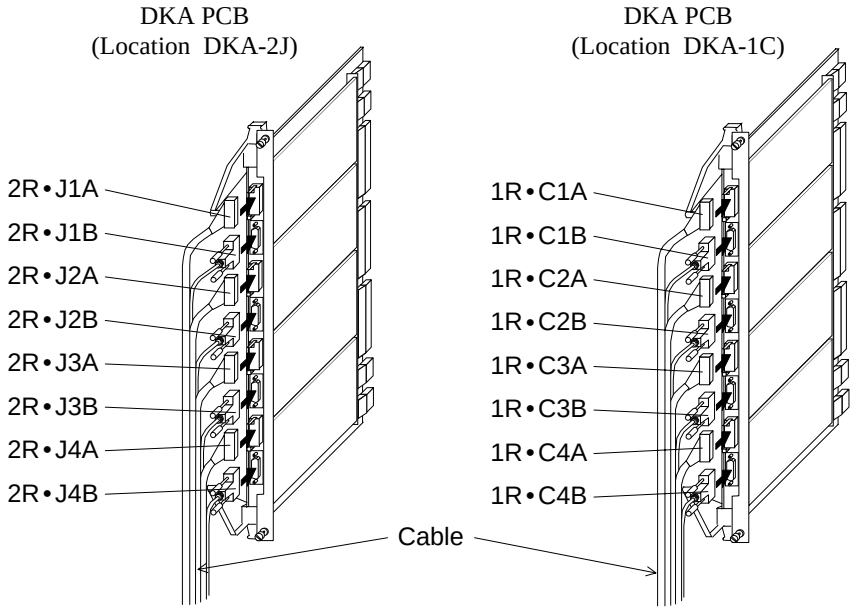

Fig.3.11.10-16 Connection of cable (Add.1)

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In case of Add.2

Caution:
Make sure that the AC power is applied to the added DKUs (DKU-L1 and DKU-L2) and the main breakers of the DKUs (DKU-L1 and DKU-L2) are turned on.
The DKU is automatically powered on when the DEV interface cable is connected to the DKA.

⚠ CAUTION

A serious failure occurs if any of cables/connectors is wrongly connected.
Since a label bearing a connection destination is affixed on each cable/connector, work very carefully referring to it and the wiring diagram.

- Colors of the labels of the subsystem shipped from the factory from June of 2002 and on are as follows. Labels on the cluster1 (CL1) side and the cluster2 (CL2) side are white and yellow respectively.

a. Connect the cables to the sub-edge of PCBs.

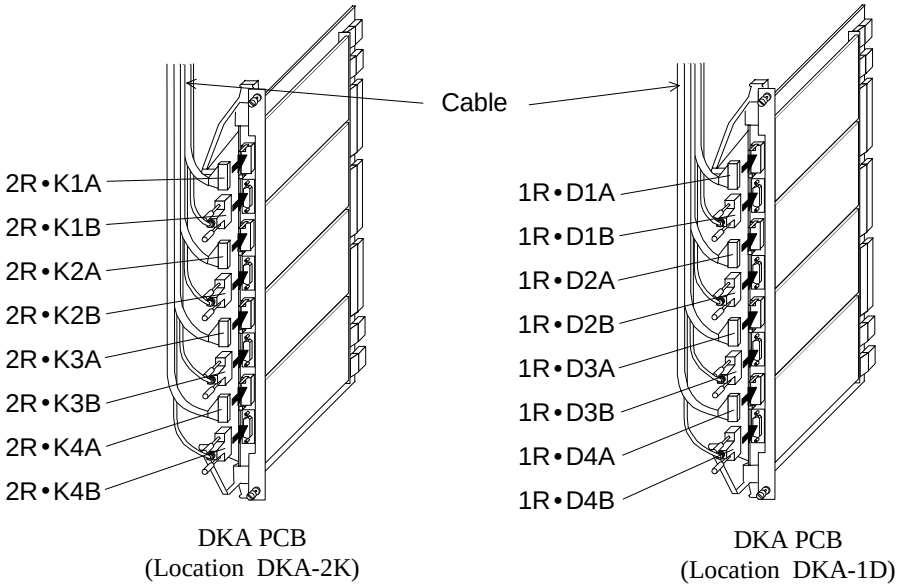

Fig.3.11.10-17 Connection of cable (Add.2)

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In case of Add.3

Caution:
Make sure that the AC power is applied to the added DKUs (DKU-L1 and DKU-L2) and the main breakers of the DKUs (DKU-L1 and DKU-L2) are turned on.
The DKU is automatically powered on when the DEV interface cable is connected to the DKA.

⚠ CAUTION

A serious failure occurs if any of cables/connectors is wrongly connected.
Since a label bearing a connection destination is affixed on each cable/connector, work very carefully referring to it and the wiring diagram.

- Colors of the labels of the subsystem shipped from the factory from June of 2002 and on are as follows. Labels on the cluster1 (CL1) side and the cluster2 (CL2) side are white and yellow respectively.

a. Connect the cables to the sub-edge of PCBs.

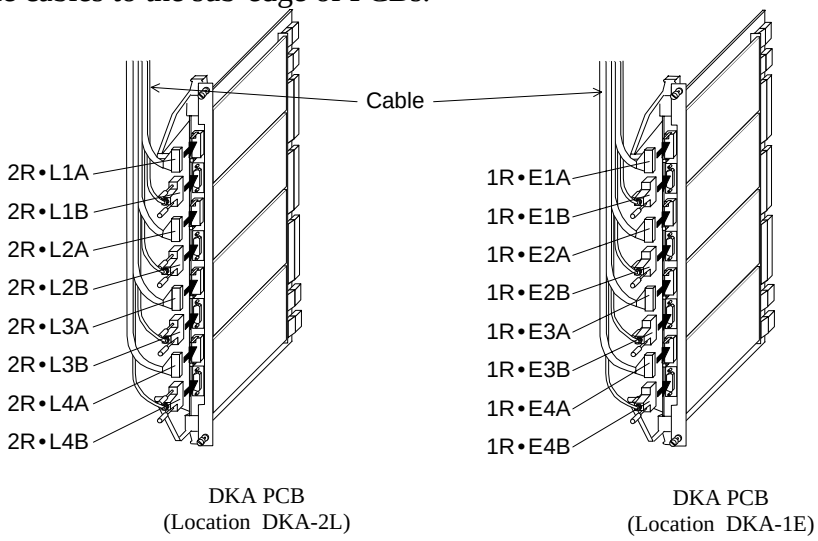

Fig.3.11.10-18 Connection of cable (Add.3)

4-3 Attachment of the nameplate

a. Attach the nameplate referring to Fig. 3.11.10-19.

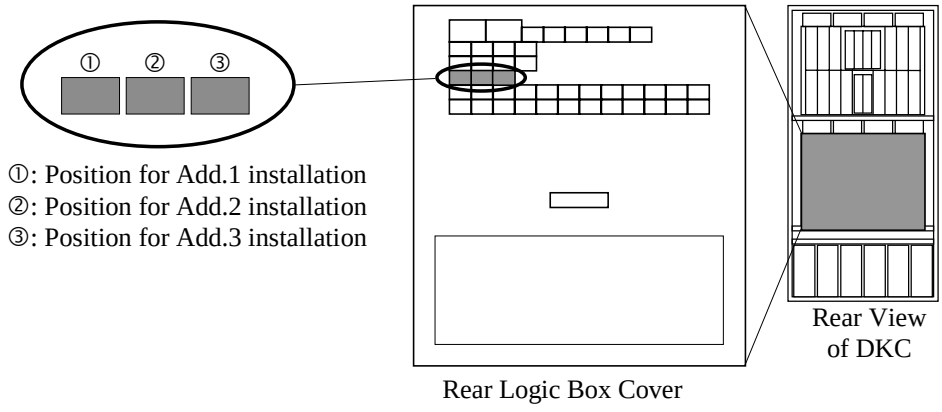

Fig. 3.11.10-19 Attachment of Nameplate

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5. Installation Procedure of HDD Canister

5-1 Confirmation of position to install HDD canister

(i) RAID5(3D+1P)/RAID1(2D+2D)

Relations between the installation locations of the RAID groups and the RAID group numbers set through the SVP are shown in Table 3.11.10-2.

Table 3.11.10-2 Relation between HDDs installation order and RAID group number (3D+1P/2D+2D)

	L2 DKU		L1 DKU		DKC		R1 DKU		R2 DKU	
	Installation Order	RAID Group No.	Installation Order	RAID Group No.			Installation Order	RAID Group No.	Installation Order	RAID Group No.
Upper	223	8-1	159	4-1	4th DKA Pair	2nd DKA Pair	032	2-1	096	6-1
	224	8-2	160	4-2			033	2-2	097	6-2
	225	8-3	161	4-3			034	2-3	098	6-3
	226	8-4	162	4-4			035	2-4	099	6-4
	227	8-5	163	4-5			036	2-5	100	6-5
	228	8-6	164	4-6			037	2-6	101	6-6
	229	8-7	165	4-7			038	2-7	102	6-7
	230	8-8	166	4-8			039	2-8	103	6-8
	231	8-9	167	4-9			040	2-9	104	6-9
	232	8-10	168	4-10			041	2-10	105	6-10
	233	8-11	169	4-11			042	2-11	106	6-11
	234	8-12	170	4-12			043	2-12	107	6-12
	235	8-13	171	4-13			044	2-13	108	6-13
	236	8-14	172	4-14			045	2-14	109	6-14
	237	8-15	173	4-15			046	2-15	110	6-15
	238	8-16	174(Spare) *2	4-16			047(Spare) *2	2-16	111	6-16
	239	8-17	175	4-17			048	2-17	112	6-17
	240	8-18	176	4-18			049	2-18	113	6-18
	241	8-19	177	4-19			050	2-19	114	6-19
	242	8-20	178	4-20			051	2-20	115	6-20
	243	8-21	179	4-21			052	2-21	116	6-21
	244	8-22	180	4-22			053	2-22	117	6-22
	245	8-23	181	4-23			054	2-23	118	6-23
	246	8-24	182	4-24			055	2-24	119	6-24
	247	8-25	183	4-25			056	2-25	120	6-25
	248	8-26	184	4-26			057	2-26	121	6-26
	249	8-27	185	4-27			058	2-27	122	6-27
	250	8-28	186	4-28			059	2-28	123	6-28
	251	8-29	187	4-29			060	2-29	124	6-29
	252	8-30	188	4-30			061	2-30	125	6-30
	253	8-31	189	4-31			062	2-31	126	6-31
	254	8-32	190	4-32			063	2-32	127	6-32
Lower	191	7-1	128	3-1	3rd DKA Pair	1st DKA Pair	001	1-1	064	5-1
	192	7-2	129	3-2			002	1-2	065	5-2
	193	7-3	130	3-3			003	1-3	066	5-3
	194	7-4	131	3-4			004	1-4	067	5-4
	195	7-5	132	3-5			005	1-5	068	5-5
	196	7-6	133	3-6			006	1-6	069	5-6
	197	7-7	134	3-7			007	1-7	070	5-7
	198	7-8	135	3-8			008	1-8	071	5-8
	199	7-9	136	3-9			009	1-9	072	5-9
	200	7-10	137	3-10			010	1-10	073	5-10
	201	7-11	138	3-11			011	1-11	074	5-11
	202	7-12	139	3-12			012	1-12	075	5-12
	203	7-13	140	3-13			013	1-13	076	5-13
	204	7-14	141	3-14			014	1-14	077	5-14
	205	7-15	142	3-15			015	1-15	078	5-15
	206	7-16	Spare *1	3-16			Spare *1	1-16	079	5-16
	207	7-17	143	3-17			016	1-17	080	5-17
	208	7-18	144	3-18			017	1-18	081	5-18
	209	7-19	145	3-19			018	1-19	082	5-19
	210	7-20	146	3-20			019	1-20	083	5-20
	211	7-21	147	3-21			020	1-21	084	5-21
	212	7-22	148	3-22			021	1-22	085	5-22
	213	7-23	149	3-23			022	1-23	086	5-23
	214	7-24	150	3-24			023	1-24	087	5-24
	215	7-25	151	3-25			024	1-25	088	5-25
	216	7-26	152	3-26			025	1-26	089	5-26
	217	7-27	153	3-27			026	1-27	090	5-27
	218	7-28	154	3-28			027	1-28	091	5-28
	219	7-29	155	3-29			028	1-29	092	5-29
	220	7-30	156	3-30			029	1-30	093	5-30
	221	7-31	157	3-31			030	1-31	094	5-31
	222	7-32	158	3-32			031	1-32	095	5-32

*1: To be left vacant or a spare disk is to be installed. *2: A data or spare disk is to be installed.

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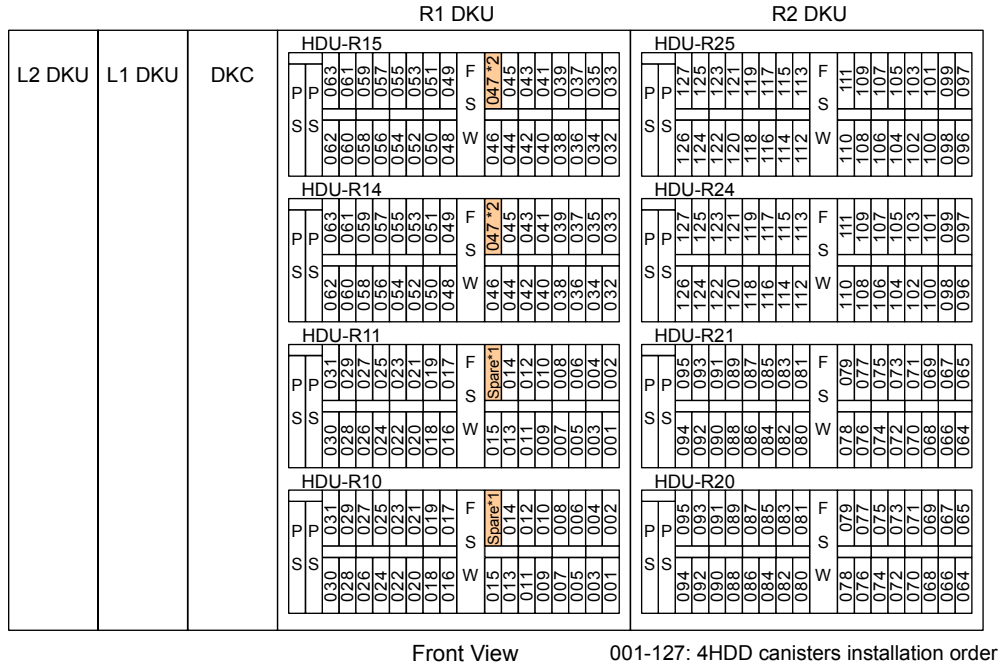
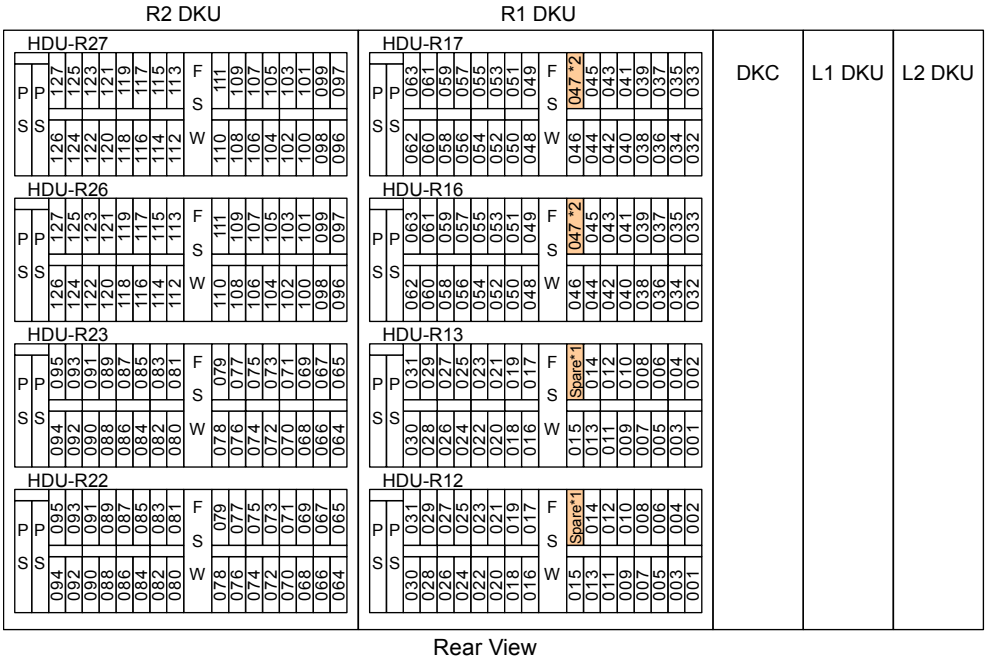
(1) Make sure of the location where the RAID group is installed and that where the HDD canister is to be added.

No.	Model Number	Model Name	Data and Parity
1	DKU-F455I-36K4/72J4/72K4/146J4/146JF/146JQ	4 HDD Canisters	Data and Parity Drive

(1) RAID5(3D+1P)/RAID1(2D+2D)





*1:To be left vacant or a spare disk is to be installed.

*2:A data or spare disk is to be installed.

Fig. 3.11.10-20 (3D+1P) or (2D+2P) Data Drive/Parity Drive Expansion Sequence (1/2)

The relationship between HDDs installation order and RAID group number is shown in the Table 3.11.10-2.

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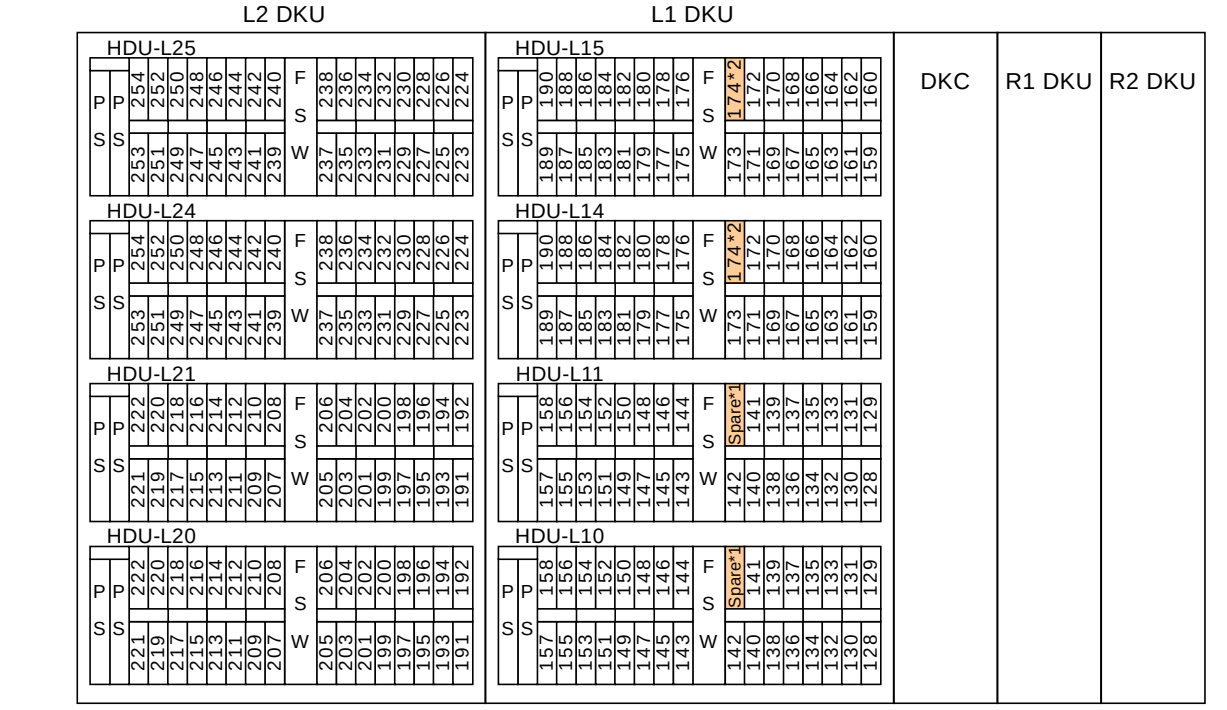

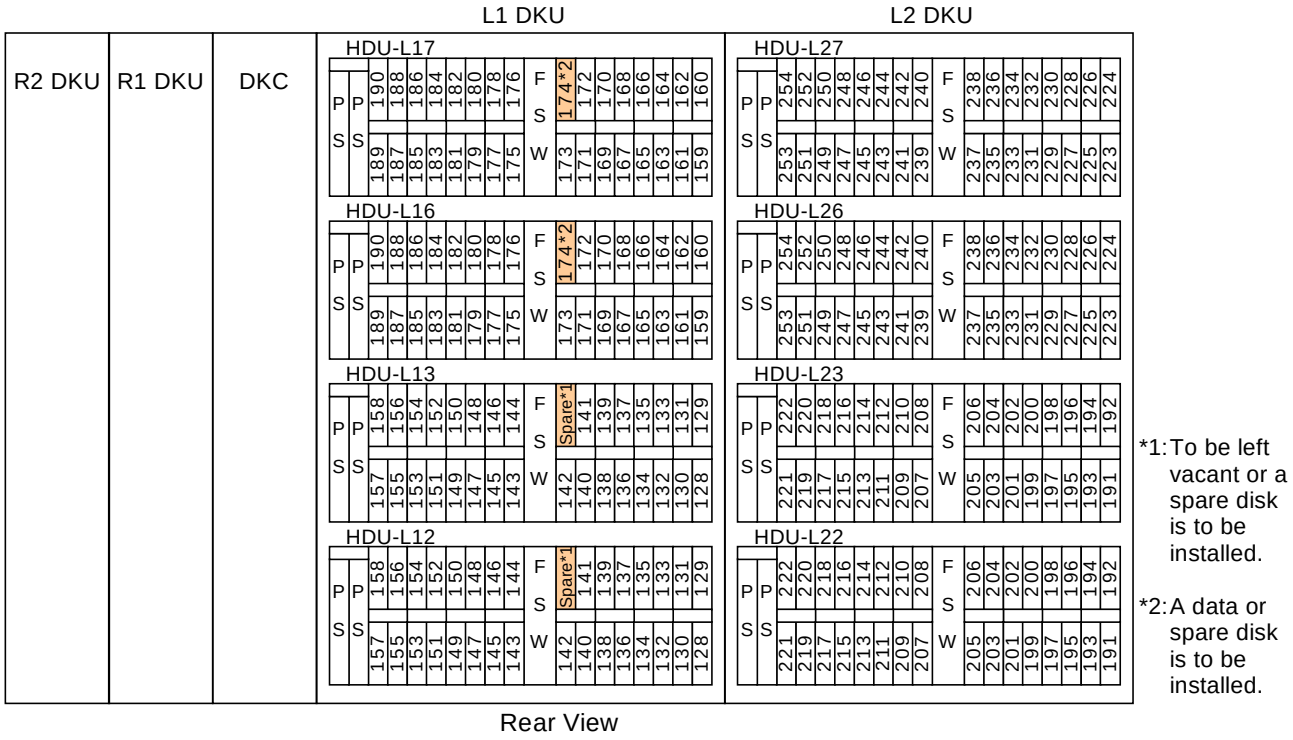

Fig. 3.11.10-20 (3D+1P) or (2D+2P) Data Drive/Parity Drive Expansion Sequence (2/2)

The relationship between HDDs installation order and RAID group number is shown in the Table 3.11.10-2.

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(ii) RAID5 (7D+1P)

Relations between the installation locations of the RAID groups and the RAID group numbers set through the SVP are shown in Table 3.11.10-3.

Table 3.11.10-3 Relation between HDDs installation order and RAID group number (7D+1P)

L2 DKU		L1 DKU		DKC		R1 DKU		R2 DKU	
Installation Order	RAID Group No.	Installation Order	RAID Group No.			Installation Order	RAID Group No.	Installation Order	RAID Group No.
095	7-1 , (8-1)	064	3-1 , (4-1)			001	1-1 , (2-1)	032	5-1 , (6-1)
096	7-2 , (8-2)	065	3-2 , (4-2)			002	1-2 , (2-2)	033	5-2 , (6-2)
097	7-3 , (8-3)	066	3-3 , (4-3)			003	1-3 , (2-3)	034	5-3 , (6-3)
098	7-4 , (8-4)	067	3-4 , (4-4)			004	1-4 , (2-4)	035	5-4 , (6-4)
099	7-5 , (8-5)	068	3-5 , (4-5)			005	1-5 , (2-5)	036	5-5 , (6-5)
100	7-6 , (8-6)	069	3-6 , (4-6)			006	1-6 , (2-6)	037	5-6 , (6-6)
101	7-7 , (8-7)	070	3-7 , (4-7)			007	1-7 , (2-7)	038	5-7 , (6-7)
102	7-8 , (8-8)	071	3-8 , (4-8)			008	1-8 , (2-8)	039	5-8 , (6-8)
103	7-9 , (8-9)	072	3-9 , (4-9)			009	1-9 , (2-9)	040	5-9 , (6-9)
104	7-10 , (8-10)	073	3-10 , (4-10)			010	1-10 , (2-10)	041	5-10 , (6-10)
105	7-11 , (8-11)	074	3-11 , (4-11)			011	1-11 , (2-11)	042	5-11 , (6-11)
106	7-12 , (8-12)	075	3-12 , (4-12)			012	1-12 , (2-12)	043	5-12 , (6-12)
107	7-13 , (8-13)	076	3-13 , (4-13)			013	1-13 , (2-13)	044	5-13 , (6-13)
108	7-14 , (8-14)	077	3-14 , (4-14)			014	1-14 , (2-14)	045	5-14 , (6-14)
109	7-15 , (8-15)	078	3-15 , (4-15)	3rd / 4th	1st / 2nd	015	1-15 , (2-15)	046	5-15 , (6-15)
110	7-16 , (8-16)	(Spare)*1	3-16 , (4-16)	DKA	DKA	(Spare)*1	1-16 , (2-16)	047	5-16 , (6-16)
111	7-17 , (8-17)	079	3-17 , (4-17)	Pairs	Pairs	016	1-17 , (2-17)	048	5-17 , (6-17)
112	7-18 , (8-18)	080	3-18 , (4-18)			017	1-18 , (2-18)	049	5-18 , (6-18)
113	7-19 , (8-19)	081	3-19 , (4-19)			018	1-19 , (2-19)	050	5-19 , (6-19)
114	7-20 , (8-20)	082	3-20 , (4-20)			019	1-20 , (2-20)	051	5-20 , (6-20)
115	7-21 , (8-21)	083	3-21 , (4-21)			020	1-21 , (2-21)	052	5-21 , (6-21)
116	7-22 , (8-22)	084	3-22 , (4-22)			021	1-22 , (2-22)	053	5-22 , (6-22)
117	7-23 , (8-23)	085	3-23 , (4-23)			022	1-23 , (2-23)	054	5-23 , (6-23)
118	7-24 , (8-24)	086	3-24 , (4-24)			023	1-24 , (2-24)	055	5-24 , (6-24)
119	7-25 , (8-25)	087	3-25 , (4-25)			024	1-25 , (2-25)	056	5-25 , (6-25)
120	7-26 , (8-26)	088	3-26 , (4-26)			025	1-26 , (2-26)	057	5-26 , (6-26)
121	7-27 , (8-27)	089	3-27 , (4-27)			026	1-27 , (2-27)	058	5-27 , (6-27)
122	7-28 , (8-28)	090	3-28 , (4-28)			027	1-28 , (2-28)	059	5-28 , (6-28)
123	7-29 , (8-29)	091	3-29 , (4-29)			028	1-29 , (2-29)	060	5-29 , (6-29)
124	7-30 , (8-30)	092	3-30 , (4-30)			029	1-30 , (2-30)	061	5-30 , (6-30)
125	7-31 , (8-31)	093	3-31 , (4-31)			030	1-31 , (2-31)	062	5-31 , (6-31)
126	7-32 , (8-32)	094	3-32 , (4-32)			031	1-32 , (2-32)	063	5-32 , (6-32)

*1: To be left vacant or a spare disk is to be installed.

- Install RAID 5 (7D+1P) forming pairs using the same number of the two RAID groups (RAID groups 1 and 2, 3 and 4, 5 and 6, and 7 and 8) of RAID 5 (3D+1P).
  (Example: RAID group numbers 1-1 and 2-1)
  The types of HDDs to be installed in each pair must be the same.
- In the case of RAID 5 (7D+1P), only odd RAID numbers are displayed on the SVP. (Group numbers shown in parentheses in the table above are not displayed.)
- When RAID 5 (3D+1P) or RAID 1 (2D+2D) and RAID 5 (7D+1P) are configured mixture, note that duplicated group numbers are excluded.
  Example: When Group No. 1-1 is configured for RAID 5 (7D+1P), Group No. 2-1 is excluded and cannot be configure for RAID 5 (3D+1P).

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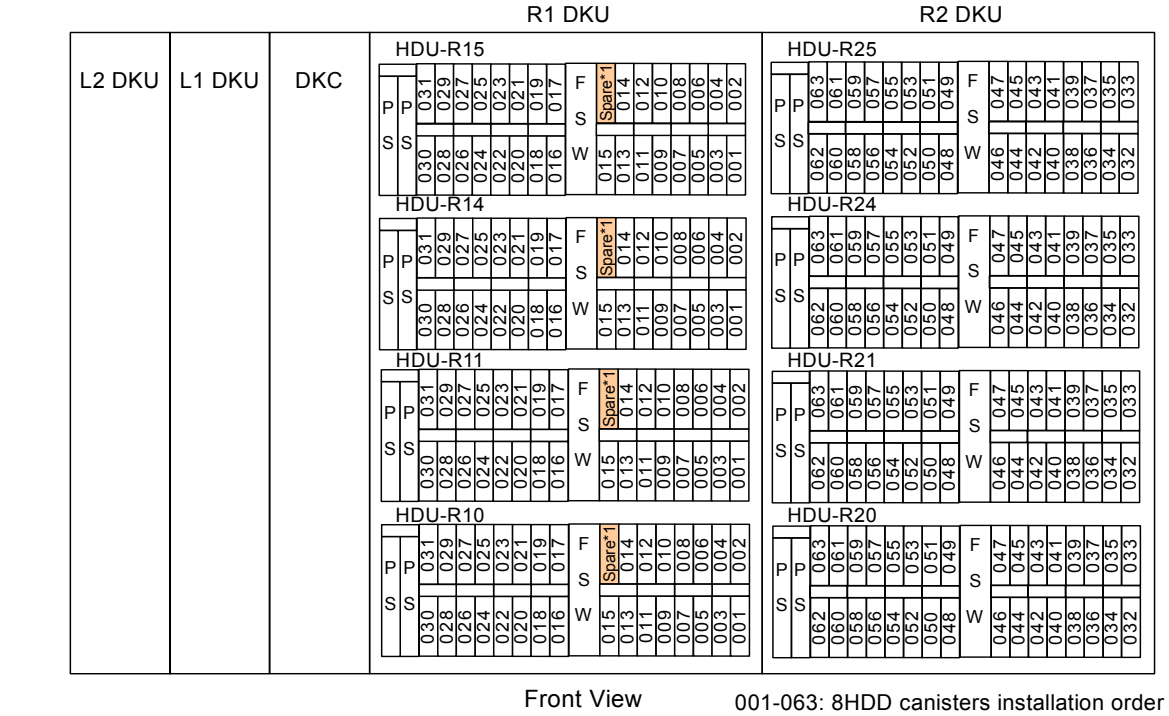
(1) Make sure of the location where the RAID group is installed and that where the HDD canister is to be added.

No.	Model Number	Model Name	Data and Parity
1	DKU-F455I-36K4/72J4/72K4/146J4/146JF/146JQ	4 HDD Canisters x 2sets	Data and Parity Drive



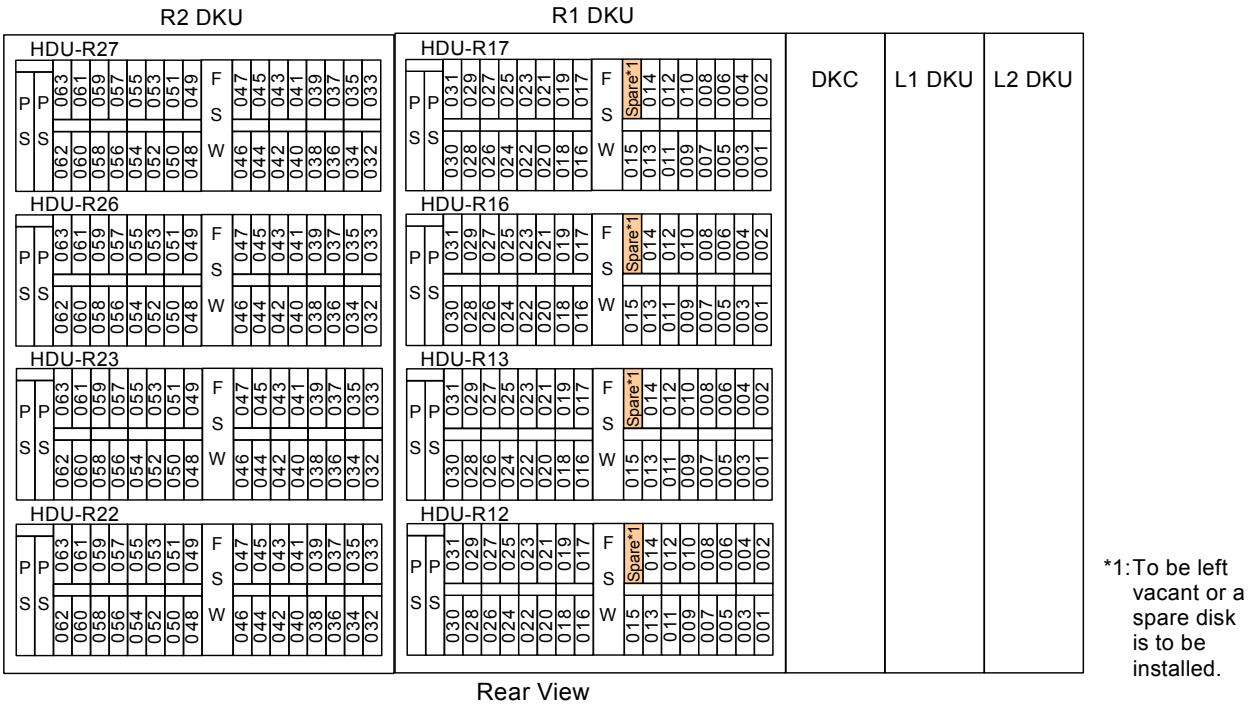


Fig. 3.11.10-21 (7D+1P) Data Drive/Parity Drive Expansion Sequence (1/2)

The relationship between HDDs installation order and RAID group number is shown in the Table 3.11.10-3.

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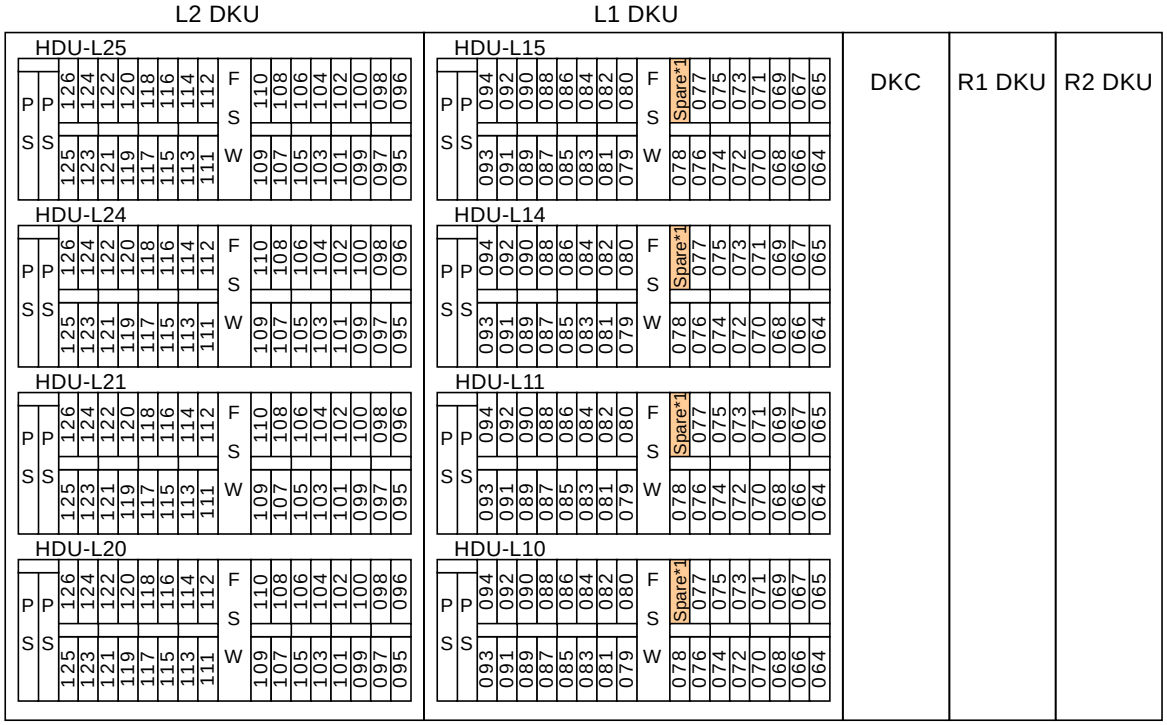

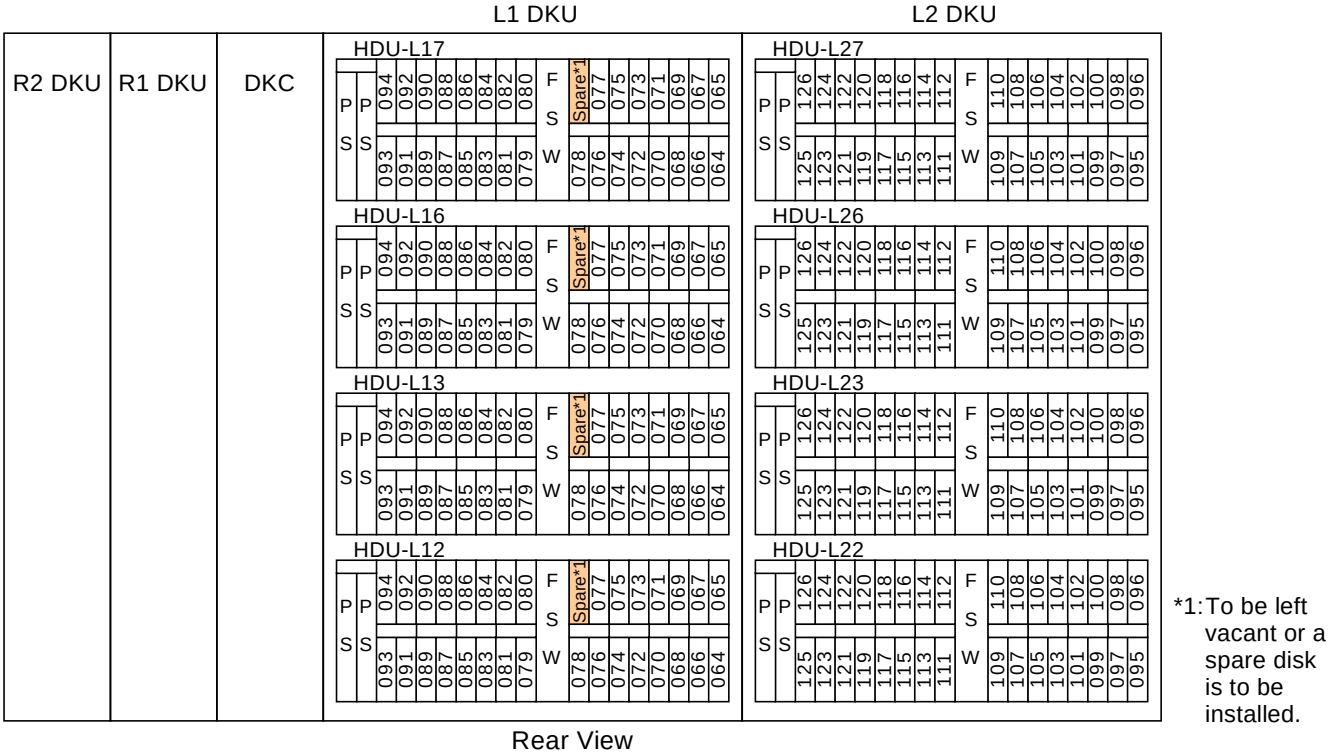

Fig. 3.11.10-21 (7D+1P) Data Drive/Parity Drive Expansion Sequence (2/2)

The relationship between HDDs installation order and RAID group number is shown in the Table 3.11.10-3.

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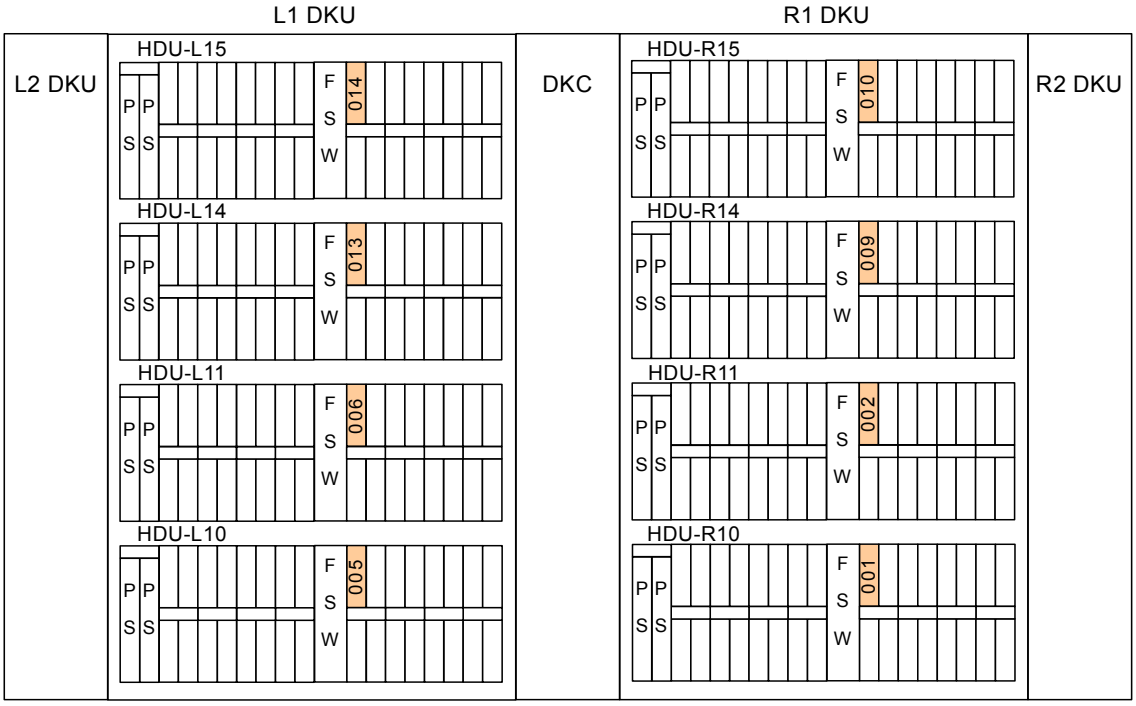
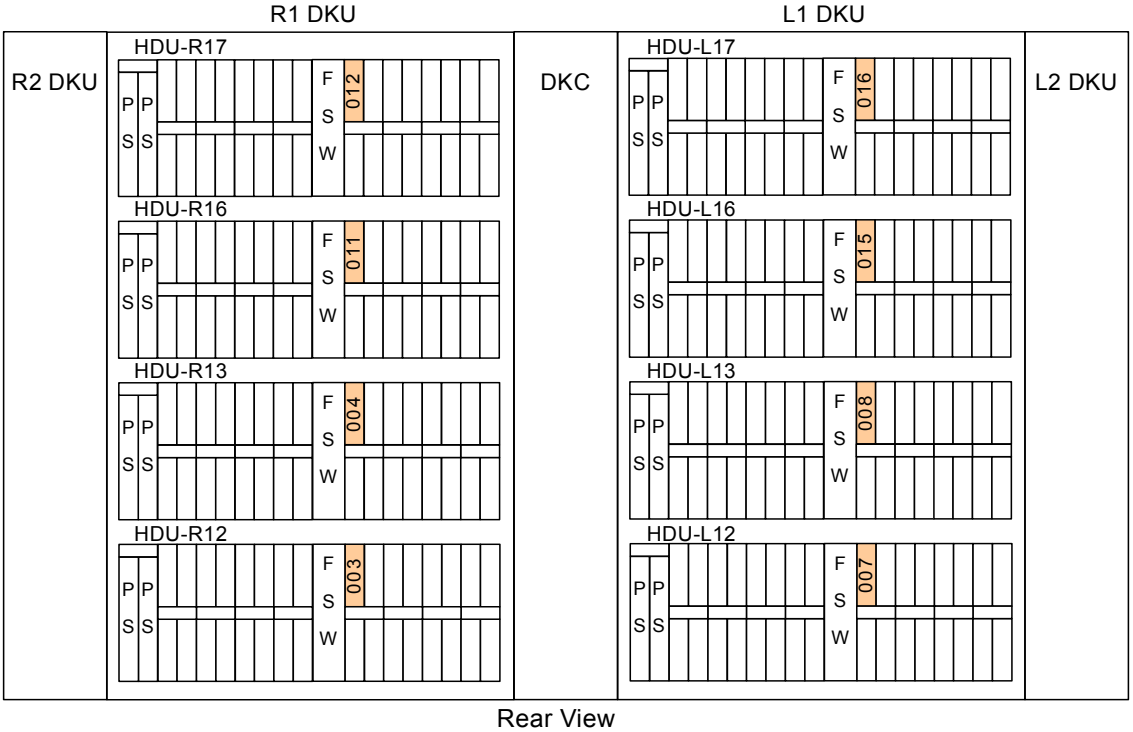
(iii) Spare HDD

No.	Model Number	Model Name	Data and Parity
1	DKU-F455I-36K1/72J1/72K1/146J1/146JS/146JM	1 HDD Canister	Spare Drive



Front View

001-016: Spare HDD canister installation order



Rear View

Fig. 3.11.10-22 Spare Drive Expansion Sequence

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5-2 Installation of the HDD Canister.

Notice:
(1) Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.
(2) Since the HDD is a precision component, handle it very carefully not to apply a vibration or shock to it.

a. Remove the dummy canister from the HDU Box.
When the dummy canister cannot be removed by pulling of it only, remove it referring to page INST03-DKA-3000.
b. Install the HDD canister. (For the detailed procedure for installation, refer to the procedure for installing HDD canister on page INST03-DKA-3010.)

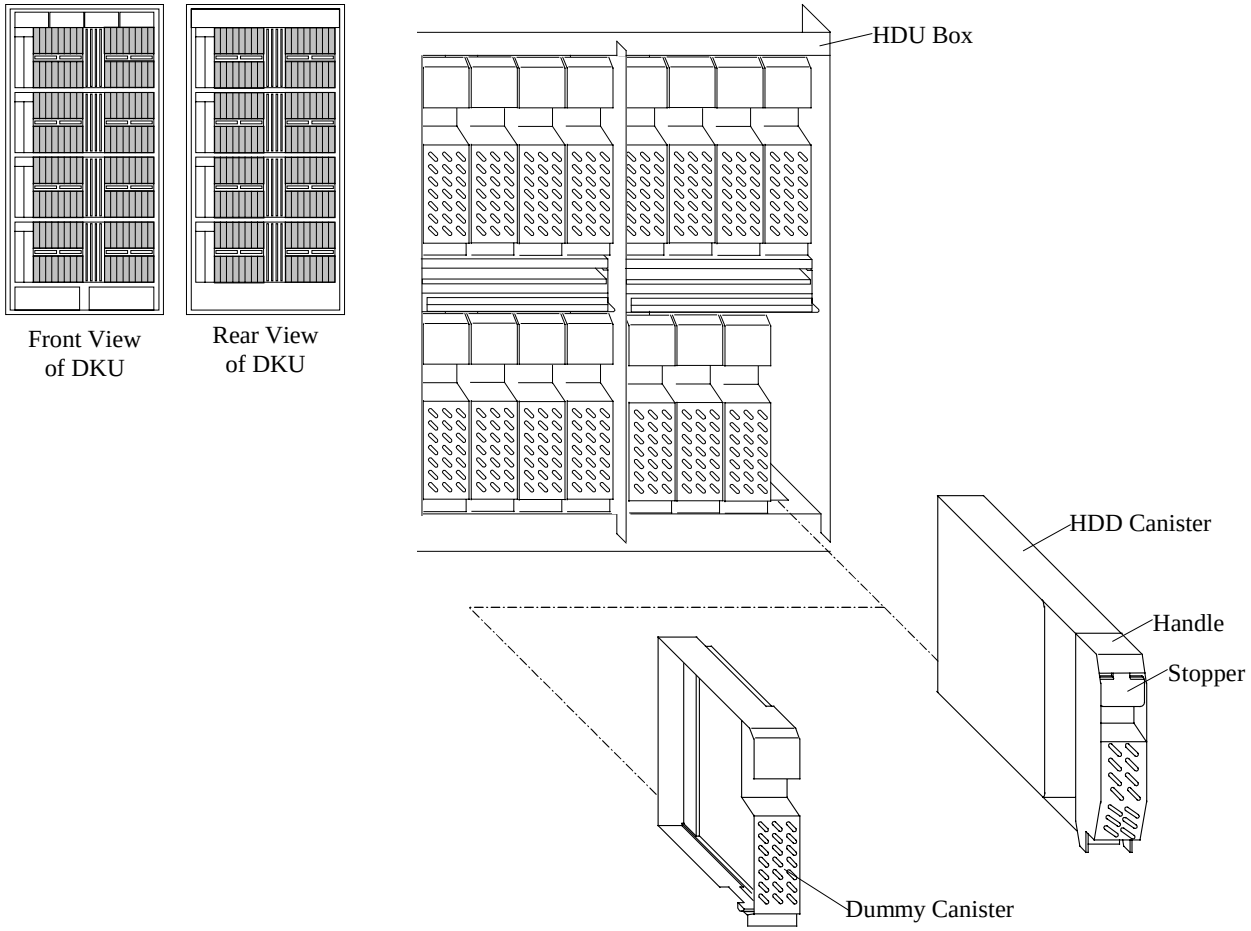

Fig. 3.11.10-23 Installation of HDD Canister

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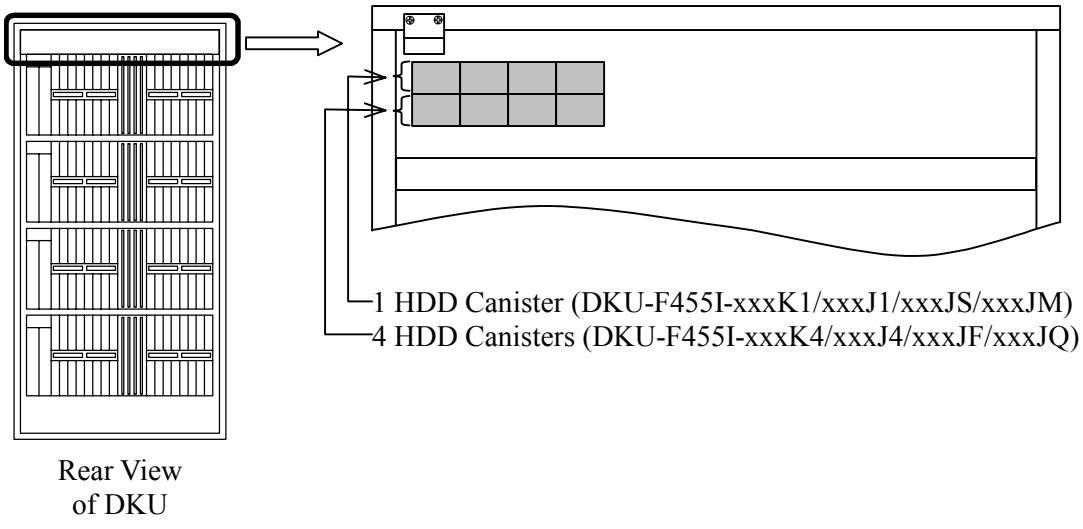
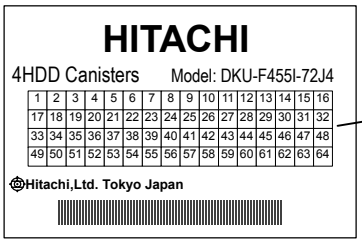
5-3 Attachment of the nameplate.

a. When the nameplate is not attached, attach the nameplate regardless of the model number from the left of the unit. Paint out mounting numbers on the nameplate.



[Example]

When the 7 DKU-F455I-72J4 sets are installed



							8	9	10	11	12	13	14	15	16
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64

Fig. 3.11.10-24 Attachment of Nameplate

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6. Installation Procedure of DEV Interface Cable 2 (DKU-F455I-EXC)

Caution:
The addition cannot be done unless the AC power is applied to the added DKU and the main breaker of the DKU is turned on.

Between HDU-L10-L17 and HDU-L20-L27

a. Connect the DEV interface cables to the FSW PCBs in the DKU-L1 frame referring to figures 3.11.10-25 and 3.11.10-26.

⚠ CAUTION

A serious failure occurs if any of cables/connectors is wrongly connected.
Since a label bearing a connection destination is affixed on each cable/connector, work very carefully referring to it and the wiring diagram.

- Colors of the labels of the subsystem shipped from the factory from June of 2002 and on are as follows. Labels on the cluster1 (CL1) side and the cluster2 (CL2) side are white and yellow respectively.

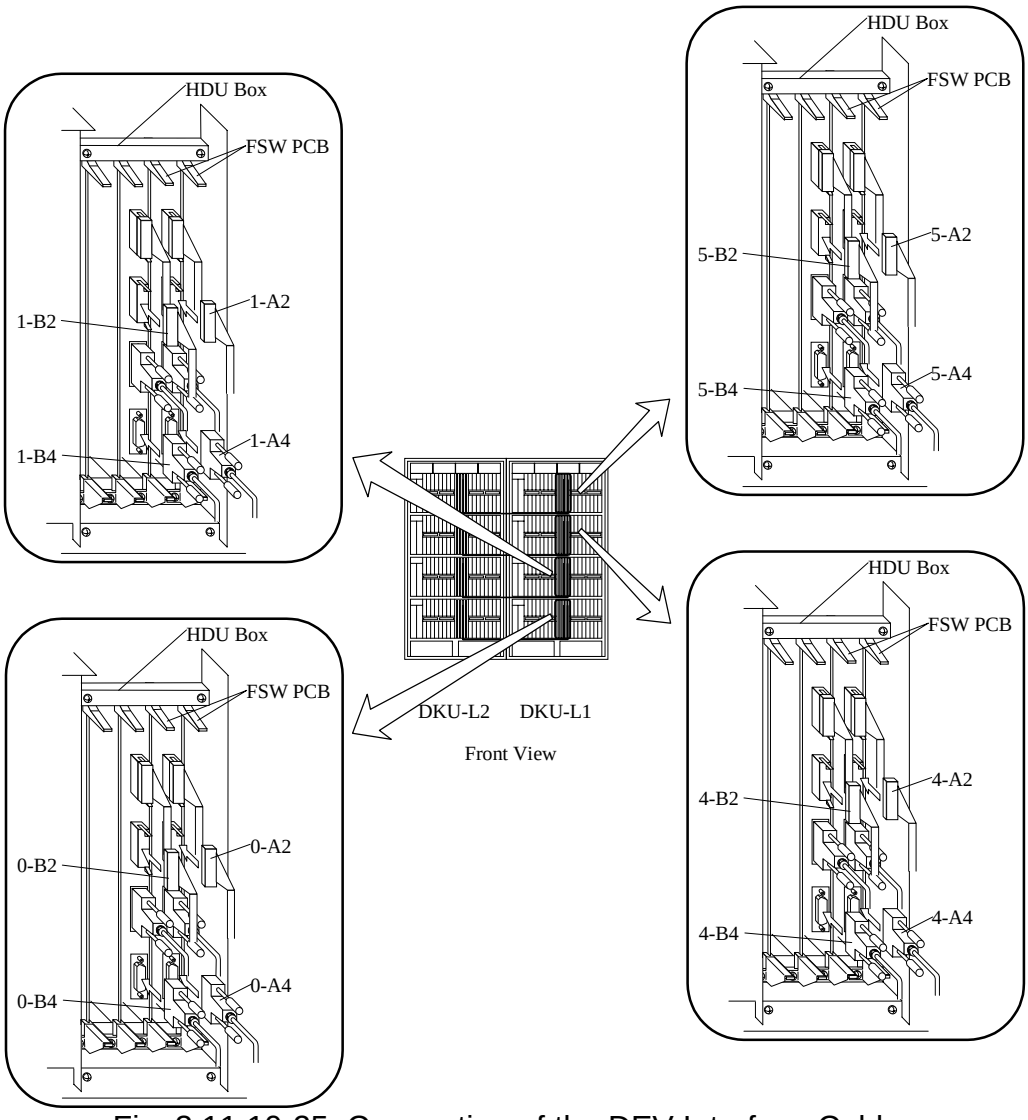

Fig. 3.11.10-25 Connection of the DEV Interface Cables

Copyright ©2002, Hitachi, Ltd.

⚠ CAUTION

A serious failure occurs if any of cables/connectors is wrongly connected.
Since a label bearing a connection destination is affixed on each cable/connector, work very carefully referring to it and the wiring diagram.

- Colors of the labels of the subsystem shipped from the factory from June of 2002 and on are as follows. Labels on the cluster1 (CL1) side and the cluster2 (CL2) side are white and yellow respectively.

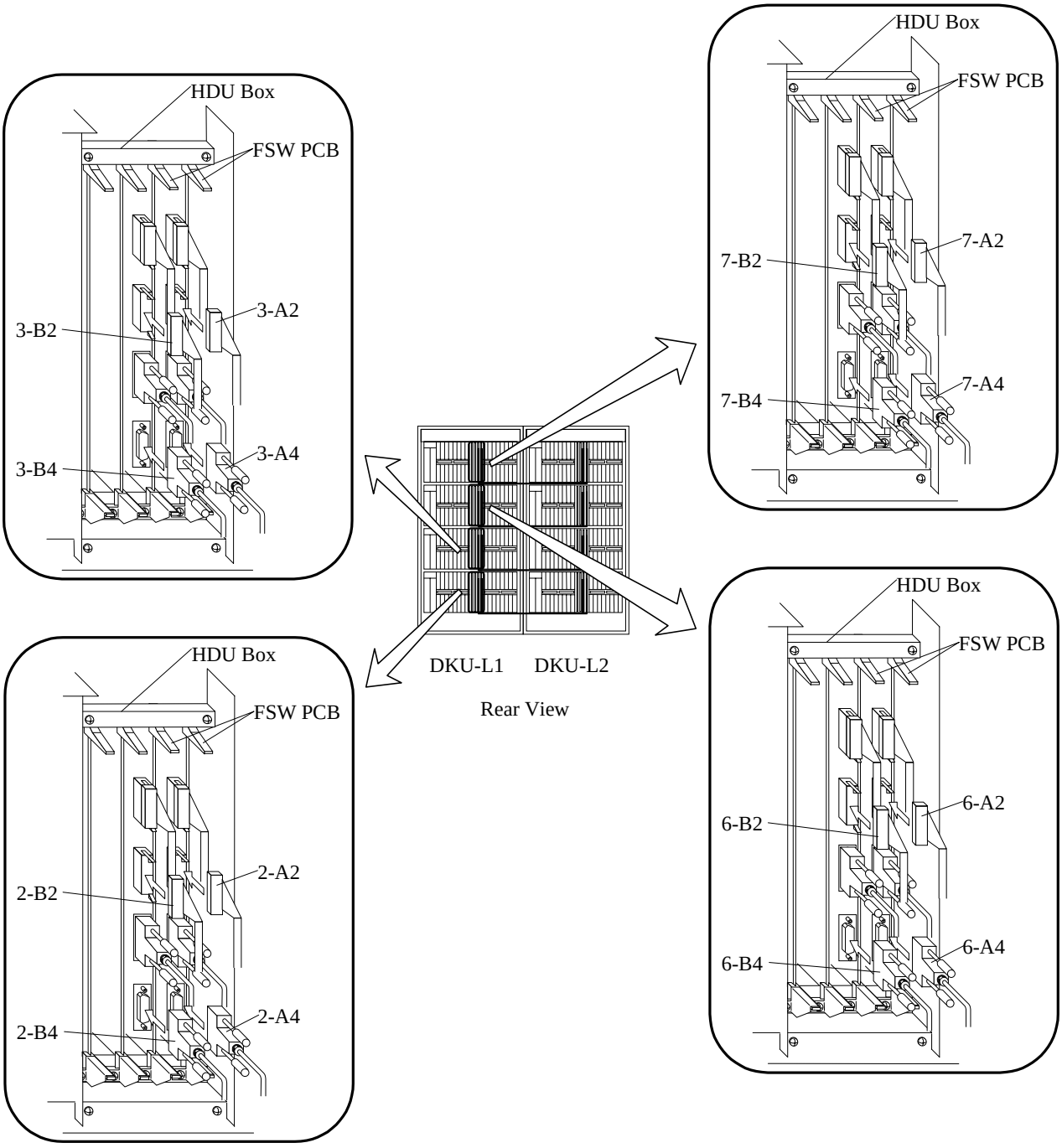

Fig. 3.11.10-26 Connection of the DEV Interface Cables

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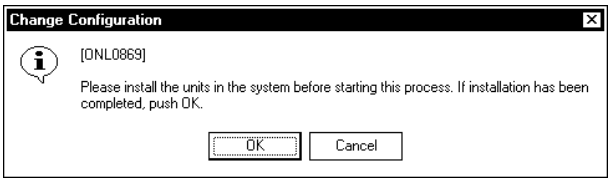
7. SVP post procedure

1. <Check that hardware components are installed>
   Select (CL) [OK] after making sure that all hardware components are installed correctly in response to “Please install the units in the system before starting this process. If installation has been completed, push OK.”.



2.
   When DKA is installed, “Waiting for Power Event... Usually, several minutes (maximum 15 minutes)” is displayed.

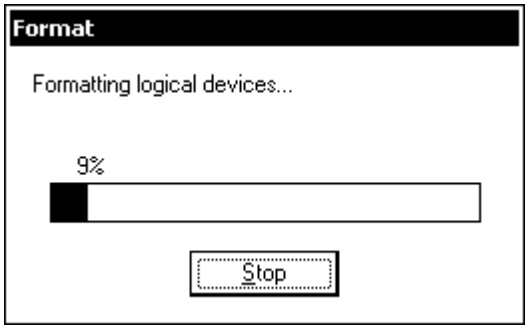
   If [ONL3437E] or [ONL3438E] is displayed, please refer 2.11.1. (INST02-630)
   If [ONL3441E] or [ONL2841W] is displayed, please refer 2.11.2. (INST02-640)

---

3. <DKU PATH INLINE>
   When DKA is installed, “DKU PATH INLINE is now running...” is displayed.

---

4. <LDEV FORMAT>
   “Formatting the logical device...” is displayed when Parity Group is defined.



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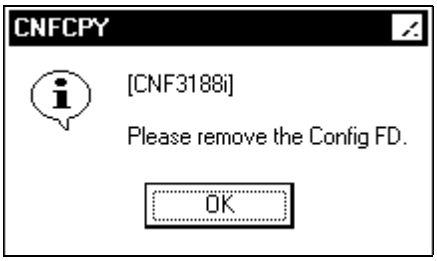
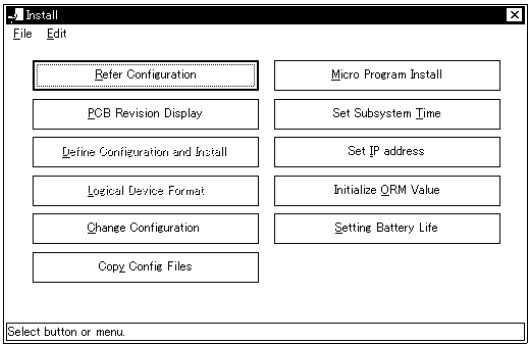
5. <End of system update processing>
"Renewal process has completed. Please check the subsystem status." is displayed when recovery processing on all installed components is completed. Select (CL) [OK] in response to this message.

6.
"Reading subsystem configuration data..." is displayed.
"Please insert the Config FD in the FDD." is displayed.
Insert the configuration FD into FDD, and select (CL) [OK].

7.
When this procedure is completed, the message "Please remove the Config FD." is displayed.
Remove the FD, select (CL) [OK].



8.
After the procedure is completed, return to 'Install'.
Select (CL) [File]-[Exit].



9. <Mode Change>
Change the mode to View Mode.

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8. Installation Procedure of DEV Interface Cable 2 (DKU-F455I-EXC)

Between HDU-L10-L17 and HDU-L20-L27

a. Attach the cable covers with the screw to fix the DEV Interface Cables.

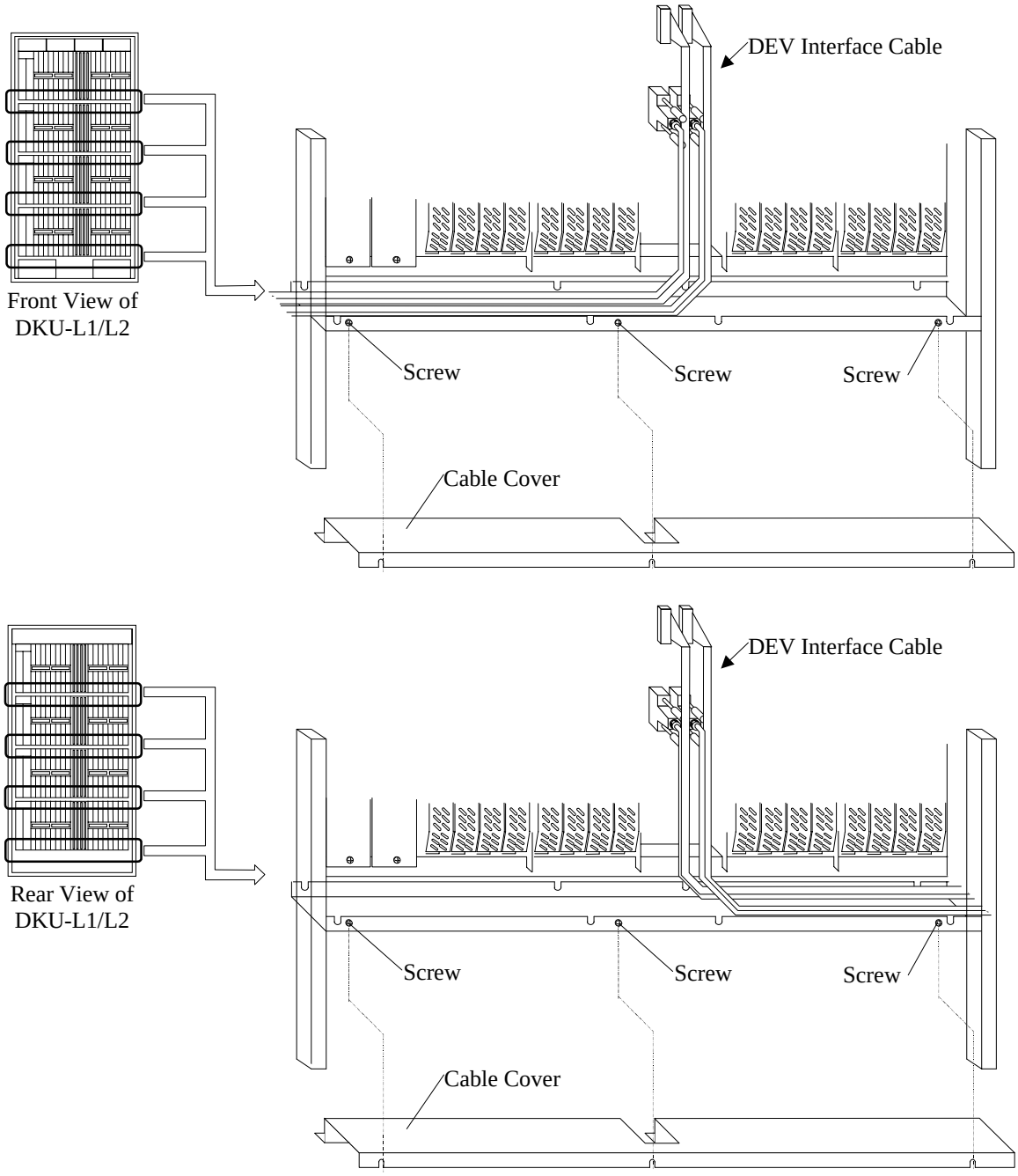

Fig. 3.11.10-27 Fixation of the DEV Interface Cables

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b. Attach the cable covers with the screw to fix the DEV Interface Cables.

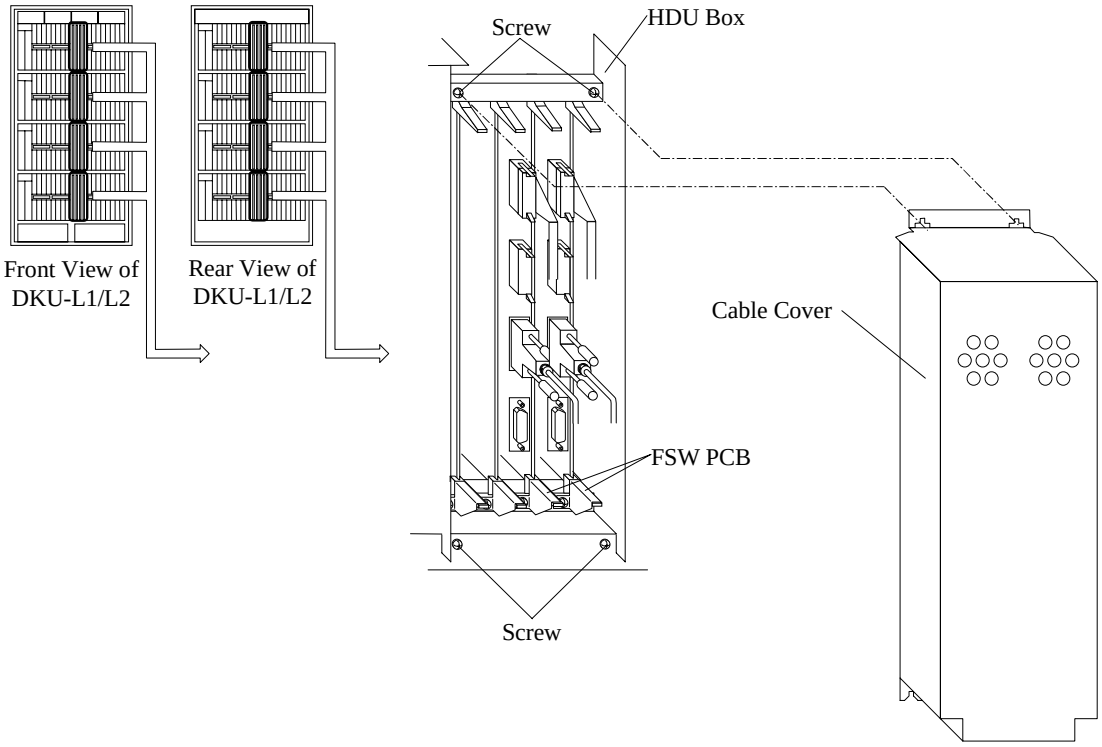

Fig. 3.11.10-28 Fixation of the DEV Interface Cables

c. Attach the nameplate to the DKU-L2 frame.

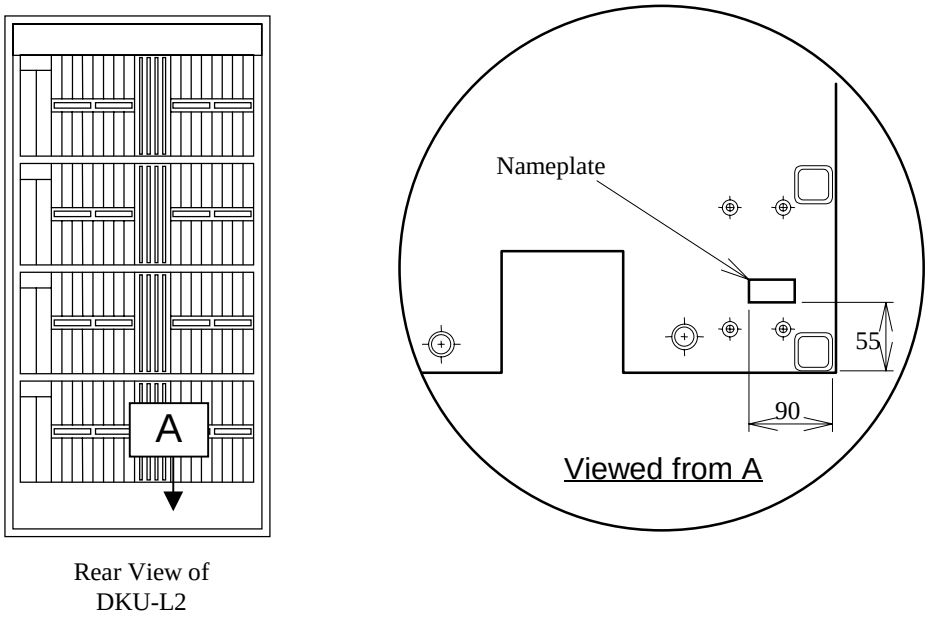

Fig. 3.11.10-29 Attachment of the Nameplate

d. Return to the work table (INST02-50) and perform rest of the works.

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3.11.11 When performing addition of the data/spare HDD canister, DKA, and DEV interface cable that accompanies the addition of the DKU-R2, DKU-L1, and DKU-L2 frames (DKC-F460I-200/L1C, DKU-F455I-36K4/36K1/72J4/72J1/72K4/72K1/146J4/146J1/146JF/146JS/146JQ/146JM/EXC)

1. Installation Procedure of DEV Interface Cable 1 (DKC-F460I-L1C)

1-1 Connect the DEV Interface cables to the FSW.

Note:
1. When the DEV interface cable is connected to the FSW in the state in which the subsystem power is on, the each HDU Box is powered on at the same time of the connection.
2. When the DEV interface cable is connected in the state in which the main circuit breaker of the DKU is not turned on, the DKU Voltage Alarm is detected (the ALARM LED on the operator panel comes on and the SIM=BF20XX or BF22XX is issued). Therefore, turn on the main circuit breaker of the DKU before connecting the DEV interface cable.

Matters to be checked:
Check the settings of the switches on the JMP PCB and multi power supply (MPS) and the jumper socket. (Refer to Subsection 3.4.4, "Switch and Jumper Plug Installation" on pages INST03-DKU-220 and INST03-DKU-230.)
If any of the switches and jumper socket is not set correctly, reset it correctly.

a. Loosen the screws and remove the cable covers from the DKU frames.

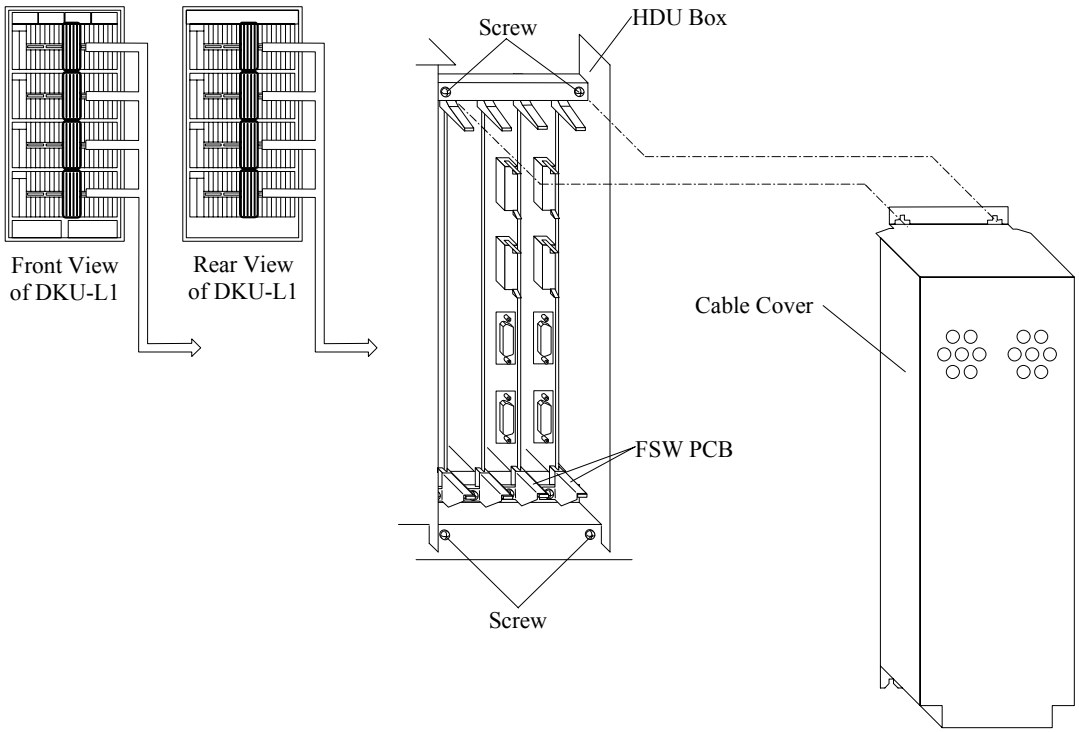

Fig. 3.11.11-1 Removal of Cable Covers

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b. Loosen the screws and remove the cable covers from the DKU frames.

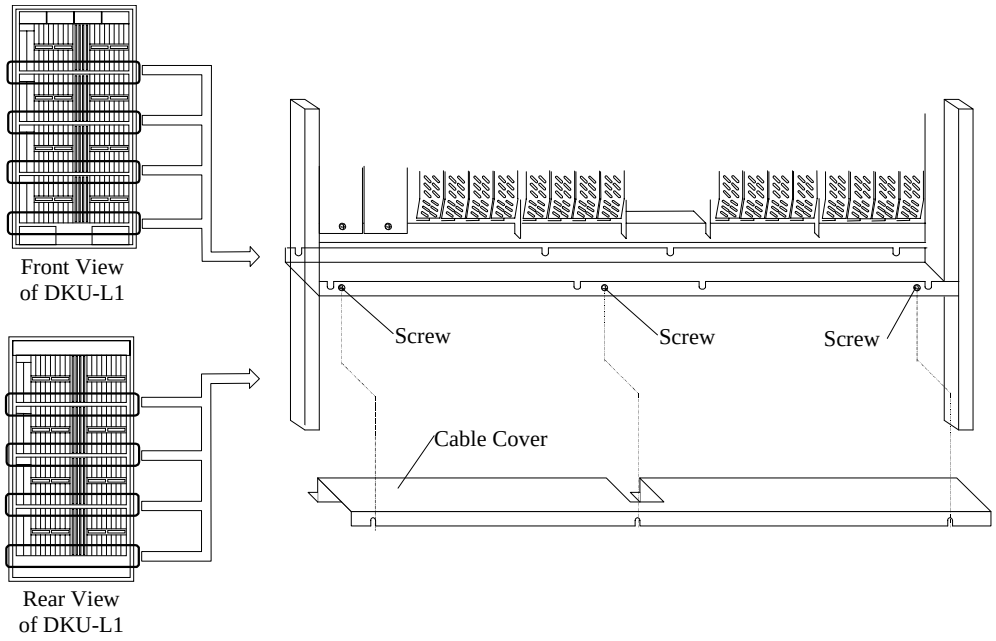

Fig. 3.11.11-2 Removal of Cable Covers

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c. Refer to Fig. 3.11.11-3 and Fig. 3.11.11-4. Connect the DEV interface cables to the sub-edges on the FSW PCBs in the HDU box.

Caution:
1. Do not perform the work unless the AC power is supplied to the additional DKU and the main breaker of the DKU is not turned on.
2. Do not connect the DEV interface cable to the DKA in this procedure. The cable is to be connected later in another procedure.

⚠ CAUTION

A serious failure occurs if any of cables/connectors is wrongly connected.
Since a label bearing a connection destination is affixed on each cable/connector, work very carefully referring to it and the wiring diagram.

- Colors of the labels of the subsystem shipped from the factory from June of 2002 and on are as follows. Labels on the cluster1 (CL1) side and the cluster2 (CL2) side are white and yellow respectively.

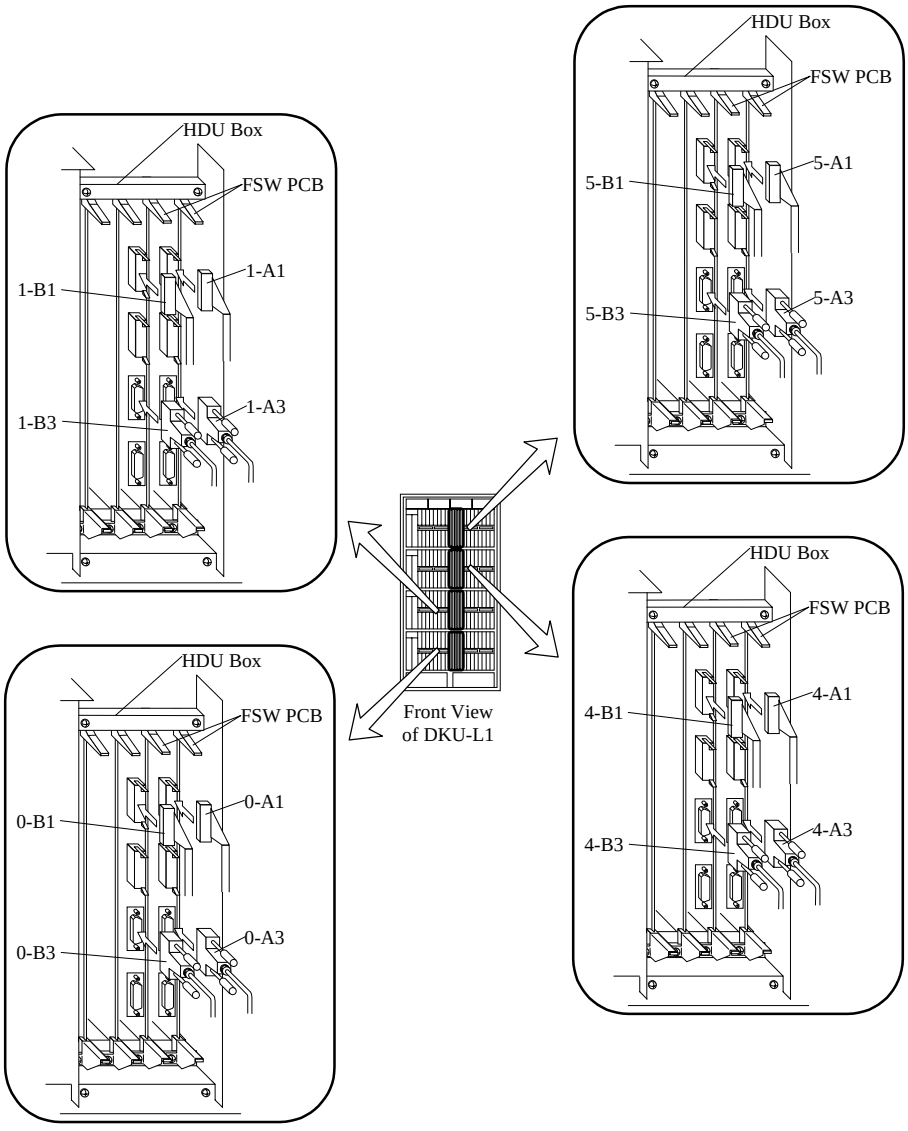

Fig. 3.11.11-3 DEV Interface Cabling Diagram (FSW PCB Side)

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⚠ CAUTION

A serious failure occurs if any of cables/connectors is wrongly connected.
Since a label bearing a connection destination is affixed on each cable/connector, work very carefully referring to it and the wiring diagram.

- Colors of the labels of the subsystem shipped from the factory from June of 2002 and on are as follows. Labels on the cluster1 (CL1) side and the cluster2 (CL2) side are white and yellow respectively.

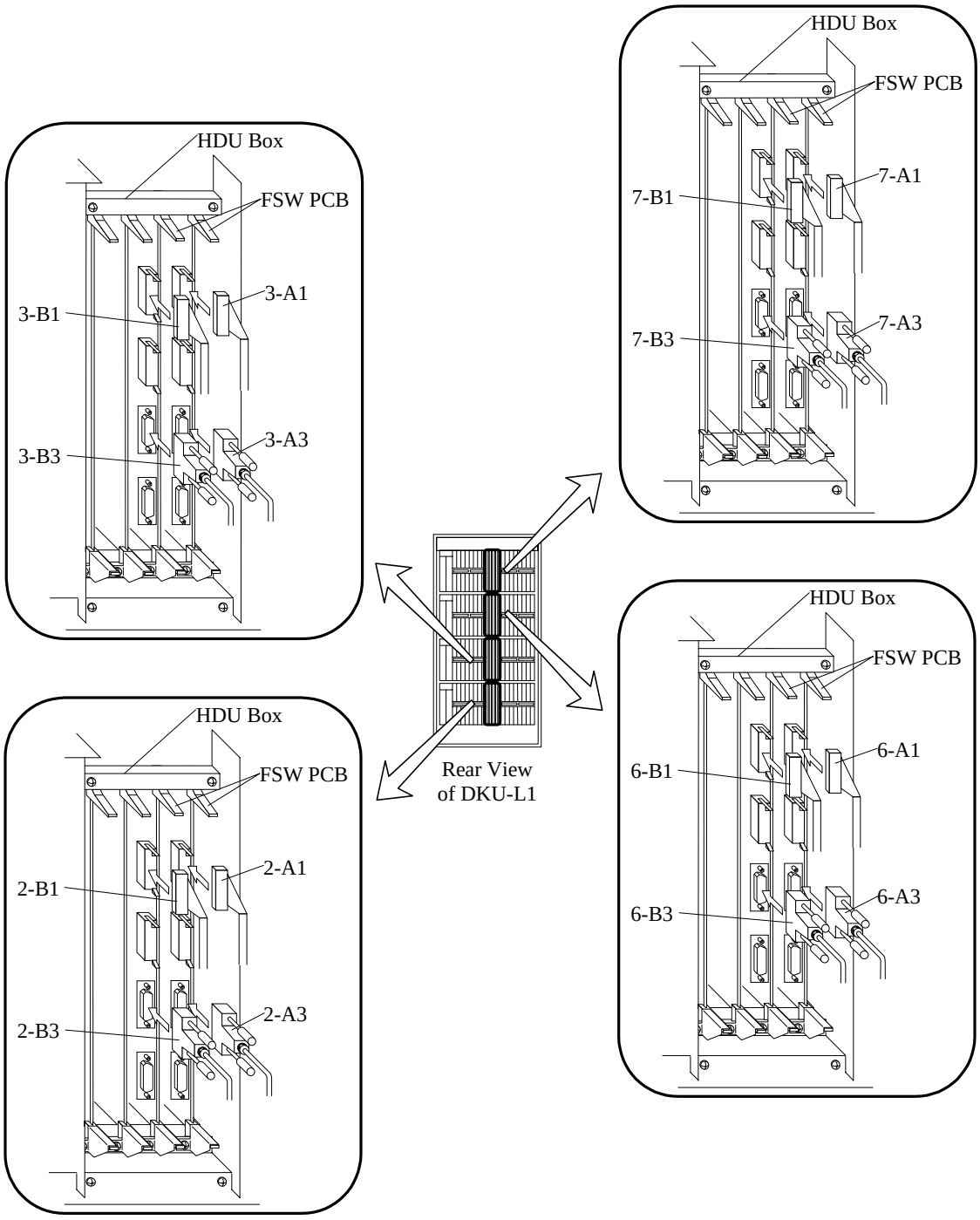

Fig. 3.11.11-4 DEV Interface Cabling Diagram (FSW PCB Side)

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d. Attach the cable covers with the screw to fix the DEV Interface Cables.

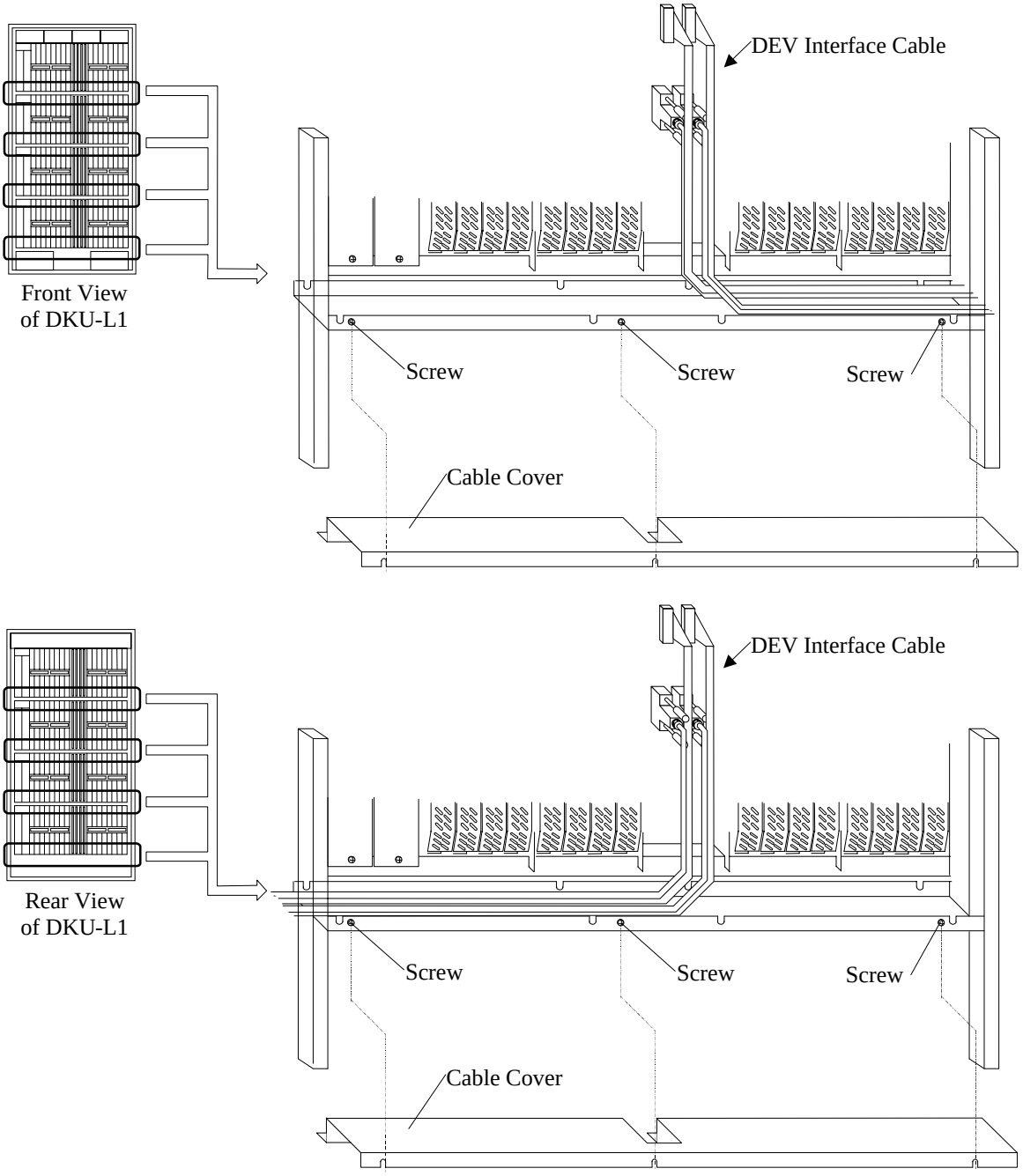

Fig. 3.11.11-5 Fixation of the DEV Interface Cables

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e. Attach the cable covers with the screw to fix the DEV Interface Cables.

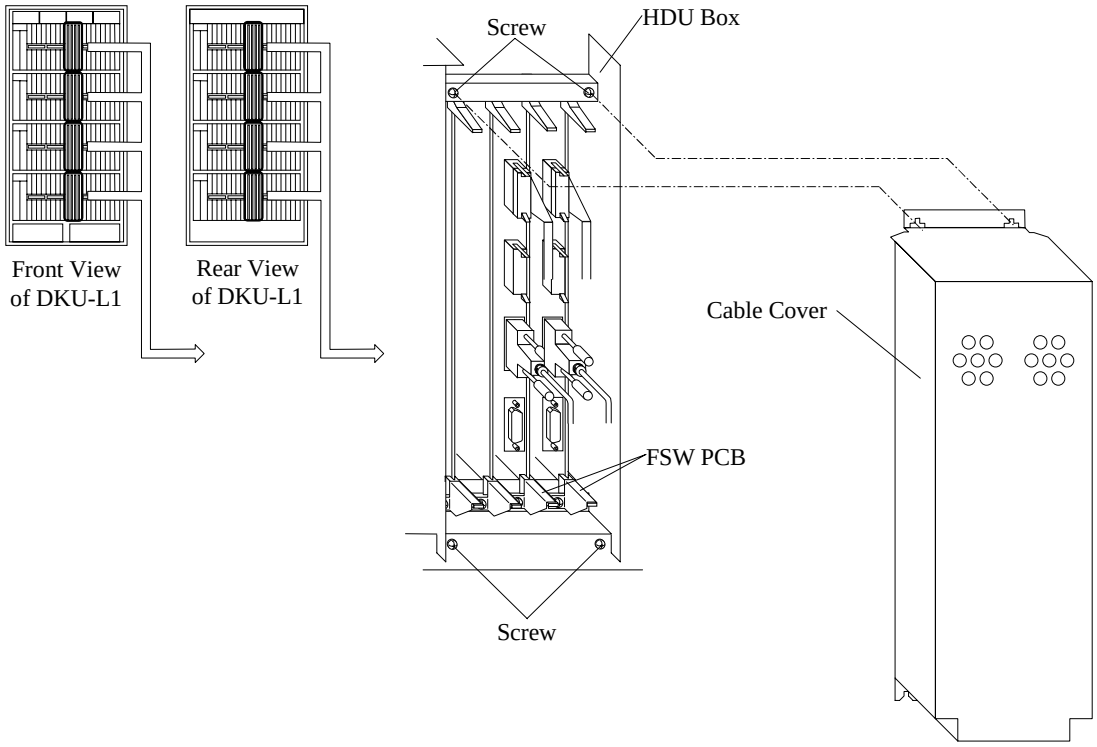

Fig. 3.11.11-6 Fixation of the DEV Interface Cables

1-2 Attach the nameplate.

a. Attach the nameplate regardless of the model number from the left of the cover.

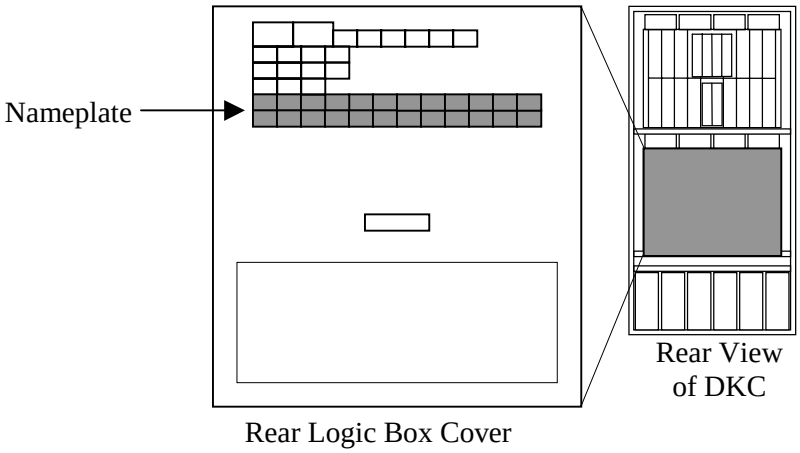

Fig. 3.11.11-7 Attachment of Nameplate

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2. Installation Procedure of DEV Interface Cable 2 (1/3) (DKU-F455I-EXC)

Between HDU-R10-R17 and HDU-R20-R27

a. Loosen the screws and remove the cable covers from the DKU frames.

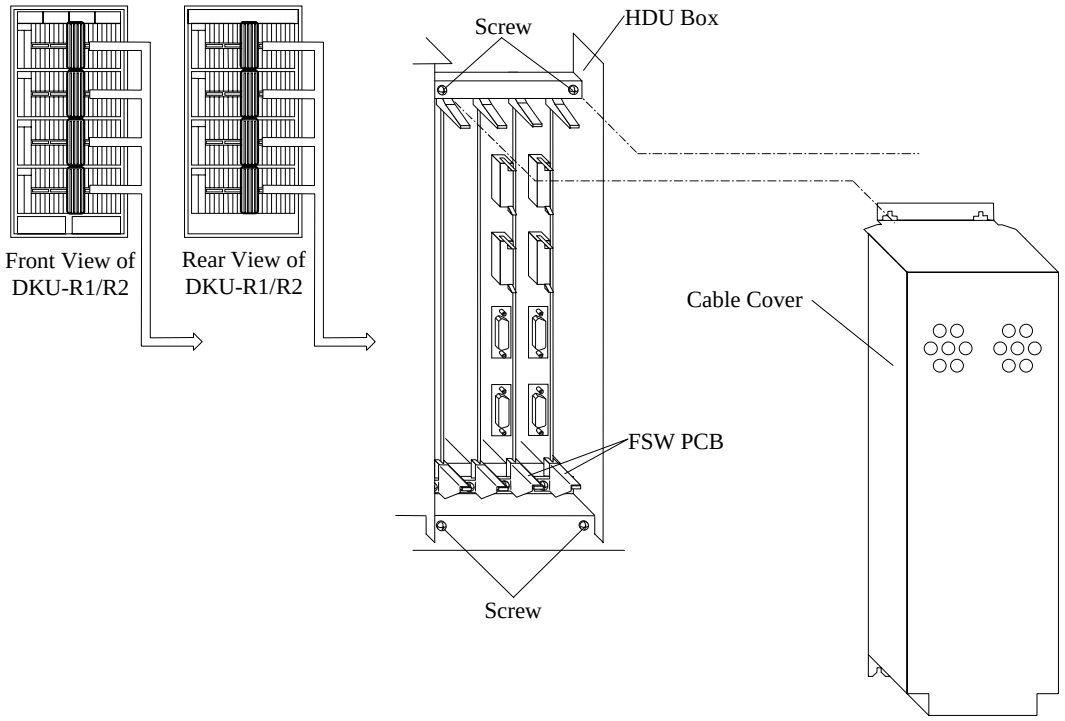

Fig. 3.11.11-8 Removal of Cable Covers

b. Loosen the screws and remove the cable covers from the DKU frames.

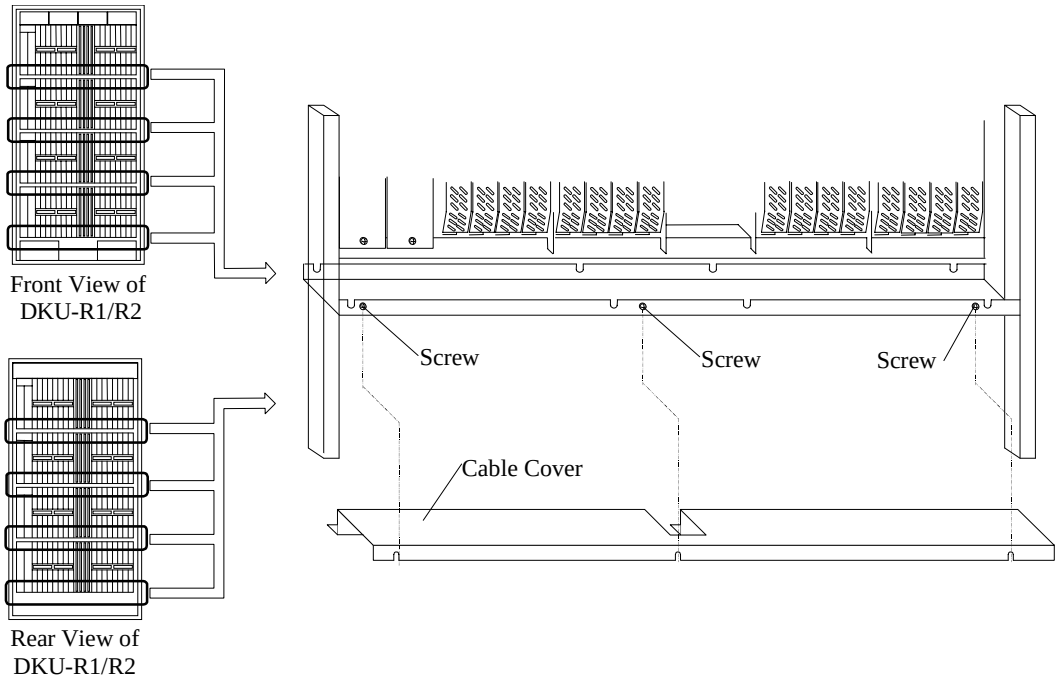

Fig. 3.11.11-9 Removal of Cable Covers

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c. Connect the DEV interface cables to the FSW PCBs in the DKU-R2 frame referring to Fig. 3.11.11-10 through Fig. 3.11.11-13.

Caution:
1. Do not perform the work unless the AC power is supplied to the additional DKU and the main breaker of the DKU is not turned on.
2. Do not connect the DEV interface cable to the operating DKU in this procedure. The cable is to be connected later in another procedure.

⚠ CAUTION

A serious failure occurs if any of cables/connectors is wrongly connected.
Since a label bearing a connection destination is affixed on each cable/connector, work very carefully referring to it and the wiring diagram.

- Colors of the labels of the subsystem shipped from the factory from June of 2002 and on are as follows. Labels on the cluster1 (CL1) side and the cluster2 (CL2) side are white and yellow respectively.

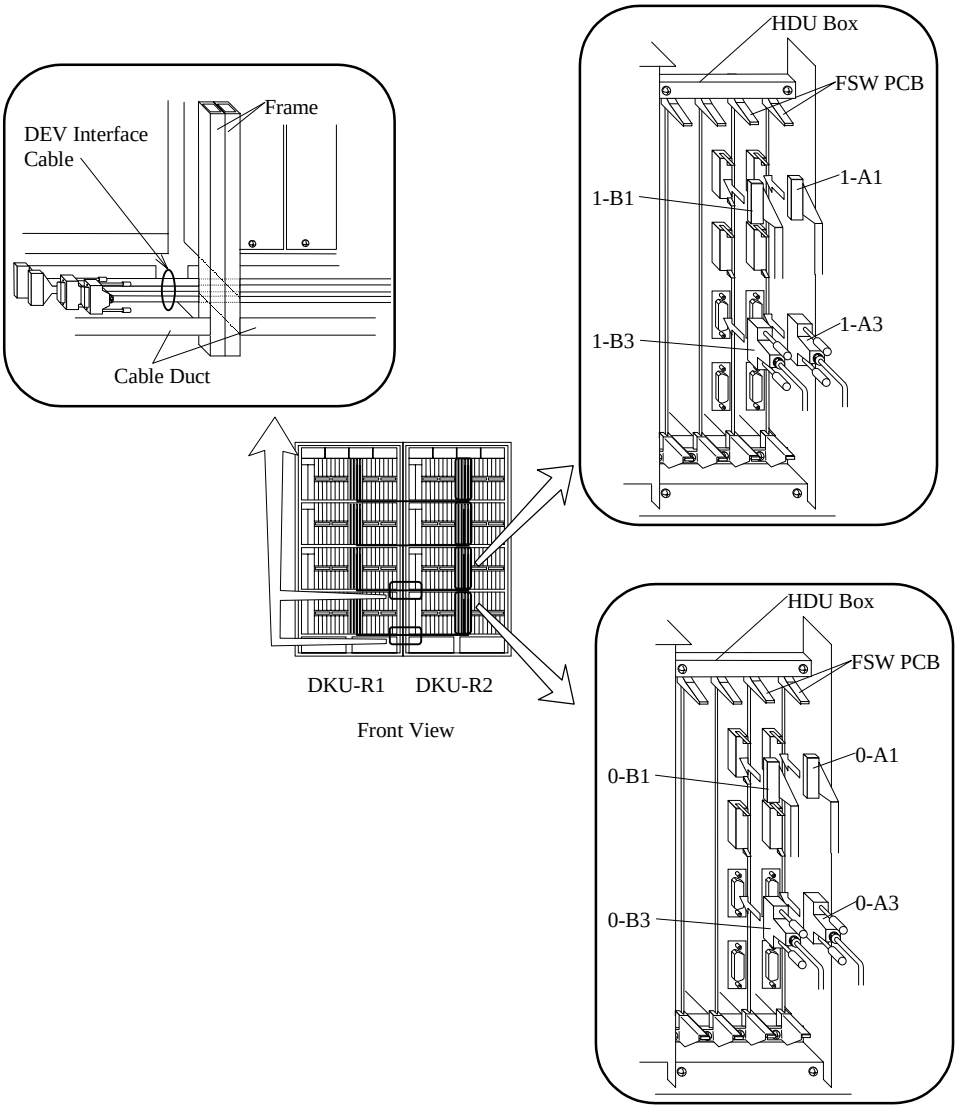

Fig. 3.11.11-10 Connection of the DEV Interface Cables

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CAUTION

A serious failure occurs if any of cables/connectors is wrongly connected.
Since a label bearing a connection destination is affixed on each cable/connector, work very carefully referring to it and the wiring diagram.

- Colors of the labels of the subsystem shipped from the factory from June of 2002 and on are as follows. Labels on the cluster1 (CL1) side and the cluster2 (CL2) side are white and yellow respectively.

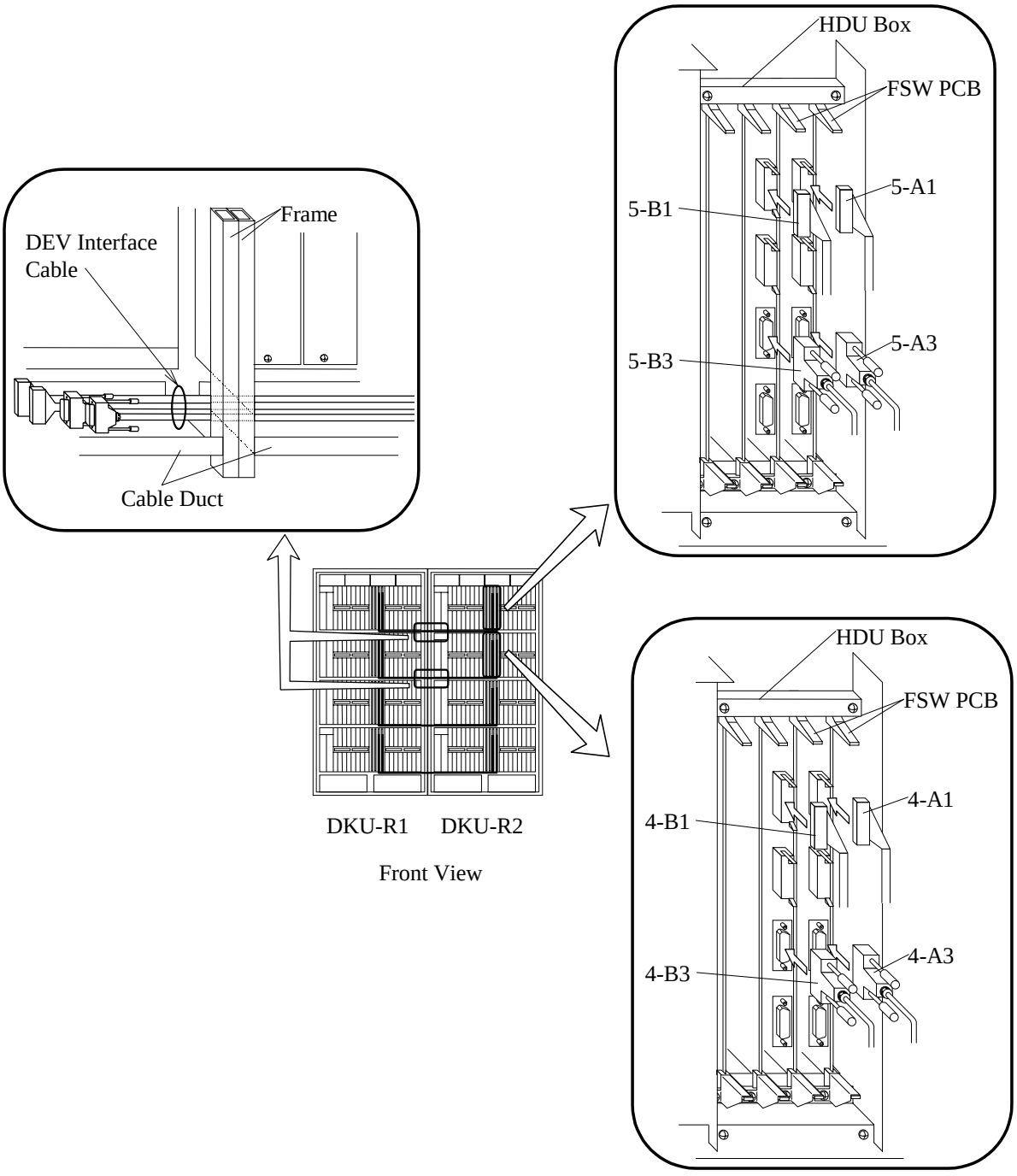

Fig. 3.11.11-11 Connection of the DEV Interface Cables

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⚠ CAUTION

A serious failure occurs if any of cables/connectors is wrongly connected.
Since a label bearing a connection destination is affixed on each cable/connector, work very carefully referring to it and the wiring diagram.

- Colors of the labels of the subsystem shipped from the factory from June of 2002 and on are as follows. Labels on the cluster1 (CL1) side and the cluster2 (CL2) side are white and yellow respectively.

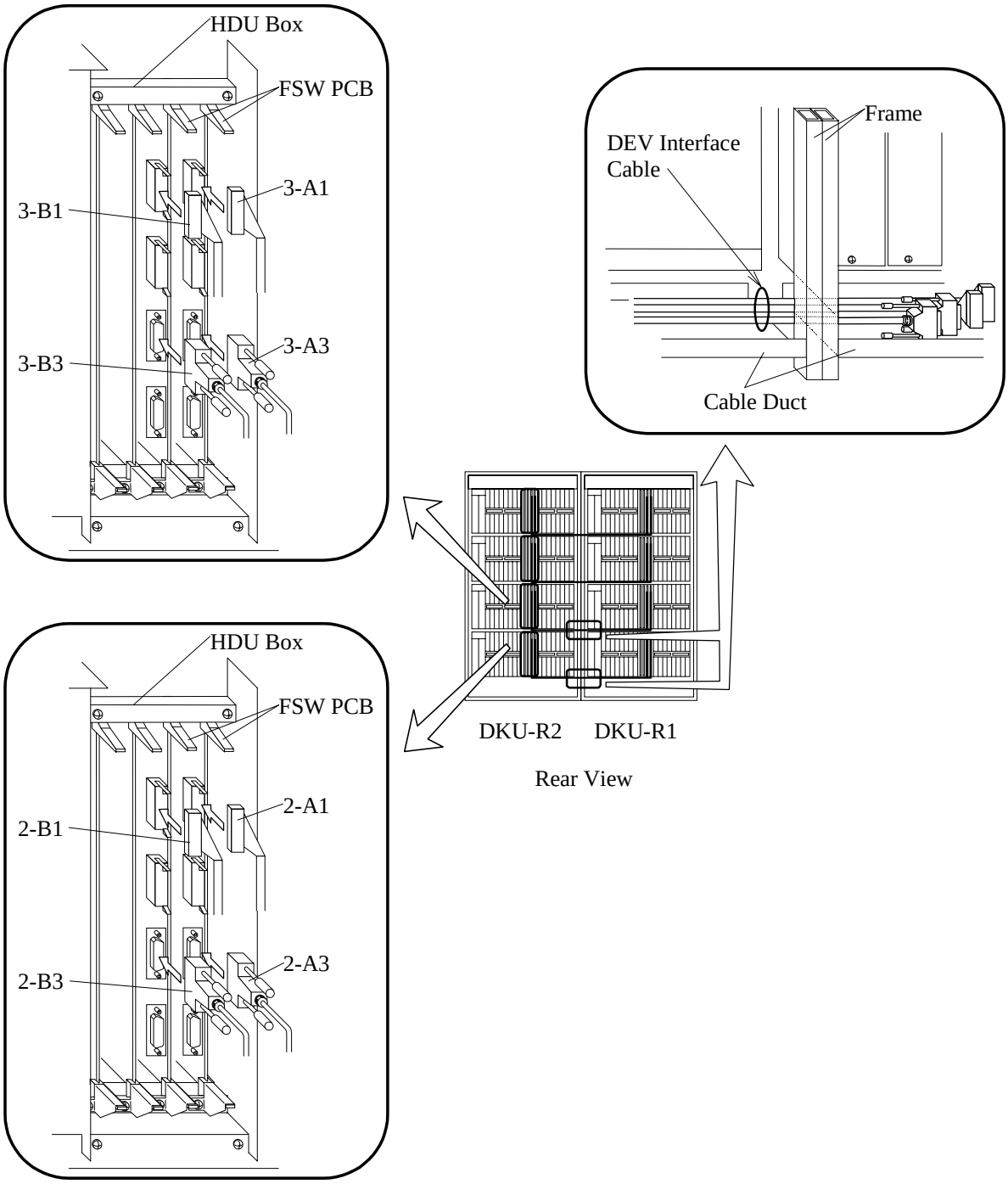

Fig. 3.11.11-12 Connection of the DEV Interface Cables

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CAUTION

A serious failure occurs if any of cables/connectors is wrongly connected.
Since a label bearing a connection destination is affixed on each cable/connector, work very carefully referring to it and the wiring diagram.

- Colors of the labels of the subsystem shipped from the factory from June of 2002 and on are as follows. Labels on the cluster1 (CL1) side and the cluster2 (CL2) side are white and yellow respectively.

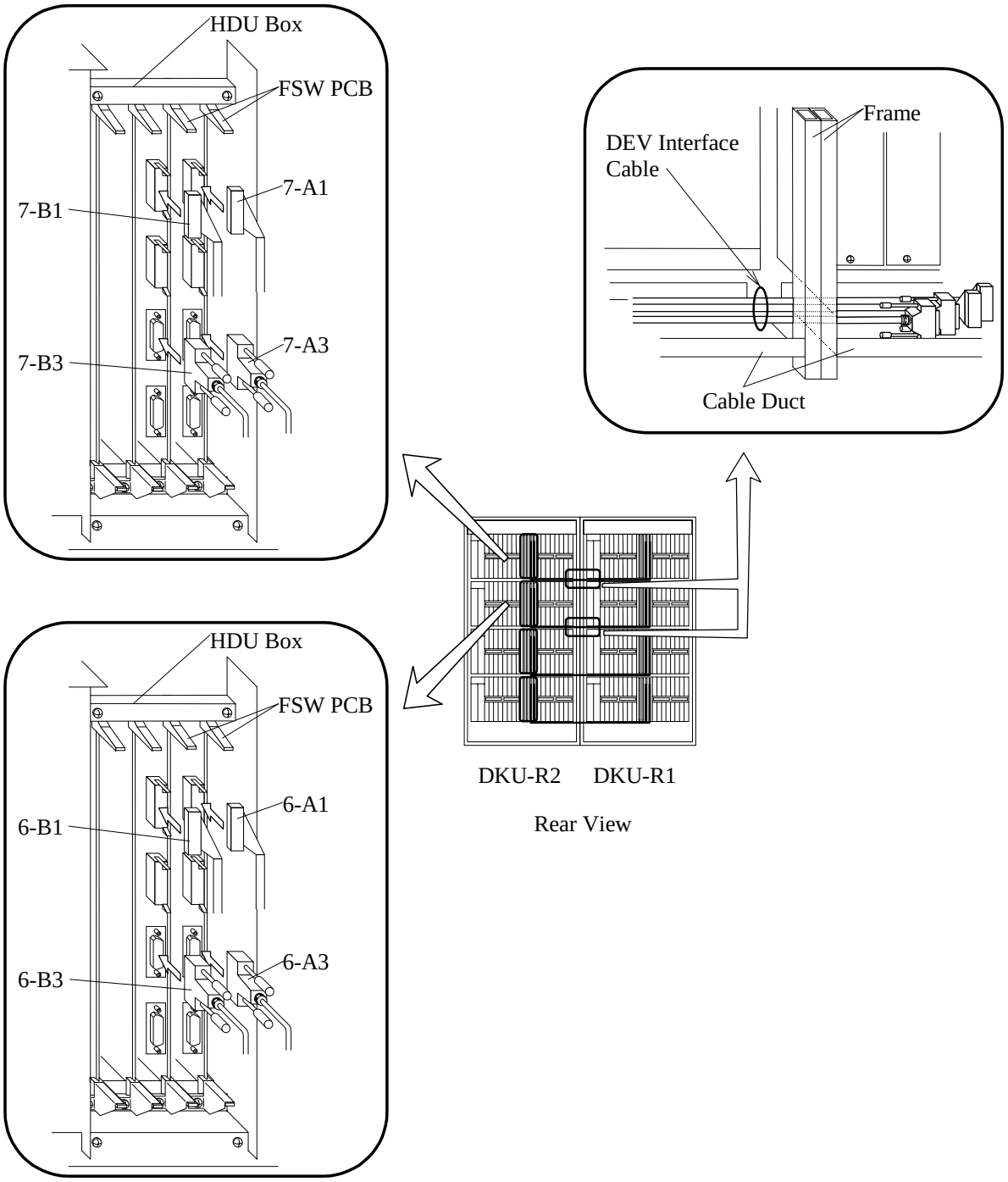

Fig. 3.11.11-13 Connection of the DEV Interface Cables

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Between HDU-L10-L17 and HDU-L20-L27

a. Loosen the screws and remove the cable covers from the DKU frames.

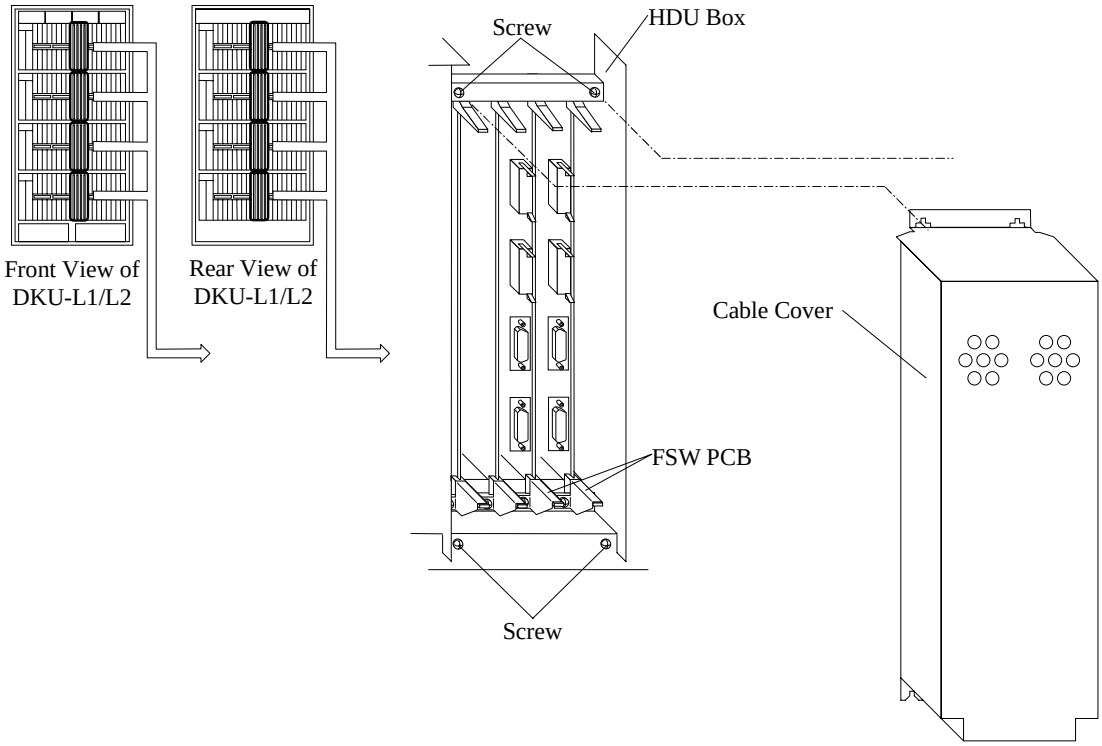

Fig. 3.11.11-14 Removal of Cable Covers

b. Loosen the screws and remove the cable covers from the DKU frames.

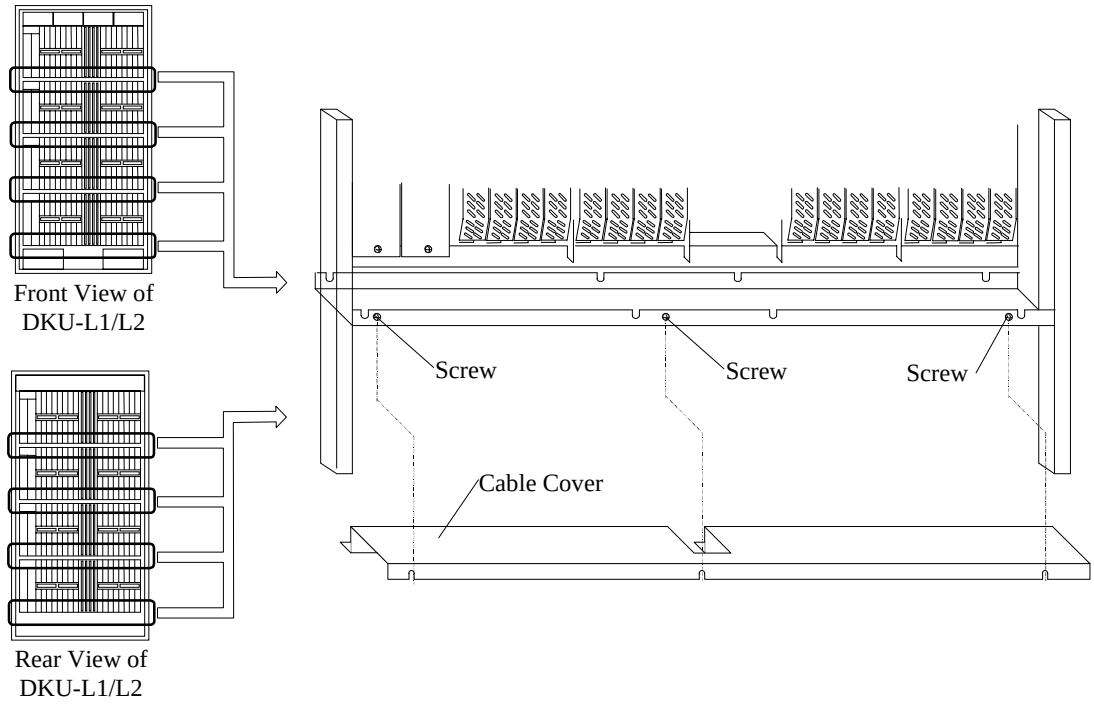

Fig. 3.11.11-15 Removal of Cable Covers

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c. Connect the DEV interface cables to the FSW PCBs in the DKU-L2 frame referring to Fig. 3.11.11-16 through Fig. 3.11.11-19.

⚠ CAUTION

A serious failure occurs if any of cables/connectors is wrongly connected.
Since a label bearing a connection destination is affixed on each cable/connector, work very carefully referring to it and the wiring diagram.

- Colors of the labels of the subsystem shipped from the factory from June of 2002 and on are as follows. Labels on the cluster1 (CL1) side and the cluster2 (CL2) side are white and yellow respectively.

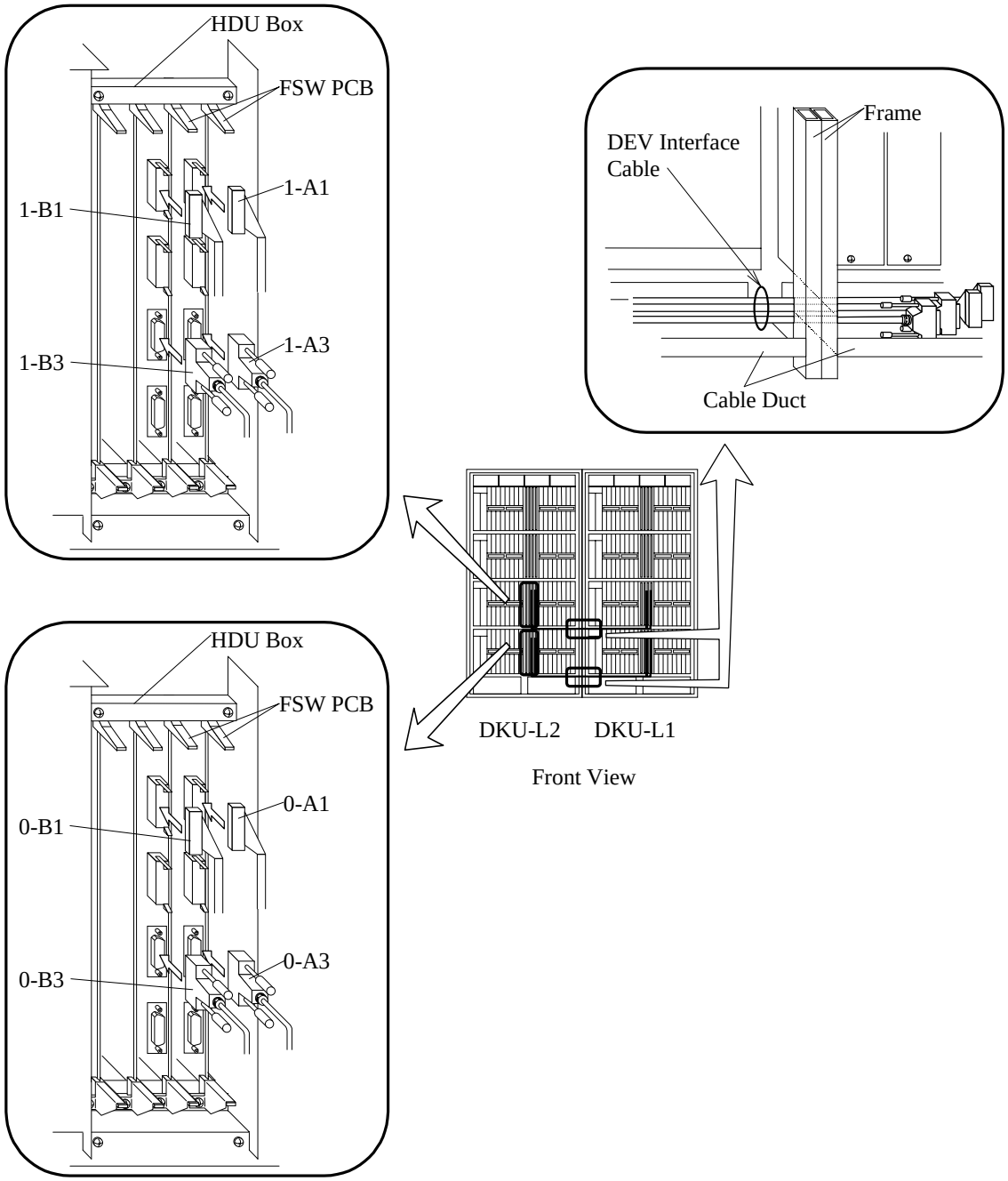

Fig. 3.11.11-16 Connection of the DEV Interface Cables

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CAUTION

A serious failure occurs if any of cables/connectors is wrongly connected.
Since a label bearing a connection destination is affixed on each cable/connector, work very carefully referring to it and the wiring diagram.

- Colors of the labels of the subsystem shipped from the factory from June of 2002 and on are as follows. Labels on the cluster1 (CL1) side and the cluster2 (CL2) side are white and yellow respectively.

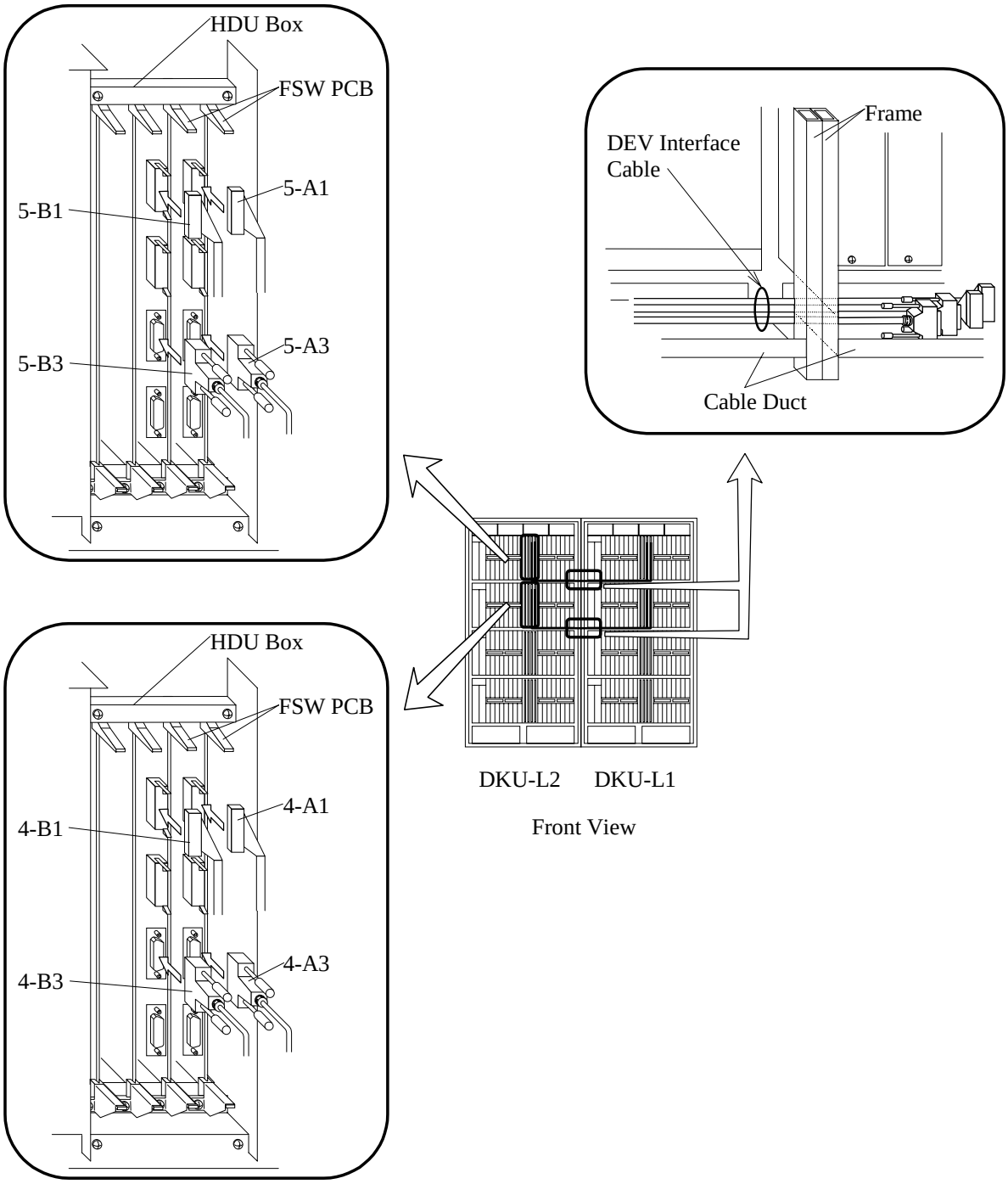

Fig. 3.11.11-17 Connection of the DEV Interface Cables

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CAUTION

A serious failure occurs if any of cables/connectors is wrongly connected.
Since a label bearing a connection destination is affixed on each cable/connector, work very carefully referring to it and the wiring diagram.

- Colors of the labels of the subsystem shipped from the factory from June of 2002 and on are as follows. Labels on the cluster1 (CL1) side and the cluster2 (CL2) side are white and yellow respectively.

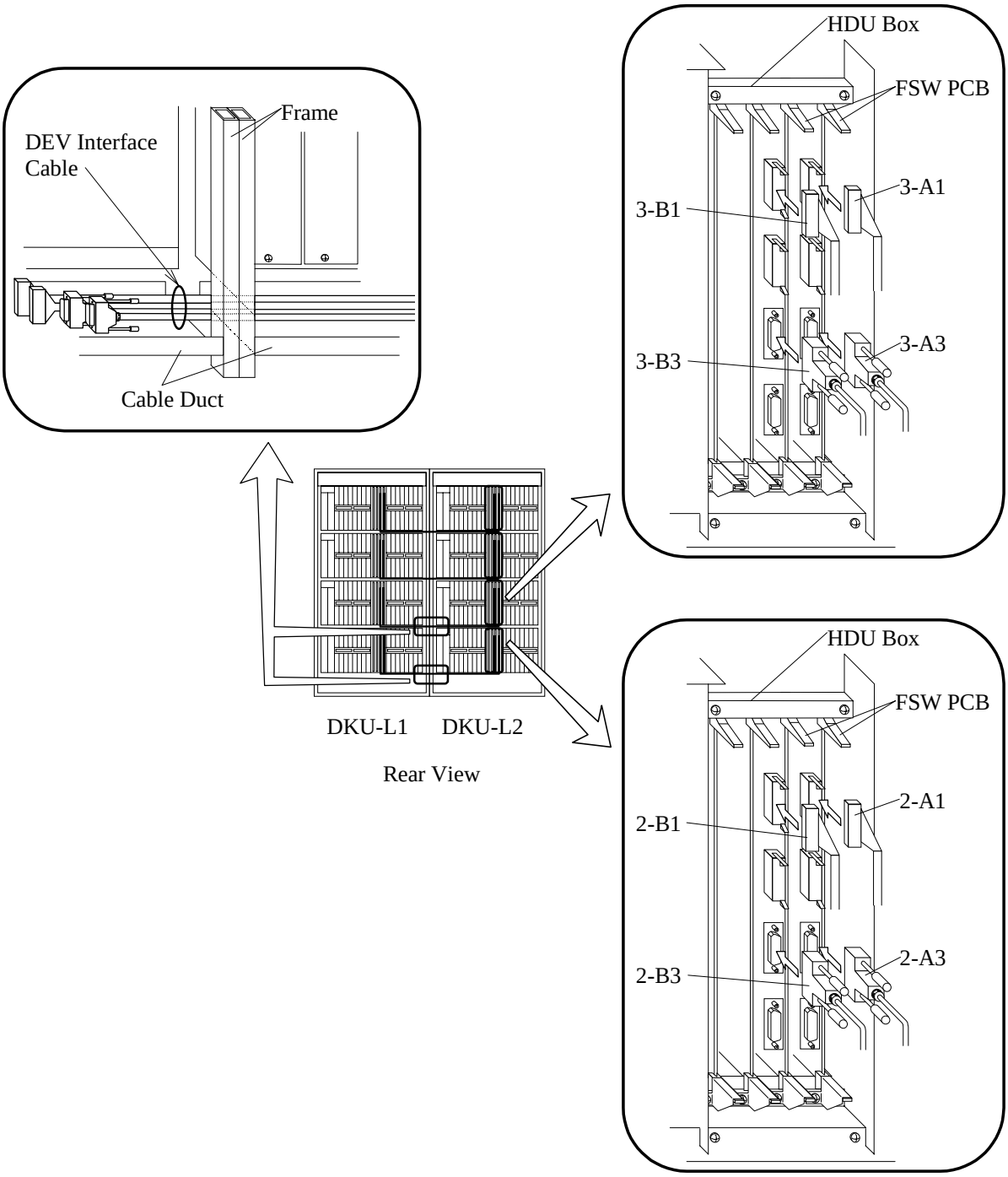

Fig. 3.11.11-18 Connection of the DEV Interface Cables

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CAUTION

A serious failure occurs if any of cables/connectors is wrongly connected.
Since a label bearing a connection destination is affixed on each cable/connector, work very carefully referring to it and the wiring diagram.

- Colors of the labels of the subsystem shipped from the factory from June of 2002 and on are as follows. Labels on the cluster1 (CL1) side and the cluster2 (CL2) side are white and yellow respectively.

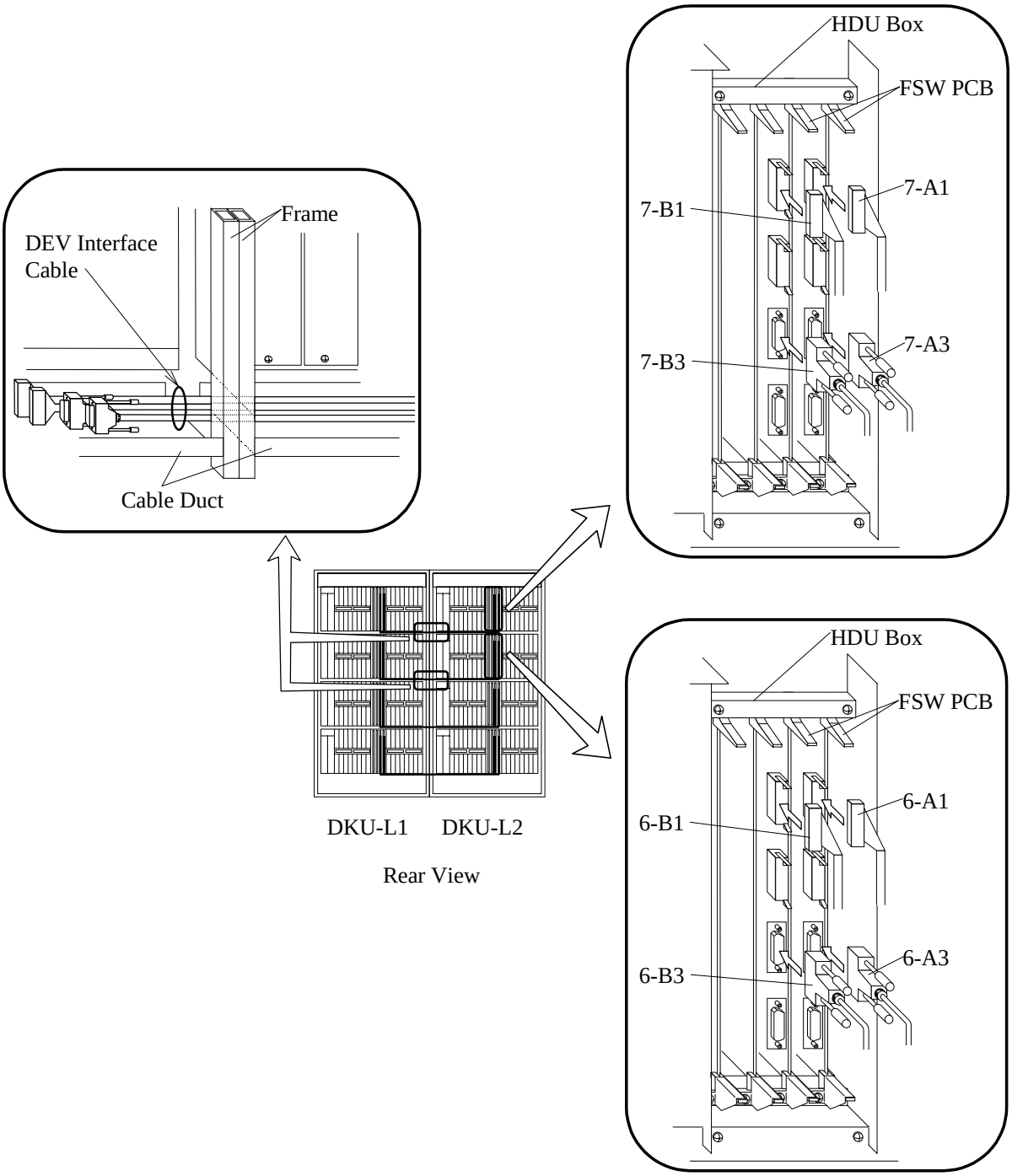

Fig. 3.11.11-19 Connection of the DEV Interface Cables

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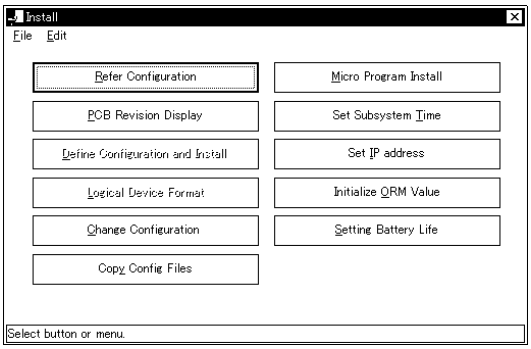
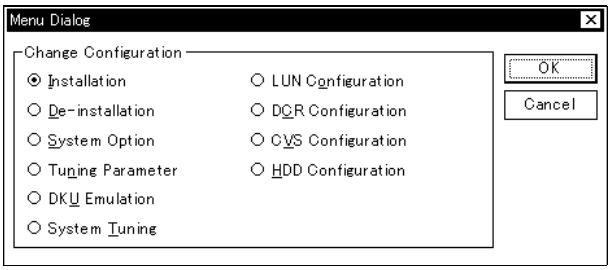
3. Setting up the New Device Structure Information

1. <Mode Change>
   Change the mode to Modify Mode.
   Select (CL) [Install].

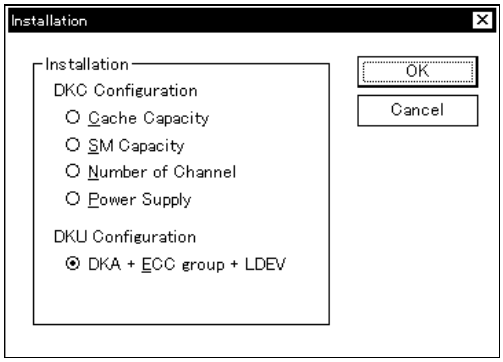
2. <Start the 'Menu Dialog' screen>
   Select (CL) [Change Configuration].



3. <Start Device Structure Setup screen>
   Select (CL) [Installation] in the 'Menu Dialog' dialog box and select (CL) [OK].



4. <Select a part to be changed>
   Select (CL) [DKA + ECC group + LDEV], and select (CL) [OK].



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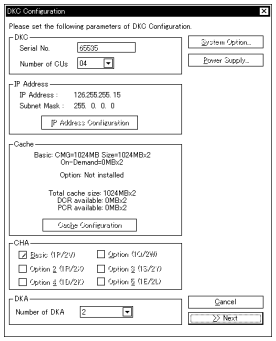
5. <Update Configuration Information>
Define the number of CU in DKC and the number of DKA in the 'DKC Configuration' window.

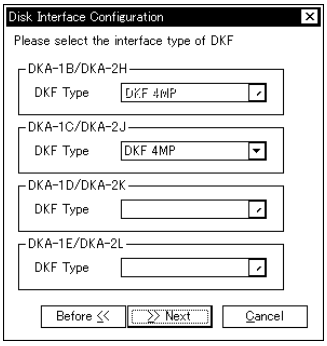
Make sure that the entered item is correct and select (CL) [>>Next].

Note1: To add the DKU-L1, the six or more DKAs are required.
Note2: There may be a case where an addition of the SM is required to add the CU.
When adding the SM, refer to page INST03-SM-10.



6. <Setting DKA type>
Define the DKA type in the 'Disk Interface Configuration' dialog box. After setting it, select (CL) the [>>Next] button.

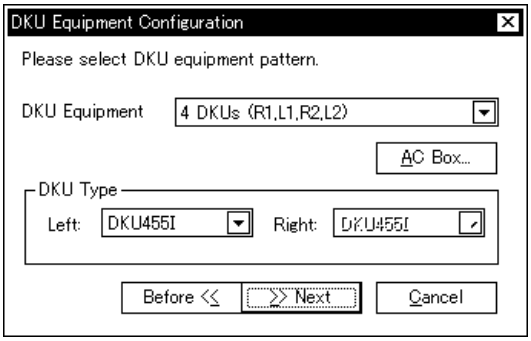
Note: When no DKA is to be added, the 'Disk Interface Configuration' dialog box is not displayed.



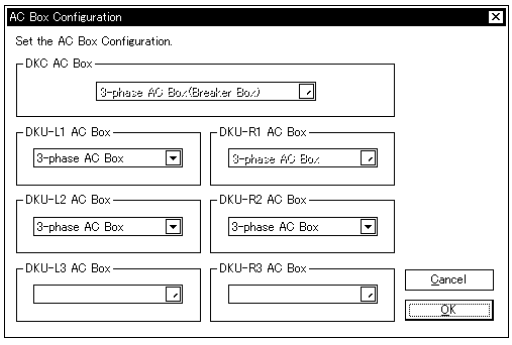
7. <DKU Equipment>
The DKU equipment pattern and DKU type is displayed in the 'DKU Equipment' configuration window.
Make an altered setting in which the DKU-L1 and DKU-L2 are added to the DKUs currently set.

Current setting	Altered setting
1DKU (R1)	4DKUs (R1, L1, R2, L2)

[AC Box...]: Set the DKU AC Box configuration.
(Refer to step 7-1.)
Select (CL) the [>>Next].



7-1. <Setting the DKU AC Box configuration>
Set the installation AC Box configuration, select (CL) the [OK]. Return to step 7.



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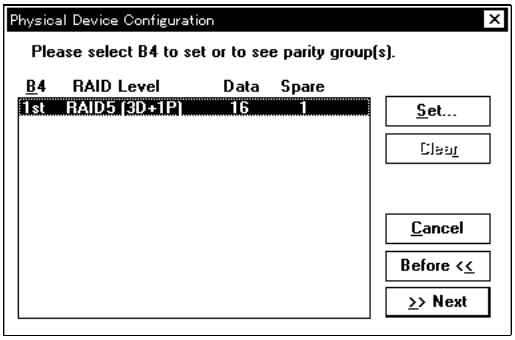
8. <Change Drive Configuration Information>
Define drive configuration according to the 'Physical Device Configuration' screen.
Detailed procedure is shown below.
[Set...]: Defines the parity group or spare disk. The routine proceeds to Step 8-1.
[Clear...]: Cancels the setting of the B4.
After setting up all items, select (CL) [>>Next]. Go to step 9.



Selecting (CL) [Before<<] returns you to the previous screen.

[Multi Cabinet Model]

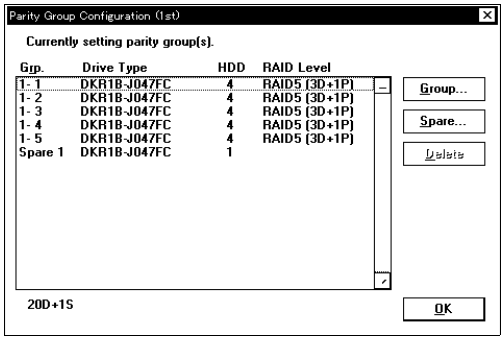
B4	Location	B4	Location
1st	HDU-R10, 11, 12, 13	7th	HDU-L20, 21, 22, 23
2nd	HDU-R14, 15, 16, 17	8th	HDU-L24, 25, 26, 27
3rd	HDU-L10, 11, 12, 13	9th	HDU-R30, 31, 32, 33
4th	HDU-L14, 15, 16, 17	10th	HDU-R34, 35, 36, 37
5th	HDU-R20, 21, 22, 23	11th	HDU-L30, 31, 32, 33
6th	HDU-R24, 25, 26, 27	12th	HDU-L34, 35, 36, 37

Note: The 9th to 12th of the B4 are valid only when the DKUs for the RAID 400 are connected.

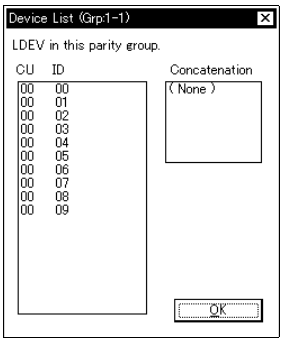
[Single Cabinet Model]

B4	Location	Comment
1st	HDU-0, 1, 2, 3	HDD-X00 ~ X0F
2nd	HDU-0, 1, 2, 3	HDD-X10 ~ X1F

8-1. <Define Parity Group>
[Group...]: Defines the parity group. See Step 8-1-1.
[Spare...]: Defines the spare drive. See Step 8-1-2.
[Delete]: Deletes the added parity group or spare drive.
Grp*: A parity group where RAID Concatenation is installed.
Note: If you want to set any Spare Drive in B4, please define the Spare Drive first.
After setting up all items, select (CL) [OK]. Return to step 8.



- To display LDEV ID in Parity group, select an item to be displayed and select (DC) this item on list box. The 'Device List' dialog box will appear.
"(no LDEV)" is displayed for the added parity group.



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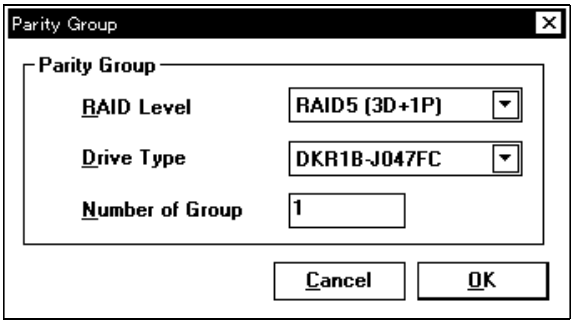
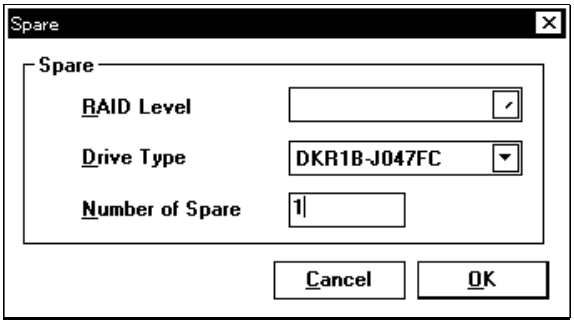
8-1-1.

Define the RAID Level and the Drive Type and the Number of Group in the 'Parity Group' dialog box.
Then select (CL) [OK]. Return to step 8-1.



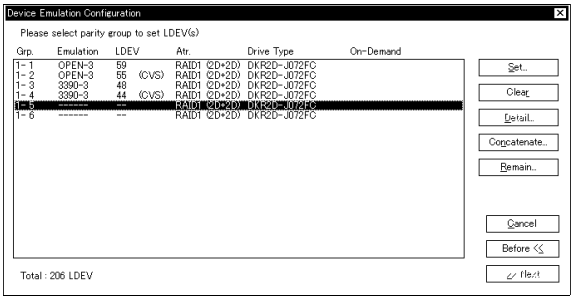
8-1-2.

Define the RAID Level and the Drive Type and the Number of Spare in the 'Spare' dialog box.
Then select (CL) [OK]. Return to step 8-1.



9. <Define Device Emulation>

After setting up all items for definition of Device Emulation, select (CL) [>>Next].
Selecting (CL) [Before<<] returns you to the previous screen.



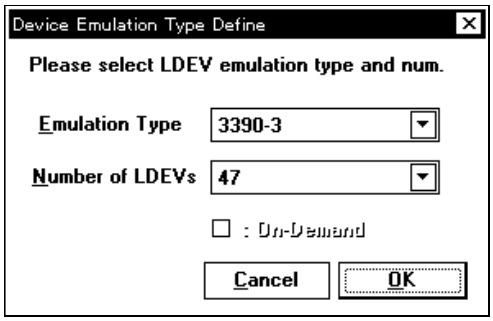
For defining Device Emulation:
Select (CL) parity group and select (CL) [Set...].
Go to step 9-1

For detailed display:
Select (CL) parity group and select (CL) [Detail...].
The detailed information is displayed.
(CVS): A parity group where CVS is installed.
Grp*: A parity group where RAID Concatenation is installed.

9-1.

After setting up all items in the 'Device Emulation Type Define' dialog box, select (CL) [OK].

Selecting (CL) [Cancel] returns you to step 9.



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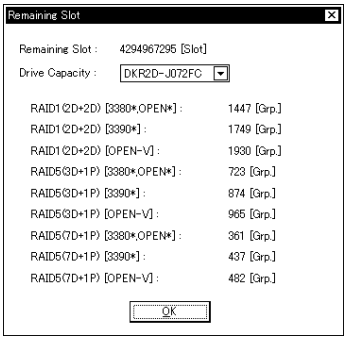
9-2. <Displaying remaining slot(s)>

The Remaining Slot window is displayed.
An allowable number of times of PDEV addition corresponding to the specified drive type is displayed.



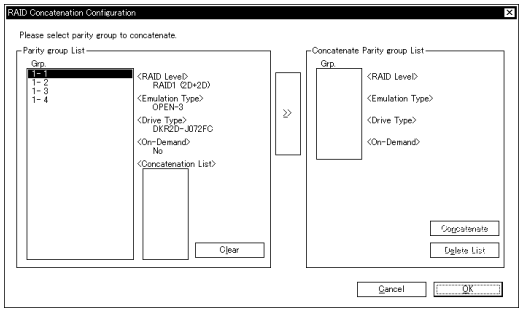
Select (CL) the [OK]. The routine returns to Step 9.

9-3. <Setting RAID concatenation>

Select (CL) [Concatenate...].
When you do not perform the RAID concatenation, return to Step 9.

9-4.

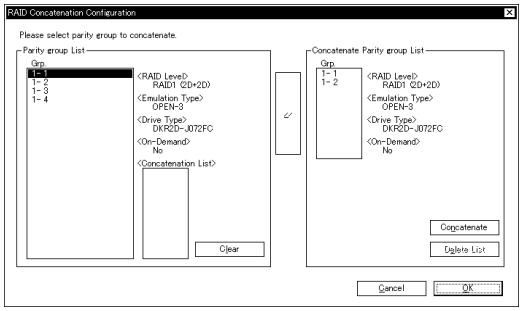
Parity groups to which the RAID concatenation can be applied are displayed in the Parity group List. Select (CL) parity groups to which you want to apply the RAID concatenation and press (CL) the [>>] button.



Note: Only the parity groups, which have been added and to which the RAID concatenation can be applied are displayed in the Parity group List.

9-5.

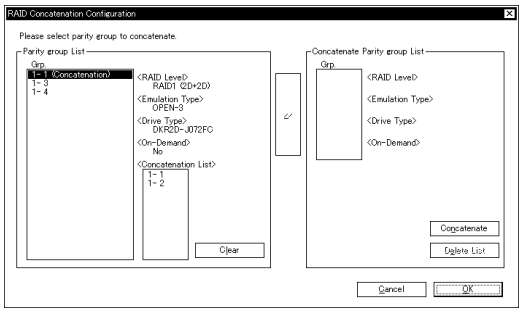
The selected parity groups are registered in the Concatenate Parity group List. Then press (CL) the [Concatenate] button.



Note: The [Concatenate] button cannot be pressed if the concatenation does not meet a condition of the RAID concatenation. Adjust the number of the parity groups in the Concatenate Parity group List.

9-6.

When the RAID concatenation is completed, "(Concatenation)" is displayed in the Parity group List. Selecting the "(Concatenation)" displays the concatenated parity groups in the Concatenation List. Pressing the [Clear] button cancels the RAID concatenation.



When all the settings of the RAID concatenation are completed, press (CL) the [OK] button.
Pressing (CL) the [Cancel] button returns the routine to Step 9.

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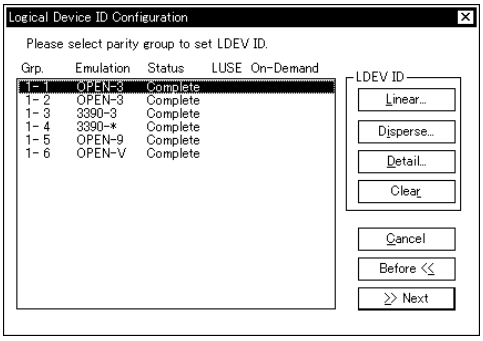
10. <Define LDEV ID>

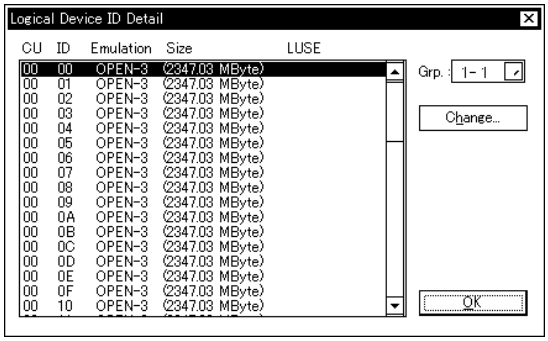


Definition Screen for LDEV ID.
Select (CL) the parity group to be defined and select (CL) a function from the [LDEV ID] list box.
[Linear...]: LDEV ID is assigned to LDEV in the order of parity groups. See step 10-1.
[Disperse...]: LDEV is assigned discretely in the order of parity groups. See step 10-1.
[Detail...]: A screen to define LDEV in detail is displayed. See step 10-2. (When plural groups are selected (CL), it is invalid.)
[Clear]: Select (CL) [Clear] to delete.
Grp*: The top parity group where RAID Concatenation is installed.

- '-----' is displayed in the Status area for the parity group to which LDEV ID is not assigned.

After setting up all items, select (CL) [>>Next]. (Go to Step 11)

10-1. Detailed Definition Screen for LDEV ID

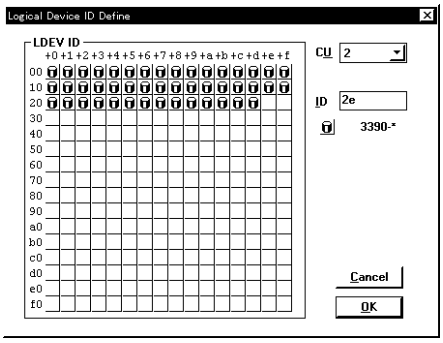


LDEV ID is defined in detail for each LDEV in the parity group.
Select (CL) LDEV from the list box and select (CL) [Change...].
The screen for LDEV ID input is displayed.
After setting, select (CL) [OK]. Return to step 10

- '-----' is displayed in the CU area and the ID area for the LDEV to which LDEV ID is not assigned.

Note: In the case of a RAID Concatenation Group, LDEV of the parity group selected by the "Grp List" is displayed.

10-2. Input LDEV ID



Select CU ID in the CU combo box.
The status of usage of ID in the CU is displayed in the LDEV ID panel.
White disk of panel: not used
Patterned disk of panel: using
Input LDEV ID you want to set or the head LDEV ID in the ID Edit box.
After setting, select (CL) [OK]. Return to step 10-1

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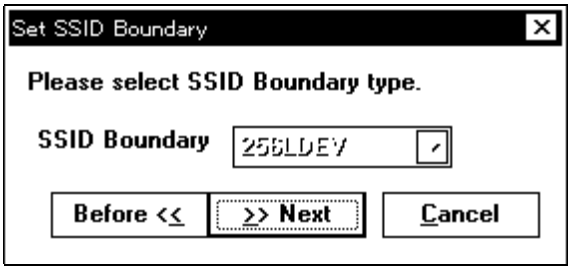
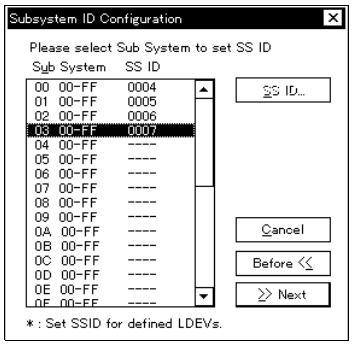
11. <Define Subsystem ID Boundary>
Press (CL) the [>>Next] button to change the screen to the “Set SSID Boundary” screen.

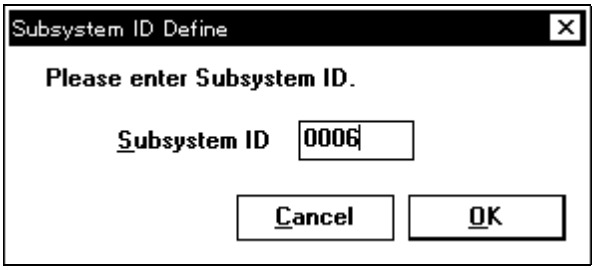


12. <Define Subsystem ID>
To define Subsystem ID, select (CL) the item from the list box and select (CL) [SSID]. See step 12-1.

After setting, select (CL) [>>Next].

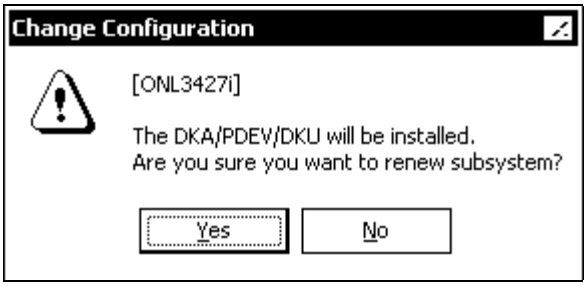


12-1. Define Subsystem ID and select (CL) [OK].
Return to step 12.



13. <Start installation>
Select (CL) [Yes] in response to “The DKA/PDEV/DKU will be installed. Are you sure you want to renew subsystem?”.

When [No] is selected (CL), returns to INST03-DKA-2710 step 3.



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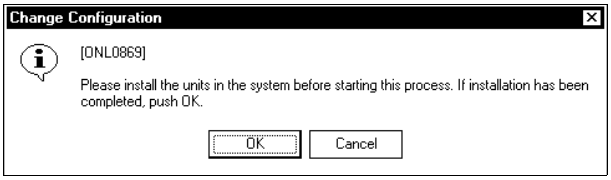
14. <Download microprogram>
    Microprograms are automatically downloaded for each processor.

15. <Install DKA>
    “Upgrading of the DKA...”

16. <Check that hardware components are installed>
    At this point refrain from pressing the [OK] button.
    “Please install the units in the system before starting this process. If installation has been completed, push OK.” is displayed.



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4 Installation Procedure of Additional Disk Adapter

Note: Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

4-1 Insertion of the PCBs

Note: Make sure that a color of the levers of the PCB to be installed is blue. Never insert a PCB whose lever is not blue.

a. Remove the dummy plate installed in the installation location referring to the Fig. 3.11.11-20. (Note) Dummy plates should be stored for future use in De-installation.
b. Insert the PCBs to the correct locations in the Logic Box. Refer to Table 3.11.11-1.
c. Fasten the two screws referring to Fig. 3.11.11-21.

Table 3.11.11-1 Inserting Location (Rear of the unit)

Cluster	CL2							CL1				
Slot No.	M	L	K	J	H	G	F	E	D	C	B	A
Function	CSW	DKA	DKA	DKA	DKA	CACHE	CACHE	DKA	DKA	DKA	DKA	CSW
Location No.	CSW -2M	DKA -2L	DKA -2K	DKA -2J	DKA -2H	CACHE -2G	CACHE -2F	DKA -1E	DKA -1D	DKA -1C	DKA -1B	CSW -1A
Order of addition		Add.3	Add.2	Add.1	Basic			Add.3	Add.2	Add.1	Basic	
Number of DKAs set through the SVP		–	–	–	2			–	–	–	2	
		–	–	4				–	–	4		
		–	6					–	6			
		8						8				

Up to 4 disk adapters can be installed in the subsystem.

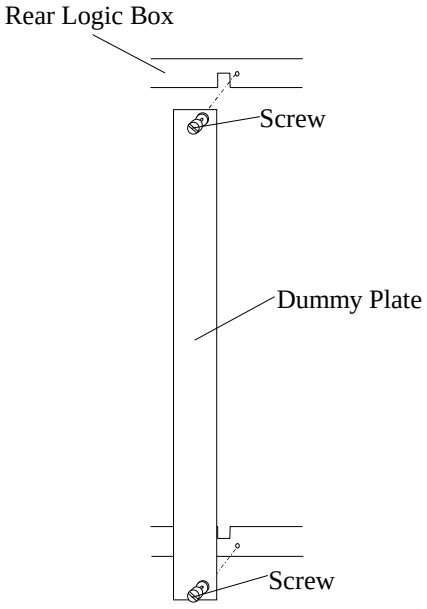

Fig. 3.11.11-20 Removal of Dummy Plate

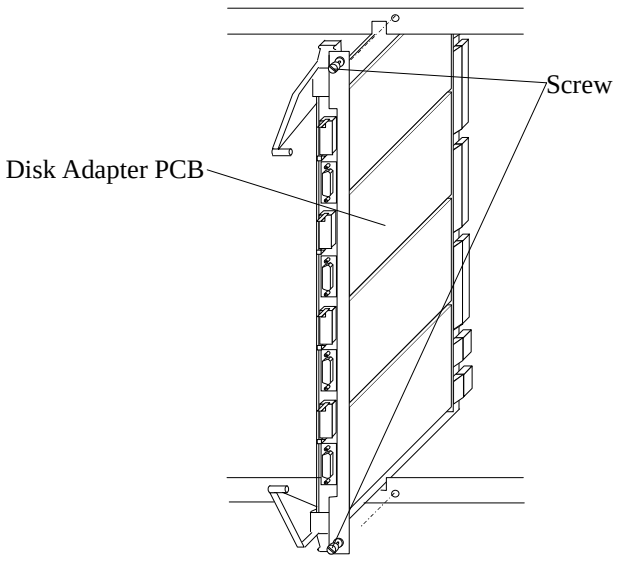

Fig. 3.11.11-21 Insertion of PCB

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4-2 Connection of cables

In case of Add.1

CAUTION

A serious failure occurs if any of cables/connectors is wrongly connected.
Since a label bearing a connection destination is affixed on each cable/connector, work very carefully referring to it and the wiring diagram.

- Colors of the labels of the subsystem shipped from the factory from June of 2002 and on are as follows. Labels on the cluster1 (CL1) side and the cluster2 (CL2) side are white and yellow respectively.

a. Connect the cables to the sub-edge of PCBs. (Refer to Fig. 3.11.11-22.)

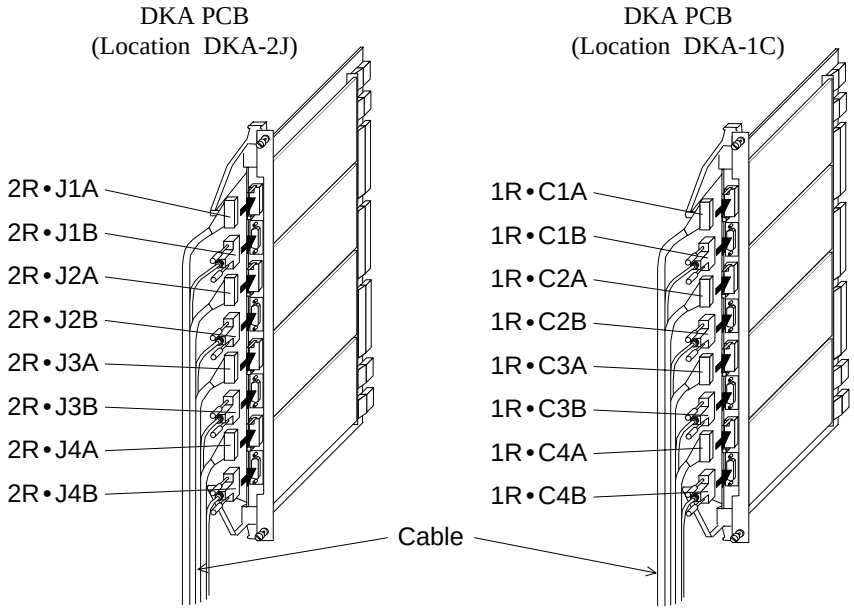

Fig.3.11.11-22 Connection of cable (Add.1)

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In case of Add.2

Caution:
Make sure that the AC power is applied to the added DKUs (DKU-L1 and DKU-L2) and the main breakers of the DKUs (DKU-L1 and DKU-L2) are turned on.
The DKU is automatically powered on when the DEV interface cable is connected to the DKA.

⚠ CAUTION

A serious failure occurs if any of cables/connectors is wrongly connected.
Since a label bearing a connection destination is affixed on each cable/connector, work very carefully referring to it and the wiring diagram.

- Colors of the labels of the subsystem shipped from the factory from June of 2002 and on are as follows. Labels on the cluster1 (CL1) side and the cluster2 (CL2) side are white and yellow respectively.

a. Connect the cables to the sub-edge of PCBs.

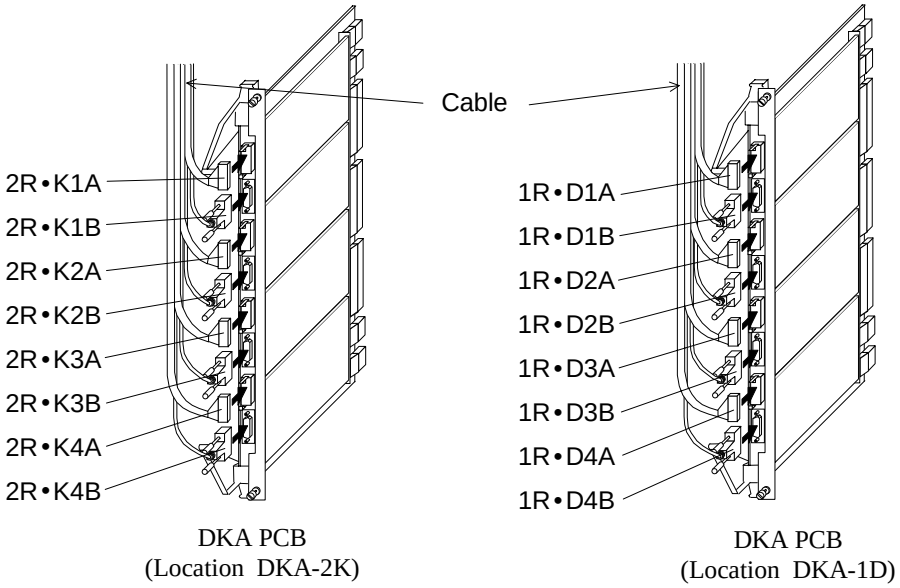

Fig.3.11.11-23 Connection of cable (Add.2)

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In case of Add.3

Caution:
Make sure that the AC power is applied to the added DKUs (DKU-L1 and DKU-L2) and the main breakers of the DKUs (DKU-L1 and DKU-L2) are turned on.
The DKU is automatically powered on when the DEV interface cable is connected to the DKA.

⚠ CAUTION

A serious failure occurs if any of cables/connectors is wrongly connected.
Since a label bearing a connection destination is affixed on each cable/connector, work very carefully referring to it and the wiring diagram.

- Colors of the labels of the subsystem shipped from the factory from June of 2002 and on are as follows. Labels on the cluster1 (CL1) side and the cluster2 (CL2) side are white and yellow respectively.

a. Connect the cables to the sub-edge of PCBs.

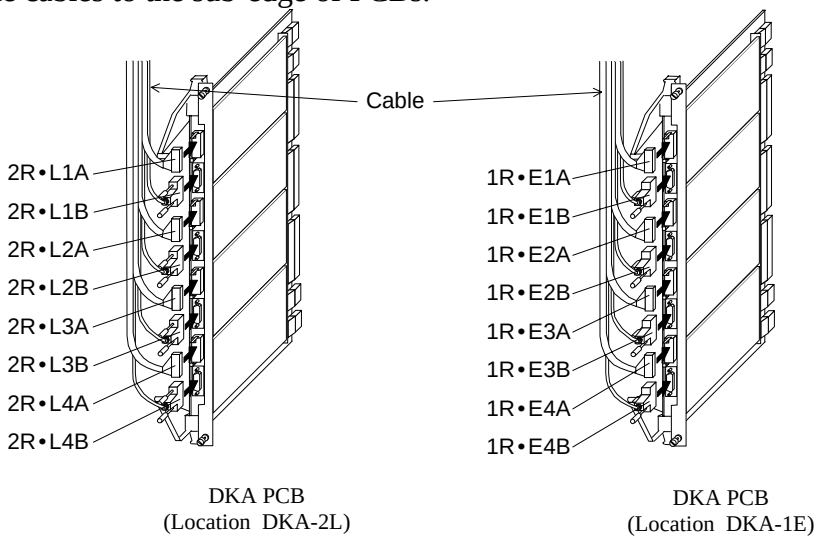

Fig.3.11.11-24 Connection of cable (Add.3)

4-3 Attachment of the nameplate

a. Attach the nameplate referring to Fig. 3.11.11-25.

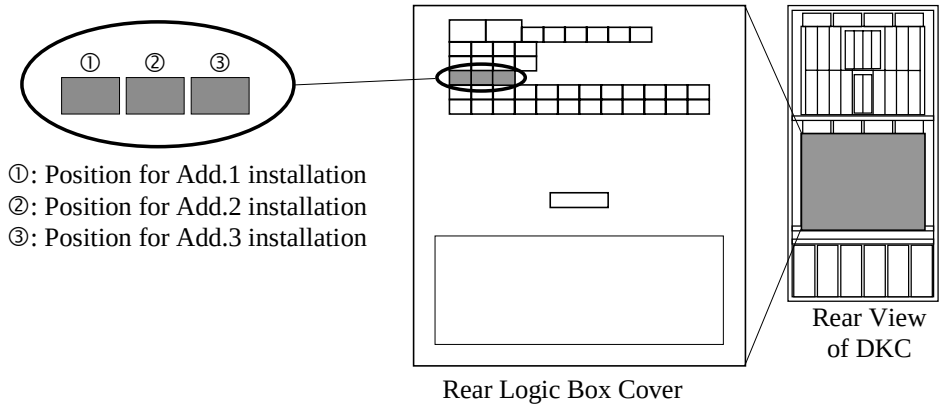

Fig. 3.11.11-25 Attachment of Nameplate

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5. Installation Procedure of HDD Canister

5-1 Confirmation of position to install HDD canister

(i) RAID5(3D+1P)/RAID1(2D+2D)

Relations between the installation locations of the RAID groups and the RAID group numbers set through the SVP are shown in Table 3.11.11-2.

Table 3.11.11-2 Relation between HDDs installation order and RAID group number (3D+1P/2D+2D)

	L2 DKU		L1 DKU		DKC		R1 DKU		R2 DKU	
	Installation Order	RAID Group No.	Installation Order	RAID Group No.			Installation Order	RAID Group No.	Installation Order	RAID Group No.
Upper	223	8-1	159	4-1	4th DKA Pair	2nd DKA Pair	032	2-1	096	6-1
	224	8-2	160	4-2			033	2-2	097	6-2
	225	8-3	161	4-3			034	2-3	098	6-3
	226	8-4	162	4-4			035	2-4	099	6-4
	227	8-5	163	4-5			036	2-5	100	6-5
	228	8-6	164	4-6			037	2-6	101	6-6
	229	8-7	165	4-7			038	2-7	102	6-7
	230	8-8	166	4-8			039	2-8	103	6-8
	231	8-9	167	4-9			040	2-9	104	6-9
	232	8-10	168	4-10			041	2-10	105	6-10
	233	8-11	169	4-11			042	2-11	106	6-11
	234	8-12	170	4-12			043	2-12	107	6-12
	235	8-13	171	4-13			044	2-13	108	6-13
	236	8-14	172	4-14			045	2-14	109	6-14
	237	8-15	173	4-15			046	2-15	110	6-15
	238	8-16	174(Spare) *2	4-16			047(Spare) *2	2-16	111	6-16
	239	8-17	175	4-17			048	2-17	112	6-17
	240	8-18	176	4-18			049	2-18	113	6-18
	241	8-19	177	4-19			050	2-19	114	6-19
	242	8-20	178	4-20			051	2-20	115	6-20
	243	8-21	179	4-21			052	2-21	116	6-21
	244	8-22	180	4-22			053	2-22	117	6-22
	245	8-23	181	4-23			054	2-23	118	6-23
	246	8-24	182	4-24			055	2-24	119	6-24
	247	8-25	183	4-25			056	2-25	120	6-25
	248	8-26	184	4-26			057	2-26	121	6-26
	249	8-27	185	4-27			058	2-27	122	6-27
	250	8-28	186	4-28			059	2-28	123	6-28
	251	8-29	187	4-29			060	2-29	124	6-29
	252	8-30	188	4-30			061	2-30	125	6-30
	253	8-31	189	4-31			062	2-31	126	6-31
	254	8-32	190	4-32			063	2-32	127	6-32
Lower	191	7-1	128	3-1	3rd DKA Pair	1st DKA Pair	001	1-1	064	5-1
	192	7-2	129	3-2			002	1-2	065	5-2
	193	7-3	130	3-3			003	1-3	066	5-3
	194	7-4	131	3-4			004	1-4	067	5-4
	195	7-5	132	3-5			005	1-5	068	5-5
	196	7-6	133	3-6			006	1-6	069	5-6
	197	7-7	134	3-7			007	1-7	070	5-7
	198	7-8	135	3-8			008	1-8	071	5-8
	199	7-9	136	3-9			009	1-9	072	5-9
	200	7-10	137	3-10			010	1-10	073	5-10
	201	7-11	138	3-11			011	1-11	074	5-11
	202	7-12	139	3-12			012	1-12	075	5-12
	203	7-13	140	3-13			013	1-13	076	5-13
	204	7-14	141	3-14			014	1-14	077	5-14
	205	7-15	142	3-15			015	1-15	078	5-15
	206	7-16	Spare *1	3-16			Spare *1	1-16	079	5-16
	207	7-17	143	3-17			016	1-17	080	5-17
	208	7-18	144	3-18			017	1-18	081	5-18
	209	7-19	145	3-19			018	1-19	082	5-19
	210	7-20	146	3-20			019	1-20	083	5-20
	211	7-21	147	3-21			020	1-21	084	5-21
	212	7-22	148	3-22			021	1-22	085	5-22
	213	7-23	149	3-23			022	1-23	086	5-23
	214	7-24	150	3-24			023	1-24	087	5-24
	215	7-25	151	3-25			024	1-25	088	5-25
	216	7-26	152	3-26			025	1-26	089	5-26
	217	7-27	153	3-27			026	1-27	090	5-27
	218	7-28	154	3-28			027	1-28	091	5-28
	219	7-29	155	3-29			028	1-29	092	5-29
	220	7-30	156	3-30			029	1-30	093	5-30
	221	7-31	157	3-31			030	1-31	094	5-31
	222	7-32	158	3-32			031	1-32	095	5-32

*1: To be left vacant or a spare disk is to be installed. *2: A data or spare disk is to be installed.

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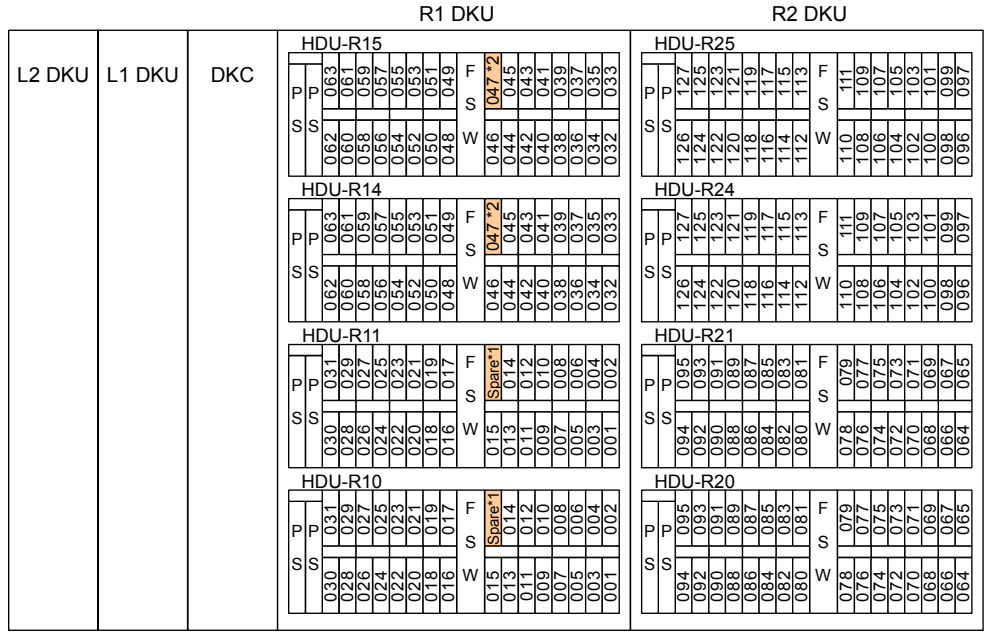
(1) Make sure of the location where the RAID group is installed and that where the HDD canister is to be added.

No.	Model Number	Model Name	Data and Parity
1	DKU-F455I-36K4/72J4/72K4/146J4/146JF/146JQ	4 HDD Canisters	Data and Parity Drive



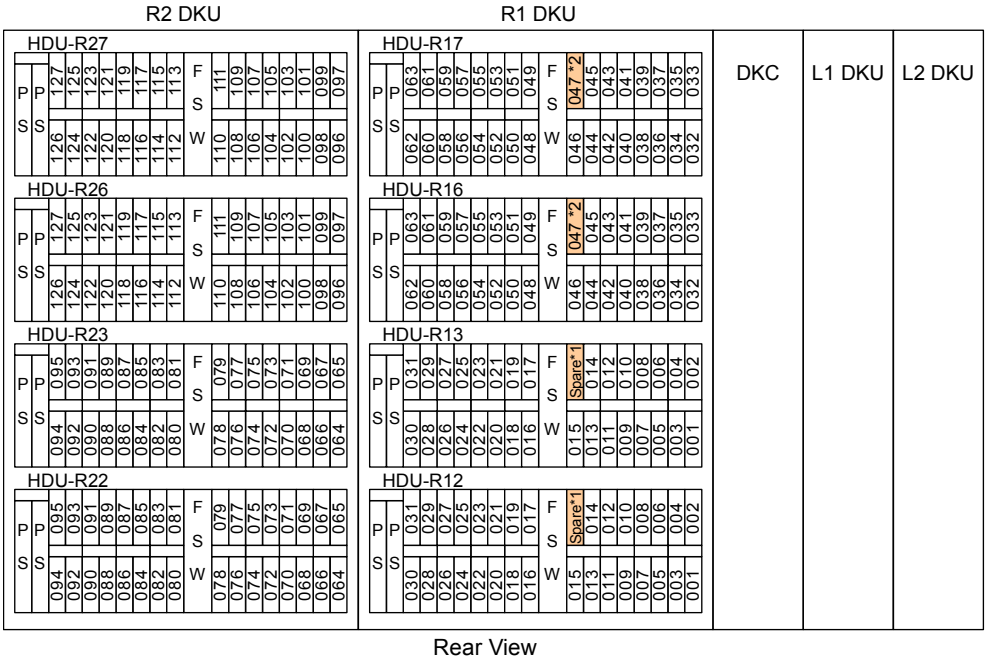


Fig. 3.11.11-26 (3D+1P) or (2D+2P) Data Drive/Parity Drive Expansion Sequence (1/2)

The relationship between HDDs installation order and RAID group number is shown in the Table 3.11.11-2.

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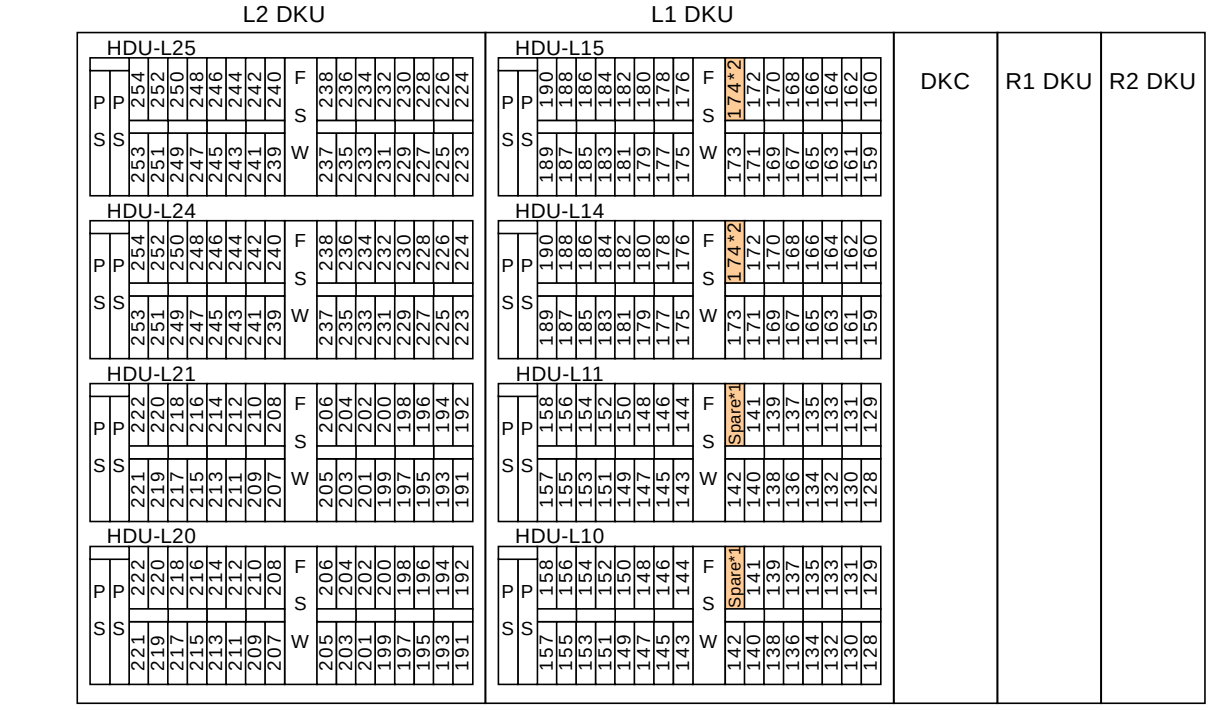

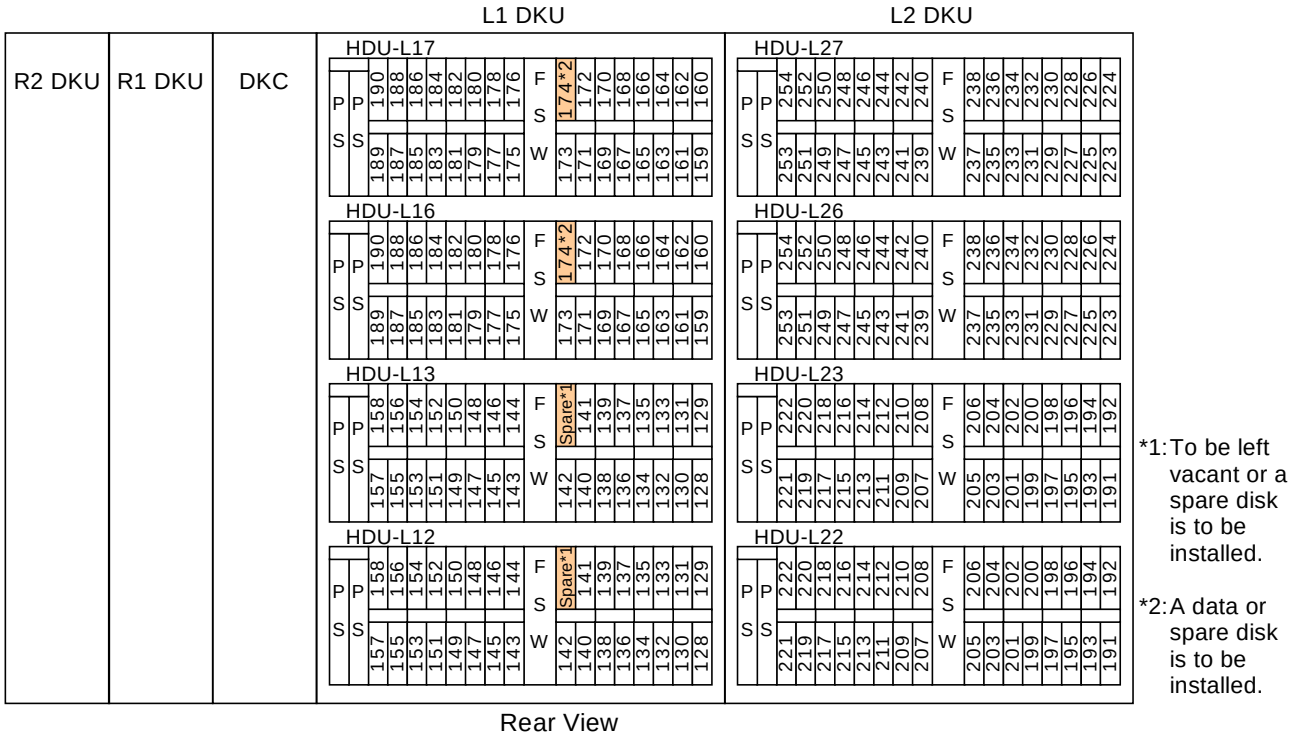

Fig. 3.11.11-26 (3D+1P) or (2D+2P) Data Drive/Parity Drive Expansion Sequence (2/2)

The relationship between HDDs installation order and RAID group number is shown in the Table 3.11.11-2.

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(ii) RAID5 (7D+1P)

Relations between the installation locations of the RAID groups and the RAID group numbers set through the SVP are shown in Table 3.11.11-3.

Table 3.11.11-3 Relation between HDDs installation order and RAID group number (7D+1P)

L2 DKU		L1 DKU		DKC		R1 DKU		R2 DKU	
Installation Order	RAID Group No.	Installation Order	RAID Group No.			Installation Order	RAID Group No.	Installation Order	RAID Group No.
095	7-1 , (8-1)	064	3-1 , (4-1)			001	1-1 , (2-1)	032	5-1 , (6-1)
096	7-2 , (8-2)	065	3-2 , (4-2)			002	1-2 , (2-2)	033	5-2 , (6-2)
097	7-3 , (8-3)	066	3-3 , (4-3)			003	1-3 , (2-3)	034	5-3 , (6-3)
098	7-4 , (8-4)	067	3-4 , (4-4)			004	1-4 , (2-4)	035	5-4 , (6-4)
099	7-5 , (8-5)	068	3-5 , (4-5)			005	1-5 , (2-5)	036	5-5 , (6-5)
100	7-6 , (8-6)	069	3-6 , (4-6)			006	1-6 , (2-6)	037	5-6 , (6-6)
101	7-7 , (8-7)	070	3-7 , (4-7)			007	1-7 , (2-7)	038	5-7 , (6-7)
102	7-8 , (8-8)	071	3-8 , (4-8)			008	1-8 , (2-8)	039	5-8 , (6-8)
103	7-9 , (8-9)	072	3-9 , (4-9)			009	1-9 , (2-9)	040	5-9 , (6-9)
104	7-10 , (8-10)	073	3-10 , (4-10)			010	1-10 , (2-10)	041	5-10 , (6-10)
105	7-11 , (8-11)	074	3-11 , (4-11)			011	1-11 , (2-11)	042	5-11 , (6-11)
106	7-12 , (8-12)	075	3-12 , (4-12)			012	1-12 , (2-12)	043	5-12 , (6-12)
107	7-13 , (8-13)	076	3-13 , (4-13)			013	1-13 , (2-13)	044	5-13 , (6-13)
108	7-14 , (8-14)	077	3-14 , (4-14)			014	1-14 , (2-14)	045	5-14 , (6-14)
109	7-15 , (8-15)	078	3-15 , (4-15)	3rd / 4th	1st / 2nd	015	1-15 , (2-15)	046	5-15 , (6-15)
110	7-16 , (8-16)	(Spare)*1	3-16 , (4-16)	DKA	DKA	(Spare)*1	1-16 , (2-16)	047	5-16 , (6-16)
111	7-17 , (8-17)	079	3-17 , (4-17)	Pairs	Pairs	016	1-17 , (2-17)	048	5-17 , (6-17)
112	7-18 , (8-18)	080	3-18 , (4-18)			017	1-18 , (2-18)	049	5-18 , (6-18)
113	7-19 , (8-19)	081	3-19 , (4-19)			018	1-19 , (2-19)	050	5-19 , (6-19)
114	7-20 , (8-20)	082	3-20 , (4-20)			019	1-20 , (2-20)	051	5-20 , (6-20)
115	7-21 , (8-21)	083	3-21 , (4-21)			020	1-21 , (2-21)	052	5-21 , (6-21)
116	7-22 , (8-22)	084	3-22 , (4-22)			021	1-22 , (2-22)	053	5-22 , (6-22)
117	7-23 , (8-23)	085	3-23 , (4-23)			022	1-23 , (2-23)	054	5-23 , (6-23)
118	7-24 , (8-24)	086	3-24 , (4-24)			023	1-24 , (2-24)	055	5-24 , (6-24)
119	7-25 , (8-25)	087	3-25 , (4-25)			024	1-25 , (2-25)	056	5-25 , (6-25)
120	7-26 , (8-26)	088	3-26 , (4-26)			025	1-26 , (2-26)	057	5-26 , (6-26)
121	7-27 , (8-27)	089	3-27 , (4-27)			026	1-27 , (2-27)	058	5-27 , (6-27)
122	7-28 , (8-28)	090	3-28 , (4-28)			027	1-28 , (2-28)	059	5-28 , (6-28)
123	7-29 , (8-29)	091	3-29 , (4-29)			028	1-29 , (2-29)	060	5-29 , (6-29)
124	7-30 , (8-30)	092	3-30 , (4-30)			029	1-30 , (2-30)	061	5-30 , (6-30)
125	7-31 , (8-31)	093	3-31 , (4-31)			030	1-31 , (2-31)	062	5-31 , (6-31)
126	7-32 , (8-32)	094	3-32 , (4-32)			031	1-32 , (2-32)	063	5-32 , (6-32)

*1: To be left vacant or a spare disk is to be installed.

- Install RAID 5 (7D+1P) forming pairs using the same number of the two RAID groups (RAID groups 1 and 2, 3 and 4, 5 and 6, and 7 and 8) of RAID 5 (3D+1P).
  (Example: RAID group numbers 1-1 and 2-1)
  The types of HDDs to be installed in each pair must be the same.
- In the case of RAID 5 (7D+1P), only odd RAID numbers are displayed on the SVP. (Group numbers shown in parentheses in the table above are not displayed.)
- When RAID 5 (3D+1P) or RAID 1 (2D+2D) and RAID 5 (7D+1P) are configured mixture, note that duplicated group numbers are excluded.
  Example: When Group No. 1-1 is configured for RAID 5 (7D+1P), Group No. 2-1 is excluded and cannot be configure for RAID 5 (3D+1P).

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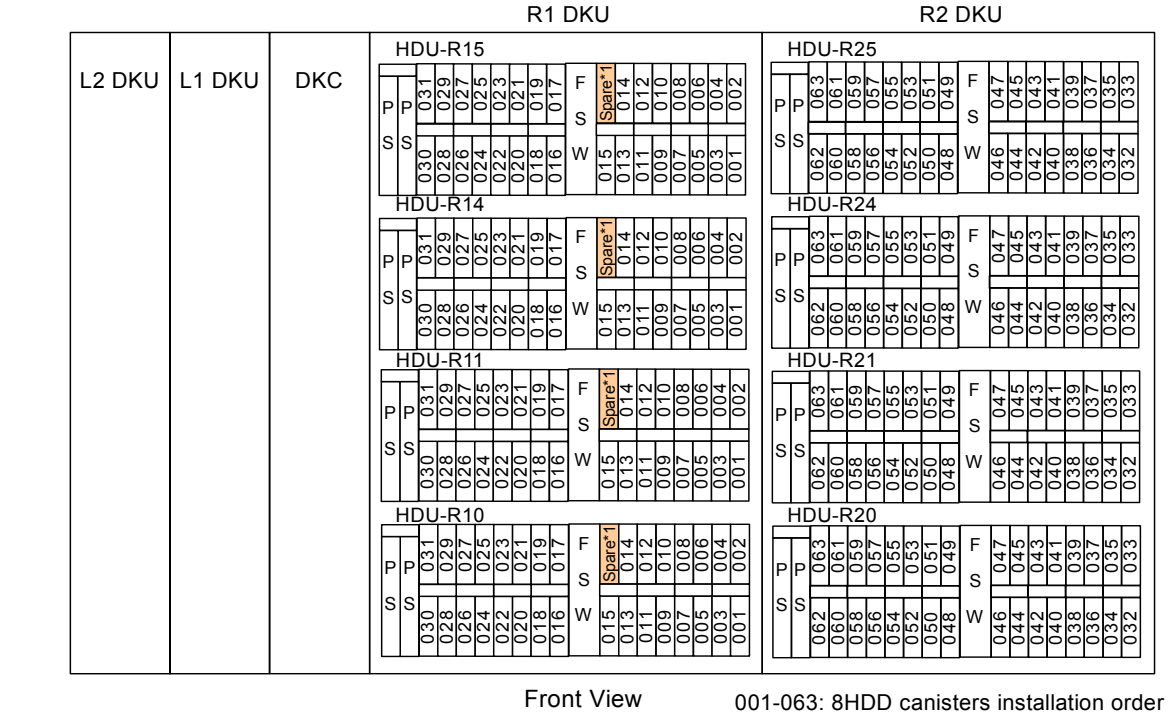
(1) Make sure of the location where the RAID group is installed and that where the HDD canister is to be added.

No.	Model Number	Model Name	Data and Parity
1	DKU-F455I-36K4/72J4/72K4/146J4/146JF/146JQ	4 HDD Canisters x 2sets	Data and Parity Drive



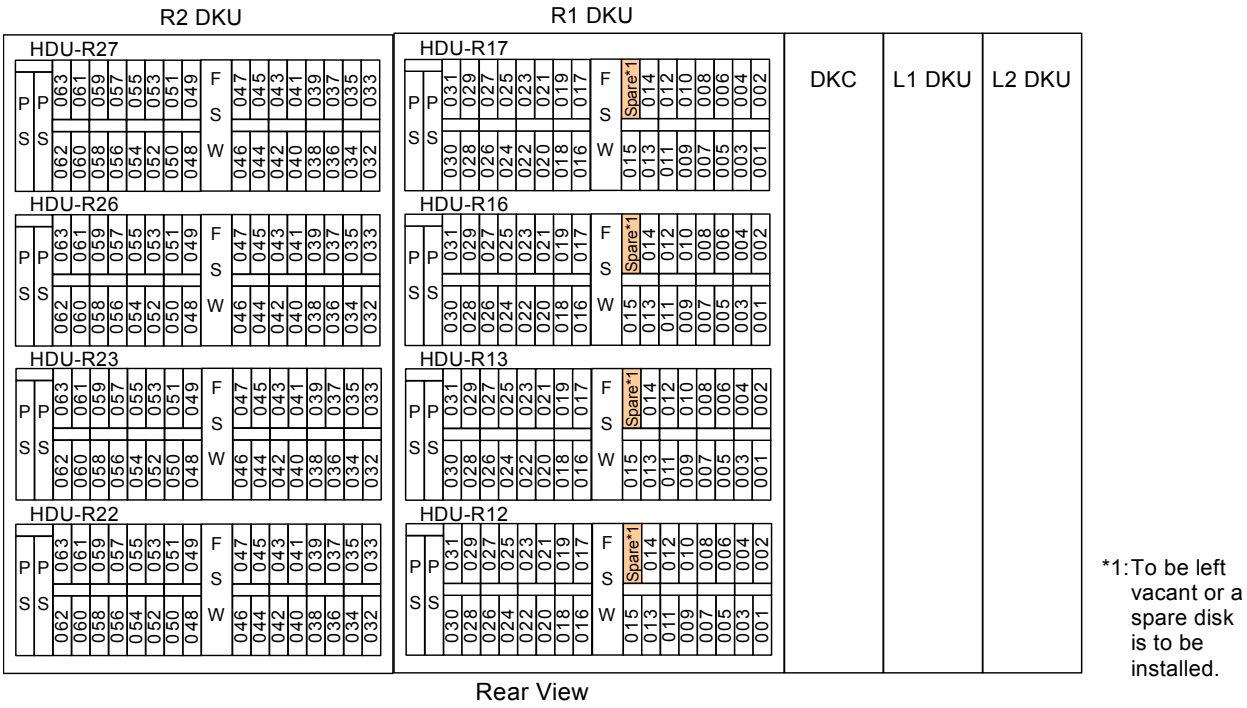


Fig. 3.11.11-27 (7D+1P) Data Drive/Parity Drive Expansion Sequence (1/2)

The relationship between HDDs installation order and RAID group number is shown in the Table 3.11.11-3.

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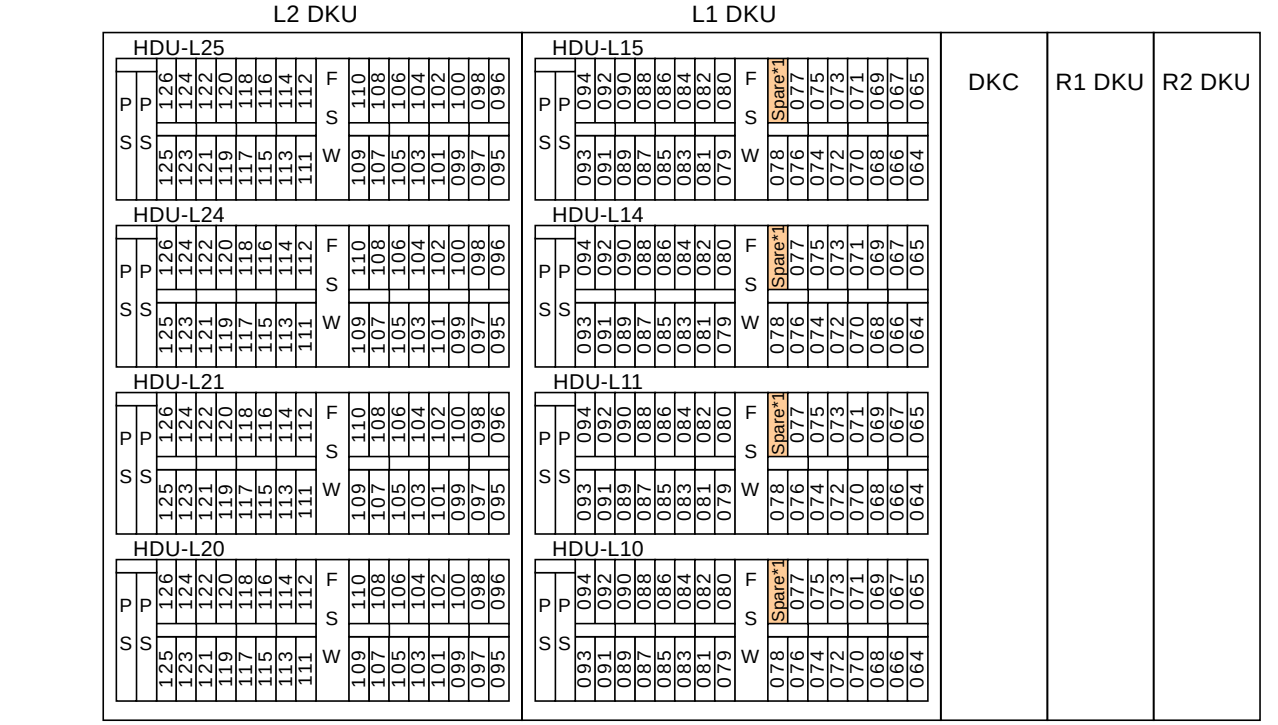

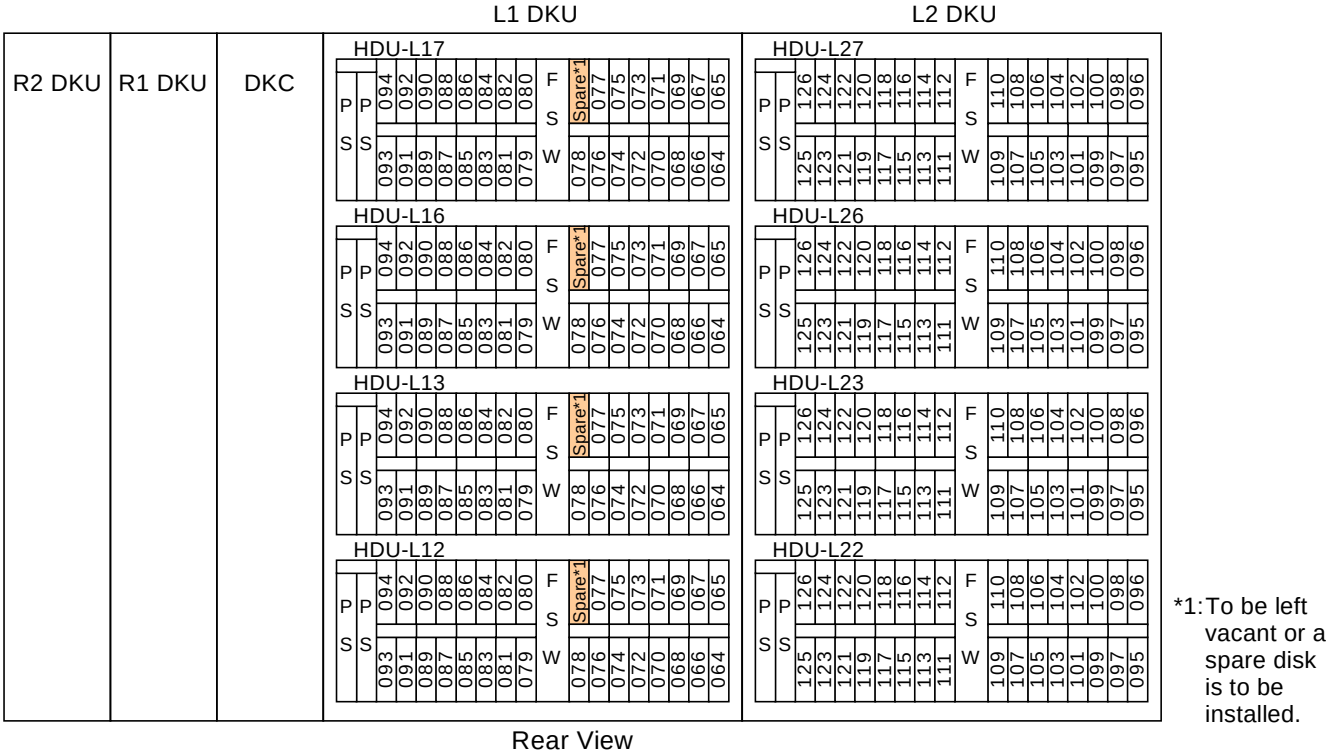

Fig. 3.11.11-27 (7D+1P) Data Drive/Parity Drive Expansion Sequence (2/2)

The relationship between HDDs installation order and RAID group number is shown in the Table 3.11.11-3.

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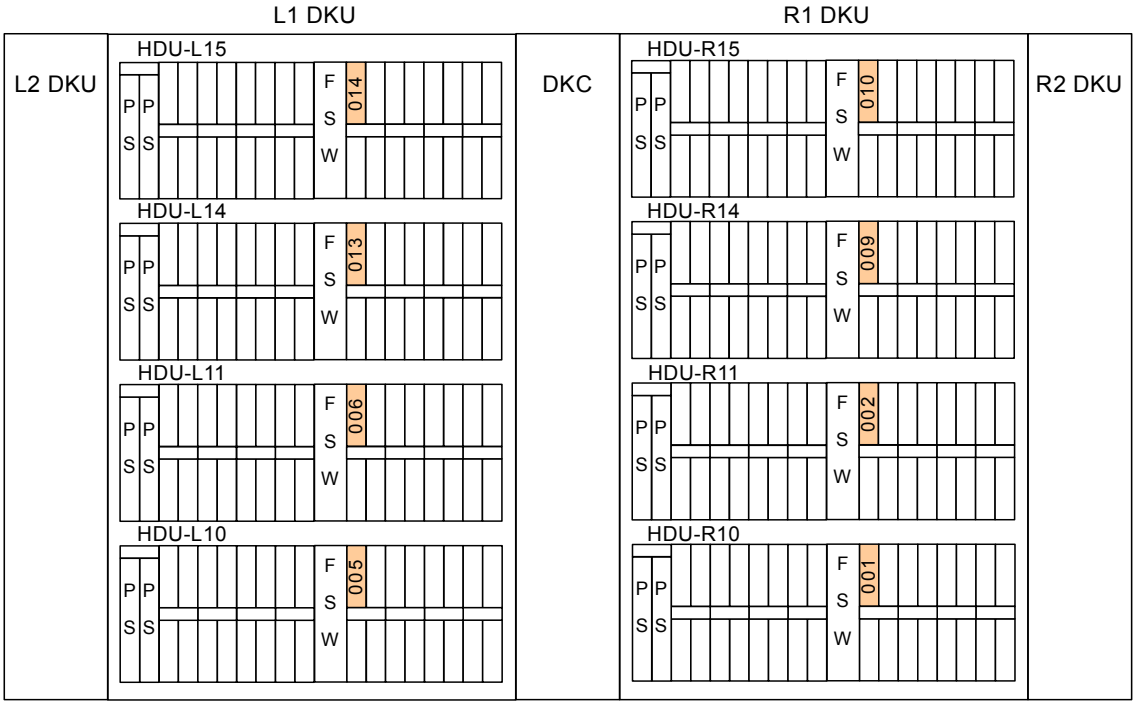
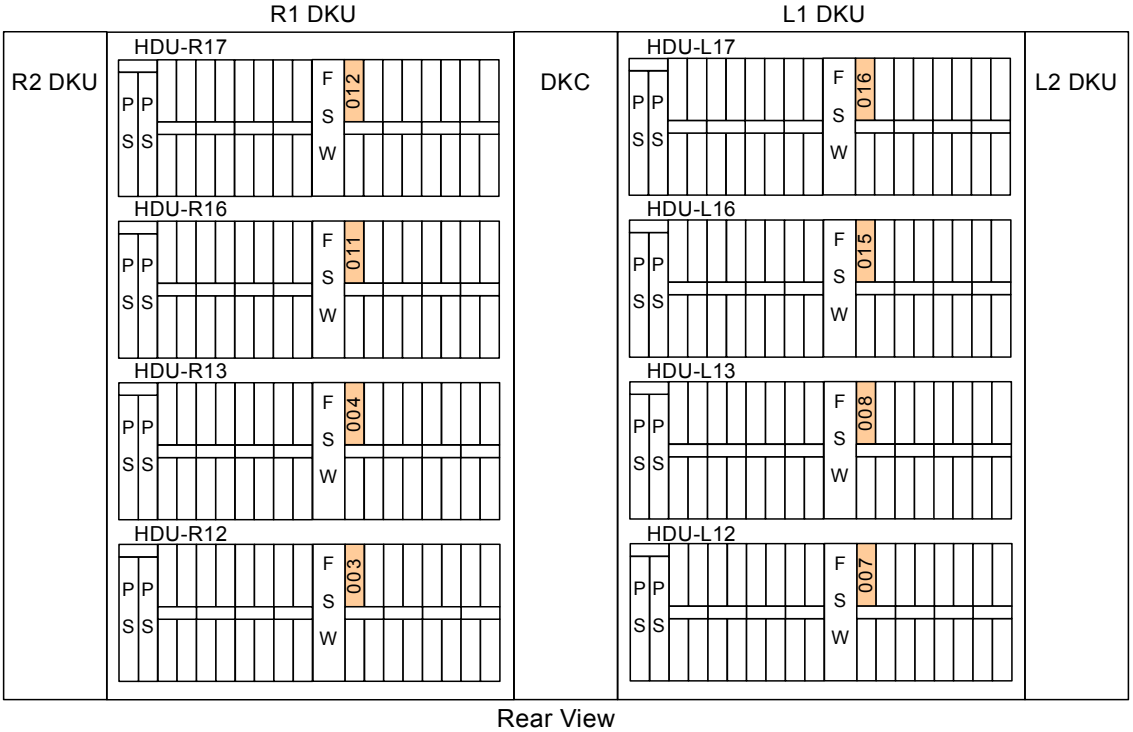
(iii) Spare HDD

No.	Model Number	Model Name	Data and Parity
1	DKU-F455I-36K1/72J1/72K1/146J1/146JS/146JM	1 HDD Canister	Spare Drive



Front View

001-016: Spare HDD canister installation order



Rear View

Fig. 3.11.11-28 Spare Drive Expansion Sequence

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5-2 Installation of the HDD Canister.

Notice:
(1) Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.
(2) Since the HDD is a precision component, handle it very carefully not to apply a vibration or shock to it.

a. Remove the dummy canister from the HDU Box.
When the dummy canister cannot be removed by pulling of it only, remove it referring to page INST03-DKA-3000.
b. Install the HDD canister. (For the detailed procedure for installation, refer to the procedure for installing HDD canister on page INST03-DKA-3010.)

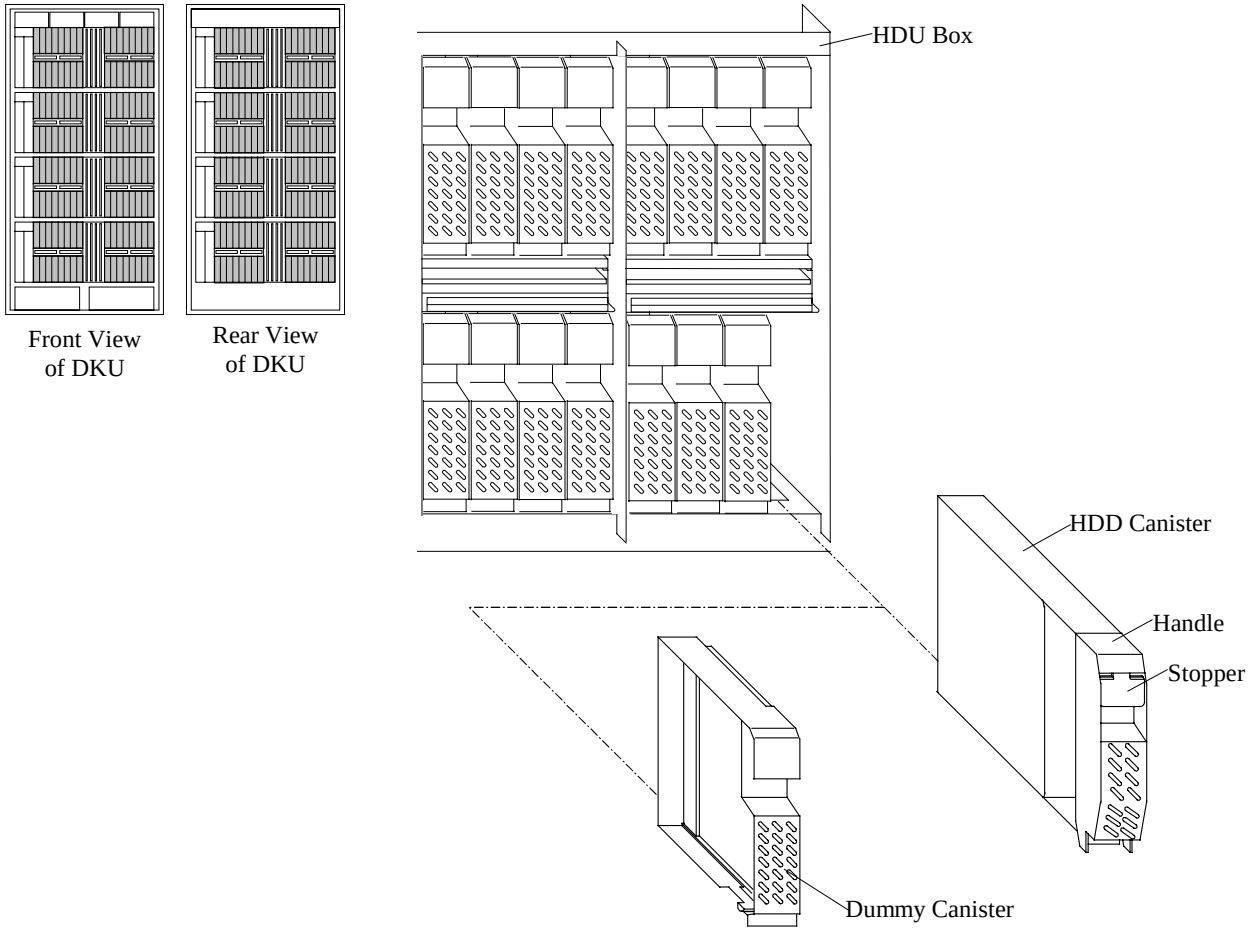

Fig. 3.11.11-29 Installation of HDD Canister

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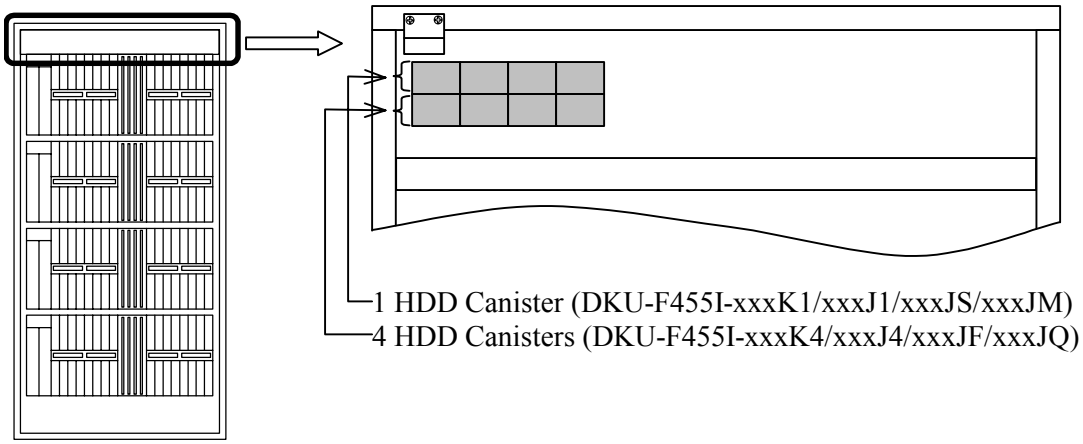
5-3 Attachment of the nameplate.

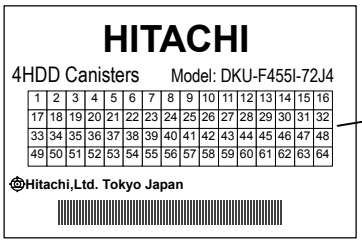
a. When the nameplate is not attached, attach the nameplate regardless of the model number from the left of the unit. Paint out mounting numbers on the nameplate.



Rear View
of DKU

[Example]

When the 7 DKU-F455I-72J4 sets are installed



							8	9	10	11	12	13	14	15	16
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64

Fig. 3.11.11-30 Attachment of Nameplate

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6. Installation Procedure of DEV Interface Cable 2 (2/3) (DKU-F455I-EXC)

Caution:
The addition cannot be done unless the AC power is applied to the added DKU and the main breaker of the DKU is turned on.

Between HDU-R10-R17 and HDU-R20-R27

a. Connect the DEV interface cables to the FSW PCBs in the DKU-R1 frame referring to figures 3.11.11-31 and 3.11.11-32.

⚠ CAUTION

A serious failure occurs if any of cables/connectors is wrongly connected.
Since a label bearing a connection destination is affixed on each cable/connector, work very carefully referring to it and the wiring diagram.

- Colors of the labels of the subsystem shipped from the factory from June of 2002 and on are as follows. Labels on the cluster1 (CL1) side and the cluster2 (CL2) side are white and yellow respectively.

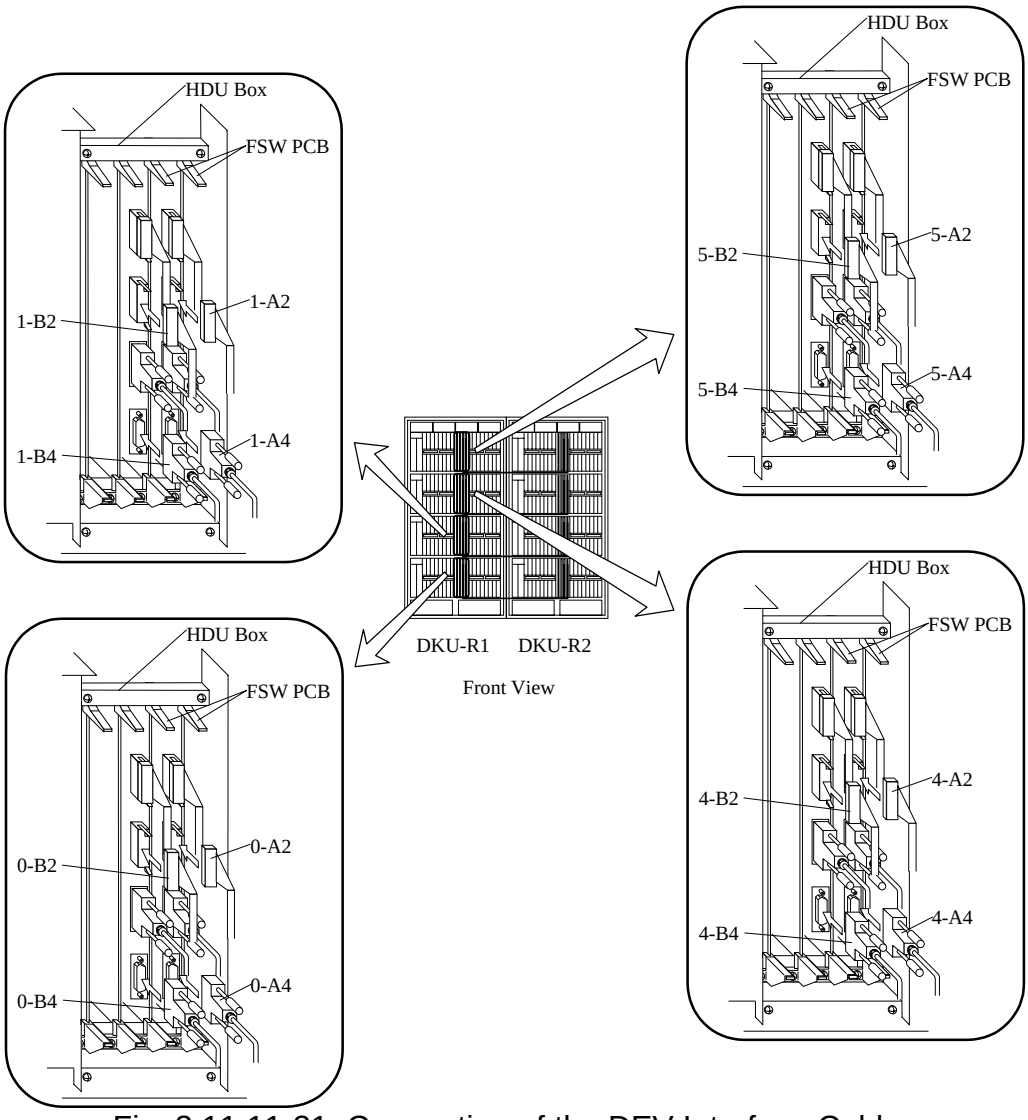

Fig. 3.11.11-31 Connection of the DEV Interface Cables

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CAUTION

A serious failure occurs if any of cables/connectors is wrongly connected.
Since a label bearing a connection destination is affixed on each cable/connector, work very carefully referring to it and the wiring diagram.

- Colors of the labels of the subsystem shipped from the factory from June of 2002 and on are as follows. Labels on the cluster1 (CL1) side and the cluster2 (CL2) side are white and yellow respectively.

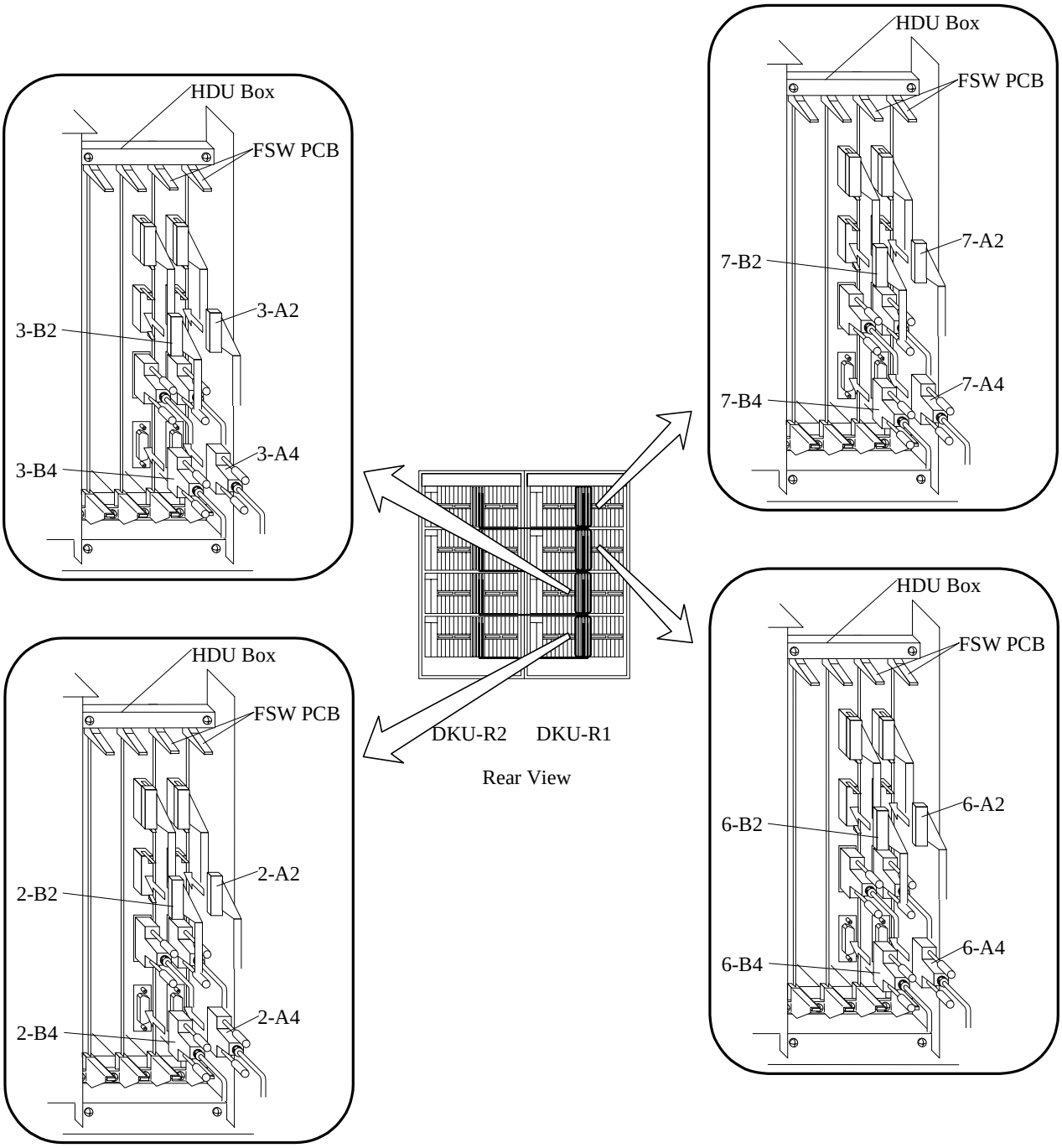

Fig. 3.11.11-32 Connection of the DEV Interface Cables

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Between HDU-L10-L17 and HDU-L20-L27

a. Connect the DEV interface cables to the FSW PCBs in the L1 DKU frame referring to figures 3.11.11-33 and 3.11.11-34.

⚠ CAUTION

A serious failure occurs if any of cables/connectors is wrongly connected.
Since a label bearing a connection destination is affixed on each cable/connector, work very carefully referring to it and the wiring diagram.

- Colors of the labels of the subsystem shipped from the factory from June of 2002 and on are as follows. Labels on the cluster1 (CL1) side and the cluster2 (CL2) side are white and yellow respectively.

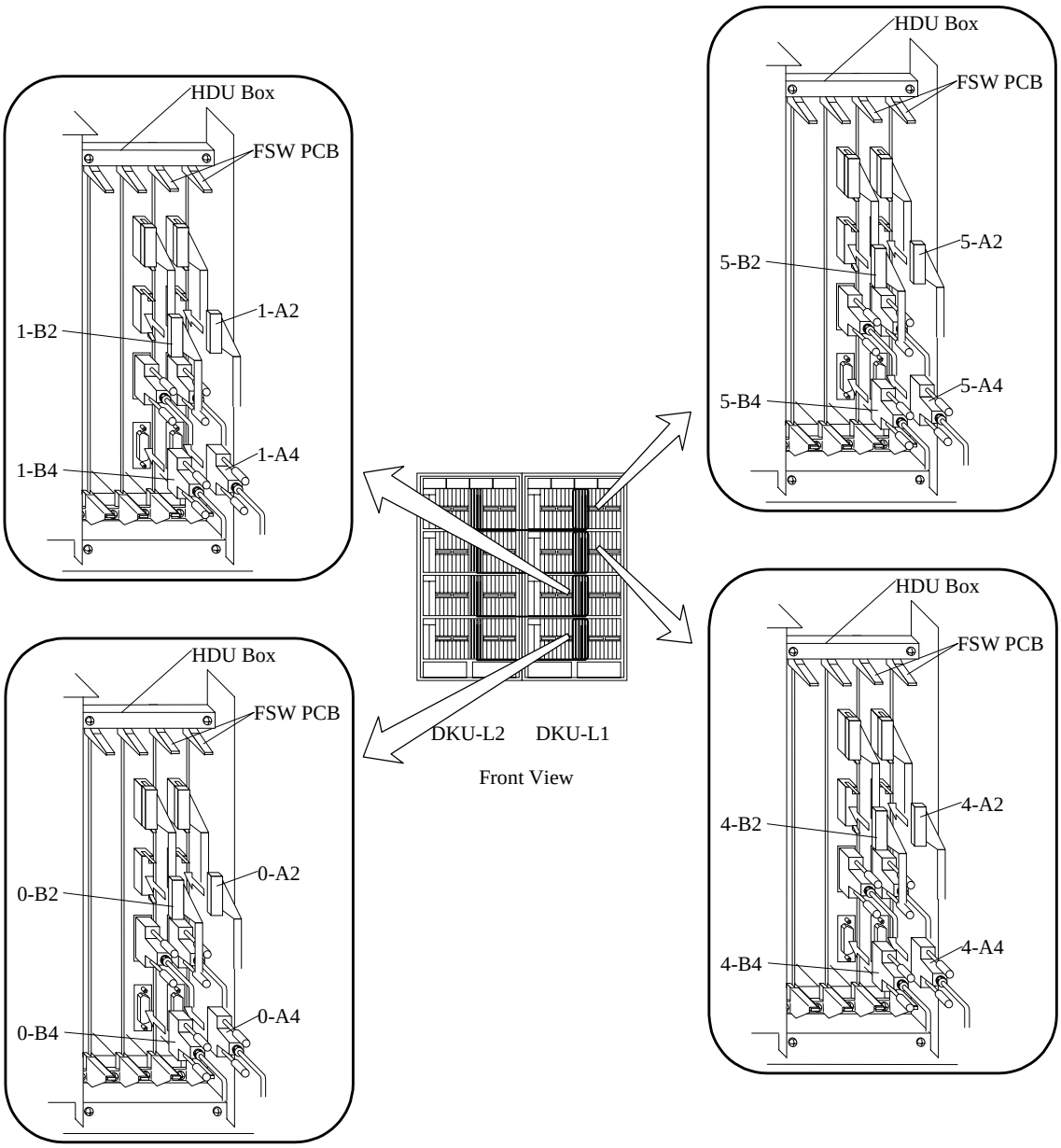

Fig. 3.11.11-33 Connection of the DEV Interface Cables

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⚠ CAUTION

A serious failure occurs if any of cables/connectors is wrongly connected.
Since a label bearing a connection destination is affixed on each cable/connector, work very carefully referring to it and the wiring diagram.

- Colors of the labels of the subsystem shipped from the factory from June of 2002 and on are as follows. Labels on the cluster1 (CL1) side and the cluster2 (CL2) side are white and yellow respectively.

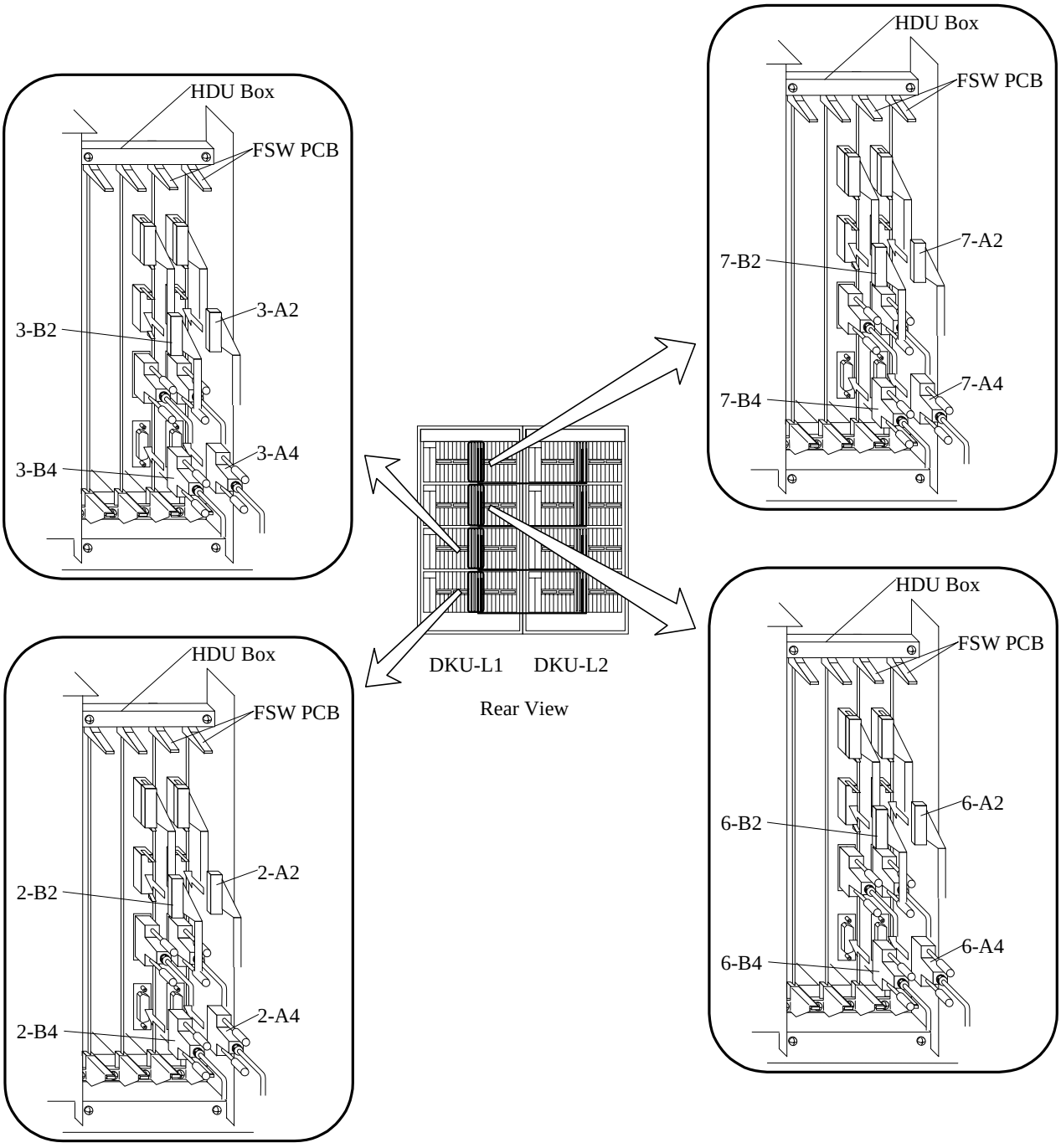

Fig. 3.11.11-34 Connection of the DEV Interface Cables

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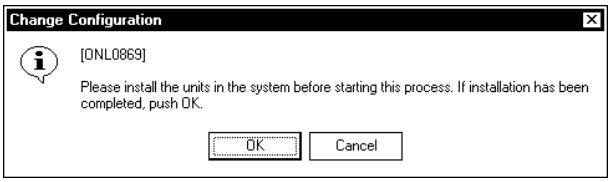
7. SVP post procedure

1. <Check that hardware components are installed>
   Select (CL) [OK] after making sure that all hardware components are installed correctly in response to “Please install the units in the system before starting this process. If installation has been completed, push OK.”.



2.
   When DKA is installed, “Waiting for Power Event... Usually, several minutes (maximum 15 minutes)” is displayed.

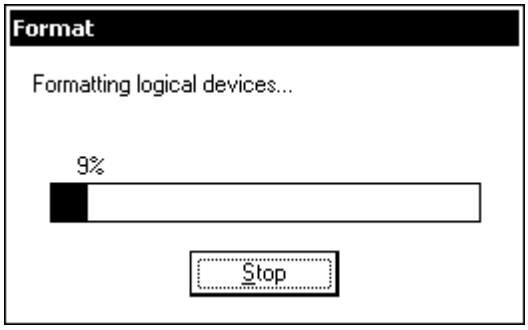
   If [ONL3437E] or [ONL3438E] is displayed, please refer 2.11.1. (INST02-630)
   If [ONL3441E] or [ONL2841W] is displayed, please refer 2.11.2. (INST02-640)

---

3. <DKU PATH INLINE>
   When DKA is installed, “DKU PATH INLINE is now running...” is displayed.

---

4. <LDEV FORMAT>
   “Formatting the logical device...” is displayed when Parity Group is defined.



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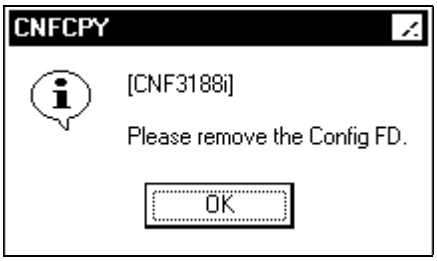
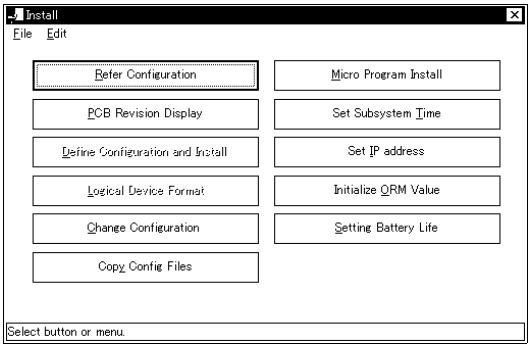
5. <End of system update processing>
"Renewal process has completed. Please check the subsystem status." is displayed when recovery processing on all installed components is completed. Select (CL) [OK] in response to this message.

6.
"Reading subsystem configuration data..." is displayed.
"Please insert the Config FD in the FDD." is displayed.
Insert the configuration FD into FDD, and select (CL) [OK].

7.
When this procedure is completed, the message "Please remove the Config FD." is displayed.
Remove the FD, select (CL) [OK].



8.
After the procedure is completed, return to 'Install'.
Select (CL) [File]-[Exit].



9. <Mode Change>
Change the mode to View Mode.

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8. Installation Procedure of DEV Interface Cable 2 (3/3) (DKU-F455I-EXC)

Between HDU-R10-R17 and HDU-R20-R27

a. Attach the cable covers with the screw to fix the DEV Interface Cables.

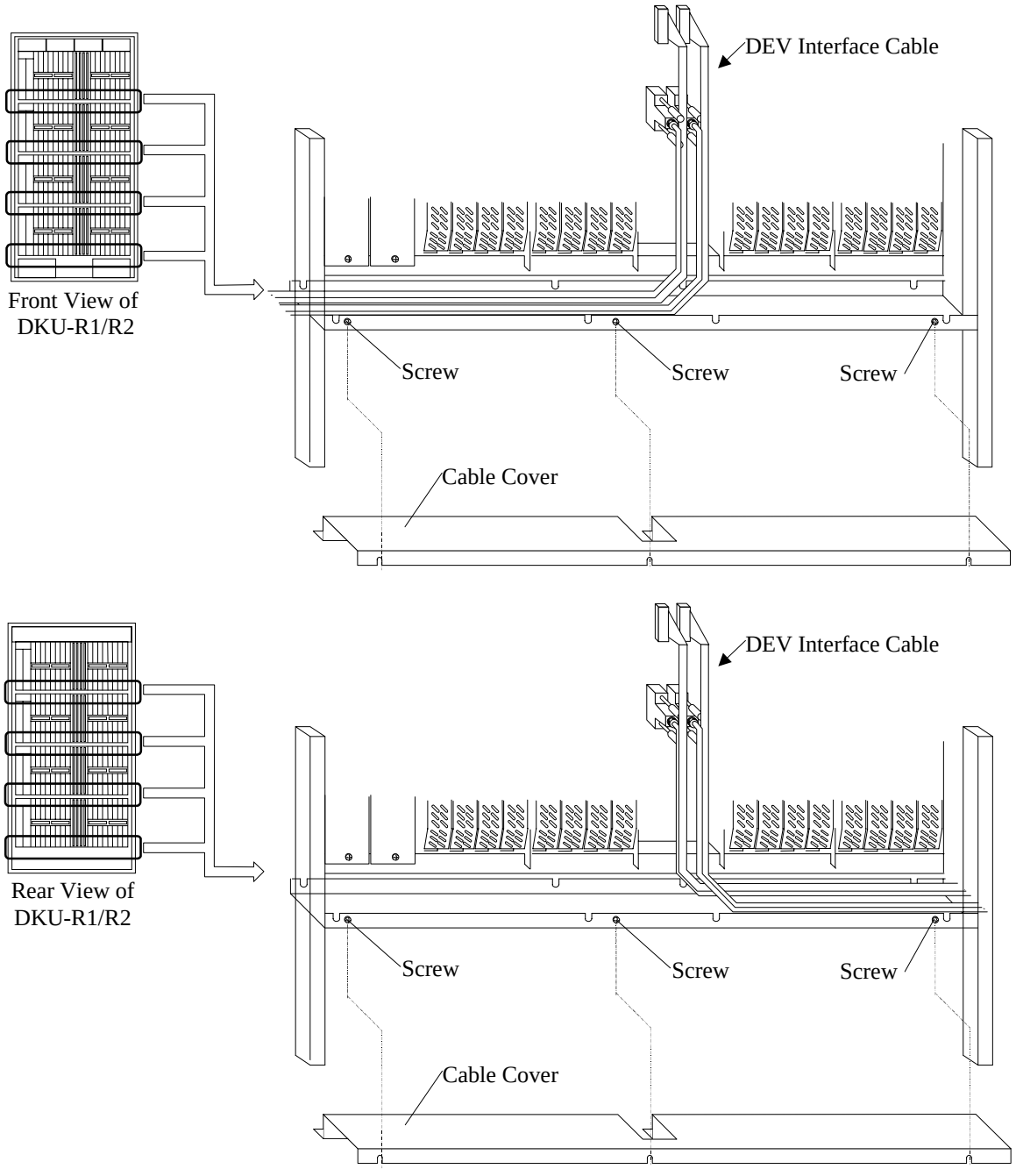

Fig. 3.11.11-35 Fixation of the DEV Interface Cables

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b. Attach the cable covers with the screw to fix the DEV Interface Cables.

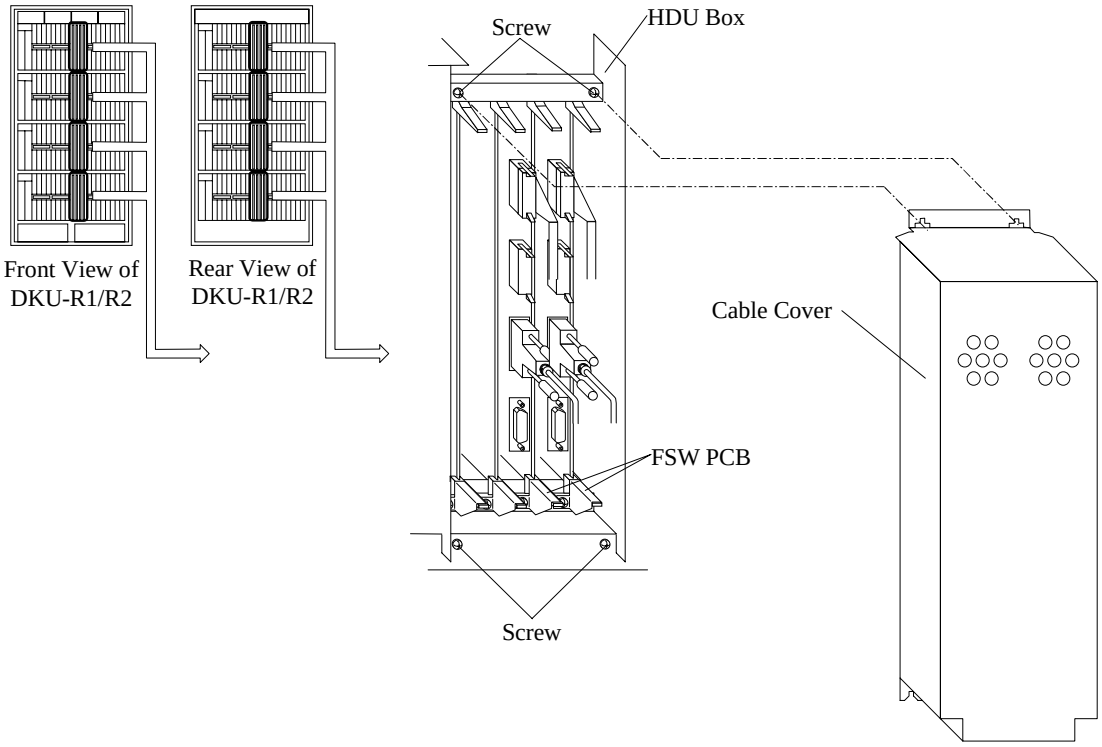

Fig. 3.11.11-36 Fixation of the DEV Interface Cables

c. Attach the nameplate to the DKU-R2 frame.

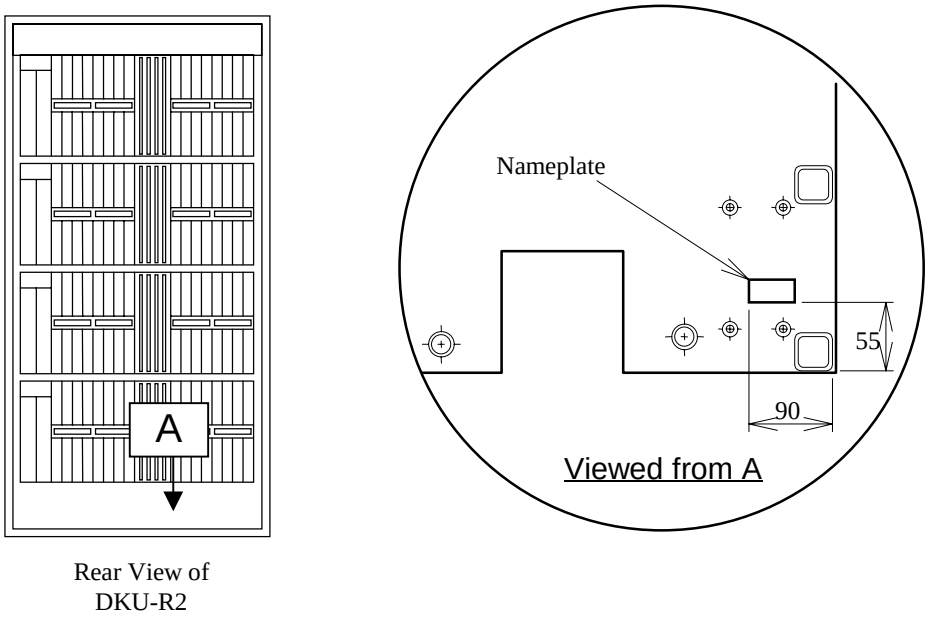

Fig. 3.11.11-37 Attachment of the Nameplate

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Between HDU-L10-L17 and HDU-L20-L27

a. Attach the cable covers with the screw to fix the DEV Interface Cables.

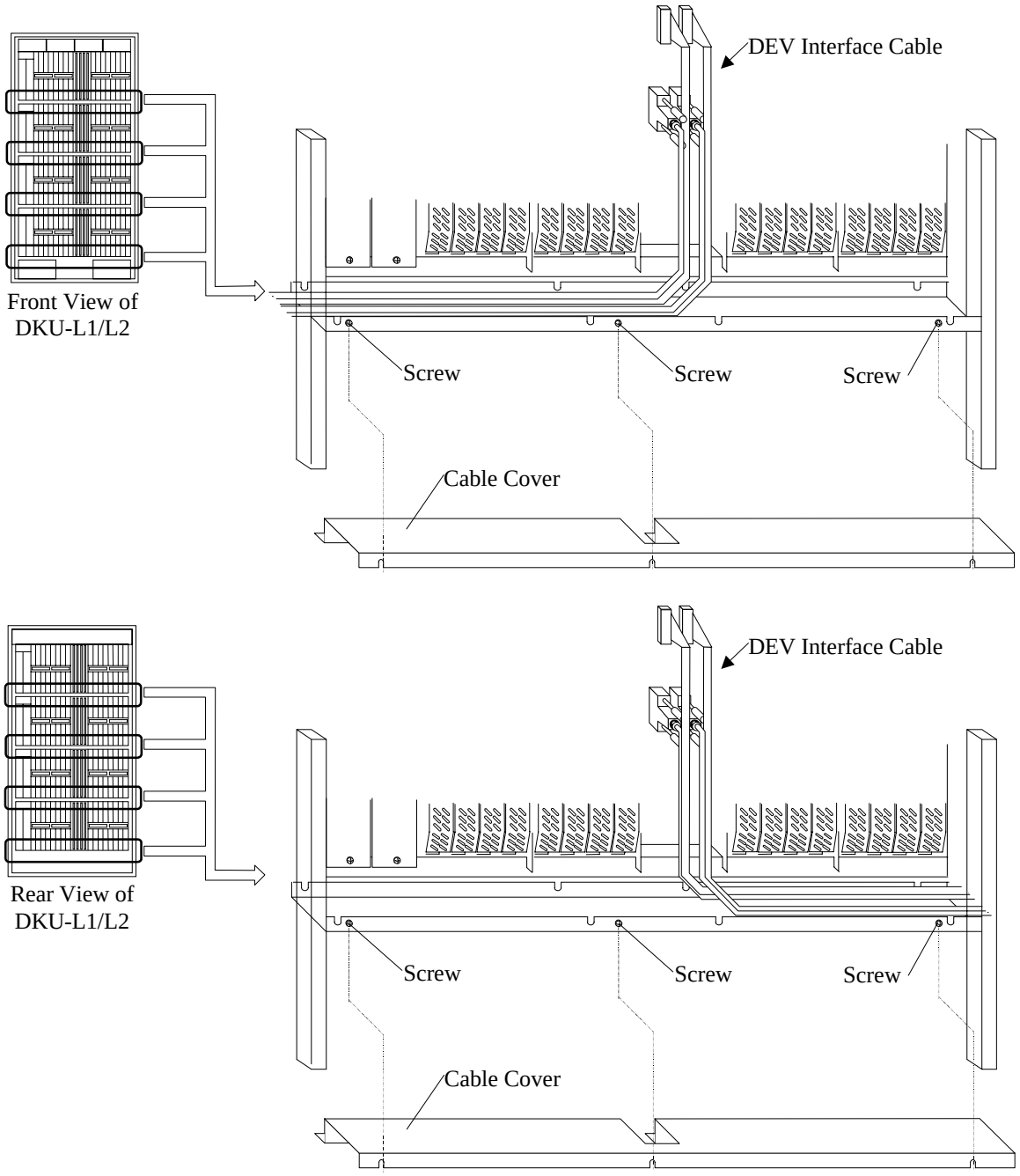

Fig. 3.11.11-38 Fixation of the DEV Interface Cables

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b. Attach the cable covers with the screw to fix the DEV Interface Cables.

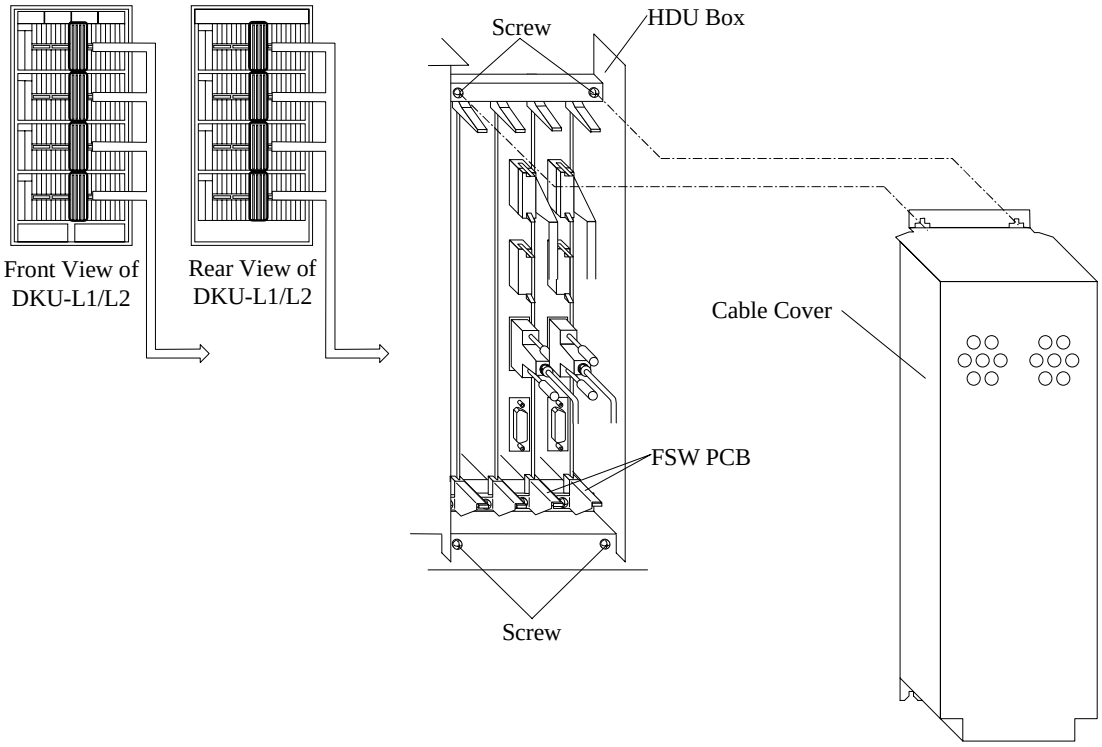

Fig. 3.11.11-39 Fixation of the DEV Interface Cables

c. Attach the nameplate to the DKU-L2 frame.

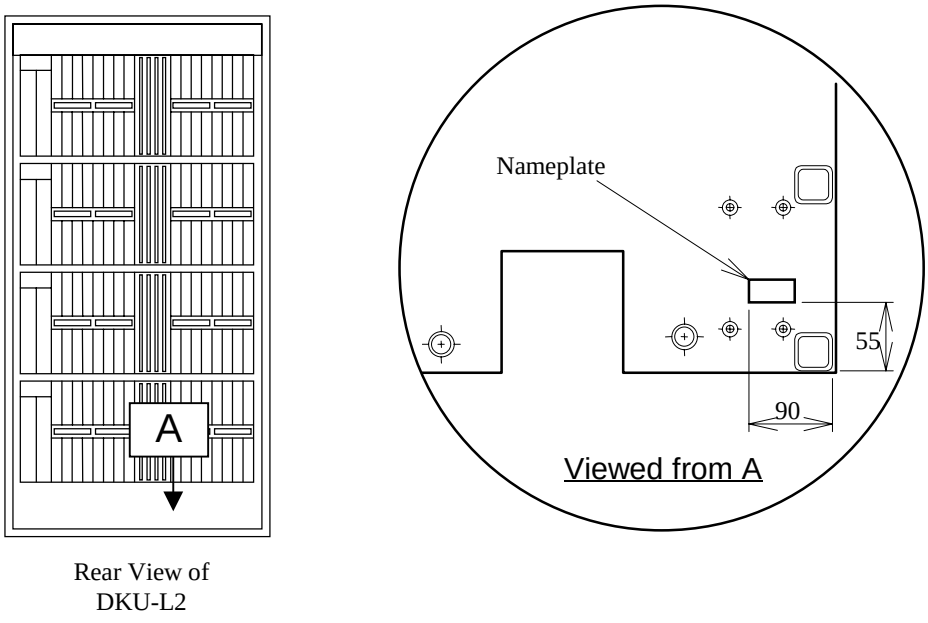

Fig. 3.11.11-40 Attachment of the Nameplate

d. Return to the work table (INST02-50) and perform rest of the works.

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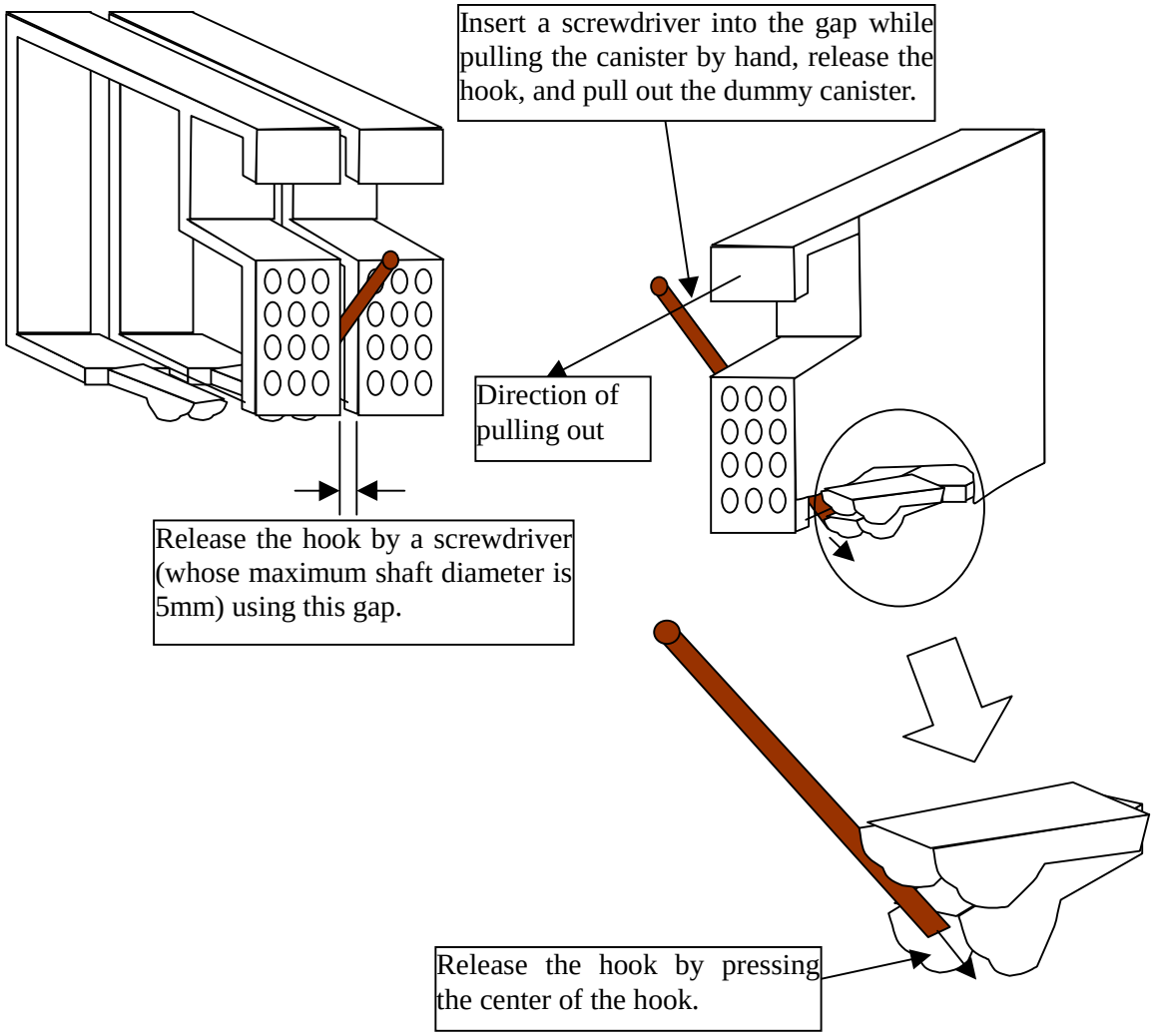
Procedure for removing the dummy canisters when they cannot be removed by pulling only.

a. While pulling the dummy canister by hand, insert a screwdriver (whose maximum shaft diameter is 5mm) into the gap of the canisters.
b. Release the hook using the screwdriver and remove the dummy canister.



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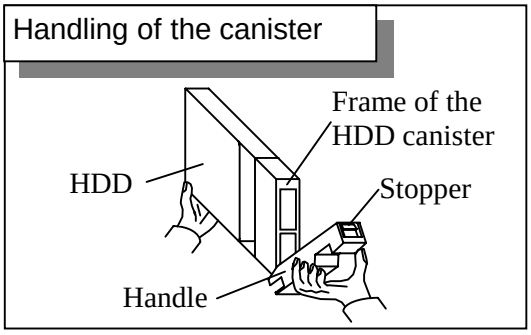
HDD canister install procedure

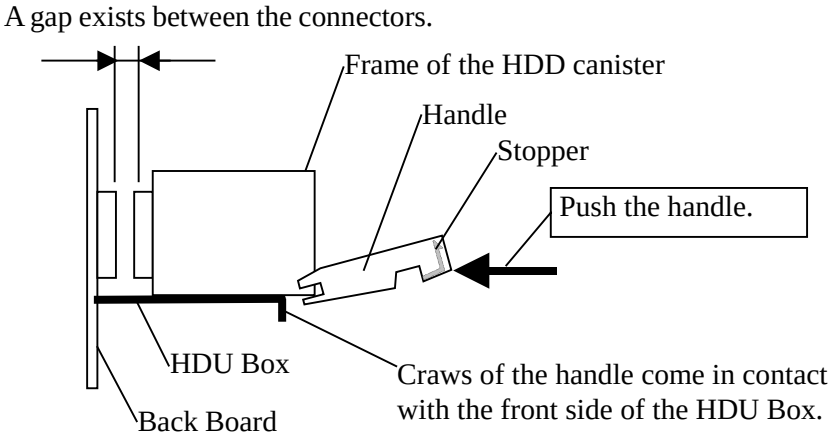
Note on the installation: Do not insert the HDD canister by pushing its frame.

(1) Insert the HDD canister into the HDU Box holding its handle.
(Insert the canister until the claws that are located at the bottom of the handle come in contact with the front side of the HDU Box.)

(2) Turn the handle at a stroke by pushing its top with your thumb.
(Turn the handle until it latches with the stopper. Do not stop the handle on its way of turning.)



(1) Insert the HDD canister into the HDU Box holding its handle.



(2) Turn the handle at a stroke by pushing its top with your thumb.
(Do not stop the lever on its way of turning.)

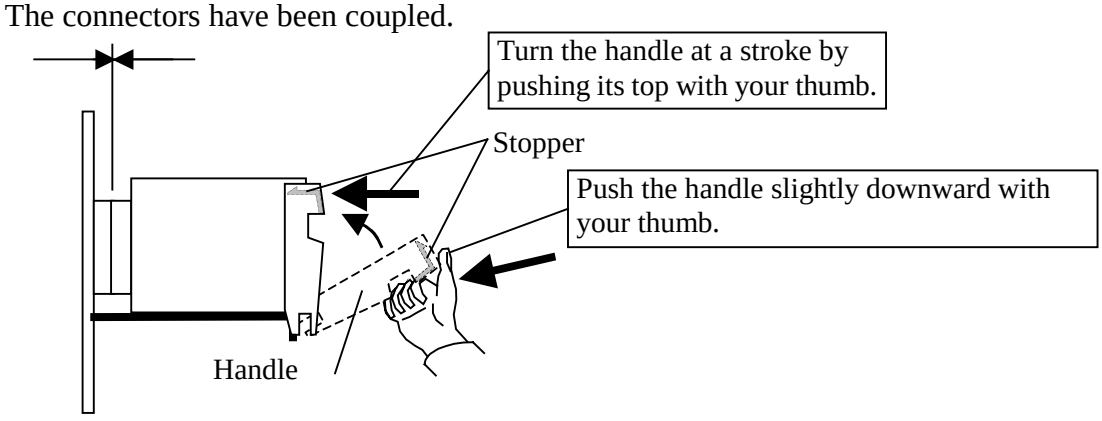


Fig. 3.11.11-41 Method of Installing HDD Canister

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3.12 Installation of SVP High Reliability Kit (DKC-F460I-SVP)

CAUTION

This work takes about three hours. During the work, the Web Console cannot be used for some time because of a rebooting of the SVP PC and verification.
Inform the customer of the following before starting the addition.

① During this installation, customer can not use Web Console/Storage Navigator via a customer PC.
② When SNMP is being used:
- 'cold start' trap is reported several times.
- The obstacle trap which occurred during work may not be notified.
- SNMP command may not answer normally.

Table 3.12-1 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKC-F460I-SVP	SVP ASSY	5513995-A	1	
		SVPPS BOX	5513997-A	1	
		Stopper (SVP-WR)	5515587-1	1	
		Rubber (SVP-WR)	5515588-1	1	
		Stopper (SVP-WF)	5515586-1	1	
		Screw	BS306N	4	
		Screw	SB408N	3	
		Screw (Stopper)	5513661-412	2	
		Hinge (SVP)	3254970-1	2	
		Nameplate (HDS)	2105902-105	1	RSD
			2105903-105		HICAM
			2105903-205		HICEF
		Nameplate (HP)	2105902-205	1	RSD
			2105903-305		HICAM
			2105903-405		HICEF

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1. Operating the Basic SVP

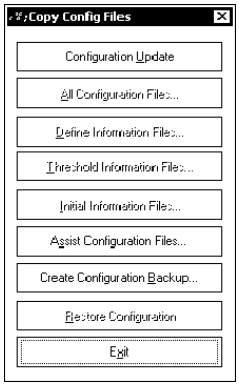
Operate the basic SVP PC as follows.

1-1 Config Back up

(1) <Mode change>
Change the mode to “Modify”.

(2) Select (CL) [Install] in the ‘SVP’ window and select (CL) [Copy Config Files] in the ‘Install’.

(3) Select (CL) [Create Configuration Backup...] in the ‘Copy Config Files’.



(4) Select (CL) [OK] after the Config FD insertion for backup.

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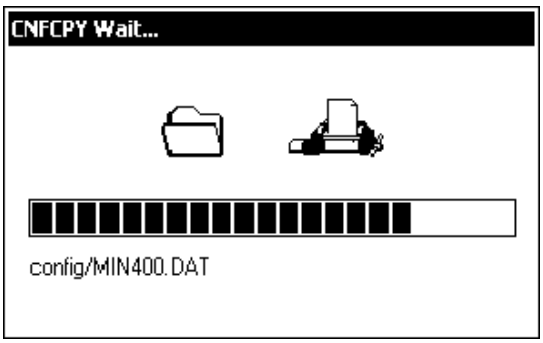
(5) The ‘CNFCPY Wait...’ window is displayed.



(6) Select (CL) [OK] in response to ‘Please remove the Config FD’.

(7) Select (CL) [Exit] of the 'Copy Config Files' to finish this operation.

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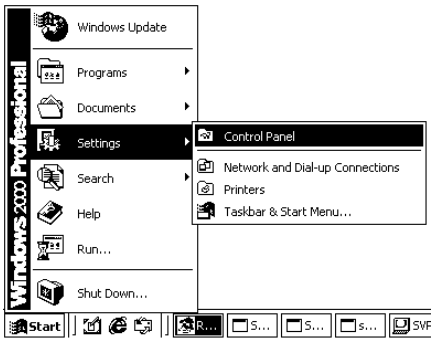
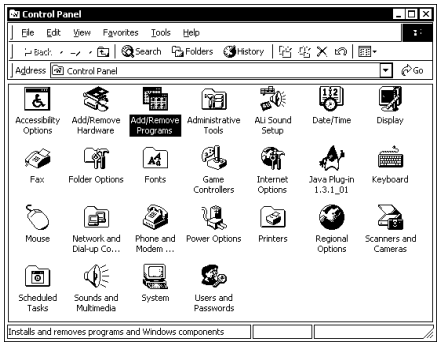
1-2 Checking OpenSA(Apache supporting SSL) Installation

Use the following procedure to check whether OpenSA is installed in the basic SVP.
If OpenSA is installed in the basic SVP, it needs to be installed in the additional SVP as well.

(1) Select (DR) [Start]-[Settings]-[Control Panel].

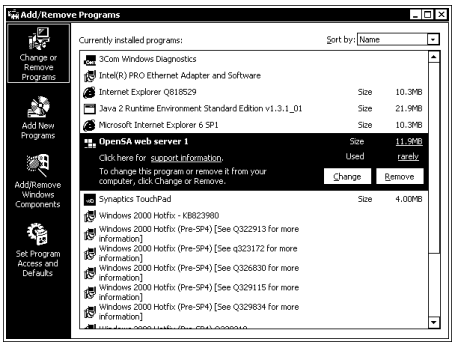


(2) Select (DC) [Add/Remove Programs].



(3) Check the content of [Currently installed programs] in the [Add/Remove Programs] panel.
If [OpenSA web server 1] exists, OpenSA is installed.
In this case, it is necessary to install OpenSA also in the additional SVP with procedure 3-6.

If [Apache Web Server] or [Apache HTTP Server 1.3.27] exists, Apache is installed.
In this case, it is not necessary to perform procedure 3-6.



When the OpenSA installation check is completed, select (CL) [X] button and close the window.

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2. Installation Procedure of SVP High Reliability Kit

Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

2-1 Attach the stopper.

a. Attach the Hinges (SVP) with the four screws.

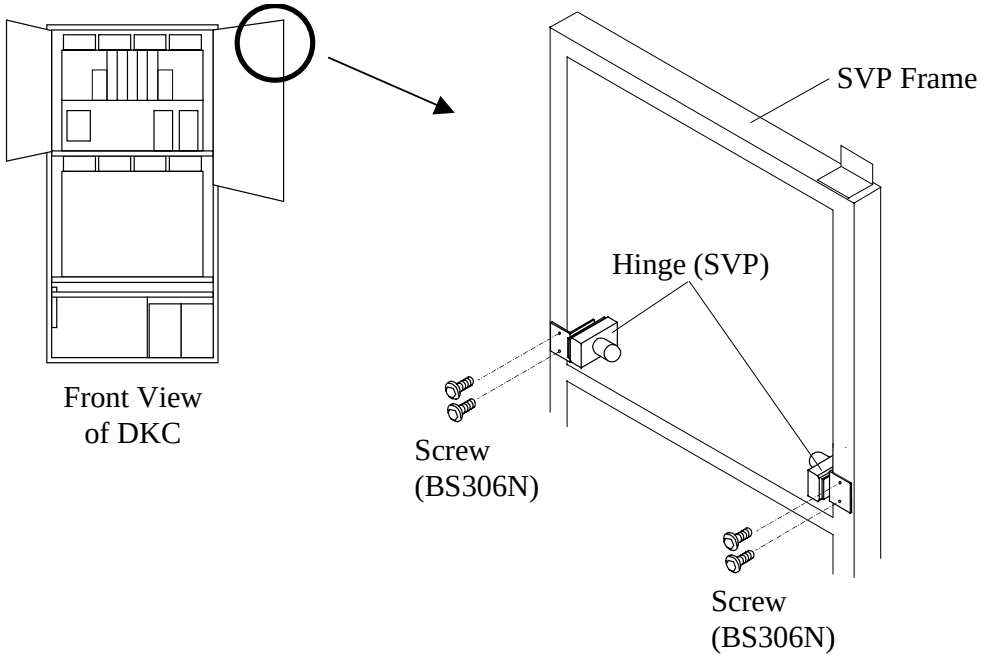

Fig. 3.12-1 Attachment of Hinges

b. Stick the Rubber (SVP-WR) to the Stopper (SVP-WR).

c. Attach the Stopper (SVP-WR) with the two screws.

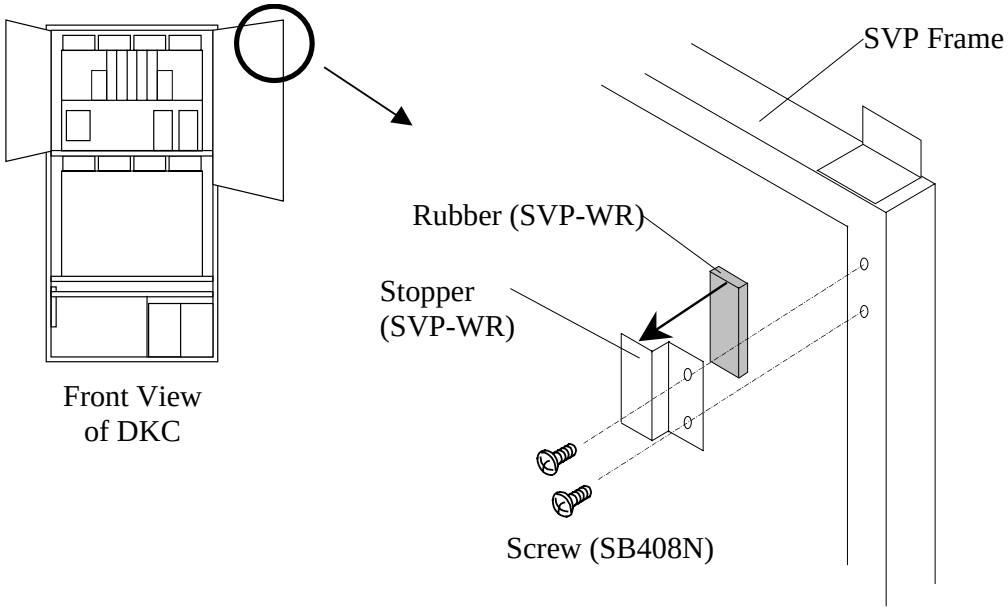

Fig. 3.12-2 Attachment of Stopper

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d. Attach the stopper (SVP-WF) placing it to the utmost left by fastening it with two screw (stopper)'s.

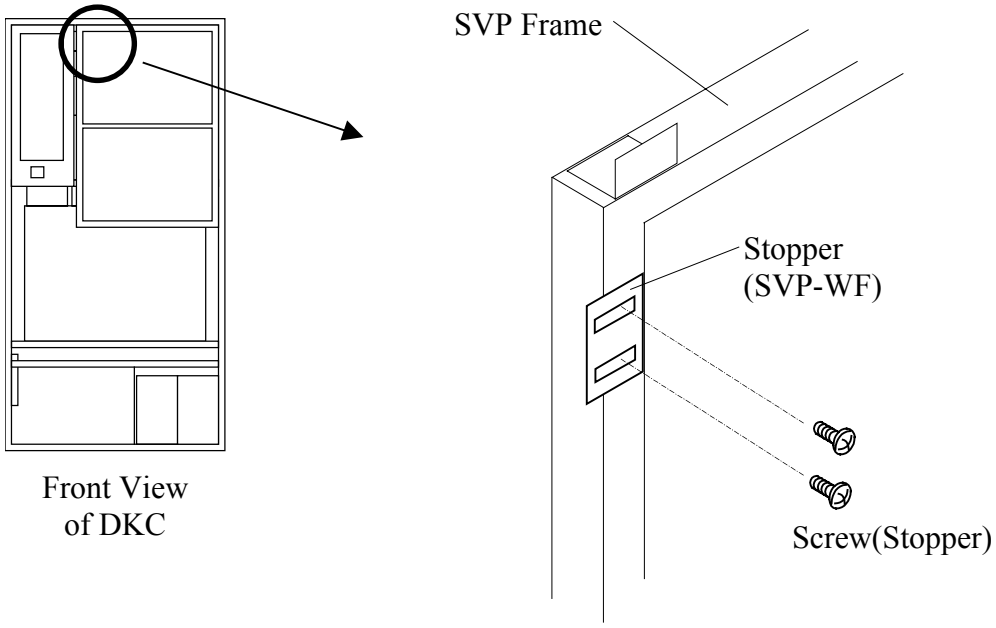

Fig. 3.12-3 Attachment of Stopper

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2-2 Attach the SVP Assy.

a. Loosen the two screws and remove the SVP cover.

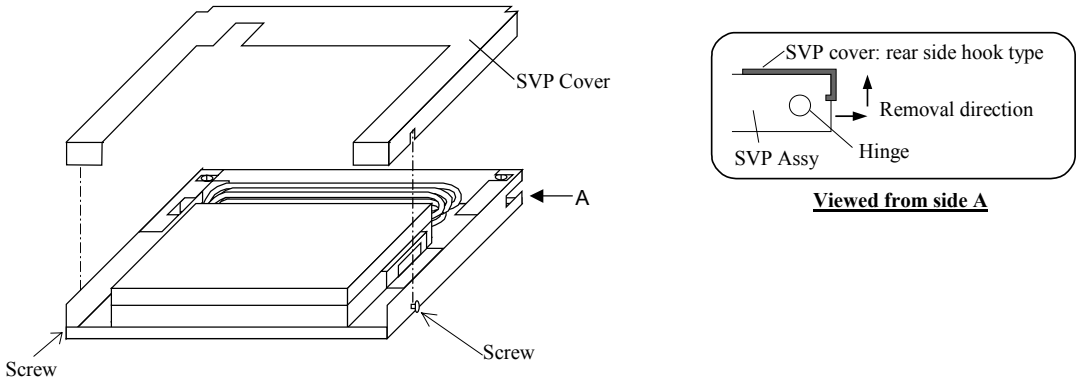

Fig. 3.12-4 Removal of SVP Cover

b. Attach the SVP Assy to the cabinet and attach the stoppers with screws.

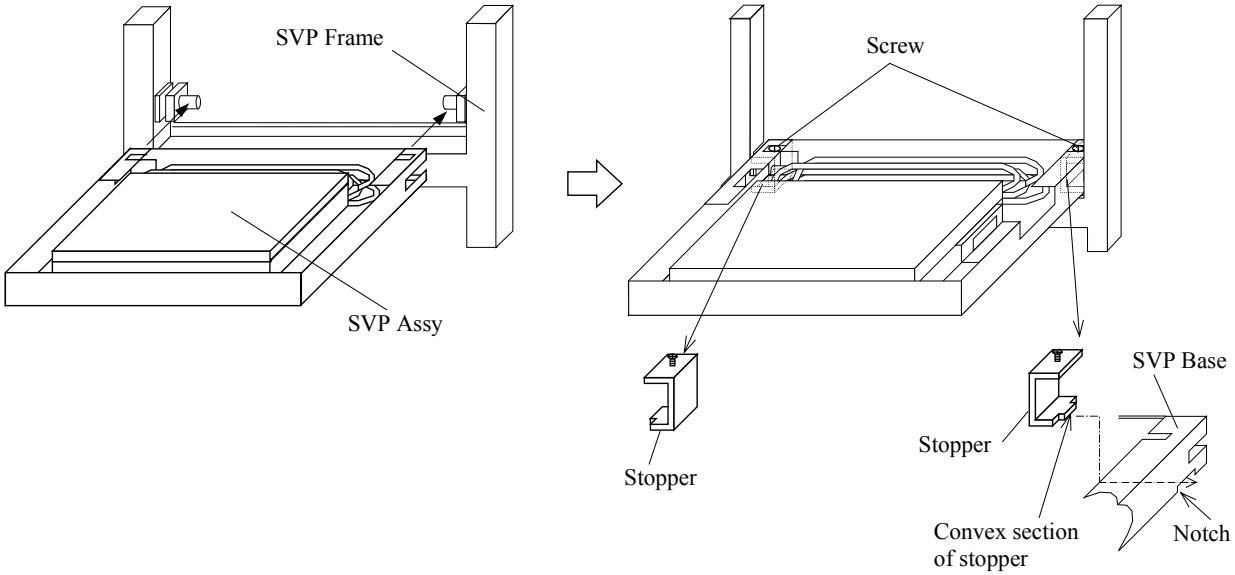

Fig. 3.12-5 Attachment of SVP ASSY

c. Route the cable that comes from the SVP Assy making it pass inside the SVP cover. Attach the SVP cover with the screws.

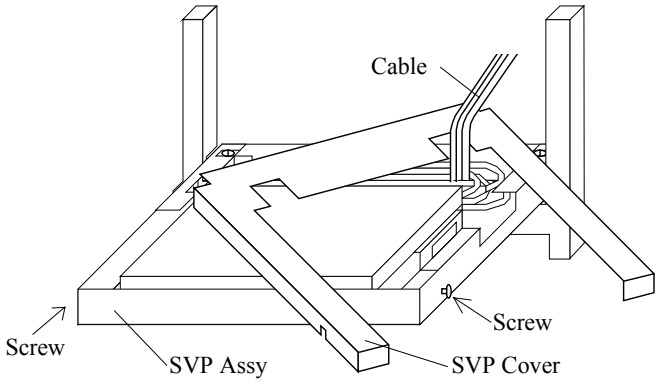

Fig. 3.12-5A Attachment of SVP Cover

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2-3 Attach the SVPPS BOX.

a. Attach the SVPPS BOX with the screw.

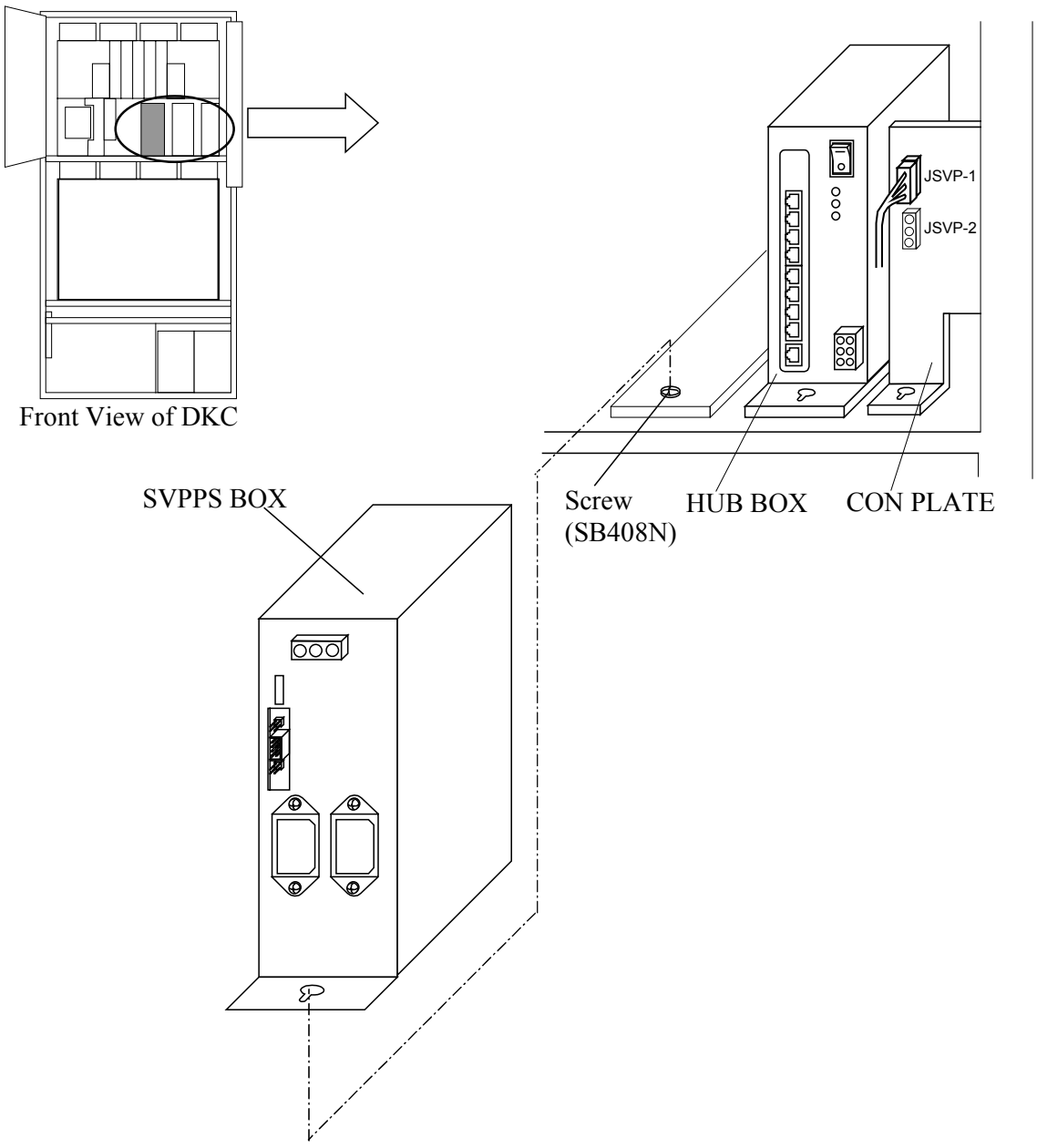

Fig. 3.12-6 Attachment of SVPPS BOX

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2-4 Fix the cables.

a. Fasten the cable that comes from the SVP Assy and excessive portion of it with Repeat Binders.

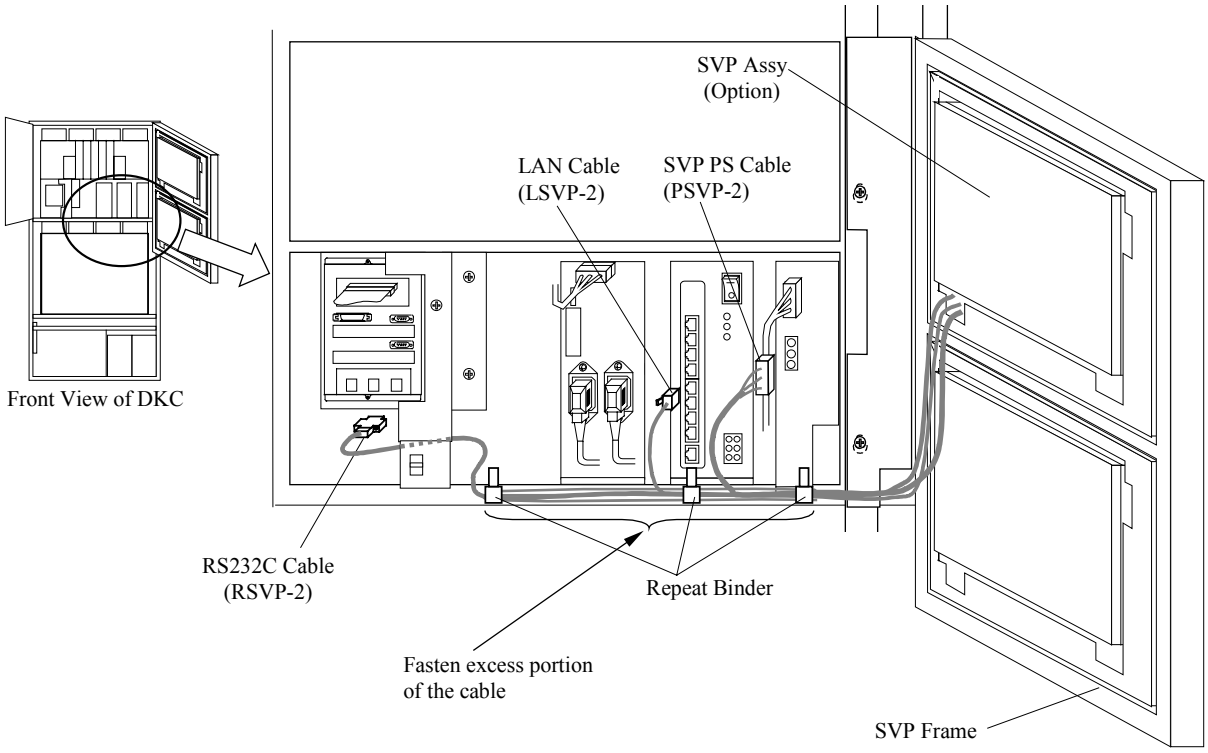

Fig. 3.12-7 Fixation of Cables

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2-5 Connect the cables (1).

a. Connect the cables (P40, PS-BOX-1, PS-BOX-2) to the SVPPS BOX.
The cable (P41) is not to be connected at this time, however.

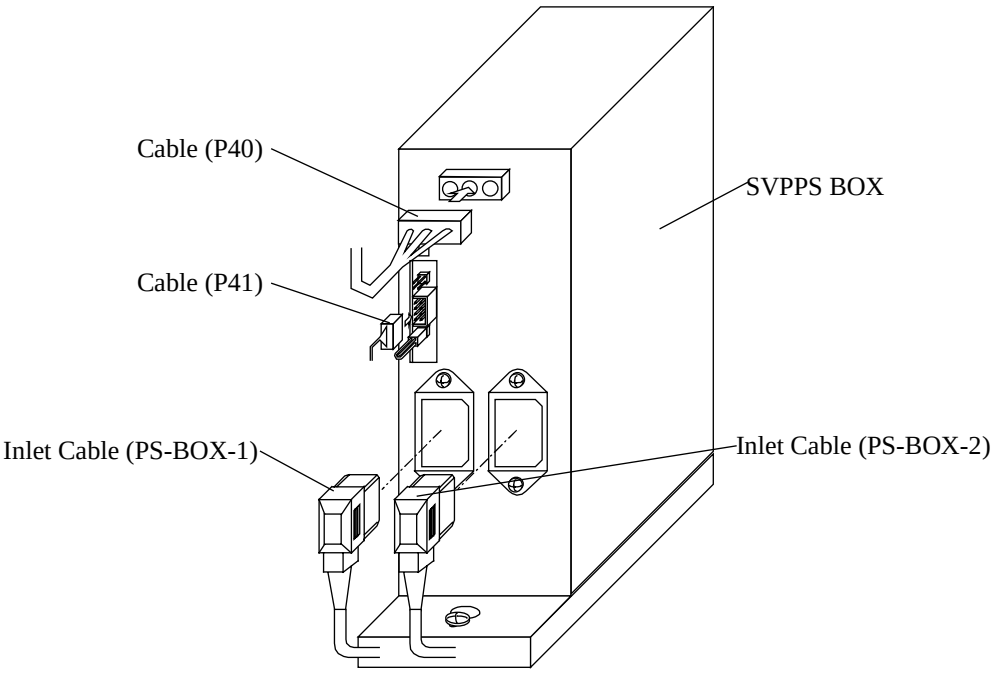

Fig. 3.12-8 Connection of Cables

b. Connect the SVP PS cable (PSVP-2) to the CON plate.

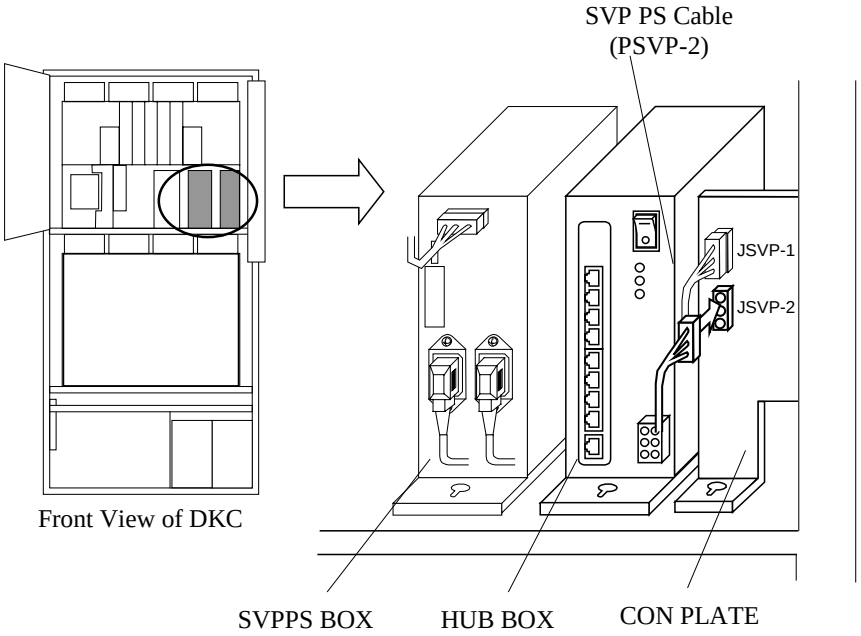

Fig. 3.12-9 Connection of Cables

(Note) The LAN cable (LSVP-2) to the HUB BOX is not to be connected.

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c. Connect the cable to the RS CON.

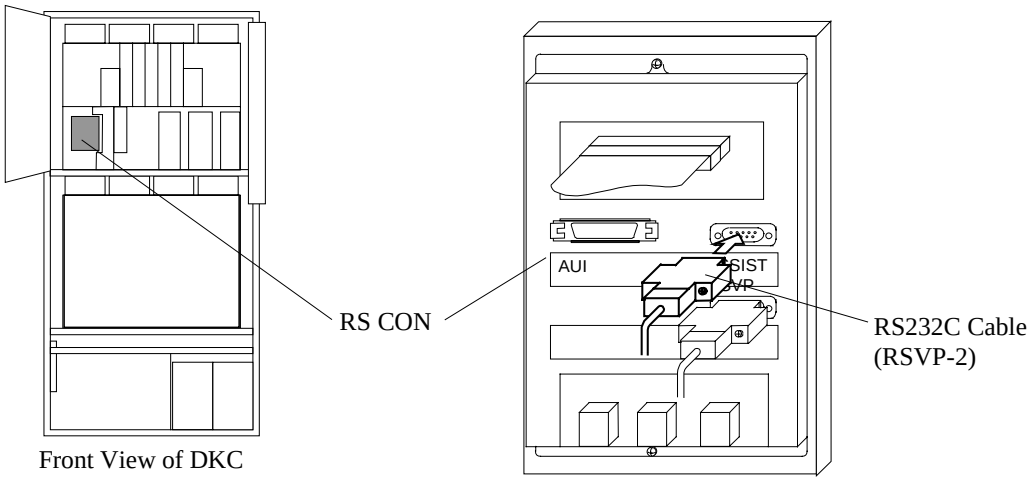

Fig. 3.12-10 Connection of Cables

2-6 Attach the nameplate.

a. Attach the nameplate regardless of the model number from the left of the cover.

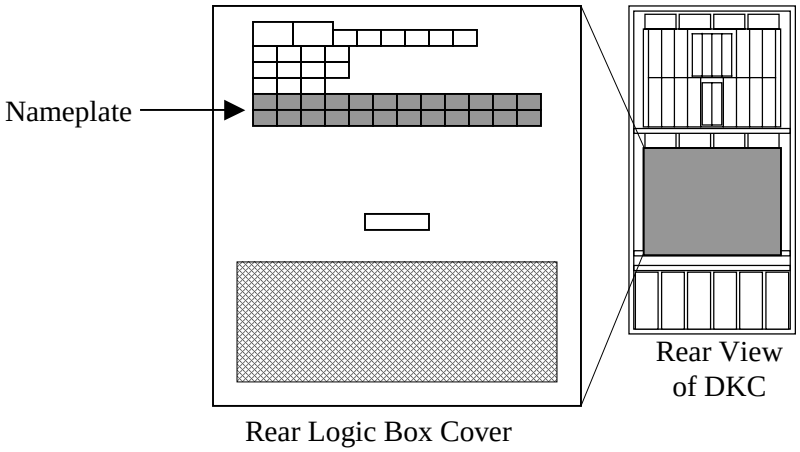

Fig. 3.12-11 Location of the Nameplate

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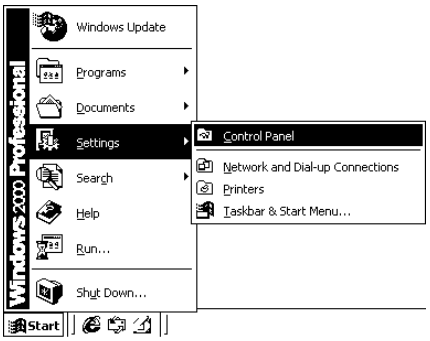
3. Operating Additional SVP

Operate the additional SVP as shown below.

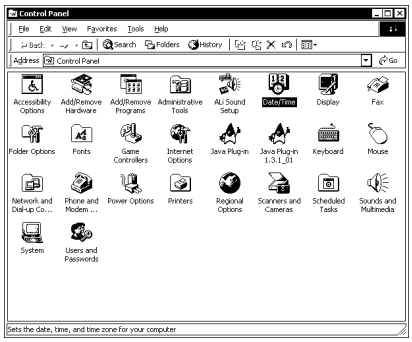
> **⚠ CAUTION**
>
> The SIMRC = 7410ff/7ff200/7ff201 may occur during this operation. But that is not a problem.

3-1 Set Date/Time

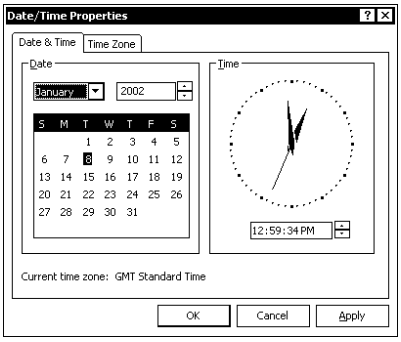
(1) <Open [Control Panel]>
Select (DR) [Settings] and then [Control Panel] from [Start].



(2) <Open [Date/Time]>
Select (DC) [Date/Time] from [Control Panel].



(3) <Select [Time Zone]>
Select (CL) [Time Zone].



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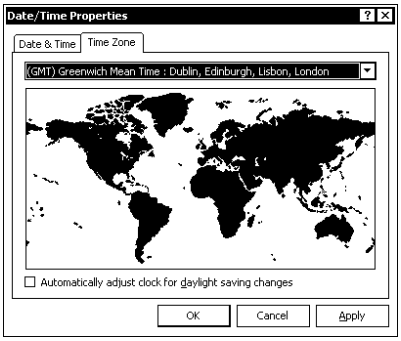
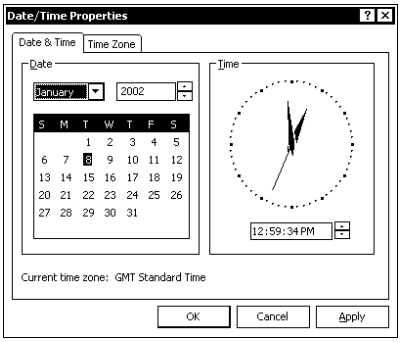
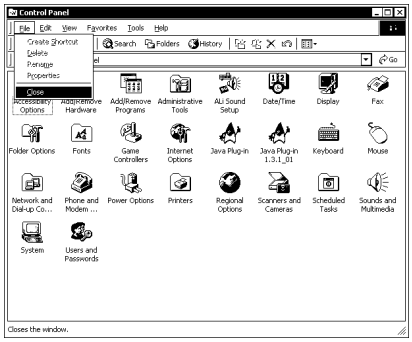
(4) <Check the setting of [Time Zone]>
Make sure that the setting of [Time Zone] is without the relation of a subsystem position "[GMT] Greenwich Mean Time; Dublin, Edinburgh, Lisbon, London". If it is not set as the (GMT), reset it as the (GMT). Also, make sure that a check box on the left of "Automatically adjust clock for daylight saving changes" is ☐ (without a check mark). Then, select (CL) [Date/Time].



(5) <Set the [Date/Time]>
Check if the [Date/Time] is set to the current time and date. If not, reset it correctly. Then, select (CL) [OK].

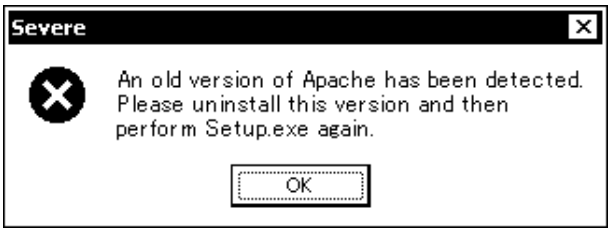


(6) <Close "Control Panel">
Select (CL) [File] on "Control Panel".
Select (CL) [Close].



3-2 Installation of Micro-program
① Insert the CD-ROM disk into the CD-ROM drive and then wait one minute.
② Select (CL) [Run...] from the [Start]. Enter "e:/setup.exe" and press the [Enter] key.

If a message "An old version of Apache has been detected. Please uninstall this version and then perform Setup.exe again." is displayed, perform again after uninstalling Apache 1.3.14.
The procedure of uninstallation of Apache 1.3.14 is shown 5.2 of WEB CONSOLE SECTION.



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3-3 Installation of Configuration

(1) Inserting the Config FD

① A message “Please insert the Config FD in the FDD.” is displayed.

② Insert the Config FD into the FDD and select (CL) [OK].

(2) Removing the Config FD

① When the copying of the Config is completed, a message “Please remove the Config FD.” is displayed.

② Remove the Config FD from the FDD and select (CL) [OK].

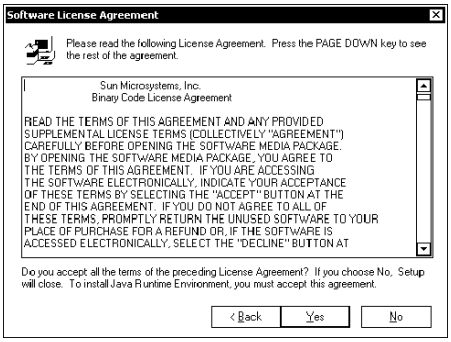
3-4 JAVA Setup

3-4-1 JAVA Setup

When the following window is not displayed, go to Step 3-4-2 because APACHE has already been installed.

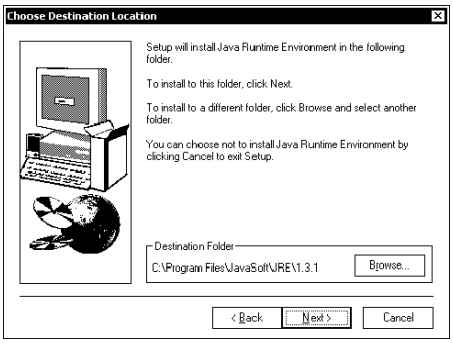
(1)

Select (CL) [Yes].



(2)

Select (CL) [Next].



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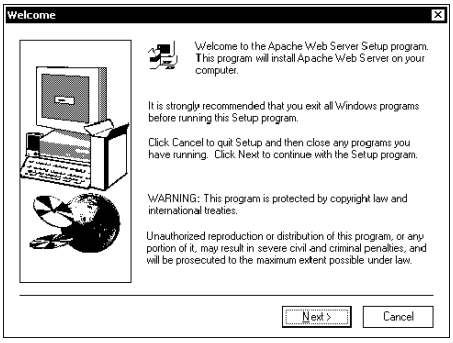
3-4-2 Setup Process of Apache

Execute Setup of Apache.

If the following panel is not displayed, Apache is already installed. Go to 3-5. If the SVP version is earlier than 21-06-20/00, Apache 1.3.14 will be installed. Use the following procedure to install it. If the SVP version is 21-06-20/00 or later, Apache 1.3.27 will be installed. Go to 3-4-3.

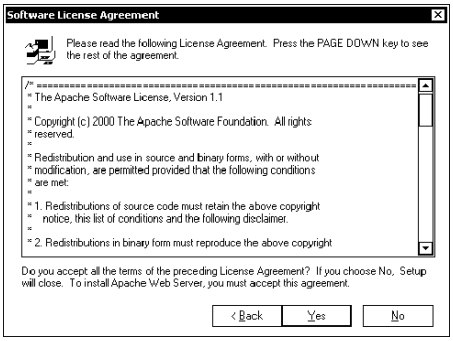
(1)

Select (CL) [Next].



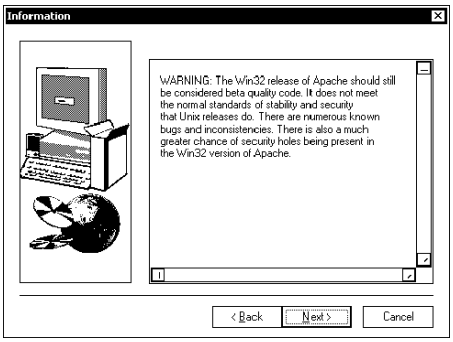
(2)

Select (CL) [Yes].



(3)

Select (CL) [Next].



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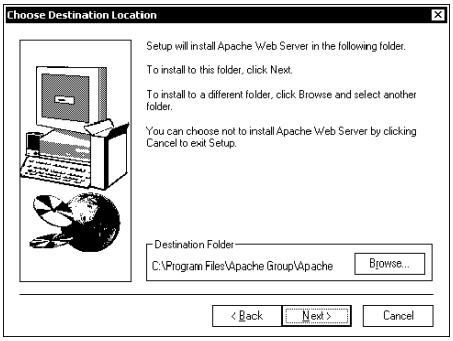
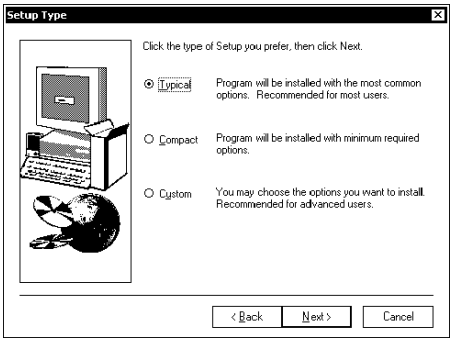
(4)

Select (CL) [Next].



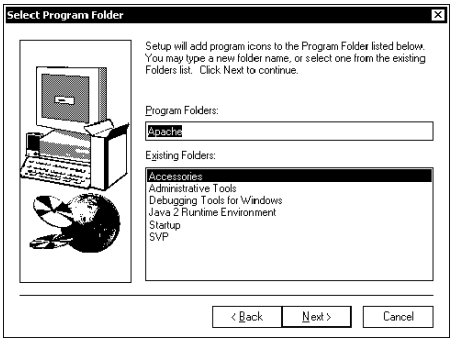
(5)

Select (CL) [Next].



(6)

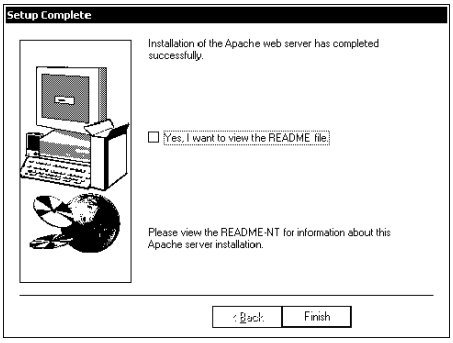
Select (CL) [Next].



(7)

Remove the check box of "Yes and I want to view the README file.", and select (CL) [Finish].

Go to Step 3-5.



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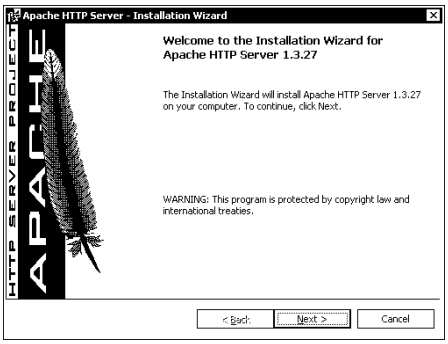
3-4-3 Setup Process of Apache 1.3.27

(1)

Select (CL) the [Next>] button.

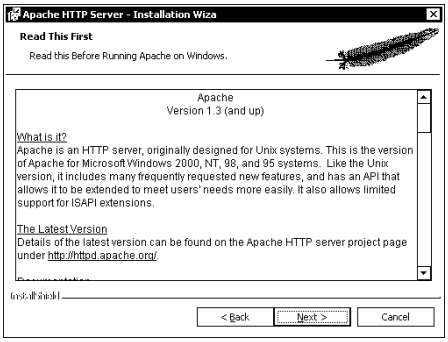


(2)

After selecting (CL) ”I accept the terms in the license agreement“, select (CL) the [Next>] button.

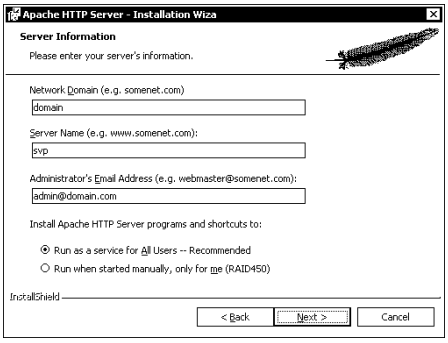
(3)

Select (CL) the [Next>] button.



(4)

Enter “domain” to the Network Domain field, “svp” to the Server Name field, and “admin@domain.com” to the Administrator’s Email Address field.
After selecting (CL) “Run as a service for All Users – Recommended”, select (CL) the [Next>] button.



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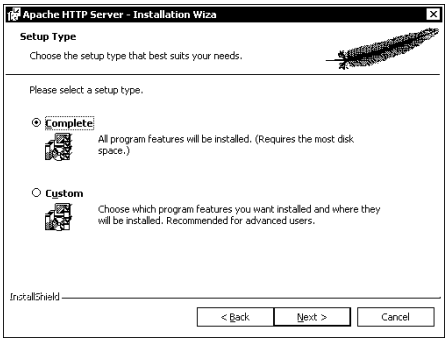
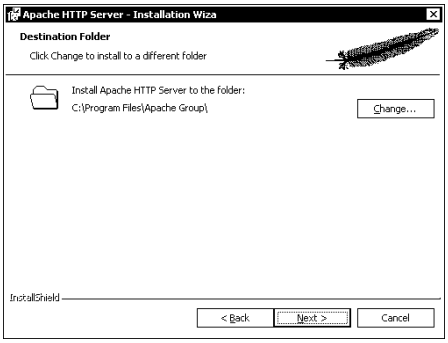
(5)

Select (CL) “Complete,” and then select (CL) the [Next>] button.



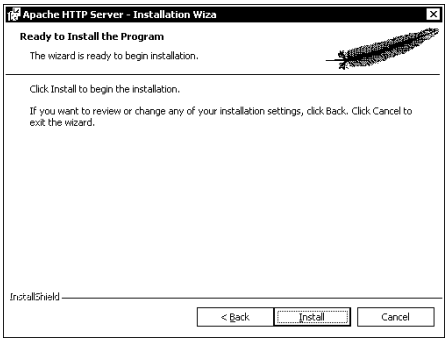
(6)

Select (CL) the [Next>] button.



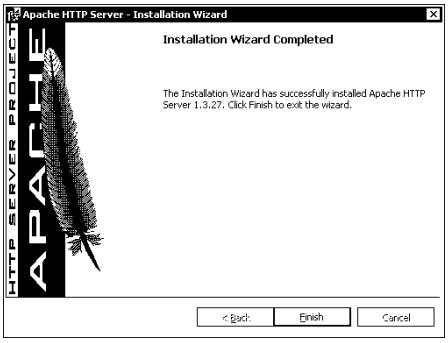
(7)

Select (CL) the [Install] button. Copying of the file will start.



(8)

When copying of the file is completed, this panel is displayed. Select (CL) the [Finish] button.



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3-5 Restarting the SVP

When the setup is completed, the SVP restarts automatically.
Remove the CD-ROM after the SVP restarts.

'DKC' of the 'Raid Information' window becomes an error because an IP Address is not setting.
Ignore it and continue the operation.

3-6 <Installation of OpenSA>

If OpenSA is installed in the basic SVP, it needs to be installed in the additional SVP as well. (WEB06-10)
If OpenSA is not installed in the basic SVP, go to 3-7.

3-7 <Setting an IP Address and Duplication of Optional SVP>

(1) <Changing the mode>

Change the mode by selecting [Modify Mode].

(2) <Opening the Install window>

Select (CL) [Install] from the [SVP] menu.

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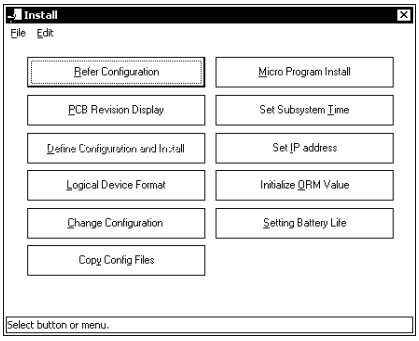
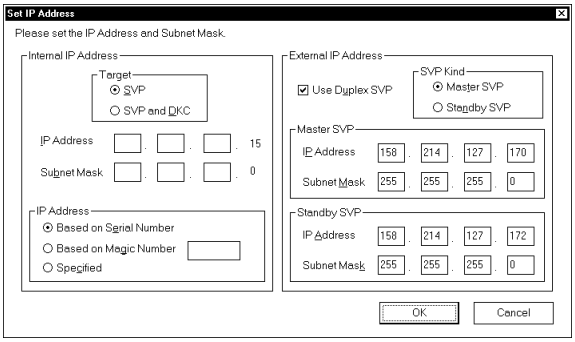
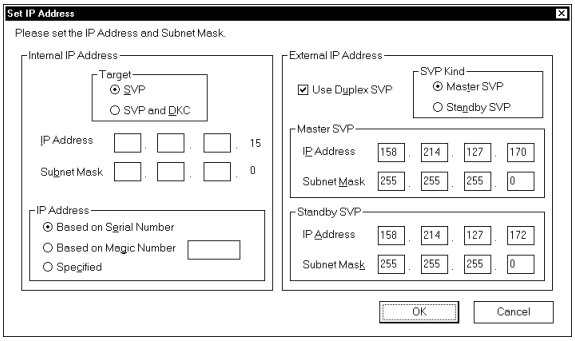
(3) <Selecting [Set SVP IP Address]>
Select (CL) [Set IP Address] in the [Install] window.



(4) <Setting an IP address>
Select (CL) [SVP] in the Internal IP Address box and enter an IP address and subnet mask of the internal IP address.

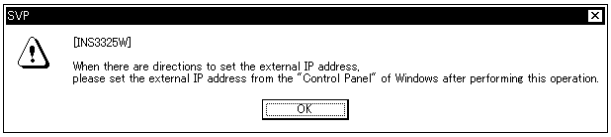


(5) <Setting the SVP duplication>
(a) Select (CL) [Use Duplex SVP] in the External IP address box.
(b) Select (CL) [Standby SVP] in the SVP Kind box.
(c) Enter the IP addresses and subnet masks of the Master and Standby SVPs, and then select (CL) [OK].



* You do not have to enter the information of Item (c) above when the setting of the external IP address is not required.

(6) <Confirming the external IP address setting>
When a message, "When there are directions to set the external IP address, please set the external IP address from the "Control Panel" of Windows after performing this operation." is displayed, select (CL) the [OK] button.



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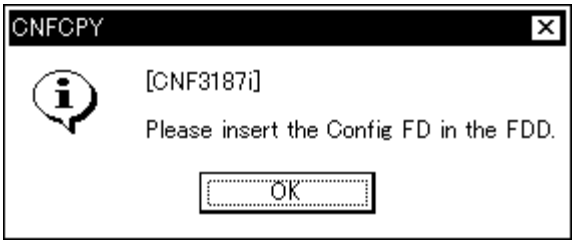
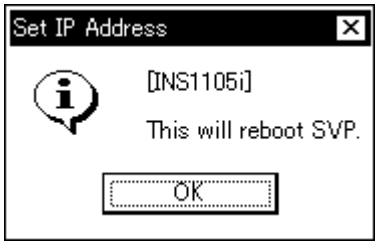
(7) <Inserting the Config FD>
Insert the Config FD in the FDD and select (CL) [OK].



(8) <Removing the Config FD>
When the copying of the Config is completed, a message, “Please remove the Config FD.” is displayed. Remove the FD and select (CL) [OK].

(9) <Confirming rebooting of the SVP>
Select (CL) [OK] in response to a message, “This will reboot SVP.”.



3-8 <Initial screen>

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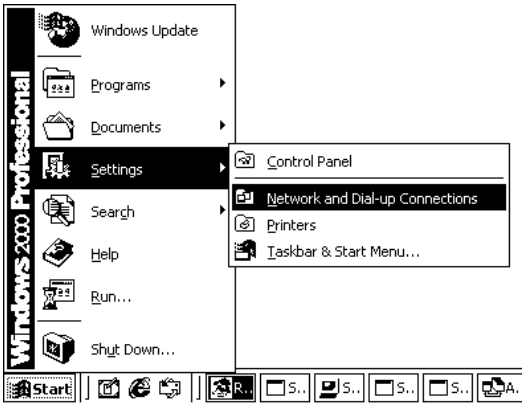
3-9 <Operation mode change>
Change the mode to [Modify Mode].

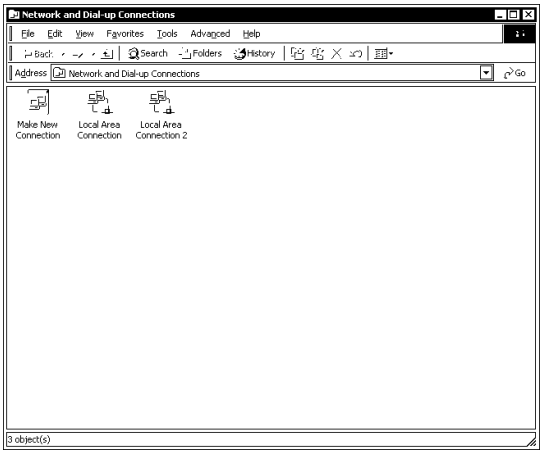
3-10 <Setting an external IP address>
When the setting of the external IP address is not required, go to Step 3-11.

(1) <Opening the Network and Dial-up Connections window>
Select (CL) [Settings] and [Network and Dial-up Connections] in this order from the [Start].



(2) <Opening the Local Area Connection 2 window>
Select (DC) [Local Area Connection 2] in the Network and Dial-up Connections window.

* [Local Area Connection 2] may be displayed [Local Area Connection 3].



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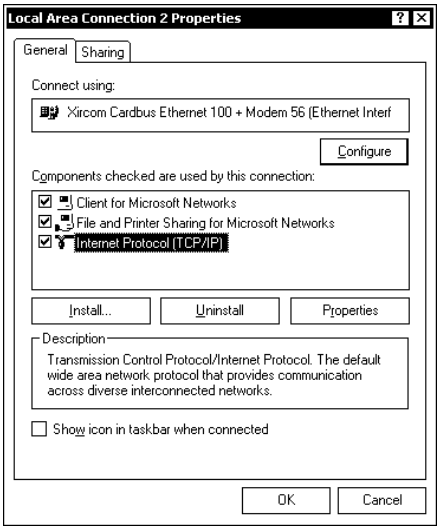
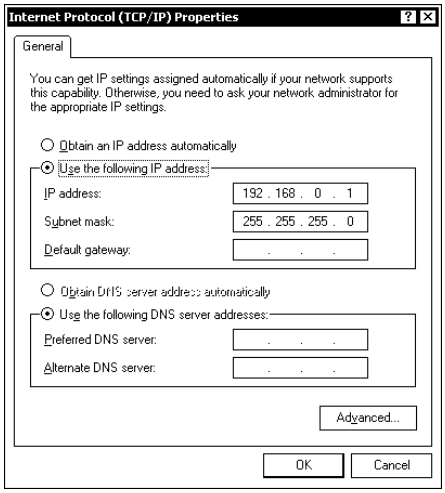
(3) <Opening the Local Area Connection 2 Properties window>
Select (CL) [Internet Protocol (TCP/IP)] in the Local Area Connection 2 Properties window, and then select the [Properties] button.

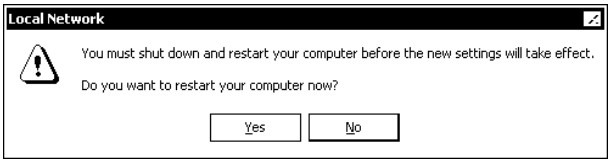


(4) <Setting an external IP address>
Set the IP address and subnet mask, and then select (CL) the [OK] button.

When the setting of the network must be changed after the setting operation is completed, go to Step (5). In the other cases, select (CL) the [OK] button in the 'Local Area Connection 2 Properties' window.
Close the 'Network and Dial-up Connection' window.



When the SVP is not connected to the LAN, the following window is displayed. Select (CL) the [No].



(5) <Opening bus information on the card being used>
Select (CL) the [Configure] button in the 'Local Area Connection 2 Properties' window.
When the Xircom card is used, go to Step (6).
When the 3com card is used, go to Step (9).

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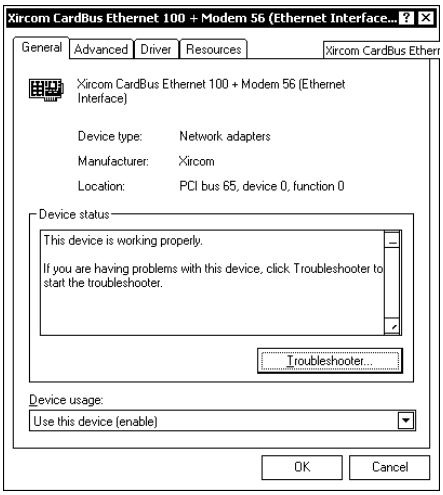
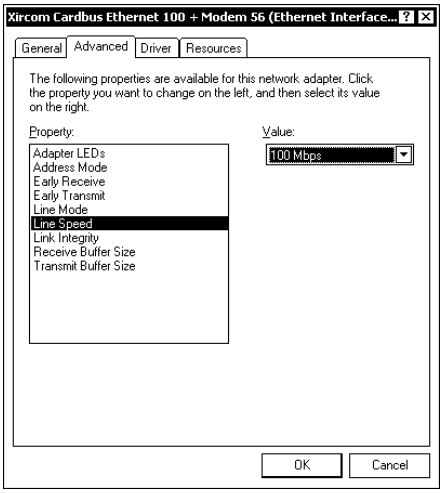
[In the case of the Xircom card bus]

(6) <Opening the 'Xircom Cardbus …' window>
Select (CL) the 'Advanced' tab in the 'Xircom Cardbus …' window.

The next step must be selected from two kinds of steps depending on the driver. Make a setting instructed in Step (7) or (8).

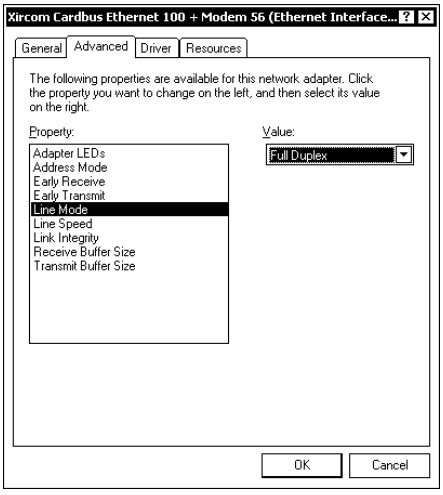


(7)-1 <Setting the speed mode>
Select the 'Line Speed' and change the setting of the 'Value' from 'Auto Detect' to '100 Mbps'.



(7)-2 <Setting the line mode>
Select the 'Line Mode' and change the setting of the 'Value' from 'Auto Detect' to 'Full Duplex'.

Return the window to 'Local Area Connection 2 Properties' by pressing (CL) the [OK] button, and close the window by pressing the [OK] button.



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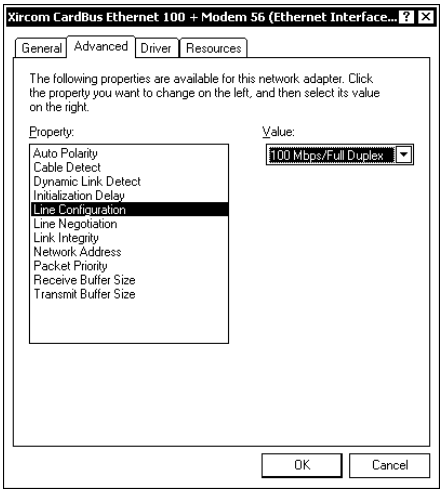
(8)-1 <Setting the Line Configuration>

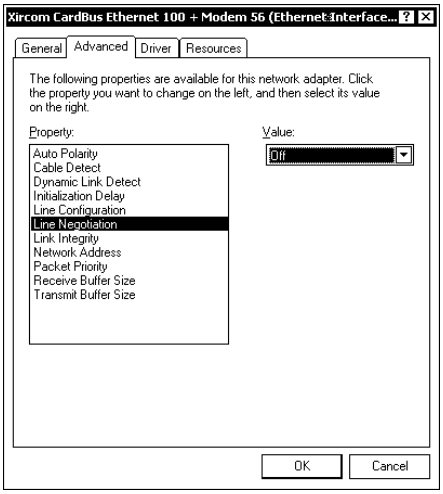
Select [Line Configuration] and change the setting of the 'Value' to '100Mbps/Full Duplex'.



(8)-2 <Setting the Line Negotiation>

Select [Line Negotiation] and change the setting of the 'Value' to 'Off'.

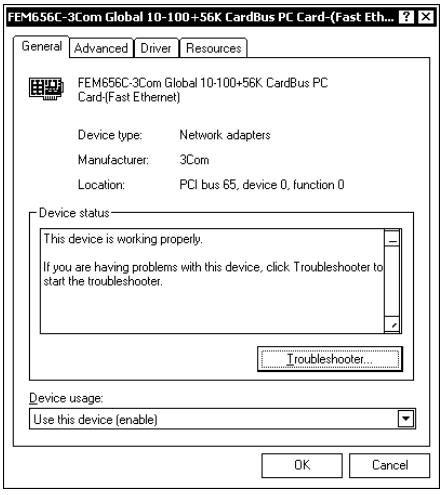
Return the window to the 'Local Area Connection 2 Properties' by selecting (CL) the [OK] button. Then close the window by selecting the [OK] button.



[In the Case of the 3com card bus]

(9) <Opening the 'FEM656C-3Com …' window>

Select (CL) the 'Advanced' tab in the 'FEM656C-3Com…' window.



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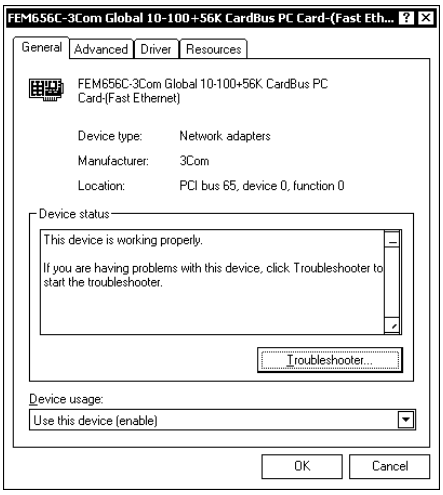
(10) <Setting the network link selection>

Select the ‘Network Link Selection’ and change the setting of the ‘Value’ from ‘Auto Negotiation’ to ‘100BTX Full Duplex’.

Return the window to ‘Local Area Connection 2 Properties’ by pressing (CL) the [OK] button, and close the window by pressing the [OK] button.



3-11 <Setting Web Console>

Make a setting of the Internet Explorer according to ‘1-1 Setting Internet Explorer’ in [WEB CONSOLE] section. (WEB01-10)

3-12 <Setting for the E-NAS>

When the E-NAS has already been installed, install Setup on SVP in the added SVP. (NAS03-110)

When the E-NAS is not installed in the system, perform the operation instructed in 3-13.

3-13 <Erasing logs>

Erase all logs that were made during operation of the SVP. (SVP02-170)

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3-14 <Shutting down the Additional SVP>

(1) <Quitting Windows>
Select (CL) [Shut Down...] from the [Start] menu.

(2) <Shutting down the SVP>
Select (CL) “Shut down” in the Closing window of Windows. When a message, “What do you want the computer to do?” is displayed, select (CL) the [OK] button.

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4. Connect the cables (2).

4-1 Connect the cable (P41) to the SVPPS BOX.

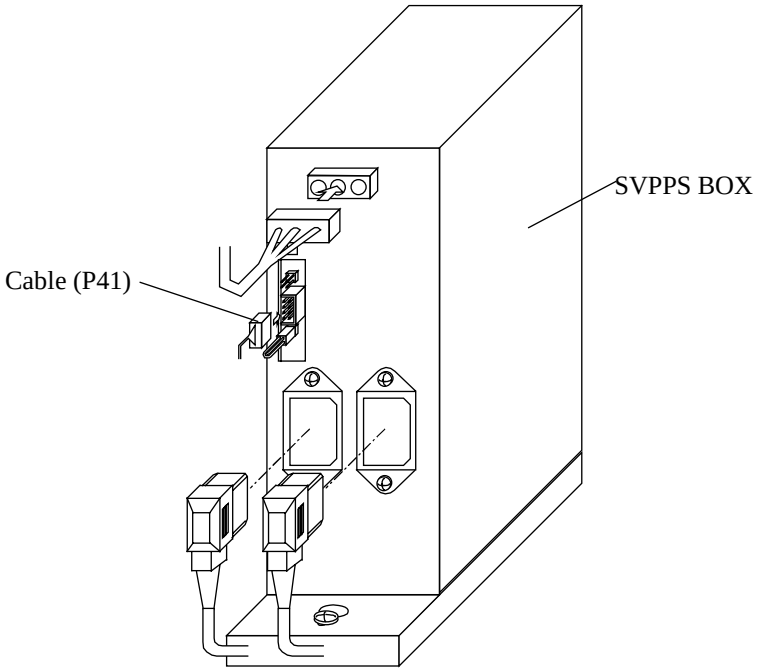

Fig. 3.12-12 Connection of Cables

4-2 Connect the LAN cable to the HUB BOX.

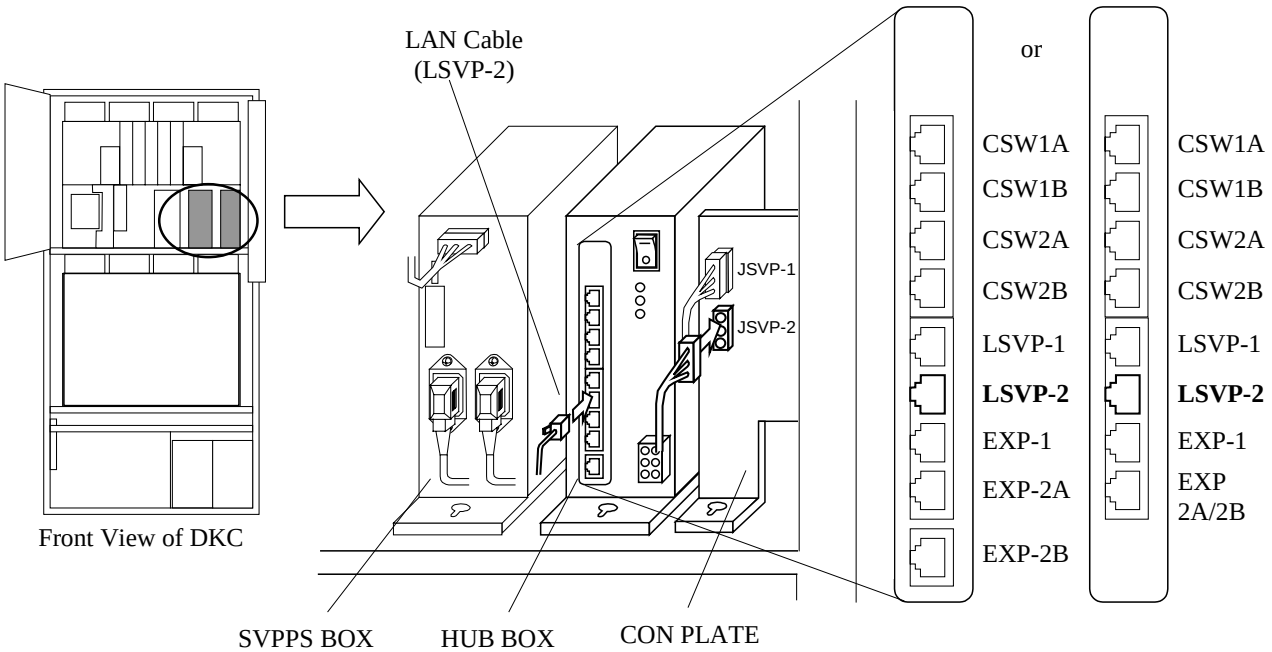

Fig. 3.12-13 Connection of Cables

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5. Operating the Basic SVP

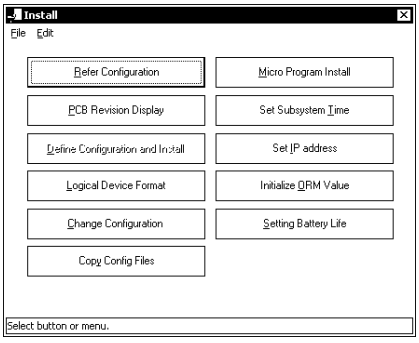
Operate the basic SVP as follows.

5-1 Setting duplication of the Basic SVP
Operate the basic SVP as follows.

(1) <Changing the mode>
Change the mode by selecting [Modify Mode].

(2) <Opening the Install window>
Select (CL) [Install] from the [SVP] menu.

(3) <Selecting [Set SVP IP Address]>
Select (CL) [Set IP Address] in the Install window.



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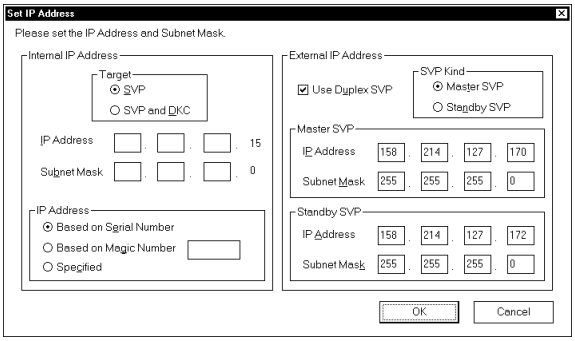
(4) <Setting the SVP duplication>

(a) Select (CL) [Use Duplex SVP] in the External IP Address box.

(b) Select (CL) [Master SVP] in the SVP Kind box.

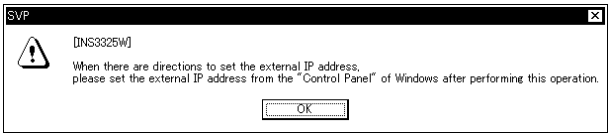
(c) Enter the IP addresses and subnet masks of the Master and Standby SVPs, and then select (CL) [OK].



* You do not have to enter the information of Item (c) above when the setting of the external IP address is not required.

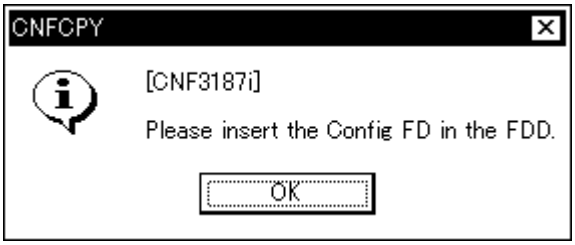
(5) <Confirming the external IP address setting>

When a message, “When there are directions to set the external IP address, please set the external IP address from the “Control Panel” of Windows after performing this operation.” is displayed, select (CL) the [OK] button.



(6) <Inserting the Config FD>

Insert the Config FD into the FDD and select (CL) [OK].



(7) <Removing the Config FD>

When the copying of the Config is completed, a message, "Please remove the Config FD." is displayed. Remove the FD and select (CL) [OK].

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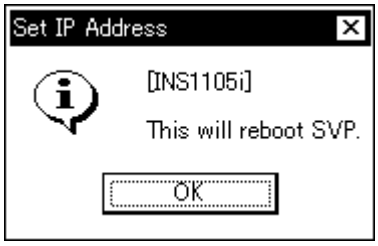
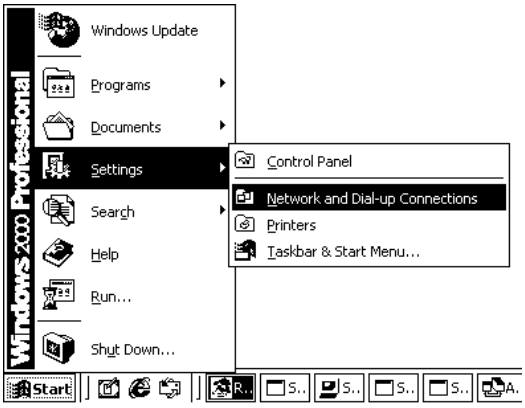
(8) <Confirming rebooting of the SVP>
Select (CL) [OK].



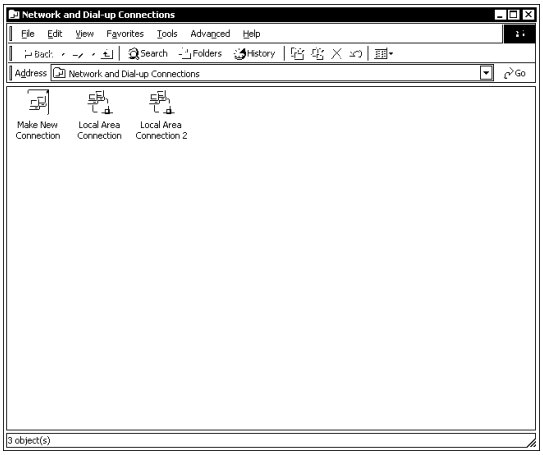
5-2 <Setting an external IP address>
When the setting of the external IP address is not required, go to Step 6.

(1) <Opening the Network and Dial-up Connections window>
Select (CL) [Settings] and [Network and Dial-up Connections] in this order from the [Start] menu.



(2) <Opening the Local Area Connection 2 window>
Select (DC) [Local Area Connection 2] in the Network and Dial-up Connections window.

* [Local Area Connection 2] may be displayed [Local Area Connection 3].



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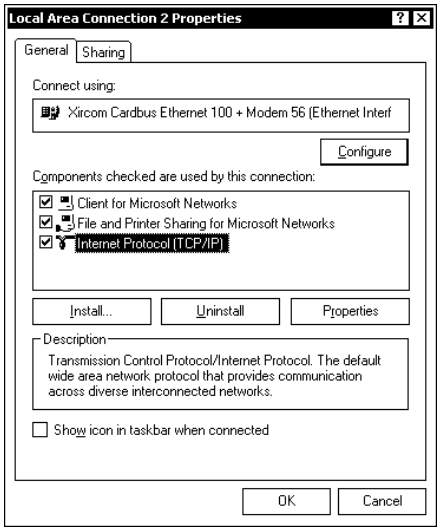
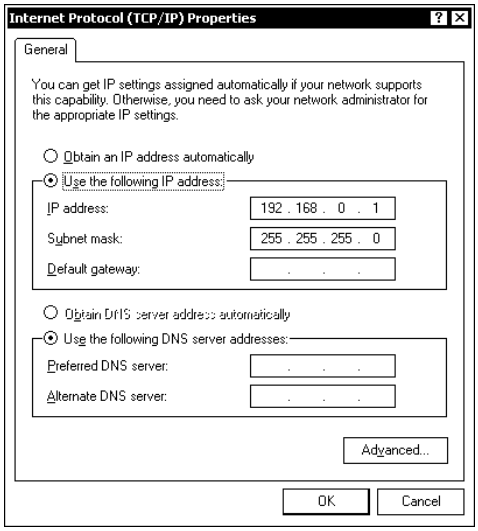
(3) <Opening the Local Area Connection 2 Properties window>
Select (CL) [Internal Protocol (TCP/IP)] in the [Local Area Connection 2 Properties window, and then select (CL) the [Properties] button.



(4) <Setting an external IP address>
Set the IP address and subnet mask, and then select (CL) the [OK] button.

When the setting of the network must be changed after the setting operation is completed, go to Step (5). In the other cases, select (CL) the [OK] button in the 'Local Area Connection 2 Properties' window.
Close the 'Network and Dial-up Connection' window.



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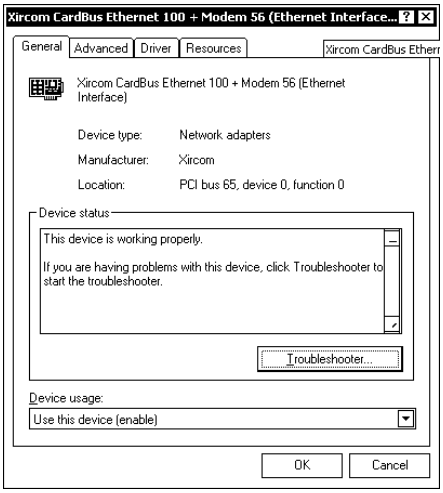
(5) <Opening bus information on the card being used>
Select (CL) the [Configure] button in the 'Local Area Connection 2 Properties' window.
When the Xircom card is used, go to Step (6).
When the 3com card is used, go to Step (9).

[In the case of the Xircom card bus]

(6) <Opening the 'Xircom Cardbus …' window>
Select (CL) the 'Advanced' tab in the 'Xircom Cardbus …' window.

The next step must be selected from two kinds of steps depending on the driver. Make a setting instructed in Step (7) or (8).



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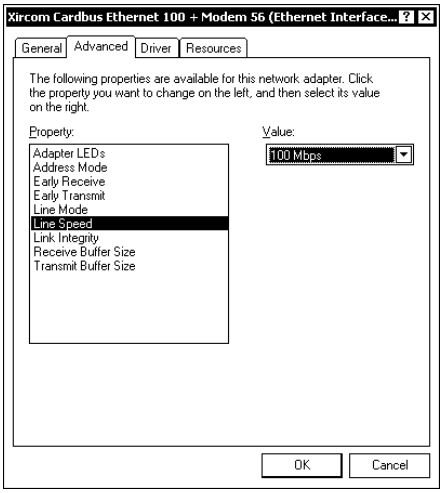
(7)-1 <Setting the speed mode>
Select the 'Line Speed' and change the setting of the 'Value' from 'Auto Detect' to '100 Mbps'.



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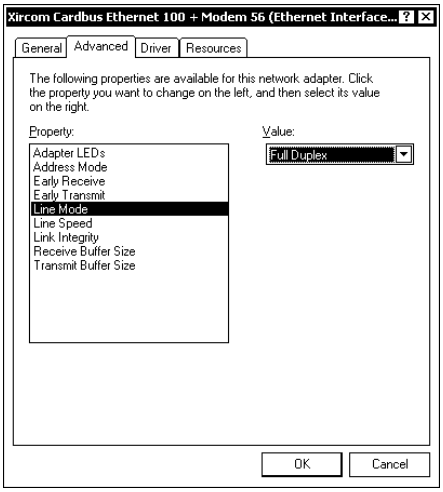
(7)-2 <Setting the line mode>

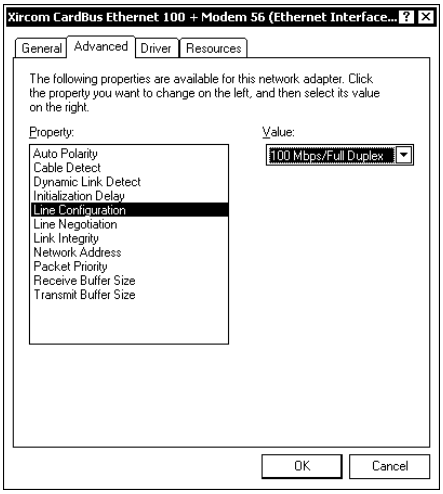
Select the 'Line Mode' and change the setting of the 'Value' from 'Auto Detect' to 'Full Duplex'.

Return the window to 'Local Area Connection 2 Properties' by pressing (CL) the [OK] button, and close the window by pressing the [OK] button.



(8)-1 <Setting the Line Configuration>

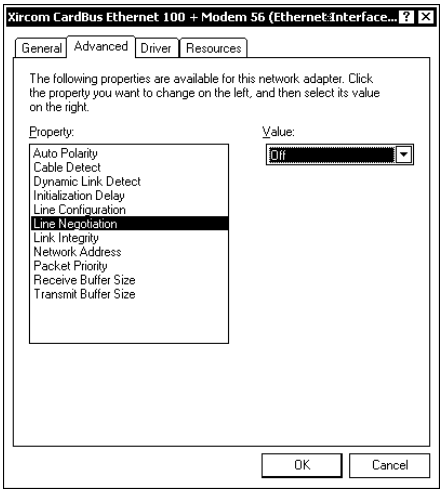
Select [Line Configuration] and change the setting of the 'Value' to '100Mbps/Full Duplex'.



(8)-2 <Setting the Line Negotiation>

Select [Line Negotiation] and change the setting of the 'Value' to 'Off'.

Return the window to the 'Local Area Connection 2 Properties' by selecting (CL) the [OK] button. Then close the window by selecting the [OK] button.



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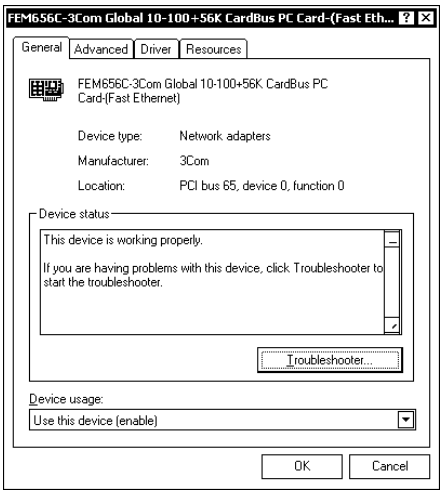
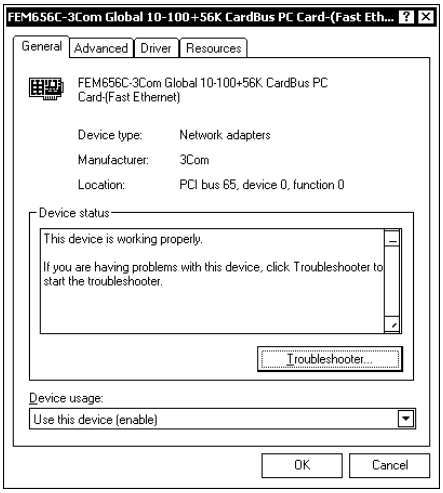
[In the Case of the 3com card bus]

(9) <Opening the 'FEM656C-3Com …' window>
Select (CL) the 'Advanced' tab in the 'FEM656C-3Com…' window.



(10) <Setting the network link selection>
Select the 'Network Link Selection' and change the setting of the 'Value' from 'Auto Negotiation' to '100BTX Full Duplex'.
Return the window to 'Local Area Connection 2 Properties' by pressing (CL) the [OK] button, and close the window by pressing the [OK] button.



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6. Executing SSVP Reset

6-1 Execute the SSVP reset by pressing the SSVP ALARM RESET switch.

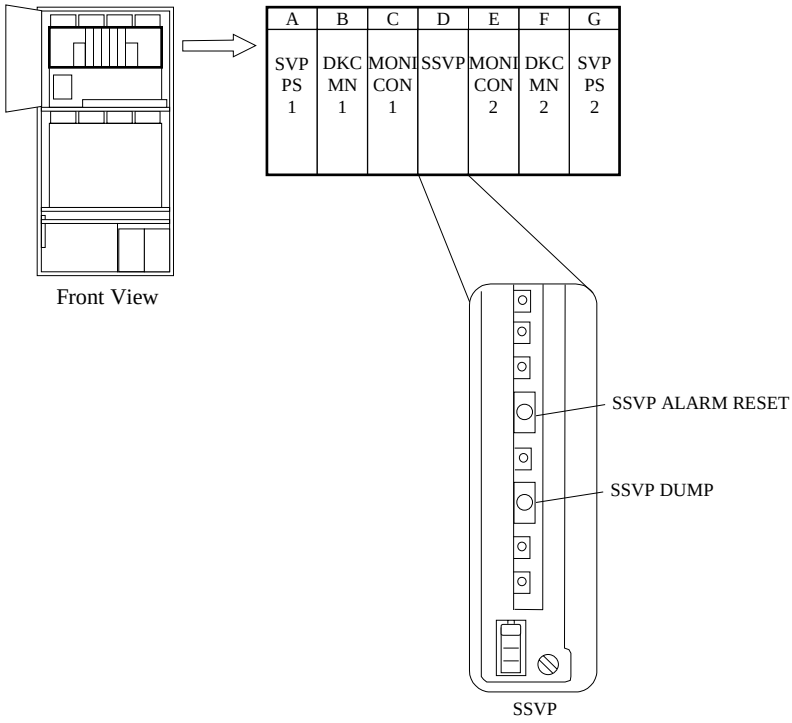

Fig. 3.9-14 SSVP Reset

6-2 Make sure that the Additional SVP is powered on about 8 minutes after the SSVP reset. Further, make sure that the SVP initial screen is displayed about 5 minutes later. Wait under condition for 1 minute.

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7. Confirmation procedure

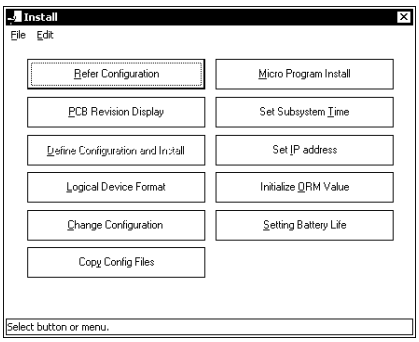
7.1 <Operating the Additional SVP>

(1) <Initial screen>

(2) <Operation mode change>
Change the mode to [Modify Mode].

(3) <Opening the Install window>
Select (CL) [Install].

(4) <Selecting [Set IP Address]>
Select (CL) [Set IP Address] in the [Install] window.



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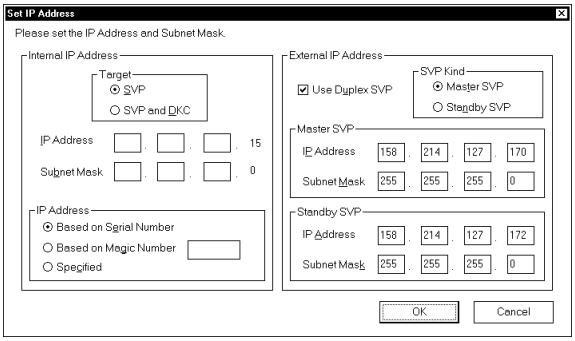
(5) <Confirmation of SVP duplication>
(a) Confirm IP Address and Subnet Mask.
(b) Confirm that “Use Duplex SVP” is selected.
(c) Confirm that “Standby SVP” is selected.

Select (CL) [Cancel] after the confirmation.



(6) <Closing the Install window>
Close ‘Install’ window.

(7) <Shutting down the Additional SVP>
Select (CL) [Shut Down...] from the [Start] menu.

(8) <Quitting Windows>
Select (CL) “Shut down” in the Closing window of Windows. And select (CL) [OK] button.

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7.2 Operating the Basic SVP.

(1) <Initial screen>

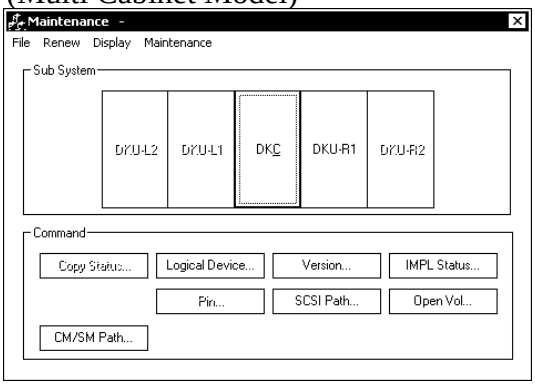
(2) <Operation mode change>
Change the mode to [Modify Mode].
Select (CL) [Maintenance].

(3) <Maintenance window>
The 'Maintenance' window is displayed.

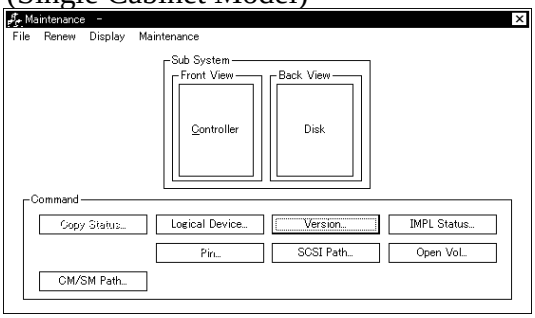
(Multi Cabinet Model)
In the 'Maintenance' window, check and select (CL) [DKC] to be replaced.

(Single Cabinet Model)
In the 'Maintenance' window, check and select (CL) [Controller] to be replaced.

(Multi Cabinet Model)



(Single Cabinet Model)



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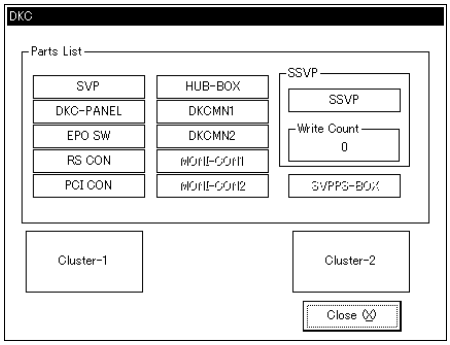
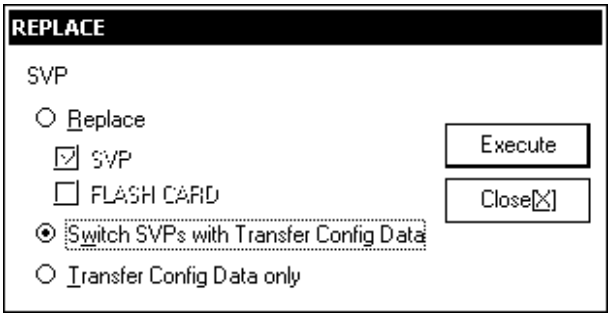
(4)

(Multi Cabinet Model)
<DKC window>
Select (CL) [SVP] in the 'DKC'.

(Single Cabinet Model)
<Controller window>
Select (CL) [SVP] in the 'Controller'.

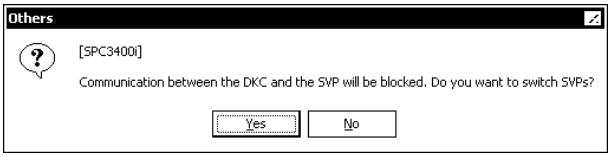


(5) <Replace window>
Select (CL) "Switch SVPs with Transfer Config Data" in the 'Replace' window.
And select (CL) [Execute].

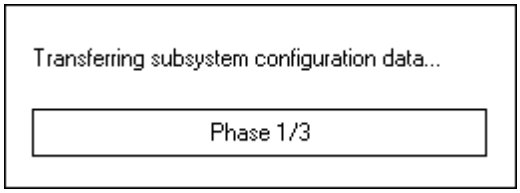


(6) <Execute>
Select (CL) [Yes].

* The switching takes about 30 minutes.



(7) <Transfer status>
"Transferring subsystem configuration data…" in displayed.



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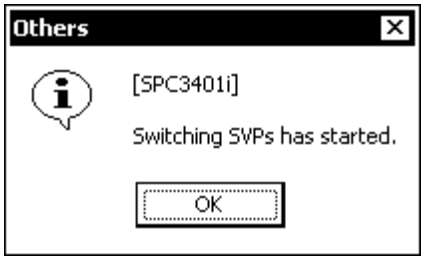
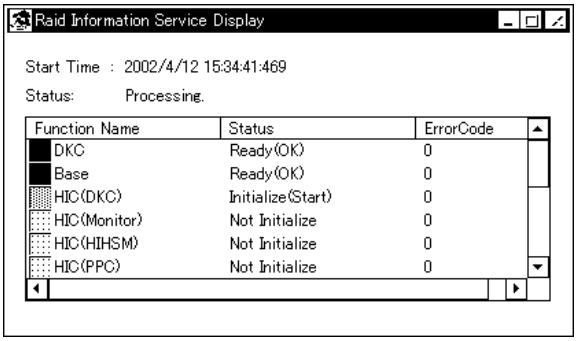
(8) <Checking beginning of the SVP switching>
The message “Switching SVPs has started.” is displayed.
The SVP is powered off automatically owing to the SVP switching. Make sure that the Additional SVP has started up.



7.3 Operating Additional SVP.

(1)
The Additional SVP restarts automatically again after the Additional SVP is powered on.
Wait until restart is end.

(2) <Initial screen>
When the RAID Information window is displayed, the switching has been completed.



(3) <Operation mode change>
Change the mode to [Modify Mode].
Select (CL) [Maintenance].

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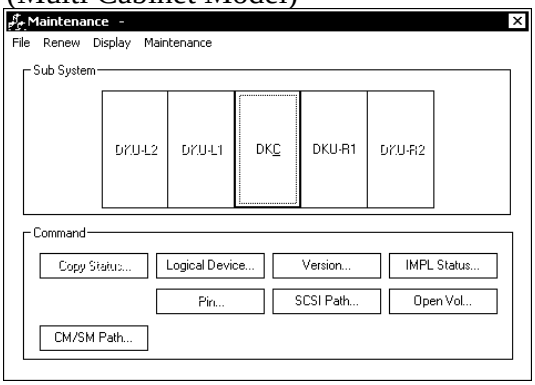
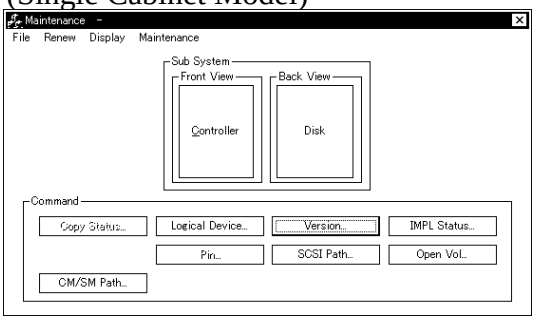
(4) <Maintenance window>
Make sure that the 'Maintenance' window is open normally.
Close 'Maintenance' window.

(Multi Cabinet Model)



(Single Cabinet Model)



(5) <Web Console>
If Customer doesn't use Web Console/Storage Navigator via a customer PC, don't need to do the following confirmation work.
Please run Web Console/Storage Navigator from customer PC, and check whether you can login using by Customer user-id and password. (The user-id and password are defined by customer. Therefore, entrust a customer with a login test.)
If you can see the main screen of Web Console/Storage Navigator, the confirmation work is done.

(6) <Select Maintenance>
Select (CL) [Maintenance].

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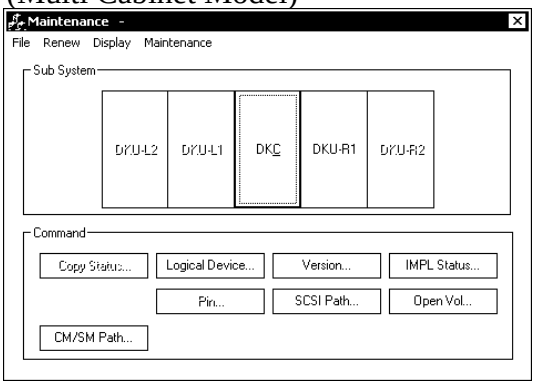
(7) <Maintenance window>
The ‘Maintenance’ window is displayed.

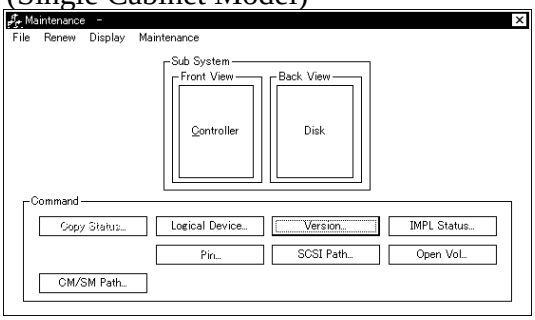
(Multi Cabinet Model)
In the ‘Maintenance’ window, check and select (CL) [DKC] to be replaced.

(Single Cabinet Model)
In the ‘Maintenance’ window, check and select (CL) [Controller] to be replaced.

(Multi Cabinet Model)



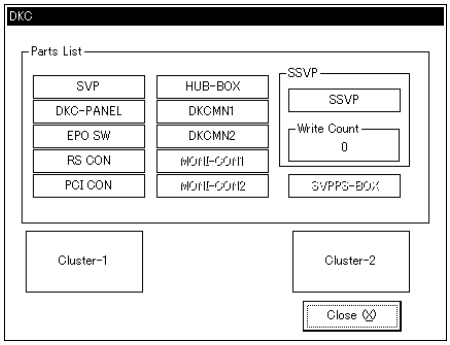
(Single Cabinet Model)



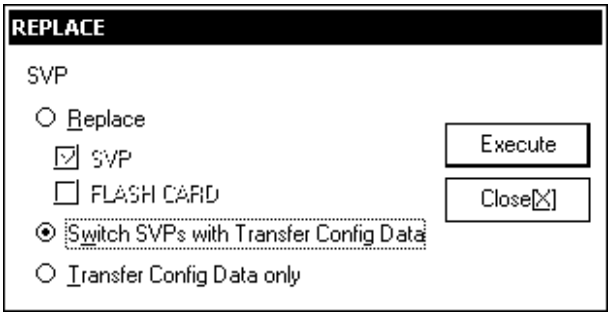
(8)

(Multi Cabinet Model)
<DKC window>
Select (CL) [SVP] in the ‘DKC’.

(Single Cabinet Model)
<Controller window>
Select (CL) [SVP] in the ‘Controller’.



(9) <Replace window>
Select (CL) “Switch SVPs with Transfer Config Data” in the ‘Replace’ window.
And select (CL) [Execute].



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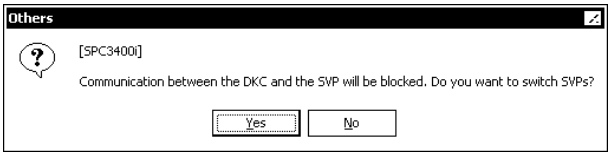
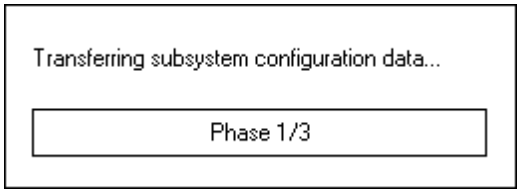
(10) <Execution>
Select (CL) [Yes].

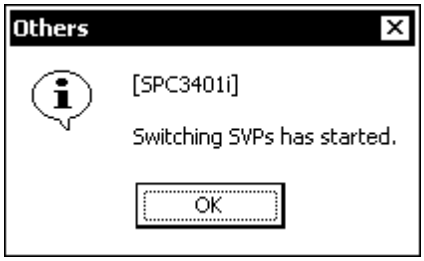


(11) <Transfer status>
"Transferring subsystem configuration data…" in displayed.



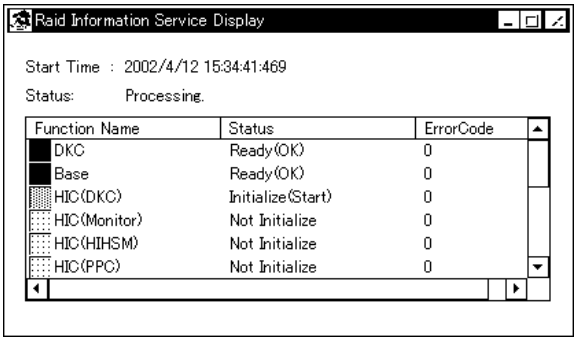
(12) <Checking beginning of the SVP switching>
The message "Switching SVPs has started." is displayed. The SVP is powered off automatically owing to the SVP switching. Make sure that the Basic SVP has started up.

The Basic SVP restarts automatically again after the Basic SVP is powered on.
Wait until restart is end.



(13) <Initial screen>
When the RAID Information window is displayed, the switching has been completed.

Operation is end.



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3.13 Installation of PCI I/F Connector (DKC-F460I-18)

Table 3.13-1 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKC-F460I-18	PCI CON	3257397-A	1	
		Bracket (460)	5517954-1	1	for DKC460I
		Bracket (465)	5513818-1	1	for DKC465I
		Nameplate (HDS)	2105902-104	1	RSD
			2105903-104		HICAM
			2105903-204		HICEF

Notes:
1. Up to the two PCI connection functions shown above can be installed.
2. The subsystem is powered on when it is given an powering on instruction by any one of the host devices connected to it.
   The subsystem performs the EPO or powering off when all the EPO or powering off instructions from all the host devices connected to it are given.

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1 Installation Procedure of PCI I/F Connector

Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

1-1 Confirm that the REMOTE/LOCAL Switch of DKC Panel is set to LOCAL. If not, set the REMOTE/LOCAL Switch to LOCAL.

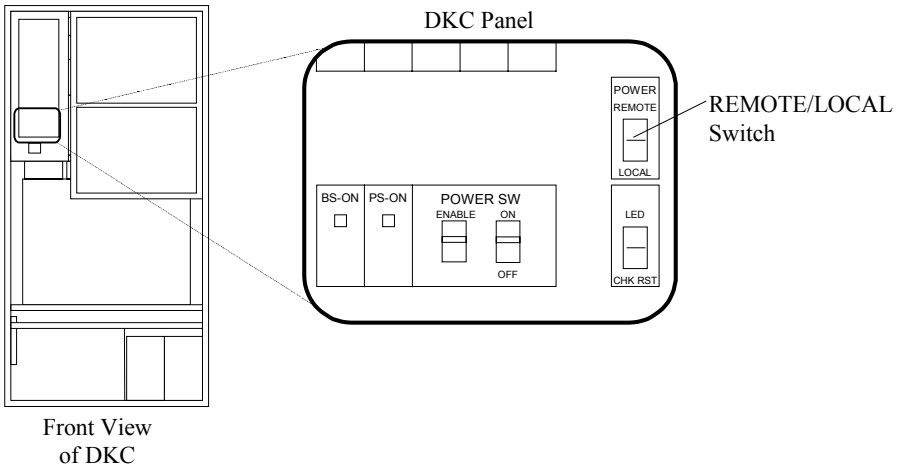

Fig. 3.13-1 Setting of REMOTE/LOCAL Switch

1-2 Connect the Maintenance jumper to the sockets on the DKCMN1 and DKCMN2.

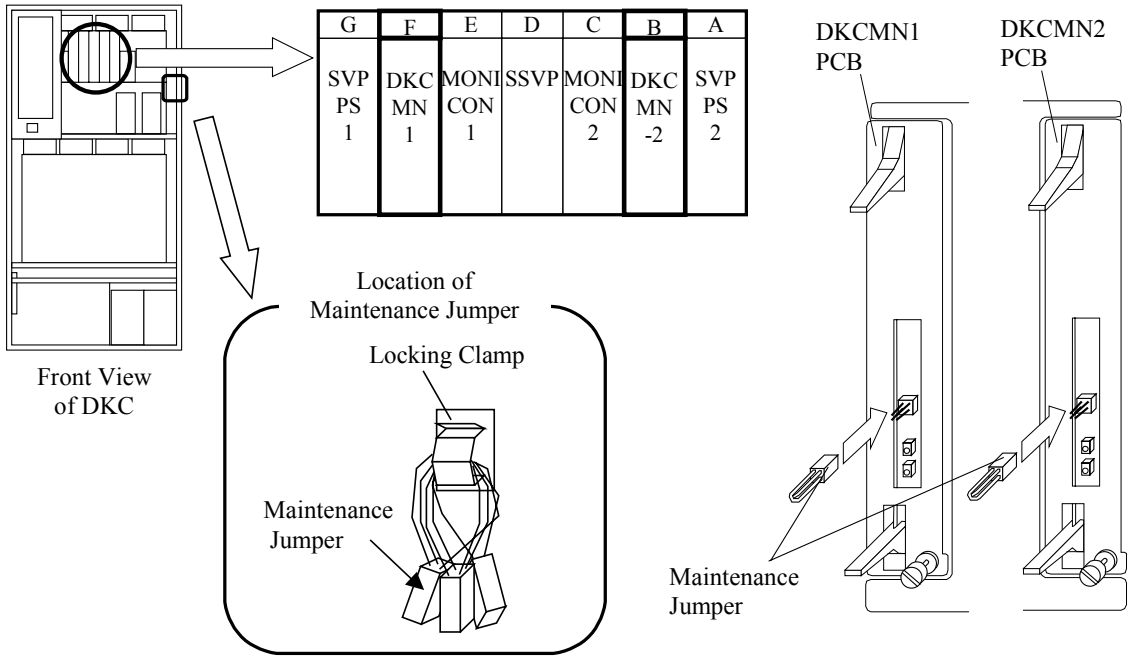

Fig. 3.13-2 Insertion of Jumper Plug

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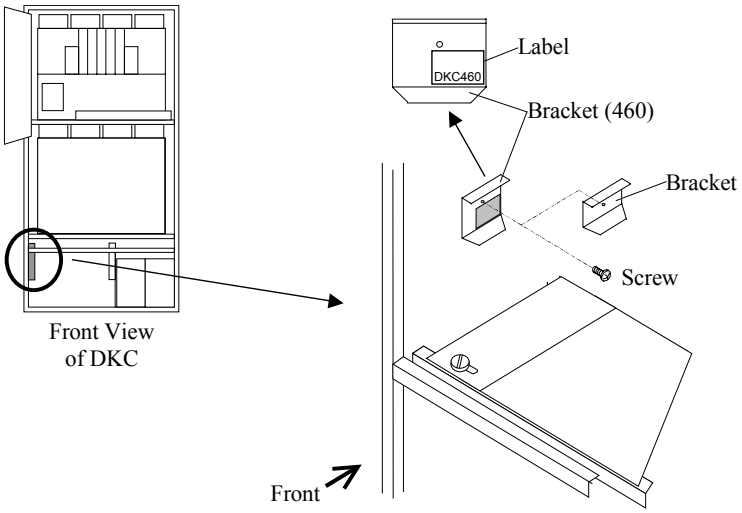
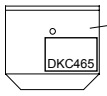
1-3 Attach the PCI CON PCB.

a. Remove the screw and remove the bracket.
b. Attach the bracket (460) with the screw.





Note: Keep the bracket (465) supplied with the option in custody with caution because it will be necessary when transferring the option from the DKC460I to the DKC465I.

Fig. 3.13-2A Attachment of Bracket

c. Remove the screw① and remove the plate.
d. Attach the PCI CON PCB and fasten the screw②.
e. Attach the plate and fasten the screw①.
f. Connect the cable.

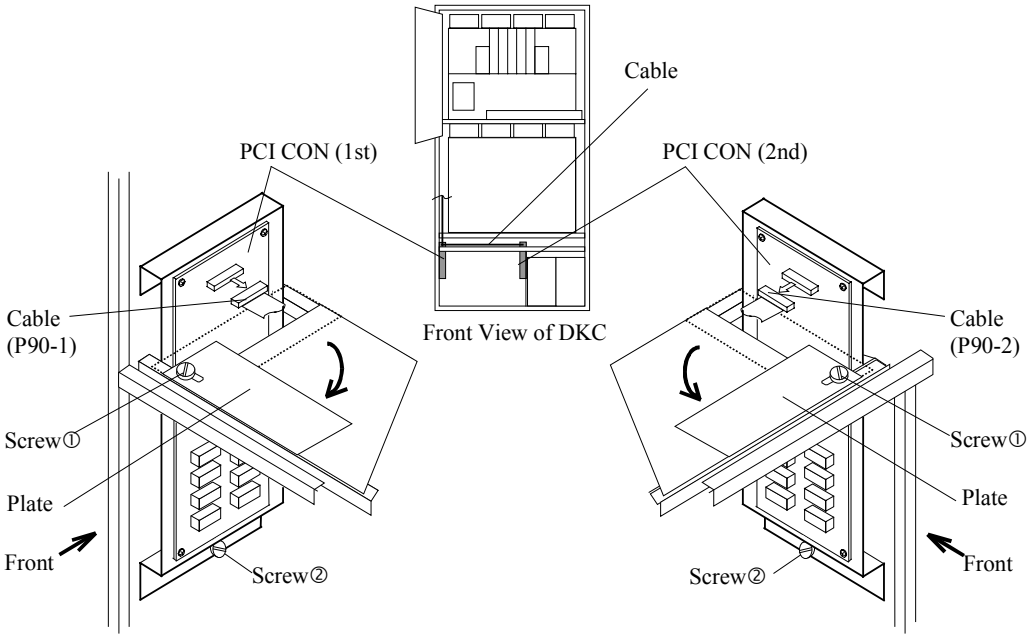


Fig. 3.13-3 Attachment of PCI CON PCB

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1-4 Set the REMOTE/LOCAL switch and jumper plugs (JP1 and JP2).

a. Set the REMOTE/LOCAL switch to REMOTE when the upper PCI is already operating. Set the REMOTE/LOCAL switch to LOCAL when the upper PCI does not operate yet. However, reset it to REMOTE when the upper PCI starts its operation.

b. Set the jumper plugs (JP1 and JP2) of the PCI CON referring to Fig. 3.13-4 and Table 3.13-2.

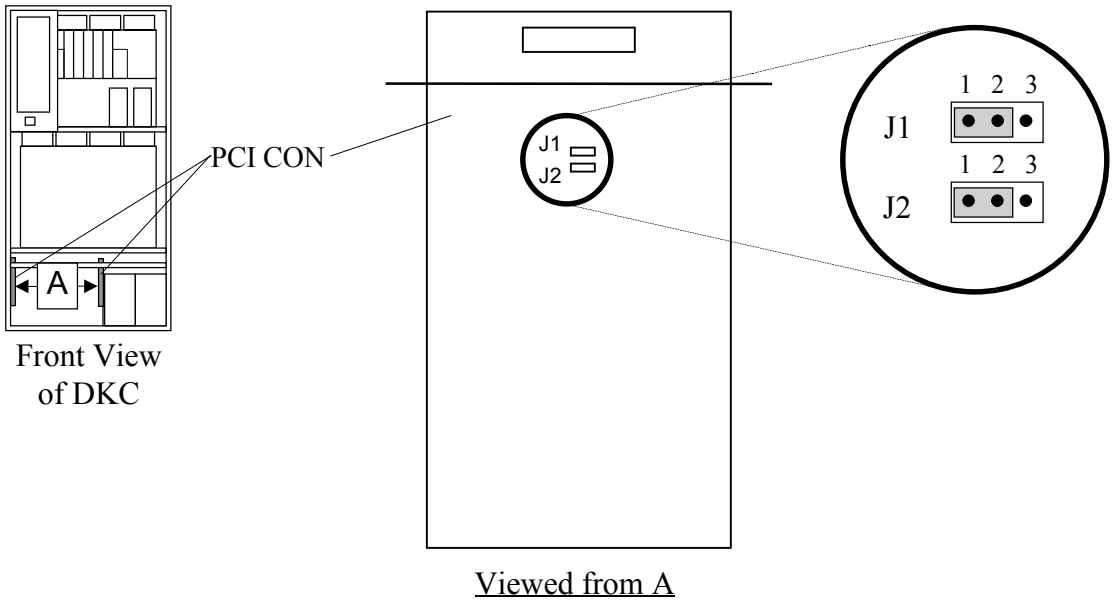

Fig. 3.13-4 Setting of Jumper Plugs

Table 3.13-2 Jumper setting of PCI CON

No.	Description	JP1 and JP2 Setting
1	When power is controlled from the host (at least one PCI cable attached to JP1-JP8 on PCI CON PCB and the upper PCI is operating), set the jumpers as shown.	JP1 (1 2 3) JP2 (1 2 3)
2	When power is not controlled from the host, no PCI Cable attached to JP1-JP8 PCI CON PCB, to disable the EPO of host, set the jumpers as shown.	JP1 (1 2 3) JP2 (1 2 3)

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1-5 Disconnect the Maintenance jumper from the socket on the DKCMN.
1-6 Attach the nameplate.
a. Attach the nameplate regardless of the model number from the left of the cover.

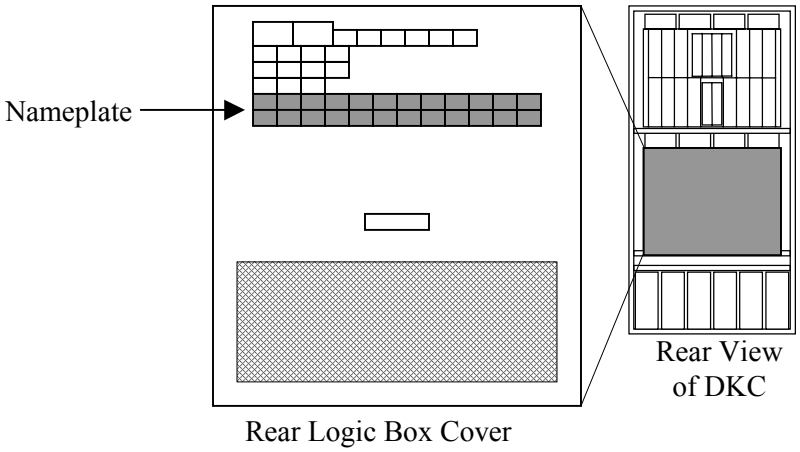

Fig. 3.13.1-5 Location of the Nameplate

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3.14 Installation of UPS Connection Kit (DKC-F460I-UPS)

Table 3.14-1 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKC-F460I-UPS	SH307-B	5513986-B	2	DKCMN
		SH298-A	5513547-A	1	UPS CON
		SH302-C	5513988-C	1	DKC Panel
		DSUB Cable	5485510-15	4	
		Cable	3261826-D	1	Label: PA-1 – P5
		Repeat Binder	5409042-2	2	Single Cabinet Model
		Bracket (460)	5517954-1	1	for DKC460I
		Bracket (465)	5513818-1	1	for DKC465I
		Nameplate (HDS)	2105902-114	1	RSD
			2105903-114		HICAM
			2105903-214		HICEF
		Nameplate (HP)	2105902-214	1	RSD
			2105903-314		HICAM
			2105903-414		HICEF

UPS Parameter settings

SYMMETRA SINGLE PHASE UPS parameter setting for UPS connection KIT

Parameter	Value	Remark
Shutdown delay	20 sec.	Factory setting
Return delay	0 sec.	Factory setting

SILCON THREE PHASE UPS parameter setting for UPS connection KIT

Parameter	Value	Remark
Autostart	YES	Not Factory setting
Remote shutdown active	YES	Not Factory setting
Remote shutdown	HIGH	Factory setting
Remote shutdown time	0 min.	Not Factory setting

Note: Output of UPS must connect only the DISK SUB-SYSTEM.

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1. Installation Procedure of UPS Connection Kit

Note: Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

1-1 Replace the DKC Panel.

a. Loosen the screw. Pull the plate forward, then lift up and remove it.

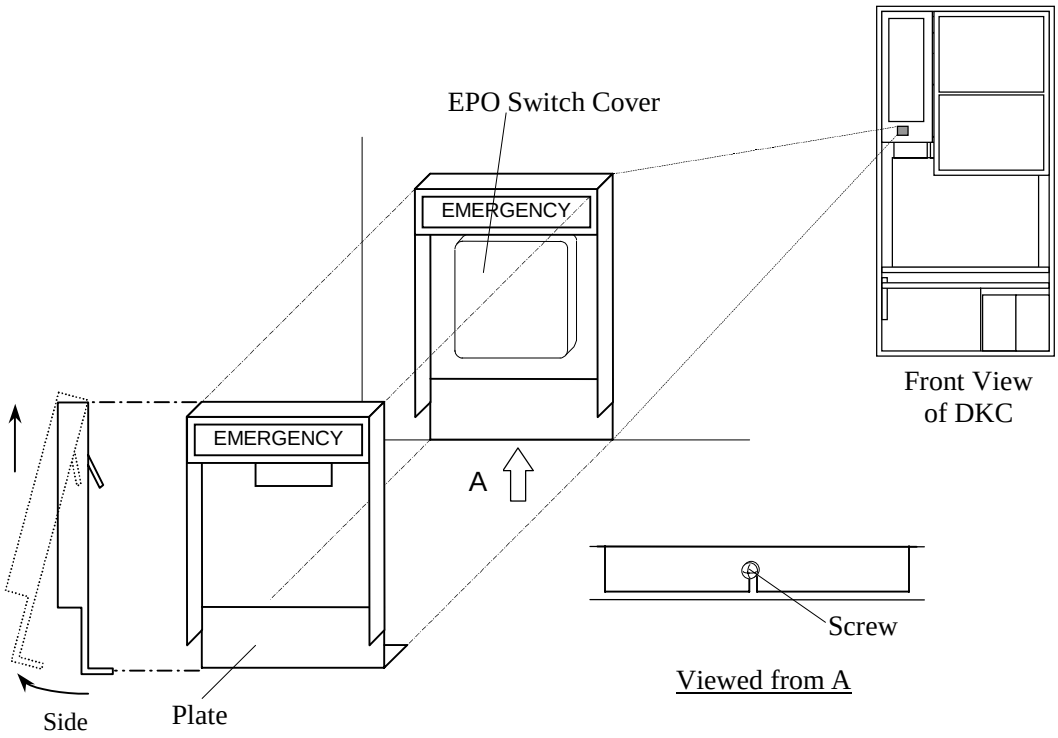

Fig. 3.14-1 Removal of Plate

b. Remove the EPO Switch cover.

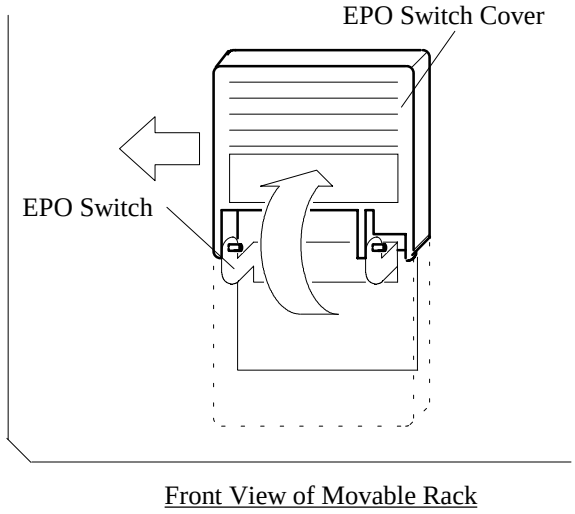

Fig. 3.14-2 Removal of EPO Switch Cover

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c. Loosen the three screws and remove the plate.

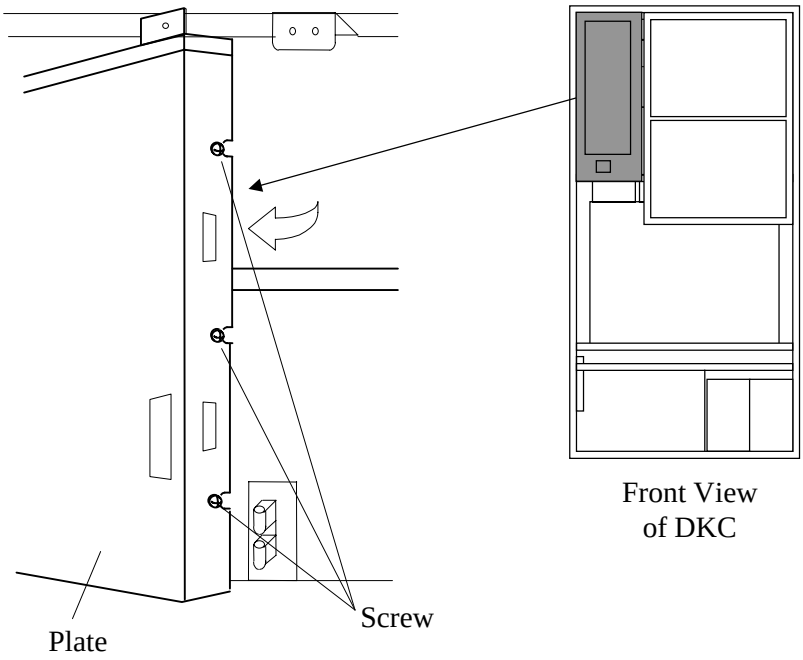

Fig. 3.14-3 Removal of Plate

d. Disconnect the cables from the DKC Panel PCB.
e. Loosen the six screws and remove the DKC Panel PCB from the Movable rack.
f. Install the DKC Panel PCB for UPS by fastening it with the screws.
g. Connect the cables to the new PCB.

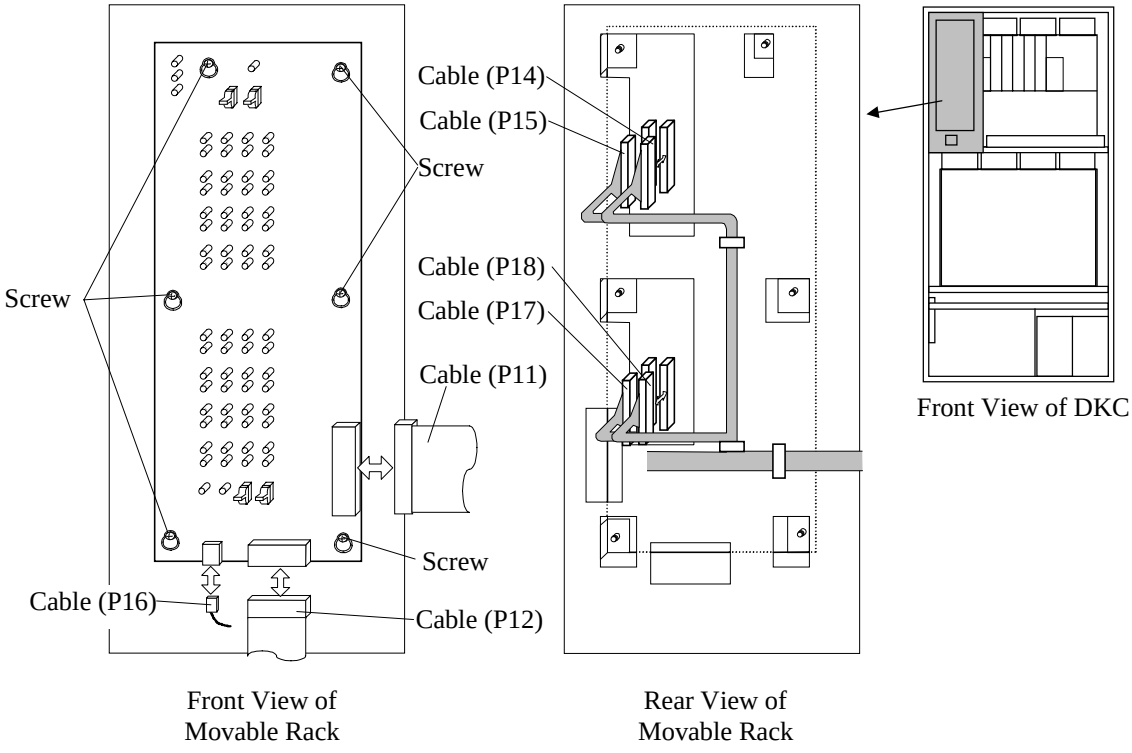

Fig. 3.14-4 Removal of PCB

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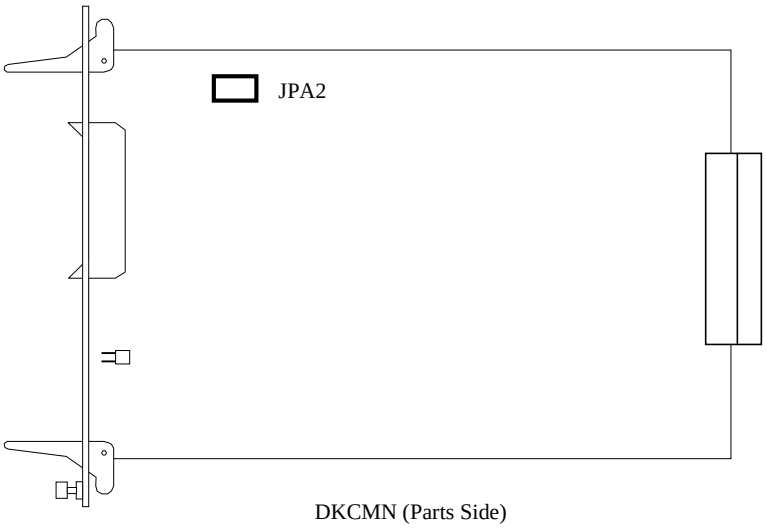
h. Attach the plate to the Movable rack and fasten the three screws. Refer to Fig. 3.14-3.
i. Attach the EPO Switch cover. Refer to Fig. 3.14-2.
j. Attach the plate and fasten the screw. Refer to Fig. 3.14-1.

1-2 Replace the DKCMN.

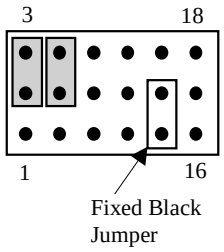
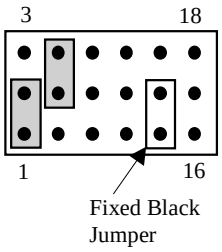
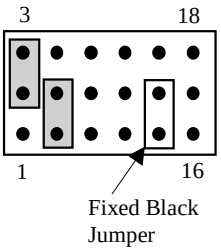
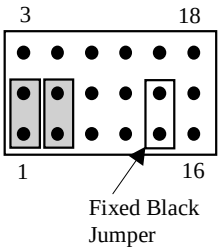
a. Set the jumper plugs in the DKCMN PCBs referring to Fig. 3.14-5, Table 3.14-2. (Both DKCMN1 and DKCMN2)



DKCMN (Parts Side)

Fig. 3.14-5 Location of Jumper Plugs

Table 3.14-2 Setting of Server Shutdown Setup Jumper

	Setting of Server Shutdown Setup Jumper			
	2.5 minutes	5 minutes	10 minutes	20 minutes
JPA2				

Select the necessary time from four kinds of Jumper setting and set it up to shutdown a server.

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b. Loosen the screw and remove the DKCMN PCB (SH307-A).

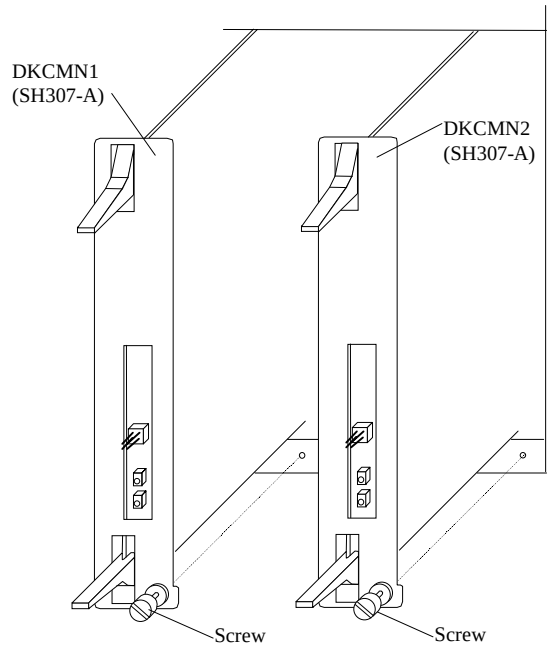

Fig. 3.14-6 Removal of DKCMN PCBs

c. Install the DKCMN PCB (SH307-B) for UPS by fastening it with the screws.
d. Connect the cable to the new DKCMN PCB.

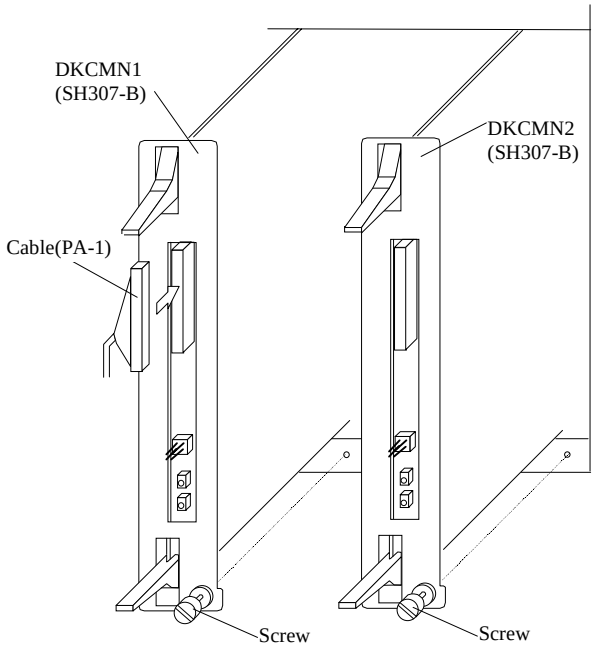

Fig. 3.14-7 Insertion of DKCMN PCBs

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1-3 Attach the Cable.

a. Remove the Front Logic Box cover. (Refer to INST03-COM-10.)
b. Loosen the screw① then remove the Upper SH Box cover.
c. Loosen the two screws② then remove the SH side plate.
d. Remove the two screws③ then remove the cable cover.
e. Wiring the cable and fix the cable with three repeat binders.
f. Attach the covers in the reverse order of step d through a.

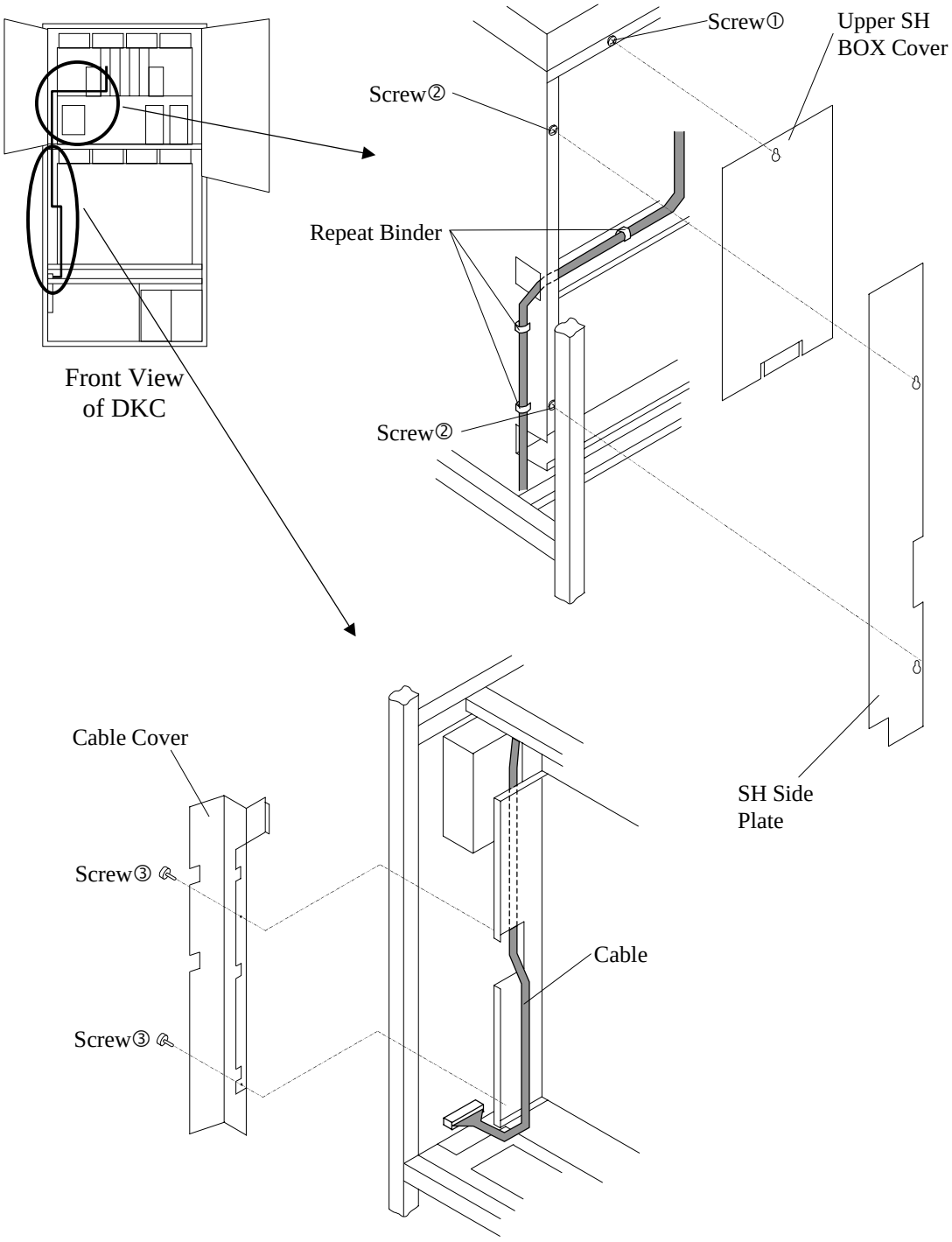

Fig. 3.14-8 Fixing of Cable

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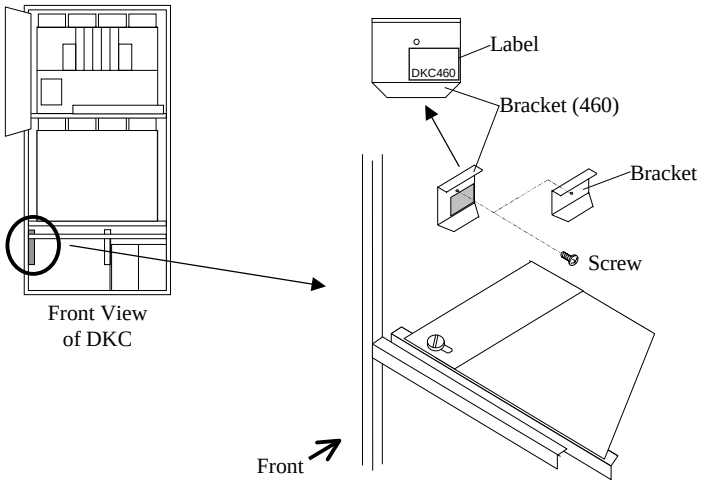
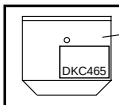
1-4 Attach the UPS CON.

a. Remove the screw and remove the bracket.
b. Attach the bracket (460) with the screw.





Bracket (465)

Note: Keep the bracket (465) supplied with the option in custody with caution because it will be necessary when transferring the option from the DKC460I to the DKC465I.

Fig. 3.14-8A Attachment of Bracket

c. Loosen the screw① and remove the screw② from the base plate.
d. Slide the plate and turn it using the screw① as an axis.
e. Install the UPS CON by fastening it with the screw③.
f. Return the plate as it was and tighten the screws① and ②.
g. Connect the cable(P5) to the UPS CON.

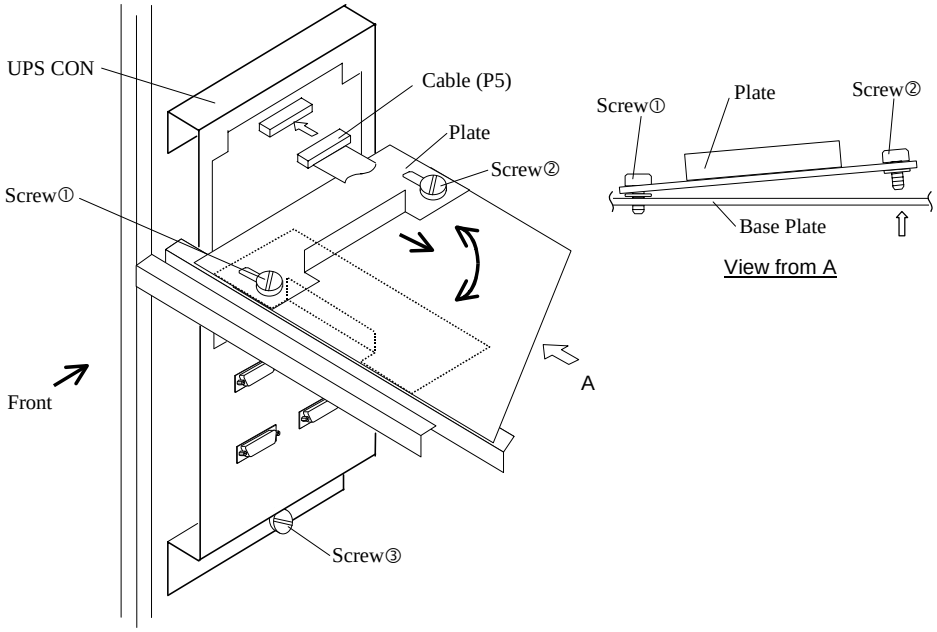


Fig. 3.14-9 Attachment of UPS CON

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1-5 Connect the DSUB Cables.

a. Connect the DSUB cables to the UPS CON.

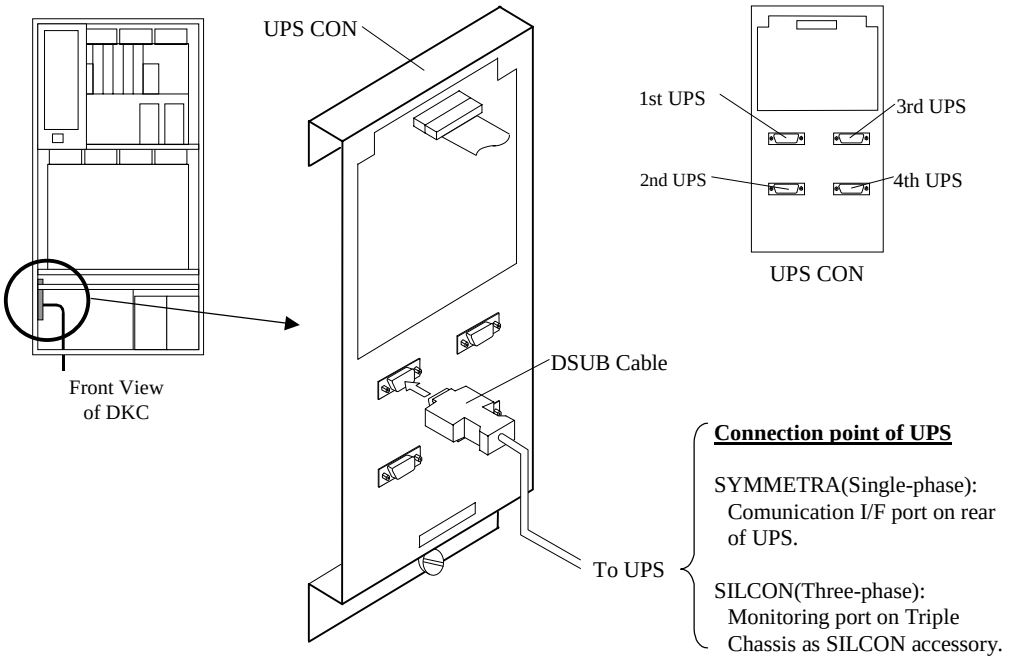

Fig. 3.14-10 Connection of DSUB Cables

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1-6 Connect the AC Power Cables.

Equipment Power Supply CAUTION:
Referring to section 1.5 Connection of External Power Cable (INST01-390), grasp an equipment power supply and its classification well, and connect a power supply cable.

3 Phase Model

⚠ CAUTION

Perform the UPS Connection Kit with care
Perform this procedure before connecting the AC Power Cable.
(Turn off the circuit breakers on the power distribution panel)
Turn off the main circuit breakers (CB101) located in the AC Boxes.

a. Disconnect the AC power cables from the distribution board
b. Connect the ac power cables to the branch distribution box.

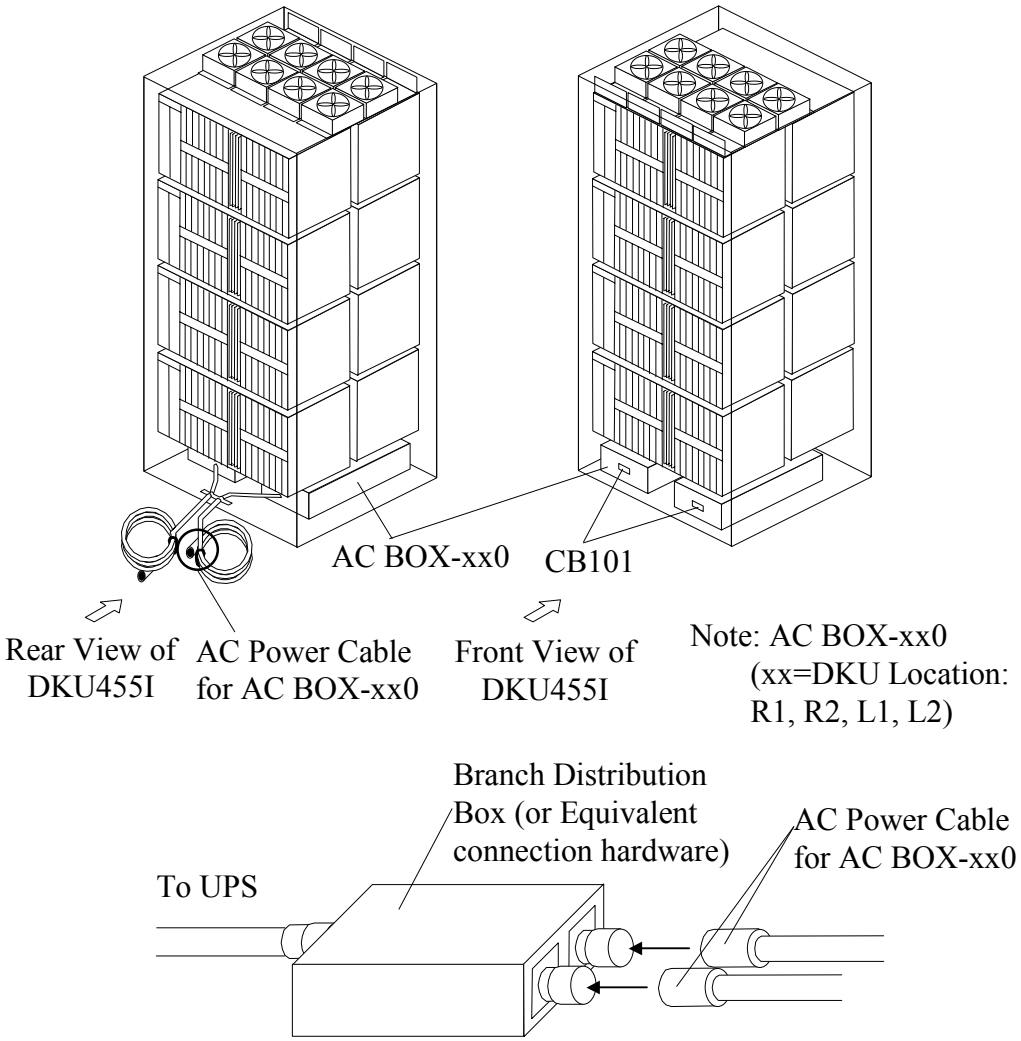

Fig. 3.14-11 Connection of AC Power Cables (3 Phase Model)

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Single Phase Model

⚠ CAUTION

Perform the UPS Connection Kit with care
Perform this procedure before connecting the AC Power Cable.
(Turn off the circuit breakers on the power distribution panel)
Turn off the main circuit breakers (CB200 and CB101) located in the AC Boxes.

a. Disconnect the AC power cables from the distribution board
b. Connect the ac power cables to the branch distribution box.

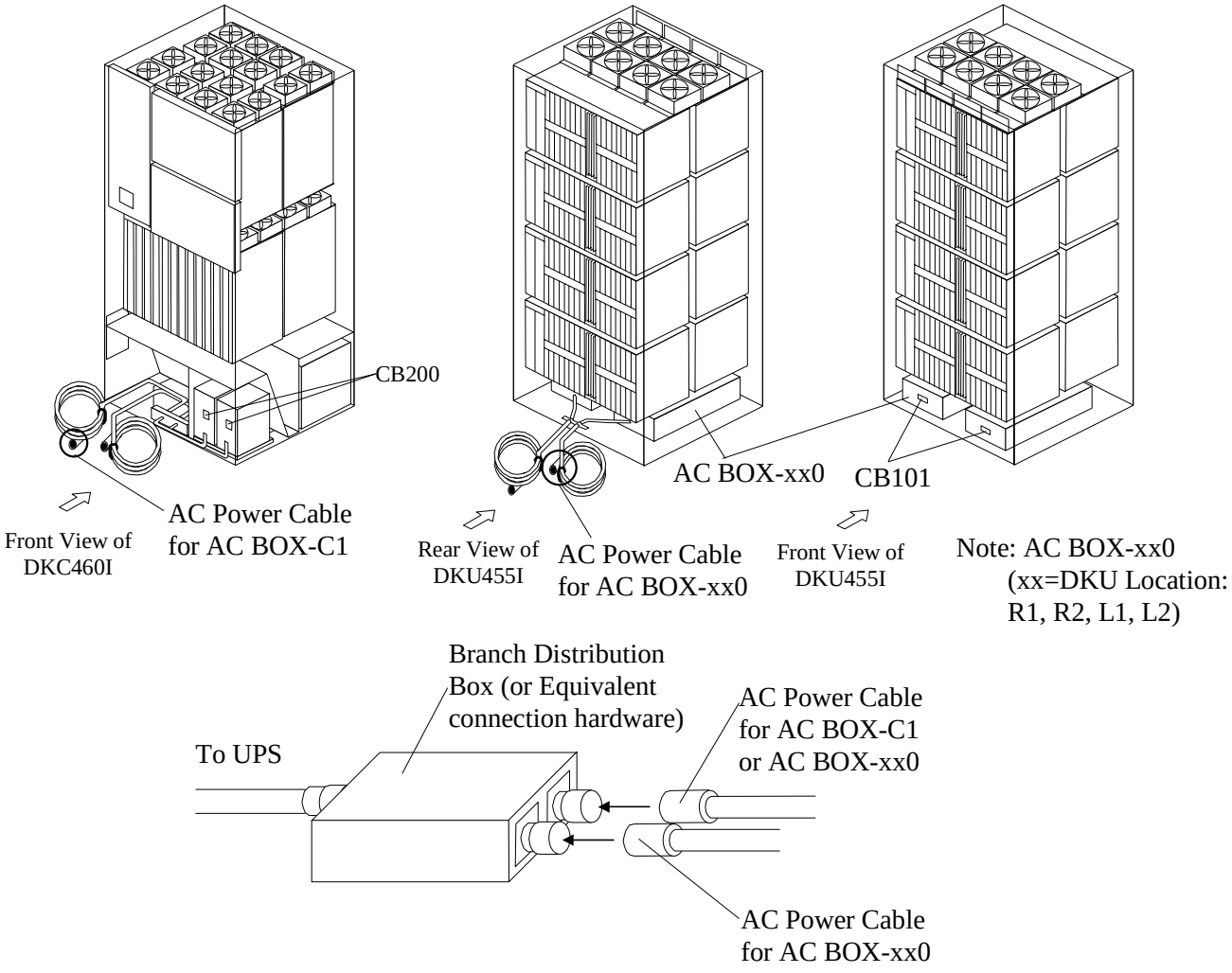

Fig. 3.14-12 Connection of AC Power Cables (Single Phase Model)

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1-7 Attach the Nameplate

a. Attach the nameplate regardless of the model number from the left of the cover.

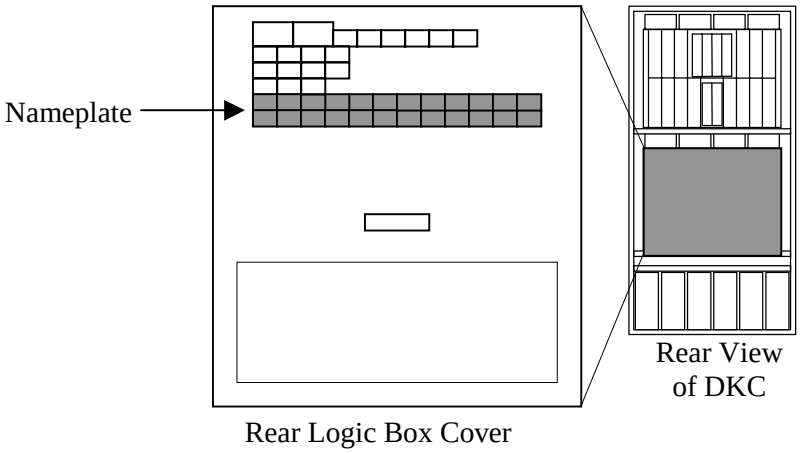

Fig. 3.14-13 Attachment of Nameplate

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1-8 Overview

Change the following system option when the system operates.

<1> PS Off Timer ---------- Enters the Destage time. (25 [min])
- OFF : The Destage time is effectively.
- ON : The Destage time is ineffectively, and change the Destage time.

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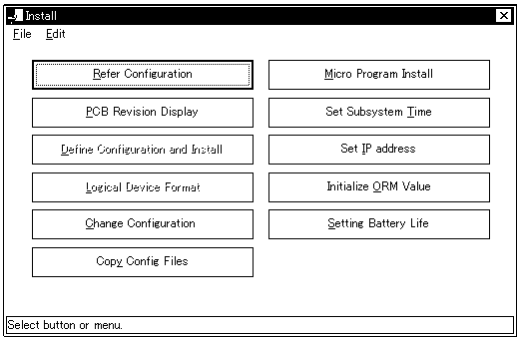
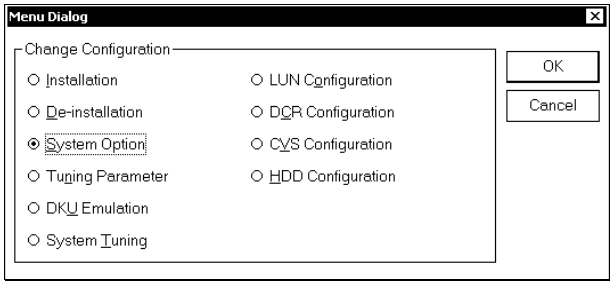
1-9 SVP procedure

(1) Select (CL) [Install].

(2) Select (CL) the [Change Configuration] menu in the 'Install' window.



(3) Select (CL) the [System Option] menu in the 'Menu Dialog' window and select (CL) [OK].



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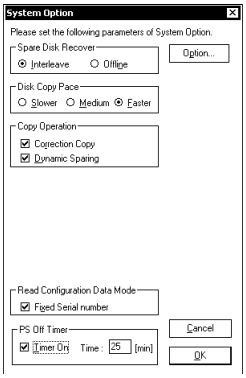
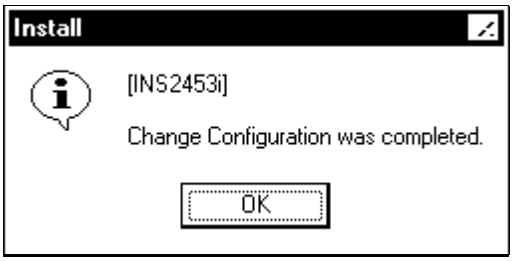
(4) Select (CL) [Timer On] check box, and then enters the destage time (25 [min]) in the 'System Option' dialog box.
And select (CL) [OK].

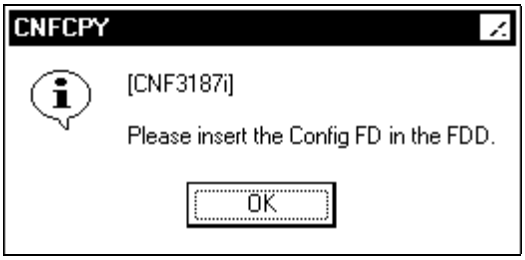


(5) "Loading configuration..." is displayed.

(6) "Change configuration was completed." is displayed.
Select (CL) [OK].



(7) "Reading subsystem configuration data..." is displayed.
"Please insert the Config FD in the FDD." is displayed.
Insert the configuration FD into FDD, select (CL) [OK].



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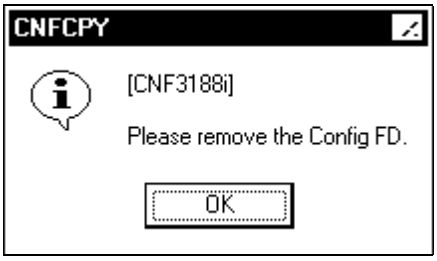
(8) When this procedure is completed, the message "Please remove the Config FD." is displayed. Remove the FD, select (CL) [OK].



(9) Close the 'Install' window.

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3.15 Check and Testing

NOTICE:
Install all of the remaining optional parts.

3.15.1 Checking Input Voltage

WARNING

Do not touch the internal parts of the AC power cable the AC Box or the Breaker Box. Line voltage is present even if the circuit breaker is off.

1. Check the AC input voltage using a voltmeter at the customer's AC power source (at the distribution board or receptacle for R & S connectors).

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3.15.2 Checking Input Power Cable and Voltage Select Jumper Cable

3 Phase/60A Model

Check the input power cable and jumper cables (PU105 and PC113) at the AC BOXes in the DKU. See Table 3.15.2-1 and figures 3.15.2-1 and 3.15.2-2 for check items.

Table 3.15.2-1 AC Input Cable Conductors and Jumper Cables Positions

Input Voltage	AC Input Cable Conductors	Jumper Cables Position	Dummy Connectors Position	Remarks
200-240Vac	4 conductors (R,S,T,FG)	JU105-1	JU105-2	Jumper Cable (PU105)
		JC113-1	JC113-2	Jumper Cable (PC113)
380-415Vac	5 conductors (R,S,T,N,FG)	JU105-2	JU105-1	Jumper Cable (PU105)
		JC113-2	JC113-1	Jumper Cable (PC113)

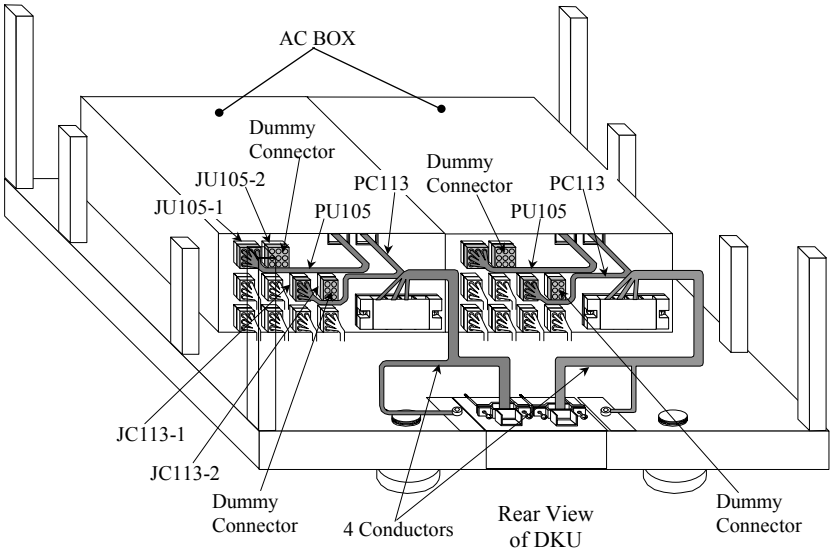

Fig. 3.15.2-1 AC Input Cable Conductors and Jumper Cables Positions 200-240Vac

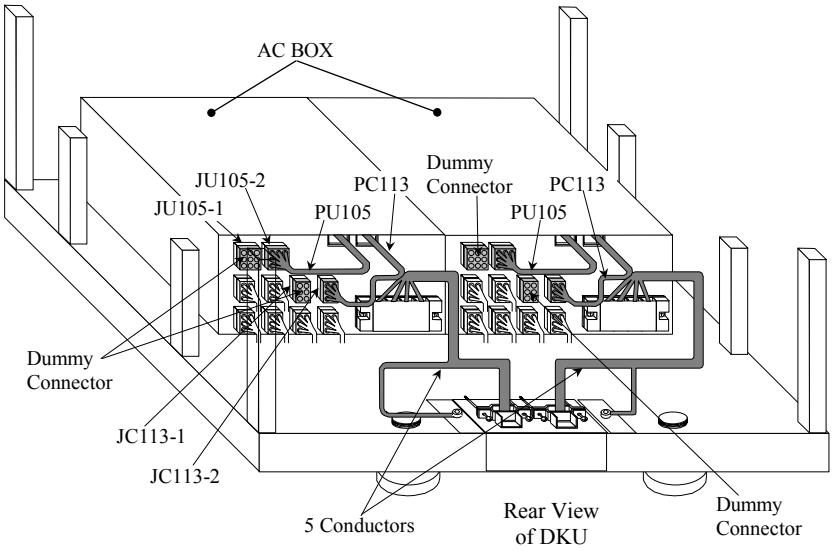

Fig. 3.15.2-2 AC Input Cable Conductors and Jumper Cables Positions 380-415Vac

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Single Phase/50A Model

Check the input power cable at the AC BOXes in the DKC and DKU. See table 3.15.2-2 and figures 3.15.2-3 and 3.15.2-4 for check items.

Table 3.15.2-2 AC Input Cable Conductors

UNIT	AC BOX	Input Voltage	AC Input Cable Conductors	Remarks
DKC	DKC AC BOX (AC BOX-C1, C2)	200-240Vac	3 conductors (U, V, FG)	
DKU	DKU AC BOX (AC BOX-##0, ##1)	200-240Vac	3 conductors (U, V, FG)	

(Note) ## : DKU Location No. (R1, R2, L1, L2)

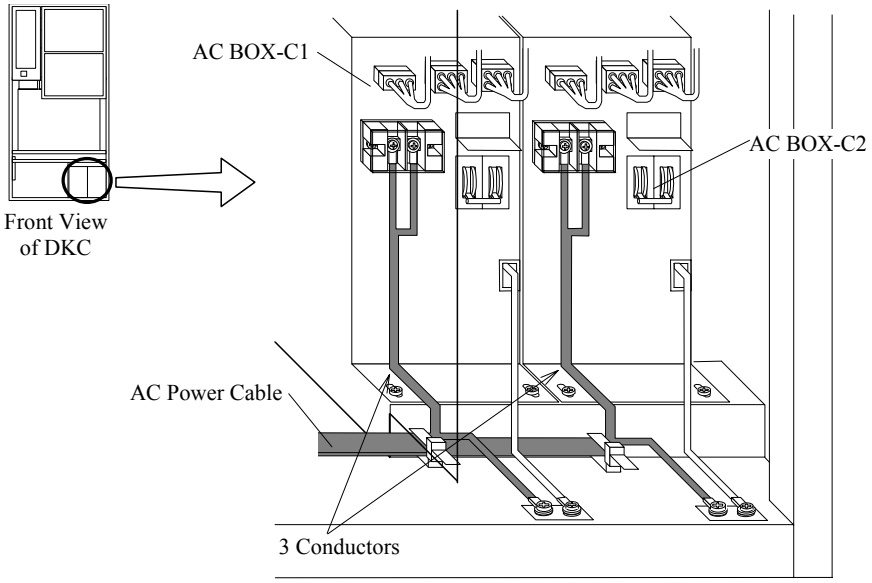

Fig. 3.15.2-3 AC Input Cable Conductors (DKC)

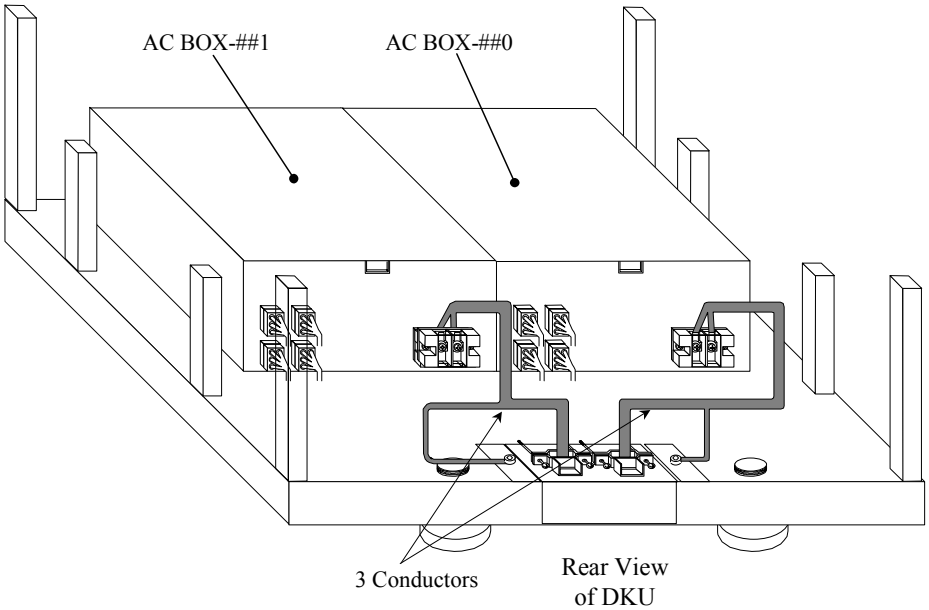

Fig. 3.15.2-4 AC Input Cable Conductors (DKU)

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3 Phase/30A Model

1. Check the input power cable and jumper cable (PU105) at the AC BOXes in the DKU. See Table 3.15.2-3 and figures 3.15.2-5 and 3.15.2-6 for check items.

Table 3.15.2-3 AC Input Cable Conductors and Jumper Cables Positions

Input Voltage	AC Input Cable Conductors	Jumper Cables Position	Dummy Connectors Position	Remarks
200-240Vac	4 conductors (R,S,T,FG)	JU105-1	JU105-2	Jumper Cable (PU105)
380-415Vac	5 conductors (R,S,T,N,FG)	JU105-2	JU105-1	Jumper Cable (PU105)

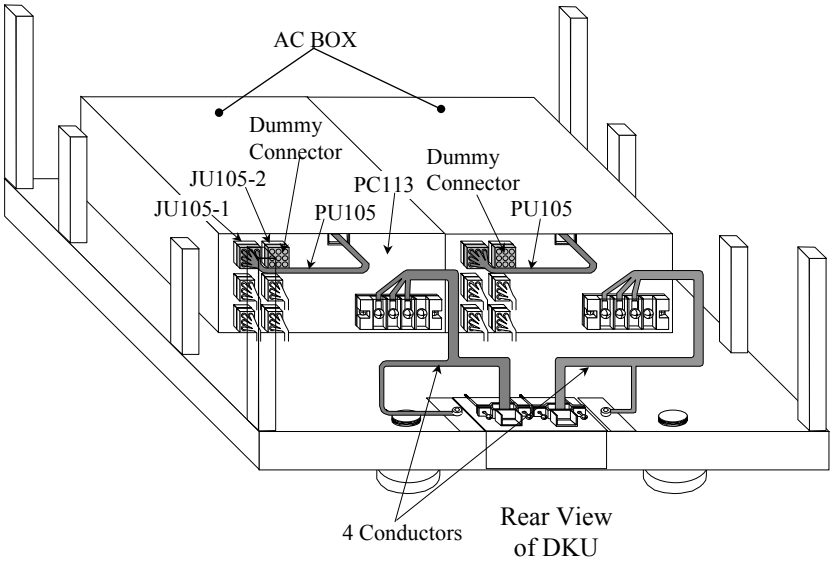

Fig. 3.15.2-5 AC Input Cable Conductors and Jumper Cables Positions 200-240Vac

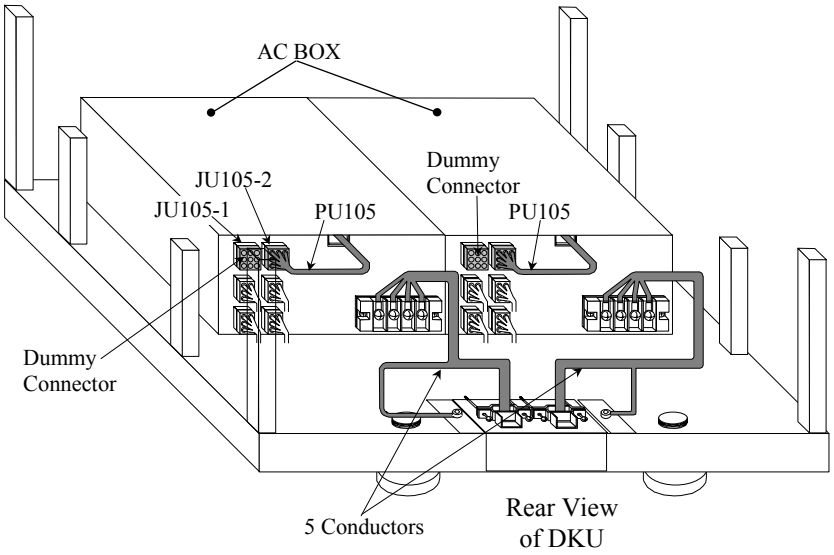

Fig. 3.15.2-6 AC Input Cable Conductors and Jumper Cables Positions 380-415Vac

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2. Check the input power cable and jumper cable (PCH) at the AC BOXes in the DKC. See Table 3.15.2-4 and figures 3.15.2-7 and 3.15.2-8 for check items.

Table 3.15.2-4 AC Input Cable Conductors and Jumper Cables Positions

Input Voltage	AC Input Cable Conductors	Jumper Cables Position	Dummy Connectors Position	Remarks
200-240Vac	4 conductors (R,S,T,FG)	JCH-1	JCH-2	Jumper Cable (PCH)
380-415Vac	5 conductors (R,S,T,N,FG)	JCH-2	JCH-1	Jumper Cable (PCH)

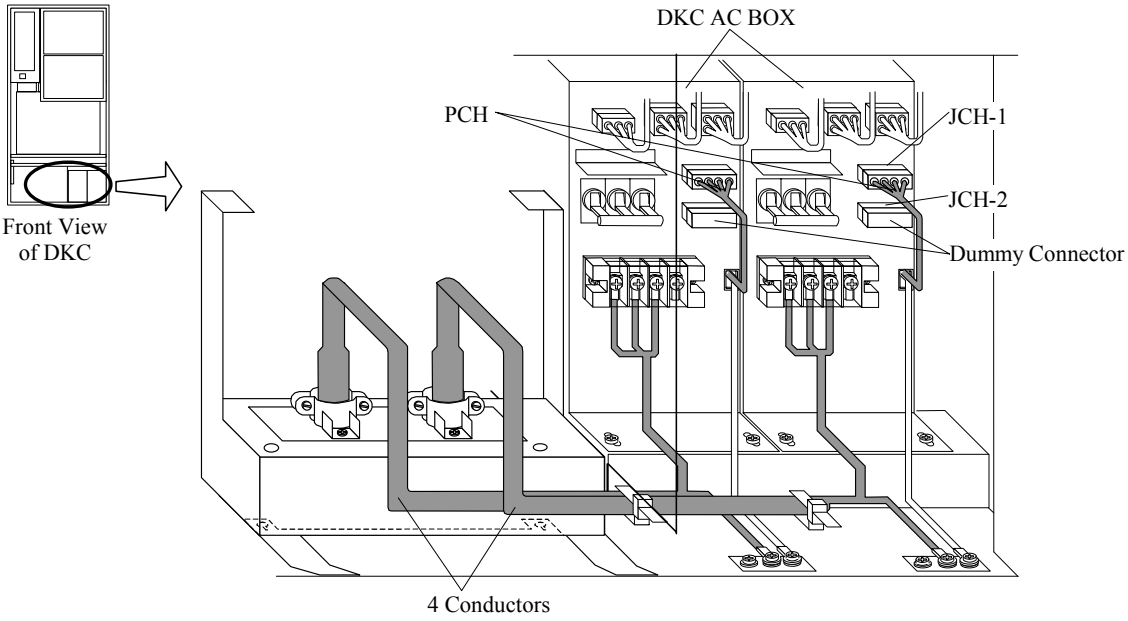

Fig. 3.15.2-7 AC Input Cable Conductors and Jumper Cables Positions 200-240Vac

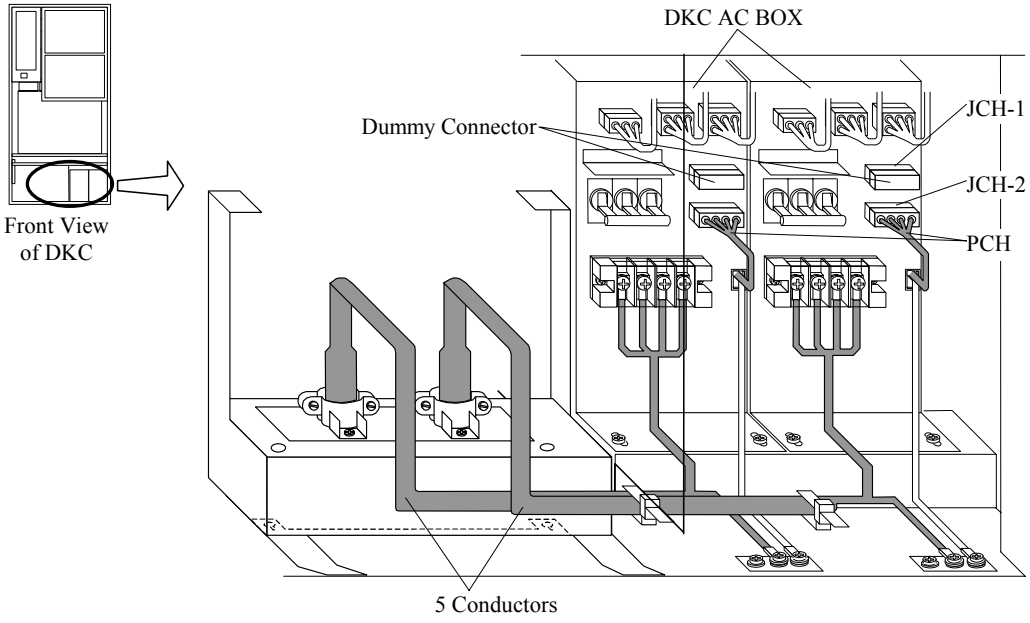

Fig. 3.15.2-8 AC Input Cable Conductors and Jumper Cables Positions 380-415Vac

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Single Phase/30A Model

1. Check the input power cables at the AC BOXes in the DKC and DKU. See Table 3.15.2-5 and figures 3.15.2-9 and 3.15.2-10 for check items.

Table 3.15.2-5 AC Input Cable Conductors and Jumper Cables Positions

Input Voltage	AC Input Cable Conductors	Unit	AC BOX	Remarks
200-240Vac	3 conductors ×2 (U, V, FG)	DKU	AC BOX-##0, AC BOX-##1	
		DKC	AC BOX-C1, AC BOX-C2	

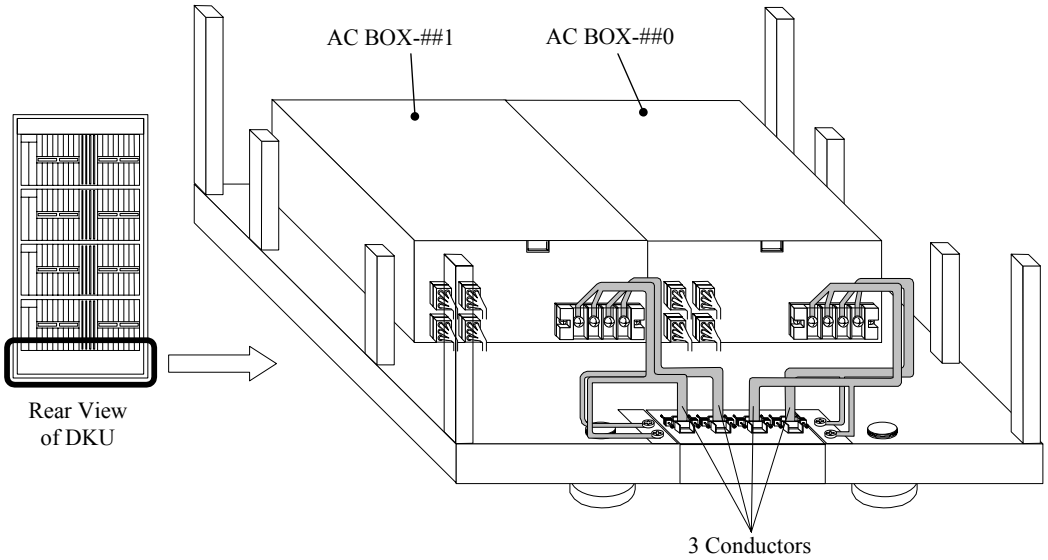

Fig. 3.15.2-9 AC Input Cable Conductors 200-240Vac

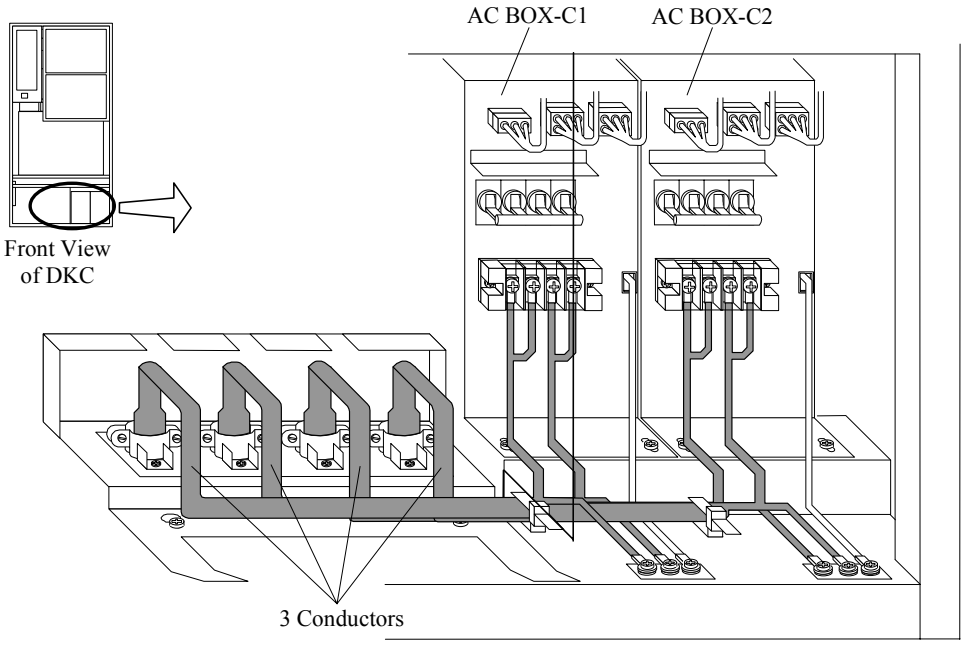

Fig. 3.15.2-10 AC Input Cable Conductors 200-240Vac

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3.15.3 Power On/Off Check

1. Turn on the disk controller according to the procedure shown in SECTION 3.16 POWER ON/OFF PROCEDURE. Refer to INST03-PWR-10 through 50.

2. Check the power supply output voltage to verify that it indicates the required level. Refer to PERIOD.

3. Turn off the Disk Subsystem according to the procedure shown in SECTION 3.16 POWER ON/OFF PROCEDURE. Refer to INST03-PWR-70 through 90.

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3.16 Power ON/OFF Procedure

3.16.1 Power ON Procedure

3.16.1.1 Power ON Procedure of Disk Subsystem

Power on procedures are shown below. Refer to the details and start the operation.

1. Turn on the main circuit breaker at the AC Box on the DKU. Refer to Fig. 3.16.1.1-1 and Fig. 3.16.1.1-1A.

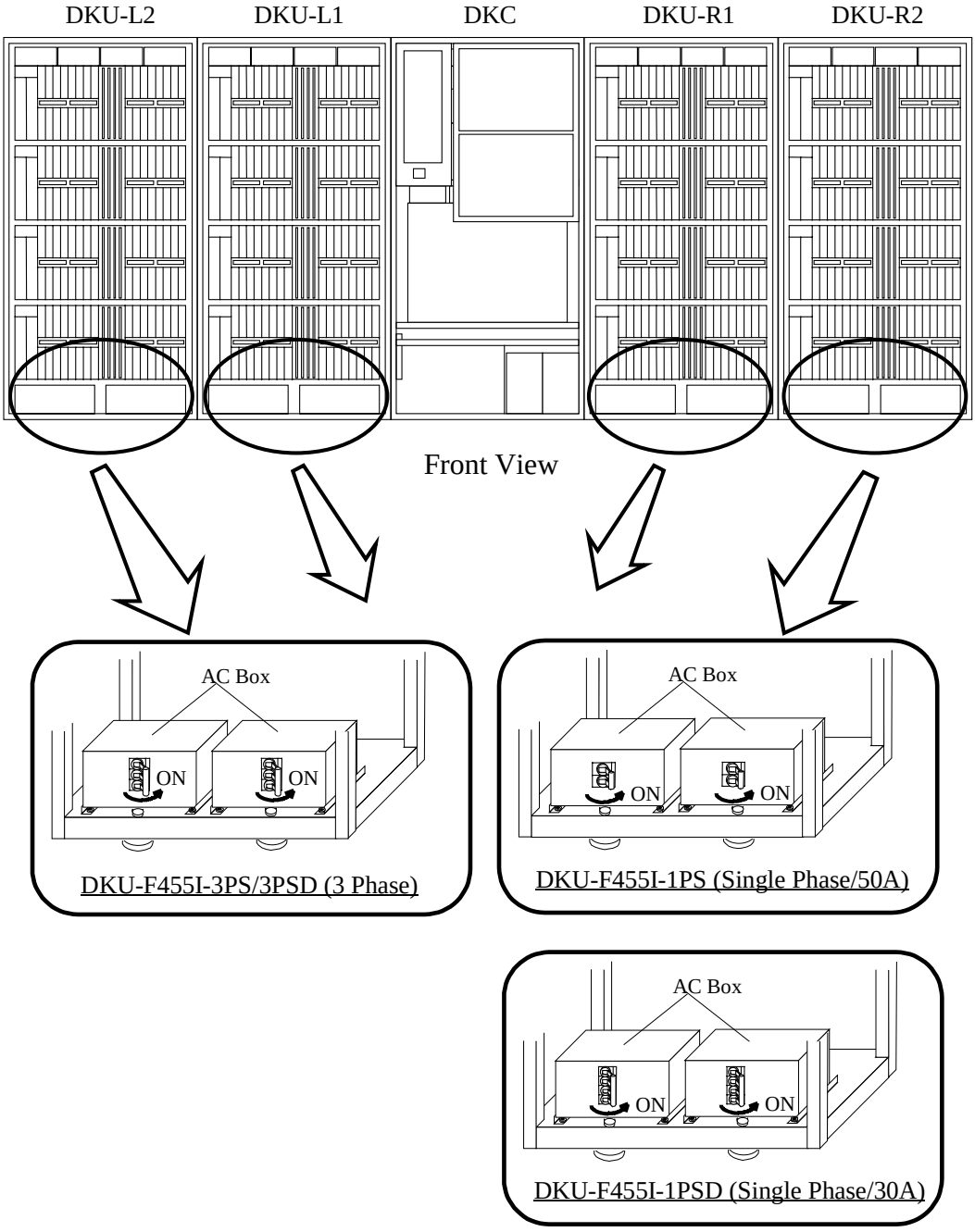

Fig. 3.16.1.1-1 Main Circuit Breaker on AC Box

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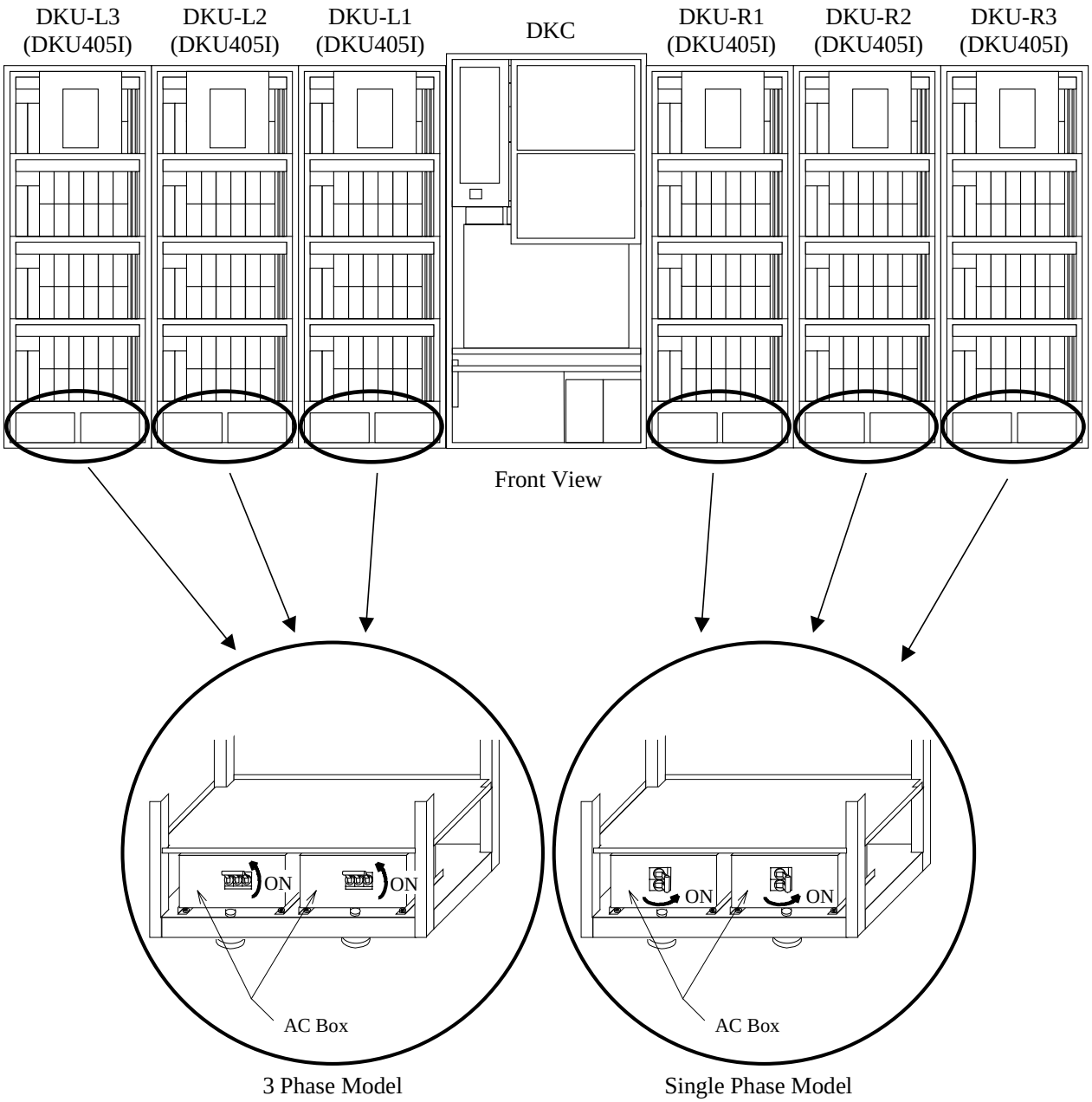

Fig. 3.16.1.1-1A Main Circuit Breaker on AC Box

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2. When the AC Box Kit for Single Phase/40A (DKC-F460I-1PS) is installed, turn on the circuit breaker at AC Box on the DKC.
   When the AC Box Kit for Single Phase/40A (DKC-F460I-1PS) is not installed, go to step 3.

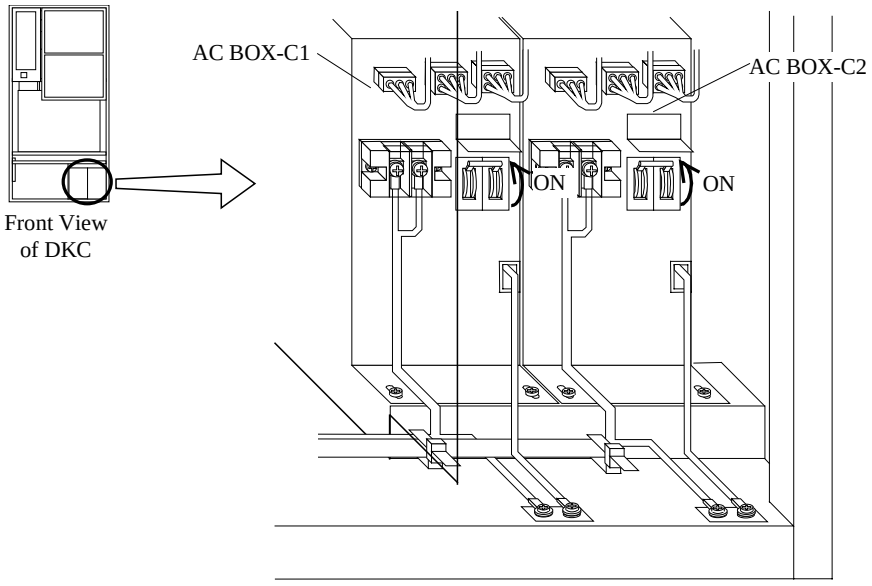

Fig. 3.16.1.1-2 Circuit Breaker on DKC AC Box

3. When the Breaker Box Kit for 3 Phase (DKC-F460I-3PS) is installed, turn on the circuit breaker at Breaker Box on the DKC.
   When the Breaker Box Kit for 3 Phase (DKC-F460I-3PS) is not installed, go to step 4.

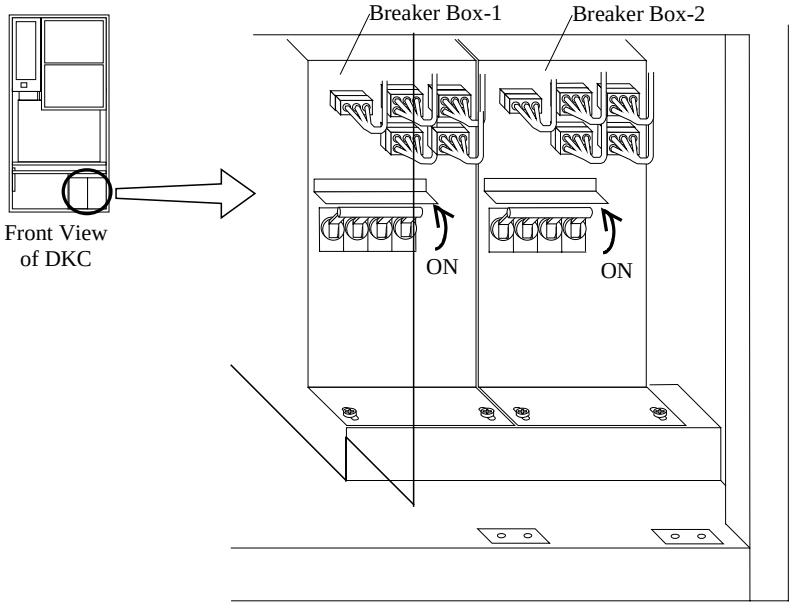

Fig. 3.16.1.1-3 Circuit Breaker in Breaker Box-1 and 2

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3A. When the AC Box Kit for Single Phase/30A (DKC-F460I-1PSD) is installed, turn on the circuit breaker at AC Box on the DKC.
When the AC Box Kit for Single Phase/30A (DKC-F460I-1PSD) is not installed, go to step 3B.

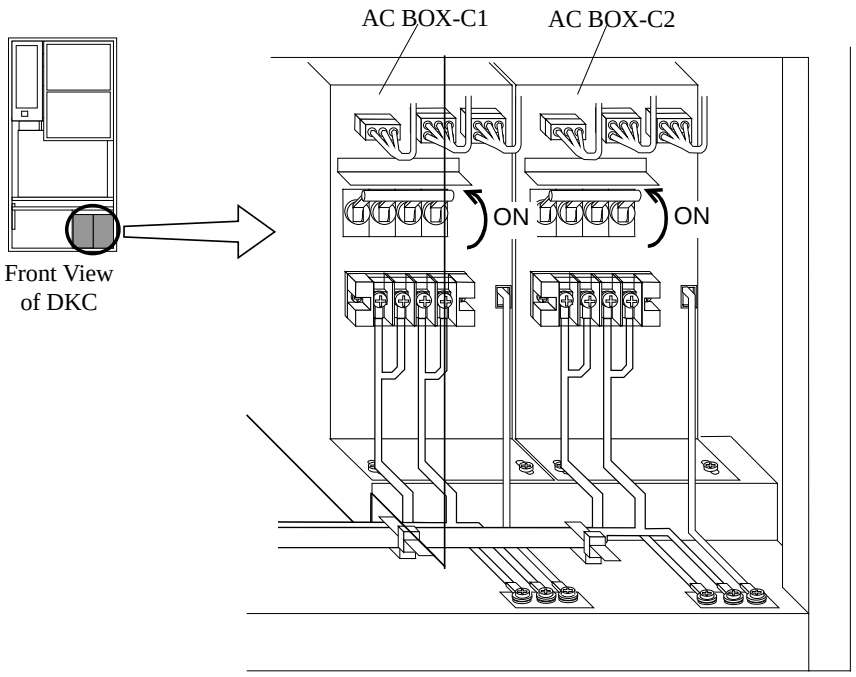

Fig. 3.16.1.1-3A Circuit Breaker on DKC AC Box

3B. When the AC Box Kit for 3 Phase/30A (DKC-F460I-3PSD) is installed, turn on the circuit breaker at AC Box on the DKC.
When the AC Box Kit for 3 Phase/30A (DKC-F460I-3PSD) is not installed, go to step 4.

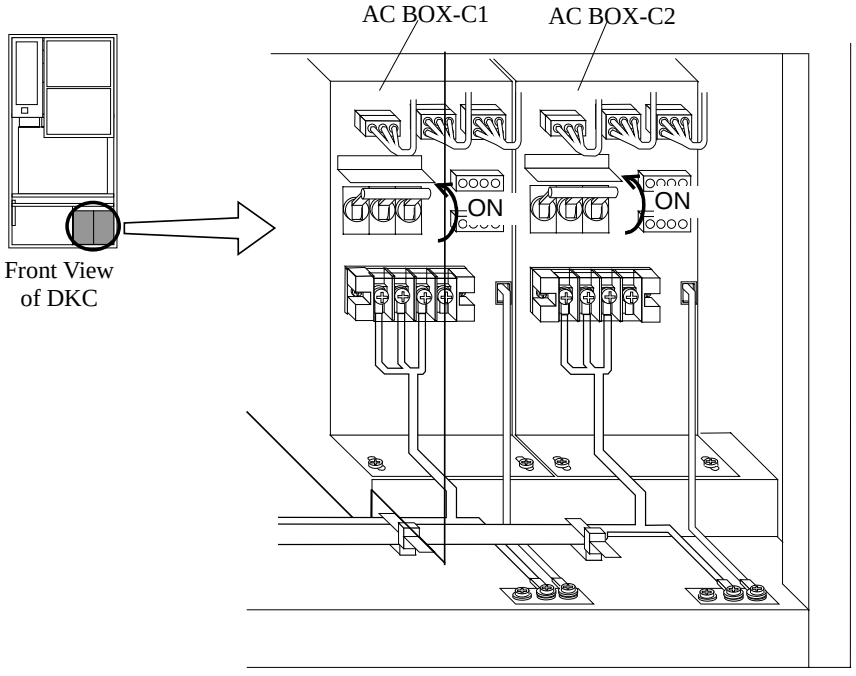

Fig. 3.16.1.1-3B Circuit Breaker in DKC AC Box

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4. Check battery charge voltage and fuse blow up on Battery Controller PCBs.
   Check charge voltage on BATTERY 10 through 12 and BATTERY 20 through 22.
   a. Disconnect the cables.
   b. Insert the pins of the digital voltmeter into the cables removed from battery to make sure that battery charge voltage is within the allowable charge voltage.
      If the battery charge voltage is not within the allowable charge voltage, replace the BATCTR PCB.
   c. Connect the cables.

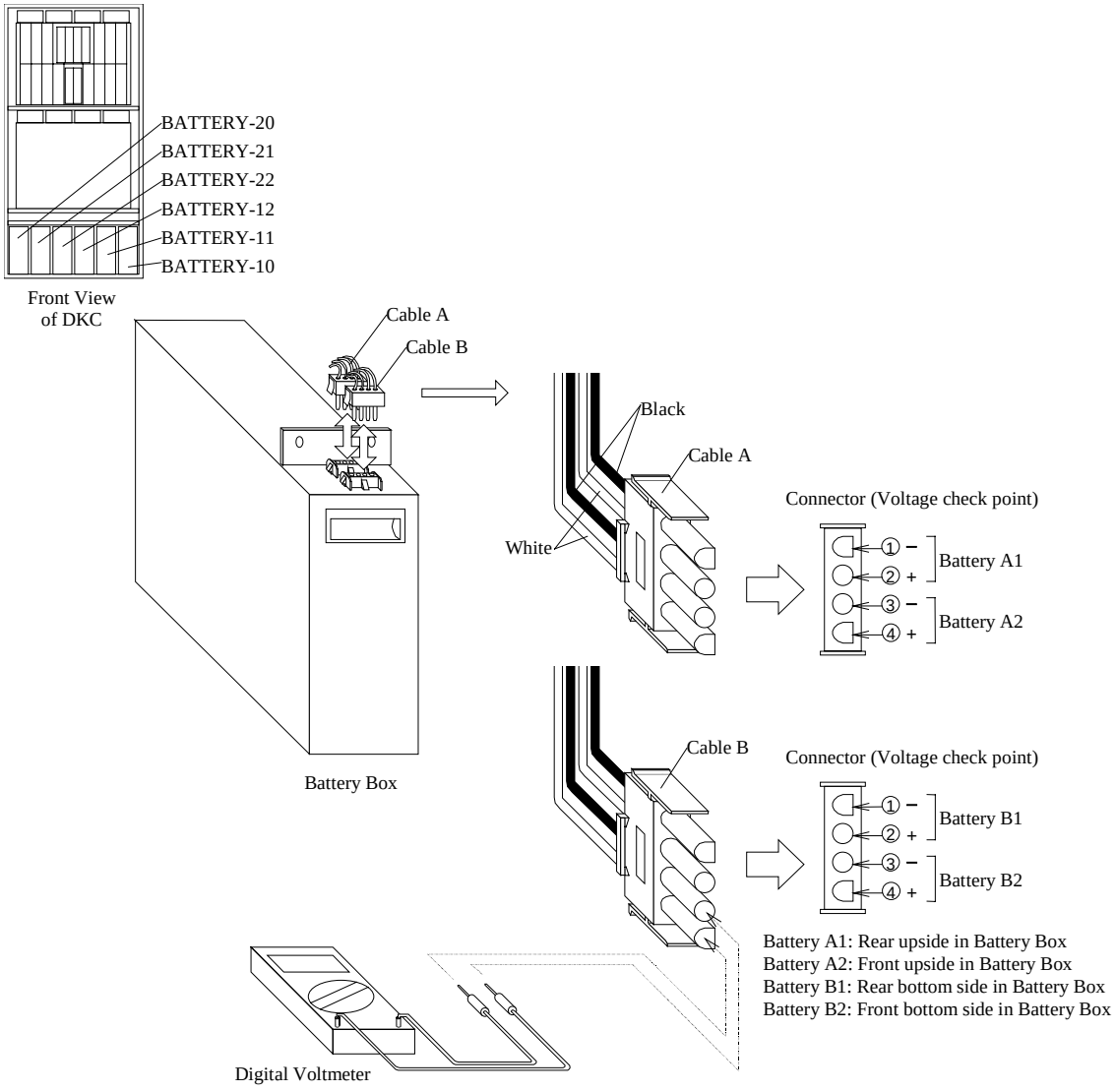

Fig. 3.16.1.1-4 Voltage Checkpoint

Table 3.16.1.1-1 Voltage Checkpoint and Allowable Voltage

No.	Pin No.		Allowable charge voltage
	+	-	
1	②	①	DC13V through DC13.8V
2	④	③	DC13V through DC13.8V

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5. Check battery voltage.
   Check battery voltage of the BATTERY 10 through 12 and BATTERY 20 through 22.
   a. Disconnect the cables.
   b. Insert the pins of the digital voltmeter into the connector on battery box to make sure that battery voltage is within the allowable battery voltage.
   c. If the battery voltage is not within the allowable battery voltage, replace the battery assembly.
   d. Connect the cables.

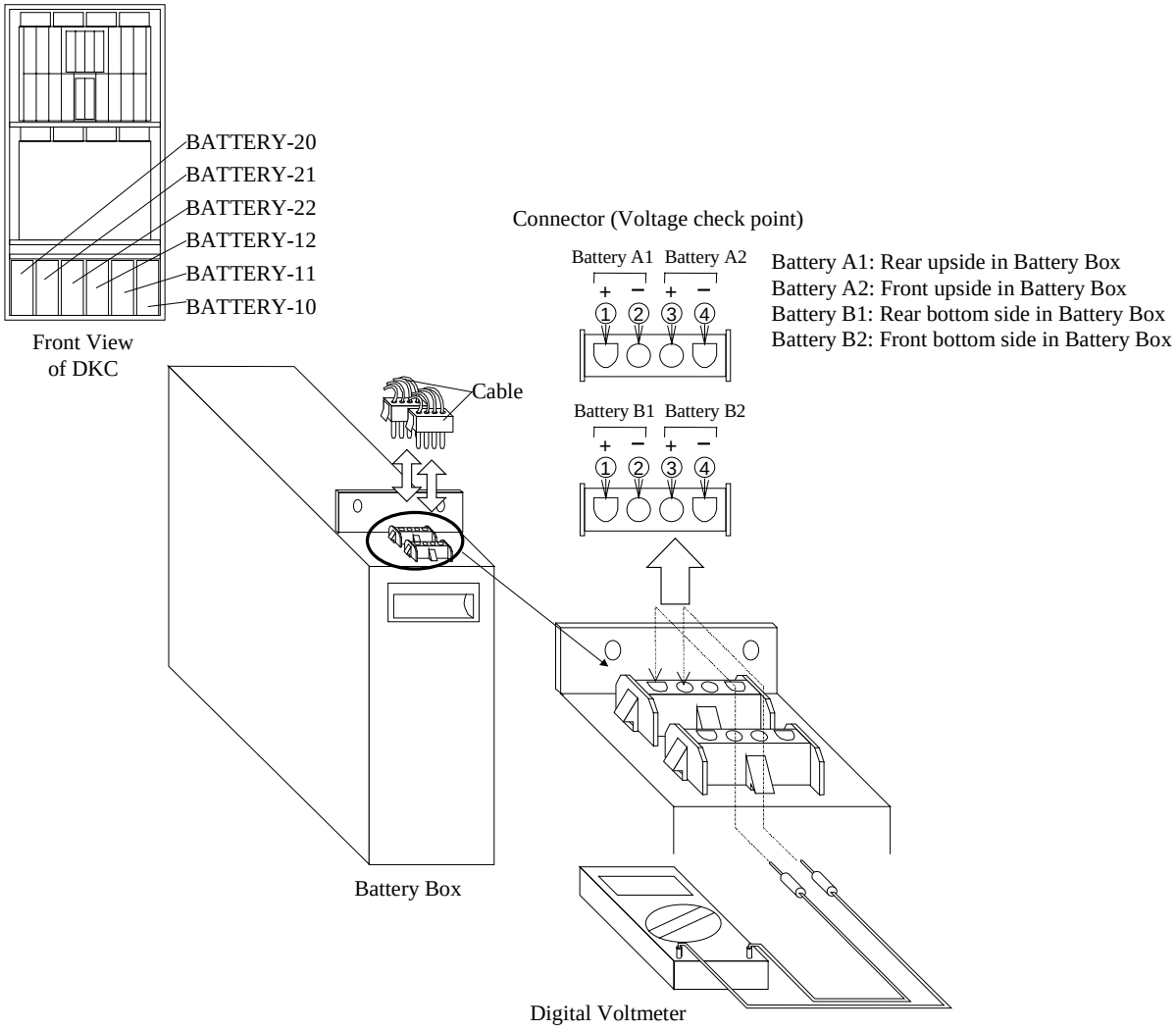

Fig. 3.16.1.1-5 Voltage Checkpoint

Table 3.16.1.1-2 Voltage Checkpoint and Allowable battery Voltage

No.	Pin No.		Allowable battery voltage
	+	-	
1	①	②	DC11.6V through DC13.8V
2	③	④	DC11.6V through DC13.8V

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6. When the DKU405I is installed, turn the “EABLE/DISABLE” switch on the DKUMN PCB’s to “ENABLE”.
   When the DKU405I is not installed, go to step 7.

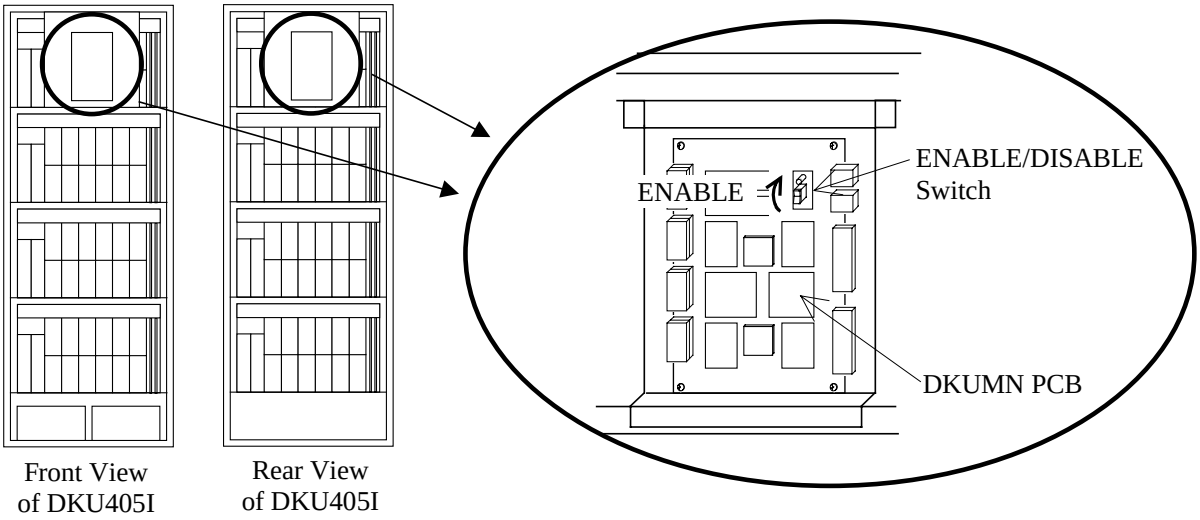

Fig. 3.16.1.1-6 ENABLE/DISABLE Switch on DKUMN PCBs

7. [Case as custom engineer operates]
   Turn the “REMOTE/LOCAL” switch to “LOCAL”.
   When the normal DKC Panel (unlocking type) is installed, turn the “POWER ON/OFF” switch to “ON”, while turning the POWER ON/OFF ENABLE switch to the ENABLE position.
   When the DKC Panel for UPS (locking type) is installed, turn the POWER ON/OFF ENABLE switch to the ENABLE and turn the “POWER ON/OFF” switch to “ON”.
   [Case as that operate from CPU]
   Turn the “REMOTE/LOCAL” switch to “REMOTE”.
   Turn on the power supply from CPU.

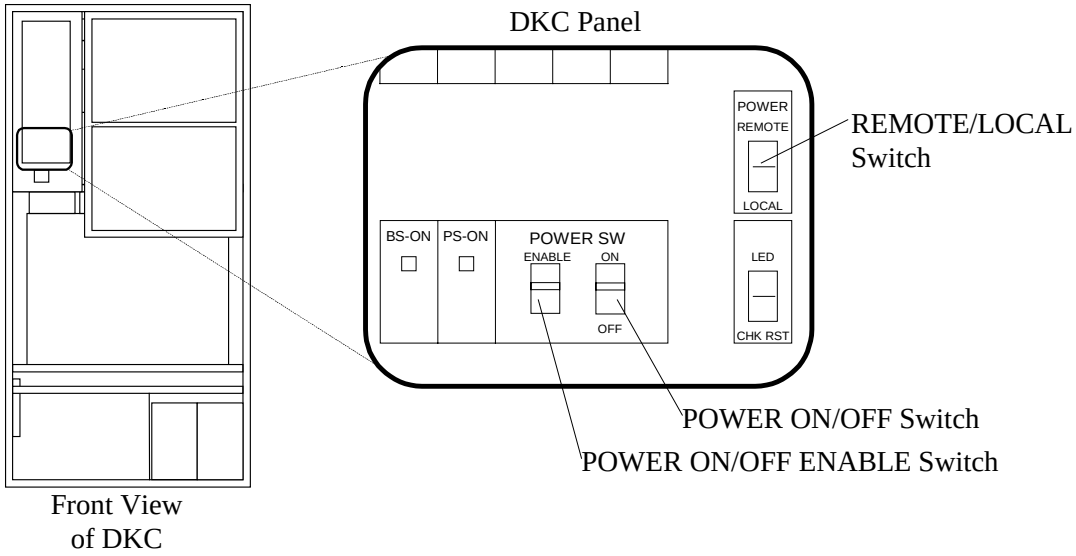

Fig. 3.16.1.1-7 DKC Panel PCB

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3.16.1.2 Power ON Procedure of Additional Disk Unit

1. Power on procedures are shown below. Refer to the details and start the operation.
   a. Turn on the main circuit breaker at the AC Box on the Disk Unit. Refer to Fig. 3.16.1.2-1 and Fig. 3.16.1.2-2.

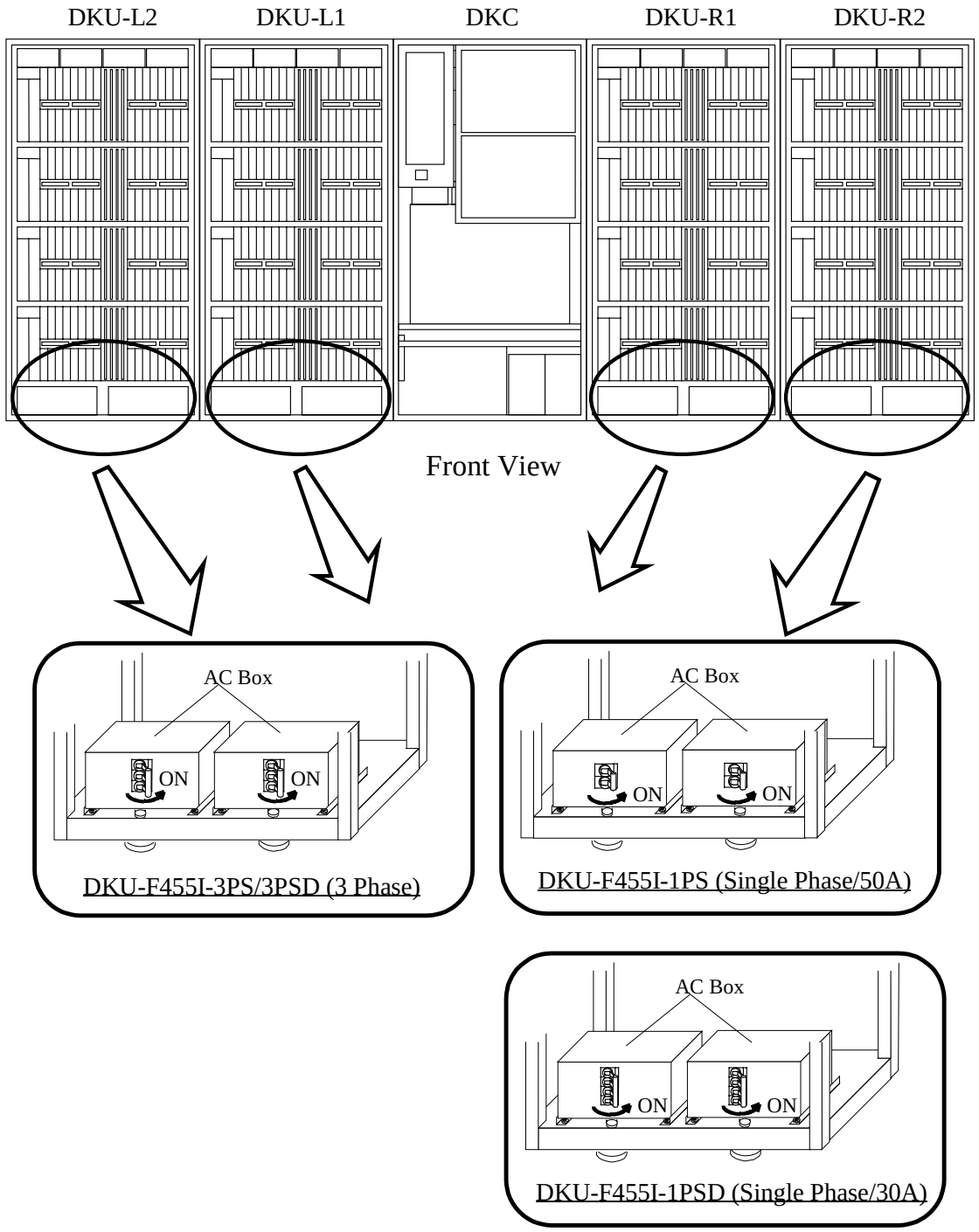

Fig. 3.16.1.2-1 Main Circuit Breaker on AC Box

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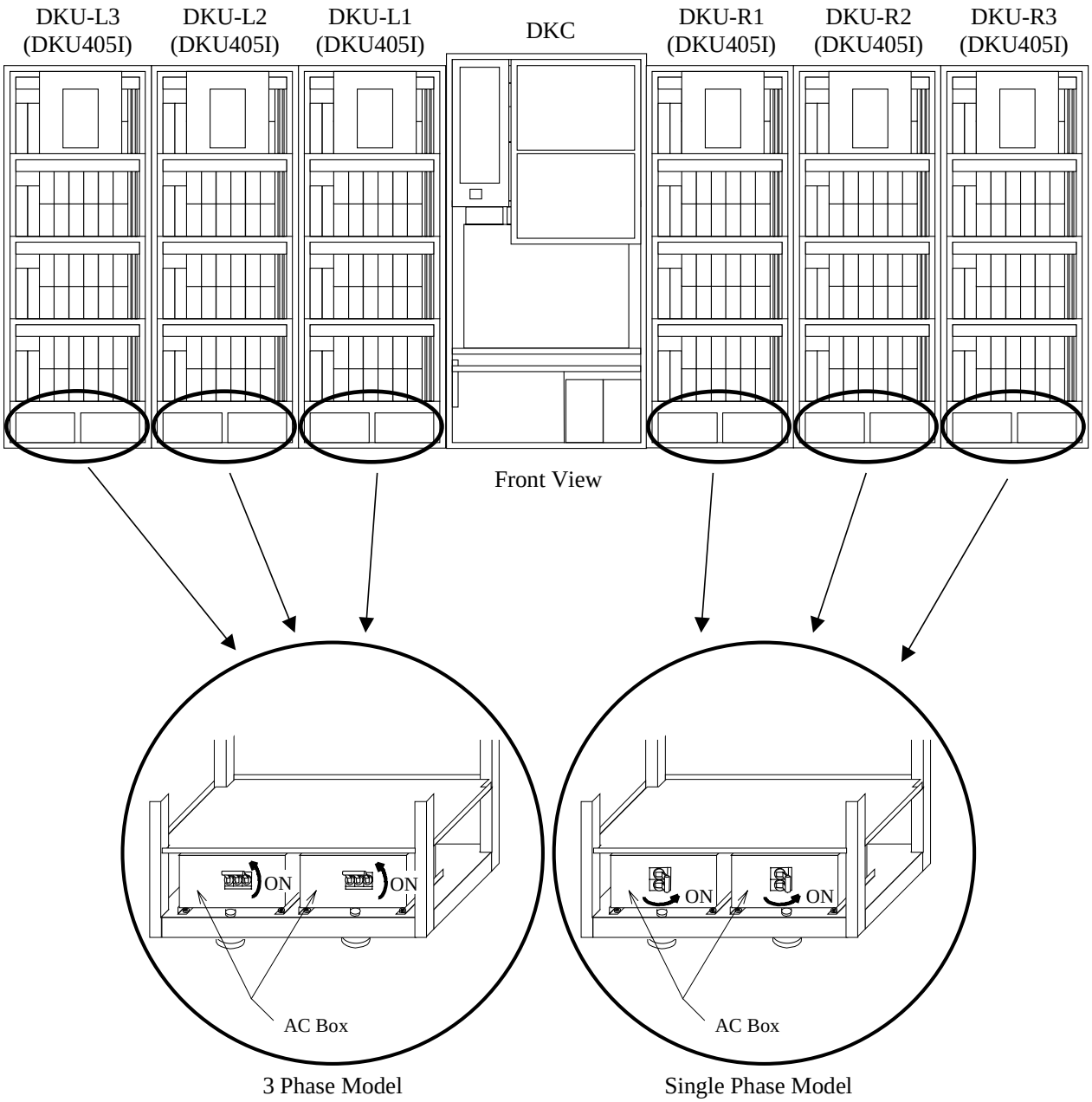

Fig. 3.16.1.2-2 Main Circuit Breaker on AC Box

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2. When the DKU405I is installed, turn the “EABLE/DISABLE” switch on the DKUMN PCB’s to “ENABLE”.

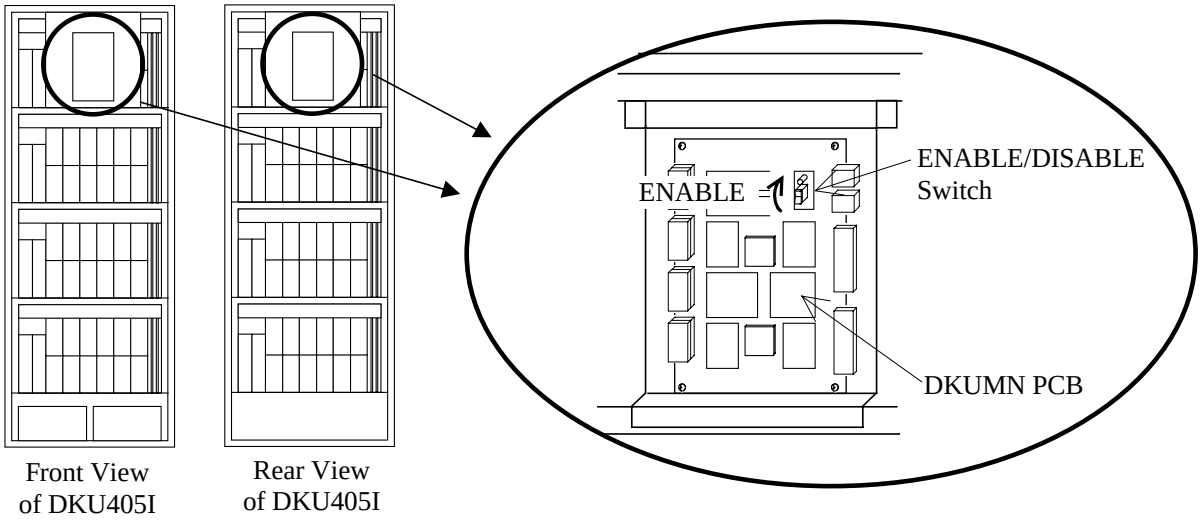

Fig. 3.16.1.2-3 ENABLE/DISABLE Switch on DKUMN PCBs

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3.16.2 Power OFF Procedure

3.16.2.1 Power OFF Procedure of Disk Subsystem

1. Power off procedures are shown below. Refer to the details and start the operation.
   a. [Case as custom engineer operates]
      Turn the “REMOTE/LOCAL” switch to “LOCAL”.
      When the normal DKC Panel (unlocking type) is installed, turn the “POWER ON/OFF” switch to “OFF”, while turning the POWER ON/OFF ENABLE switch to the ENABLE position.
      When the DKC Panel for UPS (locking type) is installed, turn the POWER ON/OFF ENABLE switch to the ENABLE and turn the “POWER ON/OFF” switch to “OFF”.
      [Case as that operate from CPU]
      Turn the “REMOTE/LOCAL” switch to “REMOTE”.
      Turn off the power supply from CPU.
   b. After checking that the PS-ON LED is off, stop the SVP.

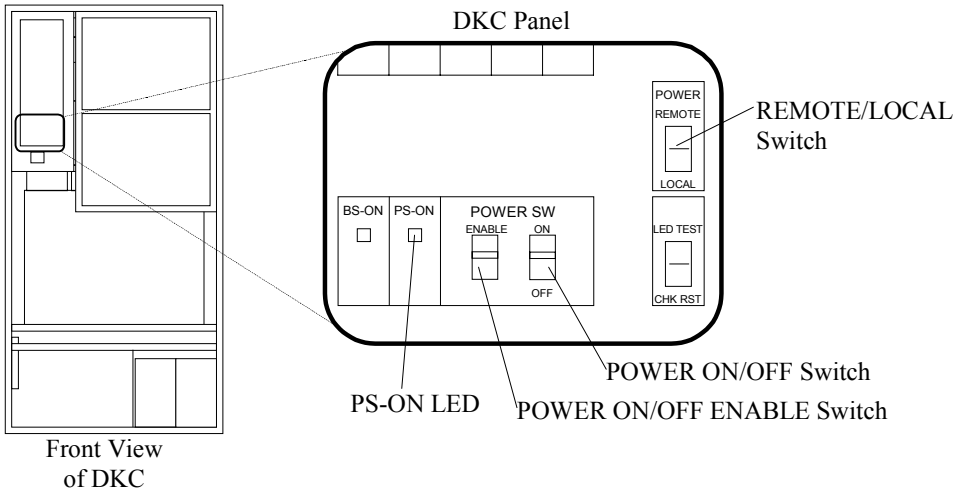

Fig. 3.16.2.1-1 DKC Panel PCB

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c. When the Breaker Box Kit for 3 Phase (DKC-F460I-3PS) is installed, turn off the circuit breaker at the Breaker Box-1 and 2 in the DKC.
When the Breaker Box Kit for 3 Phase (DKC-F460I-3PS) is not installed, go to step d.

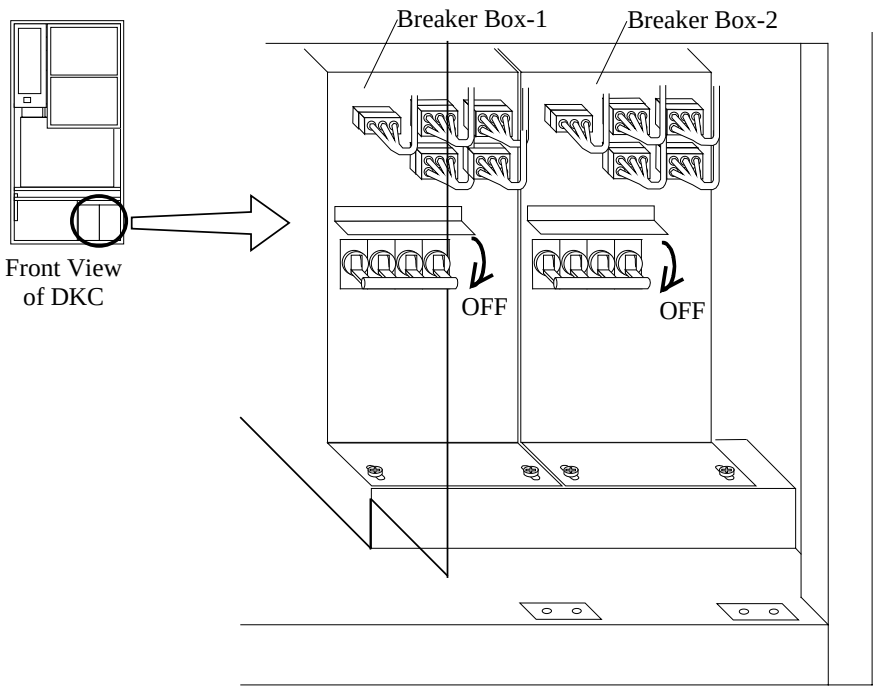

Fig. 3.16.2.1-2 Circuit Breaker on Breaker Box

d. When the AC Box Kit for Single Phase/40A (DKC-F460I-1PS) is installed, turn off the circuit breaker at AC Box on the DKC.
When the AC Box Kit for Single Phase/40A (DKC-F460I-1PS) is not installed, go to step e.

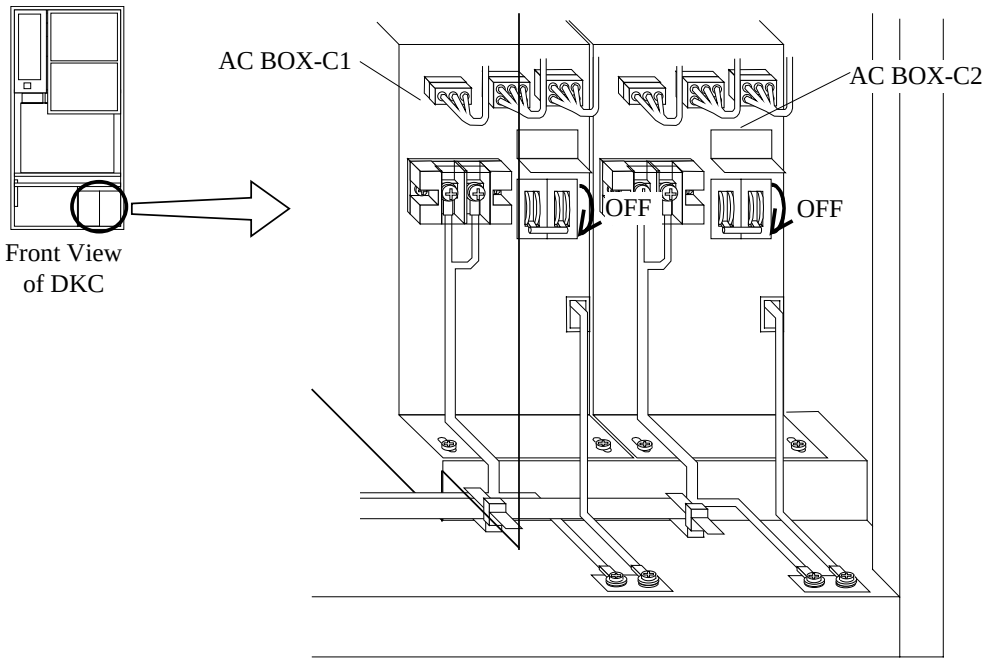

Fig. 3.16.2.1-3 Circuit Breaker on DKC AC Box

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e. When the AC Box Kit for 3 Phase/30A (DKC-F460I-3PSD) is installed, turn off the circuit breaker at the AC BOX-C1 and C2 in the DKC.
When the AC Box Kit for 3 Phase/30A (DKC-F460I-3PSD) is not installed, go to step f.

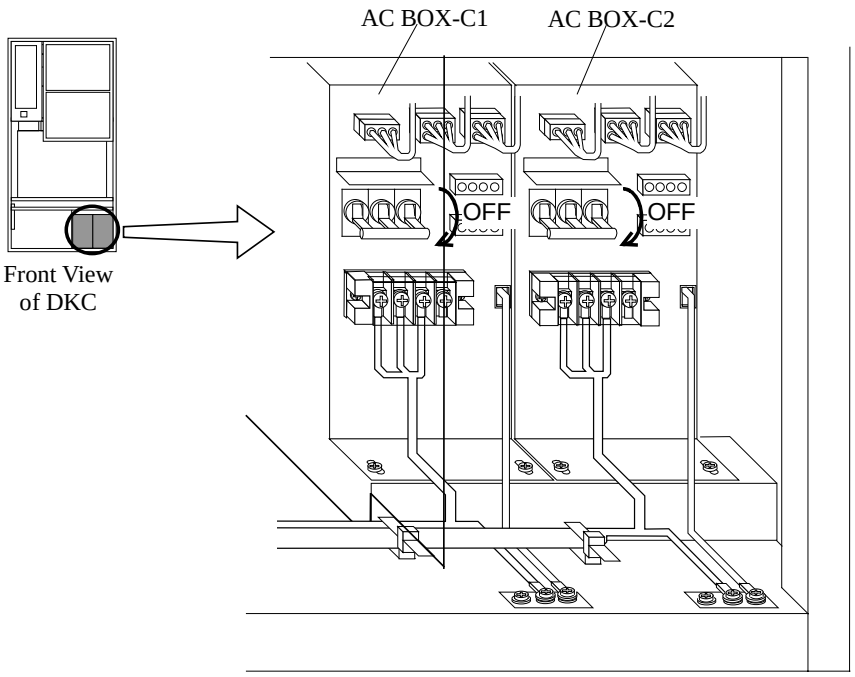

Fig. 3.16.2.1-4 Circuit Breaker on DKC AC Box

f. When the AC Box Kit for Single Phase/30A (DKC-F460I-1PSD) is installed, turn off the circuit breaker at AC Box on the DKC.
When the AC Box Kit for Single Phase/30A (DKC-F460I-1PSD) is not installed, go to step g.

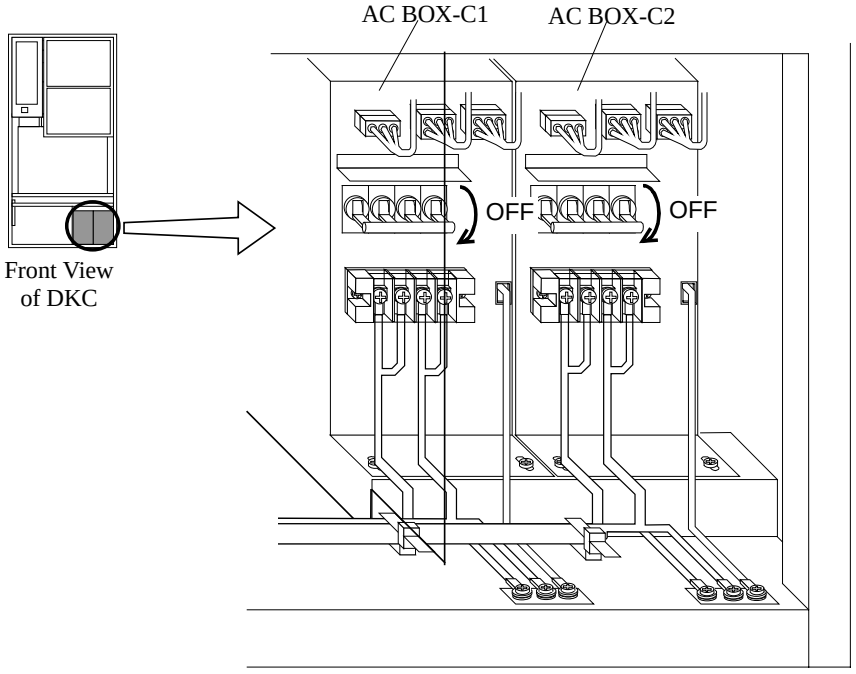

Fig. 3.16.2.1-5 Circuit Breaker on DKC AC Box

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g. Turn off the main circuit breaker at the AC Box on the DKU. Refer to Fig. 3.16.2.1-6 and Fig. 3.16.2.1-7.

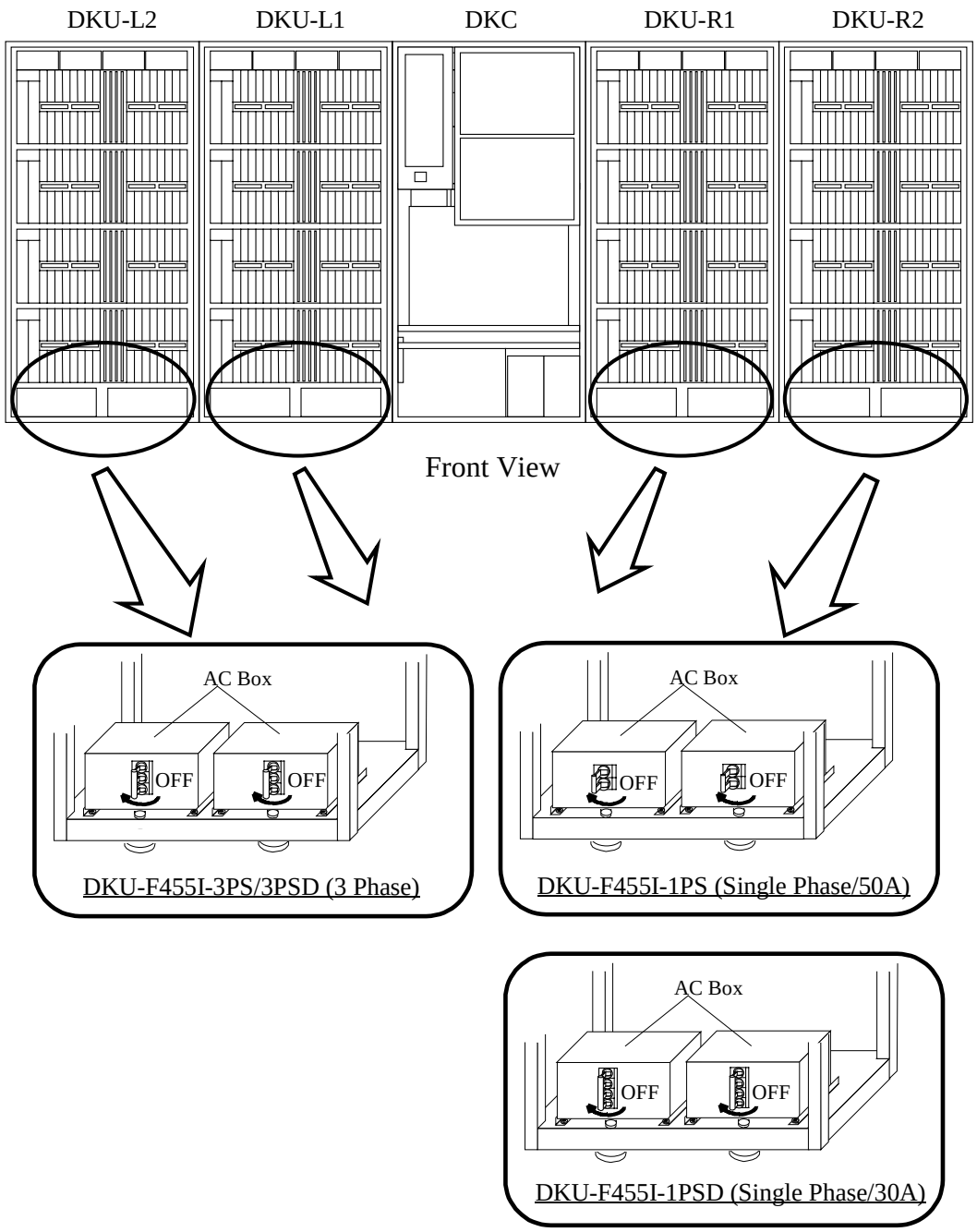

Fig. 3.16.2.1-6 Main Circuit Breaker on AC Box

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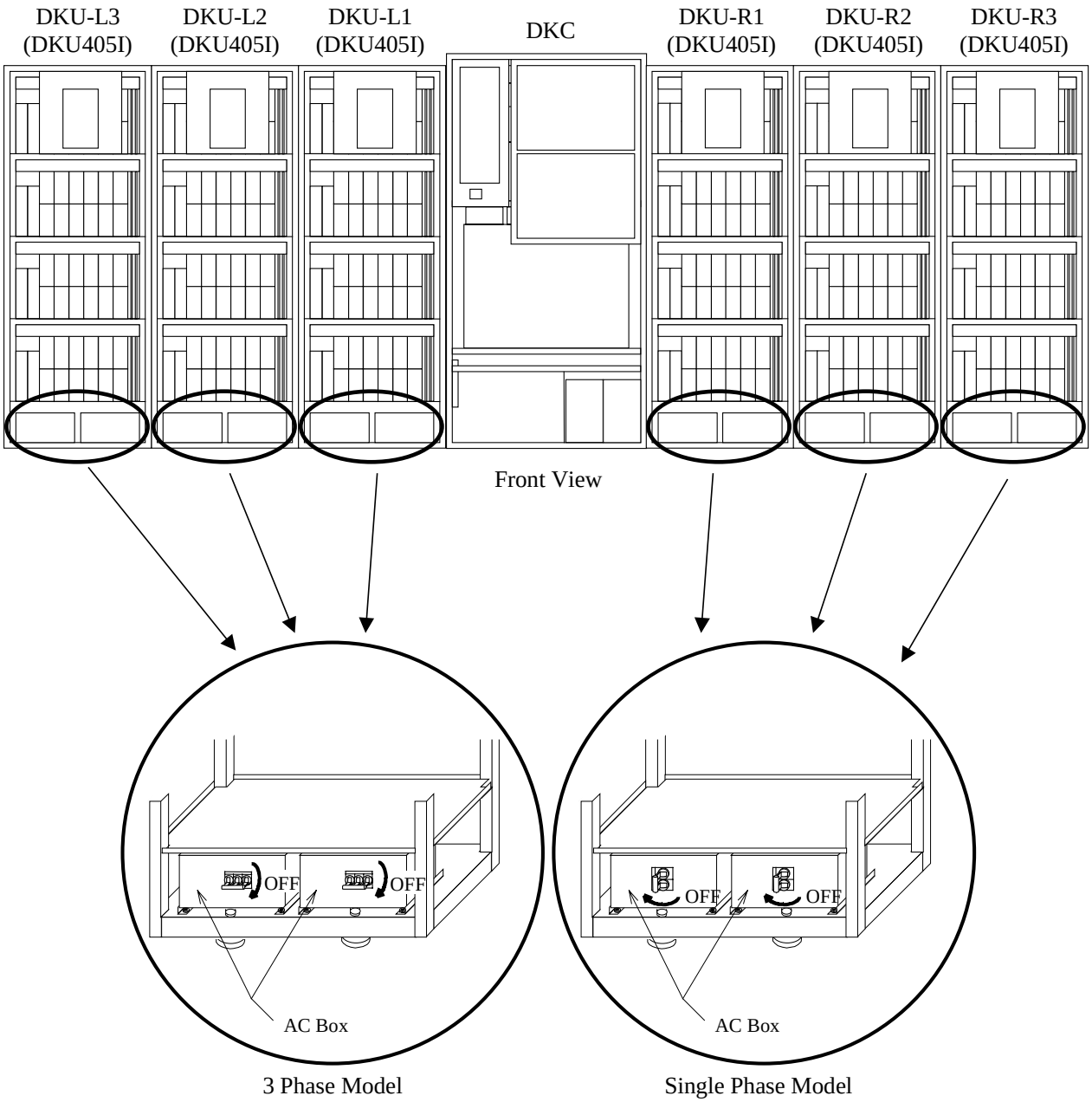

Fig. 3.16.2.1-7 Main Circuit Breaker on AC Box

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3.16.2.2 Power OFF Procedure of Additional Disk Unit

1. Power off procedures are shown below. Refer to the details and start the operation.
   a. Turn off the main circuit breaker at the AC Box on the DKU. Refer to Fig. 3.16.2.2-1 and Fig. 3.16.2.2-2.

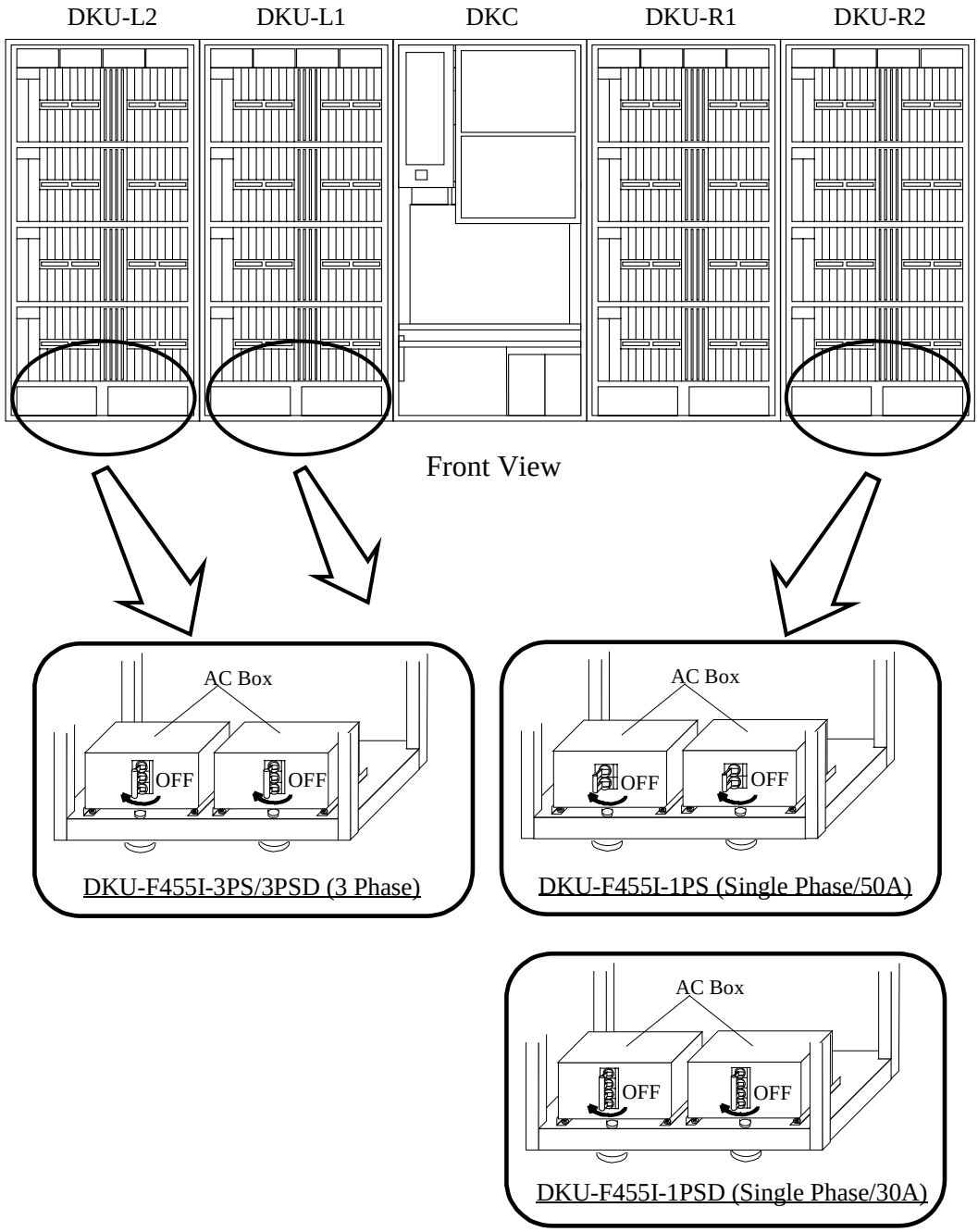

Fig. 3.16.2.2-1 Main Circuit Breaker on AC Box

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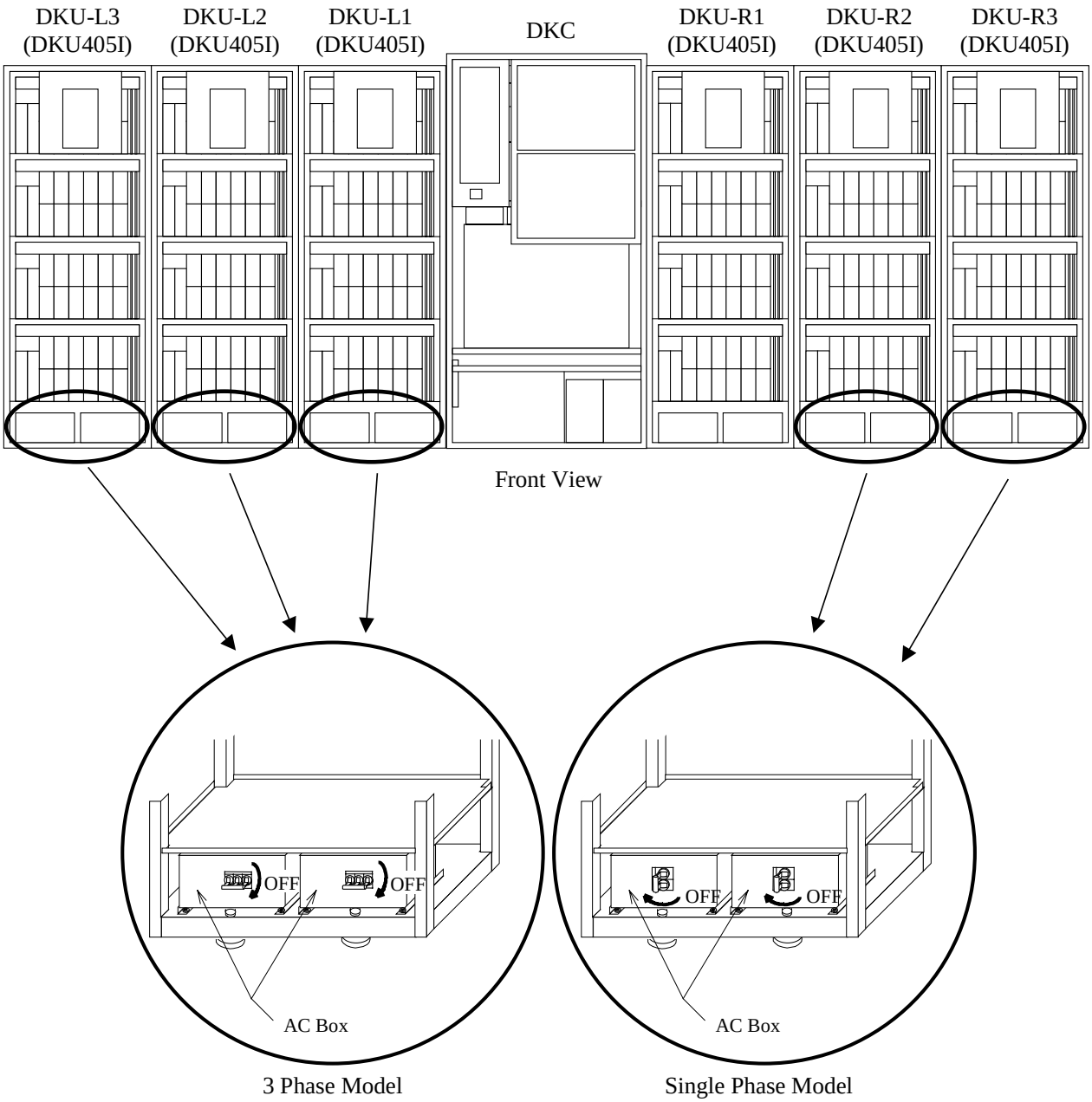

Fig. 3.16.2.2-2 Main Circuit Breaker on AC Box

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3.17 Routing of External Connection Cable

3.17.1 Connection of LAN Cable (Web Console/SNMP) and Modem Cable (Hitrack)

1. Open the front door and then open the DKC panel.
2. Open the SVP frame.

SVP frame type 1

a. Loosen the screw ① and open the SVP frame.

SVP frame type 2

a. Loosen the screw ① and the SVP stopper is slide to the left.
b. Open the SVP ASSY (Basic).
c. Loosen the screw ② and open the SVP frame.

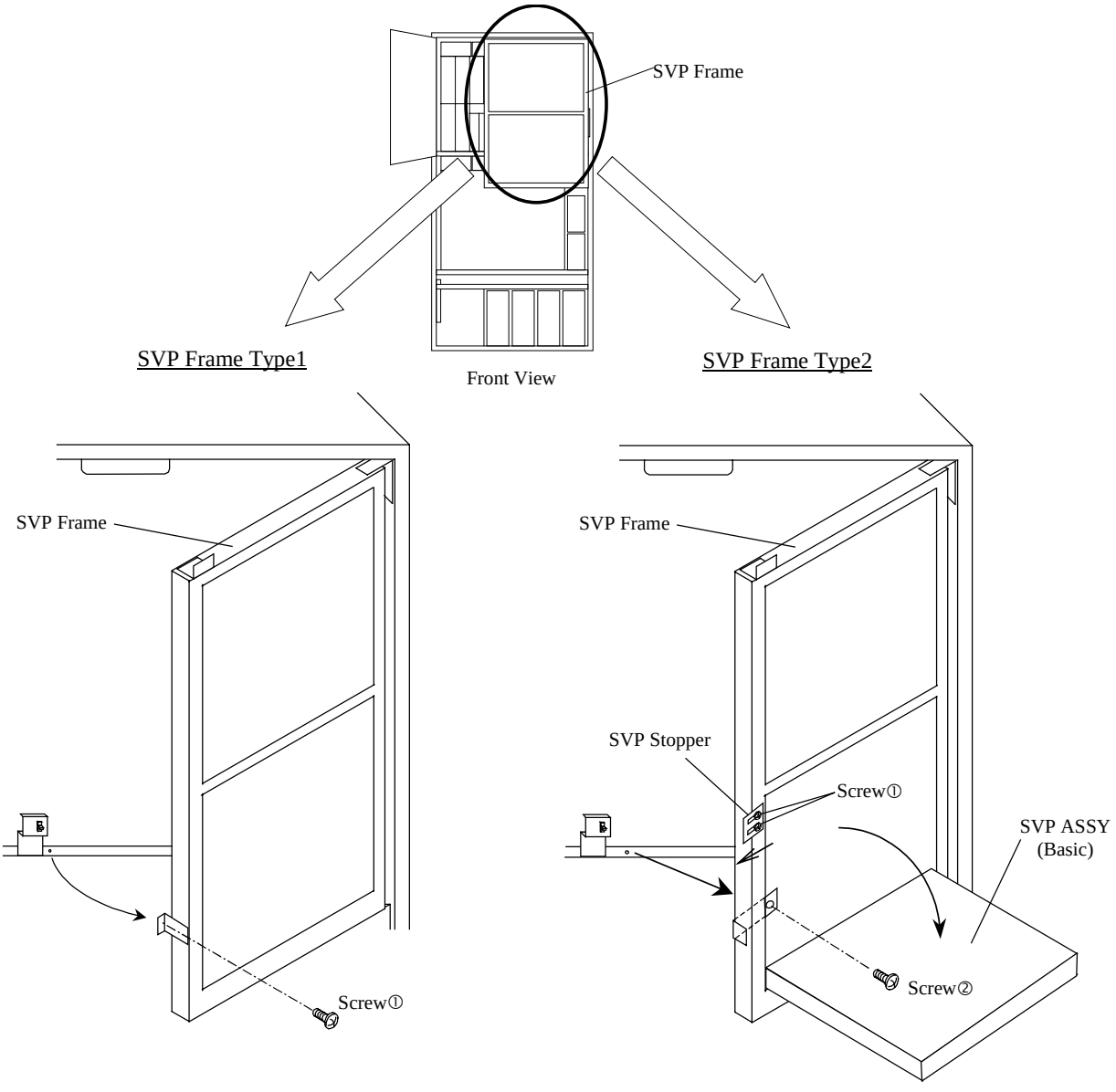

Fig. 3.17.1-1 Open the SVP Frame

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3. Remove the Front Logic Box cover.
4. Loosen the screw ① and remove the cover ①.
5. Loosen the screw ② and slide the plate.
6. Take in the cable, that has been pulled in through the opening on the bottom plate, through the gap of the sheet steel parts and route it.

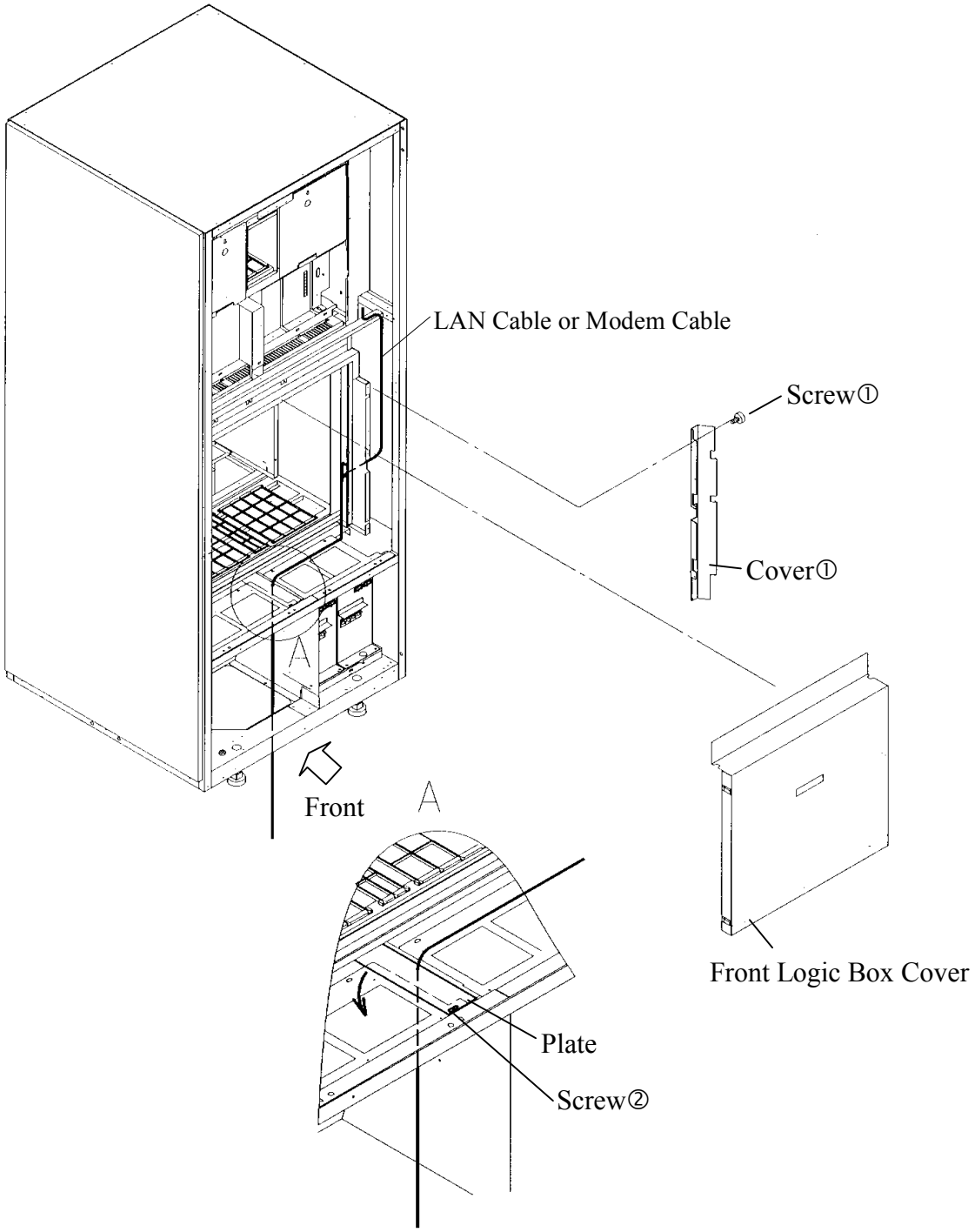

Fig. 3.17.1-2 Routing of Cable

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7. Route the cable in the SVP Assy.
8. Loosen the two torques screws and remove the SVP cover.

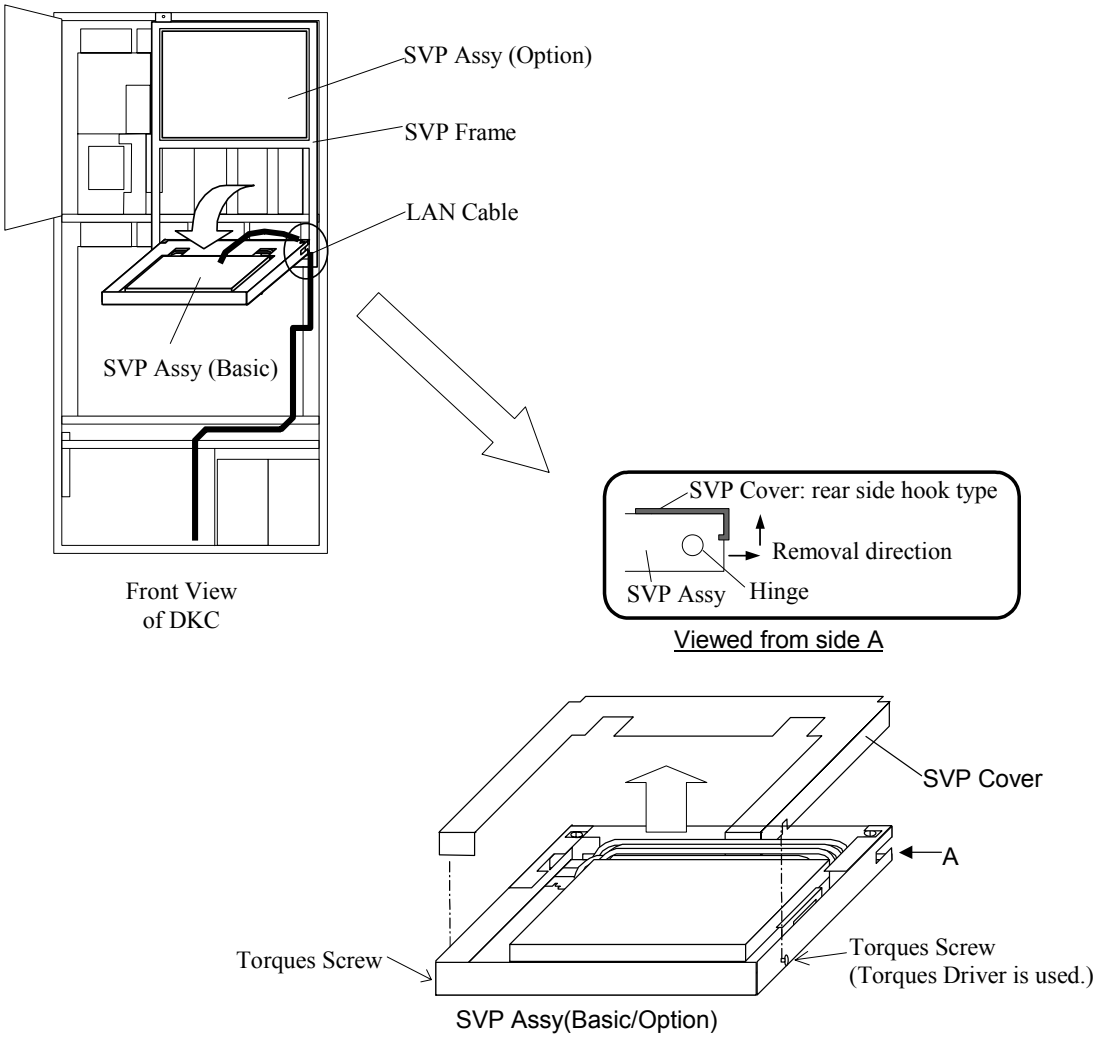

Fig. 3.17.1-3 Removal of SVP Cover

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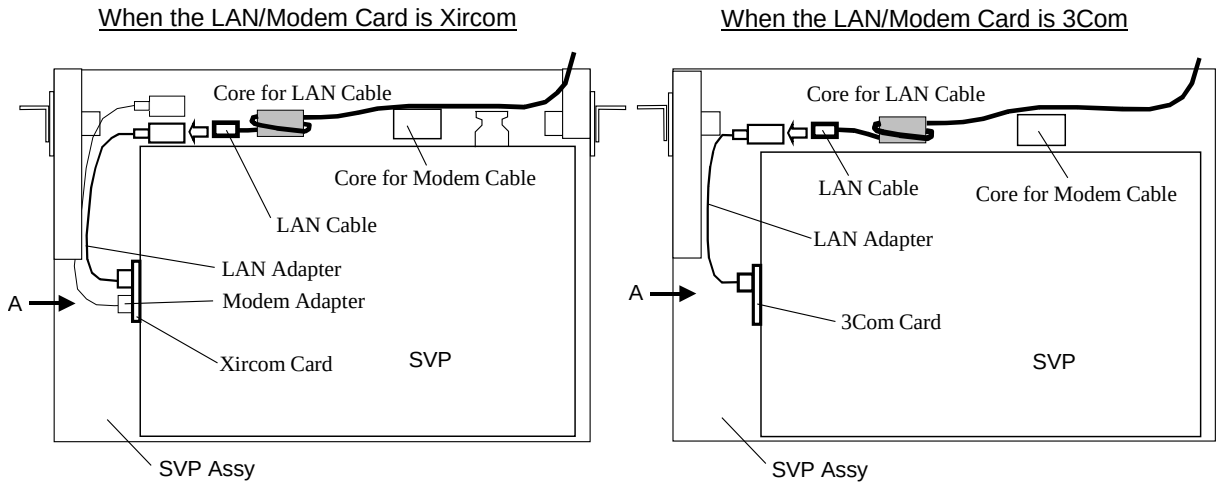
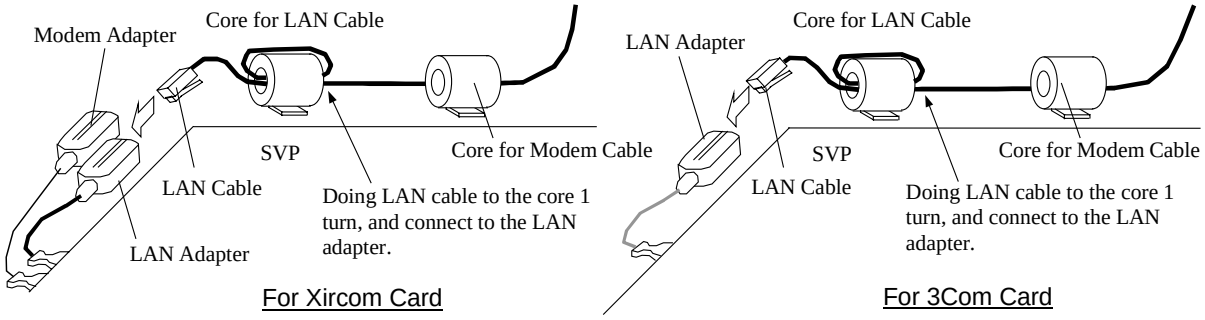
9. Connection of LAN Cable (When the LAN cable is not connected, go to step 10.)
   a. Draw the LAN cable in the SVP Assy. Doing LAN cable to the core 1 turn, and connect to the LAN adapter.

LAN Cable Routing in SVP Assy



LAN cable installation method to the core



Insertion Location of LAN/Modem Card

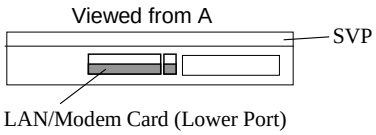


Fig. 3.17.1-4 How to connect LAN Cable

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10. Connection of Modem Cable (When the modem cable is not connected, go to step 11.)
    a. Draw the modem cable in the SVP Assy.
    b. When the LAN/Modem card is Xircom, doing modem cable to the core 1 turn, and connect to the modem connector.
    When the LAN/Modem card is 3Com, connect the modem cable and modem relay cable by the relay connector.

Cable routing in SVP Assy

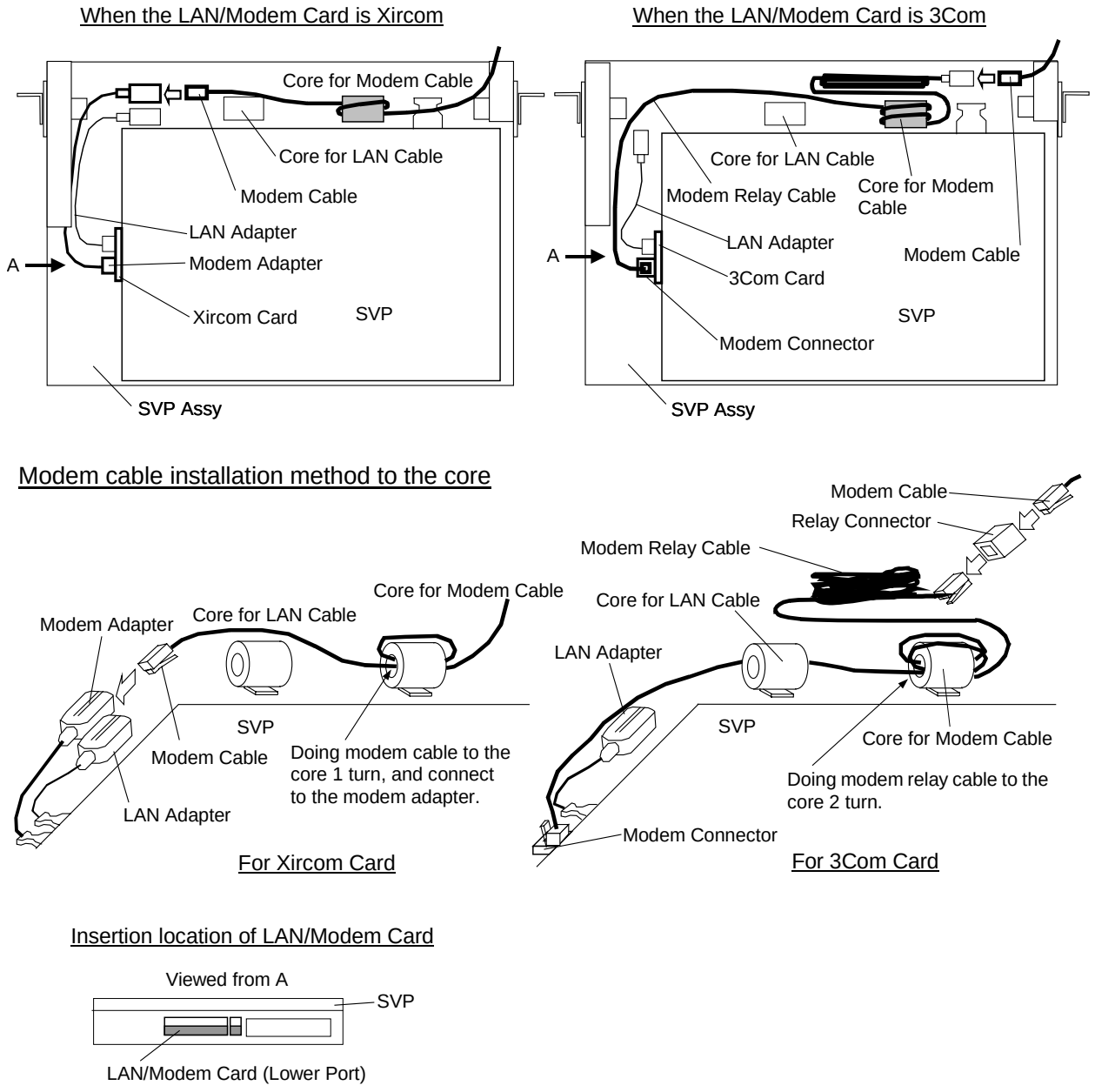

Fig. 3.17.1-5 How to Connect Modem Cable

11. Reinstall the covers by reversing the Steps 1 to 5 and 8 of the removal procedure.

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3.18 Installation of 256MB Additional Memory for SVP (DKC-F460I-256M)

Table 3.18-1 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKC-F460I-256M	Additional SVP Memory	5518055-A	1	
		LABEL		1	
		Nameplate(HP)	2105902-235	1	RSD
			2105903-335	1	HICAM
			2105903-435	1	HICEF

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3.18.1 Installation Procedure of 256MB Additional Memory for SVP

1. Open the front door and then open the DKC panel.

2. Turn the SVP Assy and turn off the power for the SVP.

3. Loosen the screw and open the SVP frame, and remove the lower SH box cover.
   (1) Open the SVP frame.
   SVP frame type1
   a. Remove the screw① and open the SVP frame.

   SVP frame type2
   a. Loosen the screw② and the SVP stopper is slide to the left.
   b. Open the SVP ASSY (Basic).
   c. Remove the screw③ and open the SVP frame.

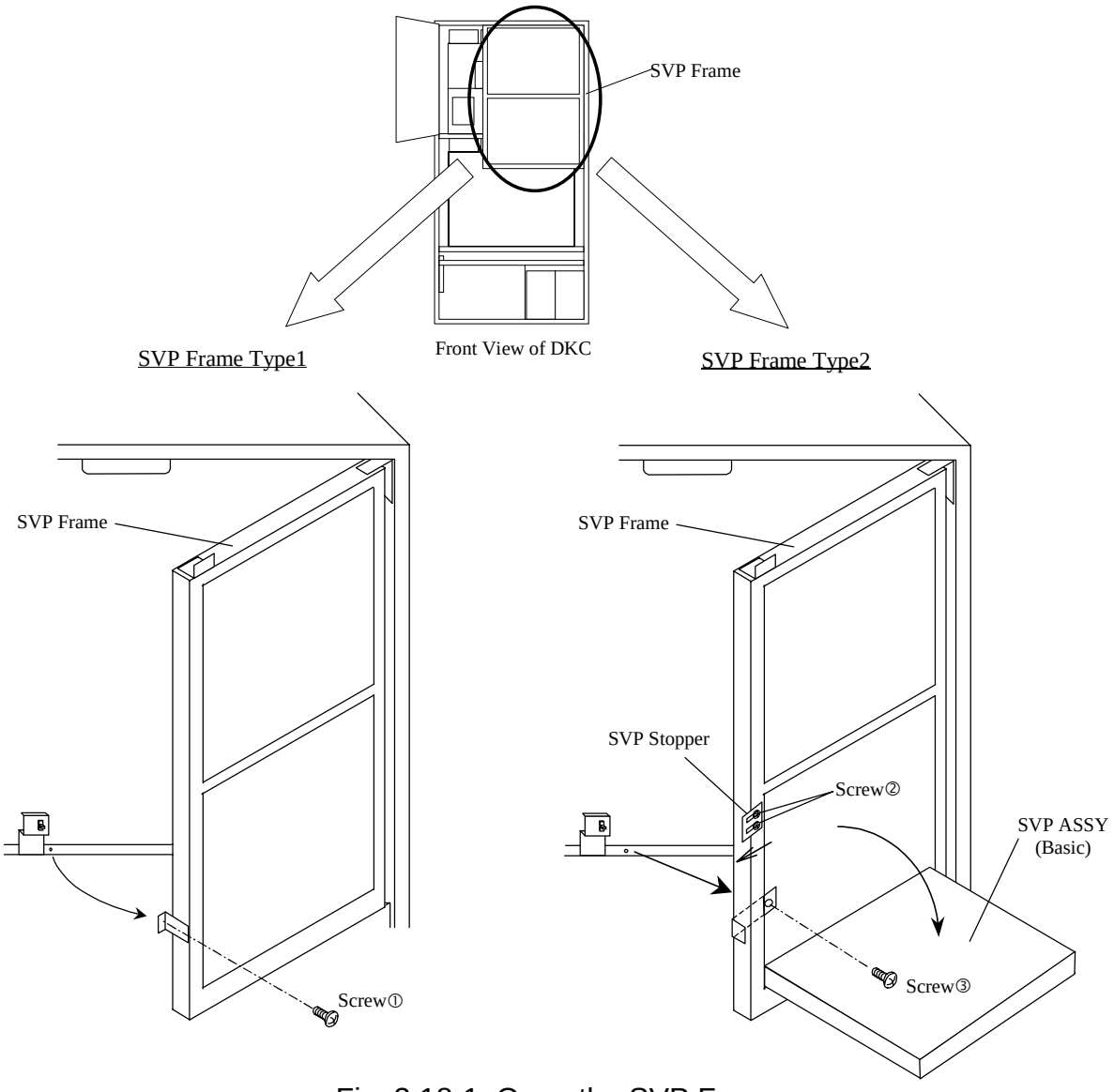

Fig. 3.18-1 Open the SVP Frame

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(2) Loosen the screws and remove the lower SH box covers.

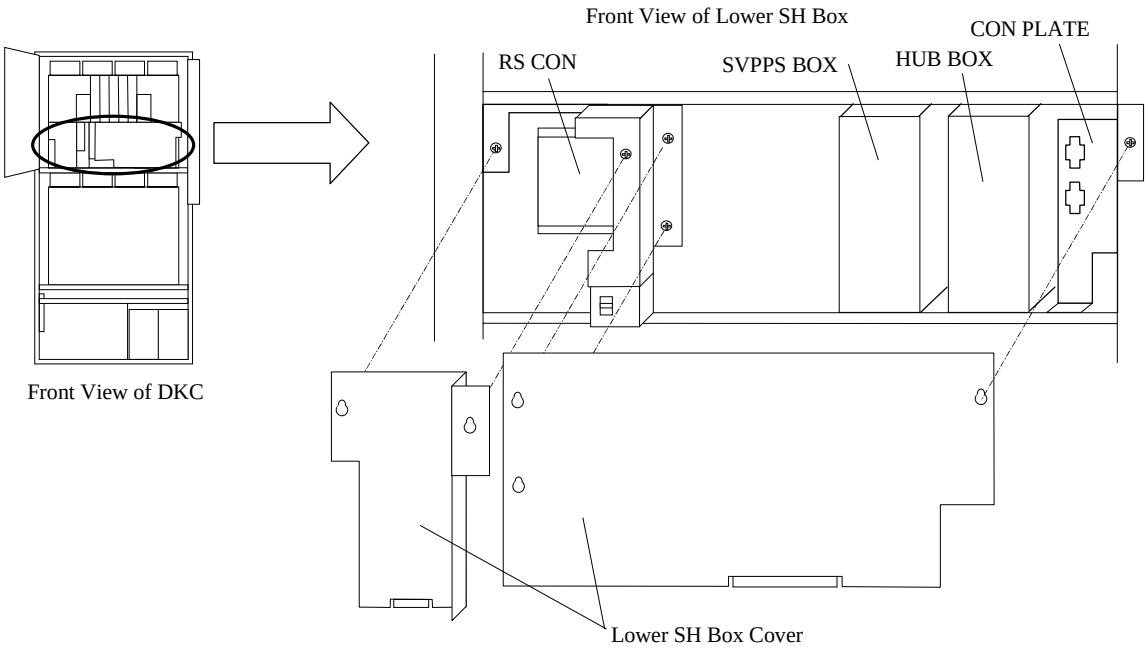

Fig. 3.18-2 Open the Lower SH Box Cover

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4. Insert the Jumper.

Replacement of Basic SVP ASSY

a. Insert the maintenance jumper into JP1 on the RS CON PCB.

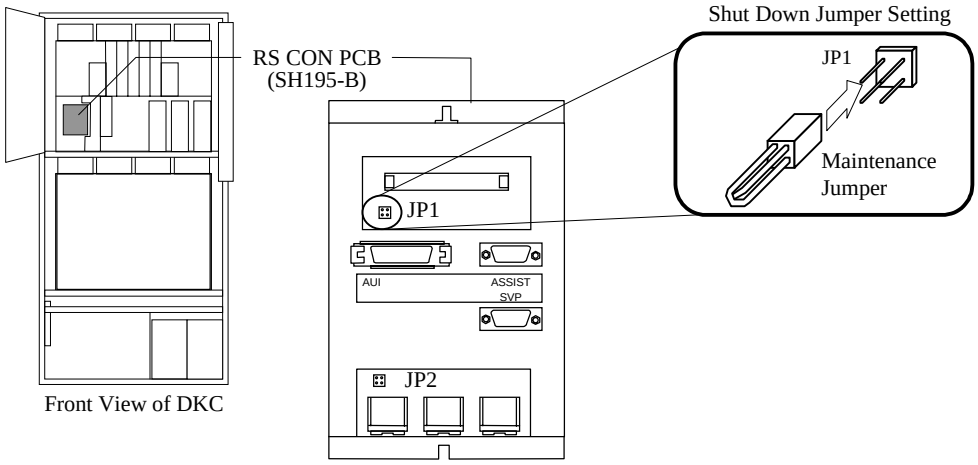

Fig. 3.18-3 Jumper settings of RS CON PCB

Replacement of Option SVP ASSY

a. Insert the maintenance jumper into PS SD on the SVPPS BOX.

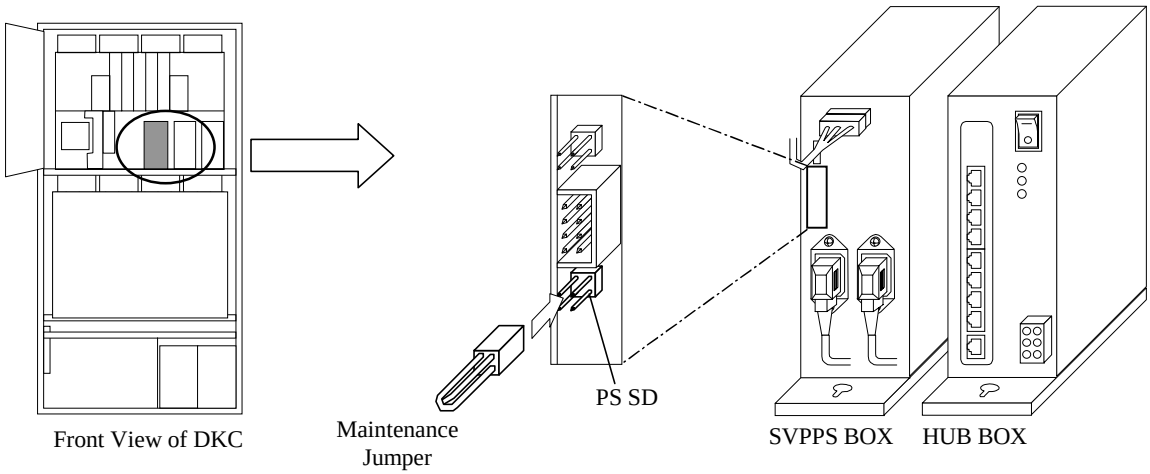

Fig. 3.18-4 Jumper settings of SVPPS BOX

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5. Remove the cables.

Additional Memory of Basic SVP

a. Disconnect the RS232C cable (RSVP-1) from the RS CON PCB.

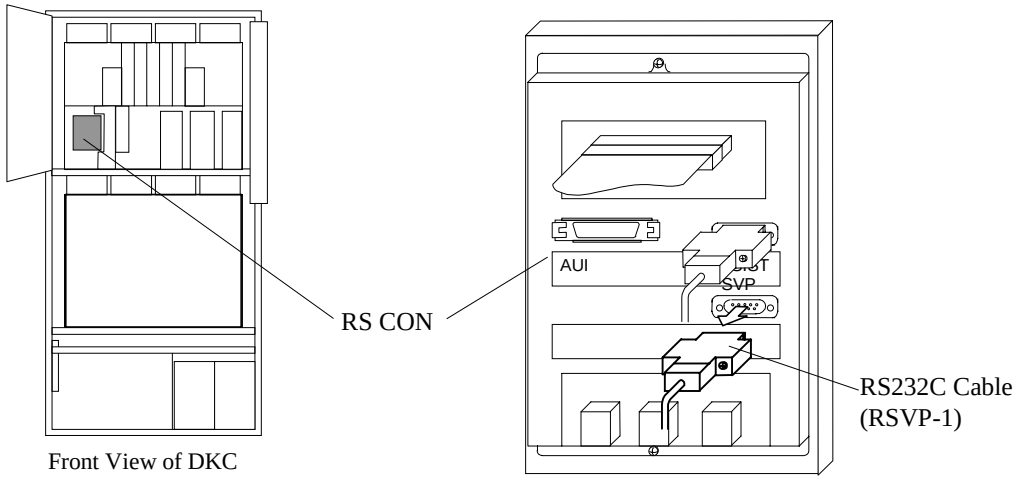

Fig. 3.18-5 Disconnection of RS232C Cable

b. Disconnect the LAN cable (LSVP-1) from the HUB BOX.
Disconnect the SVP PS cable (PSVP-1) from the CON PLATE.

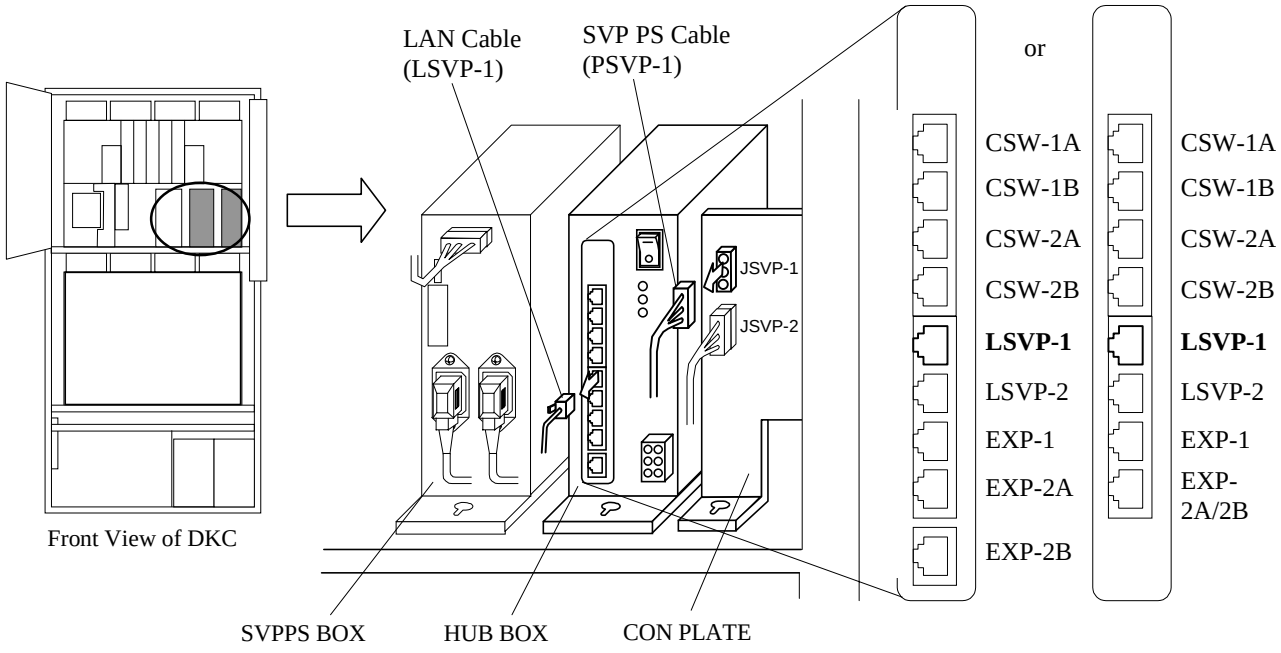

Fig. 3.18-6 Disconnection of LAN Cable and SVP-PS Cable

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c. Open the repeat binder and remove the cables.

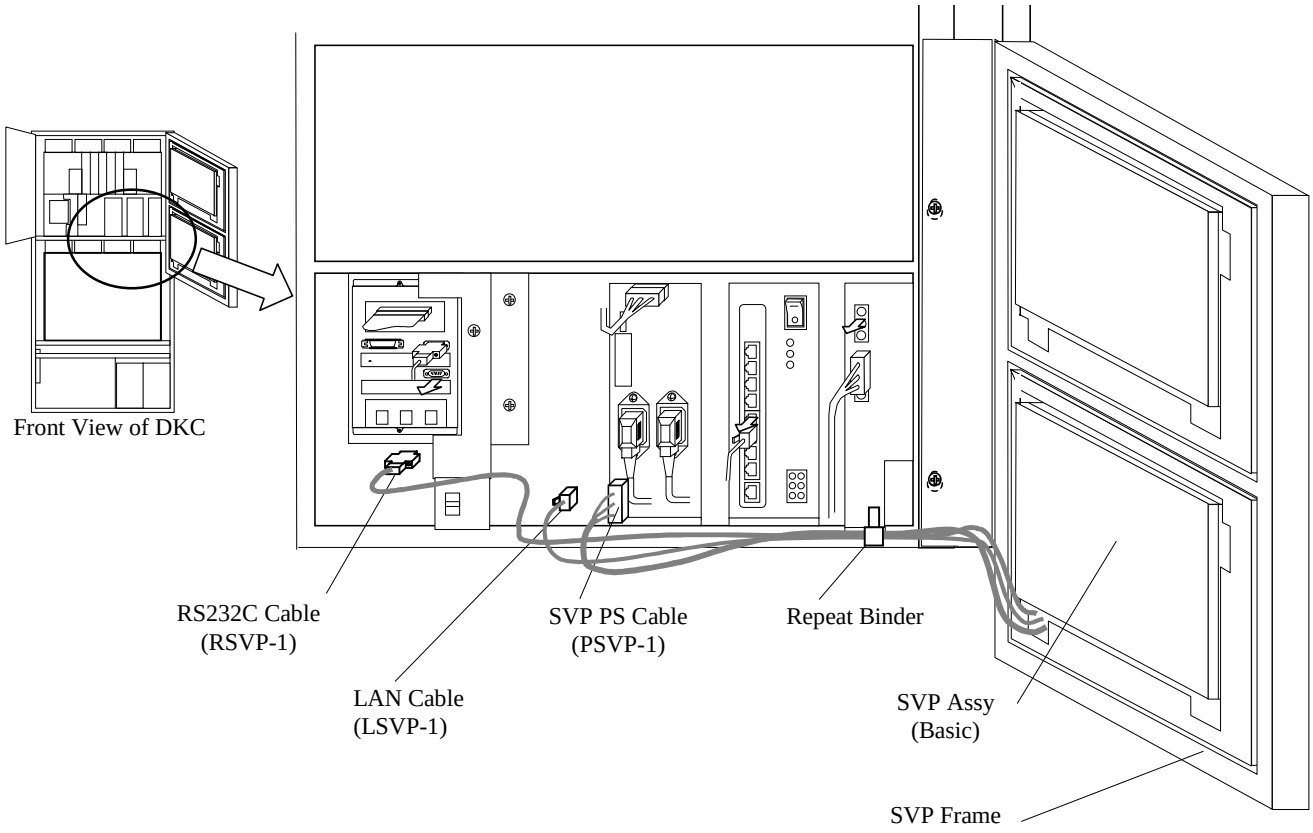

Fig. 3.18-7 Removal of Cables

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Additional Memory of Option SVP ASSY

a. Disconnect the RS232C cable (RSVP-2) from the RS CON PCB.

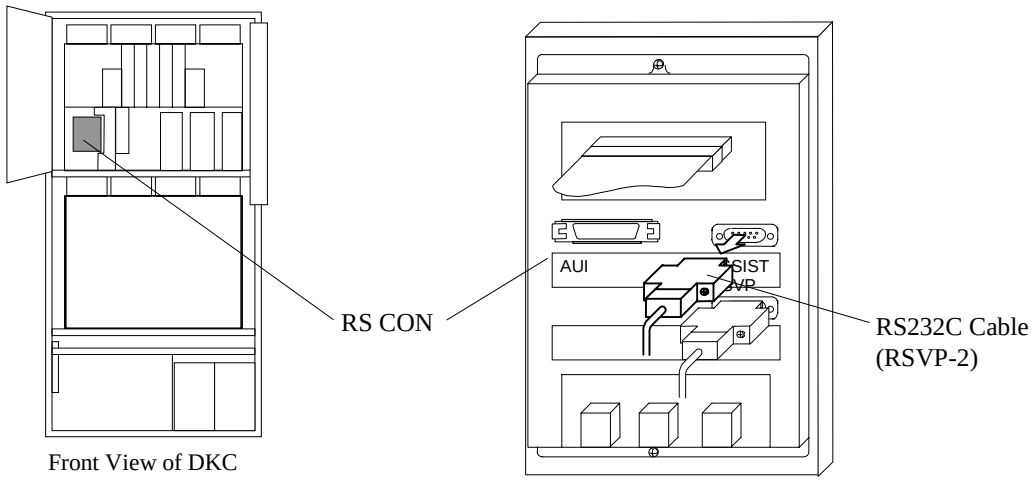

Fig. 3.18-8 Disconnection of RS232C Cable

b. Disconnect the LAN cable (LSVP-2) from the HUB BOX.
Disconnect the SVP PS cable (PSVP-2) from the CON PLATE.

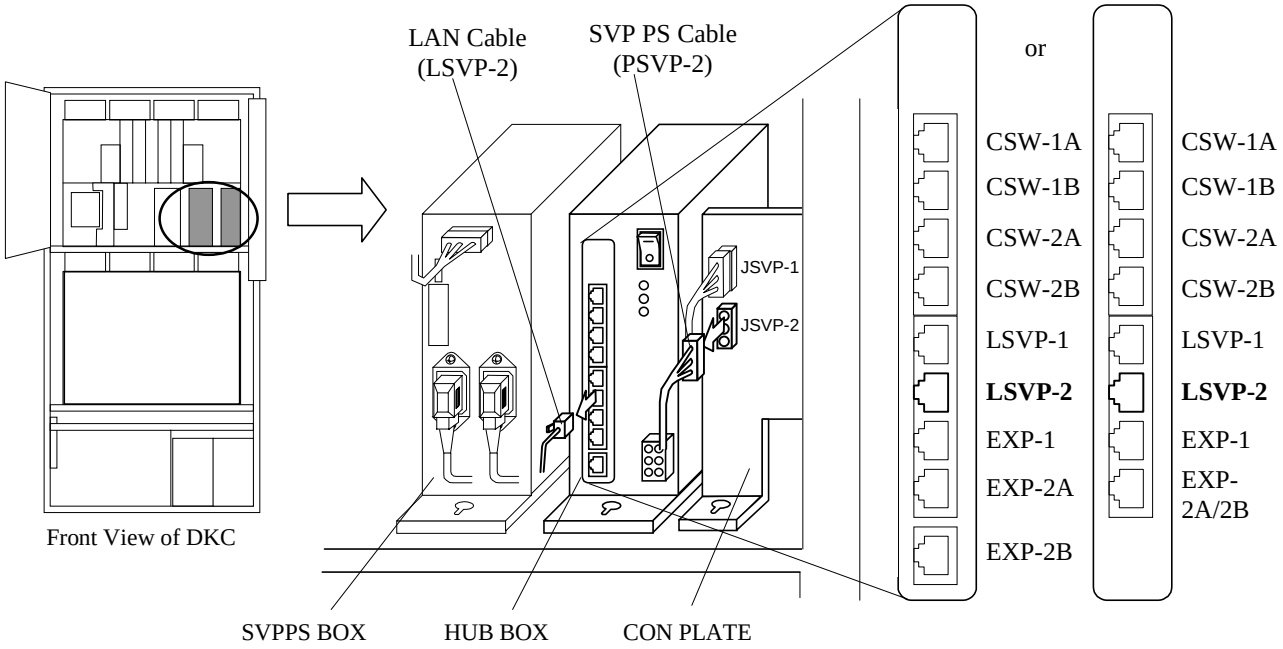

Fig. 3.18-9 Disconnection of LAN Cable and SVP PS Cable

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c. Open the repeat binder and remove the cables.

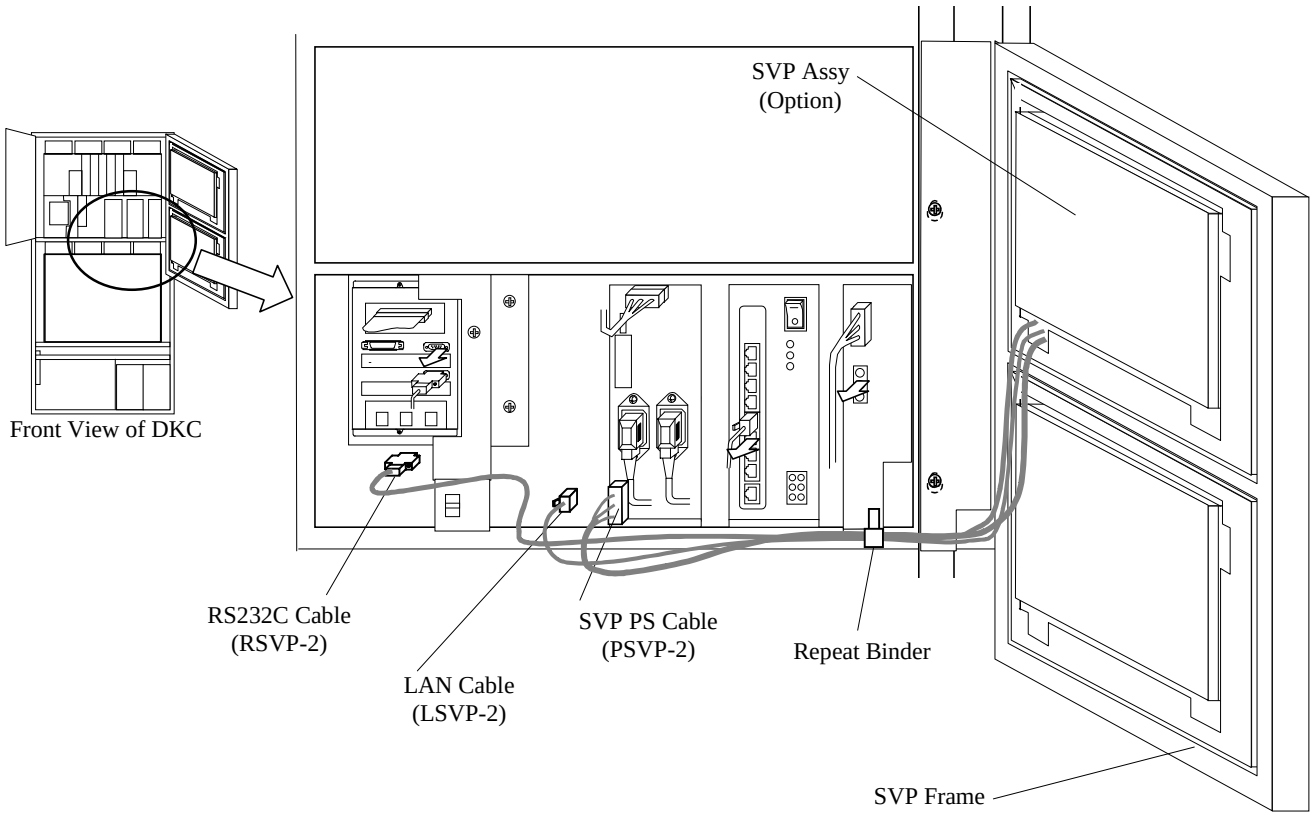

Fig. 3.18-10 Removal of Cables

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6. Remove the SVP cover.
   a. Close the SVP frame.
   b. Loosen the screws and remove the SVP cover.

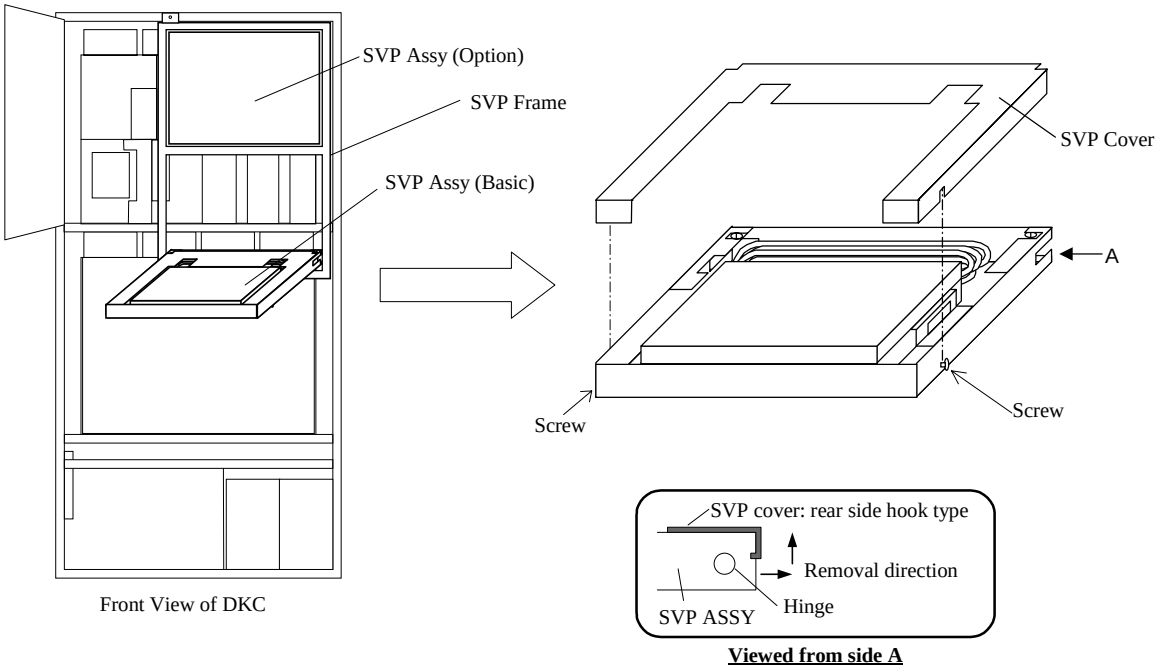

Fig. 3.18-11 Removing SVP cover

7. Loosen the screws and remove the stopper.
8. Pull out the SVP Assy.

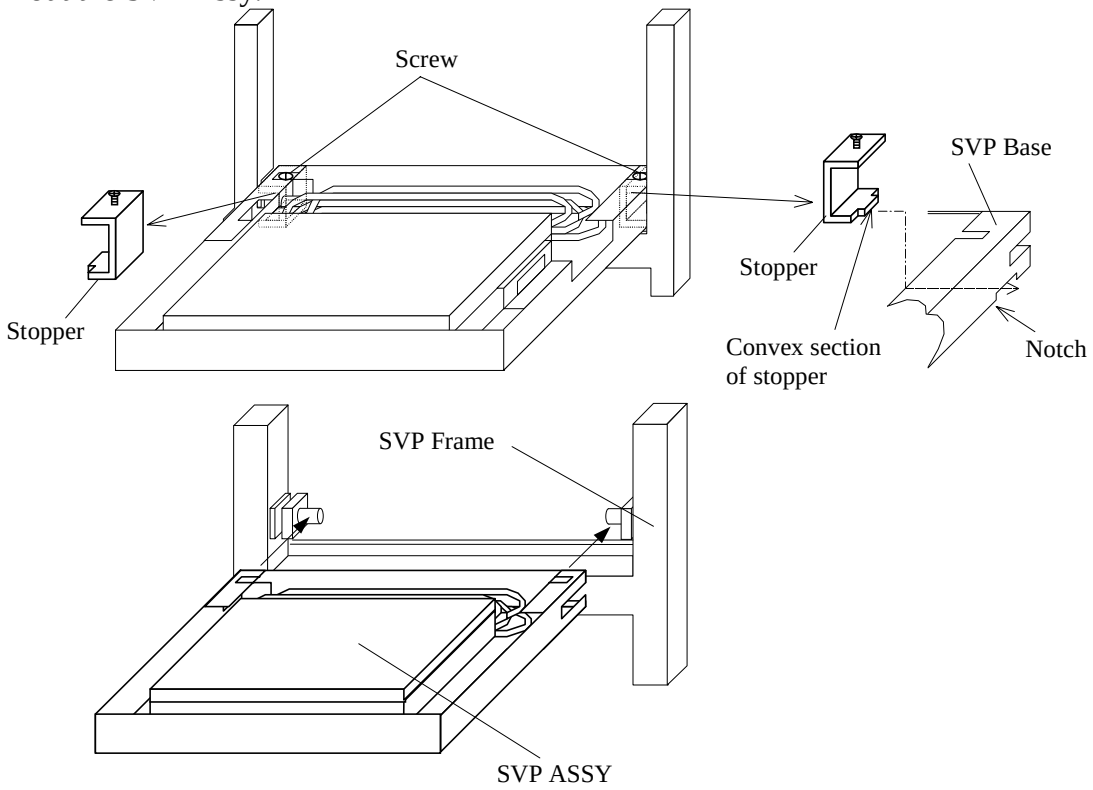

Fig. 3.18-12 Removing and installing the SVP Assy

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9. Remove the DC Cable and LAN Cable from the SVP.

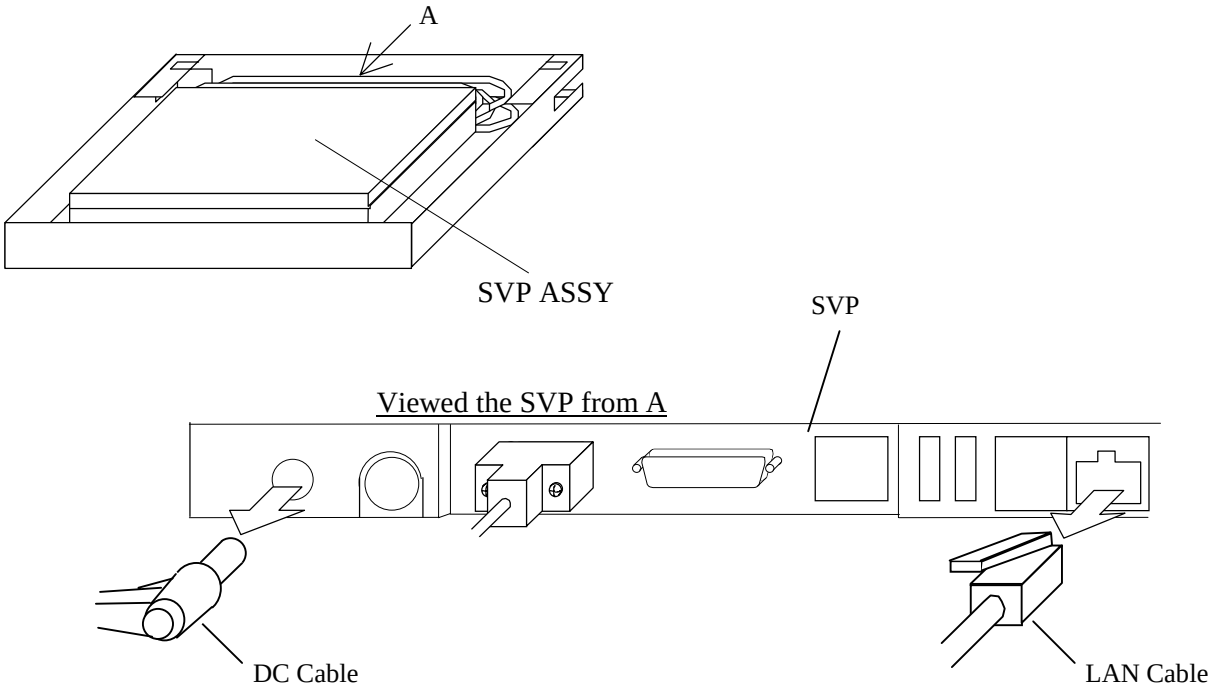

Fig. 3.18-13 Removing and installing Cables

10. Loosen the screws and remove the SVP stoppers.

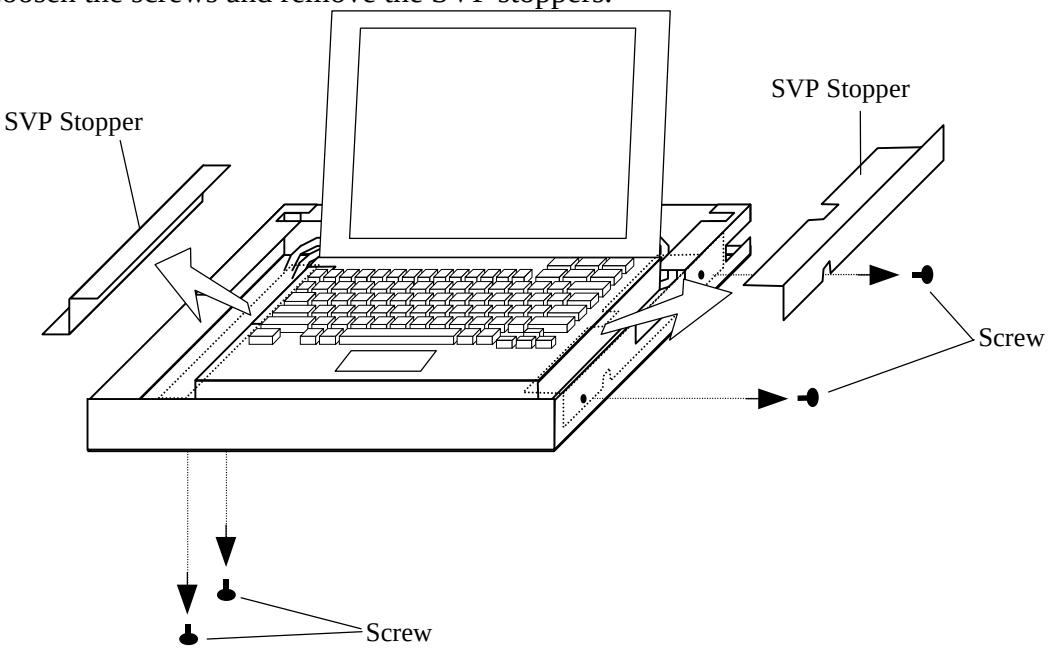

Fig. 3.18-14 Removing and installing the SVP Stoppers

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11. Remove the SVP and RS232C Cable.

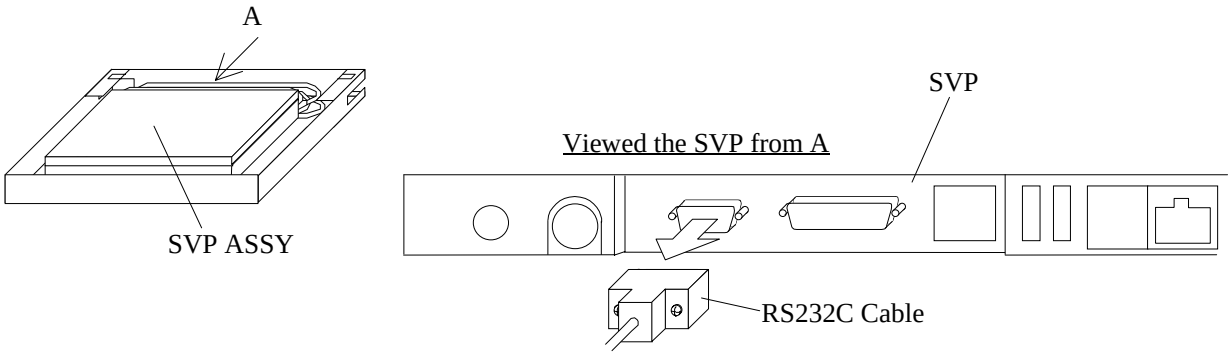

Fig. 3.18-15 Removing and installing RS232C Cable

12. Install the Memory module.
    a. Loosen the screw and remove the Memory cover.
    b. Insert the Memory module to the slot 2.
    c. Attach the Memory cover with screw.

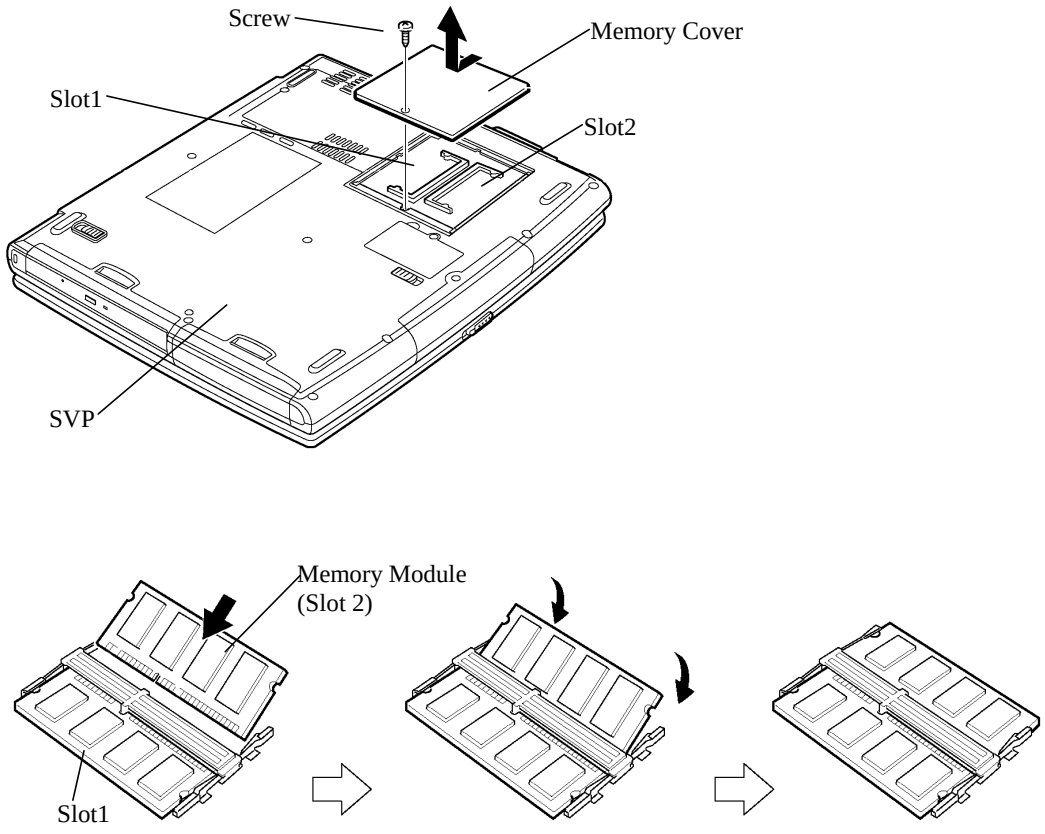

Fig. 3.18-16 Installing Memory Module

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13. Attach the Label.
    a. Attach the Label of “256MB”.

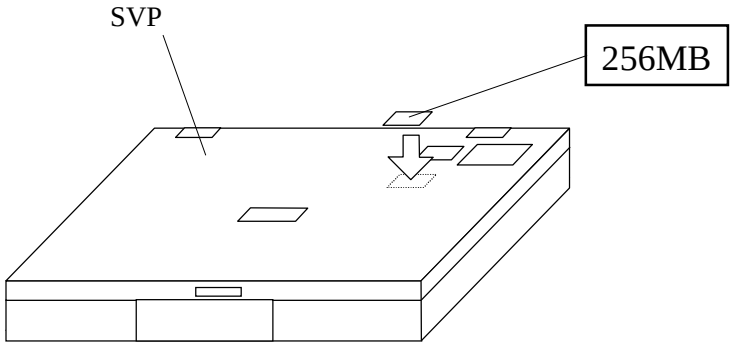

Fig. 3.18-17 Attachment of Label

14. Install a SVP.
    a. Attach the SVP and RS232C Cable. (See Fig. 3.18-15.)
    b. Install the SVP to the SVP ASSY and attach the SVP stoppers with screws. (See Fig. 3.18-14.)
    c. Connect the LAN cable and DC cable to the SVP. (See Fig. 3.18-13.)

15. Install a SVP Assy.
    a. Install the SVP to the SVP ASSY and attach the SVP stoppers with screws. (See Fig. 3.18-12.)
    b. Attach the SVP ASSY cables to the RS CON PCB, HUB BOX and CON PLATE. And then close the repeat binder. (See Fig. 3.18-7 and 3.18-10.)
    c. Attach the SVP cover. (See Fig. 3.18-11.)

16. Remove the Jumper.

Replacement of Basic SVP ASSY

a. Remove the maintenance jumper of the JP1 on the RS CON PCB. (See Fig. 3.18-3.)

Replacement of Option SVP ASSY

a. Remove the maintenance jumper of the PS SD on the SVPPS BOX. (See Fig. 3.18-4.)

17. Attach the nameplate.
    a. Attach the nameplate regardless of the model number from the left of the cover.

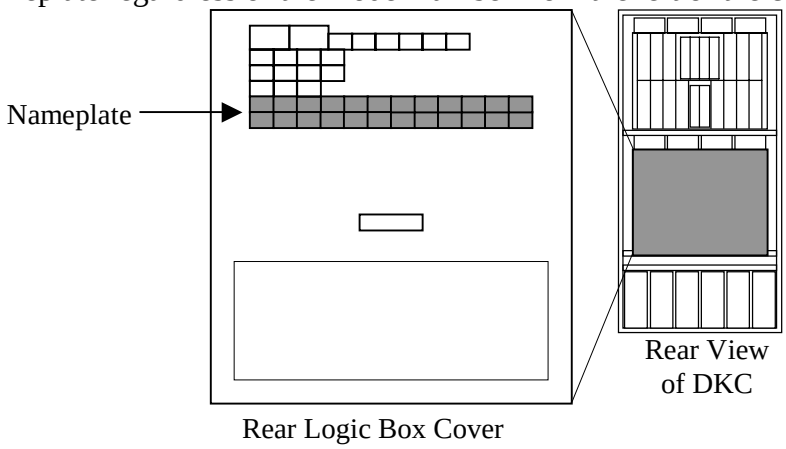

Fig. 3.18-18 Location of Nameplate

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3.19 DKU405I Connection

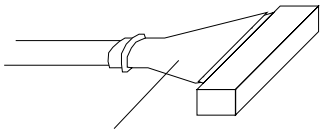
3.19.1 Installation and De-installation procedure

New Installation Procedure General Flow

Notice:

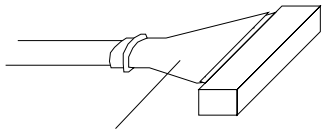
- The DEV interface cable for the DKU405I is different from the DEV interface cable for the DKU455I. When connecting the cable, use the right one by checking a color of the protector of it.

Cable (between DKC460I and DKU405I)



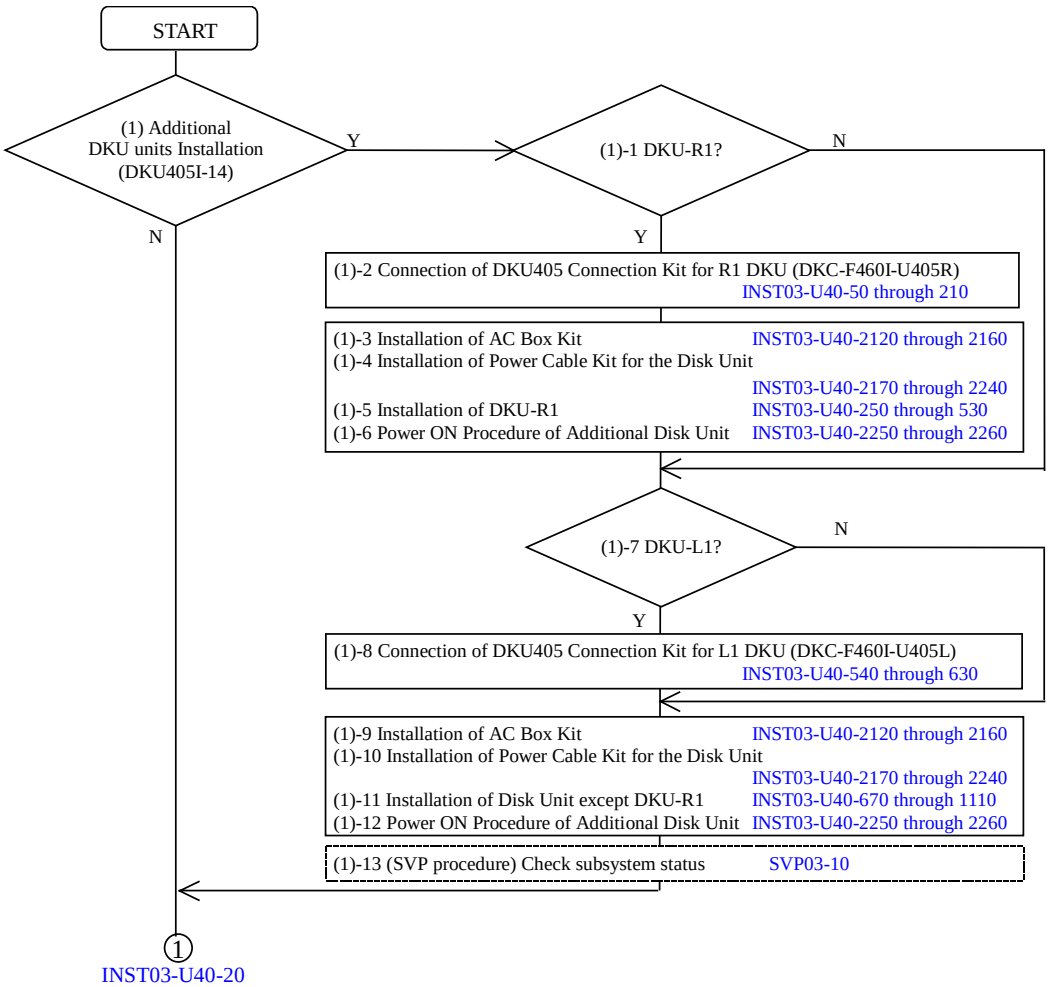
Protector (**Transparent Blue**)

Cable (between DKC460I and DKU455I)



Protector (**Black**)

- The number of phases (three or single) of the AC Box Kit (DKU-F4051-1PS/3PS) to be added to the DKU frame must be the same as that of the AC Box which is already installed in the subsystem. Check if the AC Box Kit to be added is the correct optional component.
- The DKU405I to be added must hare B4 BOX fully installed.



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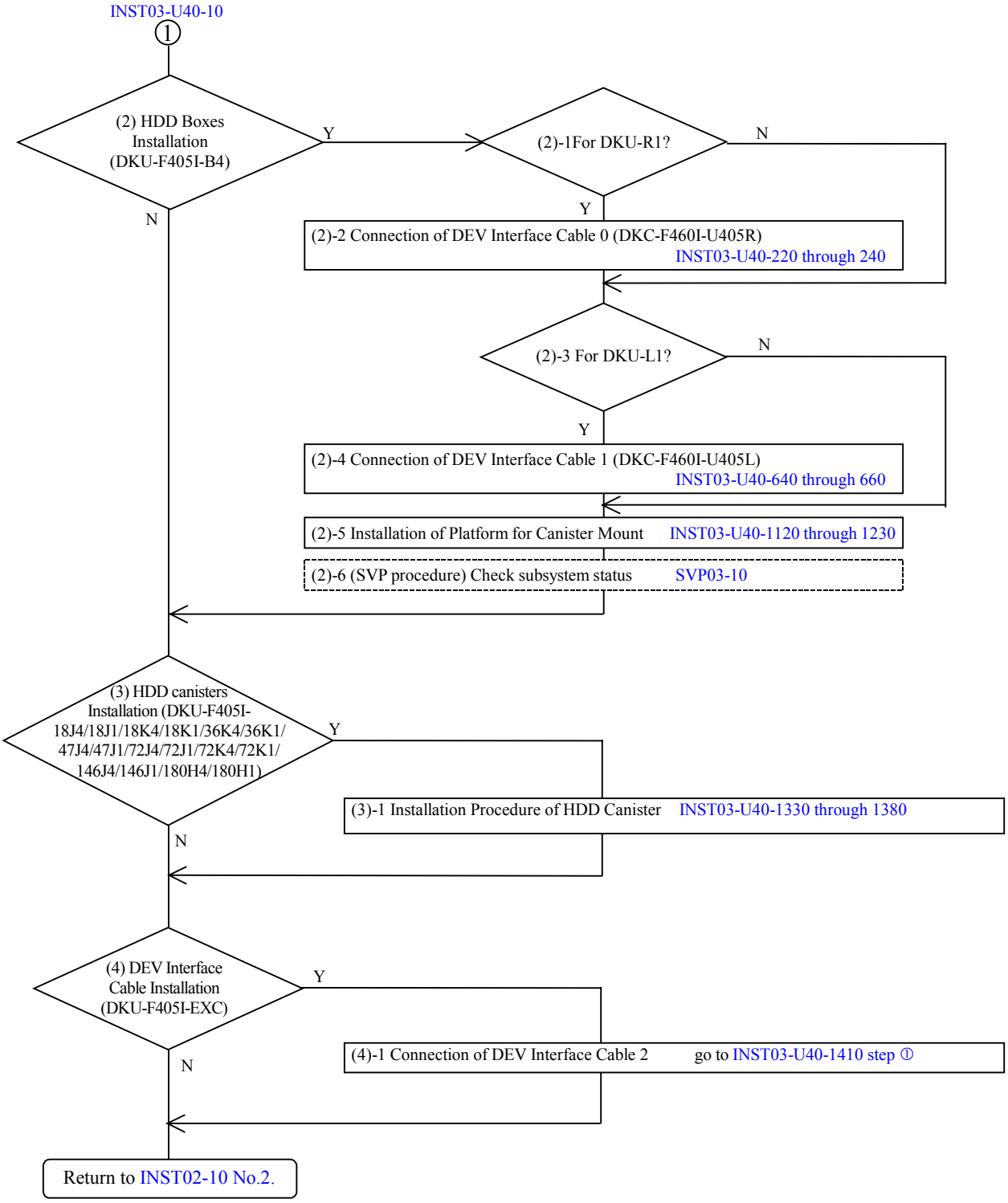

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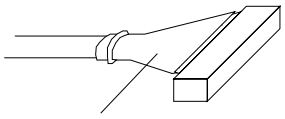
Non-Disruptive Installation Procedure General Flow

Notice:

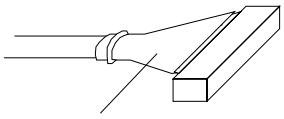
- The DEV interface cable for the DKU405I is different from the DEV interface cable for the DKU455I. When connecting the cable, use the right one by checking a color of the protector of it.

Cable (between DKC460I and DKU405I)



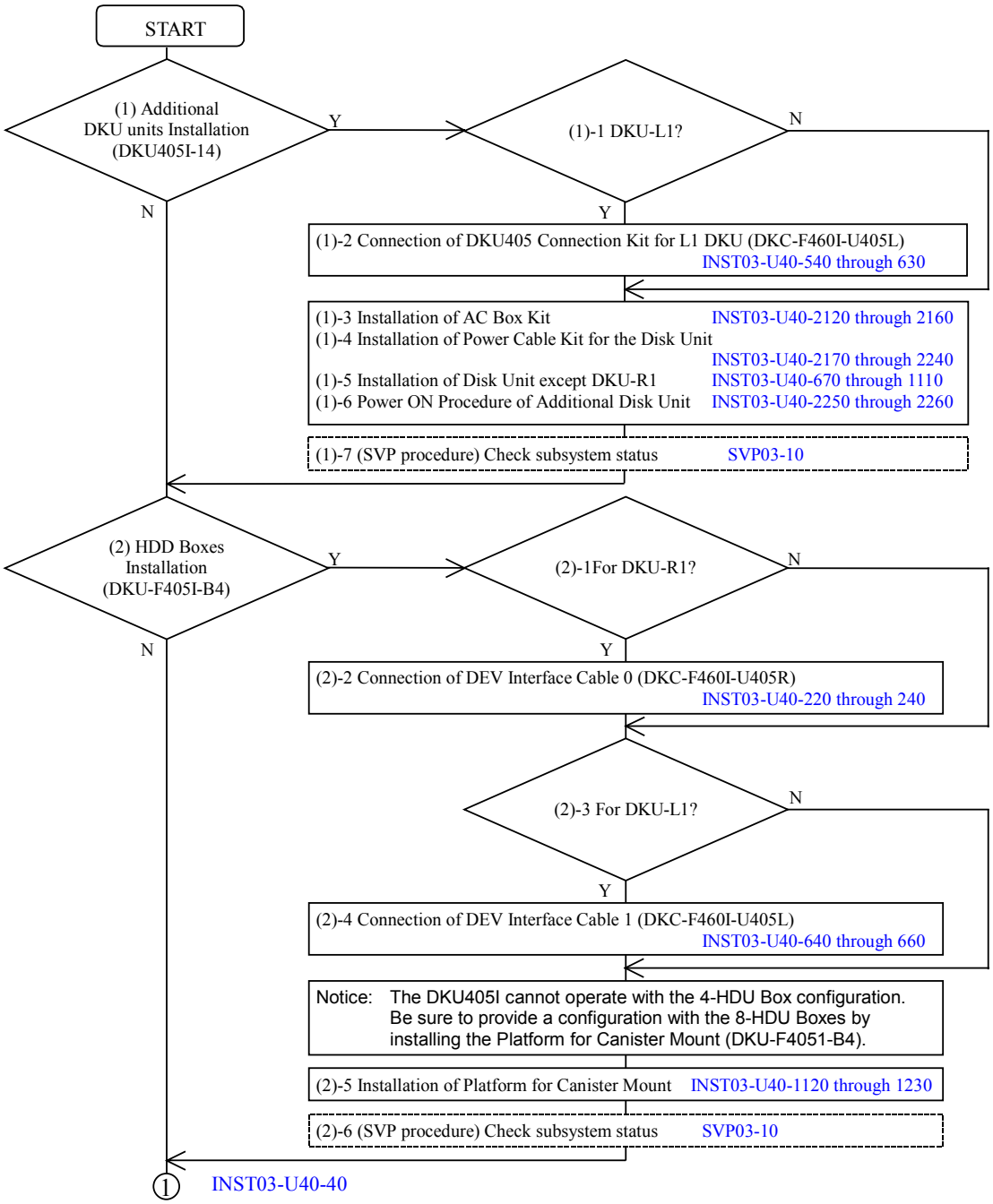
Protector (**Transparent Blue**)

Cable (between DKC460I and DKU455I)



Protector (**Black**)

- The number of phases (three or single) of the AC Box Kit (DKU-F4051-1PS/3PS) to be added to the DKU frame must be the same as that of the AC Box which is already installed in the subsystem. Check if the AC Box Kit to be added is the correct optional component.



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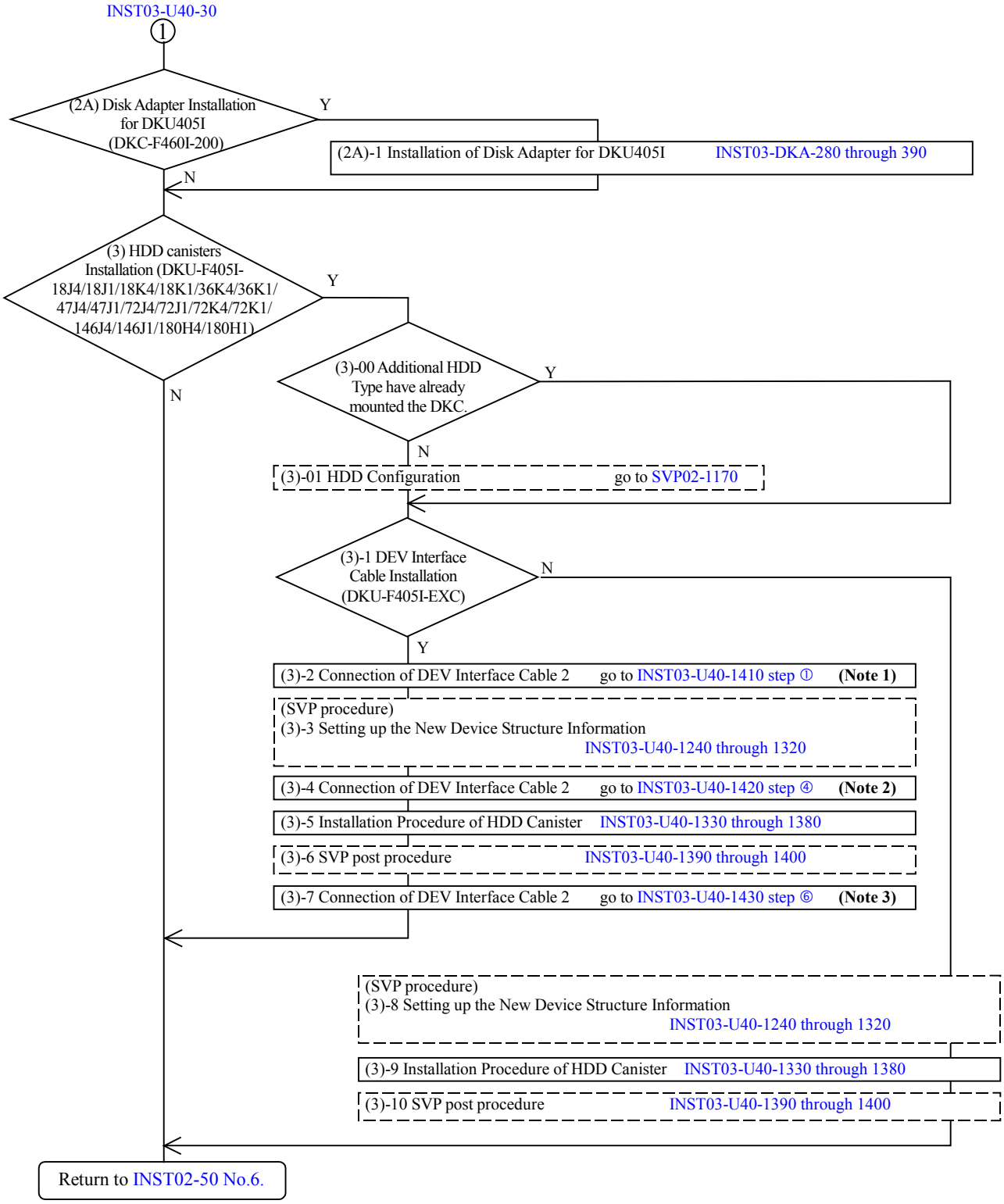

(Note 1) Connect the DEV interface cable only with installed Disk Unit (DKU405I-14) or Platform for Canister Mount (DKU-F405I-B4).
* In this step, do not connect the DEV interface cable with operating DKU.
(Note 2) Connect the DEV interface cable with operating DKU.
(Note 3) Attach the cable covers for DEV interface cable.

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3.19.2 Installation of DKU405 Connection Kit for R1 DKU (DKC-F460I-U405R)

Table 3.19.2-1 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKC-F460I-U405R	Socket Bolt(M8)	3261899-840	2	
		Nut(M8)	NF008N	2	
		Washer(M8)	WP008N	4	
		Socket Bolt (M6)	5518385-2	1	Hexagon Socket Head Bolt (M6×56)
		Plate (Nut)	5518384-1	1	
		LL Washer	2051001-612	1	
		Bind Screw	3183101-1	4	
		Bracket Cover ASSY	3265694-A	1	
		SH305-A P/K ASSY	5513985-A	2	MONI-CON
		Locking Clamp	3183016-4	5	
		Repeat Binder	5409042-2	2	140mm
		Repeat Binder	5409042-3	12	250mm
		Conductive Sheet	5510573-2	1	1000mm
		Cable ASSY (DKUMN)	5485589-627	1	
		Cable ASSY (DKUMN)	5485589-629	1	
		Cable ASSY (Fibre-U405R)	3264185-A	1	1R-B1A/B1B – 0R-P501/P503
		Cable ASSY (Fibre-U405R)	3264185-B	1	1R-B2A/B2B – 1R-P501/P503
		Cable ASSY (Fibre-U405R)	3264185-C	1	1R-B3A/B3B – 2R-P501/P503
		Cable ASSY (Fibre-U405R)	3264185-D	1	1R-B4A/B4B – 3R-P501/P503
		Cable ASSY (Fibre-U405R)	3264185-E	1	1R-C1A/C1B – 4R-P501/P503
		Cable ASSY (Fibre-U405R)	3264185-F	1	1R-C2A/C2B – 5R-P501/P503
		Cable ASSY (Fibre-U405R)	3264185-G	1	1R-C3A/C3B – 6R-P501/P503
		Cable ASSY (Fibre-U405R)	3264185-H	1	1R-C4A/C4B – 7R-P501/P503
		Cable ASSY (Fibre-U405R)	3264185-J	1	2R-H1A/H1B – 0L-P501/P503
		Cable ASSY (Fibre-U405R)	3264185-K	1	2R-H2A/H2B – 1L-P501/P503
		Cable ASSY (Fibre-U405R)	3264185-L	1	2R-H3A/H3B – 2L-P501/P503
		Cable ASSY (Fibre-U405R)	3264185-M	1	2R-H4A/H4B – 3L-P501/P503
		Cable ASSY (Fibre-U405R)	3264185-N	1	2R-J1A/J1B – 4L-P501/P503
		Cable ASSY (Fibre-U405R)	3264185-P	1	2R-J2A/J2B – 5L-P501/P503

(To be continued)

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(Continued from the preceding page)

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKC-F460I-U405R	Cable ASSY (Fibre-U405R)	3264185-Q	1	2R-J3A/J3B – 6L-P501/P503
		Cable ASSY (Fibre-U405R)	3264185-R	1	2R-J4A/J4B – 7L-P501/P503
		Nameplate (HDS)	2105902-124	1	RSD

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1. Removal of Cable Covers
   a. Remove the Front Logic Box cover from the DKC. (Refer to INST03-COM-10.)
   b. Remove the two screws and open the cable cover.

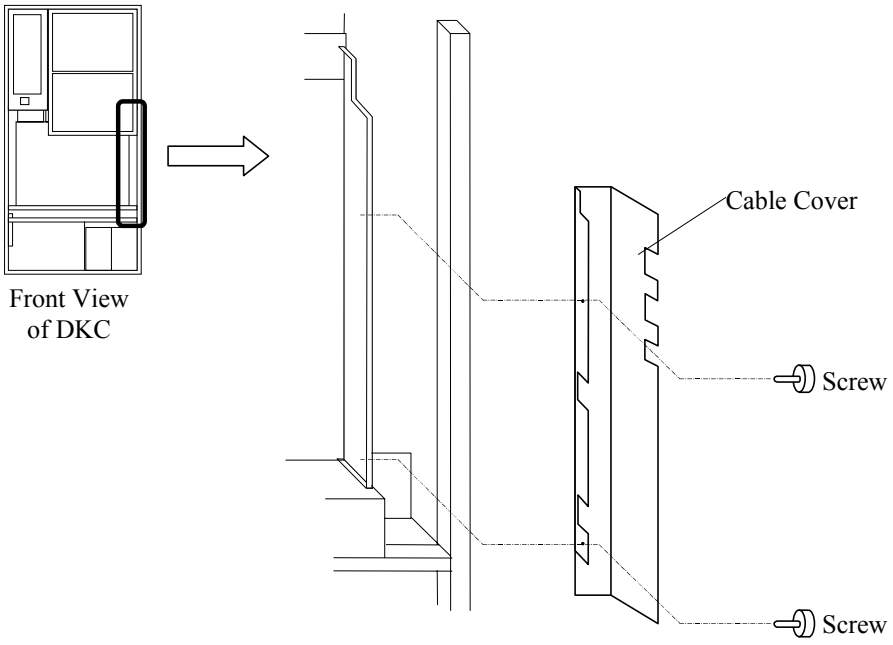

Fig. 3.19.2-1 Removal of Cable Cover

   c. Remove the Rear Logic Box cover and Rear PS Box cover. (Refer to INST03-COM-20 through 30.)
   d. Remove the three screws and remove the cable cover.

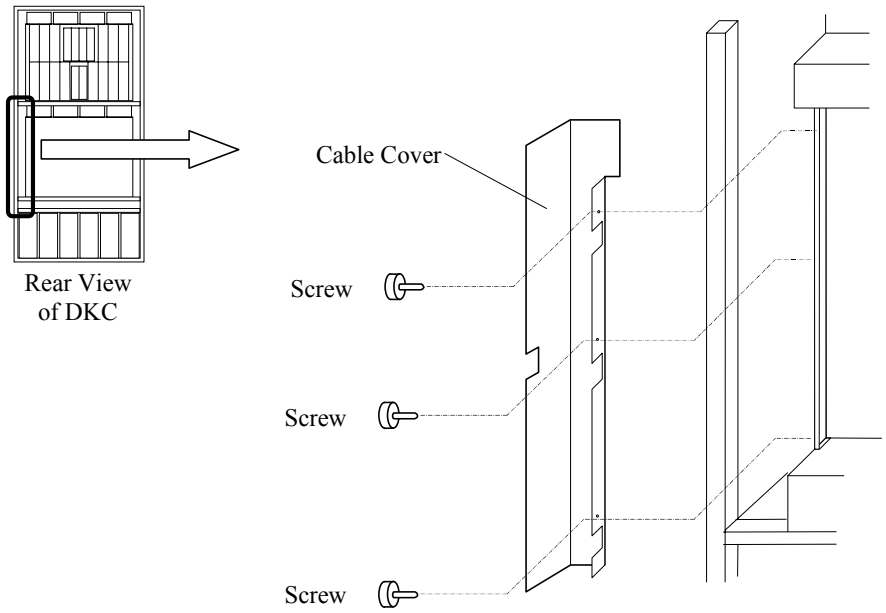

Fig. 3.19.2-2 Removal of Cable Cover

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e. Remove the two screws and remove the cable cover.

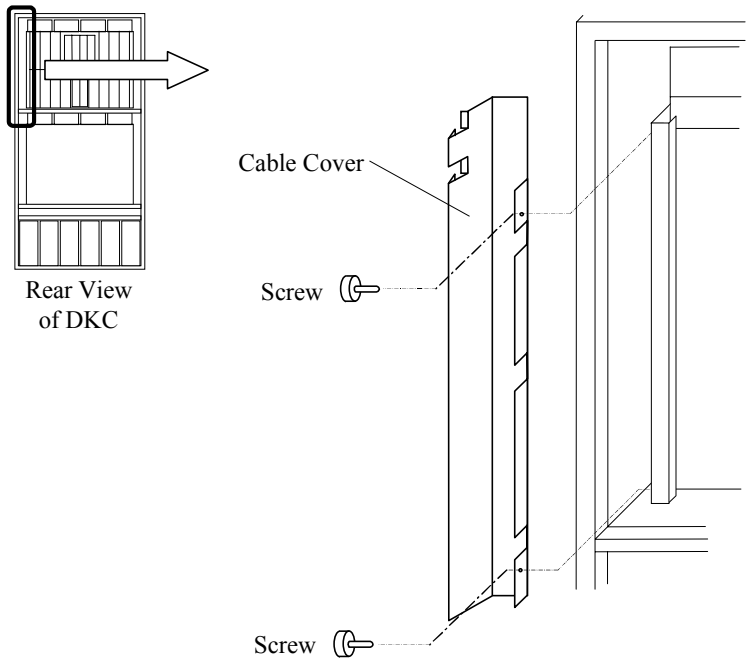

Fig. 3.19.2-3 Removal of Cable Cover

f. Remove the three screws and remove the cable cover.

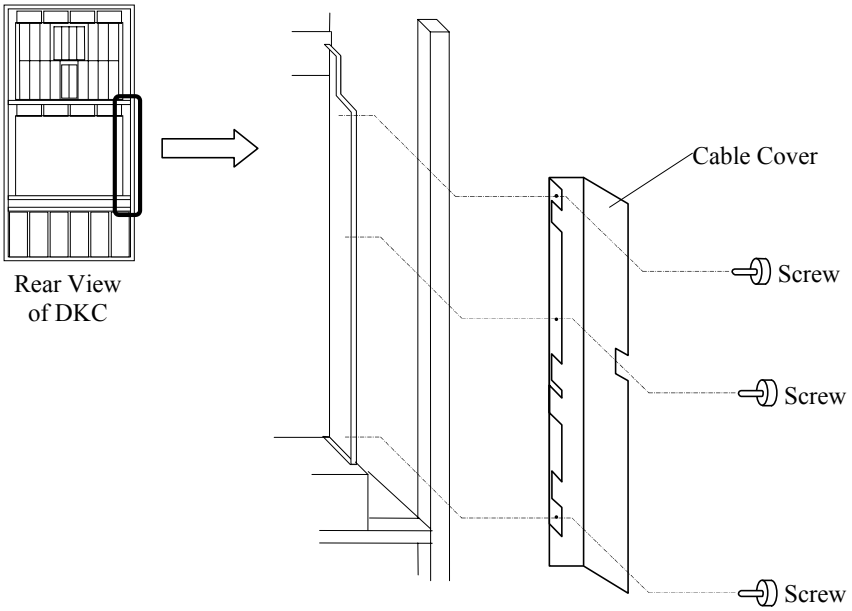

Fig. 3.19.2-4 Removal of Cable Cover

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g. Loosen the ten screws and remove the two brackets.

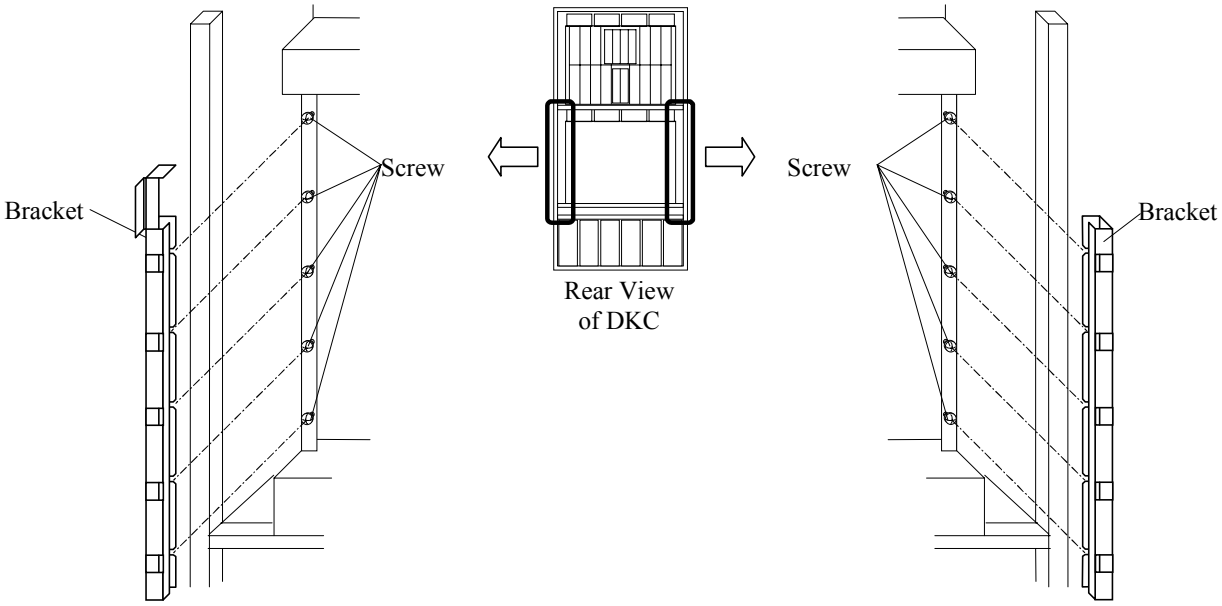

Fig. 3.19.2-5 Removal of Brackets

h. Loosen the four screws and remove the cable cover.

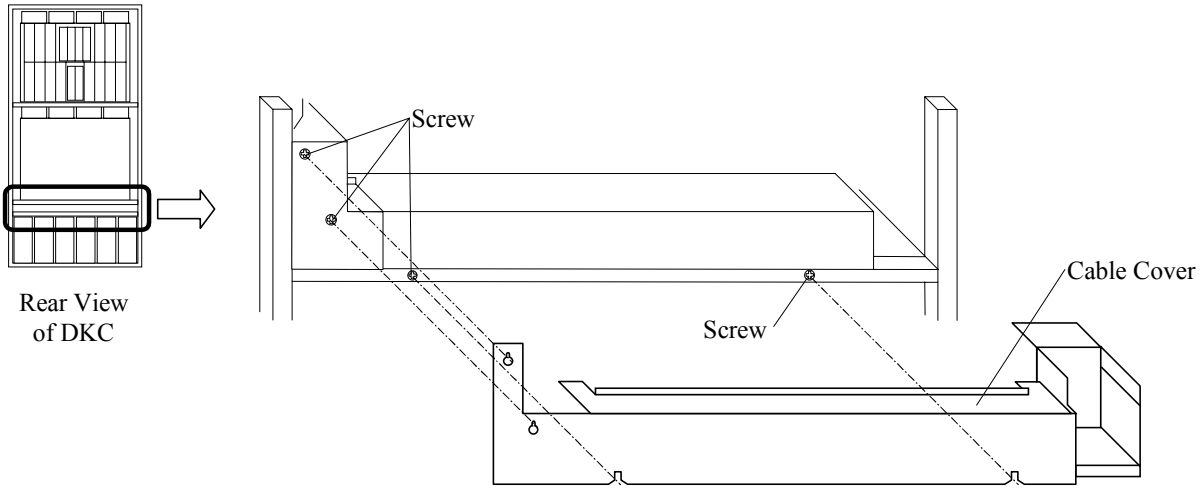

Fig. 3.19.2-6 Removal of Cable Cover

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i. Stick the new conductive sheets on the existent conductive sheets. When the conductive sheets are already stuck doubly, go to step j.

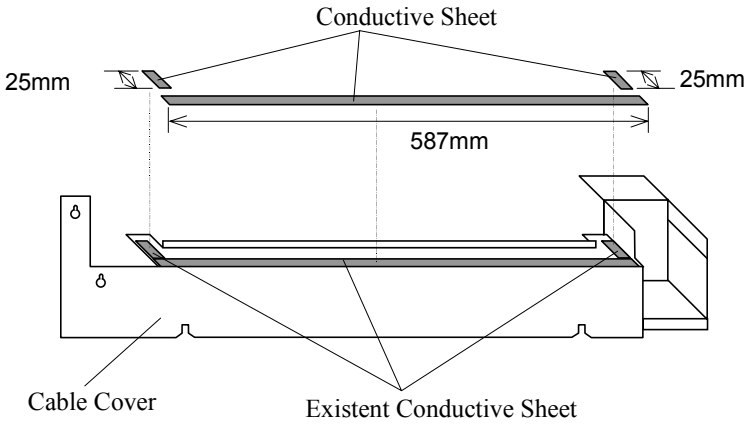

Fig. 3.19.2-6A Attachment of Conductive Sheets

j. Loosen the screw and remove the cable cover.

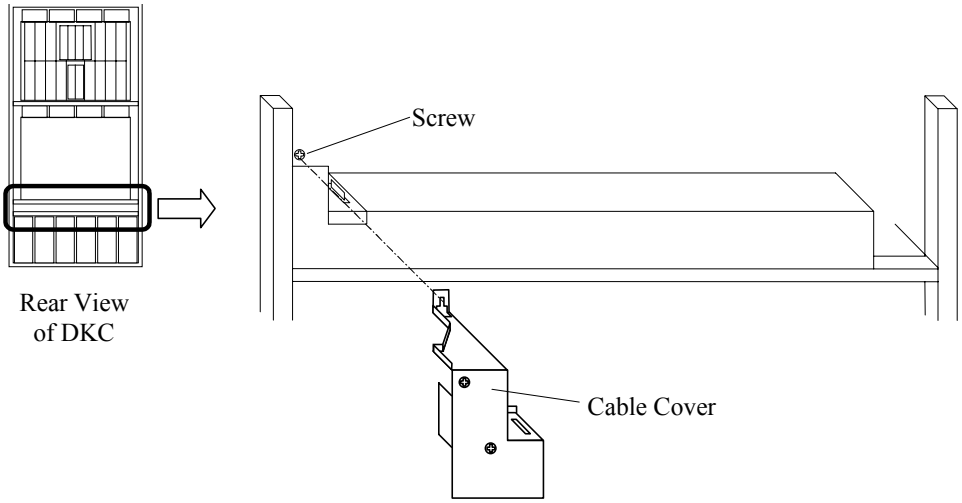

Fig. 3.19.2-7 Removal of Cable Cover

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k. Loosen the four screws and remove the cable cover.

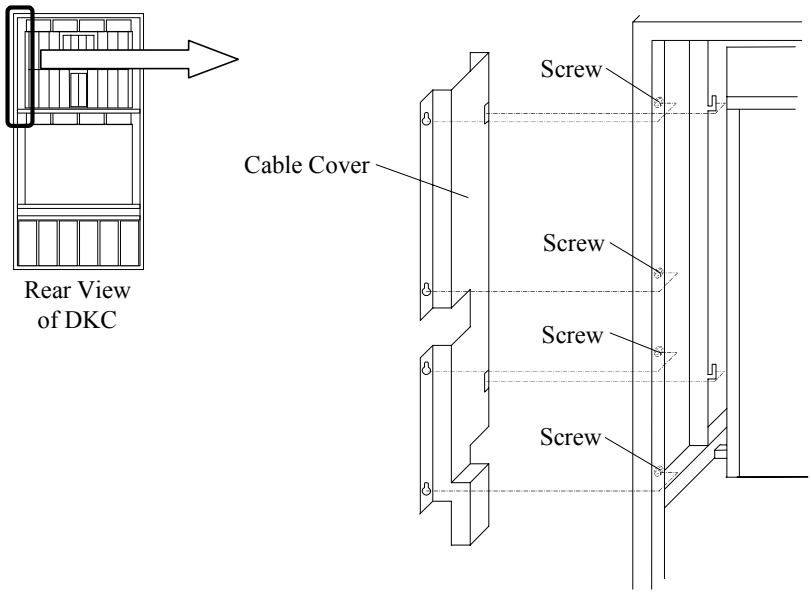

Fig. 3.19.2-8 Removal of Cable Cover

m. Loosen the three screws and remove the cable cover.

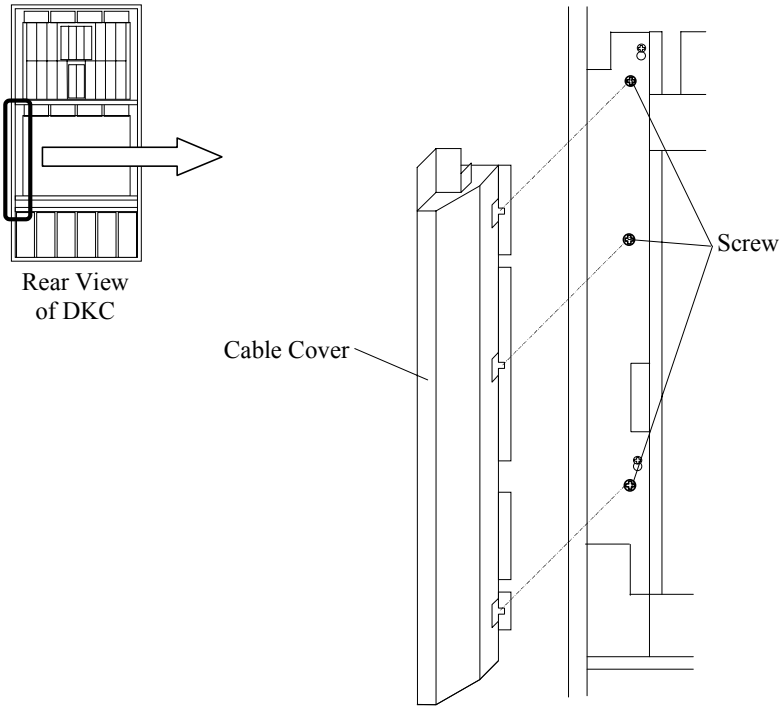

Fig. 3.19.2-9 Removal of Cable Cover

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n. Loosen the three screws and remove the cable cover.

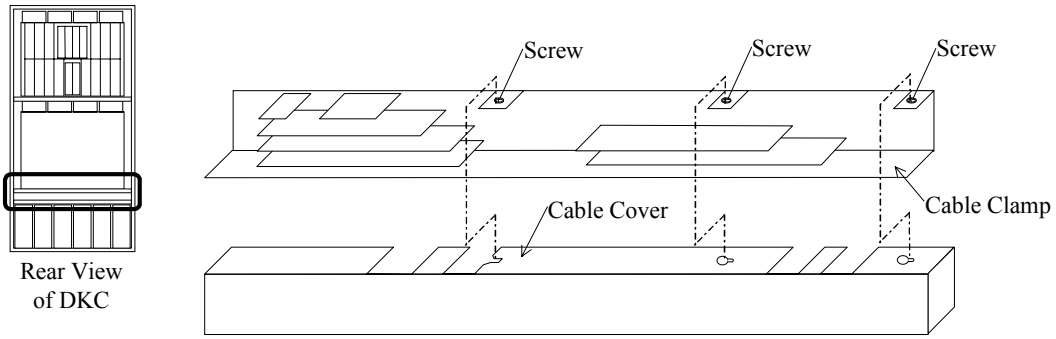

Fig. 3.19.2-10 Disconnection of Cables

p. Remove the two screws and remove the cable duct cover.

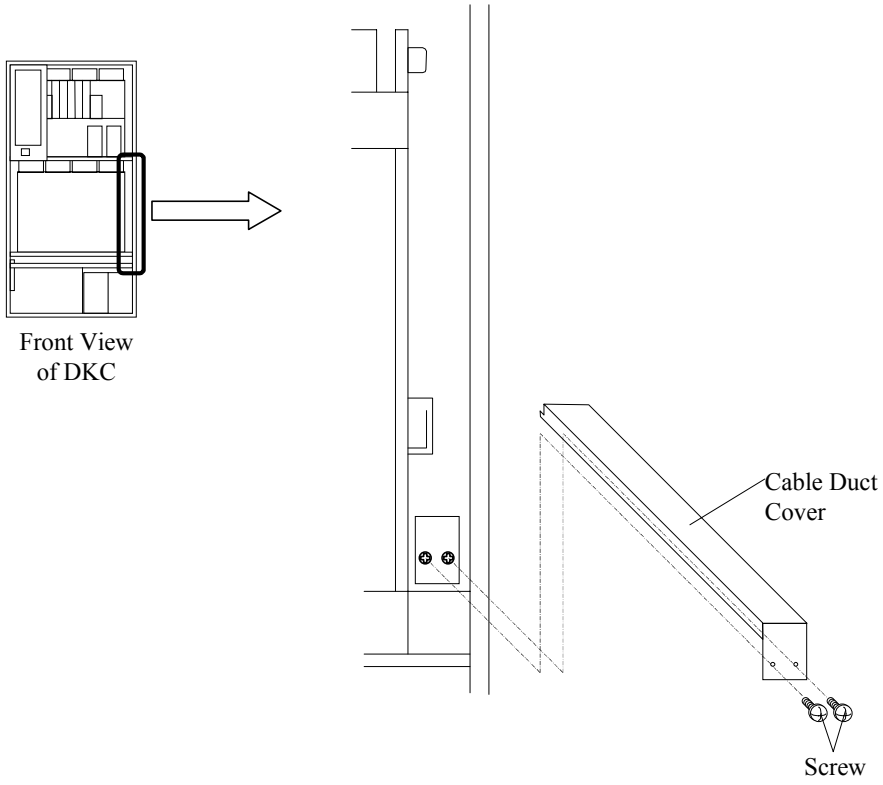

Fig. 3.19.2-11 Removal of Cable Duct Cover

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q. Loosen the two screws ① and remove the Upper SH Box covers.
r. Loosen the five screws ② and remove the Lower SH Box covers.
s. Loosen the four screws ③ and remove the SH side plates.

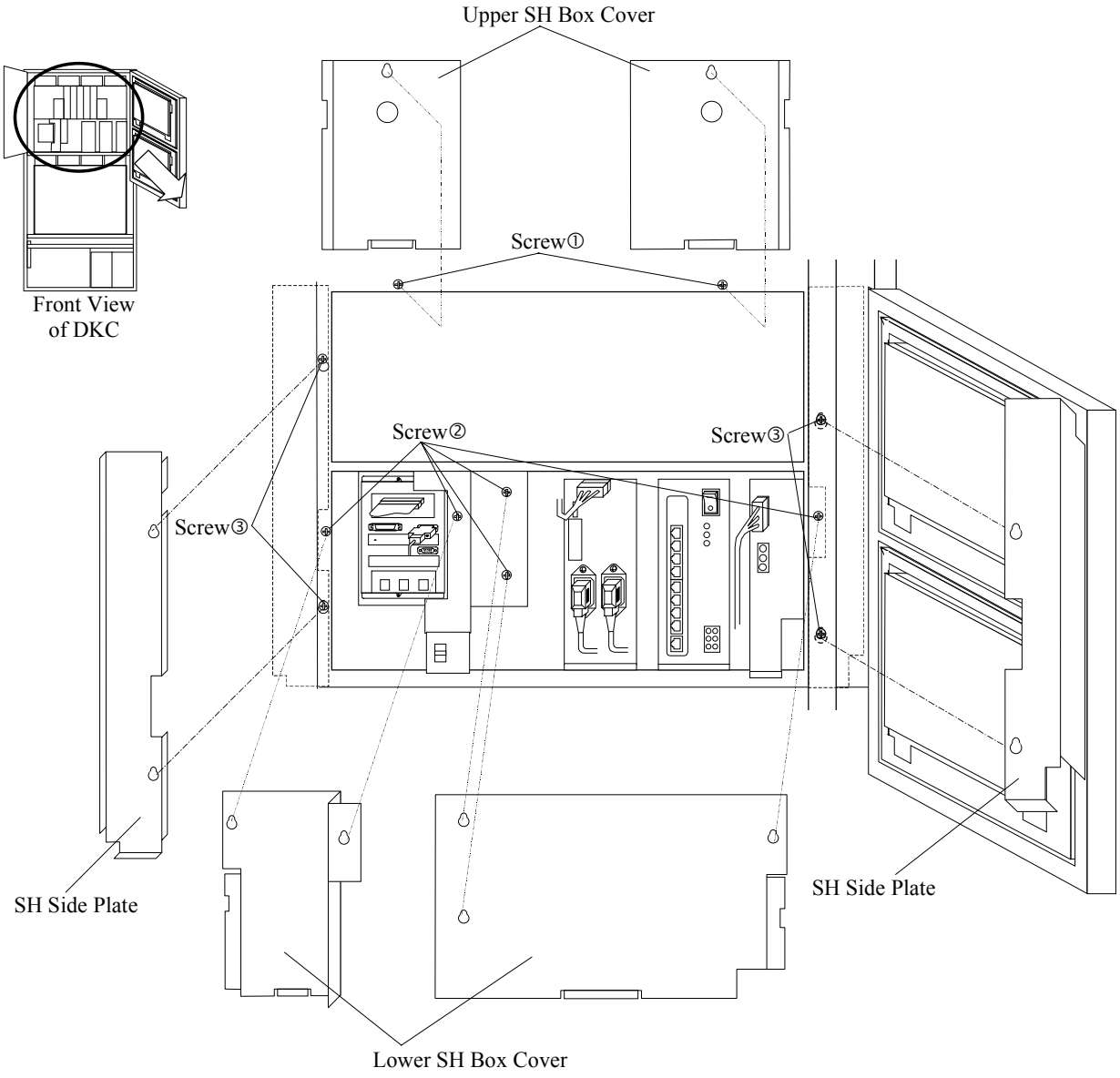

Fig. 3.19.2-12 Removal of Covers

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2. Insertion of MONI-CONs
   a. Insert the MONI-CON1 and MONI-CON2.
   b. Connect the cables to the MONI-CONs.

Table 3.19.2-2 DKUMN Cable List

No.	Source		Destination		Remarks
	Location No.	Cable No.	Location No.	Cable No.	
1	MONI-CON1	P21-1	DKUMN-R1F	P4-1R	
2	MONI-CON2	P21-2	DKUMN-R1R	P4-2R	

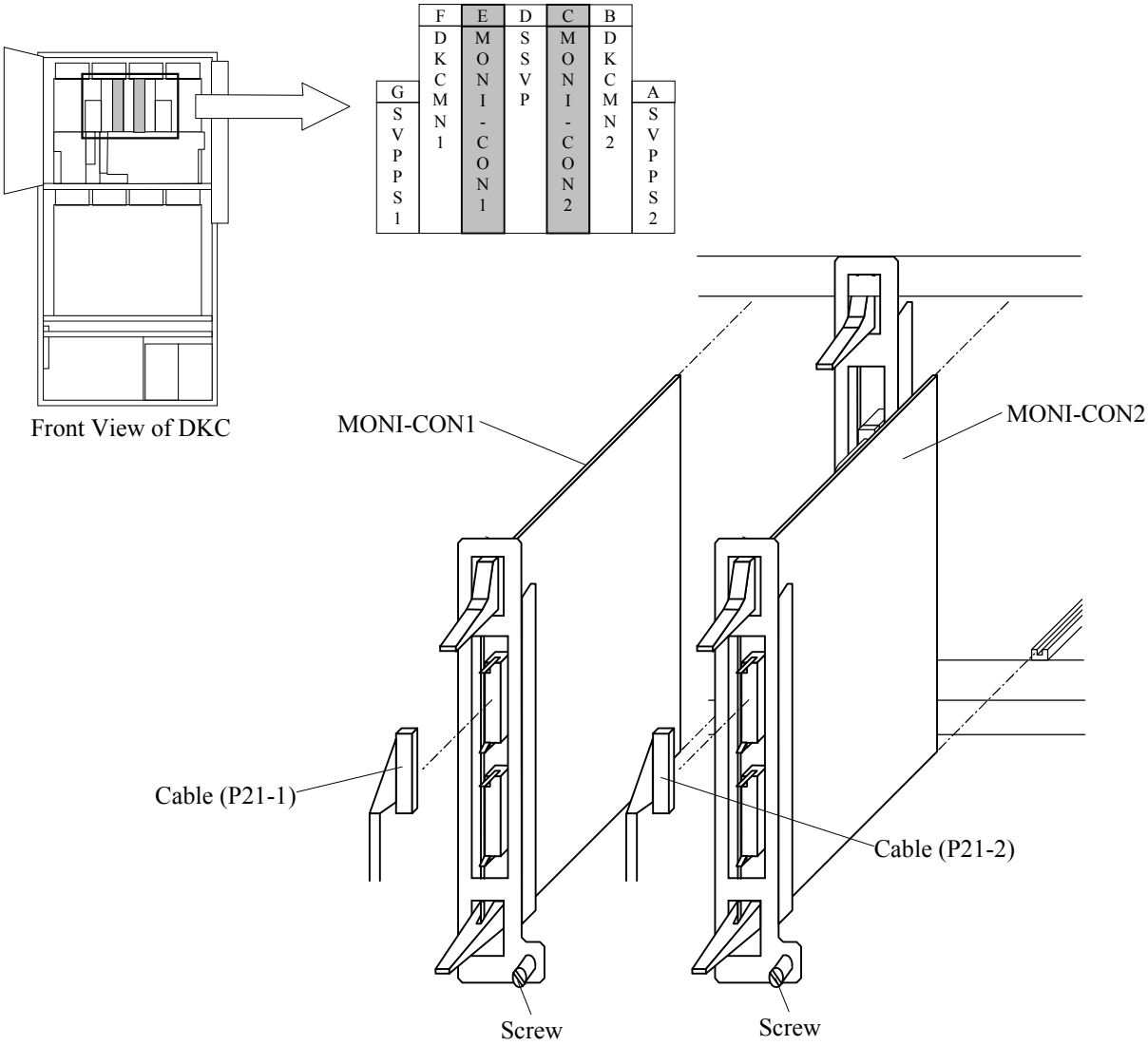

Fig. 3.19.2-13 Insertion of MONI-CONs

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c. Attach the five locking clamps. Fix the cable ASSY with the locking clamps and repeat binders.

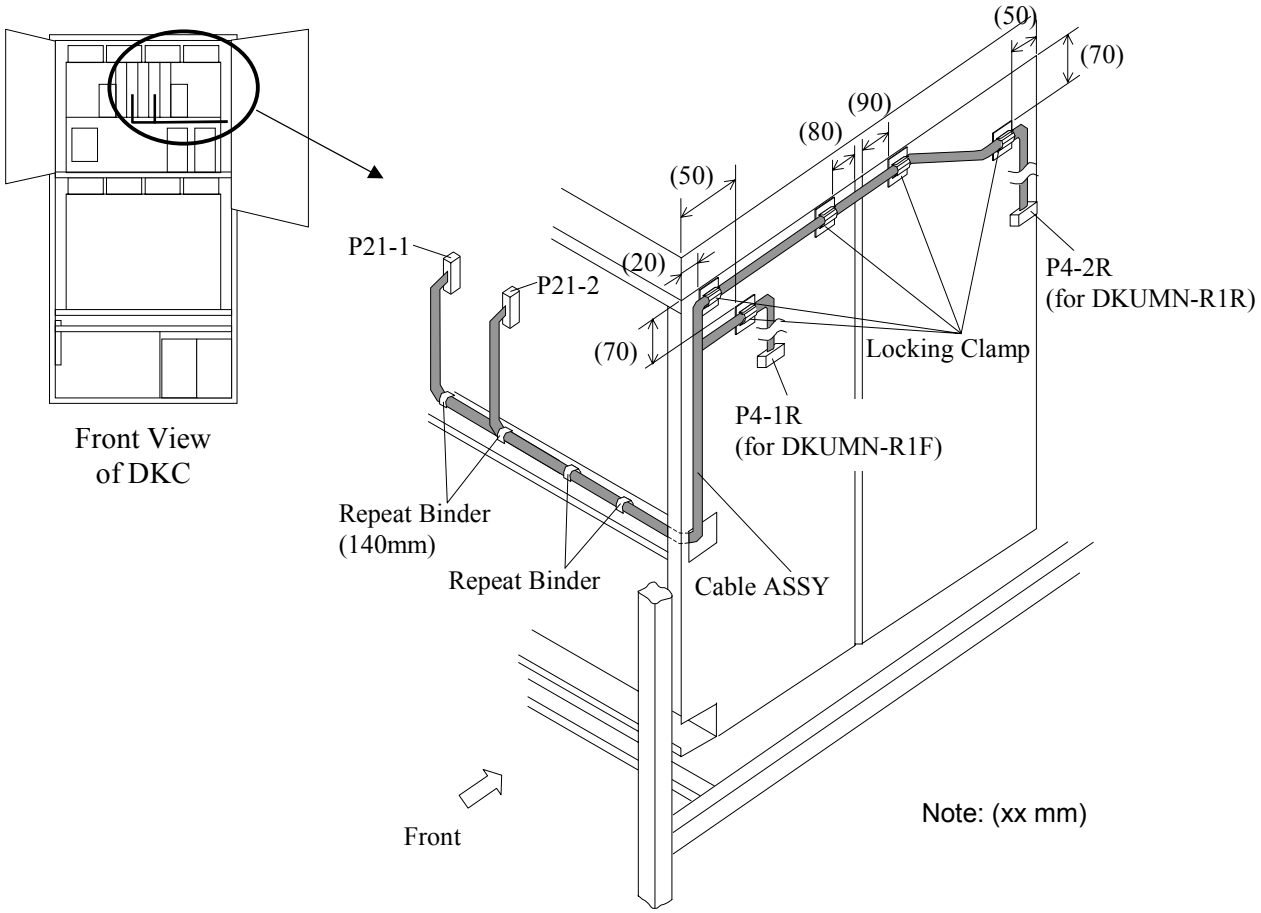

Fig. 3.19.2-14 Fixation of Cable ASSY

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3. Removal of DEV Interface cables
   a. Disconnect the cables from the DKA PCBs.

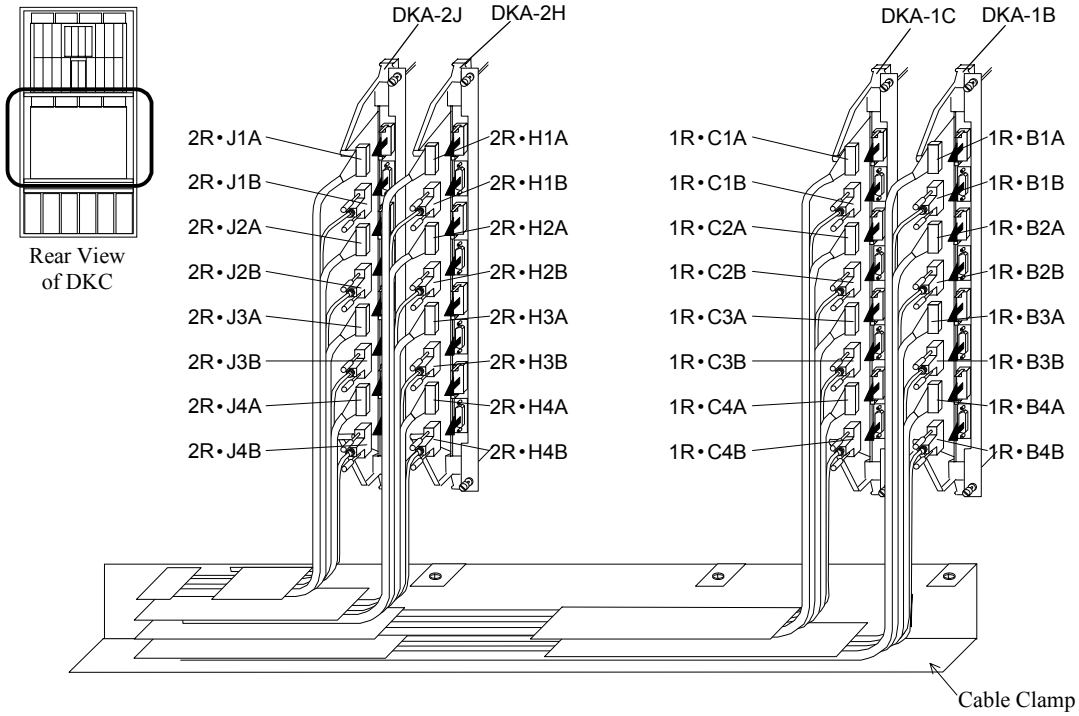

Fig. 3.19.2-15 Disconnection of Cables

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b. Remove the DEV Interface Cables from the frame.

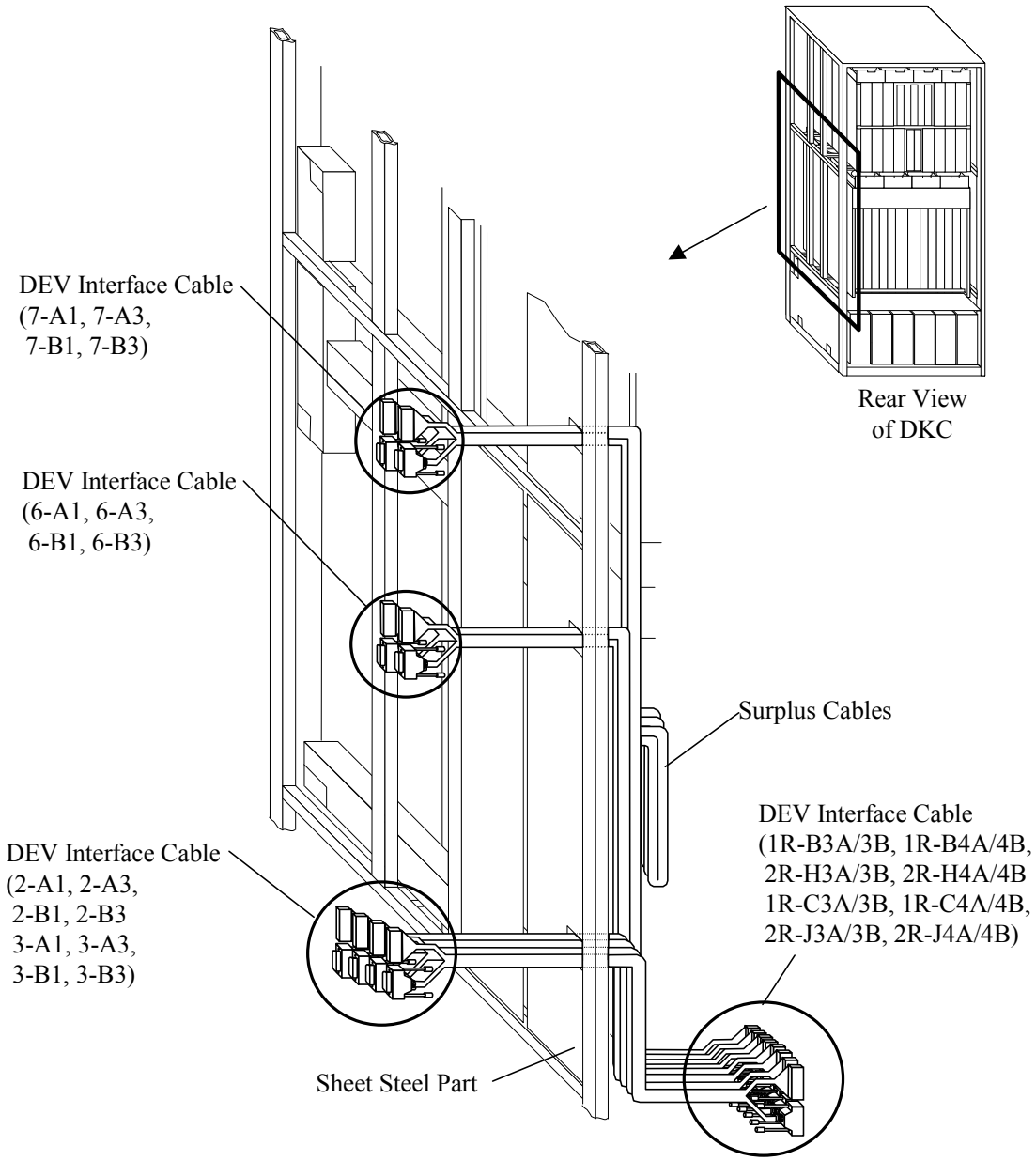

Fig. 3.19.2-16 Removal of Cables

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c. Loosen the two screws and remove the cable cover.

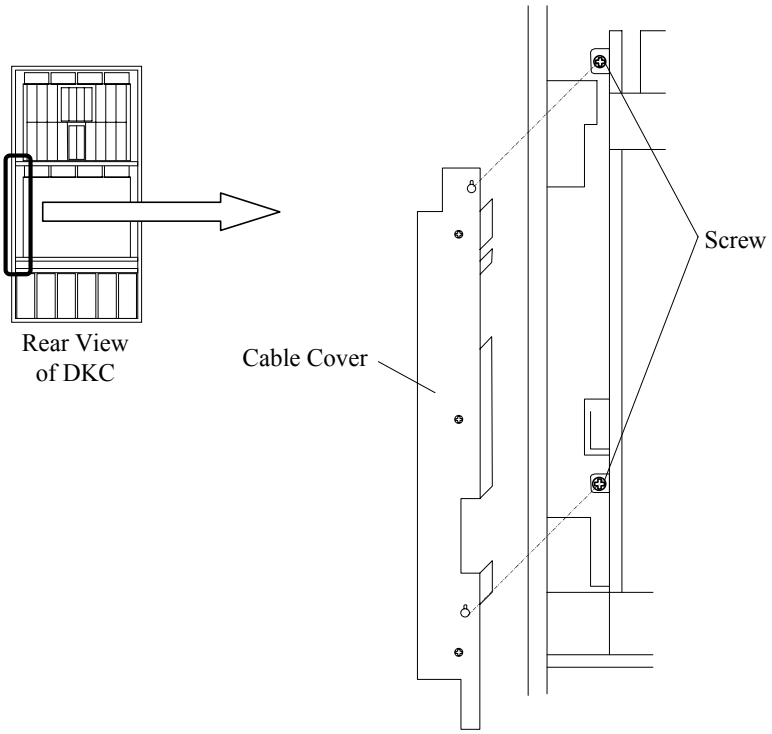

Fig. 3.19.2-17 Removal of Cable Cover

d. Loosen the screw and remove the cable duct cover.

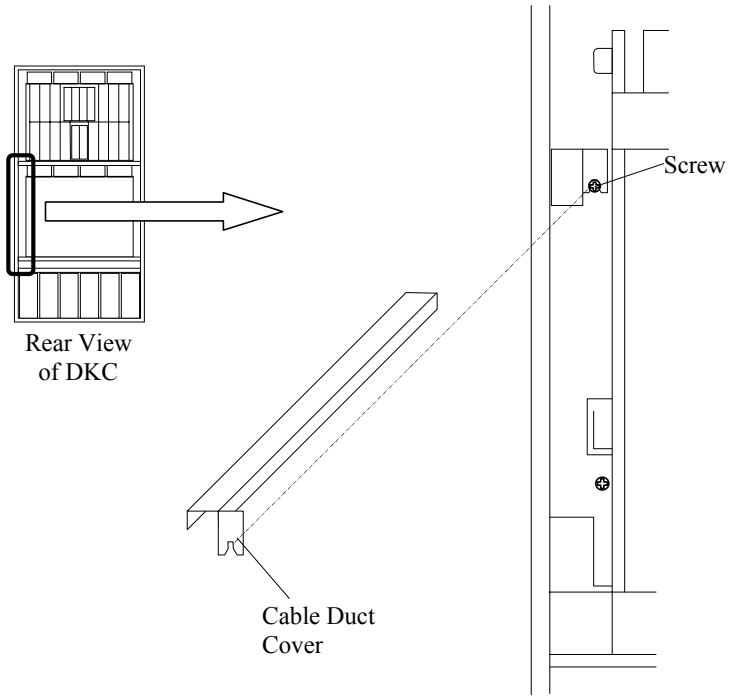

Fig. 3.19.2-18 Removal of Cable Duct Cover

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e. Remove the DEV Interface Cables from the frame.

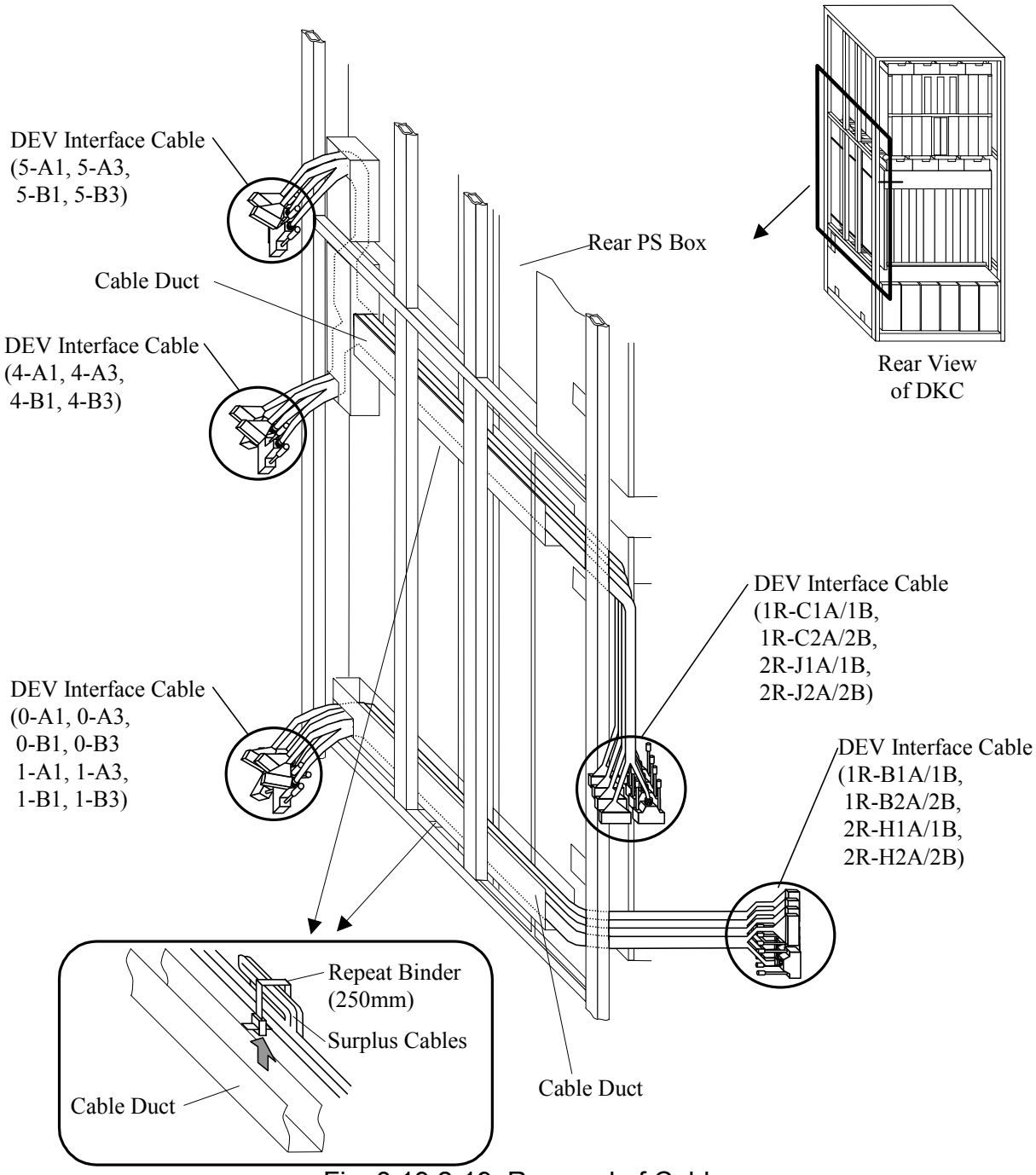

Fig. 3.19.2-19 Removal of Cables

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4. Attachment of DEV Interface cables
   a. Insert the DEV interface cables for the DKU-R1 into the cable clamp located at the bottom of the Rear Logic Box. Attach the DEV interface cables in order of ① through ⑧. When doing this, position the two binders that bundle the cables at the end of the cable clamp.

Note: Since a label bearing a connection destination is affixed on each cable/connector, work very carefully referring to it and the wiring diagram.

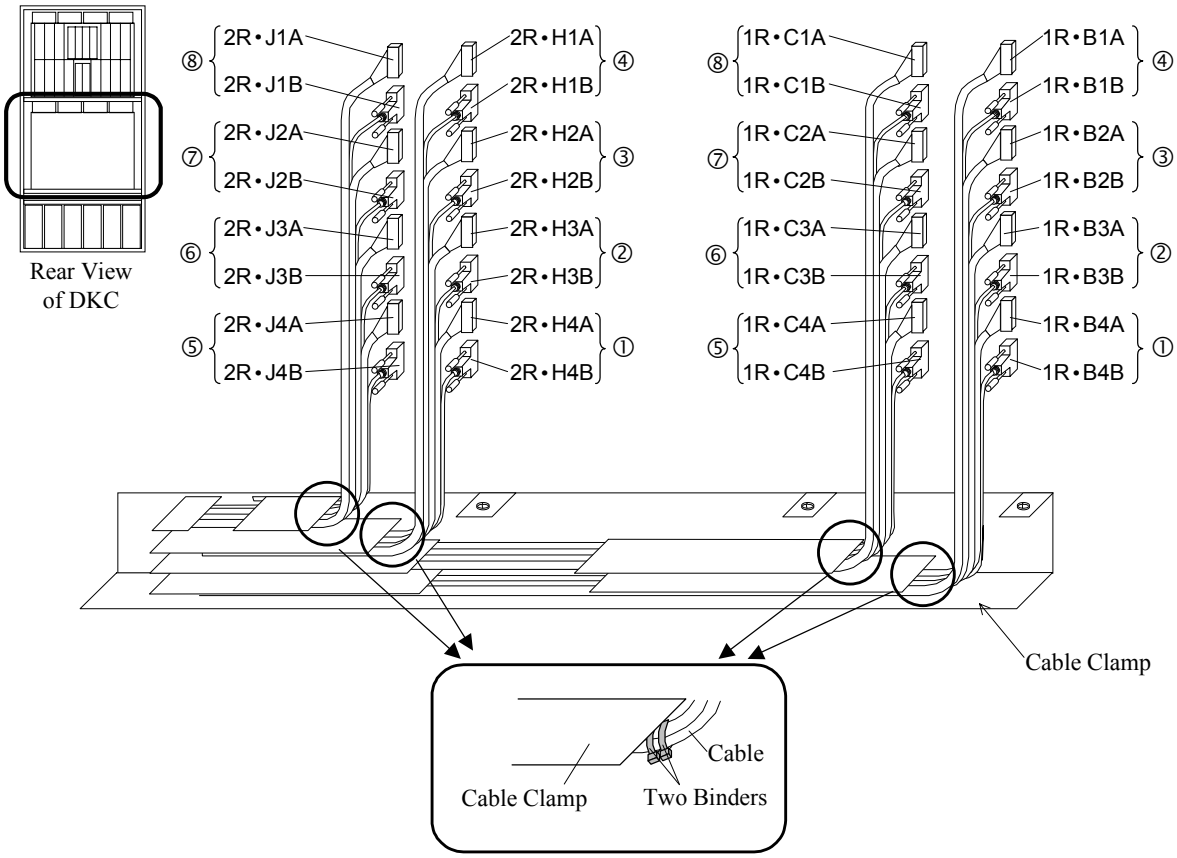

Fig. 3.19.2-20 Attachment of Cables

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b. Insert the DEV interface cables for the DKU-R1 into the cable duct. When doing this, position the two binders that bundle the DEV interface cables at the cable exit of the cable duct and fix the surplus cables with the repeat binder.

Table 3.19.2-3 DEV Interface Cable List

No.	Cable No. (DKA Side)	Cable No. (FSW Side)	Remarks
1	1R-B1A	0R-P501	
	1R-B1B	0R-P503	
2	2R-H1A	0L-P501	
	2R-H1B	0L-P503	

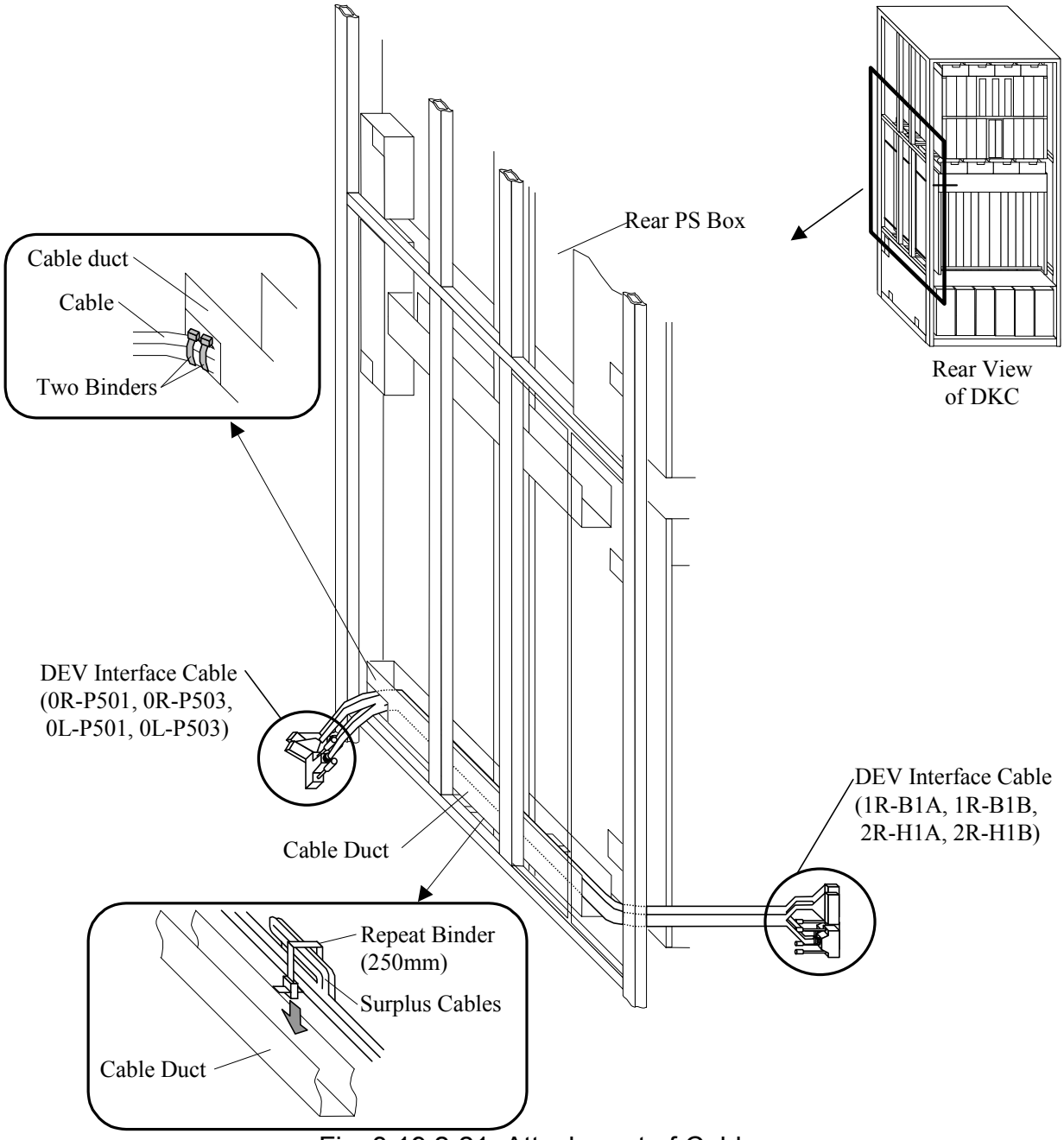

Fig. 3.19.2-21 Attachment of Cables

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c. Insert the DEV interface cables for the DKU-R1 into the cable duct. When doing this, position the two binders that bundle the DEV interface cables at the cable exit of the cable duct and fix the surplus cables with the repeat binder.

Table 3.19.2-4 DEV Interface Cable List

No.	Cable No. (DKA Side)	Cable No. (FSW Side)	Remarks
1	1R-B2A	1R-P501	
	1R-B2B	1R-P503	
2	2R-H2A	1L-P501	
	2R-H2B	1L-P503	

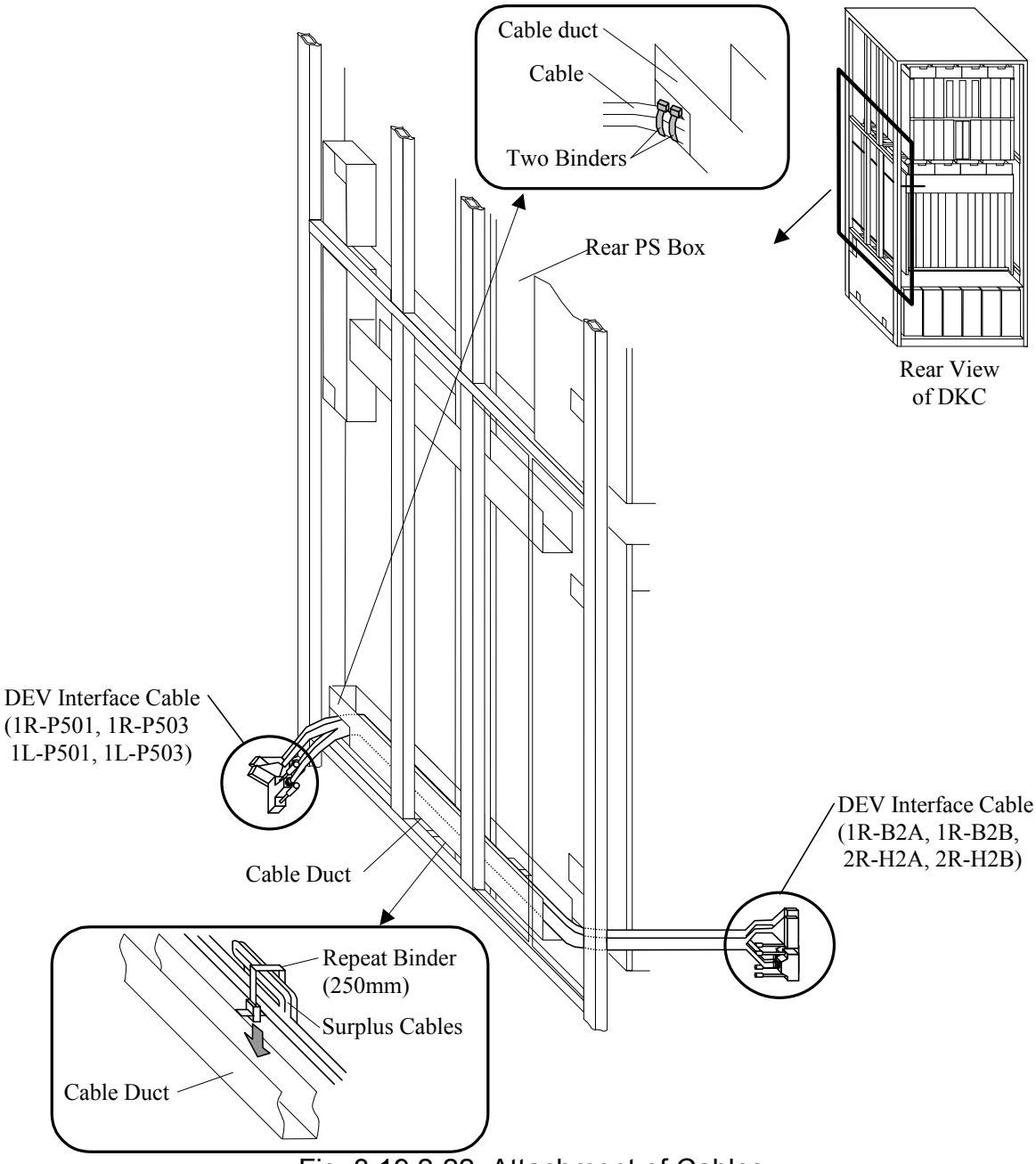

Fig. 3.19.2-22 Attachment of Cables

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d. Insert the DEV interface cables for the DKU-R1 into the cable duct. When doing this, position the two binders that bundle the DEV interface cables at the cable exit of the cable duct and fix the surplus cables with the repeat binder.

Table 3.19.2-5 DEV Interface Cable List

No.	Cable No. (DKA Side)	Cable No. (FSW Side)	Remarks
1	1R-C1A	4R-P501	
	1R-C1B	4R-P503	
2	2R-J1A	4L-P501	
	2R-J1B	4L-P503	

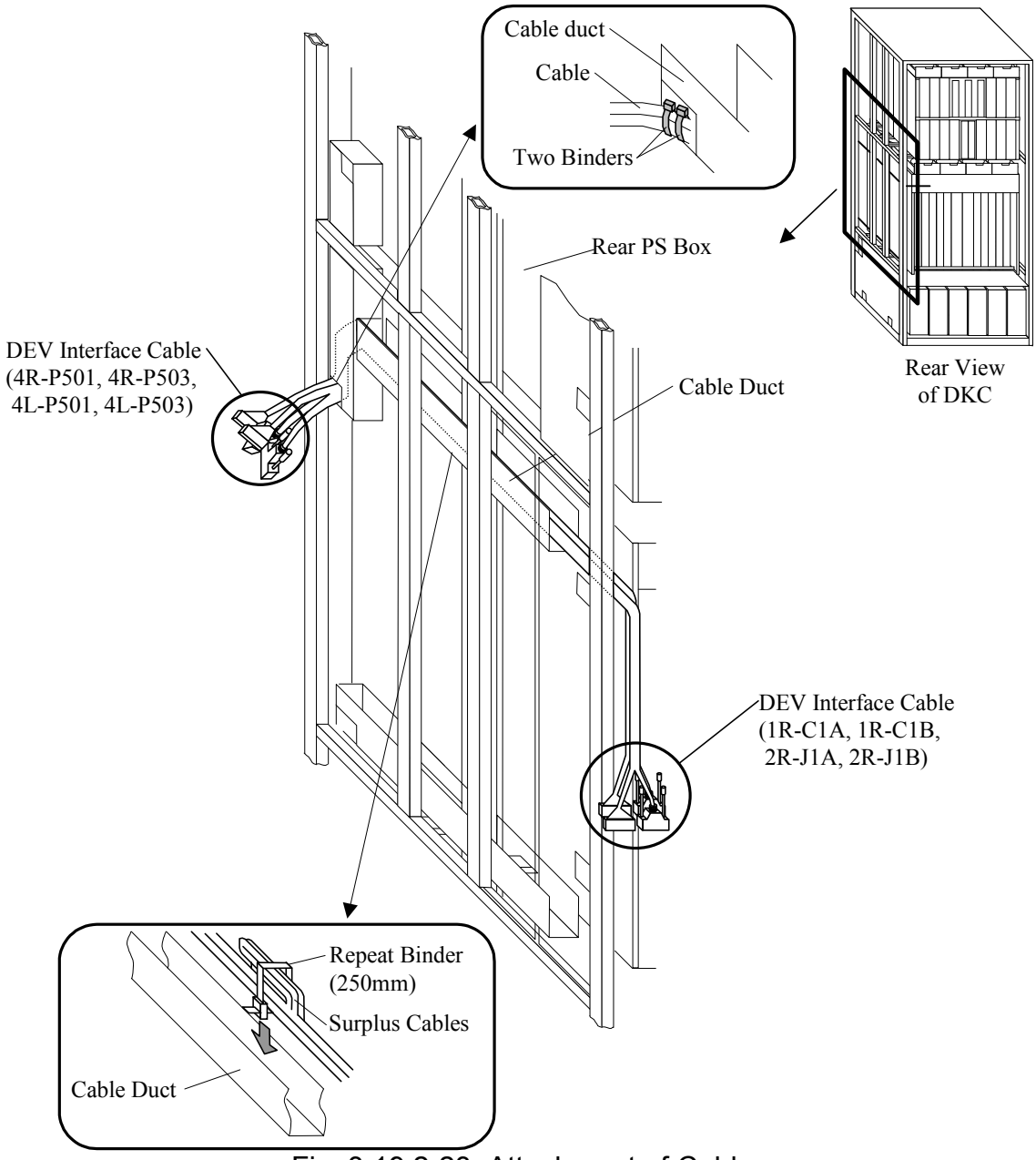

Fig. 3.19.2-23 Attachment of Cables

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e. Insert the DEV interface cables for the DKU-R1 into the cable duct. When doing this, position the two binders that bundle the DEV interface cables at the cable exit of the cable duct and fix the surplus cables with the repeat binder.

Table 3.19.2-6 DEV Interface Cable List

No.	Cable No. (DKA Side)	Cable No. (FSW Side)	Remarks
1	1R-C2A	5R-P501	
	1R-C2B	5R-P503	
2	2R-J2A	5L-P501	
	2R-J2B	5L-P503	

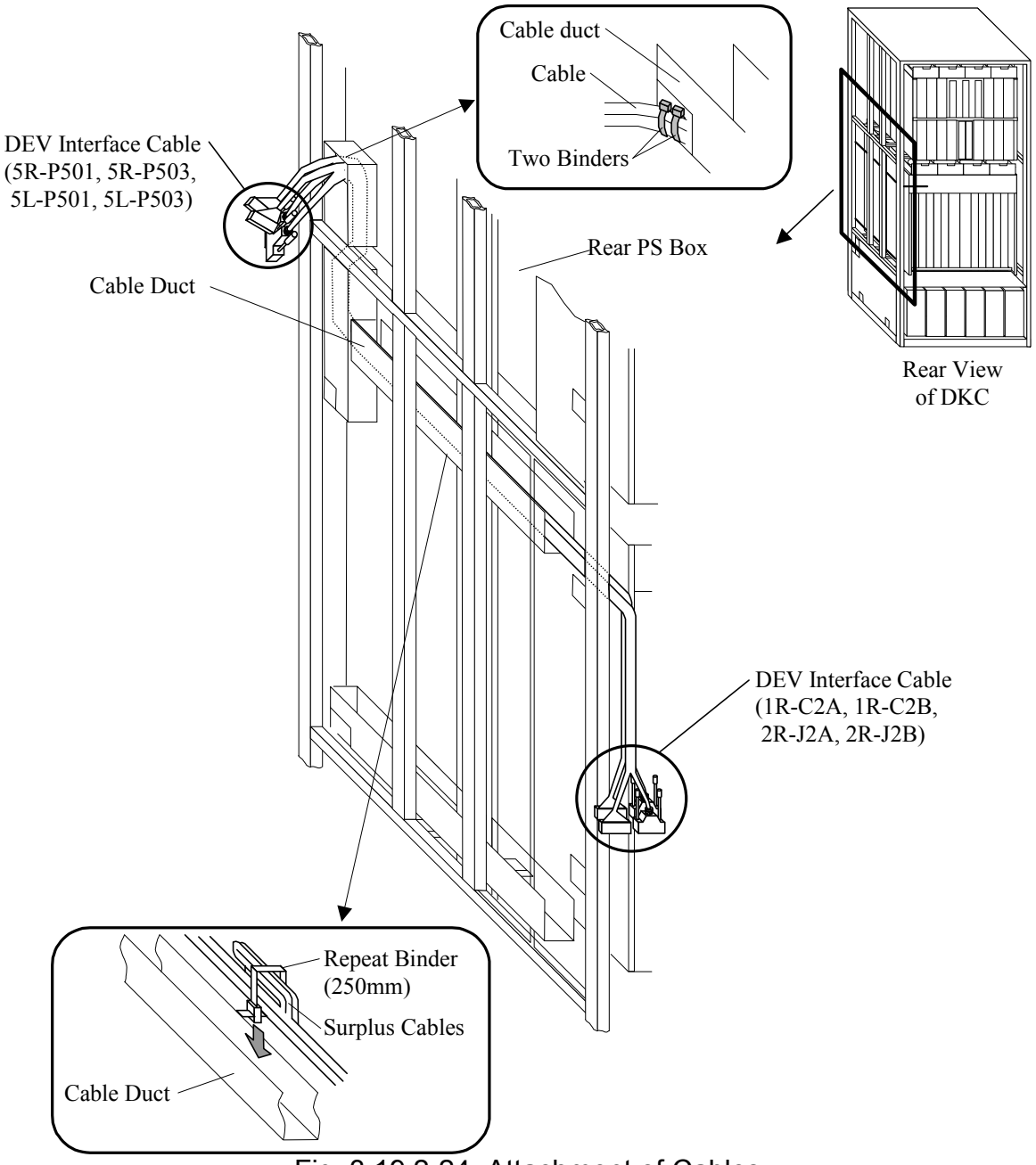

Fig. 3.19.2-24 Attachment of Cables

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f. Attach the cable cover with the two screws.

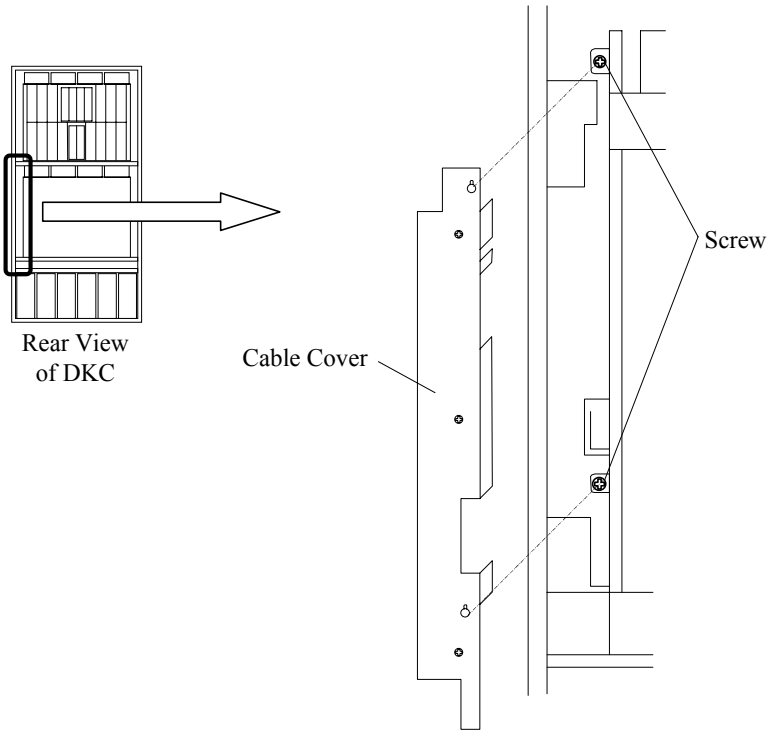

Fig. 3.19.2-25 Attachment of Cable Cover

g. Attach the cable duct cover with the screw.

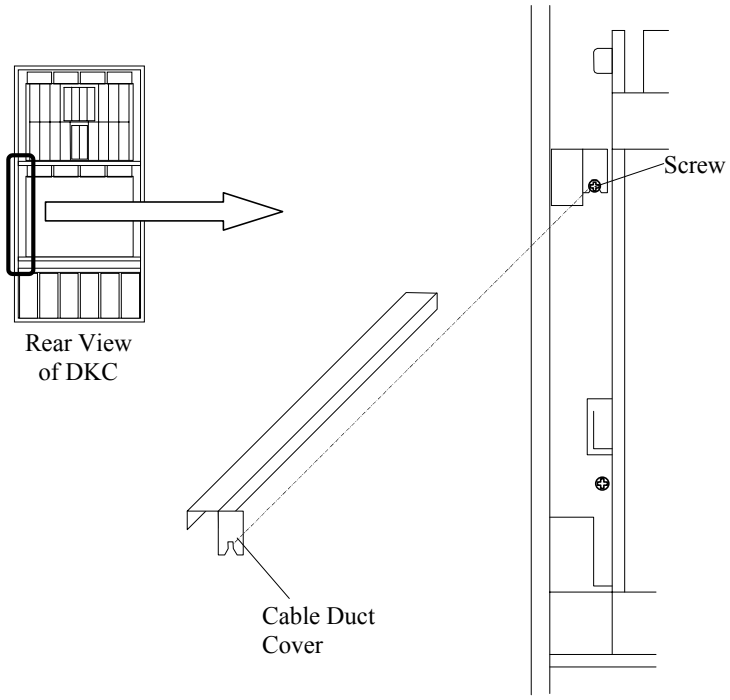

Fig. 3.19.2-26 Attachment of Cable Duct Cover

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h. Attach the cable duct cover with the two screws.

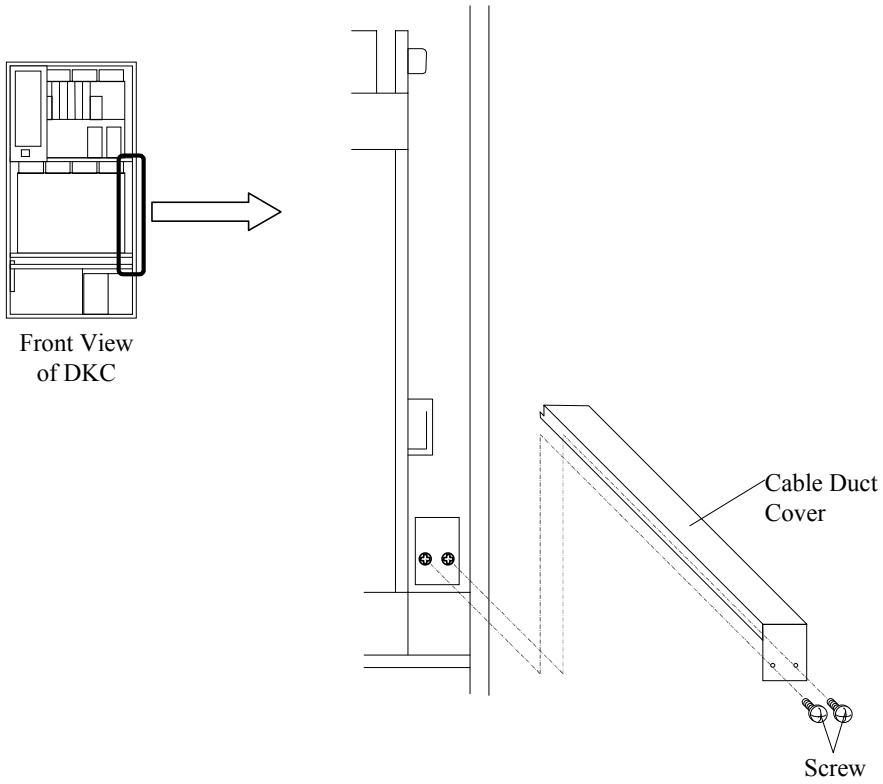

Fig. 3.19.2-27 Attachment of Cable Duct Cover

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i. Pass the DEV interface cables for the DKU-R1 through the cable entrance on the sheet steel part. When doing this, position the two binders that bundle the DEV interface cables at the cable entrance on the sheet steel part and fix the surplus cables with the repeat binder.

Table 3.19.2-7 DEV Interface Cable List

No.	Cable No. (DKA Side)	Cable No. (FSW Side)	Remarks
1	1R-B3A	2R-P501	
	1R-B3B	2R-P503	
2	2R-H3A	2L-P501	
	2R-H3B	2L-P503	

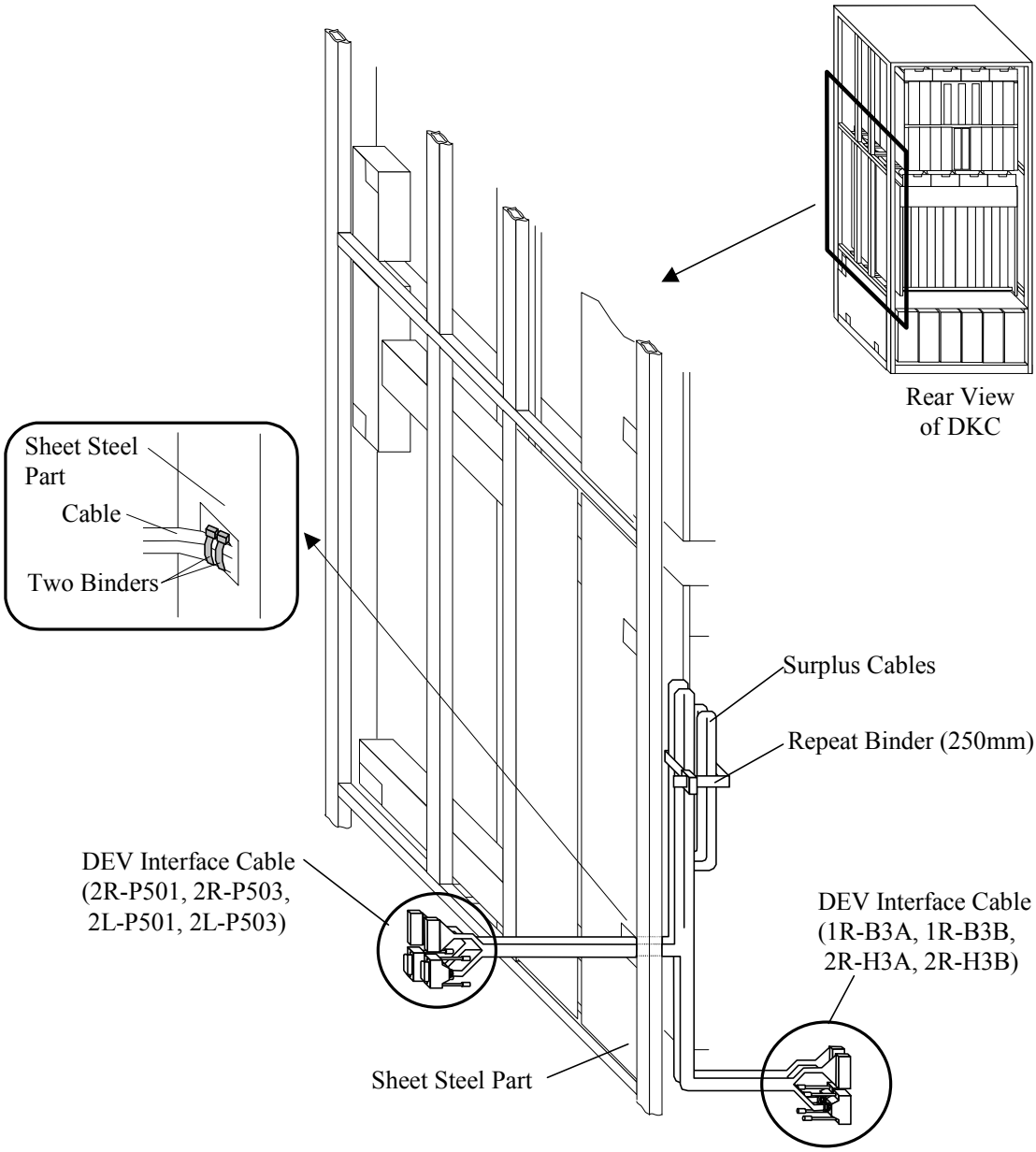

Fig. 3.19.2-28 Attachment of Cables

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j. Pass the DEV interface cables for the DKU-R1 through the cable entrance on the sheet steel part. When doing this, position the two binders that bundle the DEV interface cables at the cable entrance on the sheet steel part and fix the surplus cables with the repeat binder.

Table 3.19.2-8 DEV Interface Cable List

No.	Cable No. (DKA Side)	Cable No. (FSW Side)	Remarks
1	1R-B4A	3R-P501	
	1R-B4B	3R-P503	
2	2R-H4A	3L-P501	
	2R-H4B	3L-P503	

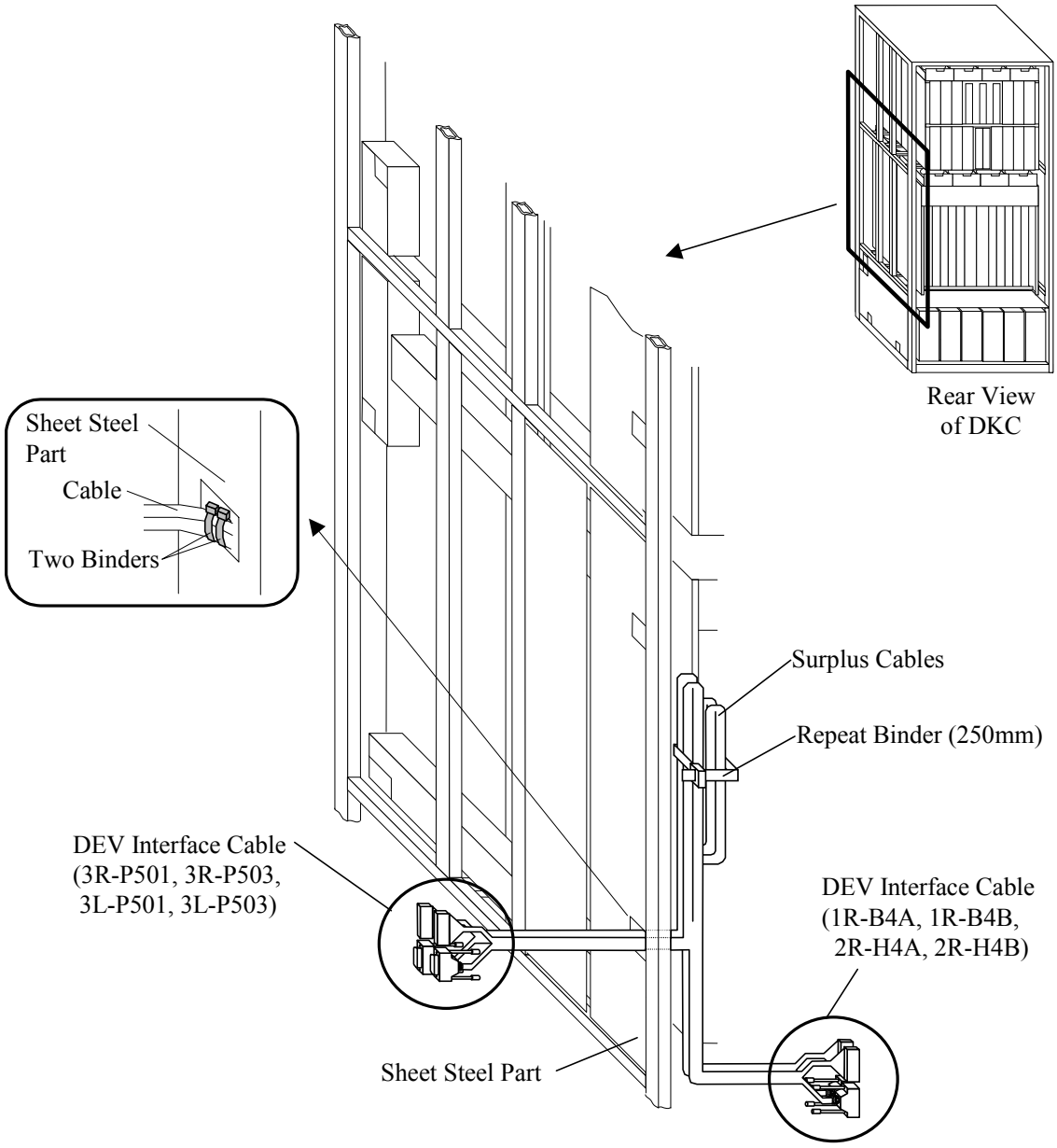

Fig. 3.19.2-29 Attachment of Cables

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k. Pass the DEV interface cables for the DKU-R1 through the cable entrance on the sheet steel part. When doing this, position the two binders that bundle the DEV interface cables at the cable entrance on the sheet steel part and fix the surplus cables with the repeat binder.

Table 3.19.2-9 DEV Interface Cable List

No.	Cable No. (DKA Side)	Cable No. (FSW Side)	Remarks
1	1R-C3A	6R-P501	
	1R-C3B	6R-P503	
2	2R-J3A	6L-P501	
	2R-J3B	6L-P503	

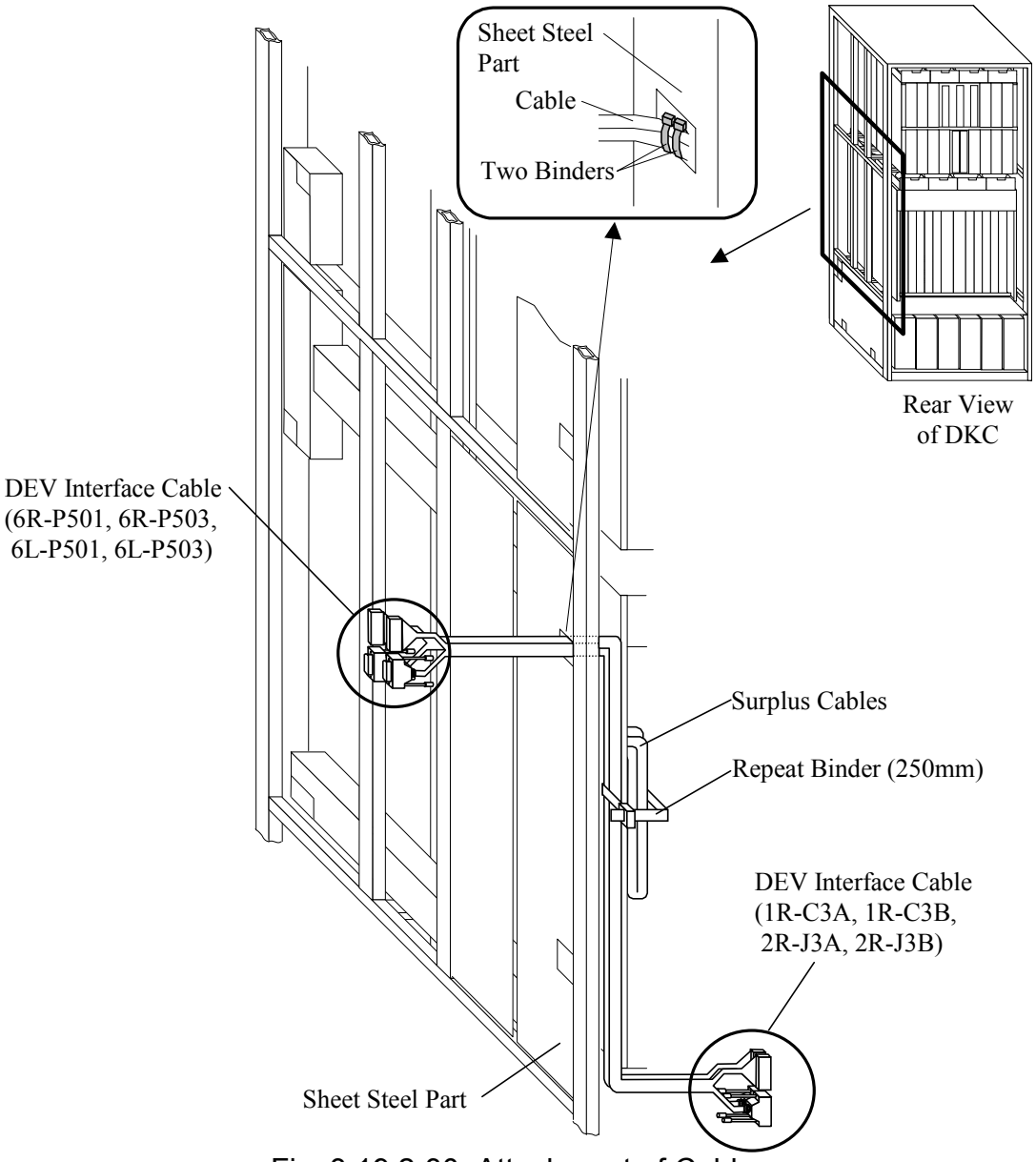

Fig. 3.19.2-30 Attachment of Cables

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m. Pass the DEV interface cables for the DKU-R1 through the cable entrance on the sheet steel part. When doing this, position the two binders that bundle the DEV interface cables at the cable entrance on the sheet steel part and fix the surplus cables with the repeat binder.

Table 3.19.2-10 DEV Interface Cable List

No.	Cable No. (DKA Side)	Cable No. (FSW Side)	Remarks
1	1R-C4A	7R-P501	
	1R-C4B	7R-P503	
2	2R-J4A	7L-P501	
	2R-J4B	7L-P503	

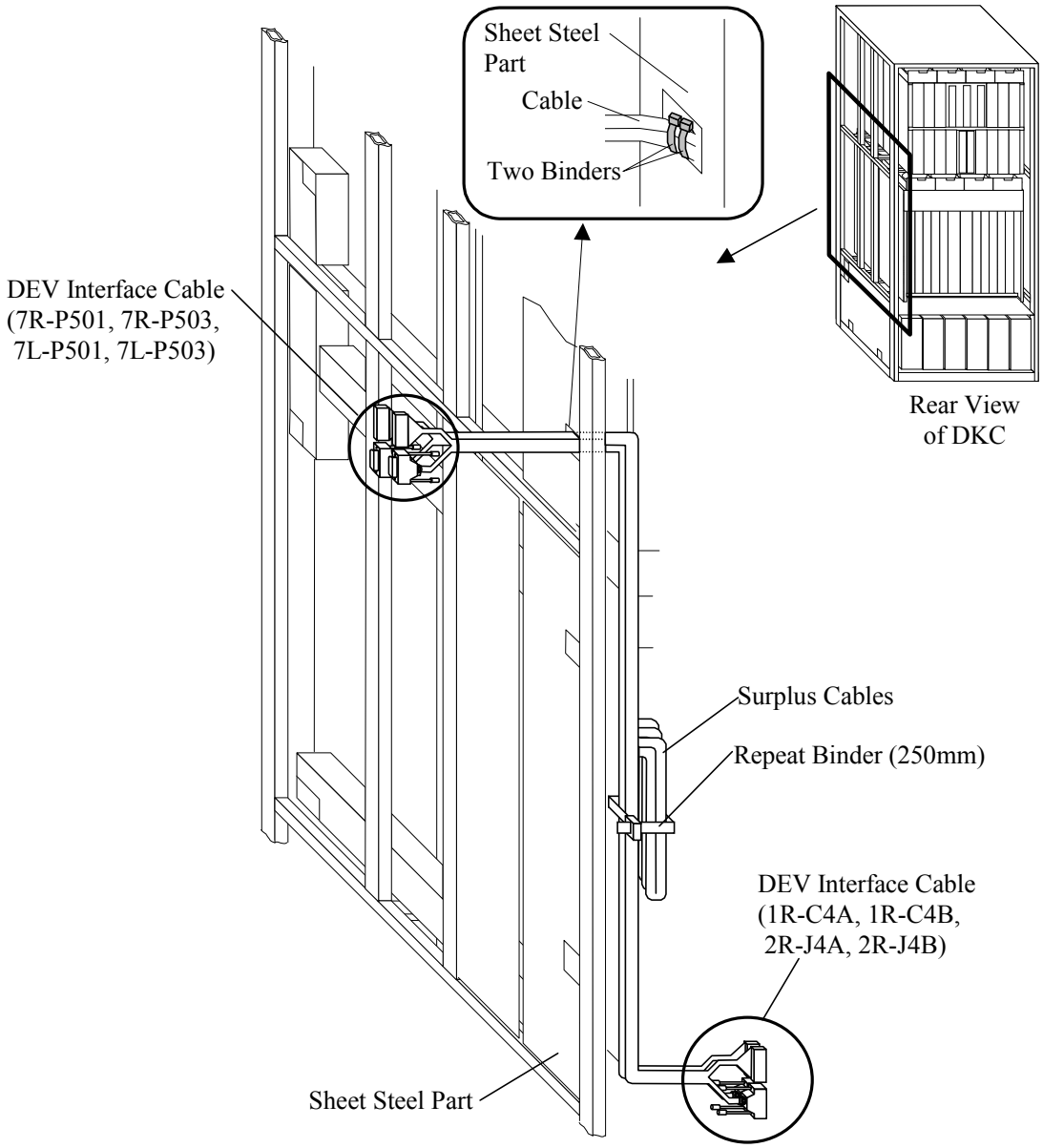

Fig. 3.19.2-31 Attachment of Cables

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4. Attachment of Cable Covers
   a. Attach the cable covers in the reverse order of step 1.

5. Attachment of Nameplate
   a. Attach the nameplate to the Rear Logic Box cover.

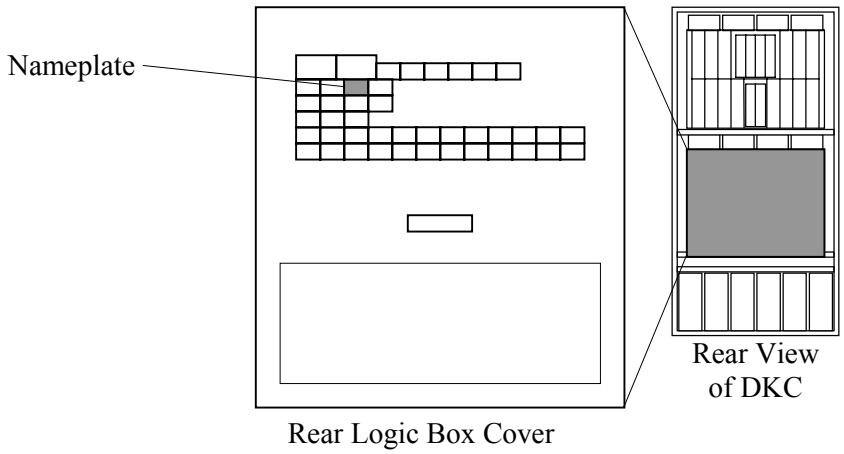

Fig. 3.19.2-32 Attachment of Nameplate

   b. Return to General Flow.
      New Installation: Go to INST03-U40-10 step (1)-3.

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6. Connection of DEV Interface Cables for HDU-R14 through R17

a. Loosen the screws and remove the cable covers ① and ②.

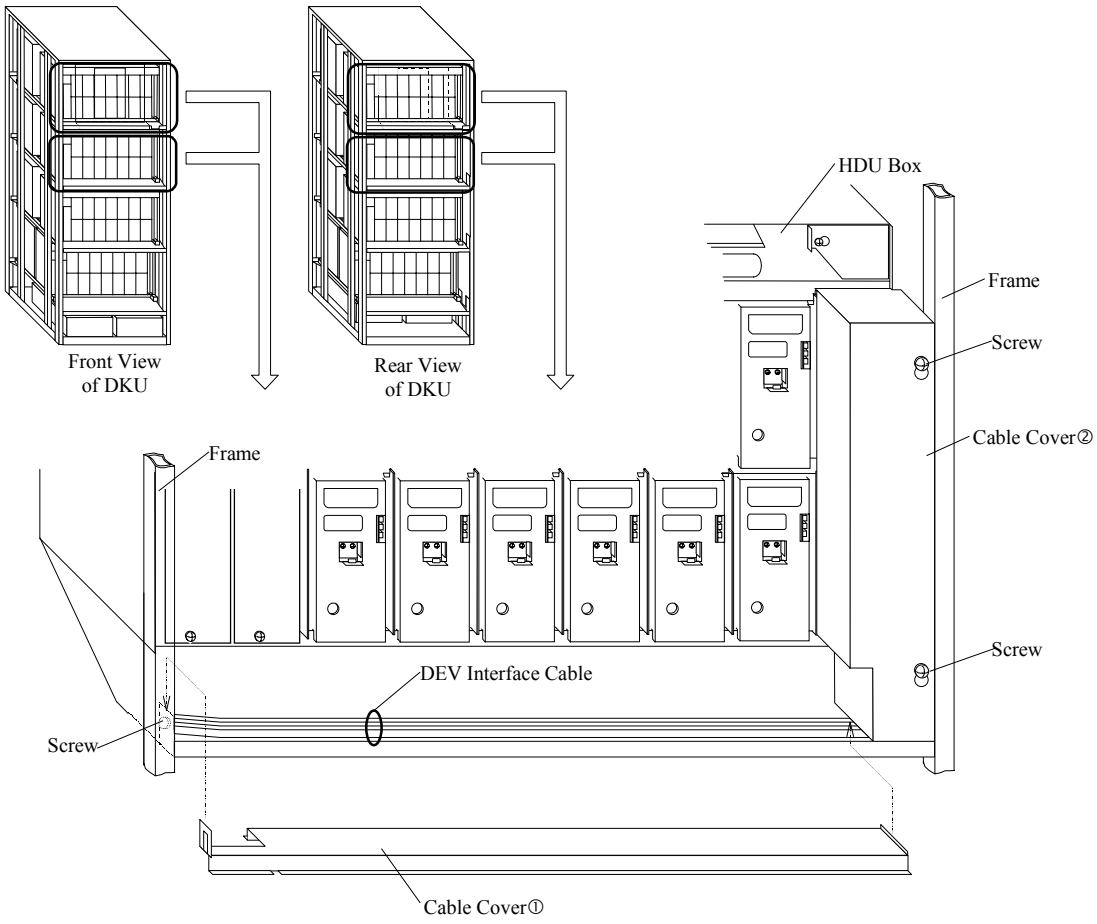

Fig. 3.19.2-33 Removal of Cable Covers

b. Loosen the screws and remove the side plates.

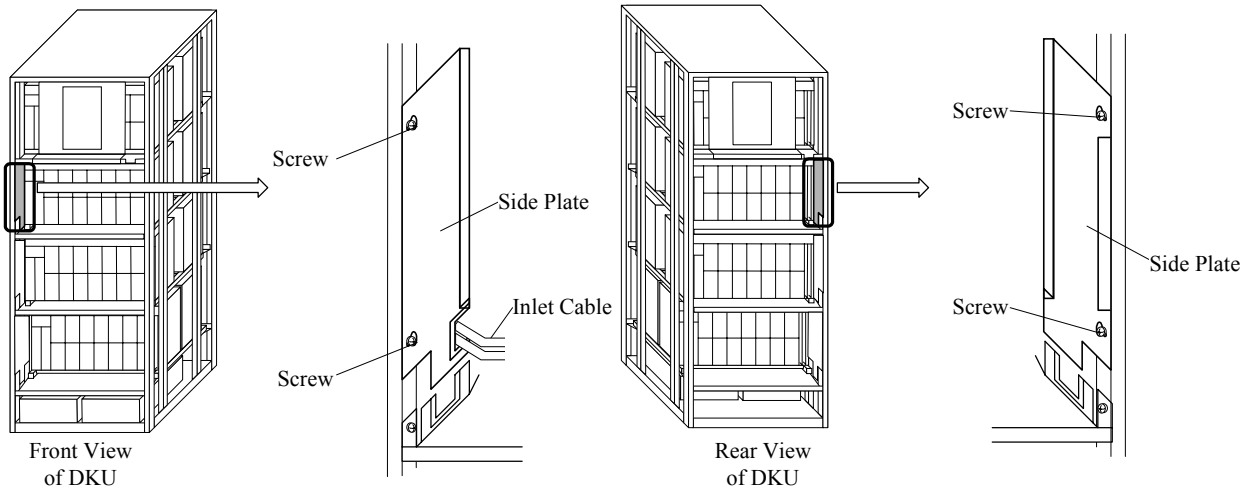

Fig. 3.19.2-34 Removal of Side Covers

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c. Connect the DEV interface cables to the sub-edges on the FSW PCBs located in the HDU box.

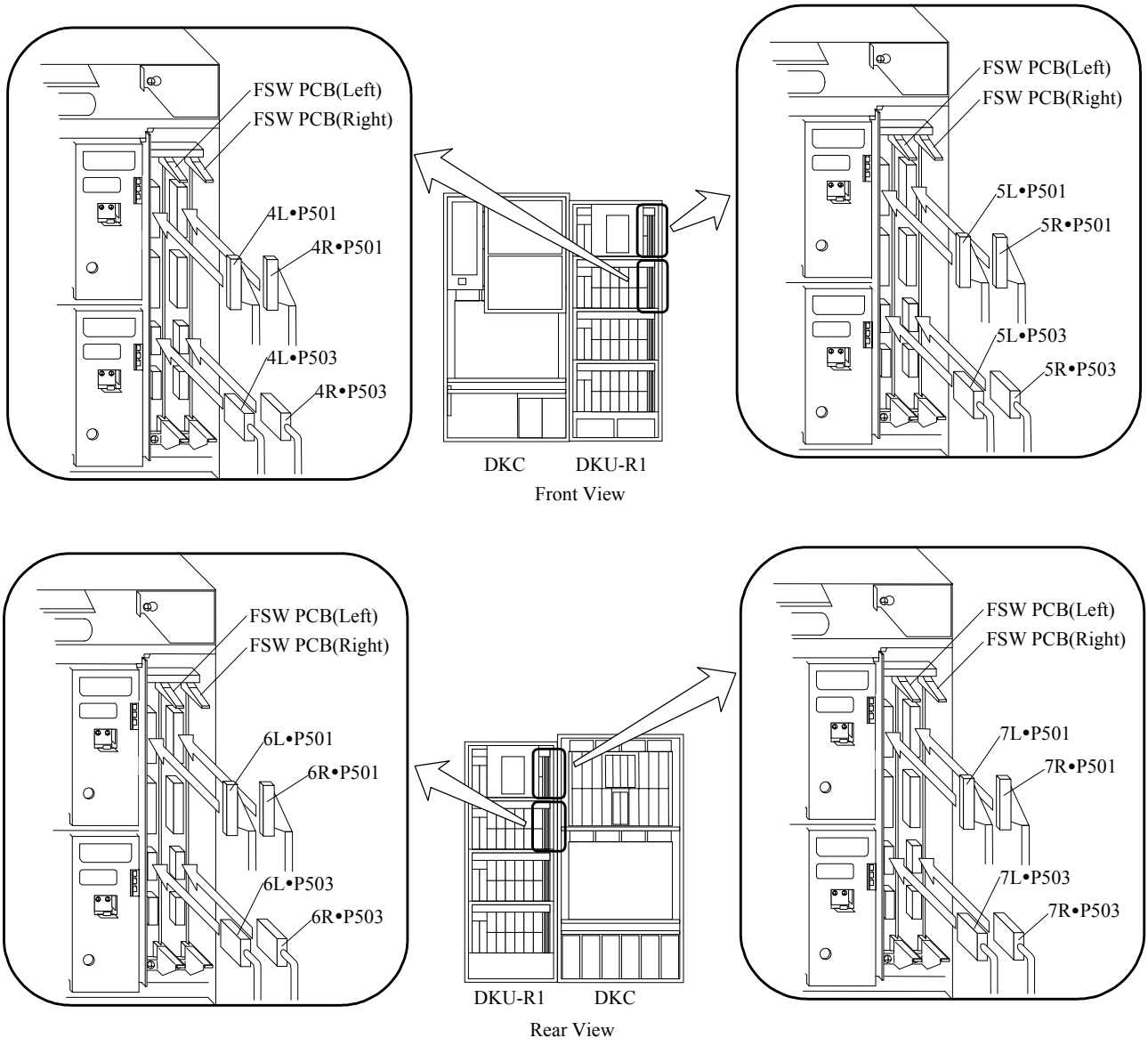

Fig. 3.19.2-35 Connection of DEV Interface Cables

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d. Attach the side plates and fasten the screws.

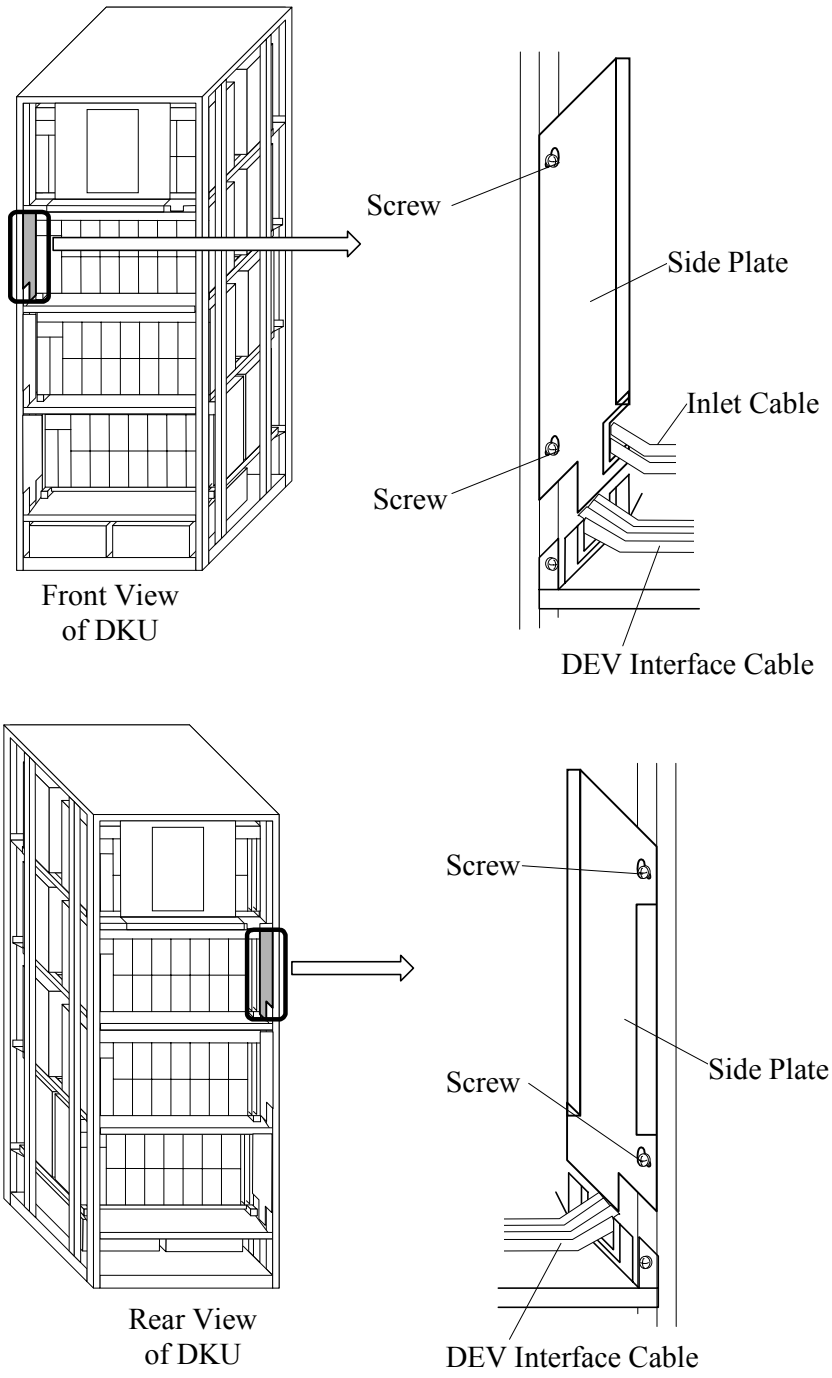

Fig. 3.19.2-36 Attachment of Side Plate

e. Attach the cable covers ① and ② with the screws. Refer to Fig. 3.19.2-33.

f. Return to General Flow.
New Installation: Go to INST03-U40-10 step (2)-3.
Non-Disruptive Installation: Go to INST03-U40-30 step (2)-3.

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3.19.3 Installation of DKU-R1 (DKU405I-14)

Table 3.19.3-1 List of Packaged Parts and Accessories (Disk Unit)

No.	Name of parts	Parts number	Quantity/Unit	Remarks
1	Disk Unit	---------	1	
2	Kick Plate	3259593-1	1	Note 1
3	Kick Plate	3259593-11	1	Note 1
4	Connecting Bolt Assy	5437962-A	4	
5	Screw (Black)	5409006-1	4	
6	Connecting Screw Assy	5487372-A	2	
7	Conductive Sheet	5510501-1	10	
8	LABEL (V/HZ/PH.)	2103307-1	1	

Note 1: This is packed with drive unit.

3.19.3.1 Flowchart

(1) Cabinet Setting [INST03-U40-260]
↓
(2) Frame Connection [INST03-U40-350]
↓
(3) Installation of Switches and Jumper Plugs [INST03-U40-400]
↓
(4) Cabling [INST03-U40-440]
↓
(5) Labeling [INST03-U40-520]
↓
(6) Check of Jumper Settings [INST03-U40-530]

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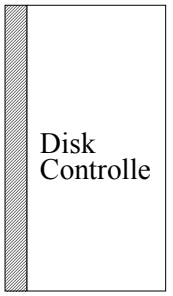
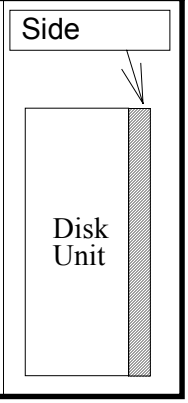
3.19.3.2 Cabinet Setting

- Refer to Table 3.19.3.2-1 when laying out the DKU-R1 with respect to the DKC and relocating the side cover.

1. Place the Disk Controller and Disk Unit in the required position.

Table 3.19.3.2-1 Removal and Re-installation of Side Cover

Configuration	DKC	DKU-R1
Disk Controller (DKC460I) and Disk Unit (DKU405I-14)		

2. Open the front and rear doors on the Disk Controller and the Disk Unit.
3. Remove the screws for transporting the movable rack, and then fasten the screws.

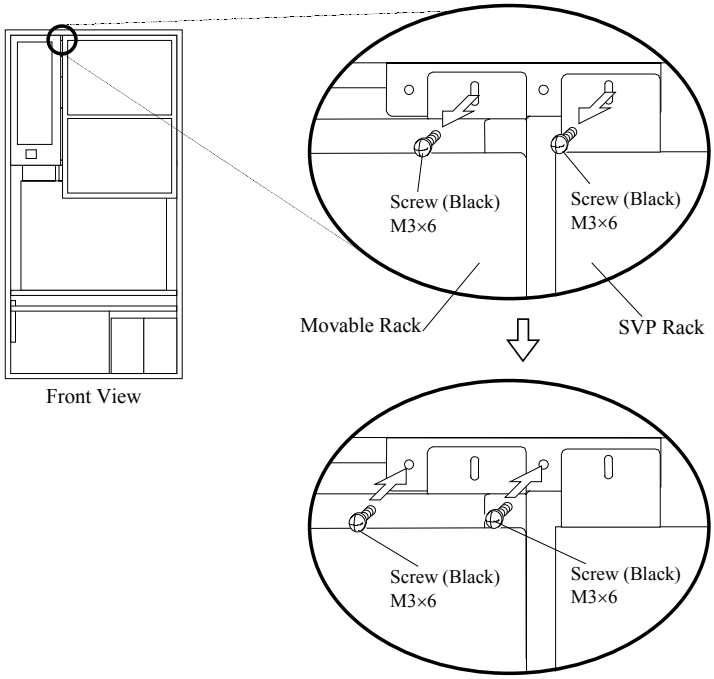


Fig. 3.19.3.2-1 Removal of Screws for Transporting the Movable Rack

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4. Loosen the screws fastening the SVP stopper, slide the stopper toward the left, and tighten the screws again. When no SVP is to be added, it is not required to shift the stopper.

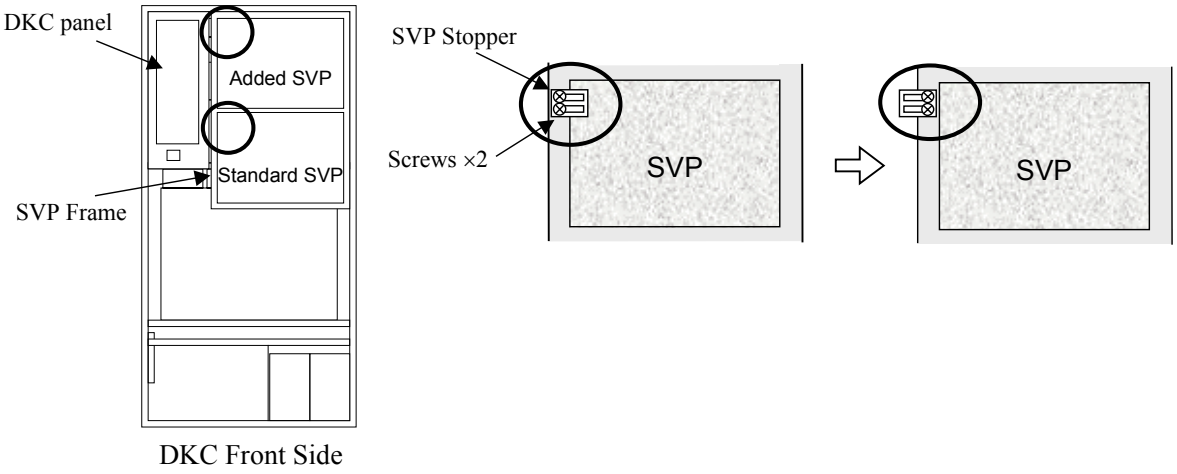

Fig. 3.19.3.2-2 Shifting SVP Stopper

5. Remove the screws fastening the SVP frame.

In the case of the SVP frame type 1

(1) Open the DKC panel.
(2) Remove the screws fastening the SVP frame.

In the case of the SVP frame type 2

(1) Open the SVP ASSY.
(2) Remove the screws fastening the SVP frame.
(3) Close the SVP ASSY.

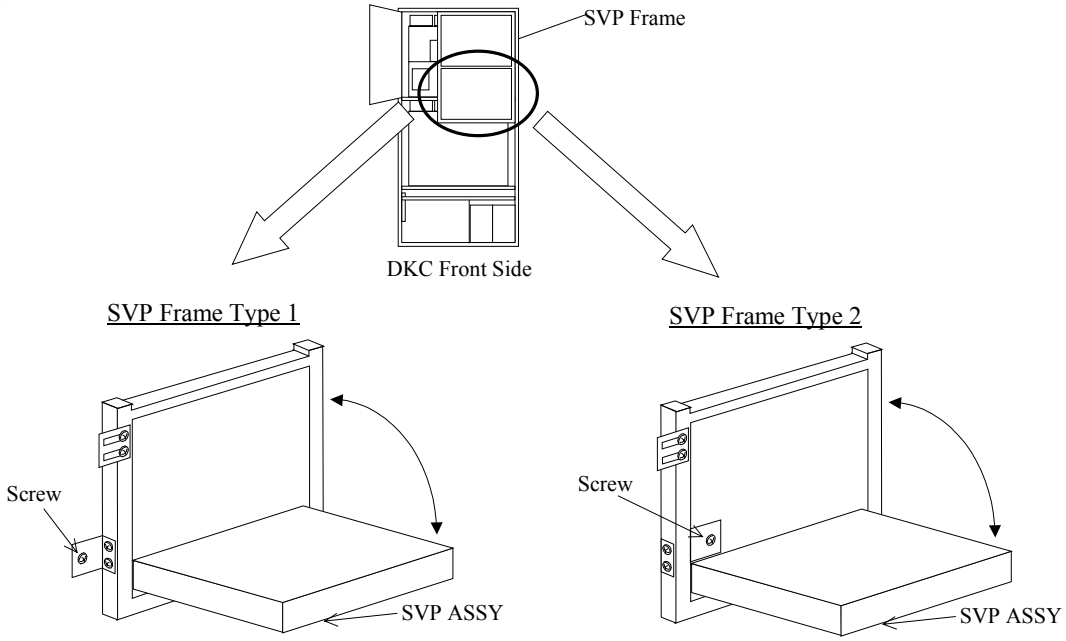

Fig. 3.19.3.2-3 Removal of Screws Fastening SVP Frame

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6. Loosen the screws and remove the cable covers ① and ②.

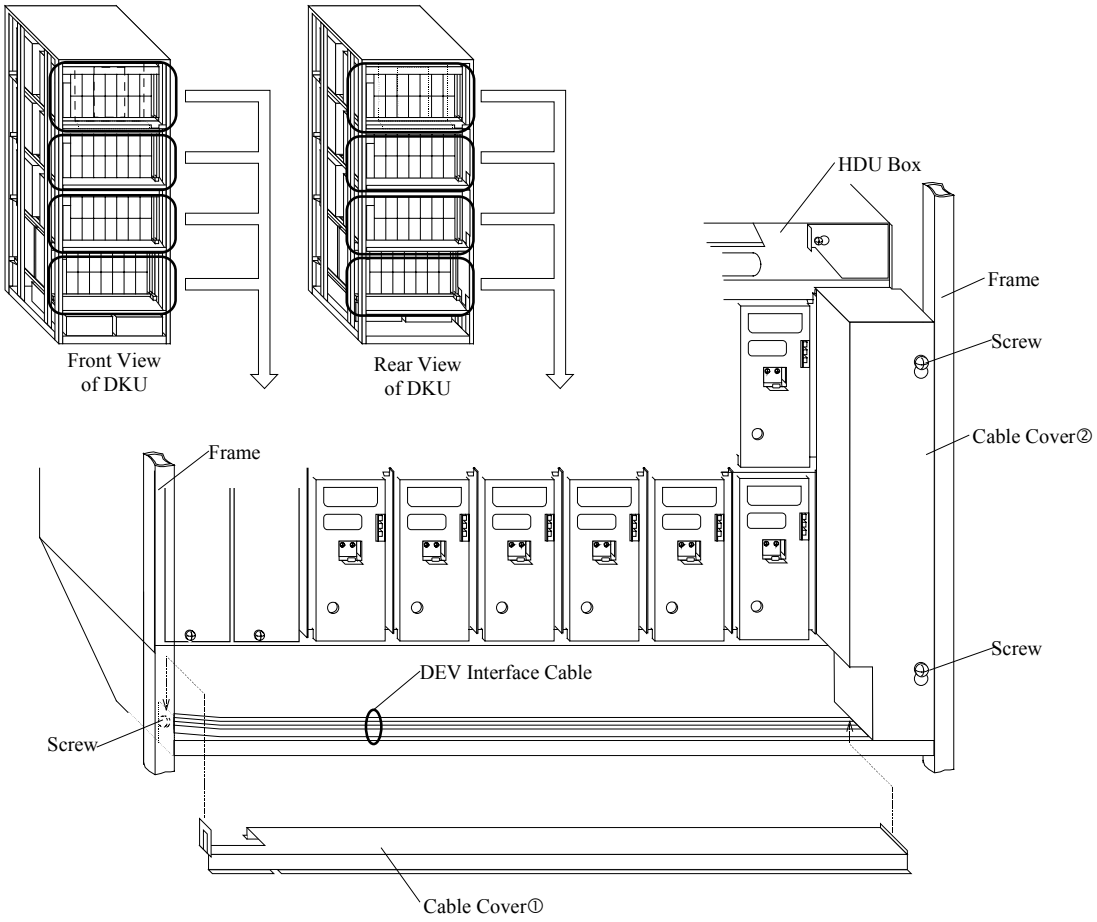

Fig. 3.19.3.2-4 Removal of Cable Covers

7. Loosen the screws and remove the side plates.

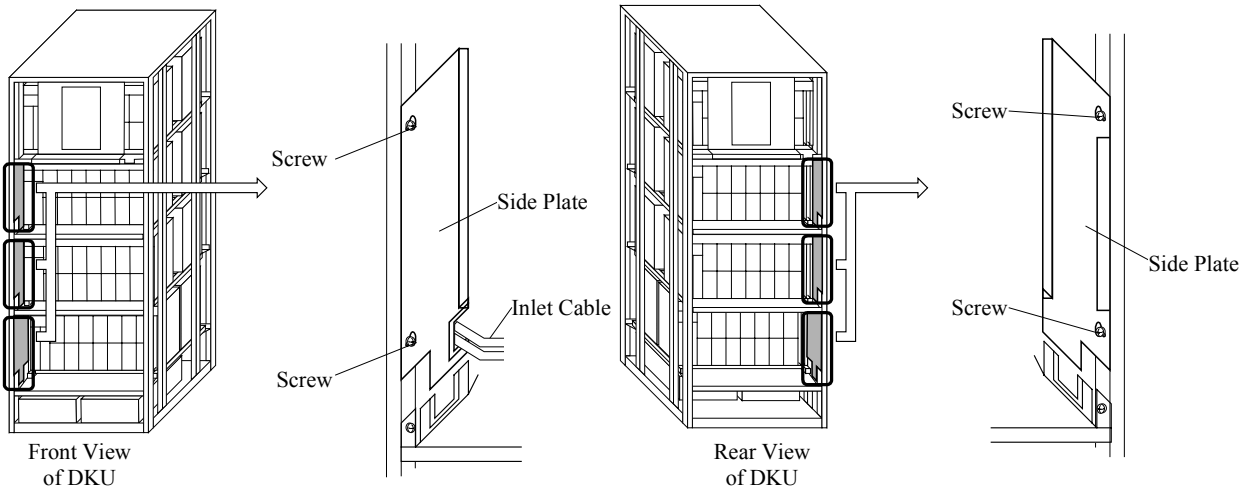

Fig. 3.19.3.2-5 Removal of Side Covers

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8. Attach the conductive sheets to the DKU frame referring to Fig. 3.19.3.2-6 and Fig. 3.19.3.2-7.

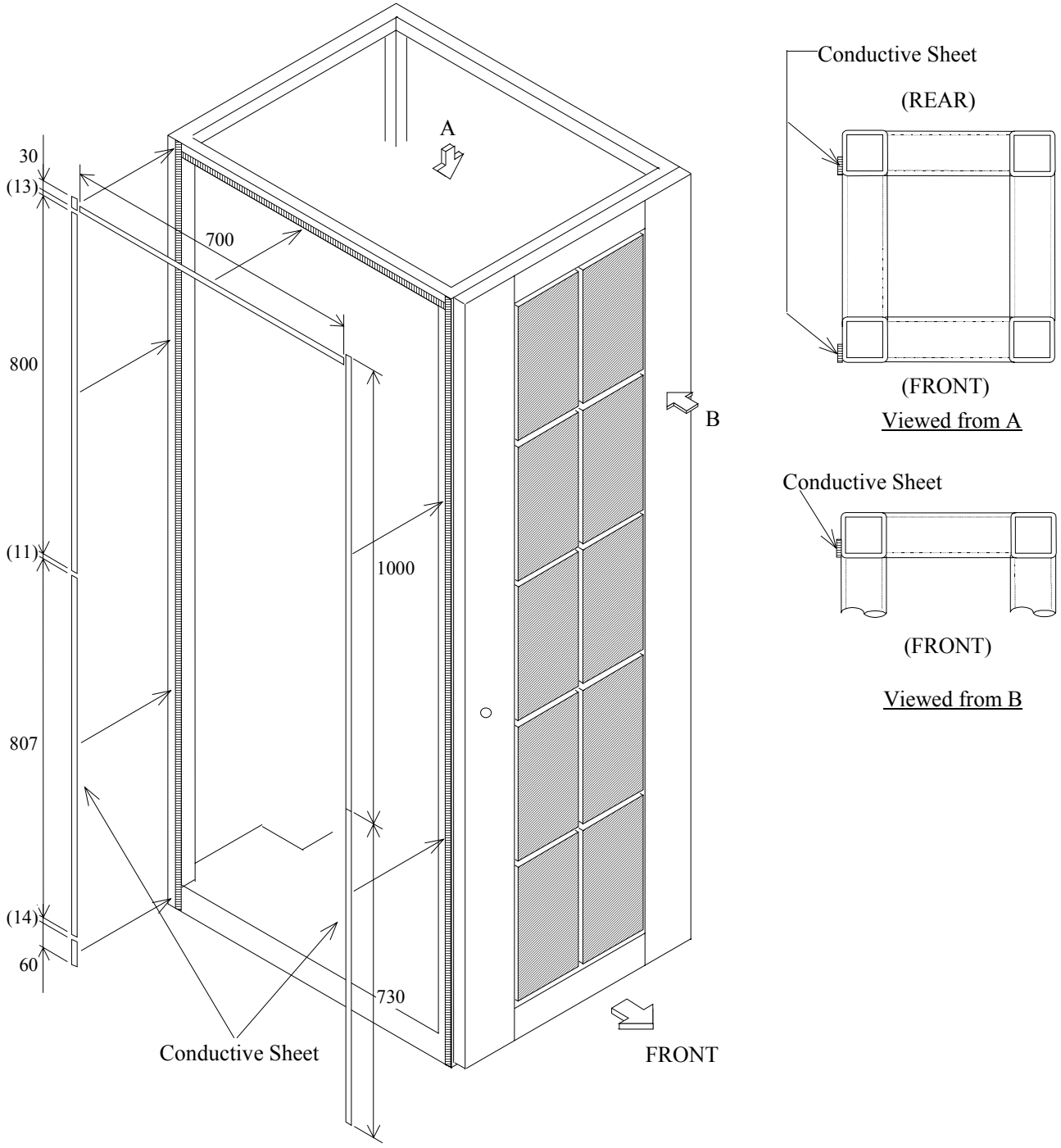

Fig. 3.19.3.2-6 Attachment of Conductive Sheets

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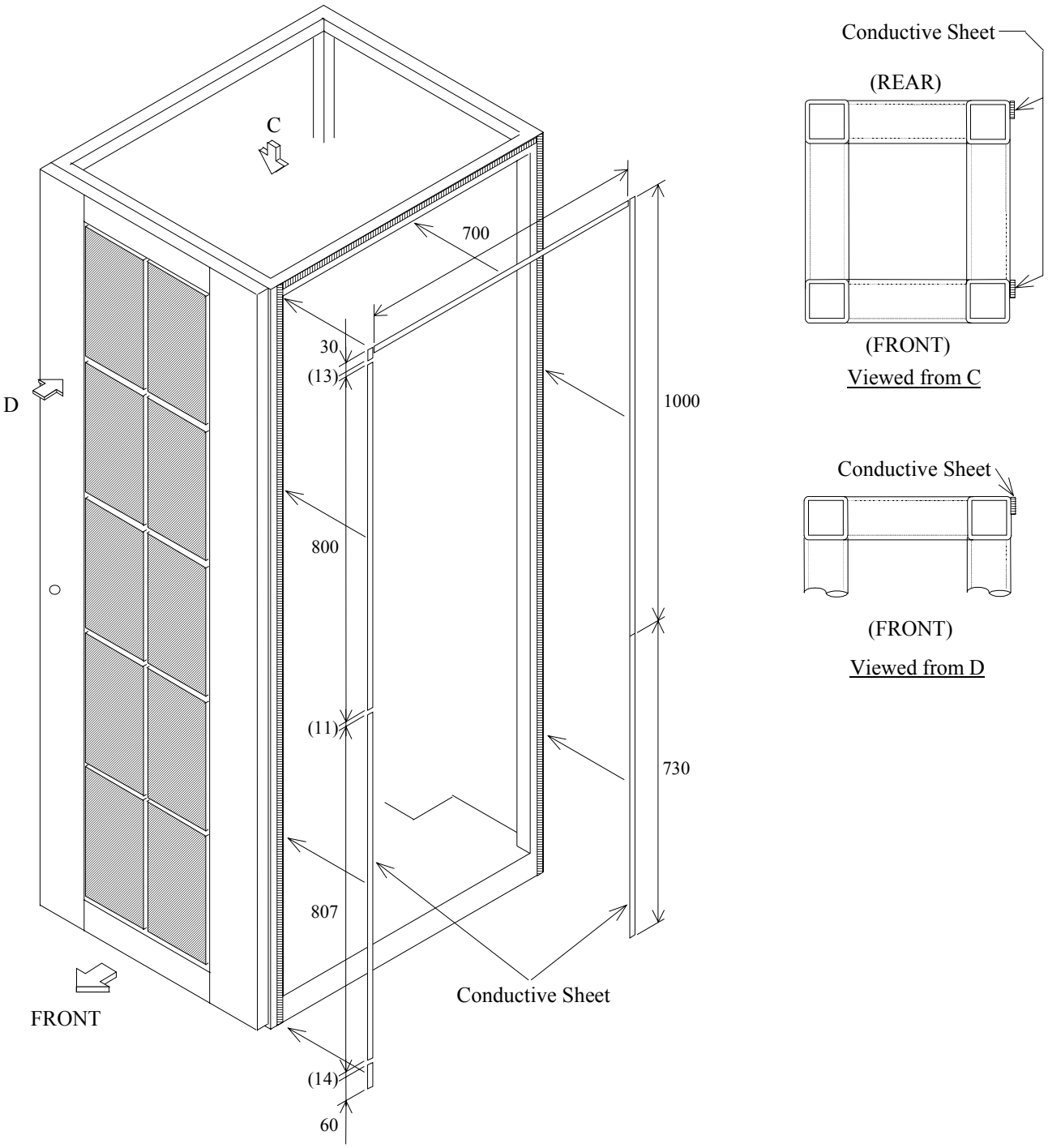

Fig. 3.19.3.2-7 Attachment of Conductive Sheets

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9. Pass the DKUMN cables and the DEV interface cables through the DKU-R1 frame. Refer to Fig. 3.19.3.2-8. Be extremely careful not to pinch the inter-frame cable when coupling the frames to each other.

Note: For Locations of FSW PCBs and DEV interface cables, refer to the labels inside the DKU doors.

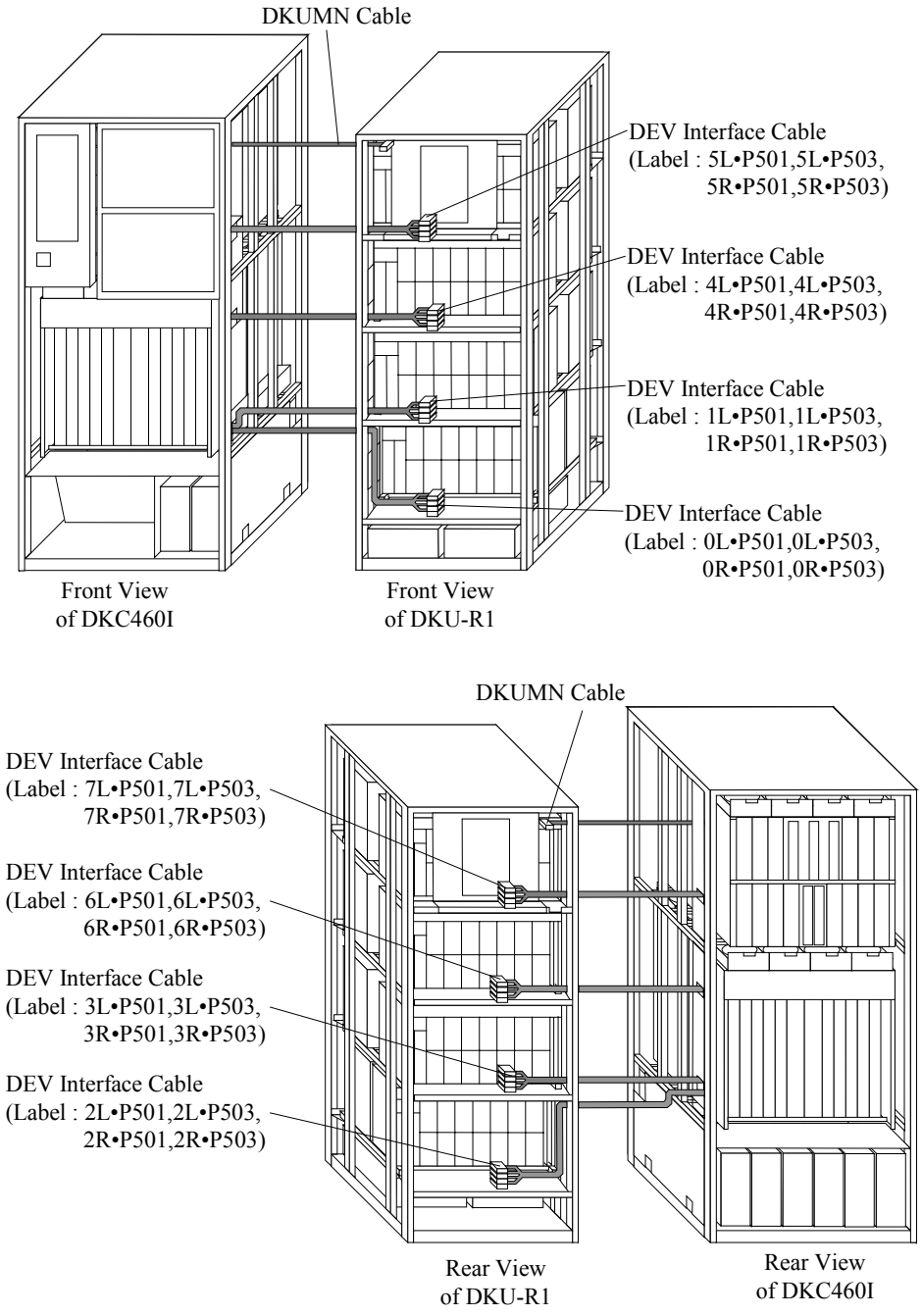

Fig. 3.19.3.2-8 Attachment of Cables

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10. Attach the side plates and fasten the screws.

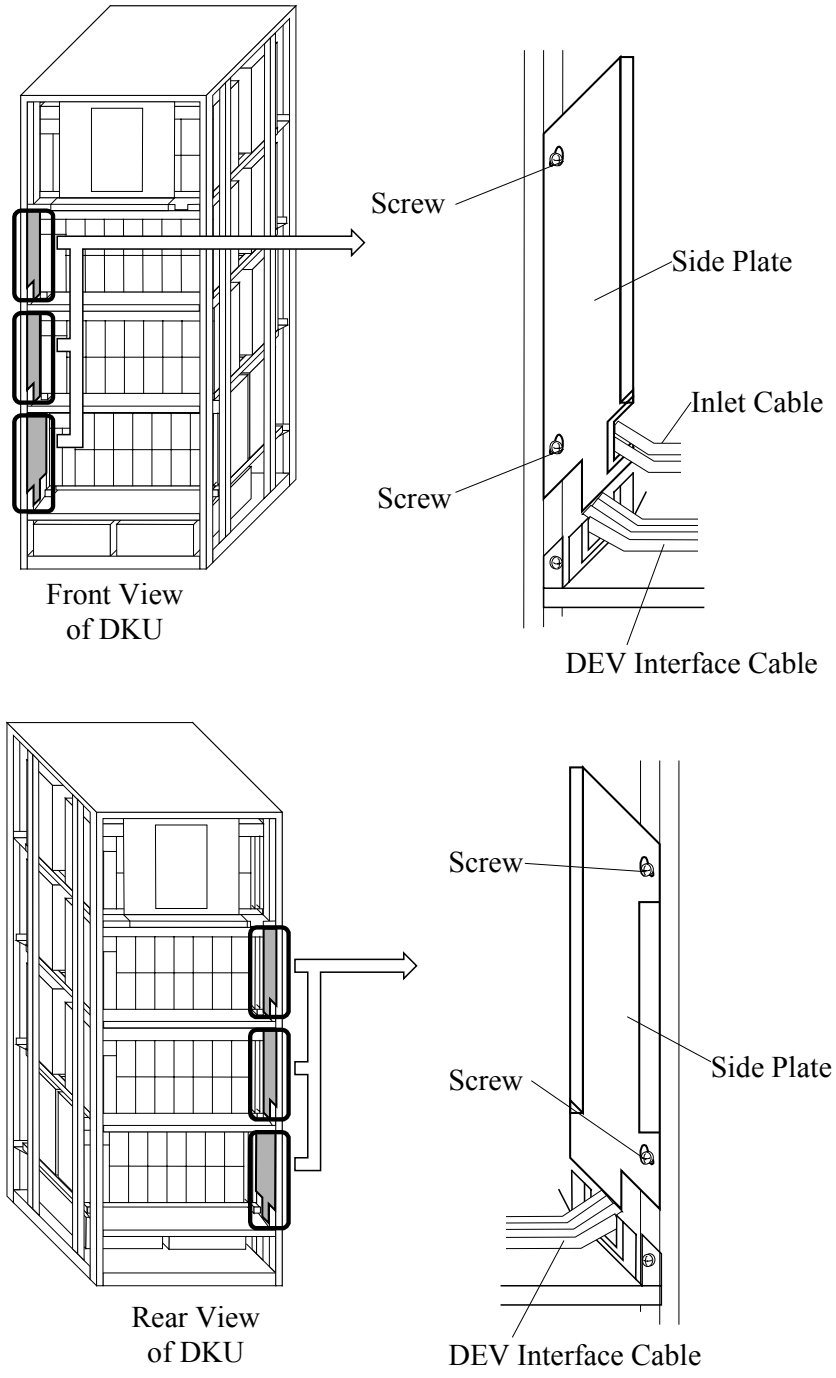

Fig. 3.19.3.2-9 Attachment of Side Plate

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11. Lower the screw jacks until frame is 57mm (2.25in.) from the floor before connecting frames.
12. Level the device as shown Fig. 3.19.3.2-10.

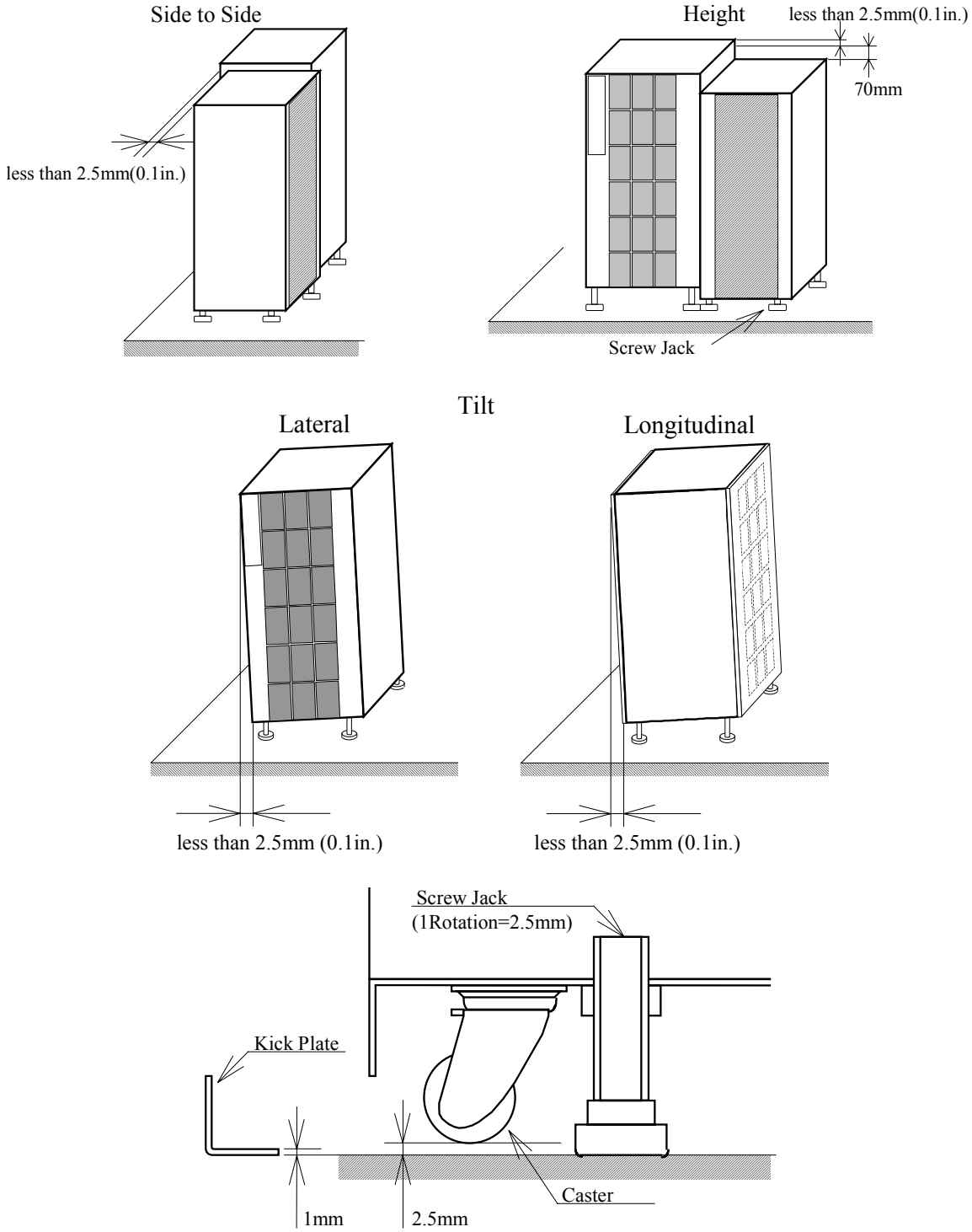

Fig. 3.19.3.2-10 Unit Layout, Height, and Tilt

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13. Remove the Front Logic Box cover from the DKC. (Refer to INST03-COM-10.)
14. Remove the two screws and open the Cable Cover.

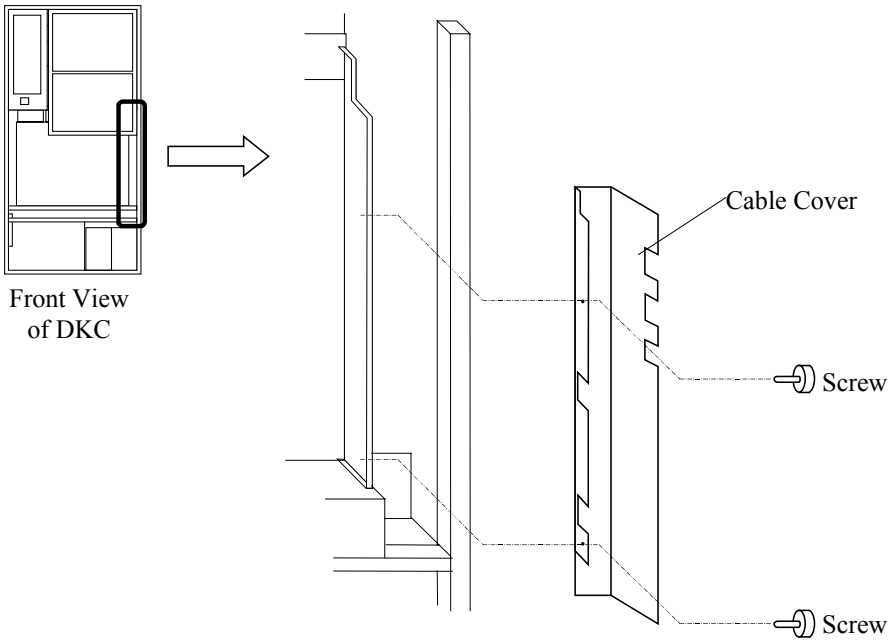

Fig. 3.19.3.2-11 How to open the Cover (DKC front side)

15. Remove the Rear Logic Box cover. (Refer to INST03-COM-20.)
16. Remove the two screws and open the Cable Cover.

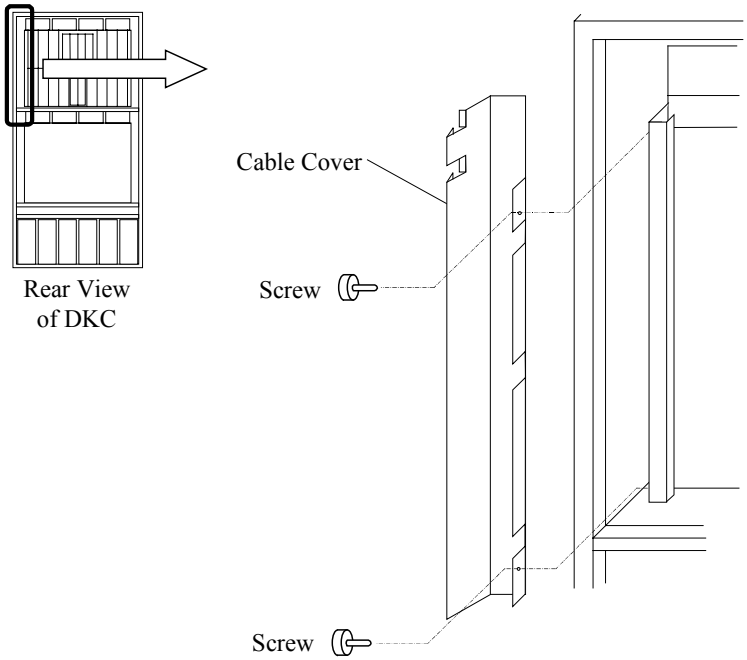

Fig. 3.19.3.2-12 How to open the Cover (DKC rear side)

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3.19.3.3 Frame Connection

3.19.3.3.1 Frame Connection

1. Connect the devices together using six of connecting bolt assemblies, three in front and three in rear. See Fig. 3.19.3.3.1-1.
   The direction of hexagon socket head bolts, binding screws and connecting nuts must be the same as shown in the figure.

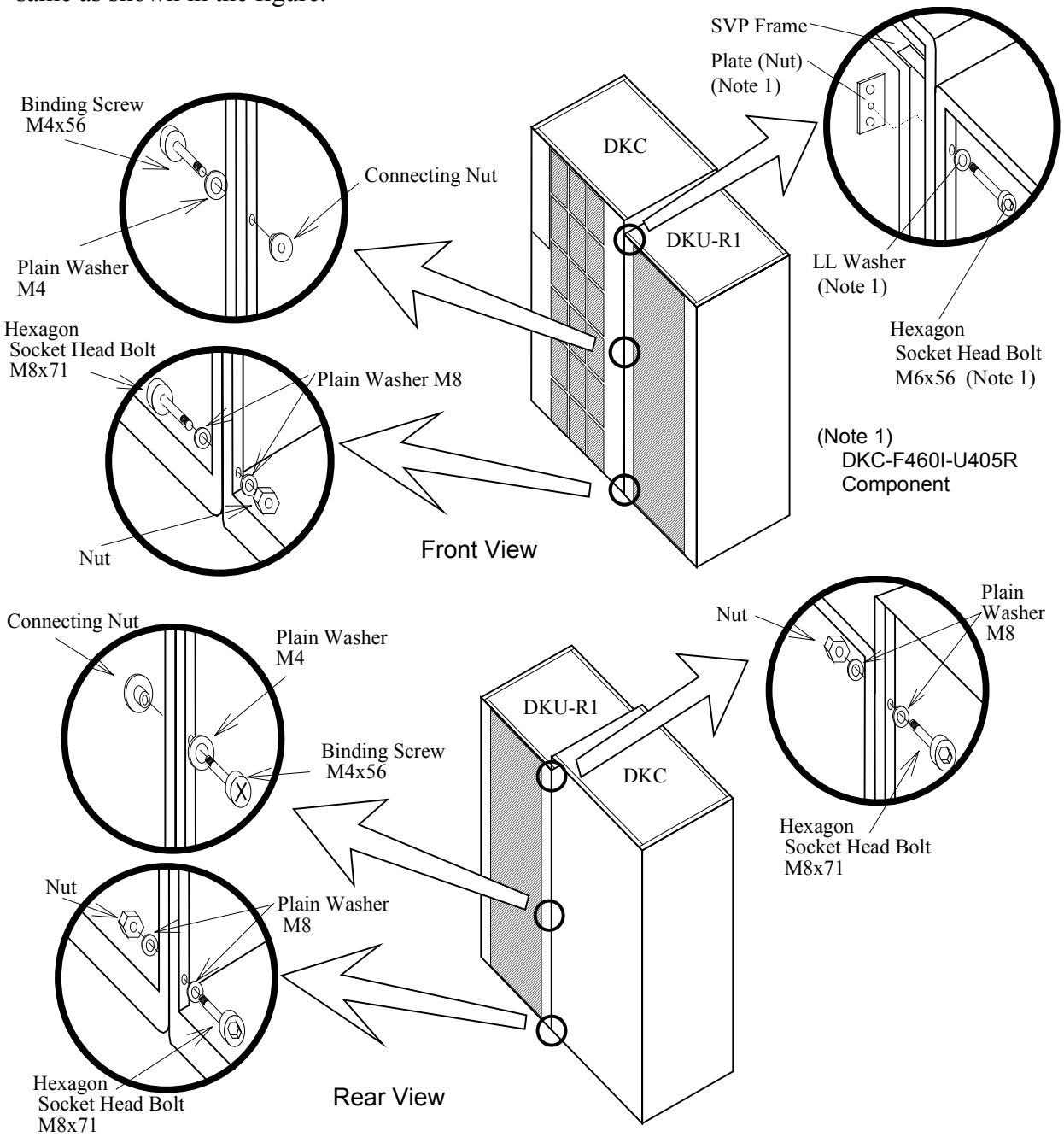

Fig. 3.19.3.3.1-1 Frame Connection

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2. Remove the four screws ① on the top covers.
3. Loosen the three screws ②.
4. Attach the bracket cover ASSY with the four screws ③.
5. Fasten the screws ②.
6. Fix the DKC frame and bracket cover ASSY with the socket bolts, washers and nuts.

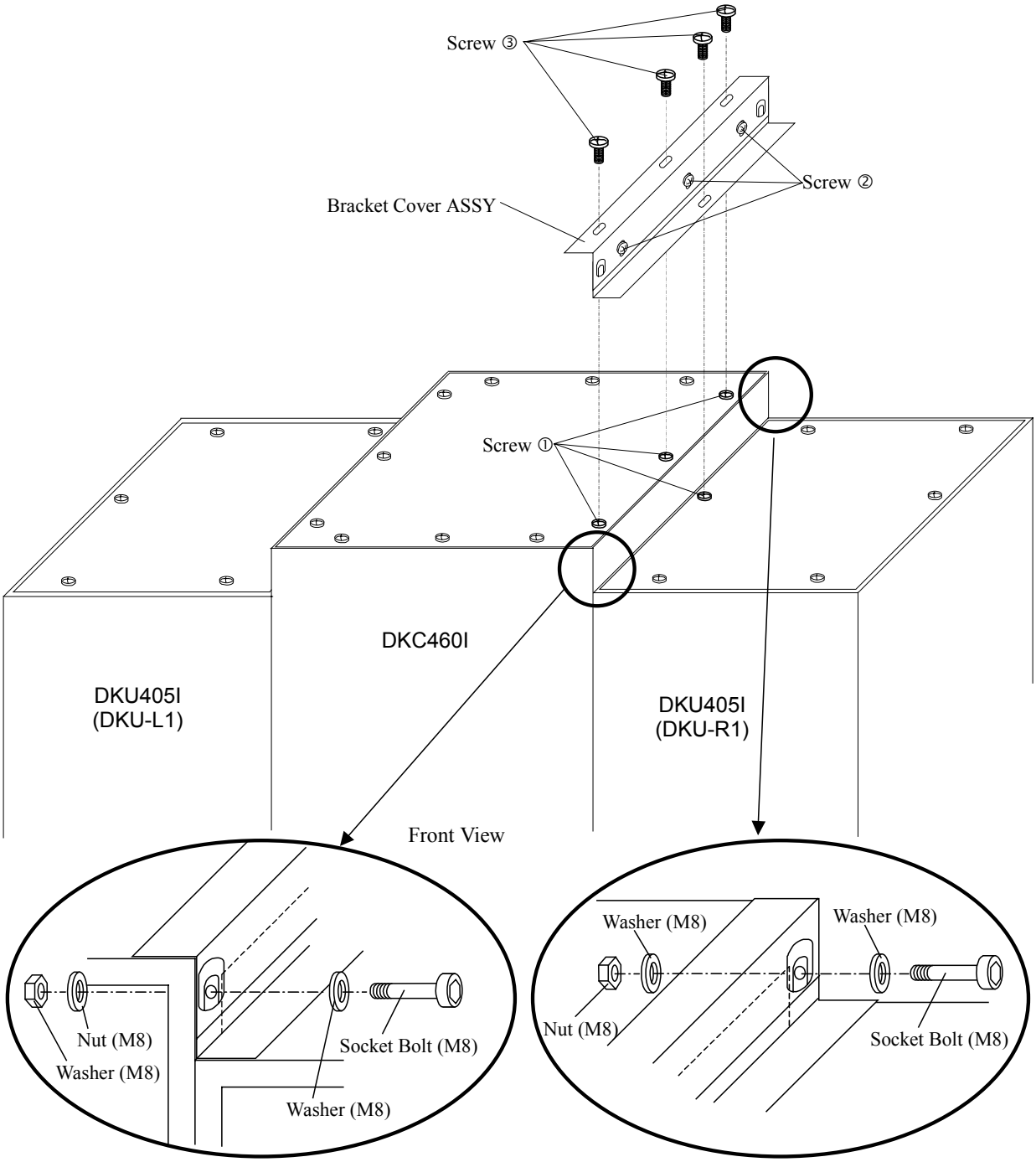

Fig. 3.19.3.3.1-2 Attachment of Bracket Cover ASSY

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3.19.3.3.2 Frame Ground Cable Attachment

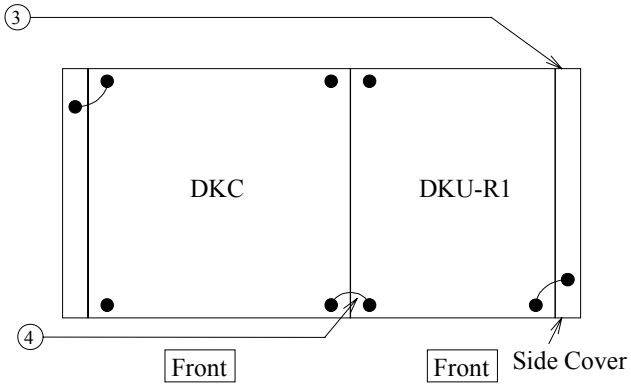
Note

: Frame ground cable

: Screw and washer (lock washer)

: Thread

1. Connect the cabinets.
2. Attach the side cover to the Disk Unit. Refer to SECTION 3.19.3.3.3 Side Cover Re-installation.
3. Attach the frame ground cable with the screw and lock washer.
4. Attach the front and rear logic box covers to the Disk Controller Unit in the reverse order of SECTION 3.19.3.2 item 13 through 16 [INST03-U40-340].



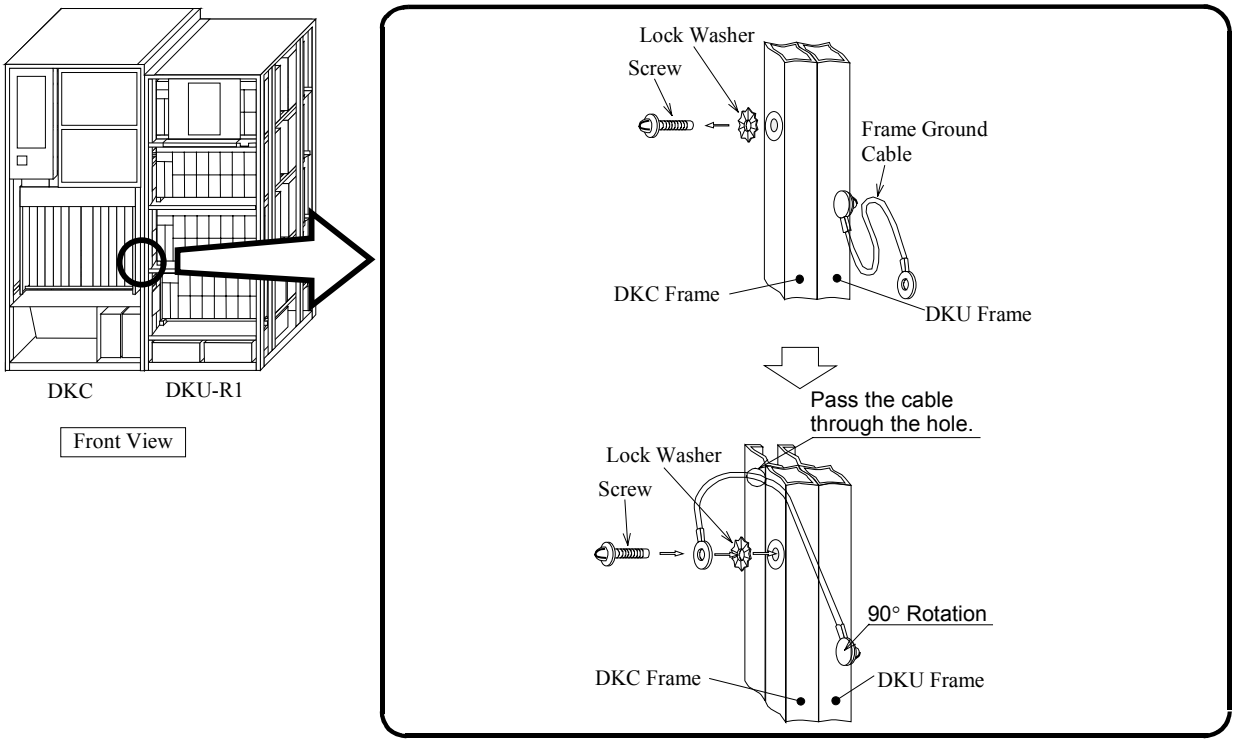


Fig. 3.19.3.3.2-1 Attachment of Frame Ground Cable

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3.19.3.3.3 Side Cover Re-installation

Attach the side cover to the end of the string with the four binding screws and washers.

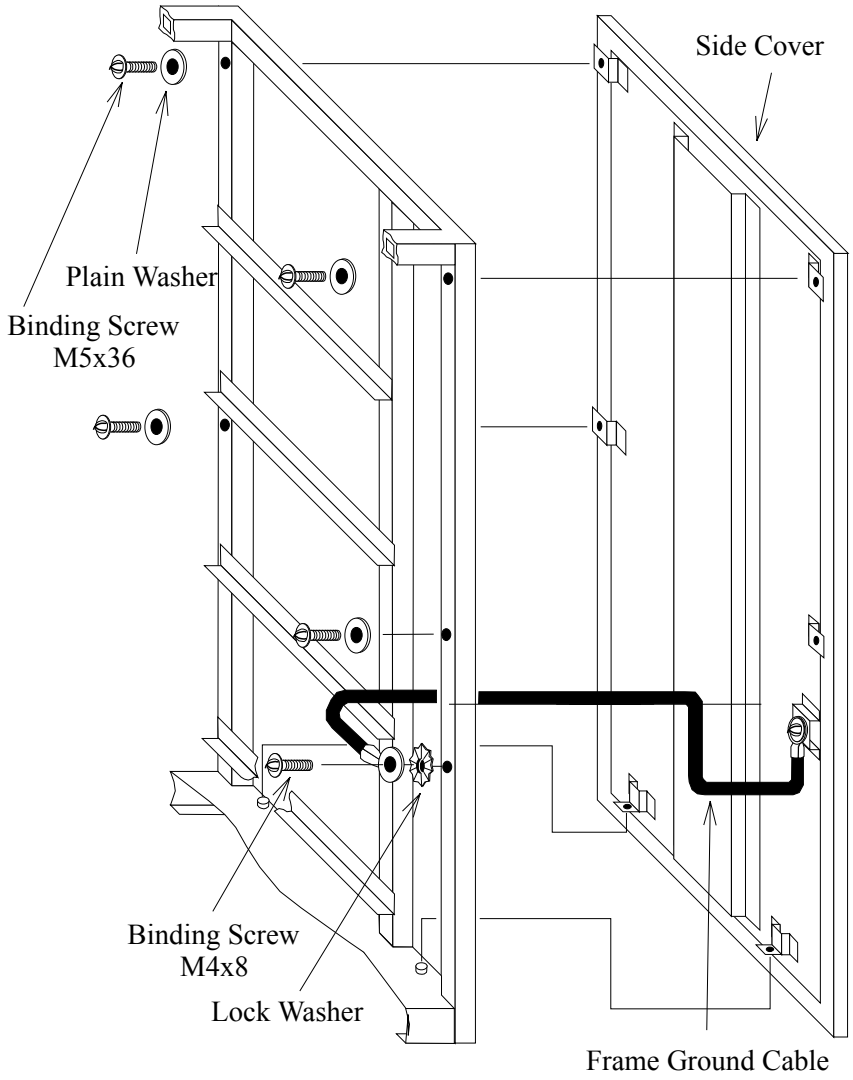

Fig. 3.19.3.3.3-1 Re-installation of Side Cover

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3.19.3.3.4 Installation of Kick Plate

Attach the kick plates with the binding screws. See Figs. 3.19.3.3.4-1 and 3.19.3.3.4-2.

NOTICE:
Contact the kick plate to the floor to prevent static electricity.

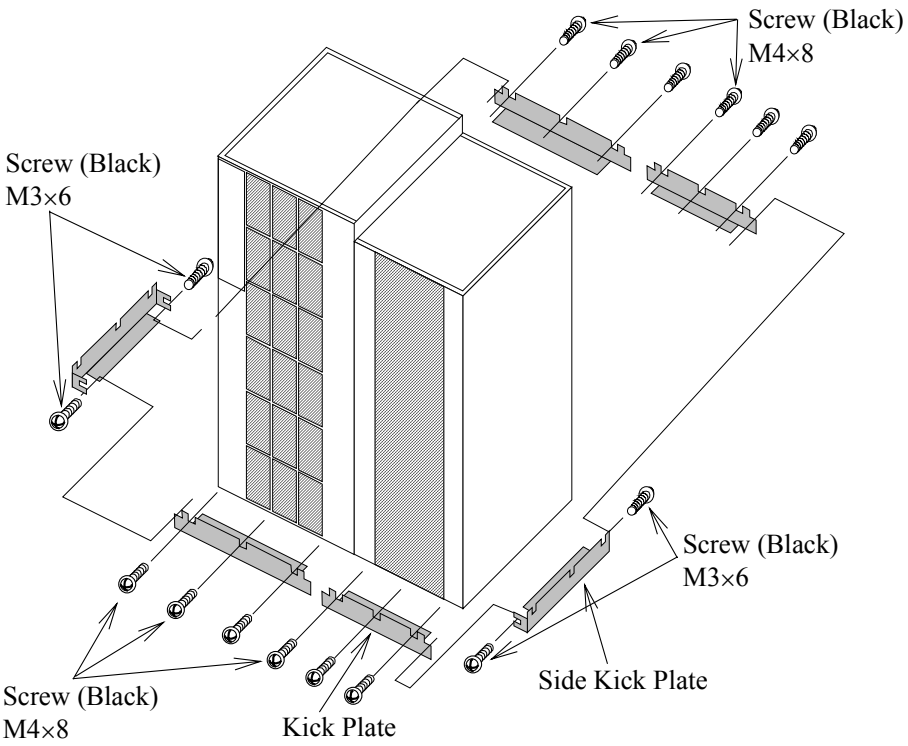
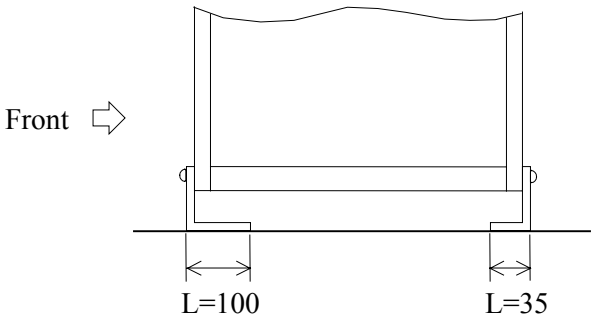


Fig. 3.19.3.3.4-1 Installation of Kick Plate

Care should be taken when installing the kick plates of the DKU, because the front and rear kick plates are not the same.
Install the kick plate with the dimension L of 100 mm to the front side of the subsystem and that with the dimension L of 35 mm to the rear side.



Side View of DKU

Fig. 3.19.3.3.4-2 Kick Plates of DKU

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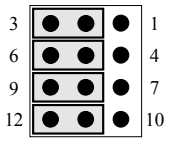
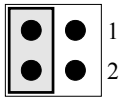
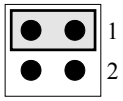
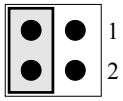
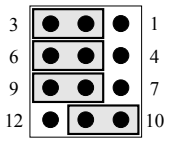
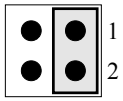
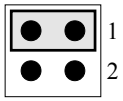
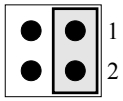
3.19.3.4 Installation of Switches and Jumper Plugs

Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

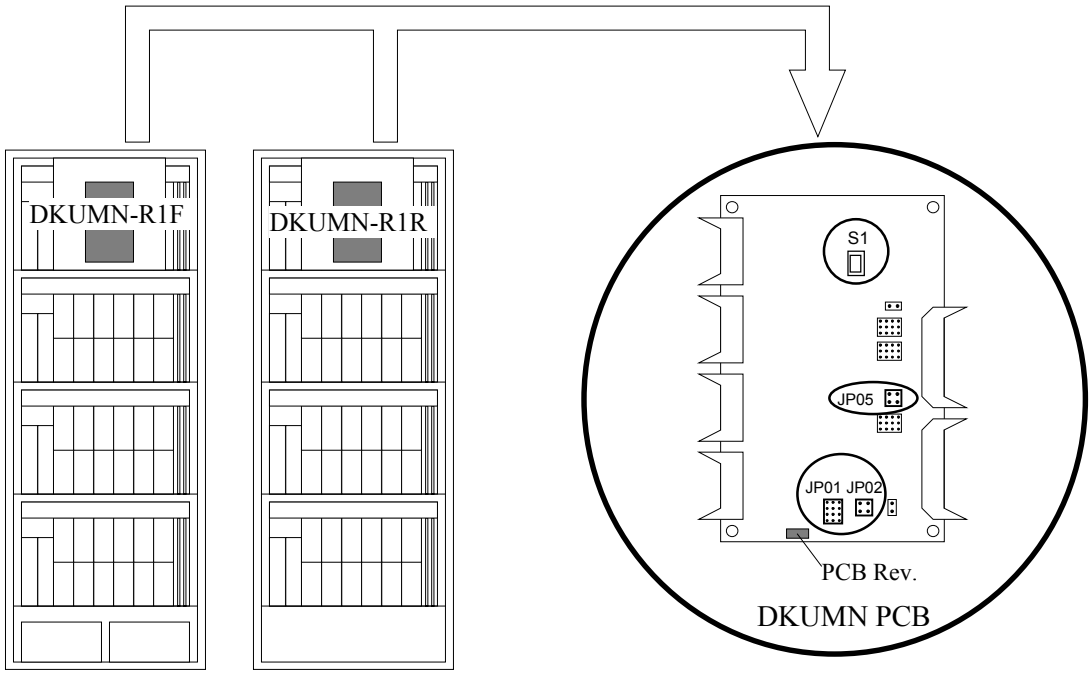
3.19.3.4.1 Installation of Switches and Jumper Plugs in DKUMN PCB

Set the switches and install the jumper plugs in the DKUMN PCBs as indicated in the table below.

Table 3.19.3.4.1-1 SWITCH and JUMPER PLUG installation of the DKUMN PCB

Location No.	S1	JP01	JP02		JP05	Remarks
			Note 1	**Note 2**	**Note 3**	
DKUMN-R1F	Enable					
DKUMN-R1R	Enable					

Note 1 : No Platform for Canister Mount (DKU-F405I-B4) Installed (Four HDU Boxes)
Note 2 : Platform for Canister Mount (DKU-F405I-B4) Installed (Eight HDU Boxes)
Note 3 : In the DKUMN PCB Rev. A/E and later A/E, jumper plugs setting are not require, because jumper connector (JP05) is not located on the DKUMN PCB.



Front View of DKU

Rear View of DKU

Note: In the DKUMN PCB Rev. A/E and later A/E, jumper plugs setting are not require because, jumper connector (JP05) is not located on the DKUMN PCB.

Fig. 3.19.3.4.1-1 Installation of Switches and Jumper Plugs in DKUMN PCB

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3.19.3.4.2 Installation of Jumper Plugs in PCI CON PCB

a. Install the jumper plugs in the PCI CON PCB as indicated in the table below.

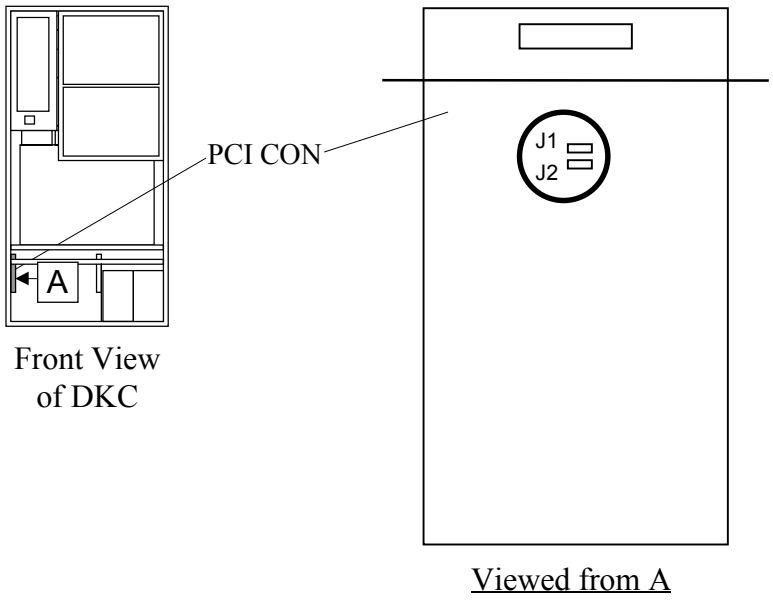
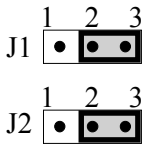
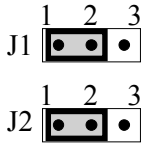


Fig. 3.19.3.4.2-1 Installation of Jumper Plugs in PCI CON PCB

Table 3.19.3.4.2-1 Installation of Jumper Plugs in PCI CON PCB

No.	Description	Installing status J1 and J2
1	When power is controlled from the host(at least one PCI cable attached to JP1-JP8 on PCI CON PCB), set the jumpers as shown.	
2	When power is not controlled from the host, no PCI cable attached to JP1-JP8 PCI CON PCB or to disable the EPO of host, set the jumpers as shown.	

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3.19.3.4.3 Installation of Jumper Connectors in BAT CTR PCB

a. Open the locking clamp and remove the two jumper connectors.

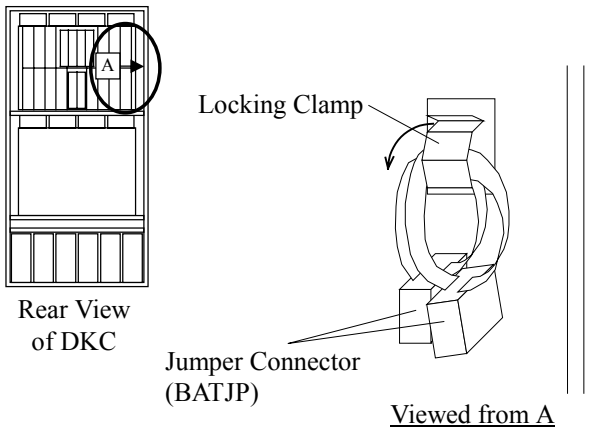

Fig. 3.19.3.4.3-1 Removal of Jumper Connectors

b. Install the jumper connectors in the BATCTR PCBs as indicated in the figure below.

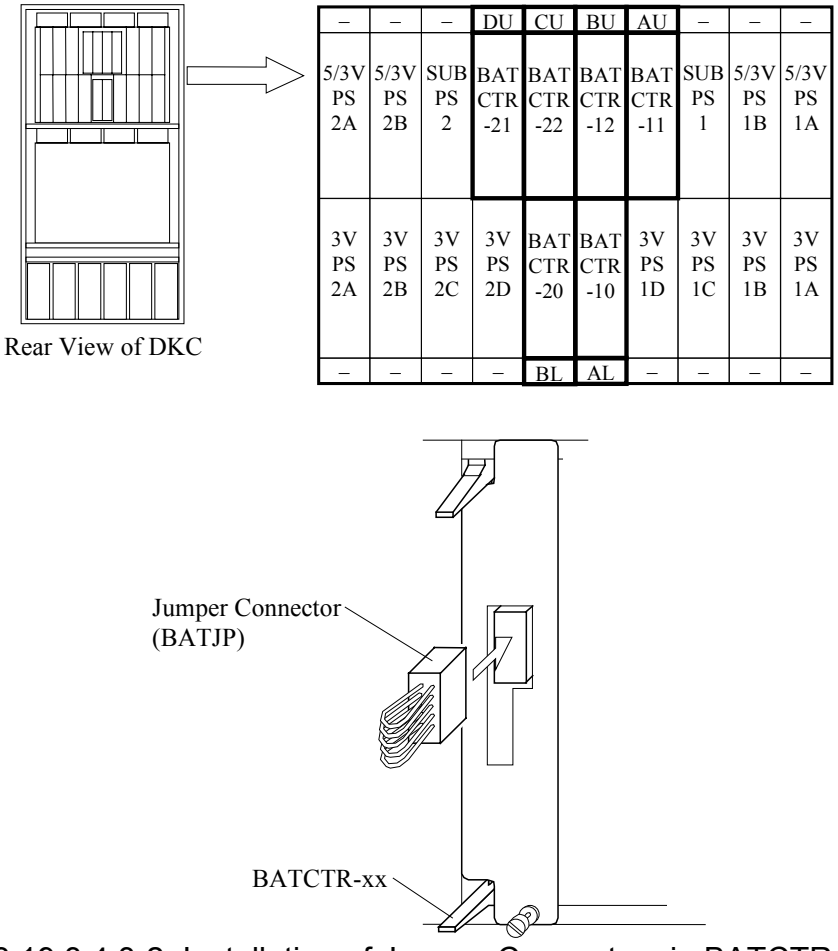

Fig. 3.19.3.4.3-2 Installation of Jumper Connectors in BATCTR PCB

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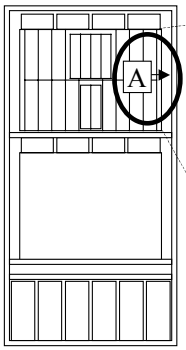
c. When the Additional Battery for Cache Memory (DKC-F460I-42) is installed, open the locking clamp and remove the two jumper connectors.
When the Additional Battery for Cache Memory (DKC-F460I-42) is not installed, go to next section.

d. Install the jumper connectors in the BATCTR PCBs as indicated in the figure below.



Rear View of DKC

–	–	–	DU	CU	BU	AU	–	–	–
5/3V PS 2A	5/3V PS 2B	SUB PS 2	BAT CTR -21	BAT CTR -22	BAT CTR -12	BAT CTR -11	SUB PS 1	5/3V PS 1B	5/3V PS 1A
3V PS 2A	3V PS 2B	3V PS 2C	3V PS 2D	BAT CTR -20	BAT CTR -10	3V PS 1D	3V PS 1C	3V PS 1B	3V PS 1A
–	–	–	–	BL	AL	–	–	–	–

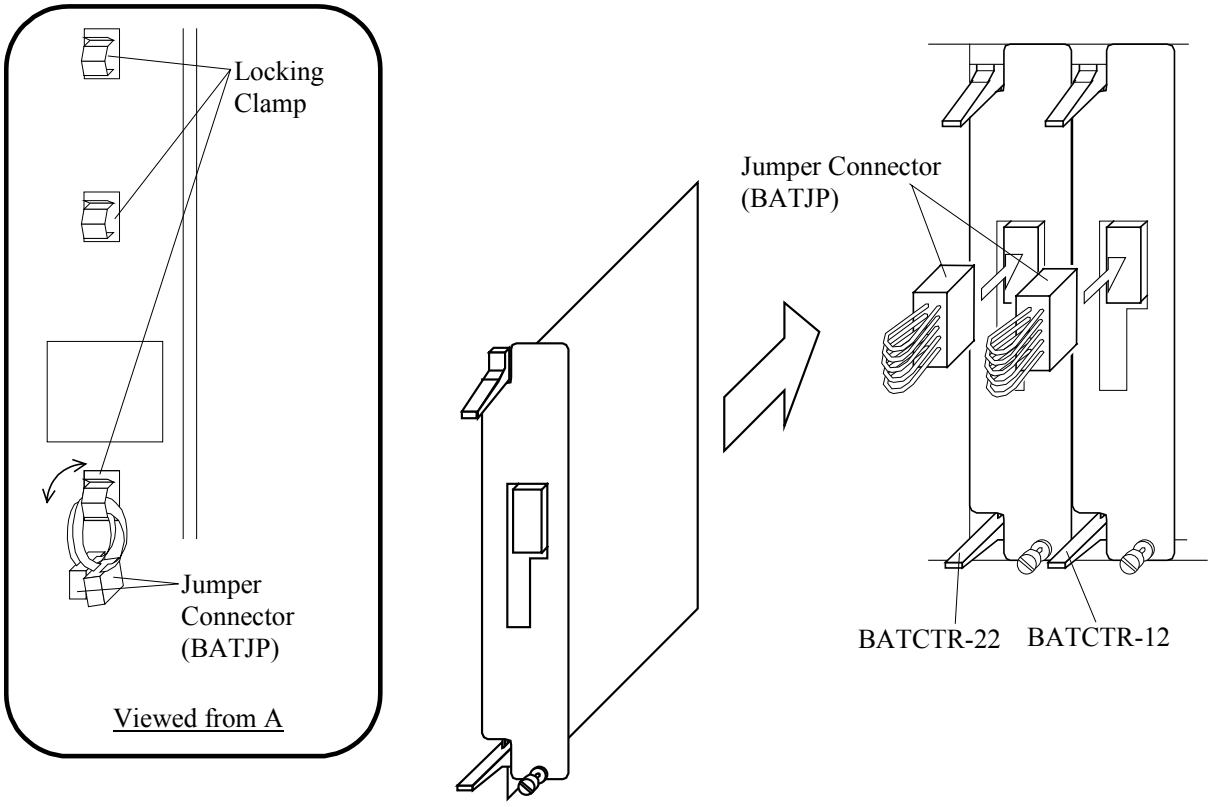


Fig. 3.19.3.4.3-3 Removal of Jumper Connectors

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3.19.3.5 Cabling

3.19.3.5.1 Cabling Procedure of Power Cable ASSY

1. Remove the plate.
   a. Loosen the two screws.

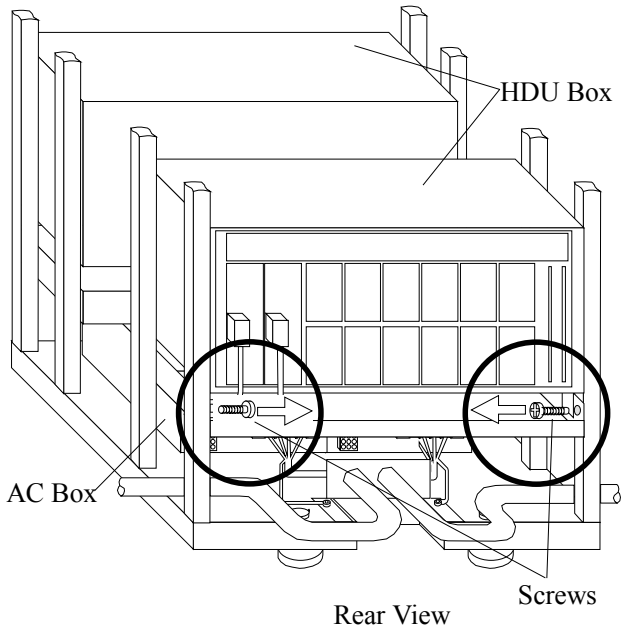

Fig. 3.19.3.5.1-1 Removal of Plate

b. Remove the plate.

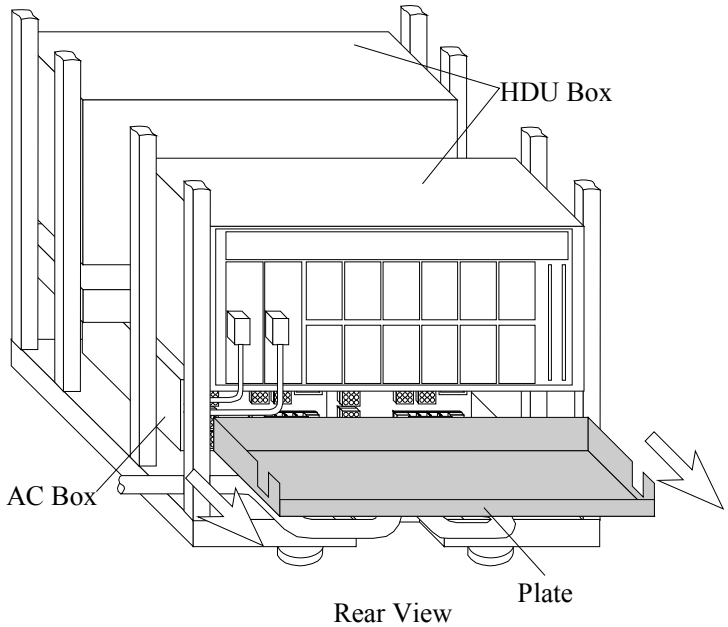

Fig. 3.19.3.5.1-2 Removal of Plate

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2. Fix the power cable assy.
   a. Loose the four screws

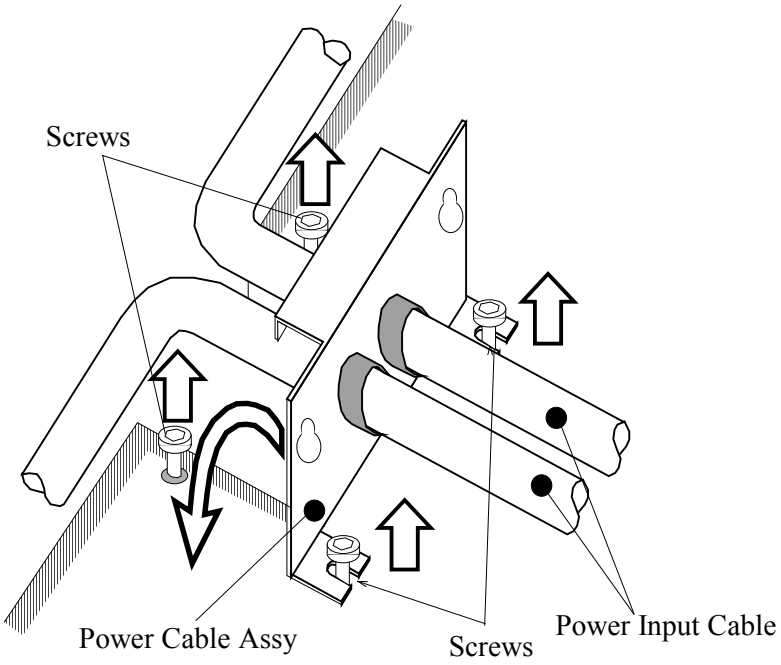

Fig. 3.19.3.5.1-3 Fixation of Power Cable Assy

   b. Fix the power cable Assy with screws.

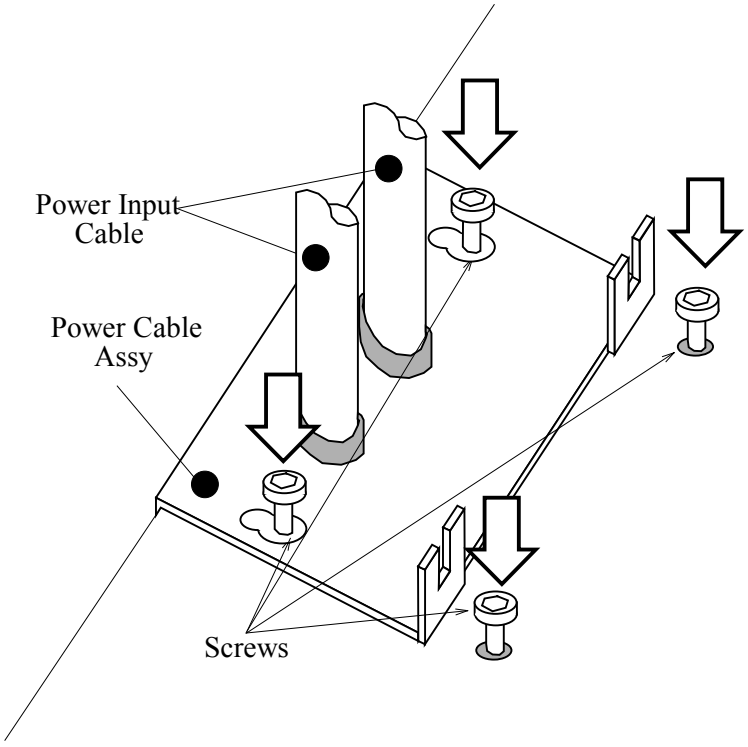

Fig. 3.19.3.5.1-4 Fixation of Power Cable Assy

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3. Re-Install the plate.

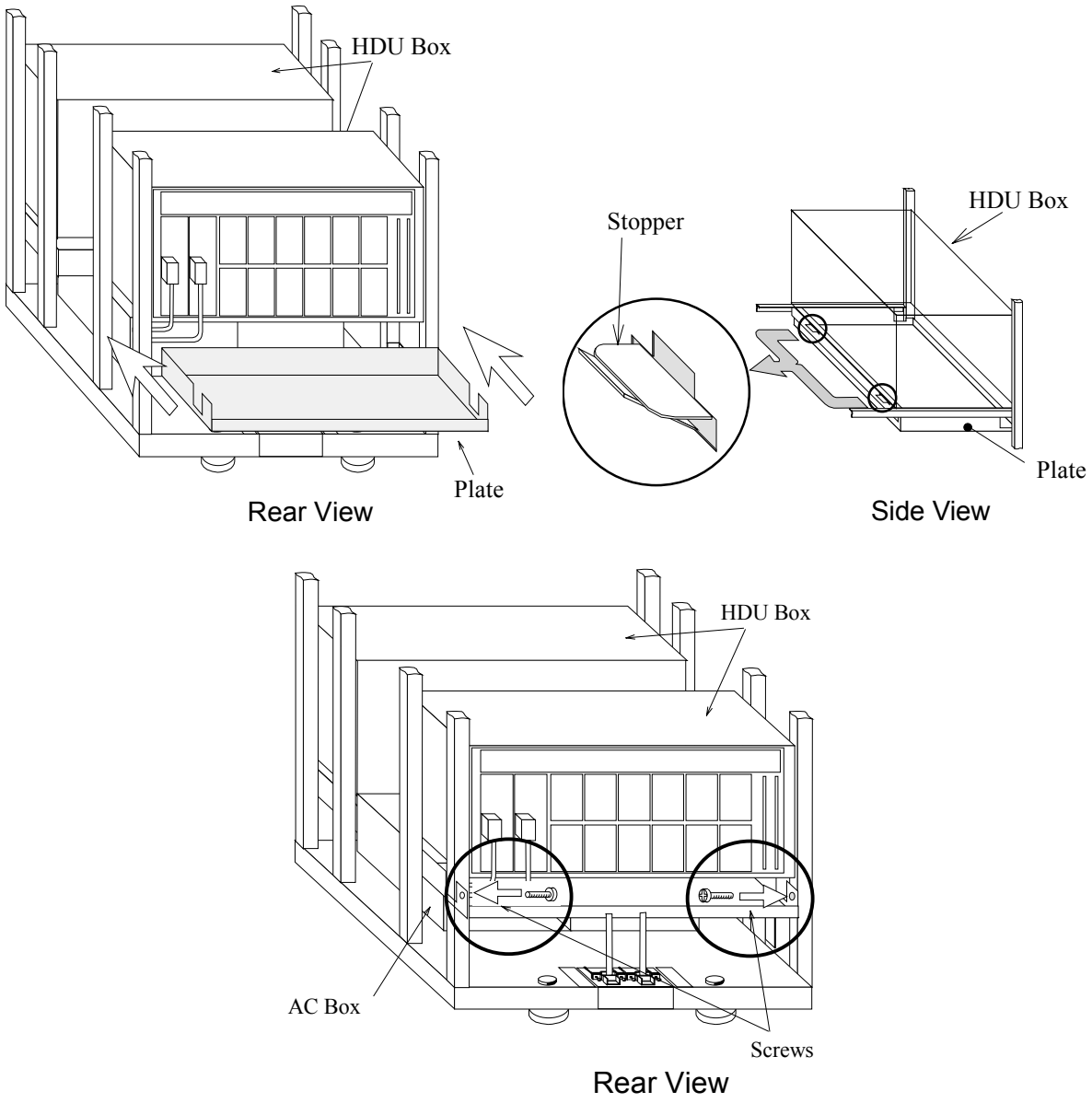

Fig. 3.19.3.5.1-5 Re-Installation of Plate

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3.19.3.5.2 Cabling Procedure of the DKUMN Cables

Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

1. Connect the MON-CON PCBs and the DKUMN PCBs as summarized in the table below.

Table 3.19.3.5.2-1 Connection of DKUMN Cables

No.	Disk Controller			First Disk Unit			Remarks
	Location No.	Connector No.	Cable No.	Location No.	Connector No.	Cable No.	
1	MONI-CON1	J21	P21-1	DKUMN-R1F	J04	P4-1R	
2	MONI-CON2	J21	P21-2	DKUMN-R1R	J04	P4-2R	

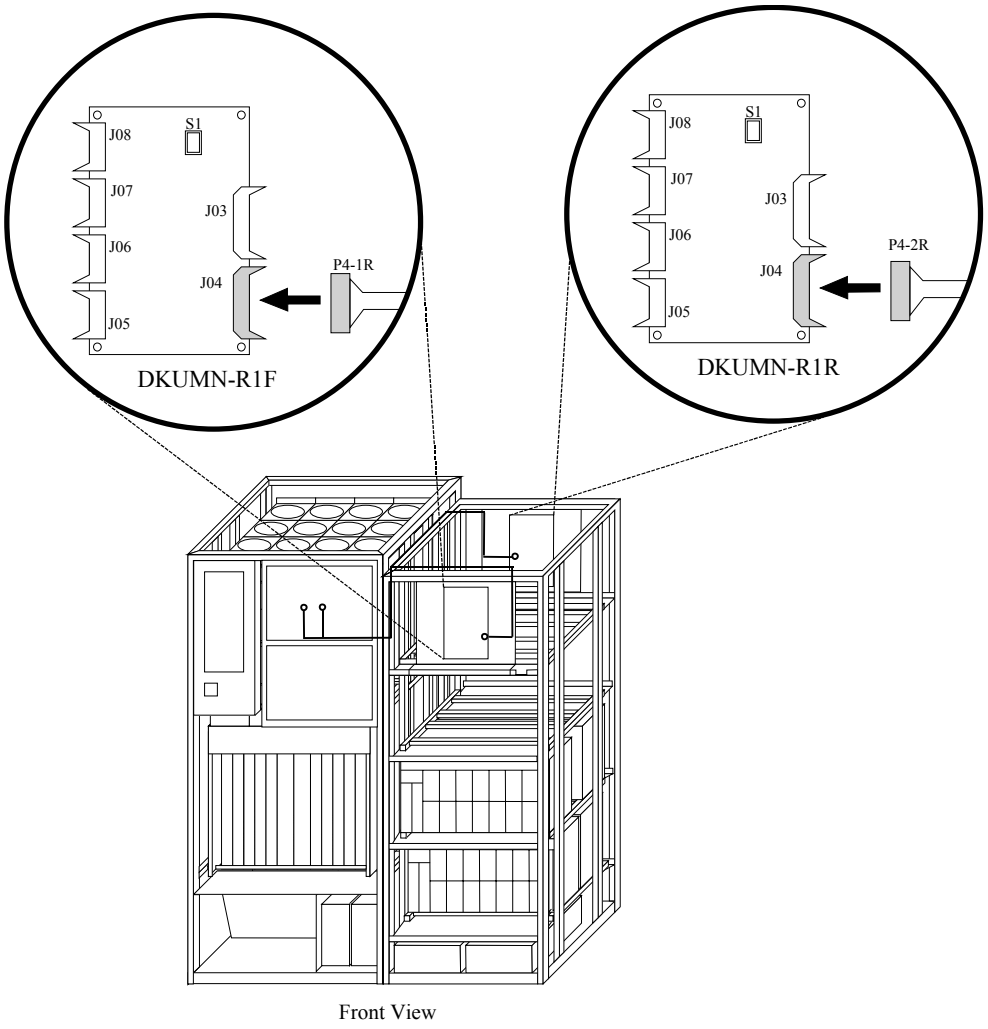

Fig. 3.19.3.5.2-1 Connection of DKUMN Cables

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2. Bind the cables with binders.

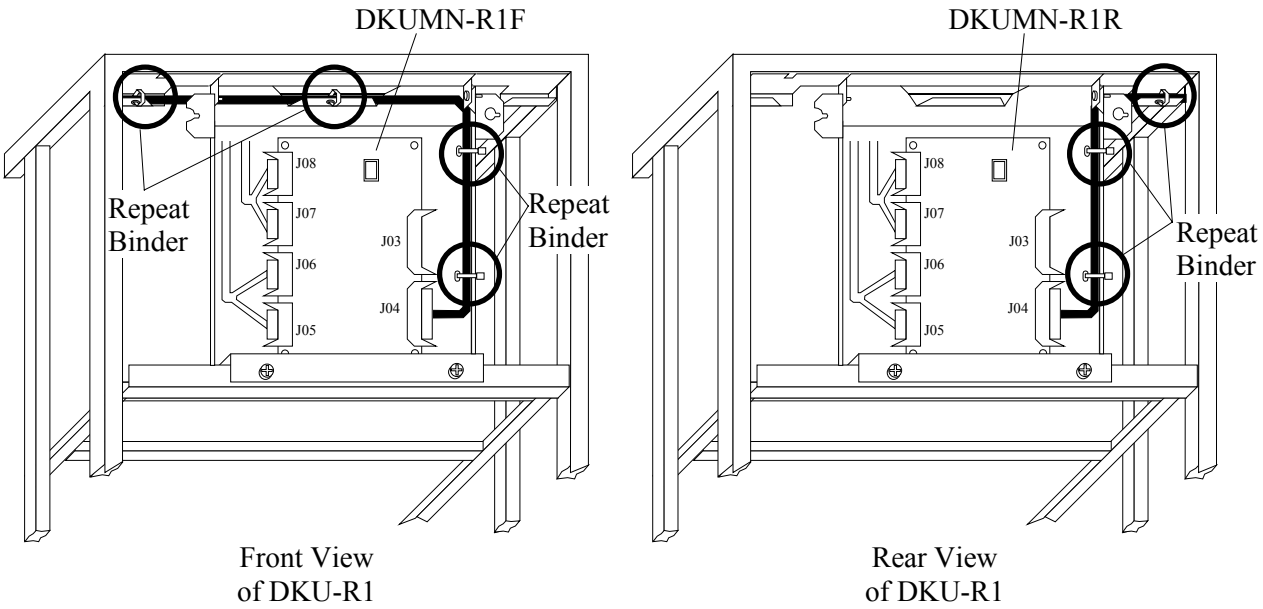

Fig. 3.19.3.5.2-2 Binding of DKUMN Cables

3. Lift the DKUMN PCB.
   a. Loosen the two screws.
   b. Lift the DKUMN PCB.
   c. Slide and secure the DKUMN PCB

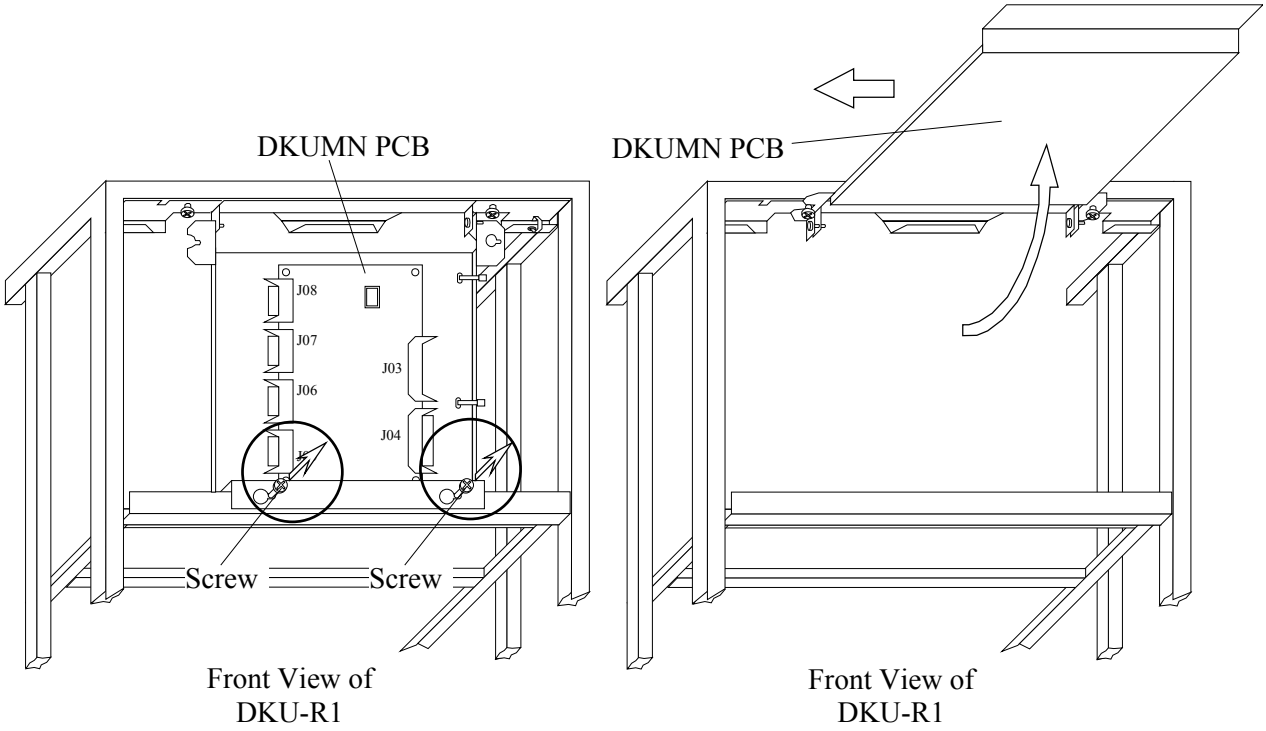

Fig. 3.19.3.5.2-3 Lift of DKUMN PCB

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3.19.3.5.3 Cabling Procedure of DEV Interface Cables

1. Connect the DEV interface cables to the sub-edges on the FSW PCBs located in the HDU box.

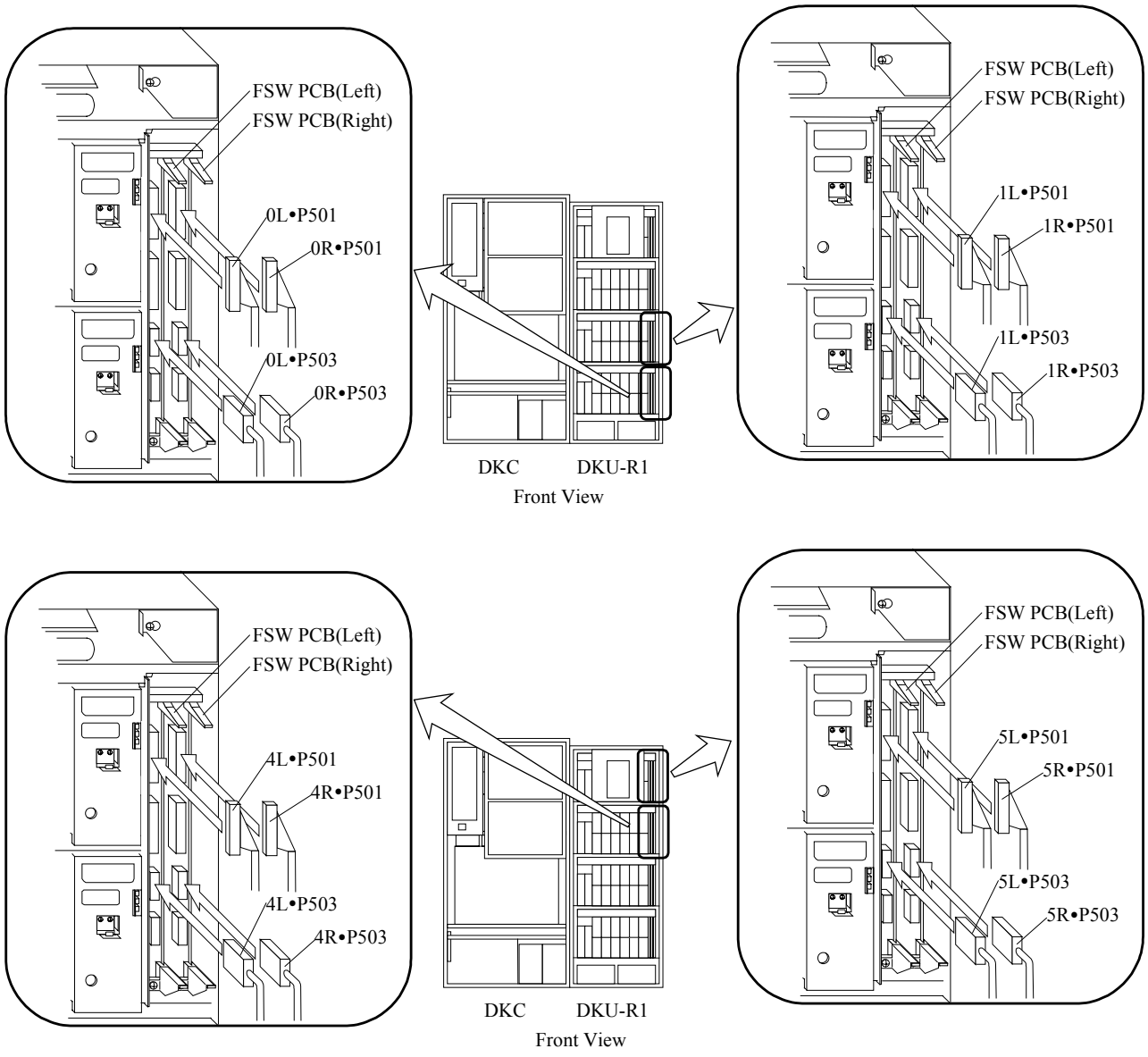

Fig. 3.19.3.5.3-1 Connection of DEV Interface Cables

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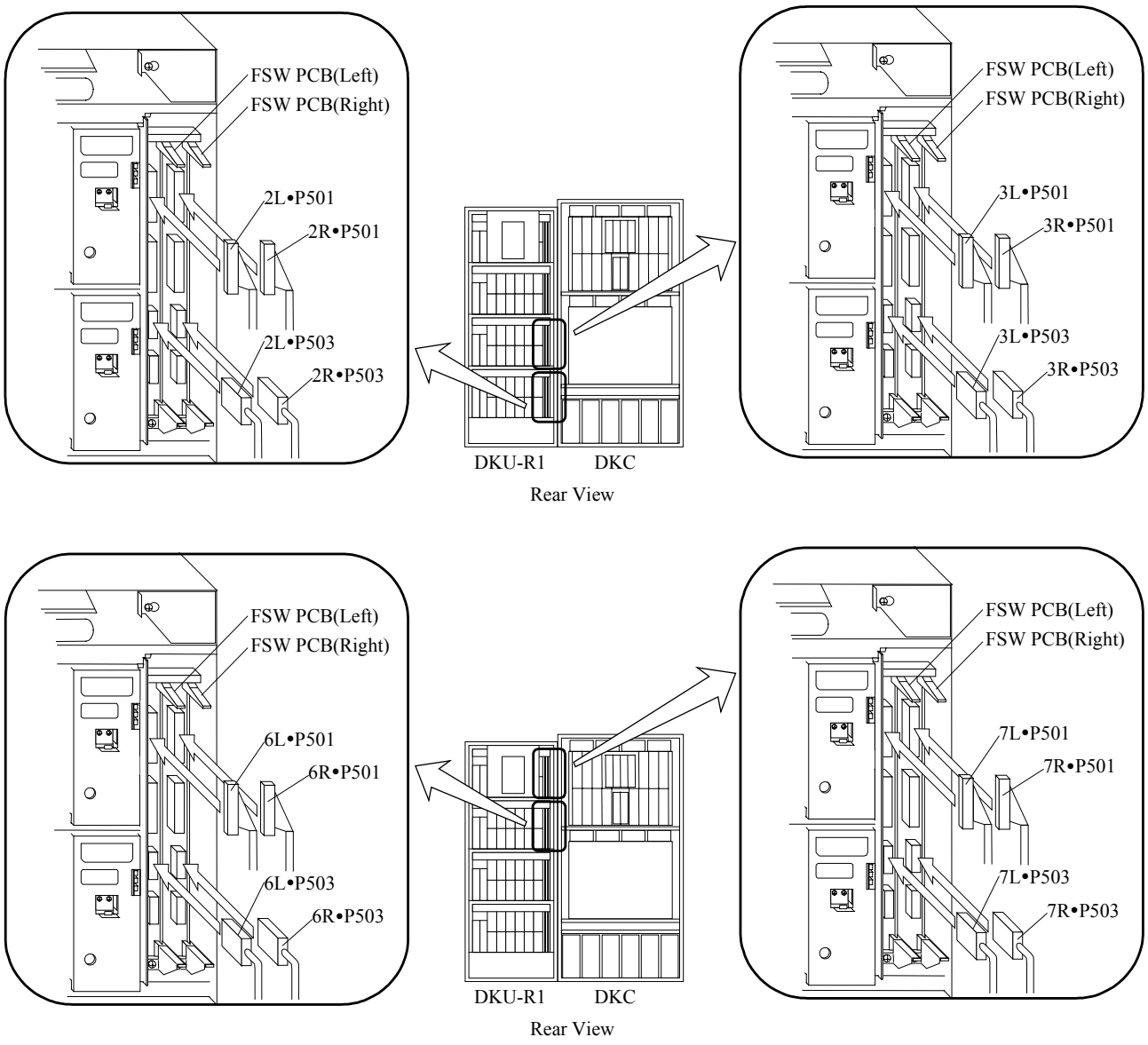

Fig. 3.19.3.5.3-2 Connection of DEV Interface Cables

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2. Attach the cable covers ① and ② with the screws.

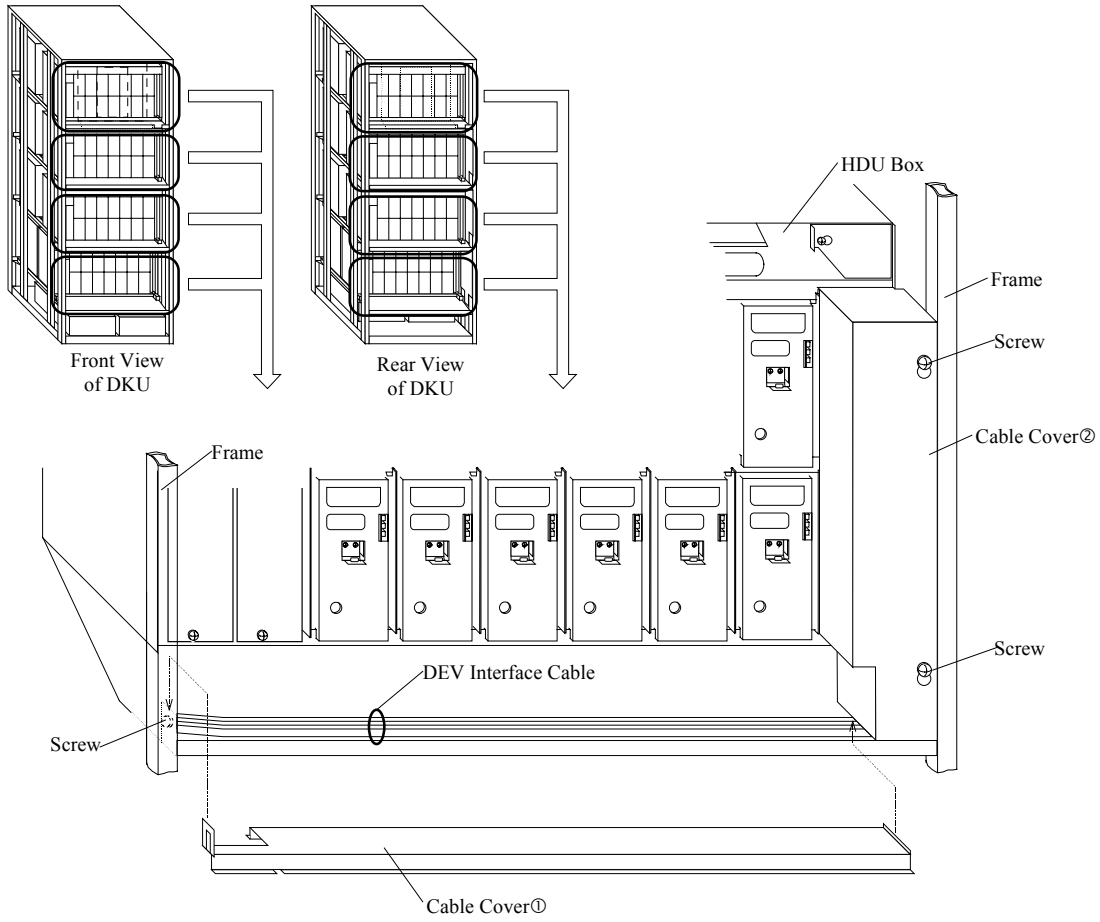

Fig. 3.19.3.5.3-3 Attachment of Cable Covers

3. When the DKU-R1 frame consists of 4 HDU boxes, fix the rest of the DEV interface cables in the DKU-R1 frame with the repeat binders.

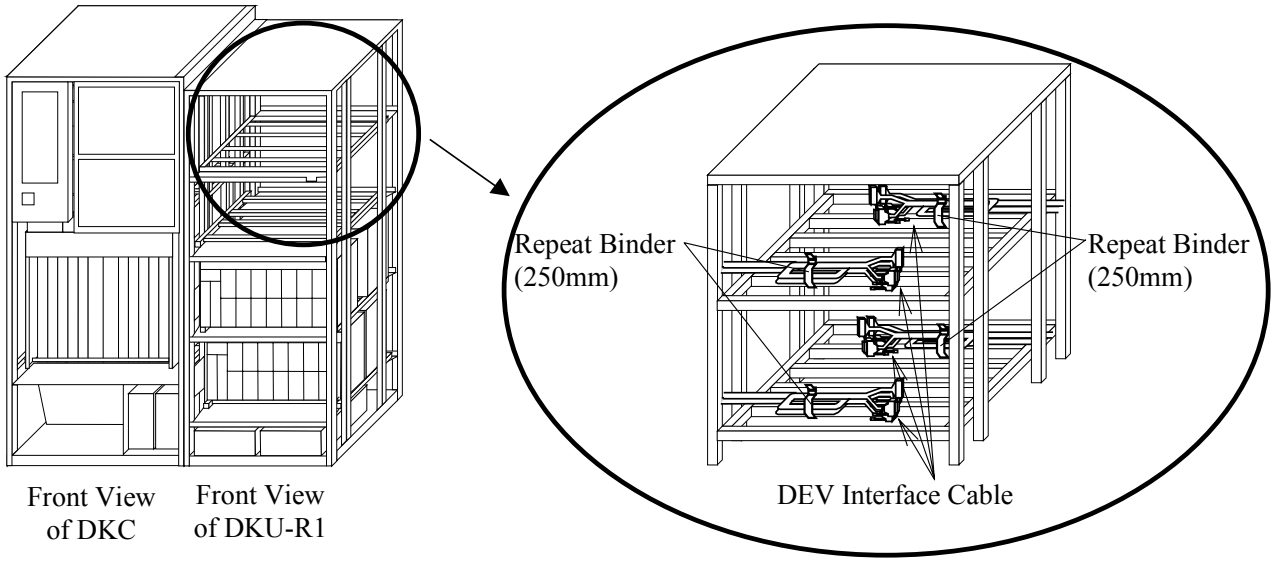

Fig. 3.18.3.5.3-4 Fixation of DEV Interface Cables

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4. Attach the screws fastening the SVP frame.

In the case of the SVP frame type 1

(1) Open the DKC panel.

(2) Attach the screws fastening the SVP frame.

In the case of the SVP frame type 2

(1) Open the SVP ASSY.

(2) Attach the screws fastening the SVP frame.

(3) Close the SVP ASSY.

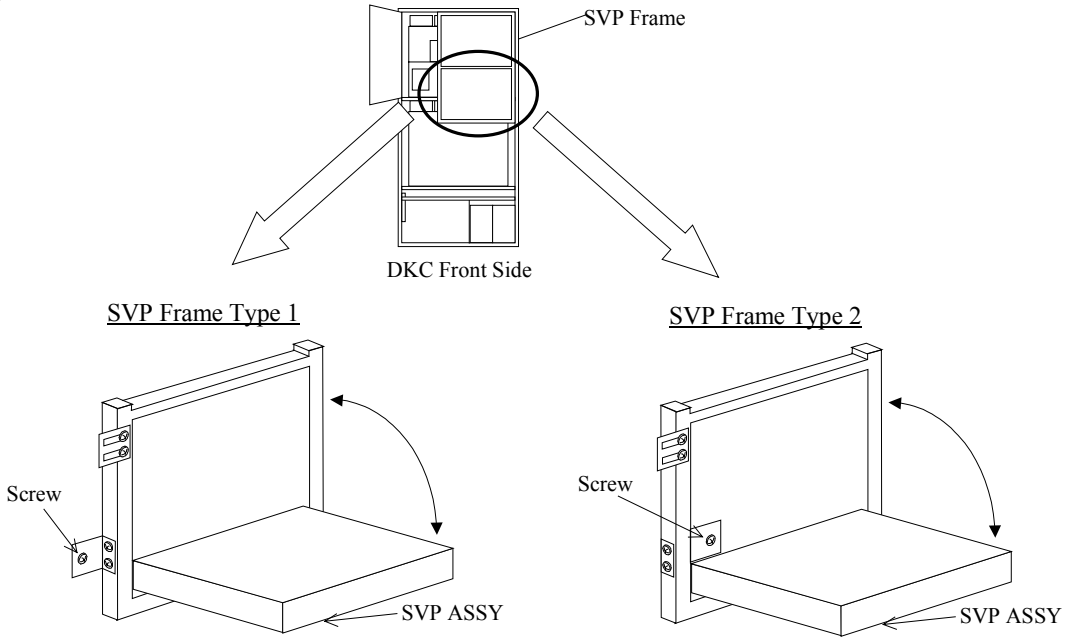

Fig. 3.19.3.5.3-5 Removal of Screws Fastening SVP Frame

3.19.3.6 Labeling

1. Attach the Label (V/Hz/PH.) to the DKU bottom base of Rear side.

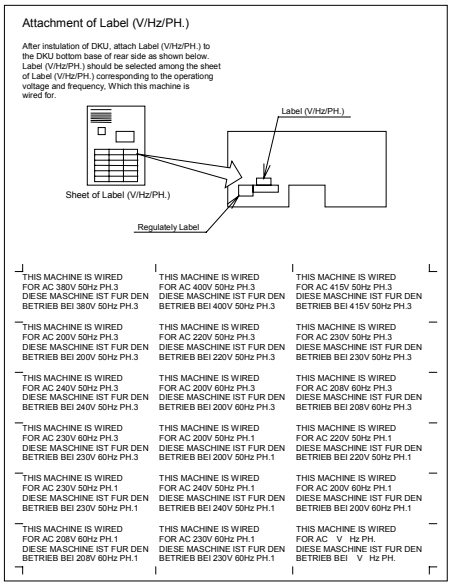

Fig. 3.19.3.6-1 Label (V/Hz/PH.)

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3.19.3.7 Check of Jumper Settings

1. Check the jumper settings (JP1, JP2 and JP3) on the DKUMN PCBs. Refer to Section 3.19.3.4.1 Installation of Switches and Jumper Plugs in DKUMN PCB [INST03-U40-400]. When the jumper plugs are not installed to the correct sockets, install the jumper plugs to the correct sockets.
2. Loosen the screws and remove the covers referring to Fig. 3.19.3.7-1.
   Check the PL ID jumpers on the PL ID PCBs referring to Fig. 3.19.3.7-2.
   When the PL ID jumpers are not installed to the correct sockets, install the PL ID jumpers to the correct sockets.
   And then attach the covers with the screws.

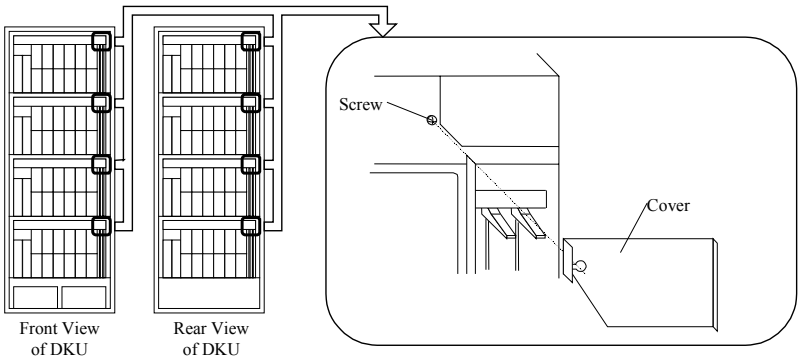

Fig. 3.19.3.7-1 Removal of Covers

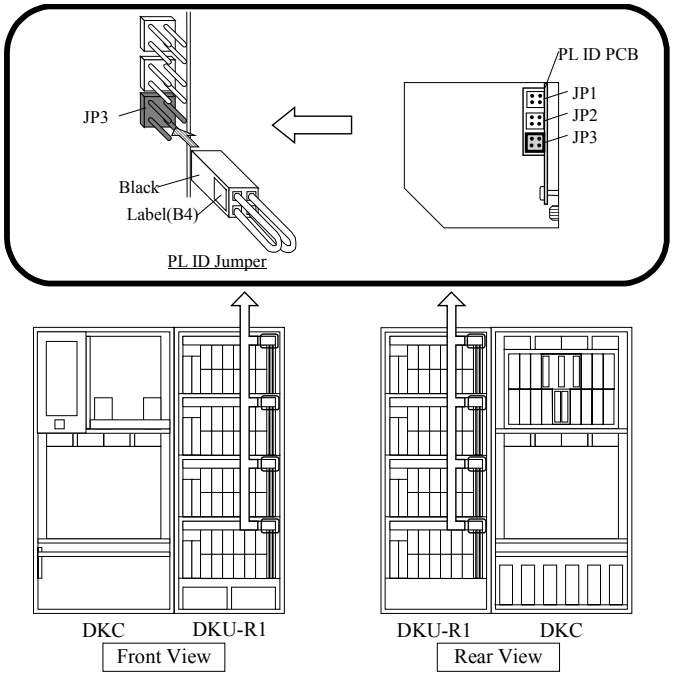

Fig. 3.19.3.7-2 Setting the PL ID Jumpers

3. Return to General Flow.
   New Installation: Go to INST03-U40-10 step (1)-6.

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3.19.4 Installation of DKU405 Connection Kit for L1 DKU (DKC-F460I-U405L)

Table 3.19.4-1 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKC-F460I-U405L	Socket Bolt(M8)	3261899-840	2	
		Nut(M8)	NF008N	2	
		Washer(M8)	WP008N	4	
		HEX Bolt (M6×63)	BH663	1	
		Nut (M6)	NF006	1	
		LL Washer	2051001-612	2	
		Bind Screw	3183101-1	4	
		Bracket Cover ASSY	3265694-A	1	
		SH305-A P/K ASSY	5513985-A	2	MONI-CON
		Locking Clamp	3183016-4	5	
		Repeat Binder	5409042-2	2	140mm
		Repeat Binder	5409042-3	12	250mm
		Conductive Sheet	5510573-2	1	1000mm
		Cable ASSY (DKUMN)	5485589-628	1	
		Cable ASSY (DKUMN)	5485589-630	1	
		Cable ASSY (Fibre-U405L)	3264186-A	1	1R-D1A/D1B – 0R-P501/P503
		Cable ASSY (Fibre-U405L)	3264186-B	1	1R-D2A/D2B – 1R-P501/P503
		Cable ASSY (Fibre-U405L)	3264186-C	1	1R-D3A/D3B – 2R-P501/P503
		Cable ASSY (Fibre-U405L)	3264186-D	1	1R-D4A/D4B – 3R-P501/P503
		Cable ASSY (Fibre-U405L)	3264186-E	1	1R-E1A/E1B – 4R-P501/P503
		Cable ASSY (Fibre-U405L)	3264186-F	1	1R-E2A/E2B – 5R-P501/P503
		Cable ASSY (Fibre-U405L)	3264186-G	1	1R-E3A/E3B – 6R-P501/P503
		Cable ASSY (Fibre-U405L)	3264186-H	1	1R-E4A/E4B – 7R-P501/P503
		Cable ASSY (Fibre-U405L)	3264186-J	1	2R-K1A/K1B – 0L-P501/P503
		Cable ASSY (Fibre-U405L)	3264186-K	1	2R-K2A/K2B – 1L-P501/P503
		Cable ASSY (Fibre-U405L)	3264186-L	1	2R-K3A/K3B – 2L-P501/P503
		Cable ASSY (Fibre-U405L)	3264186-M	1	2R-K4A/K4B – 3L-P501/P503
		Cable ASSY (Fibre-U405L)	3264186-N	1	2R-L1A/L1B – 4L-P501/P503
		Cable ASSY (Fibre-U405L)	3264186-P	1	2R-L2A/L2B – 5L-P501/P503

(To be continued)

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(Continued from the preceding page)

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKC-F460I-U405L	Socket Bolt(M8)	3261899-840	2	
		Cable ASSY (Fibre-U405L)	3264186-Q	1	2R-L3A/L3B – 6L-P501/P503
		Cable ASSY (Fibre-U405L)	3264186-R	1	2R-L4A/L4B – 7L-P501/P503
		Nameplate (HDS)	2105902-125	1	RSD

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1. Removal of Cable Covers
   a. Remove the Front Logic Box cover from the DKC. (Refer to INST03-COM-10.)
   b. Remove the two screws and remove the cable cover.

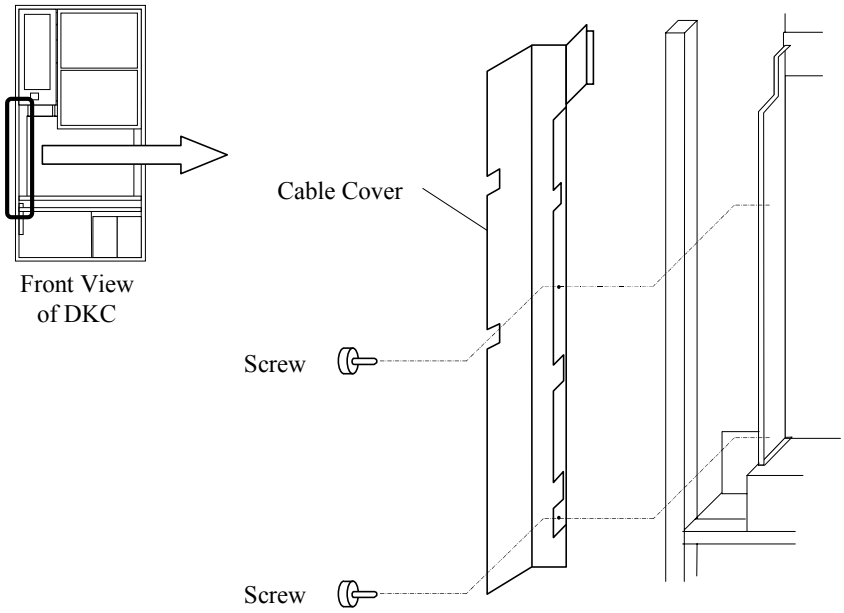

Fig. 3.19.4-1 Removal of Cover

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c. Loosen the two screws ① and remove the Upper SH Box covers.
d. Loosen the five screws ② and remove the Lower SH Box covers.
e. Loosen the four screws ③ and remove the SH side plate.

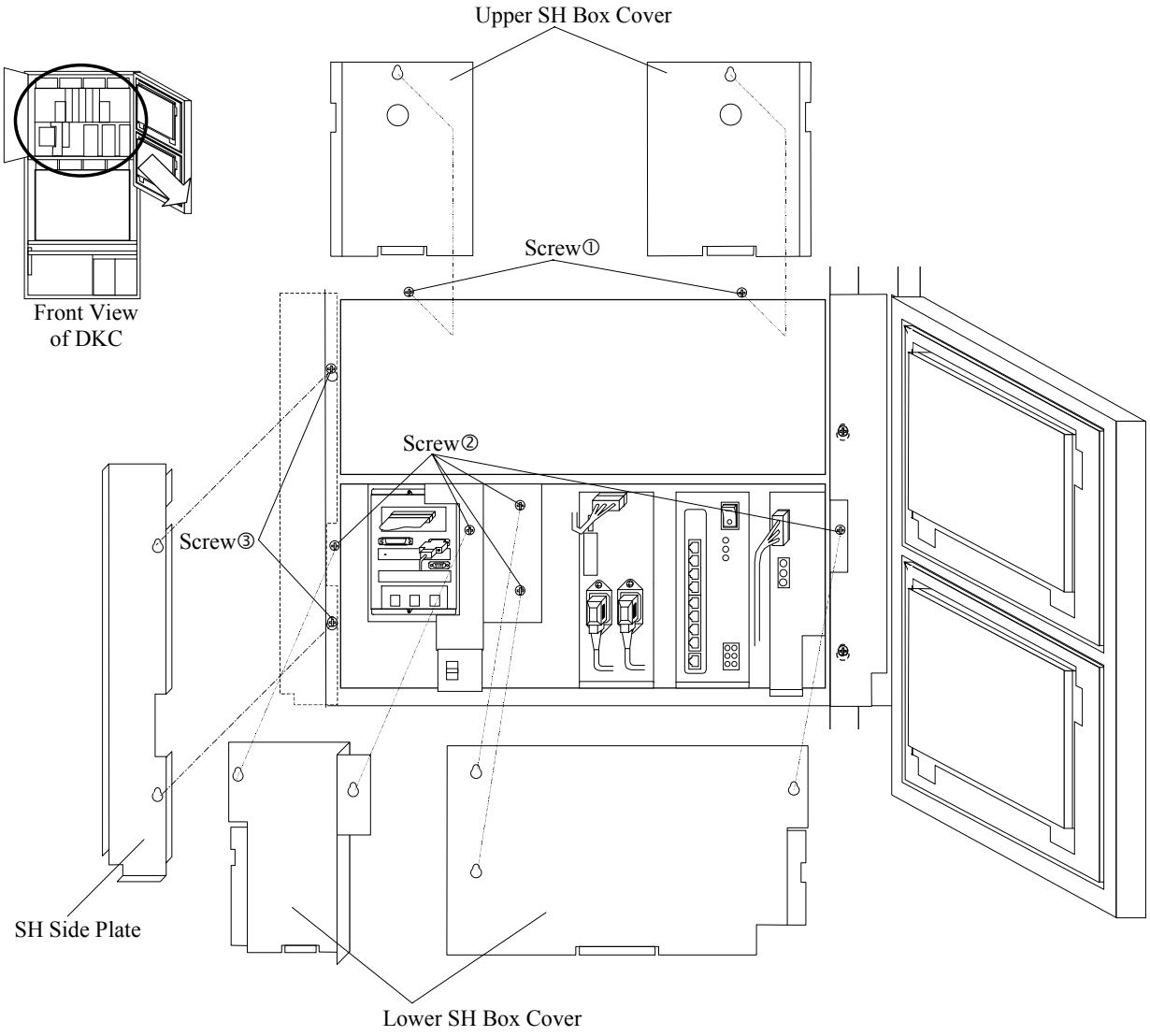

Fig. 3.19.4-2 Removal of Covers

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f. Loosen the two screws ① and remove the cable cover ①.
g. Loosen the two screws ② and remove the cable cover ②.
h. Loosen the screw ③ and remove the cable cover ③.
i. Loosen the two screws ④ and remove the cable cover ④.

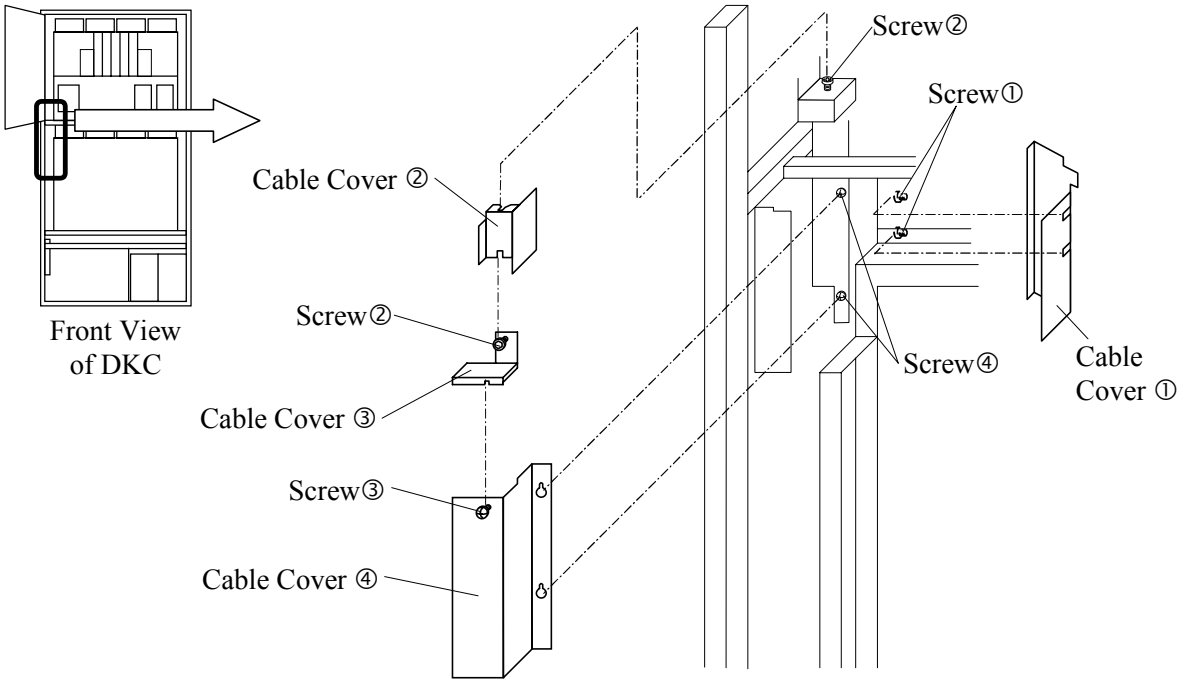

Fig. 3.19.4-3 Removal of Covers

j. Loosen the three screws and remove the cable cover.

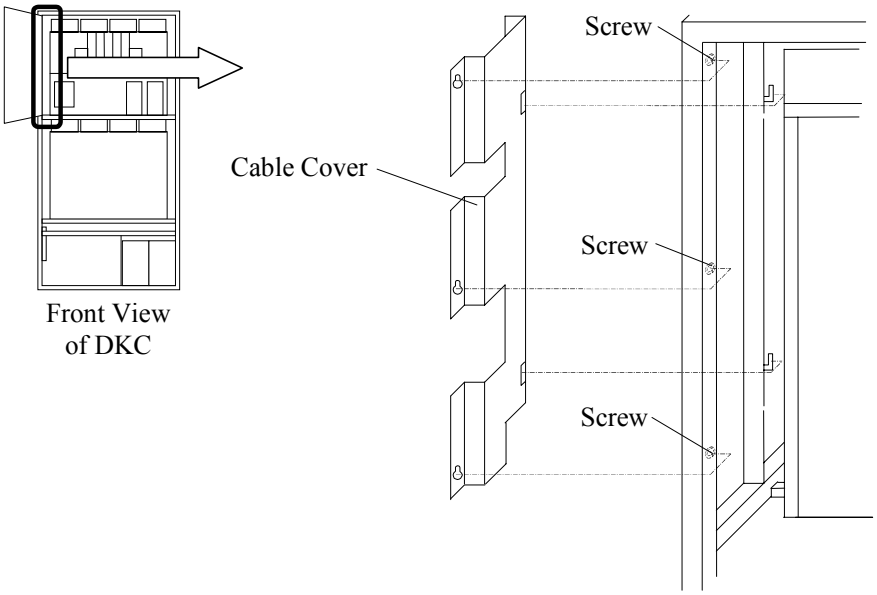

Fig. 3.19.4-4 Removal of Cover

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k. Loosen the two screws and remove the cable duct cover.

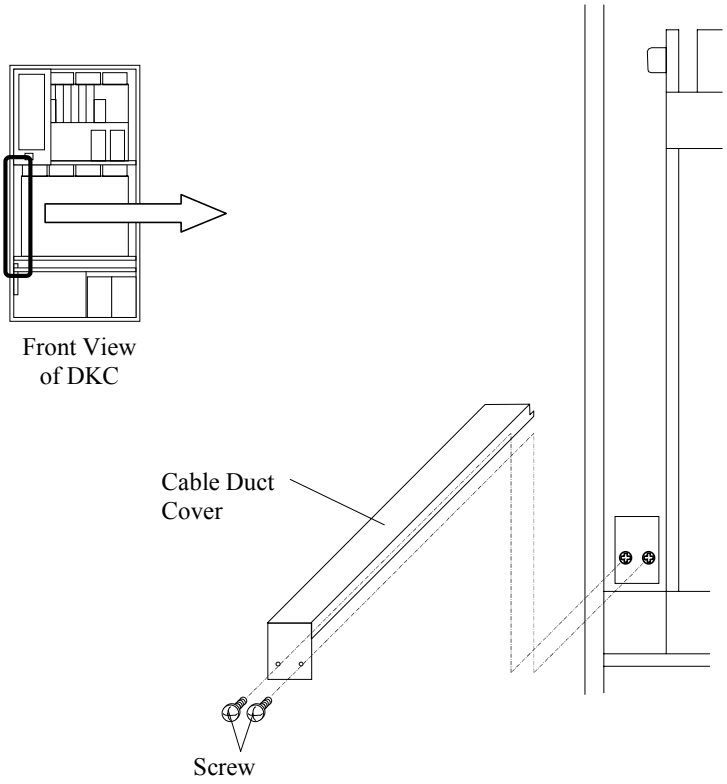

Fig. 3.19.4-5 Removal of Covers

m. Remove the Rear Logic Box cover and Rear PS Box cover. (Refer to INST03-COM-20 through 30.)

n. Remove the two screws and remove the cable cover.

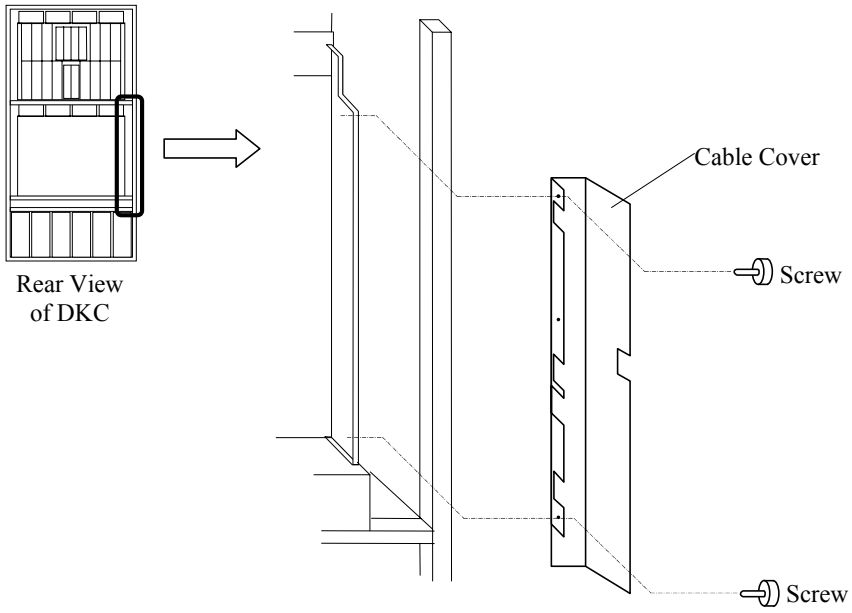

Fig. 3.19.4-6 Removal of Cover

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p. Loosen the three screws① and remove the cable cover①. Then, loosen the two screws② and remove the cable cover②.

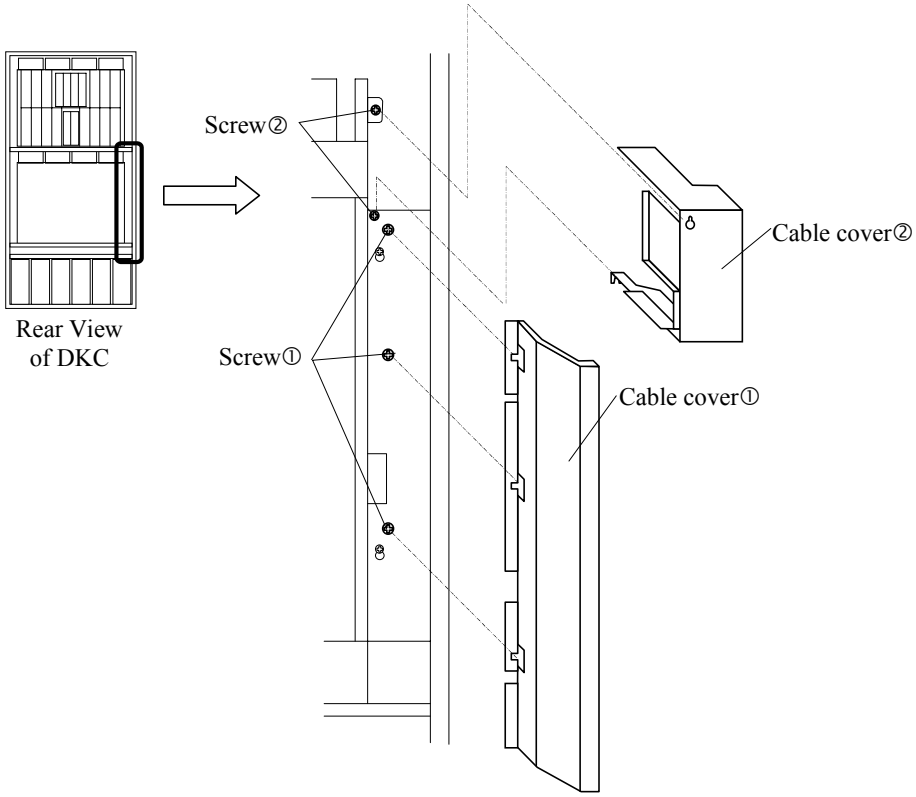

Fig. 3.19.4-7 Removal of Cover

q. Loosen the two screws and remove the cable cover.

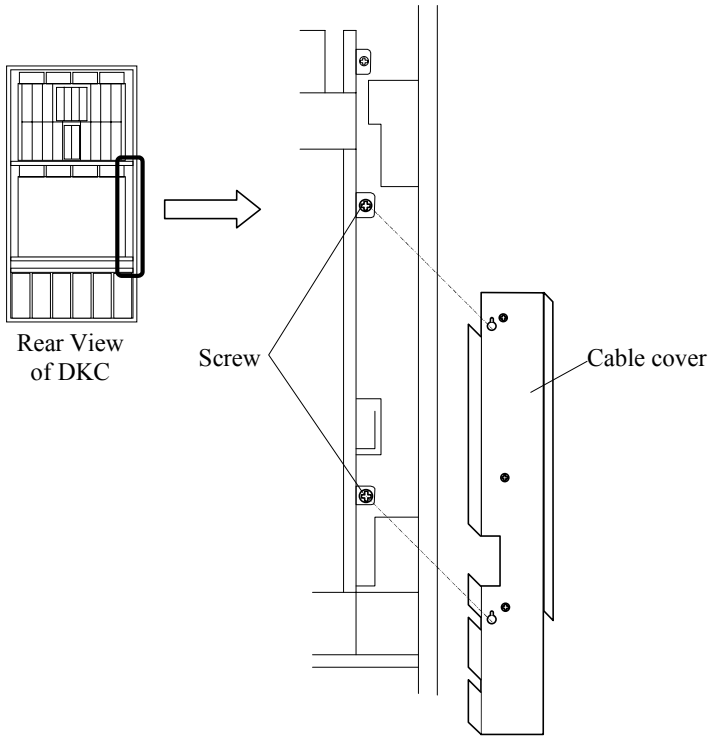

Fig. 3.19.4-8 Removal of Cable Cover

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r. Remove the two screws and remove the cable cover.

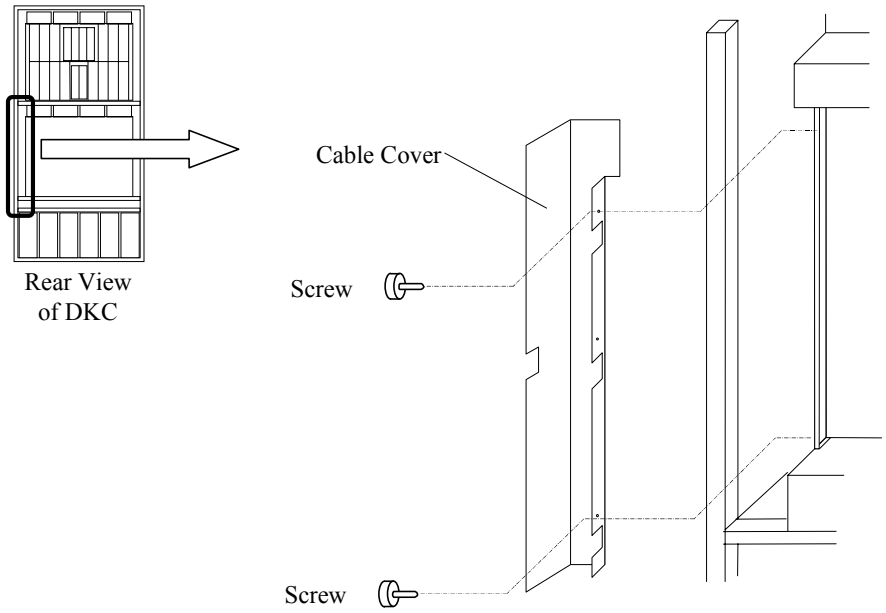

Fig. 3.19.4-9 Removal of Cable Cover

s. Loosen the five screws and remove the bracket.

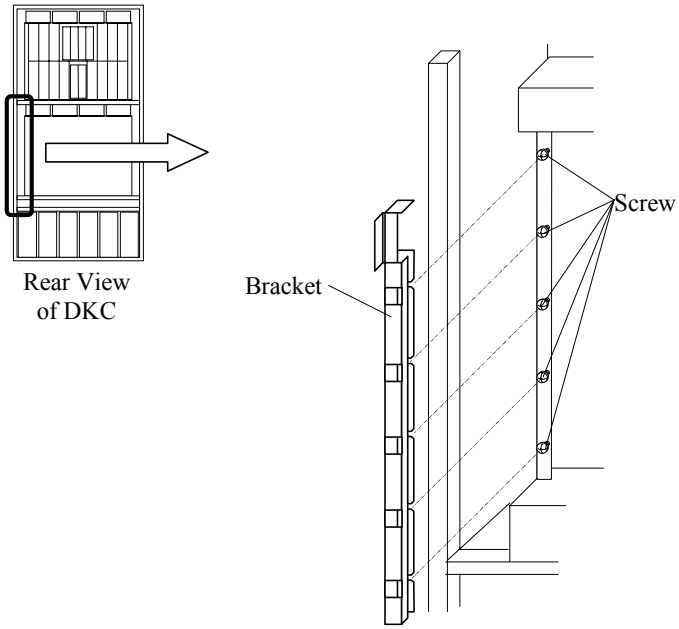

Fig. 3.19.4-10 Removal of Bracket

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t. Loosen the three screws and remove the cable cover from the cable clamp located at the top of the Rear Logic Box.

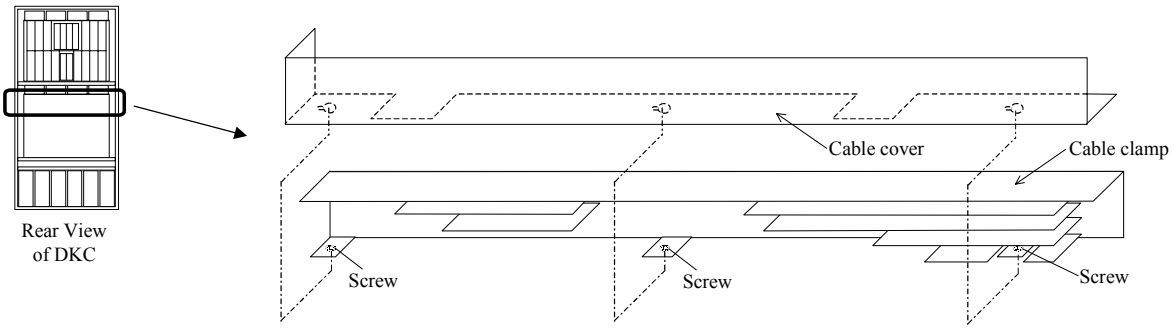

Fig. 3.19.4-11 Removal of Cable Cover

u. Loosen the screw and remove the cable duct cover.

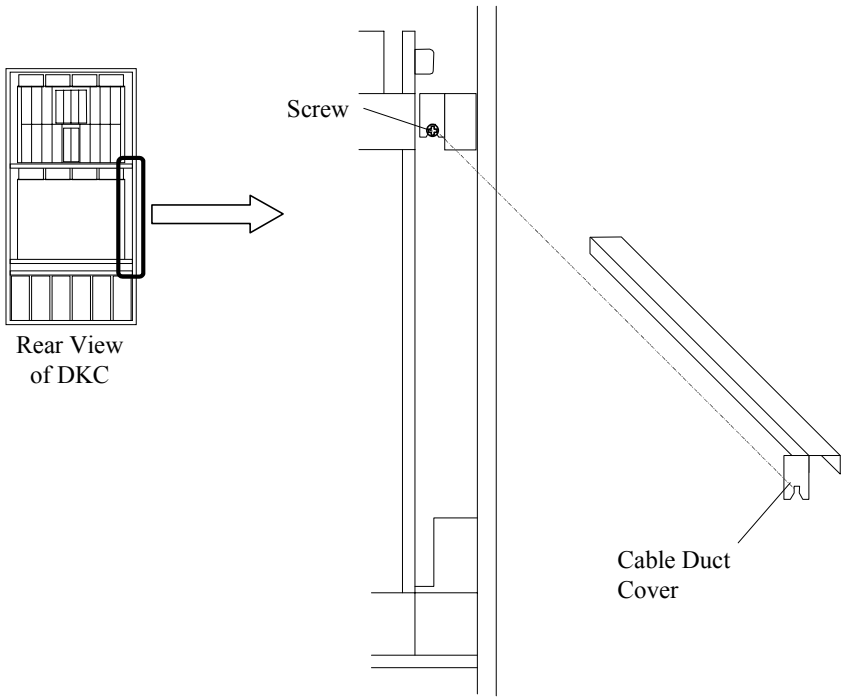

Fig. 3.19.4-12 Removal of Cable Duct Cover

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v. Loosen the two screws and remove the cable cover.

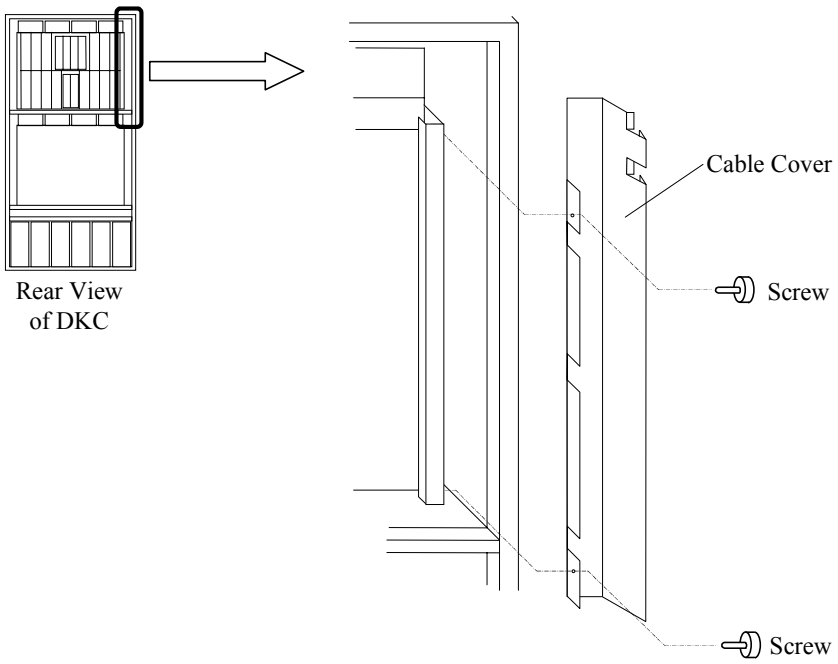

Fig. 3.19.4-13 Removal of Cable Cover

w. Loosen the four screws and remove the cable cover. Rotate the cable cover 90 degrees and pull out it forward.

⚠ CAUTION

When you rotate the cable cover, don't contact the cable cover to the bus bar.

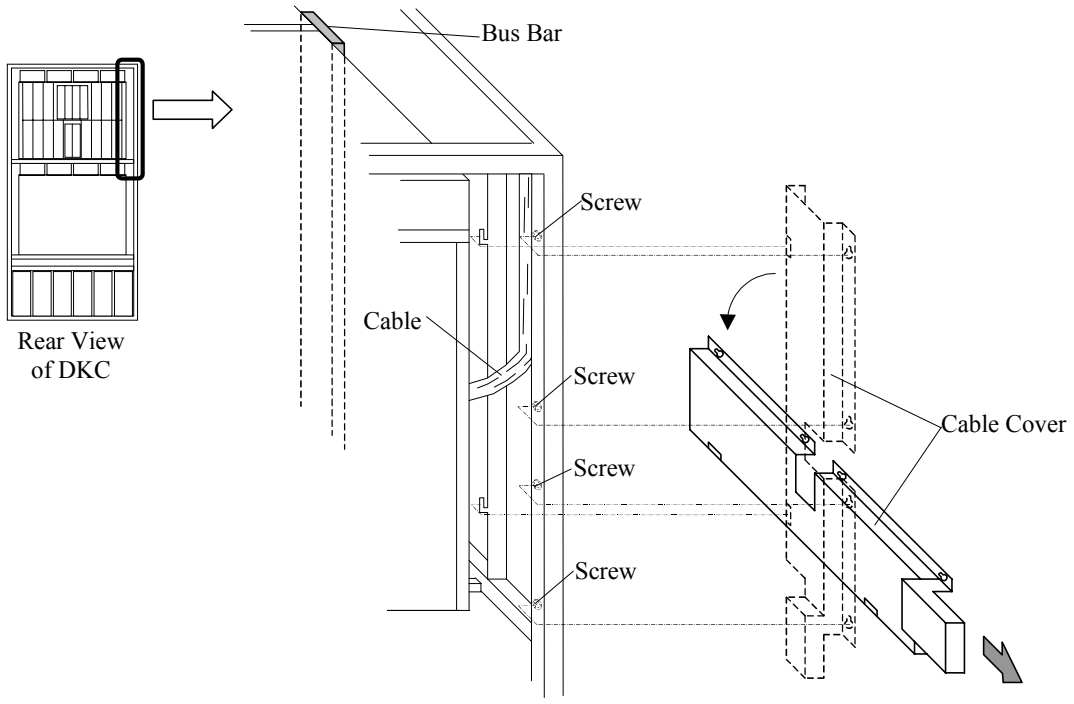

Fig. 3.19.4-14 Removal of Cable Cover

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x. Stick the new conductive sheets on the existent conductive sheets. When the conductive sheets are already stuck doubly, go to step 2.

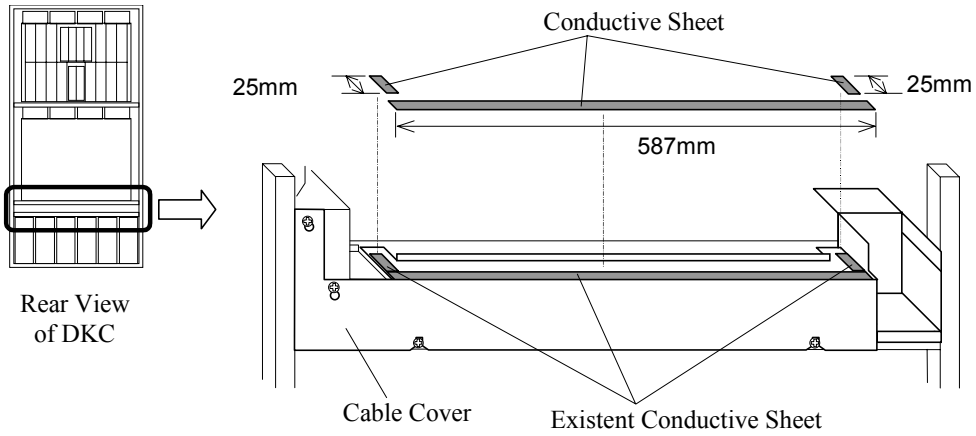

Fig. 3.19.4-14A Attachment of Conductive Sheets

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2. Insertion of MONI-CONs
   a. Insert the MONI-CON1 and MONI-CON2. When the MONI-CONs are already installed, go to step b.
   b. Connect the cables to the MONI-CONs.

Table 3.19.4-2 DKUMN Cable List

No.	Source		Destination		Remarks
	Location No.	Cable No.	Location No.	Cable No.	
1	MONI-CON1	P22-1	DKUMN-L1F	P4-1L	
2	MONI-CON2	P22-2	DKUMN-L1R	P4-2L	

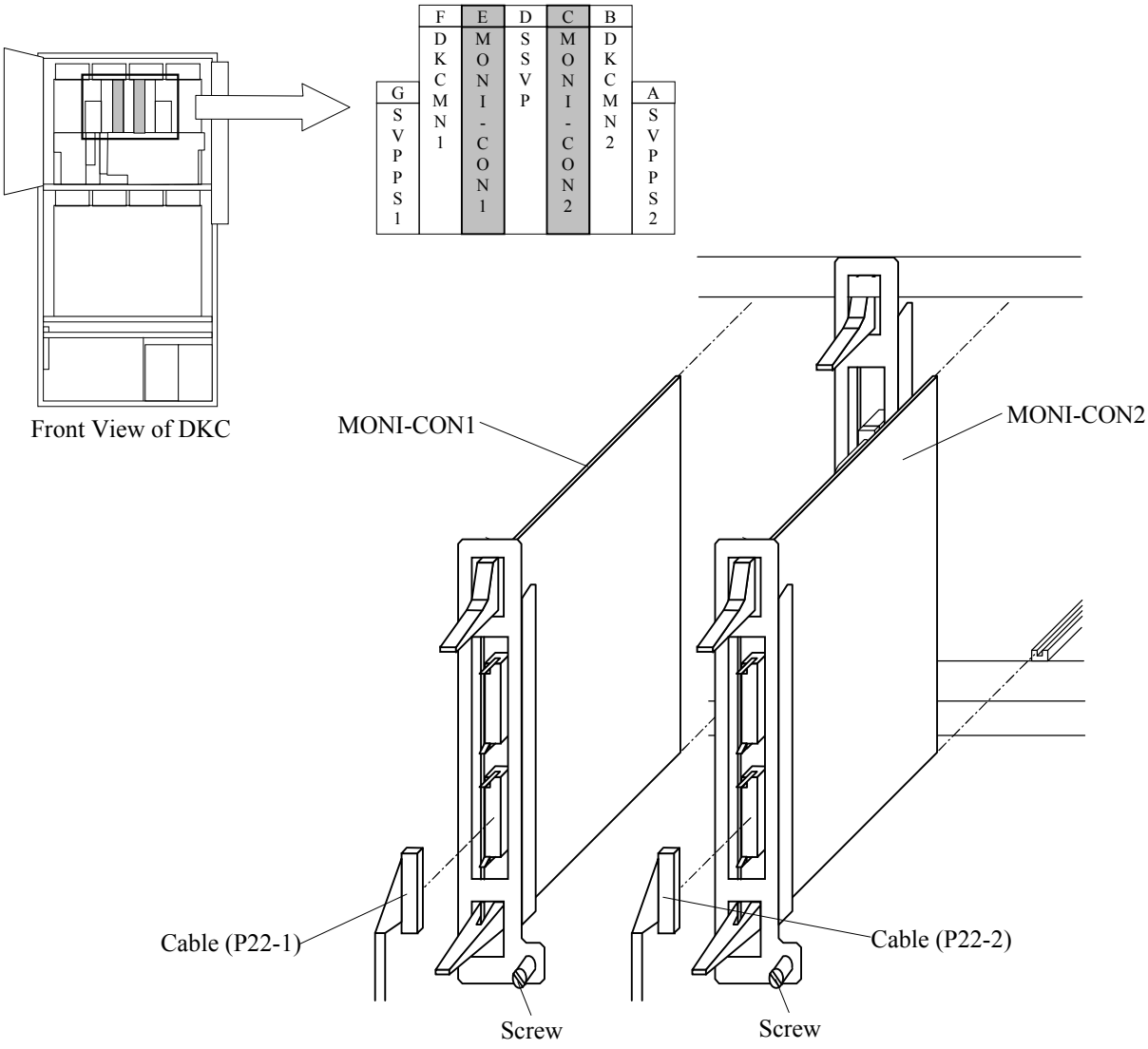

Fig. 3.19.4-15 Insertion of MONI-CONs

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c. Attach the five locking clamps. Fix the cable ASSY with the locking clamps and repeat binders.

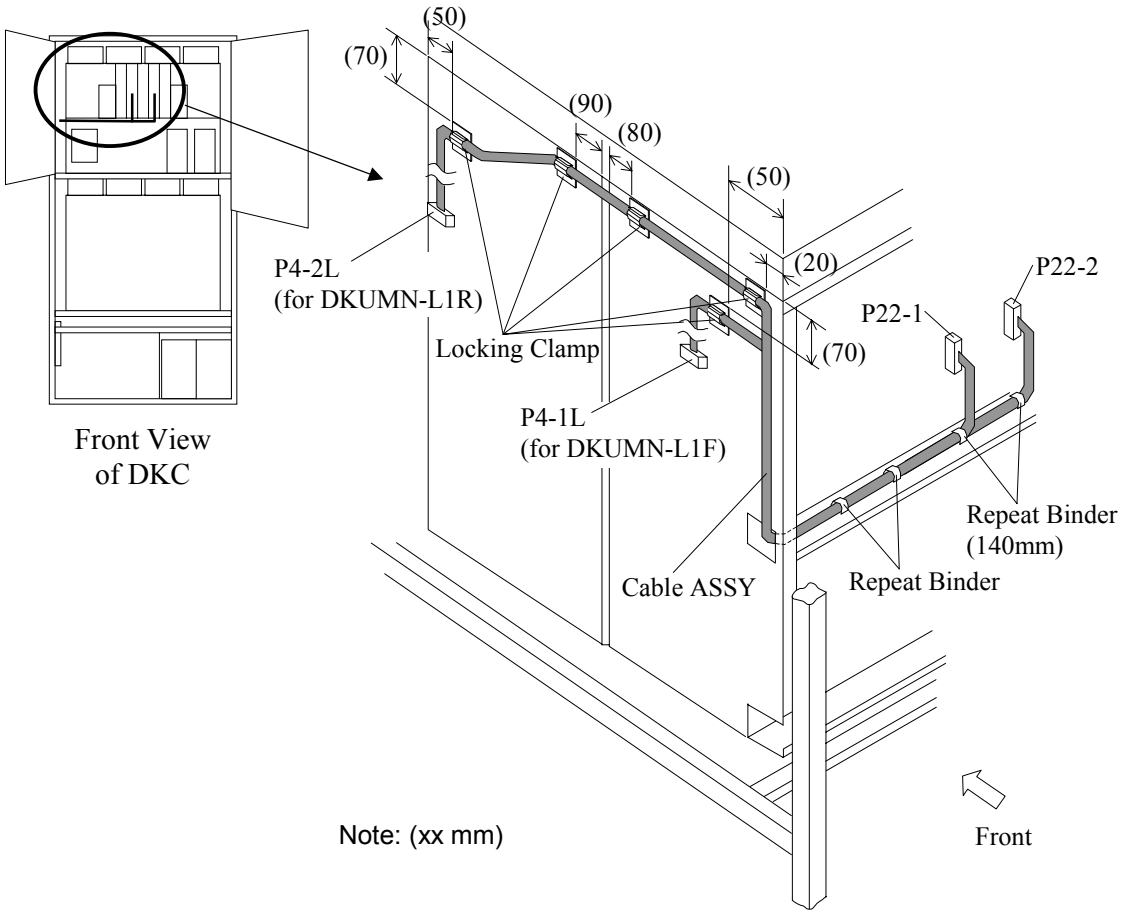

Fig. 3.19.4-16 Fixation of Cable ASSY

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3. Attachment of DEV Interface cables
   a. Insert the DEV interface cables for the DKU-L1 into the cable clamp located at the top of the Rear Logic Box. Attach the cable in order of ①, ②, ③ and ④. When doing this, position the two binders that bundle the cables at the end of the cable clamp.

Note: Since a label bearing a connection destination is affixed on each cable/connector, work very carefully referring to it and the wiring diagram.

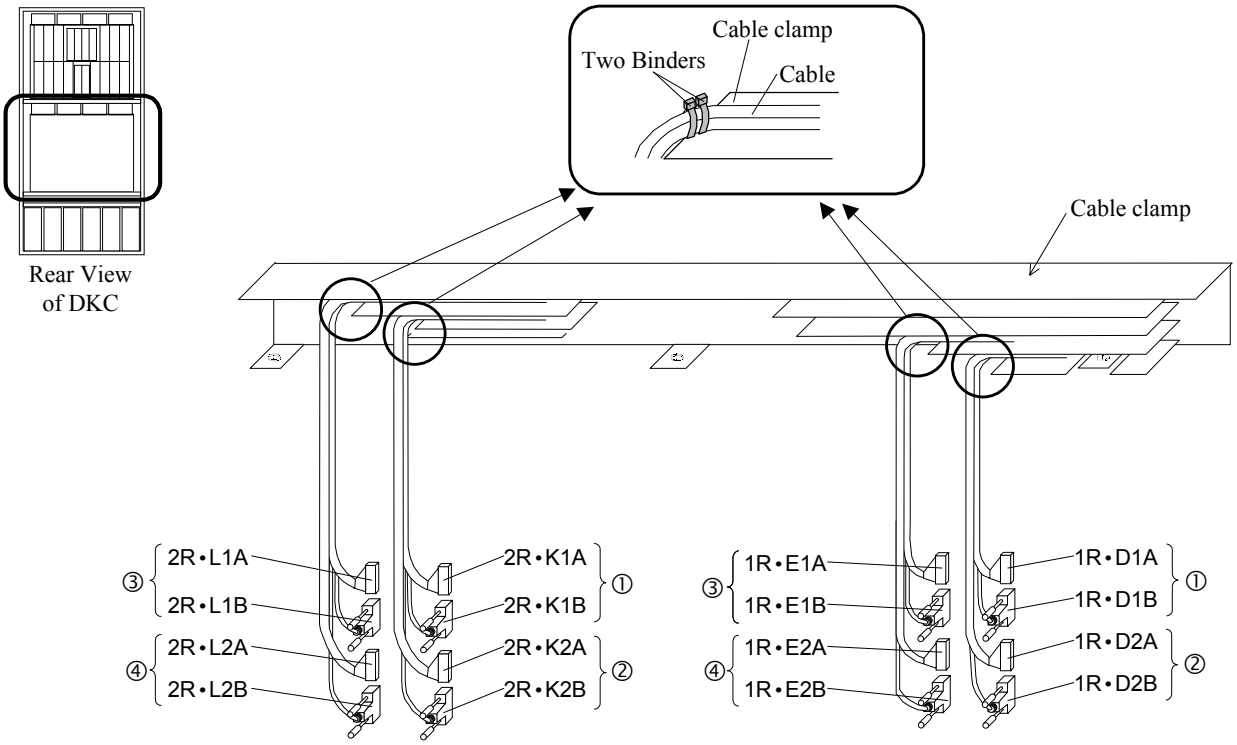

Fig. 3.19.4-17 Attachment of DEV Interface Cables

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b. Insert the DEV interface cables for the DKU-L1 into the cable duct. When doing this, position the two binders that bundle the DEV interface cables at the cable exit of the cable duct and fix the surplus cables with the repeat binder.

Table 3.19.4-3 DEV Interface Cable List

No.	Cable No. (DKA Side)	Cable No. (FSW Side)	Remarks
1	1R-D1A	0R-P501	
	1R-D1B	0R-P503	
2	2R-K1A	0L-P501	
	2R-K1B	0L-P503	

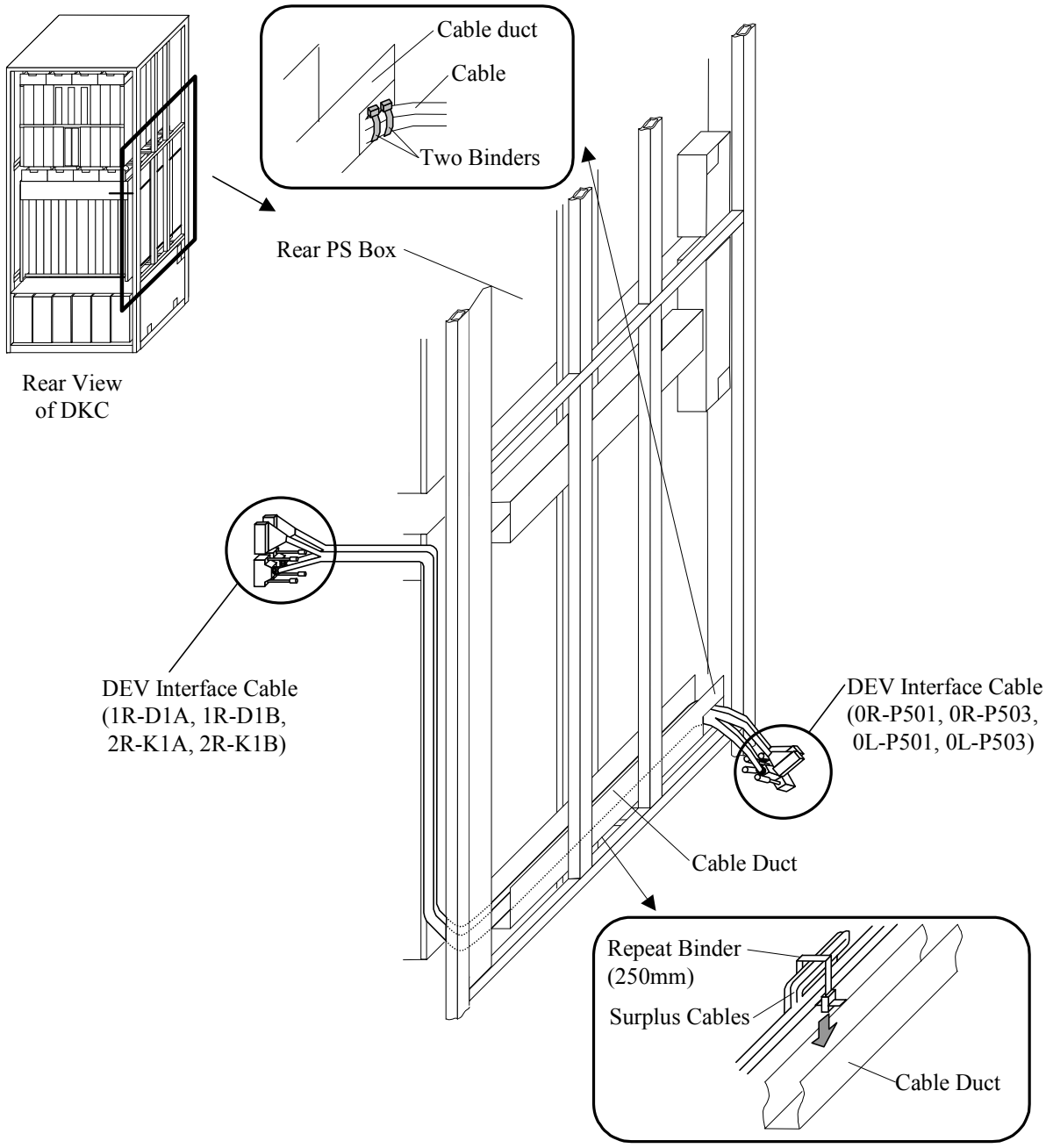

Fig. 3.19.4-18 Attachment of DEV Interface Cables

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c. Insert the DEV interface cables for the DKU-L1 into the cable duct. When doing this, position the two binders that bundle the DEV interface cables at the cable exit of the cable duct and fix the surplus cables with the repeat binder.

Table 3.19.4-4 DEV Interface Cable List

No.	Cable No. (DKA Side)	Cable No. (FSW Side)	Remarks
1	1R-D2A	1R-P501	
	1R-D2B	1R-P503	
2	2R-K2A	1L-P501	
	2R-K2B	1L-P503	

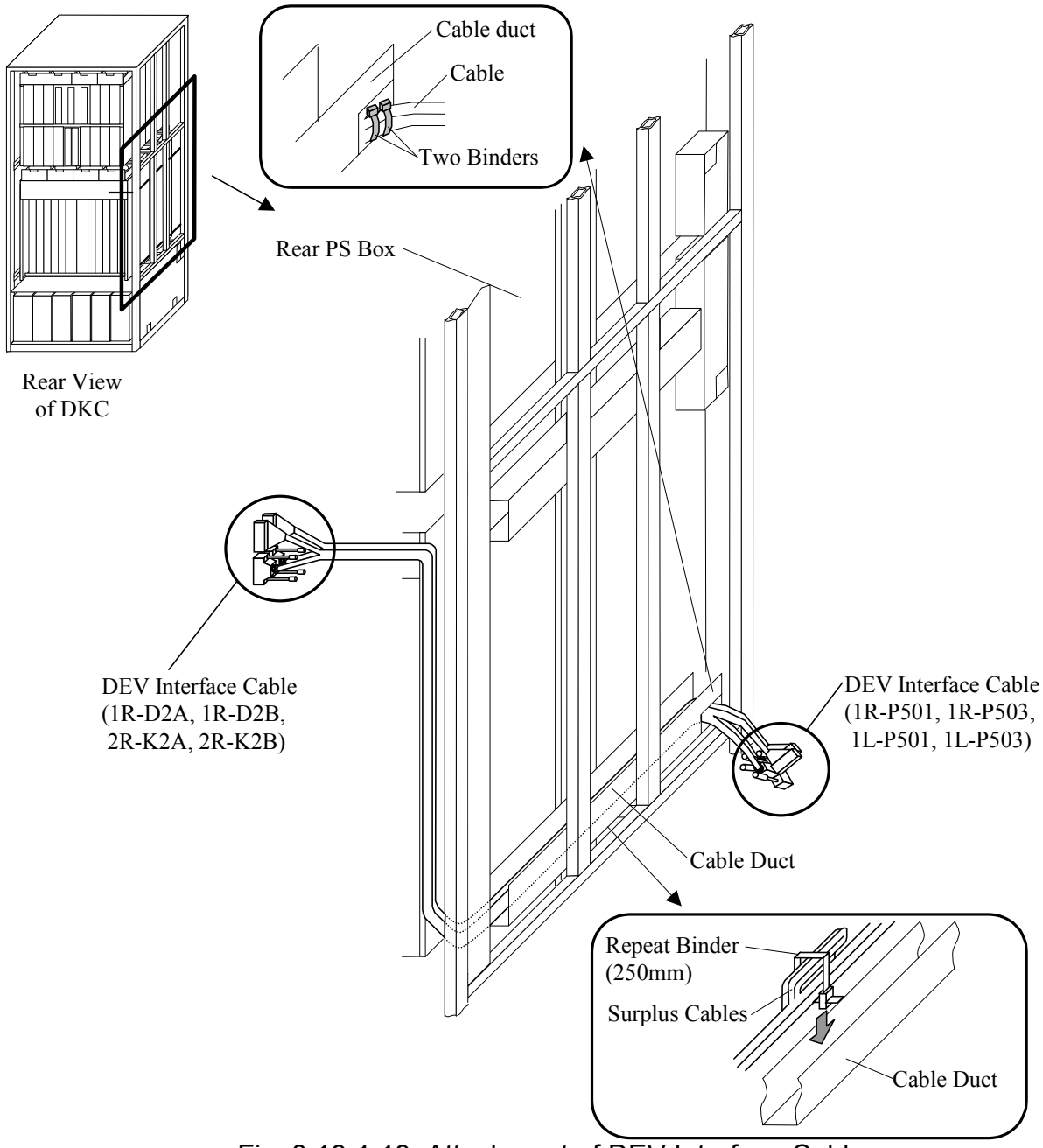

Fig. 3.19.4-19 Attachment of DEV Interface Cables

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d. Insert the DEV interface cables for the DKU-L1 into the cable duct. When doing this, position the two binders that bundle the DEV interface cables at the cable exit of the cable duct and fix the surplus cables with the repeat binder.

Table 3.19.4-5 DEV Interface Cable List

No.	Cable No. (DKA Side)	Cable No. (FSW Side)	Remarks
1	1R-E1A	4R-P501	
	1R-E1B	4R-P503	
2	2R-L1A	4L-P501	
	2R-L1B	4L-P503	

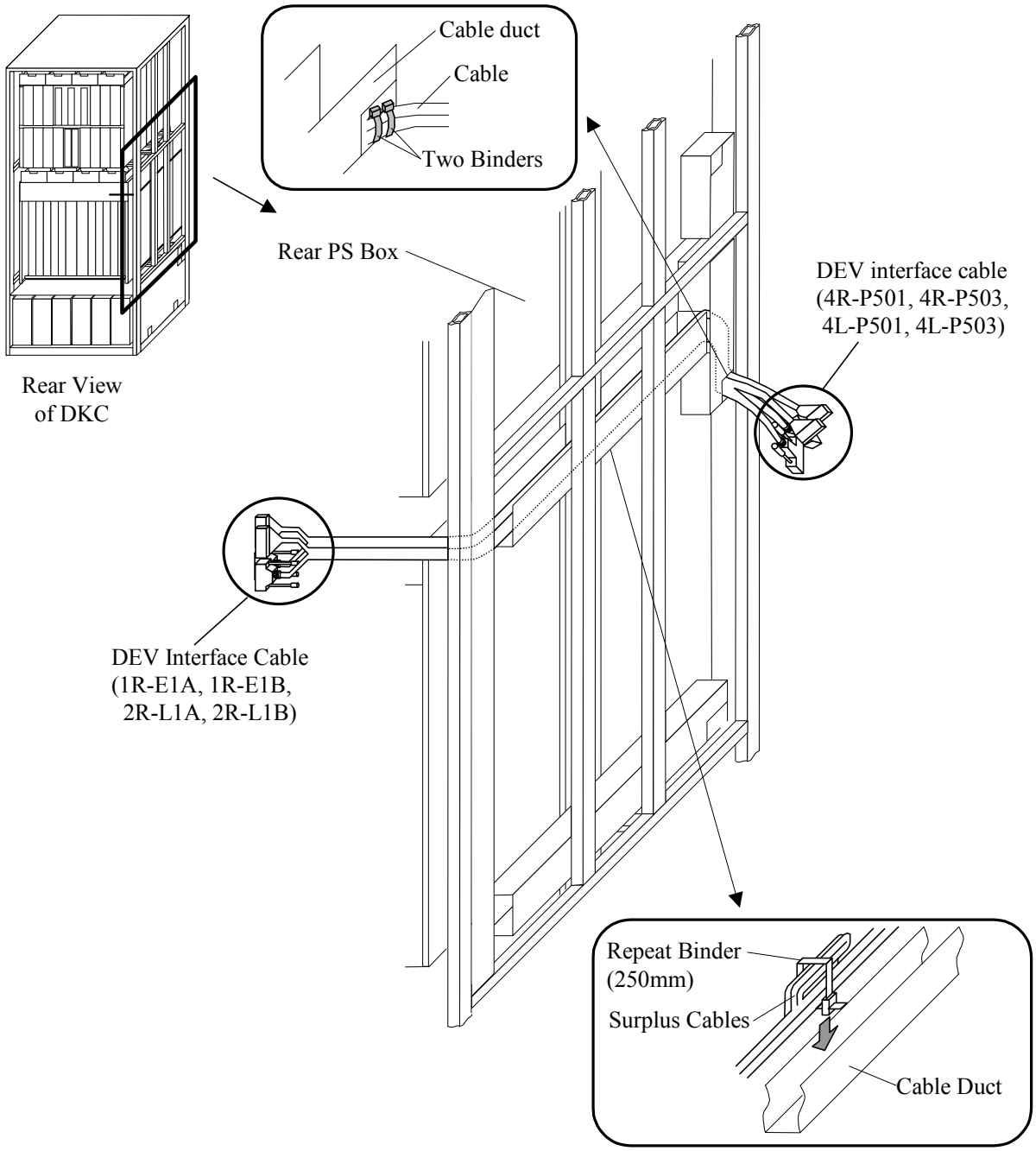

Fig. 3.19.4-20 Attachment of DEV Interface Cables

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e. Insert the DEV interface cables for the DKU-L1 into the cable duct. When doing this, position the two binders that bundle the DEV interface cables at the cable exit of the cable duct and fix the surplus cables with the repeat binder.

Table 3.19.4-6 DEV Interface Cable List

No.	Cable No. (DKA Side)	Cable No. (FSW Side)	Remarks
1	1R-E2A	5R-P501	
	1R-E2B	5R-P503	
2	2R-L2A	5L-P501	
	2R-L2B	5L-P503	

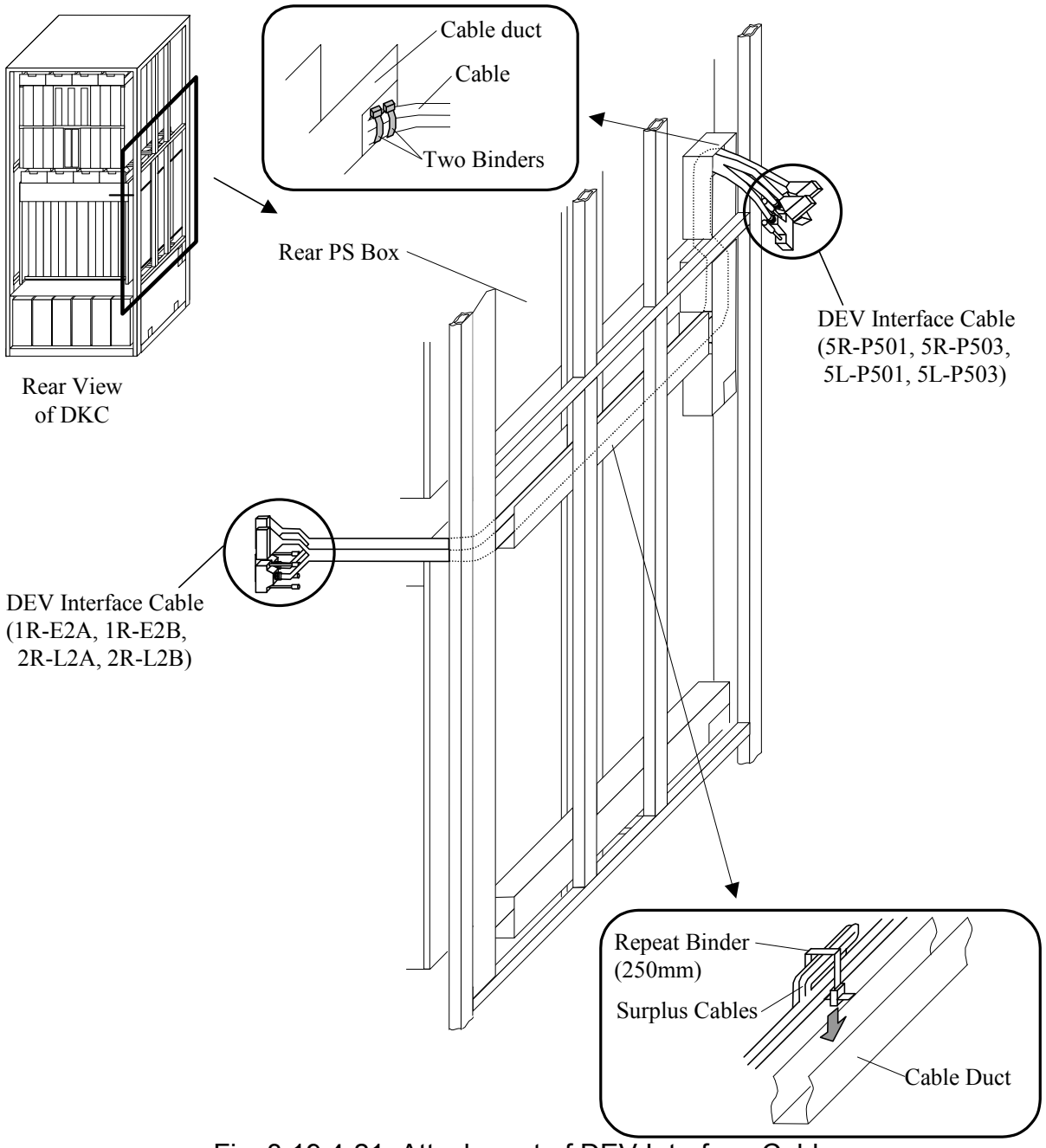

Fig. 3.19.4-21 Attachment of DEV Interface Cables

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f. Attach the cable duct cover with the two screws.

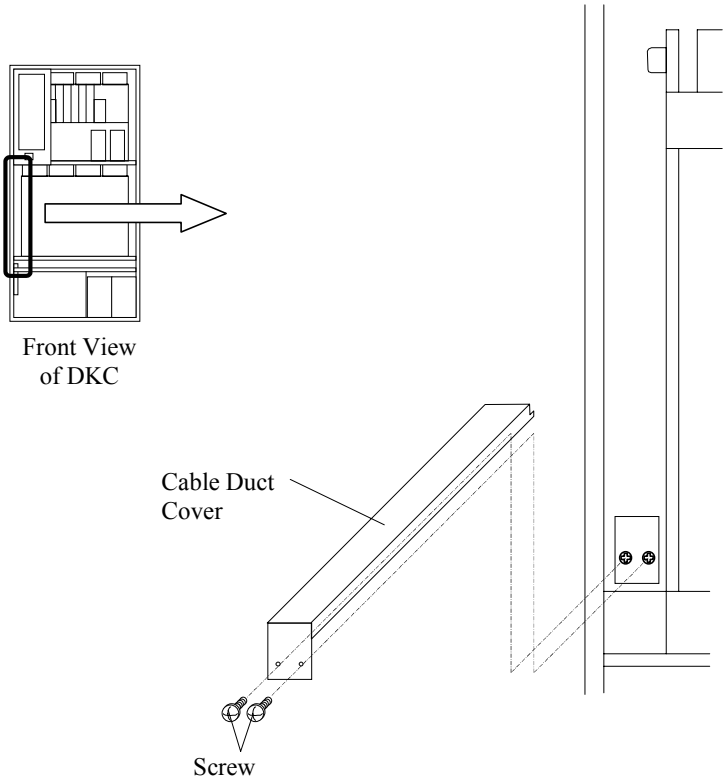

Fig. 3.19.4-22 Attachment of Cover

g. Attach the cable duct cover with the screw.

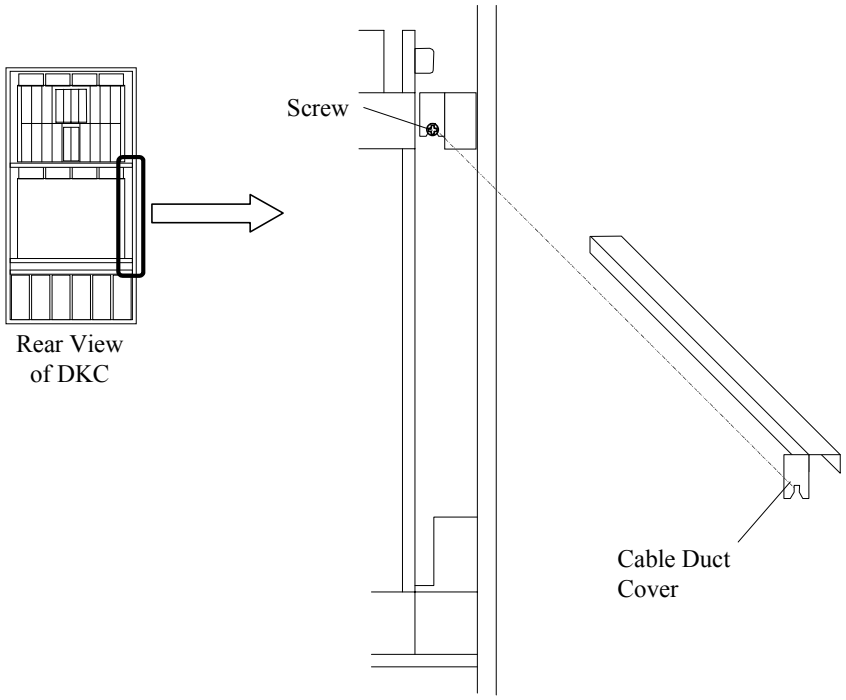

Fig. 3.19.4-23 Attachment of Cover

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h. Attach the cable cover with the two screws.

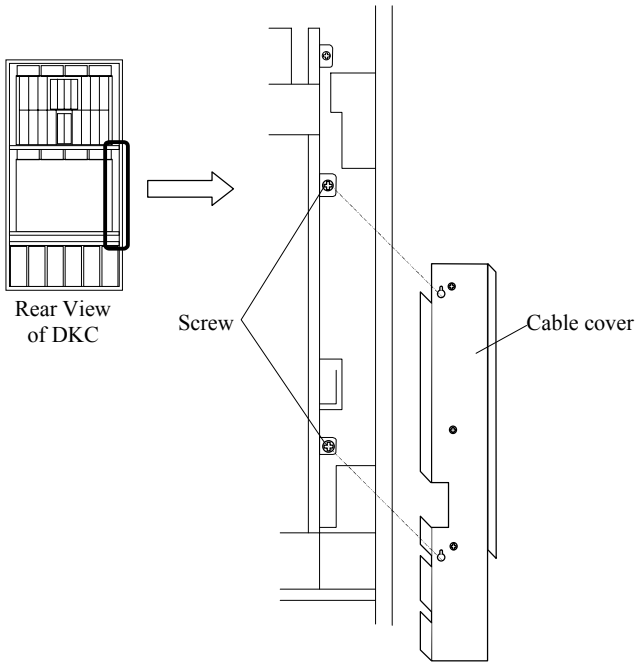

Fig. 3.19.4-24 Attachment of Cover

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i. Insert the DEV interface cables for the DKU-L1 into the cable clamp located at the top of the Rear Logic Box. Attach the cable in order of ①, ②, ③ and ④. When doing this, position the two binders that bundle the cables at the end of the cable clamp.

Note:
Since a label bearing a connection destination is affixed on each cable/connector, work very carefully referring to it and the wiring diagram.

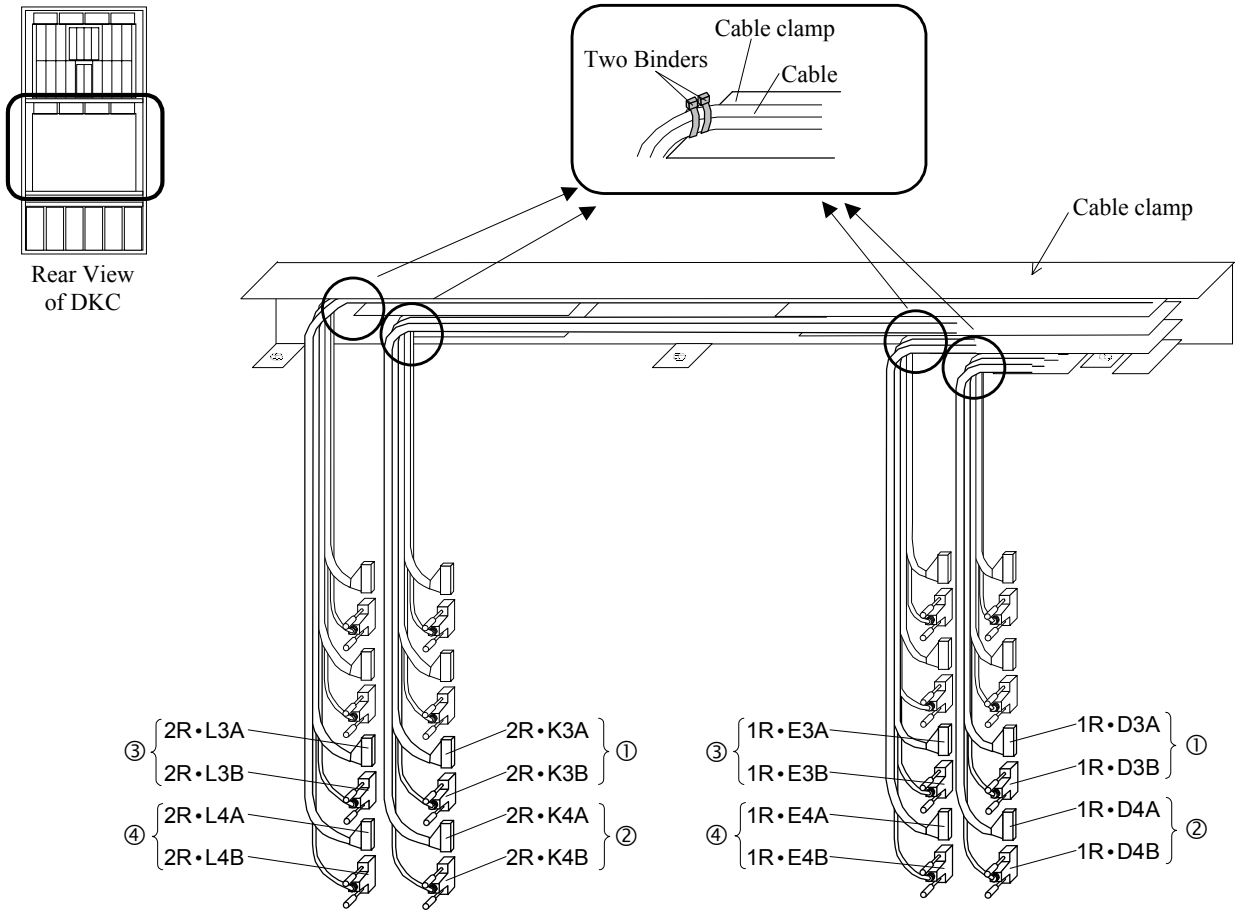

Fig. 3.19.4-25 Attachment of DEV Interface Cables

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j. Pass the DEV interface cables for the DKU-L1 through the cable entrance on the sheet steel part. When doing this, position the two binders that bundle the DEV interface cables at the cable entrance on the sheet steel part and fix the surplus cables with the repeat binder.

Table 3.19.4-7 DEV Interface Cable List

No.	Cable No. (DKA Side)	Cable No. (FSW Side)	Remarks
1	1R-D3A	2R-P501	
	1R-D3B	2R-P503	
2	2R-K3A	2L-P501	
	2R-K3B	2L-P503	

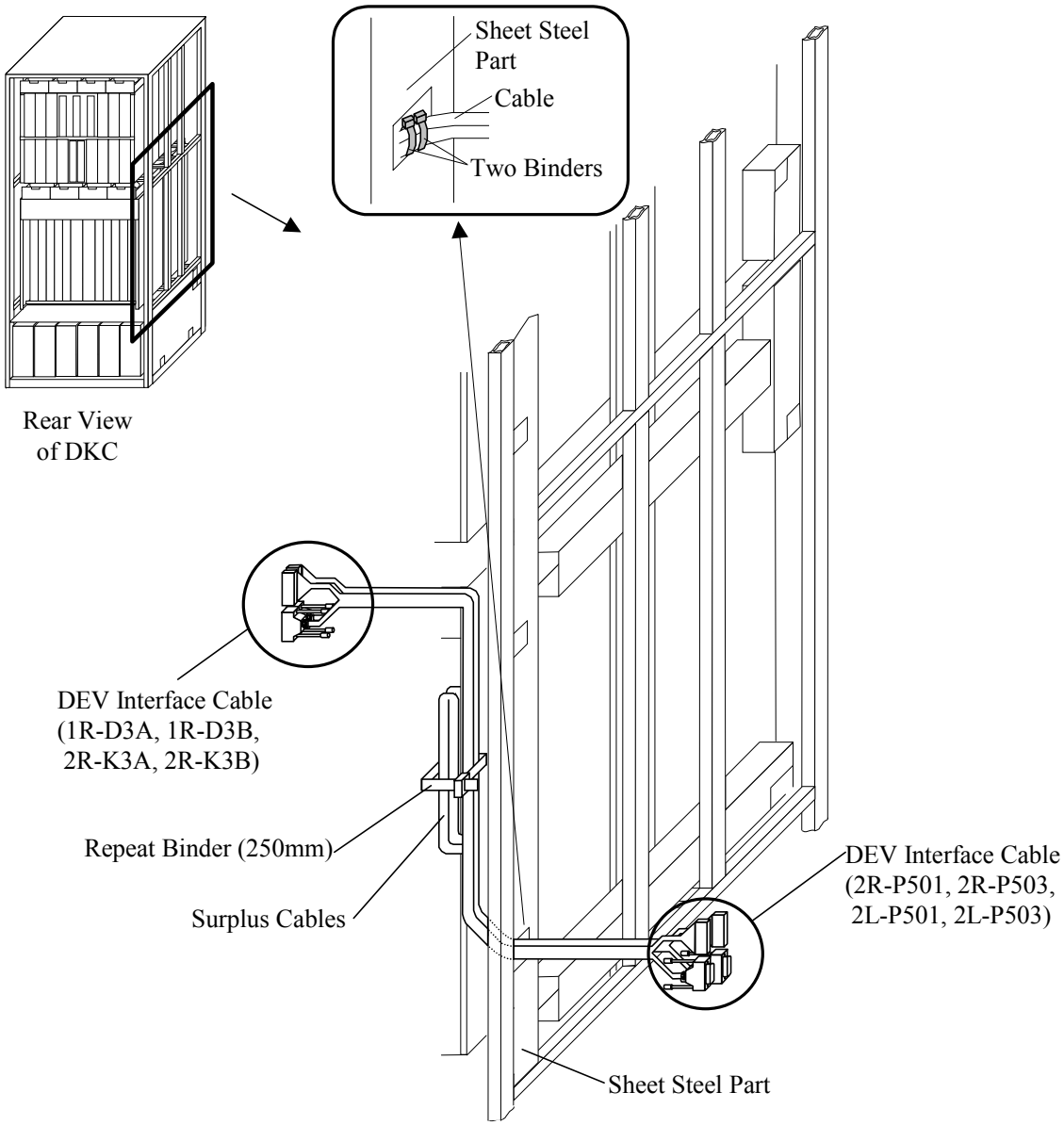

Fig. 3.19.4-26 Attachment of DEV Interface Cables

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k. Pass the DEV interface cables for the DKU-L1 through the cable entrance on the sheet steel part. When doing this, position the two binders that bundle the DEV interface cables at the cable entrance on the sheet steel part and fix the surplus cables with the repeat binder.

Table 3.19.4-8 DEV Interface Cable List

No.	Cable No. (DKA Side)	Cable No. (FSW Side)	Remarks
1	1R-D4A	3R-P501	
	1R-D4B	3R-P503	
2	2R-K4A	3L-P501	
	2R-K4B	3L-P503	

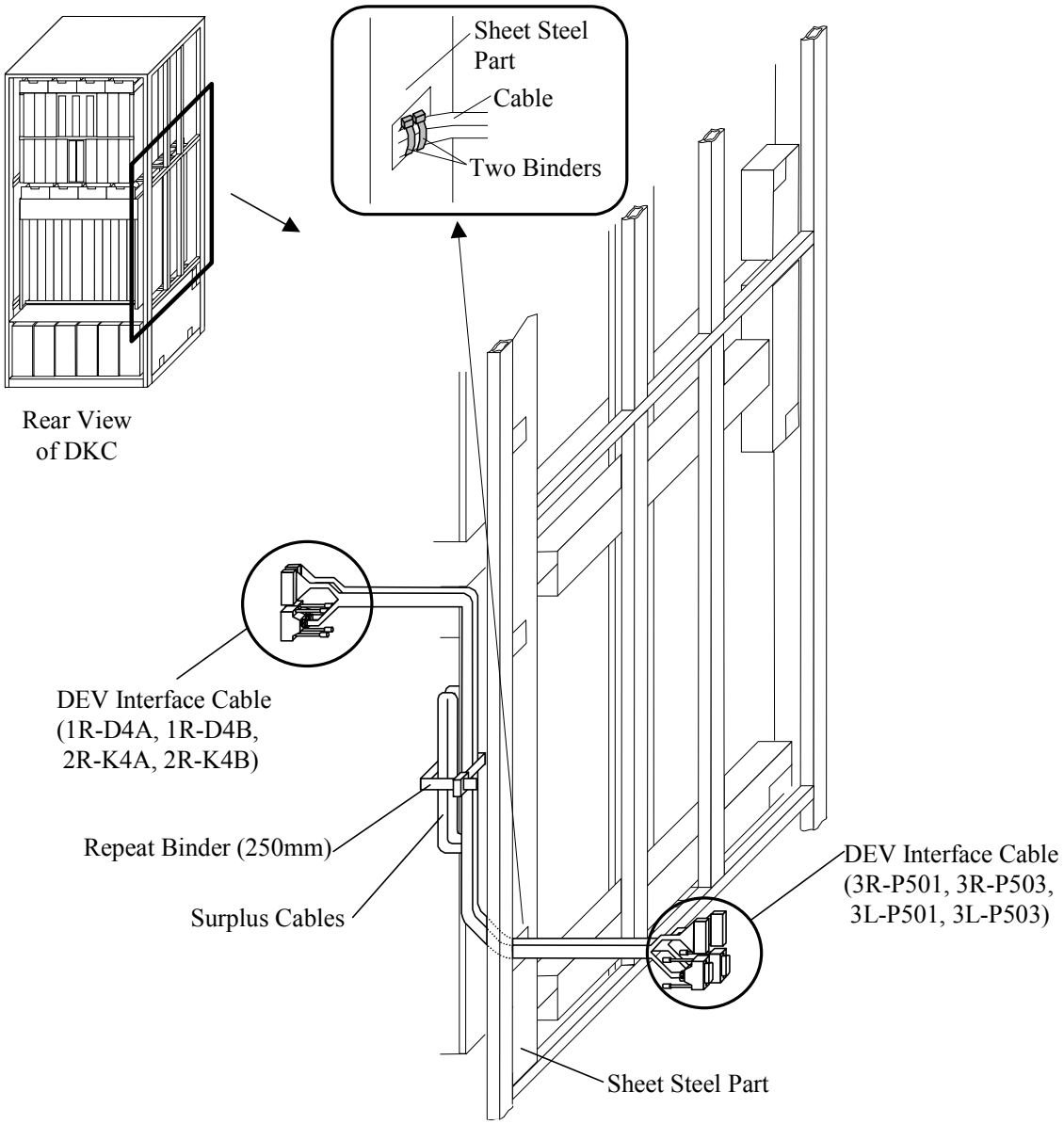

Fig. 3.19.4-27 Attachment of DEV Interface Cables

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m. Pass the DEV interface cables for the DKU-L1 through the cable entrance on the sheet steel part. When doing this, position the two binders that bundle the DEV interface cables at the cable entrance on the sheet steel part and fix the surplus cables with the repeat binder.

Table 3.19.4-9 DEV Interface Cable List

No.	Cable No. (DKA Side)	Cable No. (FSW Side)	Remarks
1	1R-E3A	6R-P501	
	1R-E3B	6R-P503	
2	2R-L3A	6L-P501	
	2R-L3B	6L-P503	

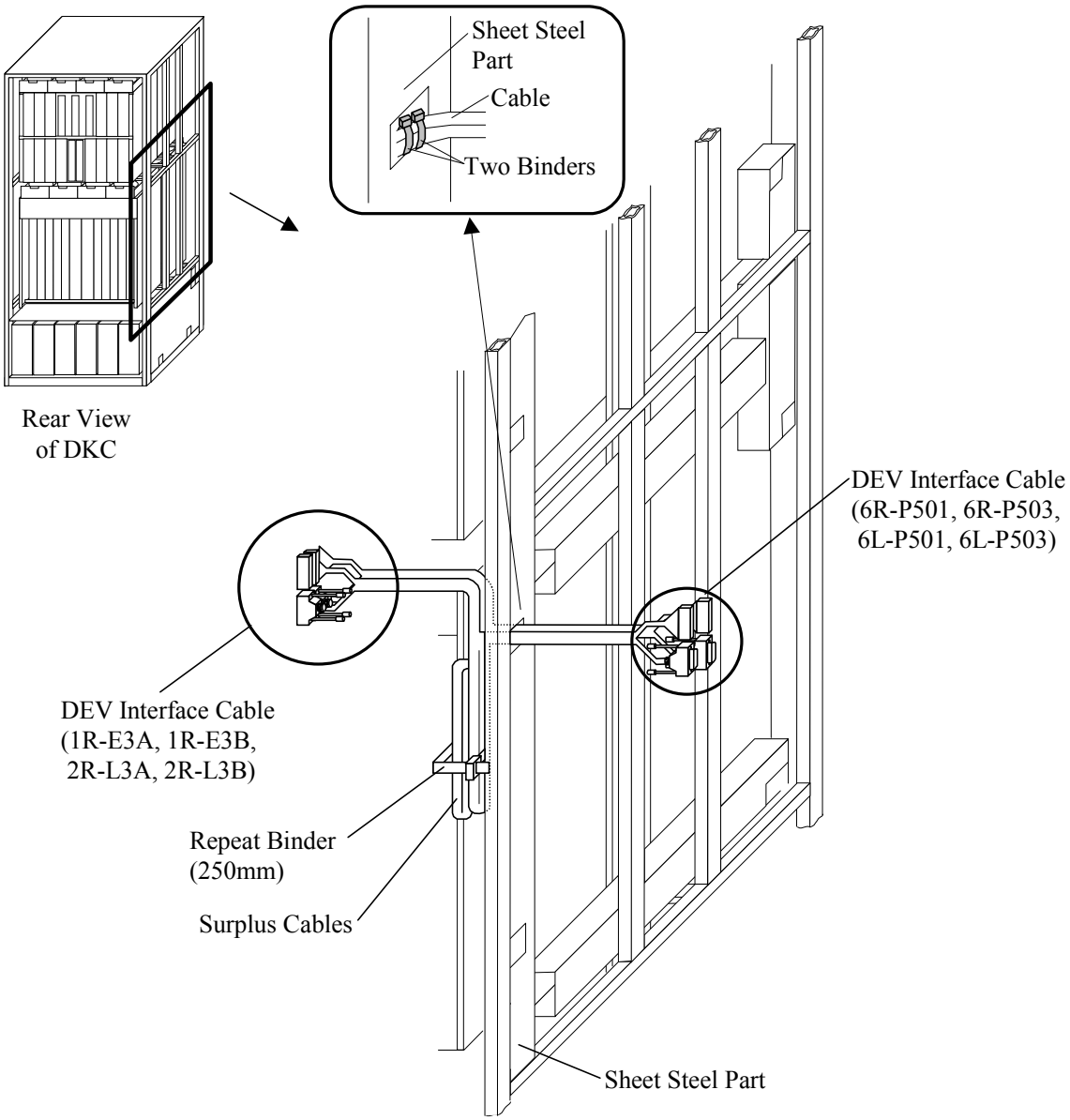

Fig. 3.19.4-28 Attachment of DEV Interface Cables

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n. Pass the DEV interface cables for the DKU-L1 through the cable entrance on the sheet steel part. When doing this, position the two binders that bundle the DEV interface cables at the cable entrance on the sheet steel part and fix the surplus cables with the repeat binder.

Table 3.19.4-10 DEV Interface Cable List

No.	Cable No. (DKA Side)	Cable No. (FSW Side)	Remarks
1	1R-E4A	7R-P501	
	1R-E4B	7R-P503	
2	2R-L4A	7L-P501	
	2R-L4B	7L-P503	

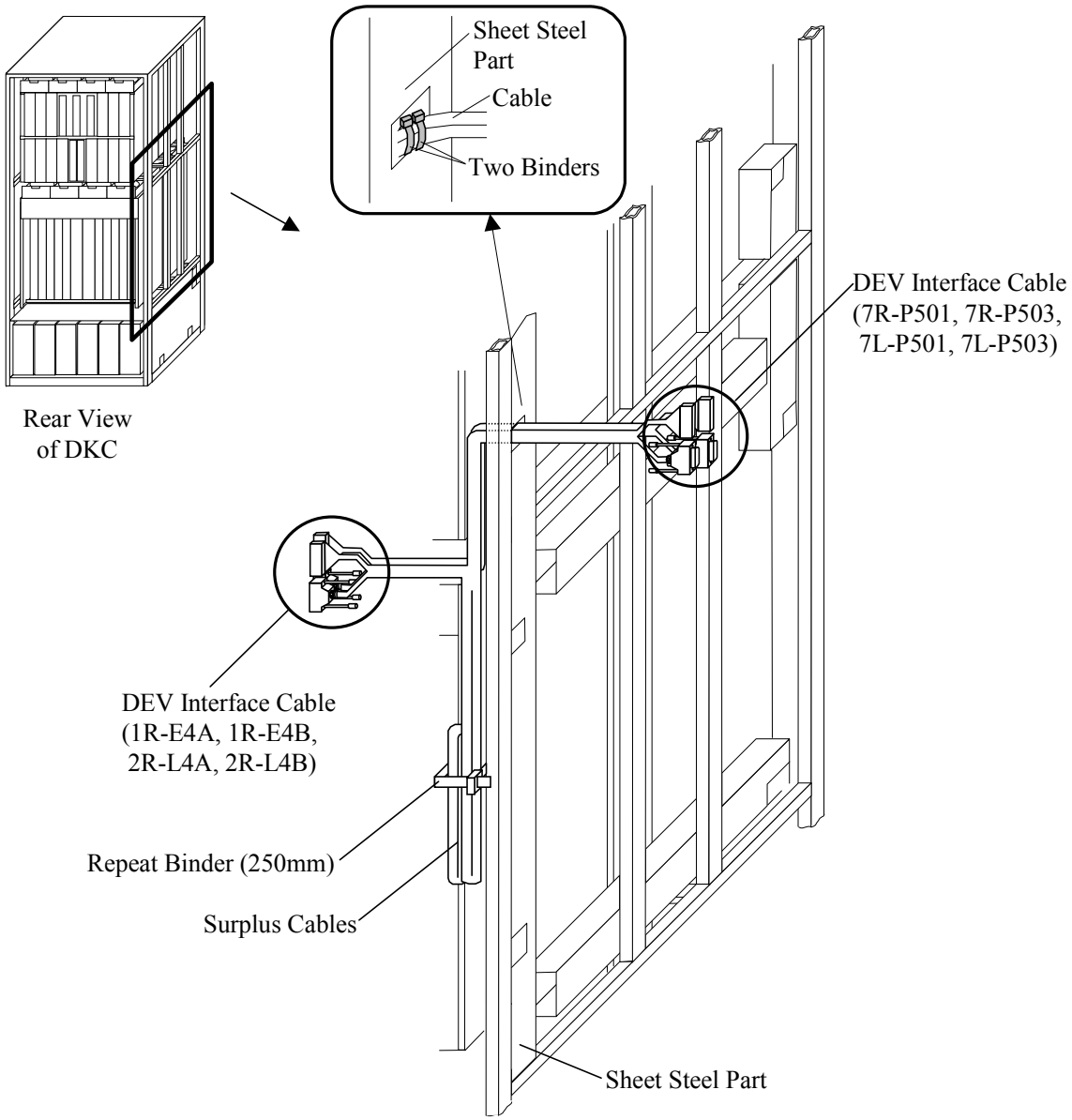

Fig. 3.19.4-29 Attachment of DEV Interface Cables

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4. Attachment of Cable Covers
   a. Attach the cable covers in the reverse order of step 1.

5. Attachment of Nameplate
   a. Attach the nameplate to the Rear Logic Box cover.

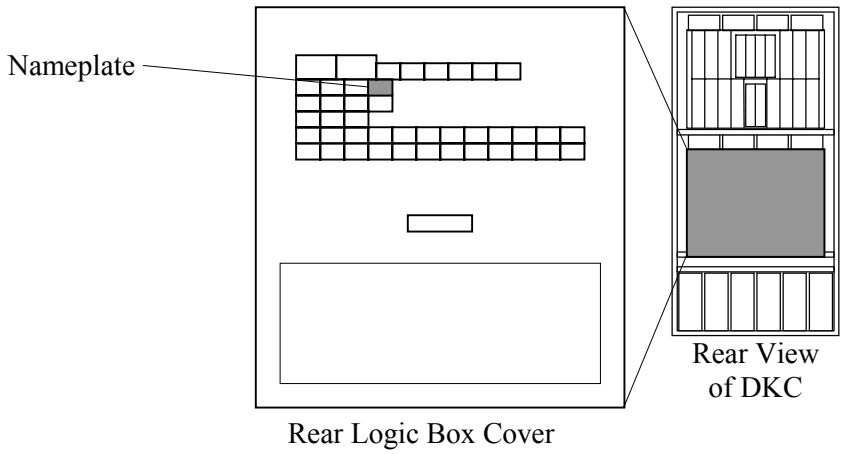

Fig. 3.19.4-30 Attachment of Nameplate

   b. Return to General Flow.
      New Installation: Go to INST03-U40-10 step (1)-9.
      Non-Disruptive Installation: Go to INST03-U40-30 step (1)-3.

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6. Connection of DEV Interface Cables for HDU-L14 through L17

a. Loosen the screws and remove the cable covers ① and ②.

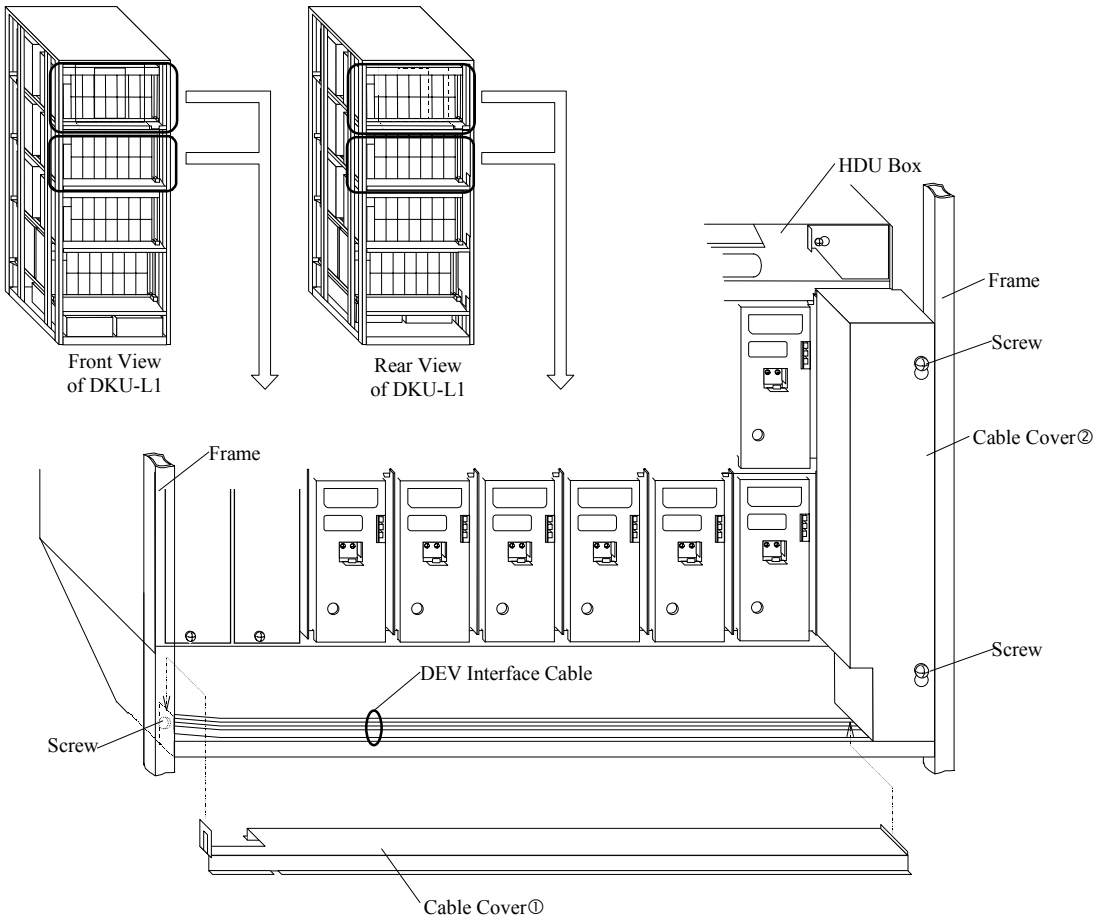

Fig. 3.19.4-31 Removal of Cable Covers

b. Loosen the screws and remove the side plates.

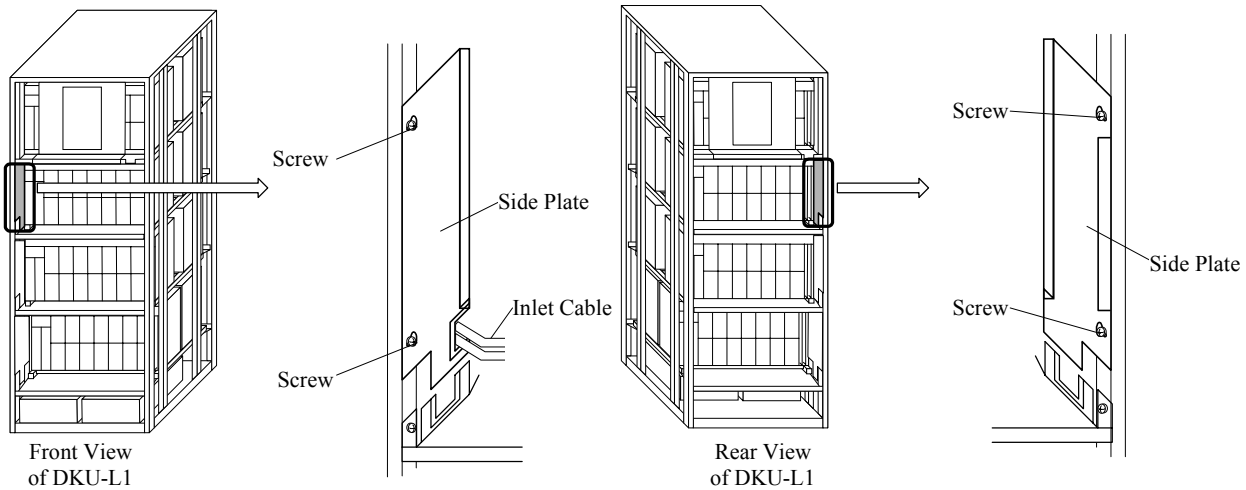

Fig. 3.19.4-32 Removal of Side Covers

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c. Connect the DEV interface cables to the sub-edges on the FSW PCBs located in the HDU box.

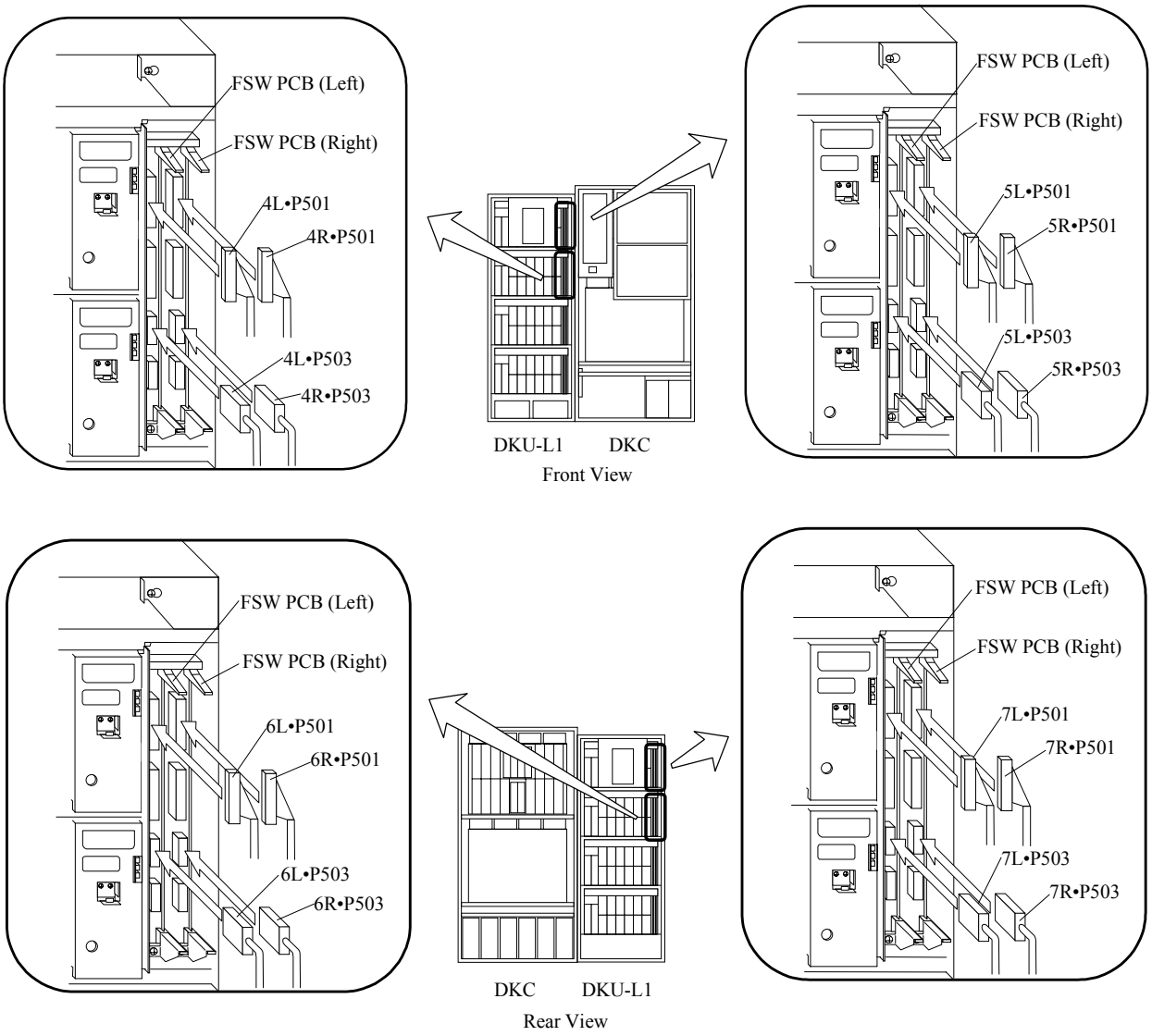

Fig. 3.19.4-33 Connection of DEV Interface Cables

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d. Attach the side plates and fasten the screws.

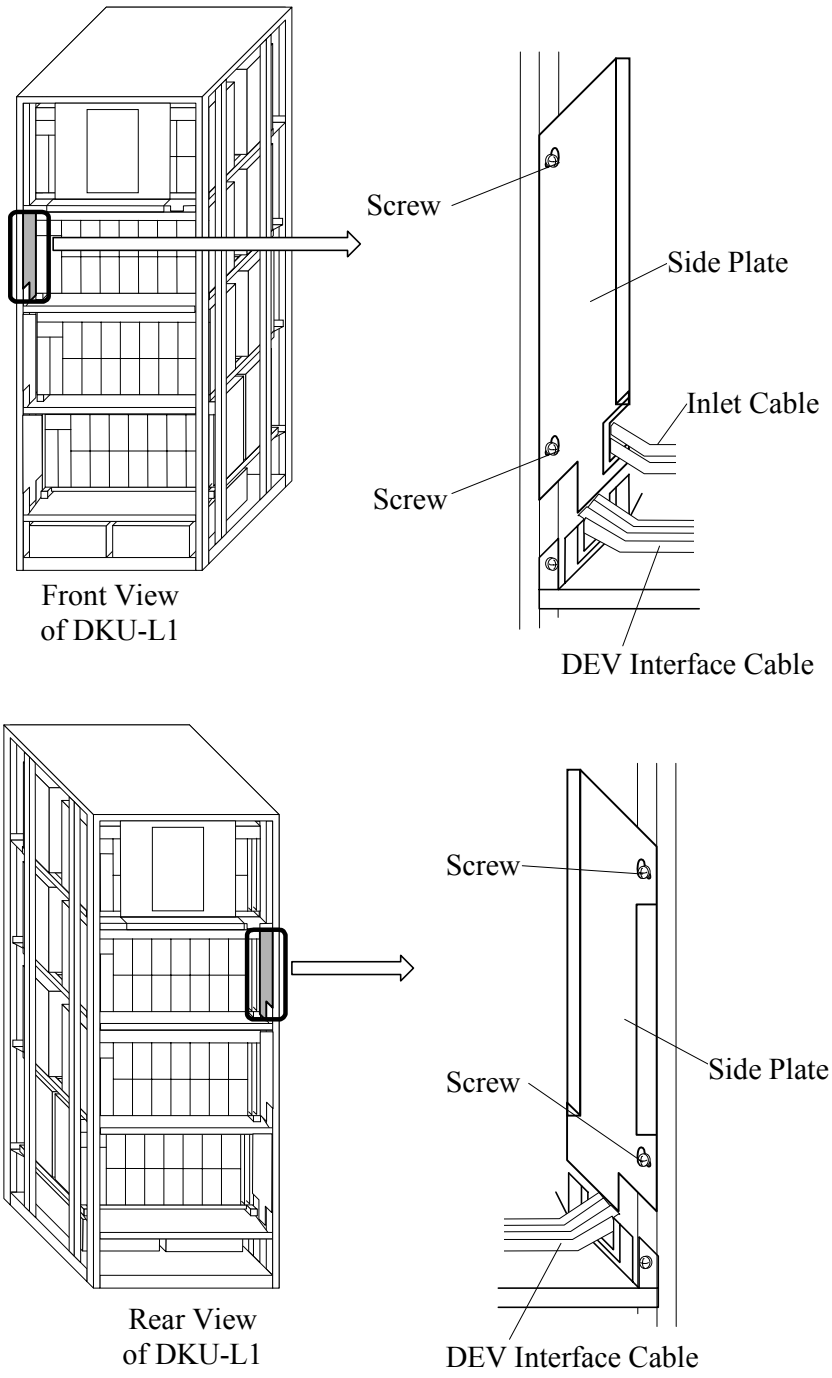

Fig. 3.19.4-34 Attachment of Side Plate

e. Attach the cable covers ① and ② with the screws. Refer to Fig. 3.19.4-31.

f. Return to General Flow.
New Installation: Go to INST03-U40-10 step (2)-5.
Non-Disruptive Installation: Go to INST03-U40-30 step (2)-5.

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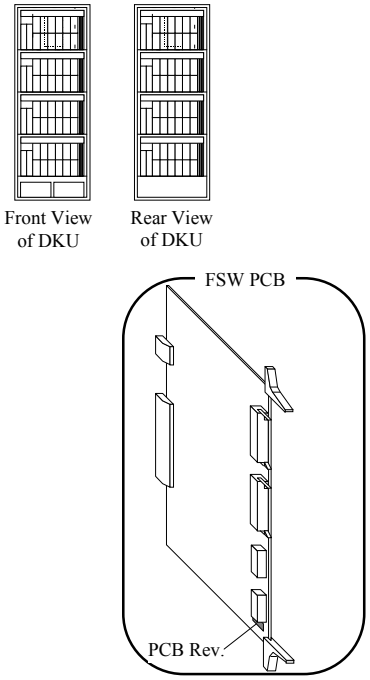
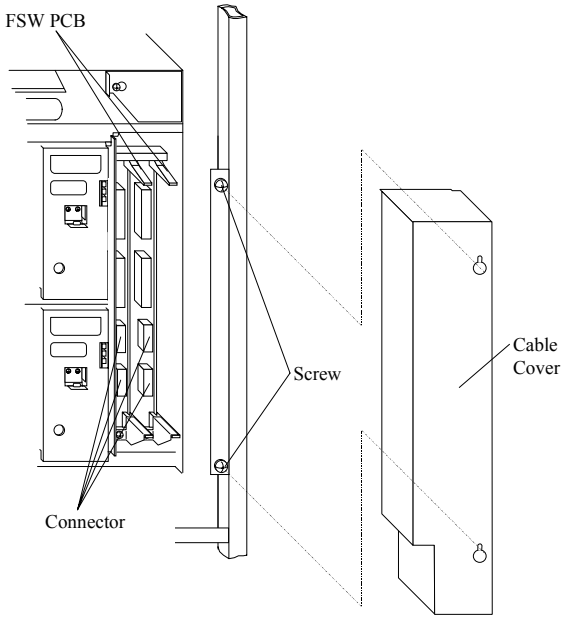
3.19.5 Installation of Disk Unit except DKU-R1 (DKU405I-14)

> **⚠ CAUTION**
>
> Check the FSW PCB Rev. firstly when additional DKU installation. The FSW PCB Rev. should be upper than **A/F31**. If Not, you should perform the PCB Rev. before starting DKU additional installation work.

1. Loosen the screws then remove the Cable cover.
2. Check the FSW PCB Rev. of all DKUs refer to following Item 3.
3. If the FSW PCB Connector color is BLACK, Rev. up is Not required.
   If the FSW PCB Connector color is WHITE, the PCB Rev. Up is required.





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3.19.5.1 Flowchart

(1) Cabinet Setting	[INST03-U40-680]
↓	
(2) Frame Connection	[INST03-U40-780]
↓	
(3) Switch and Jumper Plug Installation	[INST03-U40-910]
↓	
(4) Cabling	[INST03-U40-970]
↓	
(5) Cabling Procedure of DEV Interface Cables for DKU-L1	[INST03-U40-1060]
↓	
(6) Labeling	[INST03-U40-1090]
↓	
(7) Check of Jumper Settings	[INST03-U40-1090]
↓	
(8) Check and Testing	[INST03-U40-1090]

3.19.5.2 Cabinet Setting (Adjusting the Cabinet Height)

3.19.5.2.1 Flowchart

Disk Unit(s) Layout
↓
Side Cover Removal
↓
Conductive Sheets Attachment
↓
Installing DEV Interface Cable for DKU-L1
↓
Adjusting the Cabinet Height and Level
↓
DKU Cable Covers Removal

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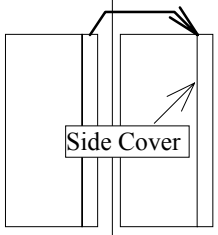
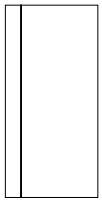
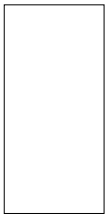
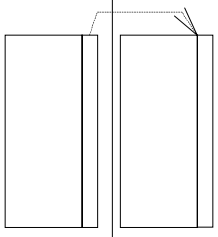
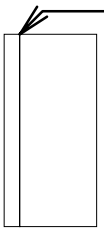
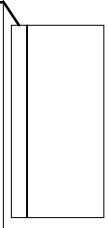
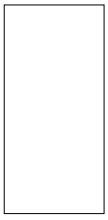
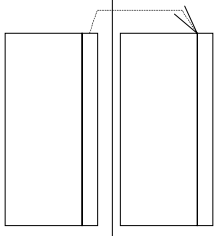
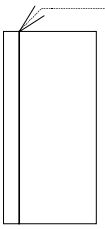
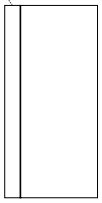
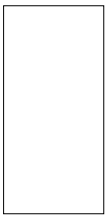
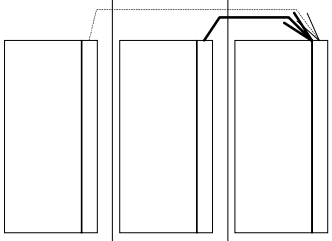
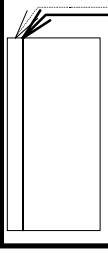
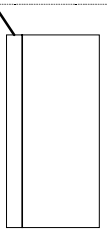
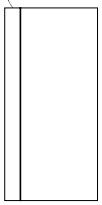
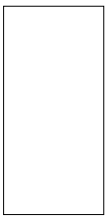
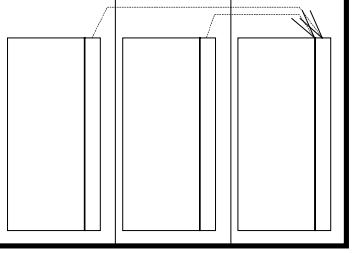
3.19.5.2.2 Disk Unit(s) Layout

Install the Disk Unit(s) in one of the locations shown in Table 3.19.5.2.2-1.

Table 3.19.5.2.2-1 Removal and Re-installation of Side Cover

Configuration	DKU-L3	DKU-L2	DKU-L1	DKC	DKU-R1	DKU-R2	DKU-R3
Disk Controller and Two Disk Units	———	———	———				———
Disk Controller and Three Disk Units	———	———					———
Disk Controller and Four Disk Units	———						———
Disk Controller and Five Disk Units	———						
Disk Controller and Six Disk Units							

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3.19.5.2.3 Side Cover Removal

Remove the side covers shown in Table 3.19.5.2.2-1 from the installed Disk Controller or Disk Unit(s).

3.19.5.2.4 Conductive Sheets Attachment

1. Attach the conductive sheets to the DKU frame referring to Fig. 3.19.5.2.4-1 and Fig. 3.19.5.2.4-2.

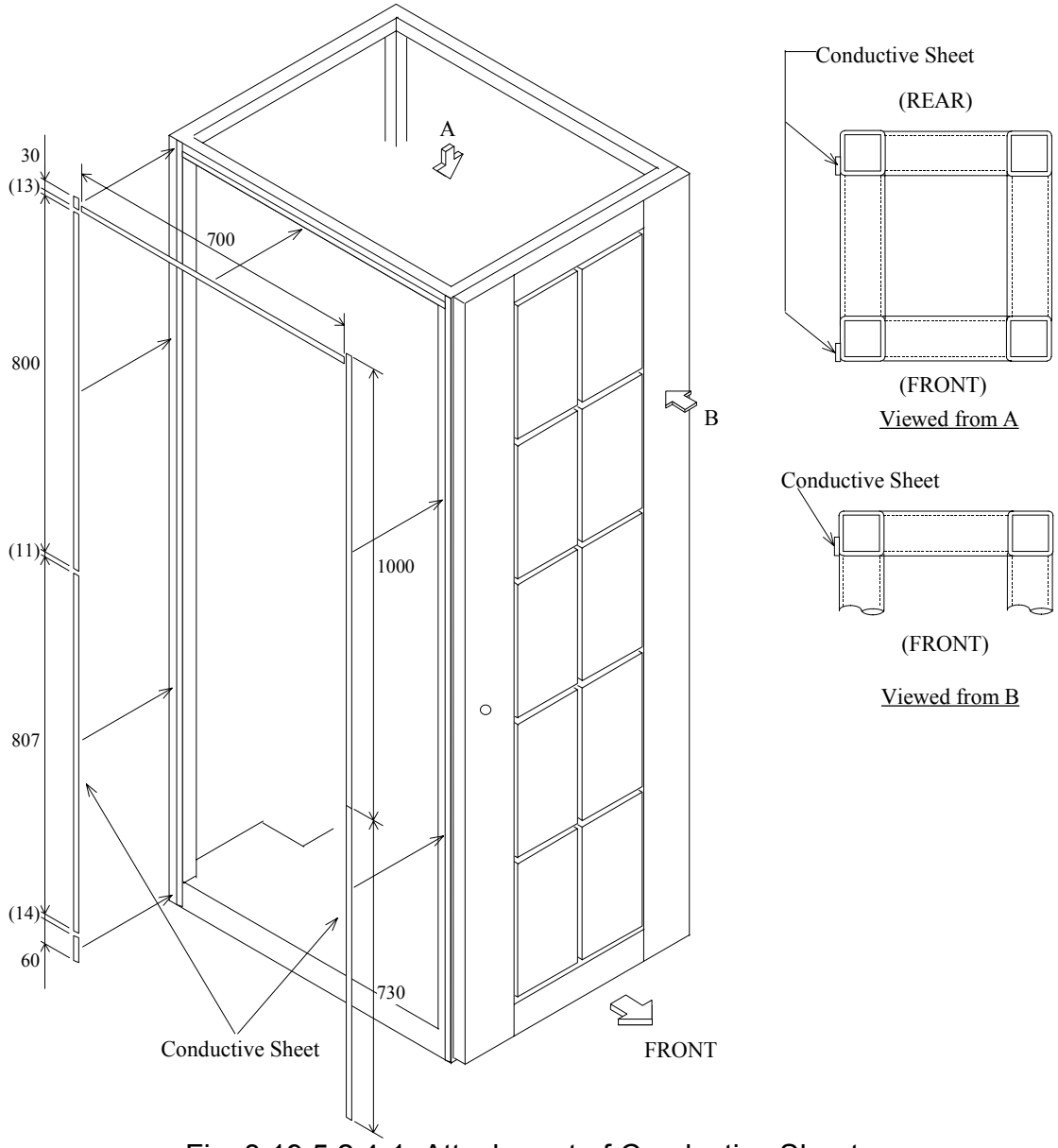

Fig. 3.19.5.2.4-1 Attachment of Conductive Sheets

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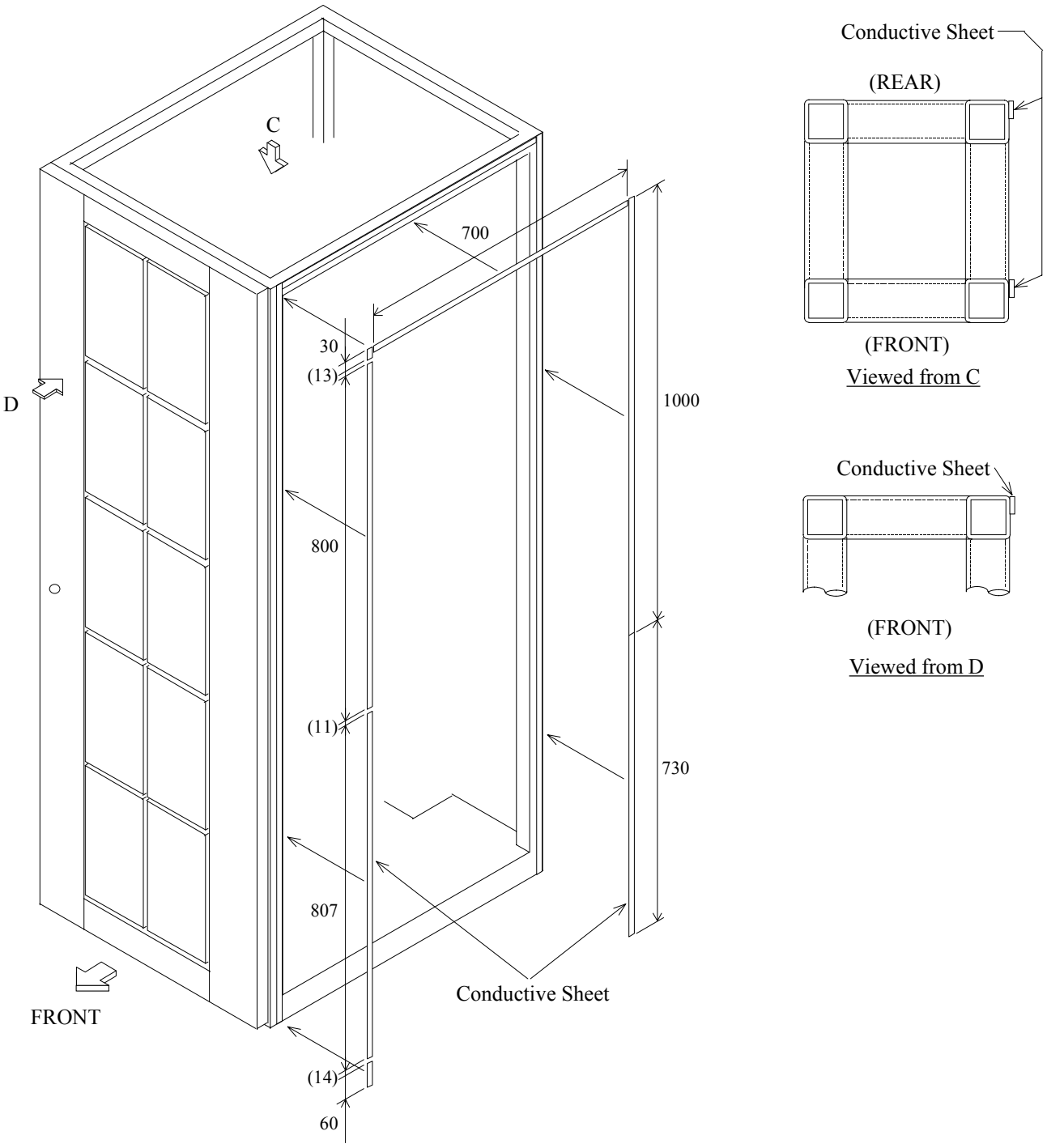

Fig. 3.19.5.2.4-2 Attachment of Conductive Sheets

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3.19.5.2.5 Installing DEV Interface cable for DKU-L1

When the frame to be added is other than the DKU-L1, GO TO Paragraph 3.19.5.2.6, “Adjusting the cabinet height and level” on page INST03-U40-760.

1. Remove the Front Logic Box Cover from the DKC.
2. Remove the two screws and remove the cable cover.

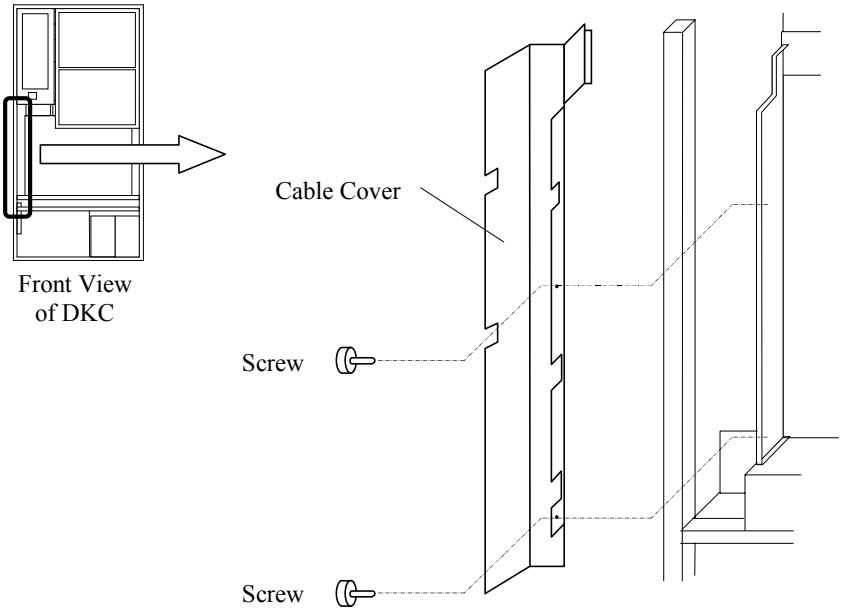

Fig. 3.19.5.2.5-1 How to open the Cover (DKC front side)

3. Remove the Rear Logic Box Cover.
4. Remove the five screws and remove the cable covers.

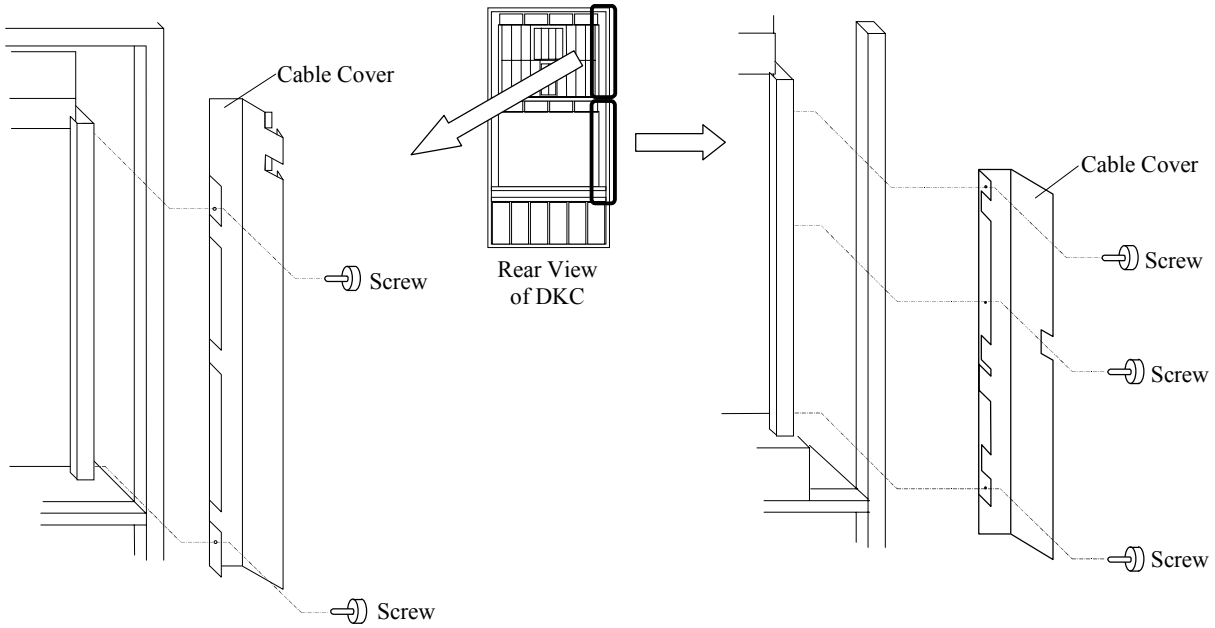

Fig. 3.19.5.2.5-2 How to open the Cover (DKC rear side)

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5. Loosen the screws and remove the cable covers ① and ②.

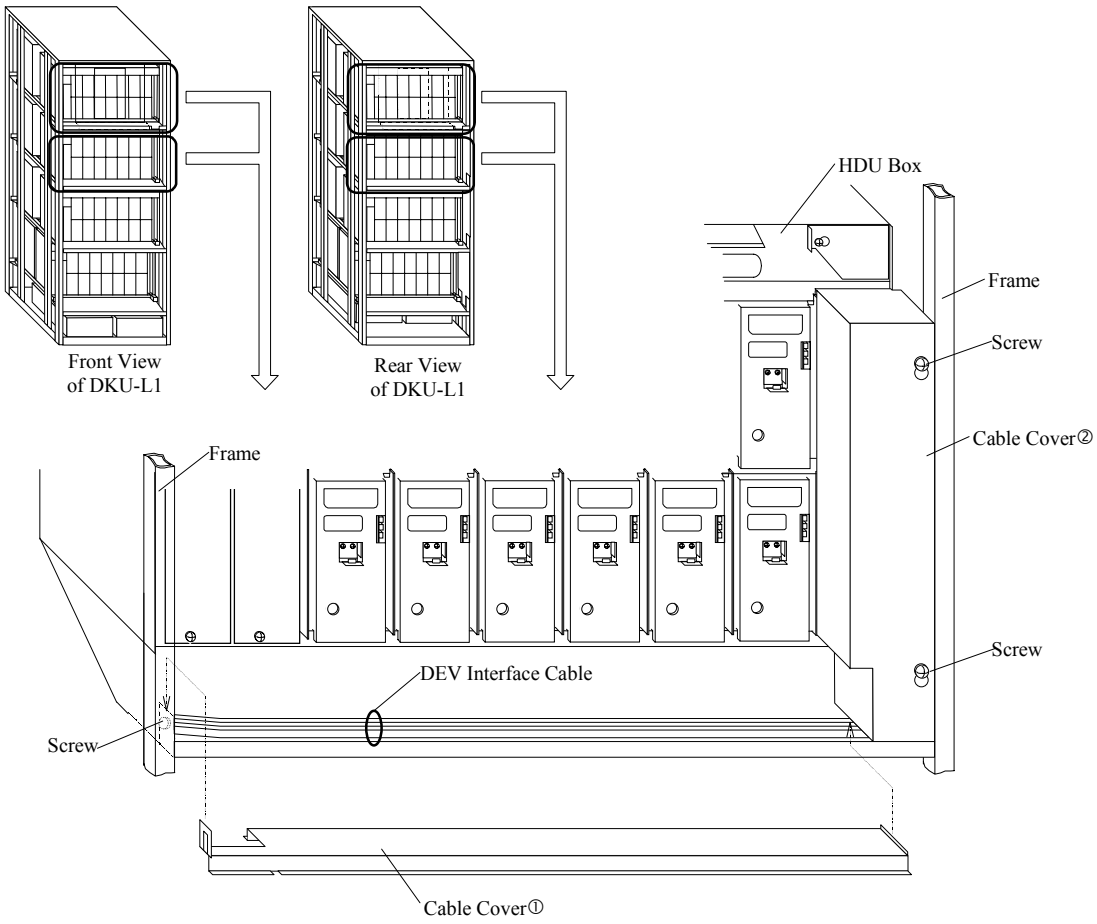

Fig. 3.19.5.2.5-3 Removal of Cable Covers

6. Loosen the screws and remove the side plates.

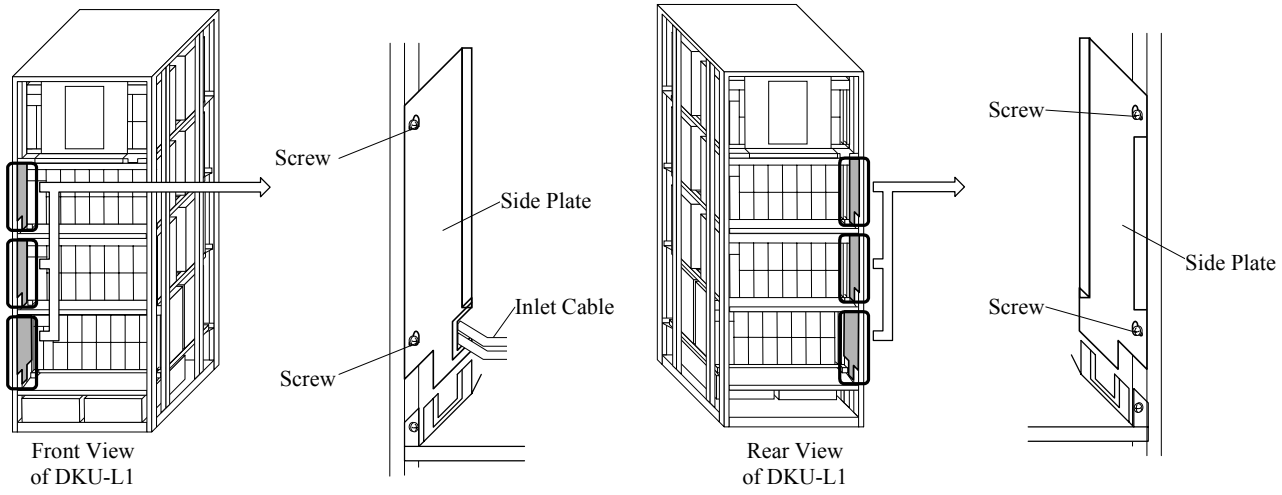

Fig. 3.19.5.2.5-4 Removal of Side Covers

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7. Pass the DEV interface cables for the DKC through the DKU-L1 frame. Be extremely careful not to pinch the inter-frame cable when coupling the frames to each other.

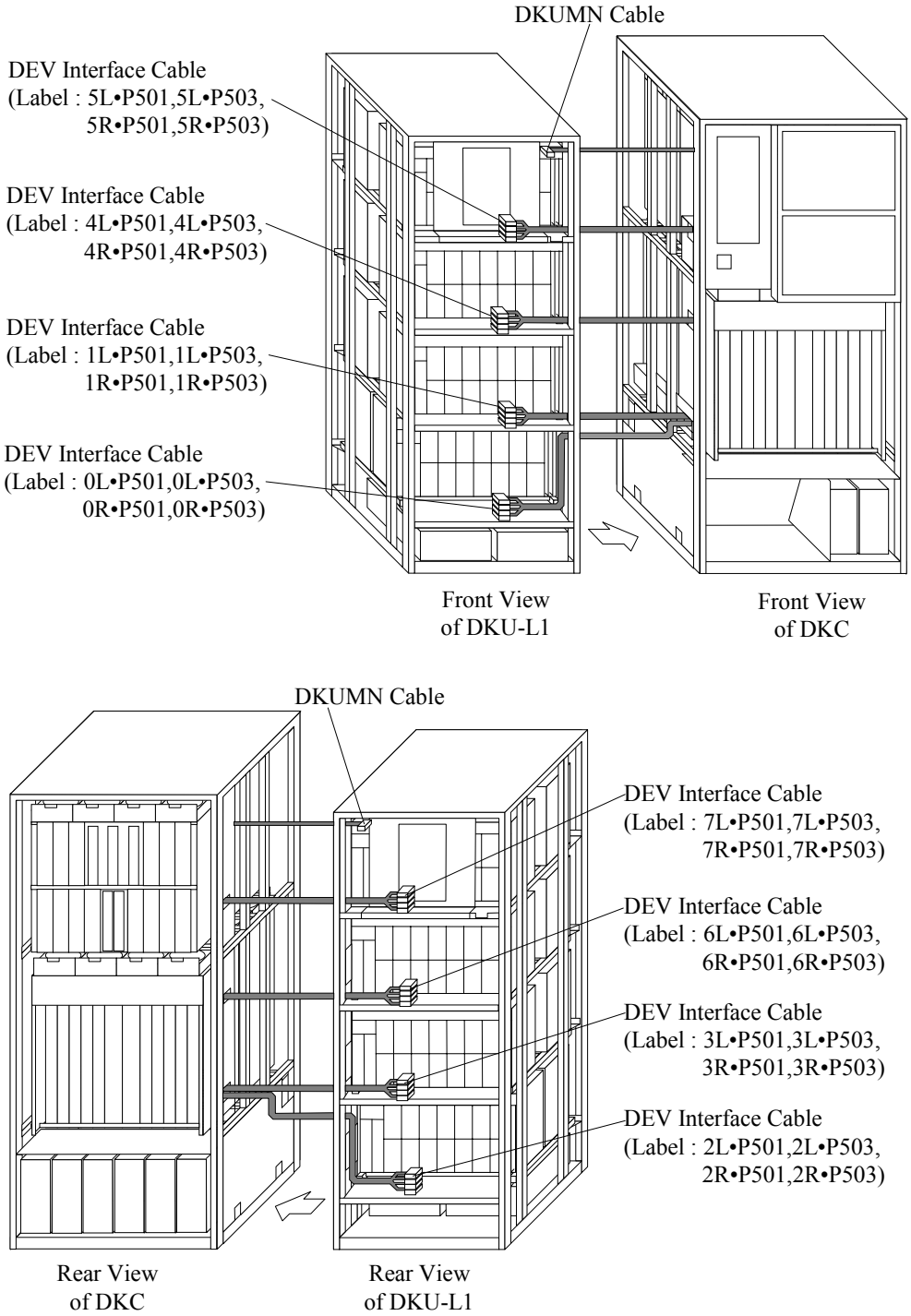

Fig. 3.19.5.2.5-5 Attachment of the DKU-L1

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8. Attach the side plates and fasten the screws.

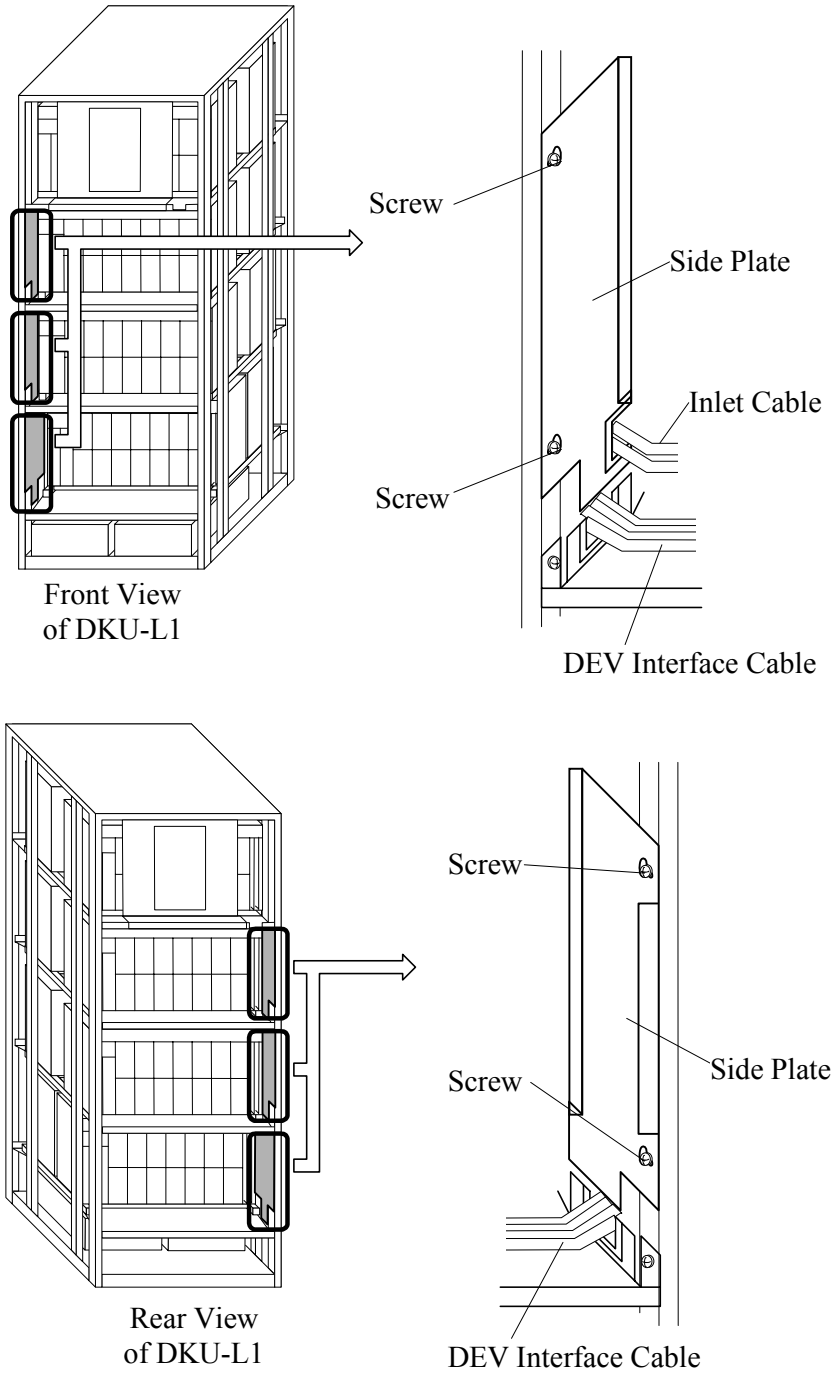

Fig. 3.19.5.2.5-6 Attachment of Side Plate

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3.19.5.2.6 Adjusting the Cabinet Height and Level

1. Lower the screw jacks until the frame is 57 mm (2.25 in.) from the floor before connecting the frames.
2. Level the device as shown on Fig. 3.19.5.2.6-1.
3. When adjusting the cabinet height, make sure that there is a clearance of approximately 2.5 mm (0.1 in.) between the casters and the floor.

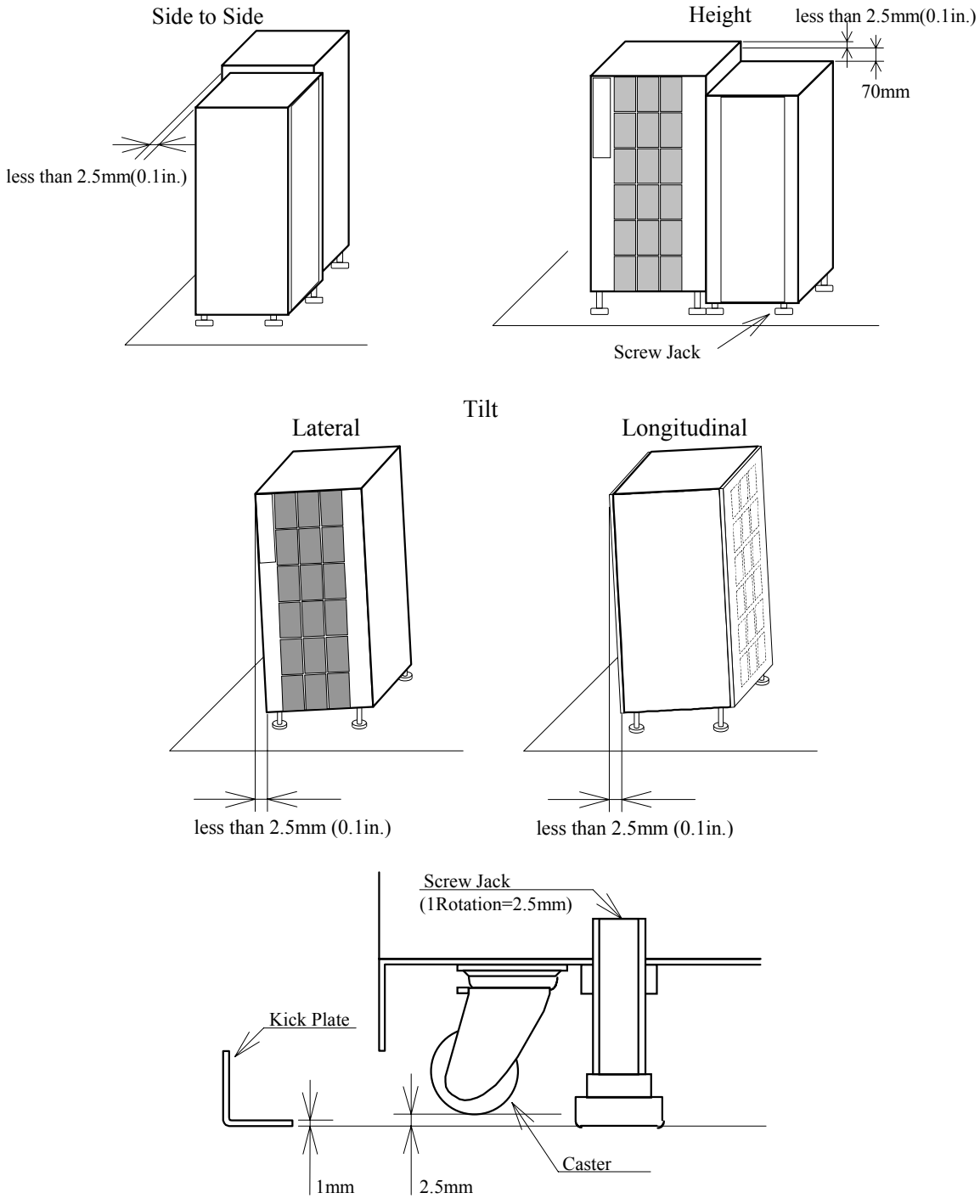

Fig. 3.19.5.2.6-1 Cabinet Setting

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3.19.5.2.7 DKU Cable Covers Removal

Remove the cable cover which located connecting bolt attach position, when connected frames.

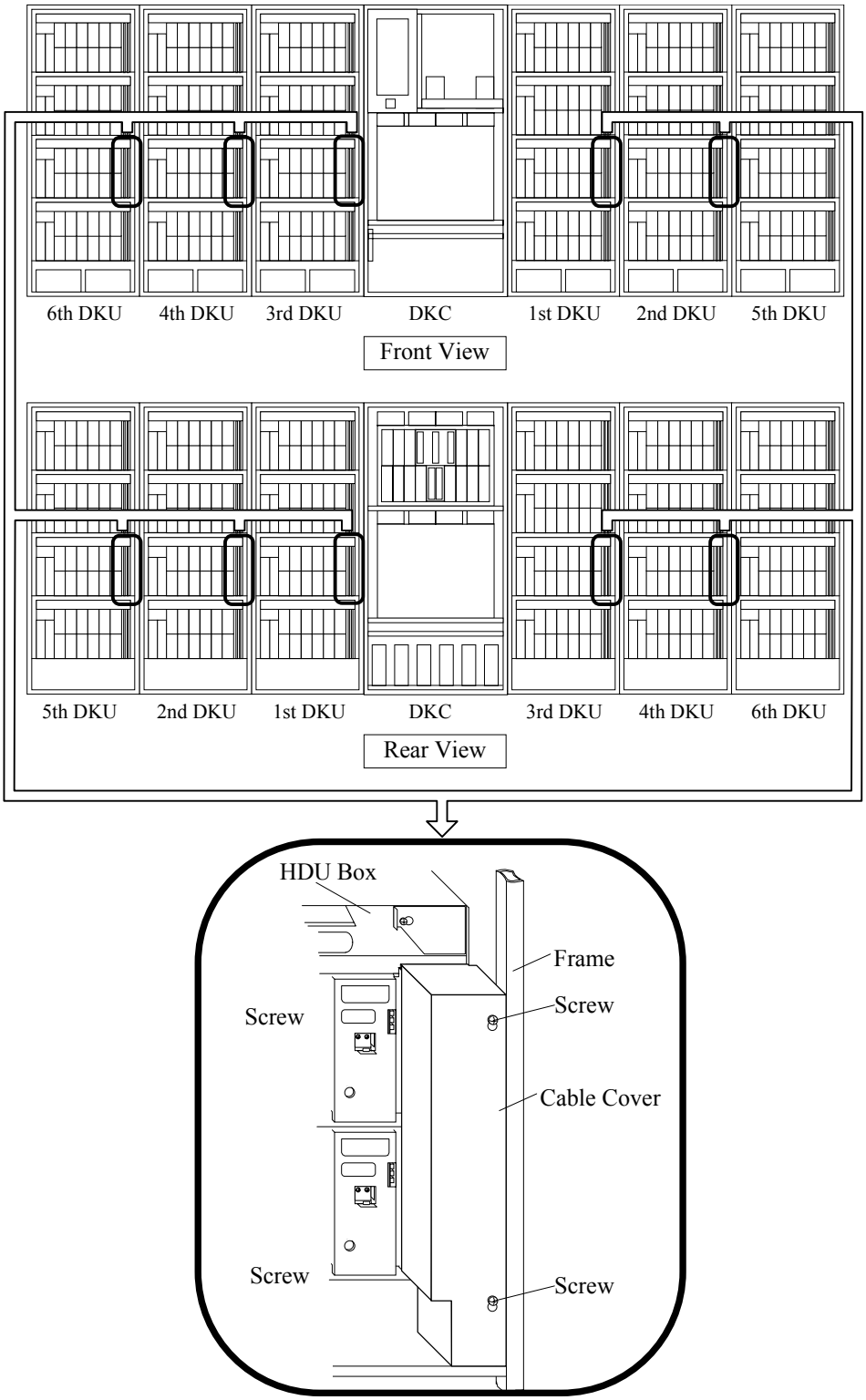

Fig. 3.19.5.2.7-1 Removal of Cable Covers

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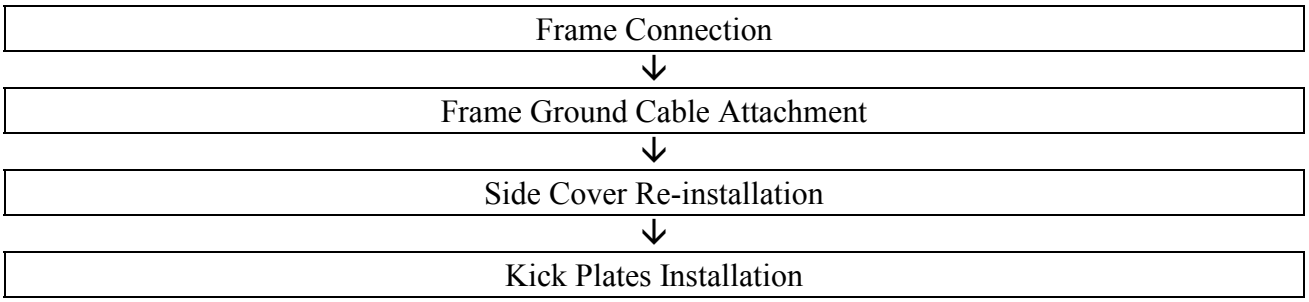
3.19.5.3 Frame Connection

3.19.5.3.1 Flowchart



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3.19.5.3.2 Frame Connection

1. Connect the devices together using four of the Connecting Bolt Assy. Place two at the front and two at the rear. See figures 3.19.5.3.2-1 and 3.19.5.3.2-2. The direction of the hexagon socket head bolts must be the same as shown in the figure.

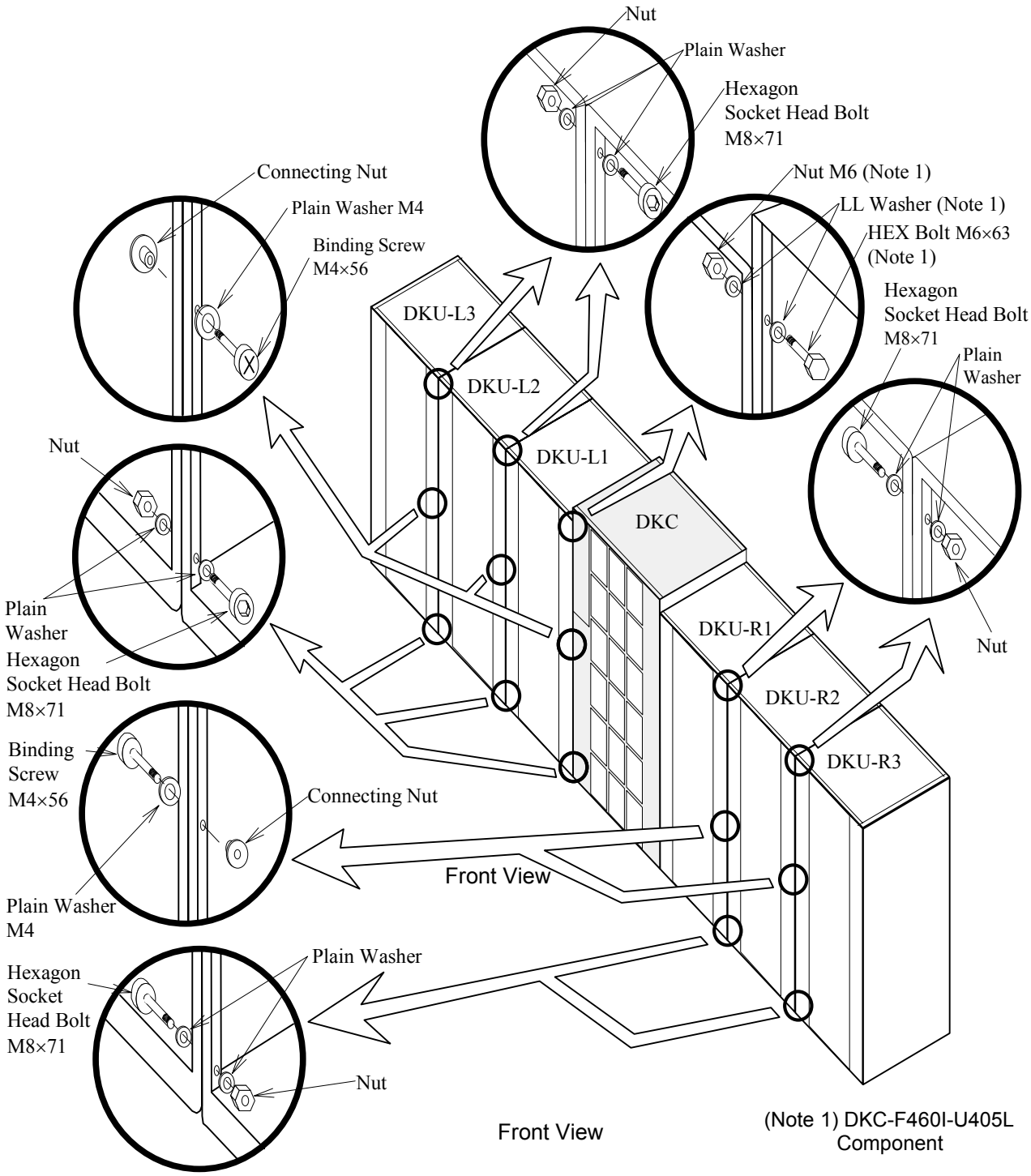

Fig. 3.19.5.3.2-1 Connection of Frame

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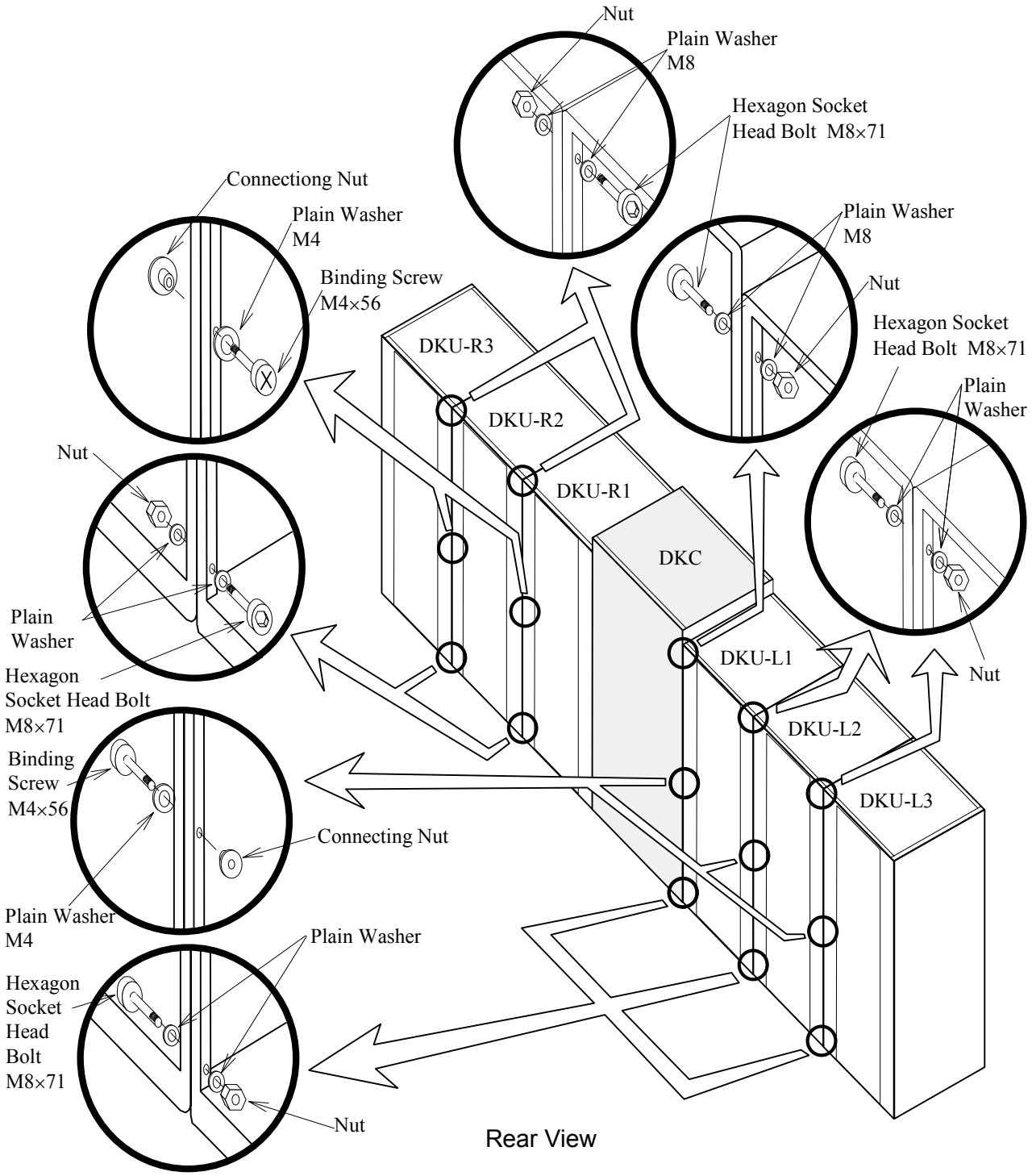

Fig. 3.19.5.3.2-2 Connection of Frame

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2. Remove the four screws ① on the top covers.
3. Loosen the three screws ②.
4. Attach the bracket cover ASSY with the four screws ③.
5. Fasten the screws ②.
6. Fix the DKC frame and bracket cover ASSY with the socket bolts, washers and nuts.

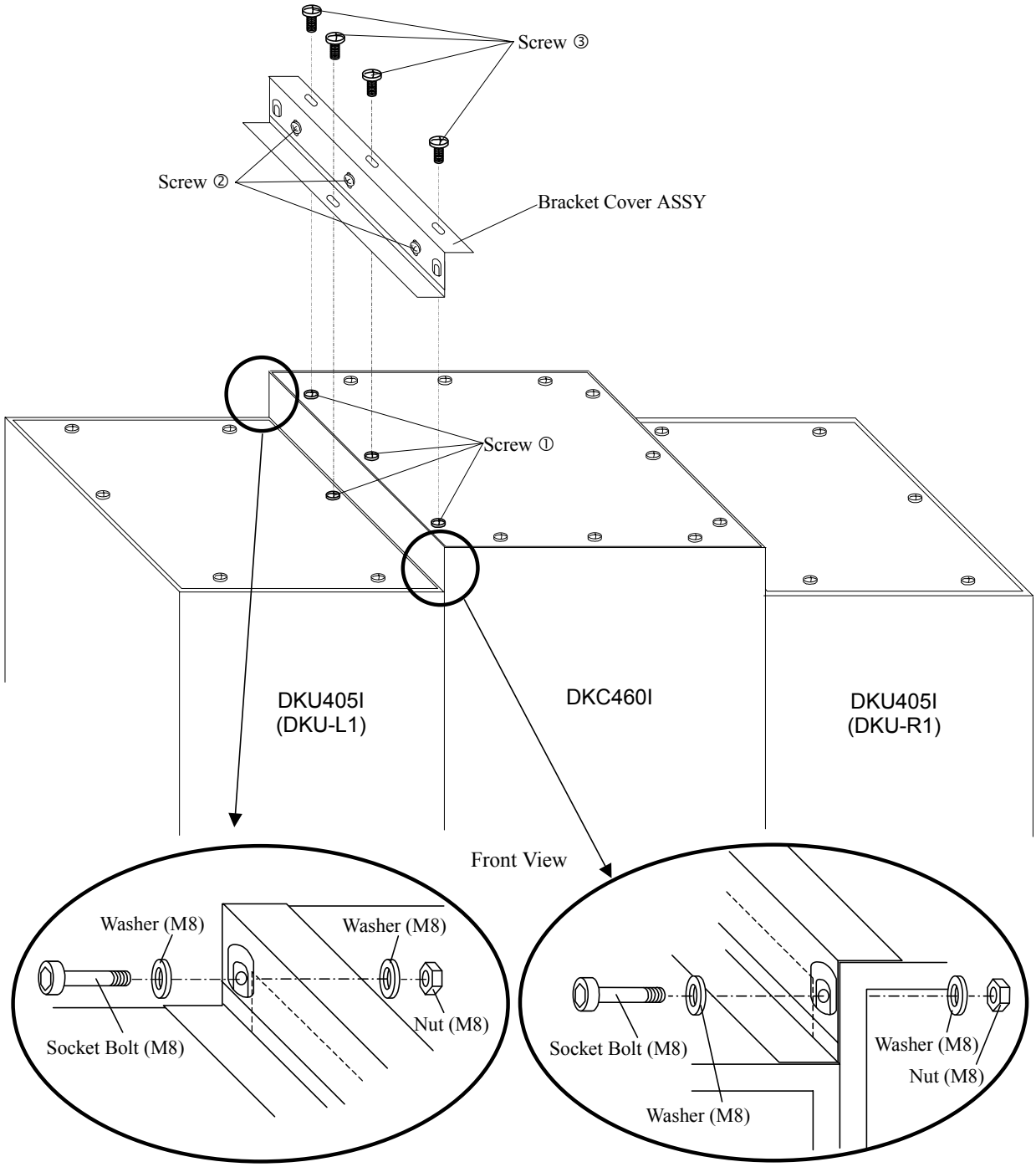

Fig. 3.19.5.3.2-3 Attachment of Bracket Cover ASSY

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3.19.5.3.3 Frame Ground Cable Attachment

Note

Frame ground cable

: Screw and washer (lock washer)

: Thread

DKU-R2

1. Remove the right side cover together with the frame ground cable from the DKU-R1.
2. Connect the cabinet.
3. Attach the side cover to the DKU-R2. Refer to SECTION 3.19.5.3.4 Side Cover Re-Installation [INST03-U40-870].
4. Attach the frame ground cable with the screw and lock washer.

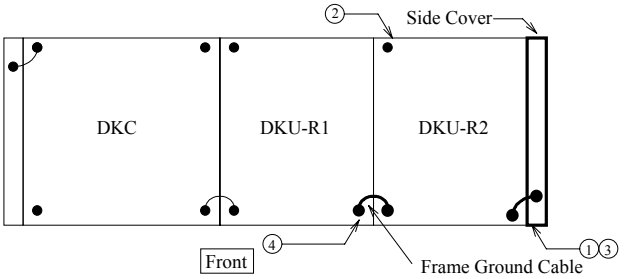
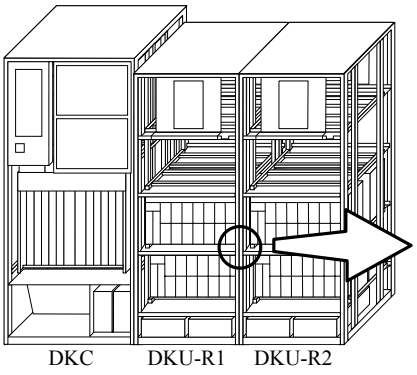


Fig. 3.19.5.3.3-1 Attachment of Frame Ground Cable



Front View

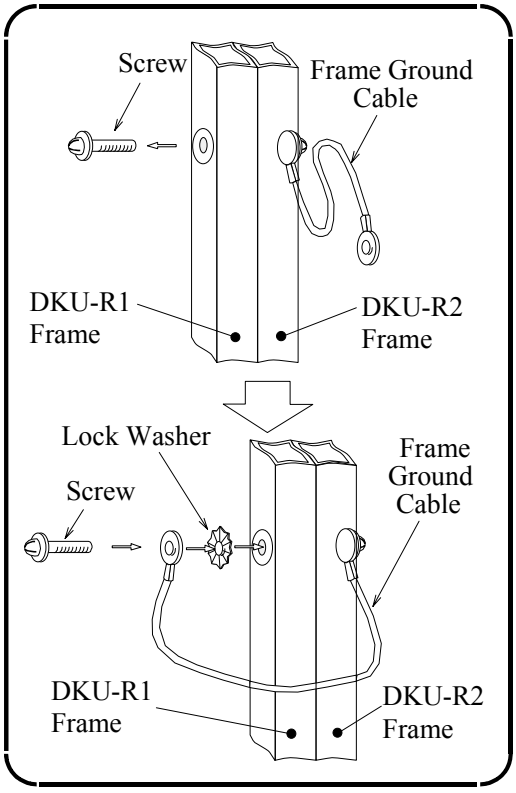


Fig. 3.19.5.3.3-2 Attachment of Frame Ground Cable

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DKU-L1

1. Remove the frame ground cable from the DKU-L1.
2. Connect the cabinets.
3. Attach the side cover to the DKU-L1. Refer to Section 3.19.5.3.4 Side Cover Re-Installation [INST03-U40-870].
4. Attach frame ground cable with the screw and lock washer.
5. Attach the Front and Rear Logic Box Covers to the DKC in the reverse order of SECTION 3.19.5.2.5 Logic Box Covers Removal [INST03-U40-720].

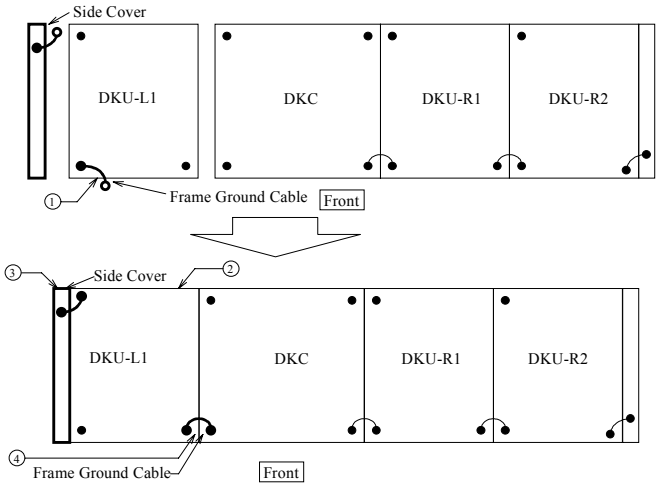

Fig. 3.19.5.3.3-3 Attachment of Frame Ground

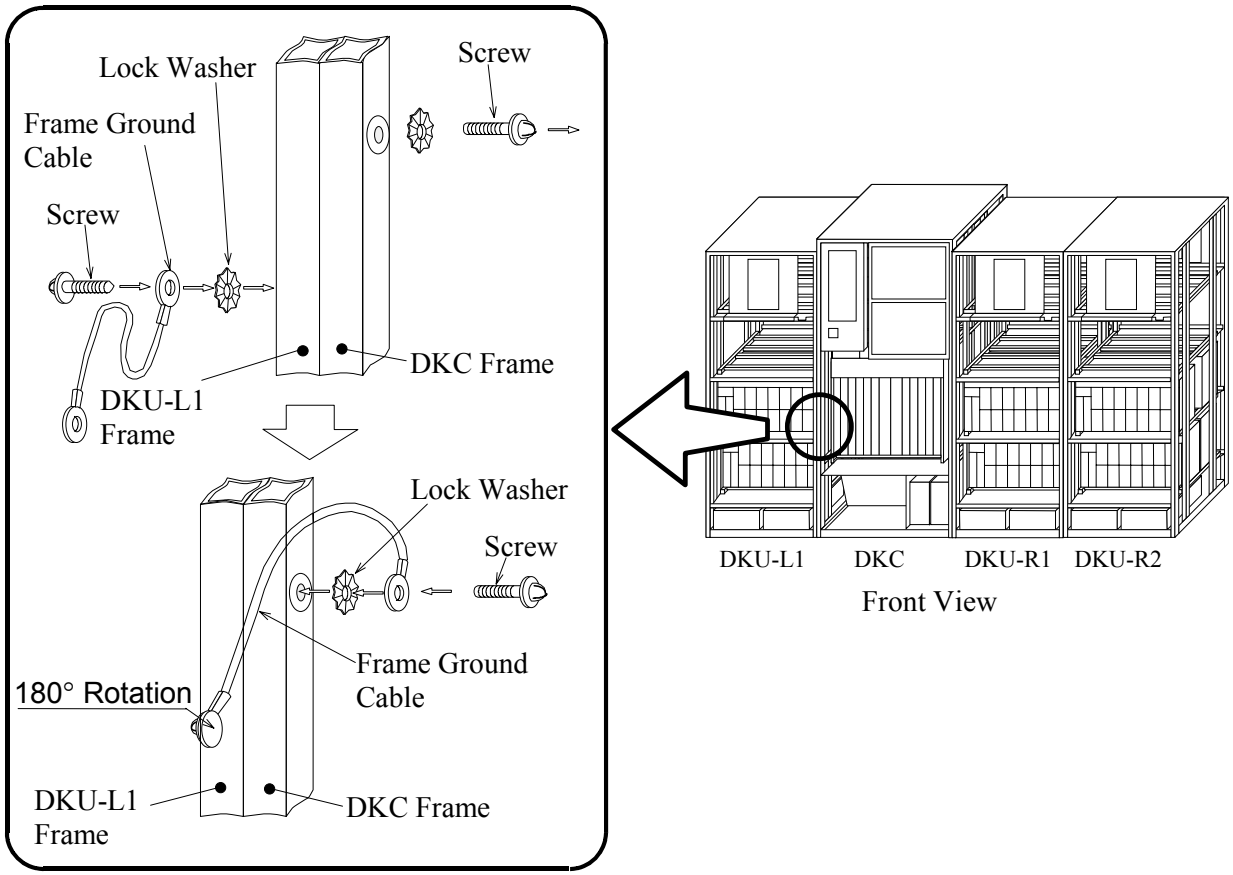

Fig. 3.19.5.3.3-4 Attachment of Frame Ground Cable

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DKU-L2

1. Remove the left side cover together with the frame ground cable from the DKU-L1.
2. Remove the frame ground cable from the DKU-L2.
3. Connect the cabinet.
4. Attach the side cover to the DKU-L2. Refer To Section 3.19.5.3.4 Side Cover Re-Installation [INST03-U40-870].
5. Attach the frame ground cable with the screw and lock washer.

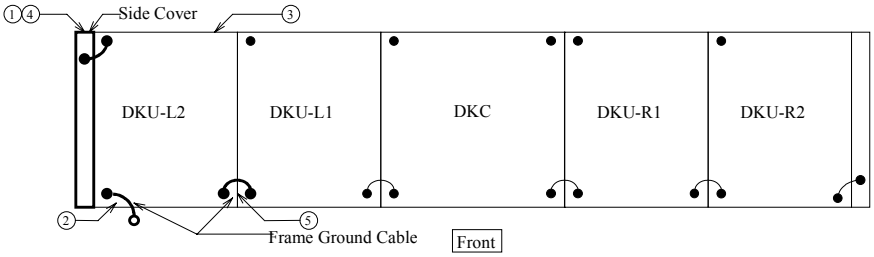

Fig. 3.19.5.3.3-5 Attachment of Frame Ground Cable

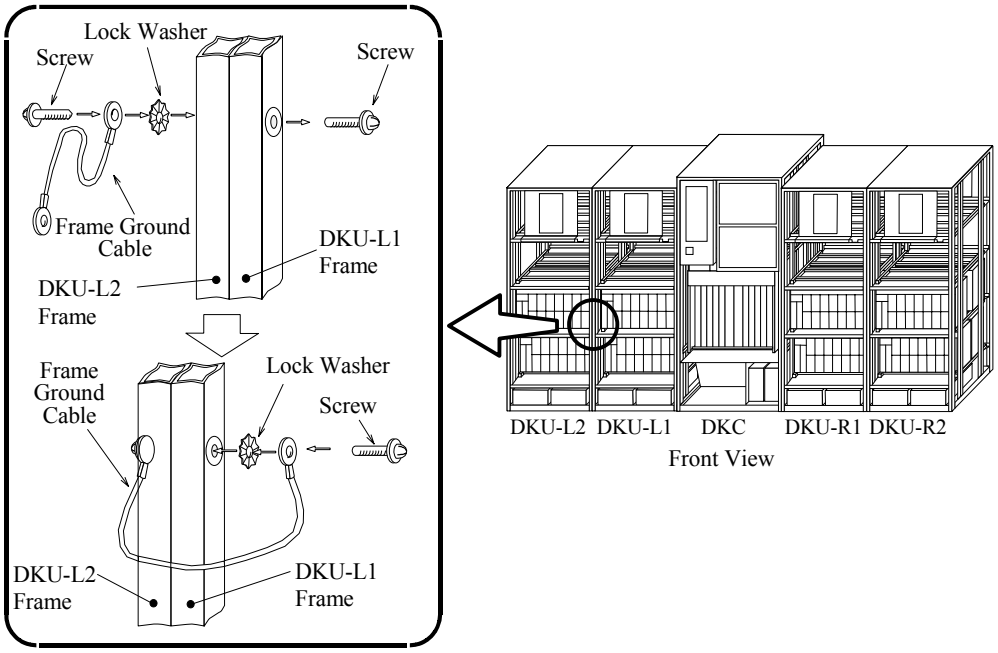

Fig. 3.19.5.3.3-6 Attachment of Frame Ground Cable

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DKU-R3

1. Remove the right side cover together with the frame ground cable from DKU-R1 or DKU-R2.
2. Connect the cabinet.
3. Attach the side cover to the DKU-R2. Refer to SECTION 3.19.5.3.4 Side Cover Re-Installation [INST03-U40-870].
4. Attach the frame ground cable with the screw and lock washer.

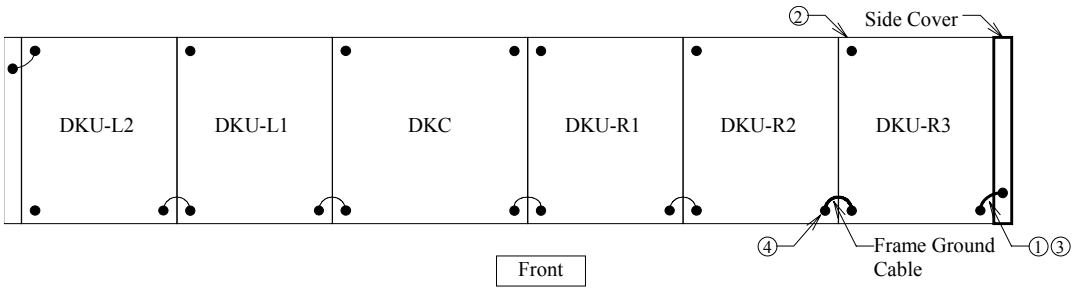

Fig. 3.19.5.3.3-7 Attachment of Frame Ground Cable

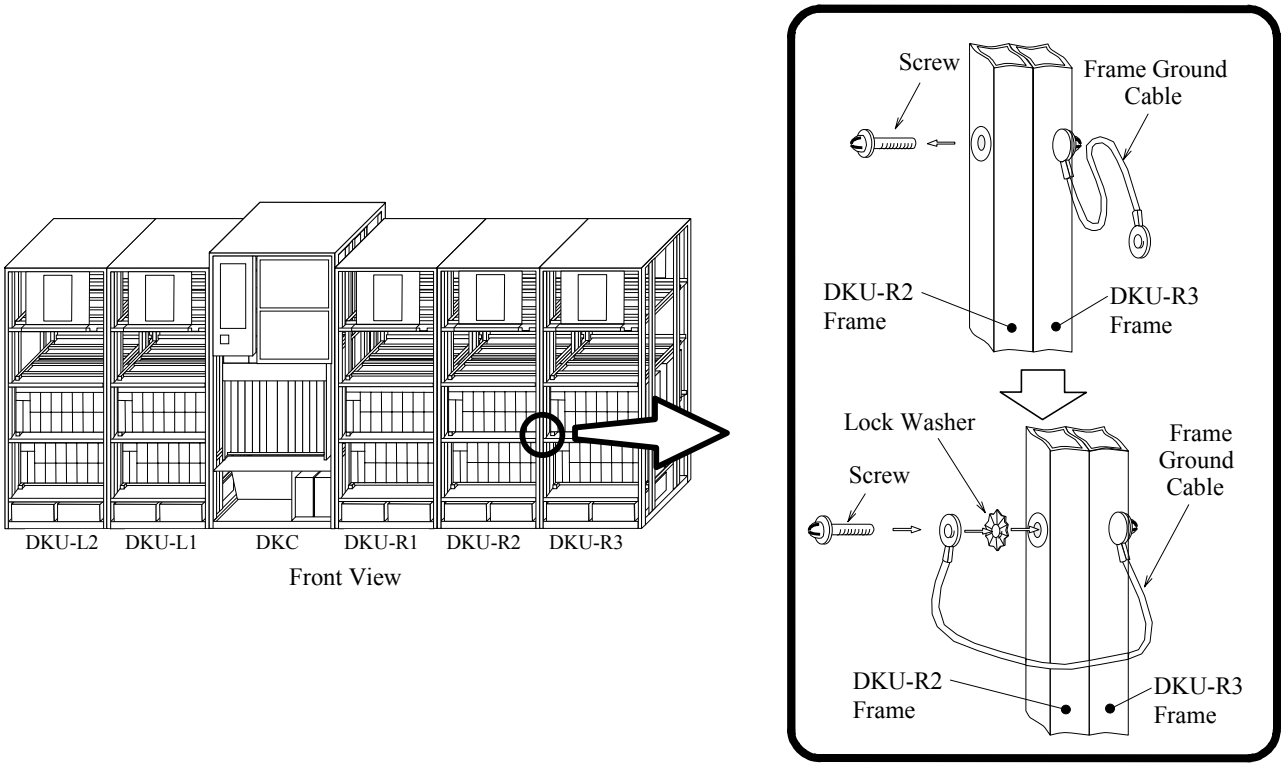

Fig. 3.19.5.3.3-8 Attachment of Frame Ground Cable

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DKU-L3

1. Remove the left side cover together with the frame ground cable from the DKU-L1 or DKU-L2.
2. Remove the frame ground cable from the DKU-L3.
3. Connect the cabinet.
4. Attach the side cover to the DKU-L3. Refer To Section 3.19.5.3.4 Side Cover Re-Installation [INST03-U40-870].
5. Attach the frame ground cable with the screw and lock washer.

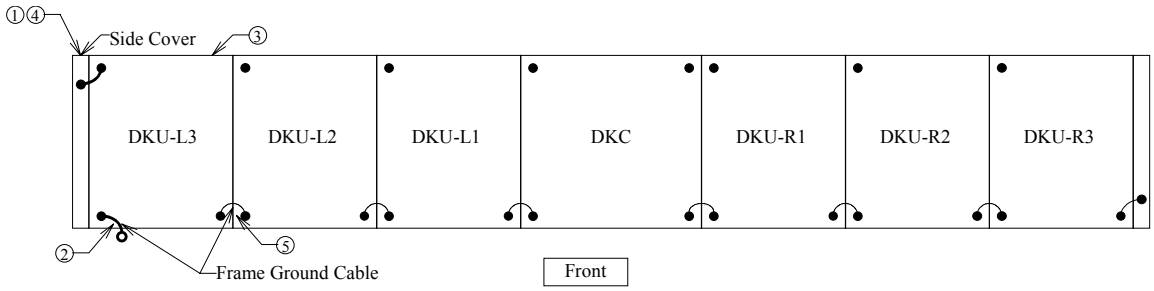

Fig. 3.19.5.3.3-9 Attachment of Frame Ground Cable

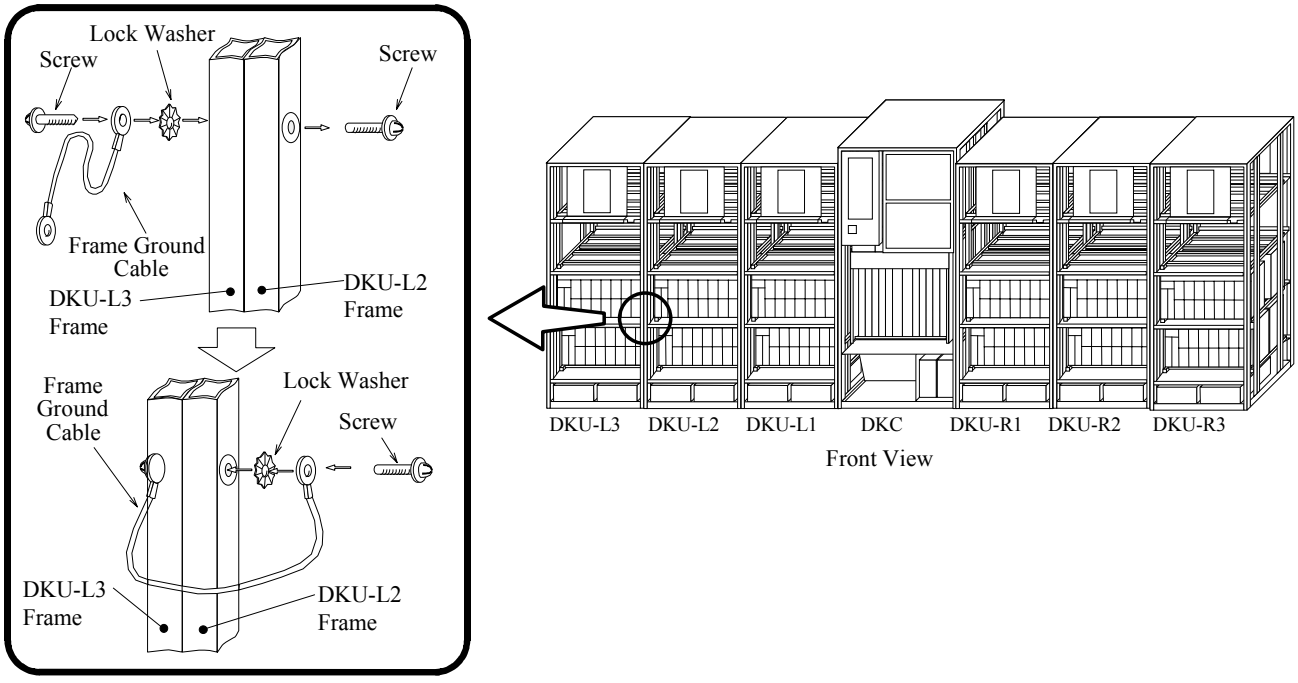

Fig. 3.19.5.3.3-10 Attachment of Frame Ground Cable

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3.19.5.3.4 Side Cover Re-Installation

Attach the side cover to the end of the string with the four binding screws and washers. See Fig. 3.19.5.3.4-1 and Table 3.19.5.2.2-1.

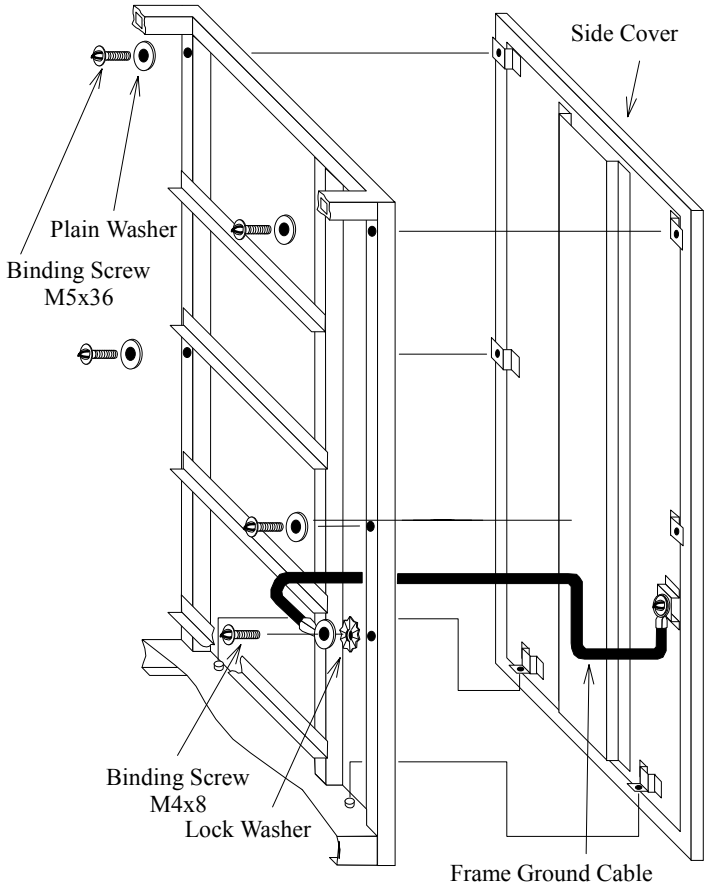

Fig. 3.19.5.3.4-1 Re-Installation of Side Cover

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3.19.5.3.5 Kick Plate Installation

Secure the kick plates with screws, as shown in figures. 3.19.5.3.5-1 through 3.19.5.3.5-6.
Remove the side kick plates from the Disk Controller and replace them on the cabinets at both ends.

NOTICE: Contact the Kick Plate to the floor to prevent static electricity.

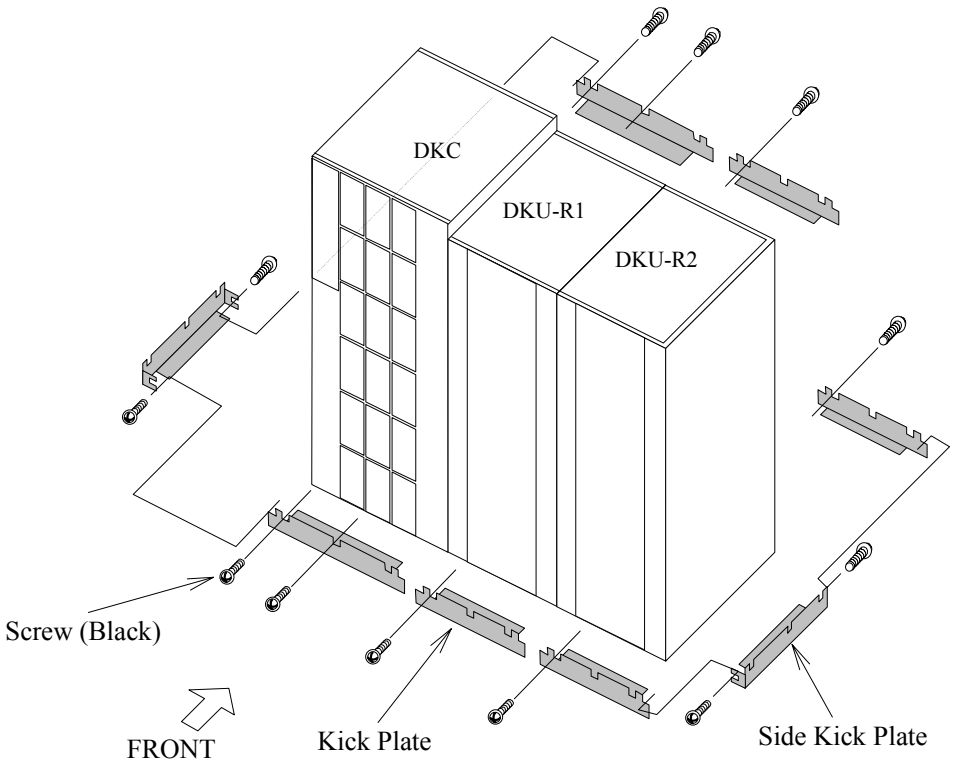
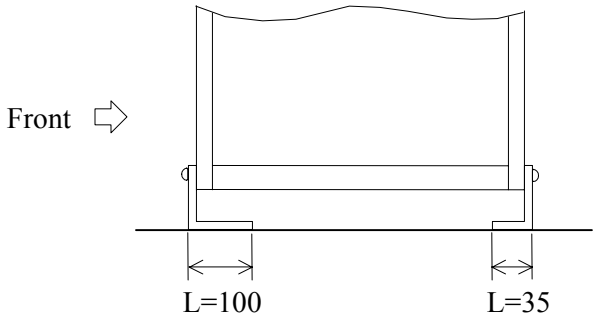


Fig. 3.19.5.3.5-1 Installation of Kick Plate (Two Disk Units)

Care should be taken when installing the kick plates of the DKU, because the front and rear kick plates are not the same.
Install the kick plate with the dimension L of 100 mm to the front side of the subsystem and that with the dimension L of 35 mm to the rear side.



Side View of DKU

Fig. 3.19.5.3.5-2 Kick Plates of DKU

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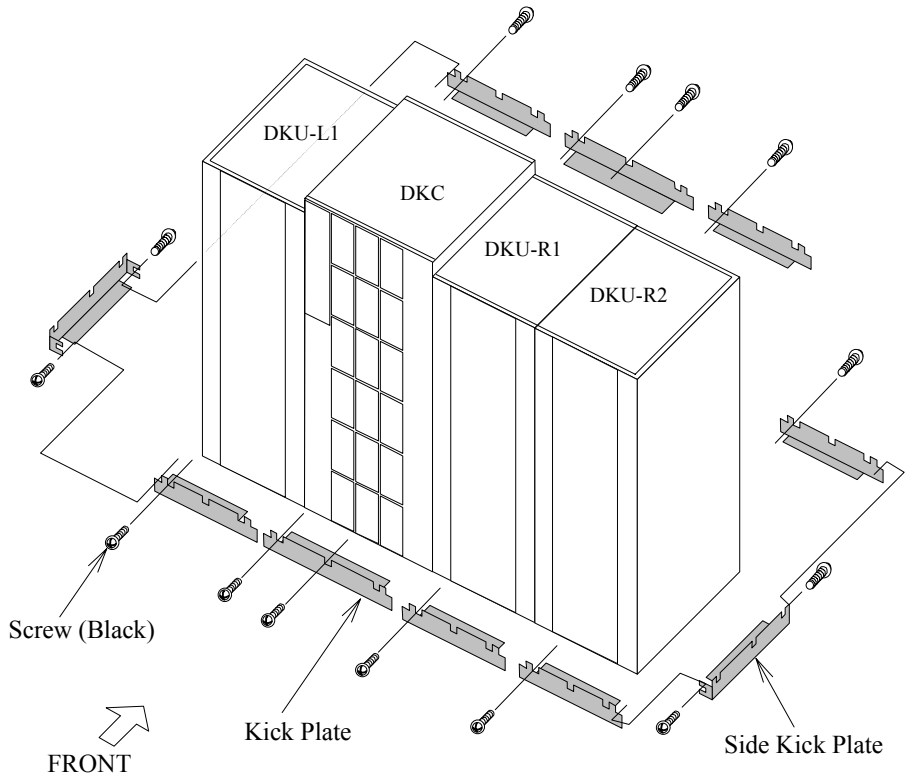

Fig. 3.19.5.3.5-3 Installation of Kick Plate(Three Disk Units)

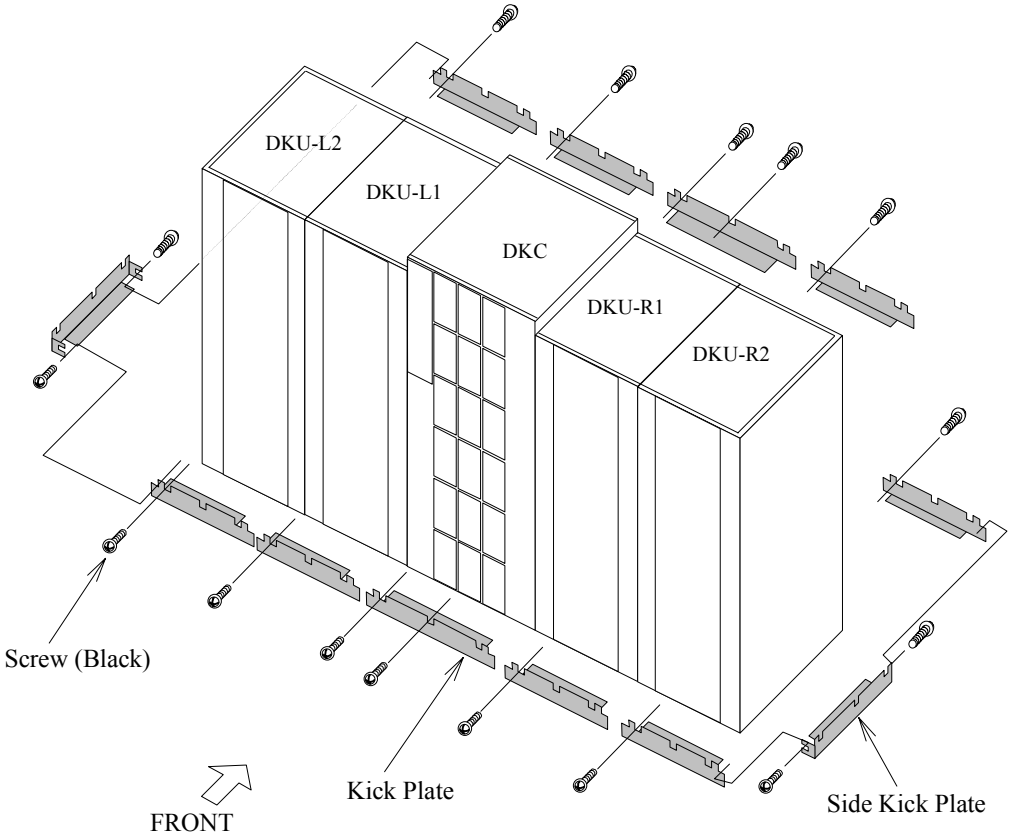

Fig. 3.19.5.3.5-4 Installation of Kick Plate (Four Disk Units)

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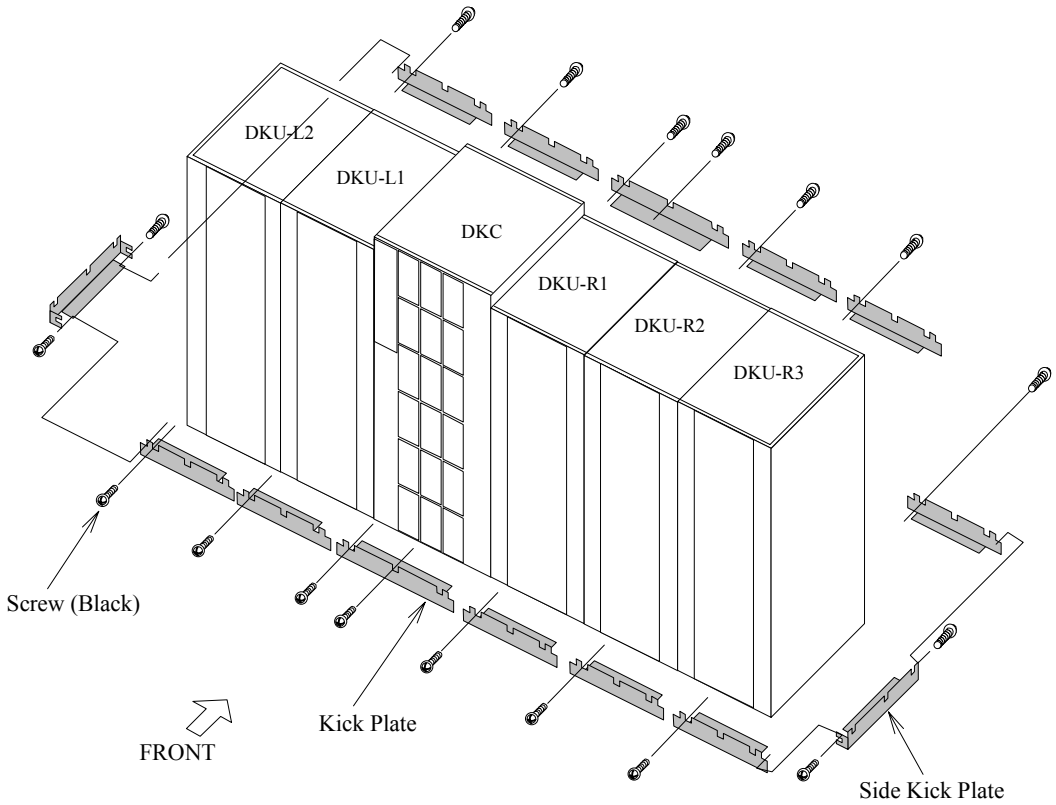

Fig. 3.19.5.3.5-5 Installation of Kick Plate(Five Disk Units)

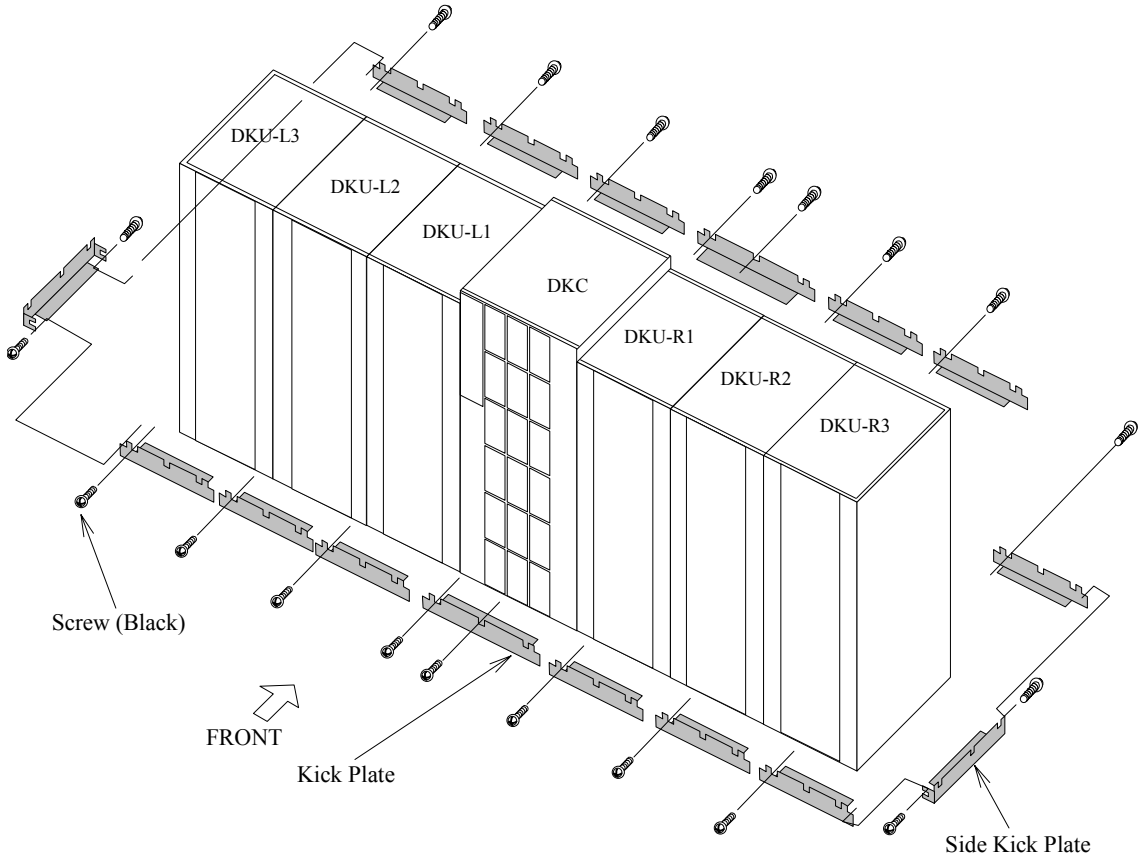

Fig. 3.19.5.3.5-6 Installation of Kick Plate (Six Disk Units)

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3.19.5.4 Switch and Jumper Plug Installation

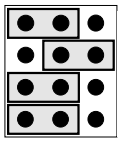
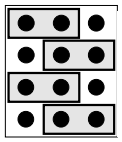
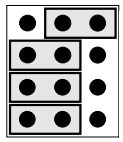
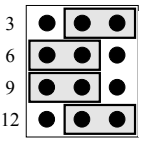
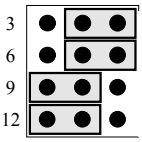
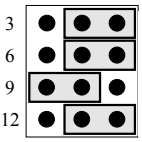
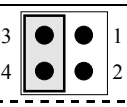
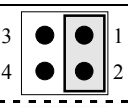
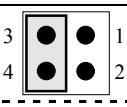
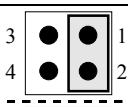
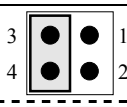
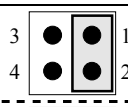
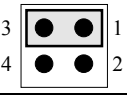
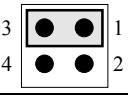
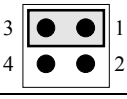
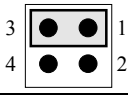
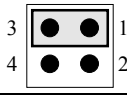
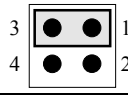
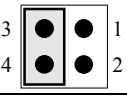
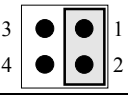
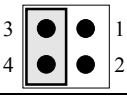
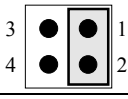
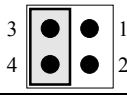
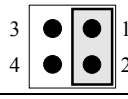
Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

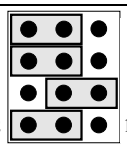
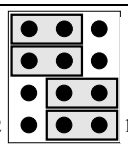
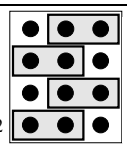
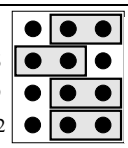
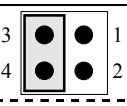
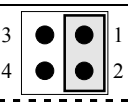
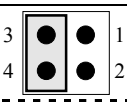
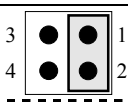
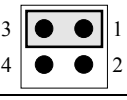
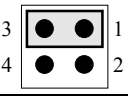
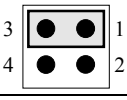
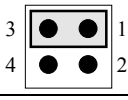
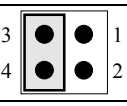
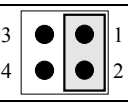
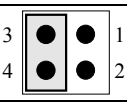
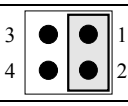
3.19.5.4.1 DKUMN Setting

NOTICE : Set Enable/Disable switch to Disable on DKUMN PCB.

Set the switches and install the jumper plugs in the DKUMN PCBs as indicated in the table below.

Table 3.19.5.4.1-1 DKUMN PCB Jumper Plug Positions

	1	2	3	4	5	6	Remarks
	DKUMN-R2F	DKUMN-R2R	DKUMN-L1F	DKUMN-L1R	DKUMN-L2F	DKUMN-L2R	
	Front	Rear	Front	Rear	Front	Rear	
S1	DISABLE	DISABLE	DISABLE	DISABLE	DISABLE	DISABLE	
JP01							
JP02 **Note 1**							
JP02 **Note 2**							
JP05 **Note 3**							
	DKU-R2		DKU-L1		DKU-L2		

	7	8	9	10	Remarks
	DKUMN-R3F	DKUMN-R3R	DKUMN-L3F	DKUMN-L3R	
	Front	Rear	Front	Rear	
S1	DISABLE	DISABLE	DISABLE	DISABLE	
JP01					
JP02 **Note 1**					
JP02 **Note 2**					
JP05 **Note 3**					
	DKU-R3		DKU-L3		

Note 1 : No Platform for Canister Mount (DKU-F405I-B4) Installed (Four HDU Boxes)

Note 2 : Platform for Canister Mount (DKU-F405I-B4) Installed (Eight HDU Boxes)

Note 3 : In the DKUMN PCB Rev. A/E and later A/E, jumper plugs setting are not require, because jumper connector (JP05) is not located on the DKUMN PCB.

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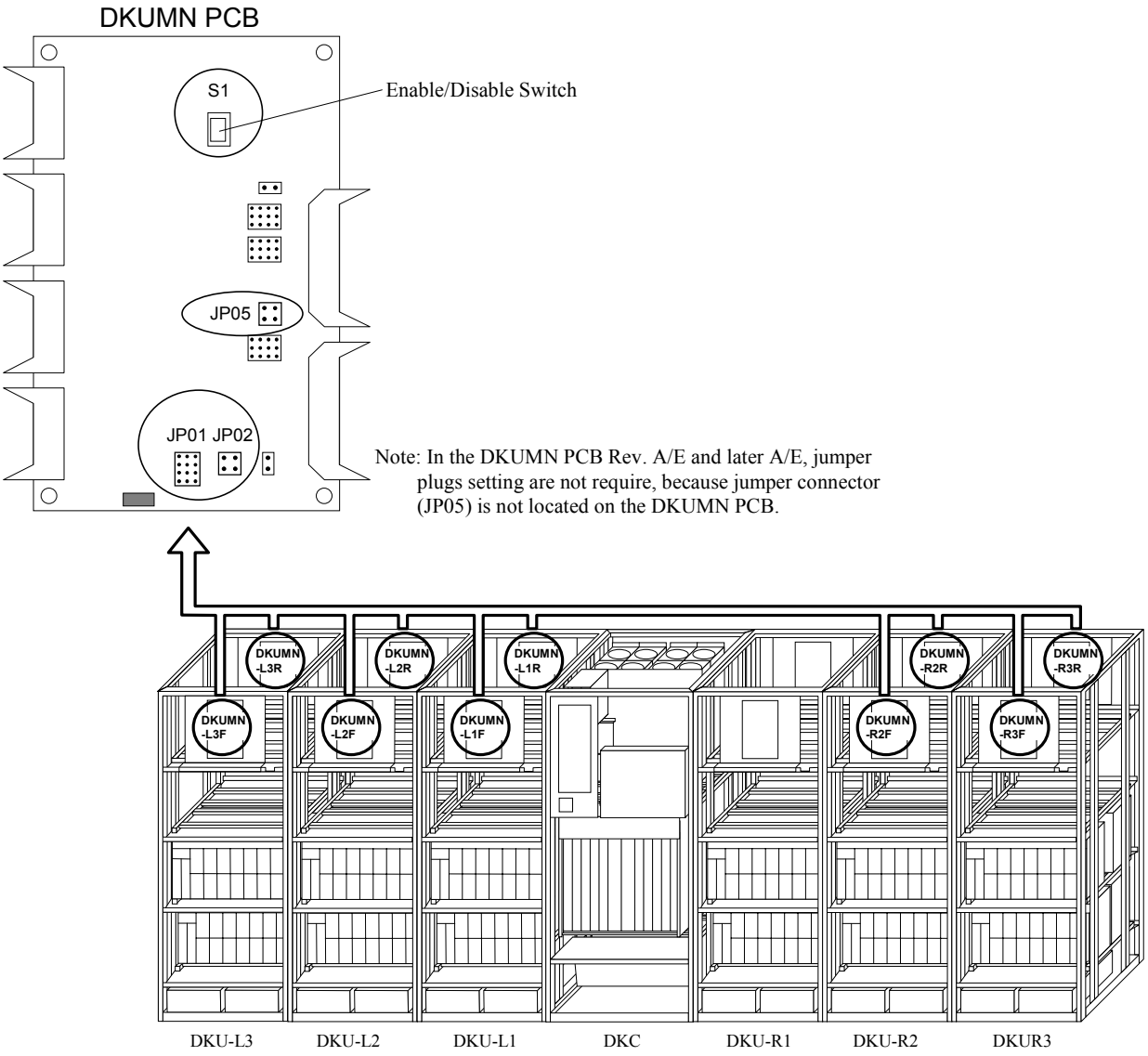

Fig. 3.19.5.4.1-1 DKUMN PCB Setting

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3.19.5.4.2 PL ID Setting

1. Loosen the screw and remove the cover. Refer to Fig. 3.19.5.4.2-1.

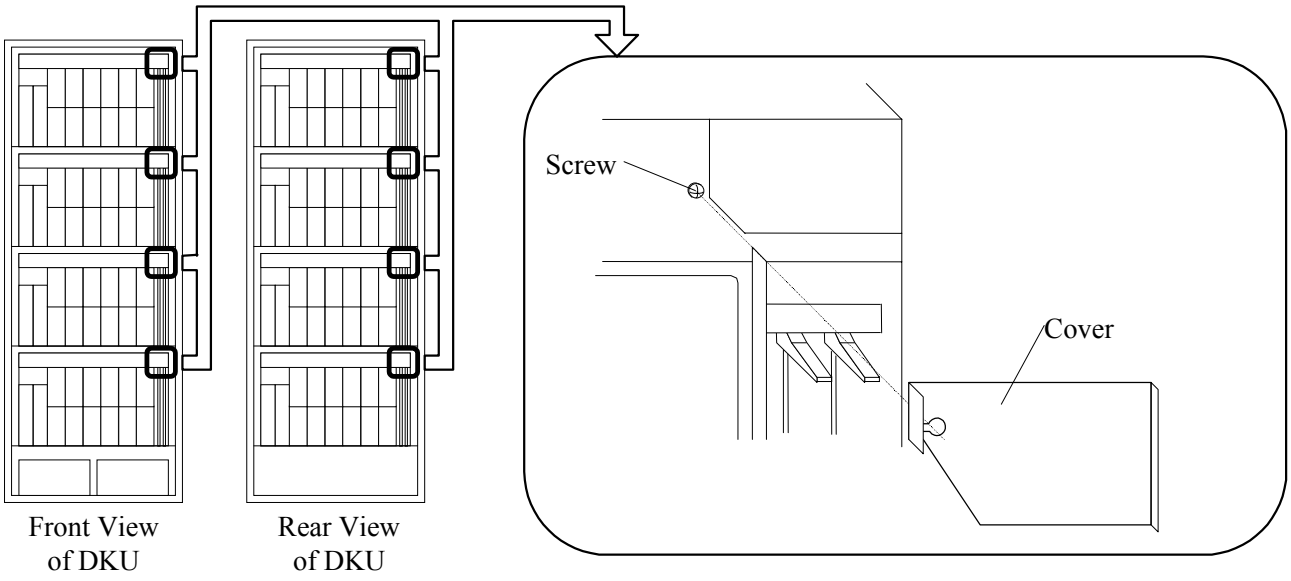

Fig. 3.19.5.4.2-1 Removal of Covers

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NOTICE:
Wrong setting of PL ID jumpers may cause DKU failures during operation. Be extremely careful in setting the PL ID jumpers.

2. Seeing Fig. 3.19.5.4.2-2, 3.19.5.4.2-3 or 3.19.5.4.2-4, set the PL ID Jumpers on HDU box.

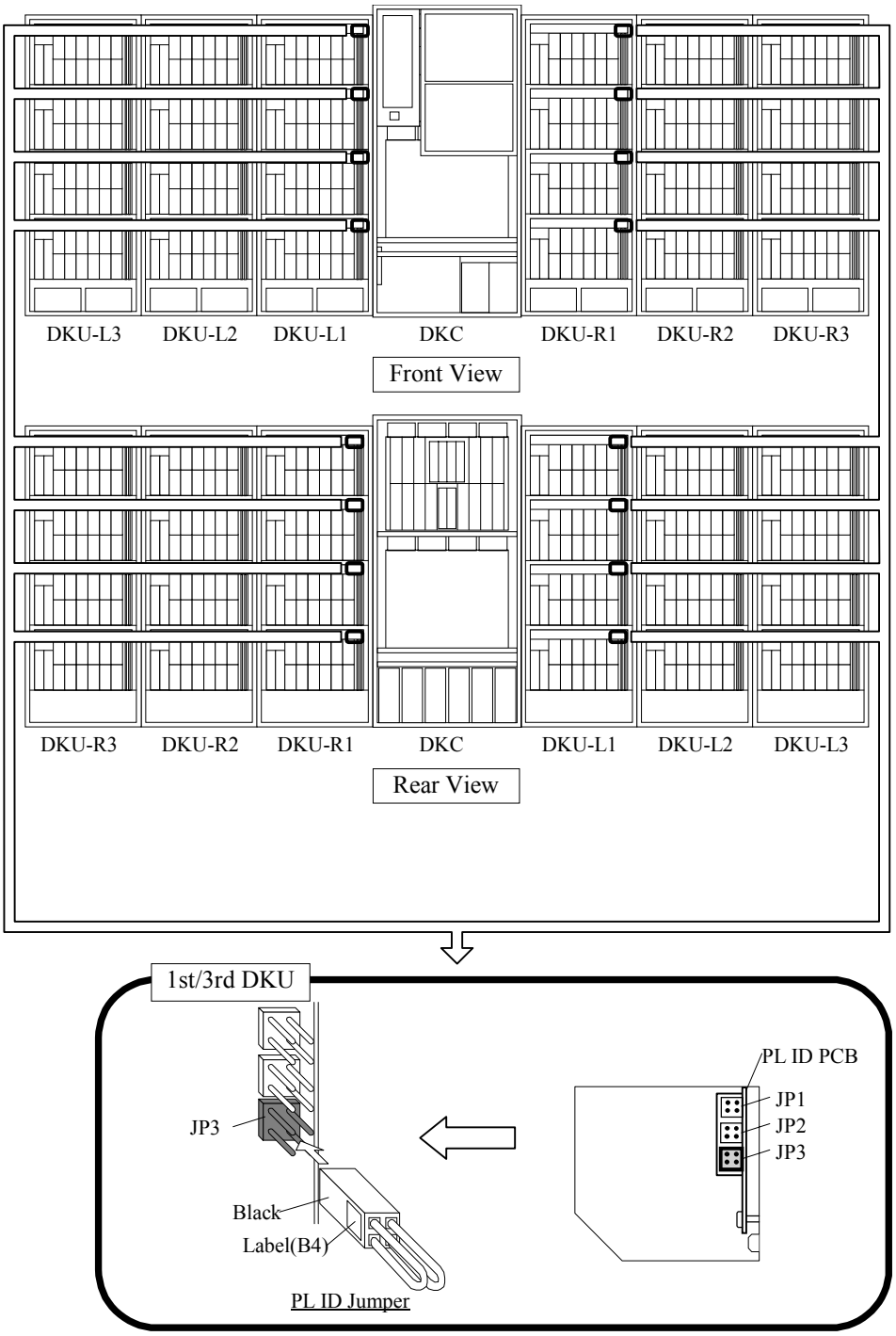

Fig. 3.19.5.4.2-2 Setting the PL ID Jumpers

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NOTICE:
Wrong setting of PL ID jumpers may cause DKU failures during operation. Be extremely careful in setting the PL ID jumpers.

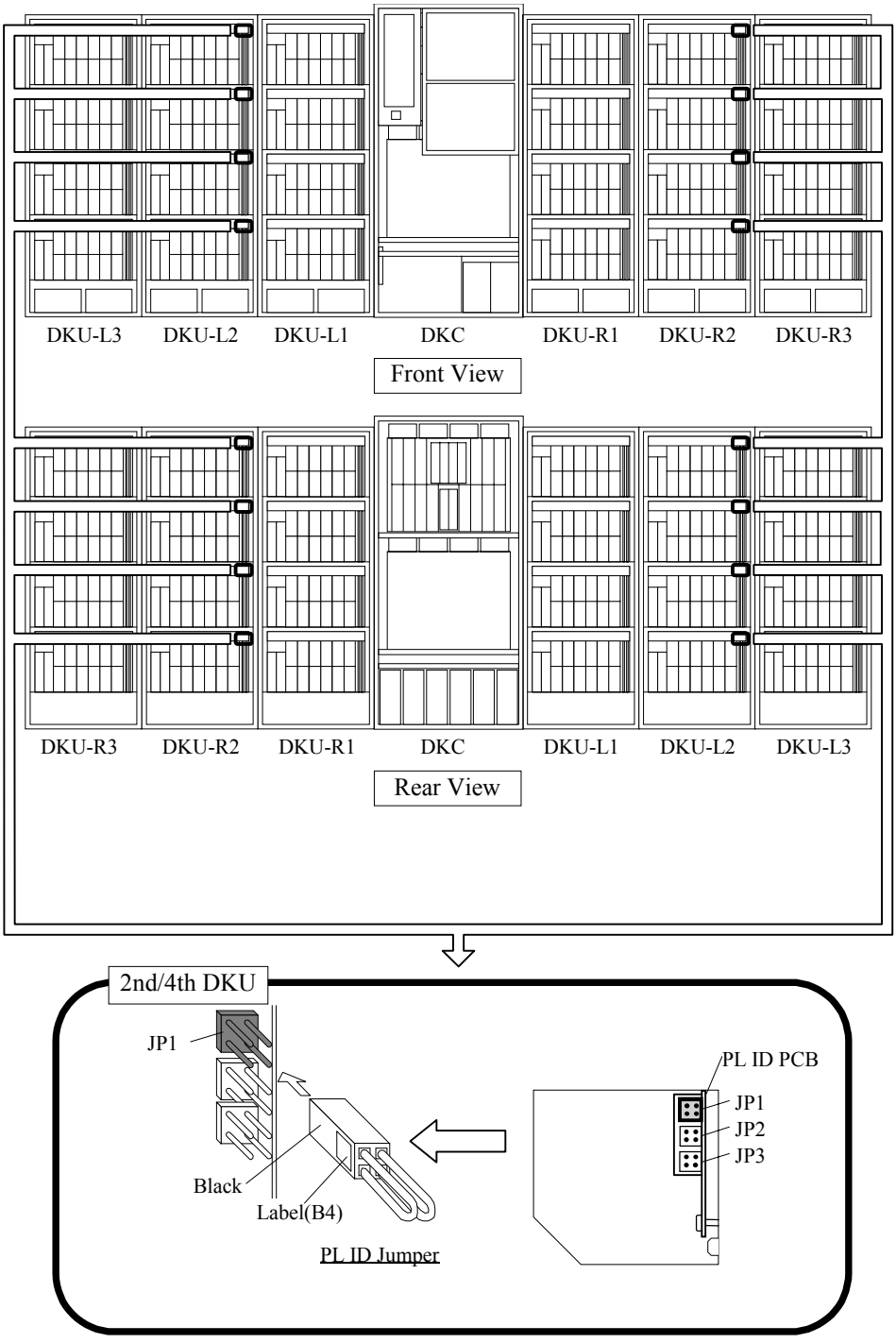

Fig. 3.19.5.4.2-3 Setting the PL ID Jumpers

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NOTICE:
Wrong setting of PL ID jumpers may cause DKU failures during operation. Be extremely careful in setting the PL ID jumpers.

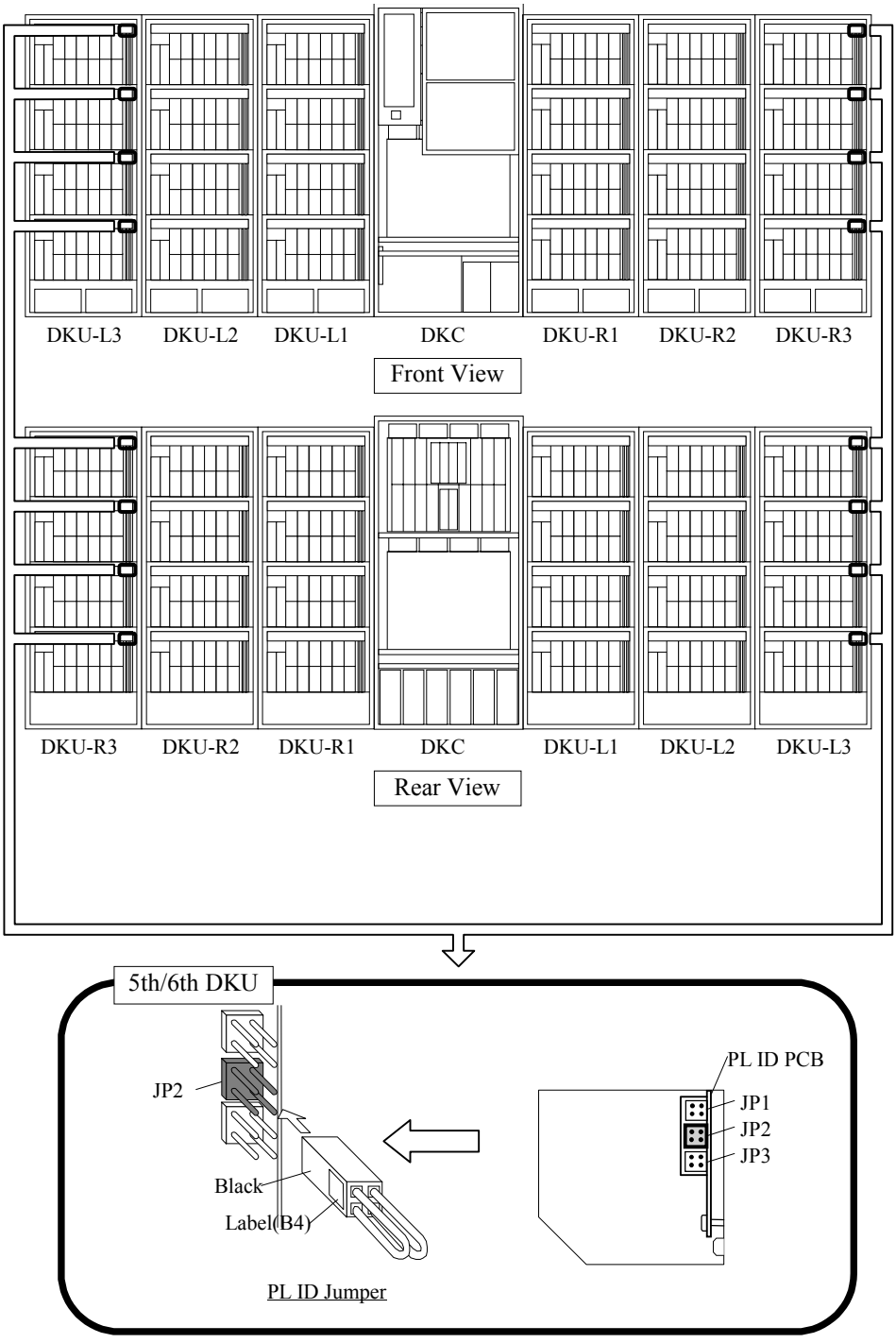

Fig. 3.19.5.4.2-4 Settings the PL ID Jumpers

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3.19.5.5 Cabling

3.19.5.5.1 Connection of DKUMN Cable

DKU-R2

Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

1. Connect the DKUMN cables between the DKU-R1 and the DKU-R2 as indicated in the table below.
2. Bind the cables with repeat binders.

Table 3.19.5.5.1-1 Connection of DKUMN Cables

No.	DKU-R1			DKU-R2			Remarks
	Location No.	Connector No.	Cable No.	Location No.	Connector No.	Cable No.	
1	DKUMN-R1F	J03	P3-1	DKUMN-R2F	J04	P4-1	
2	DKUMN-R1R	J03	P3-2	DKUMN-R2R	J04	P4-2	

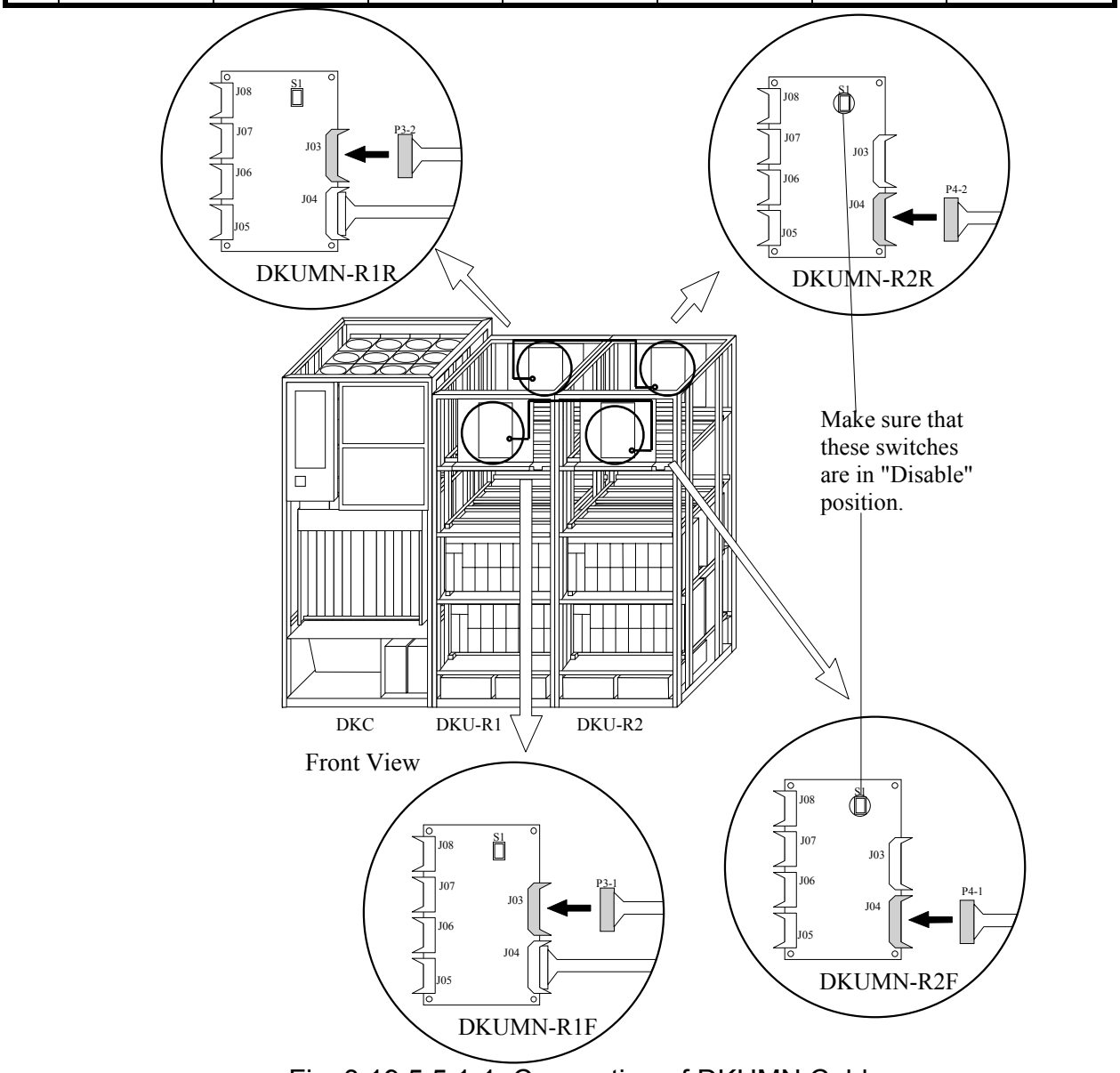

Fig. 3.19.5.5.1-1 Connection of DKUMN Cables

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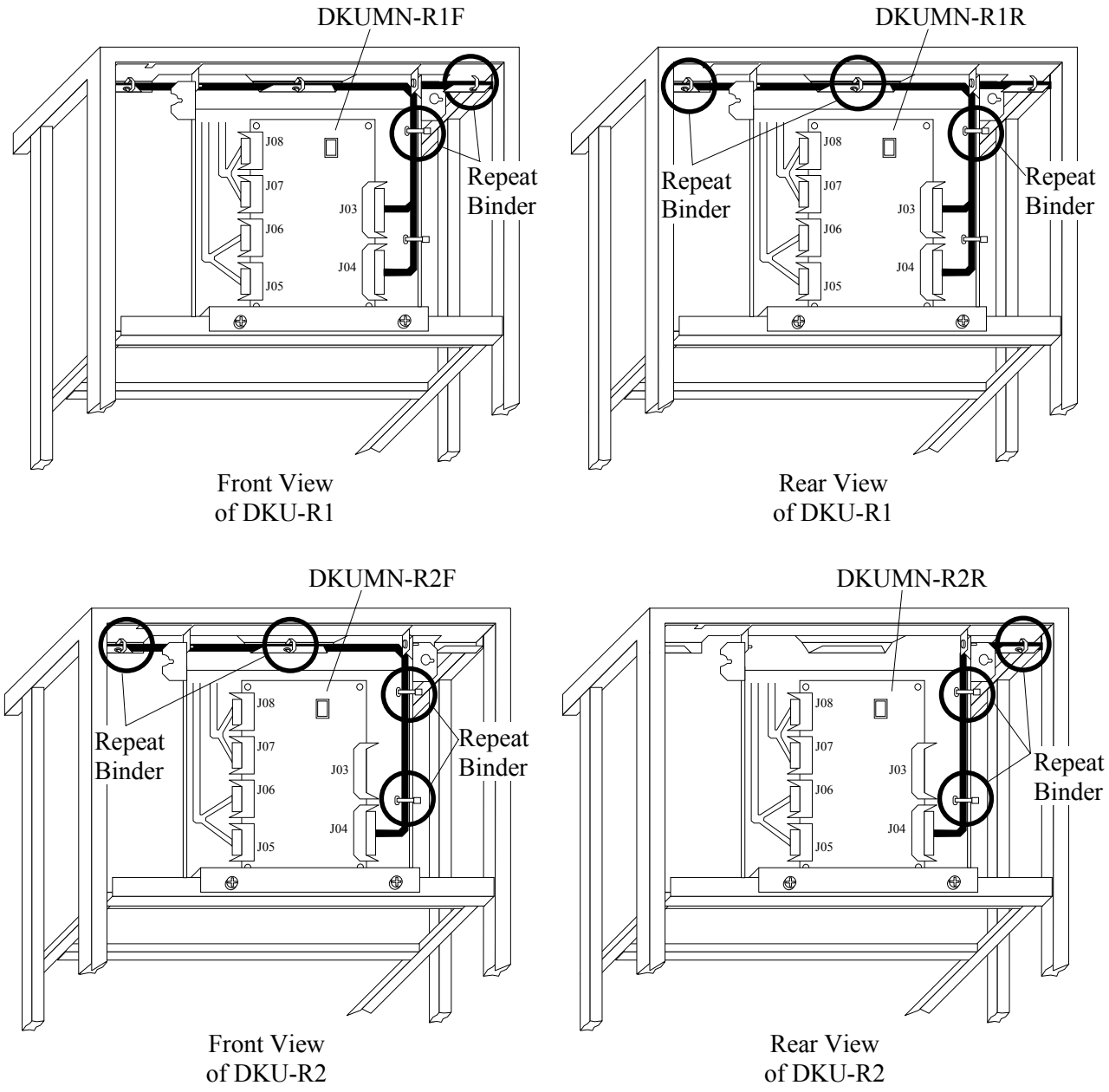

Fig. 3.19.5.5.1-2 Binding of DKUMN Cables

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DKU-L1

Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

1. Connect the MONI-CON PCBs and DKUMN PCBs as summarized in the table below.
2. Bind the cables with repeat binders.

Table 3.19.5.5.1-2 Connection of DKUMN Cable

No.	Disk Controller			Third Disk Unit			REMARKS
	Location No.	Connector No.	Cable No.	Location No.	Connector No.	Cable No.	
1	MONI-CON1	J22	P22-1	DKUMN-L1F	J04	P4-1L	
2	MONI-CON2	J22	P22-2	DKUMN-L1R	J04	P4-2L	

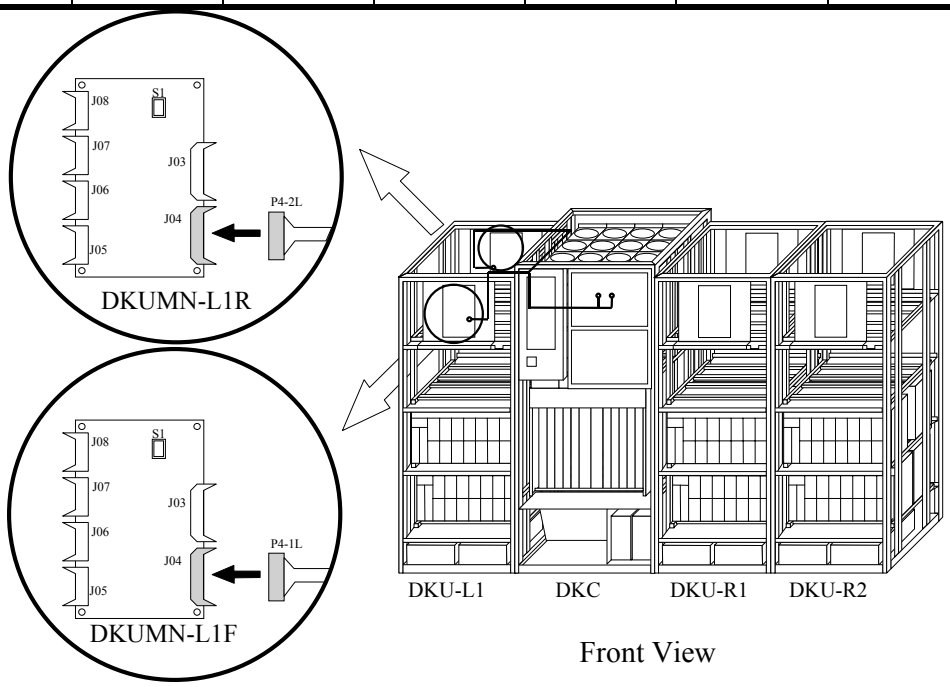

Fig. 3.19.5.5.1-3 Connection of DKUMN Cables

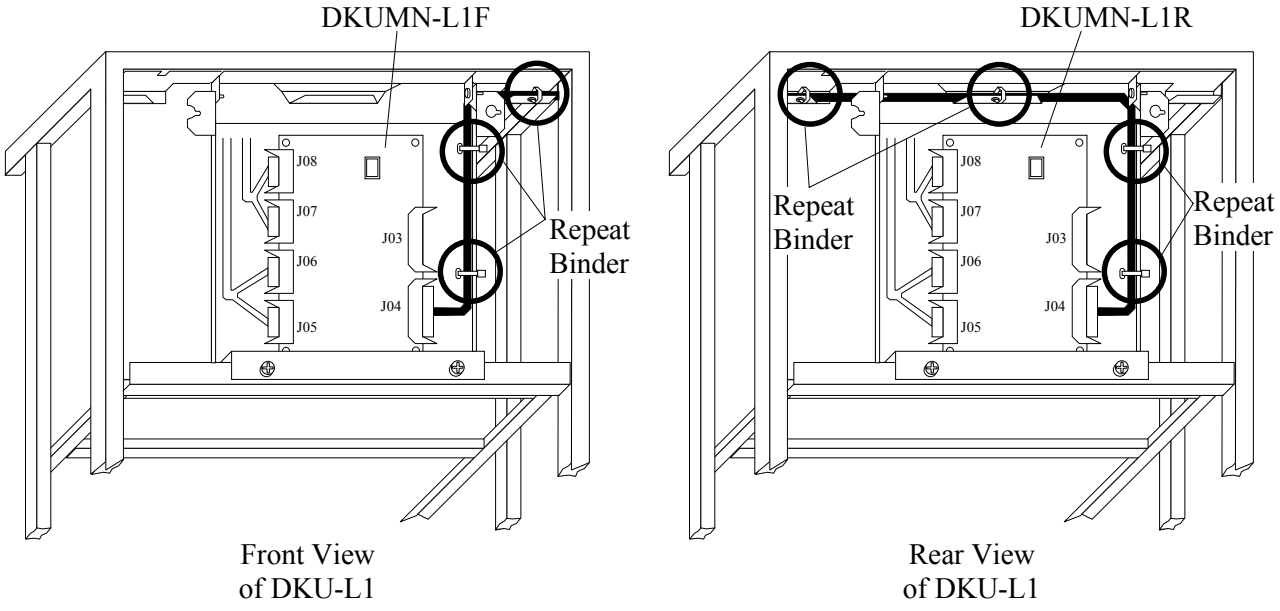

Fig. 3.19.5.5.1-4 Binding of DKUMN Cables

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DKU-L2

Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

1. Connect the DKUMN cables between the DKU-L1 and the DKU-L2 as indicated in the table below.
2. Bind the cables with repeat binders.

Table 3.19.5.5.1-3 Connection of DKUMN Cables

No.	Third Disk Unit			Fourth Disk Unit			REMARKS
	Location No.	Connector No.	Cable No.	Location No.	Connector No.	Cable No.	
1	DKUMN-L1F	J03	P3-1	DKUMN-L2F	J04	P4-1	
2	DKUMN-L1R	J03	P3-2	DKUMN-L2R	J04	P4-2	

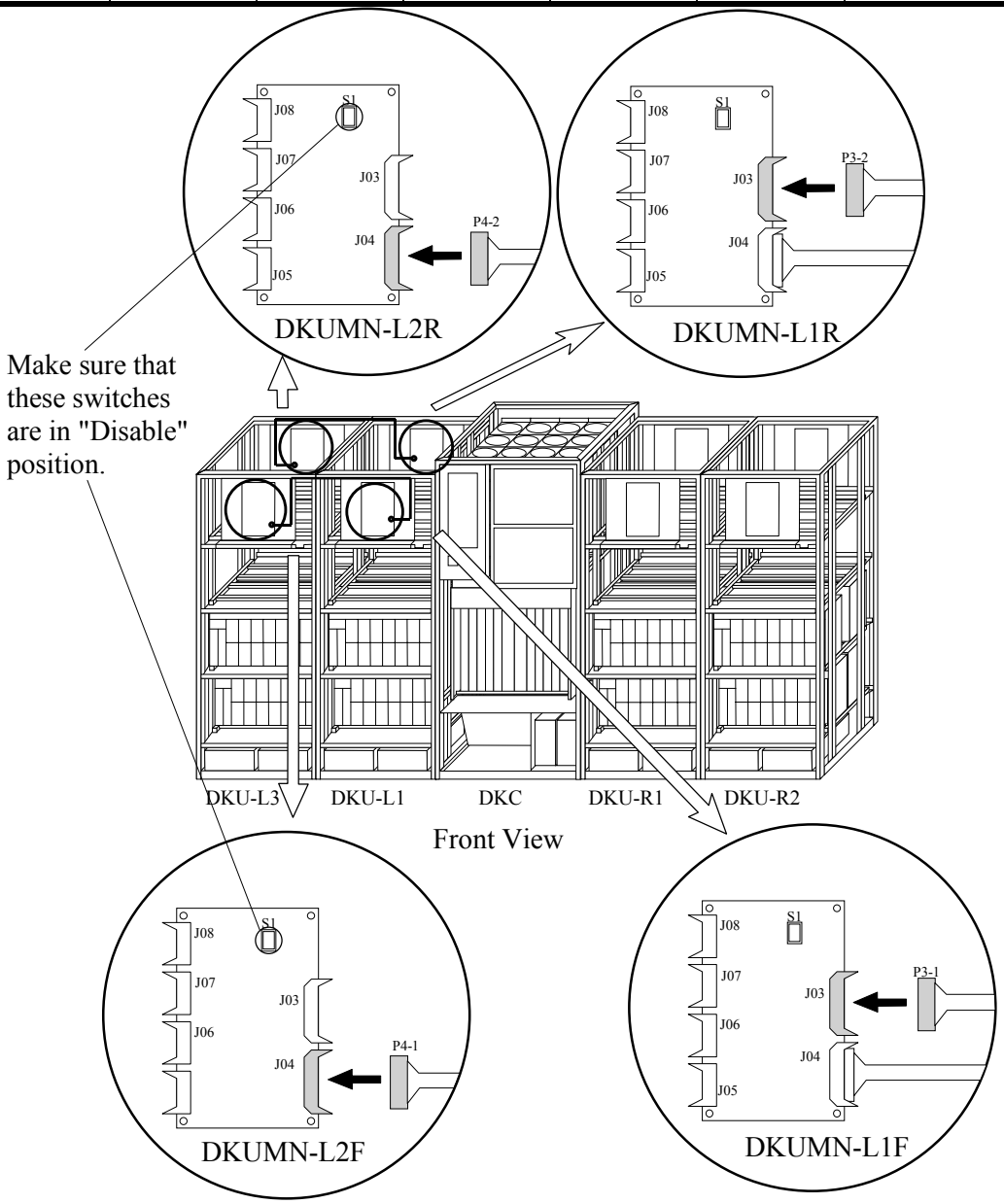

Fig. 3.19.5.5.1-5 Connection of DKUMN cables

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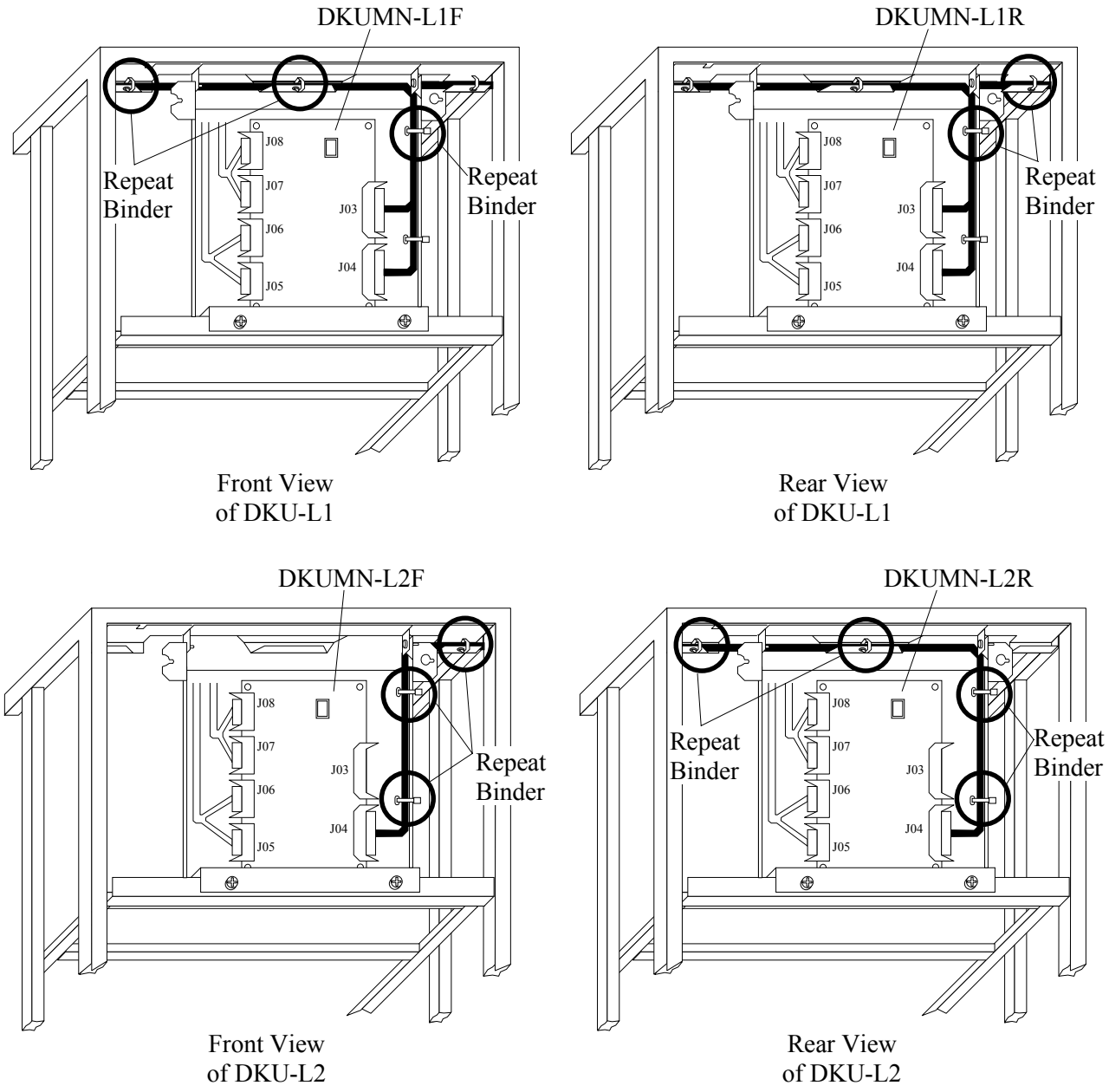

Fig. 3.19.5.5.1-6 Binding of DKUMN Cables

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DKU-R3

Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

1. Connect the DKUMN cables between the DKU-R2 and the DKU-R3 as indicated in the table below.
2. Bind the cables with repeat binders.

Table 3.19.5.5.1-4 Connection of DKUMN Cables

No.	DKU-R2			DKU-R3			Remarks
	Location No.	Connector No.	Cable No.	Location No.	Connector No.	Cable No.	
1	DKUMN-R2F	J03	P3-1	DKUMN-R3F	J04	P4-1	
2	DKUMN-R2R	J03	P3-2	DKUMN-R3R	J04	P4-2	

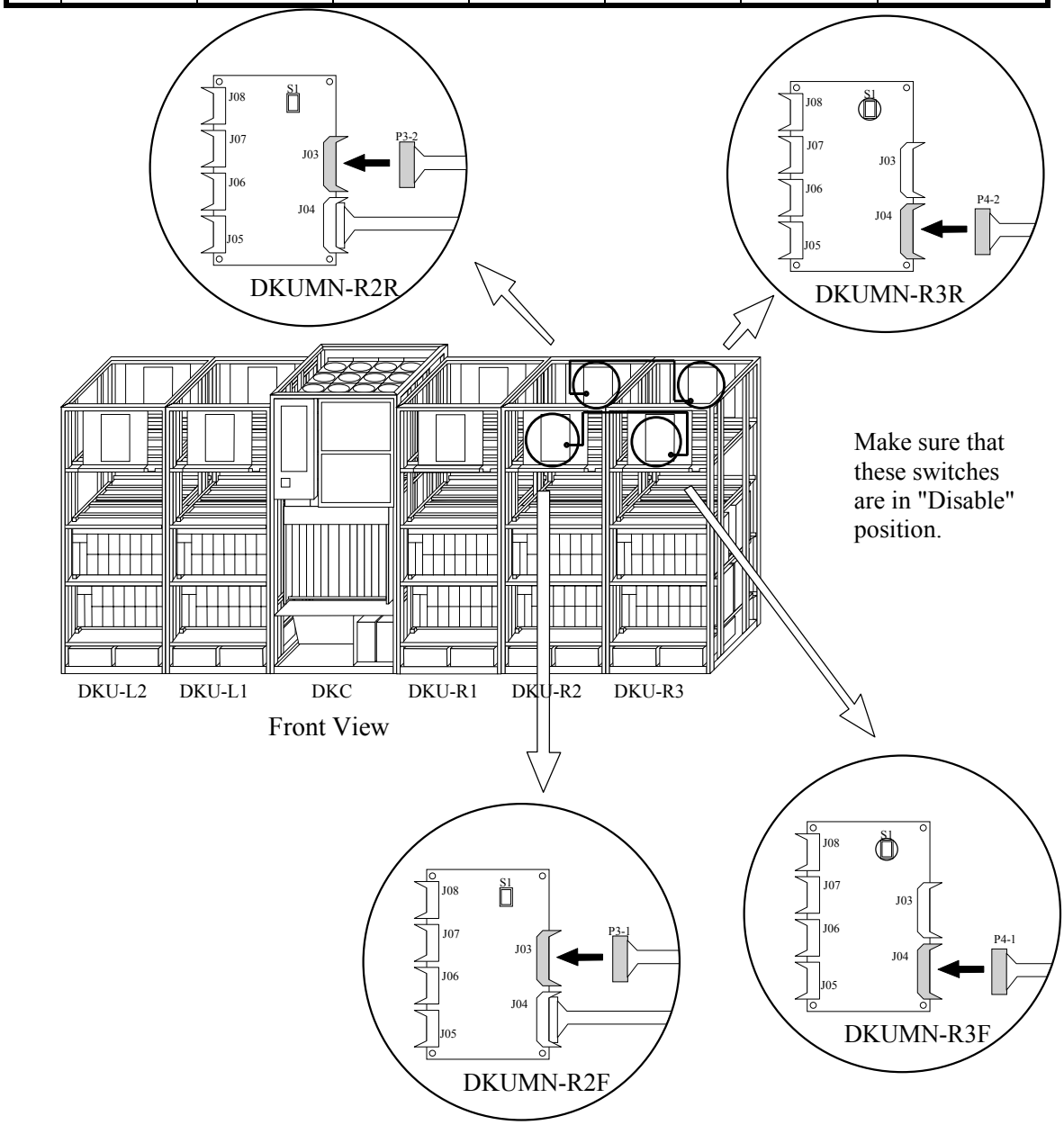

Fig. 3.19.5.5.1-7 Connection of DKUMN Cables

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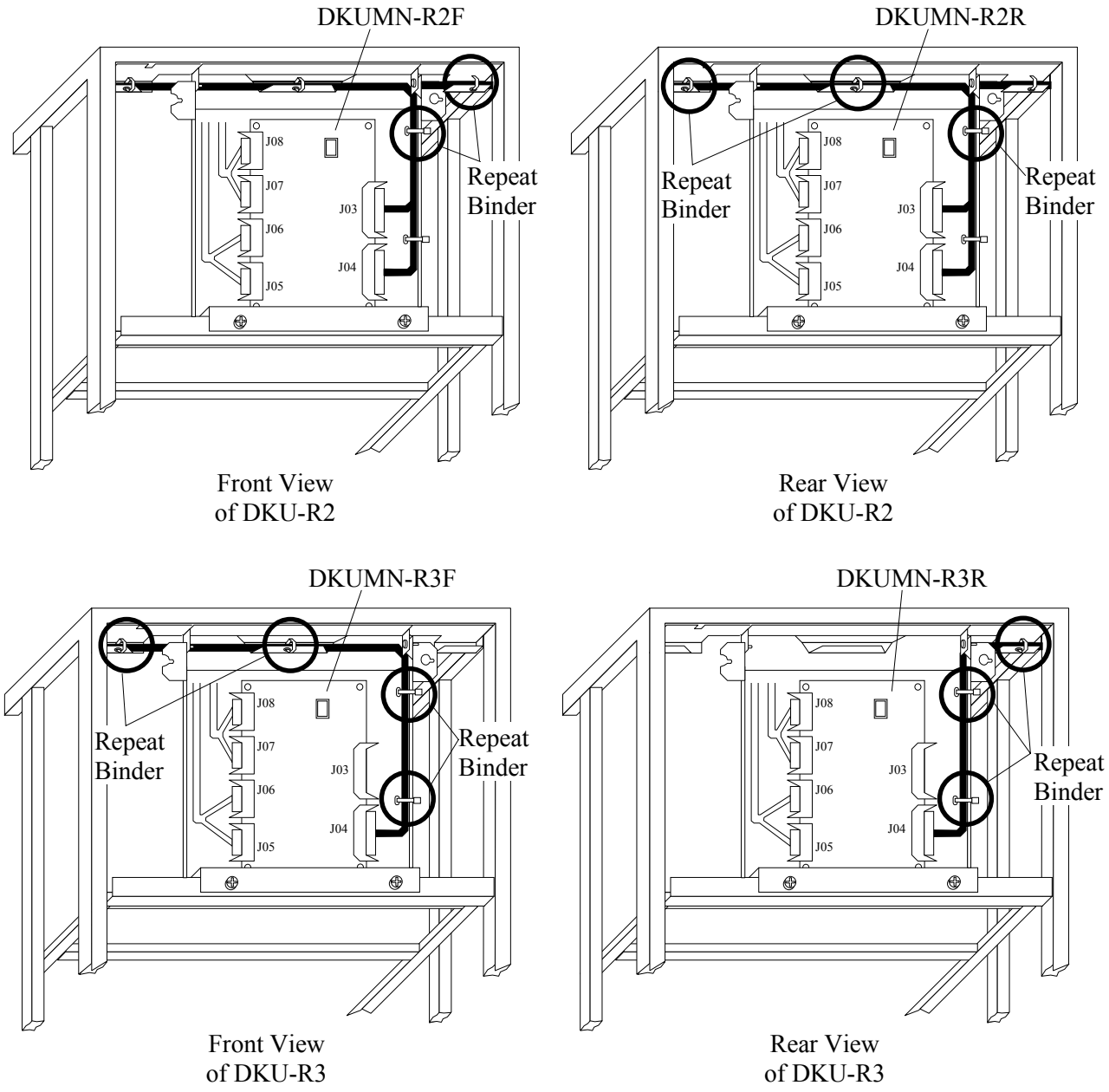

Fig. 3.19.5.5.1-8 Binding of DKUMN Cables

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DKU-L3

Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

1. Connect the DKUMN cables between the DKU-L2 and the DKU-L3 as indicated in the table below.
2. Bind the cables with repeat binders.

Table 3.19.5.5.1-5 Connection of DKUMN Cables

No.	DKU-L2			DKU-L3			REMARKS
	Location No.	Connector No.	Cable No.	Location No.	Connector No.	Cable No.	
1	DKUMN-L2F	J03	P3-1	DKUMN-L3F	J04	P4-1	
2	DKUMN-L2R	J03	P3-2	DKUMN-L3R	J04	P4-2	

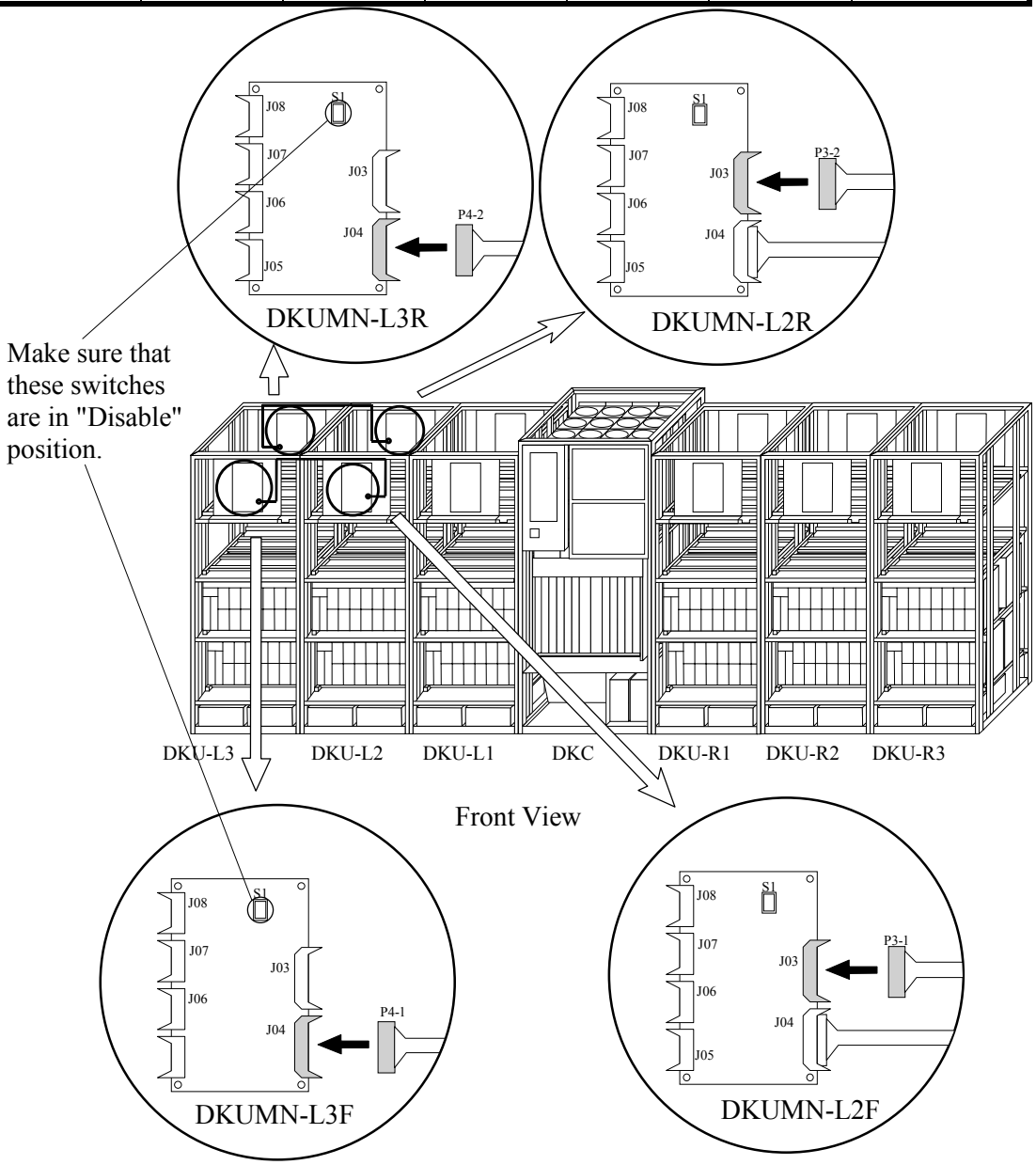

Fig. 3.19.5.5.1-9 Connection of DKUMN cables

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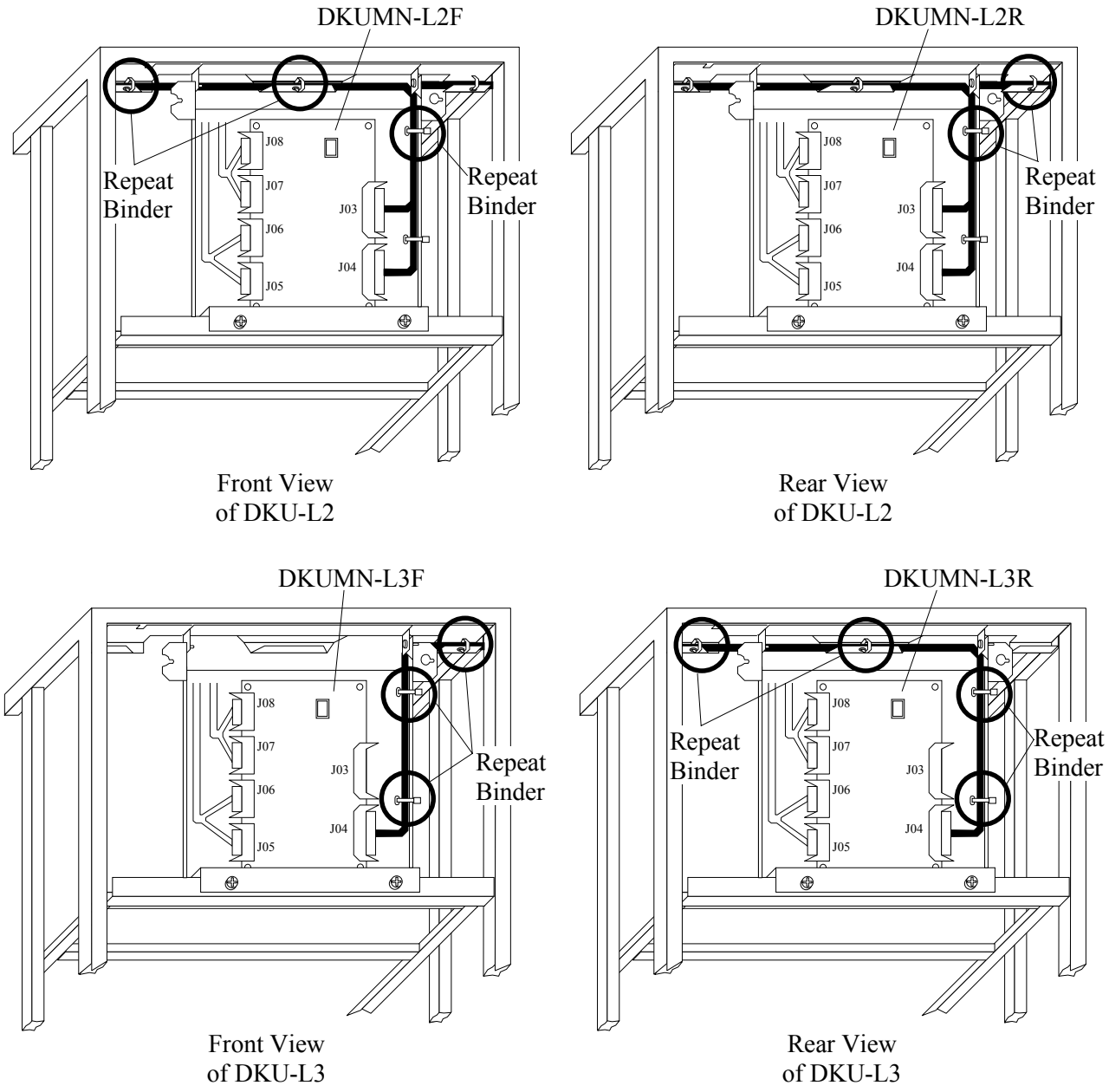

Fig. 3.19.5.5.1-10 Binding of DKUMN Cables

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3.19.5.6 Cabling Procedure of DEV Interface Cables for DKU-L1

1. Connect the DEV interface cables to the sub-edges on the FSW PCBs located in the HDU Box.

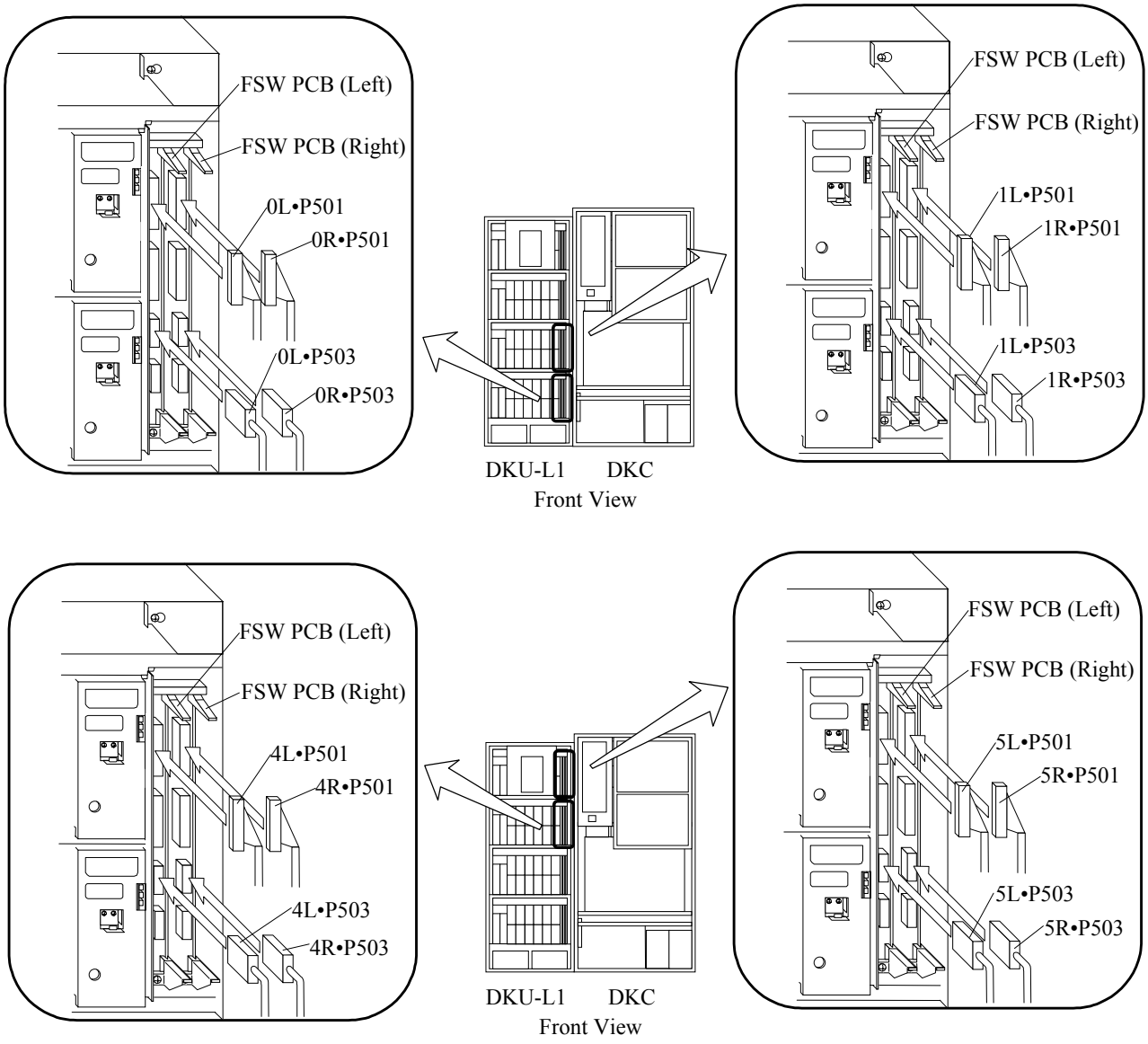

Fig. 3.19.5.6-1 Connection of DEV Interface Cables

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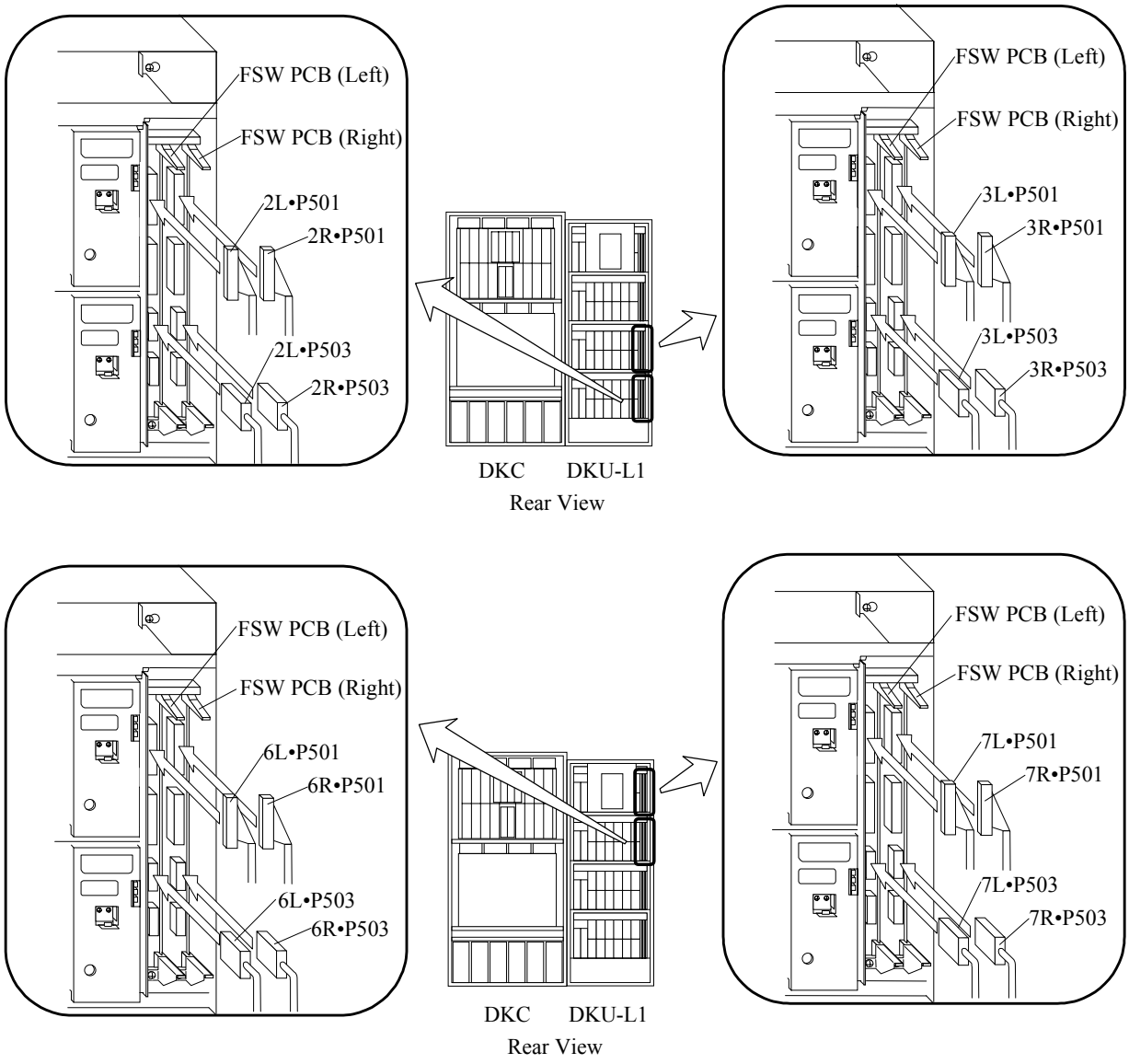

Fig. 3.19.5.6-2 Connection of DEV Interface Cables

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2. Attach the cable covers ① and ② with the screws.

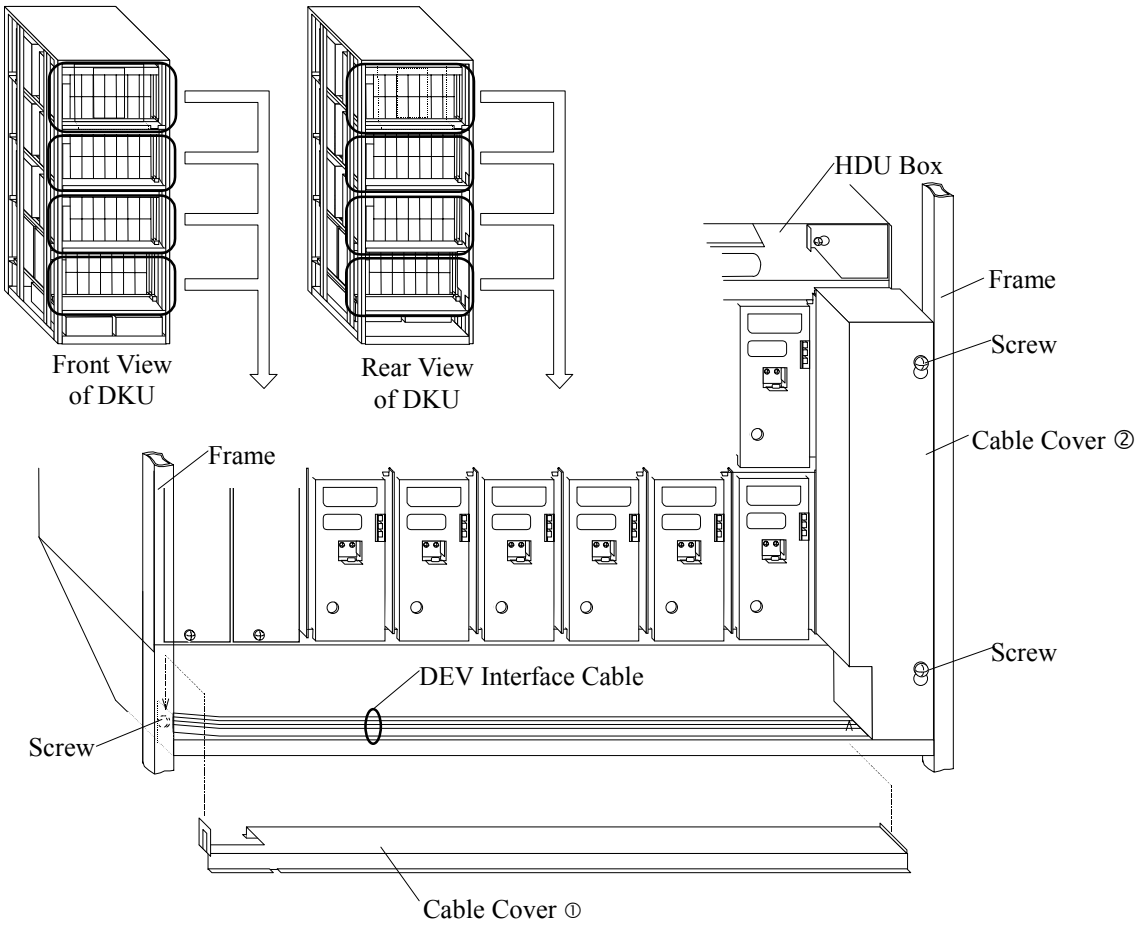

Fig. 3.19.5.6-3 Attachment of Cable Covers

3. When the DKU-L1 frame consists of 4 HDU boxes, fix the rest of the DEV interface cables in the DKU-L1 frame with the repeat binders.

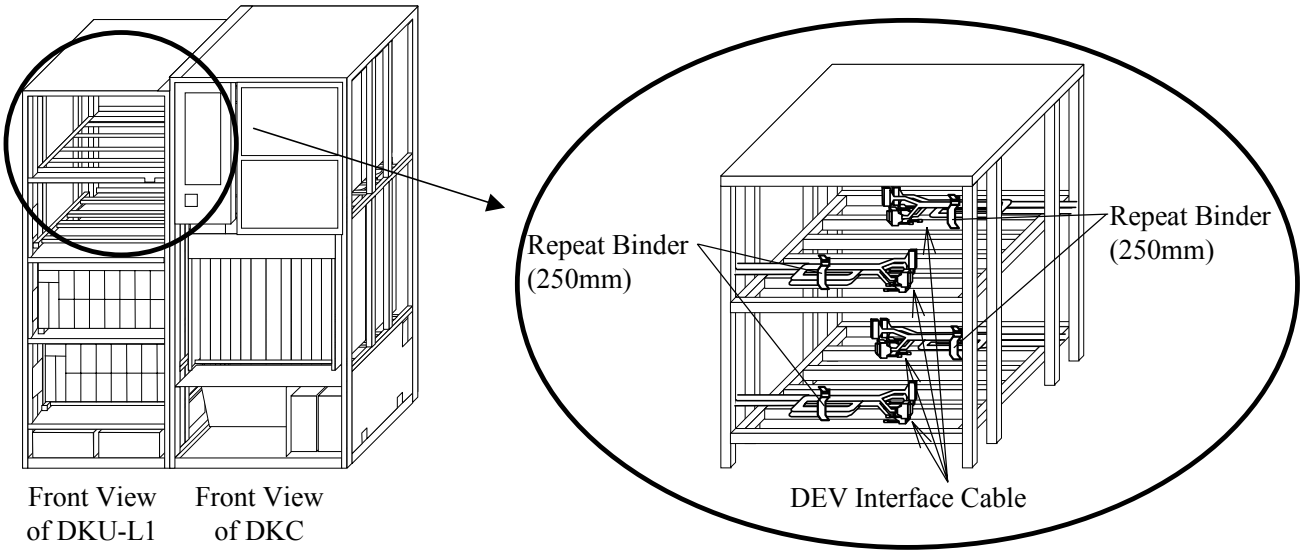

Fig. 3.18.5.6-4 Fixation of DEV Interface Cables

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3.19.5.7 Labeling

1. Attach the Label (V/Hz/PH.) to the DKU bottom base of Rear side.

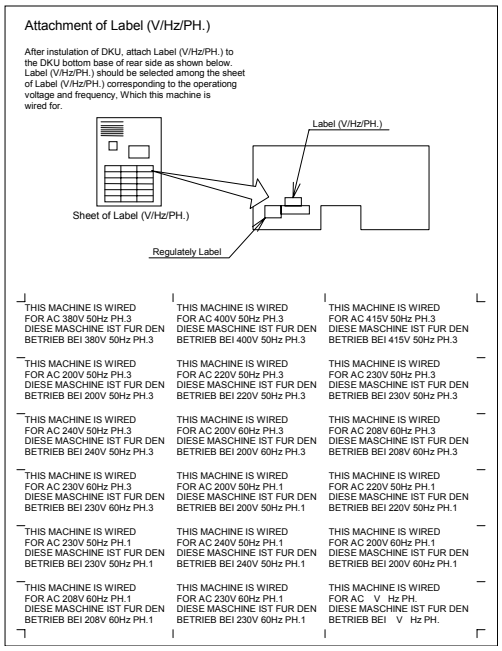

Fig. 3.19.5.7-1 Label (V/Hz/PH.)

3.19.5.8 Check of Jumper Settings

1. Check the jumper settings (JP1, JP2 and JP3) on the DKUMN PCBs. Refer to Section 3.19.5.4.1 DKUMN Setting [INST03-U40-910].
   When the jumper plugs are not installed to the correct sockets, install the jumper plugs to the correct sockets.

2. Check the ID jumpers on the HDD back boards. Refer to Section 3.19.5.4.2 ID Setting step 2 [INST03-U40-930 through 960].
   When the ID jumpers are not installed to the correct sockets, install the ID jumpers to the correct sockets.

3.19.5.9 Check and Testing

3.19.5.9.1 AC Input Voltage Check

⚠ WARNING

Do not touch the internal parts of the AC power cable, the AC Box, or the Breaker Box. Line voltage is present even if the circuit breaker is off.

1. Check the AC input voltage using a voltmeter at the customer's AC power source (at the distribution board or receptacle for R & S connectors).

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3.19.5.9.2 Checking the AC Input Cable, and AC Input Voltage Select Jumper Cable

3 Phase Model

1. Check the input power cable and jumper cable (P104) at the AC Boxes in Disk Units. See Table 3.19.5.9.2-1, Fig. 3.19.5.9.2-1, and Fig. 3.19.5.9.2-2 for items.

Table 3.19.5.9.2-1 AC Input Cable Conductors and Jumper Cable (P104) Positions

Input Voltage	AC Input Cable Conductors	Jumper Cable (P104) Position	Remarks
200-240Vac	4 conductors (R,S,T,FG)	J104-1	J104-2 dummy connector
380-415Vac	5 conductors (R,S,T,N,FG)	J104-2	J104-1 dummy connector

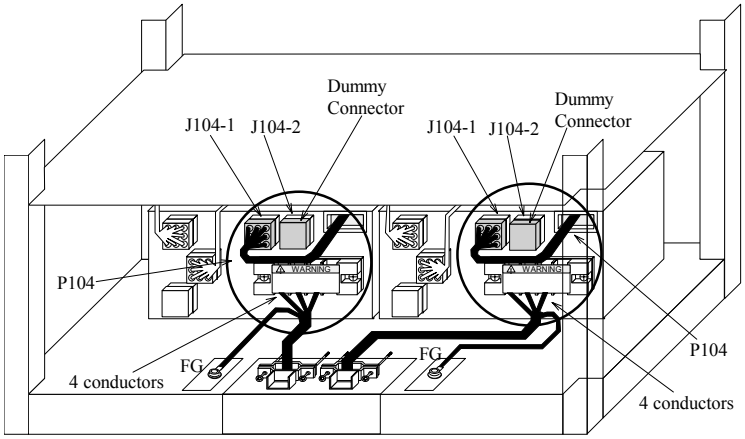

Fig. 3.19.5.9.2-1 AC Input Cable Conductors and Jumper Cable (P104) Positions 200-240Vac

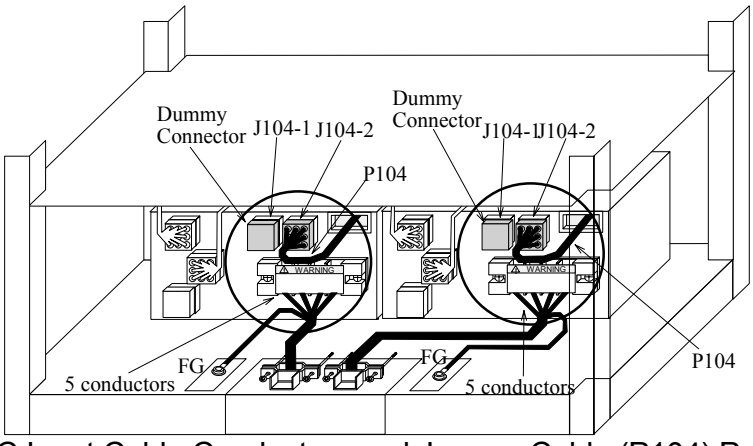

Fig. 3.19.5.9.2-2 AC Input Cable Conductors and Jumper Cable (P104) Positions 380-415Vac

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Single Phase Model

1. Check the input power cable at the AC BOXes in the DKC and DKU. See table 3.19.5.9.2-2 and figures 3.19.5.9.2-3 and 3.19.5.9.2-4 for check items.

Table 3.19.5.9.2-2 AC Input Cable Conductors

UNIT	AC BOX	Input Voltage	AC Input Cable Conductors	Remarks
DKU	DKU AC BOX (AC BOX-##0, ##1)	200-240Vac	3 conductors (U, V, FG)	

(Note) ## : DKU Location No. (R1, R2, R3, L1, L2, L3)

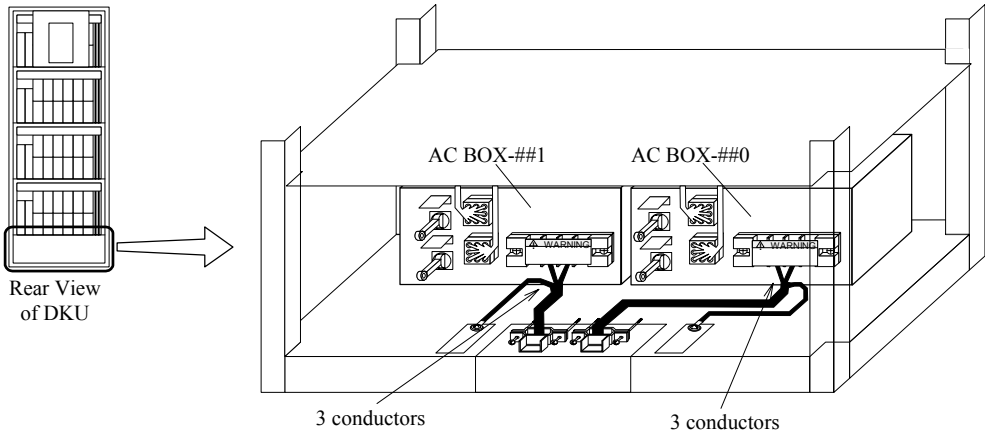

Fig. 3.19.5.9.2-3 AC Input Cable Conductors (DKU)

2. Return to General Flow.
   New Installation: Go to INST03-U40-10 step (1)-12.
   Non-Disruptive Installation: Go to INST03-U40-30 step (1)-6.

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3.19.6 Installation of the Platform for Canister Mount (DKU-F405I-B4)

3.19.6.1 Flowchart

The procedure for expanding the platform for the canister mount is shown below.

(1) Confirmation of installation position of platform for the canister mount.

↓

(2) Removal of the acrylic cover, FSW PCB, multi power supply, rail, and HDD FAN assembly.

↓

(3) Removal of the side plate.

↓

(4) Installation of the HDU box.

↓

(5) Connection of the DKUMN cable.

↓

(6) Setting of the PL ID jumper.

↓

(7) Attachment of the acrylic cover, FSW PCB, multi power supply, rail, and HDD FAN Assembly.

↓

(8) Attachment of the side plate.

↓

(9) Connection of the INLET cable.

↓

(10) Attachment of the nameplate and label (REV).

↓

(11) Setting of the PS enable switch on the multi power supply.

↓

(12) Installation of the Jumper plug in the DKUMN PCB.

↓

(13) Check of the PL ID Jumpers

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3.19.6.2 Parts List

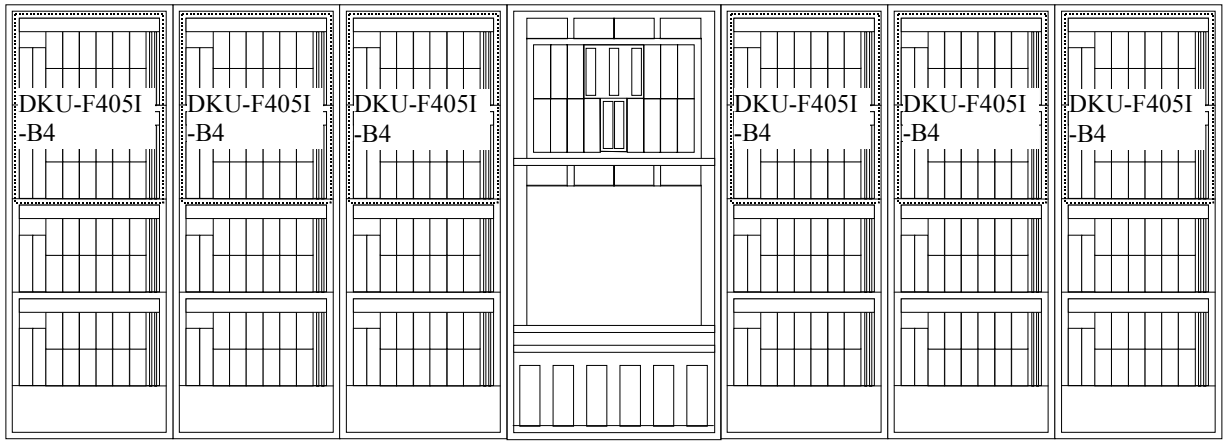
Table 3.19.6.2-1 Parts List for Platform for Canister Mount

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKU-F405I-B4	HDU Box	1505217-A	4	
		Multi Power Supply	5502384-A	8	
		FSW PCB	5502386-A	8	
		HDD FAN Assembly	5502388-A	4	
		Nameplate E (DKU-F405I)	2103570-1	1	
			2103575-1	1	
		Label (REV)	3239458-1	1	

3.19.6.3 Installation Procedure of the Platform for Canister Mount

1. Confirm a position to install platform for the canister mount.

Front View



Rear View

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2. Removal of the acrylic cover, FSW PCB, multi power supply, rail, and HDD FAN Assembly.
   a. Remove the acrylic cover.

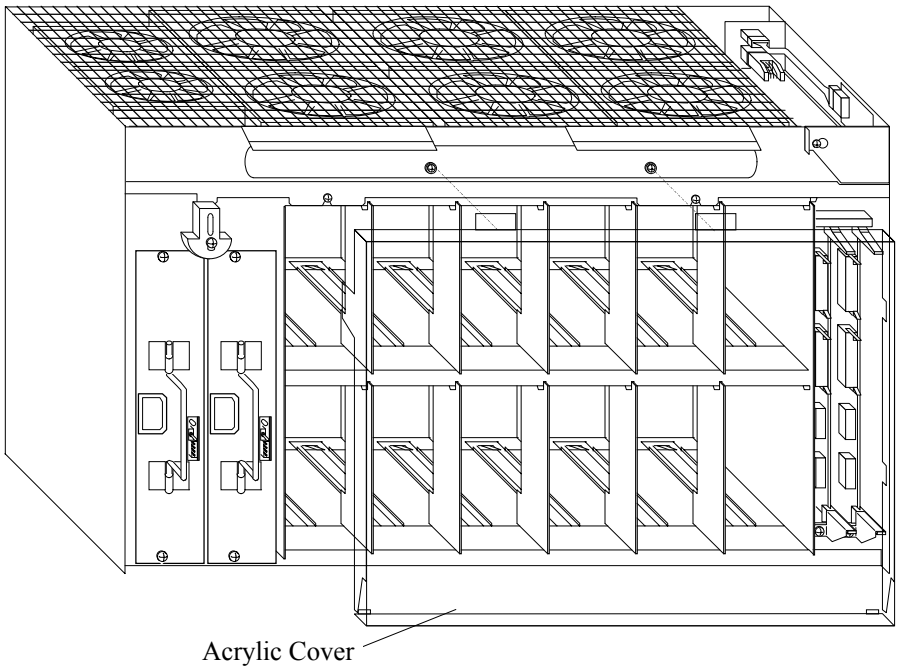

Fig. 3.19.6.3-1 Removal of the Acrylic Cover

   b. Loosen the screw and rotate the stopper. Remove the FSW PCB in the HDU box to be installed.

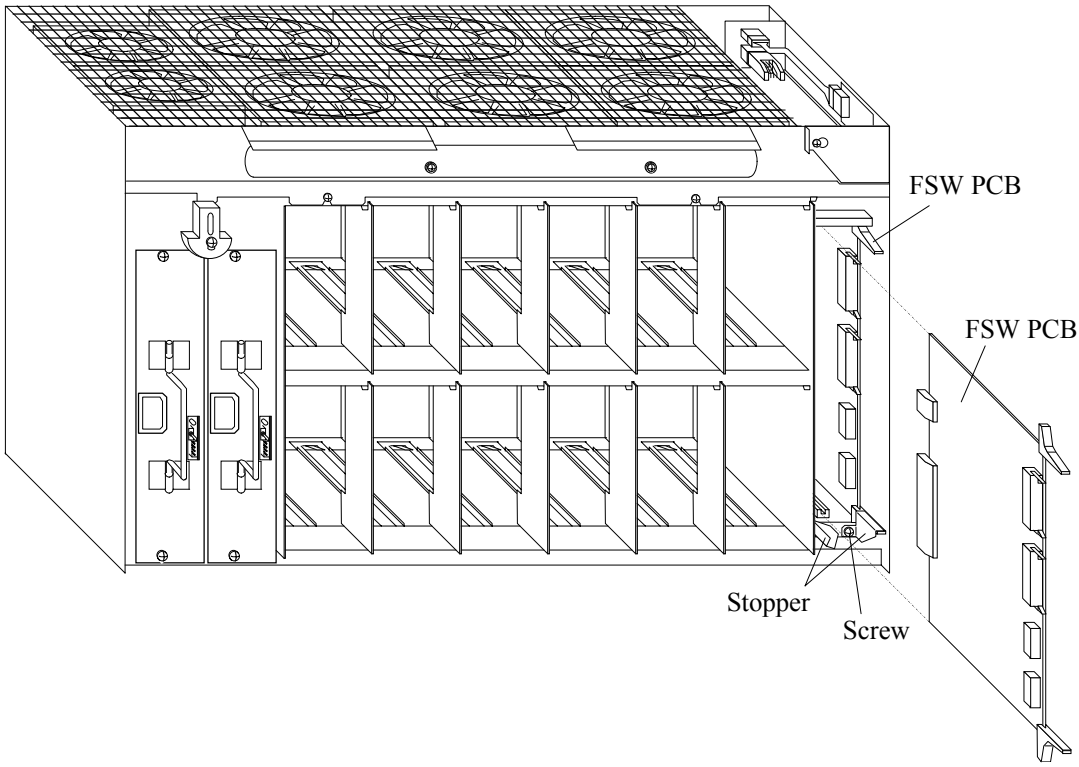

Fig. 3.19.6.3-2 Removal of the FSW PCB

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c. Remove screws securing the multi power supply in the HDU box to be installed, flip up the buffering rubbers, and pull out the multi power supply.

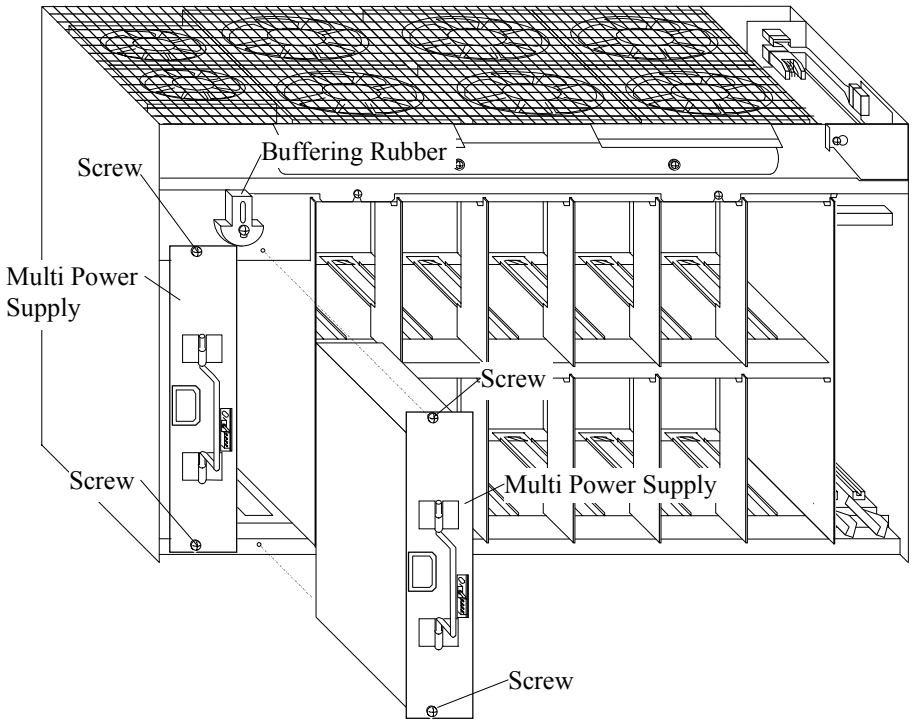

Fig. 3.19.6.3-3 Removal of the Multi Power Supply

d. Loosen the screw and remove the rail.

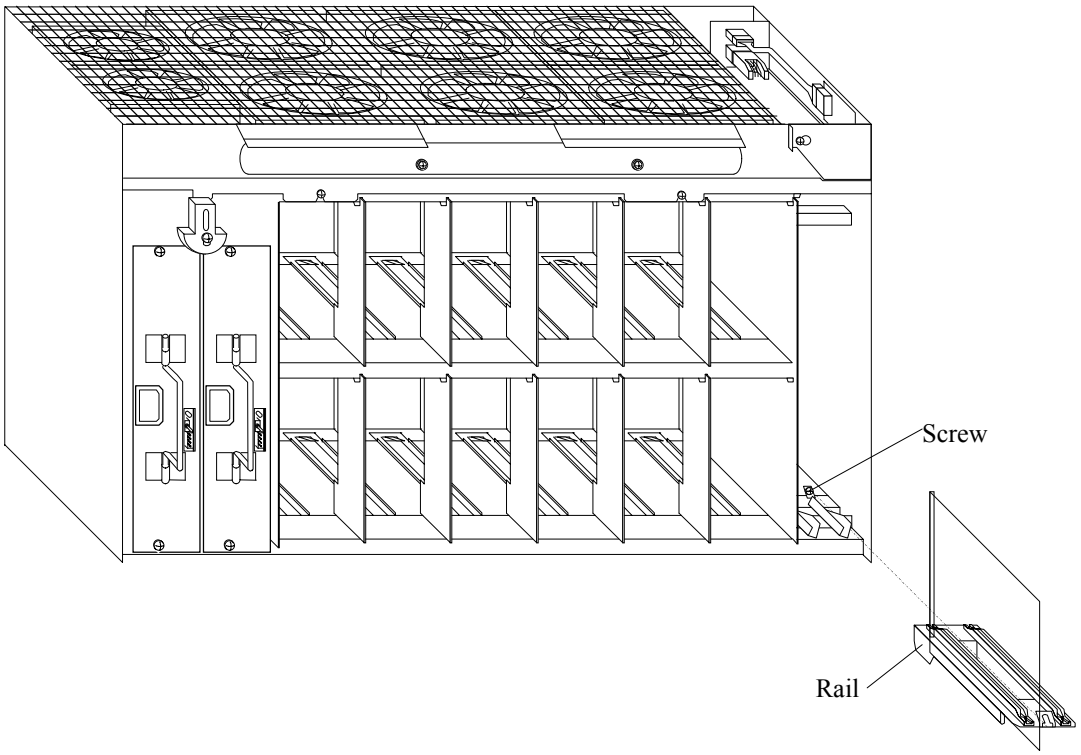

Fig. 3.19.6.3-4 Removal of the Rail

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e. Loosen the screw ① and remove the cover. Loosen the two screws ② and remove the HDD FAN Assembly.

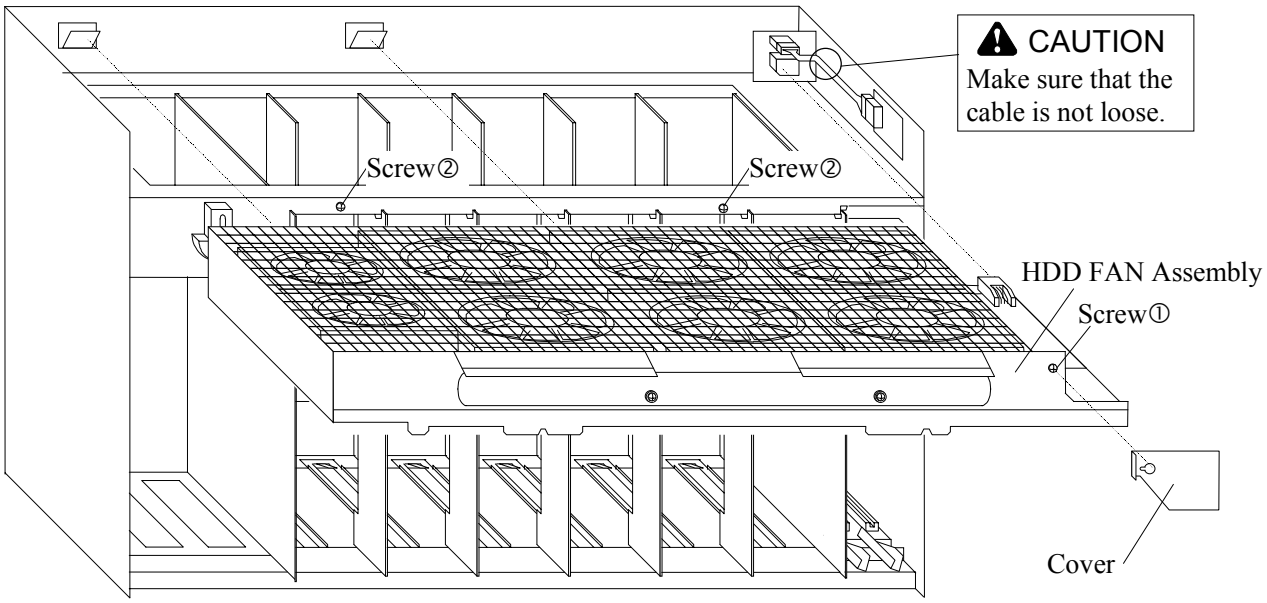

Fig. 3.19.6.3-5 Removal of the HDD FAN Assembly

3. Removal of the side plate.
   a. Loosen screws ① and raise DKUMN PCBs and slide DKUMN PCBs.
   b. Remove screws ② and side plates.
   c. Loosen screws ③ and raise cable ducts when installing a new HDU box.

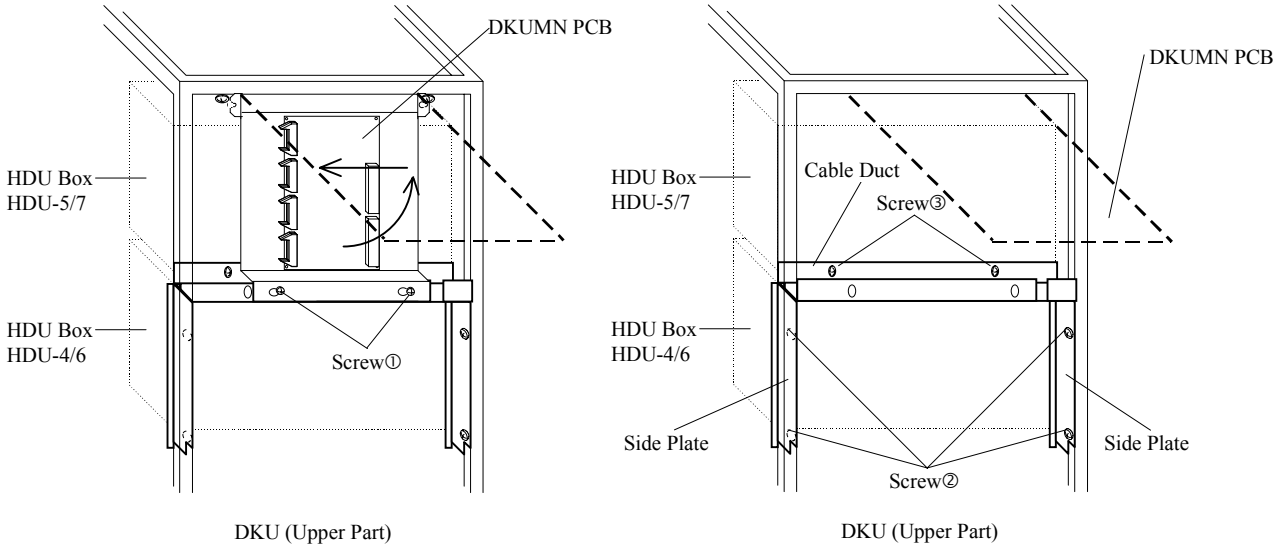

Fig. 3.19.6.3-6 Removal of the Side Plate

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4. Installation of the HDU Box.
   a. Install the HDU box on the disk unit and secure it with screws and plastic washers.

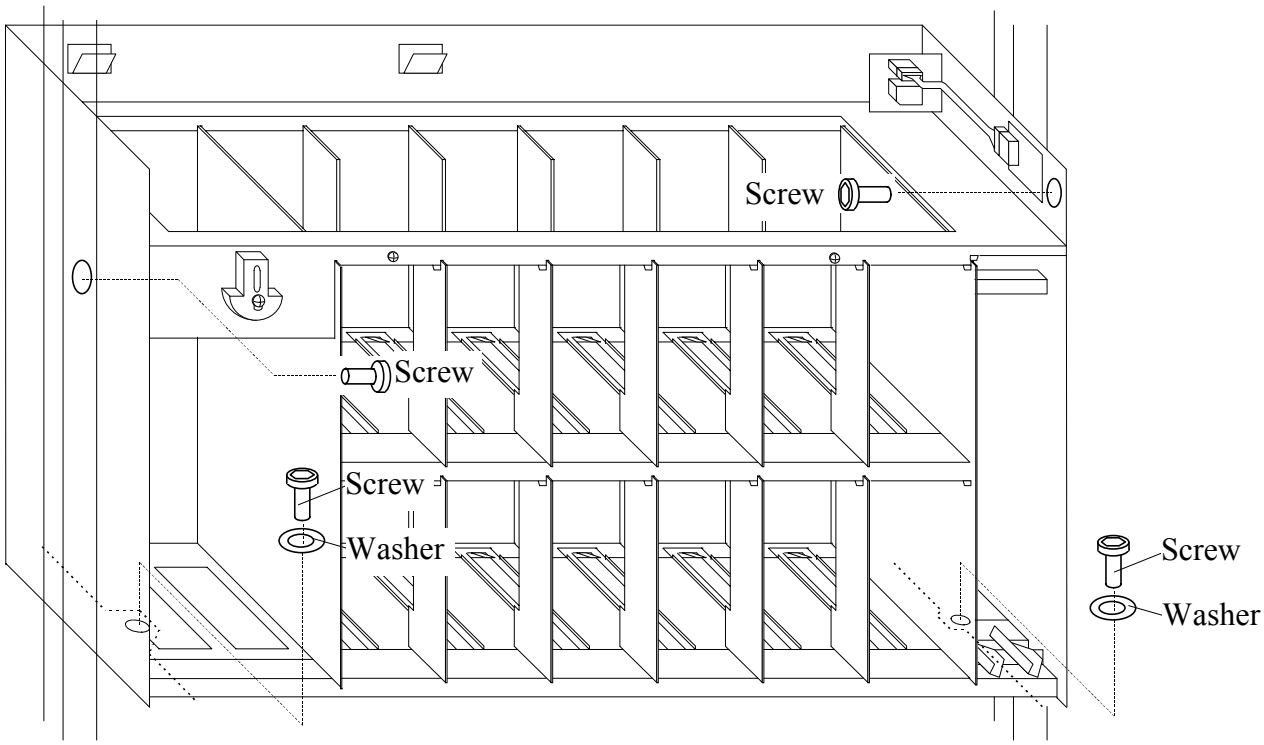

Fig. 3.19.6.3-7 Installation of the HDU Box

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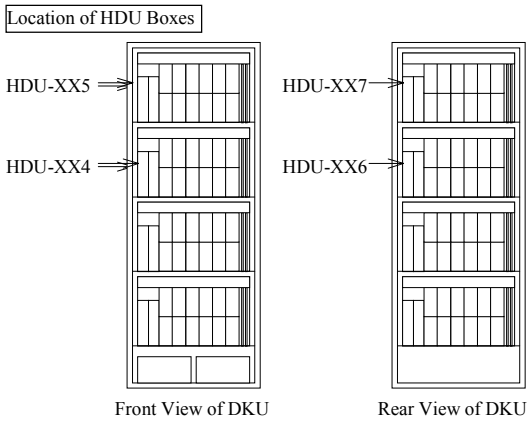
5. Connection of the DKUMN cable.
   a. Loosen the screw and remove the plate.
   b. Connect the DKUMN cables referring to Table 3.19.6.3-1 and Fig. 3.19.6.3-8.
   c. To prevent the DKUMN cable from becoming loose, fasten it with the Locking Clamp 2.
   d. Attach the plate and fasten the screw.

Table 3.19.6.3-1 DKUMN Cables and Matching Connectors

Location of HDU Box	No.	DKUMN Cable	Connector
XX4	1	4-P301	4-J301
	2	4-P302	4-J302
XX5	1	5-P301	5-J301
	2	5-P302	5-J302
XX6	1	6-P301	6-J301
	2	6-P302	6-J302
XX7	1	7-P301	7-J301
	2	7-P302	7-J302



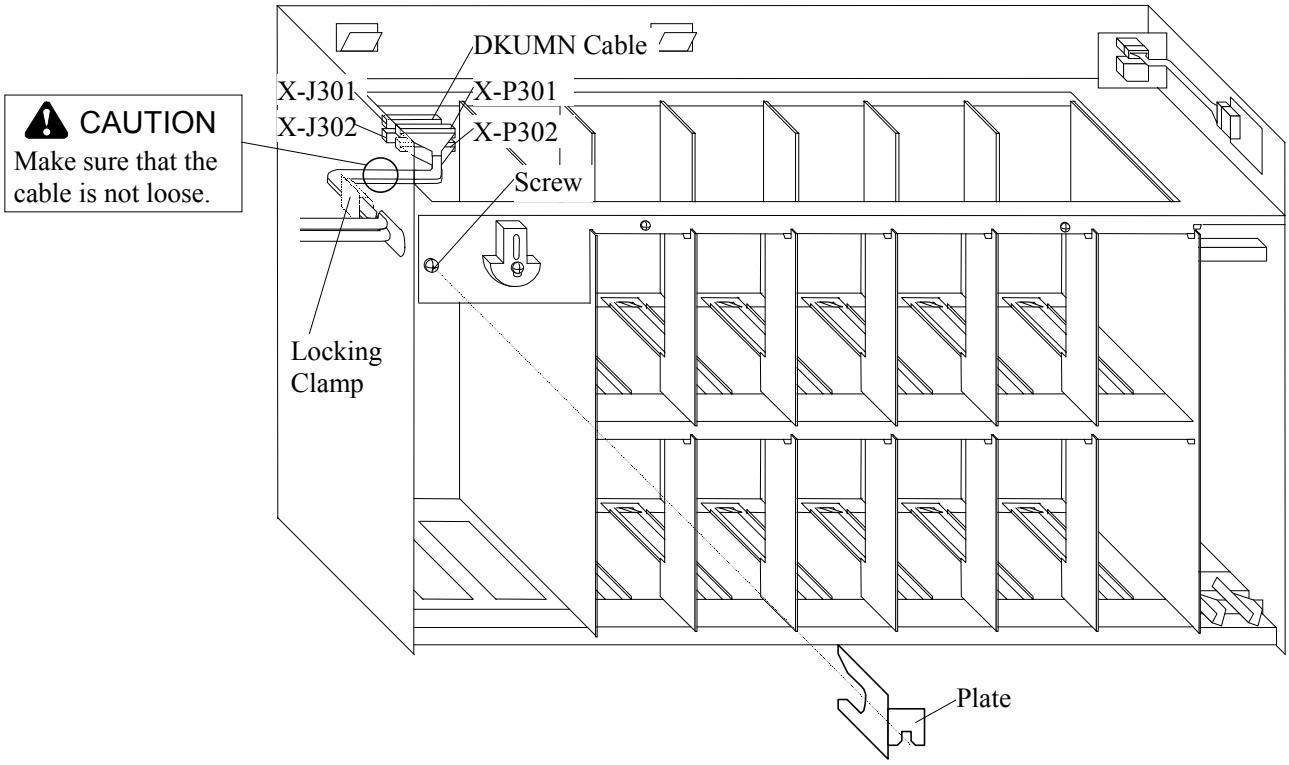


Fig. 3.19.6.3-8 Connection of the DKUMN Cables

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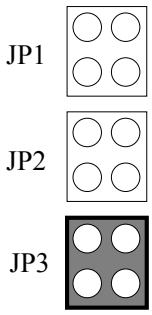
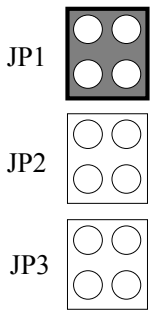
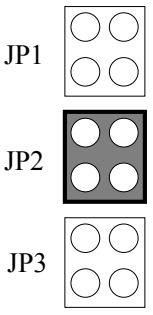
6. Setting of the PL ID jumper.
   a. For the first and third disk units, install a PL ID jumper to socket JP3 on the PL ID PCB.
   b. For the second and fourth disk units, install a PL ID jumper to socket JP1 on the PL ID PCB.
   c. For the fifth and sixth disk units, install a PL ID jumper to the socket JP2 on the PL ID PCB.

Table 3.19.6.3-2 Setting of the PL ID

	1st / 3rd DKU	2nd / 4th DKU	5th / 6th DKU
Setting of PL ID			

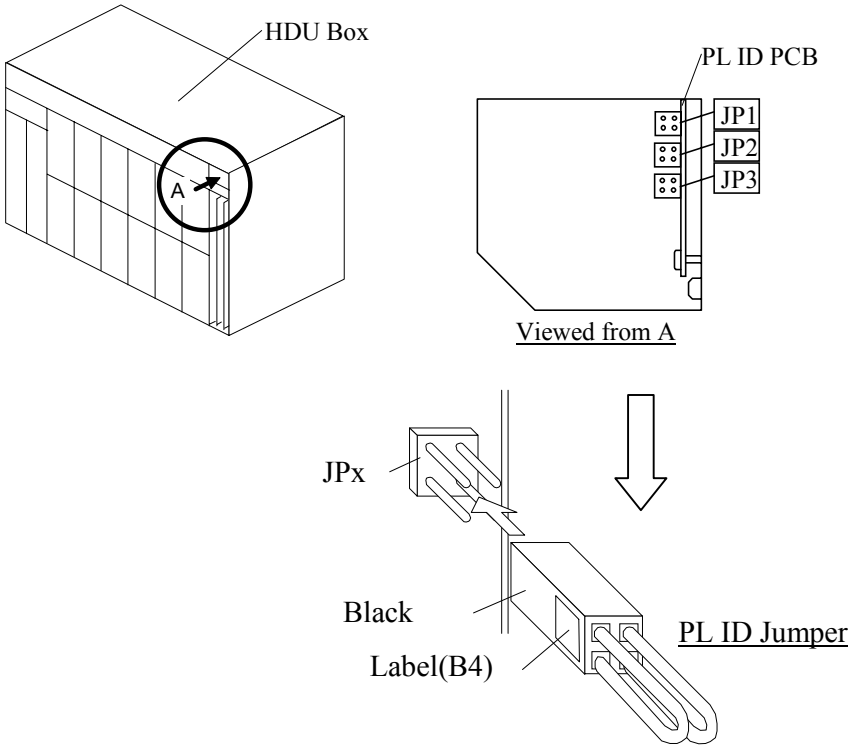


Fig. 3.19.6.3-9 Setting of the PL ID Jumper

7. Attachment of the acrylic cover, FSW PCB, multi power supply, rail, and HDD FAN Assembly.
   a. Attach the acrylic cover, FSW PCB, multi power supply, rail, and HDD FAN Assembly in the HDU box in the reverse order of Step 2.

8. Attachment of the side plate.
   a. Attach the side plates in the reverse order of Step 3.

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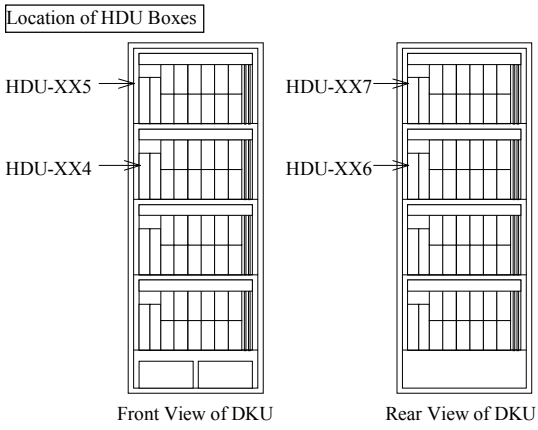
9. Connection of the INLET cable.
   a. Connect the INLET cables referring to Table 3.19.6.3-3 and Fig. 3.19.6.3-10.

Table 3.19.6.3-3 INLET Cables and Matching Connectors

Location of HDU Box	No.	INLET Cable	Connector
XX4	1	4-P601-1	4-J601-1
	2	4-P601-2	4-J601-2
XX5	1	5-P601-1	5-J601-1
	2	5-P601-2	5-J601-2
XX6	1	6-P601-1	6-J601-1
	2	6-P601-2	6-J601-2
XX7	1	7-P601-1	7-J601-1
	2	7-P601-2	7-J601-2



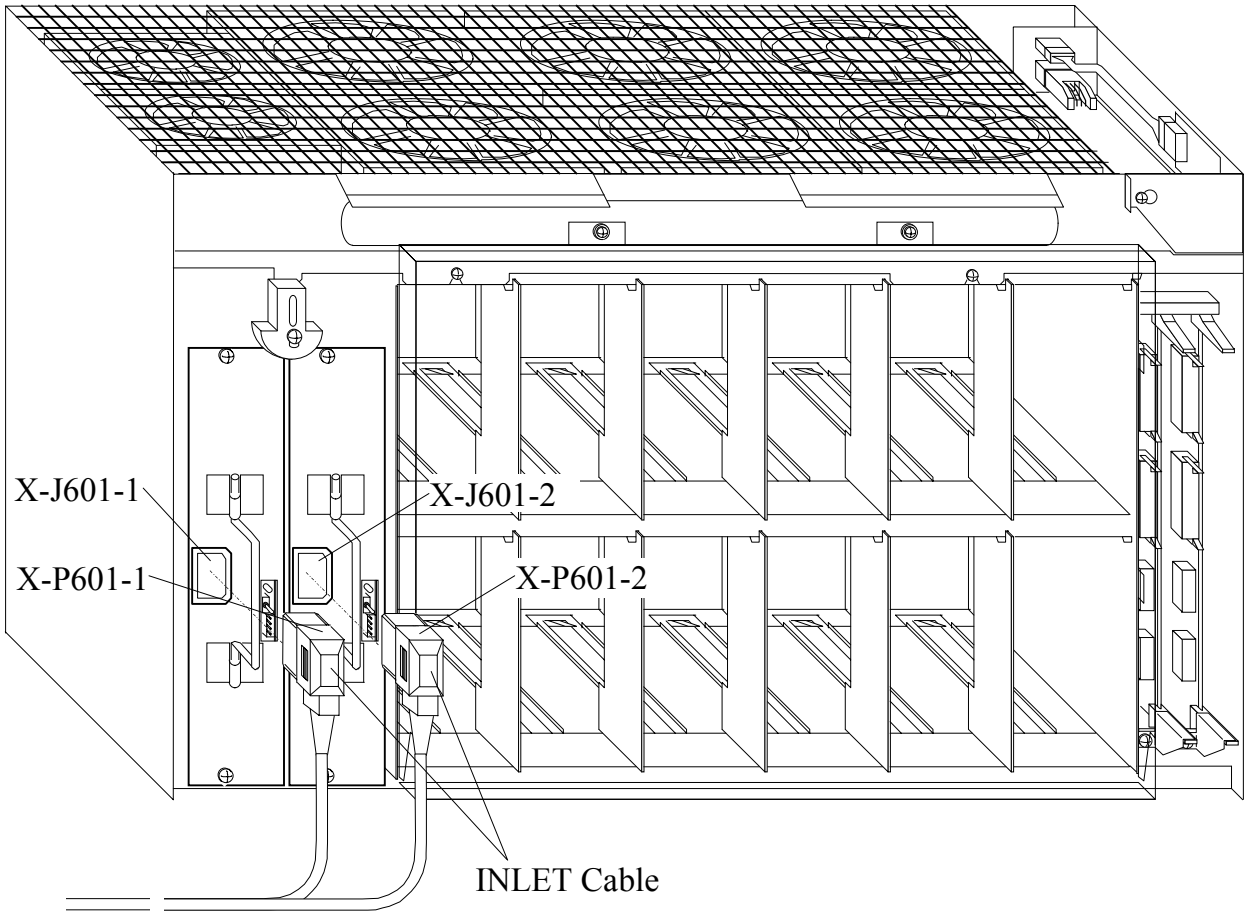


Fig. 3.19.6.3-10 Connection of the INLET Cable

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10. Attachment of the nameplate and label (REV).
    a. Attach the nameplate and label (REV) of additional HUD box, referring to Fig. 3.19.6.3-11.

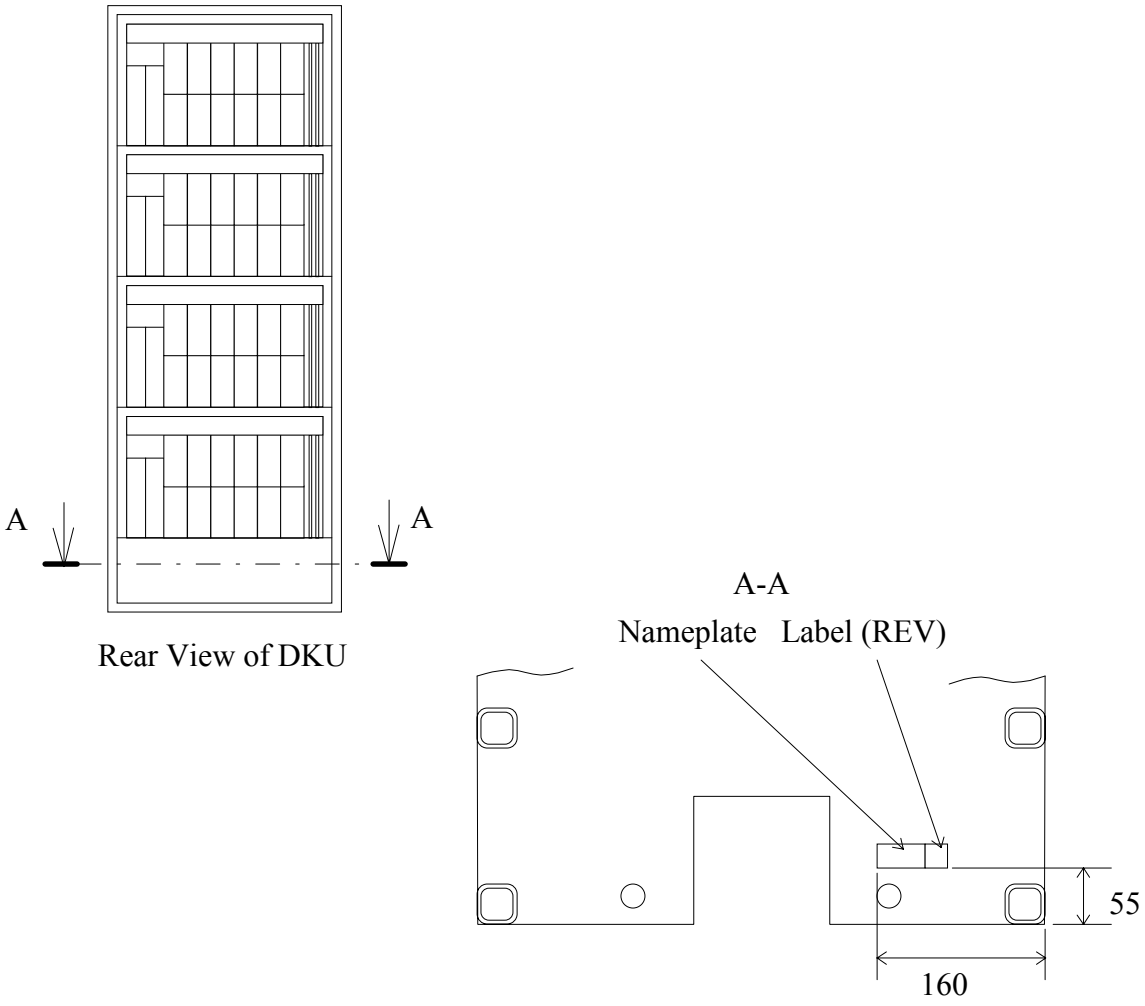

Fig. 3.19.6.3-11 Attachment of the Nameplate and Label (REV)

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11. Setting of the PS enable switch on the multi power supply.
    a. Set the PS enable switch on the multi power supply to Enable and make sure that the PS enable LED goes on.

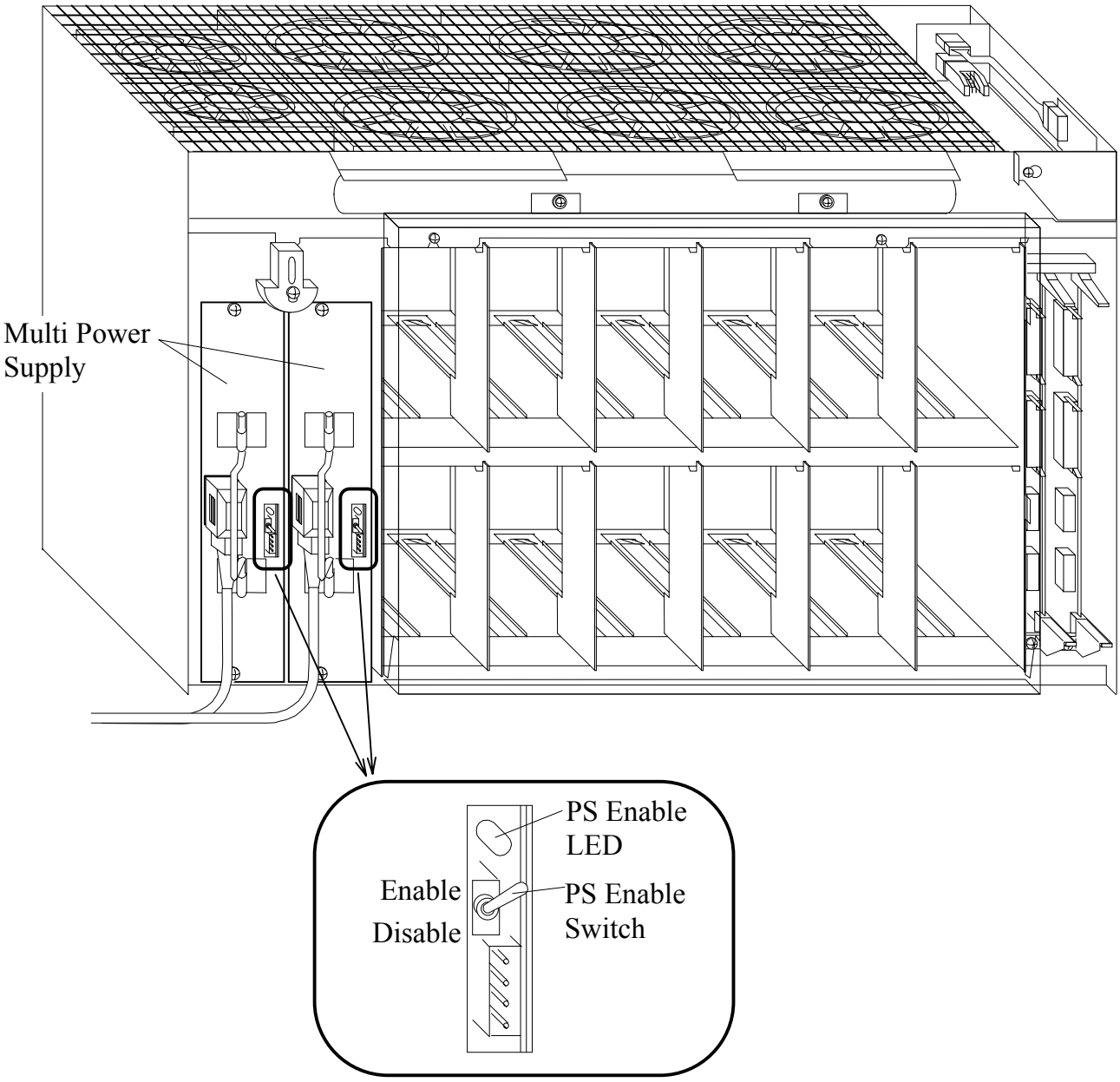

Fig. 3.19.6.3-12 Setting of the PS Enable Switch on the Multi Power Supply

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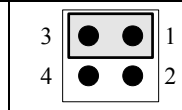
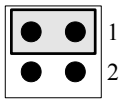
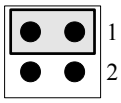
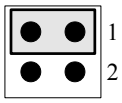
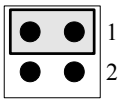
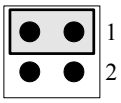
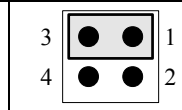
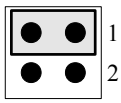
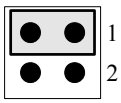
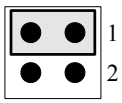
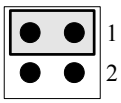
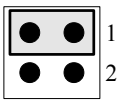
12. Installation of the jumper plug on the DKUMN PCB.
    a. Install the jumper plugs for JP02 on the DKUMN PCBs, referring to Fig. 3.19.6.3-13.

	1	2	3	4	5	6
	DKUMN-R1F	DKUMN-R1R	DKUMN-R2F	DKUMN-R2R	DKUMN-L1F	DKUMN-L1R
	Front	Rear	Front	Rear	Front	Rear
JP02						
	1st DKU		2nd DKU		3rd DKU	

	7	8	9	10	11	12
	DKUMN-L2F	DKUMN-L2R	DKUMN-R3F	DKUMN-R3R	DKUMN-L3F	DKUMN-L3R
	Front	Rear	Front	Rear	Front	Rear
JP02						
	4th DKU		5th DKU		6th DKU	

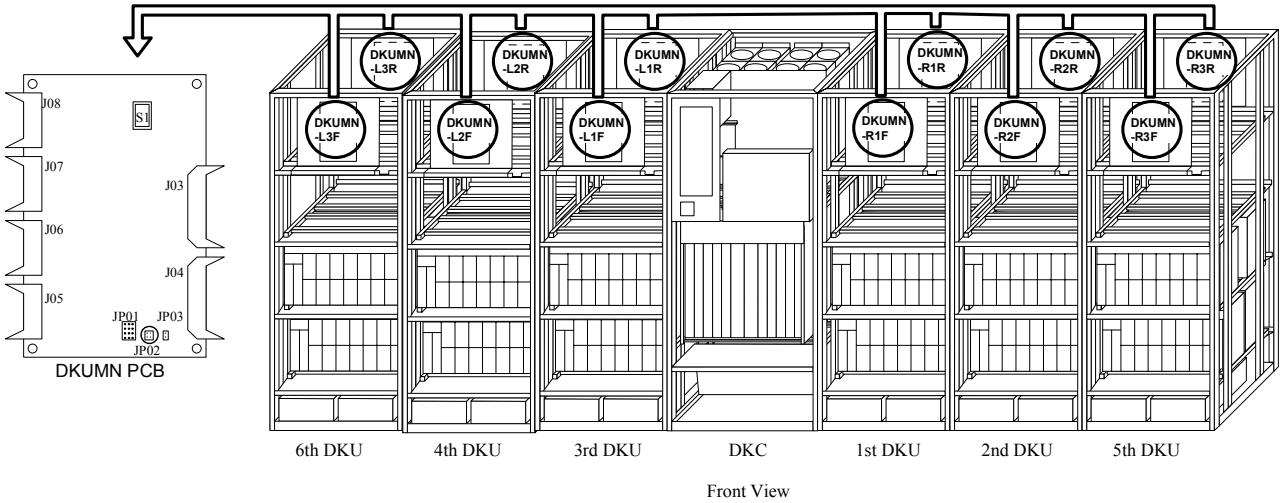


Fig. 3.19.6.3-13 DKUMN PCB Jumper Plug Positions

13. Check of the PL ID Jumpers
    a. Check the PL ID jumpers on the PL ID PCBs. Refer to step 6 Setting of the PL ID jumper [INST03-1520].
    When the PL ID jumpers are not installed to the correct sockets, install the PL ID jumpers to the correct sockets.

14. Return to General Flow.
    New Installation : Go to INST03-U40-20 step (2)-6.
    Non-Disruptive Installation : Go to INST03-U40-30 step (2)-6.

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3.19.7 Installation of the HDD Canister (DKU-F405I-18J4/18J1/18K4/18K1/36K4/36K1/47J4/47J1/72J4/72J1/72K4/72K1/146J4/146J1/180H4/180H1)

Table 3.19.7-1 Parts List for HDD Canister

No.	Model Number	Parts Name	Parts No.	Quantity	Remarks
1	DKU-F405I-18J4	HDU-18J1FC	5502391-A	4	
		Nameplate	2103570-15	1	
			3259627-2	1	
2	DKU-F405I-18J1	HDU-18J1FC	5502391-A	1	
		Nameplate	2103570-14	1	
			3259627-1	1	
3	DKU-F405I-18K4	HDU-18K1FC	5510884-A	4	
		Nameplate	2103570-51	1	
			3259627-19	1	
4	DKU-F405I-18K1	HDU-18K1FC	5510884-A	1	
		Nameplate	2103570-52	1	
			3259627-20	1	
5	DKU-F405I-36K4	HDU-36K1FC	5502398-A	4	
		Nameplate	2103570-63	1	
			3259627-31	1	
6	DKU-F405I-36K1	HDU-36K1FC	5502398-A	1	
		Nameplate	2103570-64	1	
			3259627-32	1	
7	DKU-F405I-47J4	HDU-47J1FC	5502392-A	4	
		Nameplate	2103570-17	1	
			3259627-4	1	
8	DKU-F405I-47J1	HDU-47J1FC	5502392-A	1	
		Nameplate	2103570-16	1	
			3259627-3	1	
9	DKU-F405I-72J4	HDU-72J1FC	5502393-A	4	
		Nameplate	2103570-19	1	
			3259627-6	1	
10	DKU-F405I-72J1	HDU-72J1FC	5502393-A	1	
		Nameplate	2103570-18	1	
			3259627-5	1	
11	DKU-F405I-72K4	HDU-72K1FC	5519913-A	4	
		Nameplate	2103570-69	1	
			—	1	
12	DKU-F405I-72K1	HDU-72K1FC	5519913-A	1	
		Nameplate	2103570-60	1	
			—	1	

(To be continued.)

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(Continued from preceding sheet.)

No.	Model Number	Parts Name	Parts No.	Quantity	Remarks
13	DKU-F405I-146J4	HDU-146J1FC	5518495-A	4	
		Nameplate (HDS)	2103570-65	1	
		Nameplate (HP)	—	1	
14	DKU-F405I-146J1	HDU-146J1FC	5518495-A	1	
		Nameplate (HDS)	2103570-66	1	
		Nameplate (HP)	—	1	
15	DKU-F405I-180H4	HDU-180H1FC	5502397-A	4	
		Nameplate	2103570-57	1	
			3259627-26	1	
16	DKU-F405I-180H1	DKU-180H1FC	5502397-A	1	
		Nameplate	2103570-58	1	
			3259627-25	1	

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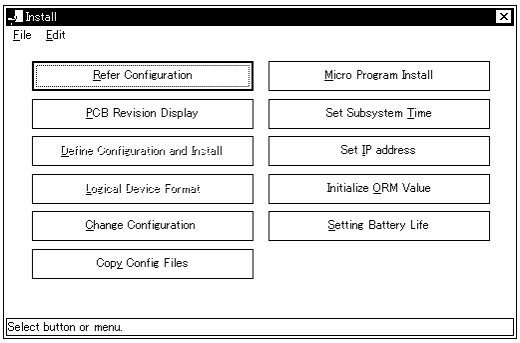
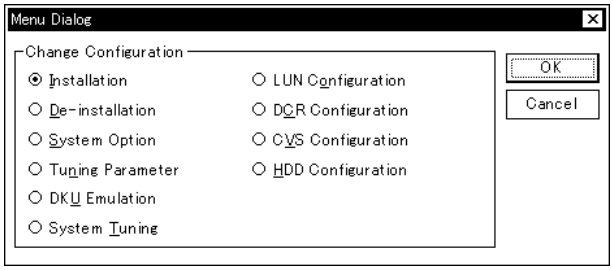
1. Setting up the New Device Structure Information

1. <Mode Change>
   Change the mode to Modify Mode.
   Select (CL) [Install].

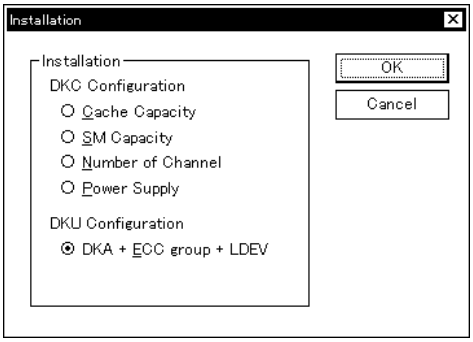
2. <Start the 'Menu Dialog' screen>
   Select (CL) [Change Configuration].



3. <Start Device Structure Setup screen>
   Select (CL) [Installation] in the 'Menu Dialog' dialog box and select (CL) [OK].



4. <Select a part to be changed>
   Select (CL) [DKA + ECC group + LDEV], and select (CL) [OK].



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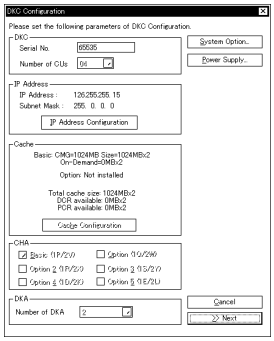
5. <Update Configuration Information>
Define the number of CU in DKC in the 'DKC Configuration' window.

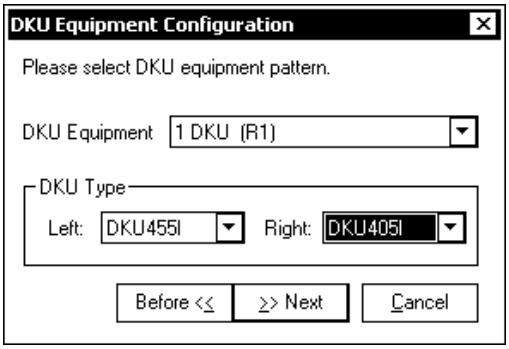


Make sure that the entered item is correct and select (CL) [>>Next].

Note: There may be a case where an addition of the SM is required to add the CU.
When adding the SM, refer to page INST03-SM-10.

6.

7. <DKU Equipment>
The DKU equipment pattern and DKU type is displayed in the 'DKU Equipment' configuration window.
Select (CL) [>>Next].



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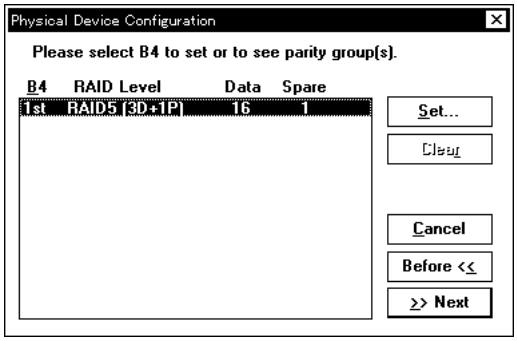
8. <Change Drive Configuration Information>
Define drive configuration according to the 'Physical Device Configuration' screen.
Detailed procedure is shown below.
[Set...]: Defines the parity group or spare disk. The routine proceeds to Step 8-1.
[Clear...]: Cancels the setting of the B4.
After setting up all items, select (CL) [>>Next]. Go to step 9.



Selecting (CL) [Before<<] returns you to the previous screen.

[Multi Cabinet Model]

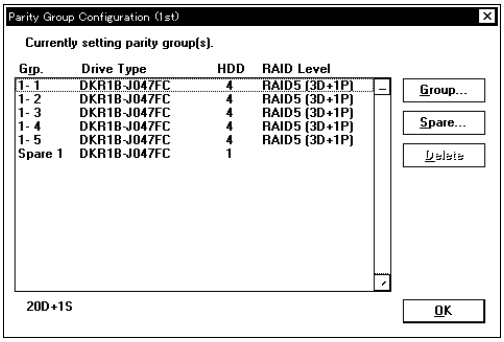
B4	Location	B4	Location
1st	HDU-R10, 11, 12, 13	7th	HDU-L20, 21, 22, 23
2nd	HDU-R14, 15, 16, 17	8th	HDU-L24, 25, 26, 27
3rd	HDU-L10, 11, 12, 13	9th	HDU-R30, 31, 32, 33
4th	HDU-L14, 15, 16, 17	10th	HDU-R34, 35, 36, 37
5th	HDU-R20, 21, 22, 23	11th	HDU-L30, 31, 32, 33
6th	HDU-R24, 25, 26, 27	12th	HDU-L34, 35, 36, 37

Note: The 9th to 12th of the B4 are valid only when the DKUs for the RAID 400 are connected.

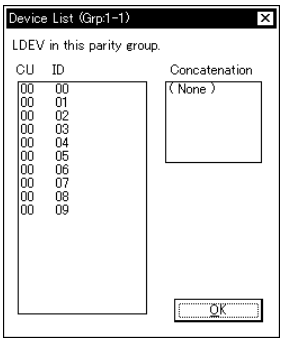
[Single Cabinet Model]

B4	Location	Comment
1st	HDU-0, 1, 2, 3	HDD-X00 ~ X0F
2nd	HDU-0, 1, 2, 3	HDD-X10 ~ X1F

8-1. <Define Parity Group>
[Group...]: Defines the parity group. See Step 8-1-1.
[Spare...]: Defines the spare drive. See Step 8-1-2.
[Delete]: Deletes the added parity group or spare drive.
Note: If you want to set any Spare Drive in B4, please define the Spare Drive first.
After setting up all items, select (CL) [OK]. Return to step 8.



- To display LDEV ID in Parity group, select an item to be displayed and select (DC) this item on list box. The 'Device List' dialog box will appear.
"(no LDEV)" is displayed for the added parity group.



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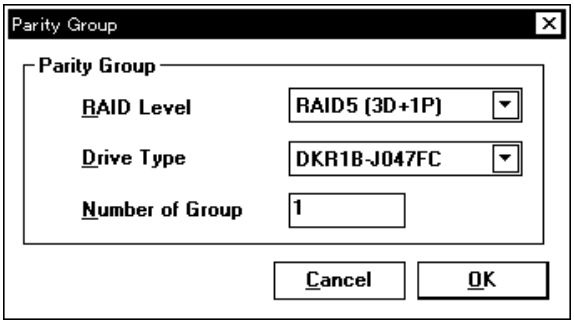
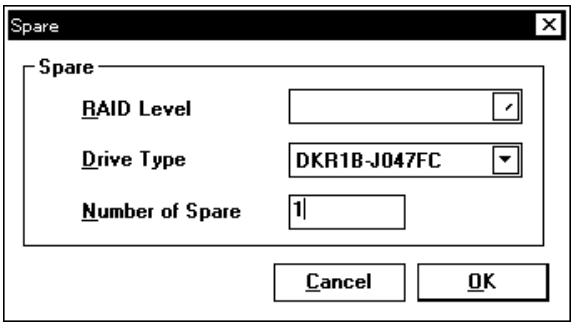
8-1-1.

Define the RAID Level and the Drive Type and the Number of Group in the 'Parity Group' dialog box.
Then select (CL) [OK]. Return to step 8-1.



8-1-2.

Define the RAID Level and the Drive Type and the Number of Spare in the 'Spare' dialog box.
Then select (CL) [OK]. Return to step 8-1.

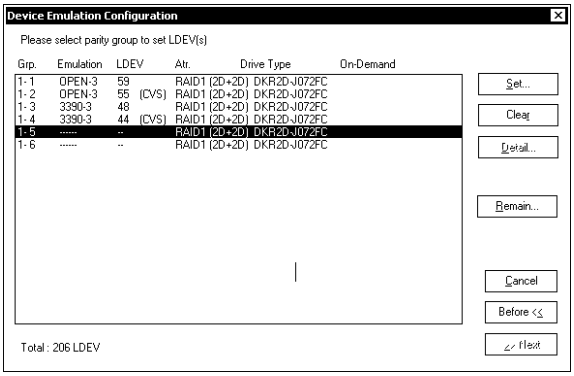


9. <Define Device Emulation>

After setting up all items for definition of Device Emulation, select (CL) [>>Next].
Selecting (CL) [Before<<] returns you to the previous screen.

For defining Device Emulation:
Select (CL) parity group and select (CL) [Set...].
Go to step 9-1

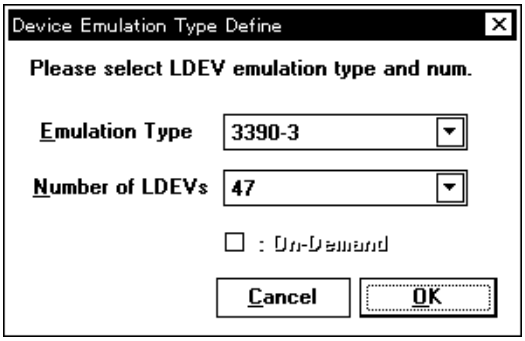
For detailed display:
Select (CL) parity group and select (CL) [Detail...].
The detailed information is displayed.
(CVS): A parity group where CVS is installed.



9-1.

After setting up all items in the 'Device Emulation Type Define' dialog box, select (CL) [OK].

Selecting (CL) [Cancel] returns you to step 9.



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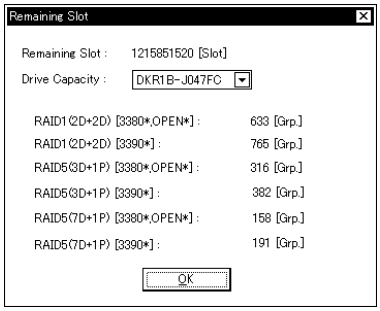
9-2. <Displaying remaining slot(s)>

The Remaining Slot window is displayed.
An allowable number of times of PDEV addition corresponding to the specified drive type is displayed.

Select (CL) the [OK]. The routine returns to Step 9.



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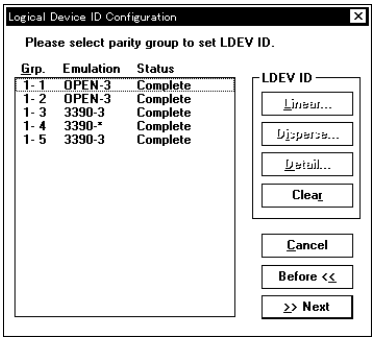
10. <Define LDEV ID>

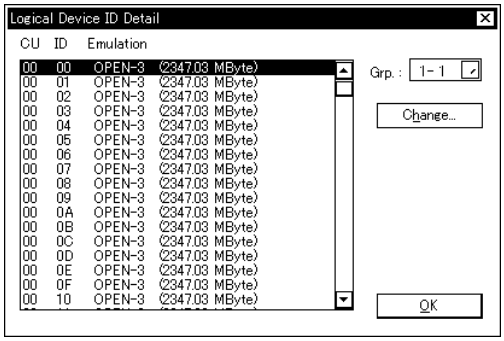


Definition Screen for LDEV ID.
Select (CL) the parity group to be defined and select (CL) a function from the [LDEV ID] list box.
[Linear...]: LDEV ID is assigned to LDEV in the order of parity groups. See step 10-1.
[Disperse...]: LDEV is assigned discretely in the order of parity groups. See step 10-1.
[Detail...]: A screen to define LDEV in detail is displayed. See step 10-2. (When plural groups are selected (CL), it is invalid.)
[Clear]: Select (CL) [Clear] to delete.

- '-----' is displayed in the Status area for the parity group to which LDEV ID is not assigned.

After setting up all items, select (CL) [>>Next]. (Go to Step 11)

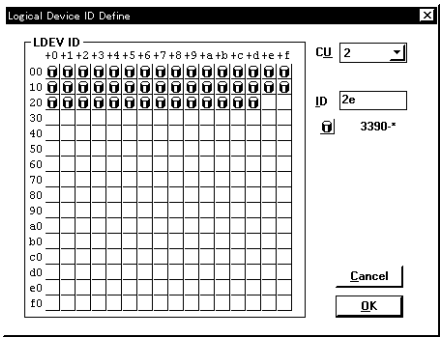
10-1. Detailed Definition Screen for LDEV ID



LDEV ID is defined in detail for each LDEV in the parity group.
Select (CL) LDEV from the list box and select (CL) [Change...].
The screen for LDEV ID input is displayed.
After setting, select (CL) [OK]. Return to step 10

- '-----' is displayed in the CU area and the ID area for the LDEV to which LDEV ID is not assigned.

10-2. Input LDEV ID



Select CU ID in the CU combo box.
The status of usage of ID in the CU is displayed in the LDEV ID panel.
White disk of panel: not used
Patterned disk of panel: using
Input LDEV ID you want to set or the head LDEV ID in the ID Edit box.
After setting, select (CL) [OK]. Return to step 10-1

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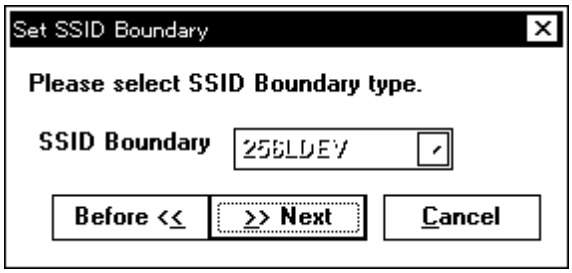
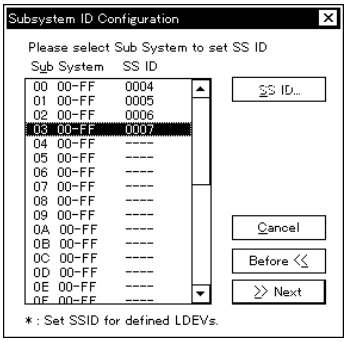
11. <Define Subsystem ID Boundary>
Press (CL) the [>>Next] button to change the screen to the “Set SSID Boundary” screen.

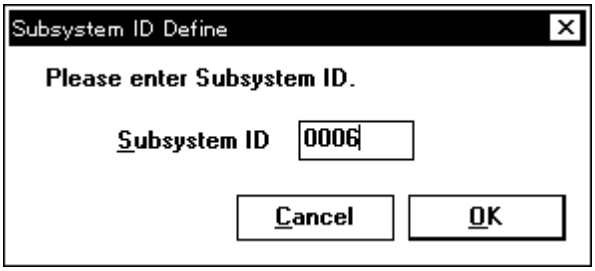


12. <Define Subsystem ID>
To define Subsystem ID, select (CL) the item from the list box and select (CL) [SSID]. See step 12-1.

After setting, select (CL) [>>Next].

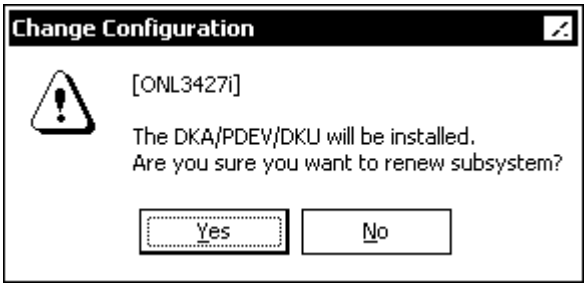


12-1. Define Subsystem ID and select (CL) [OK].
Return to step 12.



13. <Start installation>
Select (CL) [Yes] in response to “The DKA/PDEV/DKU will be installed. Are you sure you want to renew subsystem?”.

When [No] is selected (CL), returns to INST03-U40-1250 step 3.



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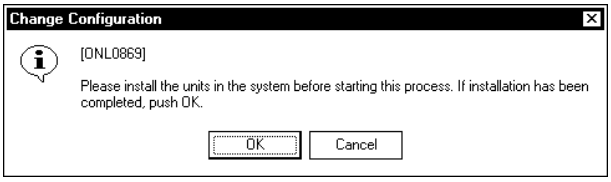
14. <Download microprogram>
    Microprograms are automatically downloaded for each processor.

15. <Install DKA>
    "Upgrading of the DKA..."

16. <Check that hardware components are installed>
    At this point refrain from pressing the [OK] button.
    "Please install the units in the system before starting this process. If installation has been completed, push OK." is displayed.



17. Return to General Flow
    Non-Disruptive Installation:
    - If connection of DEV interface cables (2) (DKC-F410I-EXC) Installation, go to INST03-U40-40 step (3)-4.
    - If connection of DEV interface cables (2) (DKC-F410I-EXC) not Installation, go to INST03-U40-40 step (3)-9.

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2. Installation Procedure of HDD Canister

2-1 Confirmation of position to install HDD canister

The order in which DKU-F405I-18J4/18K4/36K4/47J4/72J4/72K4/146J4/180H4 (4 HDD canisters) units are to be installed in a DKU-F405I-B4 is shown in Fig. 3.19.7-1 and the order in which DKU-F405I-18J1/18K1/36K1/47J1/72J1/72K1/146J1/180H1 (spare HDD) units are to be installed in Fig. 3.19.7-2.

NOTICE:

(1) The position to be installed in the 2nd or 4th DKU is different from one in the 1st or 3rd DKU. Be sure to set the HDDs in the right position.

(2) Don't use the position marked as X in the 5th and 6th DKU. Wrong setting of a HDD in the 5th or 6th DKU may cause DKU failure on the same SCSI path.

(3) Specifications for the selection of the spare HDD are shown below. A sparing of an HDD with a smaller capacity for an HDD with a larger capacity is possible. However, there are some cases in which an HDD cannot be assigned depending on the drive type as shown in the table below.

Copy destination spare HDD / Copy source data HDD	DKR1B-Jxx DKR1C-Jxx DKR2B-Jxx DKR2C-Jxx DKR2D-Jxx DKR2E-Jxx	DKS2A-Kxx DKS2B-Kxx DKS2C-Kxx	DKS1A-Hxx
DKR1B-Jxx DKR1C-Jxx DKR2B-Jxx DKR2C-Jxx DKR2D-Jxx DKR2E-Jxx	A spare HDD can be assigned when the following condition is satisfied. Capacity of a copy source data HDD ≤ Capacity of a copy destination spare HDD.	Assignment cannot be done.	Assignment cannot be done.
DKS2A-Kxx DKS2B-Kxx DKS2C-Kxx	Assignment cannot be done.	A spare HDD can be assigned when the following condition is satisfied. Capacity of a copy source data HDD ≤ Capacity of a copy destination spare HDD	Assignment cannot be done.
DKS1A-Hxx	Assignment cannot be done.	Assignment cannot be done.	A spare HDD can be assigned when the following condition is satisfied. Capacity of a copy source data HDD ≤ Capacity of a copy destination spare HDD

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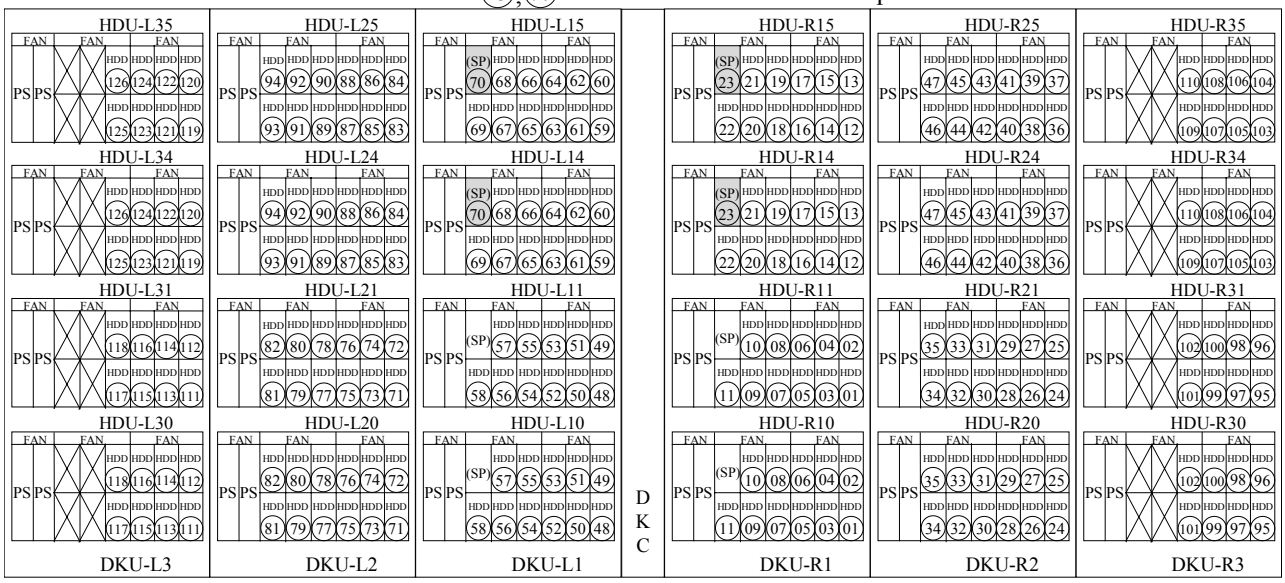
a. Make sure of the location where the HDD canister is to be added.

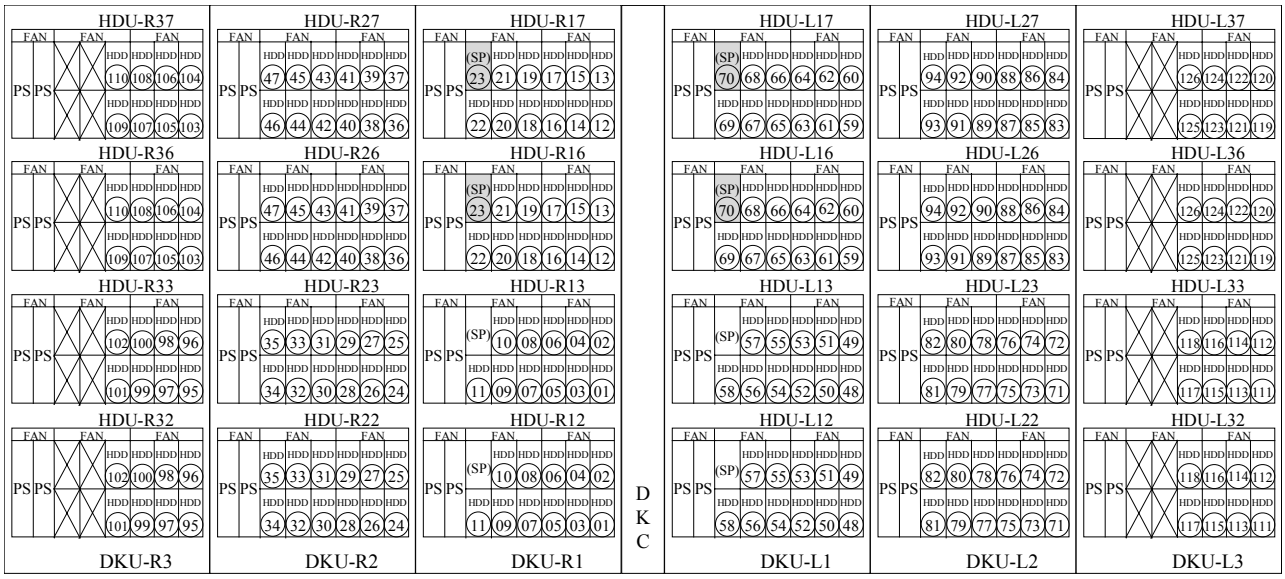
No.	Model Number	Model Name	Data and Parity
1	DKU-F405I- 18J4/18K4/36K4/47J4/72J4/72K4/146J4/180H4	4 HDD Canisters	Data and Parity Drive

(01) - (126) : 4HDD canister expansion sequence

Note: Number of (23), (70) can be used as data HDD or spare HDD



Front view



Rear view

Fig. 3.19.7-1 Data Drive/Parity Drive Expansion Sequence

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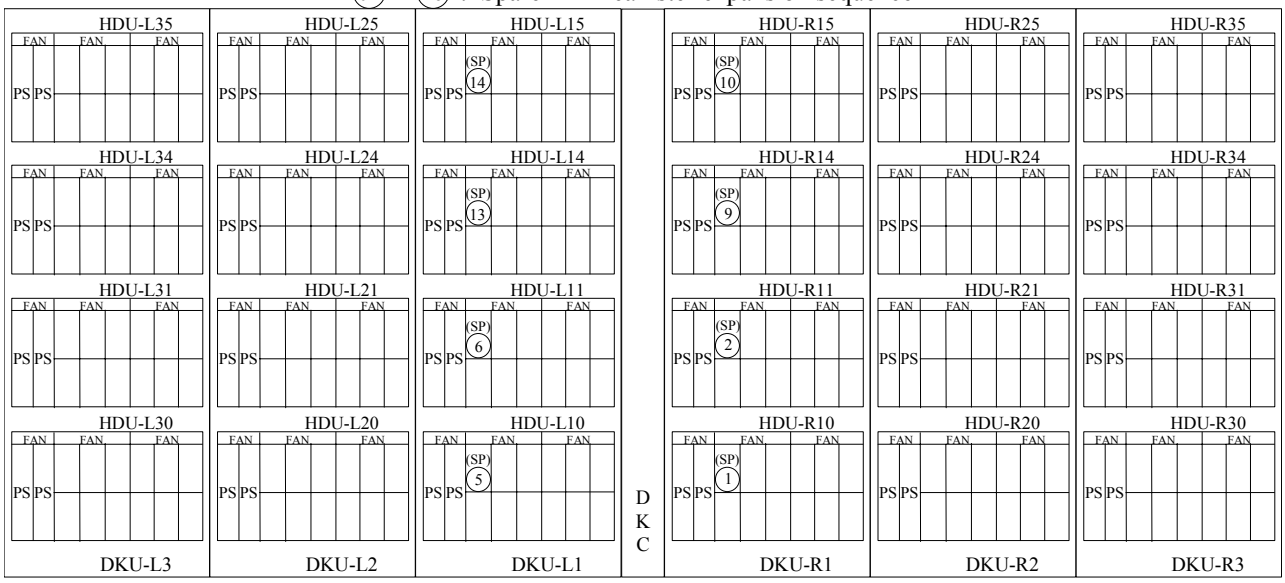
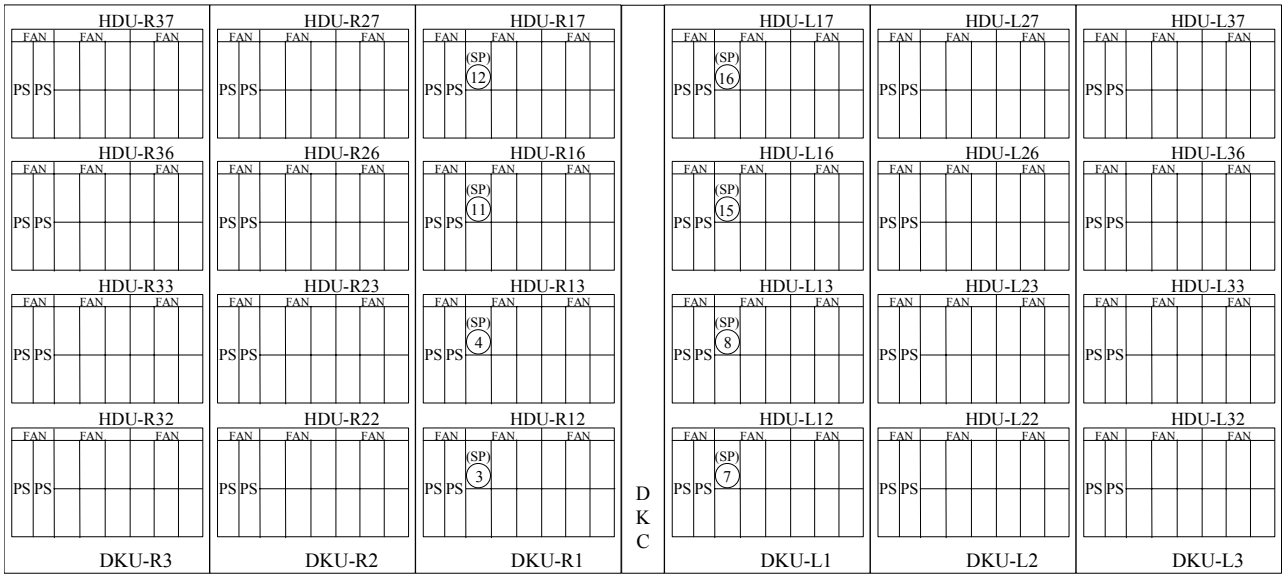
No.	Model Number	Model Name	Data and Parity
1	DKU-F405I- 18J1/18K1/36K1/47J1/72J1/72K1/146J1/180H1	1 HDD Canister	Spare Drive

01 - 16 : Spare HDD canister expansion sequence



Front view



Rear view

Fig. 3.19.7-2 Spare Drive Expansion Sequence

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2-2 Installation of the HDD Canister

Notice: Since the HDD is a precision component, handle it very carefully not to apply a vibration or shock to it.

a. Remove the acrylic cover.
   Process 1 : Disengage two claws at the bottom of the acrylic cover.
   Process 2 : Slide the acrylic cover upward and remove it from the screws on the HDD Box.
b. Install the HDD canister. (For the detailed procedure for installation, refer to the procedure for installing HDD canister on page INST03-U40-1370.)
c. Attach the acrylic cover.

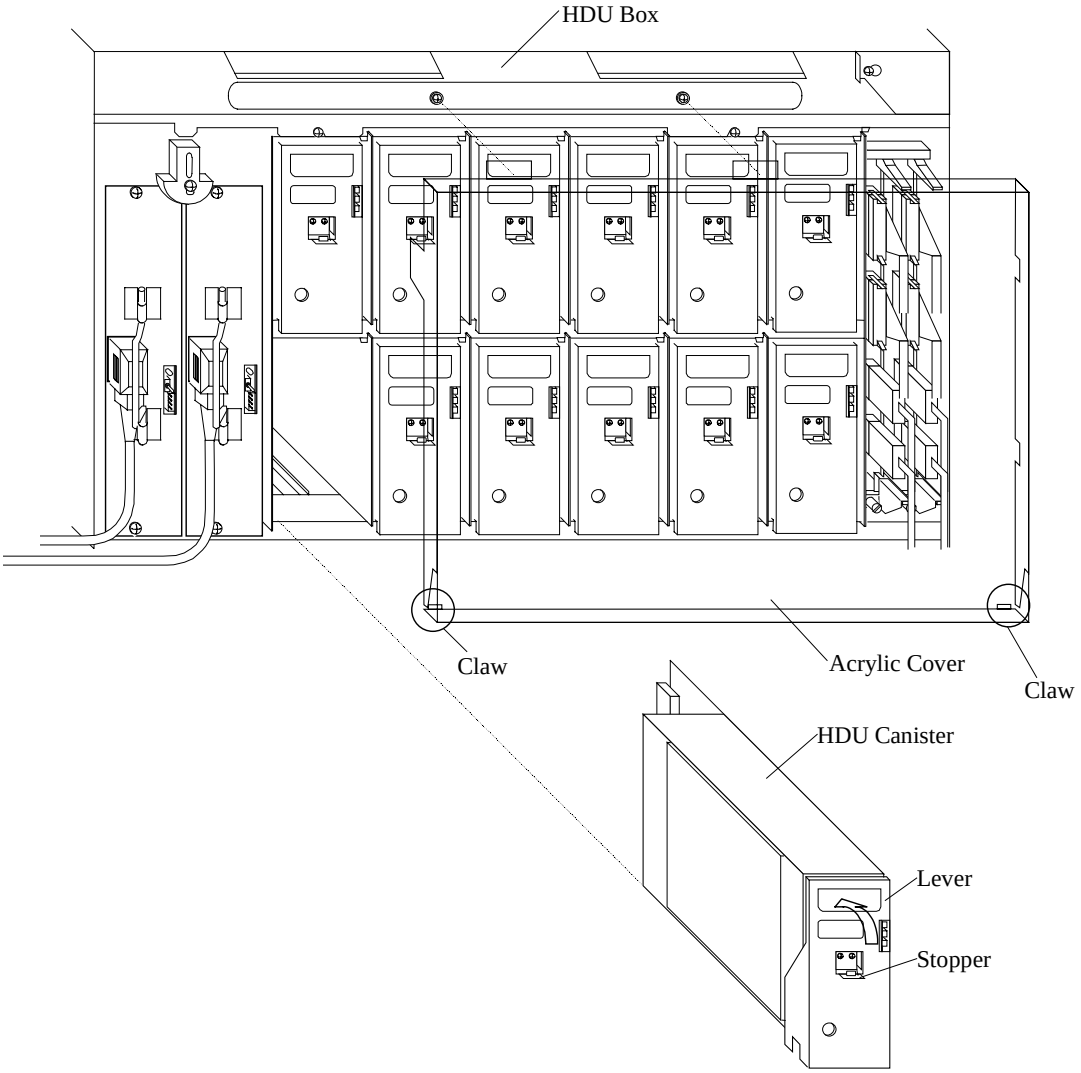

Fig. 3.19.7-3 Installation of HDD Canister

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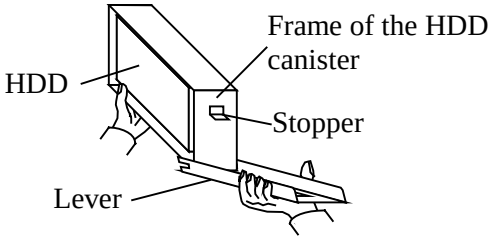
HDD canister install procedure

Note on the installation: Do not insert the HDD canister by pushing its frame.

Handling of the canister

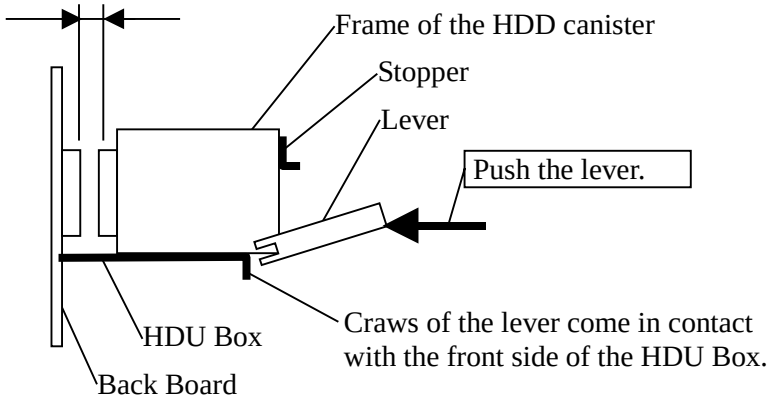


(1) Insert the HDD canister into the HDU Box holding its lever.
(Insert the canister until the claws that are located at the bottom of the lever come in contact with the front side of the HDU Box.)

(2) Turn the lever at a stroke by pushing its top with your thumb.
(Turn the lever until it latches with the stopper. Do not stop the lever on its way of turning.)

(1) Insert the HDD canister into the HDU Box holding its lever.

A gap exists between the connectors.



(2) Turn the lever at a stroke by pushing its top with your thumb.
(Do not stop the lever on its way of turning.)

The connectors have been coupled.

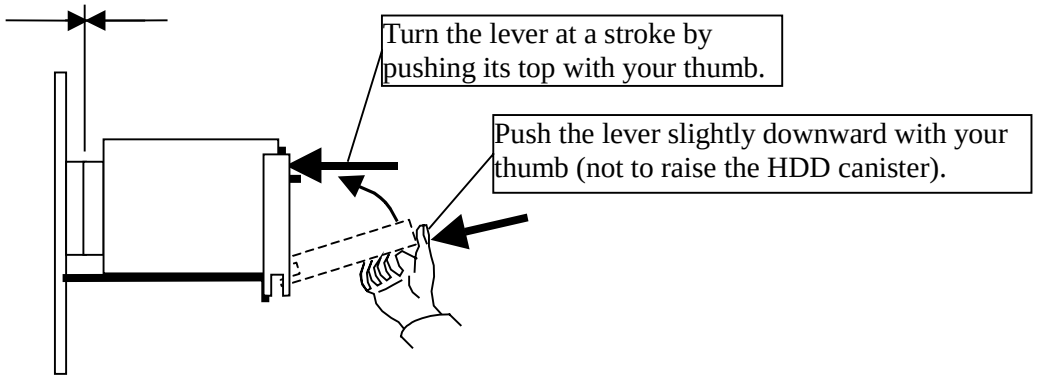


Fig. 3.19.7-4 Method of Installing HDD Canister

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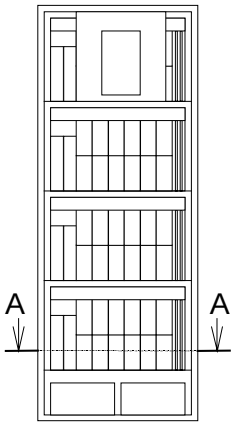
2-3 Attachment of the nameplate

a. Attach the nameplate regardless of the model number and location of the added HDD canister(s) from the left of the air plate.



Front View of DKU

A - A

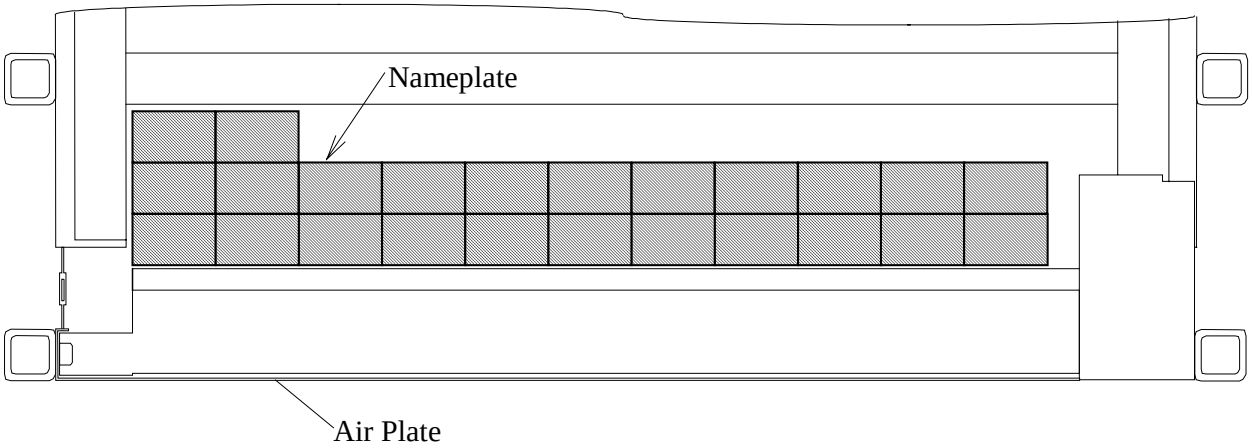


Fig. 3.19.7-5 Attachment of Nameplate

2-4 Return to General Flow

New Installation: Go to INST03-U40-20 step (4).

Non-Disruptive Installation:

- If connection of DEV interface cables (2) (DKC-F410I-EXC) Installation, go to INST03-U40-40 step (3)-6.
- If connection of DEV interface cables (2) (DKC-F410I-EXC) not Installation, go to INST03-U40-40 step (3)-10.

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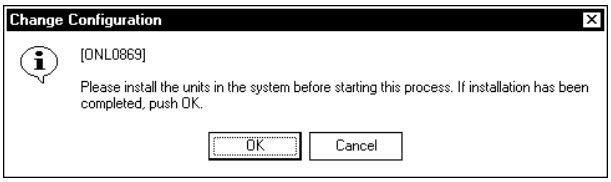
3. SVP post procedure

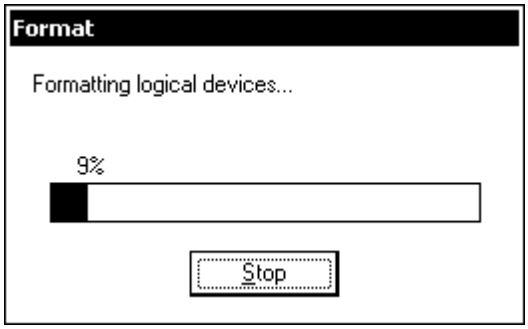
1. <Check that hardware components are installed>
   Select (CL) [OK] after making sure that all hardware components are installed correctly in response to “Please install the units in the system before starting this process. If installation has been completed, push OK.”.



   If [ONL3437E] or [ONL3438E] is displayed, please refer 2.11.1. (INST02-630)
   If [ONL3441E] or [ONL2841W] is displayed, please refer 2.11.2. (INST02-640)

2. <DKU PATH INLINE>
   When DKA is installed, “DKU PATH INLINE is now running...” is displayed.

3. <LDEV FORMAT>
   “Formatting the logical device...” is displayed when Parity Group is defined.



4. <End of system update processing>
   “Renewal process has completed. Please check the subsystem status.” is displayed when recovery processing on all installed components is completed. Select (CL) [OK] in response to this message.

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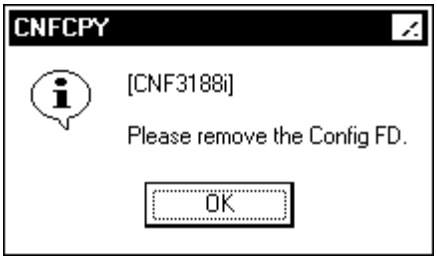
5.

"Reading subsystem configuration data..." is displayed.
"Please insert the Config FD in the FDD." is displayed.
Insert the configuration FD into FDD, and select (CL) [OK].

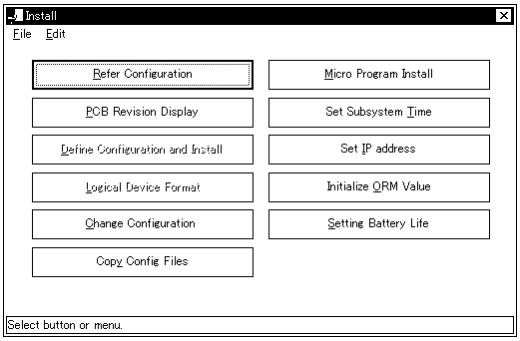
6.

When this procedure is completed, the message "Please remove the Config FD." is displayed.
Remove the FD, select (CL) [OK].



7.

After the procedure is completed, return to 'Install'.
Select (CL) [File]-[Exit].



8. <Mode Change>
Change the mode to View Mode.

9. Return to General Flow

Non-Disruptive Installation:

- If connection of DEV interface cables (2) (DKC-F410I-EXC) Installation, go to INST03-U40-40 step (3)-7.
- If connection of DEV interface cables (2) (DKC-F410I-EXC) not Installation, go to INST03-U40-40 step RETURN.

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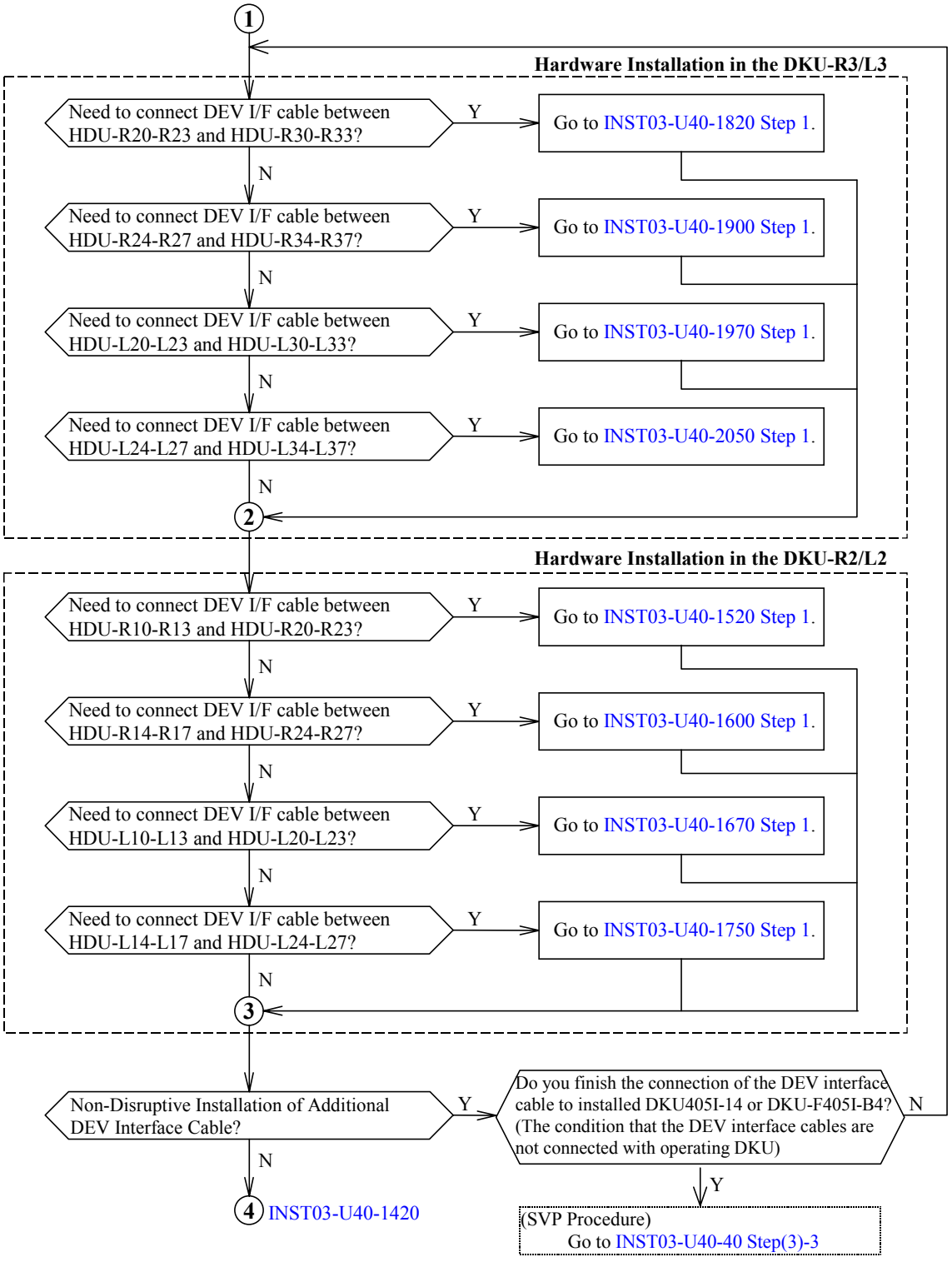
3.19.8 Connection of DEV Interface Cable 2 (DKU-F405I-EXC)

Installation General Flow

NOTICE: Repeat the work until all DEV interface cables (DKU-F405I-EXC) are installed.



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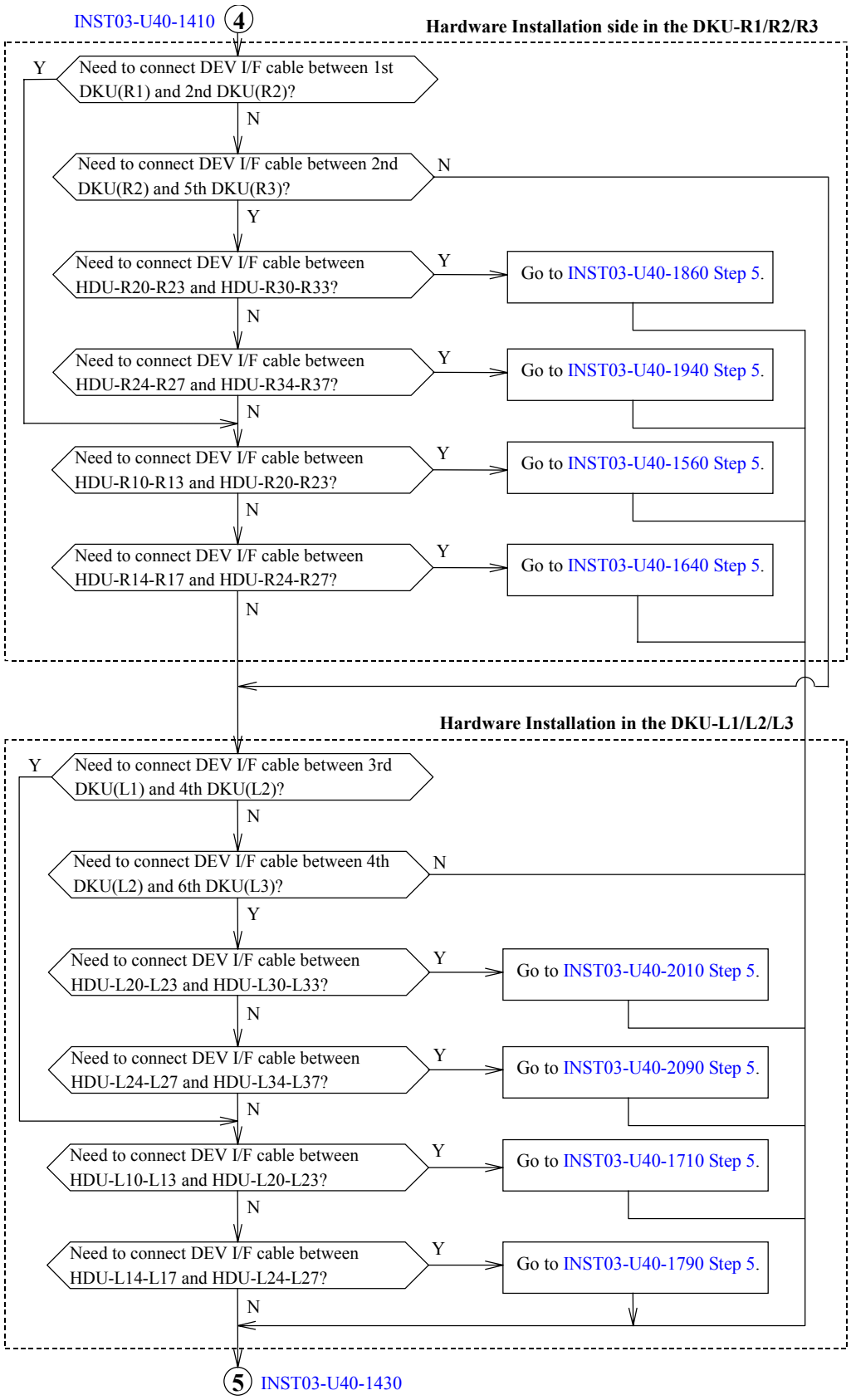

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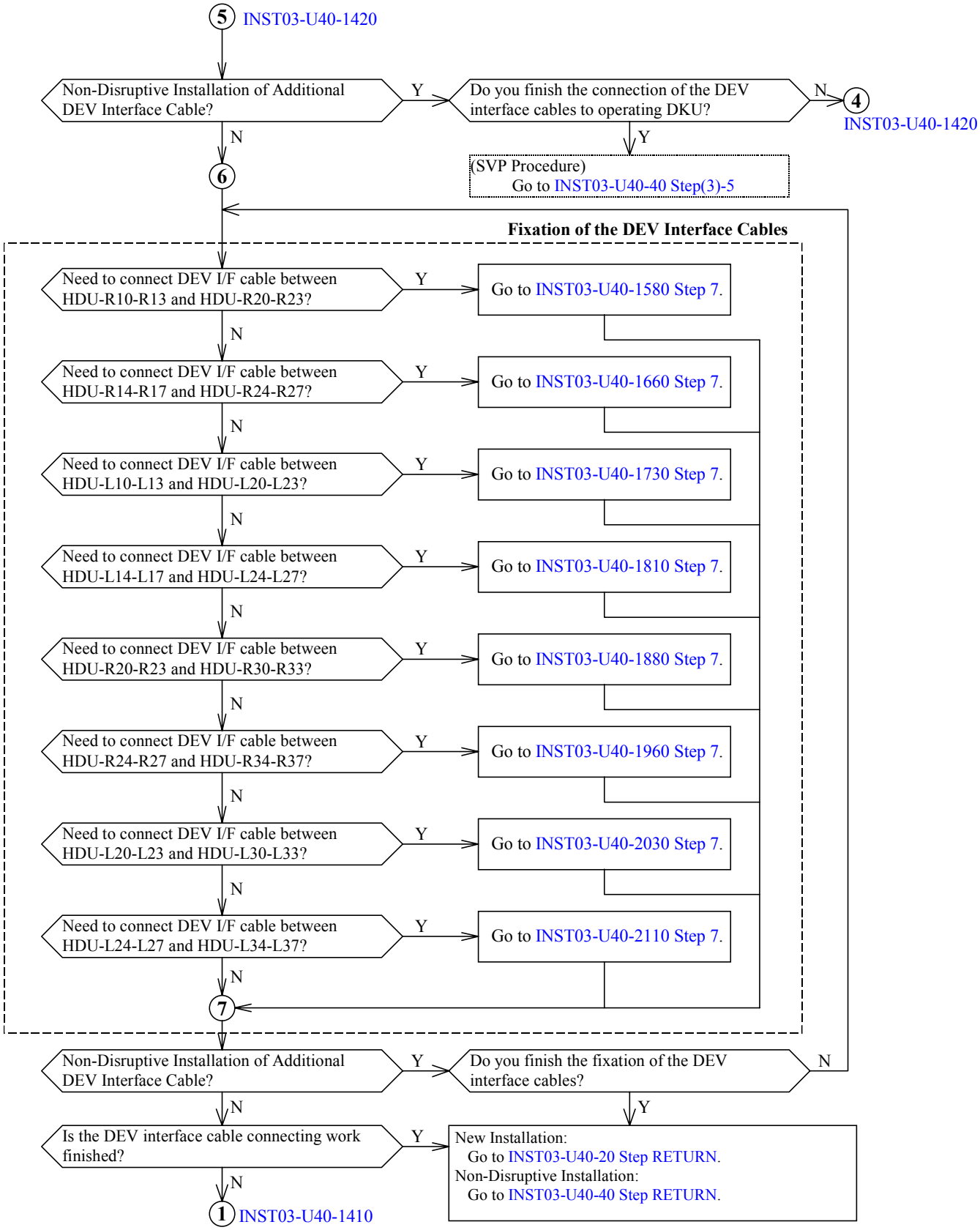

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3.19.8.1 Flowchart

The connection procedure of the DEV I/F cable (DKU-F405I-EXC) is shown below. You must perform the operations actually after referring to the details of the procedure.

1. Connection Procedure of DEV Interface Cables between DKU-R1 (HDU-R10-R13) and DKU-R2 (HDU-R20-R23) Frames ---------- [INST03-U40-1520]

(1) Loosen the screws and remove the cable covers ① and ② from the DKU frames.

↓

(2) Loosen the screws and remove the side plates from the DKU frames.

↓

(3) Connect the DEV interface cables to the FSW PCBs in the DKU-R2 frame.

↓

(4) Return to flow when connecting the additional DEV interface cable while the sub-system is in operation. Go to next step when connecting the additional DEV interface cable with the sub-system switched off.

↓

(5) Connect the DEV interface cables to the FSW PCBs in the DKU-R1 frame.

↓

(6) Return to flow when connecting the additional DEV interface cable while the sub-system is in operation. Go to next step when connecting the additional DEV interface cable with the sub-system switched off.

↓

(7) Attach the side plates in the reverse order of Step 2.

↓

(8) Attach the cable covers ① and ② with the screws to fix the DEV Interface cables.

(9) Attach the nameplate to the DKU-R2 frame.

↓

(10) When the DKU-R2 frame consists of 4 HDU boxes, fix the rest of the DEV interface cables in the DKU-R2 frame.

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2. Connection Procedure of DEV Interface Cables between DKU-R1 (HDU-R14-R17) and DKU-R2 (HDU-R24-R27) Frames ---------- [INST03-U40-1600]

(1) Loosen the screws and remove the cable covers ① and ② from the DKU frames.

↓

(2) Loosen the screws and remove the side plates from the DKU frames.

↓

(3) Connect the DEV interface cables to the FSW PCBs in the DKU-R2 frame.

↓

(4) Return to flow when connecting the additional DEV interface cable while the sub-system is in operation. Go to next step when connecting the additional DEV interface cable with the sub-system switched off.

↓

(5) Connect the DEV interface cables to the FSW PCBs in the DKU-R1 frame.

↓

(6) Return to flow when connecting the additional DEV interface cable while the sub-system is in operation. Go to next step when connecting the additional DEV interface cable with the sub-system switched off.

↓

(7) Attach the side plates in the reverse order of Step 2.

↓

(8) Attach the cable covers ① and ② with the screws to fix the DEV Interface cables.

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3. Connection Procedure of DEV Interface Cables between DKU-L1 (HDU-L10-L13) and DKU-L2 (HDU-L20-L23) Frames ---------- [INST03-U40-1670]

(1) Loosen the screws and remove the cable covers ① and ② from the DKU frames.

↓

(2) Loosen the screws and remove the side plates from the DKU frames.

↓

(3) Connect the DEV interface cables to the FSW PCBs in the DKU-L2 frame.

↓

(4) Return to flow when connecting the additional DEV interface cable while the sub-system is in operation. Go to next step when connecting the additional DEV interface cable with the sub-system switched off.

↓

(5) Connect the DEV interface cables to the FSW PCBs in the DKU-L1 frame.

↓

(6) Return to flow when connecting the additional DEV interface cable while the sub-system is in operation. Go to next step when connecting the additional DEV interface cable with the sub-system switched off.

↓

(7) Attach the side plates in the reverse order of Step 2.

↓

(8) Attach the cable covers ① and ② with the screws to fix the DEV Interface cables.

↓

(9) Attach the nameplate to the DKU-L2 frame.

↓

(10) When the DKU-L2 frame consists of 4 HDU boxes, fix the rest of the DEV interface cables in the DKU-L2 frame.

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4. Connection Procedure of DEV Interface Cables between DKU-L1 (HDU-L14-L17) and DKU-L2 (HDU-L24-L27) Frames ---------- [INST03-U40-1750]

(1) Loosen the screws and remove the cable covers ① and ② from the DKU frames.

↓

(2) Loosen the screws and remove the side plates from the DKU frames.

↓

(3) Connect the DEV interface cables to the FSW PCBs in the DKU-L2 frame.

↓

(4) Return to flow when connecting the additional DEV interface cable while the sub-system is in operation. Go to next step when connecting the additional DEV interface cable with the sub-system switched off.

↓

(5) Connect the DEV interface cables to the FSW PCBs in the DKU-L1 frame.

↓

(6) Return to flow when connecting the additional DEV interface cable while the sub-system is in operation. Go to next step when connecting the additional DEV interface cable with the sub-system switched off.

↓

(7) Attach the side plates in the reverse order of Step 2.

↓

(8) Attach the cable covers ① and ② with the screws to fix the DEV Interface cables.

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5. Connection Procedure of DEV Interface Cables between DKU-R2 (HDU-R20-R23) and DKU-R3 (HDU-R30-R33) Frames ---------- [INST03-U40-1820]

(1) Loosen the screws and remove the cable covers ① and ② from the DKU frames.

↓

(2) Loosen the screws and remove the side plates from the DKU frames.

↓

(3) Connect the DEV interface cables to the FSW PCBs in the DKU-R3 frame.

↓

(4) Return to flow when connecting the additional DEV interface cable while the sub-system is in operation. Go to next step when connecting the additional DEV interface cable with the sub-system switched off.

↓

(5) Connect the DEV interface cables to the FSW PCBs in the DKU-R2 frame.

↓

(6) Return to flow when connecting the additional DEV interface cable while the sub-system is in operation. Go to next step when connecting the additional DEV interface cable with the sub-system switched off.

↓

(7) Attach the side plates in the reverse order of Step 2.

↓

(8) Attach the cable covers ① and ② with the screws to fix the DEV Interface cables.

↓

(9) Attach the nameplate to the DKU-R3 frame.

↓

(10) When the DKU-R3 frame consists of 4 HDU boxes, fix the rest of the DEV interface cables in the DKU-R3 frame.

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6. Connection Procedure of DEV Interface Cables between DKU-R2 (HDU-R24-R27) and DKU-R3 (HDU-R34-R37) Frames ---------- [INST03-U40-1900]

(1) Loosen the screws and remove the cable covers ① and ② from the DKU frames.

↓

(2) Loosen the screws and remove the side plates from the DKU frames.

↓

(3) Connect the DEV interface cables to the FSW PCBs in the DKU-R3 frame.

↓

(4) Return to flow when connecting the additional DEV interface cable while the sub-system is in operation. Go to next step when connecting the additional DEV interface cable with the sub-system switched off.

↓

(5) Connect the DEV interface cables to the FSW PCBs in the DKU-R2 frame.

↓

(6) Return to flow when connecting the additional DEV interface cable while the sub-system is in operation. Go to next step when connecting the additional DEV interface cable with the sub-system switched off.

↓

(7) Attach the side plates in the reverse order of Step 2.

↓

(8) Attach the cable covers ① and ② with the screws to fix the DEV Interface cables.

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7. Connection Procedure of DEV Interface Cables between DKU-L2 (HDU-L20-L23) and DKU-L3 (HDU-L30-L33) Frames ---------- [INST03-U40-1970]

(1) Loosen the screws and remove the cable covers ① and ② from the DKU frames.

↓

(2) Loosen the screws and remove the side plates from the DKU frames.

↓

(3) Connect the DEV interface cables to the FSW PCBs in the DKU-L3 frame.

↓

(4) Return to flow when connecting the additional DEV interface cable while the sub-system is in operation. Go to next step when connecting the additional DEV interface cable with the sub-system switched off.

↓

(5) Connect the DEV interface cables to the FSW PCBs in the DKU-L2 frame.

↓

(6) Return to flow when connecting the additional DEV interface cable while the sub-system is in operation. Go to next step when connecting the additional DEV interface cable with the sub-system switched off.

↓

(7) Attach the side plates in the reverse order of Step 2.

↓

(8) Attach the cable covers ① and ② with the screws to fix the DEV Interface cables.

↓

(9) Attach the nameplate to the DKU-L3 frame.

↓

(10) When the DKU-L3 frame consists of 4 HDU boxes, fix the rest of the DEV interface cables in the DKU-L3 frame.

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8. Connection Procedure of DEV Interface Cables between DKU-L2 (HDU-L24-L27) and DKU-L3 (HDU-L34-L37) Frames ---------- [INST03-U40-2050]

(1) Loosen the screws and remove the cable covers ① and ② from the DKU frames.

↓

(2) Loosen the screws and remove the side plates from the DKU frames.

↓

(3) Connect the DEV interface cables to the FSW PCBs in the DKU-L3 frame.

↓

(4) Return to flow when connecting the additional DEV interface cable while the sub-system is in operation. Go to next step when connecting the additional DEV interface cable with the sub-system switched off.

↓

(5) Connect the DEV interface cables to the FSW PCBs in the DKU-L2 frame.

↓

(6) Return to flow when connecting the additional DEV interface cable while the sub-system is in operation. Go to next step when connecting the additional DEV interface cable with the sub-system switched off.

↓

(7) Attach the side plates in the reverse order of Step 2.

↓

(8) Attach the cable covers ① and ② with the screws to fix the DEV Interface cables.

3.19.8.2 Parts List

Table 3.19.8.2-1 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKU-F405I-EXC	DEV Interface Cable 2 (FC)	5502402-A-R	16	
		DEV Interface Cable 2 (LED)	5502403-A-R	16	
		DKUMN Cable	5485589-517, 518	2	
		Nameplate	2103570-2	1	
			2103575-2	1	

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3.19.8.3 Connection Procedure of DEV Interface Cables (In case of HDU-R23 from R20)

1. Loosen the screws and remove the cable covers ① and ② from the DKU frames.

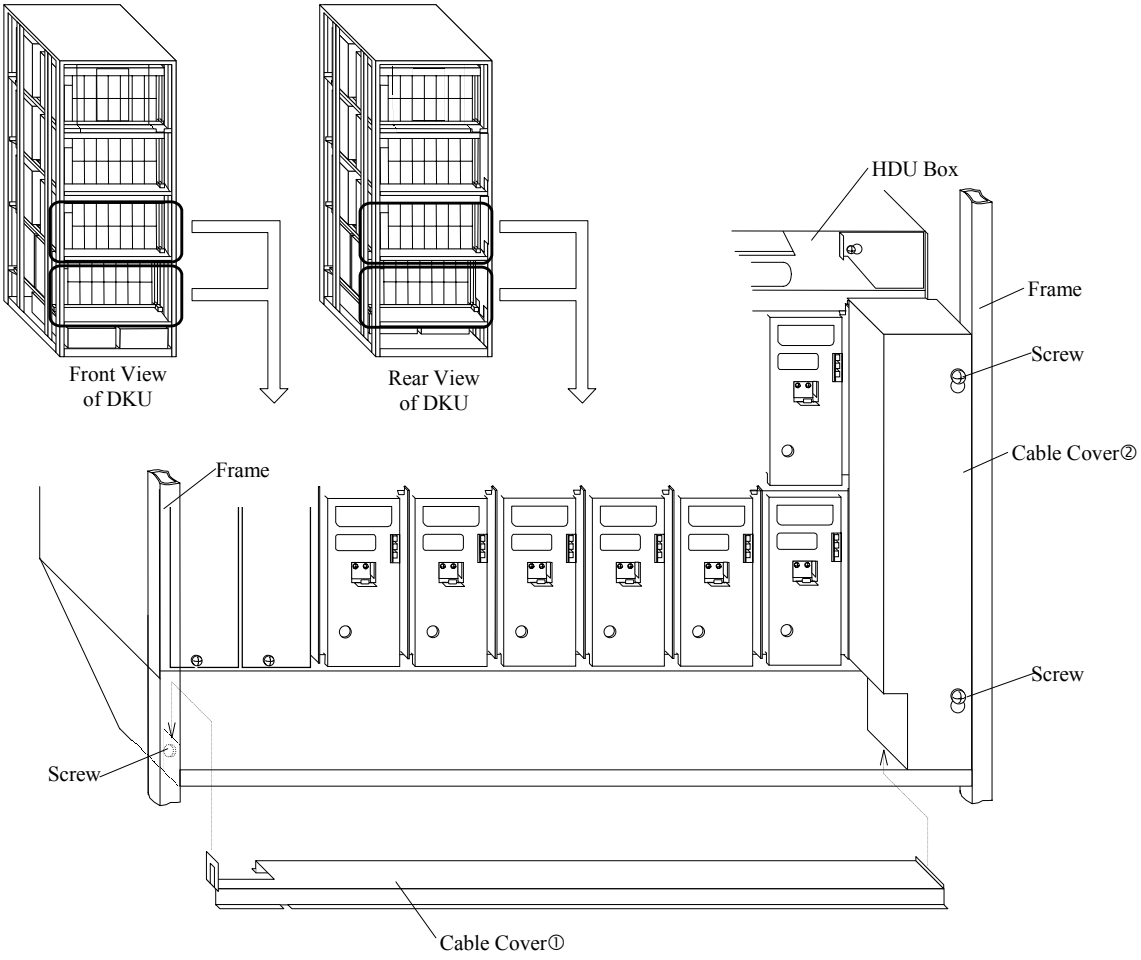

Fig. 3.19.8.3-1 Removal of Cable Covers

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2. Loosen the screws and remove the side plates from the DKU frames.

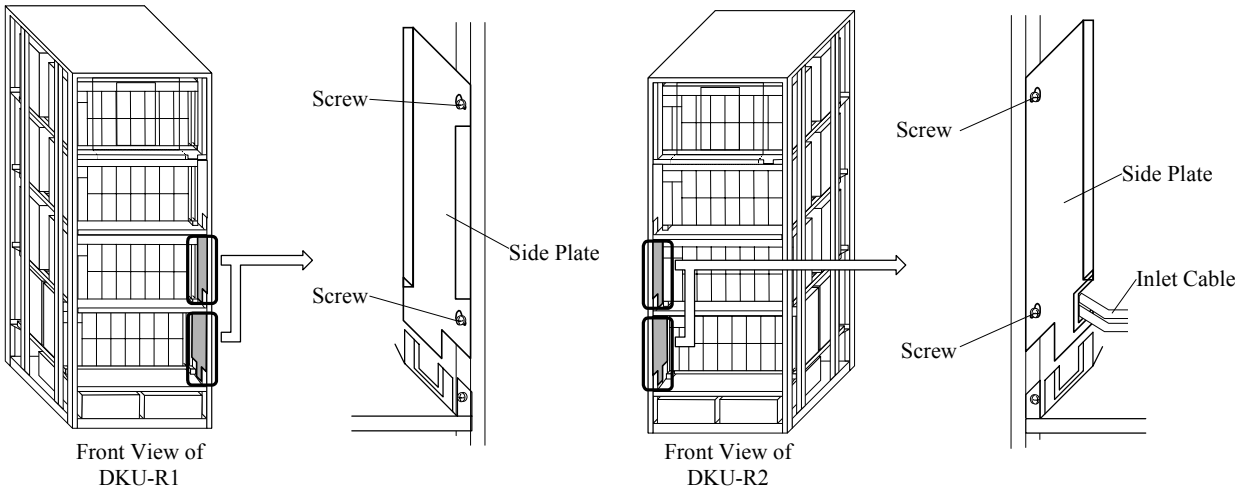

Fig. 3.19.8.3-2 Removal of Side Plates (Front View)

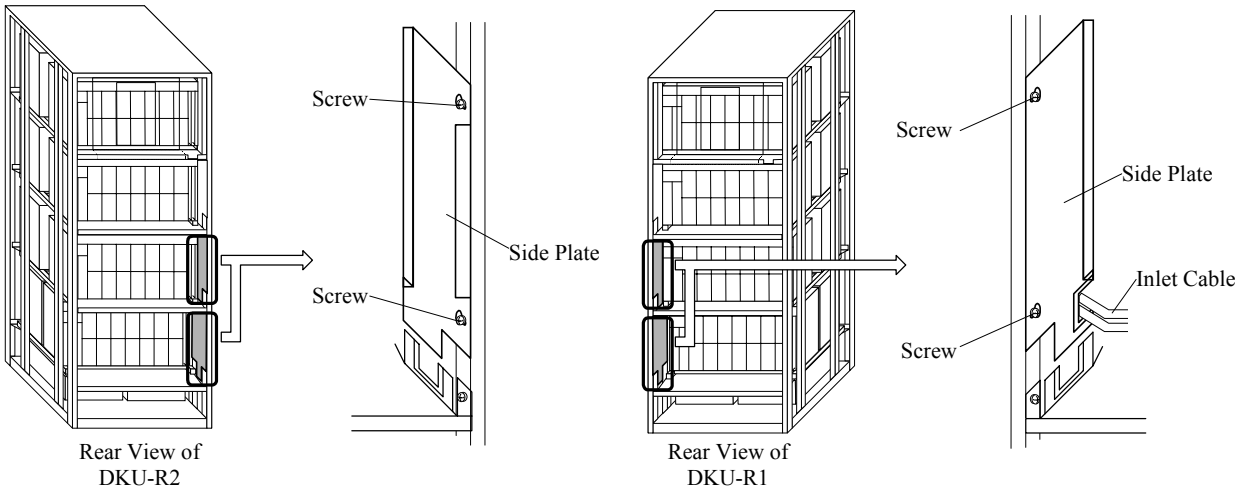

Fig. 3.19.8.3-3 Removal of Side Plates (Rear View)

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3. Connect the DEV interface cables to the FSW PCBs in the DKU-R2 frame referring to figures 3.19.8.3-4 and 3.19.8.3-5.

⚠ CAUTION

Precaution against a cutting of a cable : When installing a cable with no protector, take care not to get it cut by letting it caught by a sharp edge of a sheet metal part, etc.

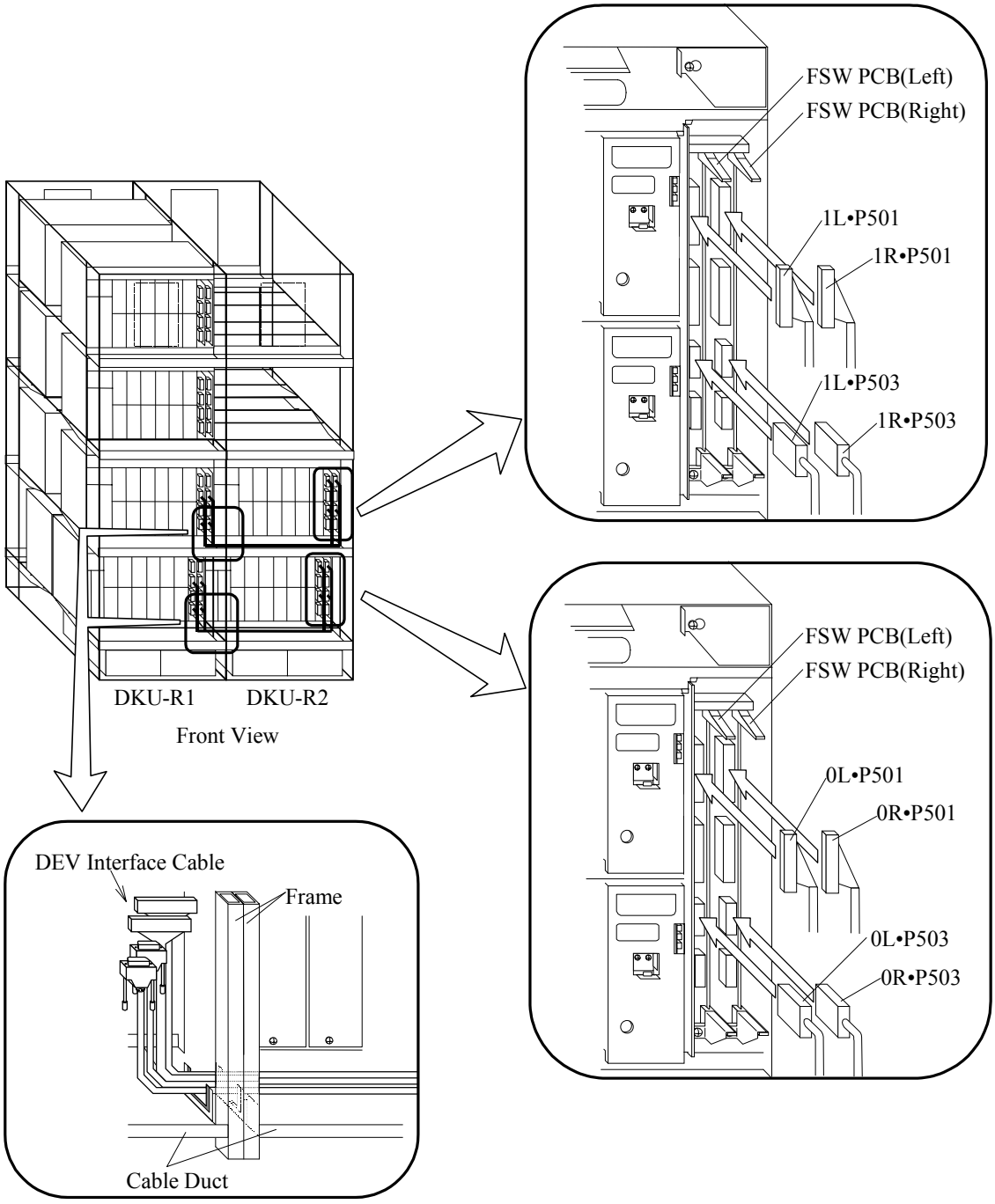

Fig. 3.19.8.3-4 Connection of the DEV Interface Cables

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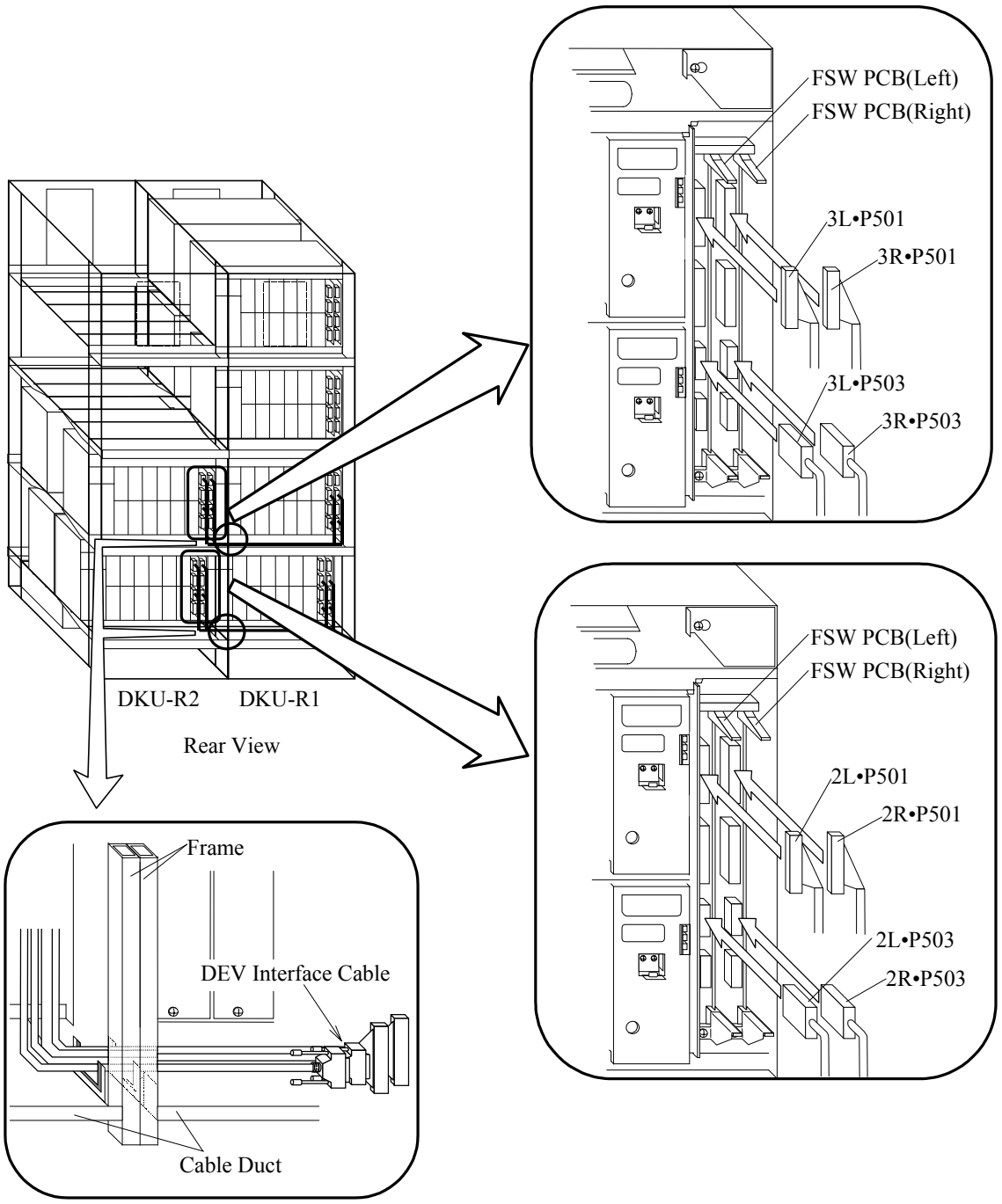

Fig. 3.19.8.3-5 Connection of the DEV Interface Cables

4. Return to INST03-U40-1410 ③ when connecting the additional DEV interface cable while the sub-system is in operation. Go to INST03-U40-1560 when connecting the additional DEV interface cable with the sub-system switched off.

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5. Connect the DEV interface cables to the FSW PCBs in the DKU-R1 frame referring to figures 3.19.8.3-6 and 3.19.8.3-7.

⚠ CAUTION

Precaution against a cutting of a cable : When installing a cable with no protector, take care not to get it cut by letting it caught by a sharp edge of a sheet metal part, etc.

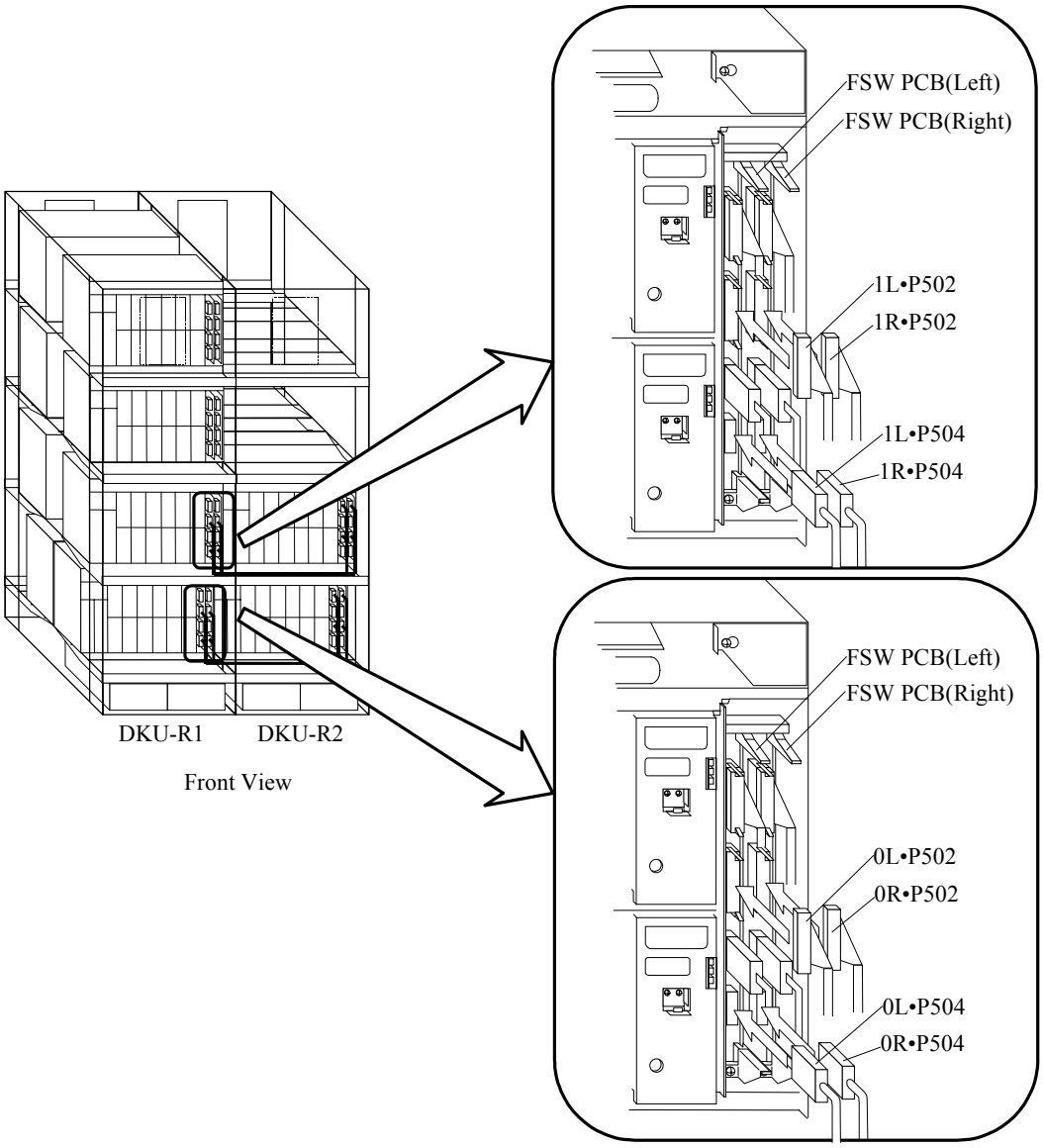

Fig. 3.19.8.3-6 Connection of the DEV Interface Cables

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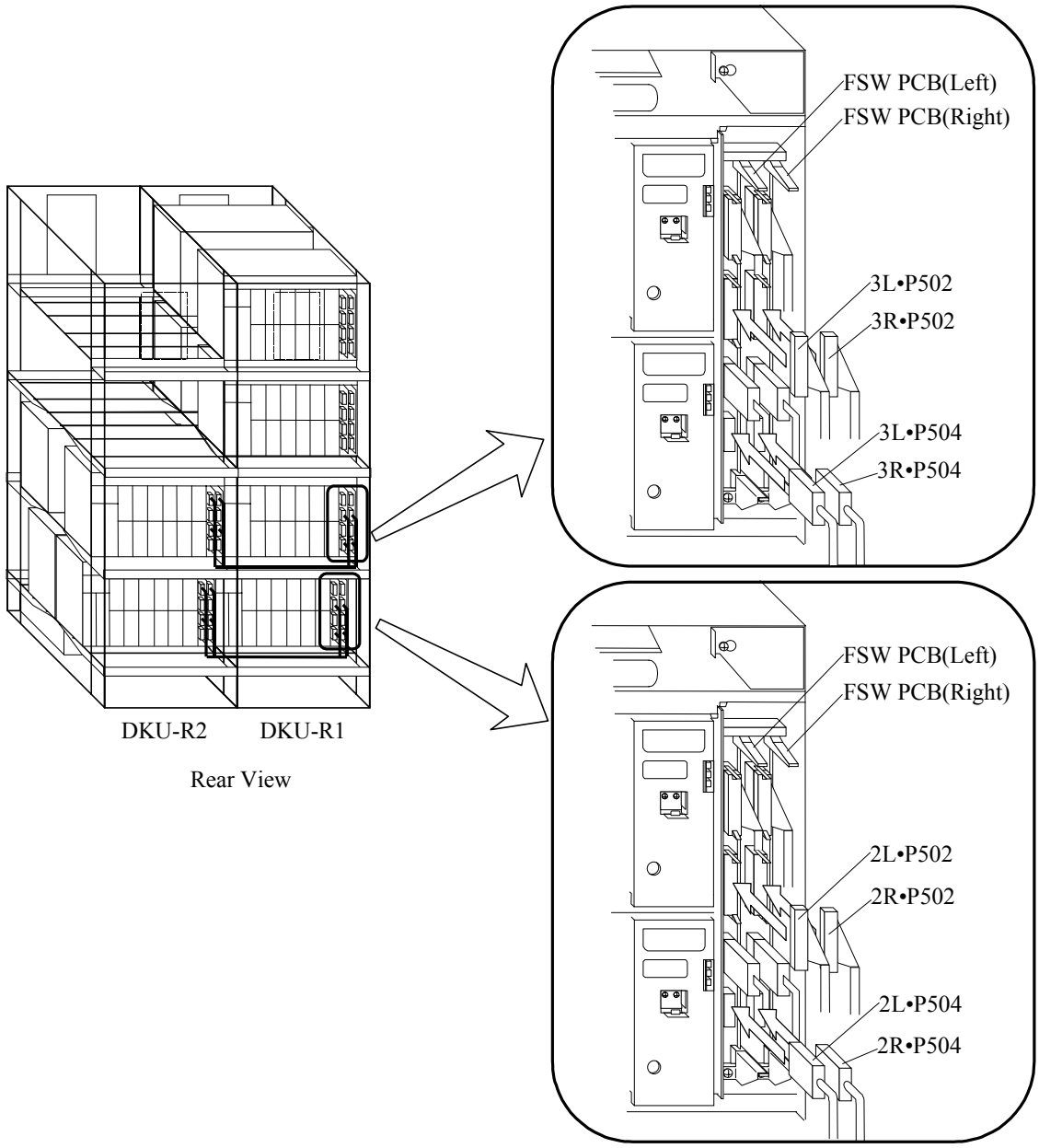

Fig. 3.19.8.3-7 Connection of the DEV Interface Cables

6. Return to INST03-U40-1430 ⑤ when connecting the additional DEV interface cable while the sub-system is in operation. Go to INST03-U40-1580 when connecting the additional DEV interface cable with the sub-system switched off.

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7. Attach the side plates in the reverse order of Step 2.
8. Attach the cable covers ① and ② with the screw to fix the DEV Interface Cables.

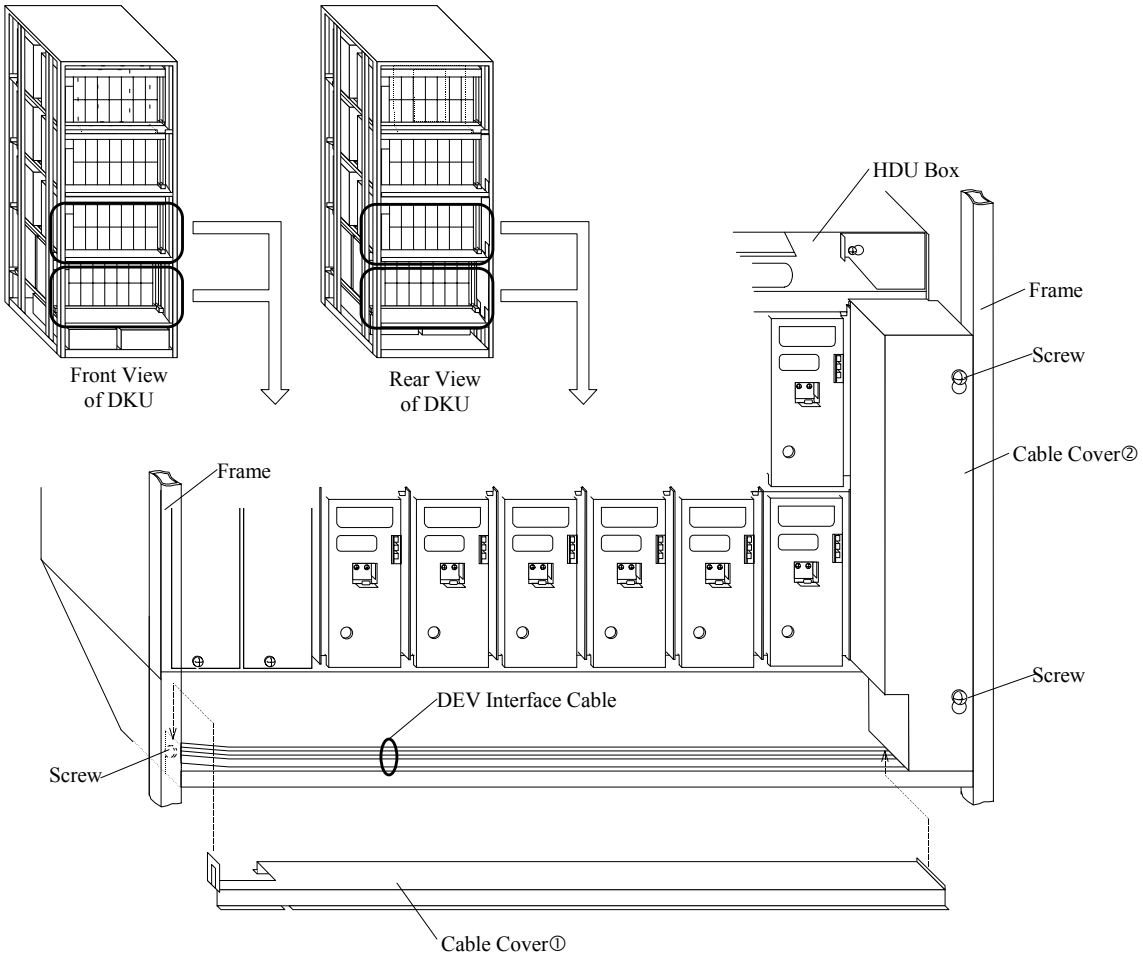

Fig. 3.19.8.3-8 Fixation of the DEV Interface Cables

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9. Attach the nameplate to the DKU-R2 frame.

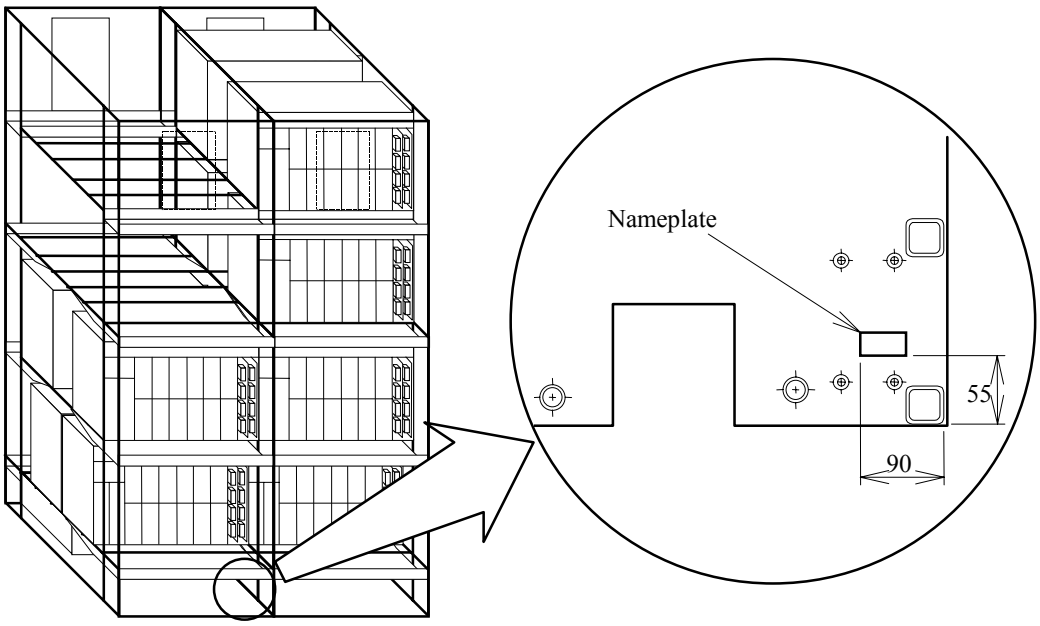

Fig. 3.19.8.3-9 Attachment of the Nameplate

10. When the DKU-R2 frame consists of 4 HDU boxes, fix the rest of the DEV interface cables in the DKU-R2 frame with the binders.

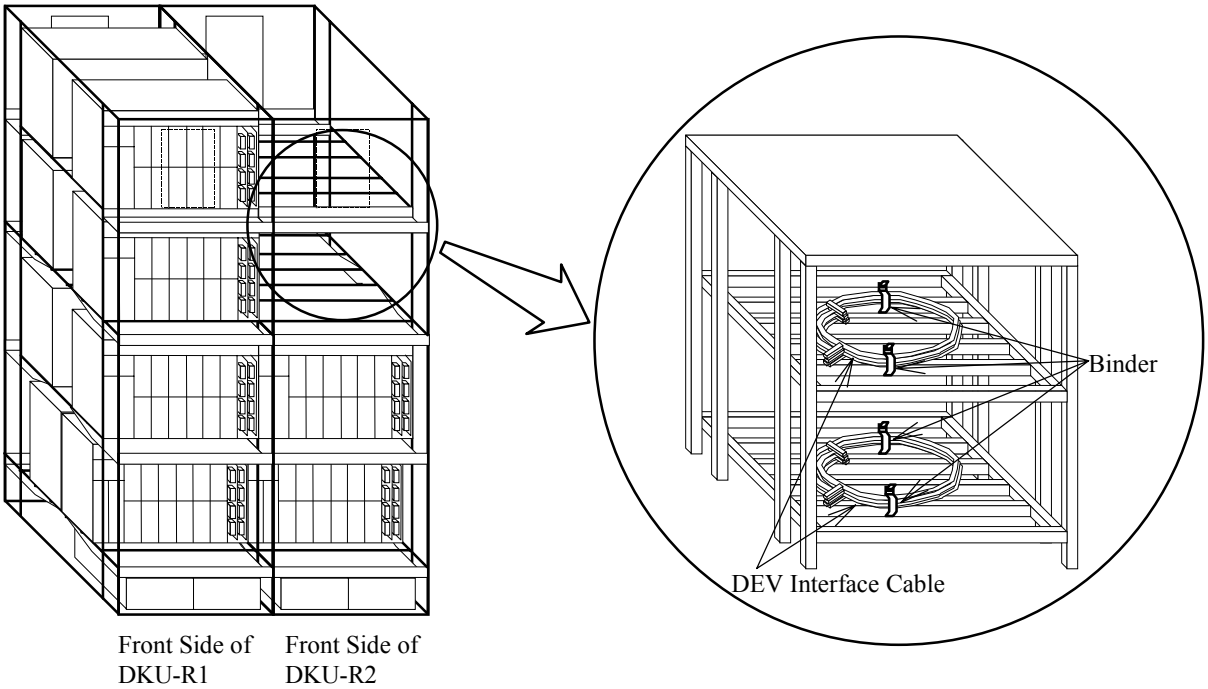

Fig. 3.19.8.3-10 Fixation of the DEV Interface Cables

11. Go to INST03-U40-1430 Step ⑦.

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3.19.8.4 Connection Procedure of DEV Interface Cables (In case of HDU-R27 from R24)

1. Loosen the screws and remove the cable covers ① and ② from the DKU frames.

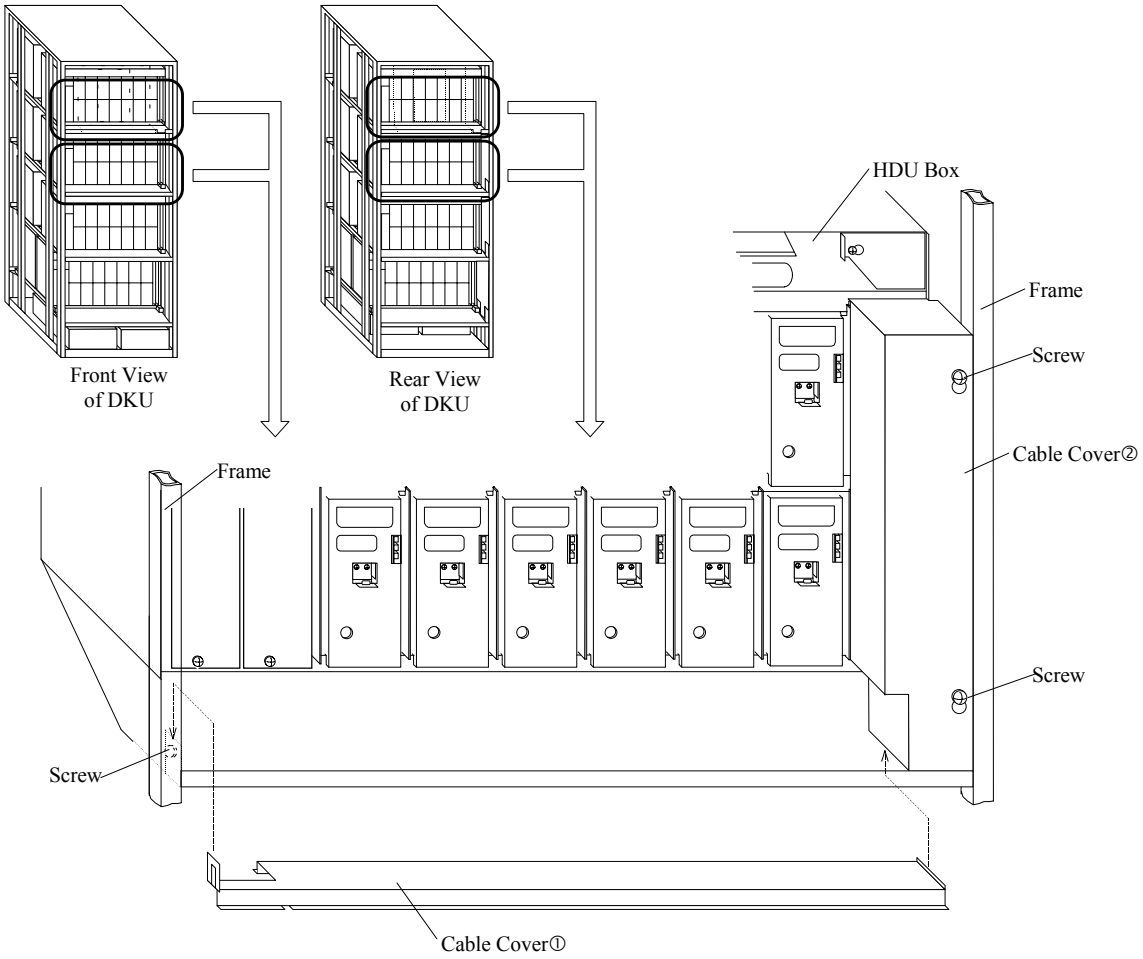

Fig. 3.19.8.4-1 Removal of Cable Covers

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2. Loosen the screws and remove the side plates from the DKU frames.

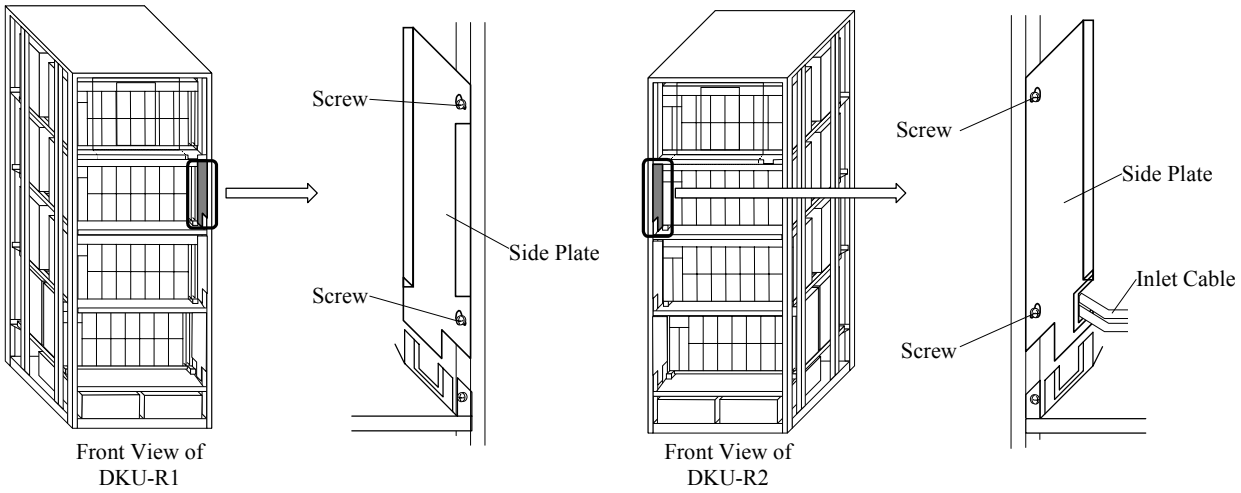

Fig. 3.19.8.4-2 Removal of Side Plates (Front View)

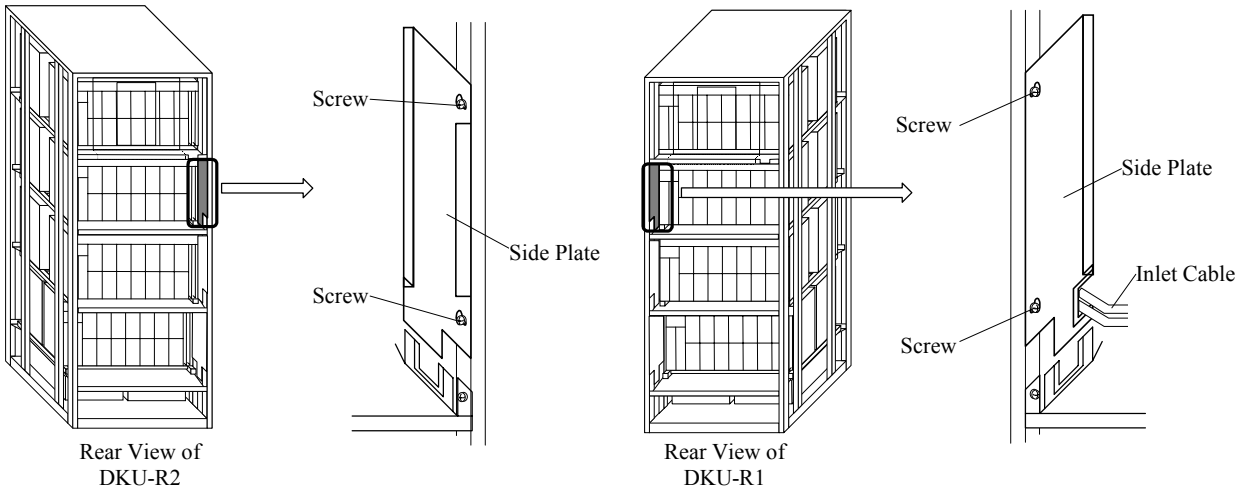

Fig. 3.19.8.4-3 Removal of Side Plates (Rear View)

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3. Connect the DEV interface cables to the FSW PCBs in the DKU-R2 frame referring to figures 3.19.8.4-4 and 3.19.8.4-5.

⚠ CAUTION

Precaution against a cutting of a cable : When installing a cable with no protector, take care not to get it cut by letting it caught by a sharp edge of a sheet metal part, etc.

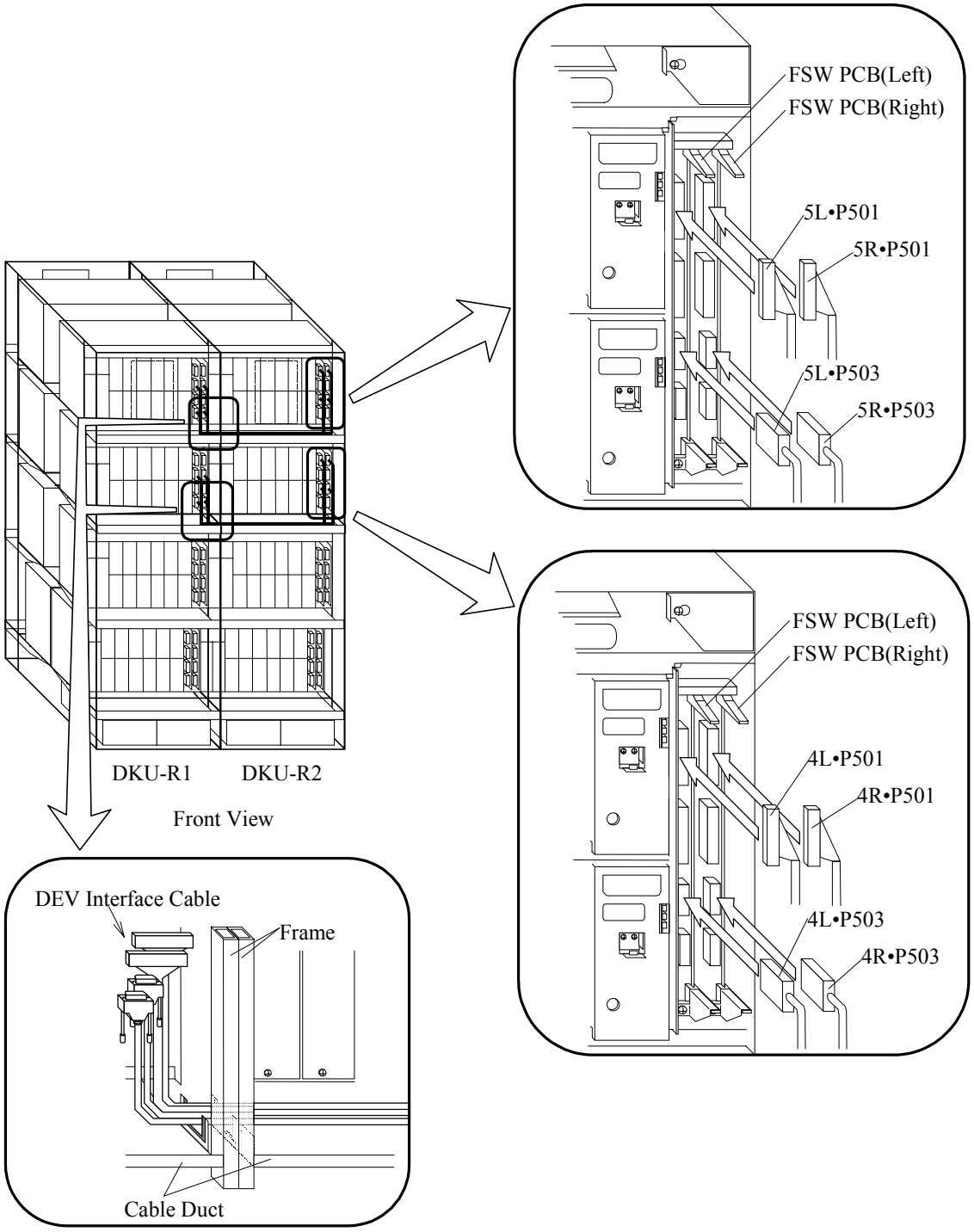

Fig. 3.19.8.4-4 Connection of the DEV Interface Cables

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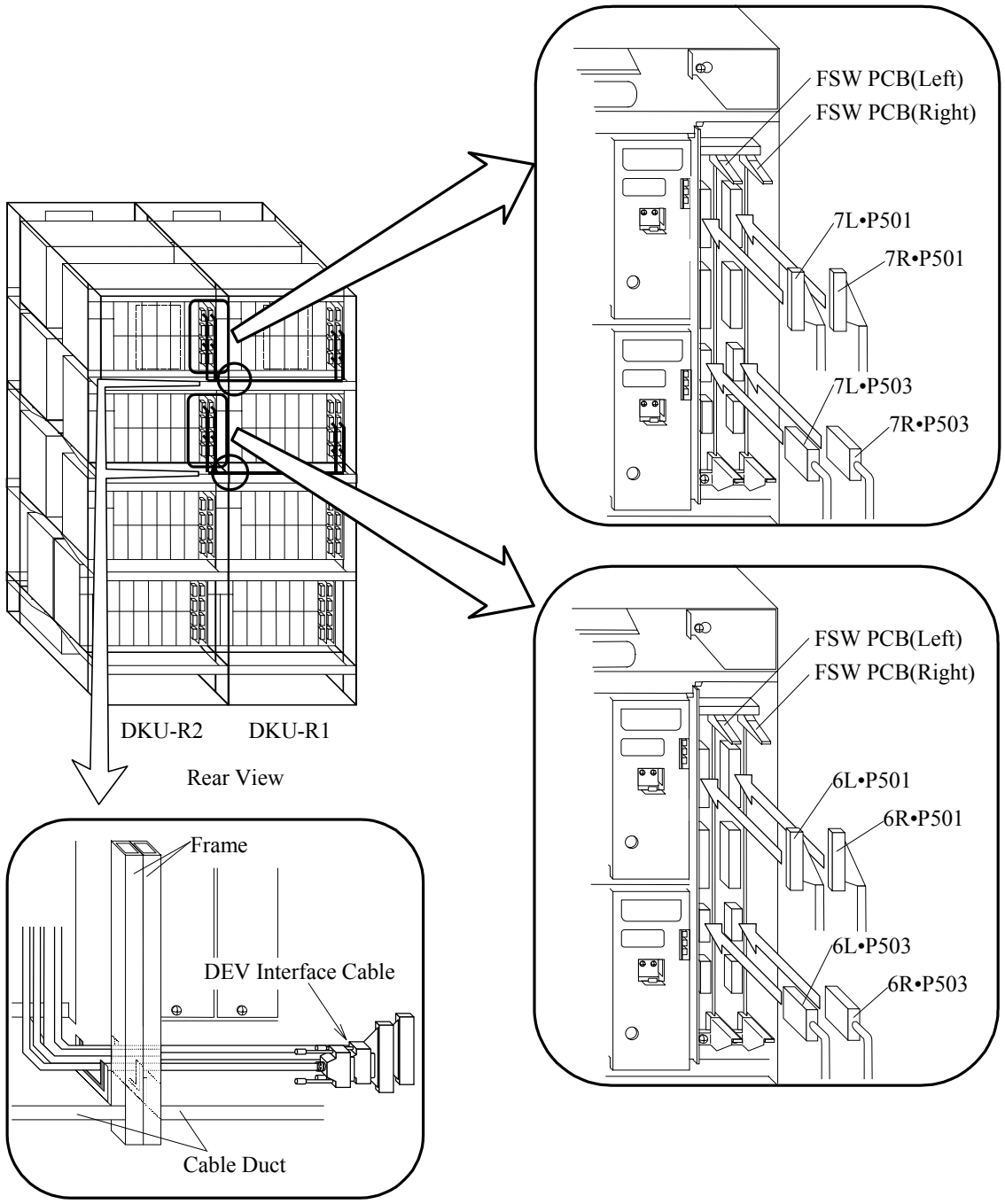

Fig. 3.19.8.4-5 Connection of the DEV Interface Cables

4. Return to INST03-U40-1410 ③ when connecting the additional DEV interface cable while the sub-system is in operation. Go to INST03-U40-1640 when connecting the additional DEV interface cable with the sub-system switched off.

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5. Connect the DEV interface cables to the FSW PCBs in the DKU-R1 frame referring to figures 3.19.8.4-6 and 3.19.8.4-7.

⚠ CAUTION

Precaution against a cutting of a cable : When installing a cable with no protector, take care not to get it cut by letting it caught by a sharp edge of a sheet metal part, etc.

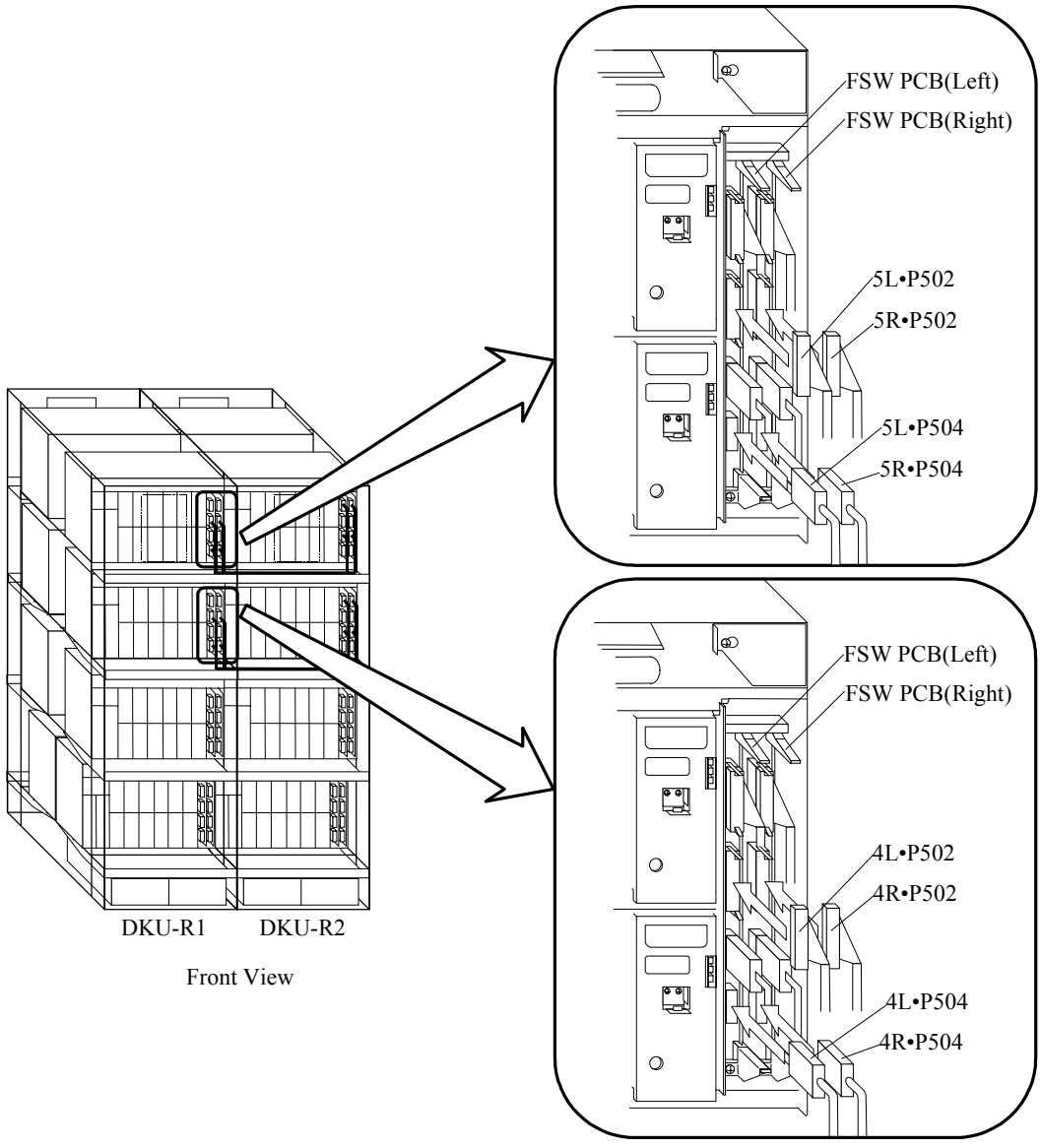

Fig. 3.19.8.4-6 Connection of the DEV Interface Cables

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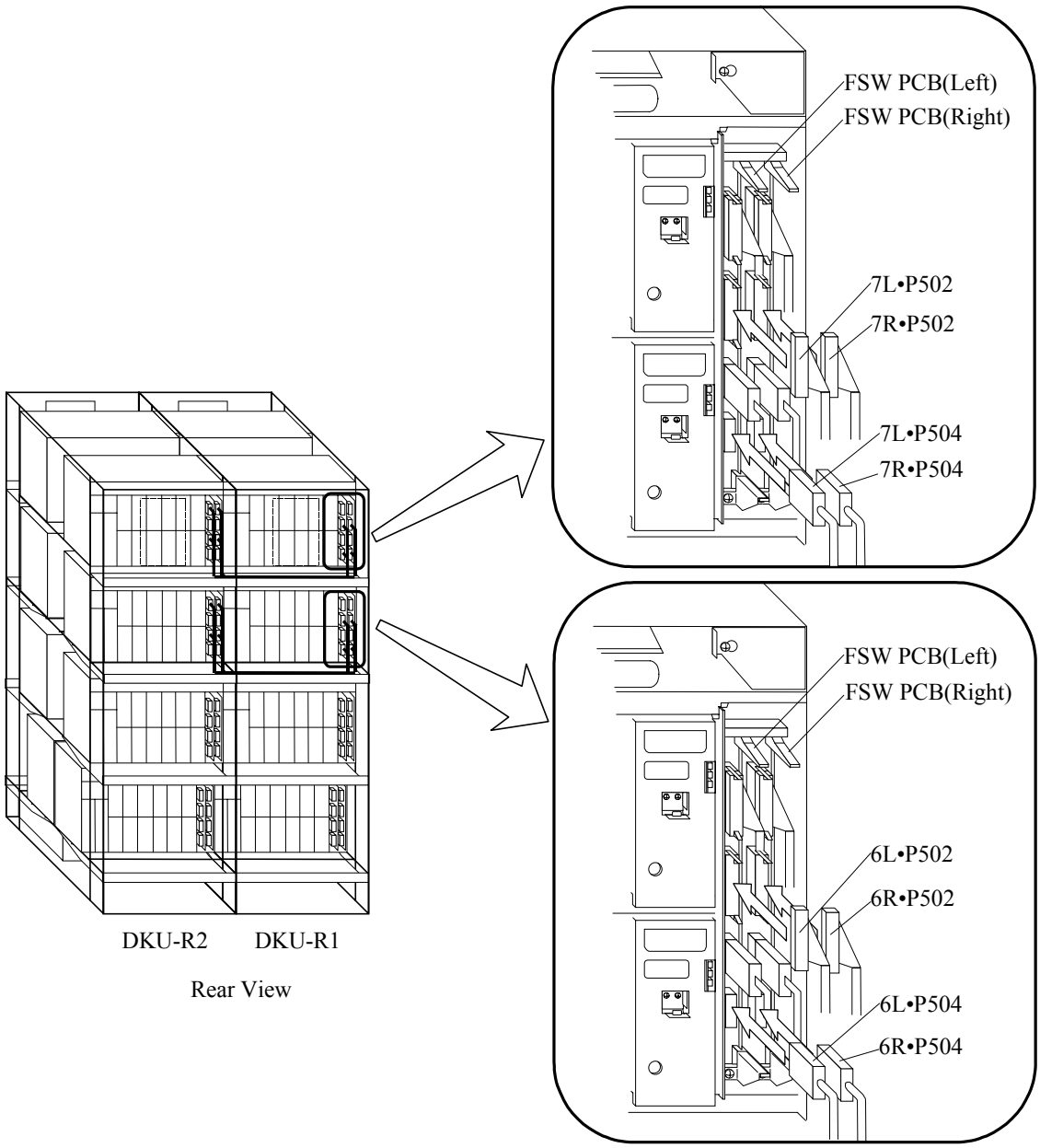

Fig. 3.19.8.4-7 Connection of the DEV Interface Cables

6. Return to INST03-U40-1430 ⑤ when connecting the additional DEV interface cable while the sub-system is in operation. Go to INST03-U40-1660 when connecting the additional DEV interface cable with the sub-system switched off.

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7. Attach the side plates in the reverse order of Step 2.
8. Attach the cable covers ① and ② with the screw to fix the DEV Interface Cables.

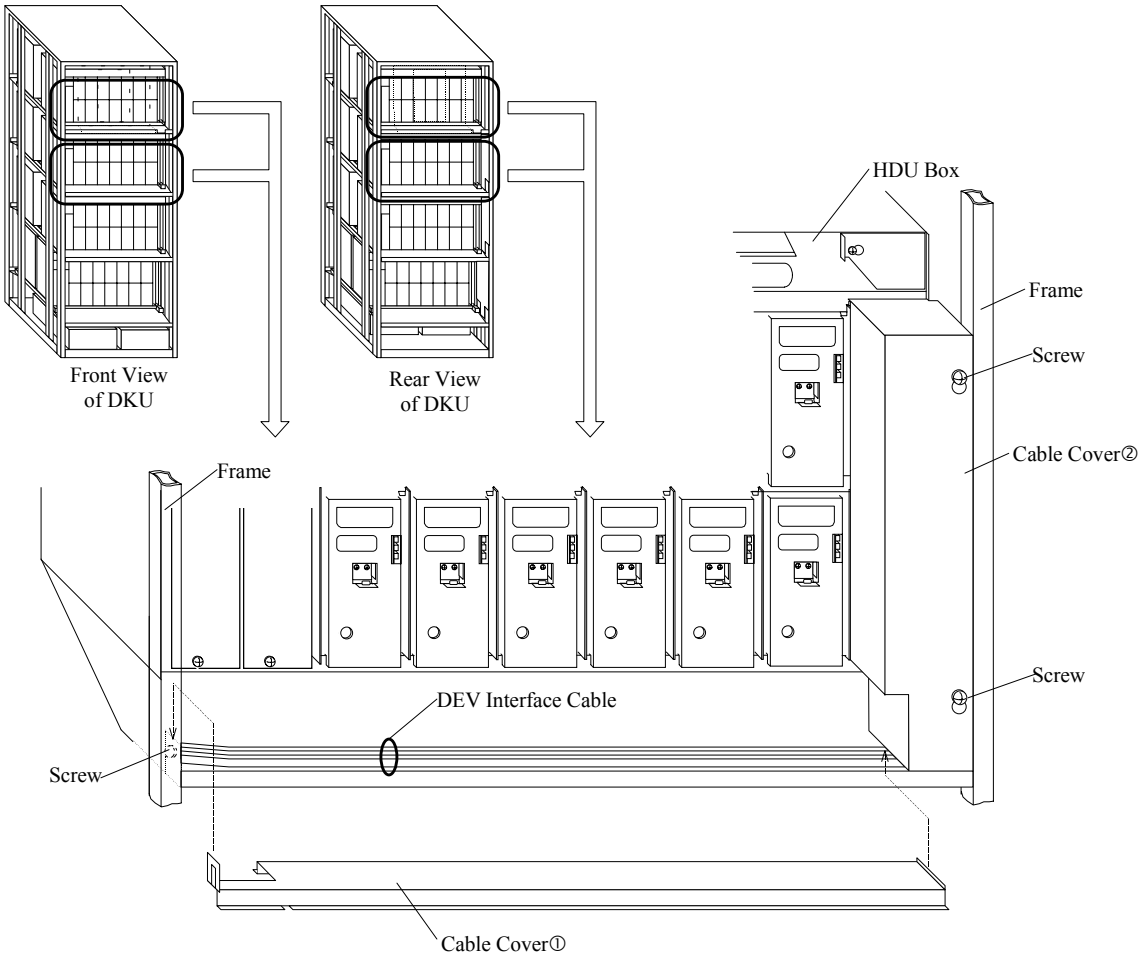

Fig. 3.19.8.4-8 Fixation of the DEV Interface Cables

9. Go to INST03-U40-1430 Step ⑦.

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3.19.8.5 Connection Procedure of DEV Interface Cables (In case of HDU-L23 from L20)

1. Loosen the screws and remove the cable covers ① and ② from the DKU frames.

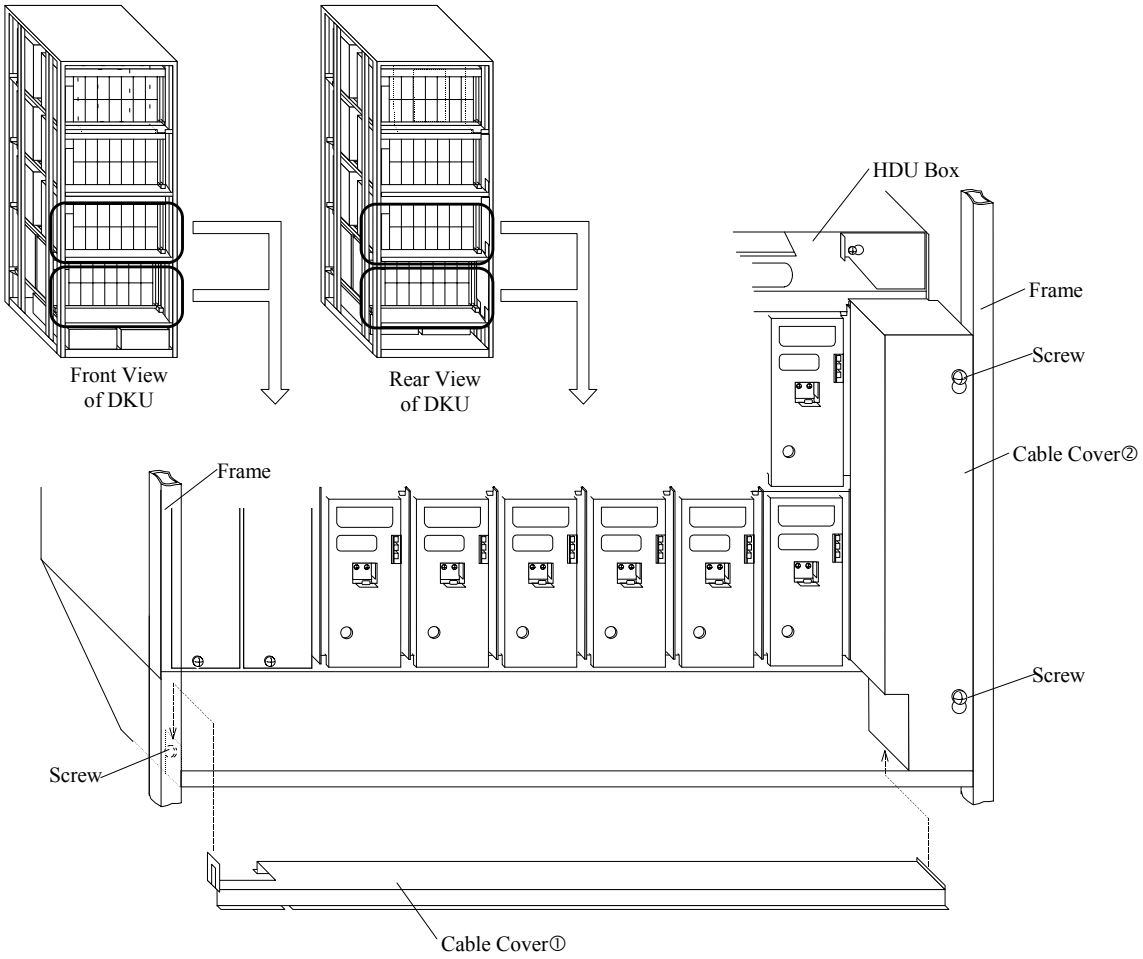

Fig. 3.19.8.5-1 Removal of Cable Covers

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2. Loosen the screws and remove the side plates from the DKU frames.

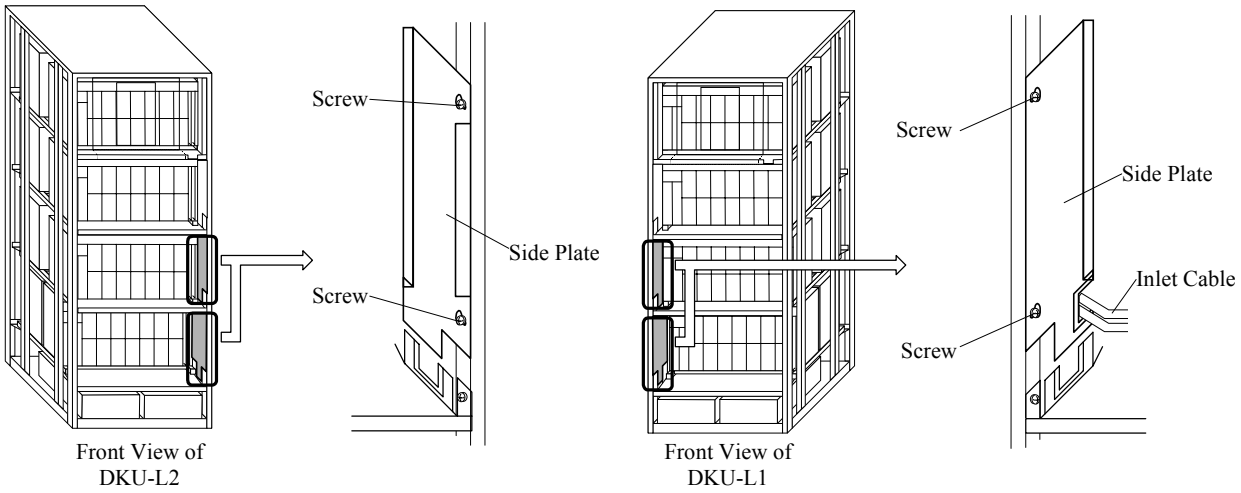

Fig. 3.19.8.5-2 Removal of Side Plates (Front View)

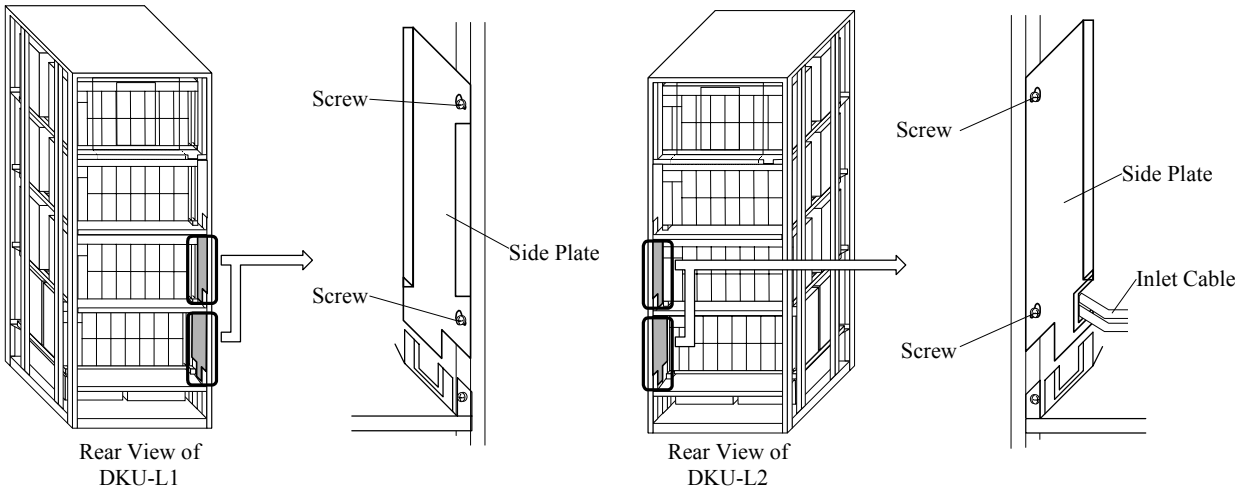

Fig. 3.19.8.5-3 Removal of Side Plates (Rear View)

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3. Connect the DEV interface cables to the FSW PCBs in the DKU-L2 frame referring to figures 3.19.8.5-4 and 3.19.8.5-5.

⚠ CAUTION

Precaution against a cutting of a cable : When installing a cable with no protector, take care not to get it cut by letting it caught by a sharp edge of a sheet metal part, etc.

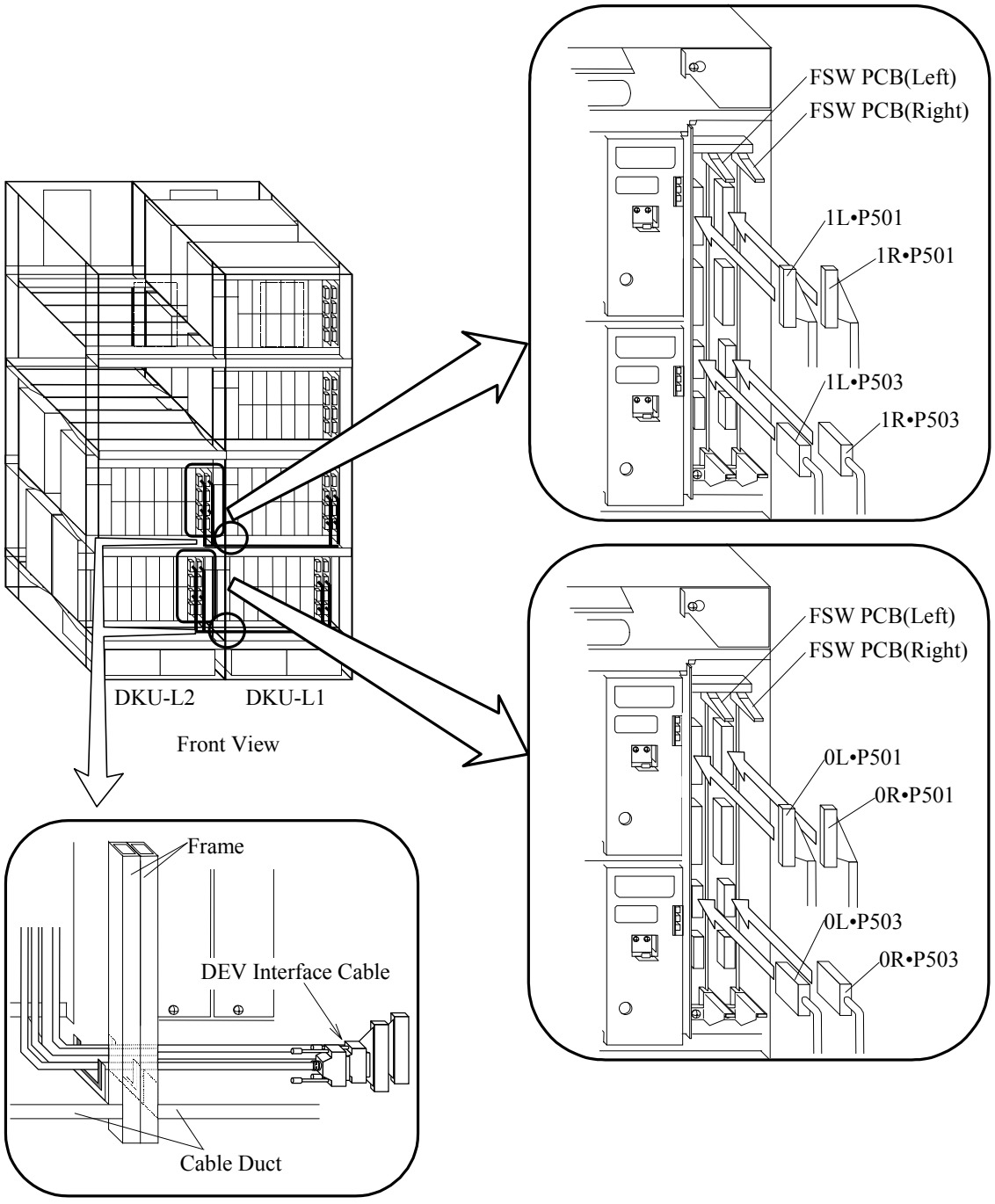

Fig. 3.19.8.5-4 Connection of the DEV Interface Cables

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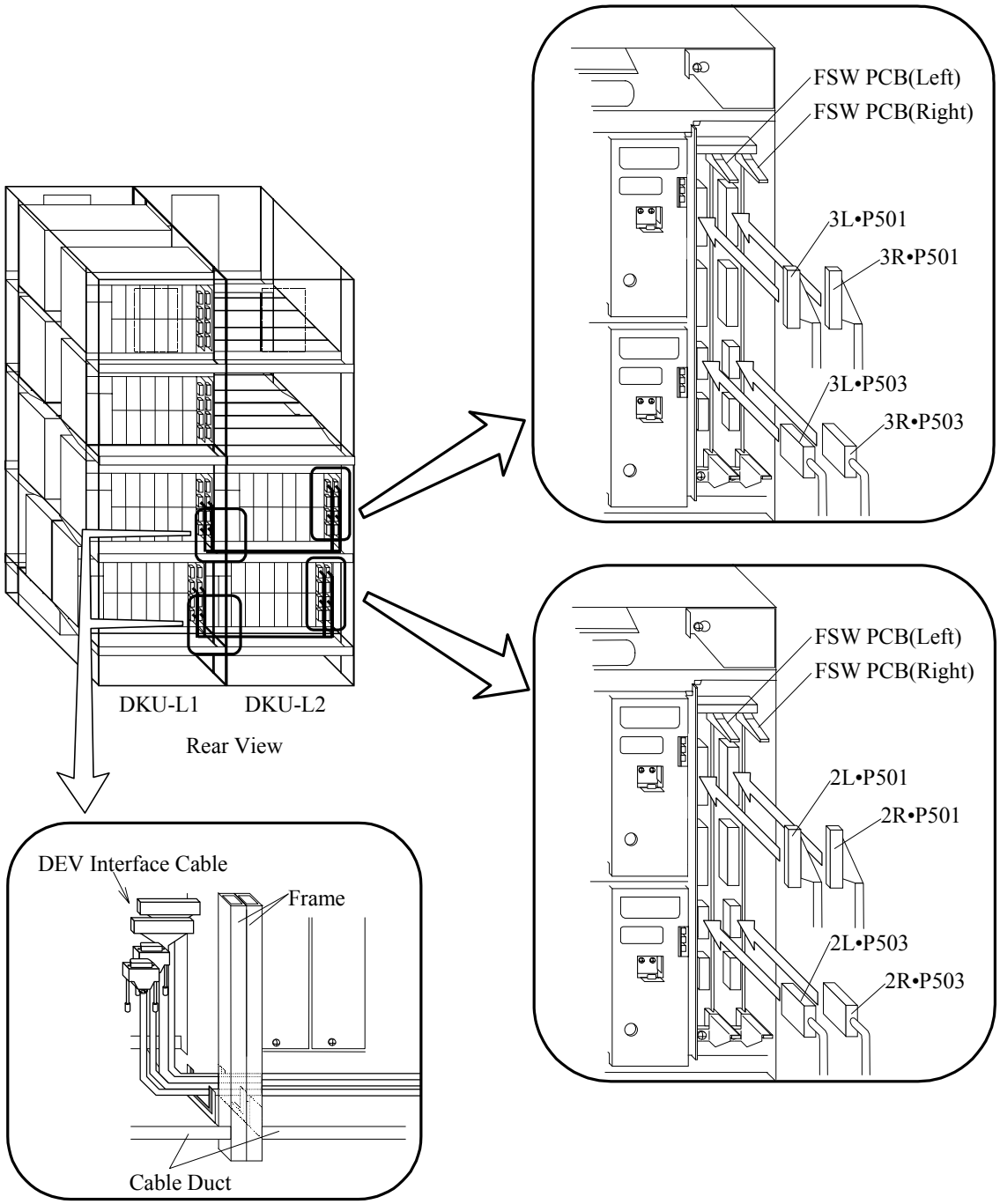

Fig. 3.19.8.5-5 Connection of the DEV Interface Cables

4. Return to INST03-U40-1410 ③ when connecting the additional DEV interface cable while the sub-system is in operation. Go to INST03-U40-1710 when connecting the additional DEV interface cable with the sub-system switched off.

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5. Connect the DEV interface cables to the FSW PCBs in the DKU-L1 frame referring to figures 3.19.8.5-6 and 3.19.8.5-7.

⚠ CAUTION

Precaution against a cutting of a cable : When installing a cable with no protector, take care not to get it cut by letting it caught by a sharp edge of a sheet metal part, etc.

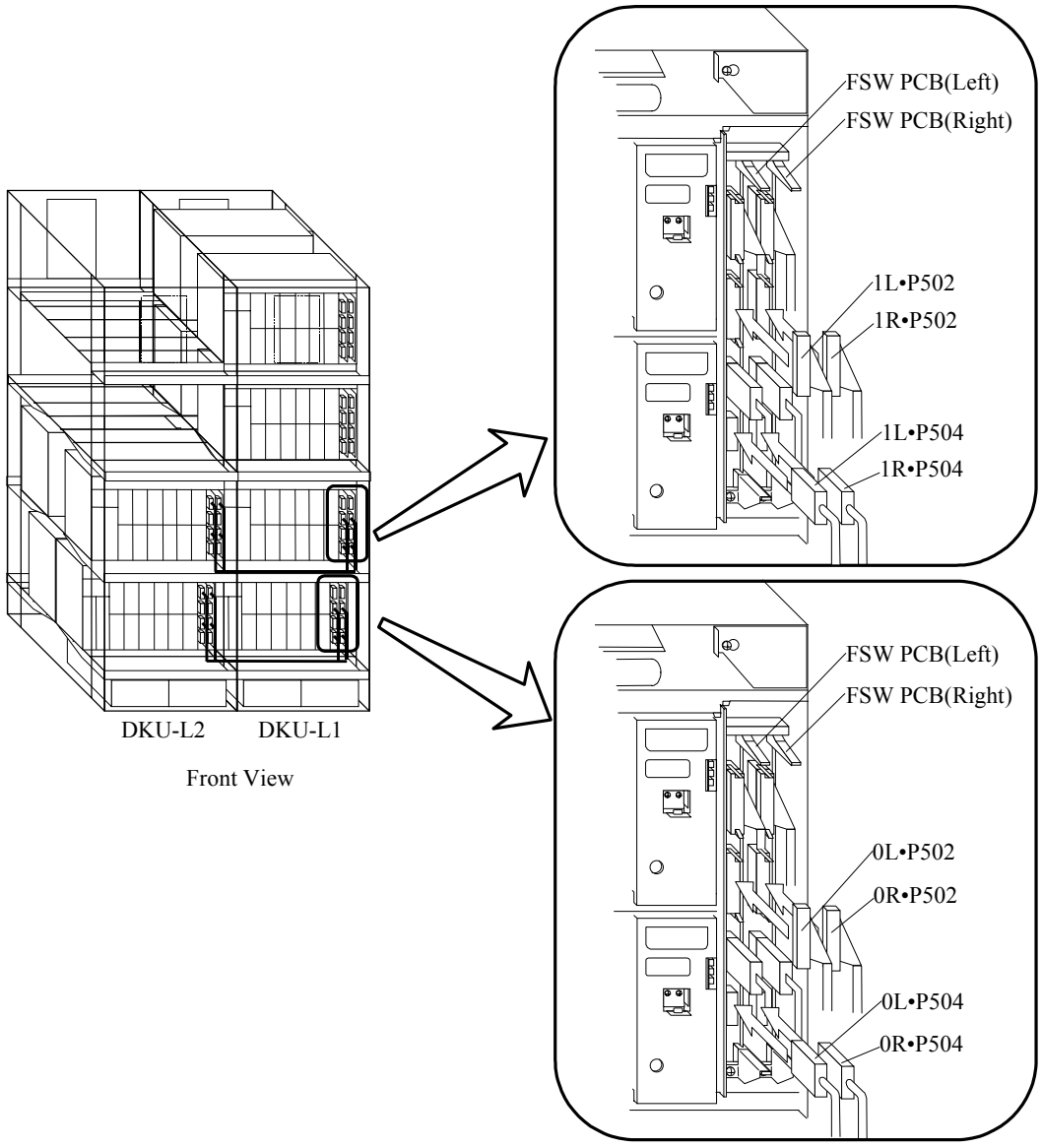

Fig. 3.19.8.5-6 Connection of the DEV Interface Cables

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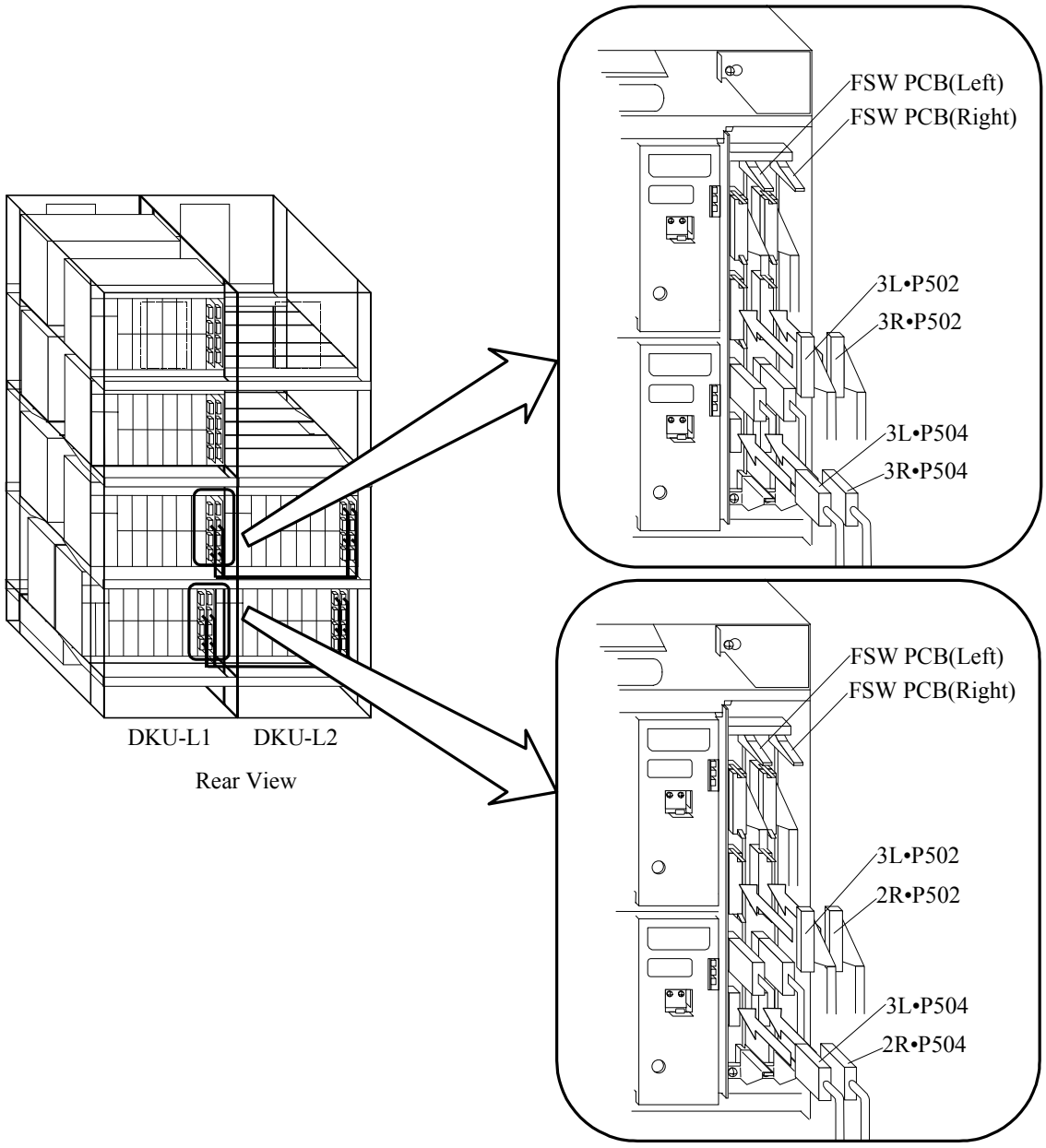

Fig. 3.19.8.5-7 Connection of the DEV Interface Cables

6. Return to INST03-U40-1430 ⑤ when connecting the additional DEV interface cable while the sub-system is in operation. Go to INST03-U40-1730 when connecting the additional DEV interface cable with the sub-system switched off.

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7. Attach the side plates in the reverse order of Step 2.
8. Attach the cable covers ① and ② with the screw to fix the DEV Interface Cables.

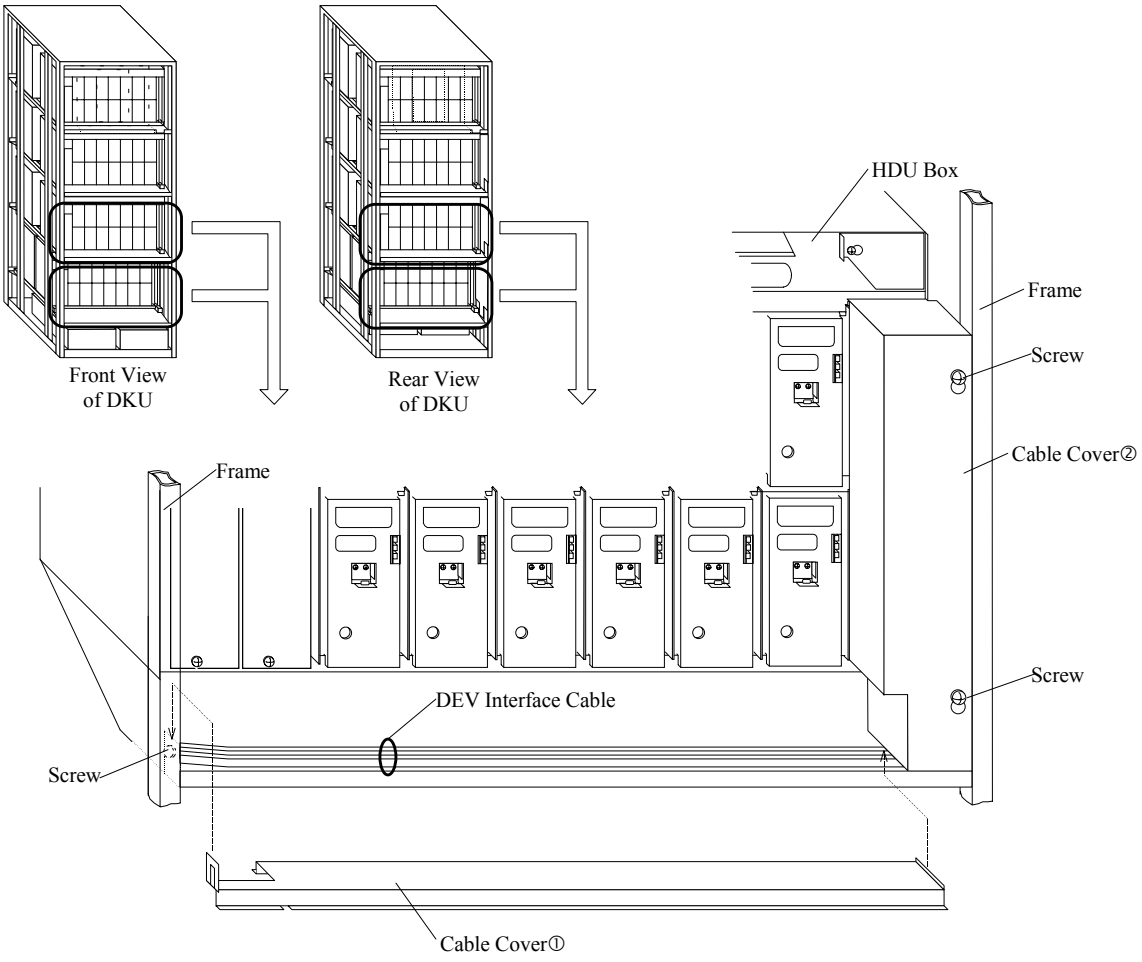

Fig. 3.19.8.5-8 Fixation of the DEV Interface Cables

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9. Attach the nameplate to the DKU-L2 frame.

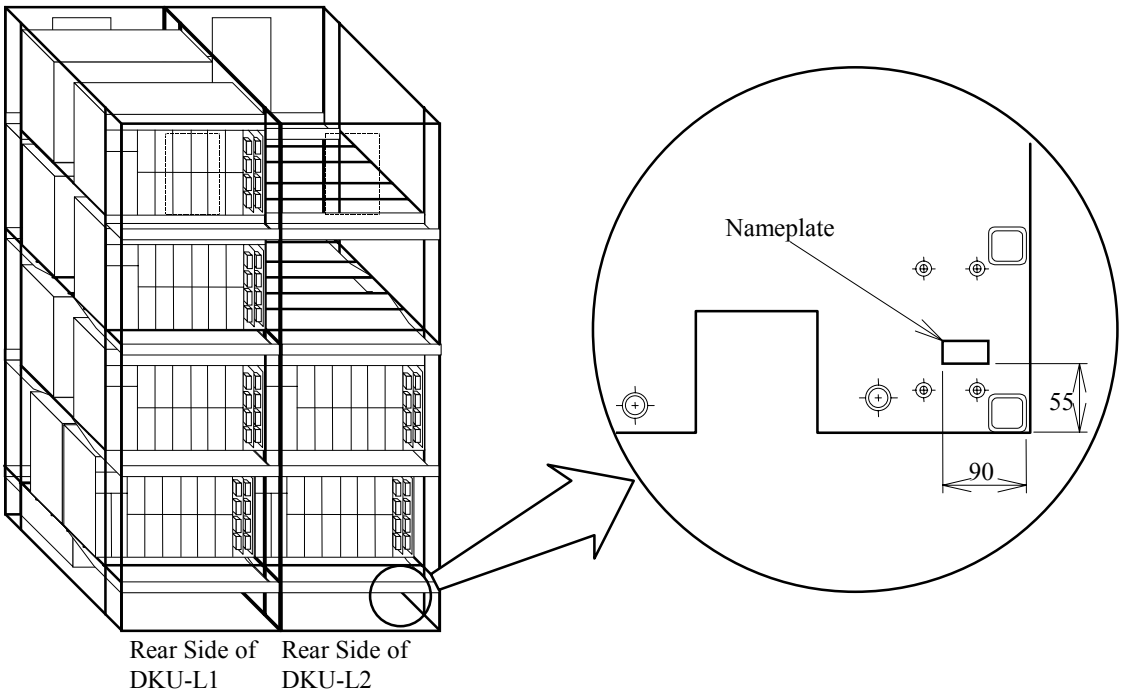

Fig. 3.19.8.5-9 Attachment of the Nameplate

10. When the DKU-L2 frame consists of 4 HDU boxes, fix the rest of the DEV interface cables in the DKU-L2 frame with the binders.

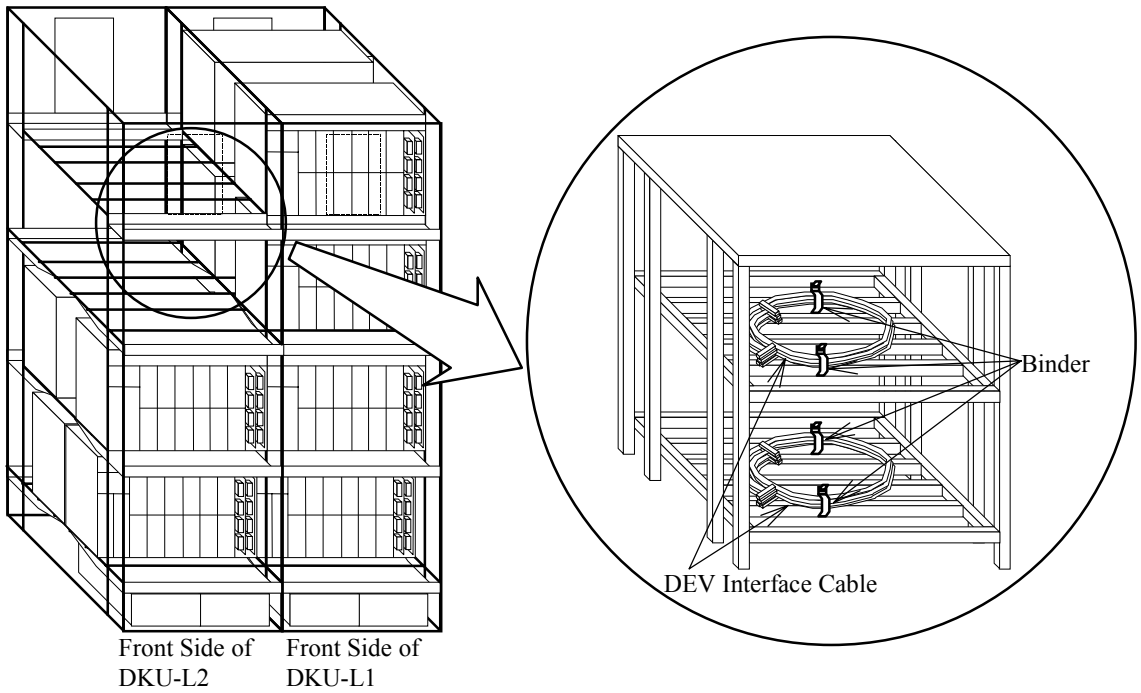

Fig. 3.19.8.5-10 Fixation of the DEV Interface Cables

11. Go to INST03-U40-1430 Step ⑦.

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3.19.8.6 Connection Procedure of DEV Interface Cables (In case of HDU-L27 from L24)

1. Loosen the screws and remove the cable covers ① and ② from the DKU frames.

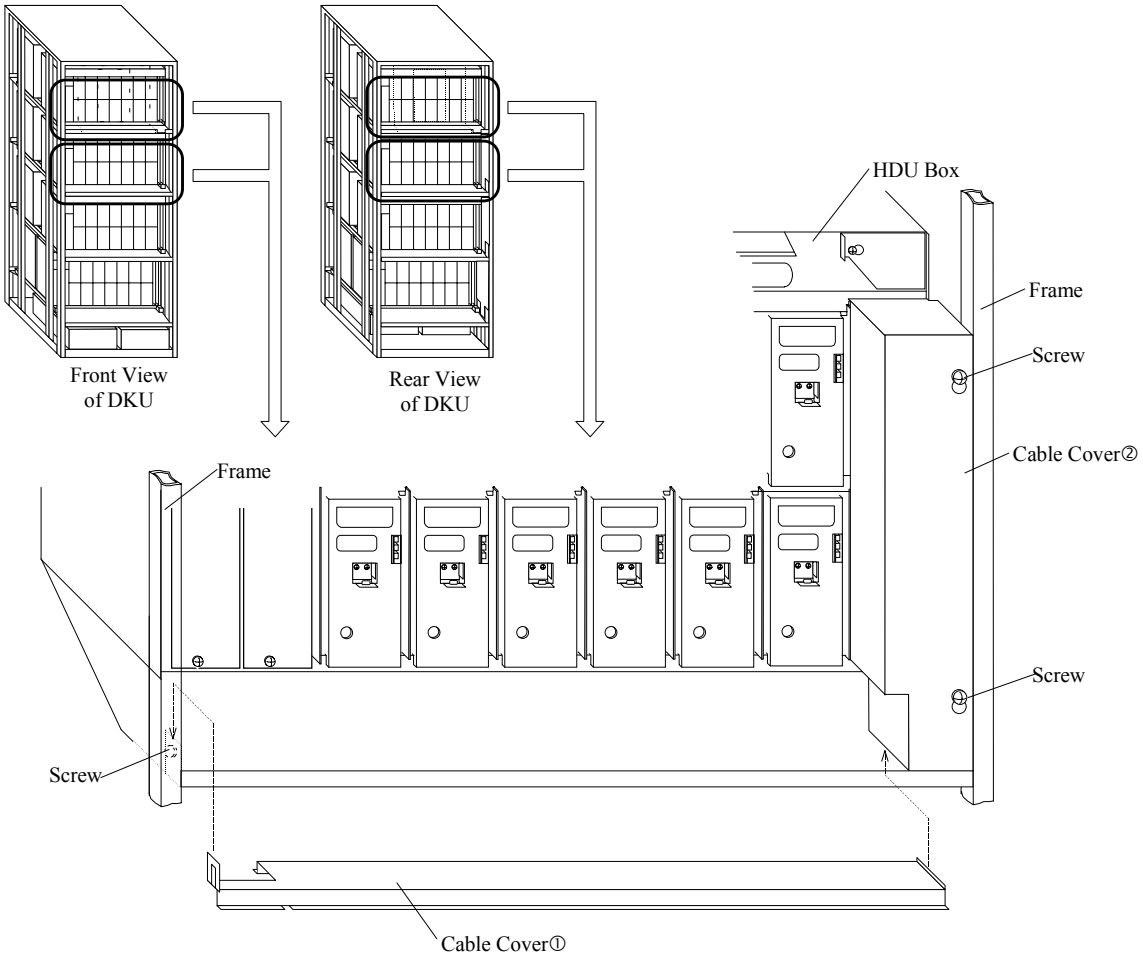

Fig. 3.19.8.6-1 Removal of Cable Covers

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2. Loosen the screws and remove the side plates from the DKU frames.

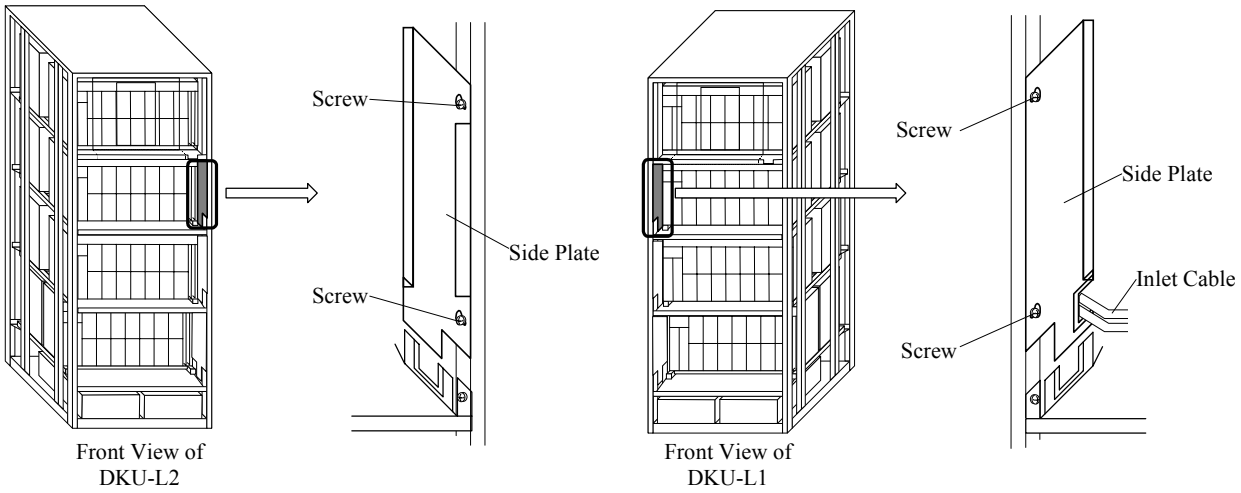

Fig. 3.19.8.6-2 Removal of Side Plates (Front View)

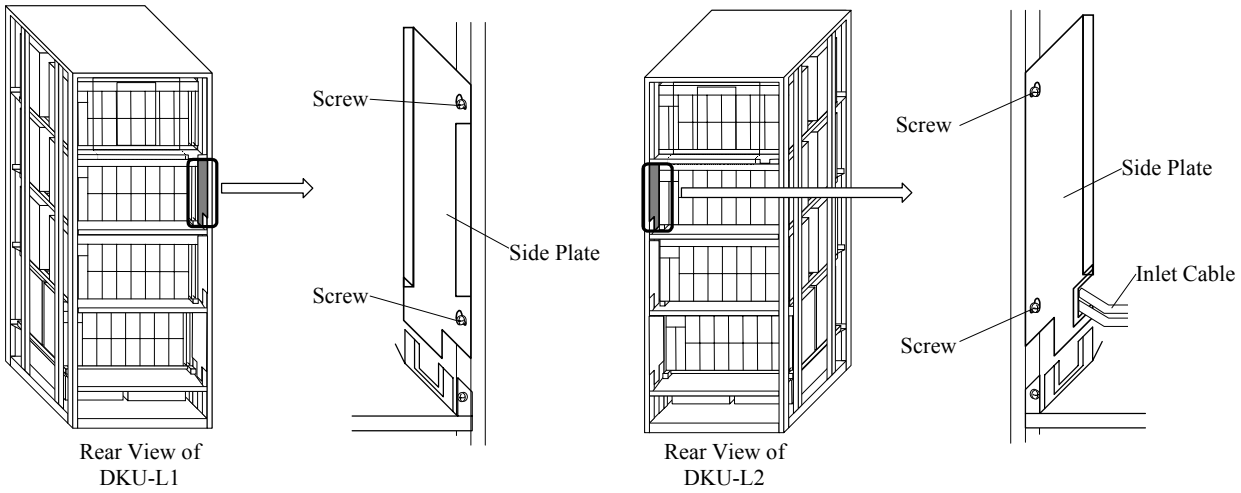

Fig. 3.19.8.6-3 Removal of Side Plates (Rear View)

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3. Connect the DEV interface cables to the FSW PCBs in the DKU-L2 frame referring to figures 3.19.8.6-4 and 3.19.8.6-5.

⚠ CAUTION

Precaution against a cutting of a cable : When installing a cable with no protector, take care not to get it cut by letting it caught by a sharp edge of a sheet metal part, etc.

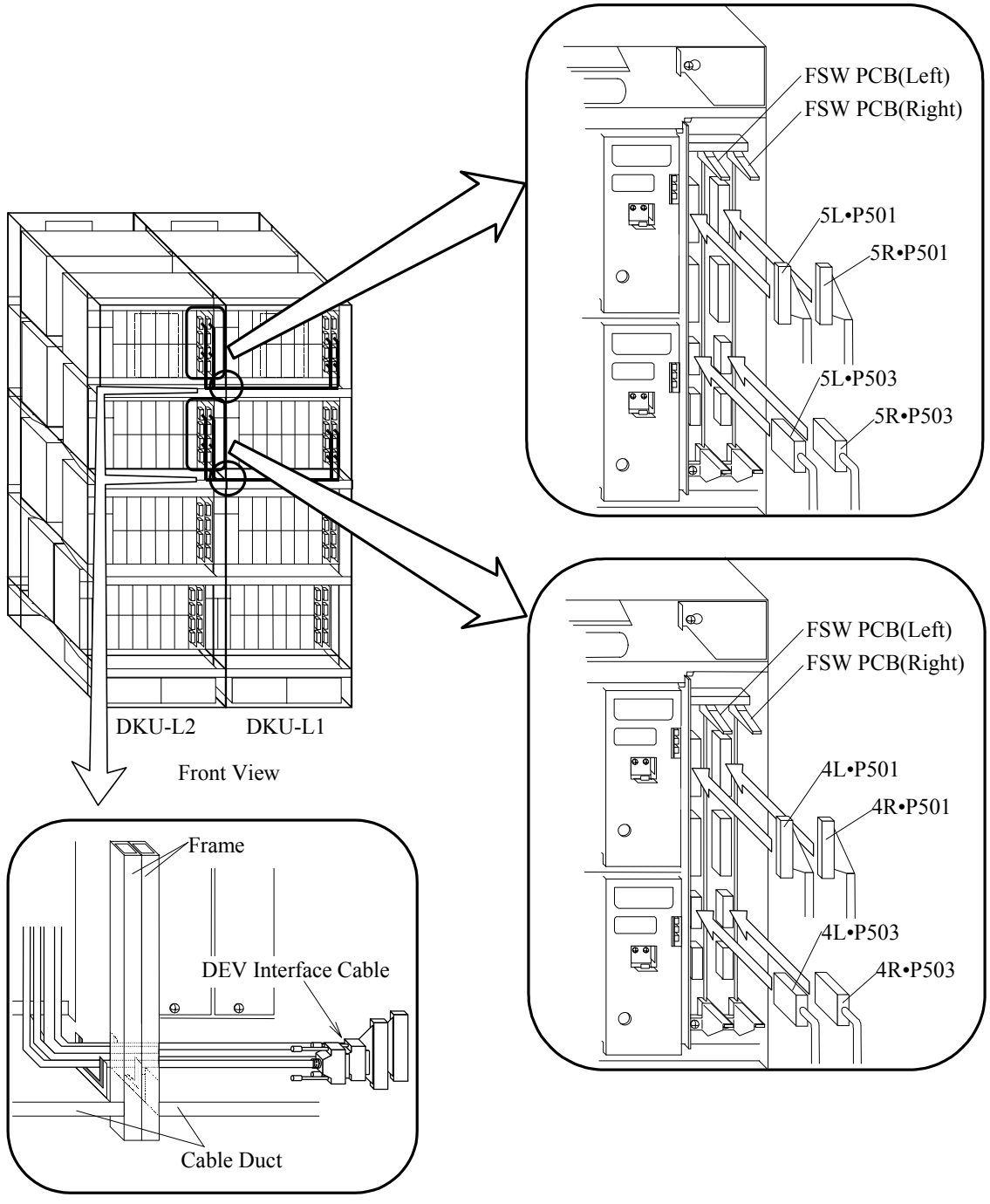

Fig. 3.19.8.6-4 Connection of the DEV Interface Cables

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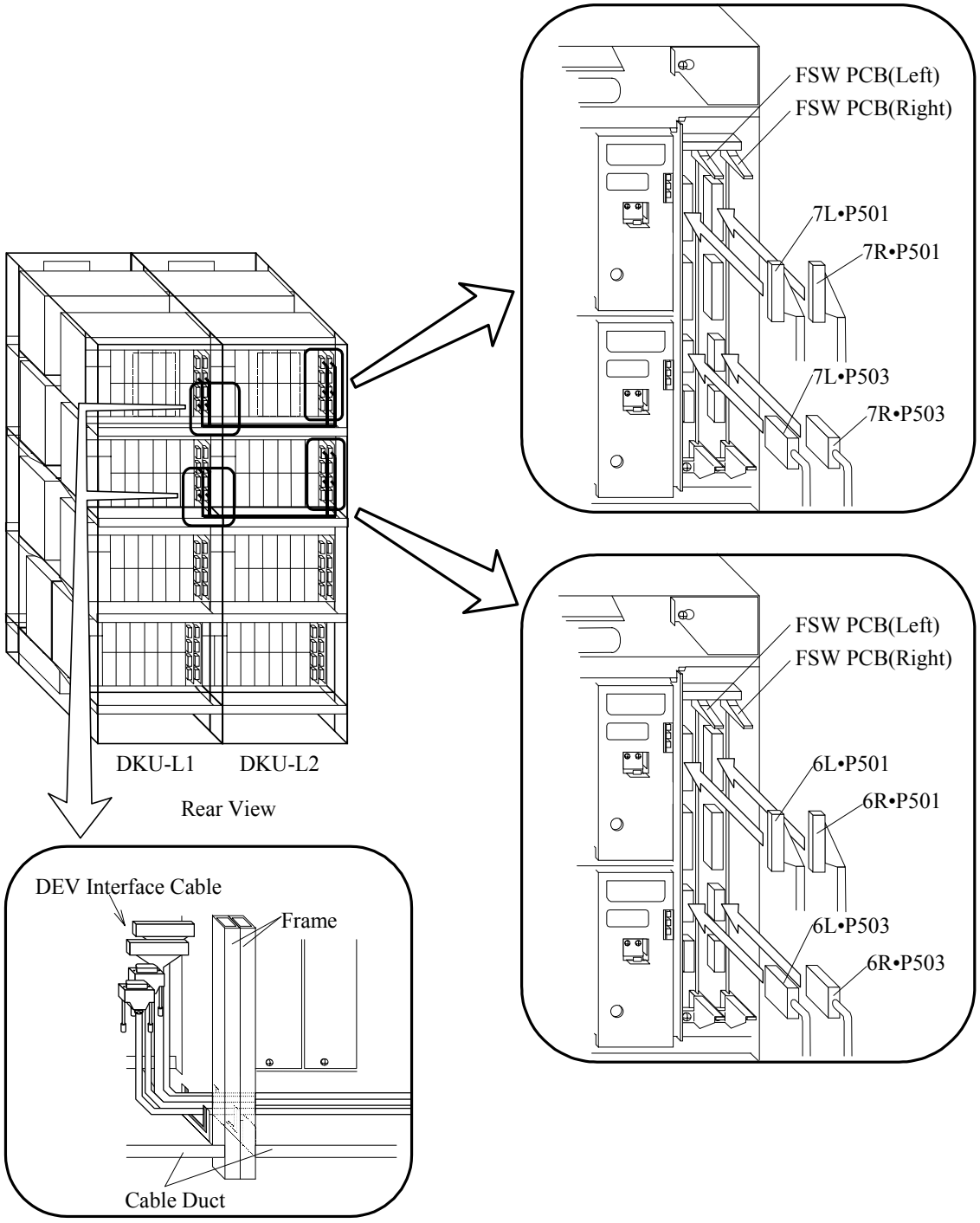

Fig. 3.19.8.6-5 Connection of the DEV Interface Cables

4. Return to INST03-U40-1410 ③ when connecting the additional DEV interface cable while the sub-system is in operation. Go to INST03-U40-1790 when connecting the additional DEV interface cable with the sub-system switched off.

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5. Connect the DEV interface cables to the FSW PCBs in the DKU-L1 frame referring to figures 3.19.8.6-6 and 3.19.8.6-7.

⚠ CAUTION

Precaution against a cutting of a cable : When installing a cable with no protector, take care not to get it cut by letting it caught by a sharp edge of a sheet metal part, etc.

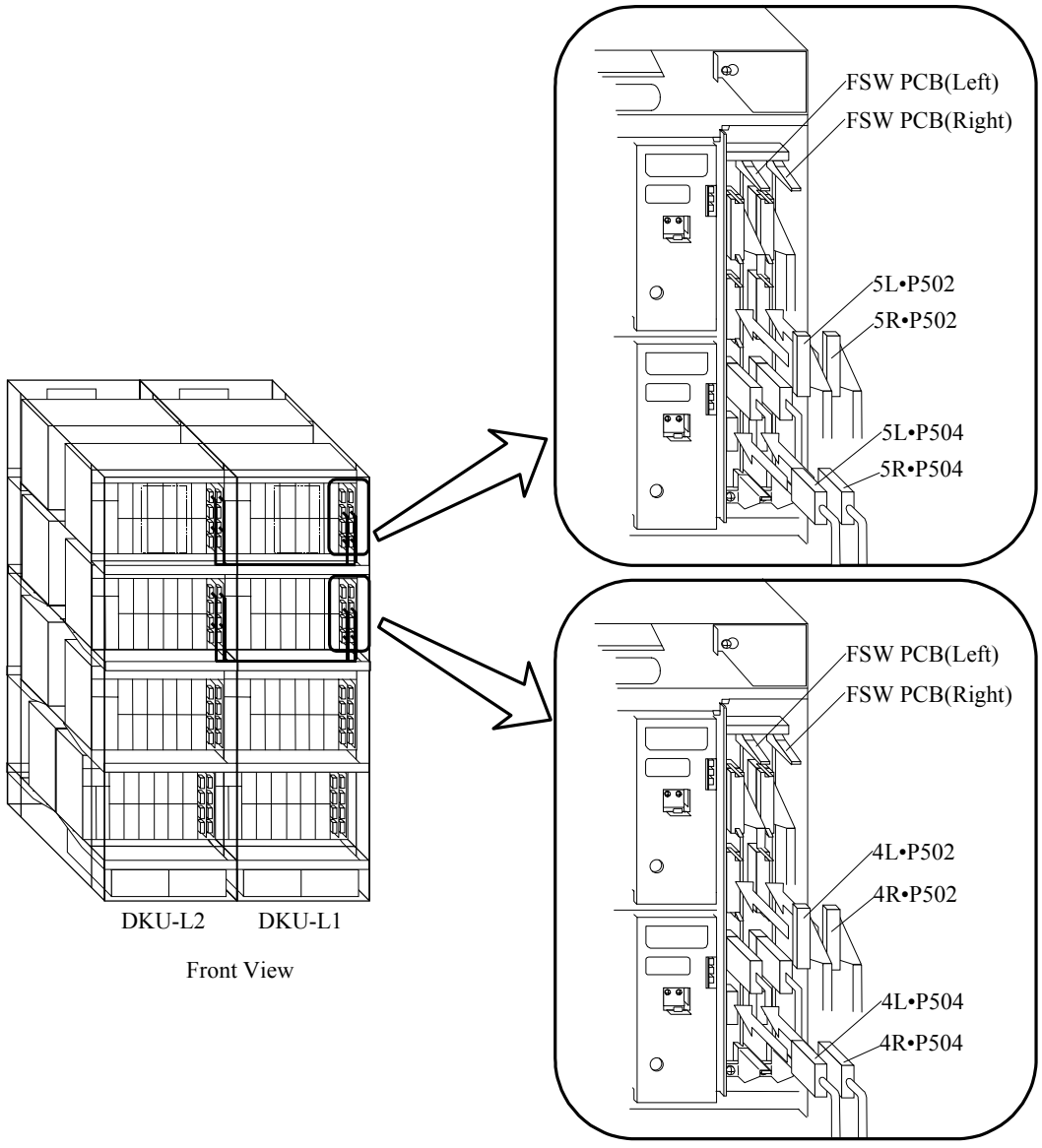

Fig. 3.19.8.6-6 Connection of the DEV Interface Cables

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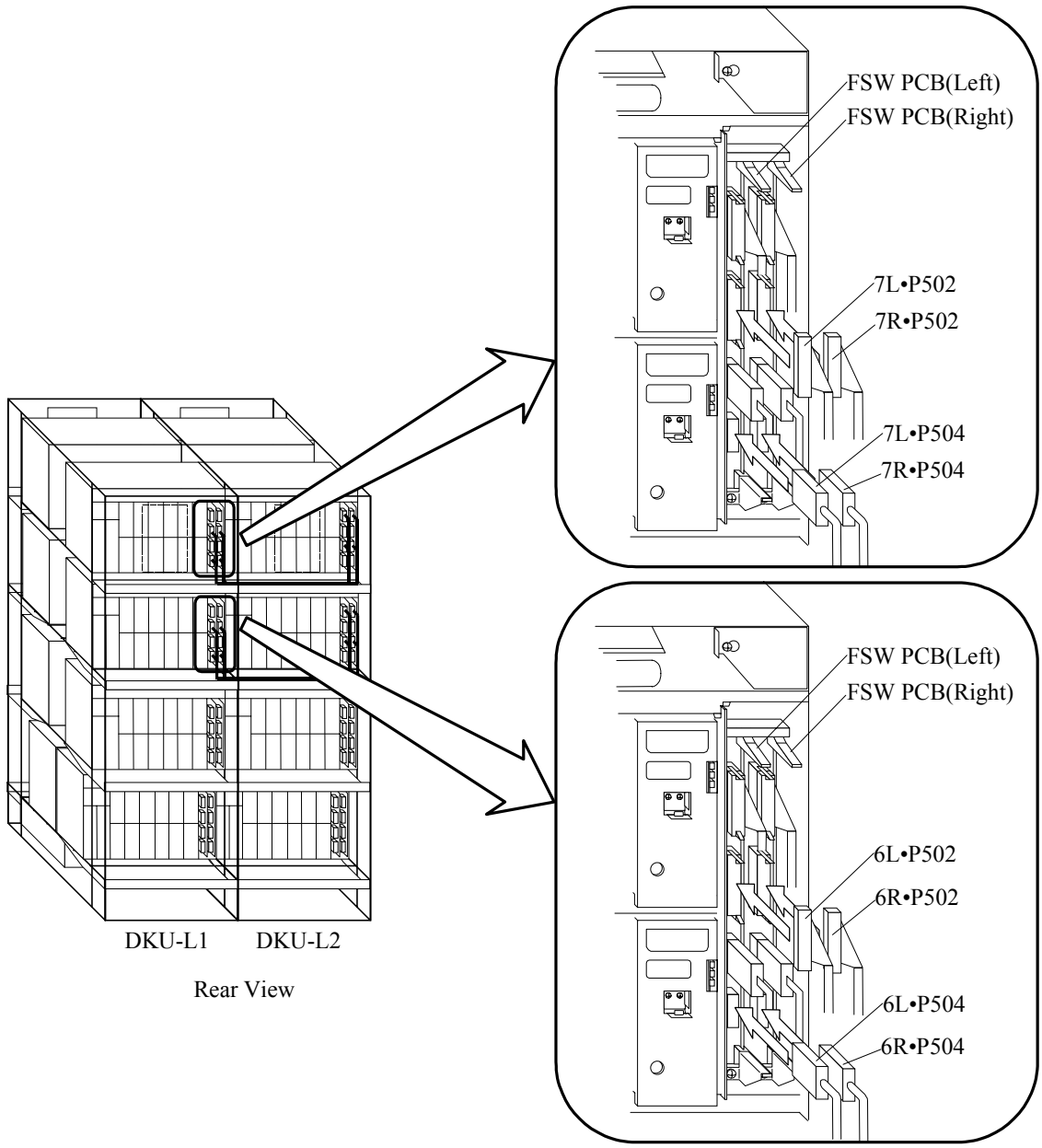

Fig. 3.19.8.6-7 Connection of the DEV Interface Cables

6. Return to INST03-U40-1430 ⑤ when connecting the additional DEV interface cable while the sub-system is in operation. Go to INST03-U40-1810 when connecting the additional DEV interface cable with the sub-system switched off.

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7. Attach the side plates in the reverse order of Step 2.
8. Attach the cable covers ① and ② with the screw to fix the DEV Interface Cables.

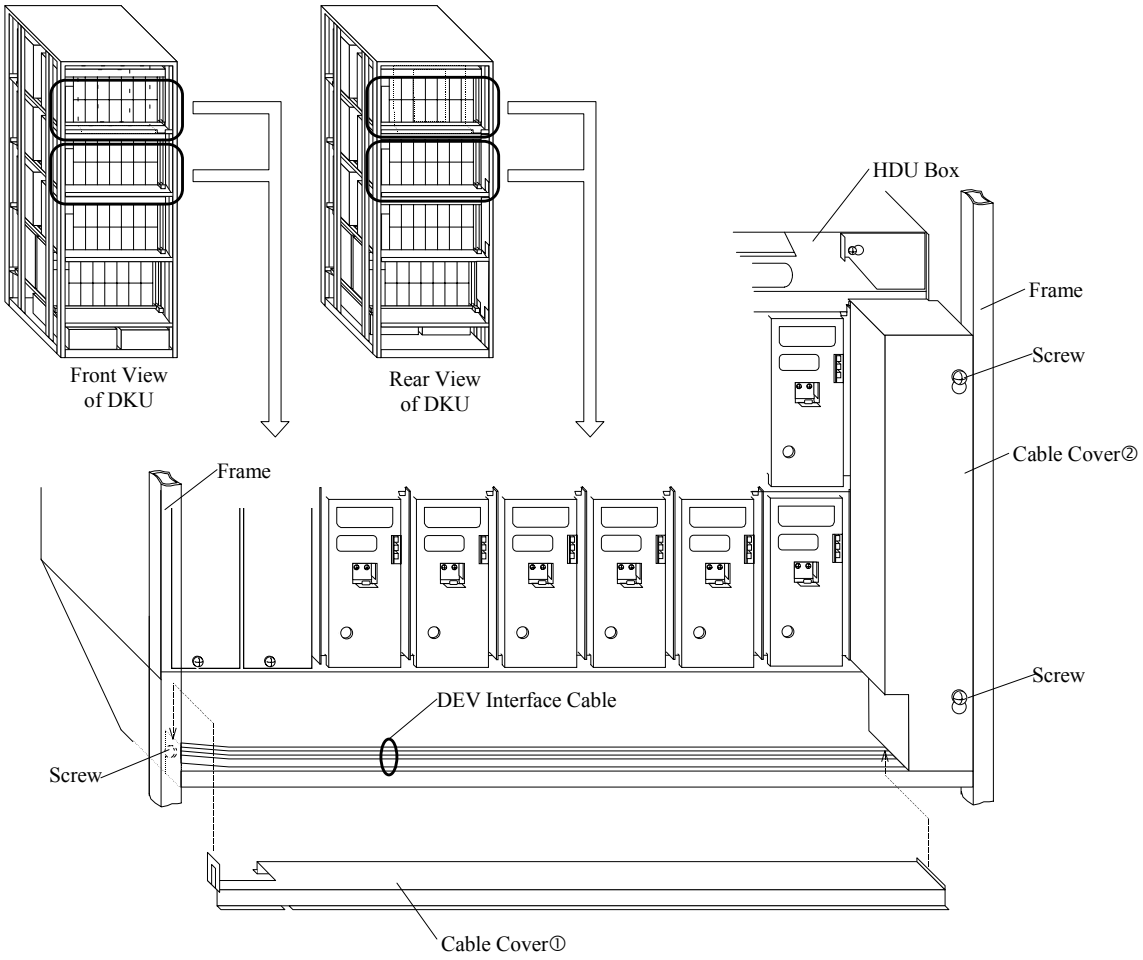

Fig. 3.19.8.6-8 Fixation of the DEV Interface Cables

9. Go to INST03-U40-1430 Step ⑦.

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3.19.8.7 Connection Procedure of DEV Interface Cables (In case of HDU-R33 from R30)

1. Loosen the screws and remove the cable covers ① and ② from the DKU frames.

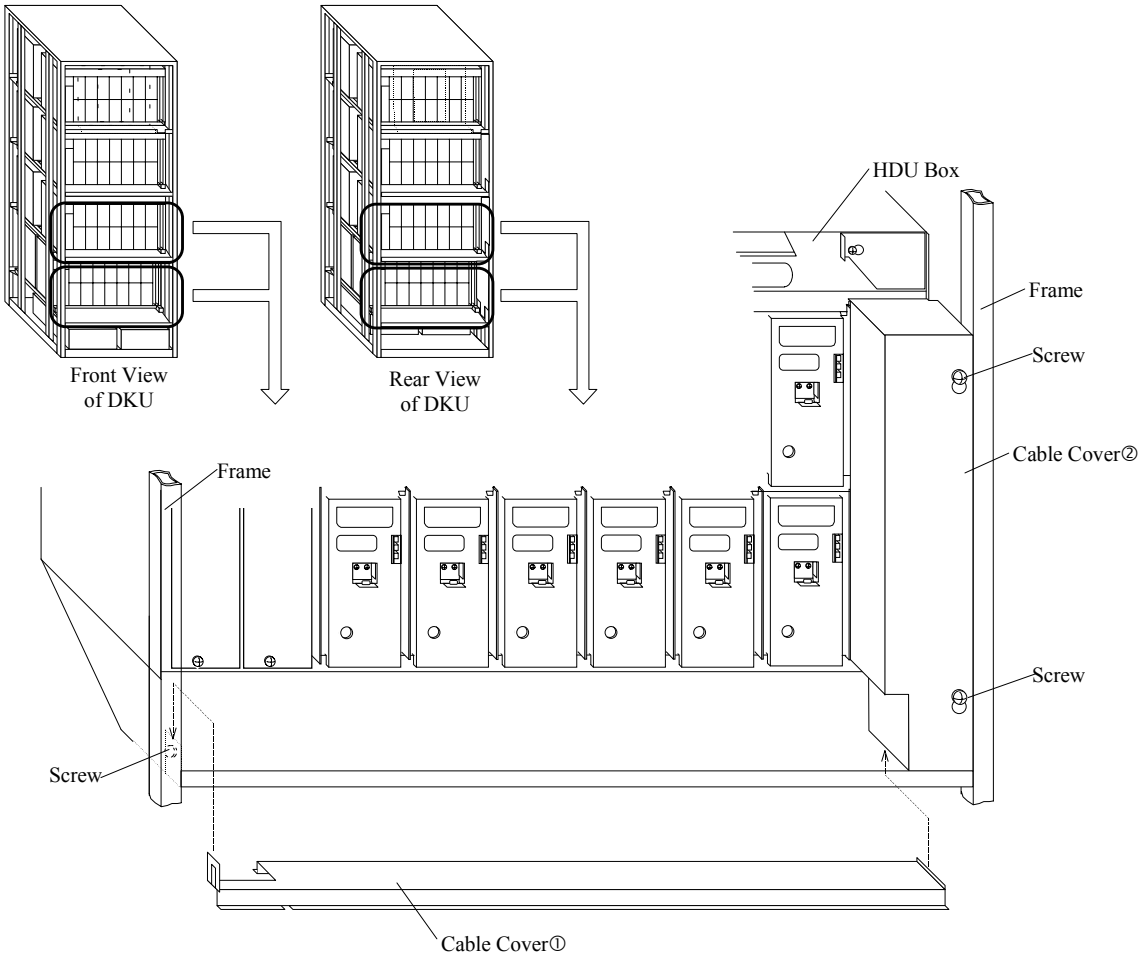

Fig. 3.19.8.7-1 Removal of Cable Covers

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2. Loosen the screws and remove the side plates from the DKU frames.

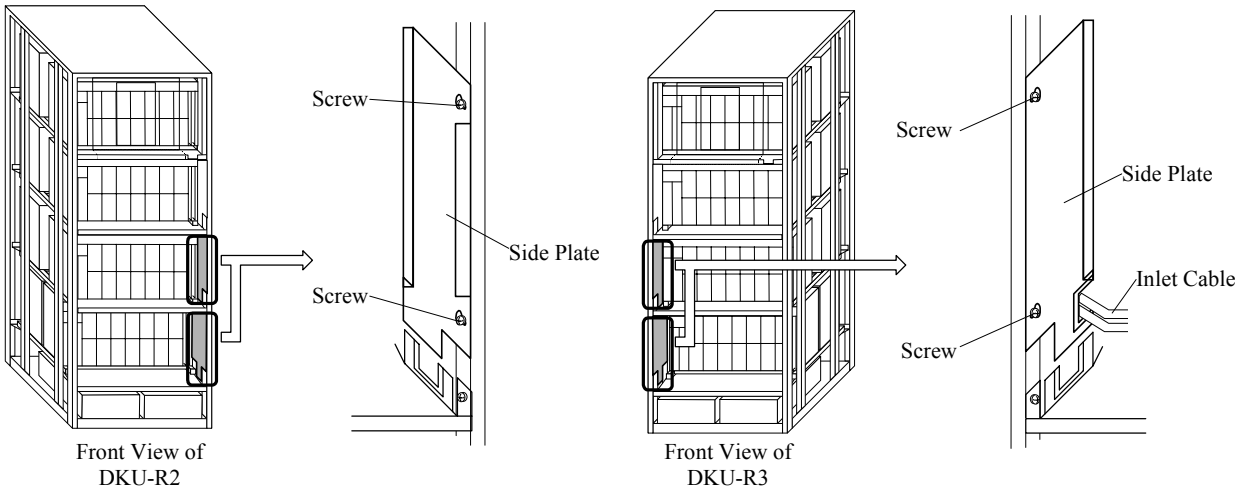

Fig. 3.19.8.7-2 Removal of Side Plates (Front View)

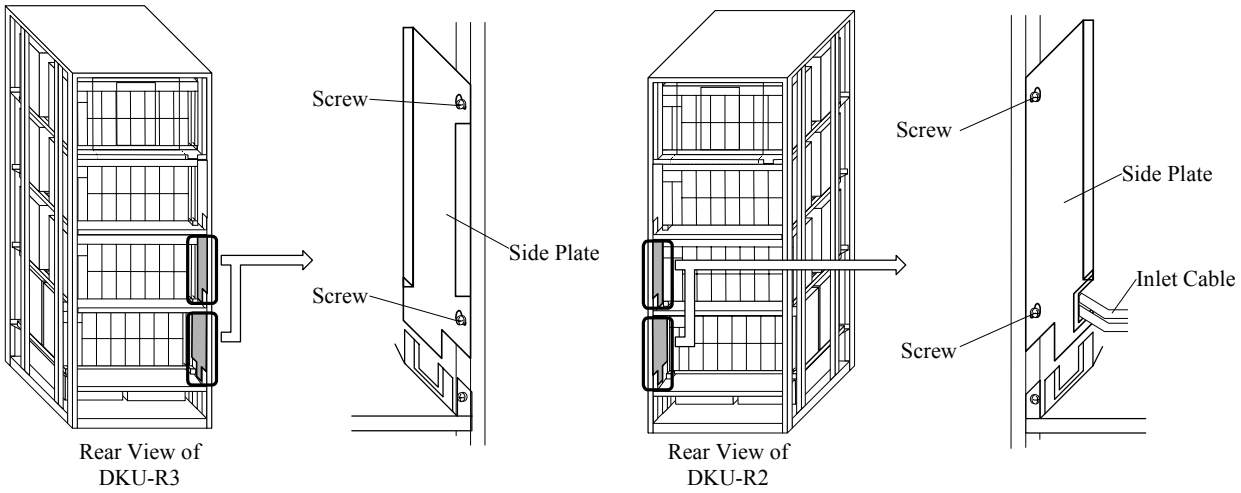

Fig. 3.19.8.7-3 Removal of Side Plates (Rear View)

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3. Connect the DEV interface cables to the FSW PCBs in the DKU-R3 frame referring to figures 3.19.8.7-4 and 3.19.8.7-5.

⚠ CAUTION

Precaution against a cutting of a cable : When installing a cable with no protector, take care not to get it cut by letting it caught by a sharp edge of a sheet metal part, etc.

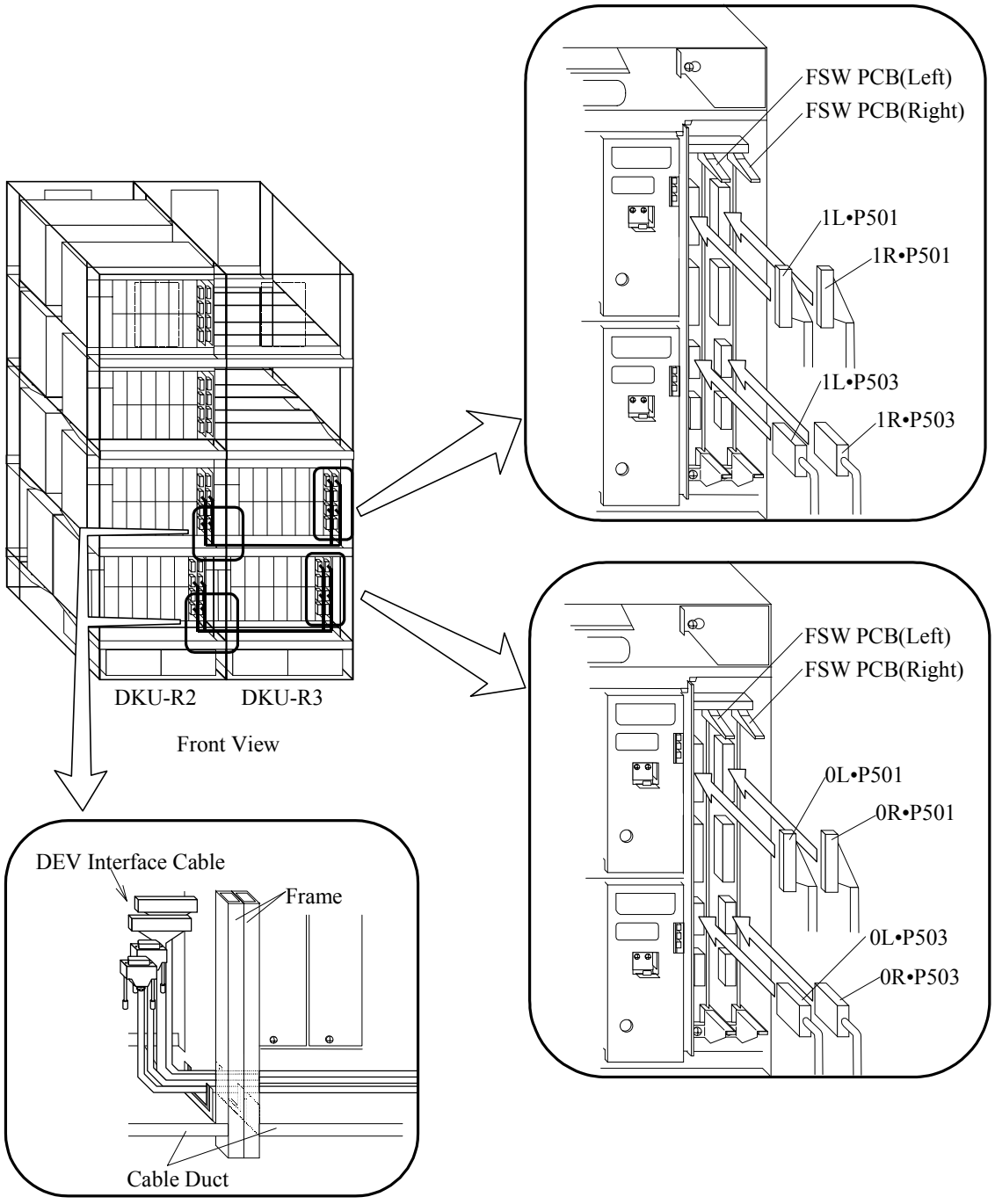

Fig. 3.19.8.7-4 Connection of the DEV Interface Cables

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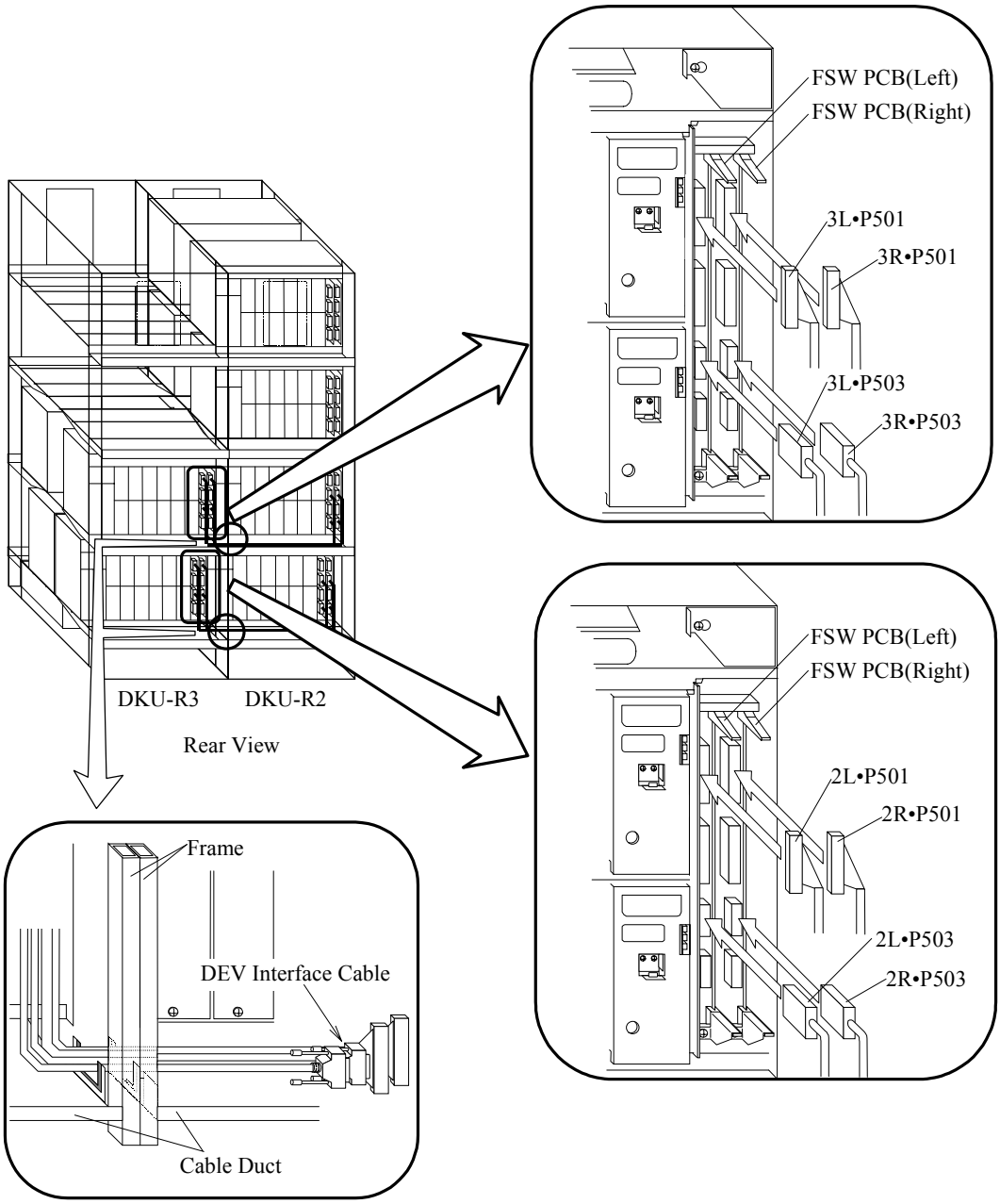

Fig. 3.19.8.7-5 Connection of the DEV Interface Cables

4. When connecting the DEV interface cable while the subsystem is operating (excluding the case when connecting the DEV interface cables between the DKU-R1 frame (HDU-R10-R13) and the DKU-R2 frame (HDU-R20-R23) and between the DKU-R2 frame (HDU-R20-R23) and the DKU-R3 frame (HDU-R30-R33) at the same time), return to INST03-U40-1410 ②.
When connecting the DEV interface cable while the subsystem power is turned off or connecting the DEV interface cables between the DKU-R1 frame (HDU-R10-R13) and the DKU-R2 frame (HDU-R20-R23) and between the DKU-R2 frame (HDU-R20-R23) and the DKU-R3 frame (HDU-R30-R33) at the same time while the subsystem is operating, go to INST03-U40-1860.

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5. Connect the DEV interface cables to the FSW PCBs in the DKU-R2 frame referring to figures 3.19.8.7-6 and 3.19.8.7-7.

⚠ CAUTION

Precaution against a cutting of a cable : When installing a cable with no protector, take care not to get it cut by letting it caught by a sharp edge of a sheet metal part, etc.

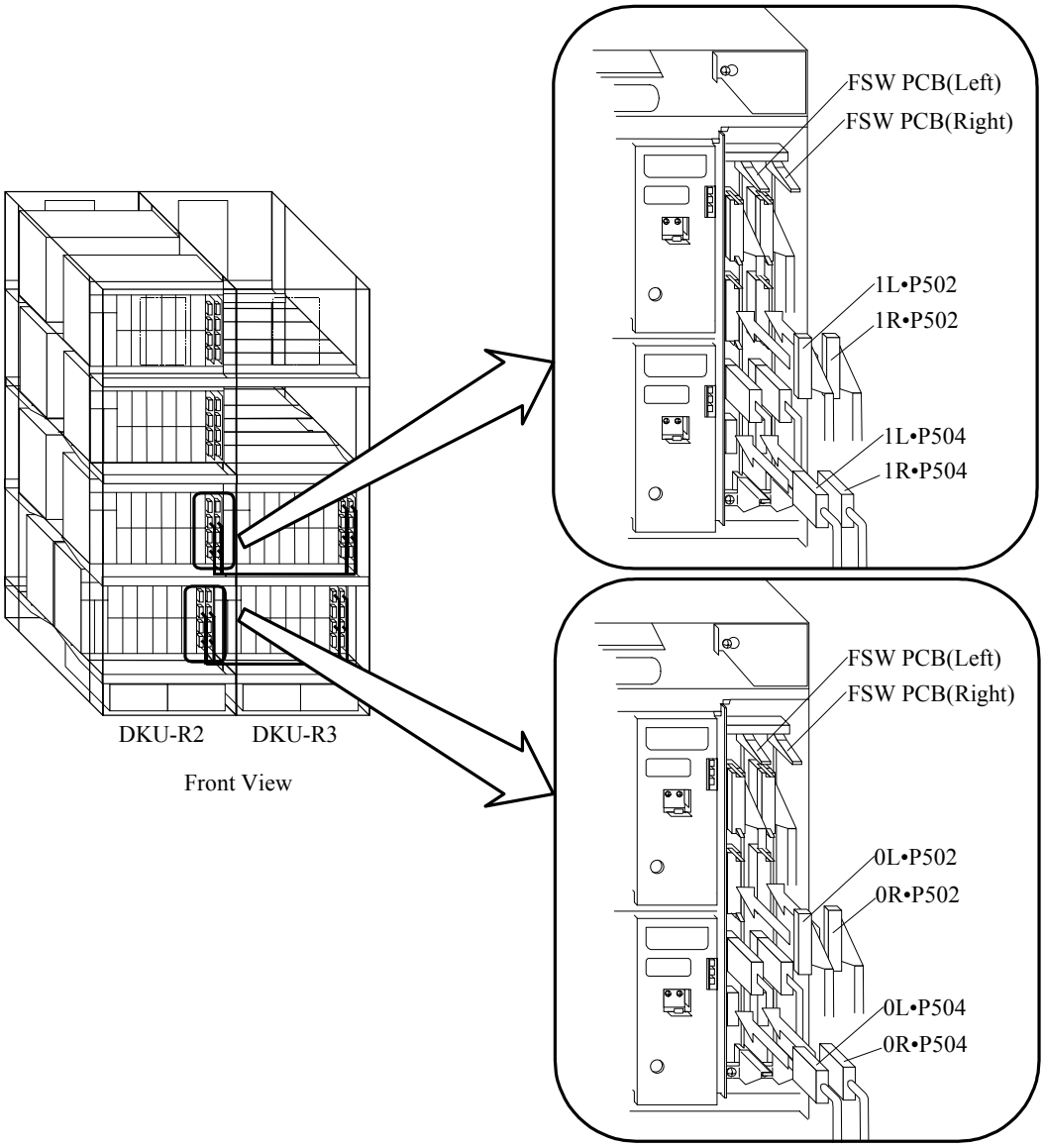

Fig. 3.19.8.7-6 Connection of the DEV Interface Cables

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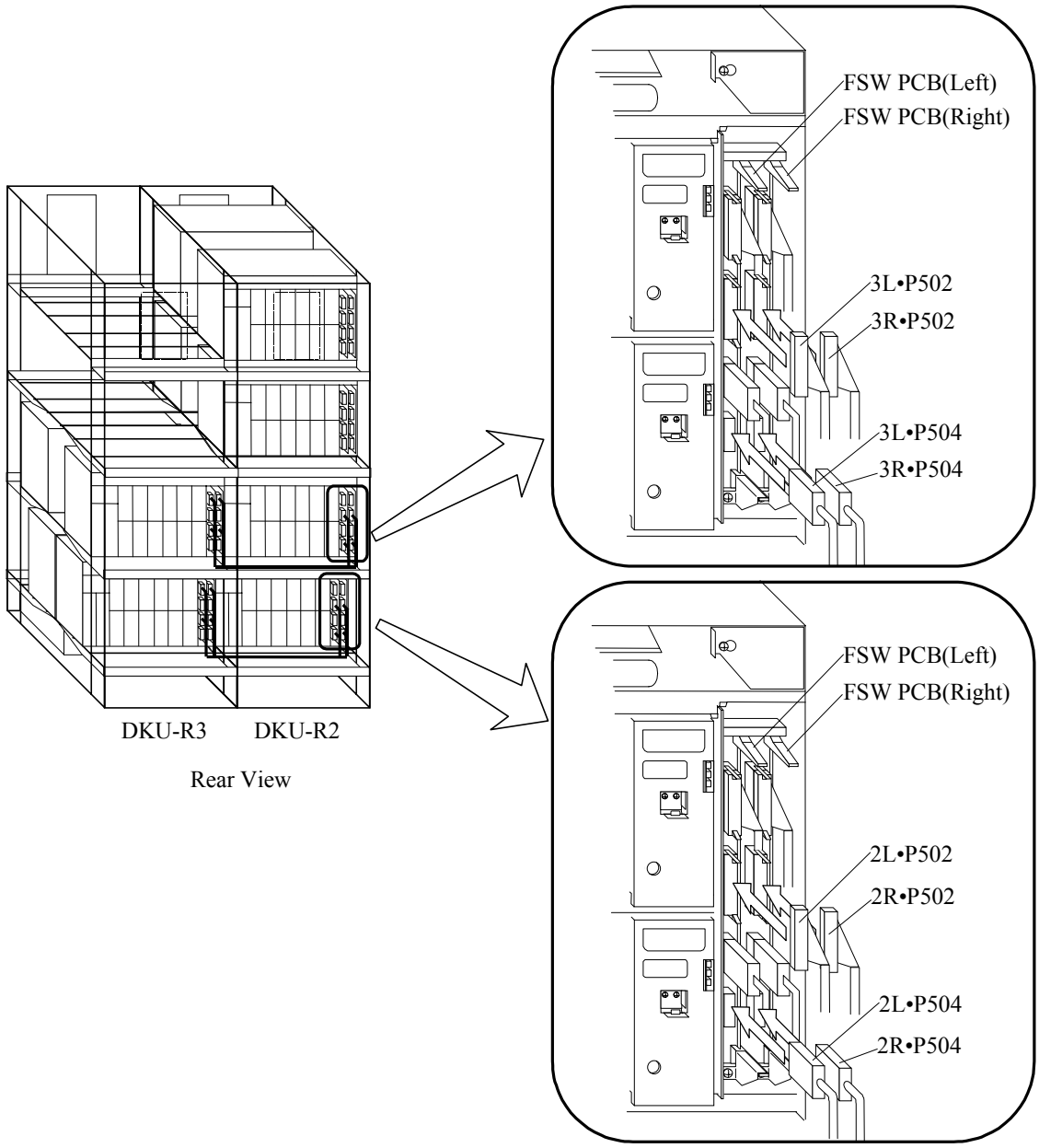

Fig. 3.19.8.7-7 Connection of the DEV Interface Cables

6. When connecting the DEV interface cable while the subsystem is operating (excluding the case when connecting the DEV interface cables between the DKU-R1 frame (HDU-R10-R13) and the DKU-R2 frame (HDU-R20-R23) and between the DKU-R2 frame (HDU-R20-R23) and the DKU-R3 frame (HDU-R30-R33) at the same time), return to INST03-U40-1430 ⑤.
   When connecting the DEV interface cable while the subsystem power is turned off or connecting the DEV interface cables between the DKU-R1 frame (HDU-R10-R13) and the DKU-R2 frame (HDU-R20-R23) and between the DKU-R2 frame (HDU-R20-R23) and the DKU-R3 frame (HDU-R30-R33) at the same time while the subsystem is operating, go to INST03-U40-1880.

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7. Attach the side plates in the reverse order of Step 2.
8. Attach the cable covers ① and ② with the screw to fix the DEV Interface Cables.

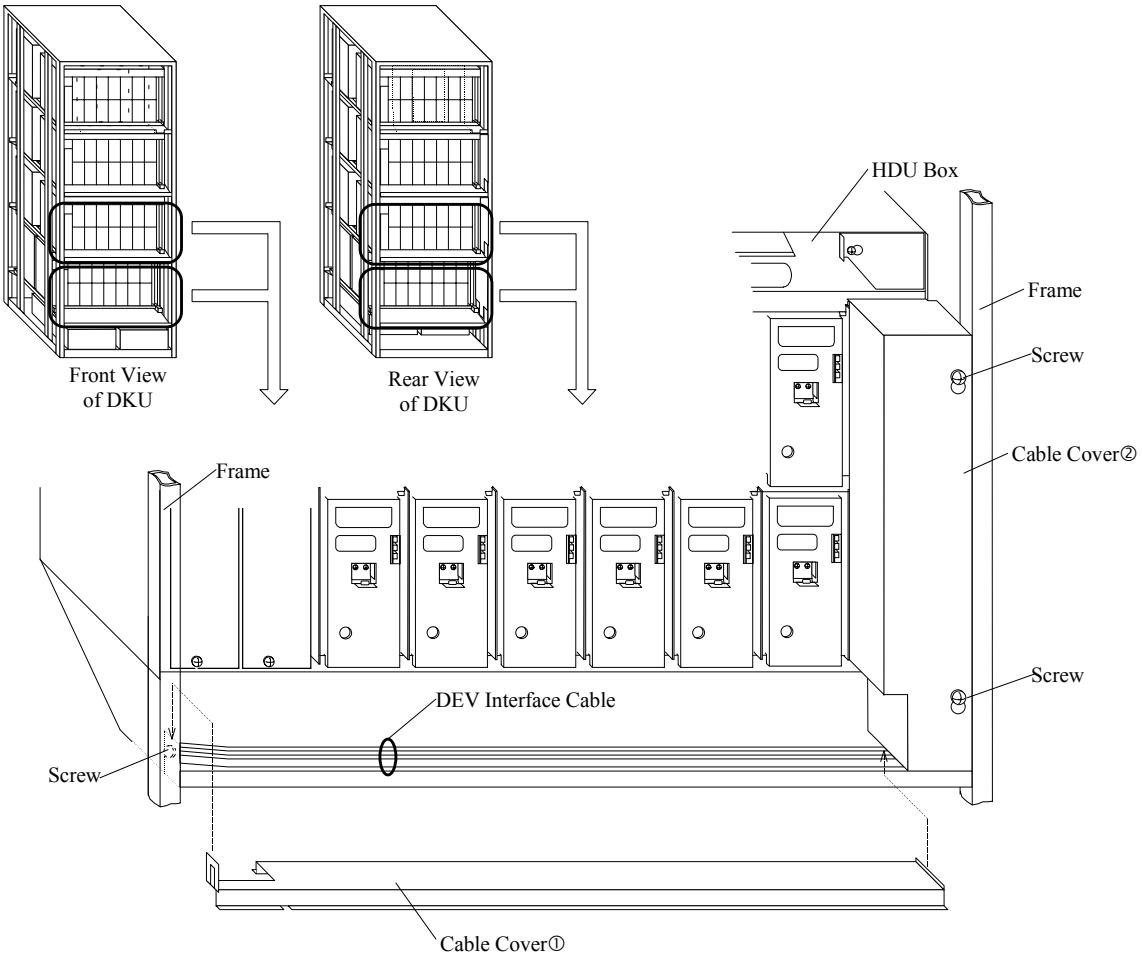

Fig. 3.19.8.7-8 Fixation of the DEV Interface Cables

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9. Attach the nameplate to the DKU-R3 frame.

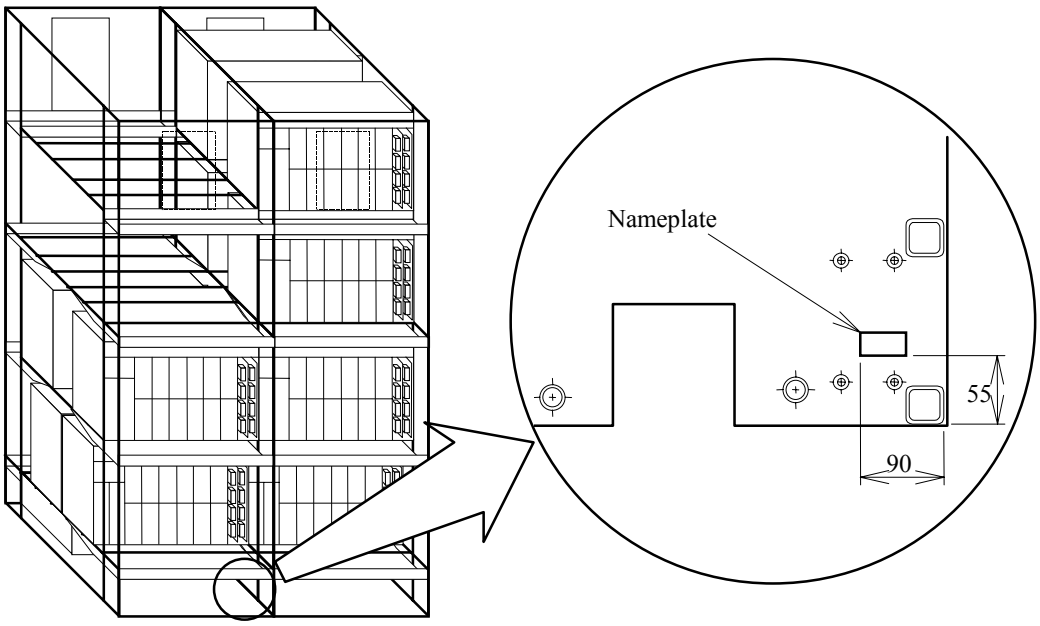

Fig. 3.19.8.7-9 Attachment of the Nameplate

10. When the DKU-R3 frame consists of 4 HDU boxes, fix the rest of the DEV interface cables in the DKU-R3 frame with the binders.

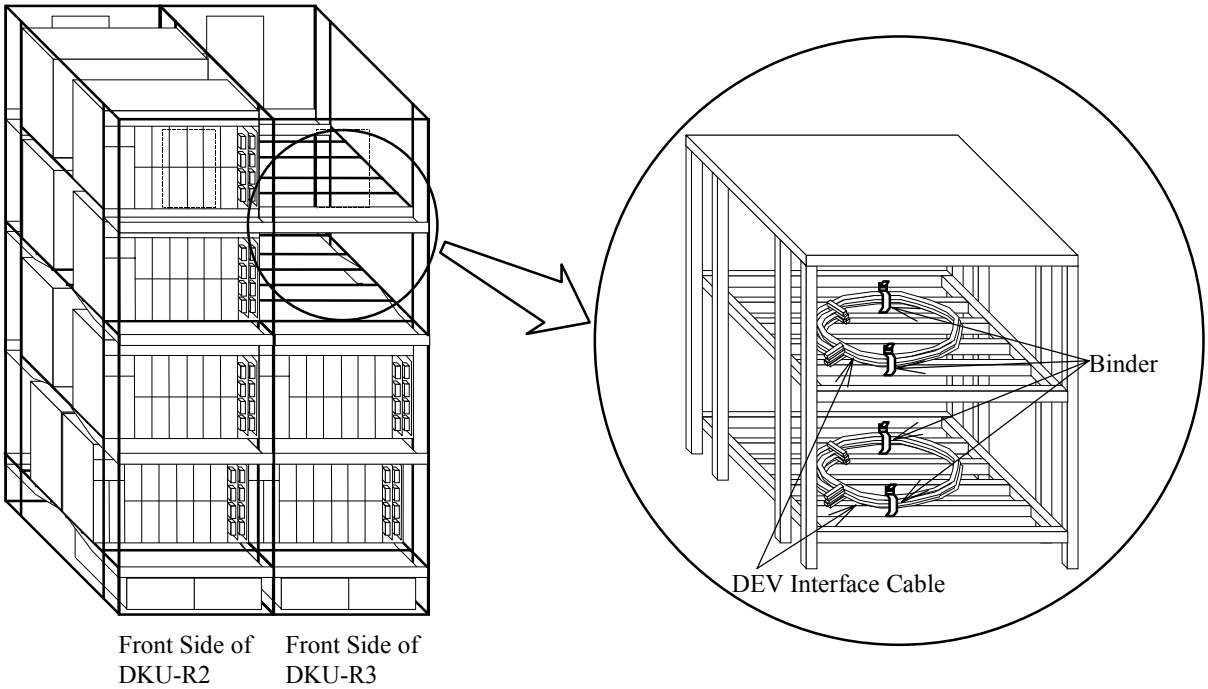

Fig. 3.19.8.7-10 Fixation of the DEV Interface Cables

11. Go to INST03-U40-1430 Step ⑦.

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3.19.8.8 Connection Procedure of DEV Interface Cables (In case of HDU-R37 from R34)

1. Loosen the screws and remove the cable covers ① and ② from the DKU frames.

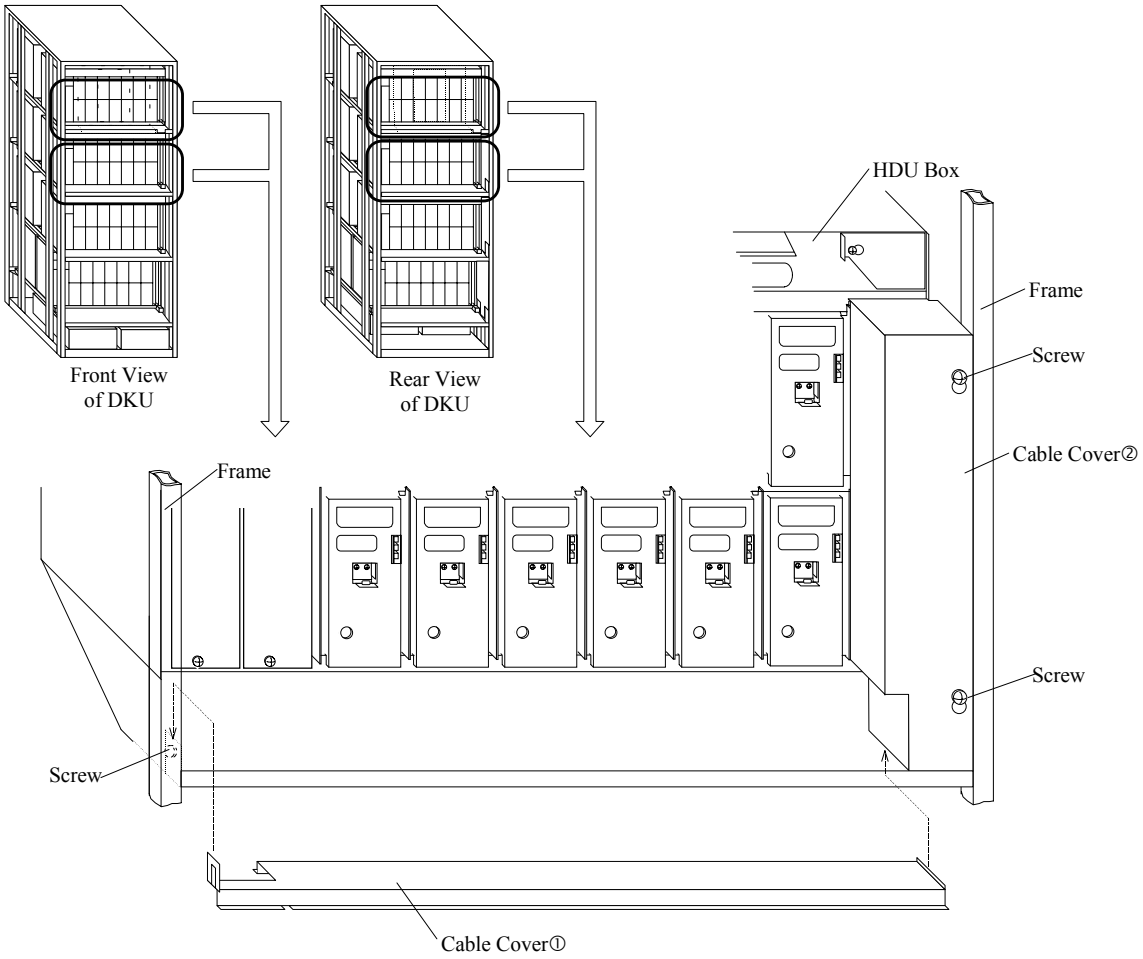

Fig. 3.19.8.8-1 Removal of Cable Covers

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2. Loosen the screws and remove the side plates from the DKU frames.

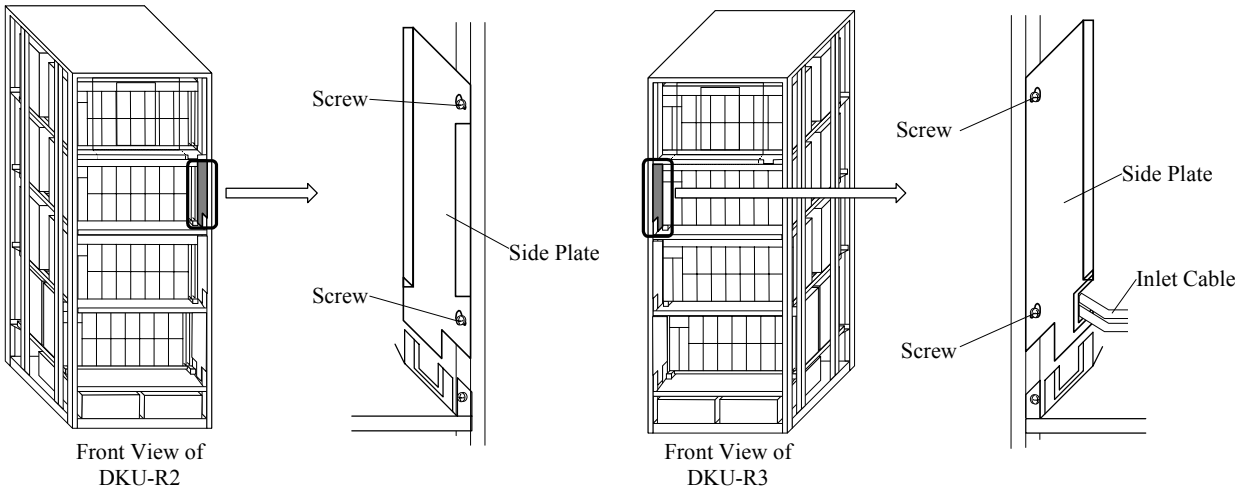

Fig. 3.19.8.8-2 Removal of Side Plates (Front View)

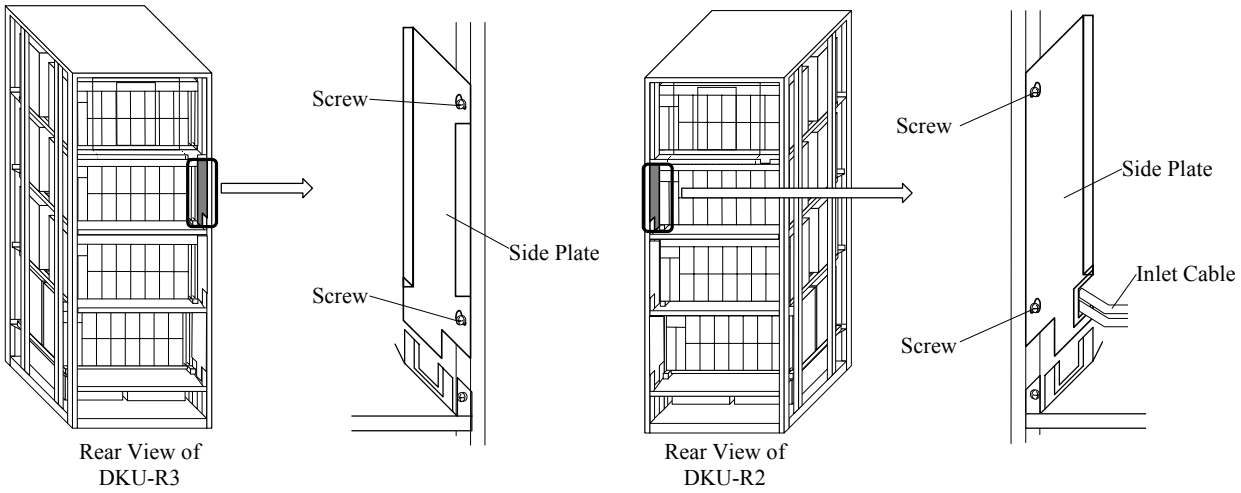

Fig. 3.19.8.8-3 Removal of Side Plates (Rear View)

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3. Connect the DEV interface cables to the FSW PCBs in the DKU-R3 frame referring to figures 3.19.8.8-4 and 3.19.8.8-5.

⚠ CAUTION

Precaution against a cutting of a cable : When installing a cable with no protector, take care not to get it cut by letting it caught by a sharp edge of a sheet metal part, etc.

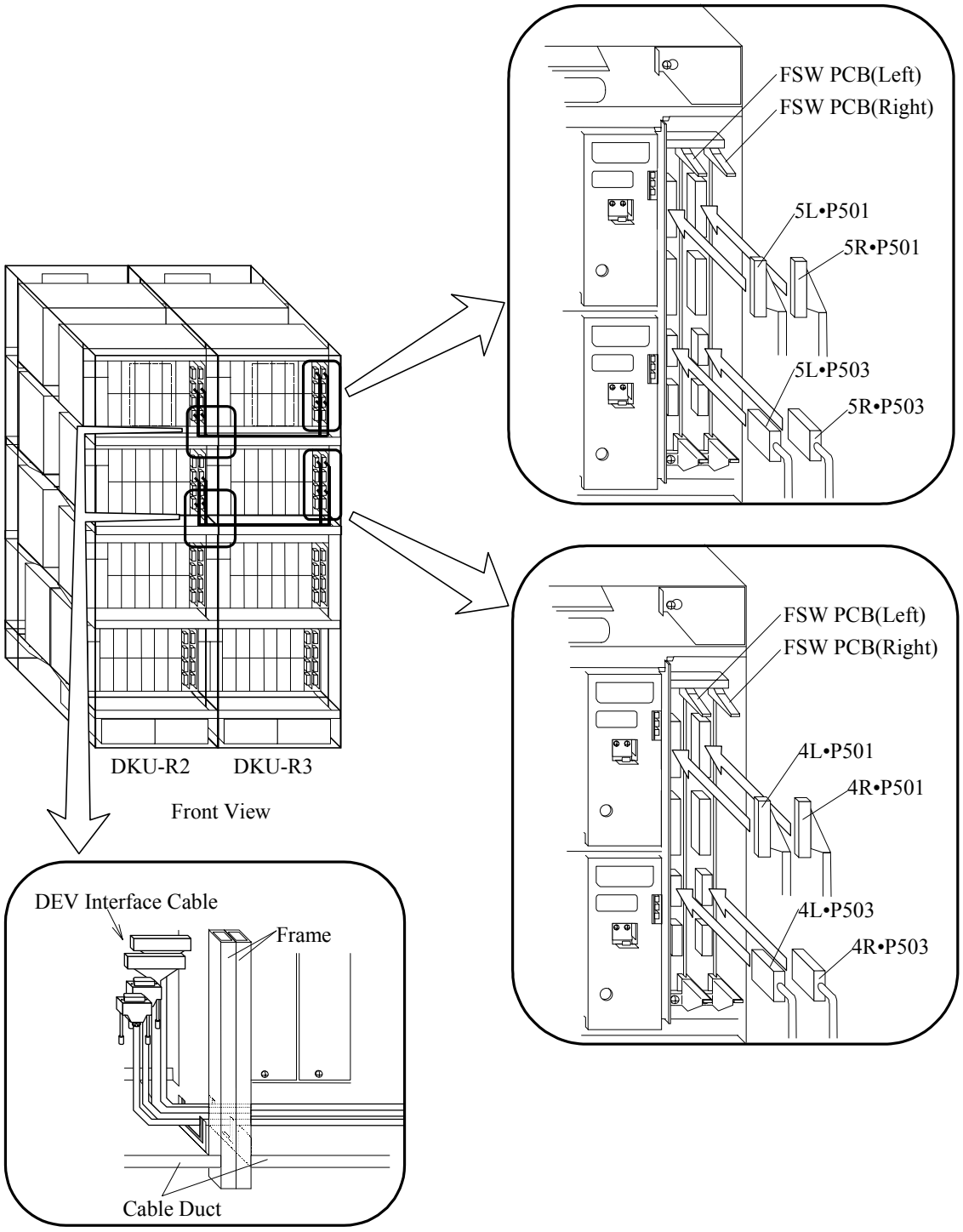

Fig. 3.19.8.8-4 Connection of the DEV Interface Cables

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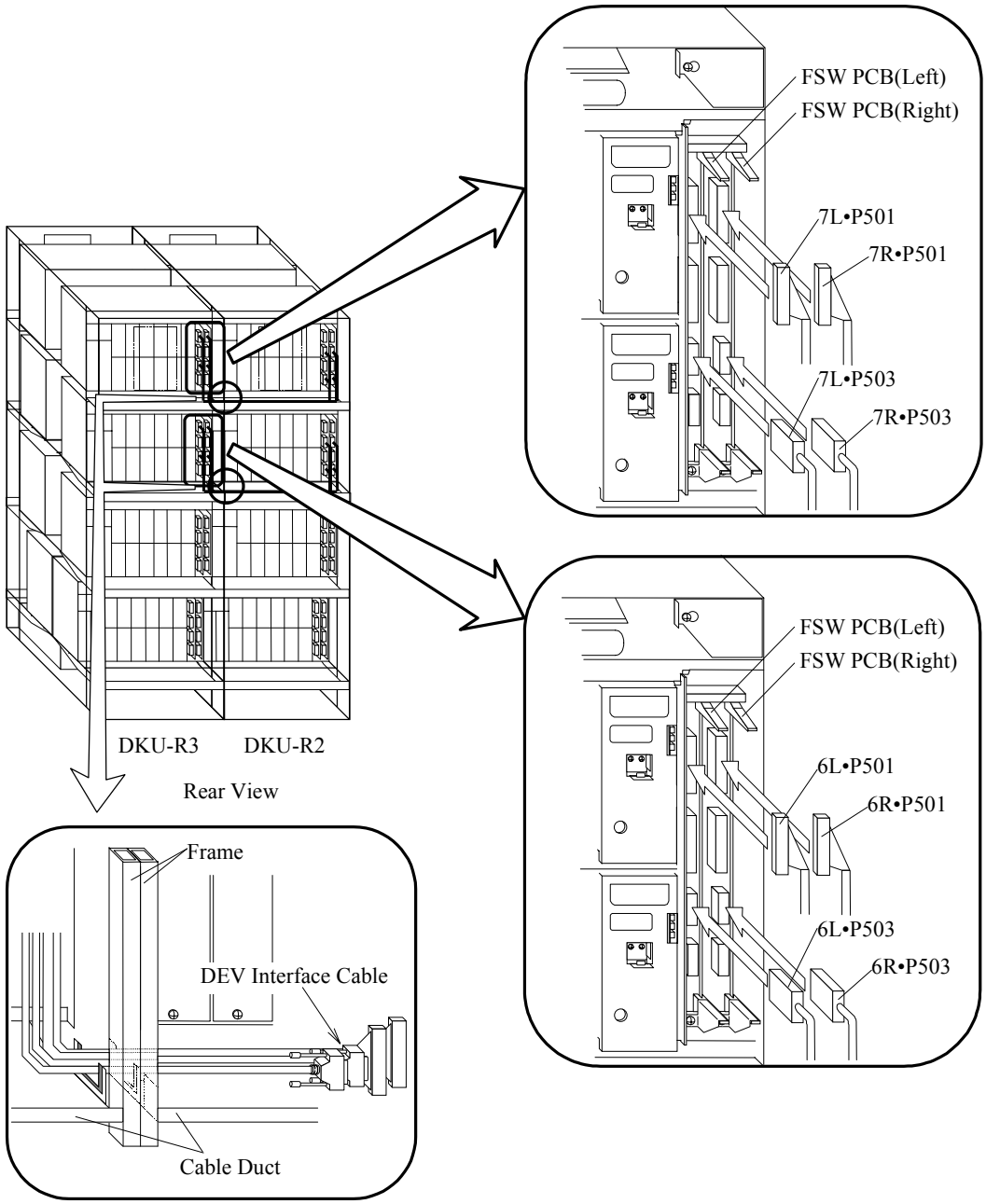

Fig. 3.19.8.8-5 Connection of the DEV Interface Cables

4. When connecting the DEV interface cable while the subsystem is operating (excluding the case when connecting the DEV interface cables between the DKU-R1 frame (HDU-R14-R17) and the DKU-R2 frame (HDU-R24-R27) and between the DKU-R2 frame (HDU-R24-R27) and the DKU-R3 frame (HDU-R34-R37) at the same time), return to INST03-U40-1410 ②.
When connecting the DEV interface cable while the subsystem power is turned off or connecting the DEV interface cables between the DKU-R1 frame (HDU-R14-R17) and the DKU-R2 frame (HDU-R24-R27) and between the DKU-R2 frame (HDU-R24-R27) and the DKU-R3 frame (HDU-R34-R37) at the same time while the subsystem is operating, go to INST03-U40-1940.

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5. Connect the DEV interface cables to the FSW PCBs in the DKU-R2 frame referring to figures 3.19.8.8-6 and 3.19.8.8-7.

⚠ CAUTION

Precaution against a cutting of a cable : When installing a cable with no protector, take care not to get it cut by letting it caught by a sharp edge of a sheet metal part, etc.

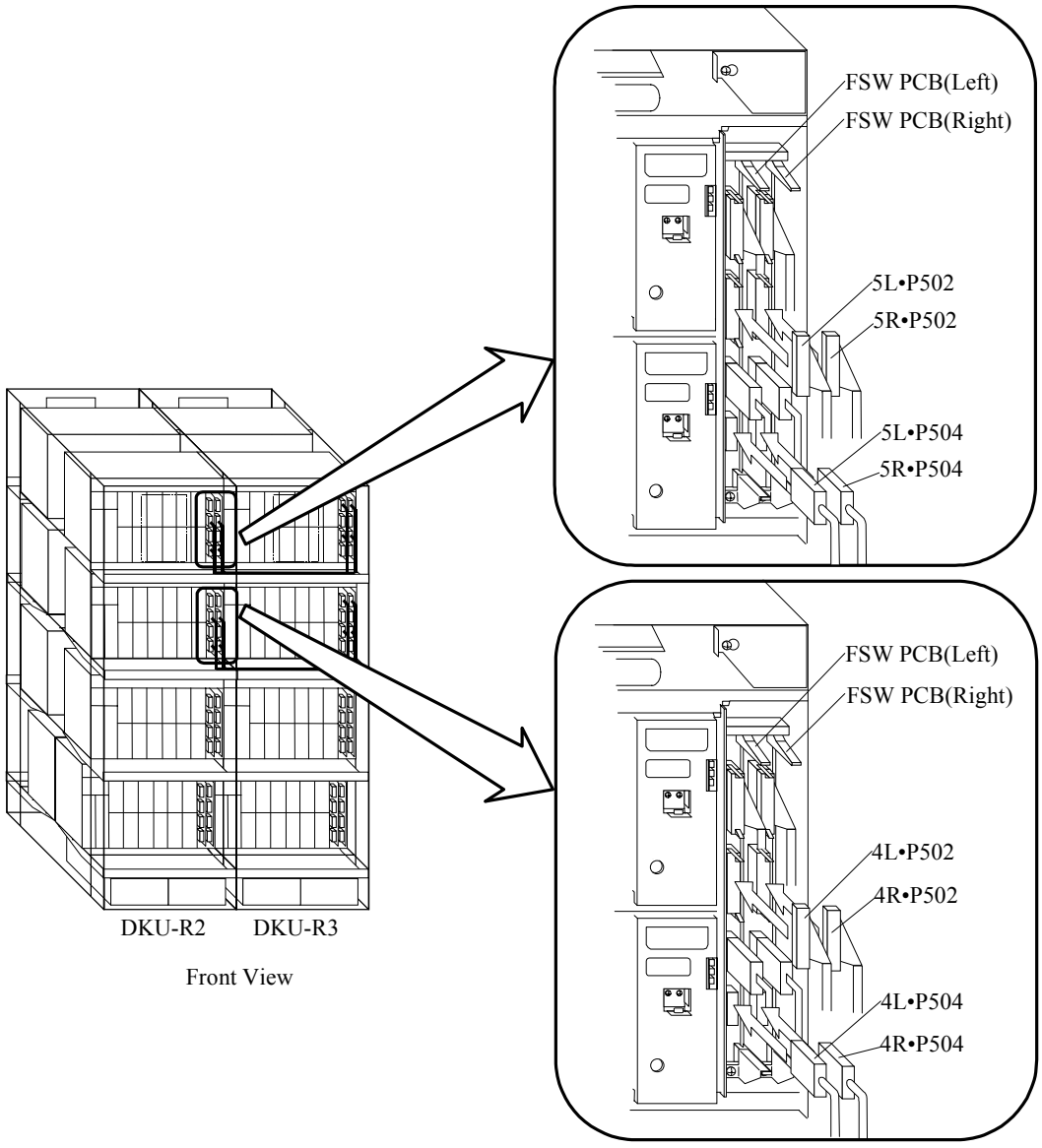

Fig. 3.19.8.8-6 Connection of the DEV Interface Cables

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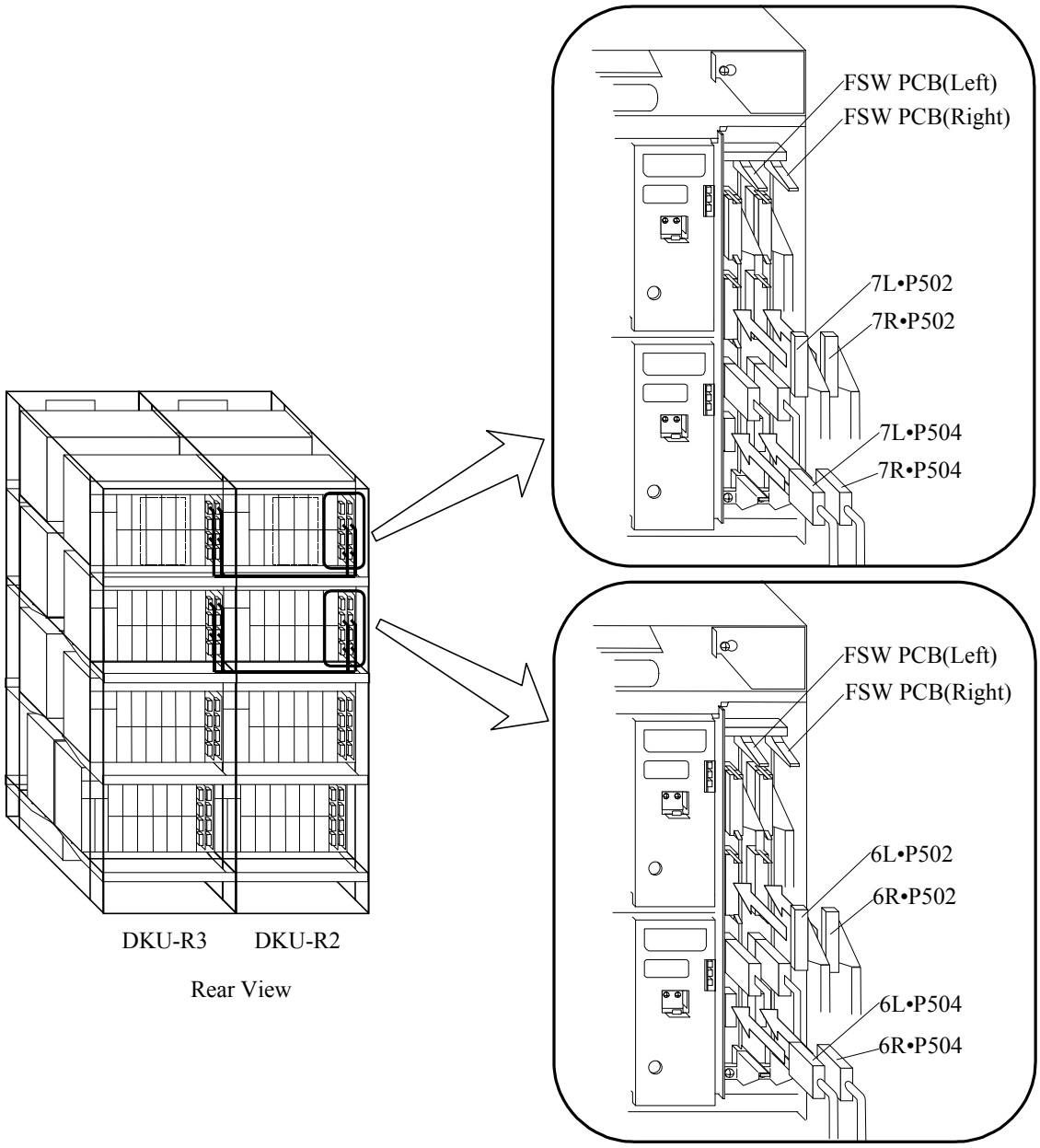

Fig. 3.19.8.8-7 Connection of the DEV Interface Cables

6. When connecting the DEV interface cable while the subsystem is operating (excluding the case when connecting the DEV interface cables between the DKU-R1 frame (HDU-R14-R17) and the DKU-R2 frame (HDU-R24-R27) and between the DKU-R2 frame (HDU-R24-R27) and the DKU-R3 frame (HDU-R34-R37) at the same time), return to INST03-U40-1430 ⑤.
   When connecting the DEV interface cable while the subsystem power is turned off or connecting the DEV interface cables between the DKU-R1 frame (HDU-R14-R17) and the DKU-R2 frame (HDU-R24-R27) and between the DKU-R2 frame (HDU-R24-R27) and the DKU-3 frame (HDU-R34-R37) at the same time while the subsystem is operating, go to INST03-U40-1960.

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7. Attach the side plates in the reverse order of Step 2.
8. Attach the cable covers ① and ② with the screw to fix the DEV Interface Cables.

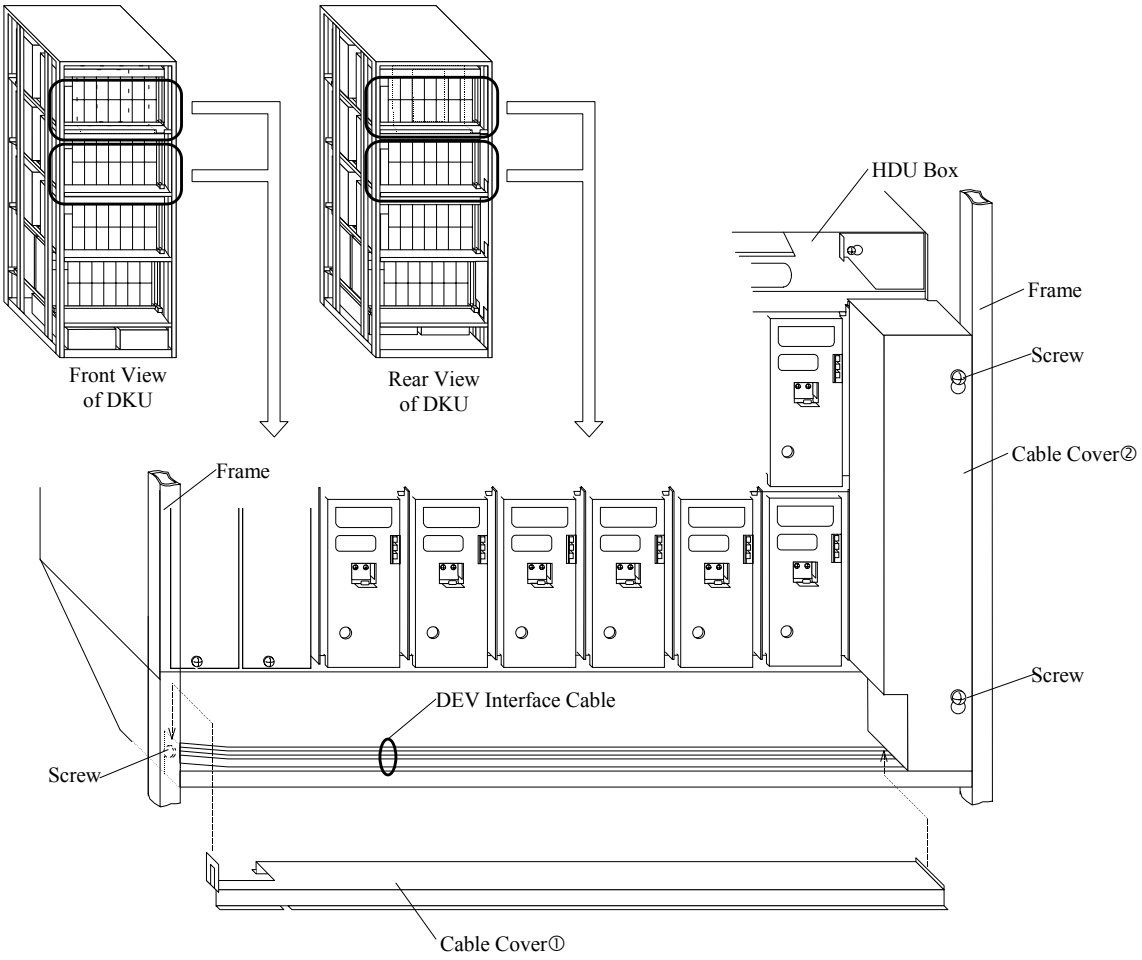

Fig. 3.19.8.8-8 Fixation of the DEV Interface Cables

9. Go to INST03-U40-1430 Step ⑦.

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3.19.8.9 Connection Procedure of DEV Interface Cables (In case of HDU-L33 from L30)

1. Loosen the screws and remove the cable covers ① and ② from the DKU frames.

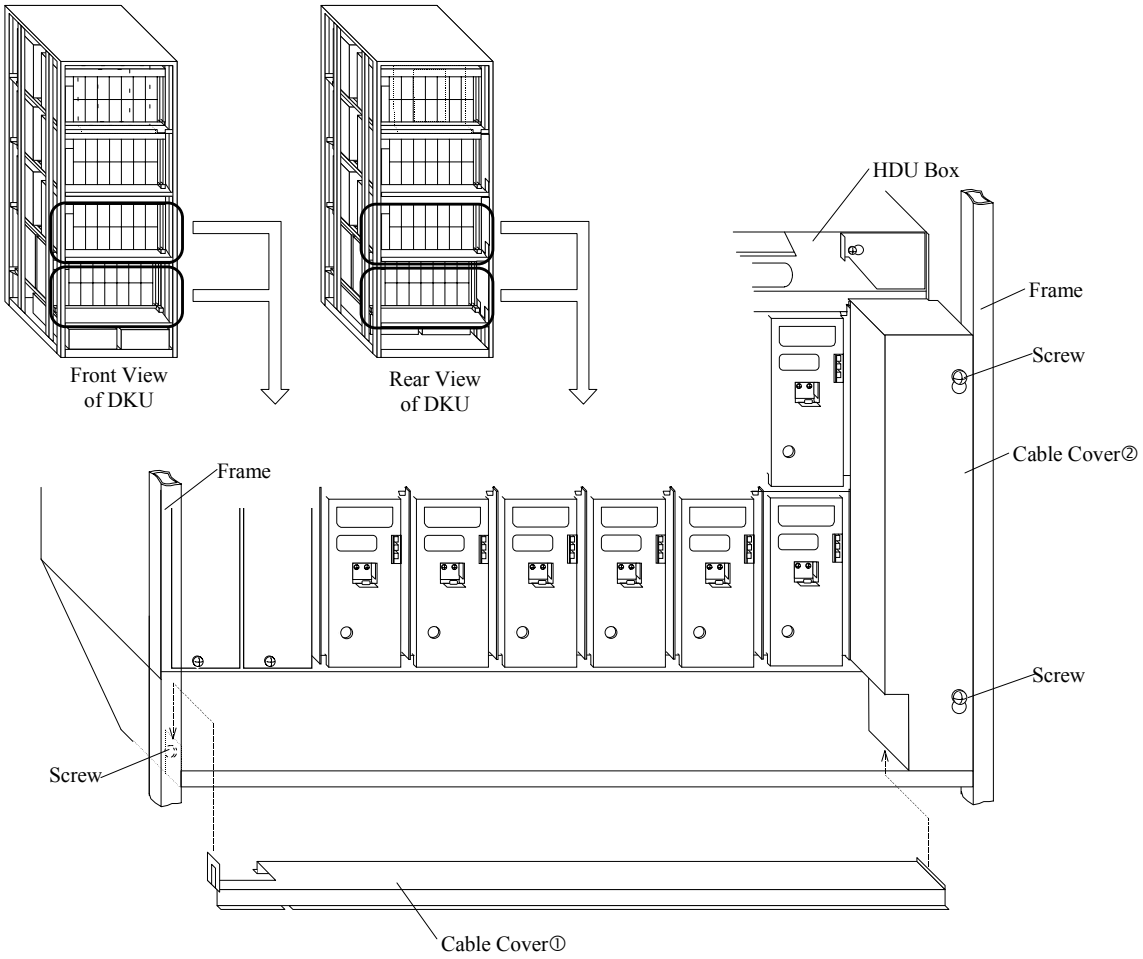

Fig. 3.19.8.9-1 Removal of Cable Covers

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2. Loosen the screws and remove the side plates from the DKU frames.

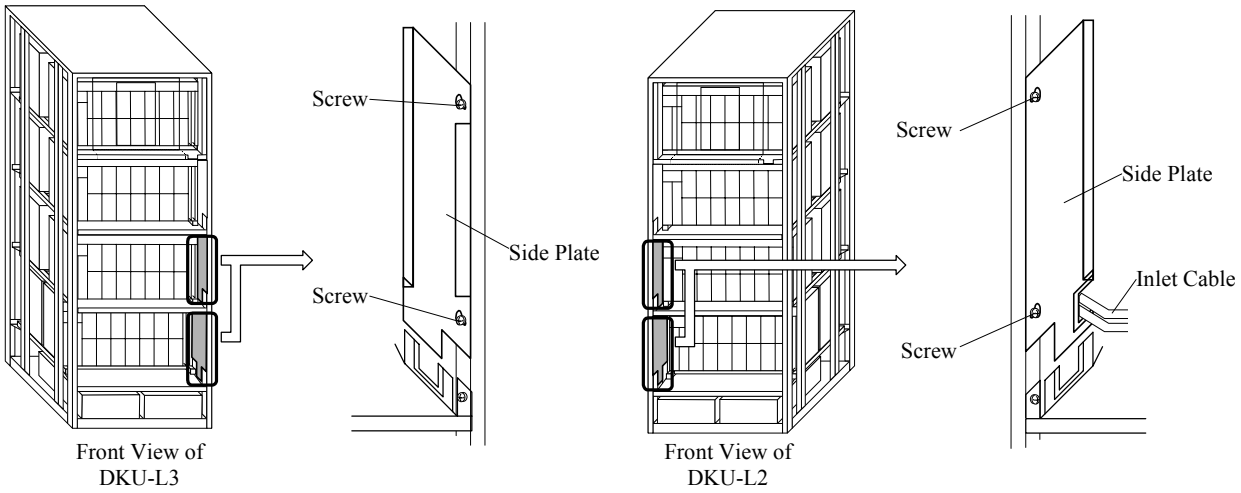

Fig. 3.19.8.9-2 Removal of Side Plates (Front View)

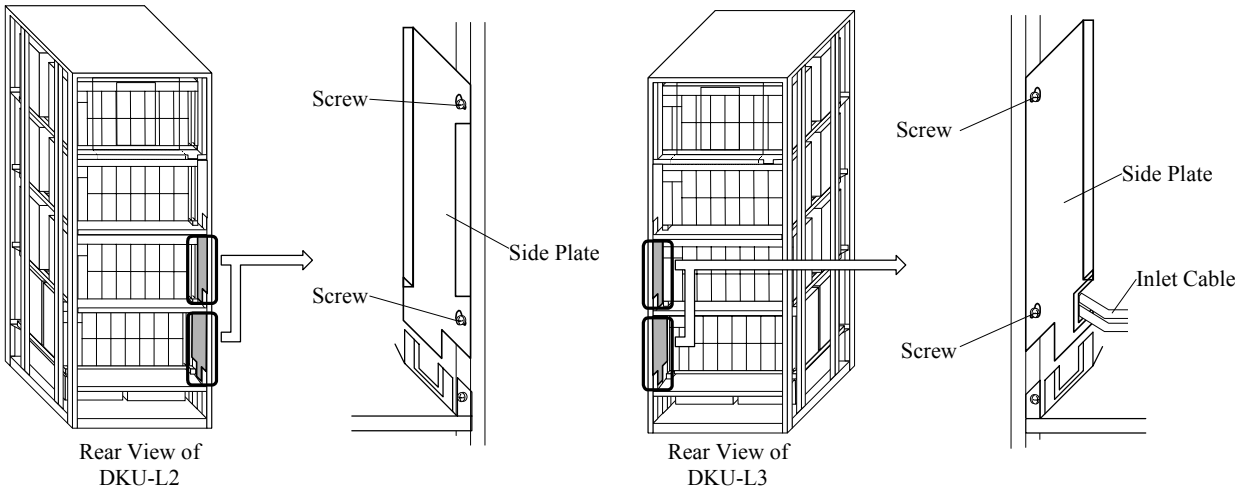

Fig. 3.19.8.9-3 Removal of Side Plates (Rear View)

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3. Connect the DEV interface cables to the FSW PCBs in the DKU-L3 frame referring to figures 3.19.8.9-4 and 3.19.8.9-5.

⚠ CAUTION

Precaution against a cutting of a cable : When installing a cable with no protector, take care not to get it cut by letting it caught by a sharp edge of a sheet metal part, etc.

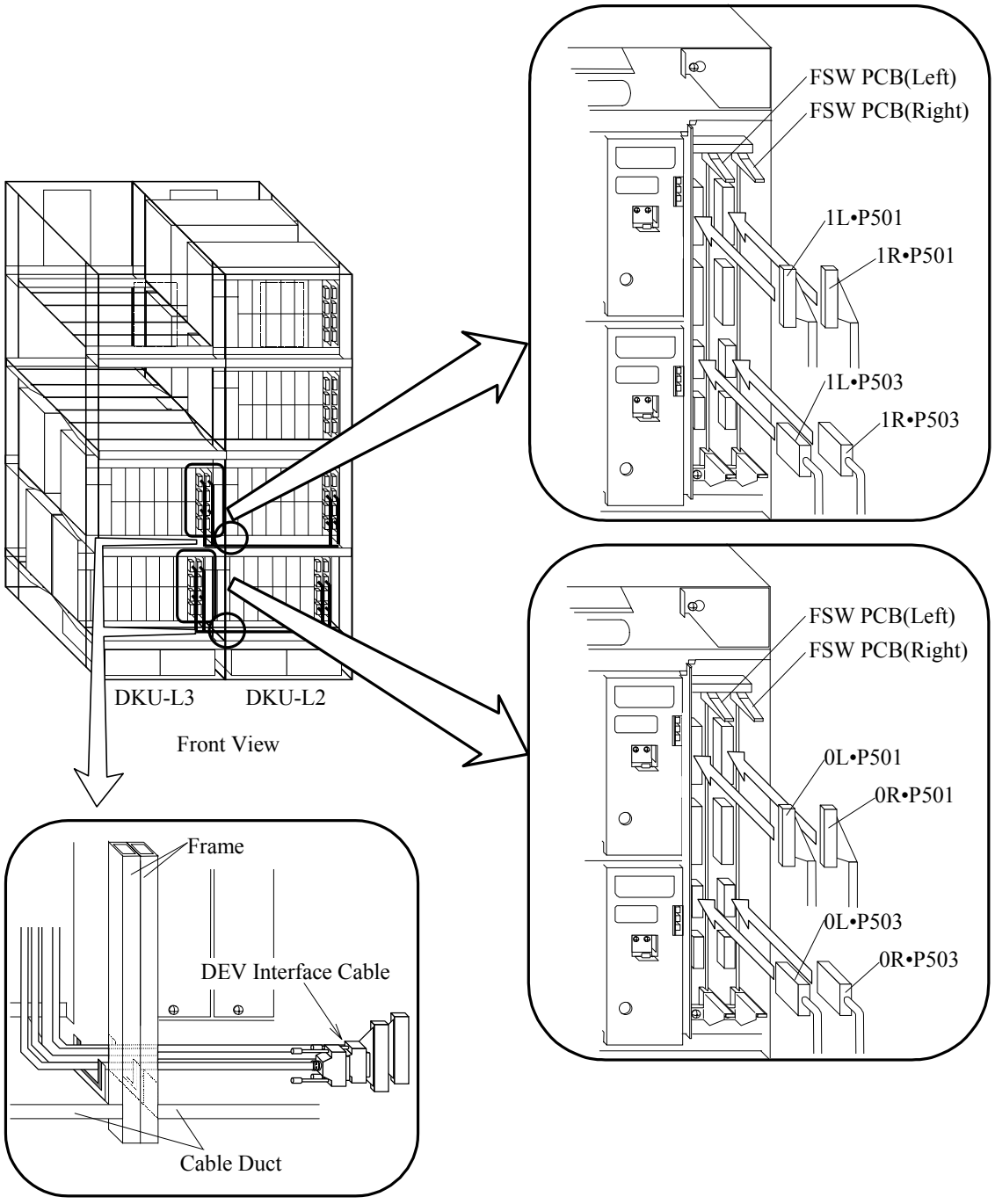

Fig. 3.19.8.9-4 Connection of the DEV Interface Cables

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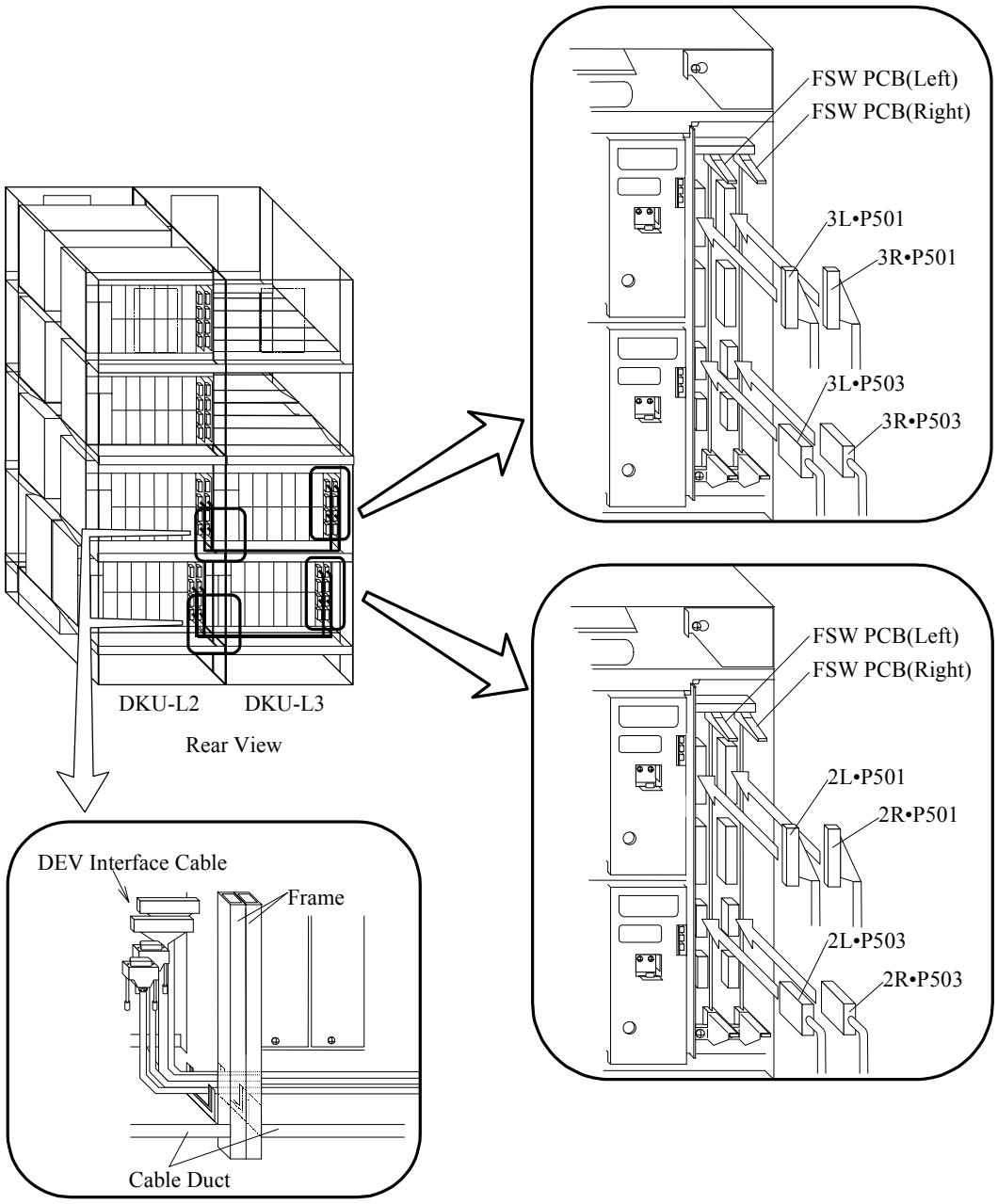

Fig. 3.19.8.9-5 Connection of the DEV Interface Cables

4. When connecting the DEV interface cable while the subsystem is operating (excluding the case when connecting the DEV interface cables between the DKU-L1 frame (HDU-L10-L13) and the DKU-L2 frame (HDU-L20-L23) and between the DKU-L2 frame (HDU-L20-L23) and the DKU-L3 frame (HDU-L30-L33) at the same time), return to INST03-U40-1410 ②.
When connecting the DEV interface cable while the subsystem power is turned off or connecting the DEV interface cables between the DKU-L1 frame (HDU-L10-L13) and the DKU-L2 frame (HDU-L20-L23) and between the DKU-L2 frame (HDU-L20-L23) and the DKU-L3 frame (HDU-L30-L33) at the same time while the subsystem is operating, go to INST03-U40-2010.

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5. Connect the DEV interface cables to the FSW PCBs in the DKU-L2 frame referring to figures 3.19.8.9-6 and 3.19.8.9-7.

⚠ CAUTION

Precaution against a cutting of a cable : When installing a cable with no protector, take care not to get it cut by letting it caught by a sharp edge of a sheet metal part, etc.

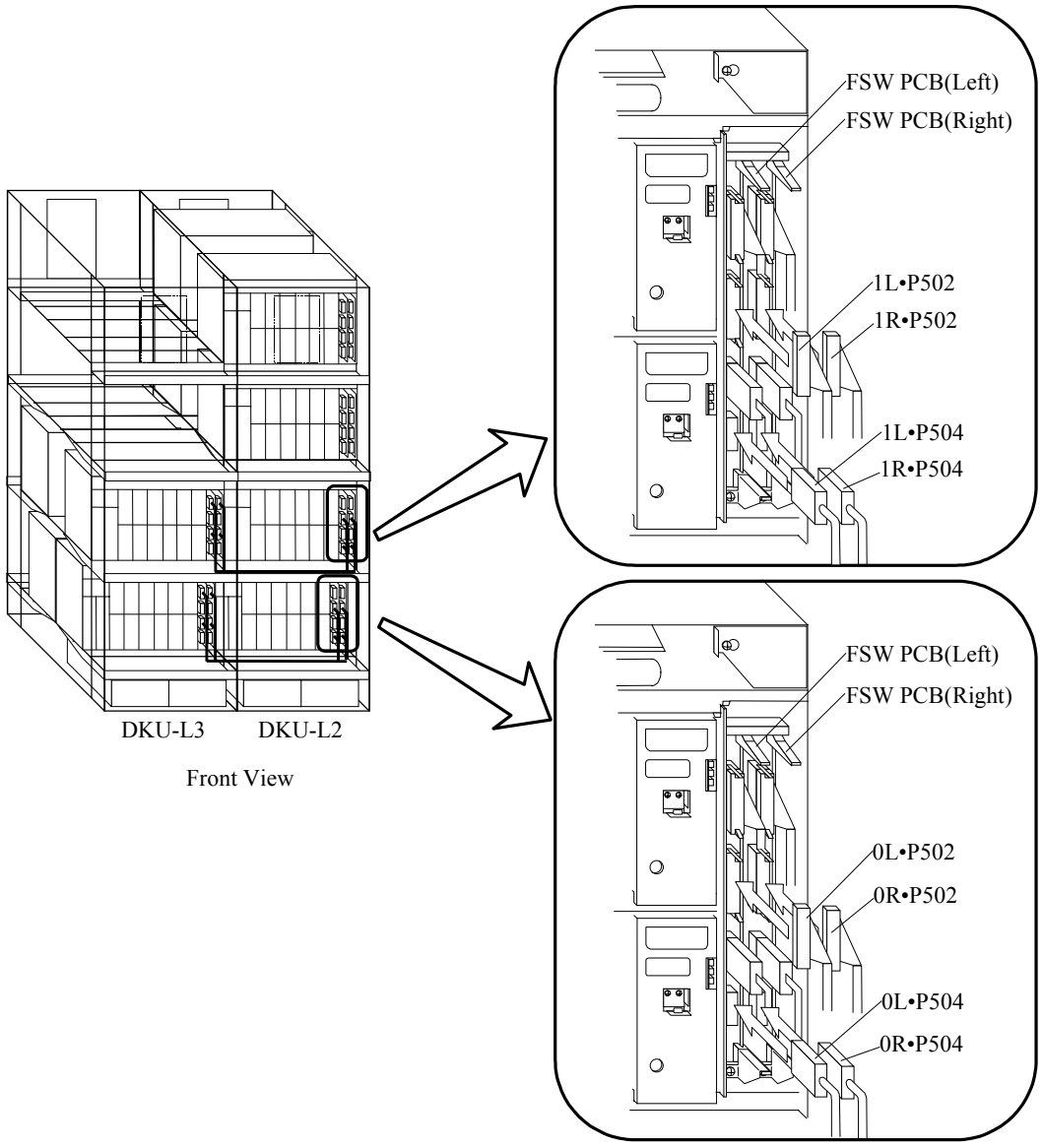

Fig. 3.19.8.9-6 Connection of the DEV Interface Cables

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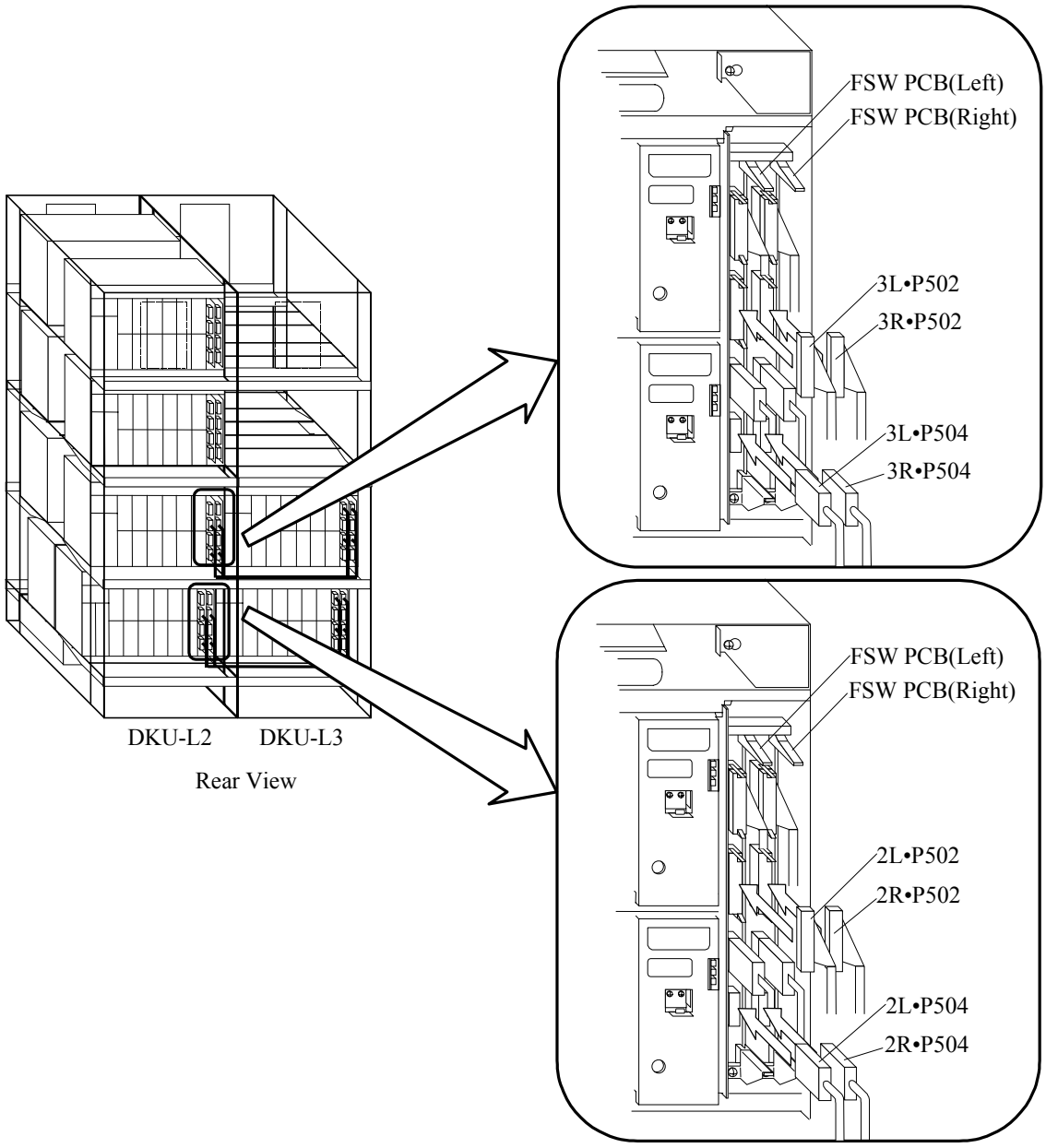

Fig. 3.19.8.9-7 Connection of the DEV Interface Cables

6. When connecting the DEV interface cable while the subsystem is operating (excluding the case when connecting the DEV interface cables between the DKU-L1 frame (HDU-L10-L13) and the DKU-L2 frame (HDU-L20-L23) and between the DKU-L2 frame (HDU-L20-L23) and the DKU-L3 frame (HDU-L30-L33) at the same time), return to INST03-U40-1410 ⑤.
   When connecting the DEV interface cable while the subsystem power is turned off or connecting the DEV interface cables between the DKU-L1 frame (HDU-L10-L13) and the DKU-L2 frame (HDU-L20-L23) and between the DKU-L2 frame (HDU-L20-L23) and the DKU-L3 frame (HDU-L30-L33) at the same time while the subsystem is operating, go to INST03-U40-2030.

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7. Attach the side plates in the reverse order of Step 2.
8. Attach the cable covers ① and ② with the screw to fix the DEV Interface Cables.

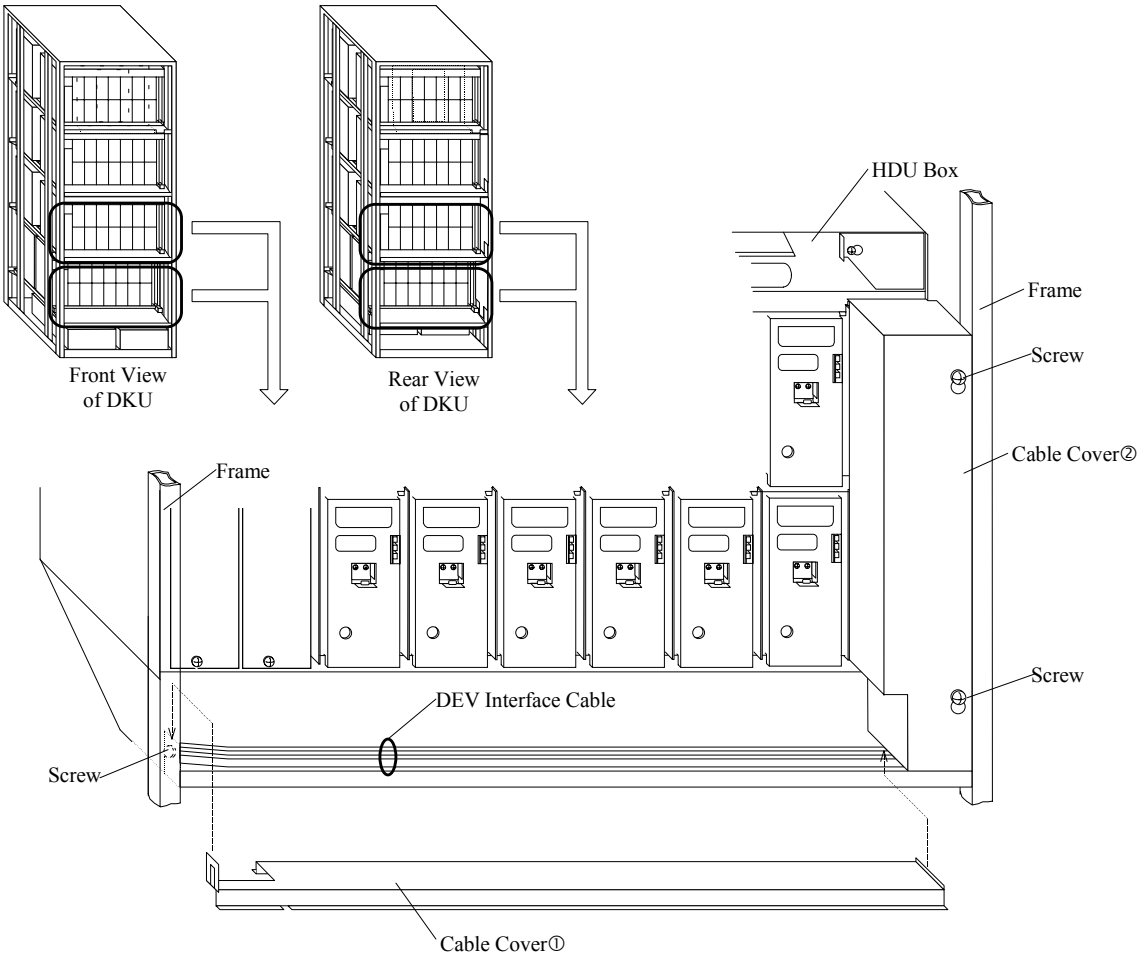

Fig. 3.19.8.9-8 Fixation of the DEV Interface Cables

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9. Attach the nameplate to the DKU-L3 frame.

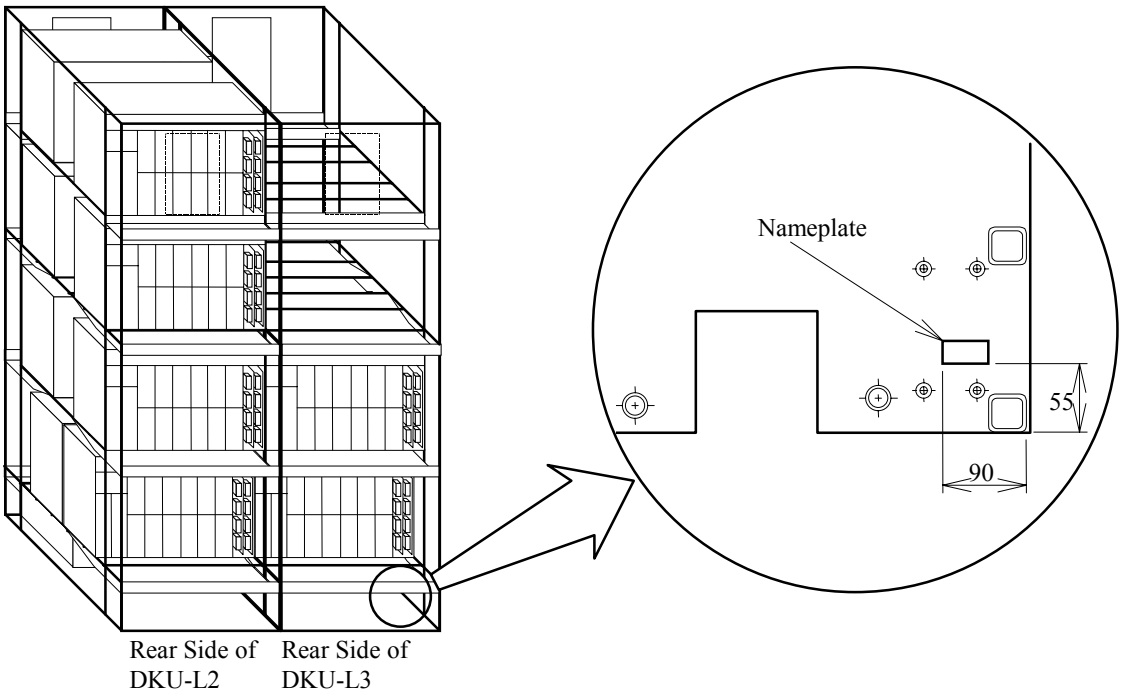

Fig. 3.19.8.9-9 Attachment of the Nameplate

10. When the DKU-L3 frame consists of 4 HDU boxes, fix the rest of the DEV interface cables in the DKU-L3 frame with the binders.

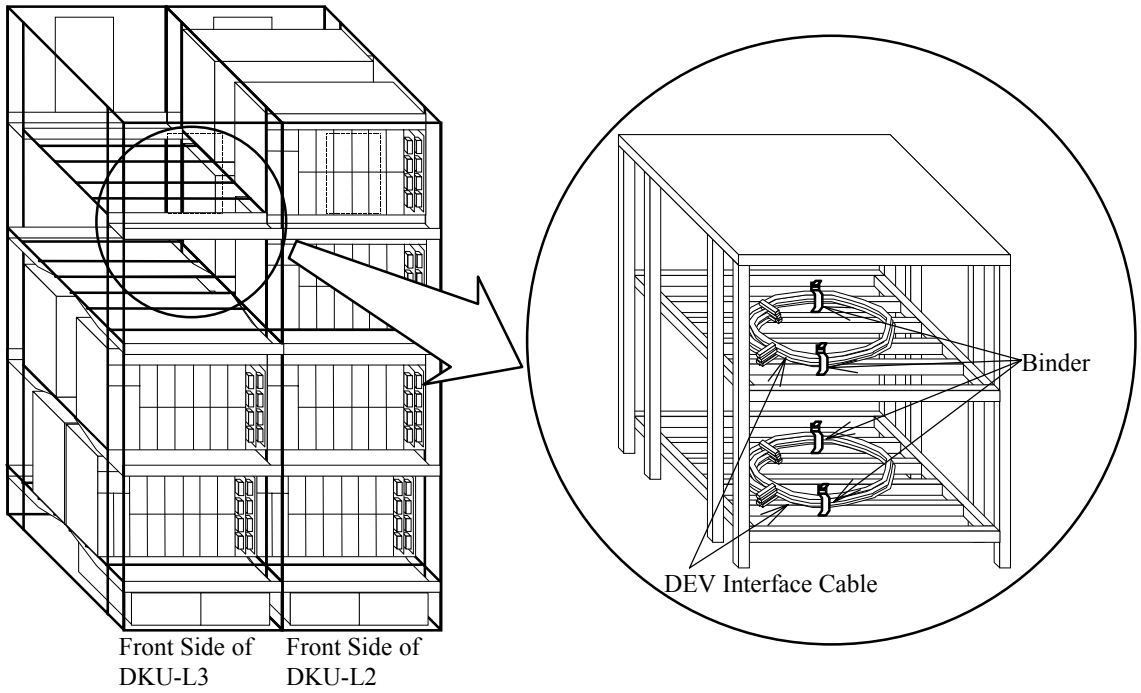

Fig. 3.19.8.9-10 Fixation of the DEV Interface Cables

11. Go to INST03-U40-1430 Step ⑦.

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3.19.8.10 Connection Procedure of DEV Interface Cables (In case of HDU-L37 from L34)

1. Loosen the screws and remove the cable covers ① and ② from the DKU frames.

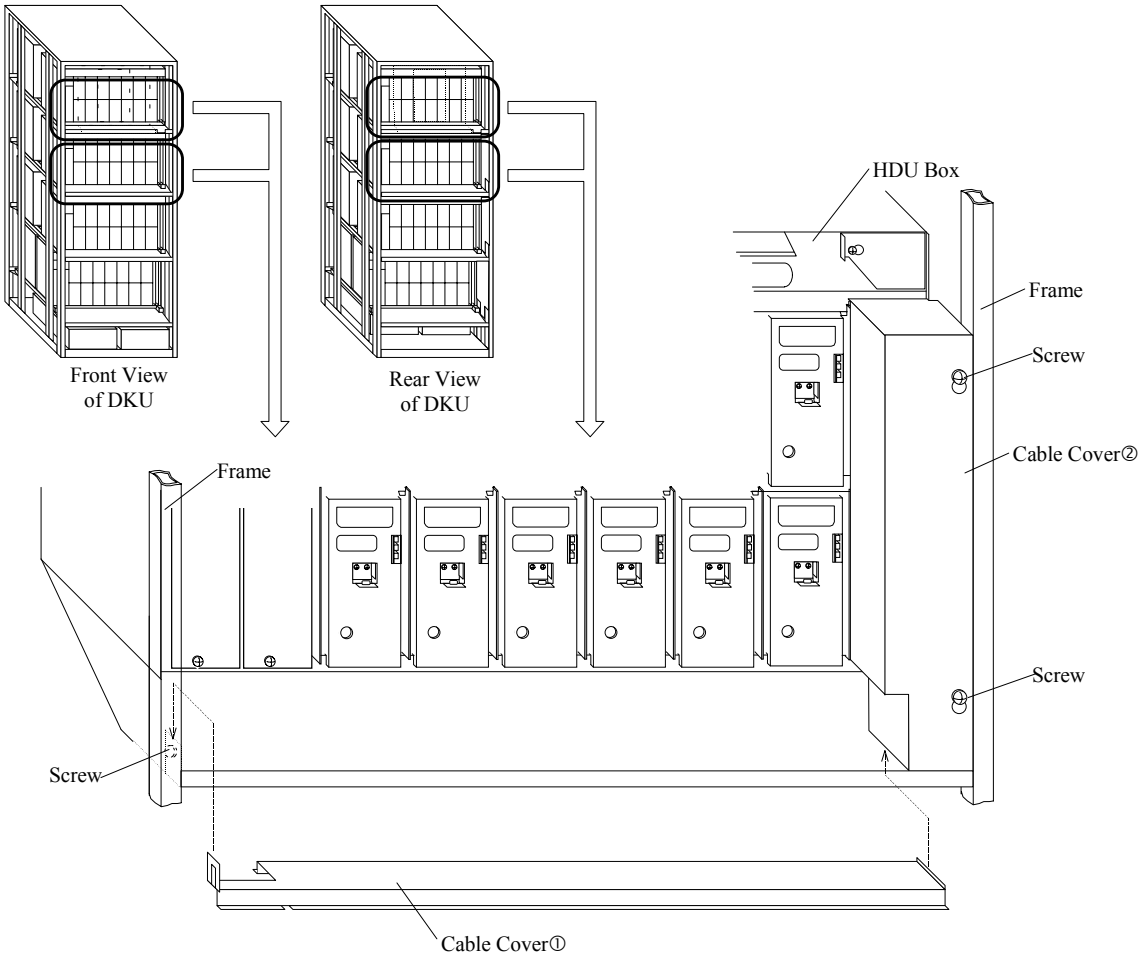

Fig. 3.19.8.10-1 Removal of Cable Covers

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2. Loosen the screws and remove the side plates from the DKU frames.

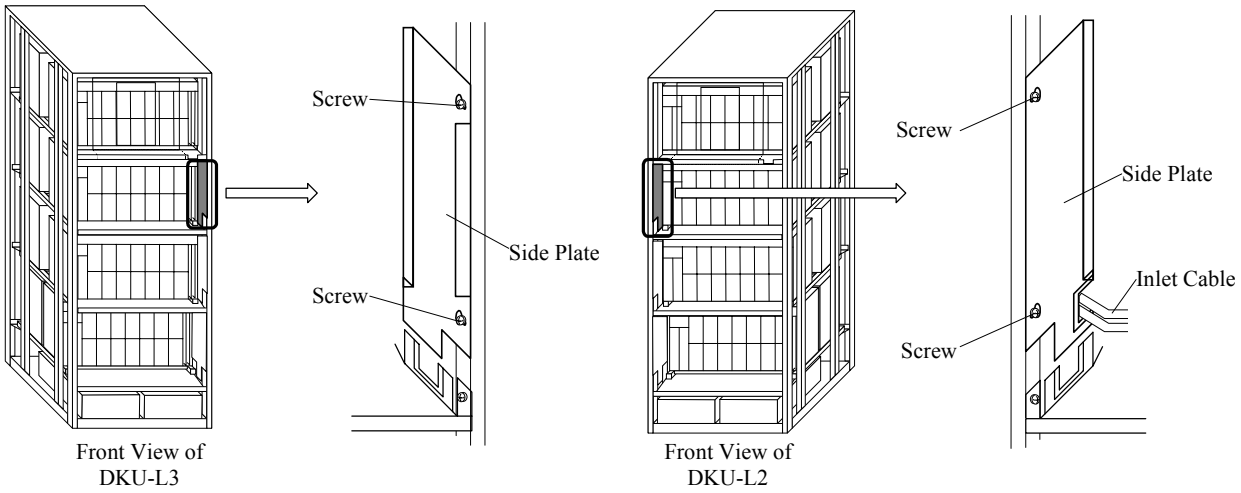

Fig. 3.19.8.10-2 Removal of Side Plates (Front View)

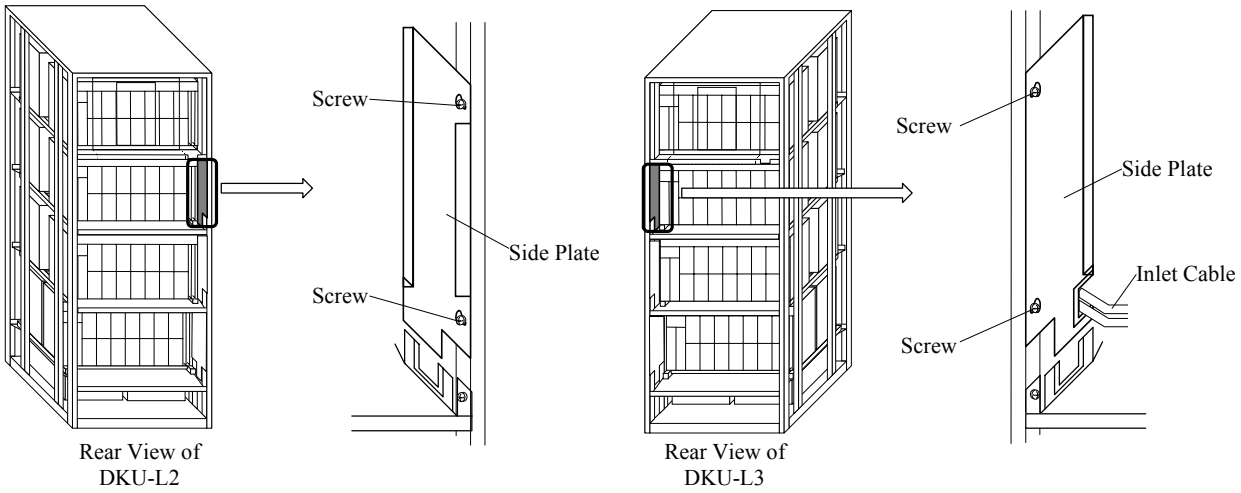

Fig. 3.19.8.10-3 Removal of Side Plates (Rear View)

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3. Connect the DEV interface cables to the FSW PCBs in the DKU-L3 frame referring to figures 3.19.8.10-4 and 3.19.8.10-5.

⚠ CAUTION

Precaution against a cutting of a cable : When installing a cable with no protector, take care not to get it cut by letting it caught by a sharp edge of a sheet metal part, etc.

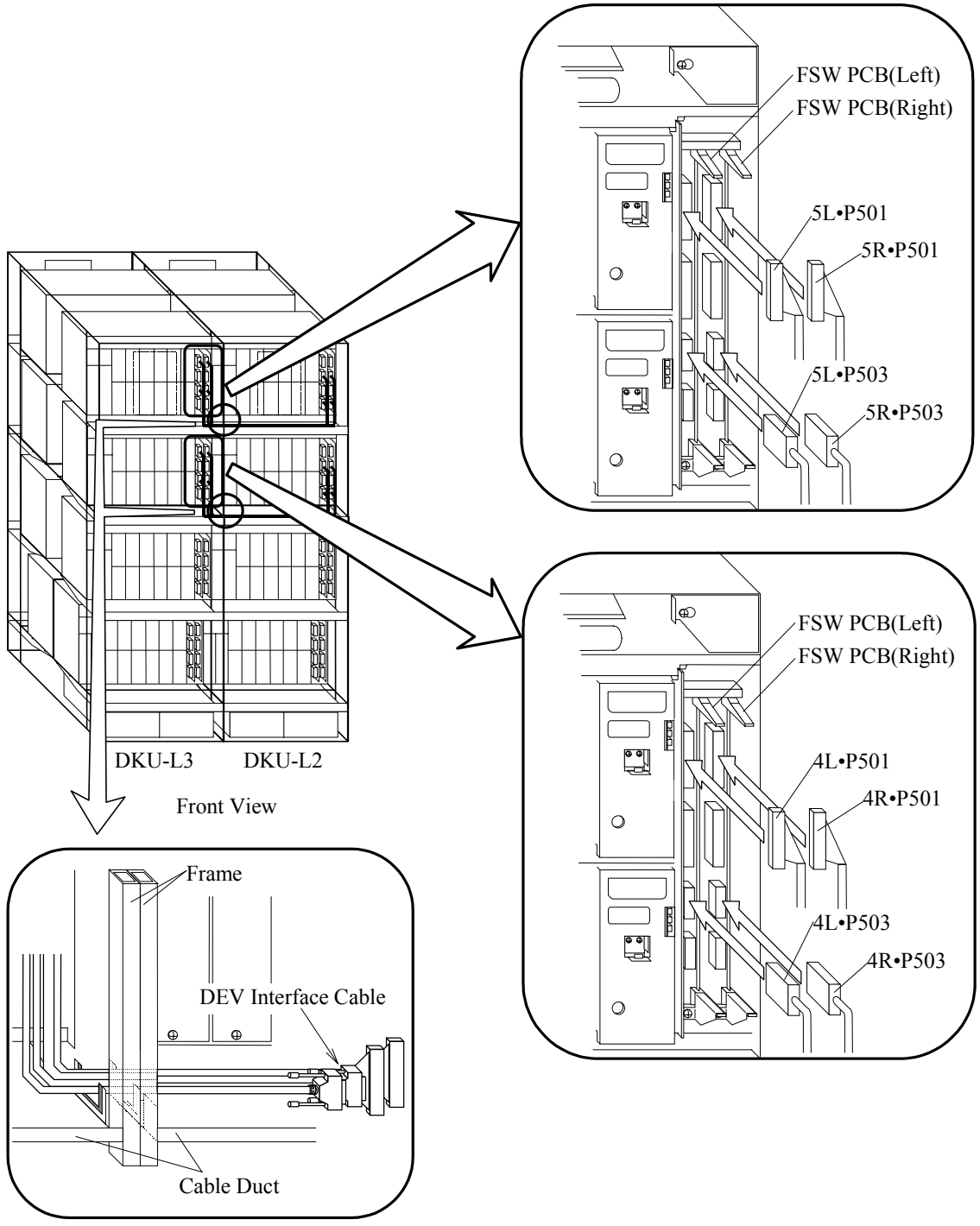

Fig. 3.19.8.10-4 Connection of the DEV Interface Cables

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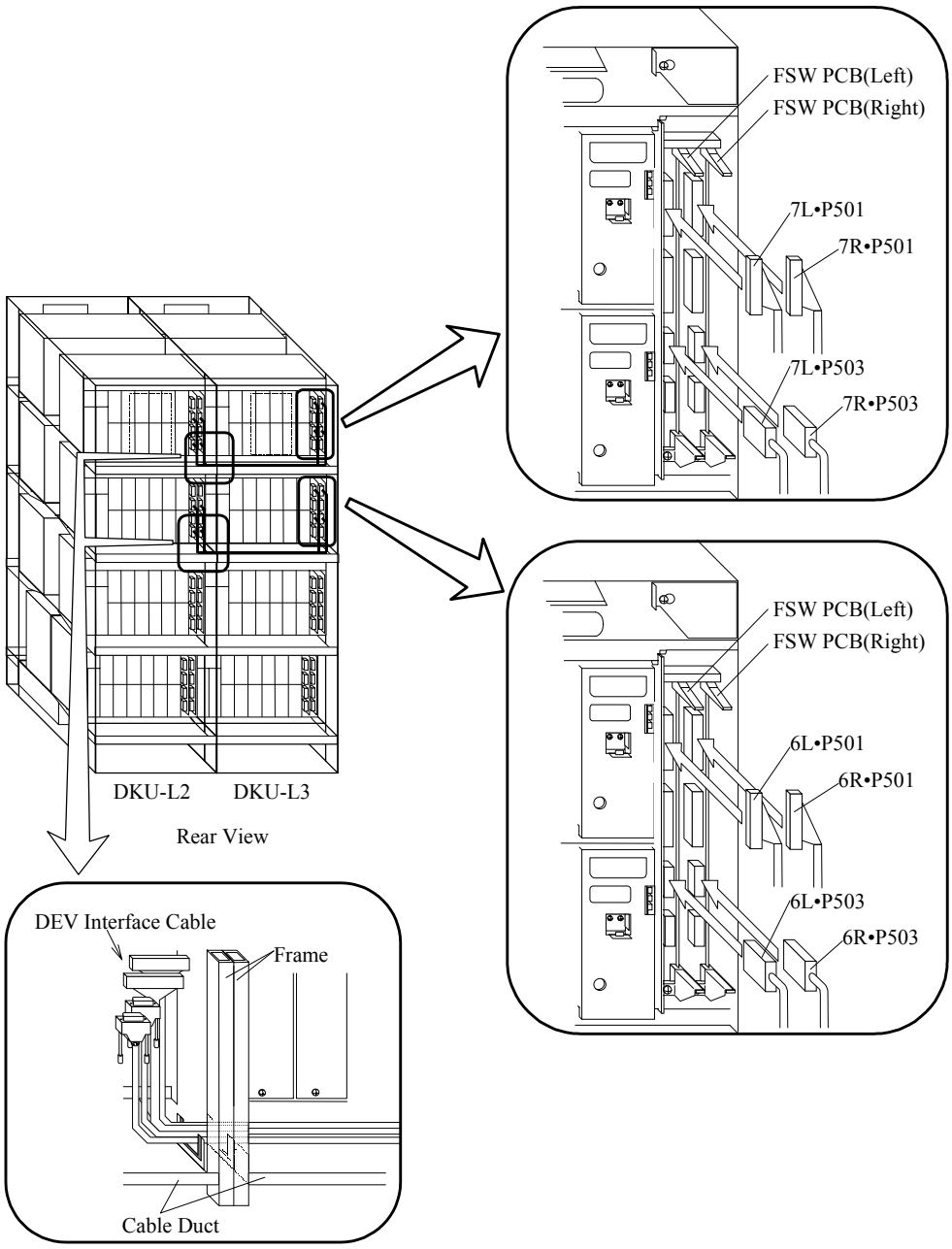

Fig. 3.19.8.10-5 Connection of the DEV Interface Cables

4. When connecting the DEV interface cable while the subsystem is operating (excluding the case when connecting the DEV interface cables between the DKU-L1 frame (HDU-L14-L17) and the DKU-L2 frame (HDU-L24-L27) and between the DKU-L2 frame (HDU-L24-L27) and the DKU-L3 frame (HDU-L34-L37) at the same time), return to INST03-U40-1410 ②.
   When connecting the DEV interface cable while the subsystem power is turned off or connecting the DEV interface cables between the DKU-L1 frame (HDU-L14-L17) and the DKU-L2 frame (HDU-L24-L27) and between the DKU-L2 frame (HDU-L24-L27) and the DKU-L3 frame (HDU-L34-L37) at the same time while the subsystem is operating, go to INST03-U40-2090.

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5. Connect the DEV interface cables to the FSW PCBs in the DKU-L2 frame referring to figures 3.19.8.10-6 and 3.19.8.10-7.

⚠ CAUTION

Precaution against a cutting of a cable : When installing a cable with no protector, take care not to get it cut by letting it caught by a sharp edge of a sheet metal part, etc.

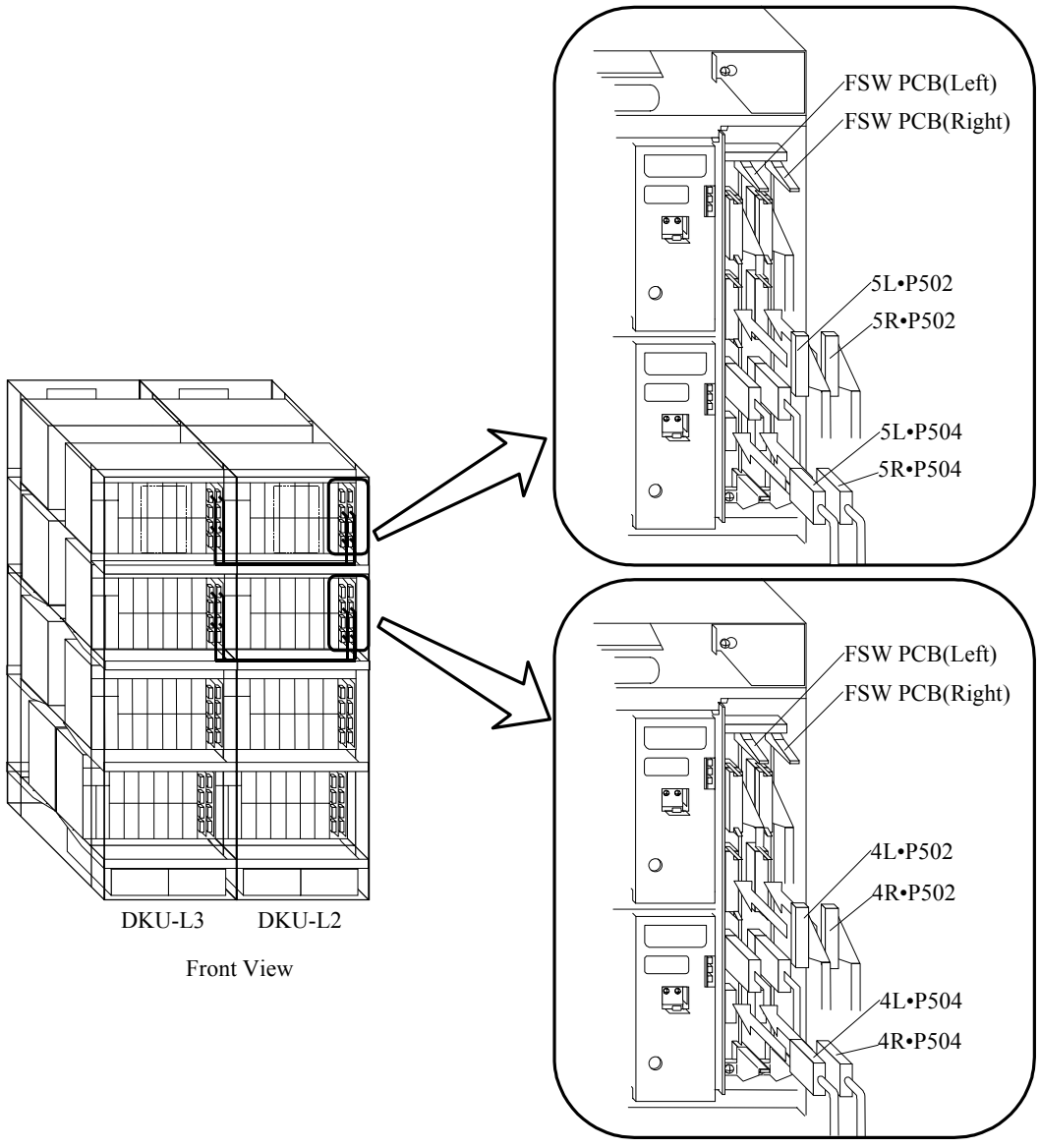

Fig. 3.19.8.10-6 Connection of the DEV Interface Cables

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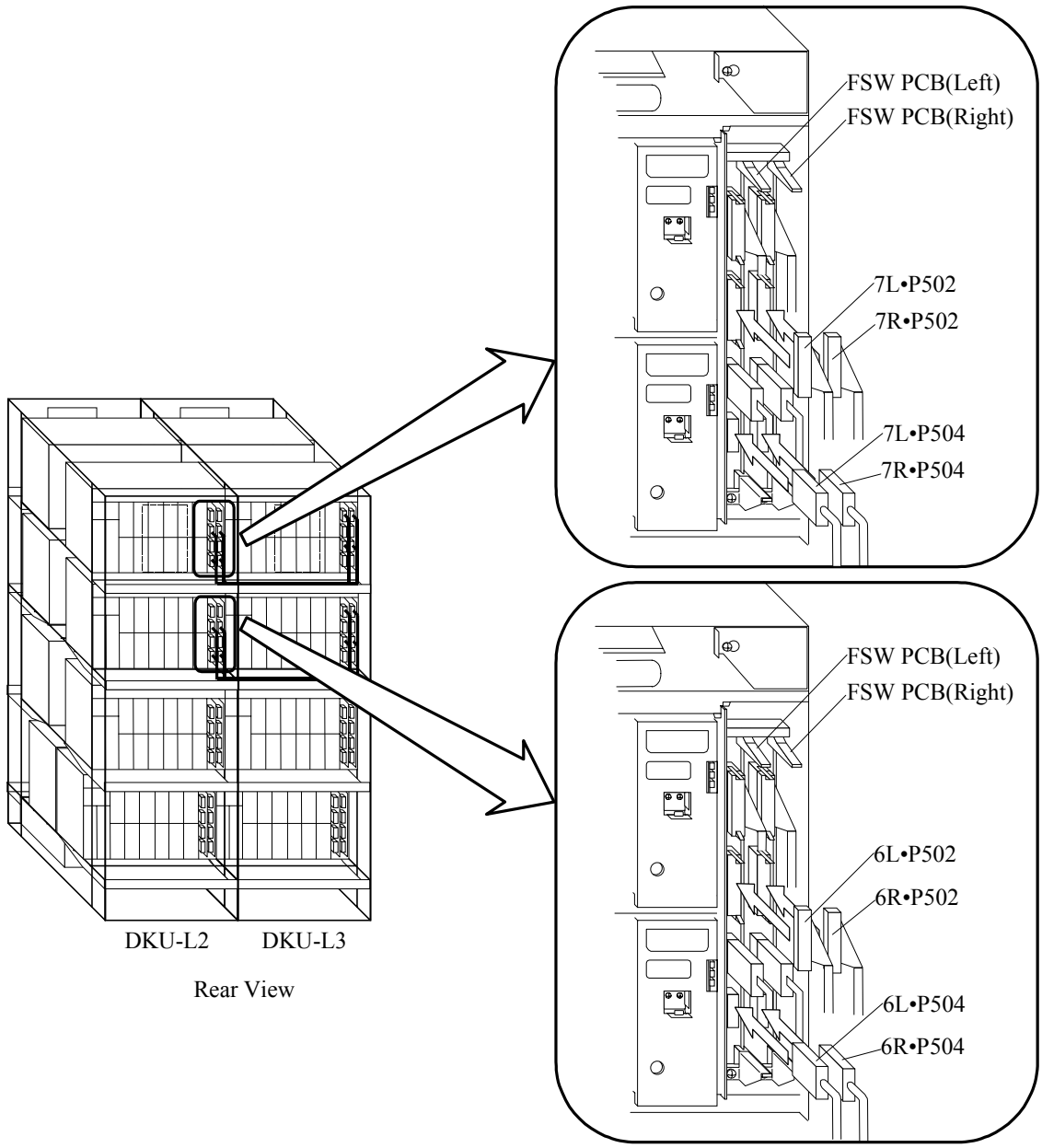

Fig. 3.19.8.10-7 Connection of the DEV Interface Cables

6. When connecting the DEV interface cable while the subsystem is operating (excluding the case when connecting the DEV interface cables between the Third DKU frame (HDU-L14-L17) and the Fourth DKU frame (HDU-L24-L27) and between the Fourth DKU frame (HDU-L24-L27) and the Sixth DKU frame (HDU-L34-L37) at the same time), return to INST03-U40-1430 ⑤. When connecting the DEV interface cable while the subsystem power is turned off or connecting the DEV interface cables between the Third DKU frame (HDU-L14-L17) and the Fourth DKU frame (HDU-L24-L27) and between the Fourth DKU frame (HDU-L24-L27) and the Sixth DKU frame (HDU-L34-L37) at the same time while the subsystem is operating, go to INST03-U40-2110.

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7. Attach the side plates in the reverse order of Step 2.
8. Attach the cable covers ① and ② with the screw to fix the DEV Interface Cables.

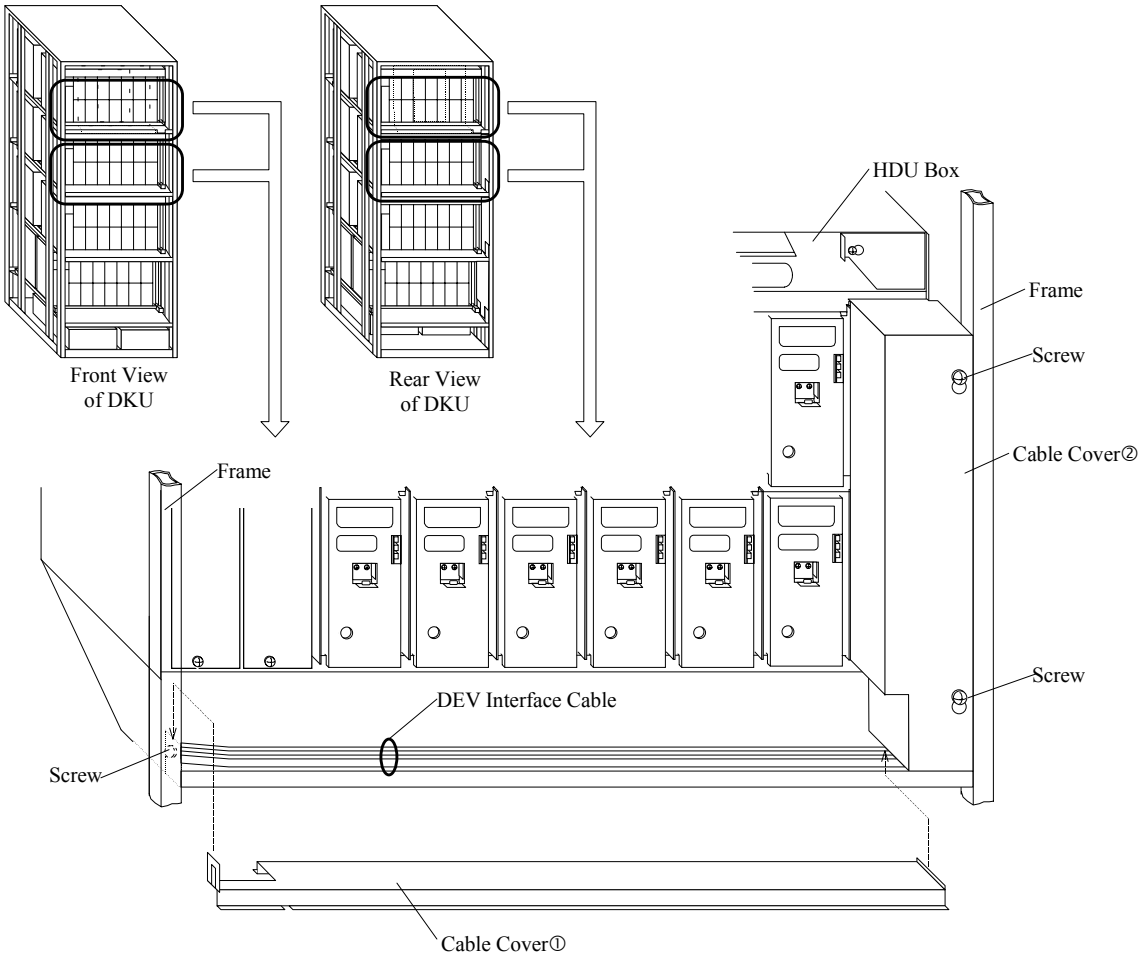

Fig. 3.19.8.10-8 Fixation of the DEV Interface Cables

9. Go to INST03-U40-1430 Step ⑦.

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3.19.9 Installation of AC Box Kit for DKU (DKU-F405I-3PS/1PS)

3.19.9.1 Flowchart

1. Remove the Plate.
↓
2. Attach the DKU AC Boxes.
↓
3. Attach the Nameplate.
↓
4. Connect the Cables.
↓
5. Attach the Plate.

3.19.9.2 Parts List

Table 3.19.9.2-1 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKU-F405I-3PS	DKU AC Box	5502383-A	2	
		Nameplate	2103308-13	1	
			3259625-1	1	
2	DKU-F405I-1PS	DKU AC Box	5502396-A	2	
		Nameplate	2103308-18	1	
			3259625-6	1	

Notice:
The number of phases (three or single) of the AC Box Kit (DKU-F4051-1PS/3PS) to be added to the DKU frame must be the same as that of the AC Box which is already installed in the subsystem. Check if the AC Box Kit to be added is the correct optional component.

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3.19.9.3 Installation Procedure of AC Box Kit for DKU

1. Remove the Plate.
   a. Remove the two screws.
   b. Slide the plate toward the rear side to remove.

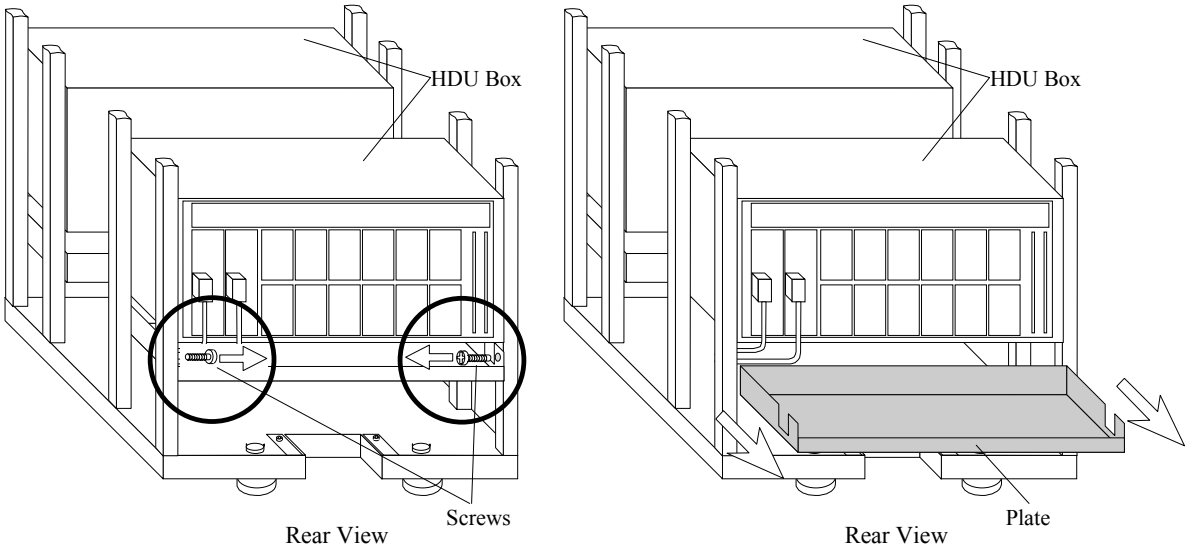

Fig. 3.19.9.3-1 Removal of Plate

1. Attach the DKU AC Boxes.
   a. Slide the DKU AC Boxes from the front to the rear.

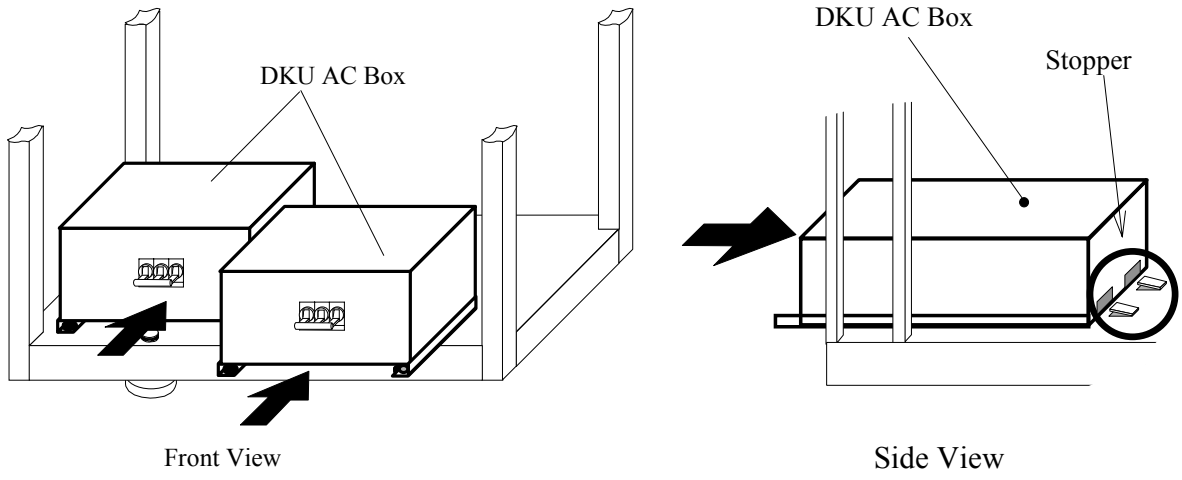

Fig. 3.19.9.3-2 Attachment of DKU AC Boxes

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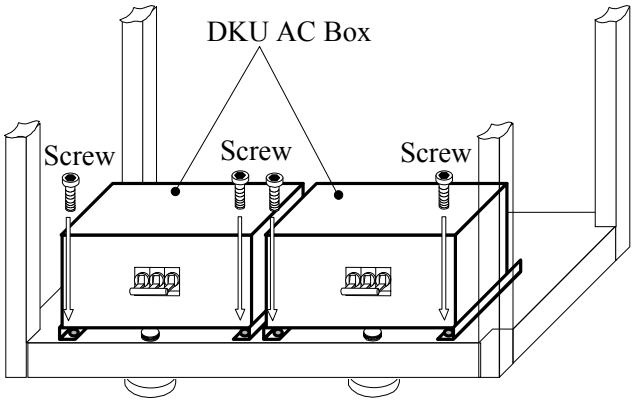
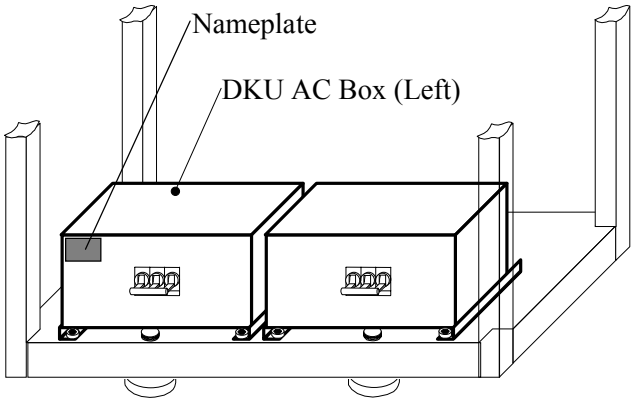
b. Secure the DKU AC Boxes with the screws.



Front View
of DKU

Fig. 3.19.9.3-3 Attachment of Screws

4. Attach the Nameplate.
   a. Attach the corresponding nameplate to the left DKU AC Box.



Front View
of DKU

Fig. 3.19.9.3-4 Attachment of Nameplate

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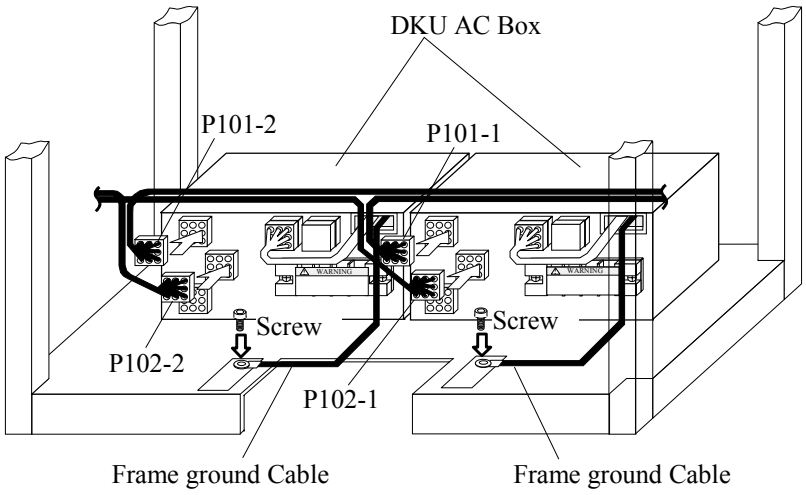
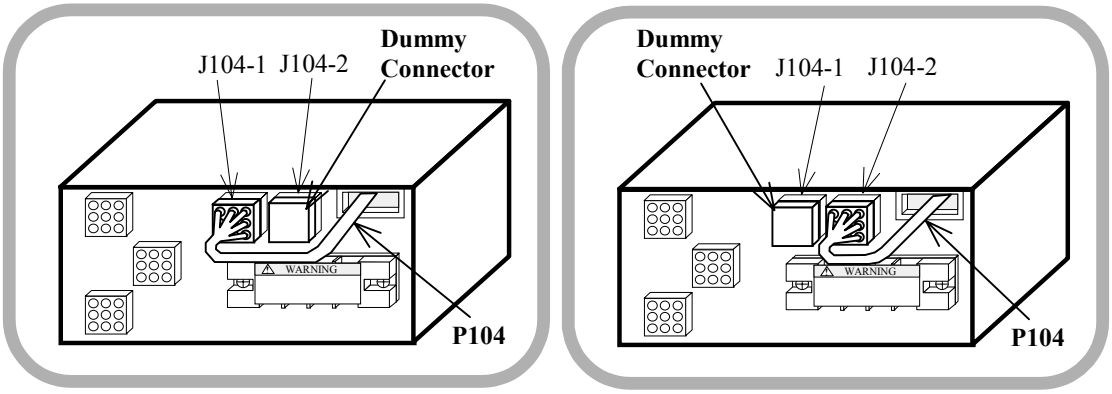
3. Connect the Cables.

DKU-F405I-3PS

a. Secure the frame ground cables with the screws.
b. Connect the cables (P101-1, P102-1, P101-2, P102-2 and P104) and dummy connector to the DKU AC Boxes.



Rear View



Input AC Voltage : 200 - 240V Input AC Voltage : 380 - 415V

Fig. 3.19.9.3-5 Connection of Cables

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DKU-F405I-1PS

a. Secure the frame ground cables with the screws.
b. Connect the cables (P101-1, P102-1, P101-2 and P102-2) to the DKU AC Boxes.

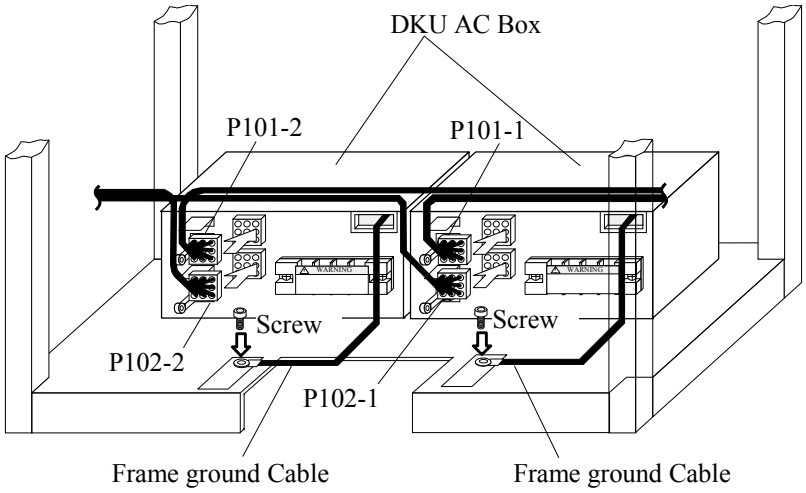

Fig. 3.19.9.3-6 Connection of Cables

5. Attach the Plate.
   a. Attach the plate with the two screws.

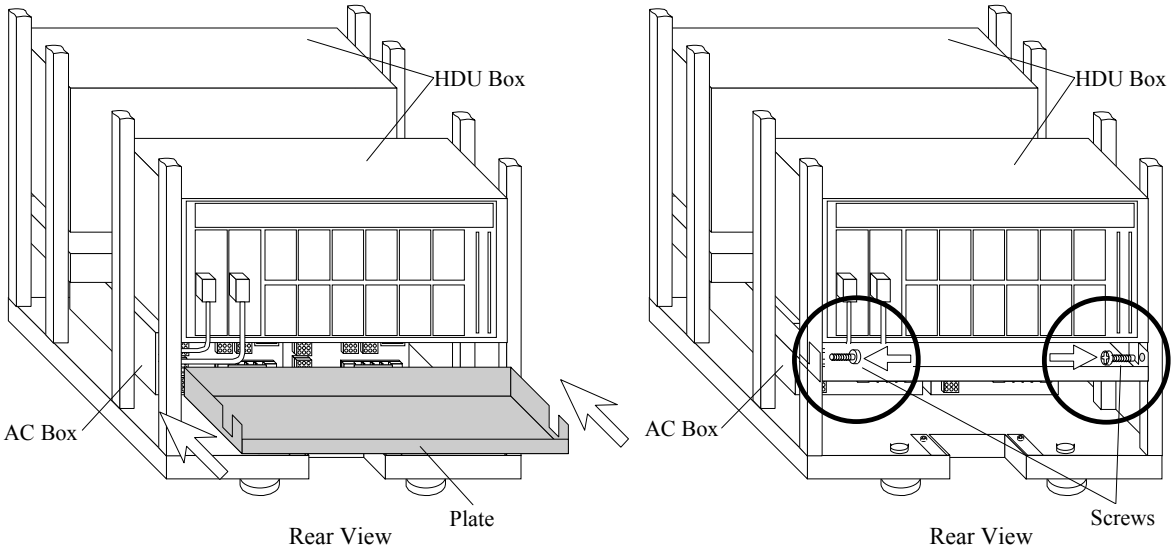

Fig. 3.19.9.3-7 Attachment of Plate

6. Return to General Flow.
   New Installation
      Installation of DKU-R1 : Go to INST03-U40-10 step (1)-4.
      Installation of Disk Unit except DKU-R1 : Go to INST03-U40-10 step (1)-10.
   Non-Disruptive Installation : Go to INST03-U40-30 step (1)-4.

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3.19.10 Installation of Power Cable Kit for Disk Unit (DKU-F405I-3EC/3UC/1EC/1UC)

⚠ CAUTION

Perform The Power Cable Kit with care.
This Power Cable Kit is concerned with Primary Circuit.
Perform this procedure before connecting the Power Cable Assy.
(Turn off the circuit breakers on the power distribution panel)
Turn off the main circuit breaker CB101 located in the AC Box.

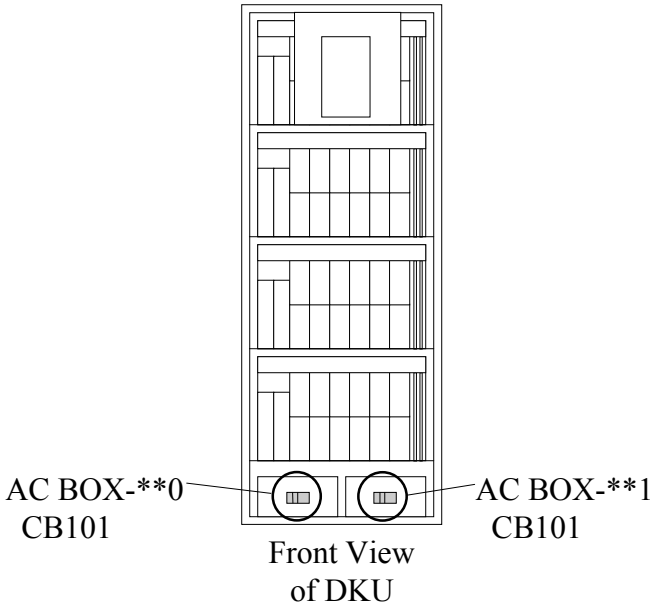

Fig. 3.19.10-1 Location of the Disk Unit Circuit Breakers

Table 3.19.10-1 Disk Unit Circuit Breakers

No.	Location No.	Breaker No.	Remarks
1	AC BOX-**0	CB101	
2	AC BOX-**1	CB101	

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3.19.10.1 Flowchart

1. Remove Terminal Block Cover
↓
2. Attach the Nameplate.
↓
3. Install Power Cable Assy
↓
4. Reset Jumper Cable (P104) Setting

3.19.10.2 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKU-F405I-3UC	Power Cable Assy (IU)	3239396-A	1	
		Nameplate	2103308-1	1	
			3259626-1	1	
2	DKU-F405I-3EC	Power Cable Assy (IE)	3239396-B	1	
		Nameplate	2103308-2	1	
			3259626-2	1	
3	DKU-F405I-1UC	Power Cable Assy (IU)	3255667-A	1	
		Nameplate	2103308-7	1	
			3259626-7	1	
4	DKU-F405I-1EC	Power Cable Assy (IE)	3255667-B	1	
		Nameplate	2103308-8	1	
			3259626-8	1	

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3.19.10.3 Installation Procedure of Power Cable Kit

1. Remove the terminal block covers.
   a. Remove the two screws.
   b. Slide the plate toward the rear side to remove.

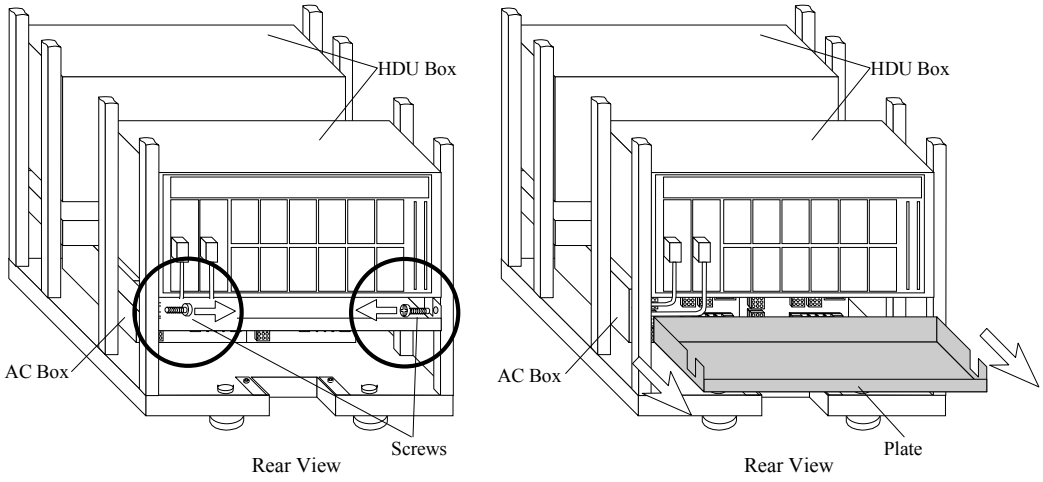

Fig. 3.19.10.3-1 Removal of Plate

   c. Remove the terminal block covers and the screws.

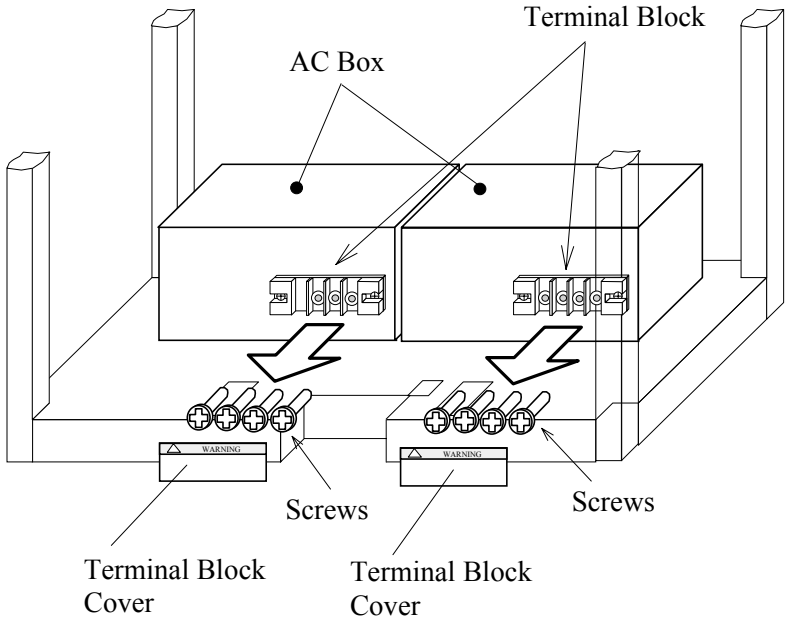

Fig. 3.19.10.3-2 Removal of Power Cable Assy (DKU-F405I-3EC)

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2. Attach the Nameplate.
   a. Attach the corresponding nameplate to the Power Cable Assy.

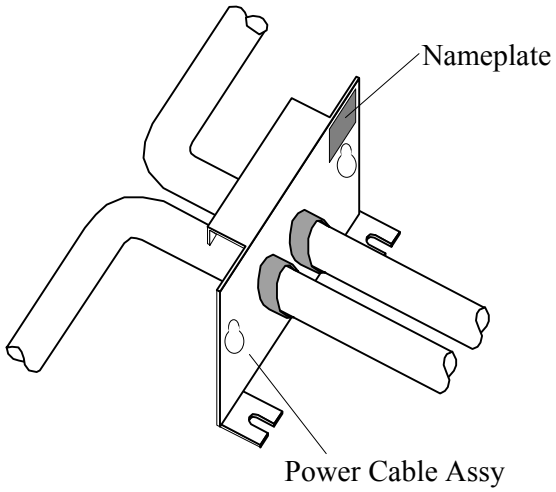

Fig. 3.19.10.3-3 Attachment of Nameplate

3. Install the Power Cable Assy.
   a. Attach the Power Cable Assy and secure two screws.

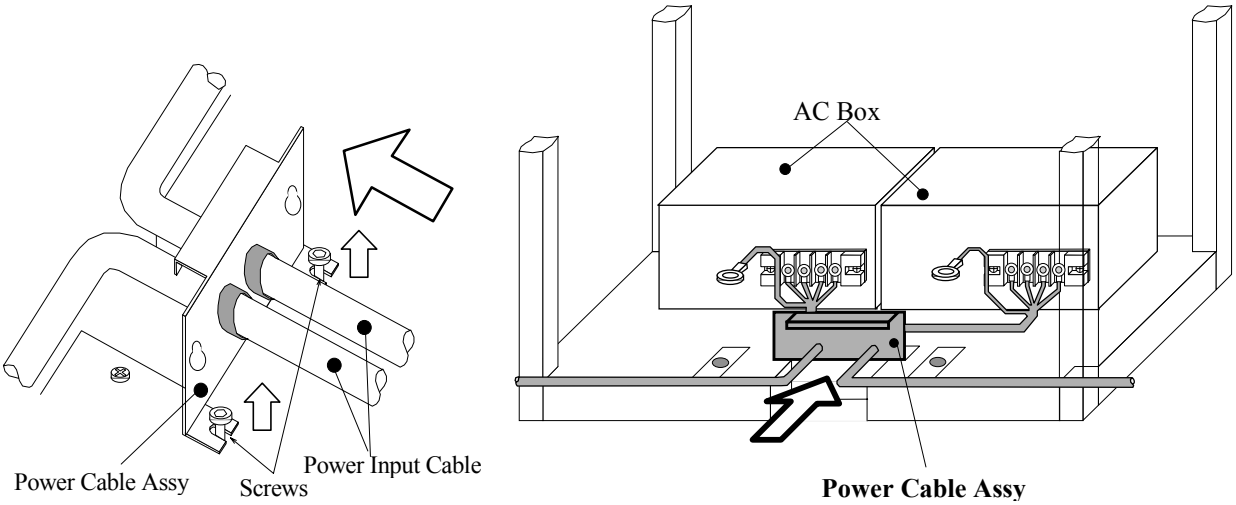

Fig. 3.19.10.3-4 Installation of Power Cable Assy (DKU-F405I-3EC)

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b. Attach frame ground cable with the screw and lock washer.

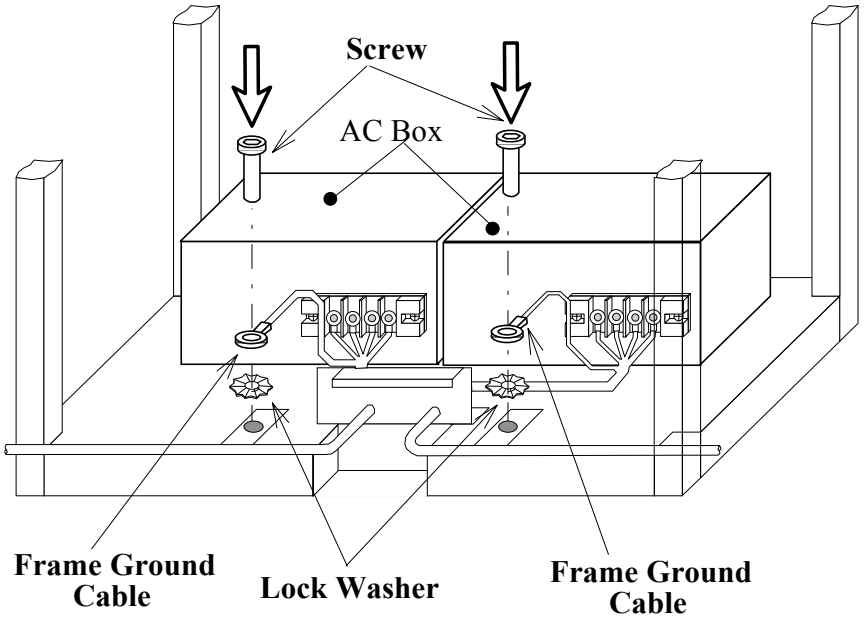

Fig. 3.19.10.3-5 Attachment of Frame Ground Cable (DKU-F405I-3EC)

c. Connect the AC power cables to the terminal block and attach terminal block cover. Refer to Fig 3.19.10.3-6, Fig. 3.19.10.3-7 and Table 3.19.10.3-2.

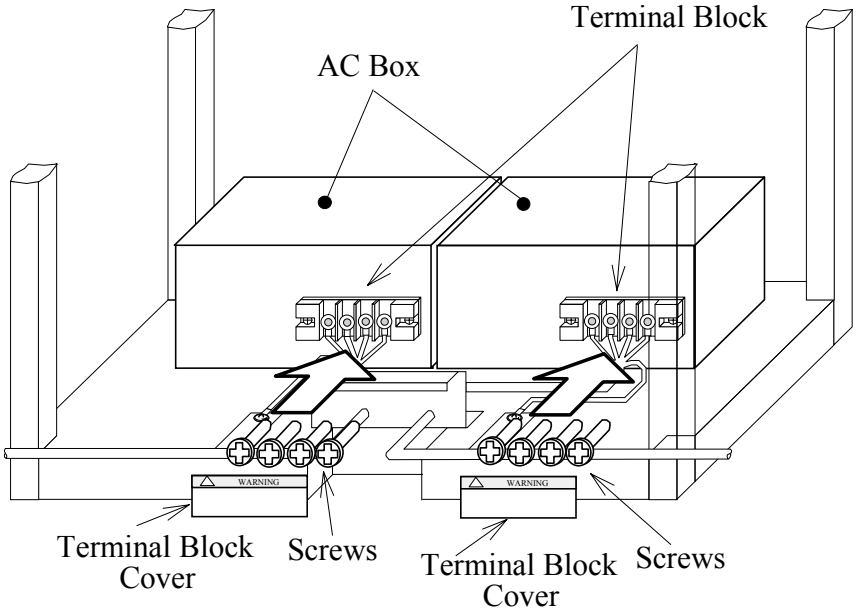

Fig. 3.19.10.3-6 Connection of AC Power Cable (DKU-F405I-3EC)

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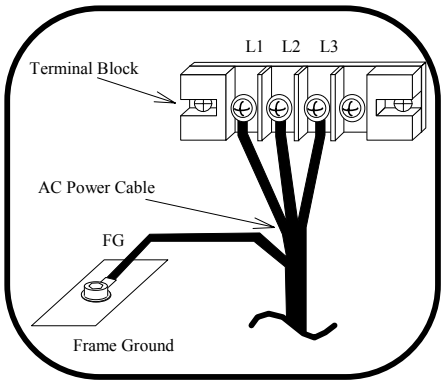
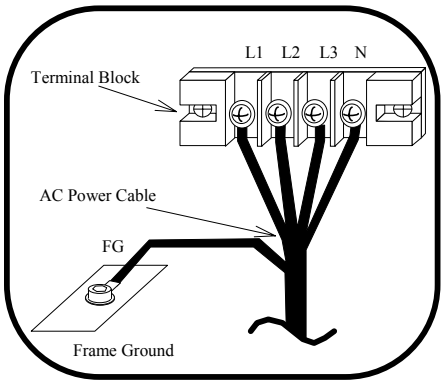
Table 3.19.10.3-1 AC Power Cable Conductors Numbers

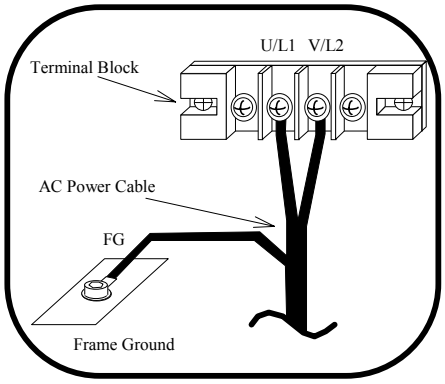
No.	Model Number	Input Voltage	AC Power Cable Conductors	Remarks
1	DKU-F405I-3UC	200-240Vac	4 conductors (L1, L2, L3, FG)	
2	DKU-F405I-3EC	380-415Vac	5 conductors (L1, L2, L3, N, FG)	
3	DKU-F405I-1UC	200-230Vac	3 conductors (U/L1, V/L2, FG)	
4	DKU-F405I-1EC	200-240Vac	3 conductors (U/L1, V/L2, FG)	



DKU-F405I-3UC



DKU-F405I-3EC



DKU-F405I-1UC/1EC

Fig. 3.19.10.3-7 Connection of AC Power Cables to the Terminal Block

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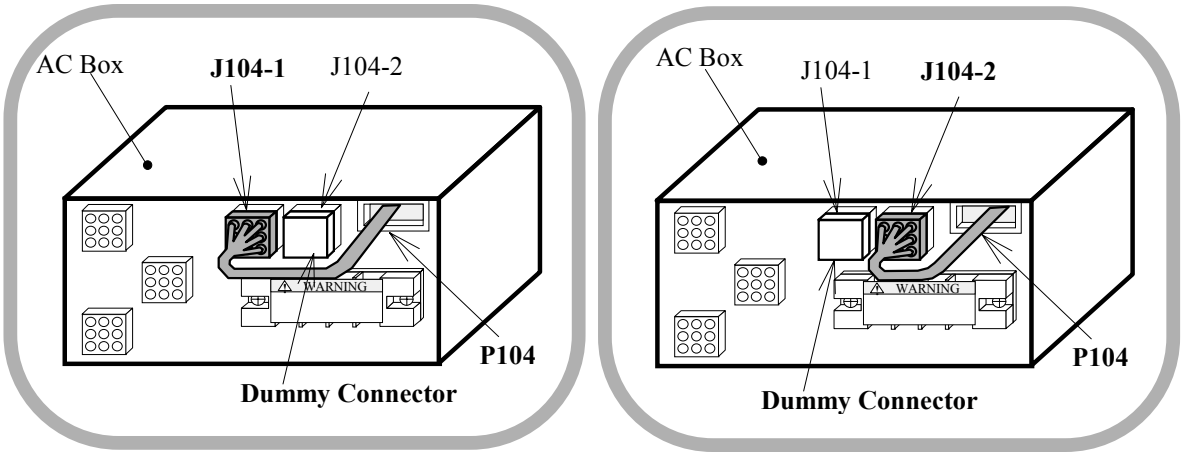
4. Reset the Jumper Cable Setting
   a. When the 3 Phase Model (DKU-F405I-3UC/3EC) is installed, connect the jumper cable (P104) as indicated in the table below.
   When the Single Phase Model (DKU-F405I-1UC/1EC) is installed, go to step b.

Table 3.19.10.3-2 Jumper Cable (P104) Locations

No.	Model Number	Input Voltage	Jumper Cable (P104) Location	Remarks
1	DKU-F405I-3UC	200-240Vac	J104-1	(J104-2: Dummy Connector)
2	DKU-F405I-3EC	380-415Vac	J104-2	(J104-1: Dummy Connector)



DKU-F405I-3UC DKU-F405I-3EC

Fig. 3.19.10.3-8 Jumper Cable P104 Setting

b. Re-Install the plate.

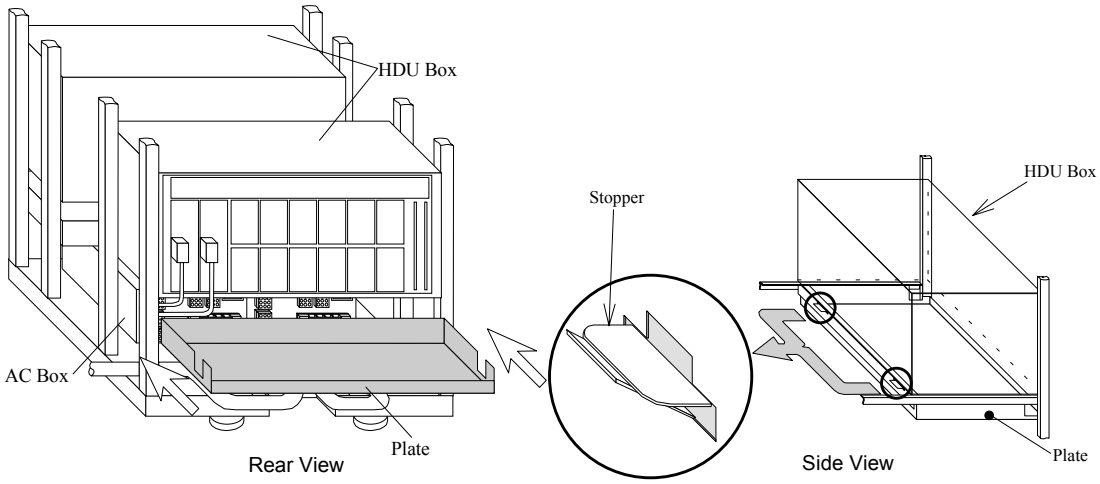


Fig. 3.19.10.3-9 Attachment of Plate

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c. Secure the plate with screws.

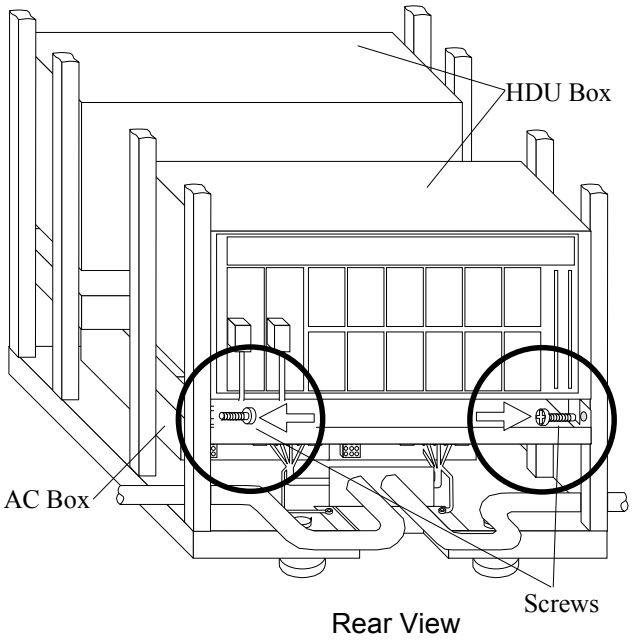

Fig. 3.19.10.3-10 Attachment of Plate

5. Return to General Flow.
   New Installation
      Installation of DKU-R1 : Go to INST03-U40-10 step (1)-5.
      Installation of Disk Unit except DKU-R1 : Go to INST03-U40-10 step (1)-11.
   Non-Disruptive Installation : Go to INST03-U40-30 step (1)-5.

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3.19.11 Power ON/OFF Procedure

3.19.11.1 Power ON Procedure of Additional Disk Unit

Before turning the power of AC BOX on, make sure that the Enable/Disable switch on the DKU Monitor is in “Disable” position. If the switch is in “Enable” position, turn the switch to “Disable” position.

1. Power on procedures are shown below. Refer to the details and start the operation.
   a. Turn on the main circuit breaker at the AC Box on the Disk Unit.

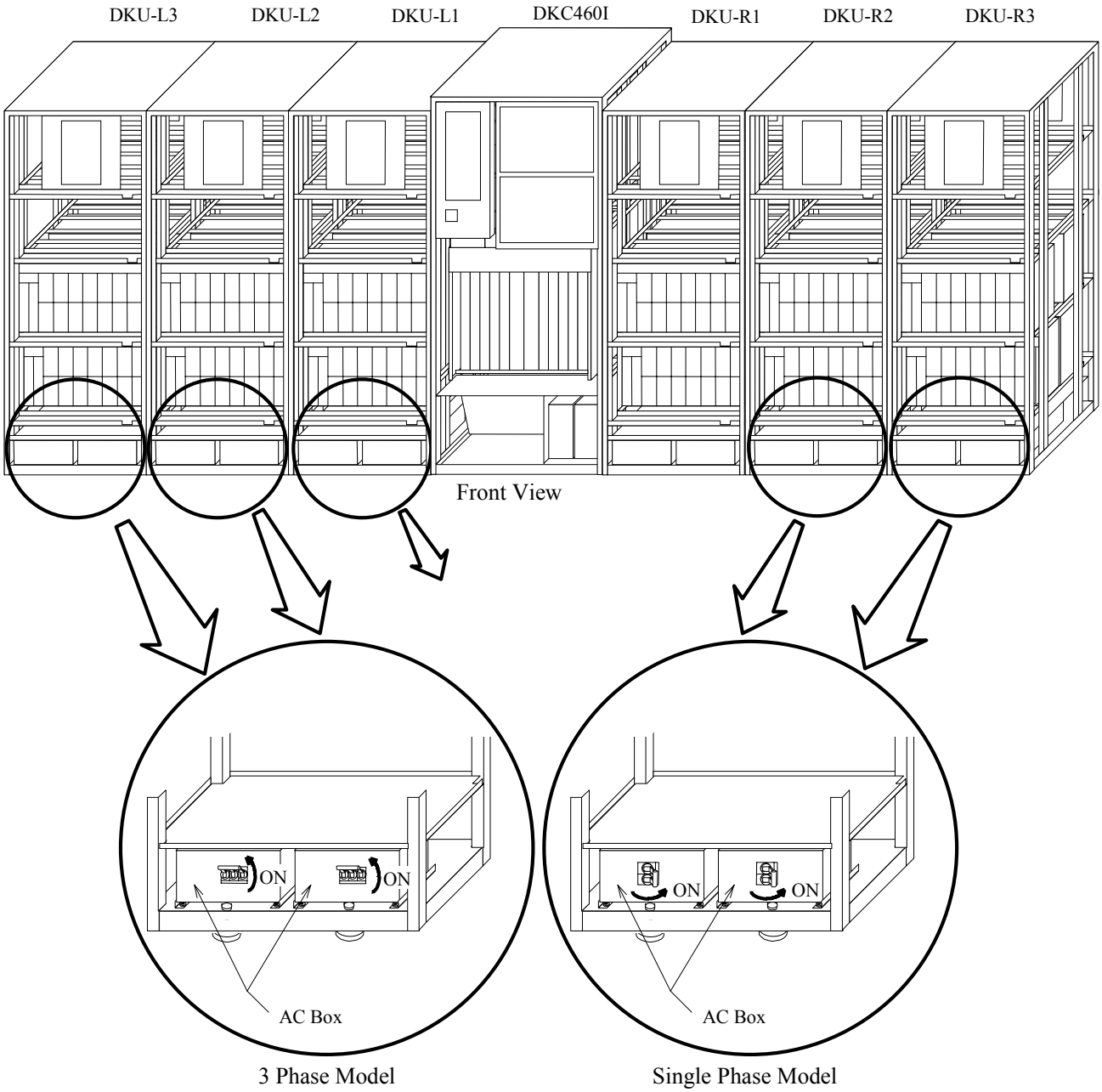

Fig. 3.19.11.1-1 Main Circuit Breaker on AC Box

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b. Turn the “ENABLE/DISABLE” switch on the DKUMN PCB’s to “ENABLE”.

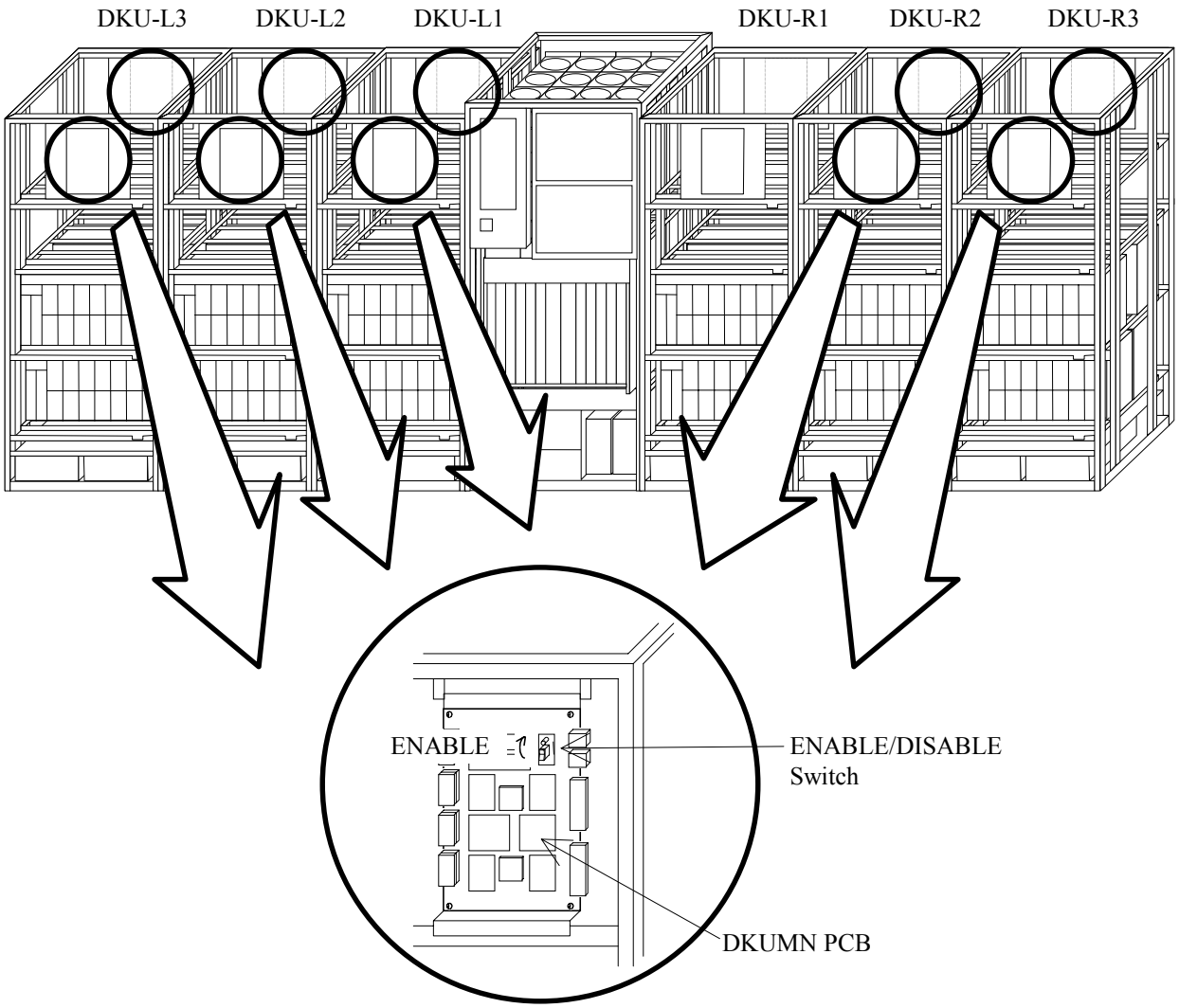

Fig. 3.19.11.1-2 ENABLE/DISABLE Switch on DKUMN PCBs

c. Return to General Flow.
New Installation:
Installation of DKU-R1: Go to INST03-U40-10 step (1)-7.
Installation of Disk Unit except DKU-R1: Go to INST03-U40-10 step (1)-13.
Non-Disruptive Installation: Go to INST03-U40-30 step (1)-7.

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3.19.11.2 Power OFF Procedure of Additional Disk Unit

1. Power off procedures are shown below. Refer to the details and start the operation.
   a. Turn off the main circuit breaker at the AC Box on the Disk Unit.

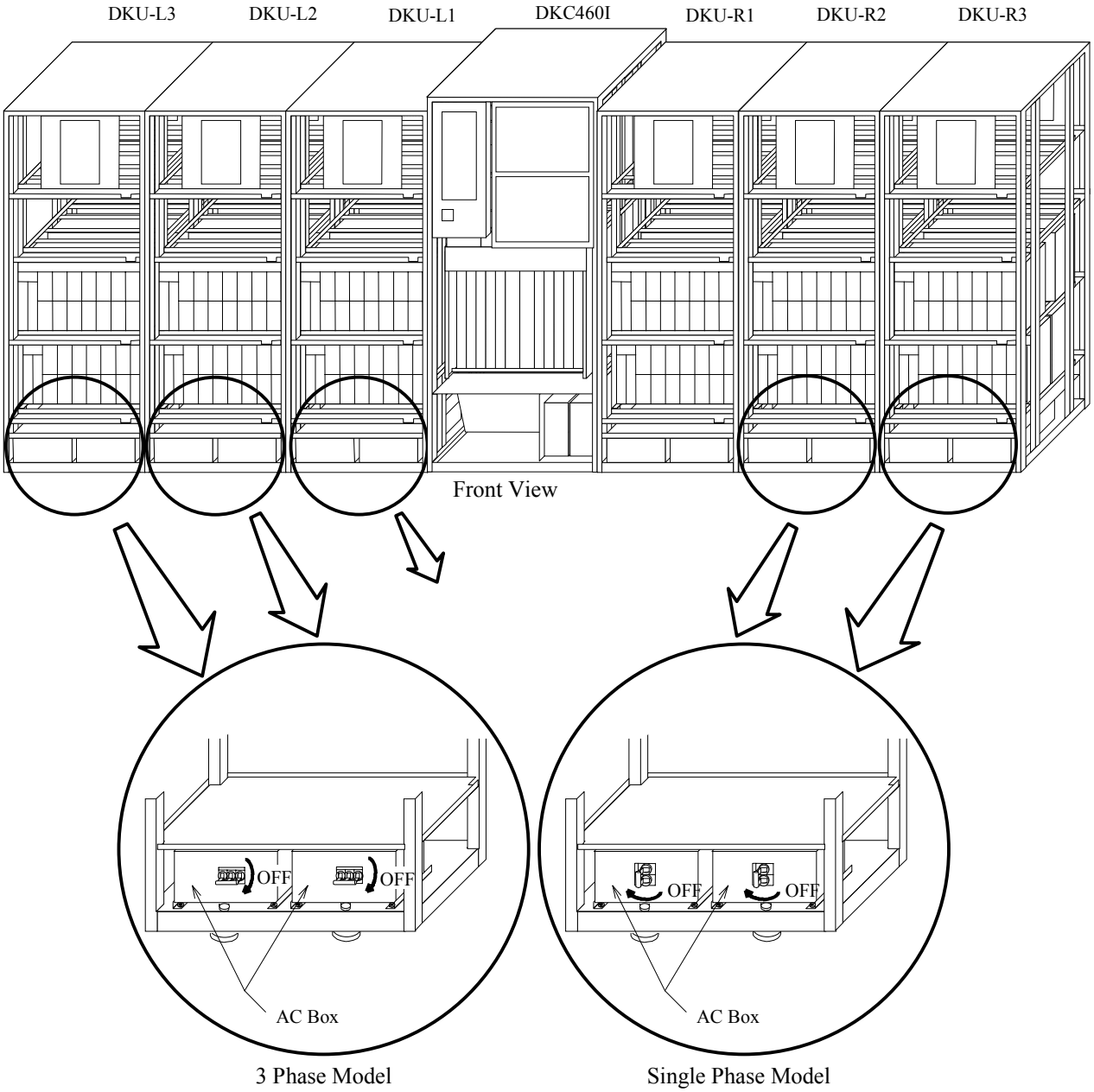

Fig. 3.19.11.2-1 Main Circuit Breaker on AC Box

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3.20 Machine Installation/De-installation Procedure

Flowchart

1. Power OFF of Disk Subsystem ----------[INST03-SWP-20 through 30]

↓

2. Disconnection of External Cable ----------[INST03-SWP-40 through 90]

↓

3. Disconnection of DKC
   - 3.1 Disconnection between DKC and DKU-R1 ----------[INST03-SWP-100 through 250]
   - 3.2 Disconnection between DKC and DKU-L1----------[INST03-SWP-260 through 370]

↓

4. Connection of DKC460I
   - 4.1 Connection between DKC and DKU-R1----------[INST03-SWP-380 through 510]
   - 4.2 Connection between DKC and DKU-L1 ----------[INST03-SWP-520 through 610]

↓

5. Connection of External Cable----------[INST03-SWP-620 through 690]

↓

6. Connection of DEV and DKUMN Cables ----------[INST03-SWP-700 through 770]

↓

7. Power ON of Disk Subsystem ----------[INST03-SWP-780 through 840]

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3.20.1 Power OFF of Disk Subsystem

1. Power off procedures are shown below. Refer to the details and start the operation.
   a. Stop the SVP.
   b. [Case as custom engineer operates]
      Turn the “REMOTE/LOCAL” switch to “LOCAL”.
      Turn the “POWER ON/OFF” switch to “OFF”, while turning the POWER ON/OFF ENABLE switch to the ENABLE position.
      [Case as that operate from CPU]
      Turn the “REMOTE/LOCAL” switch to “REMOTE”.
      Turn off the power supply from CPU.

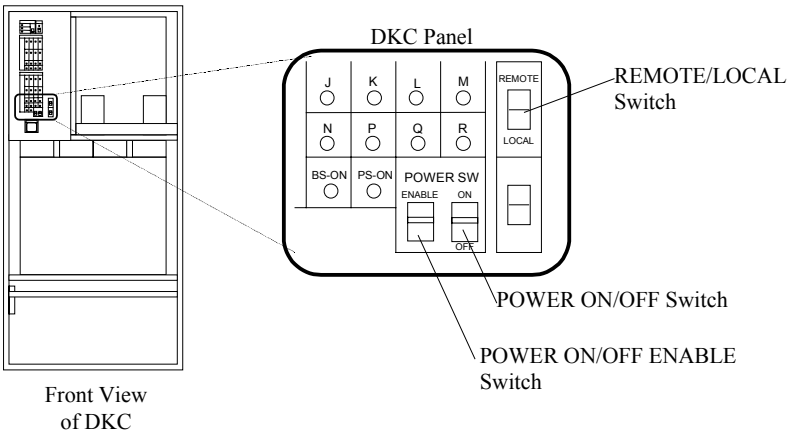

Fig. 3.20-1 DKC Panel PCB

   c. Turn off the circuit breaker at the Breaker Box-1 and 2 in the Disk Controller.
   d. When the AC Box Kit for Single Phase (DKC-F410I-1PS) is installed, turn off the circuit breaker at AC Box on the Disk Controller.
      When the AC Box Kit for Single Phase (DKC-F410I-1PS) is not installed, go to step e.

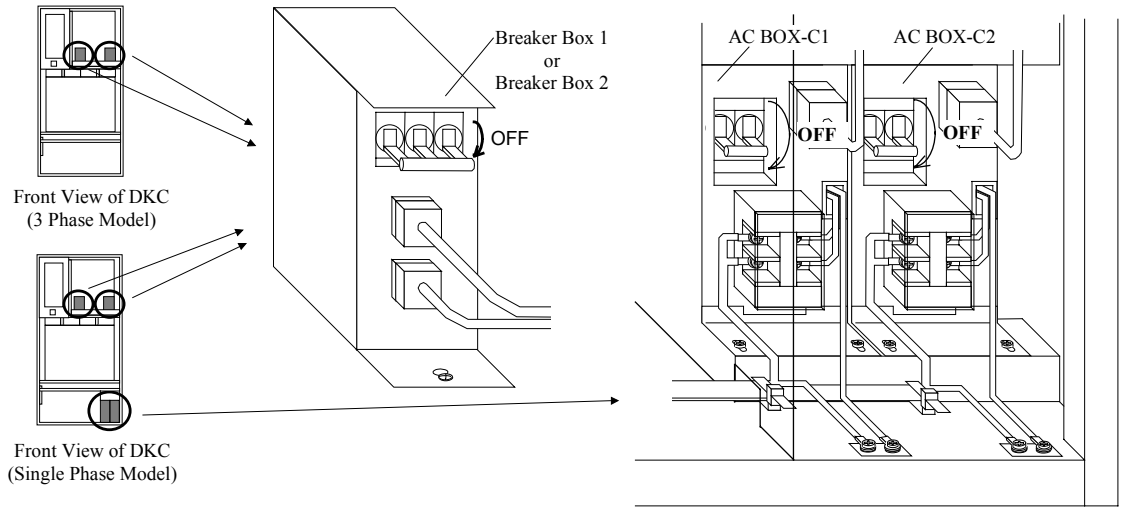

Fig. 3.20-2 Circuit Breaker on DKC AC Box

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e. Turn off the main circuit breaker at the AC Box on the Disk Unit.

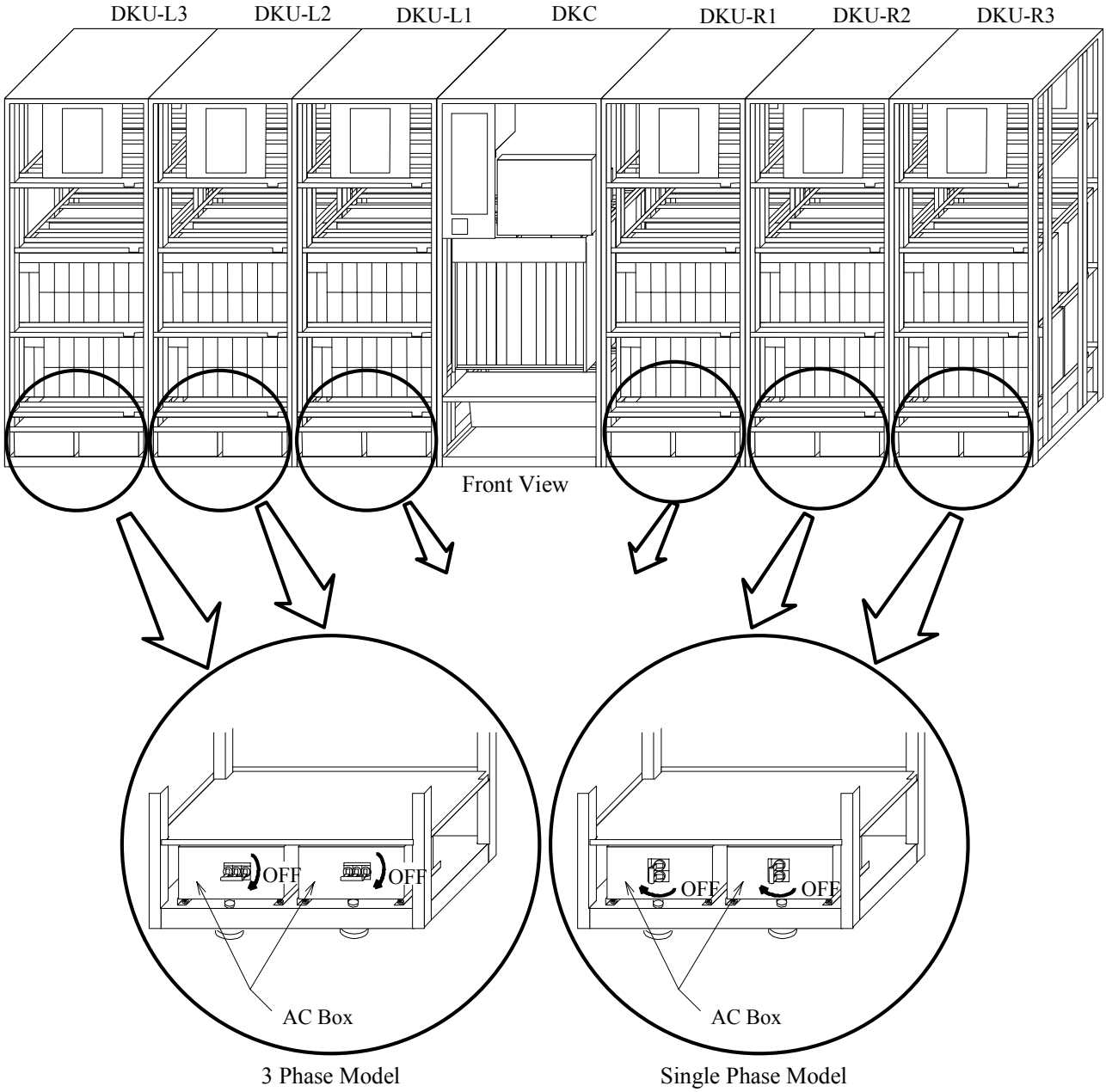

Fig. 3.20-3 Main Circuit Breaker on AC Box

f. Turn off the main circuit breaker at the distribution board that supplies DKC and DKU with a power.

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3.20.2 Disconnection of External Cable

3.20.2.1 Disconnection of AC Cable

3.20.2.1.1 3 Phase Model

1. Disconnect the AC cables. Refer to Fig. 3.20.2-1 or Fig. 3.20.2-2.

⚠ WARNING

Be Careful of Electric Shock
You will get an electric shock if you fail to turn it off.
Start your work after turning off the breaker on the distribution board connected to the AC BOX.

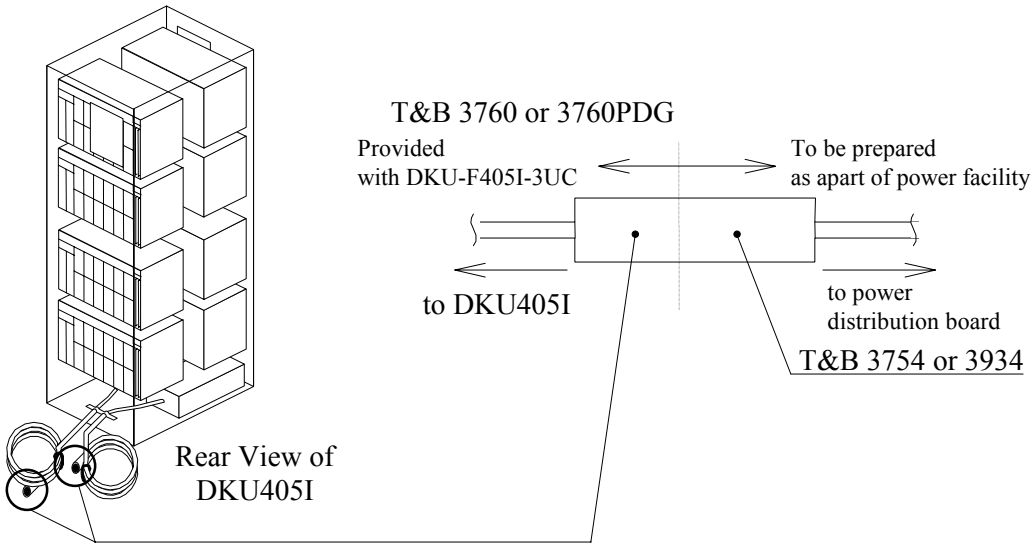

Fig. 3.20.2-1 Disconnection of the AC cables (for USA)

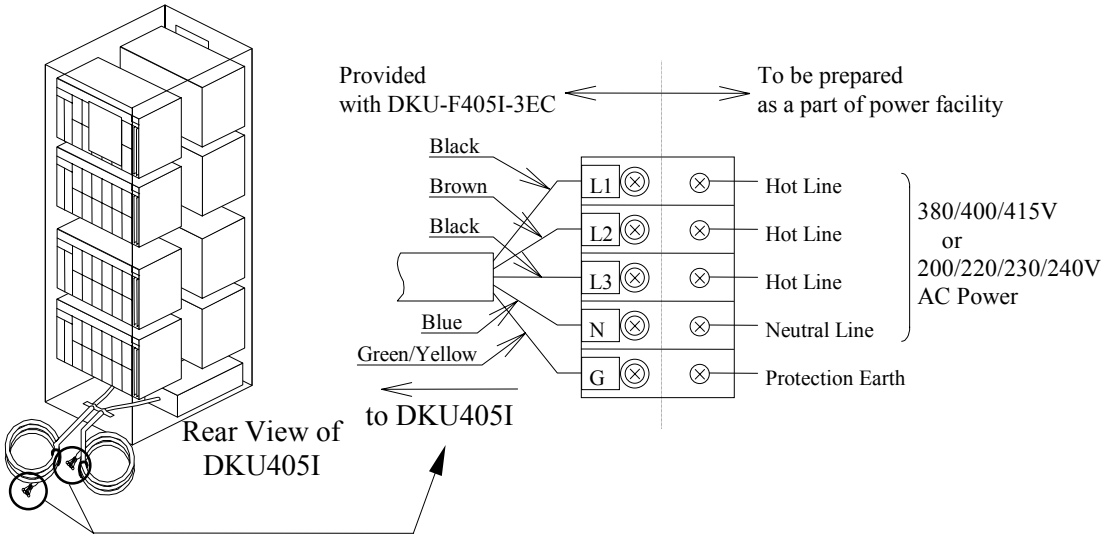

Fig. 3.20.2-2 Disconnection of the AC cables (for Europe)

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3.20.2.1.2 Single Phase Model

1. Disconnect the AC cables. Refer to Fig. 3.20.2-3 or Fig.3.20.2.-4.

> **⚠ WARNING**
>
> Be Careful of Electric Shock
> You will get an electric shock if you fail to turn it off.
> Start your work after turning off the breaker on the distribution board connected to the AC BOX.

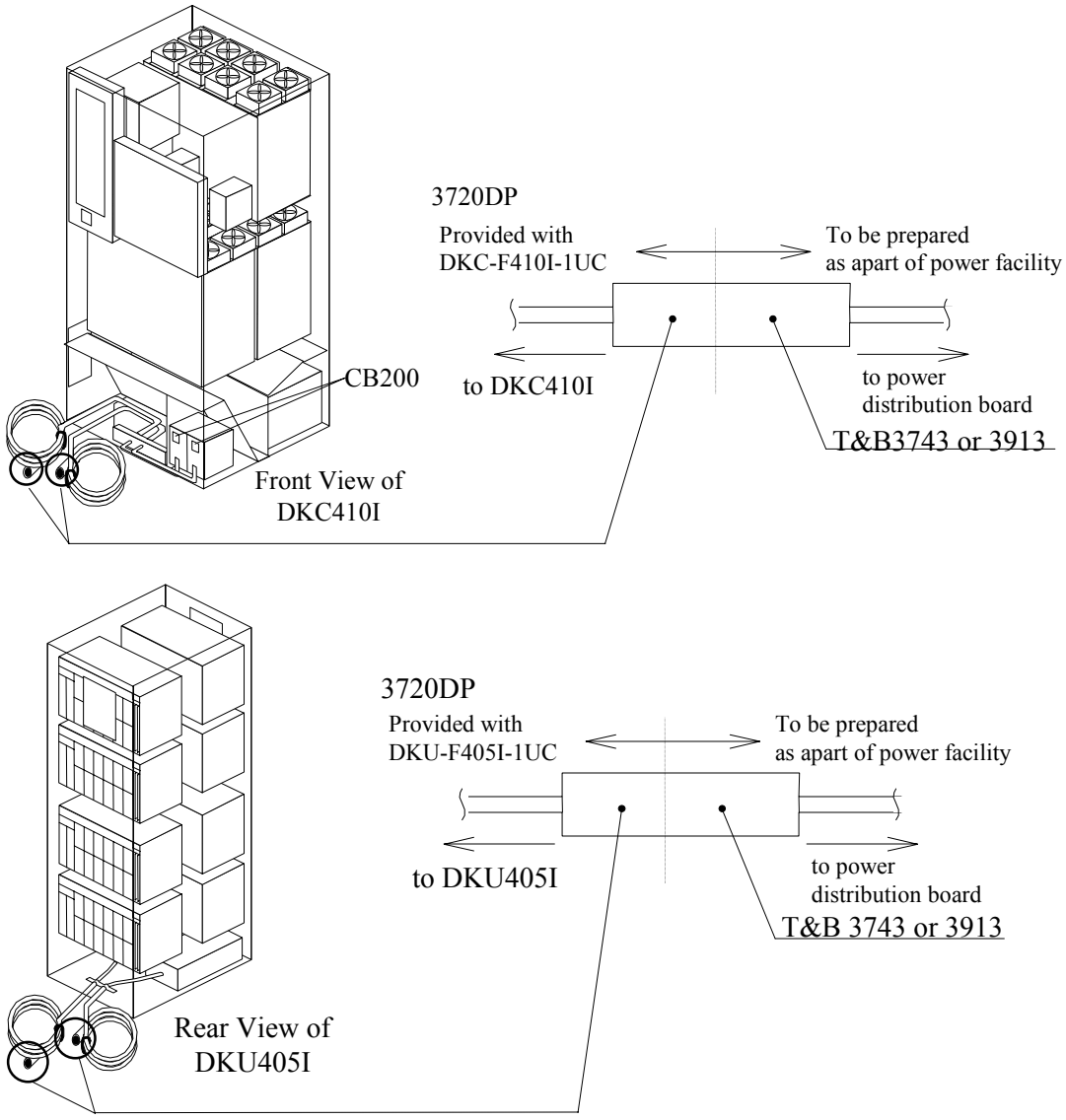

Fig. 3.20.2-3 Disconnection of the AC cables (for USA)

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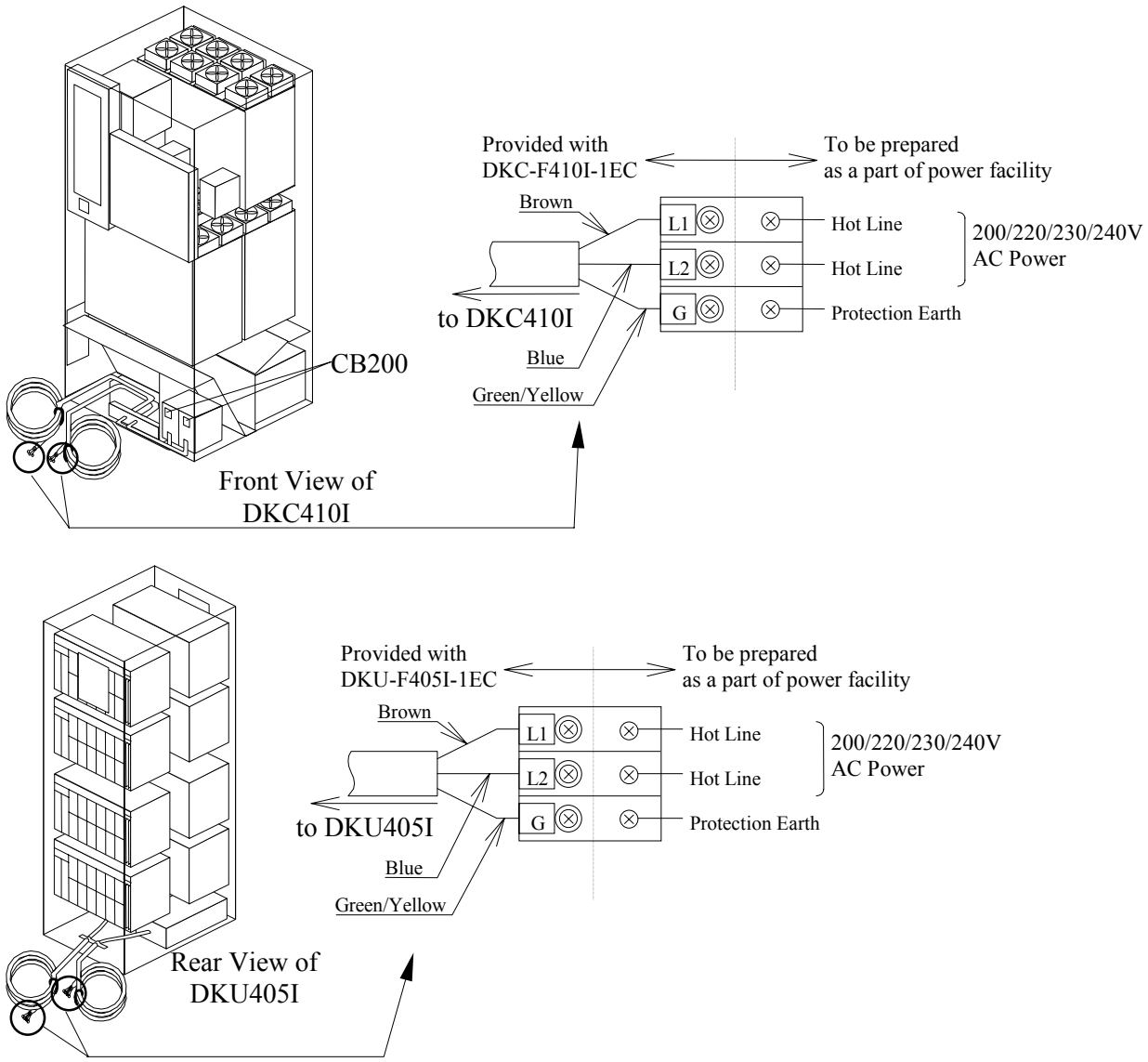

Fig. 3.20.2-4 Disconnection of the AC cables (for Europe)

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3.20.2.2 Disconnection of Channel Interface Cable

3.20.2.2.1 Disconnection of Serial Channel Interface Cable

1. Disconnect the Serial Channel Interface cables. Refer to Fig. 3.20.2-5.

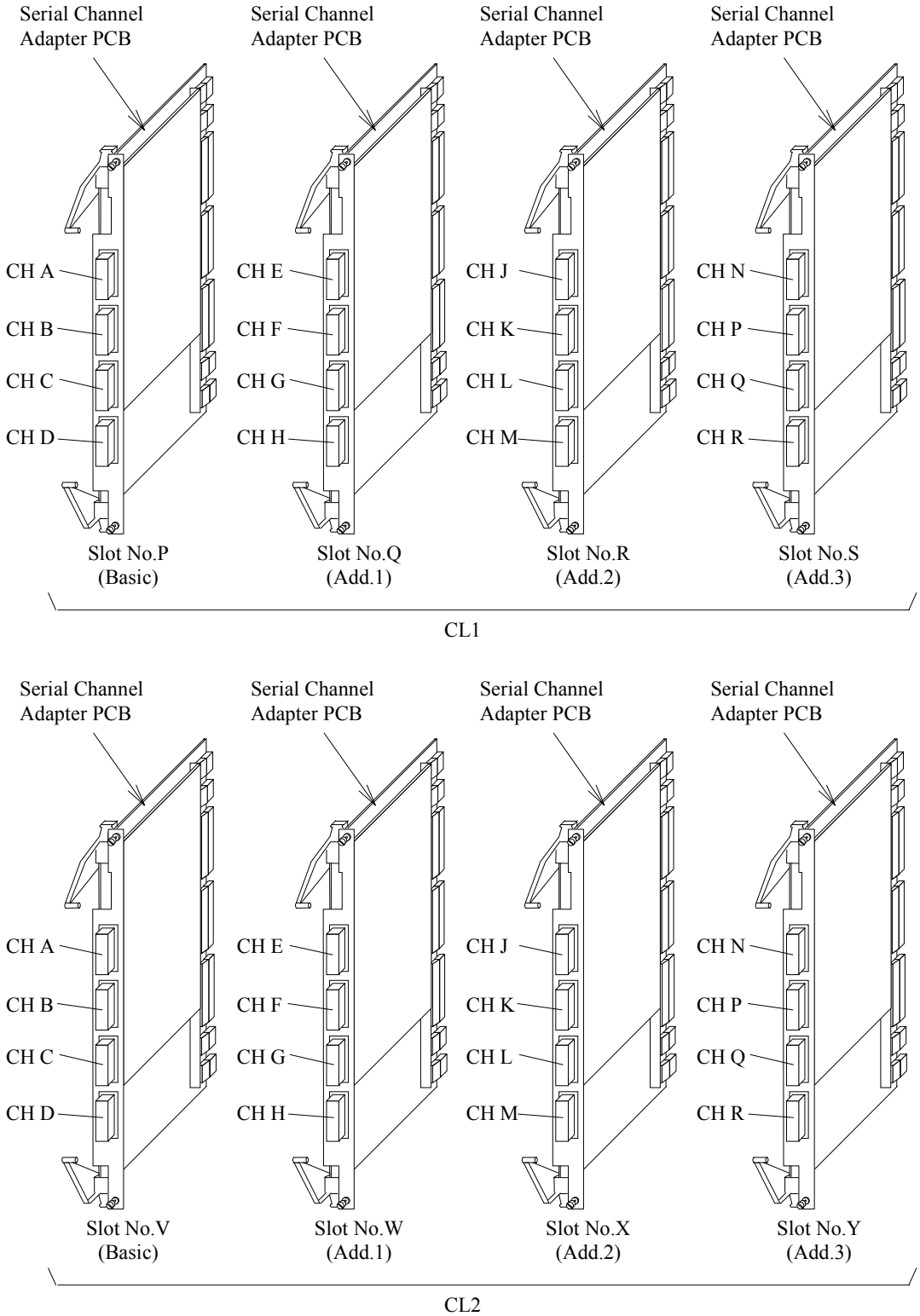

Fig. 3.20.2-5 Disconnection of the Serial Channel Interface cables

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3.20.2.2.2 Disconnection of Fibre Channel Interface Cable

1. Disconnect the Fibre Channel Interface cables. Refer to Fig. 3.20.2-6.

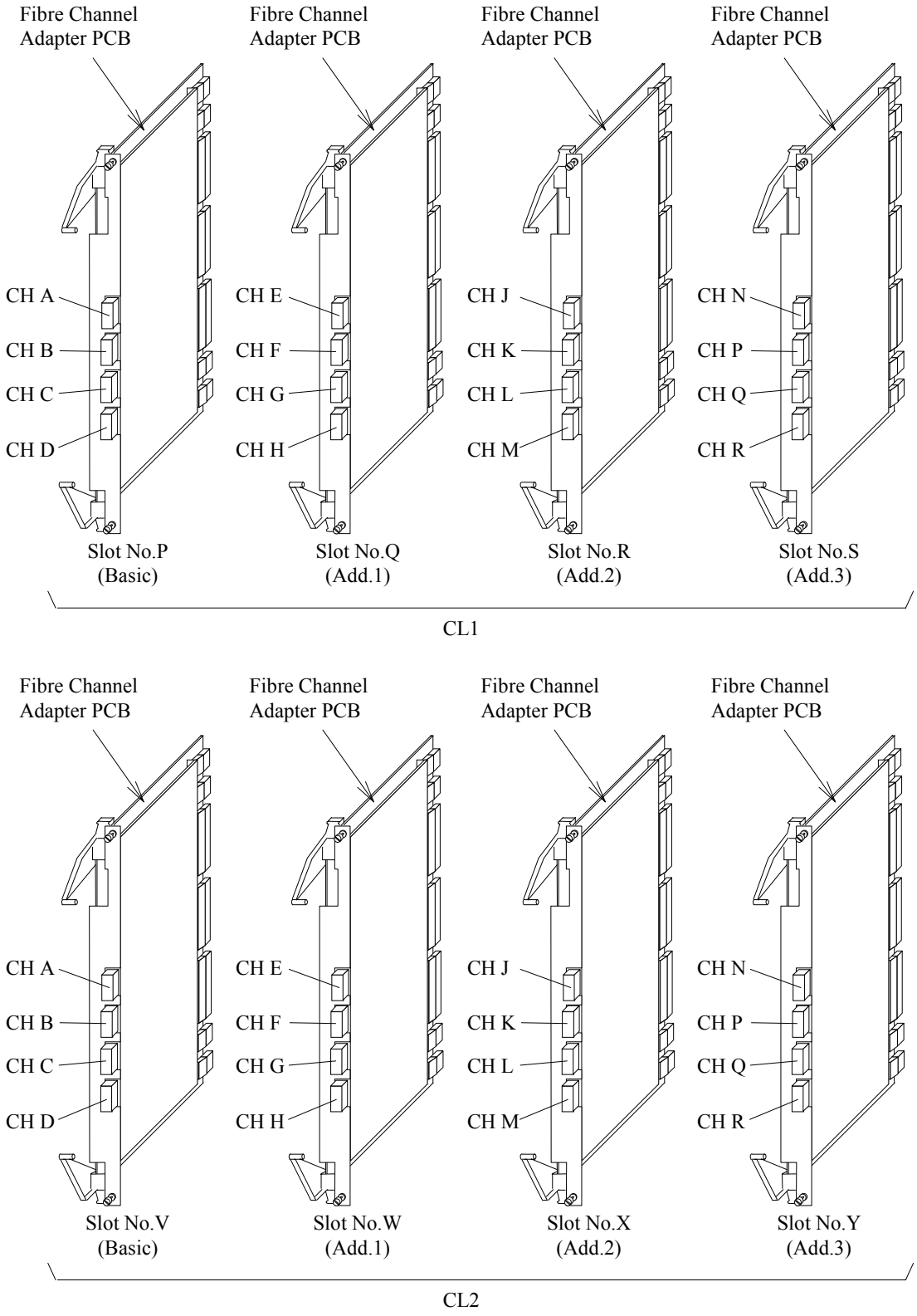

Fig. 3.20.2-6 Disconnection of the Fibre Channel Interface cable

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3.20.2.3 Disconnection of PCI Cable

1. Disconnect the PCI cables. Refer to Fig. 3.20.2-7.

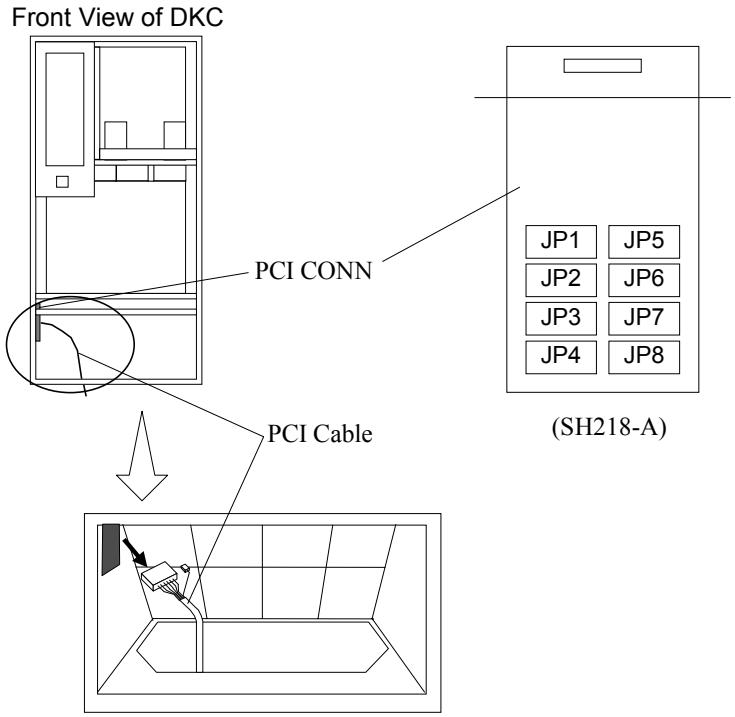

Fig. 3.20.2-7 Disconnection of the PCI cables

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3.20.3 Disconnection of DKC

3.20.3.1 Disconnection between DKC and DKU-R1

1. Remove the covers.
   a. Remove the Front Logic Box cover and Front Inner cover from the DKC.

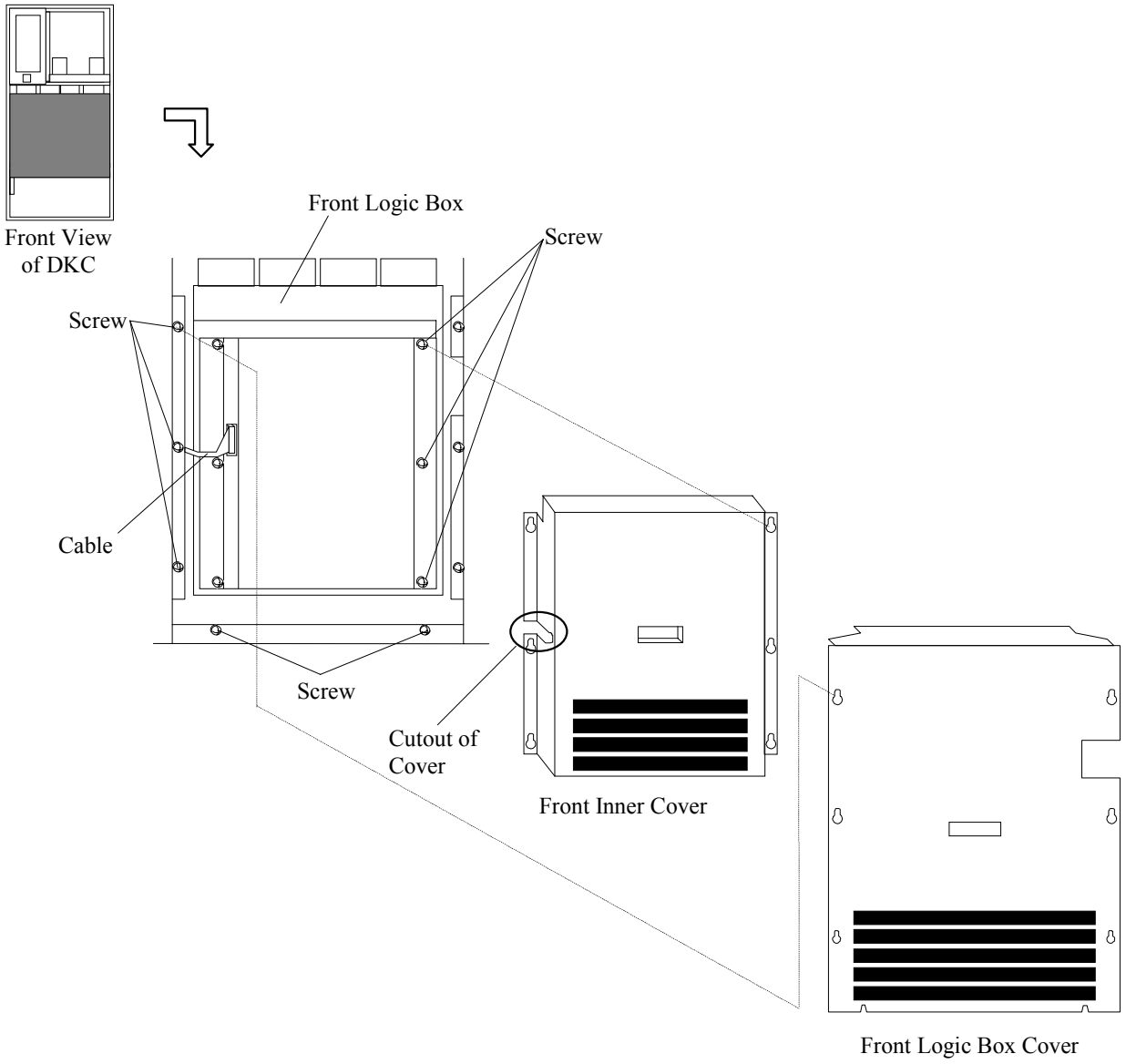

Fig. 3.20.3.1-1 Removal of Covers

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b. Remove the two screws and open the Cable Cover.

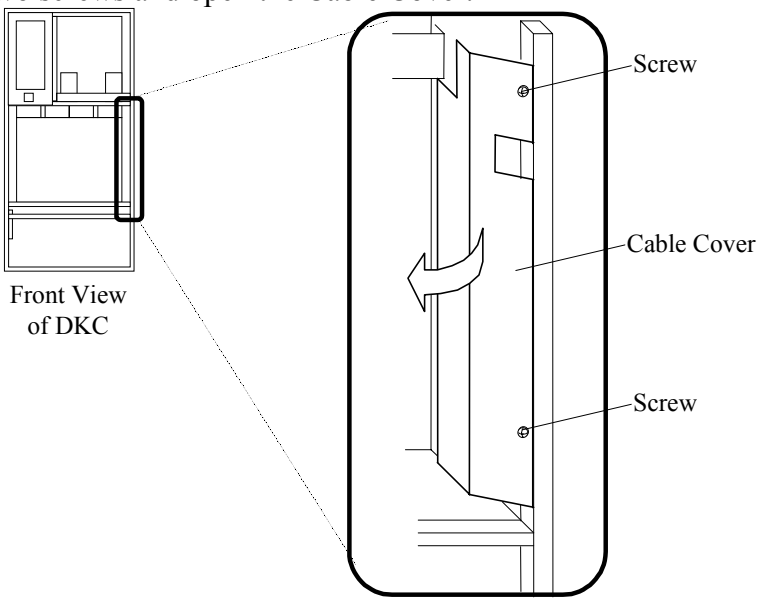

Fig. 3.20.3.1-2 How to open the Cover (DKC front side)

c. Remove the Rear Logic Box cover and Rear Inner cover.

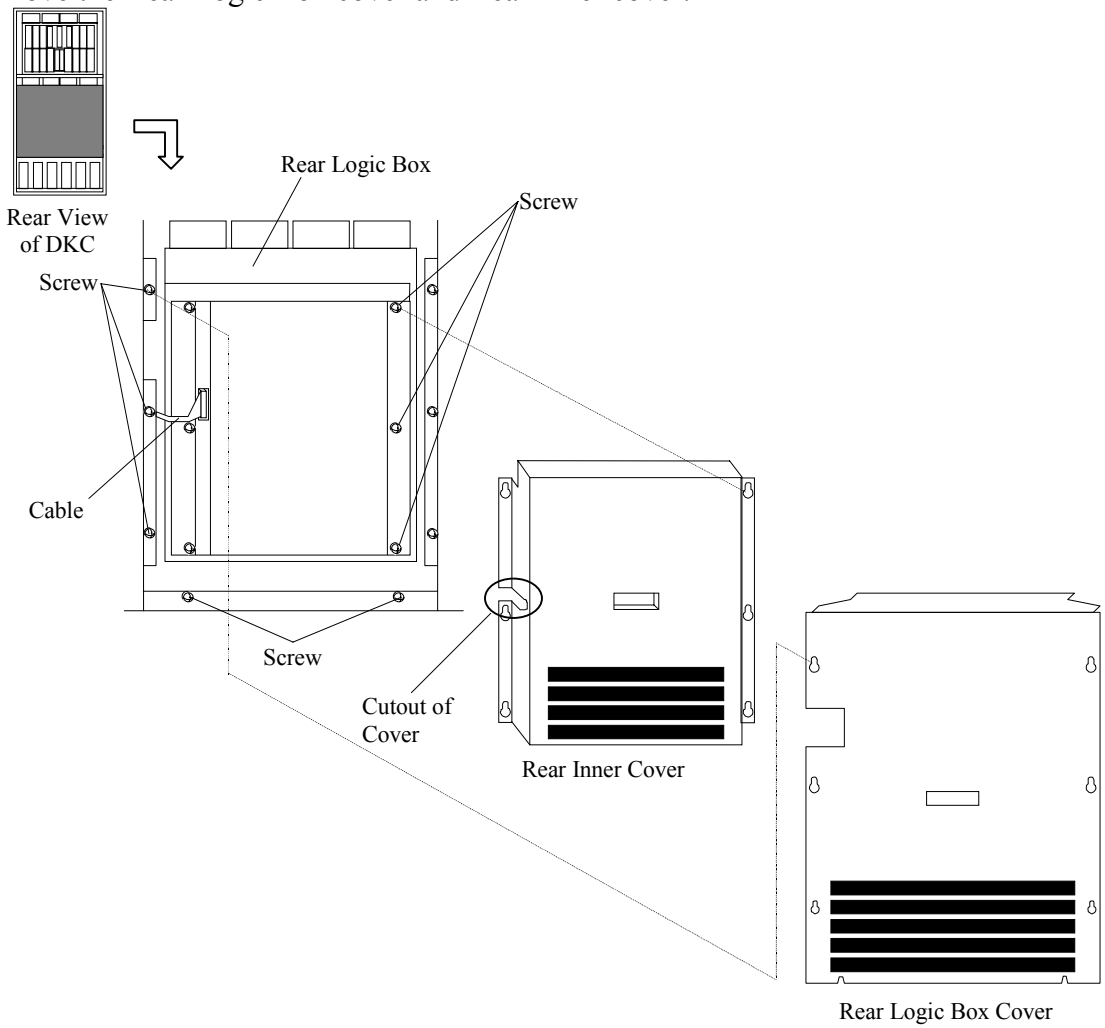

Fig. 3.20.3.1-3 Removal of Covers

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d. Loosen the screws and remove the cable covers ① and ②.

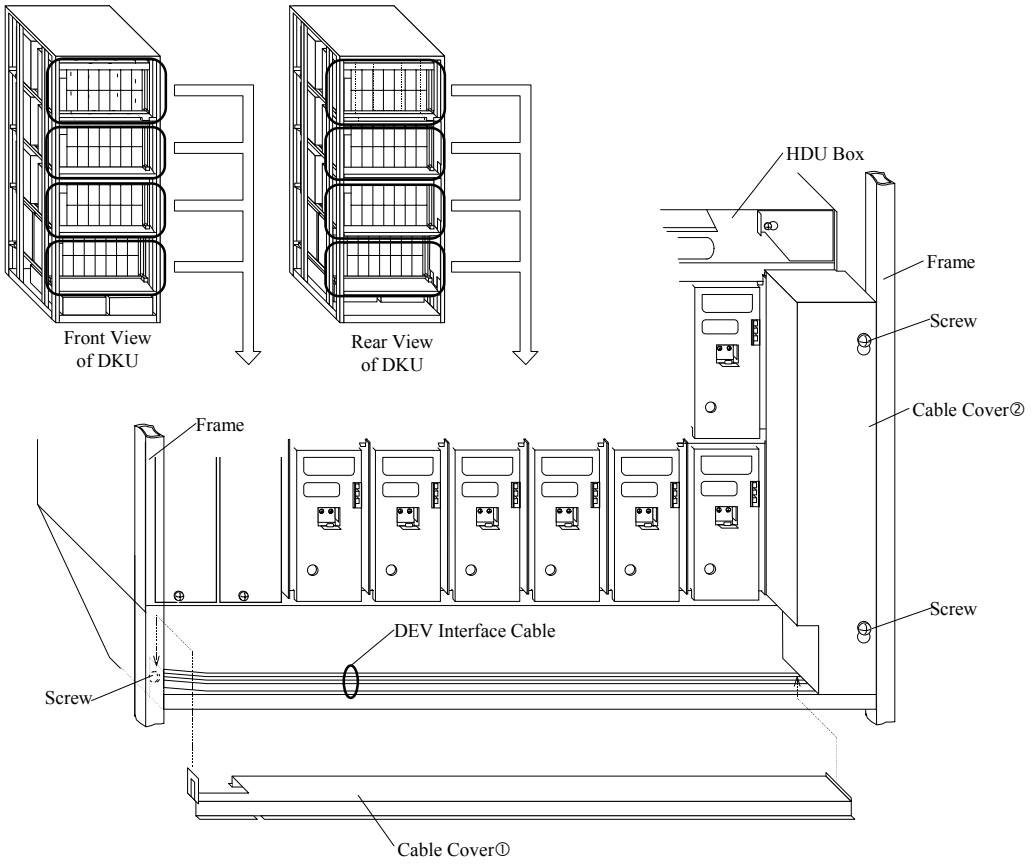

Fig. 3.20.3.1-4 Removal of Cable Covers

e. Loosen the screws and remove the side plates.

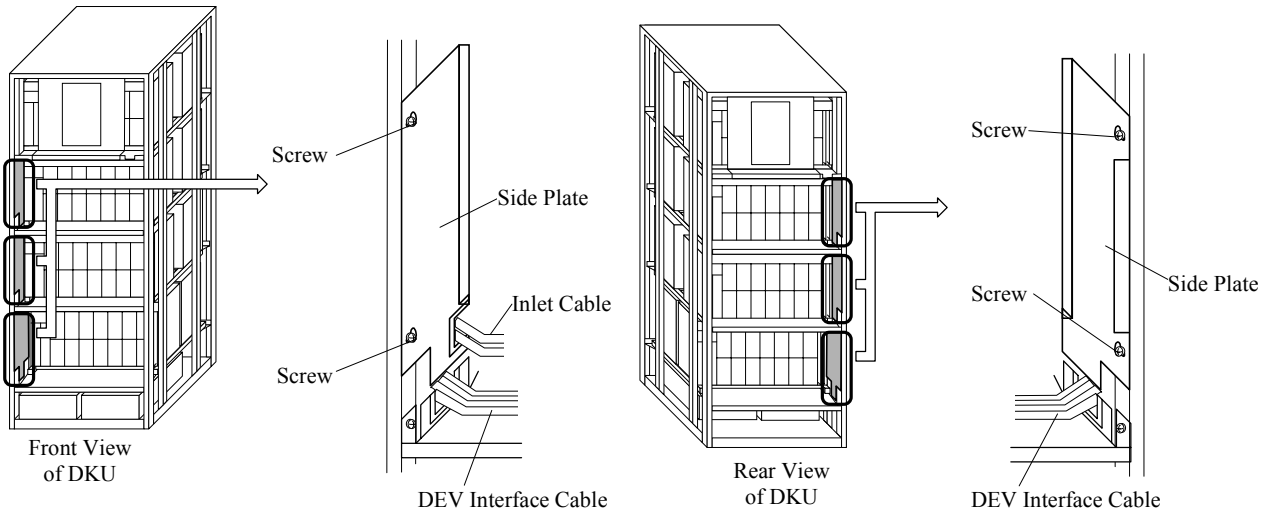

Fig. 3.20.3.1-5 Removal of Side Covers

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2. When the AC Box Kit for 3 Phase (DKU-F405I-3PS) is installed, disconnect the AC cables from the AC boxes.
   When the AC Box Kit for Single Phase (DKU-F405I-1PS) is installed, go to step 3.

   a. Loosen the two screws.
   b. Remove the plate.

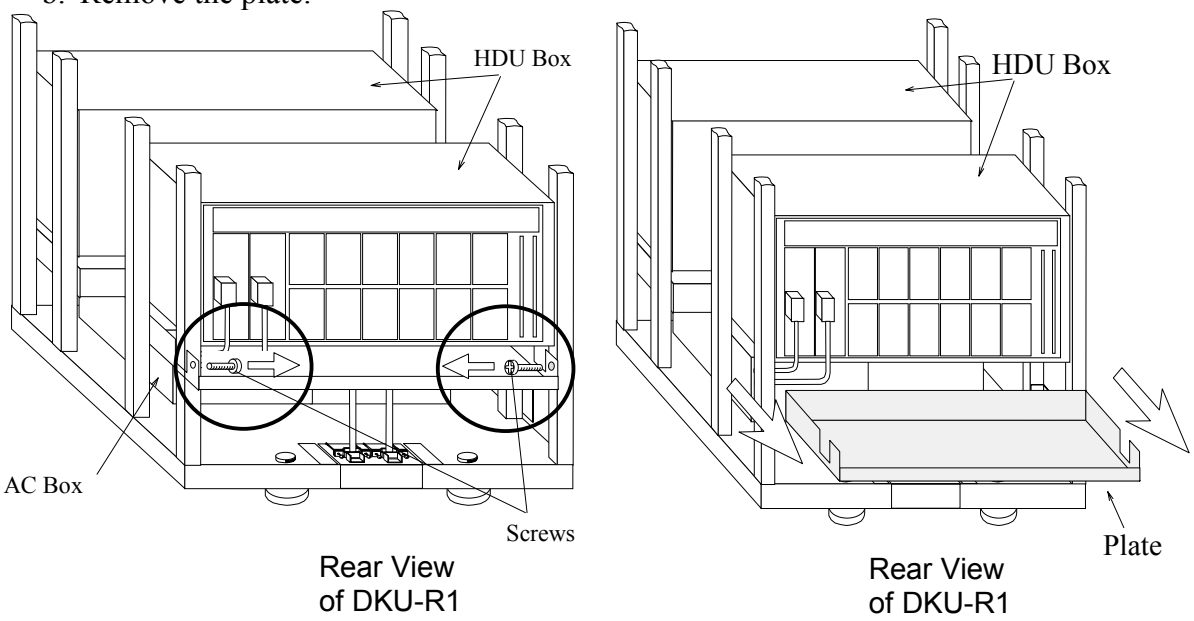

Fig. 3.20.3.1-6 Removal of the Plate

   c. Remove the repeat binders.

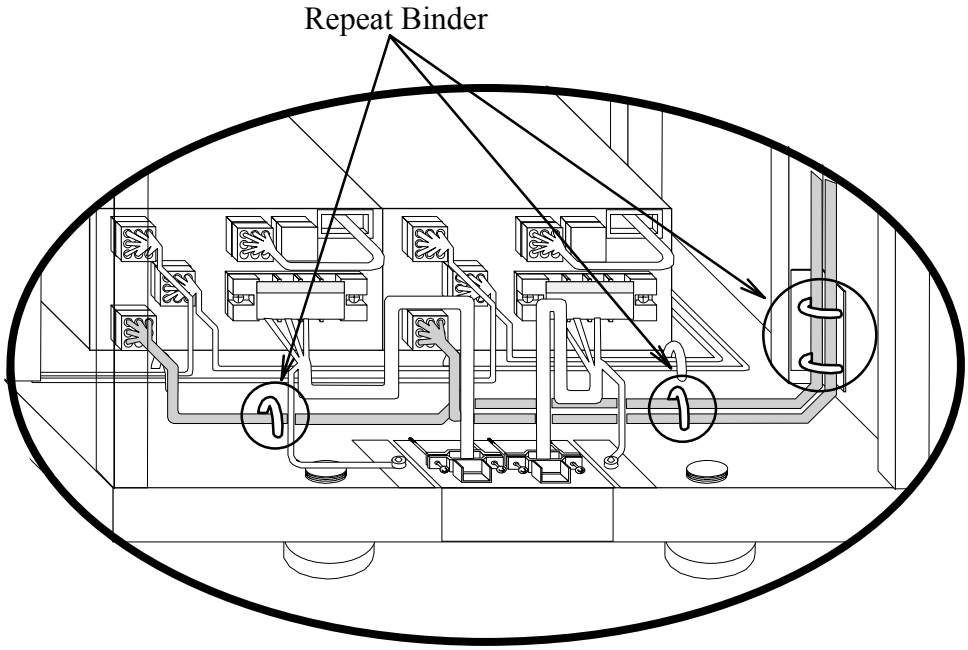

Fig. 3.20.3.1-7 Removal of the Repeat Binders

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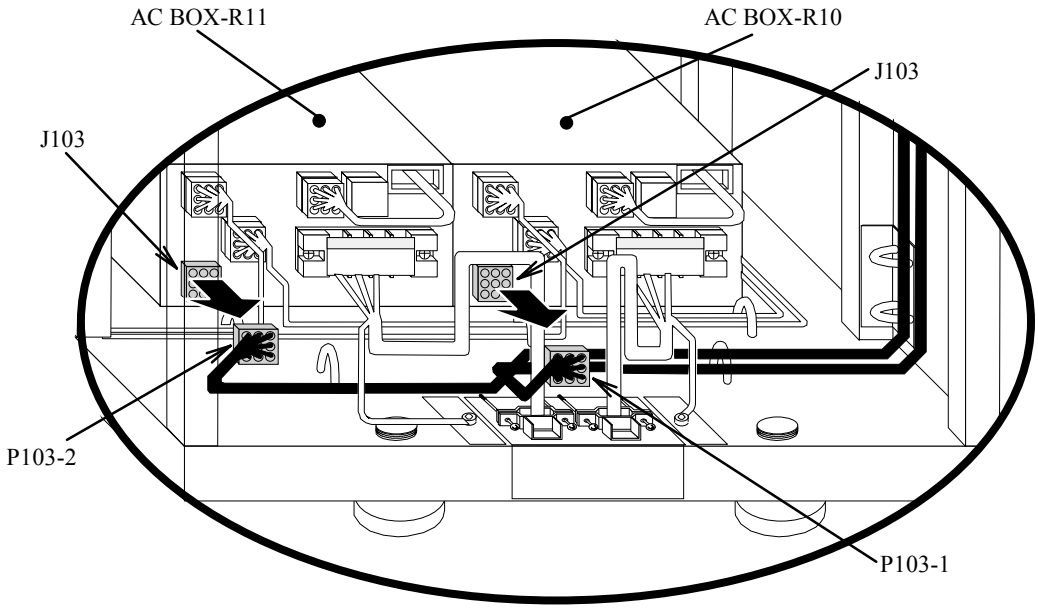
d. Disconnect the AC cables from the AC boxes.



Rear View
of DKU-R1

Fig. 3.20.3.1-8 Disconnection of the AC Cables

e. Re-Install the plate.

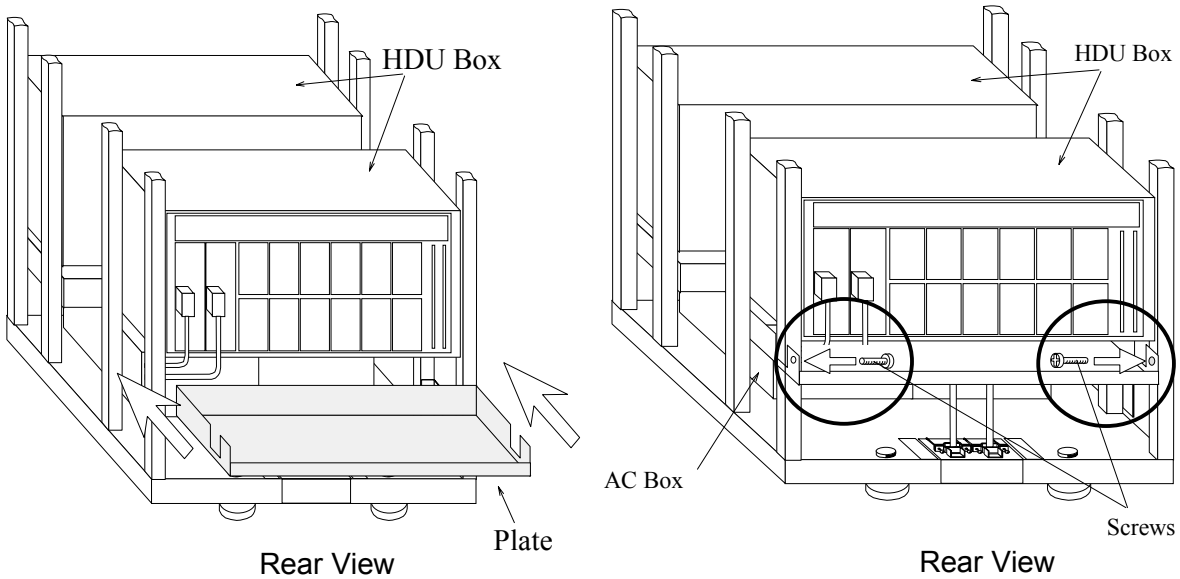


Fig. 3.20.3.1-9 Re-Installation of the Plate

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3. Disconnect the DKUMN cables from the DKUMN PCBs.
   a. Disconnect the DKUMN cables from the DKUMN PCBs.

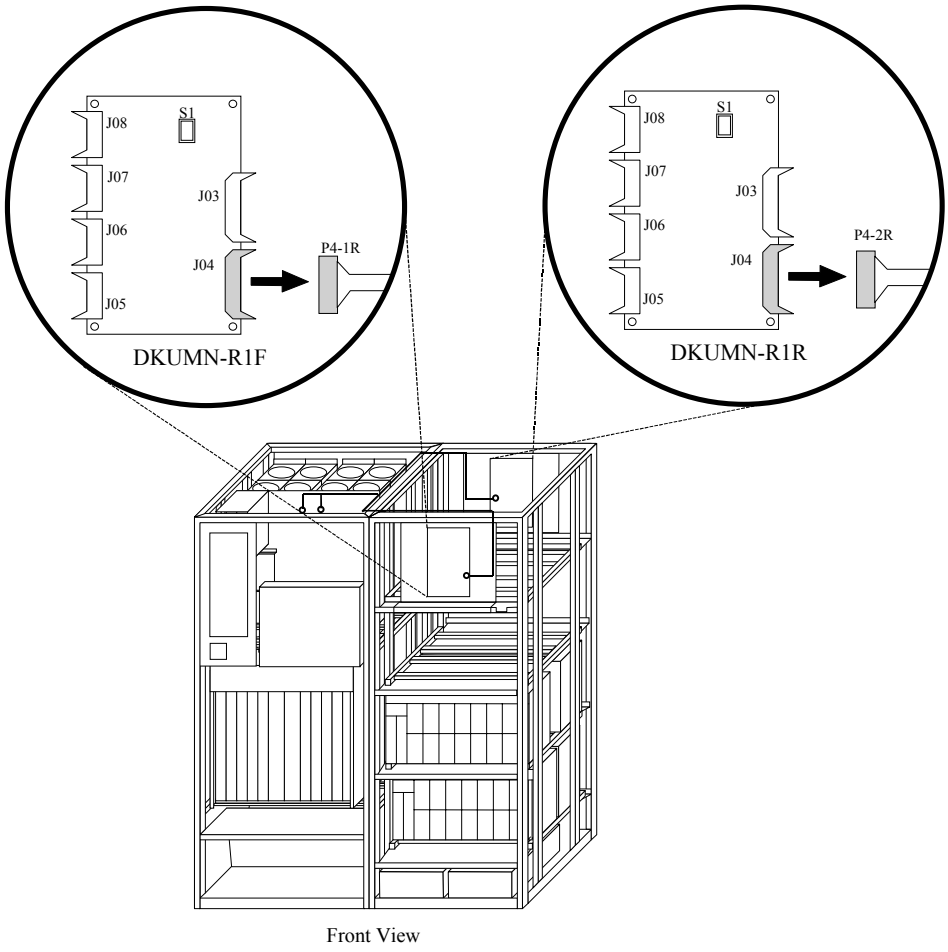

Fig. 3.20.3.1-10 Disconnection of DKUMN Cables

   b. Remove the repeat binders.

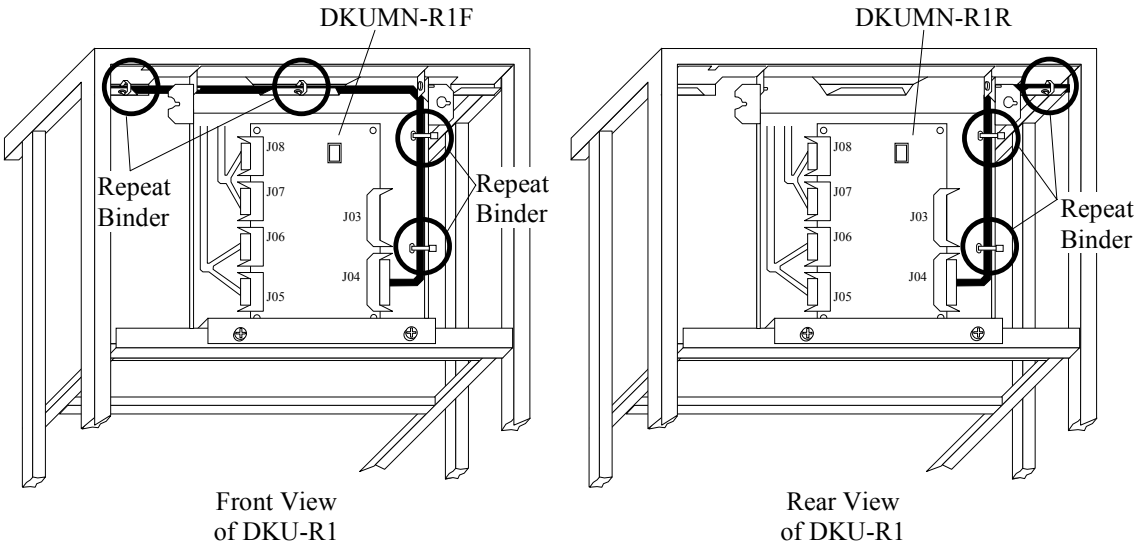

Fig. 3.20.3.1-11 Removal of Repeat Binders

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4. Disconnect the DEV interface cables from the FSW PCBs.
   a. Loosen the two screws.
   b. Lift the DKUMN PCBs.
   c. Slide and secure the DKUMN PCBs.

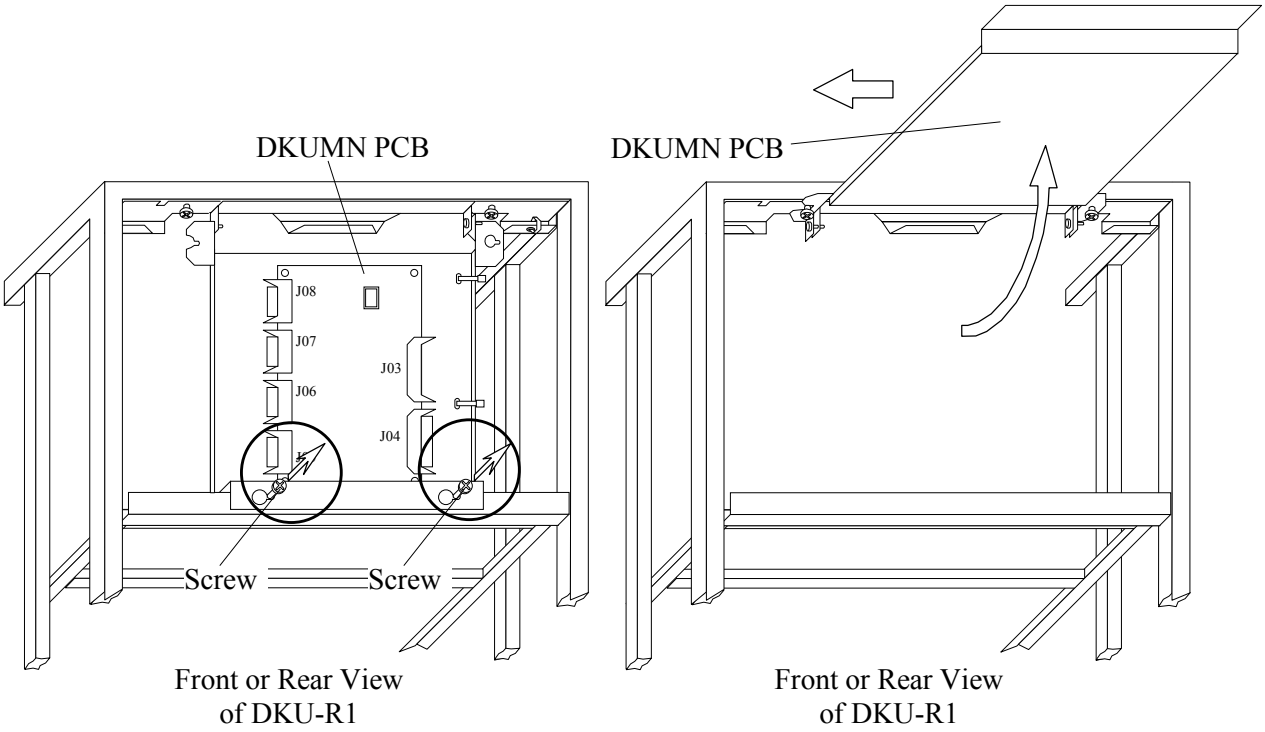

Fig. 3.20.3.1-12 Lift of DKUMN PCBs

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d. Disconnect the DEV interface cables from the FSW PCBs. Refer to Fig. 3.20.3.1-13 and Fig. 3.20.3.1-14.

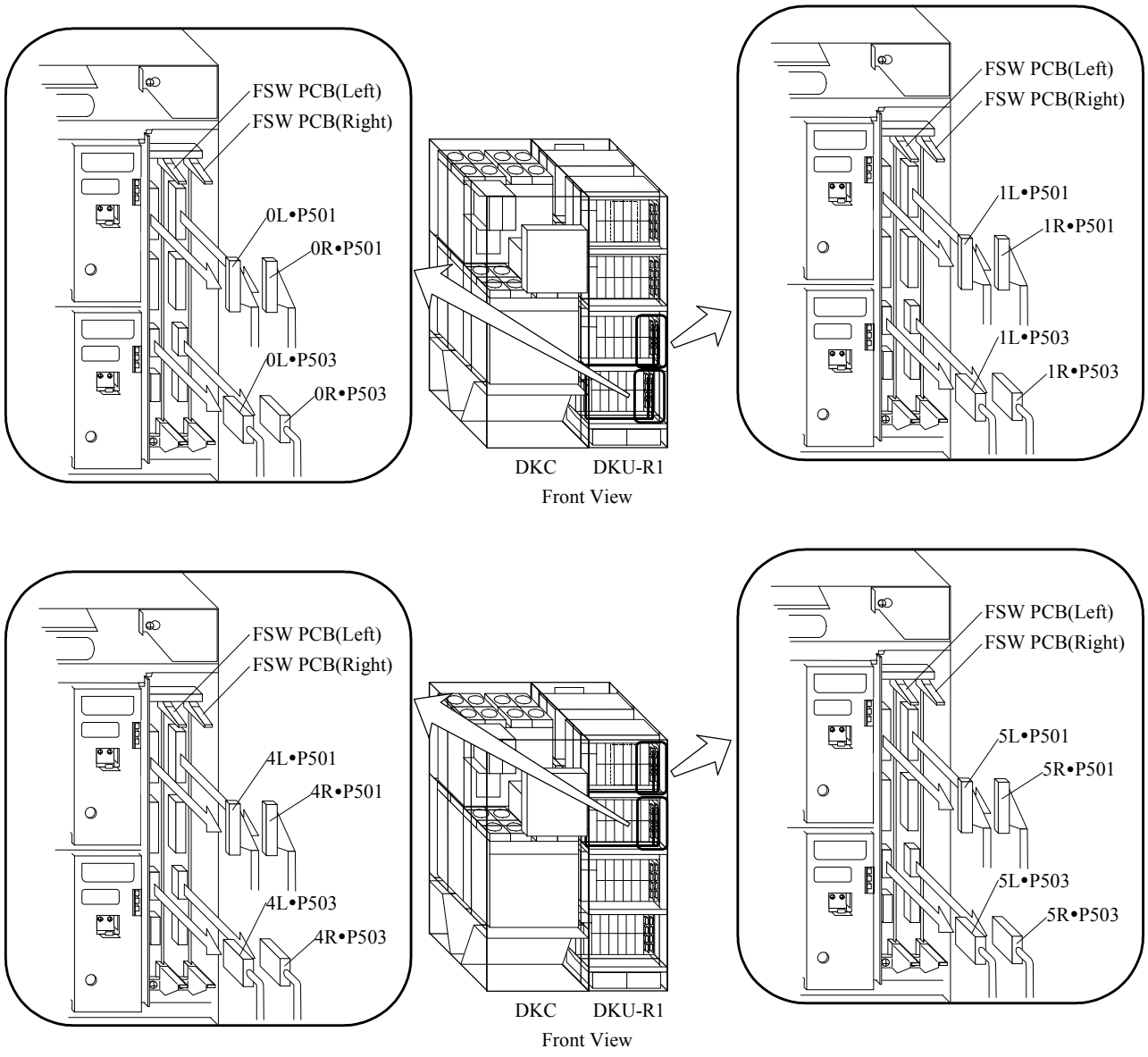

Fig. 3.20.3.1-13 Disconnection of DEV Interface Cables

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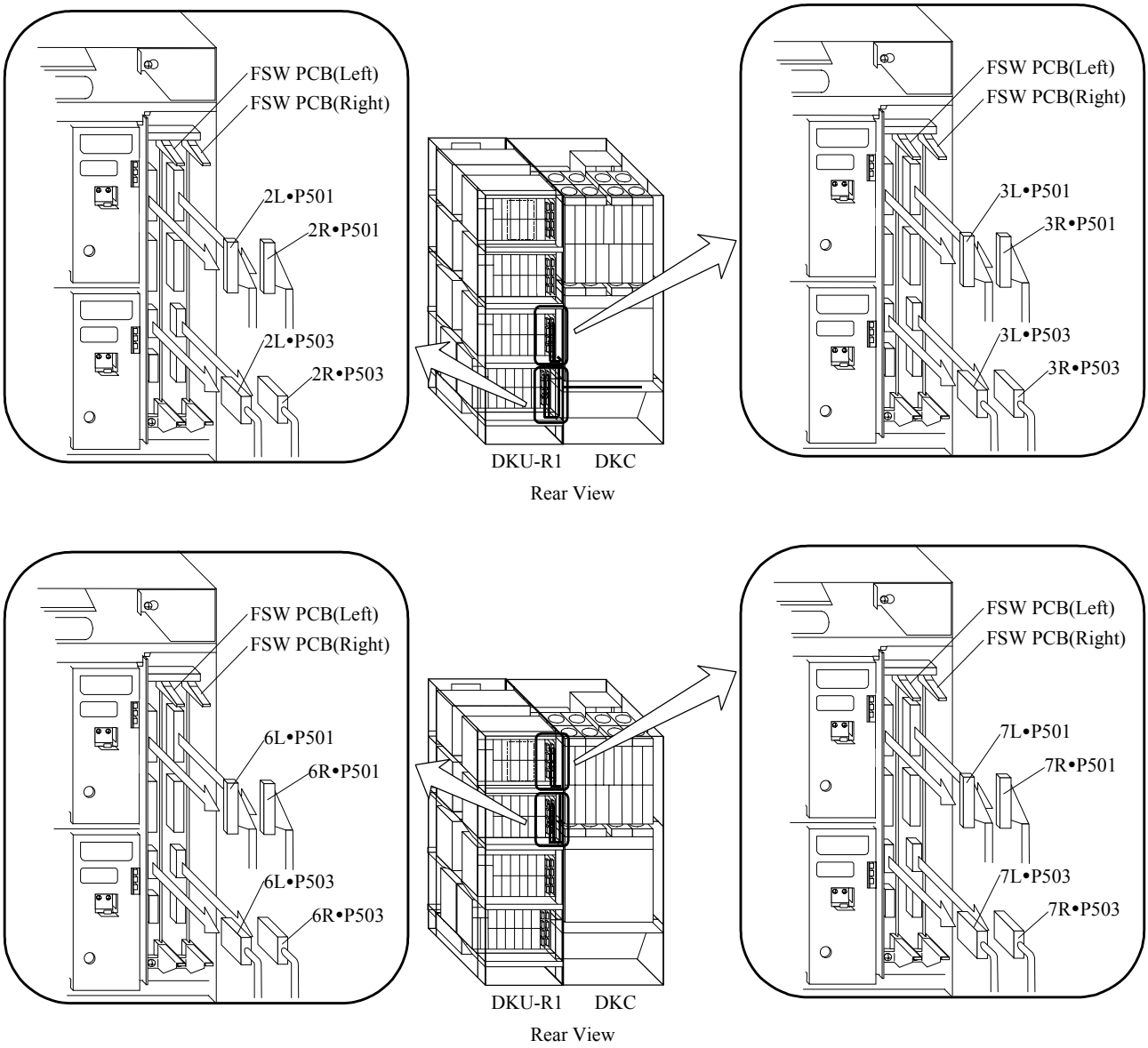

Fig. 3.20.3.1-14 Disconnection of DEV Interface Cables

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5. Remove the frame ground cable.

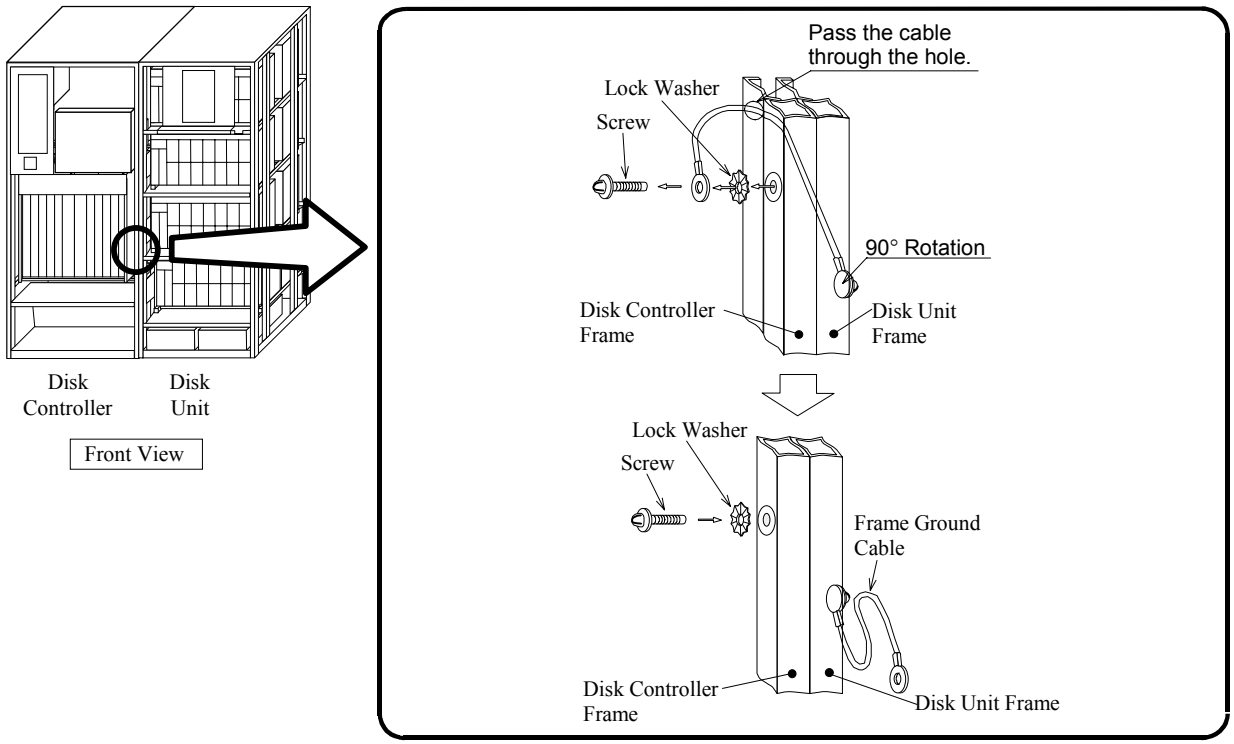

Fig. 3.20.3.1-15 Removal of the Frame Ground Cable

6. Remove the kick plates.

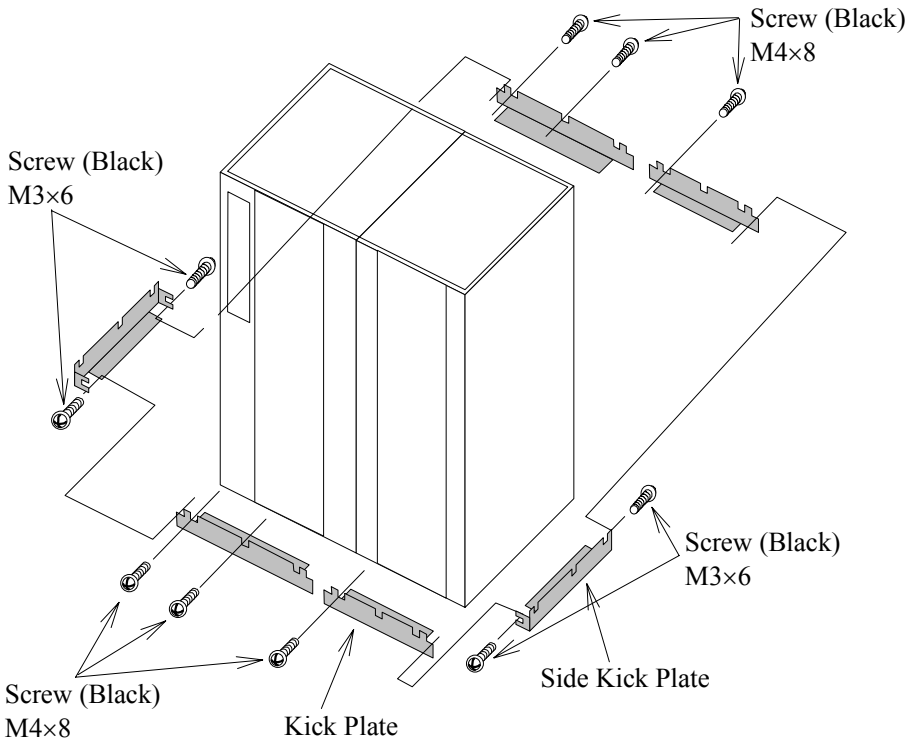

Fig. 3.20.3.1-16 Removal of the Kick Plates

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7. Fix the movable rack with the screw.

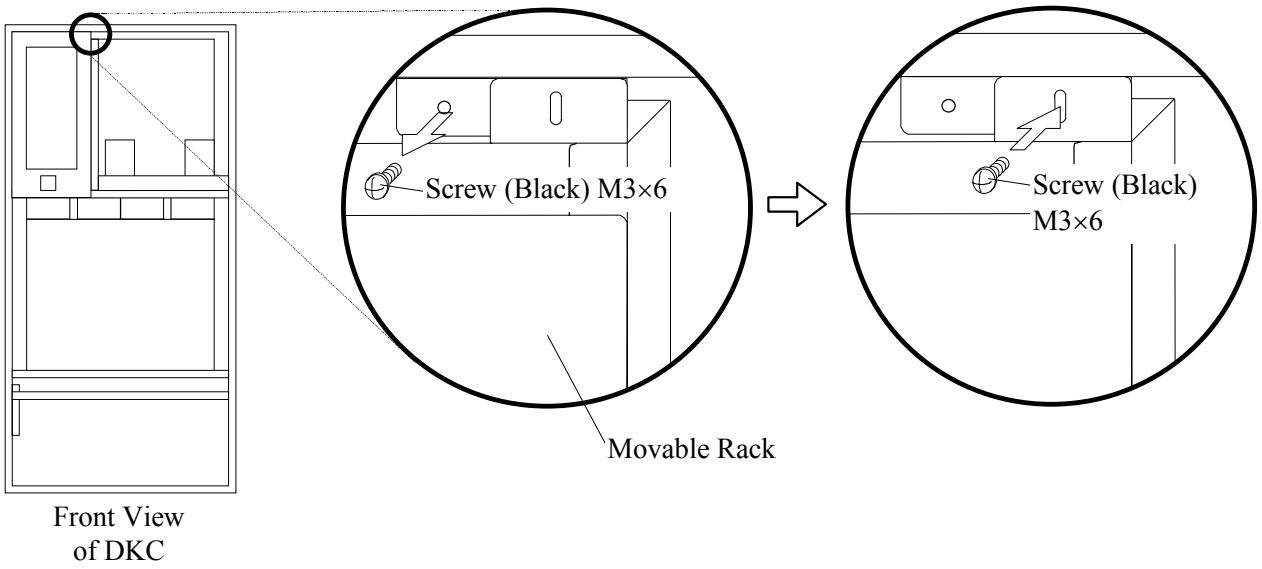

Fig. 3.20.3.1-17 Fixing the Movable Rack

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8. Disconnect the connecting bolts.

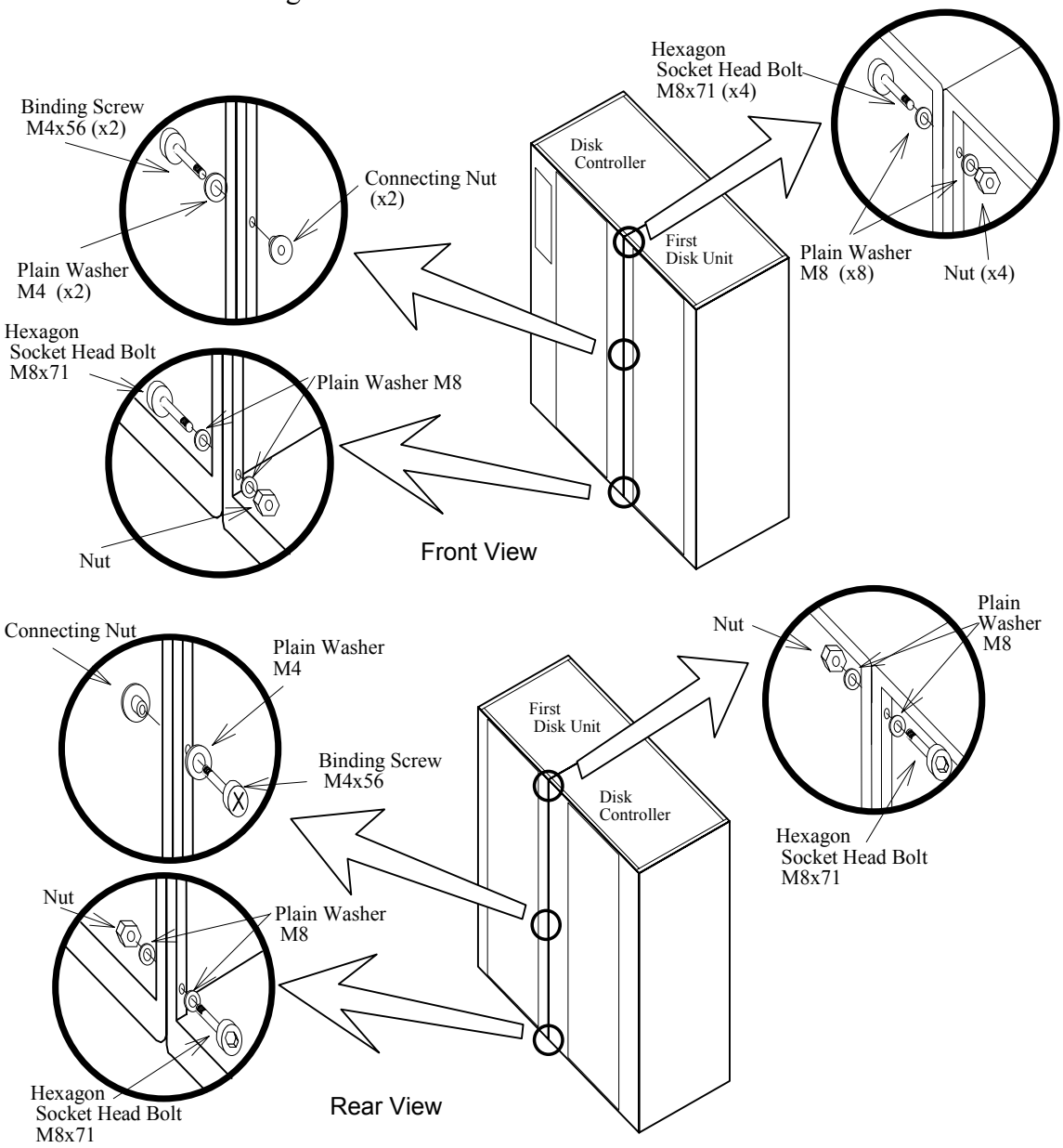

Fig. 3.20.3.1-18 Disconnection of the Connecting Bolts.

9. Loosen the screw jack of First DKU.

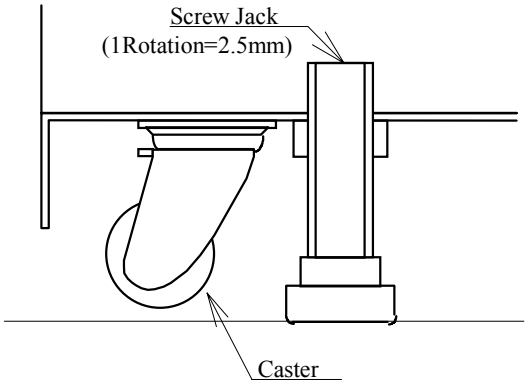

Fig. 3.20.3.1-19 Loosening the Screw Jack

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10. Secure the power cable assy.
    a. Loosen the four screws.

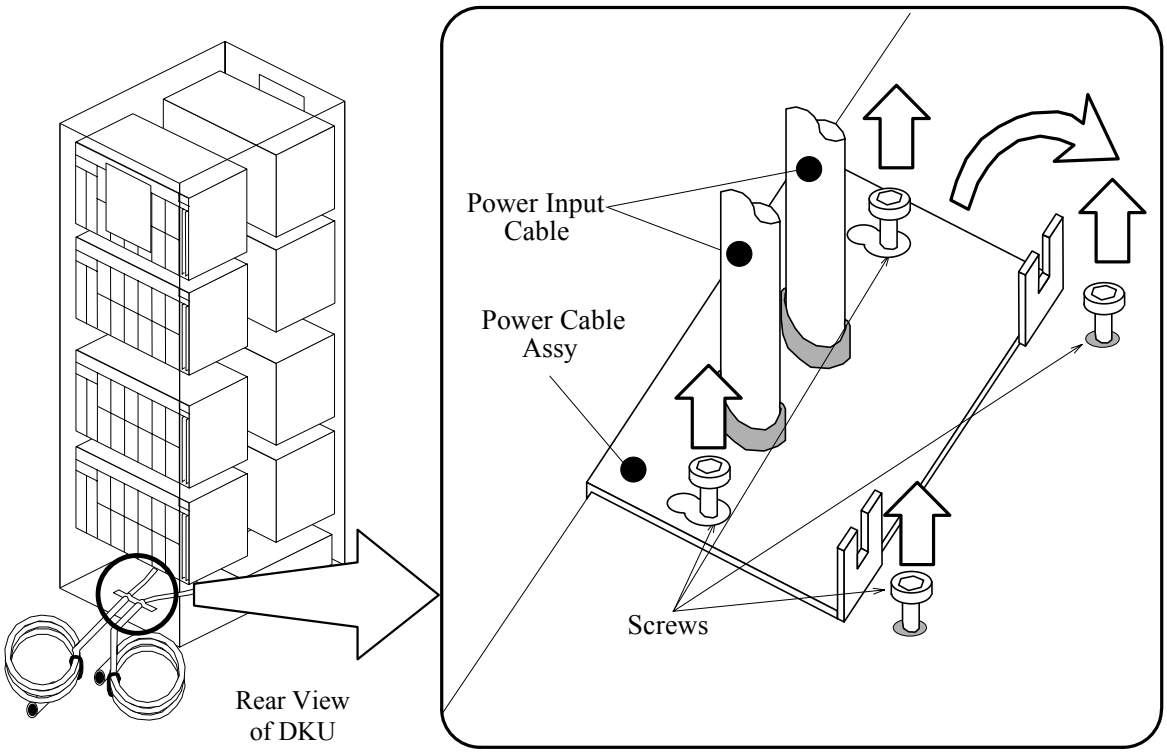

Fig. 3.20.3.1-20 Fixing of the Power Cable Assy

    b. Secure the power cable assy with the screws.

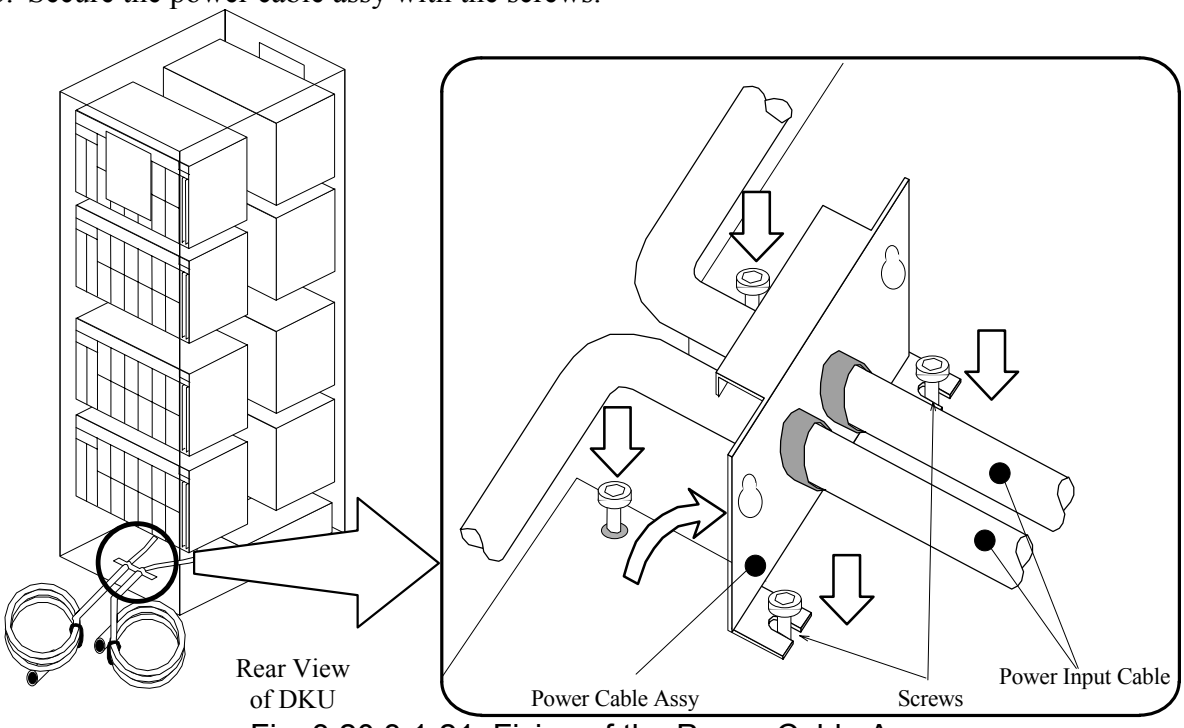

Fig. 3.20.3.1-21 Fixing of the Power Cable Assy

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11. Remove the DKC.

Notice: Move the DKC and the DKU as being careful of floor cut.

[In case that there isn't DKU-L1.]

a. In case that there isn't DKU-L1, remove the DKC from DKU-R1.

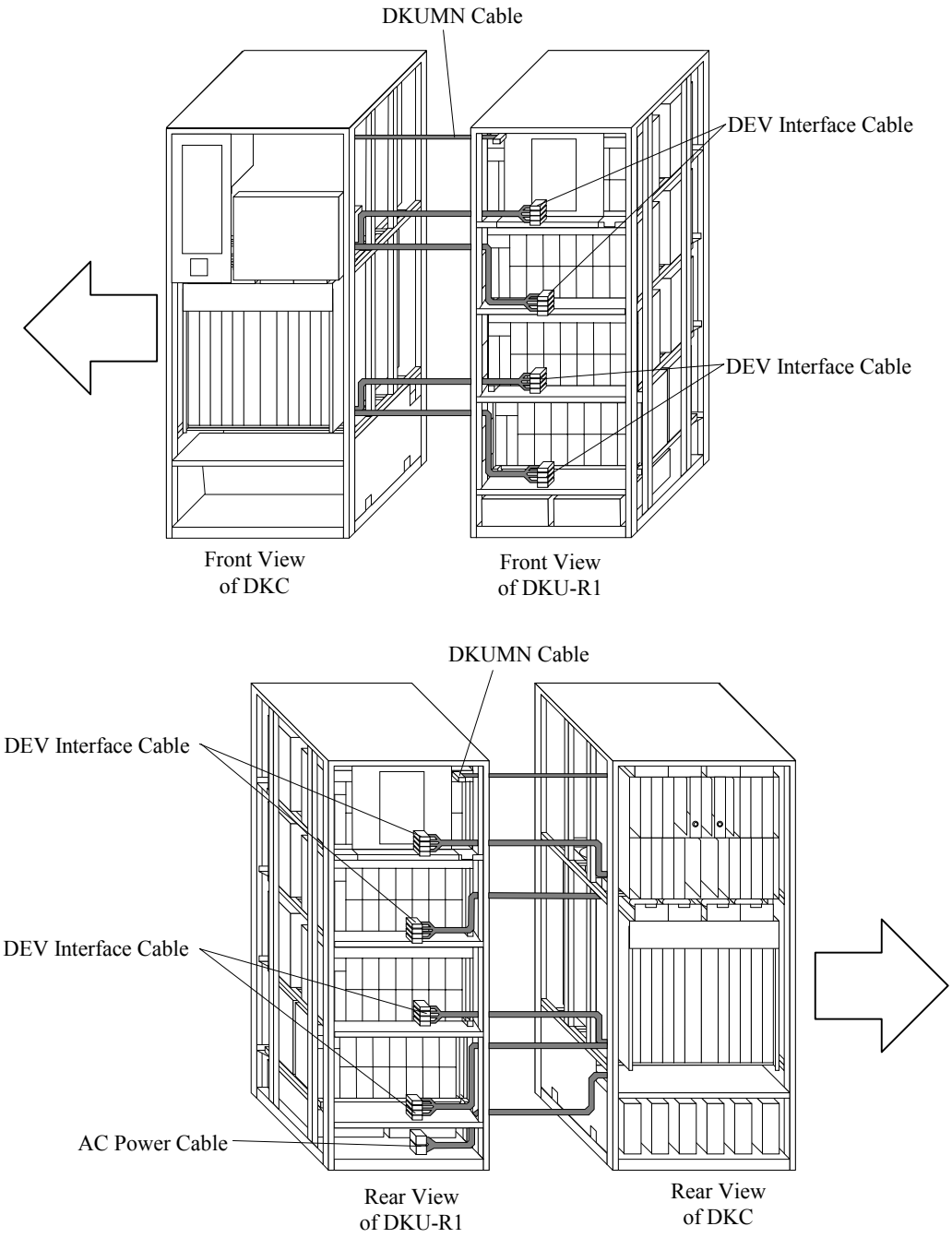

Fig. 3.20.3.1-22 Removal of the DKC

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[In case that there is DKU-L1.]

a. In case that there is DKU-L1, remove the DKU-R1 from DKC.

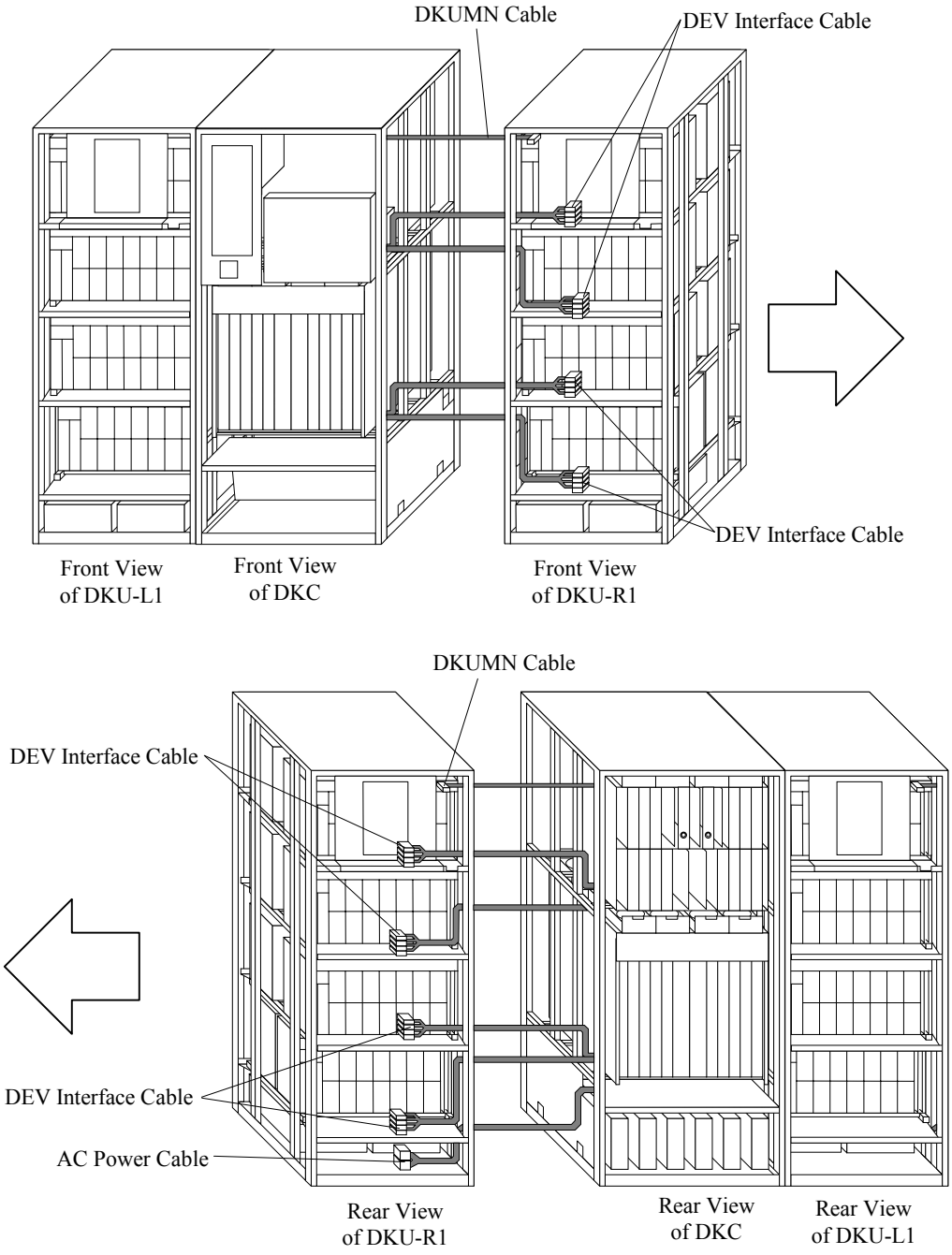

Fig. 3.20.3.1-23 Removal of the DKU-R1

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12. Fix the DKUMN cables, the DEV interface cables and the AC power cables with the repeat binders.

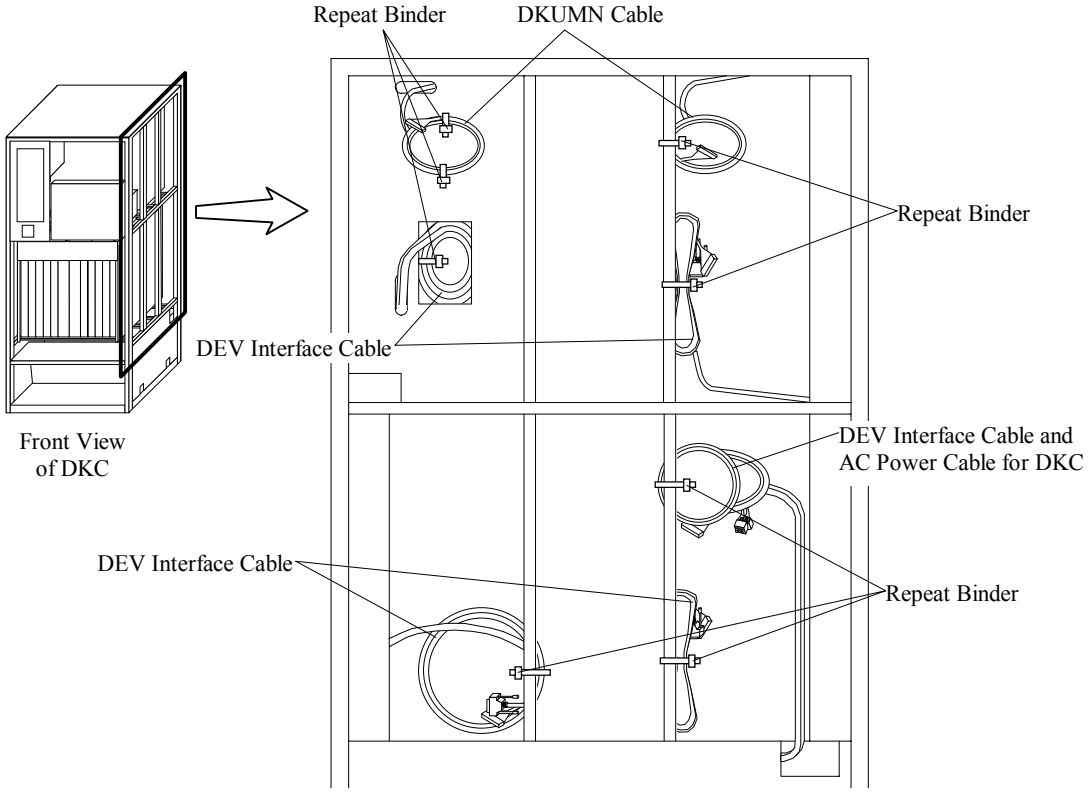

Fig. 3.20.3.1-24 Fixation of the Cables

13. Replace the New DKC.
    In case that there is DKU-L1, go to “Disconnection between DKC and DKU-L1” [INST03-SWP-260].

    Go to “Connection of DKC460I” [INST03-SWP-380].

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3.20.3.2 Disconnection between DKC and DKU-L1

1. Remove the covers.
   a. Remove the Front Logic Box cover, Front Inner cover, Rear Logic Box cover and Rear Inner cover.
   b. Remove the screws and open the cable covers.

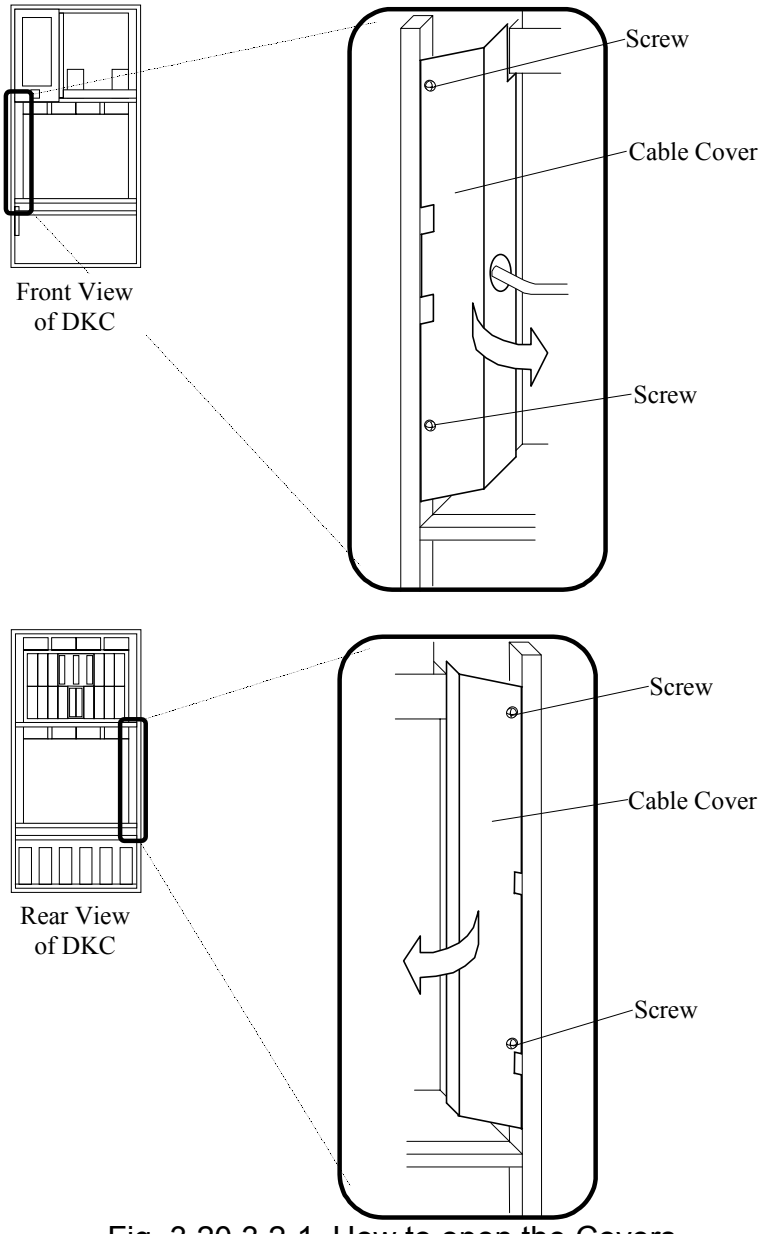

Fig. 3.20.3.2-1 How to open the Covers

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c. Loosen the screws and remove the cable covers ① and ②.

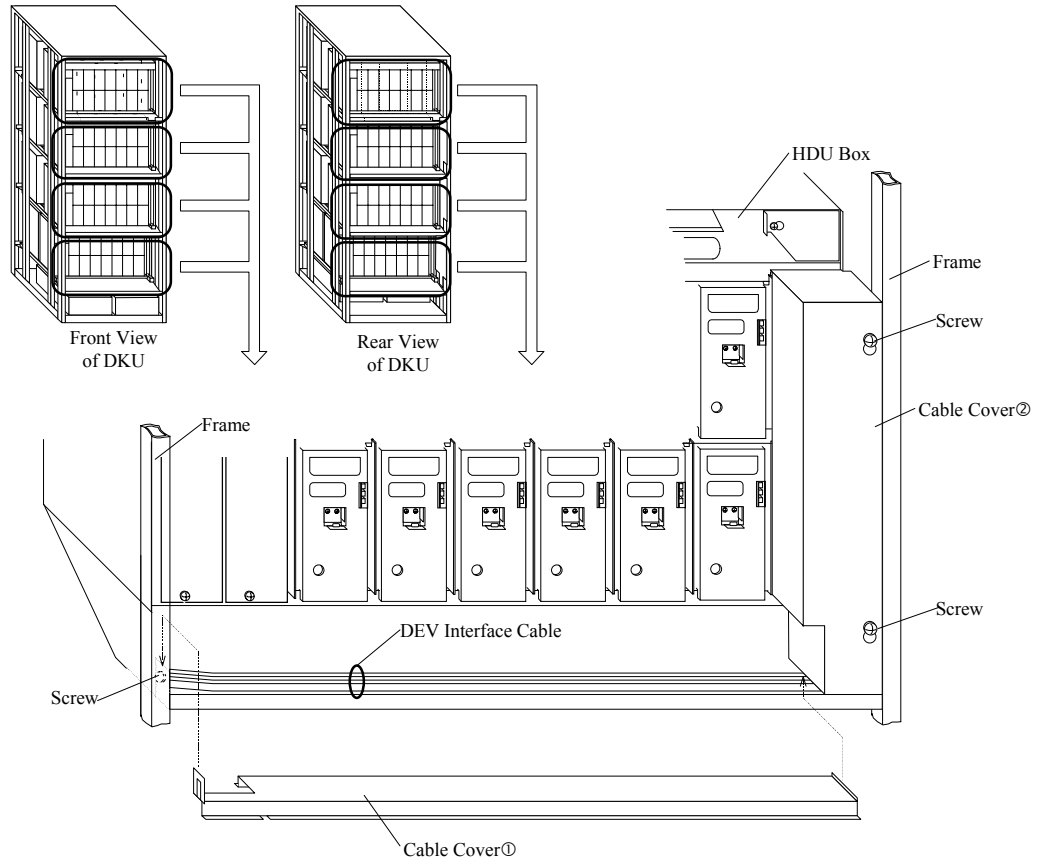

Fig. 3.20.3.2-2 Removal of Cable Covers

d. Loosen the screws and remove the side plates.

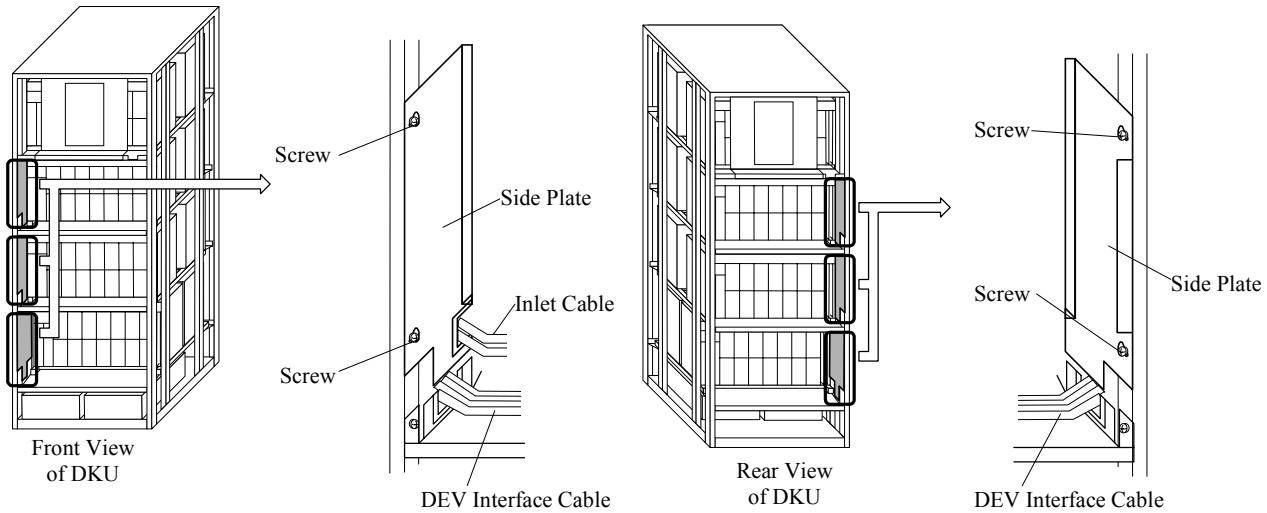

Fig. 3.20.3.2-3 Removal of Side Covers

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2. Disconnect the DKUMN cables from the DKUMN PCBs.
   a. Disconnect the DKUMN cables from the DKUMN PCBs.

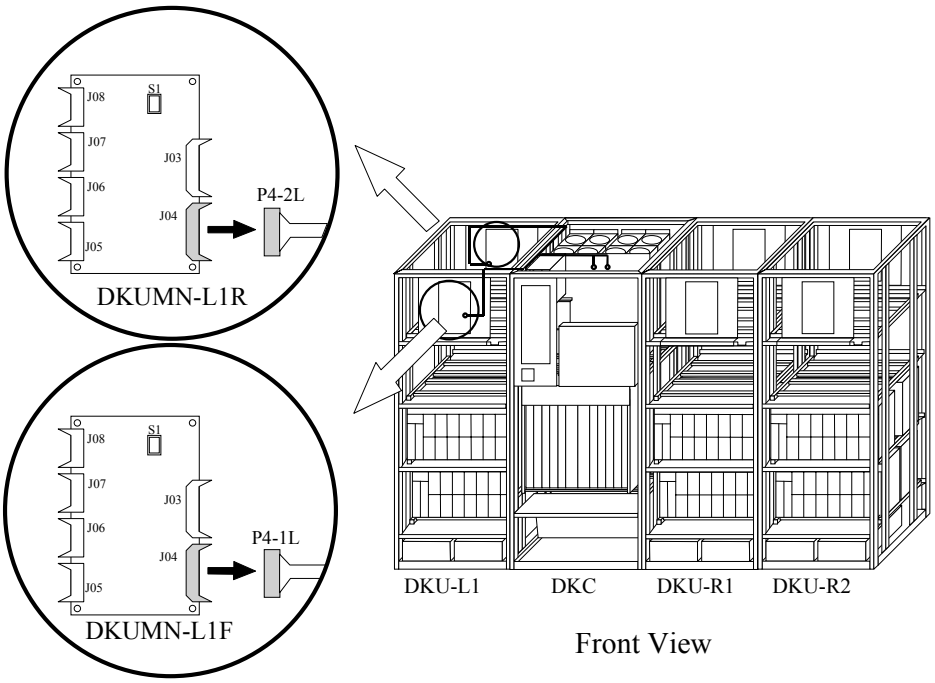

Fig. 3.20.3.2-4 Disconnection of DKUMN Cables

   b. Remove the repeat binders.

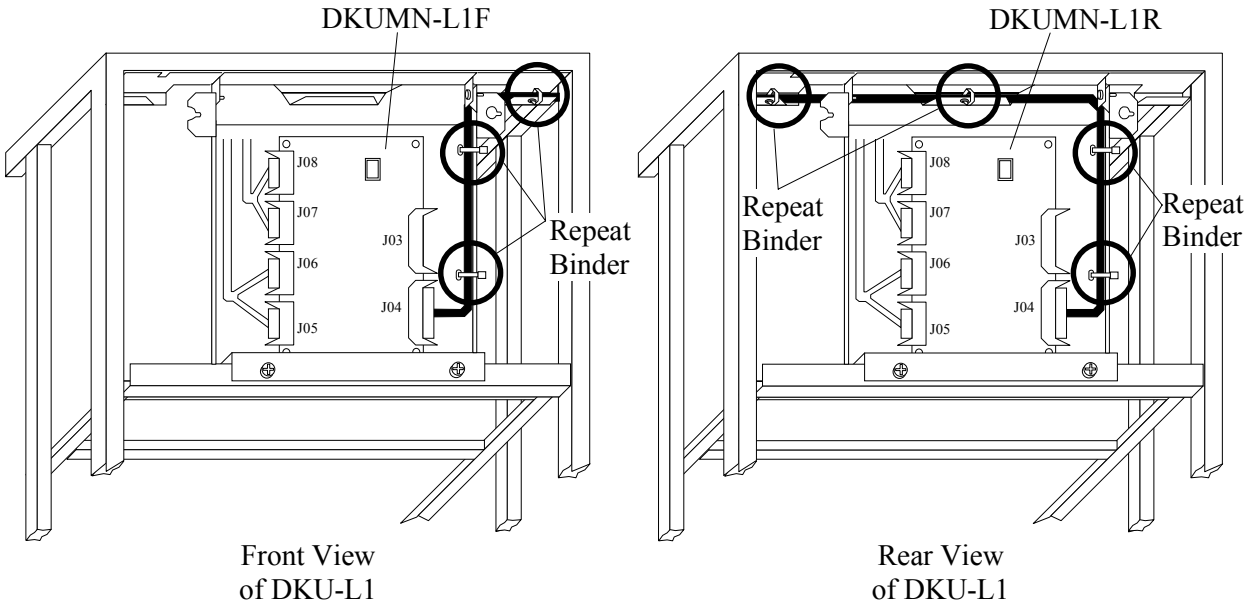

Fig. 3.20.3.2-5 Removal of Repeat Binders

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3. Disconnect the DEV interface cables from the FSW PCBs.
   a. Loosen the two screws.
   b. Lift the DKUMN PCBs.
   c. Slide and secure the DKUMN PCBs.

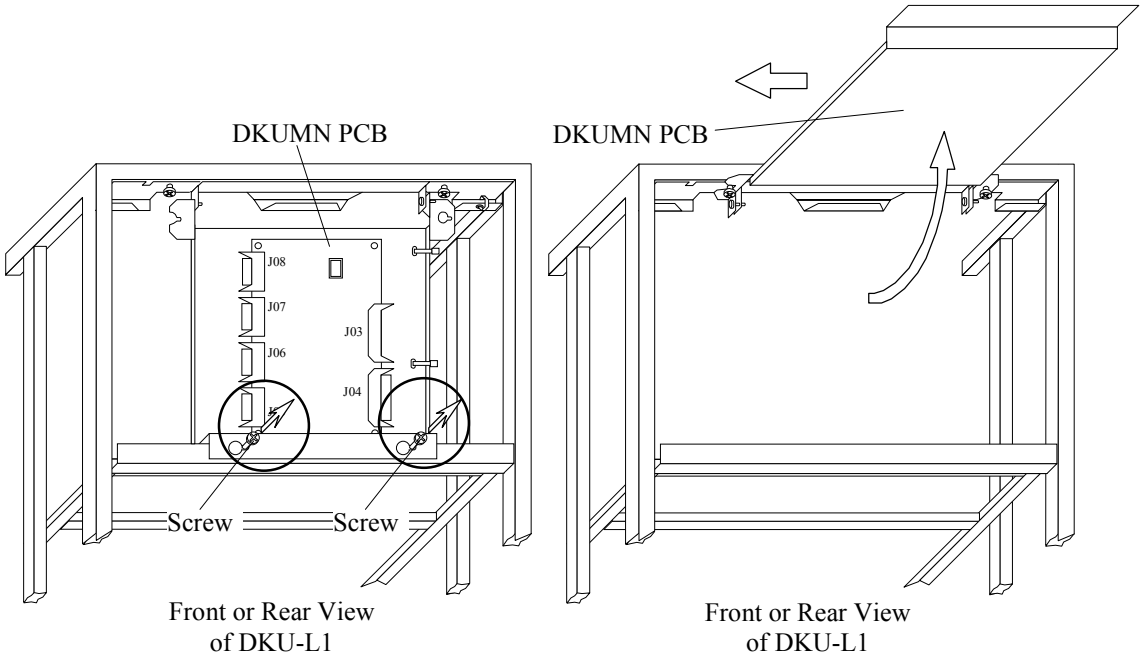

Fig. 3.20.3.2-6 Lift of DKUMN PCBs

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d. Disconnect the DEV interface cables from the FSW PCBs.

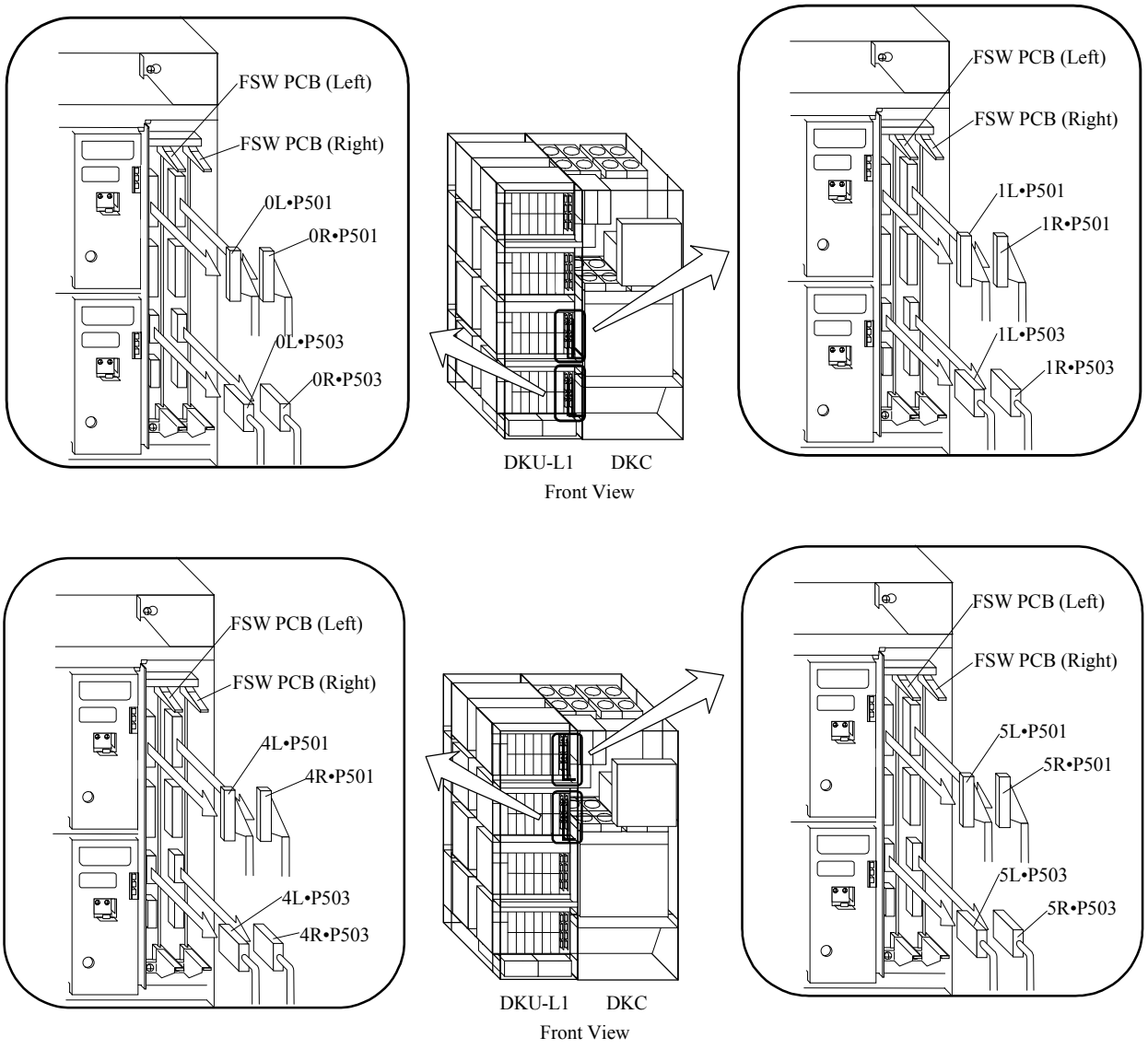

Fig. 3.20.3.2-7 Disconnection of the DEV Interface Cables

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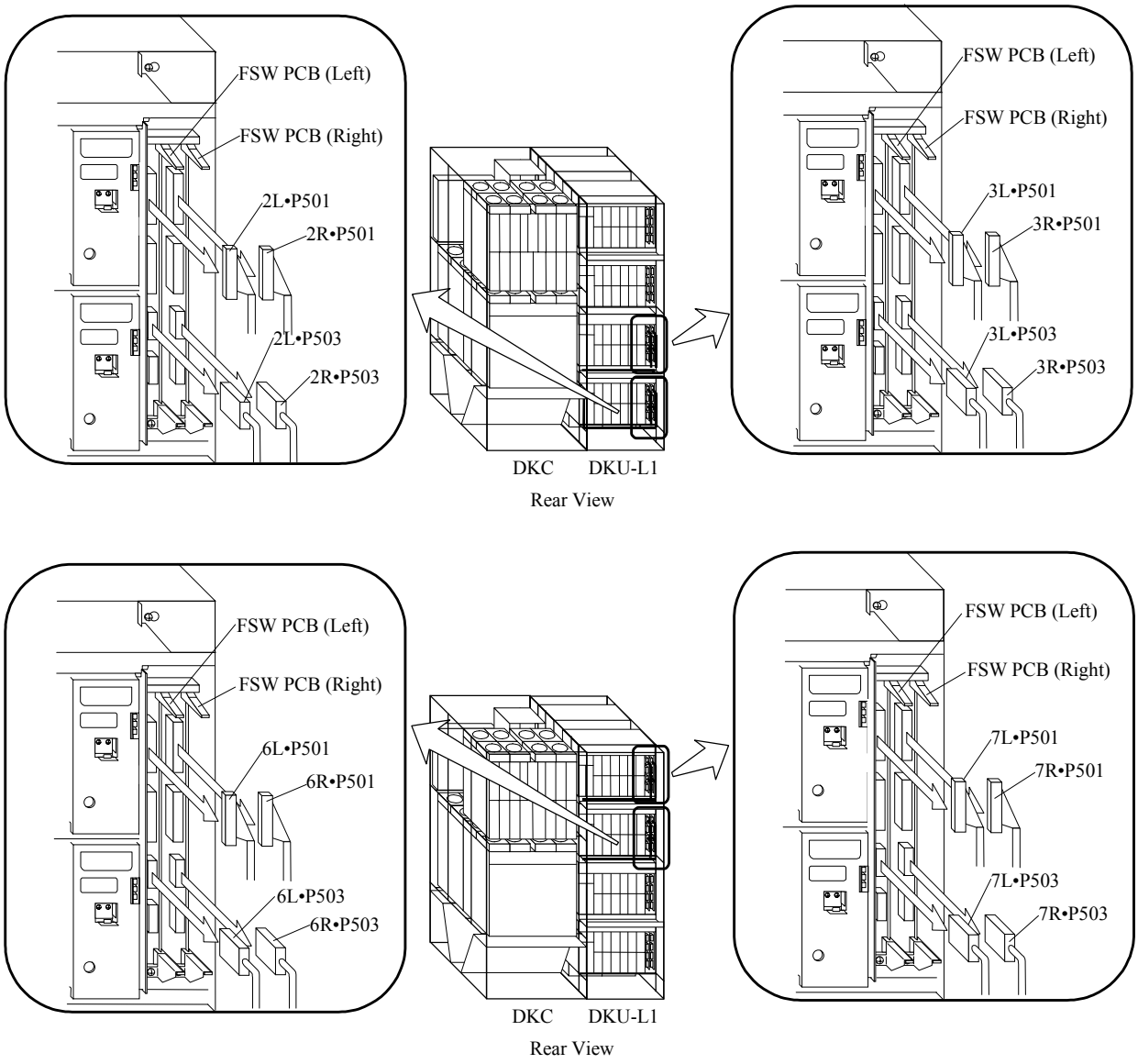

Fig. 3.20.3.2-8 Disconnection of the DEV Interface Cables

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4. Remove the frame ground cable.

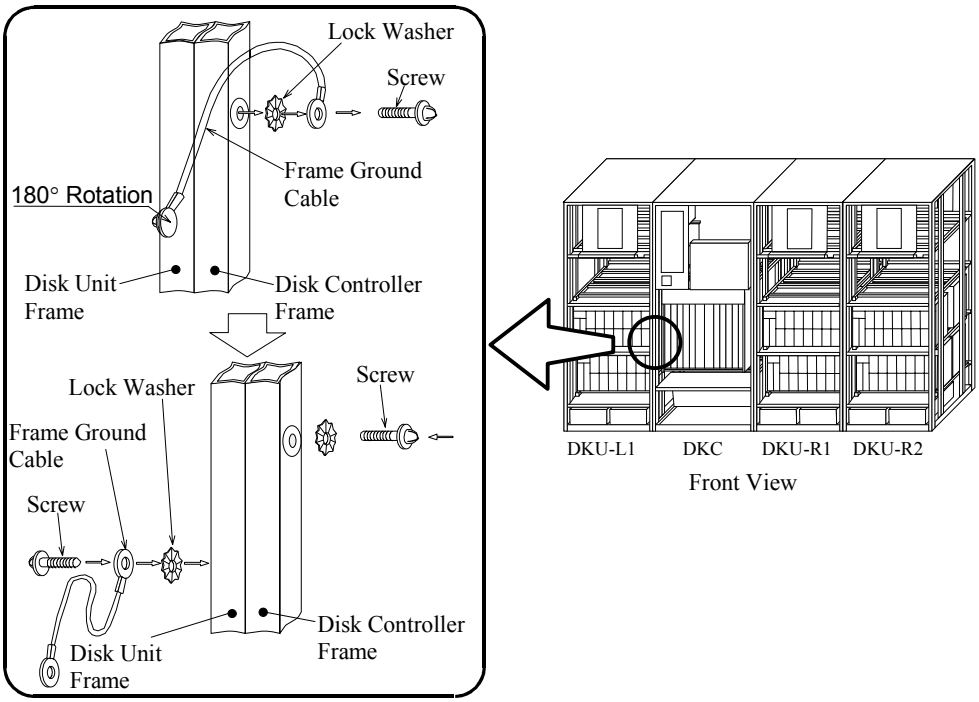

Fig. 3.20.3.2-9 Removal of the Frame Ground Cable

5. Remove the kick plates.

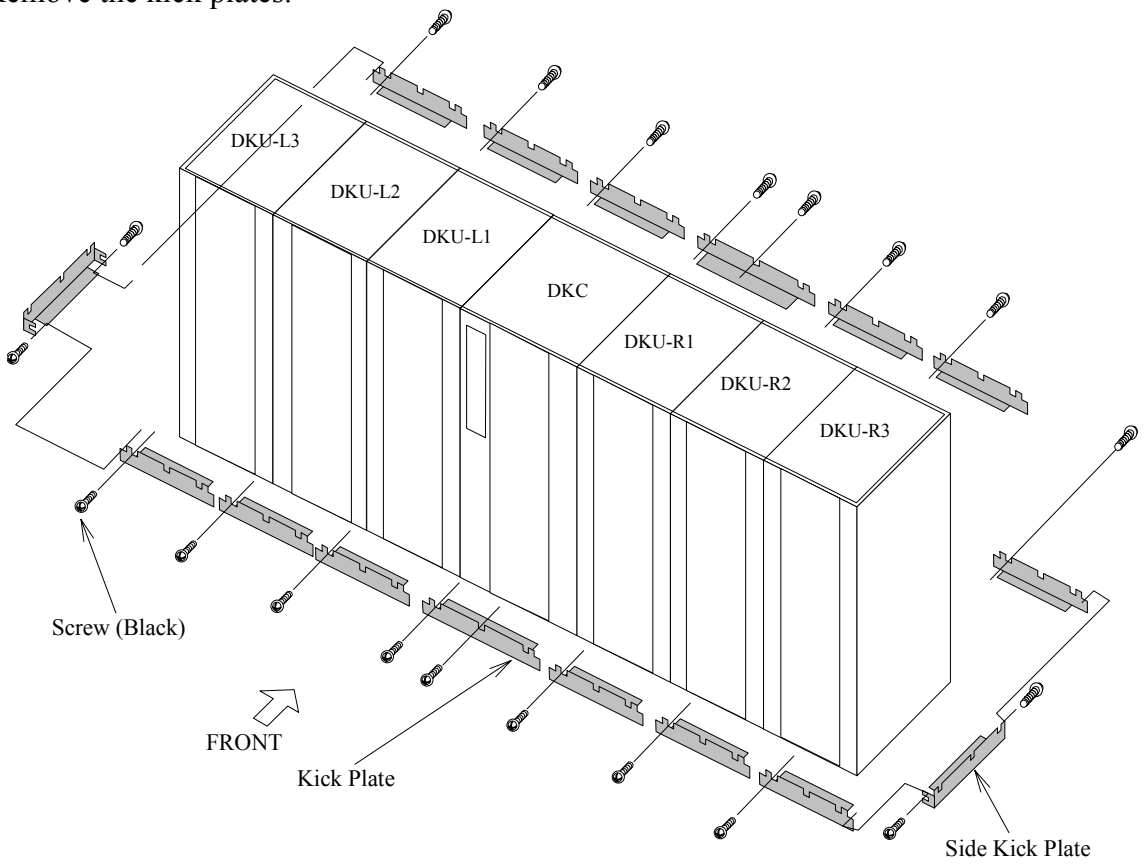

Fig. 3.20.3.2-10 Removal of the Kick Plates

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6. Disconnect the connecting bolts. Refer to Fig. 3.20.3.2-11 and Fig. 3.20.3.2-12.

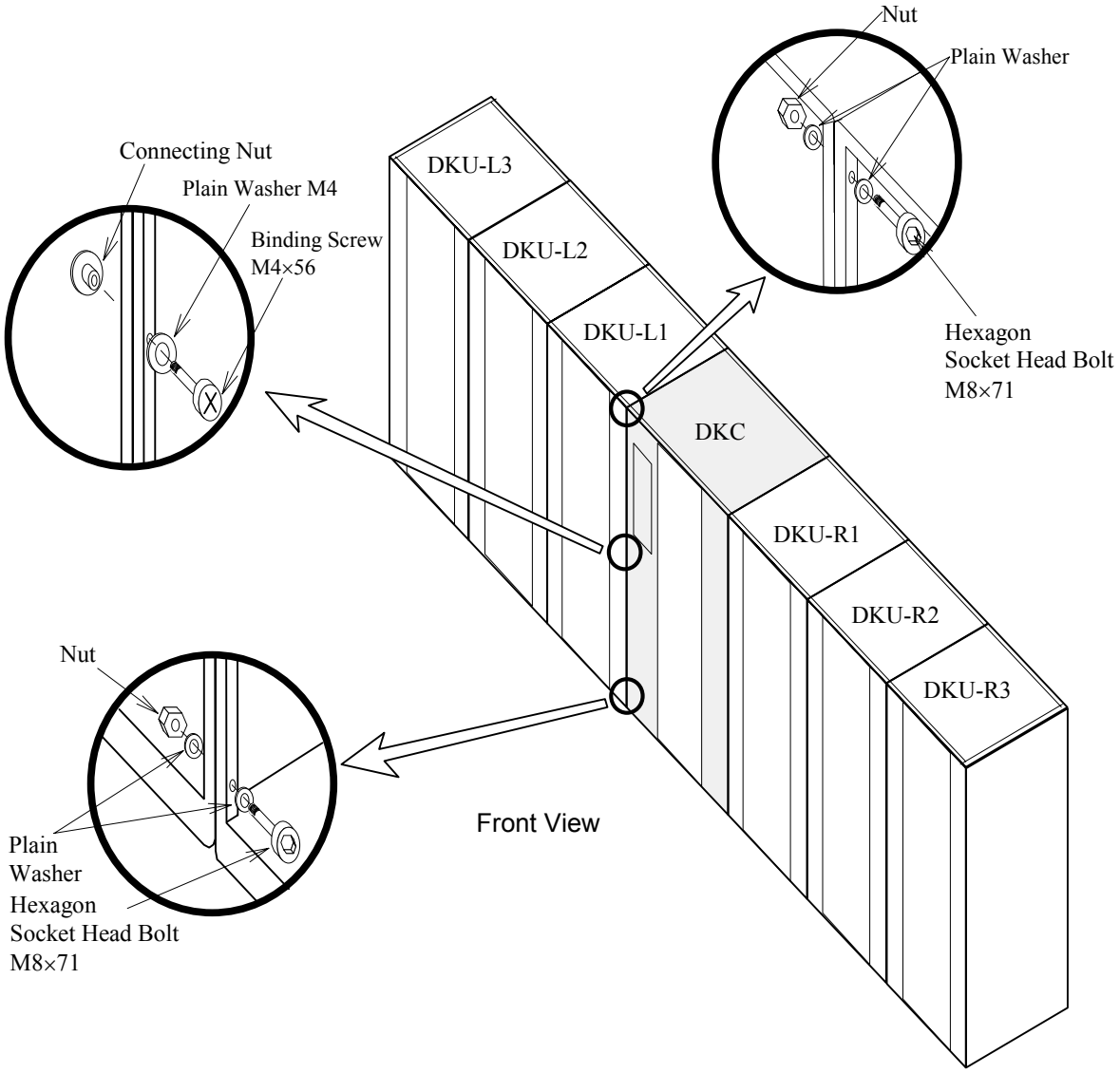

Fig. 3.20.3.2-11 Disconnection of Connecting Bolts

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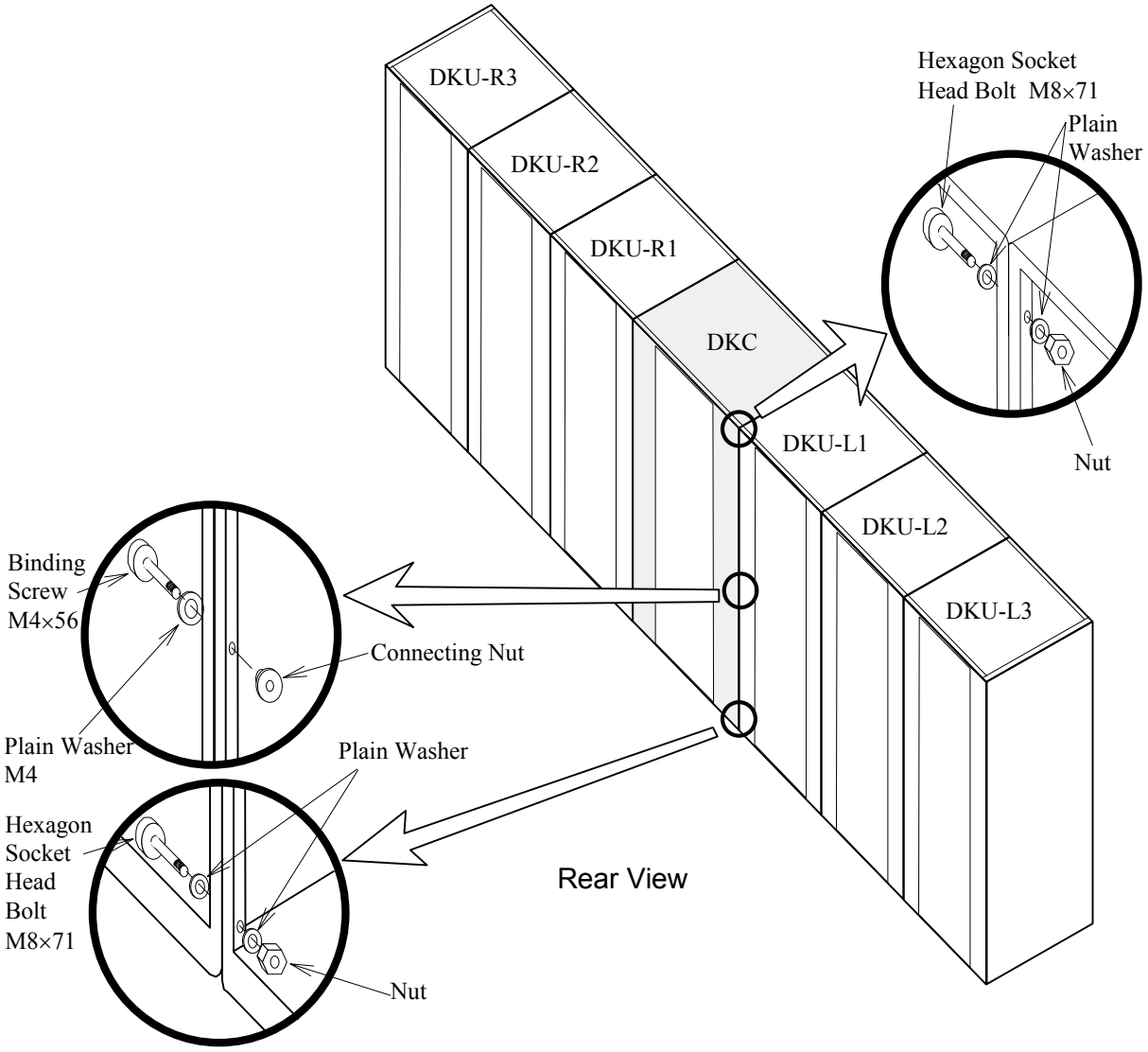

Fig. 3.20.3.2-12 Disconnection of Connecting Bolts

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7. Secure the power cable assy.
   a. Loosen the four screws.

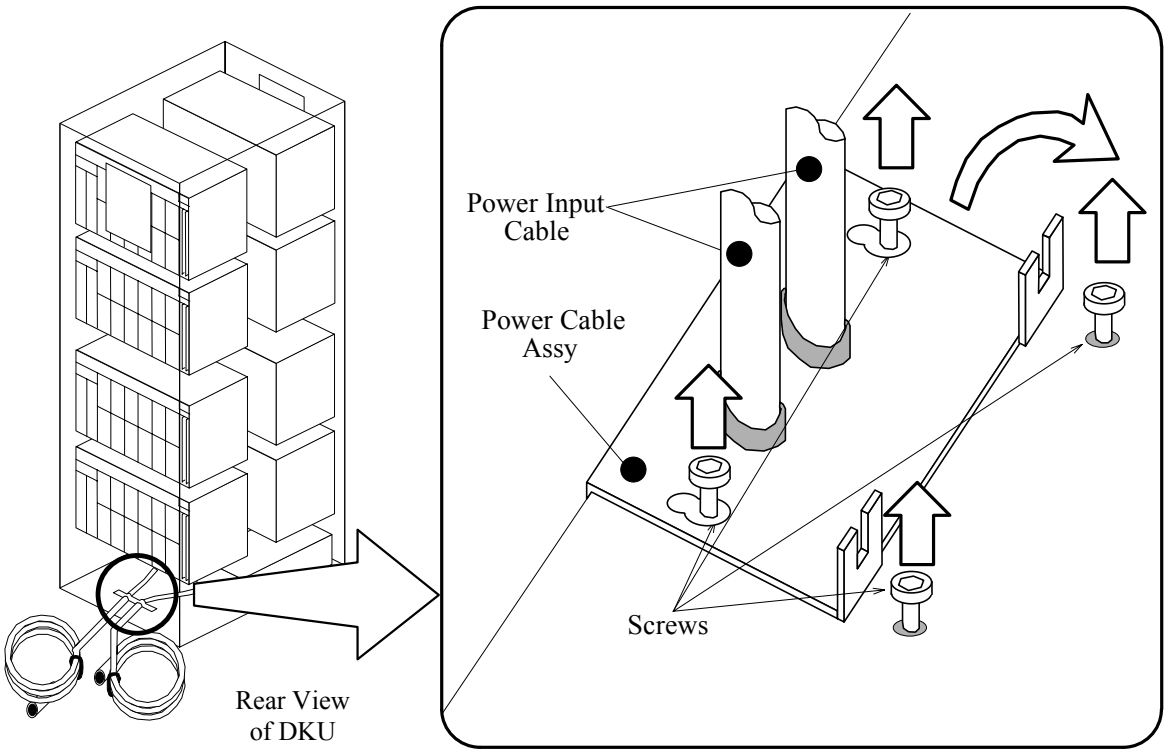

Fig. 3.20.3.2-13 Fixing of the Power Cable Assy

   b. Secure the power cable assy with the screws.

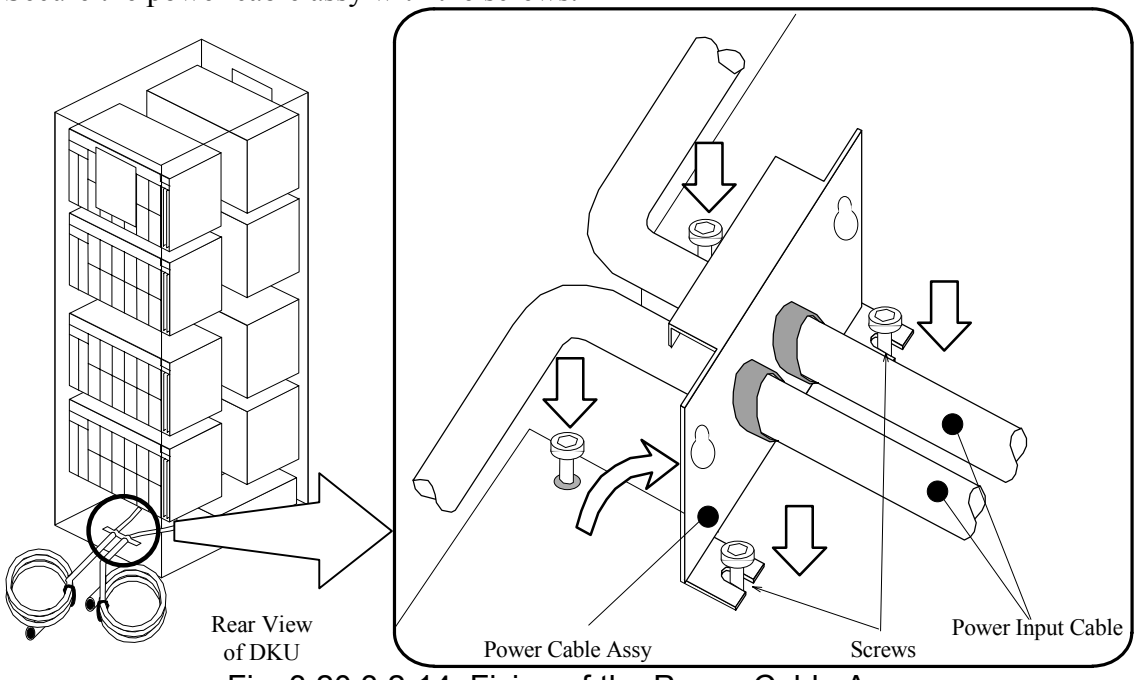

Fig. 3.20.3.2-14 Fixing of the Power Cable Assy

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8. Loosen the screw jack.

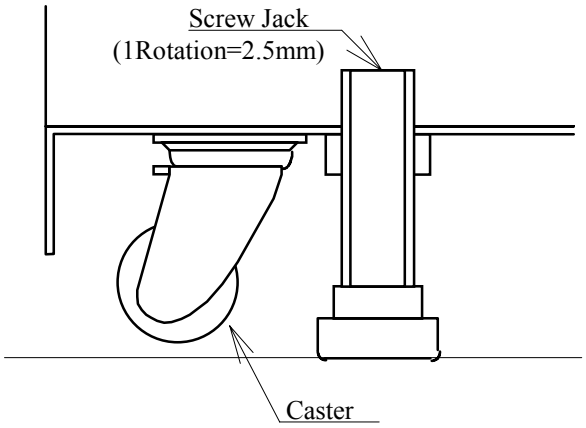

Fig. 3.20.3.2-15 Loosening the Screw Jack

9. Remove the DKU-L1 from DKC.

Notice: Move the DKC and the DKU as being careful of floor cut.

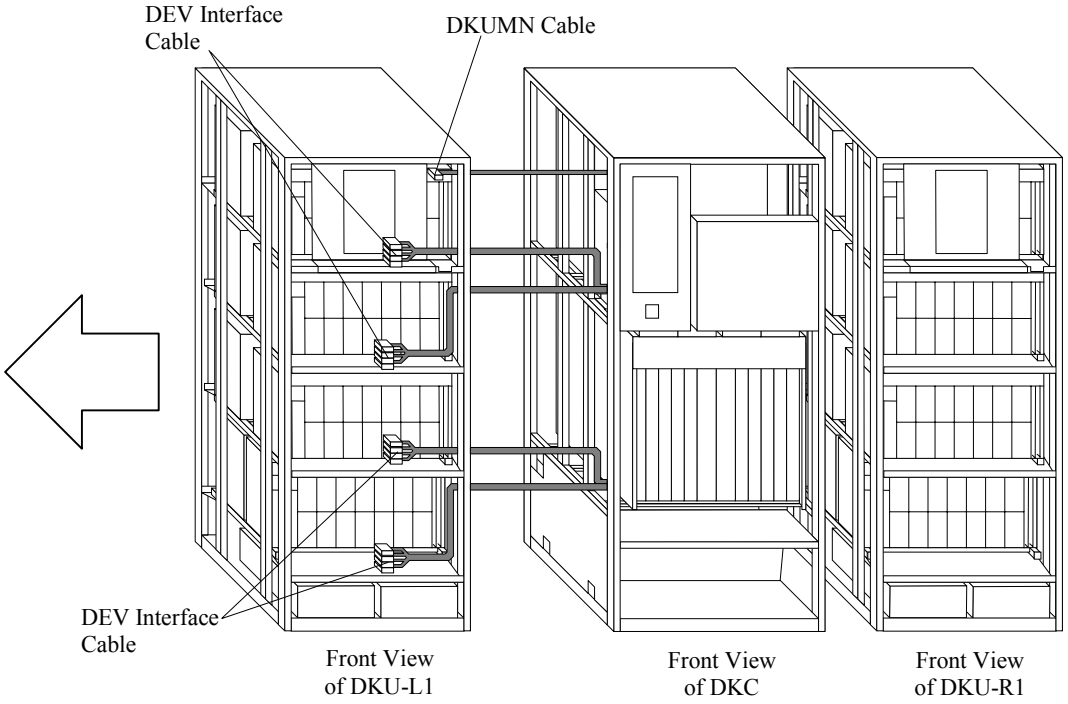

Fig. 3.20.3.2-16 Removal of the DKU-L1

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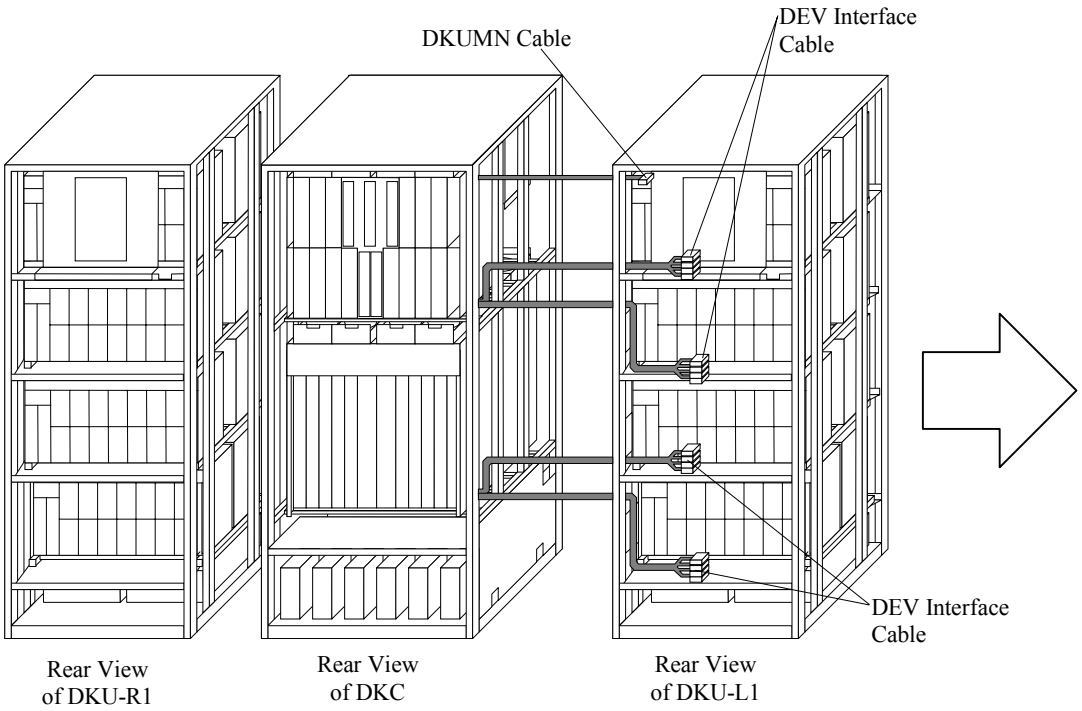

Fig. 3.20.3.2-17 Removal of the DKU-L1

10. Fix the DEV interface cables with the repeat binders.

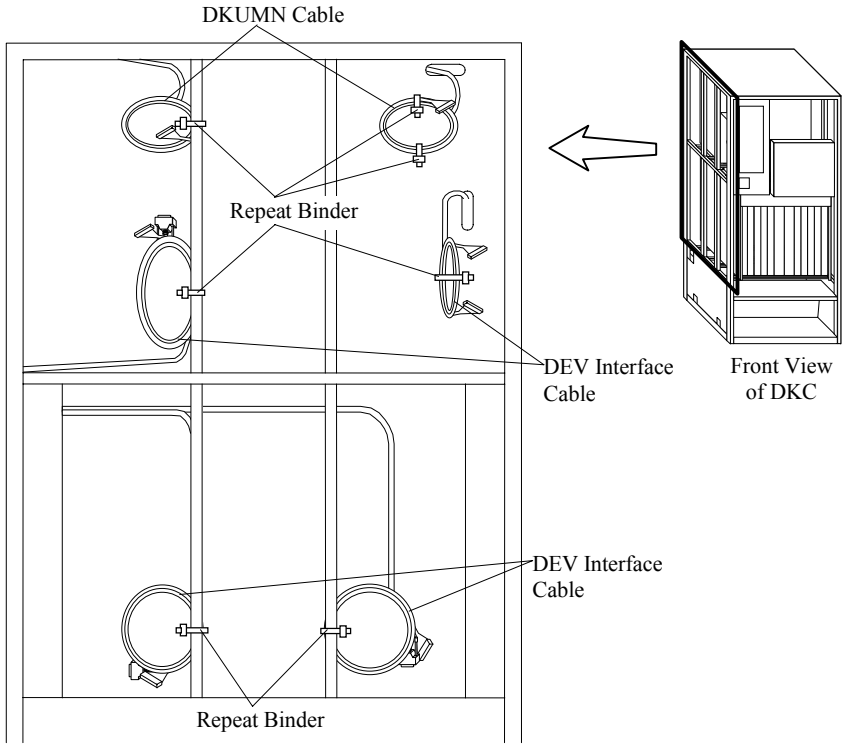

Fig. 3.20.3.2-18 Fixation of Repeat Binders

11. Replace the DKC460I.
    Go to "Connection of DKC460I" [INST03-SWP-380].

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3.20.4 Connection of DKC460I

3.20.4.1 Connection between DKC and DKU-R1

1. Install the DKU405 Connection Kit for R1 DKU (DKC-F460I-U405R). Refer to INST03-U40-50 through 240.
2. Remove the screws for transporting the movable rack, and then fasten the screws.

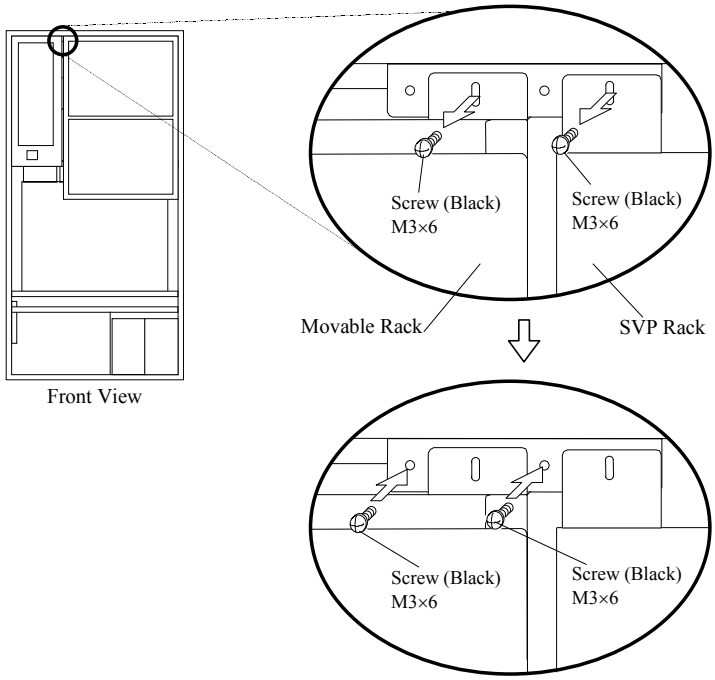

Fig. 3.20.4.1-1 Removal of Screw for Transporting the Movable Rack

3. Loosen the screws fastening the SVP stopper, slide the stopper toward the left, and tighten the screws again. When no SVP is to be added, it is not required to shift the stopper.

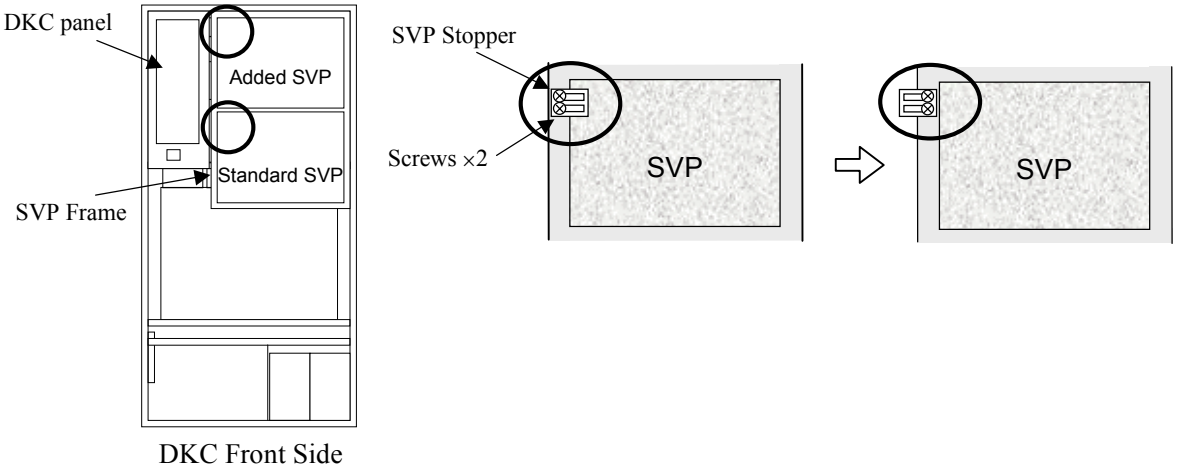

Fig. 3.20.4.1-2 Shifting SVP Stopper

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4. Pass the DKUMN cables, the DEV interface cables for the DKC through the DKU-R1 frame. Be extremely careful not to pinch the inter-frame cable when coupling the frames to each other.

Notice: Move the DKC and the DKU as being careful of floor cut.

a. Attach the DKC to DKU-R1.

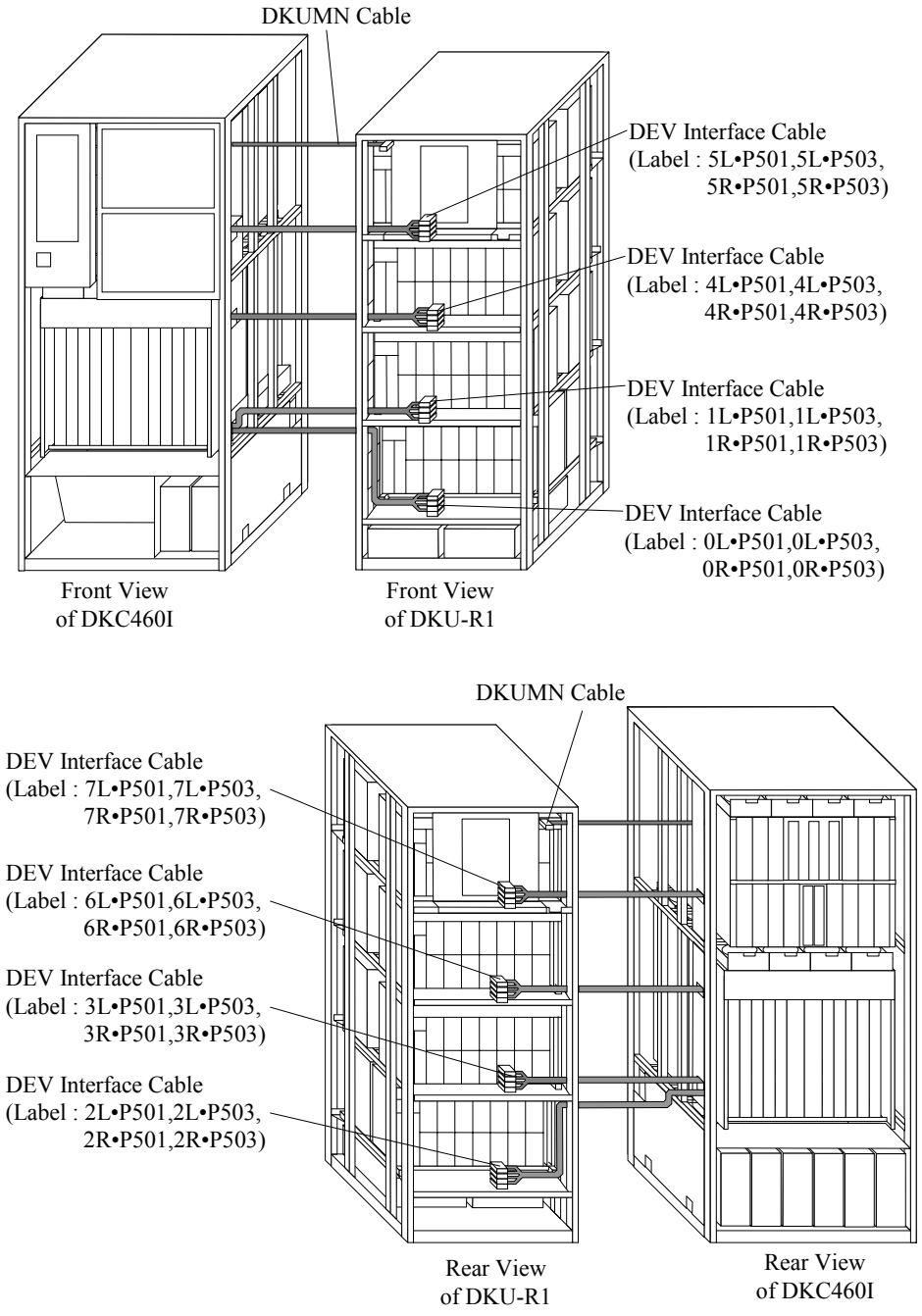

Fig. 3.20.4.1-3 Attachment of DKC

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5. Attach the side plates and fasten the screws.

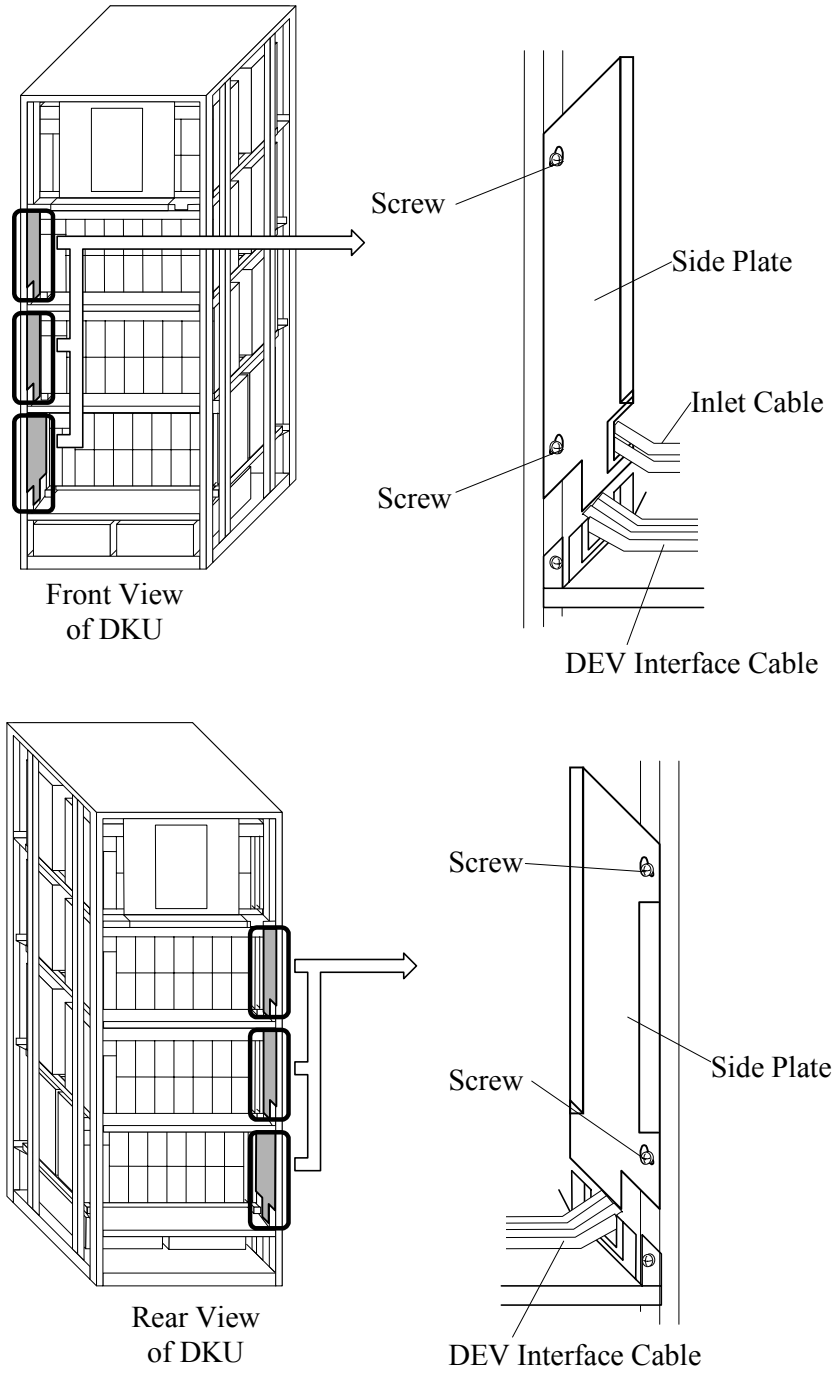

Fig. 3.20.4.1-4 Attachment of Side Plate

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6. Install the DKC.
   a. Lower the screw jacks until the frame is 57 mm (2.25 in.) from the floor before connecting the frames.
   b. Level the device as shown on Fig. 3.20.4.1-5.
   c. When adjusting the cabinet height, make sure that there is a clearance of approximately 2.5 mm (0.1 in.) between the casters and the floor.

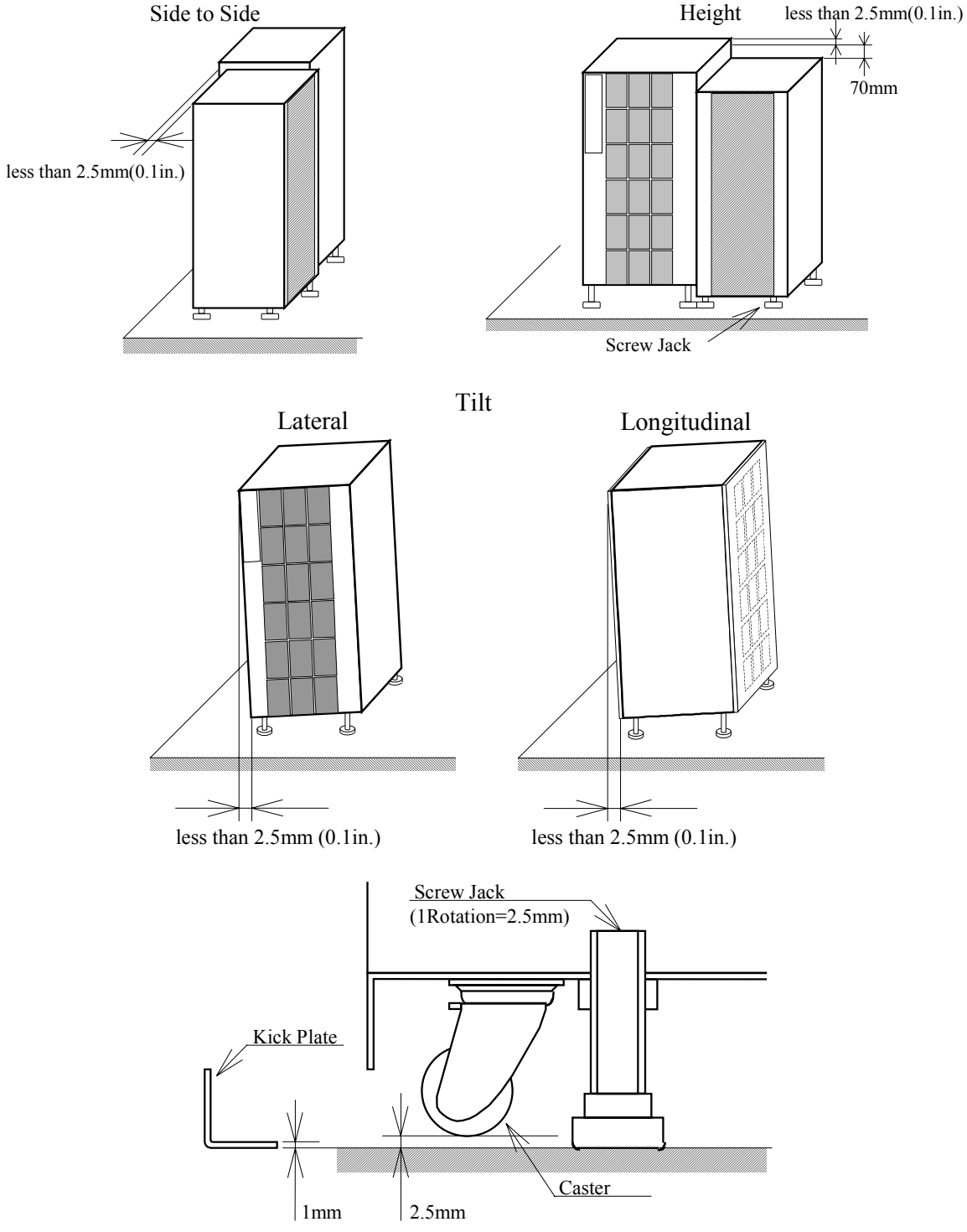

Fig. 3.20.4.1-5 Unit layout, Height, and Tilt

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7. Connect the Connecting Bolt.
   a. Remove the Front Logic Box cover from the DKC. (Refer to INST03-COM-10.)
   b. Remove the two screws and open the Cable Cover.

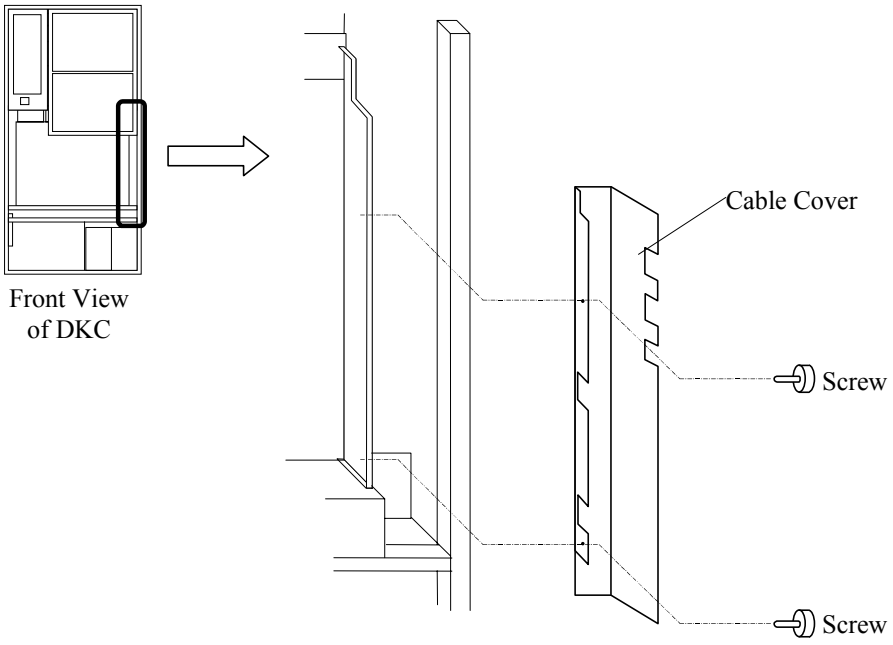

Fig. 3.20.4.1-6 How to open the Cover (DKC front side)

   c. Remove the Rear Logic Box cover. (Refer to INST03-COM-20.)

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d. Connect the devices together using six of Connecting Bolt assemblies, three in front and three in rear.

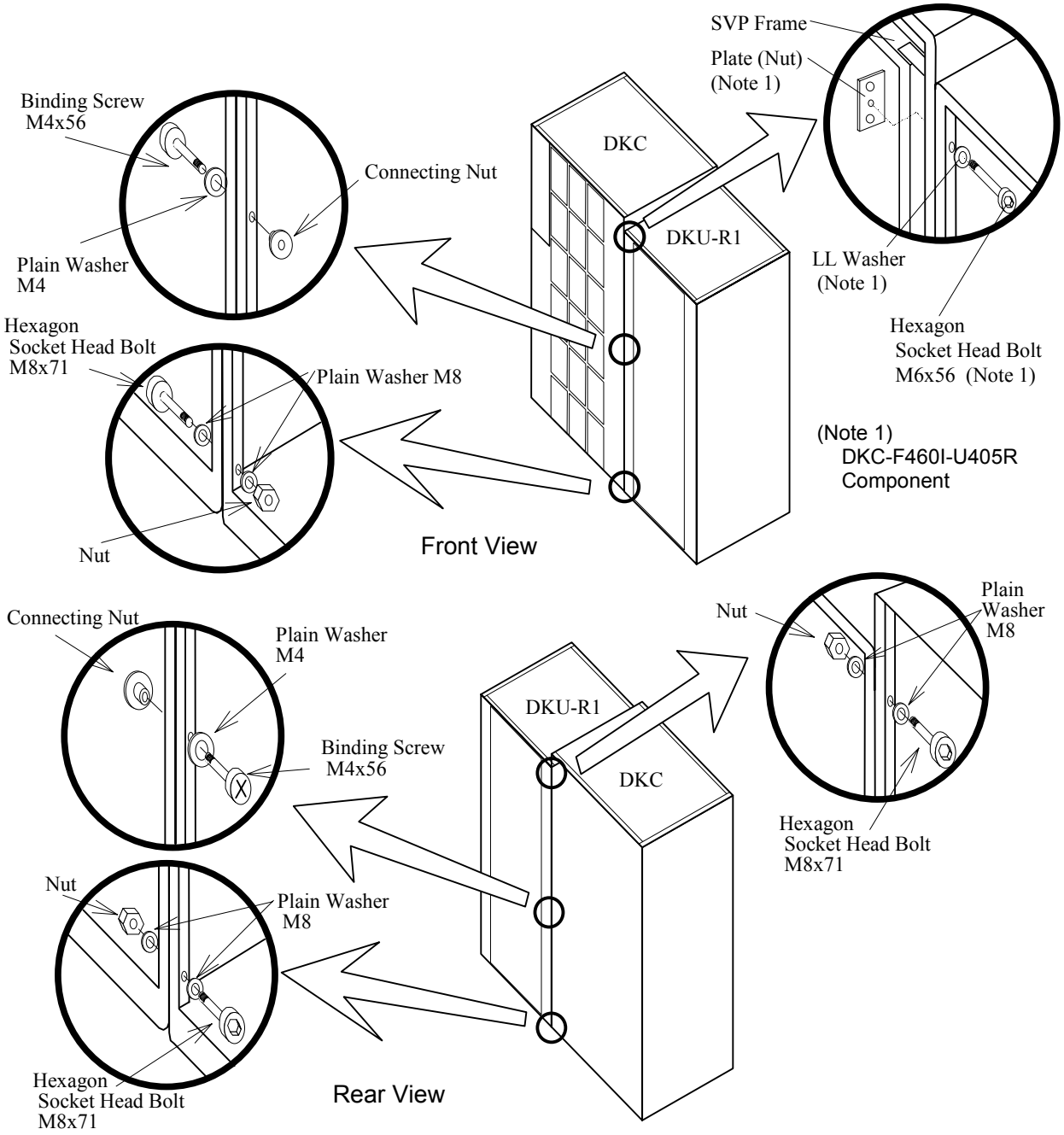

Fig. 3.20.4.1-7 Frame Connection

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e. Remove the four screws ① on the top covers.
f. Loosen the three screws ②.
g. Attach the bracket cover ASSY with the four screws ③.
h. Fasten the screws ②.
i. Fix the DKC frame and bracket cover ASSY with the socket bolts, washers and nuts.

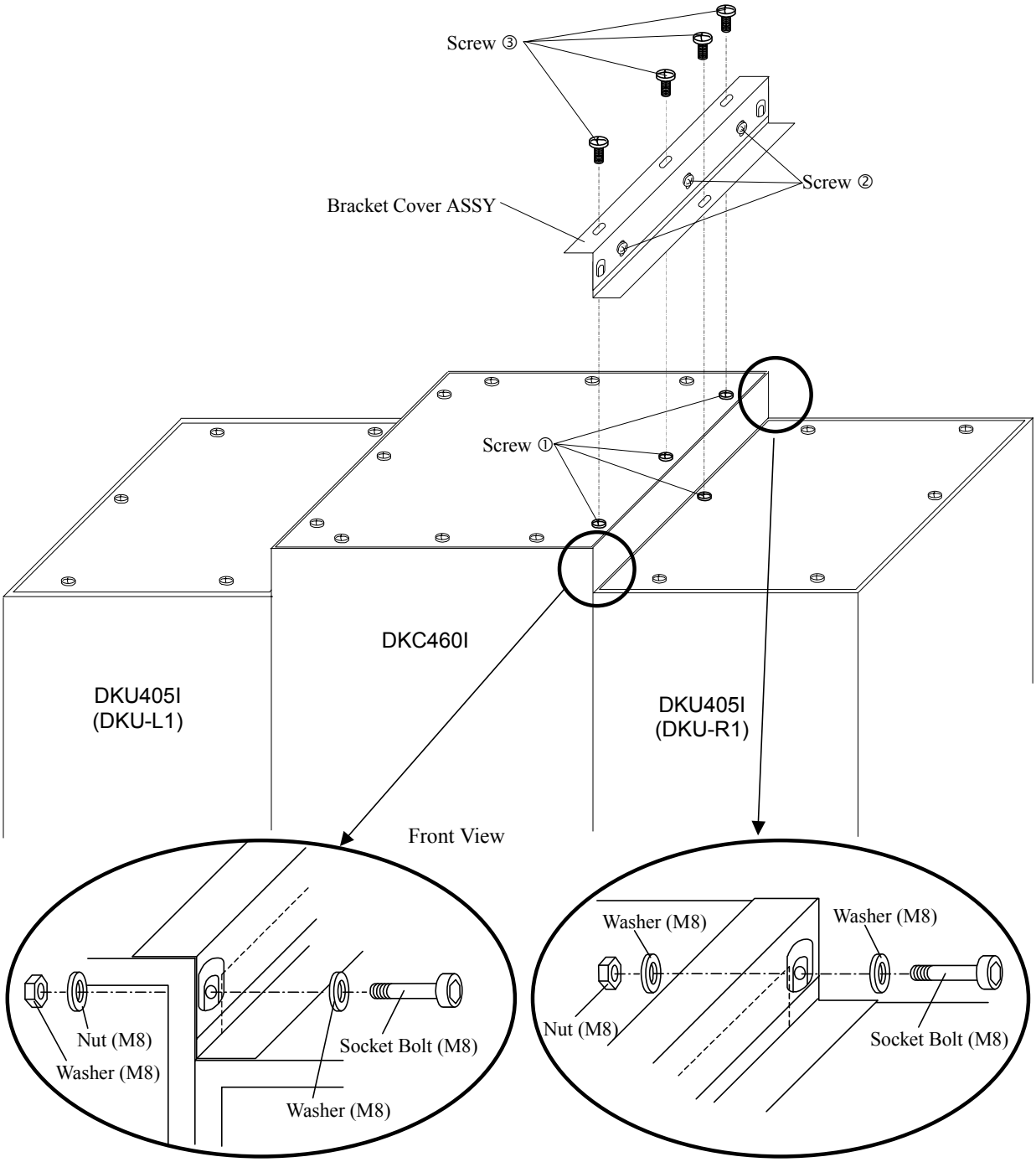

Fig. 3.20.4.1-8 Attachment of Bracket Cover ASSY

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8. Secure the power cable assy.
   a. Loose the four screws.

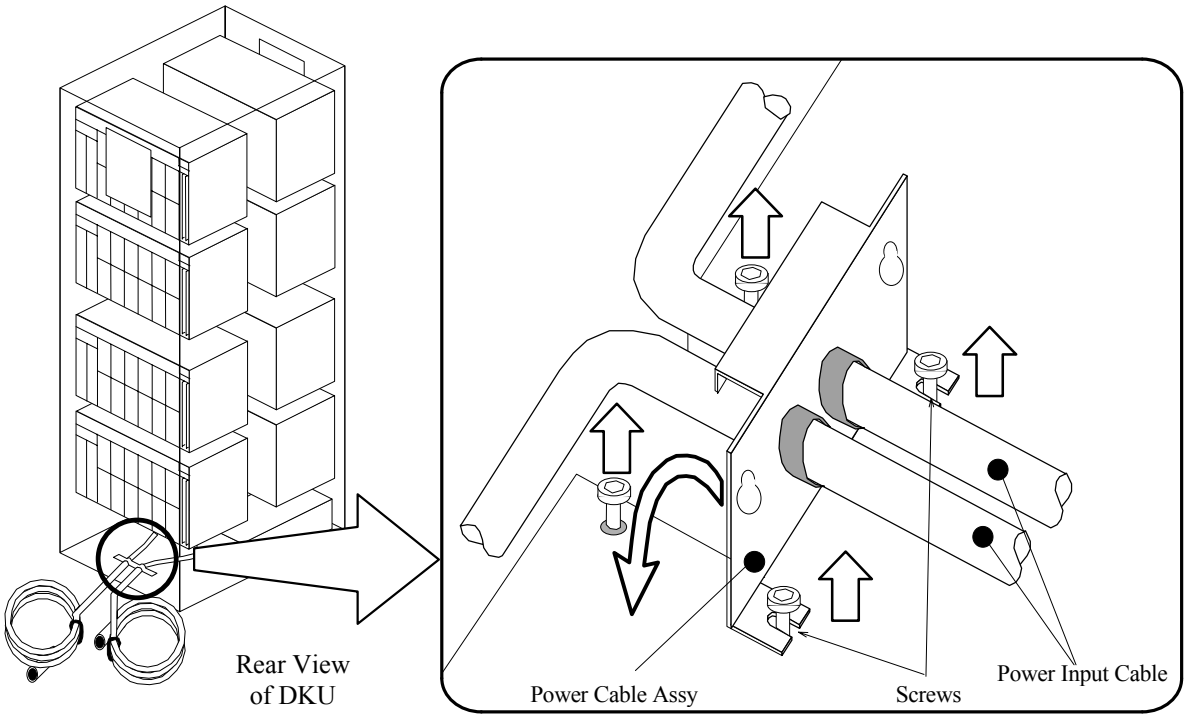

Fig. 3.20.4.1-9 Fixing of the Power Cable Assy

   b. Secure the power cable assy with screws.

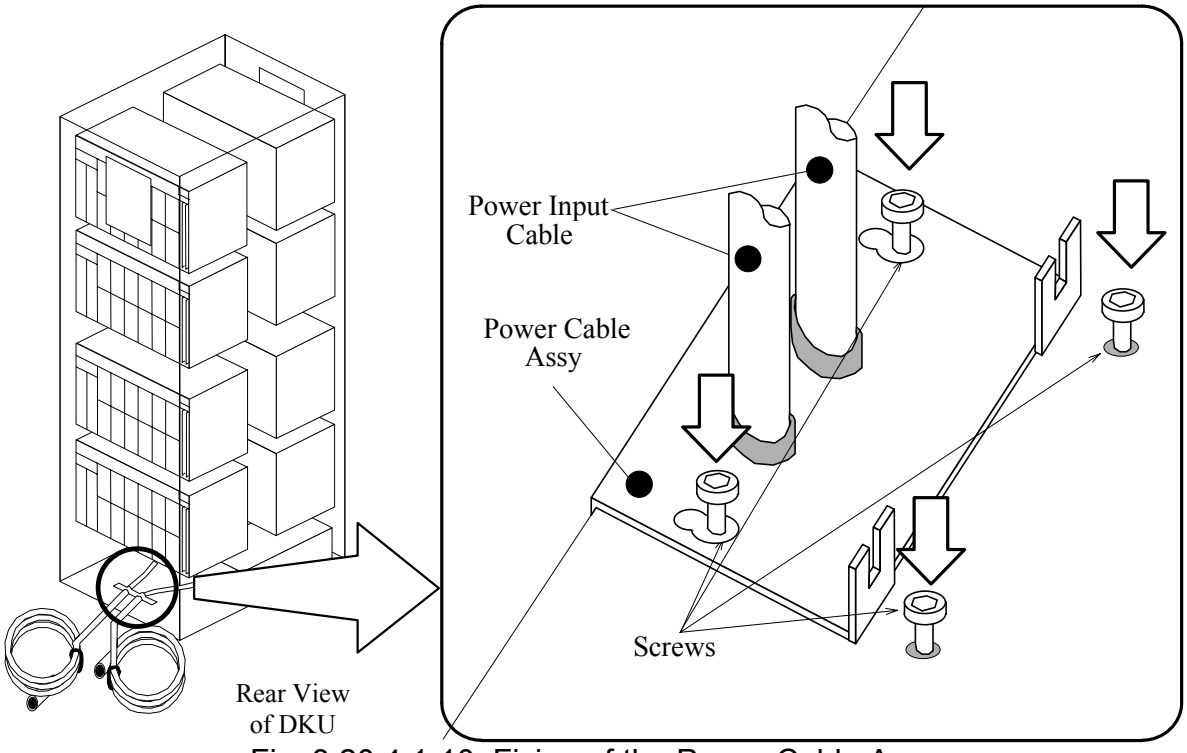

Fig. 3.20.4.1-10 Fixing of the Power Cable Assy

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9. Attach the frame ground cable.

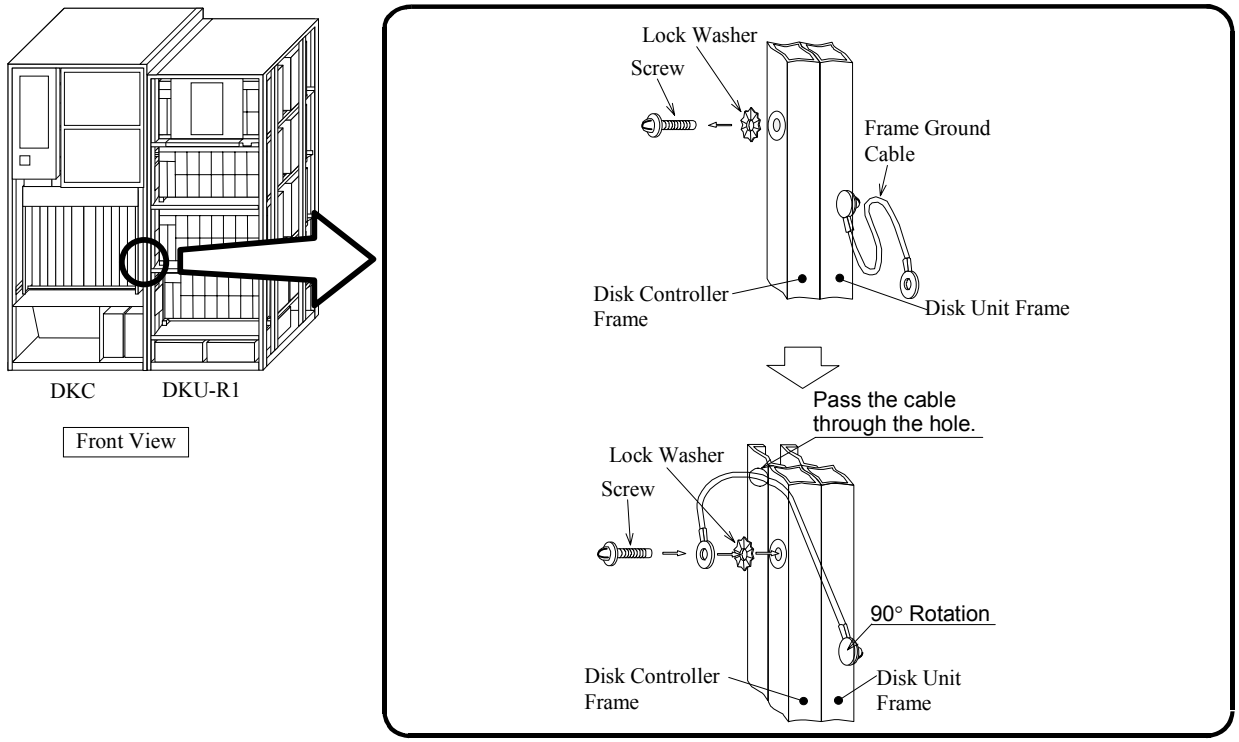

Fig. 3.20.4.1-11 Attachment of Frame Ground Cable

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10. Install the kick plates.

Notice: Contact the Kick Plate to the floor to prevent static electricity.

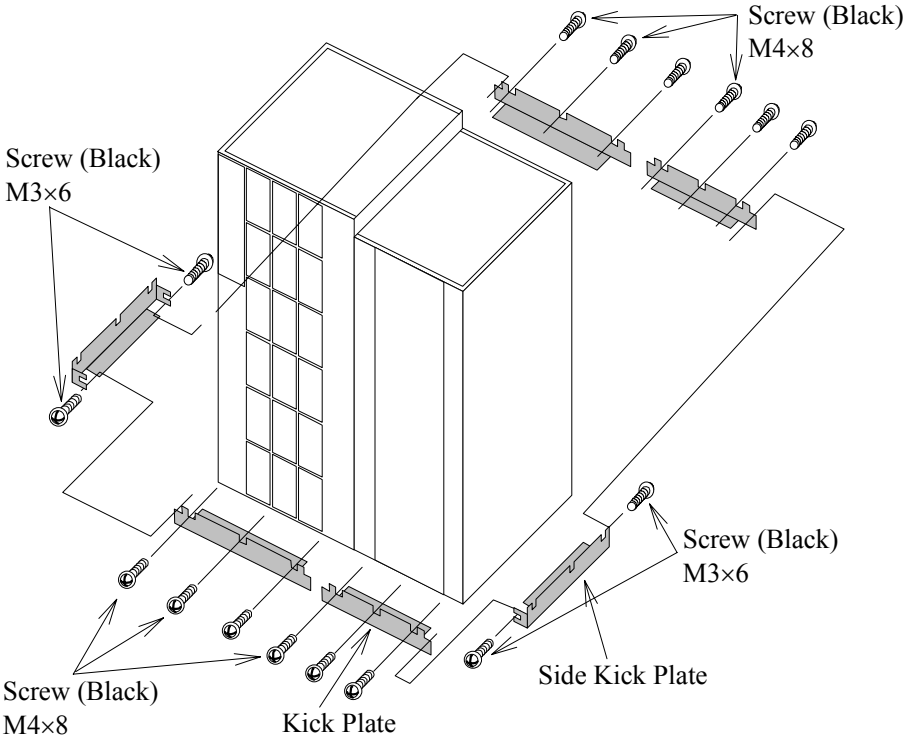
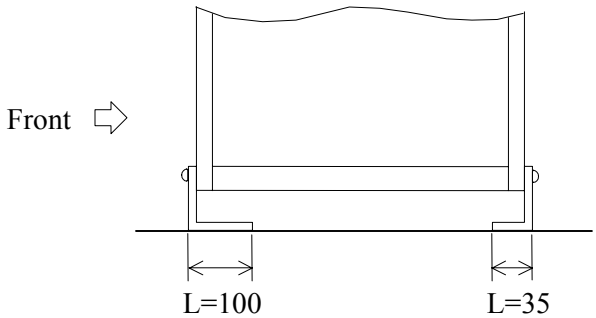


Fig. 3.20.4.1-12 Installation of Kick Plates

Care should be taken when installing the kick plates of the DKU, because the front and rear kick plates are not the same.
Install the kick plate with the dimension L of 100 mm to the front side of the subsystem and that with the dimension L of 35 mm to the rear side.



Side View of DKU

Fig. 3.20.4.1-13 Kick Plates of DKU

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11. Install the Jumper Plugs in the PCI CON.

Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will insure that the IC and LSI on the PCB are protected from static electricity.

a. Install the jumper plugs in the PCI CON PCB as indicated in the table below.

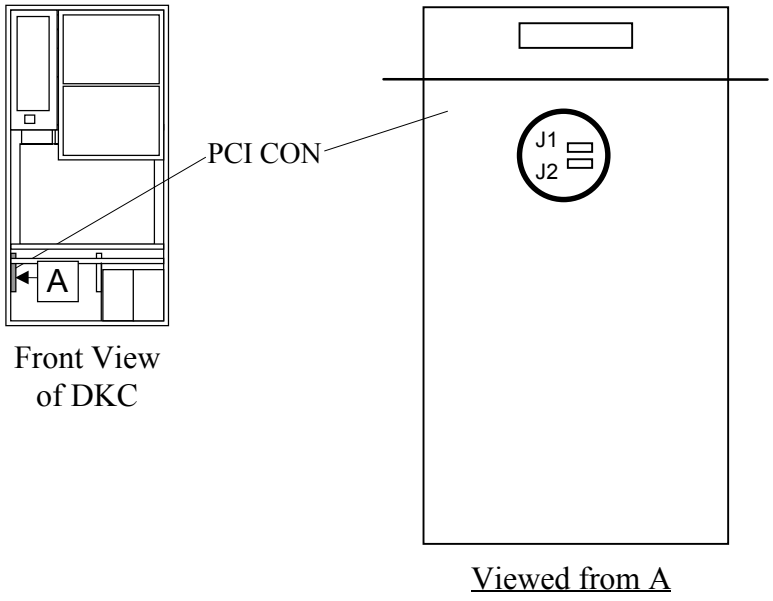
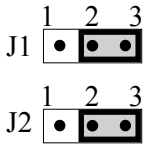
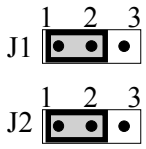


Fig. 3.20.4.1-14 Installation of Jumper Plugs in PCI CON PCB

Table 3.20.4.1-1 Installation of Jumper Plugs in PCI CON PCB

No.	Description	Installing status J1 and J2
1	When power is controlled from the host(at least one PCI cable attached to JP1-JP8 on PCI CON PCB), set the jumpers as shown.	
2	When power is not controlled from the host, no PCI cable attached to JP1-JP8 PCI CON PCB or to disable the EPO of host, set the jumpers as shown.	

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12. Install the Jumper connectors in the BATCTR.
    a. Open the locking clamp and remove the two jumper connectors.

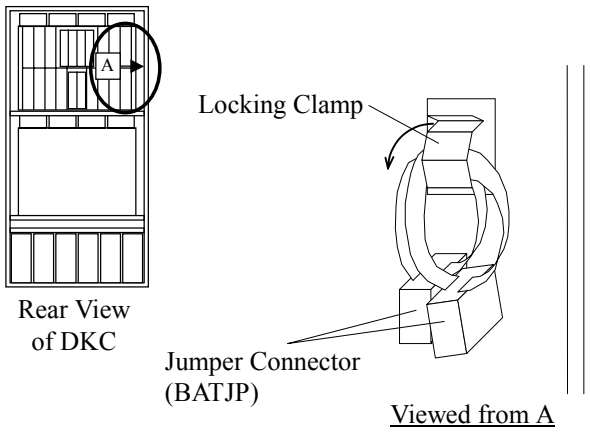
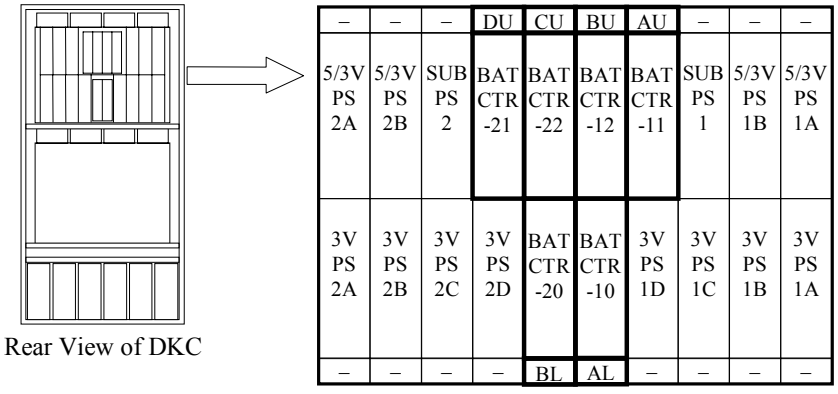


Fig. 3.20.4.1-15 Removal of Jumper Connectors

    b. Install the jumper connectors in the BATCTR PCBs as indicated in the figure below.



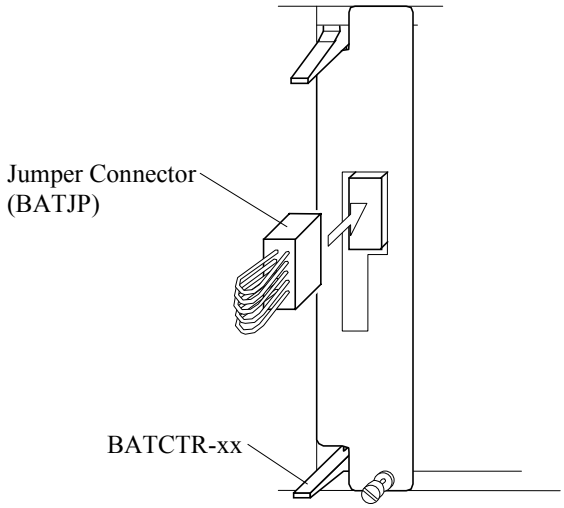


Fig. 3.20.4.1-16 Installation of Jumper Connectors in BATCTR PCB

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c. When the Additional Battery for Cache Memory (DKC-F460I-42) is installed, open the locking clamp and remove the two jumper connectors.
When the Additional Battery for Cache Memory (DKC-F460I-42) is not installed, go to step 13.

d. Install the jumper connectors in the BATCTR PCBs as indicated in the figure below.

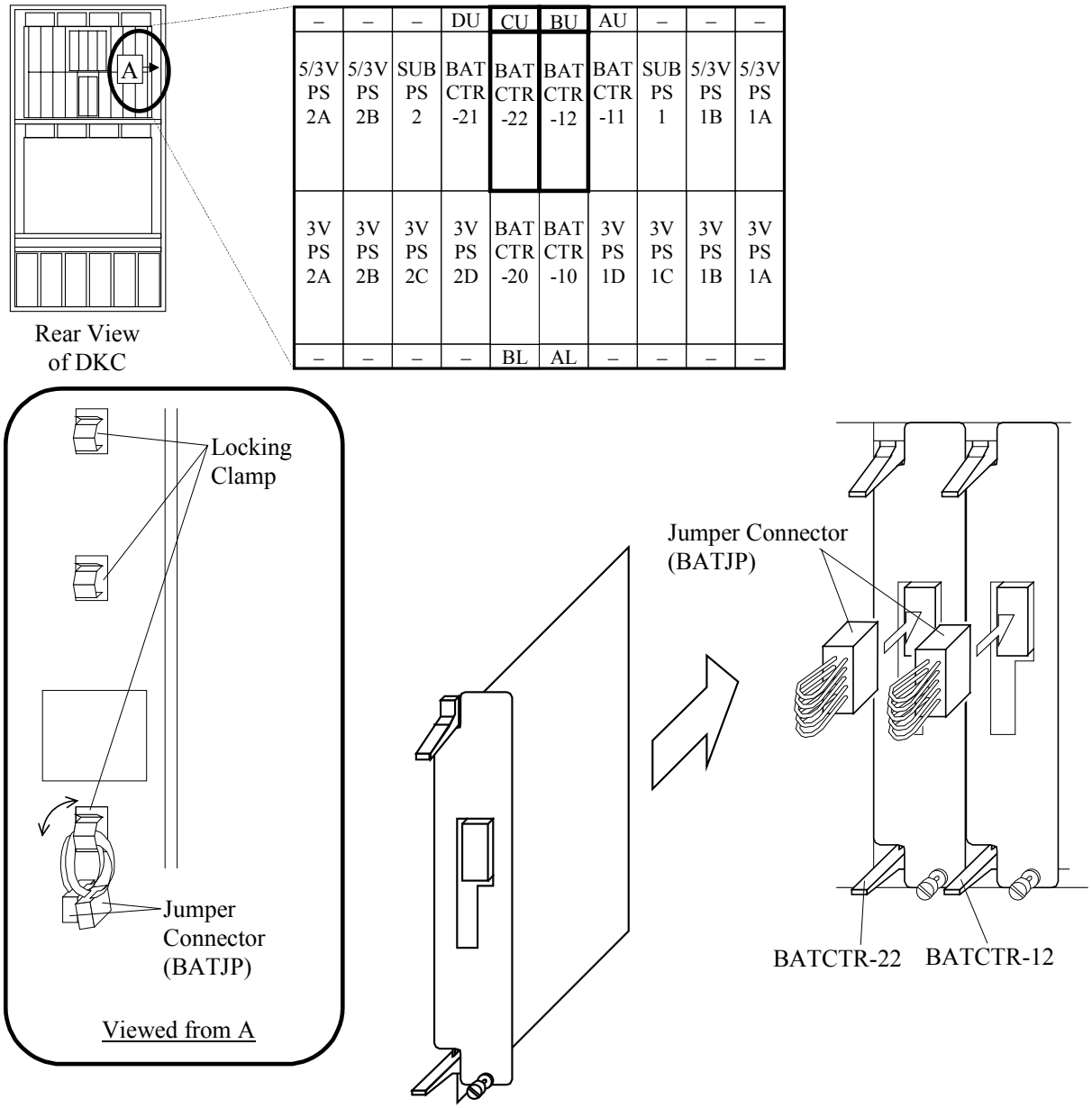

Fig. 3.20.4.1-17 Removal of Jumper Connectors

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13. Bind the DKUMN cables with repeat binders.
    a. Bind the DKUMN cables with repeat binders.

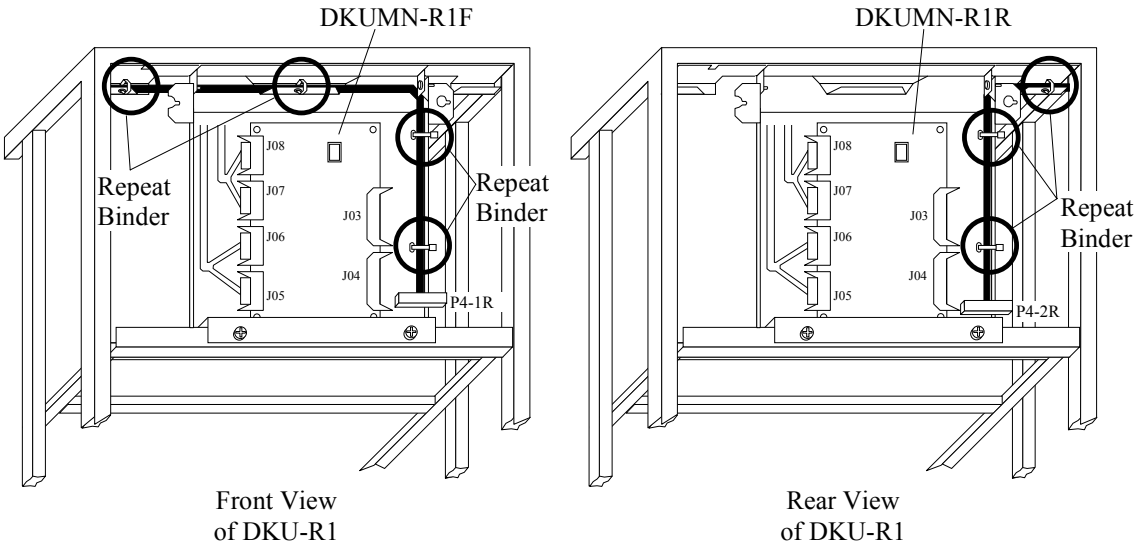

Fig. 3.20.4.1-18 Binding of DKUMN Cables

14. In case that there is DKU-L1, go to “Connection between DKC and DKU-L1” [INST03-SWP-520].
    In case that there isn’t DKU-L1, go to “Connection of external cable” [INST03-SWP-620].

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3.20.4.2 Connection between DKC and DKU-L1

1. Install the DKU405 Connection Kit for L1 DKU (DKC-F460I-U405L). Refer to INST03-U40-540 through 660.

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2. Pass the DEV interface cables for the DKC through the DKU-L1 frame. Be extremely careful not to pinch the inter-frame cable when coupling the frames to each other.

Notice: Move the DKC and the DKU as being careful of floor cut.

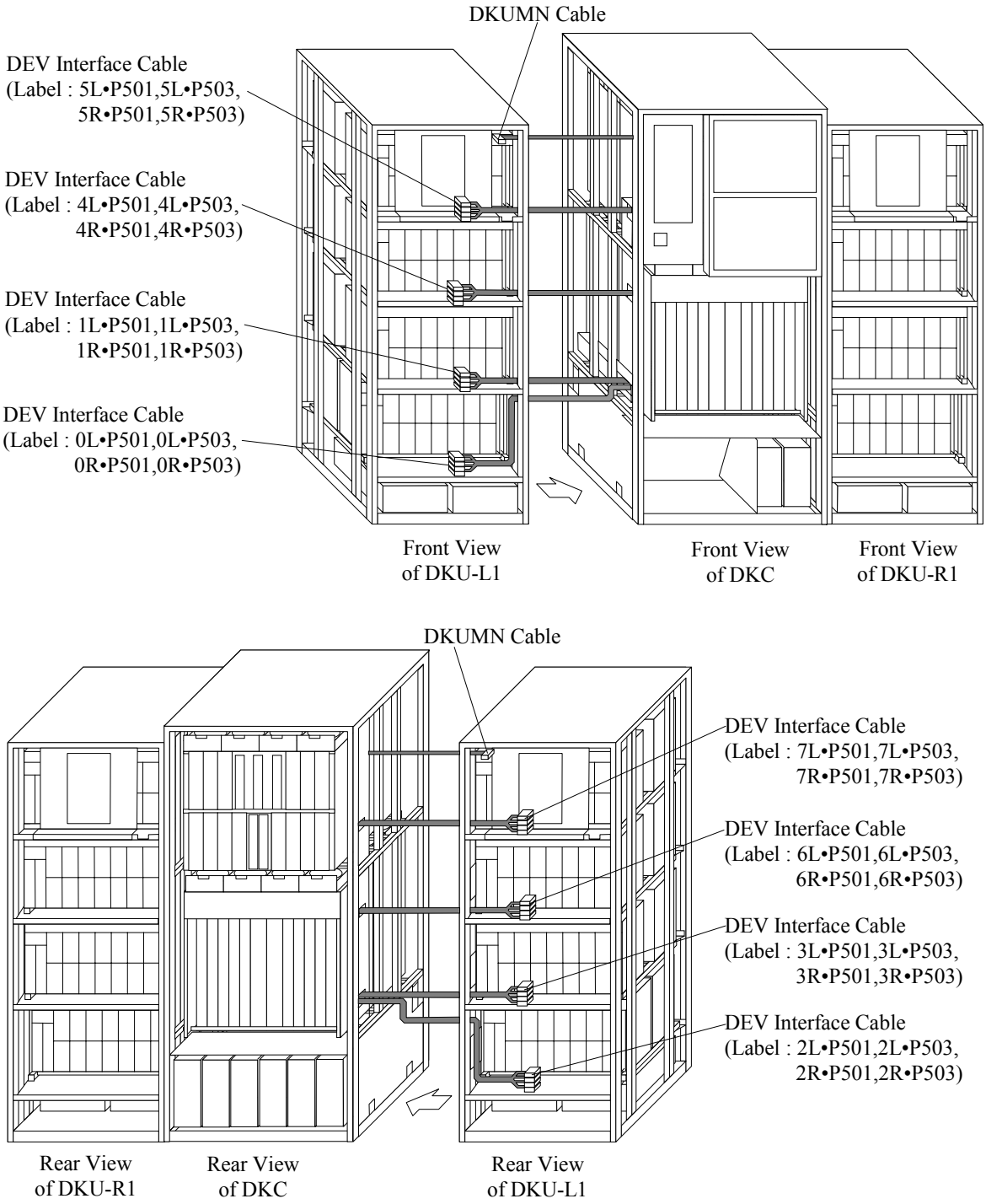

Fig. 3.20.4.2-1 Attachment of the DKU-L1

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3. Install the DKU-L1.
   a. Lower the screw jacks until the frame is 57 mm (2.25 in.) from the floor before connecting the frames.
   b. Level the device as shown on Fig. 3.20.4.2-2.
   c. When adjusting the cabinet height, make sure that there is a clearance of approximately 2.5 mm (0.1 in.) between the casters and the floor.

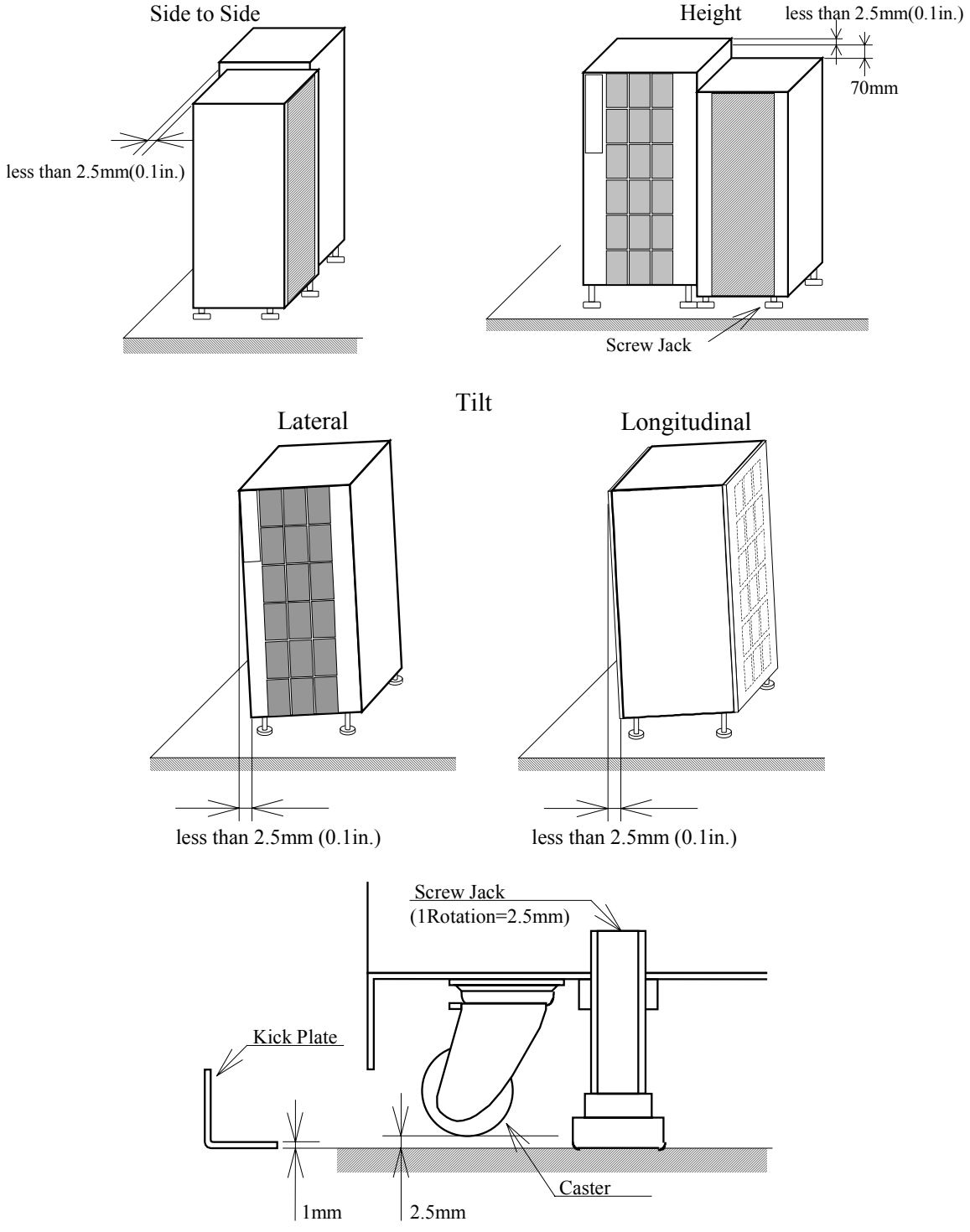

Fig. 3.20.4.2-2 Cabinet Setting

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4. Connect the connecting bolt.
   a. Remove the Front Logic Box Cover from the DKC.
   b. Remove the two screws and remove the cable cover.

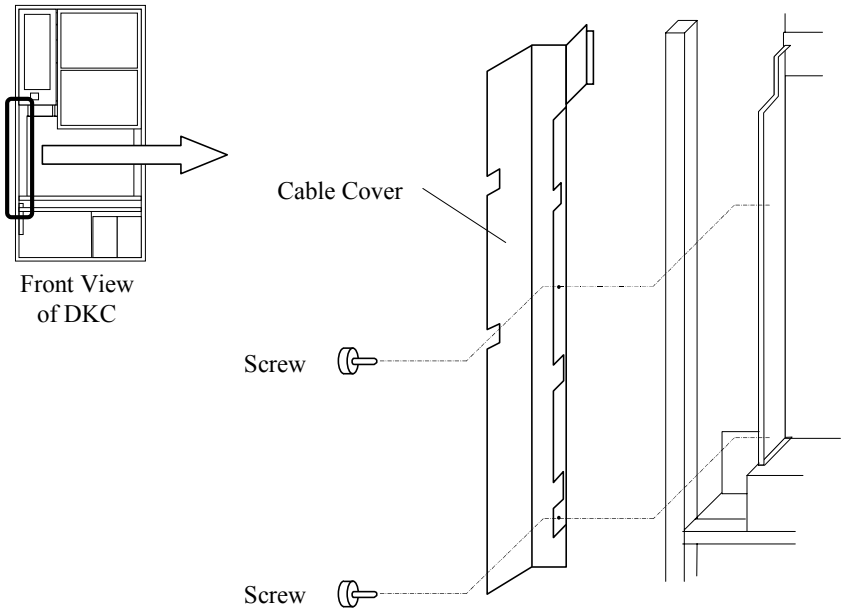

Fig. 3.20.4.2-3 Removing Cover

   c. Remove the Rear Logic Box Cover.
   d. Remove the three screws and remove the cable cover.

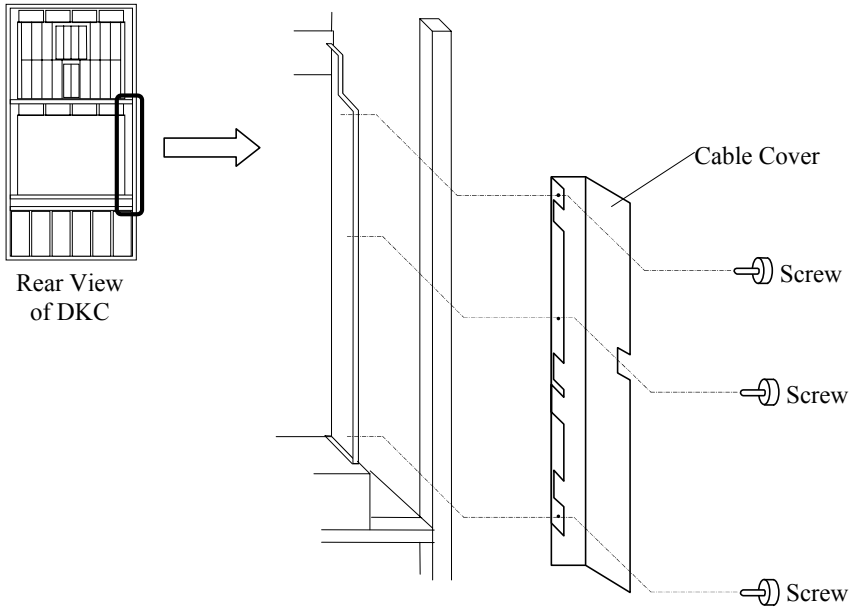

Fig. 3.20.4.2-4 Removing Cover

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e. Connect the devices together using six of Connecting Bolt assemblies, three in front and three in rear.

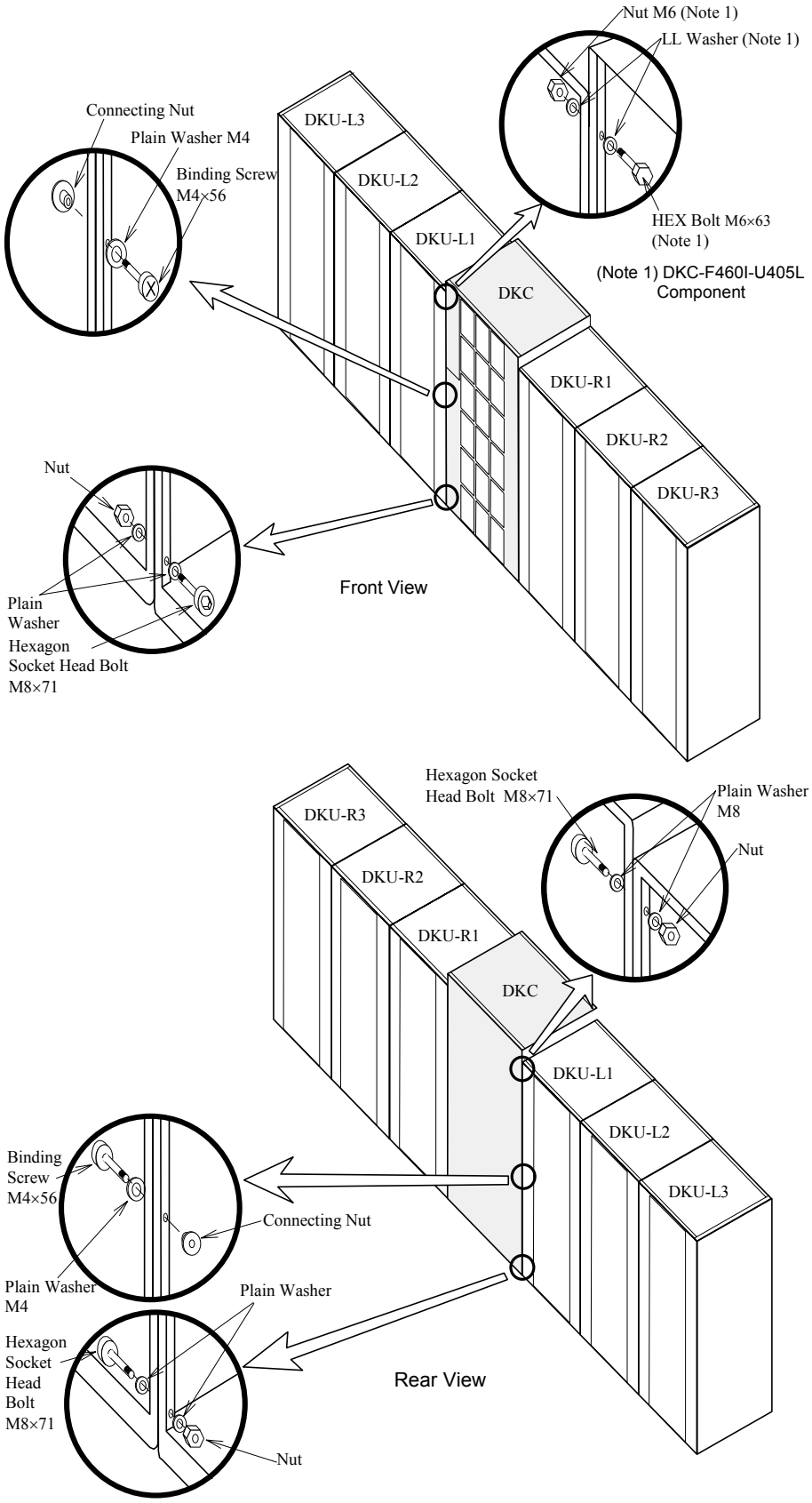

Fig. 3.20.4.2-5 Connection of Frame

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f. Remove the four screws ① on the top covers.
g. Loosen the three screws ②.
h. Attach the bracket cover ASSY with the four screws ③.
i. Fasten the screws ②.
j. Fix the DKC frame and bracket cover ASSY with the socket bolts, washers and nuts.

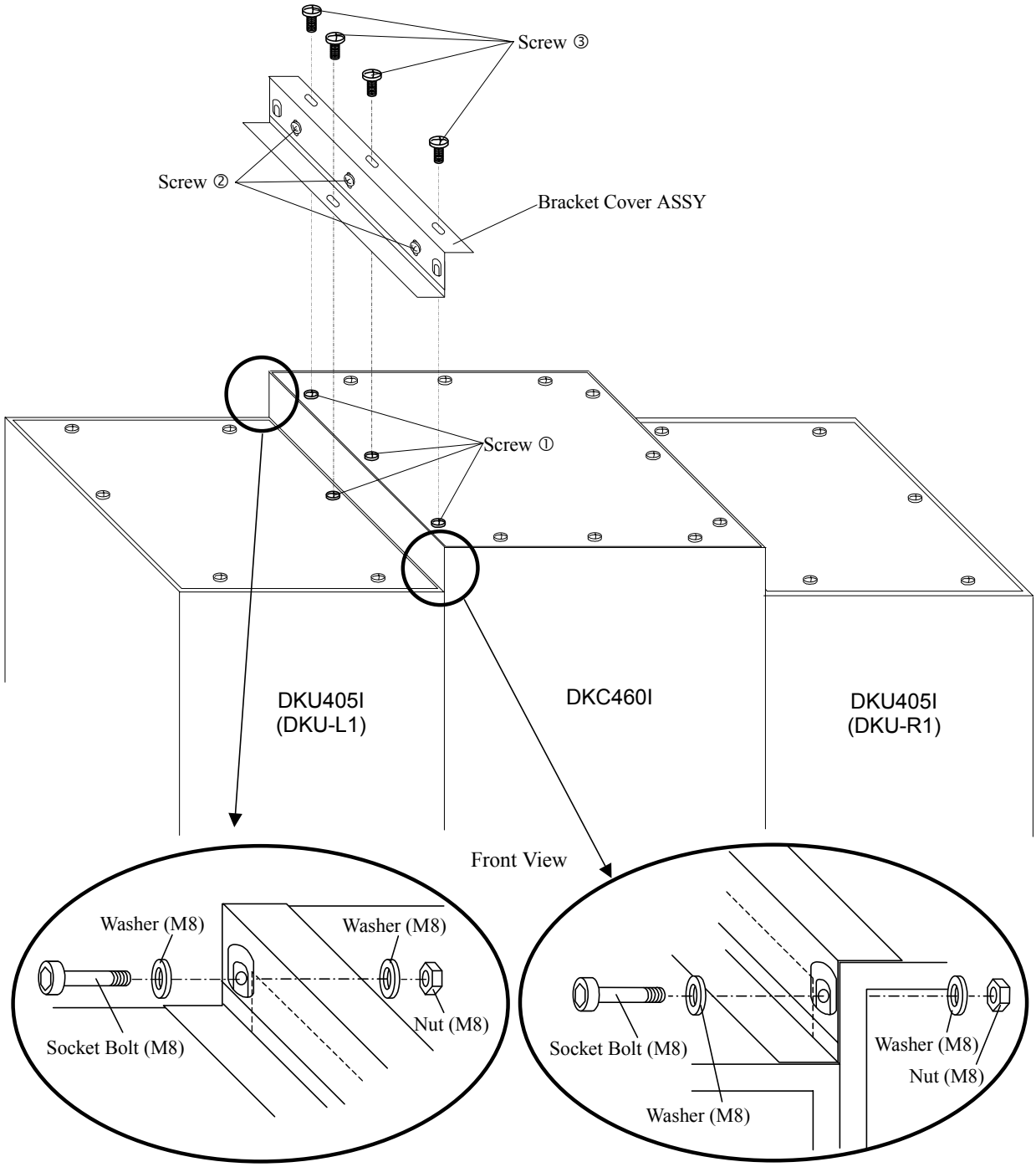

Fig. 3.20.4.2-6 Attachment of Bracket Cover ASSY

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5. Secure the power cable assy.
   a. Loose the four screws.

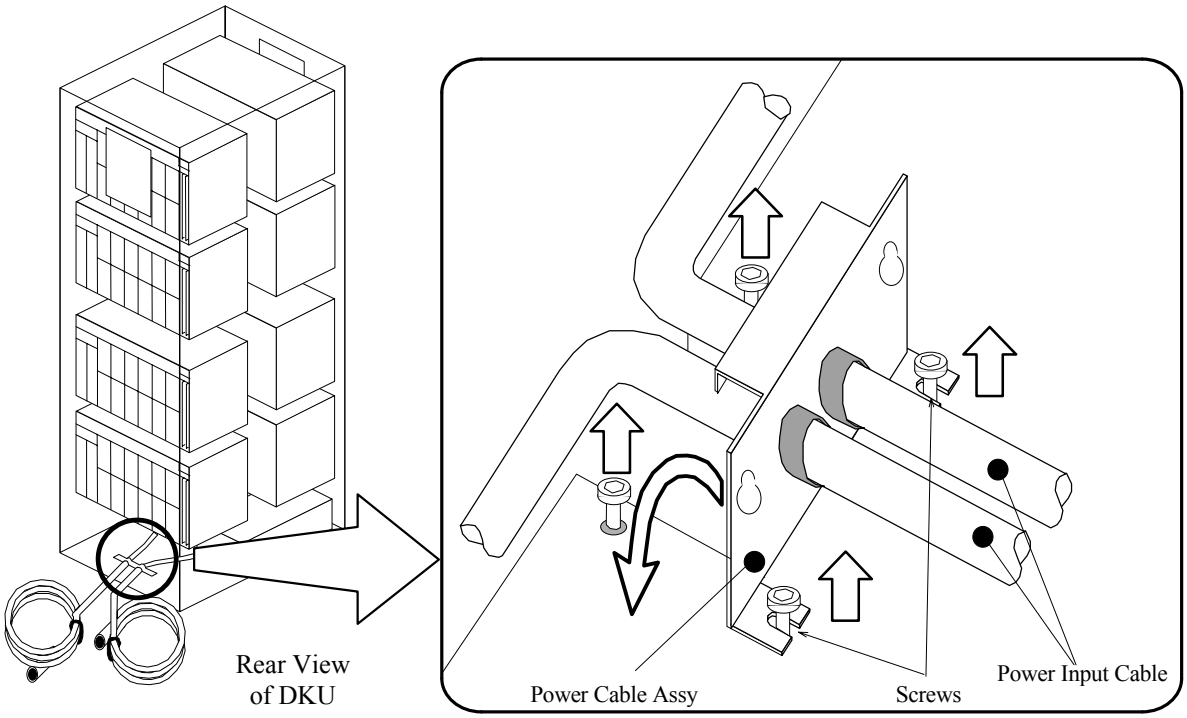

Fig. 3.20.4.2-7 Fixing of the power cable assy

   b. Secure the power cable assy with screws.

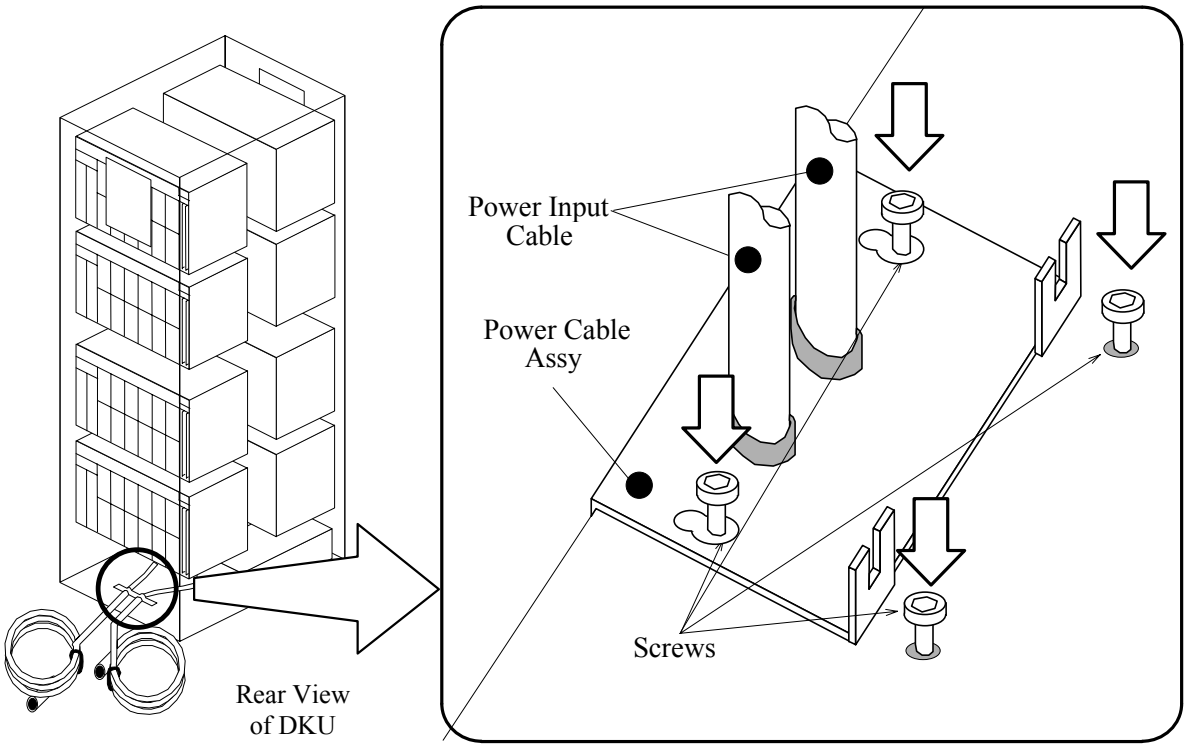

Fig. 3.20.4.2-8 Fixing of the power cable assy

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6. Attach the frame ground cable.

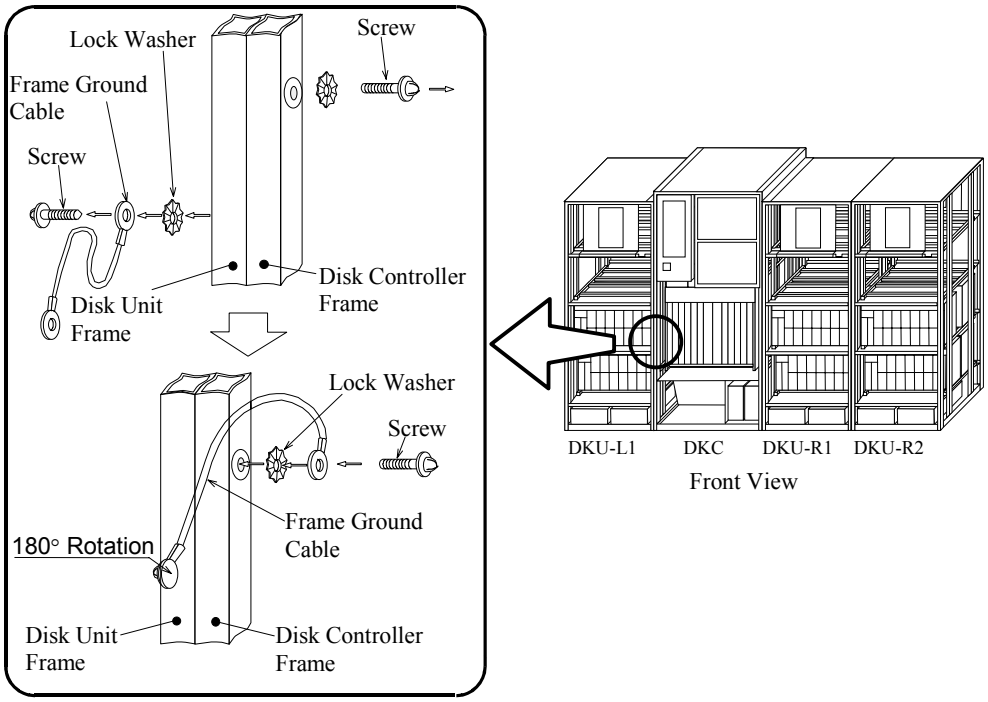

Fig. 3.20.4.2-9 Attachment of Frame Ground Cable

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7. Secure the kick plates with screws.

Notice: Contact the Kick Plate to the floor to prevent static electricity.

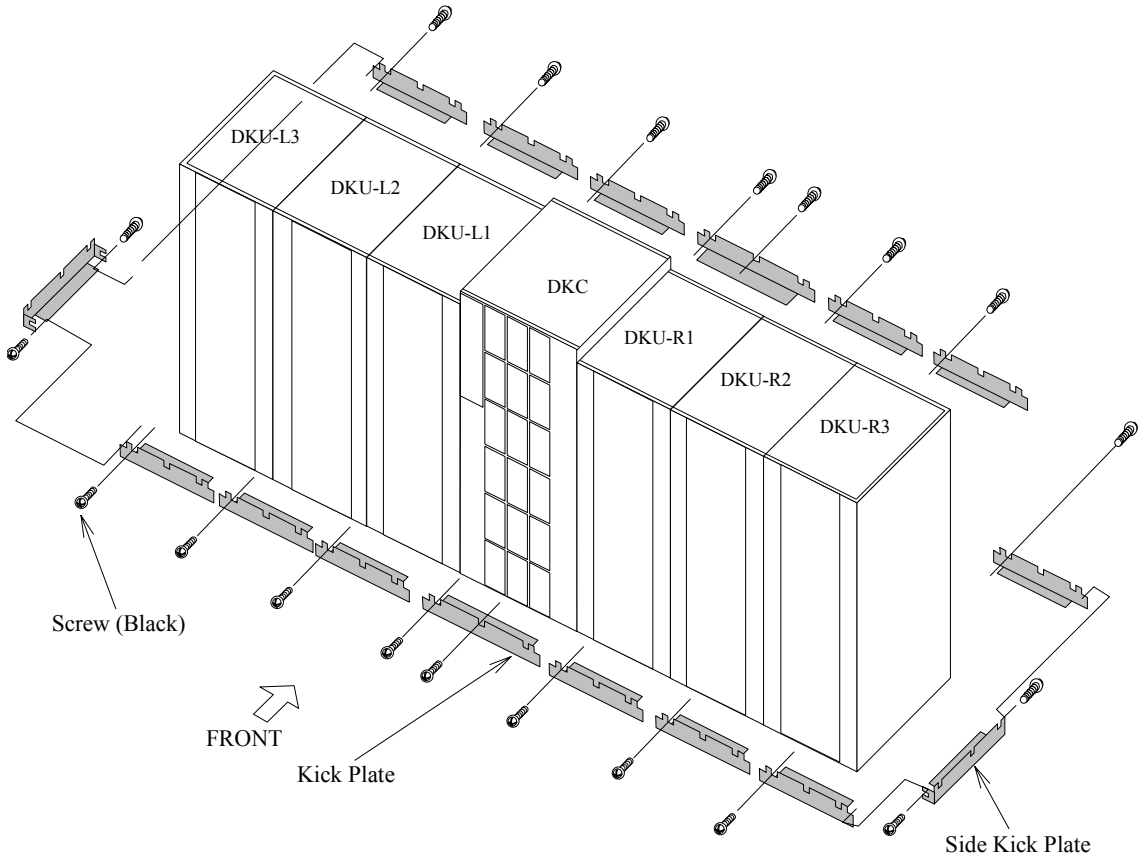
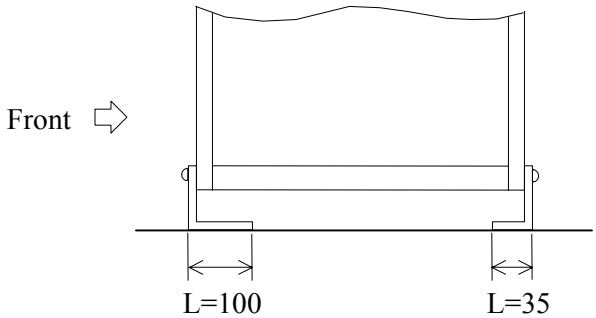


Fig. 3.20.4.2-10 Installation of Kick Plates

Care should be taken when installing the kick plates of the DKU, because the front and rear kick plates are not the same.
Install the kick plate with the dimension L of 100 mm to the front side of the subsystem and that with the dimension L of 35 mm to the rear side.



Side View of DKU

Fig. 3.20.4.2-11 Kick Plates of DKU

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8. Bind the DKUMN cables with repeat binders.
   a. Bind the DKUMN cables with repeat binders.

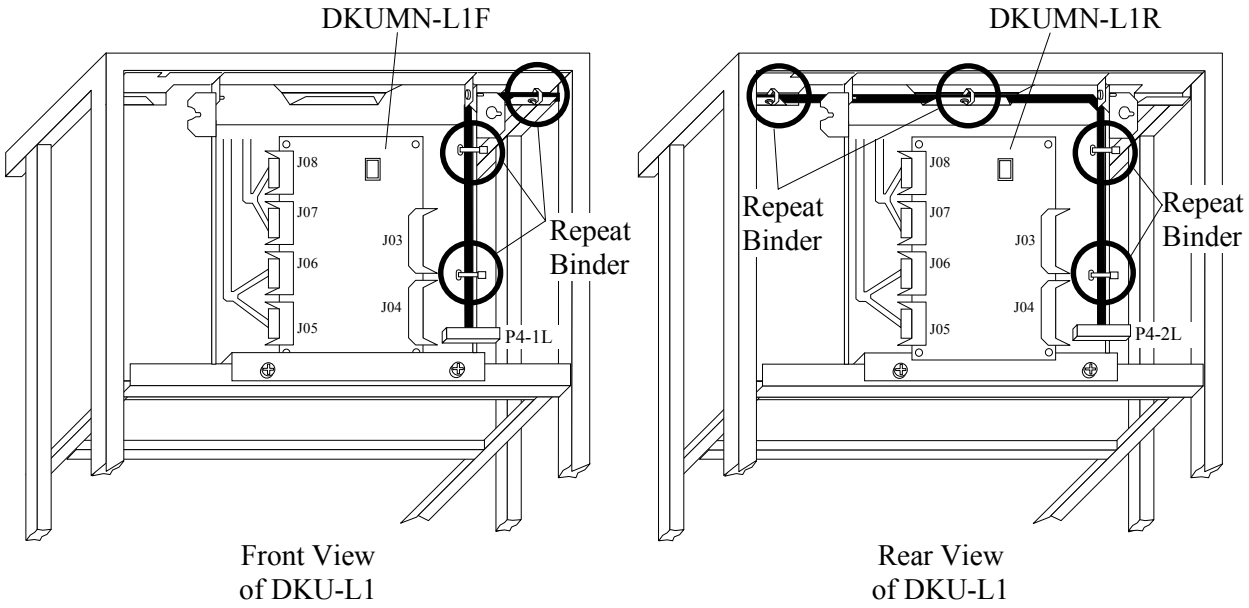

Fig. 3.20.4.2-12 Binding of DKUMN cables

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3.20.5 Connection of External Cable

3.20.5.1 Connection of AC Cable

3.20.5.1.1 3 Phase Model

1. Connect the AC cables. Refer to Fig. 3.20.5-1 or Fig.3.20.5-2.

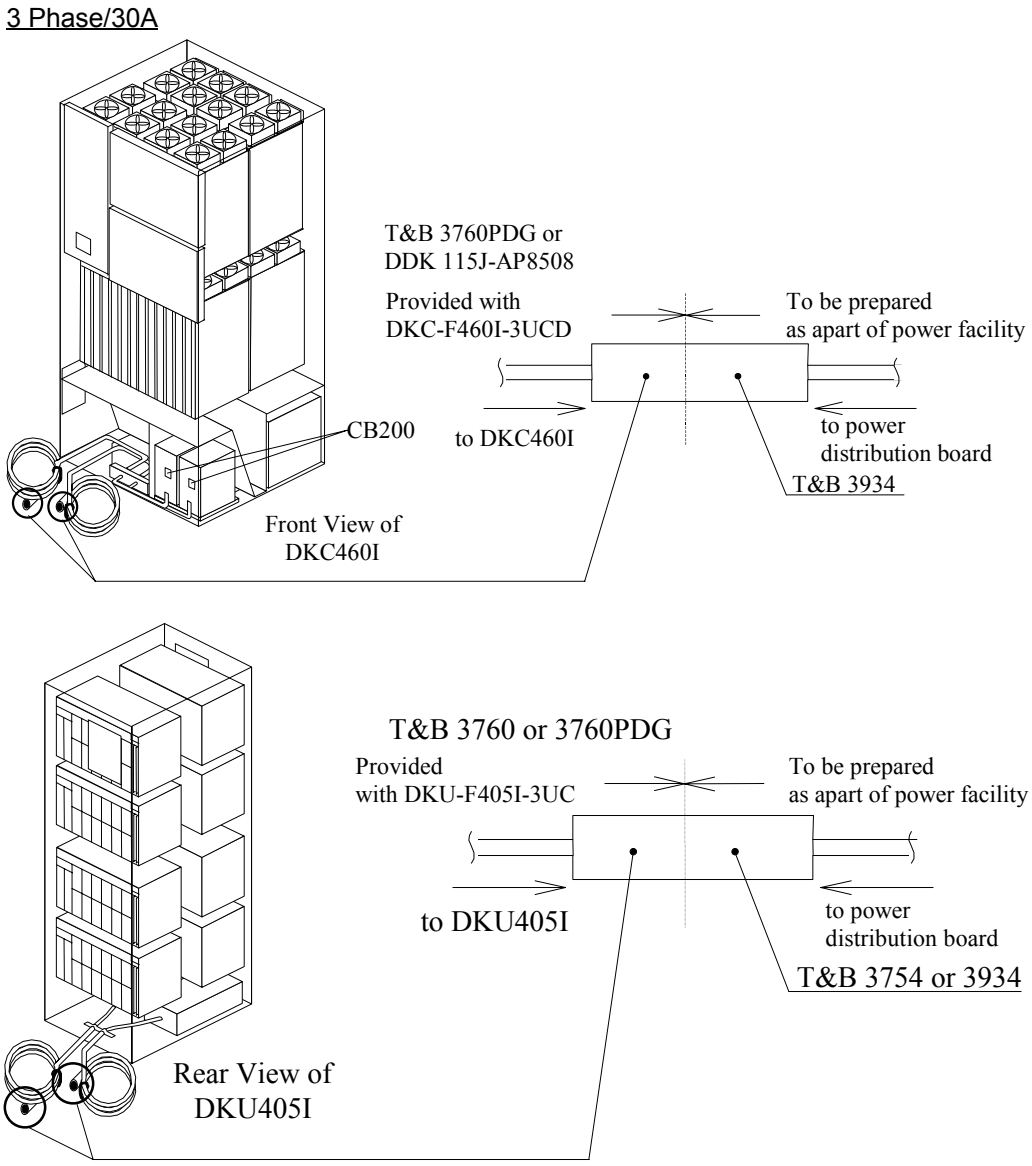

Fig. 3.20.5-1 Connection of the AC cables (for USA)

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3 Phase/30A

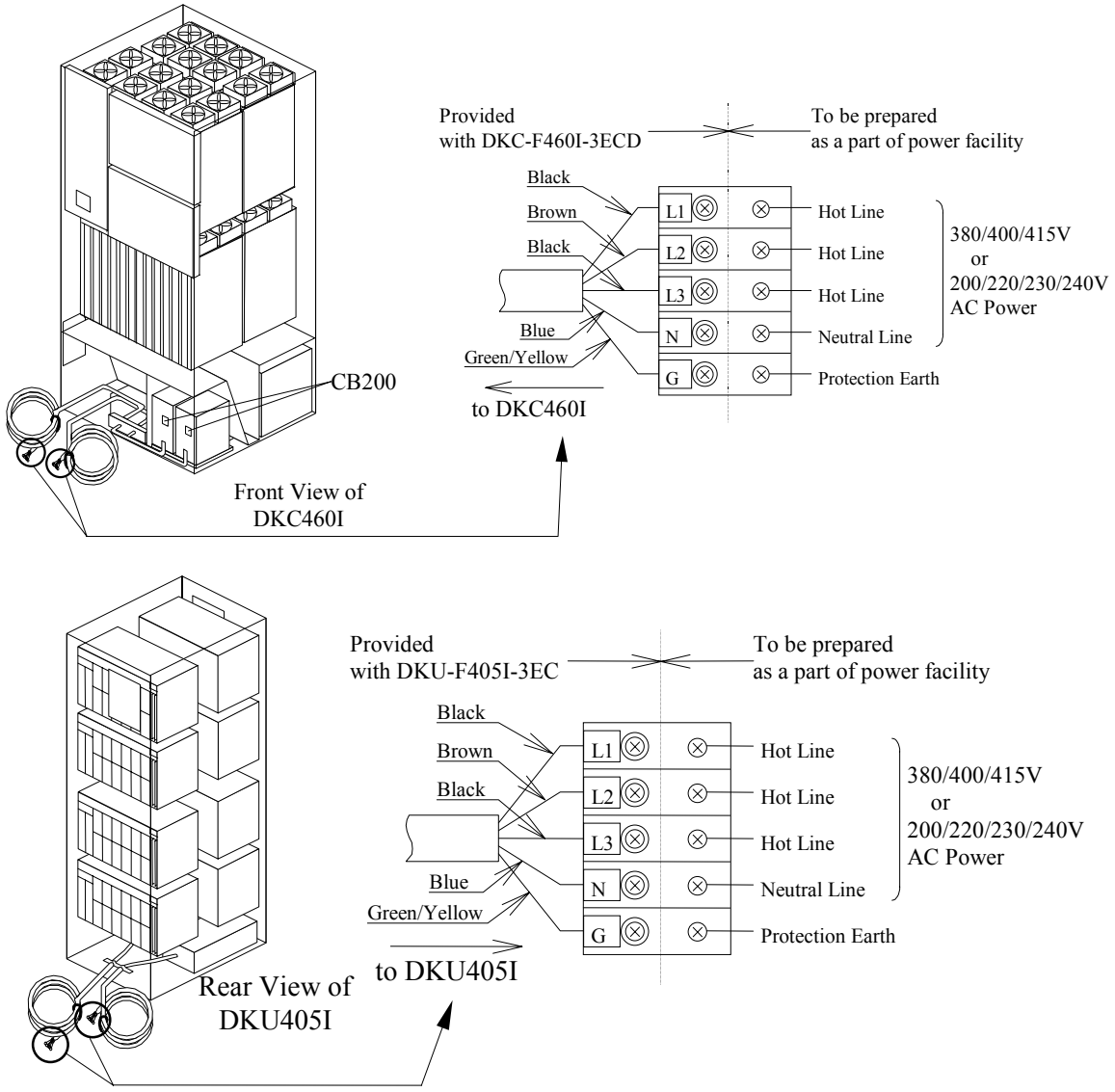

Fig. 3.20.5-2 Connection of the AC cables (for Europe)

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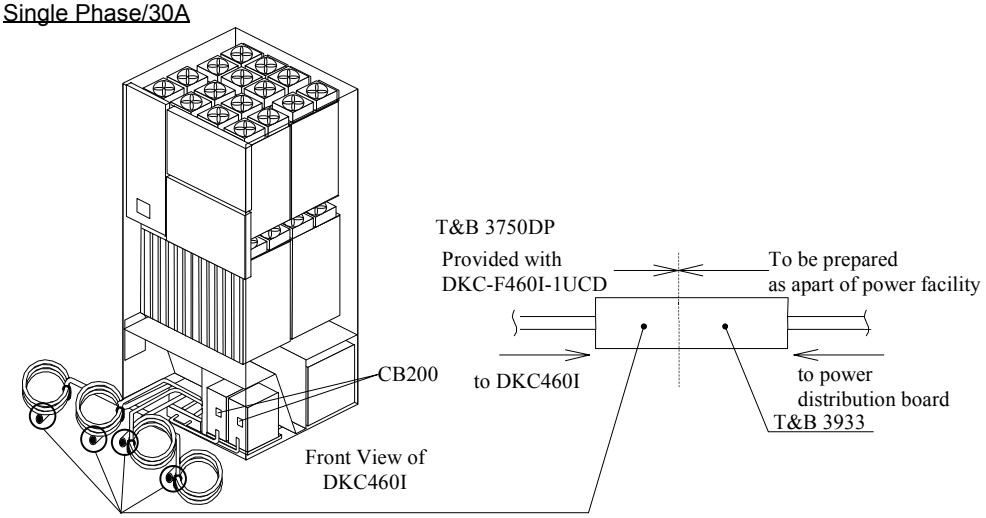
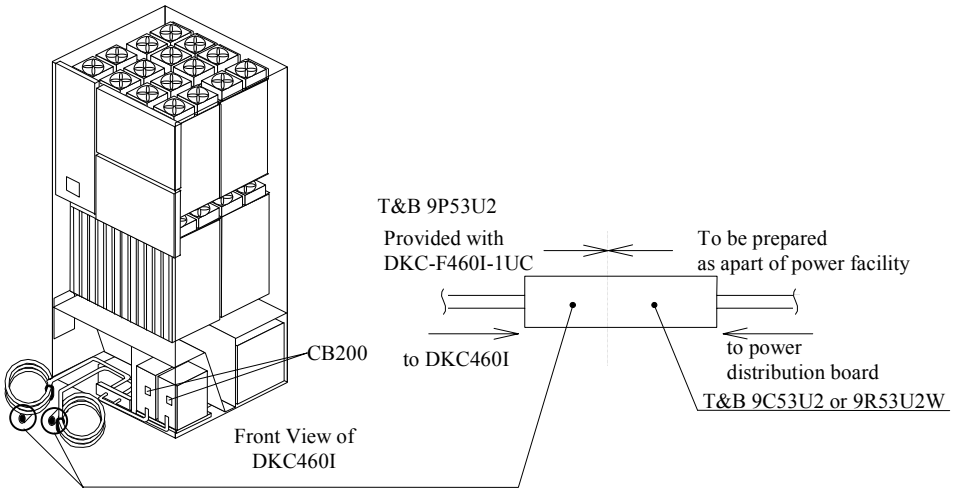
3.20.5.1.2 Single Phase Model

1. Connect the AC cables. Refer to Fig. 3.20.5-3 or Fig.3.20.5-4.

Single Phase/30A



Single Phase/40A



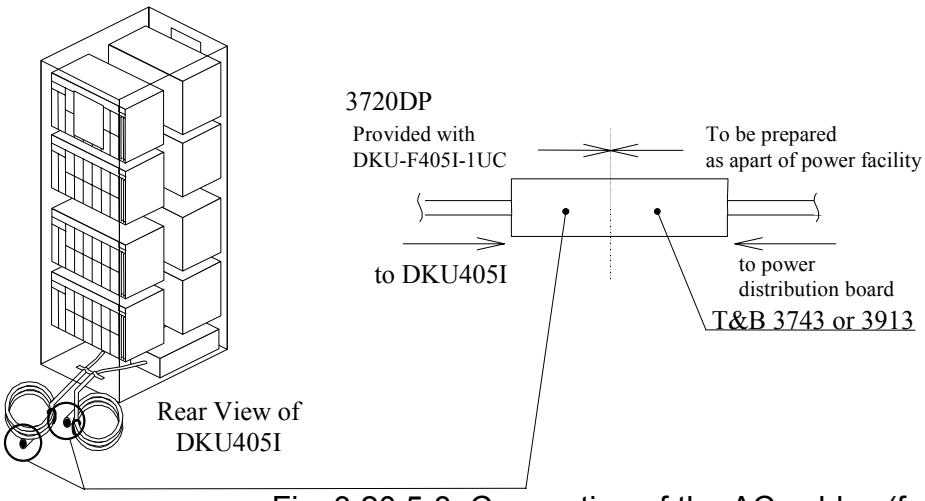


Fig. 3.20.5-3 Connection of the AC cables (for USA)

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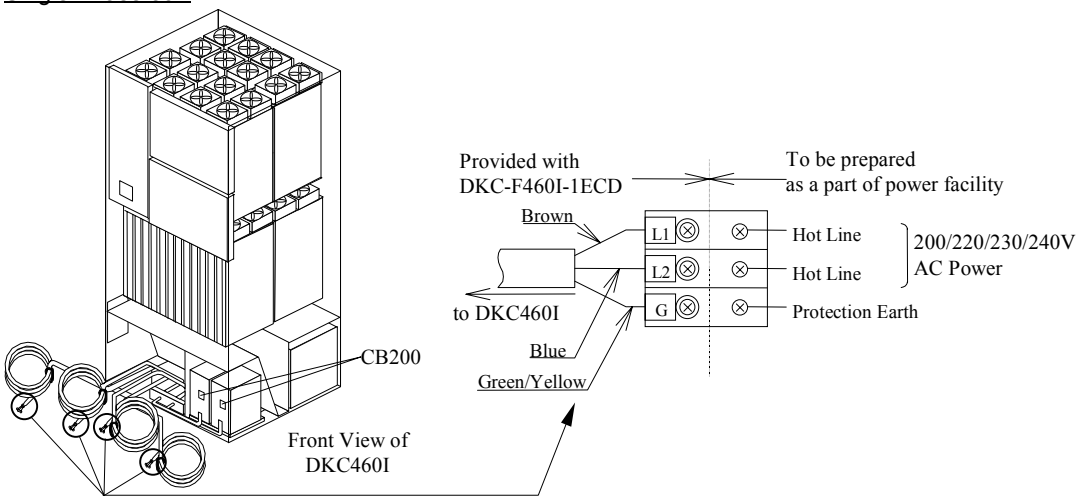
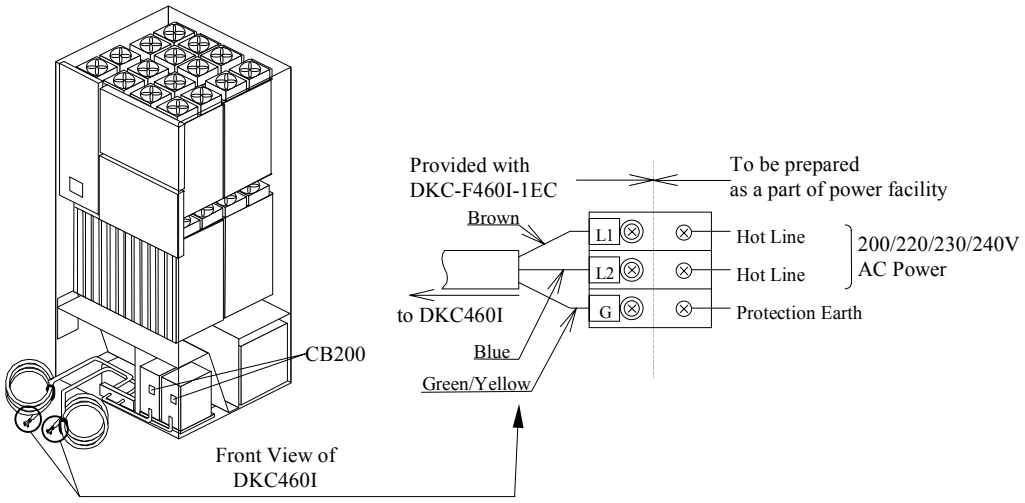
Single Phase/30A



Single Phase/40A



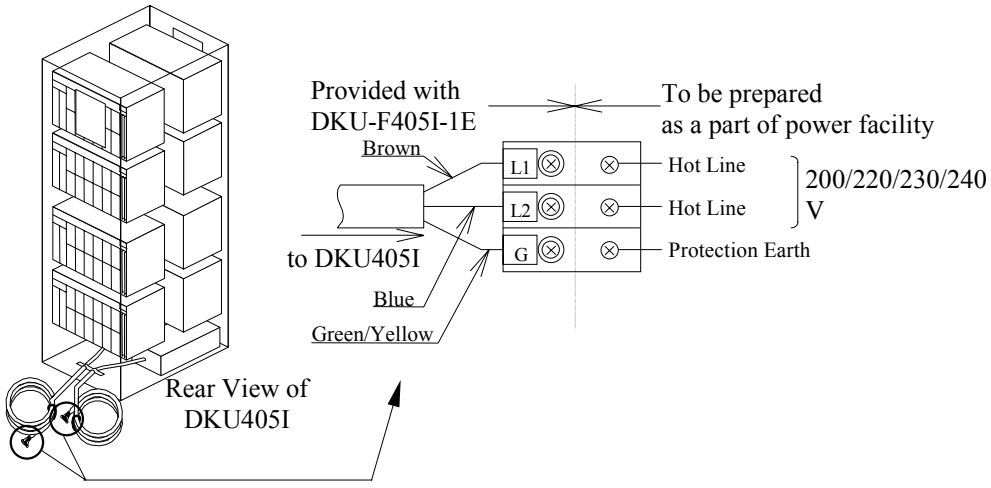


Fig. 3.20.5-4 Connection of the AC cables (for Europe)

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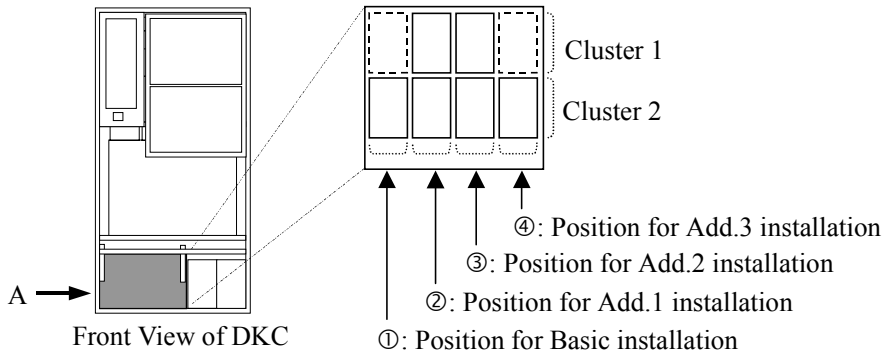
3.20.5.2 Connection of Channel Interface Cable

Fig. 3.20.5.2-1 shows the interface connector panel locations.



Refer to the following figure for how to attach the cable clamp and cable routing.

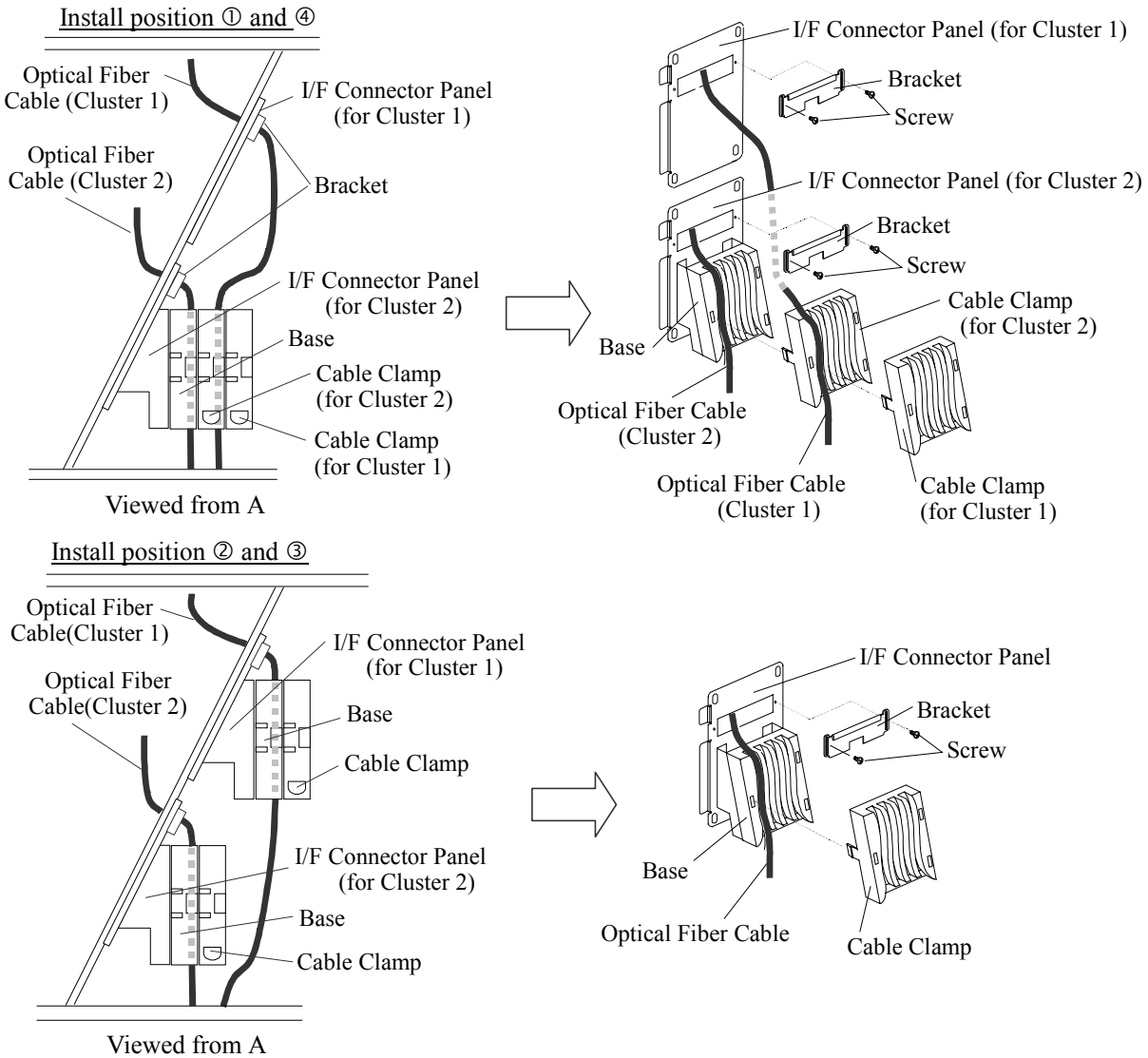


Fig. 3.20.5.2-1 The Mounting Location of Channel Options

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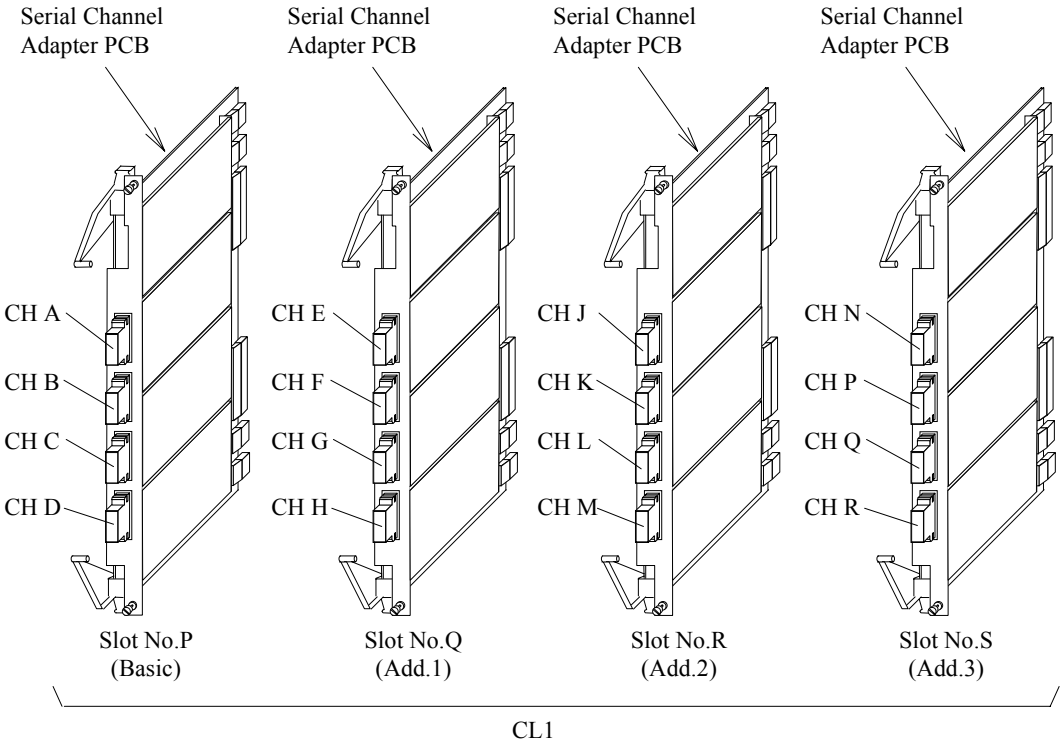
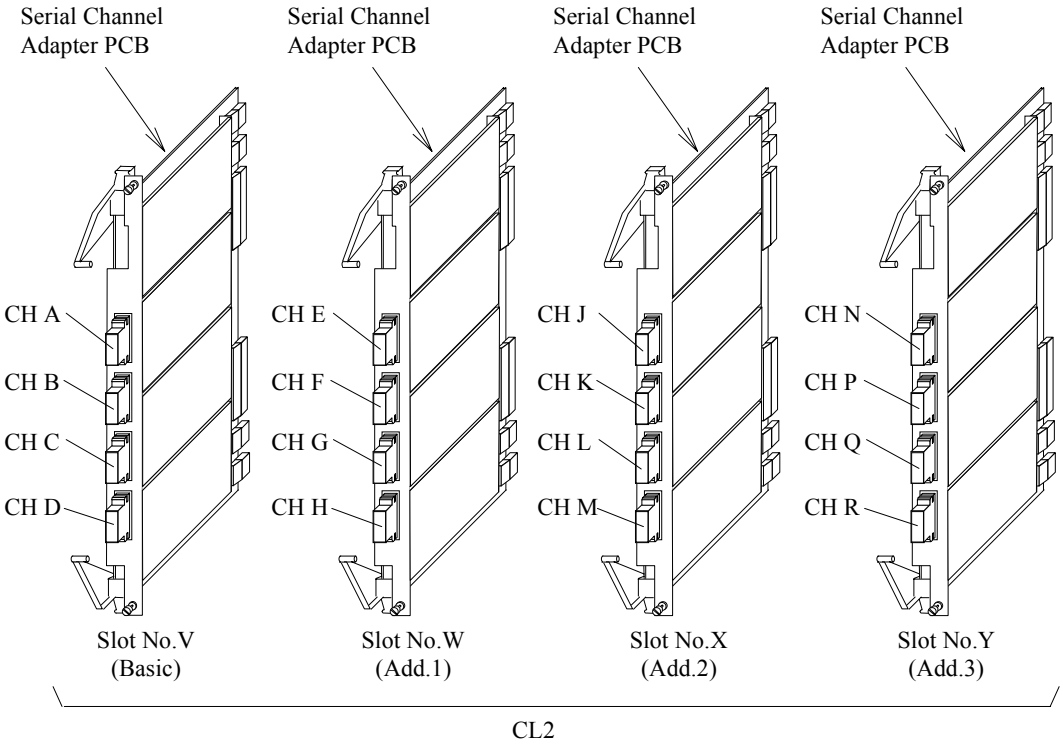
3.20.5.2.1 Connection of Serial Channel Interface Cables

1. Connect the Serial Channel Interface cables.





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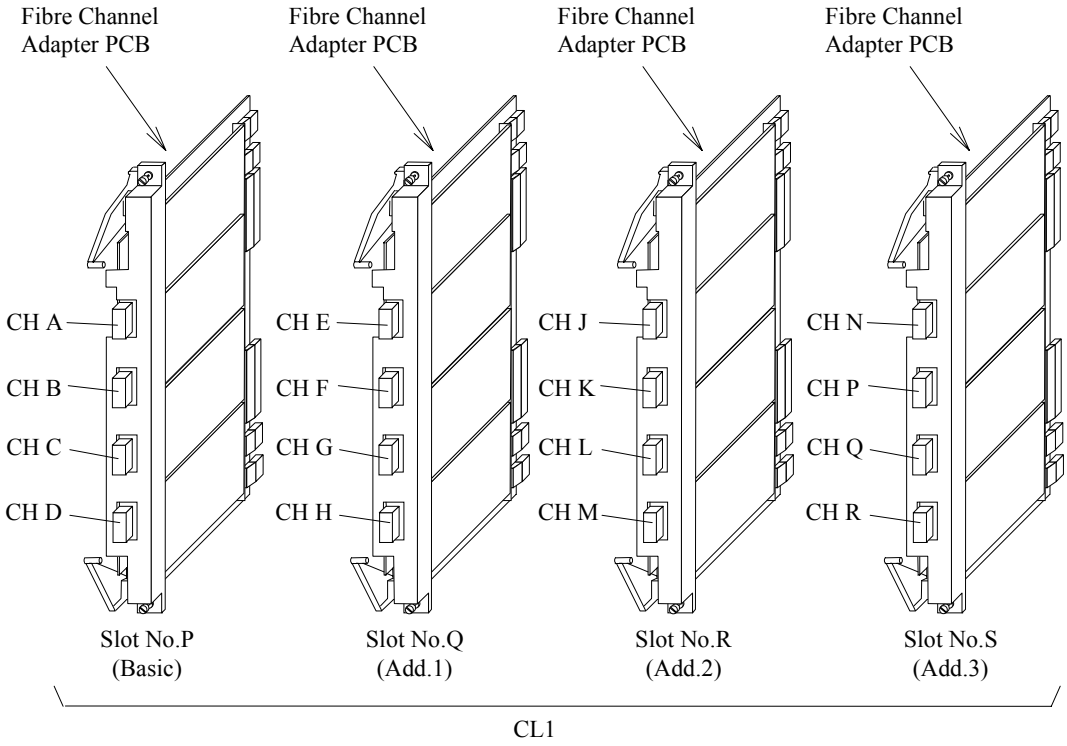
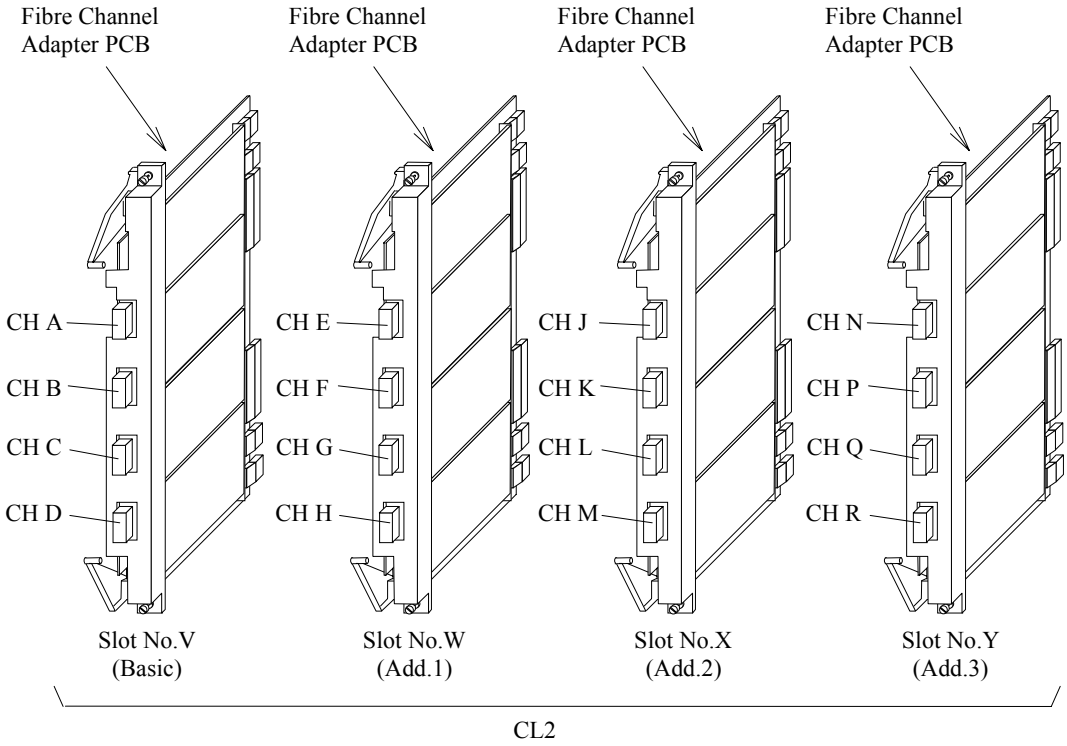
3.20.5.2.2 Connection of Fibre Channel Interface Cables

1. Connect the Fibre Channel Interface cables.





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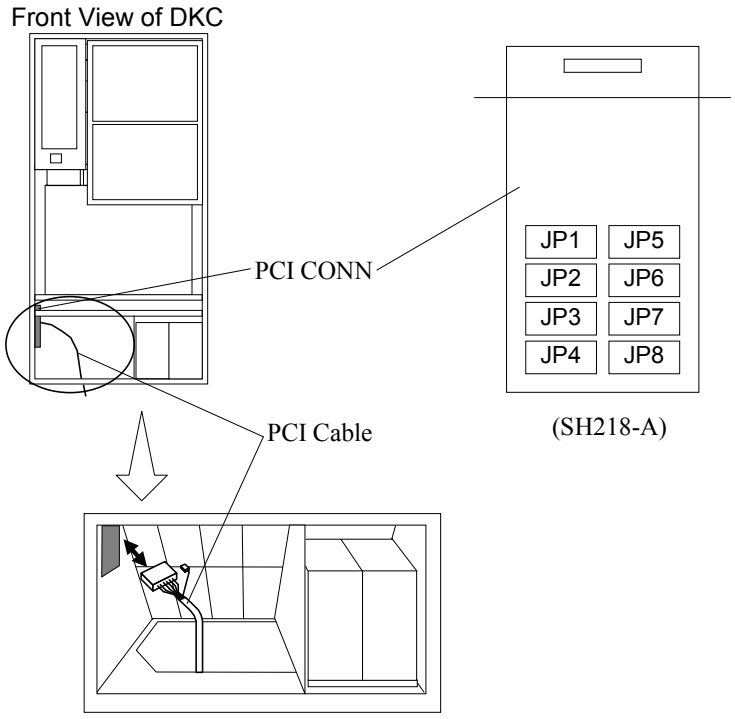
3.20.5.3 PCI Cabling

1. Connect the PCI cables.



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3.20.6 Connection of the DEV and DKUMN Cables

1. Connect the DKUMN cables to the DKUMN PCBs. Refer to Figs. 3.20.6-1 and 3.20.6-2.

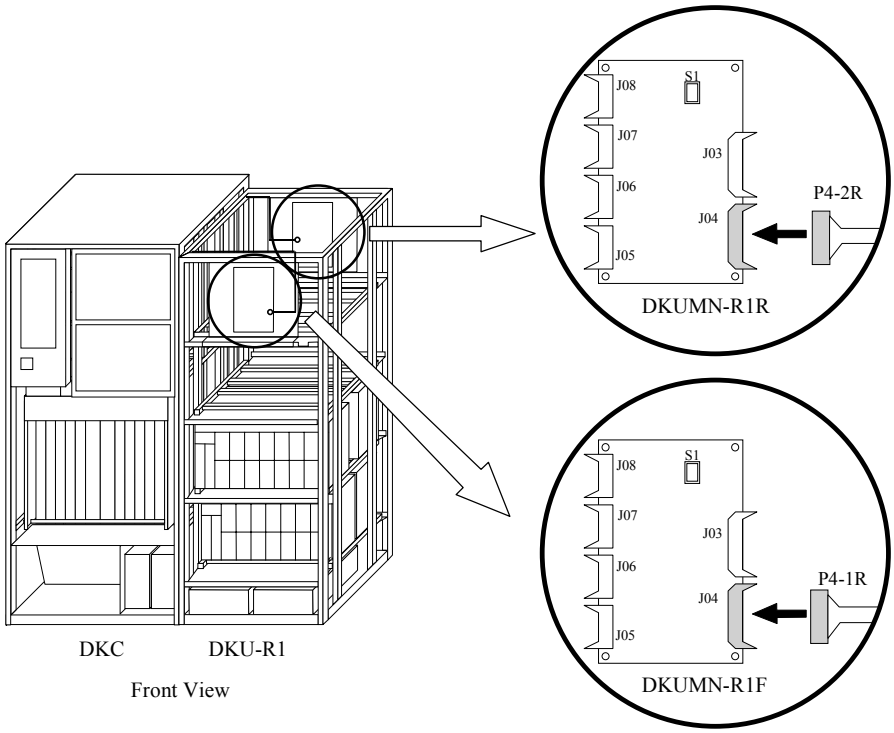

Fig. 3.20.6-1 Connection of DKUMN cables (Between DKC and DKU-R1)

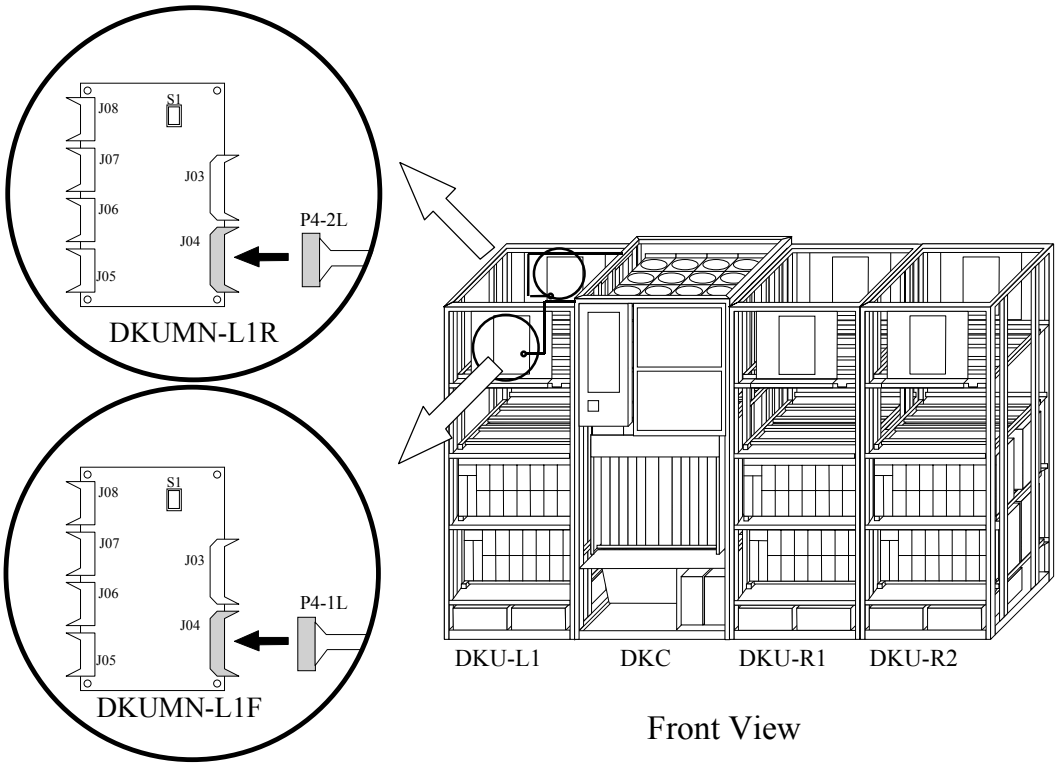

Fig. 3.20.6-2 Connection of DKUMN cables (Between DKC and DKU-L1)

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2. Connect the DEV interface cables to the sub-edges on the FSW PCBs. Refer to Fig. 3.20.6-3 through Fig. 3.20.6-6.

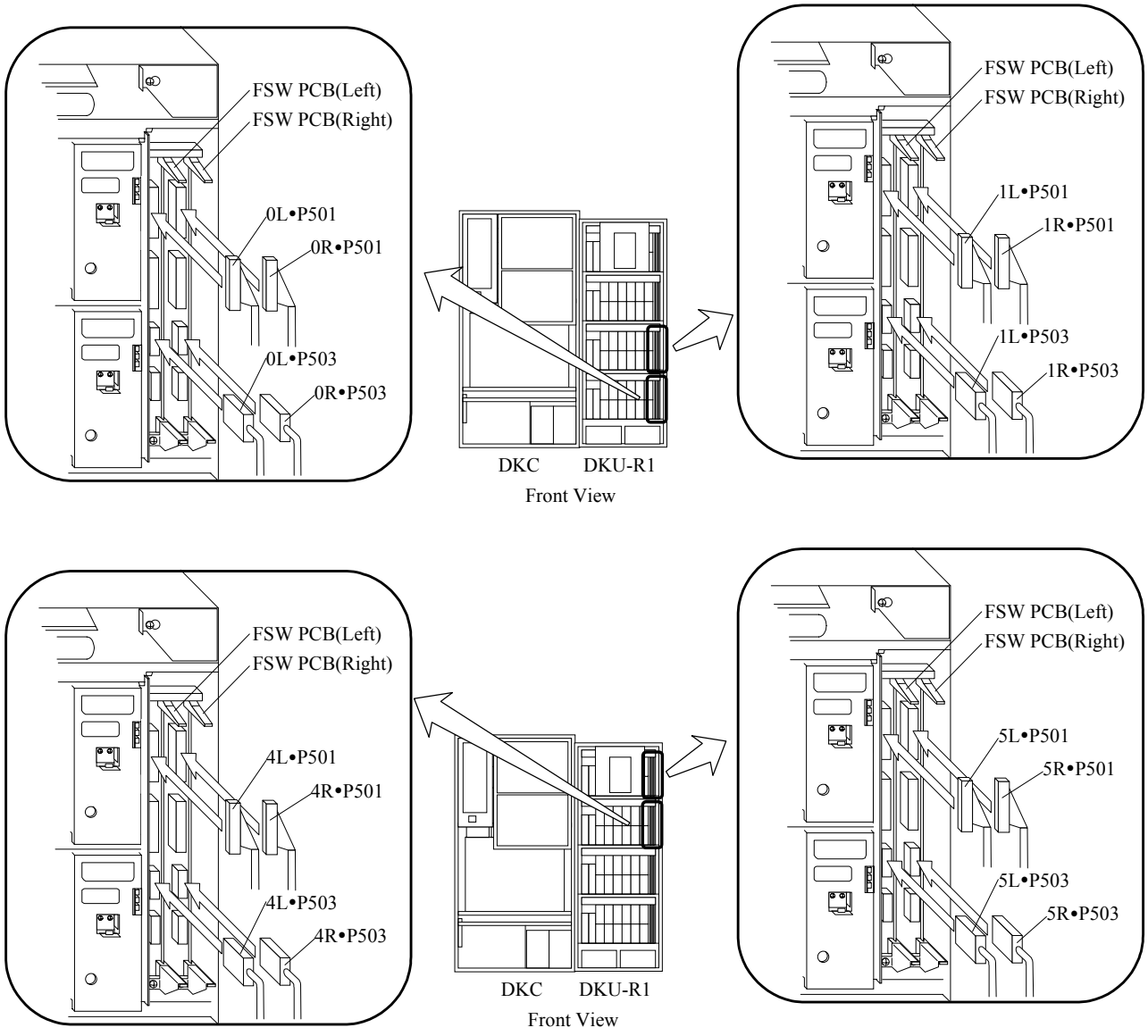

Fig. 3.20.6-3 Connection of DEV Interface Cables (Between DKC and DKU-R1)

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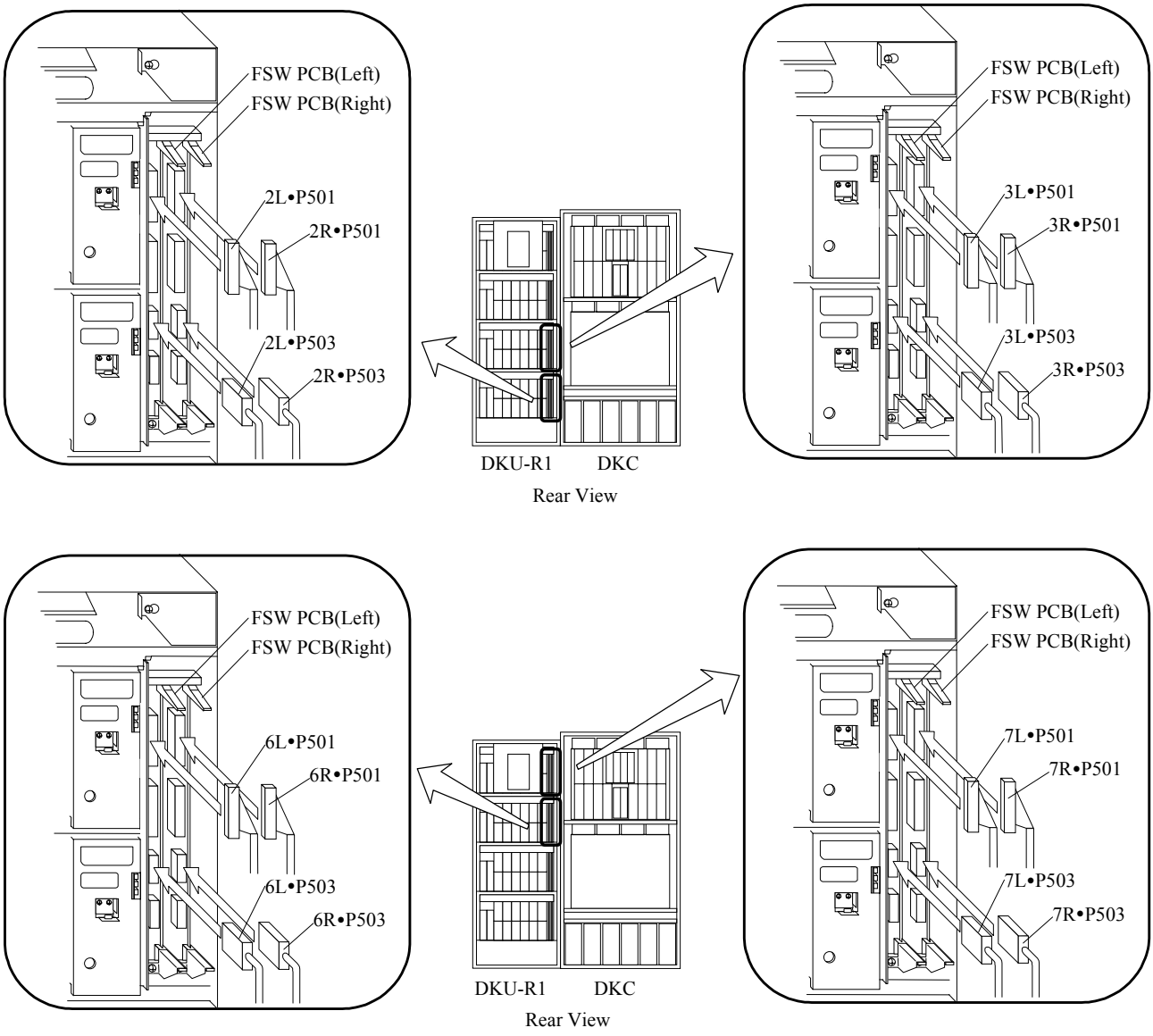

Fig. 3.20.6-4 Connection of DEV Interface Cables (Between DKC and DKU-R1)

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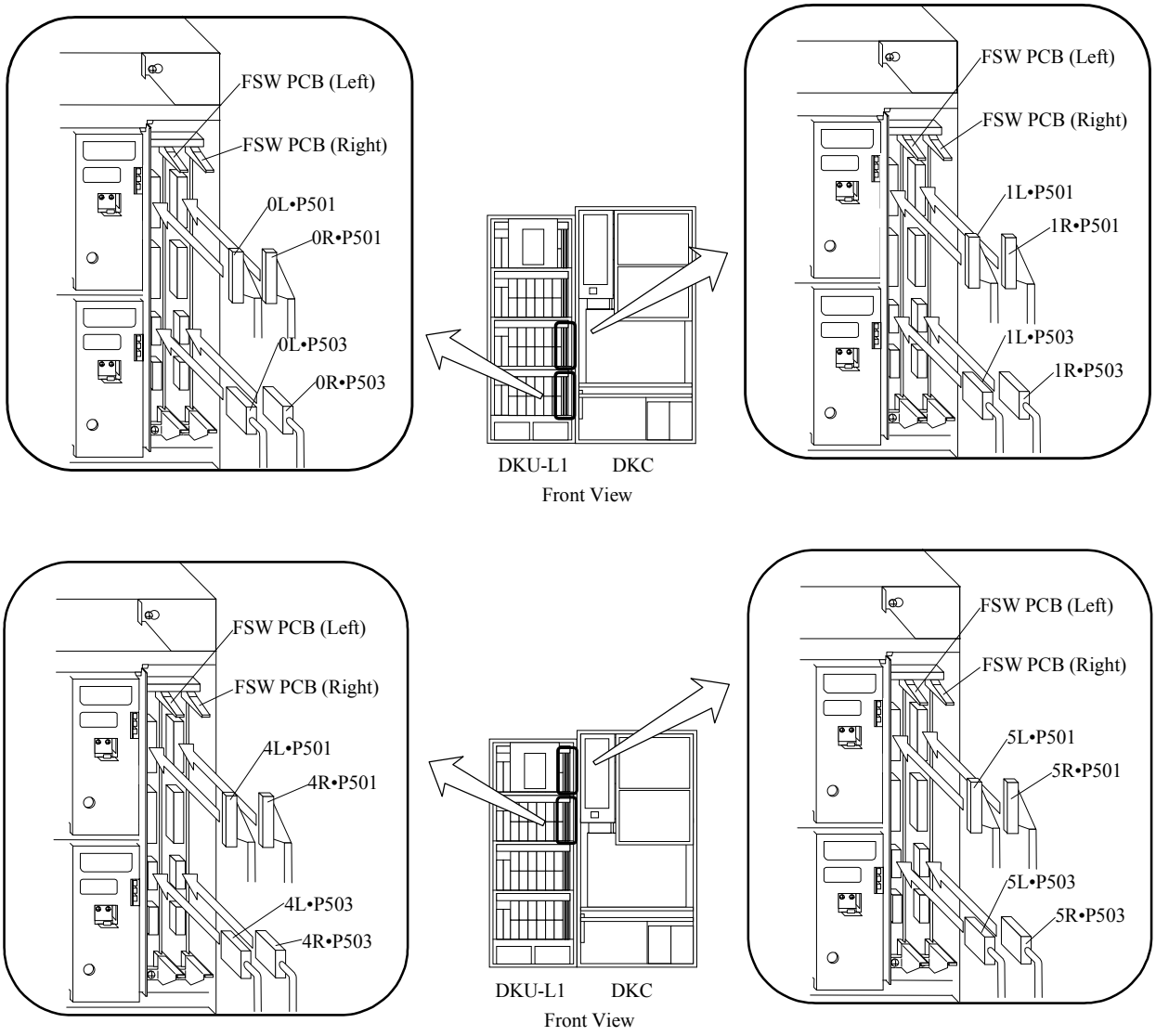

Fig. 3.20.6-5 Connection of DEV Interface Cables (Between DKC and DKU-L1)

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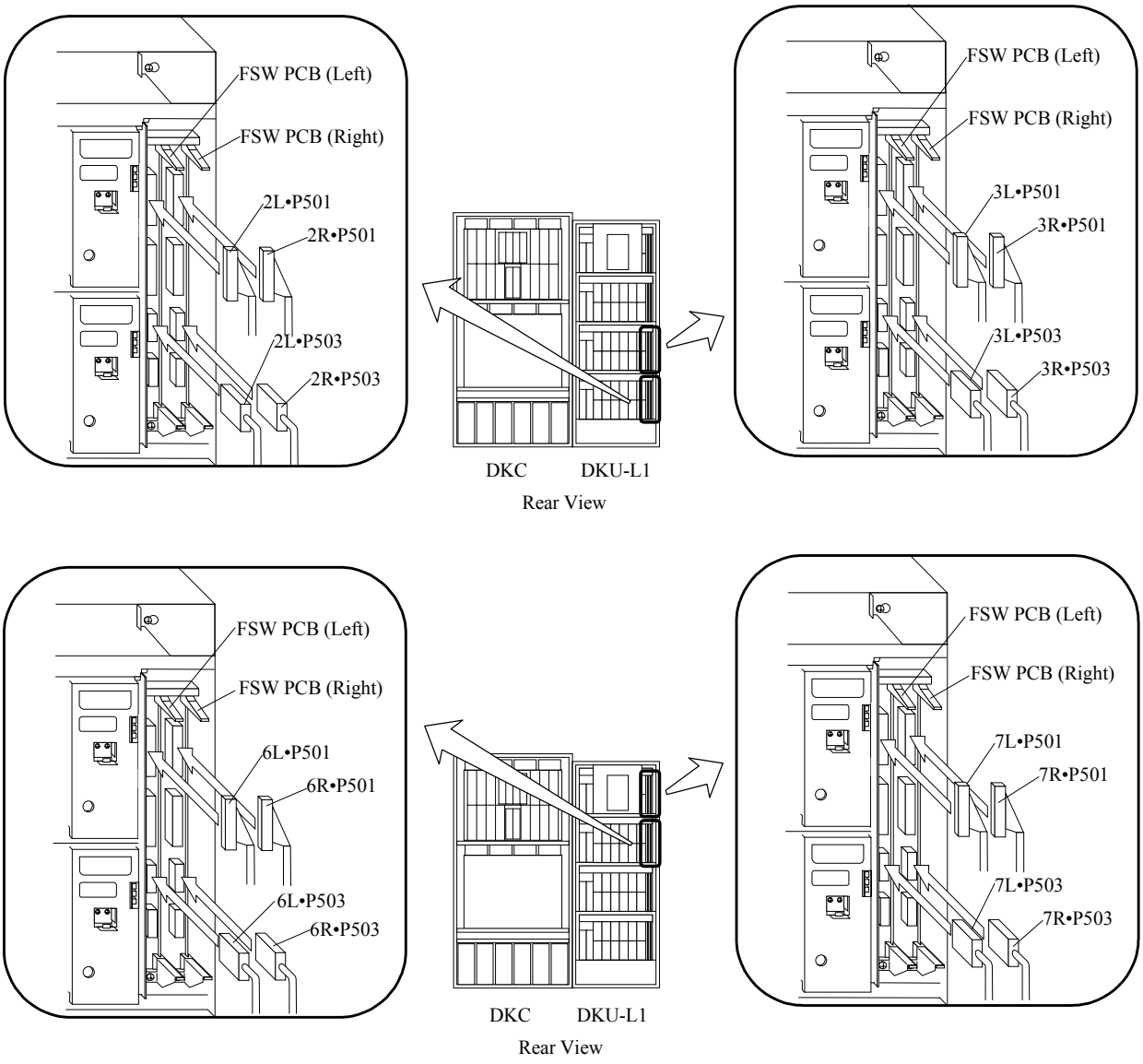

Fig. 3.20.6-6 Connection of DEV Interface Cables (Between DKC and DKU-L1)

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3. Attach the covers.
   a. Attach the cable covers ① and ② with the screws.

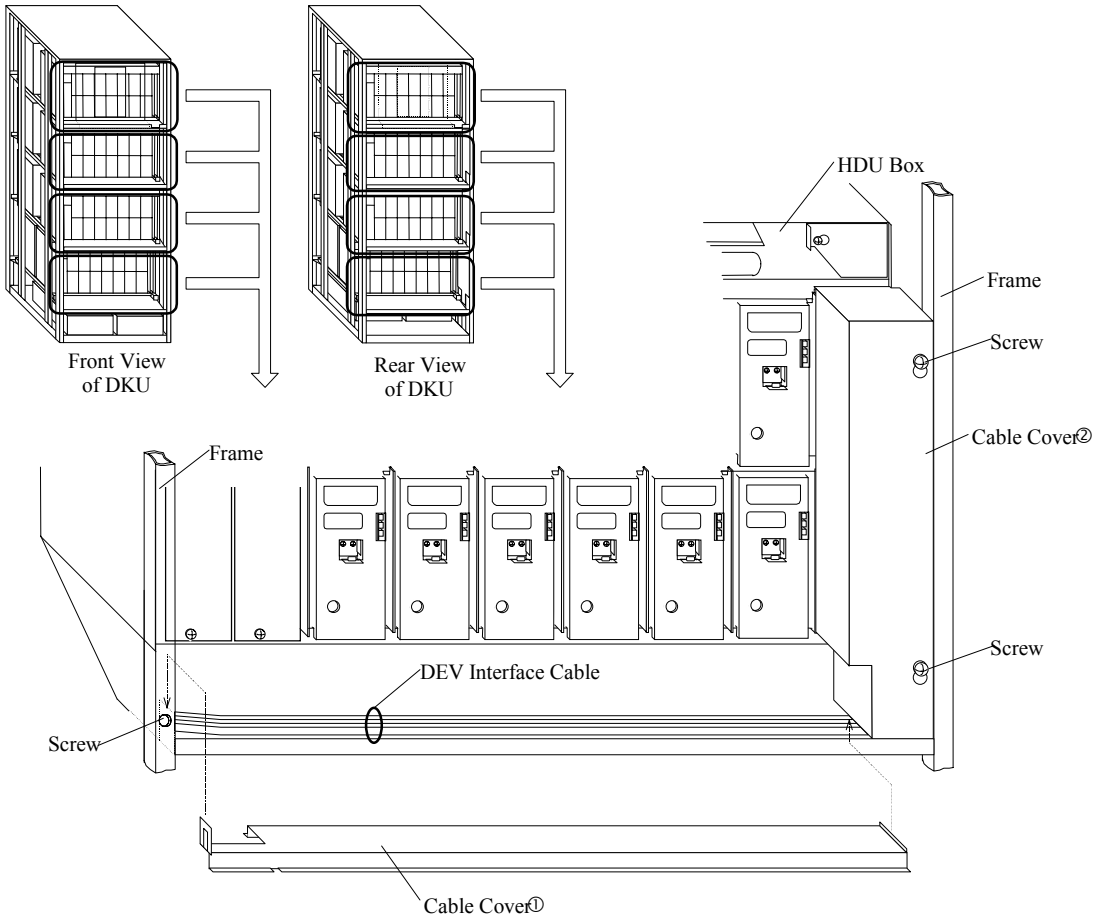

Fig. 3.20.6-7 Attachment of Cable Covers

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b. Attach the cable covers and fasten the screws.

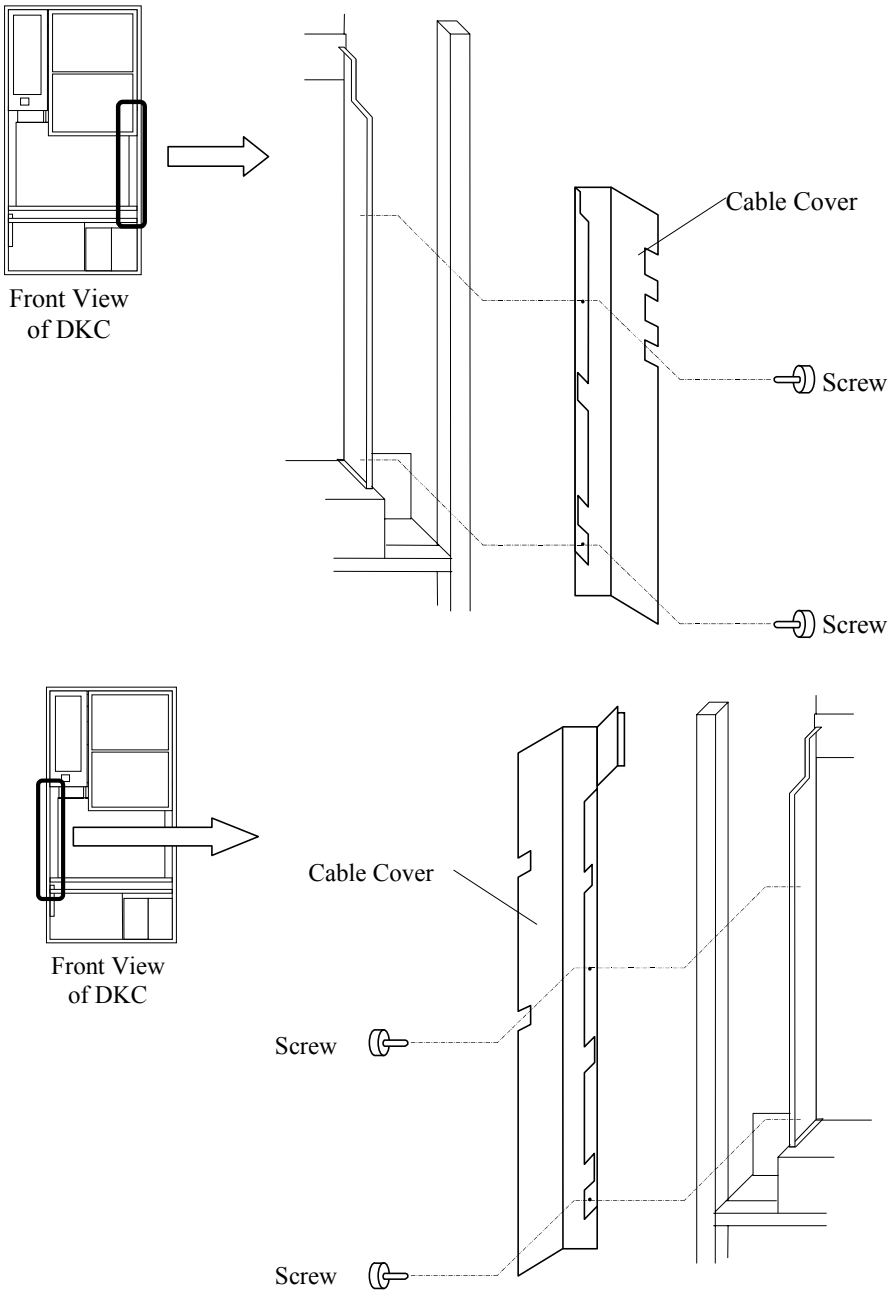

Fig. 3.20.6-8 Attachment of Covers

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c. Attach the cable cover and fasten the screws.

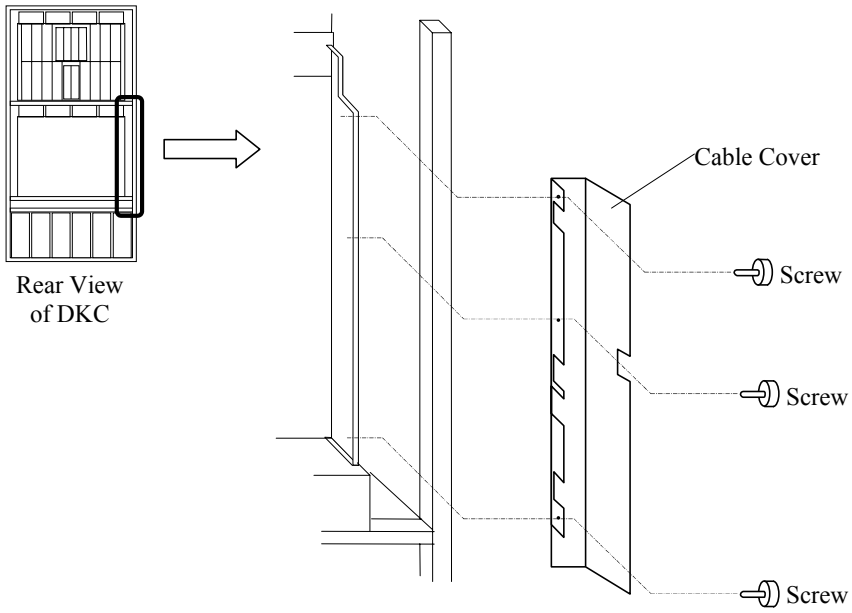

Fig. 3.20.6-9 Attachment of Cover

d. Attach the Front Logic Box cover and Rear Logic Box cover. Refer to INST03-COM-20 through 30.

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3.20.7 Power ON of Disk Subsystem

Power on procedures are shown below. Refer to the details and start the operation.

1. Turn on the main circuit breaker at the distribution board.
2. Turn on the main circuit breaker at the AC Box on the Disk Unit.

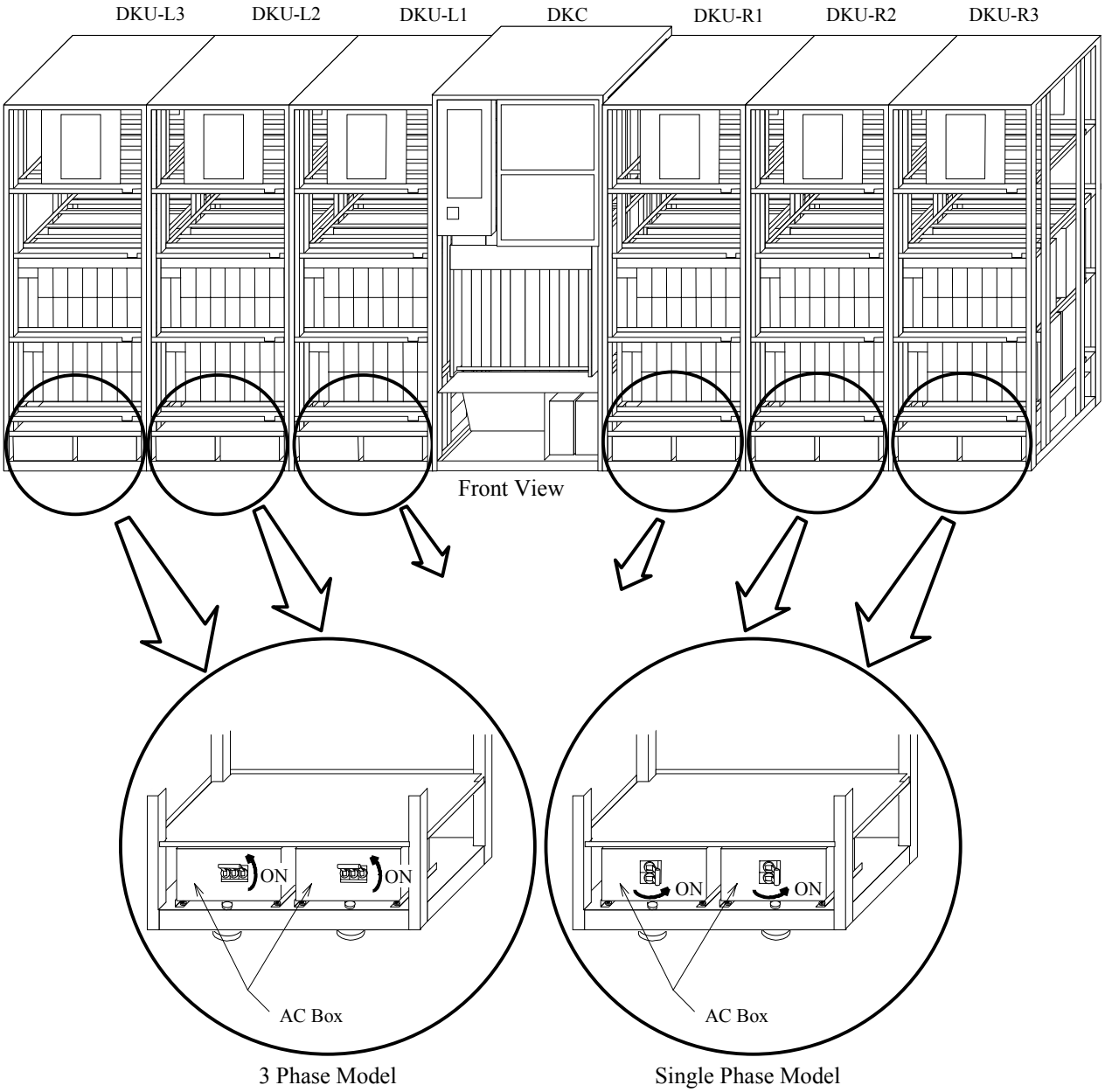

Fig. 3.20.7-1 Main Circuit Breaker on AC Box

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3. When the AC Box Kit for Single Phase/40A (DKC-F460I-1PS) is installed, turn on the circuit breaker at AC Box on the DKC.
   When the AC Box Kit for Single Phase/40A (DKC-F460I-1PS) is not installed, go to step 4.

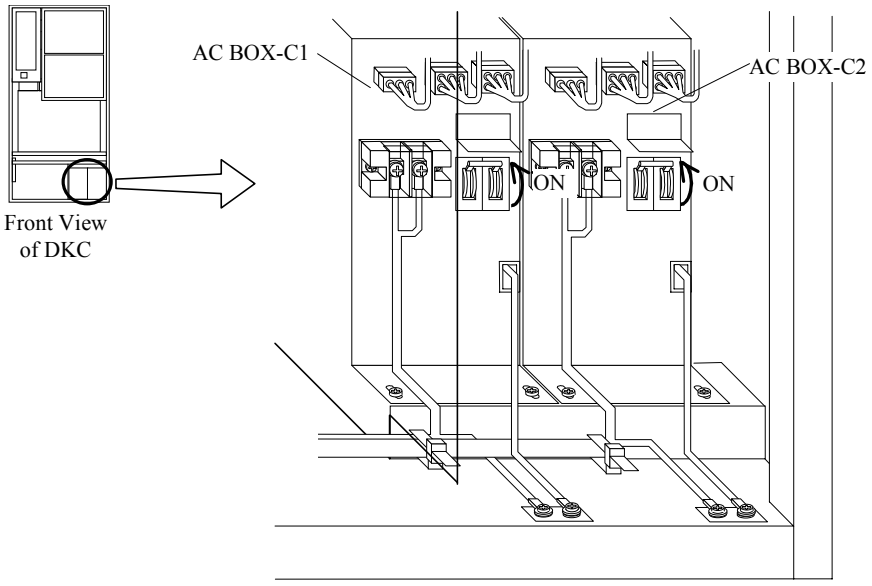

Fig. 3.20.7-2 Circuit Breaker on DKC AC Box

4. When the Breaker Box Kit for 3 Phase (DKC-F460I-3PS) is installed, turn on the circuit breaker at Breaker Box on the DKC.
   When the Breaker Box Kit for 3 Phase (DKC-F460I-3PS) is not installed, go to step 5.

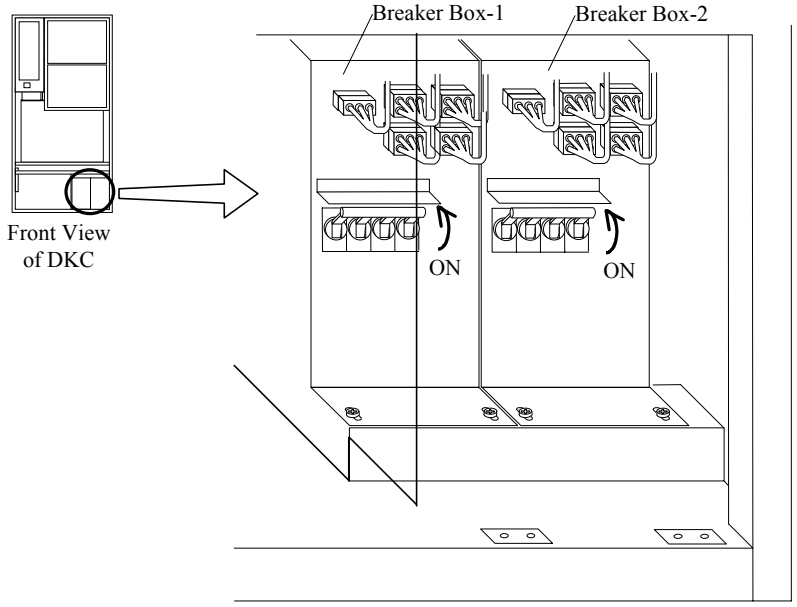

Fig. 3.20.7-3 Circuit Breaker in Breaker Box-1 and 2

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5. When the AC Box Kit for Single Phase/30A (DKC-F460I-1PSD) is installed, turn on the circuit breaker at AC Box on the DKC.
   When the AC Box Kit for Single Phase/30A (DKC-F460I-1PSD) is not installed, go to step 6.

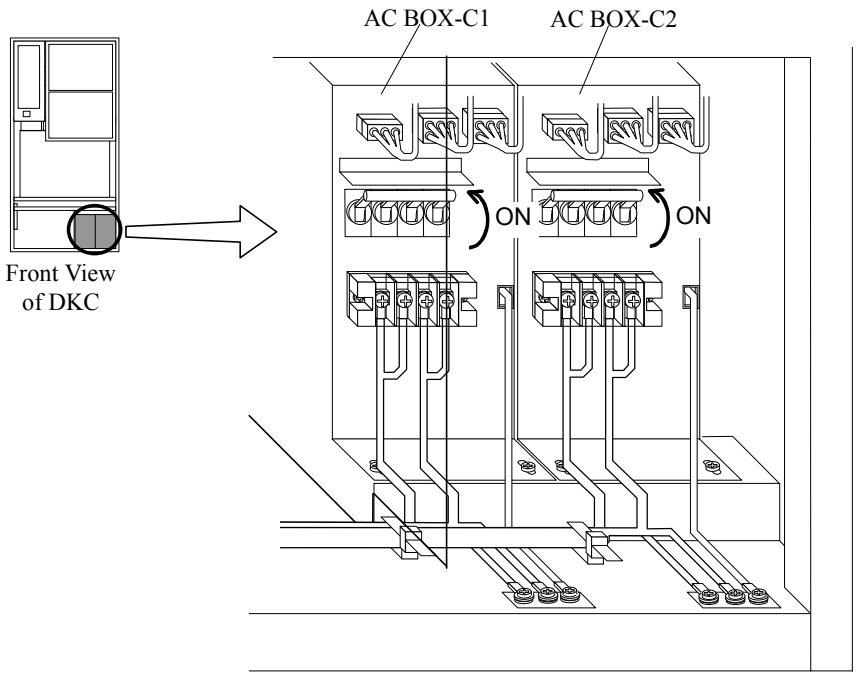

Fig. 3.20.7-4 Circuit Breaker on DKC AC Box

6. When the AC Box Kit for 3 Phase/30A (DKC-F460I-3PSD) is installed, turn on the circuit breaker at AC Box on the DKC.
   When the AC Box Kit for 3 Phase/30A (DKC-F460I-3PSD) is not installed, go to step 7.

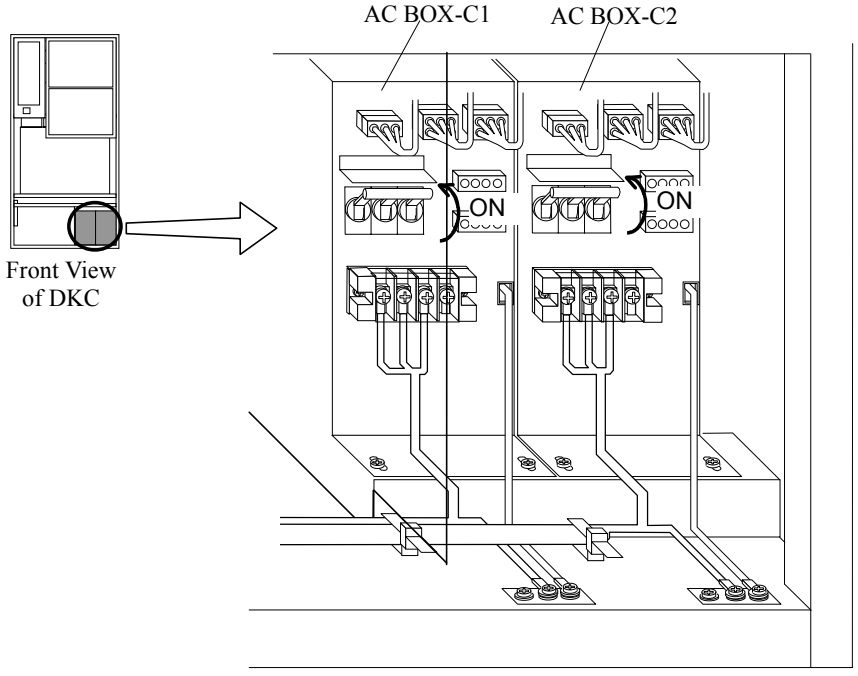

Fig. 3.20.7-5 Circuit Breaker in DKC AC Box

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7. Check battery charge voltage and fuse blow up on Battery Controller PCBs.
   Check charge voltage on BATTERY 10 through 12 and BATTERY 20 through 22.
   a. Disconnect the cables.
   b. Insert the pins of the digital voltmeter into the cables removed from battery to make sure that battery charge voltage is within the allowable charge voltage.
      If the battery charge voltage is not within the allowable charge voltage, replace the BATCTR PCB.
   c. Connect the cables.

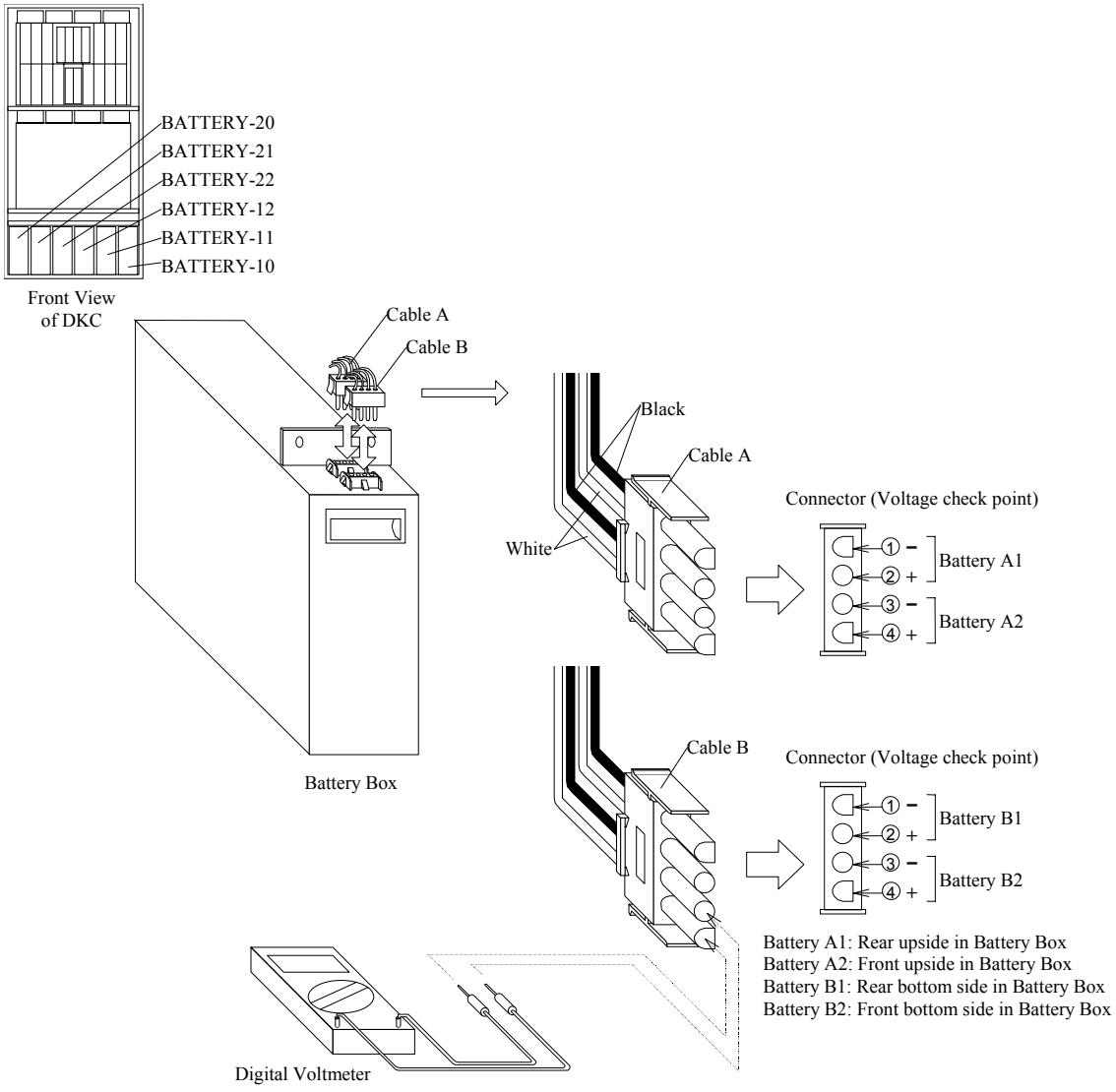

Fig. 3.20.7-6 Voltage Checkpoint

Table 3.20.7-1 Voltage Checkpoint and Allowable Voltage

No.	Pin No.		Allowable charge voltage
	+	-	
1	②	①	DC13V through DC13.8V
2	④	③	DC13V through DC13.8V

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8. Check battery voltage.
   Check battery voltage of the BATTERY 10 through 12 and BATTERY 20 through 22.
   a. Disconnect the cables.
   b. Insert the pins of the digital voltmeter into the connector on battery box to make sure that battery voltage is within the allowable battery voltage.
   c. If the battery voltage is not within the allowable battery voltage, replace the battery assembly.
   d. Connect the cables.

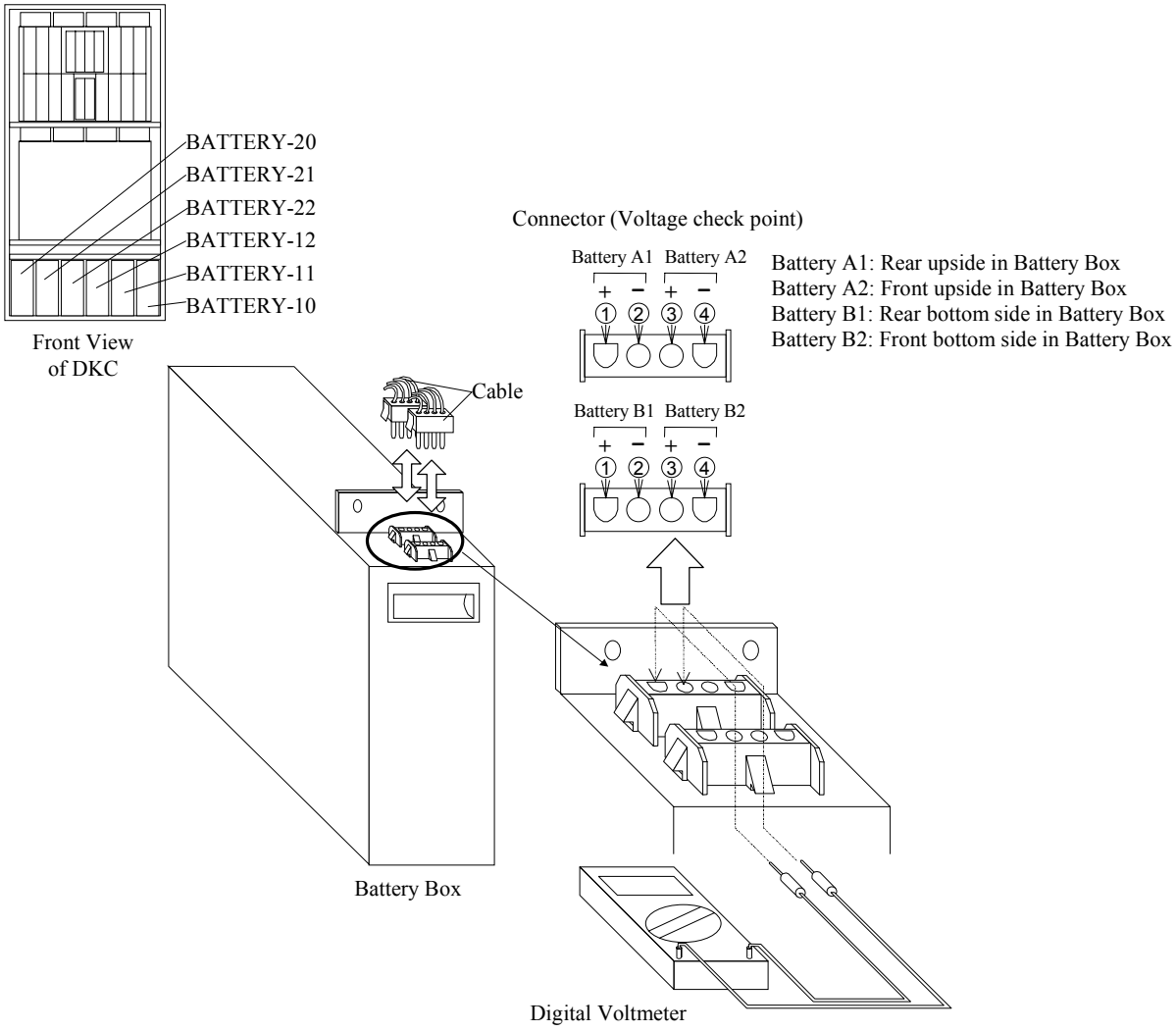

Fig. 3.20.7-7 Voltage Checkpoint

Table 3.20.7-2 Voltage Checkpoint and Allowable battery Voltage

No.	Pin No.		Allowable battery voltage
	+	-	
1	①	②	DC11.6V through DC13.8V
2	③	④	DC11.6V through DC13.8V

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9. Turn the “ENABLE/DISABLE” switch on the DKUMN PCB’s to “ENABLE”.

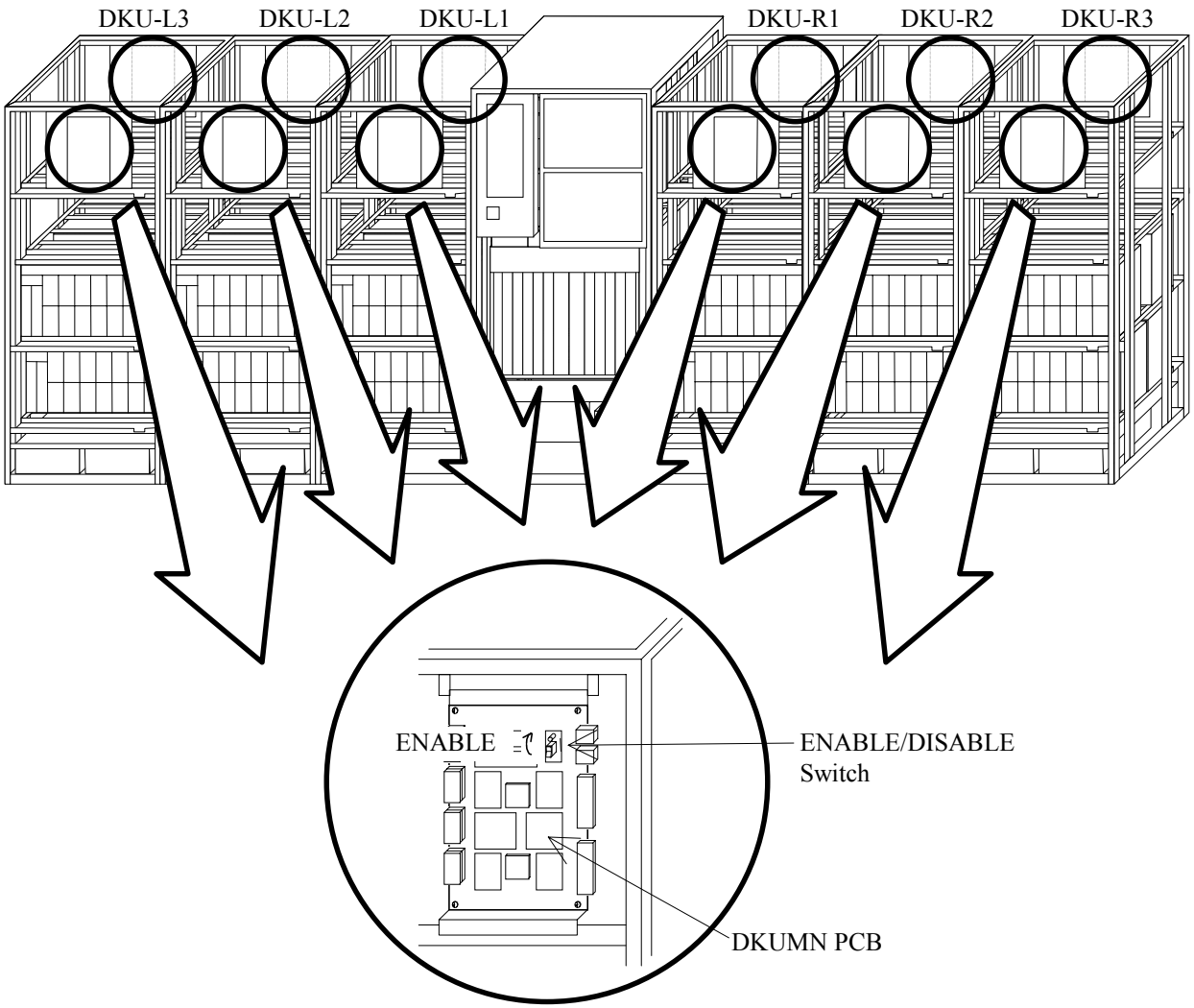

Fig. 3.20.7-8 ENABLE/DISABLE Switch on DKUMN PCBs

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10. [Case as custom engineer operates]
    Turn the “REMOTE/LOCAL” switch to “LOCAL”.
    Turn the “POWER ON/OFF” switch to “ON”, while turning the POWER ON/OFF ENABLE switch to the ENABLE position.
    [Case as that operate from CPU]
    Turn the “REMOTE/LOCAL” switch to “REMOTE”.
    Turn on the power supply from CPU.

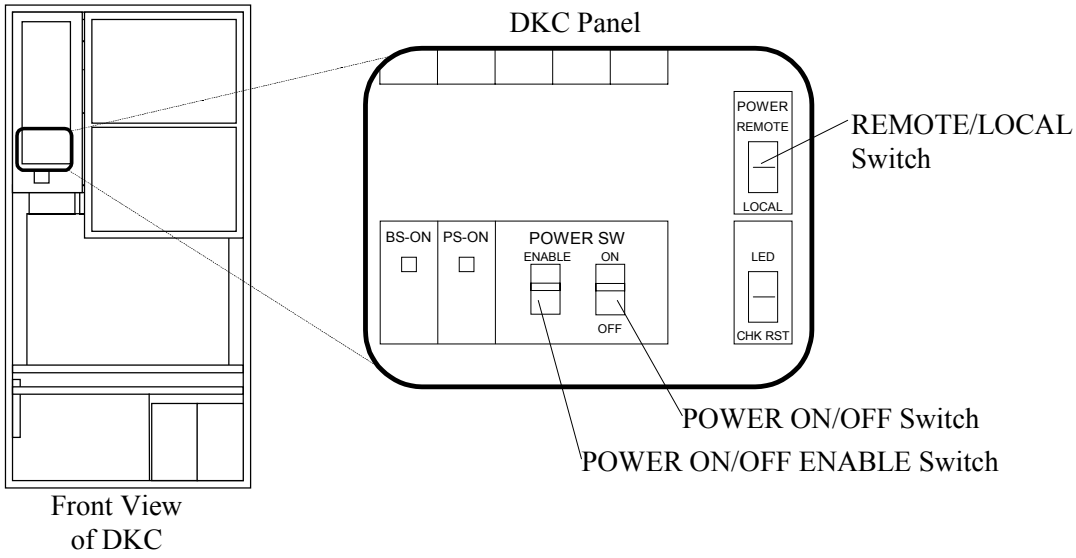

Fig. 3.20.7-9 Switches on DKC Panel PCB

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3.21 Installation of NAS Enable Kit for MC model (DKC-F460I-NENB)

Table 3.21-1 Parts List

No.	Model Number	Item No.	Part Name	Part No.	Quantity	Remarks
1	DKC-F460I-NENB	①	3/12V Power Supply	5519715-A	4	
		②	FAN Assembly (A)	5519716-A	8	
		③	FAN Assembly (B)	5519716-B	8	
		④	Bracket	3265847-A	1	
		⑤	Bracket	3265847-B	1	
		⑥	Rear PS Box Cover	3265846-A	1	
		⑦	Cable Duct ASSY	3265899-A	1	
		⑧	Repeat Binder	5409042-3	2	
		⑨	Label (3/12VPS)	3265931-1	1	
		⑩	Label (V.Hz.PH.A.W)	2106820-1	4	for DKC-F460I-3PS
		⑪	Label (V.Hz.PH.A.W)	3265983-1	1	for DKC-F460I-1PS
		⑫	Label (V.Hz.PH.A.W)	3265984-1	1	for DKC-F460I-1PSD/3PSD
		⑬	Nameplate (HDS)	2105902-143	1	RSD
				2105903-143		HICAM
				2105903-243		HICEF
		⑭	Nameplate (HP)	2105902-243	1	RSD
				2105903-343		HICAM
				2105903-443		HICEF
		⑮	Wiring Tool	—	1	Note

Note: The wiring tool made from carton is packed together with the kit.

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1. Procedure for short circuit check on the power supply

(1) Check the power supply for short circuit by connecting the voltage checking jig to the short circuit check point of the power supply as shown below.

(2) Measure the resistance at the check points on the individual power supply before installation shown below. Confirm that the measured resistance values are over the value shown in the table below. If the resistance values are not over the value, replace it to the new part.

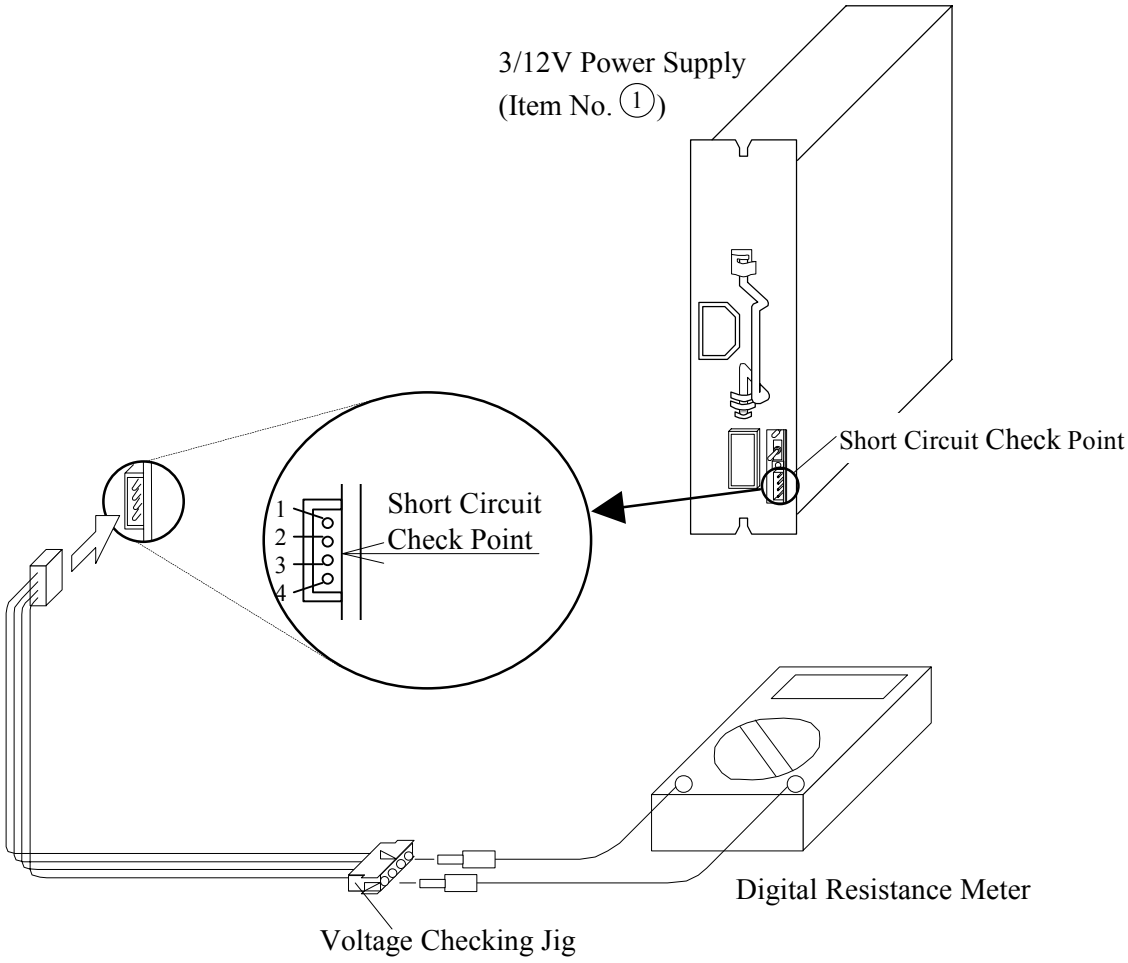

Fig. 3.21-1 Short Circuit Check Point (Item No.1 in Parts List)

Table 3.21-2 Short Circuit Check Point

PS	Check pin	Resistance
3/12V PS	Between 1 and 4	≥ 1.7 kΩ
	Between 2 and 4	≥ 1.7 kΩ

Note: Pin number 4 is ground.

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2. Removal of Cable Covers

a. Remove the Front Logic Box cover from the DKC. (Refer to INST03-COM-10.)
b. Remove the Rear PS Box cover. (Refer to INST03-COM-30.)
c. Loosen the two screws ① and remove the Upper SH Box covers.
d. Loosen the five screws ② and remove the Lower SH Box covers.
e. Loosen the four screws ③ and remove the SH side plates.

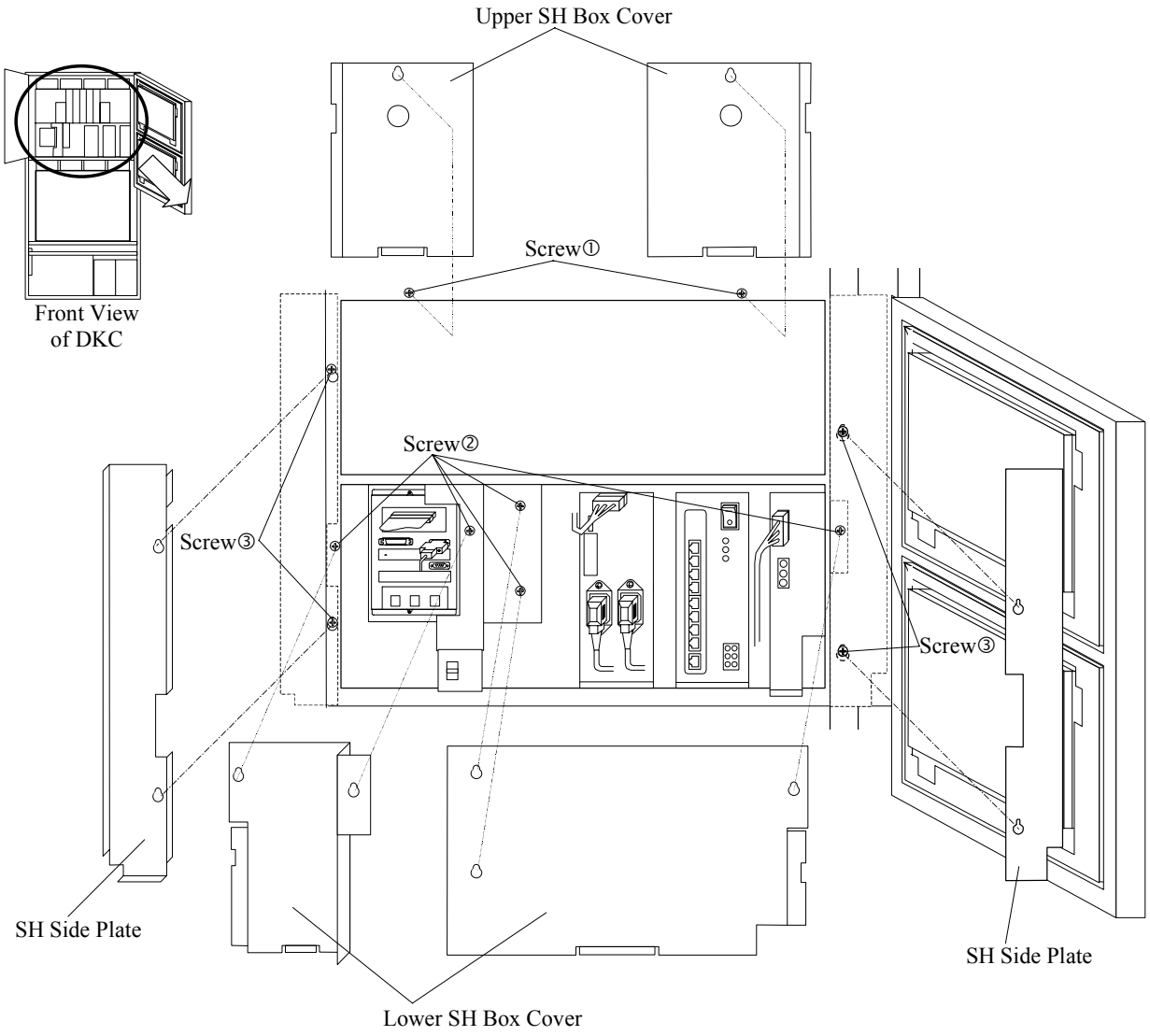

Fig. 3.21-2 Removal of Covers

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f. Remove the four screws and remove the cable covers.

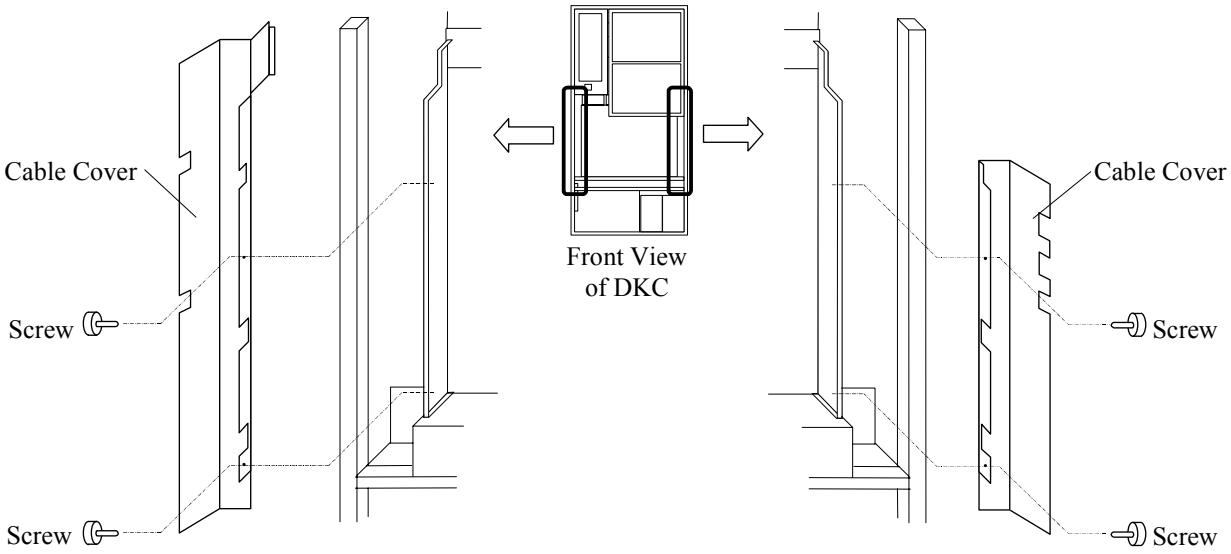

Fig. 3.21-3 Removal of Cable Covers

g. Loosen the two screws and remove the cable cover.

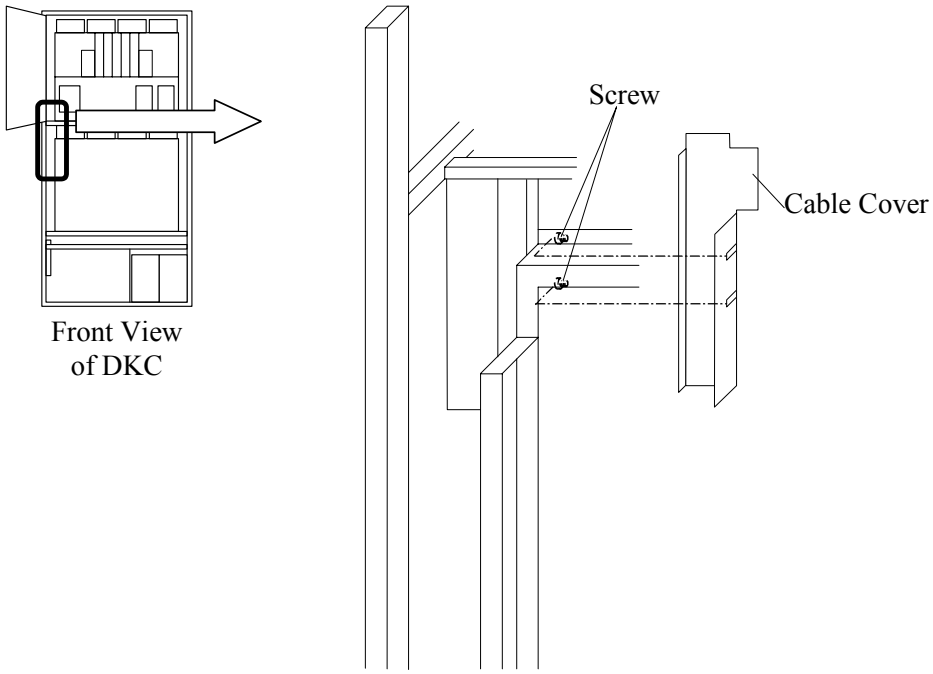

Fig. 3.21-4 Removal of Cable Cover

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h. Loosen the two screws and remove the cable cover.

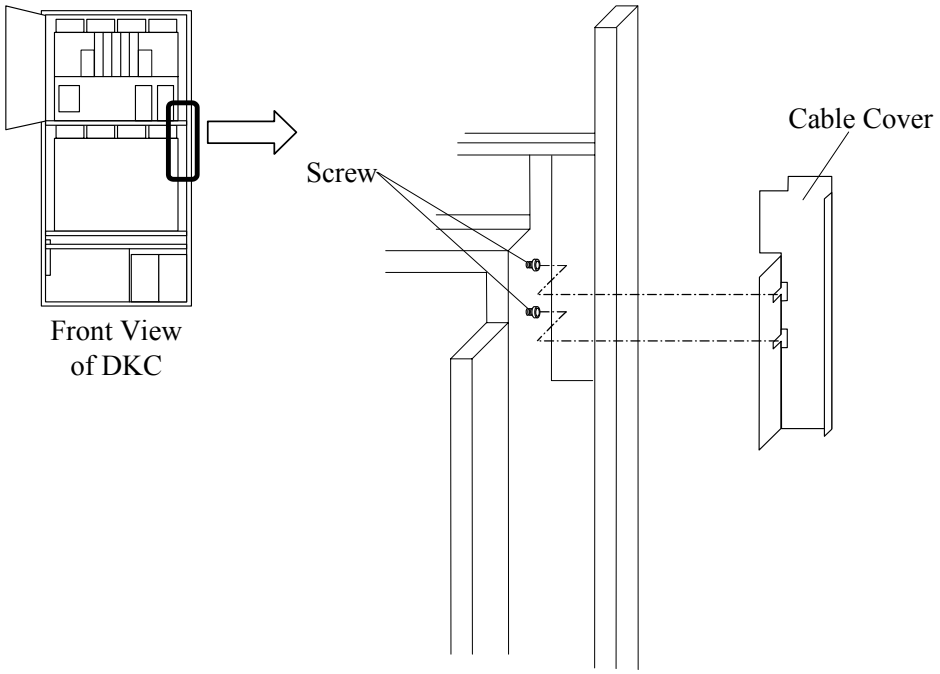

Fig. 3.21-5 Removal of Cable Cover

i. Remove the two screws① and loosen the ten screws②. Remove the two brackets.

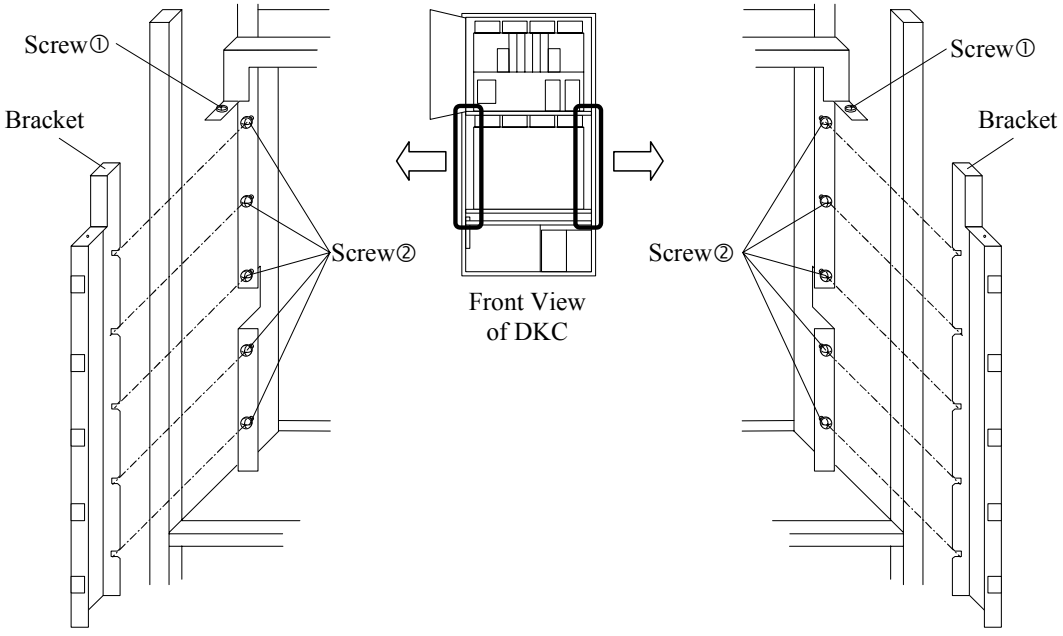

Fig. 3.21-6 Removal of Brackets

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j. Remove the two screws and remove the cable cover.

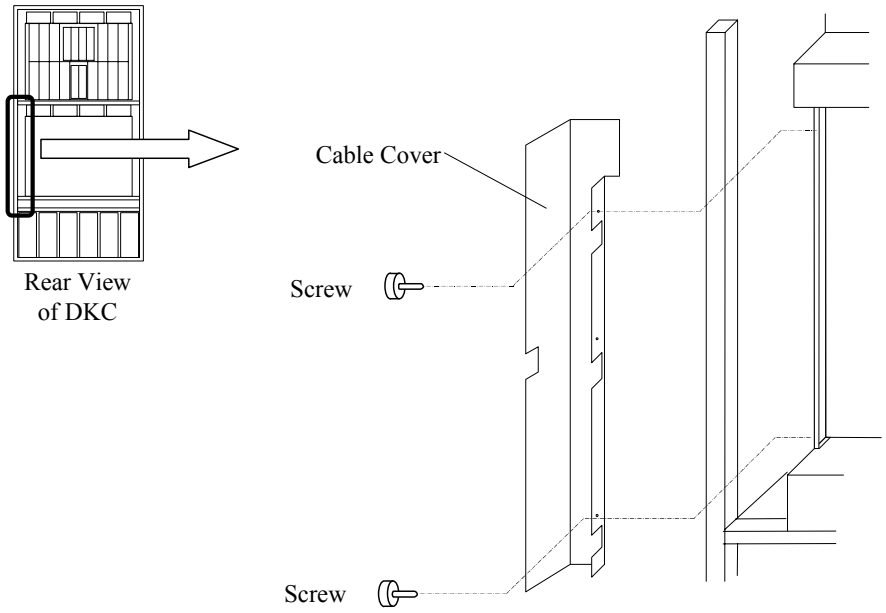

Fig. 3.21-7 Removal of Cable Cover

k. Remove the two screws ① and loosen the four screws ②. Rotate the bracket 90 degrees and remove it. And then remove the cable cover.

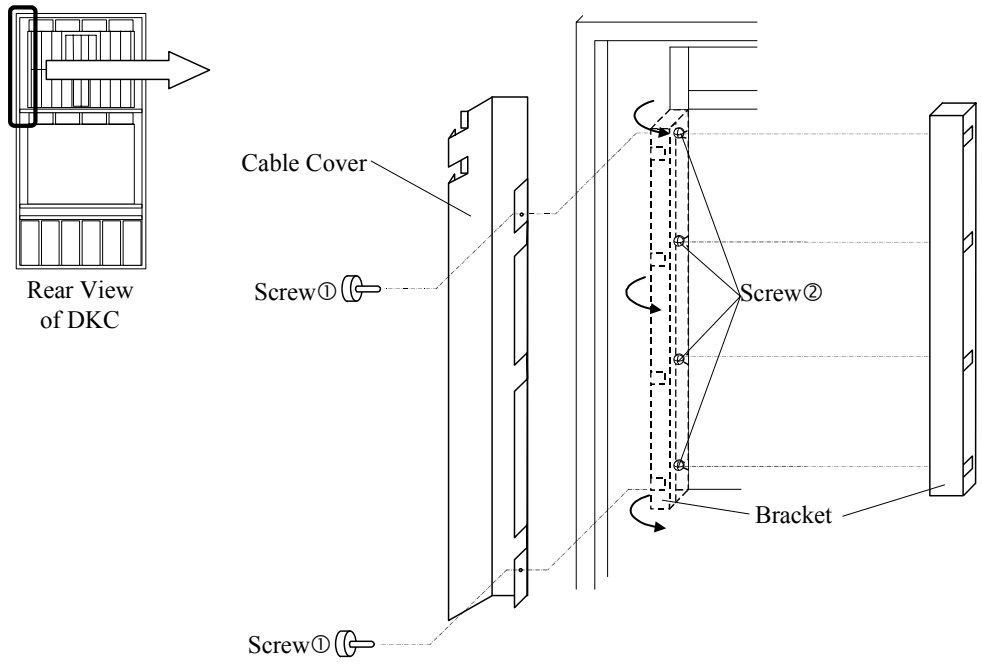

Fig. 3.21-8 Removal of Covers

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m. Remove the two screws ① and loosen the four screws ②. Rotate the bracket 90 degrees and remove it. And then remove the cable cover.

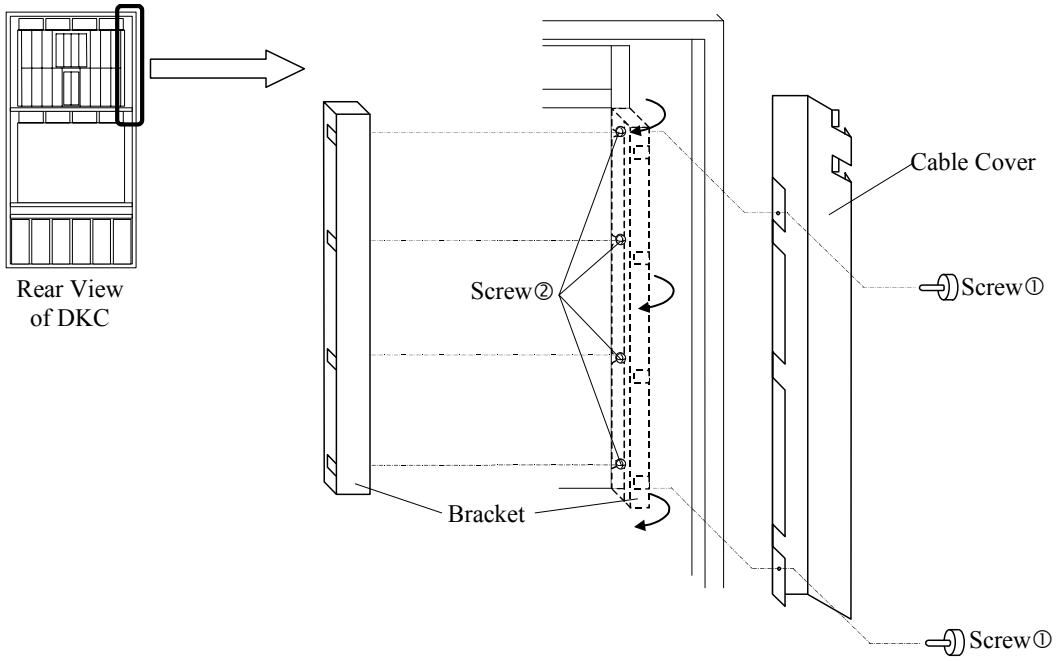

Fig. 3.21-9 Removal of Covers

n. Loosen the two screws. Fix the cable duct ASSY with the two screws.
p. Pull out the cables in the front of the DKC using the wiring tool.

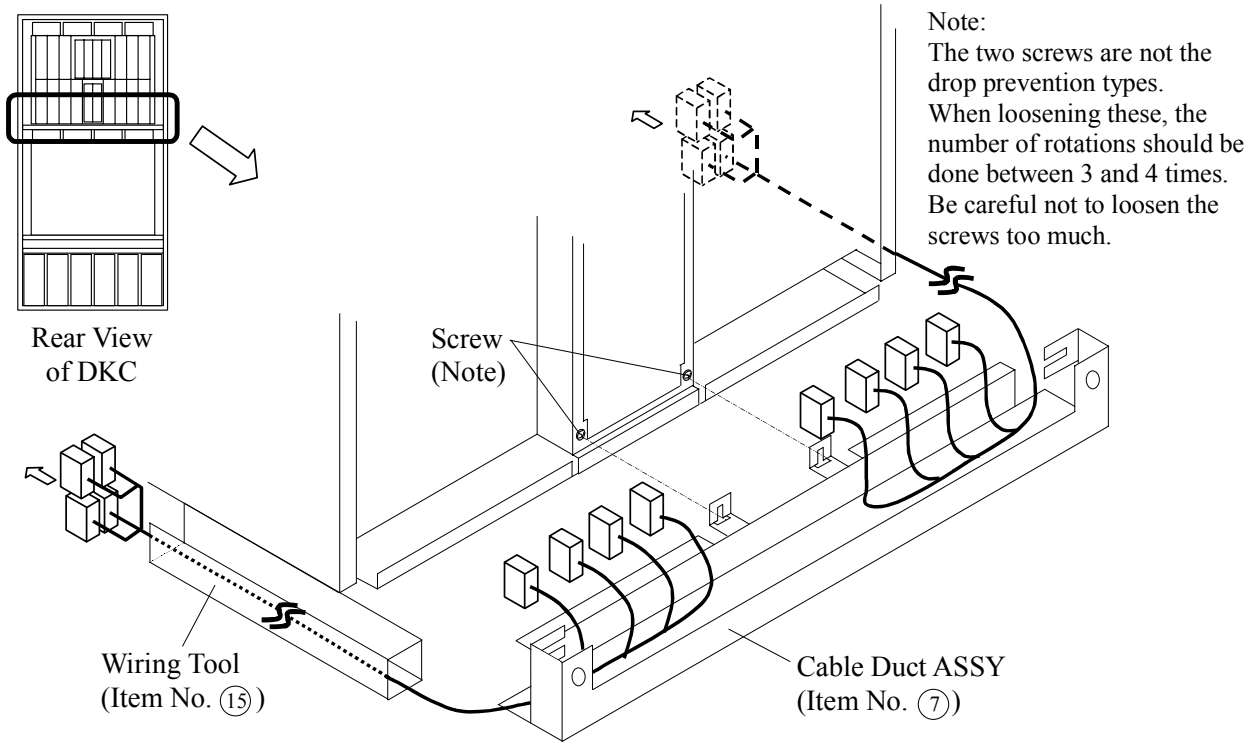

Fig. 3.21-10 Attachment of Cable Duct ASSY (Item Nos.⑦ and ⑮ in Parts List)

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q. Attach the cable cover and bracket.
q-1. Loosen the screw①.
q-2. Attach the cable cover. In this step, do not fasten the screws③.
q-3. Slide the bracket from right–hand side, and attach it.
q-4. Fix the bracket with the four screw②.
q-5. Fix the cable duct ASSY with the screw①.
q-6. Fix the cable cover with the two screws③.

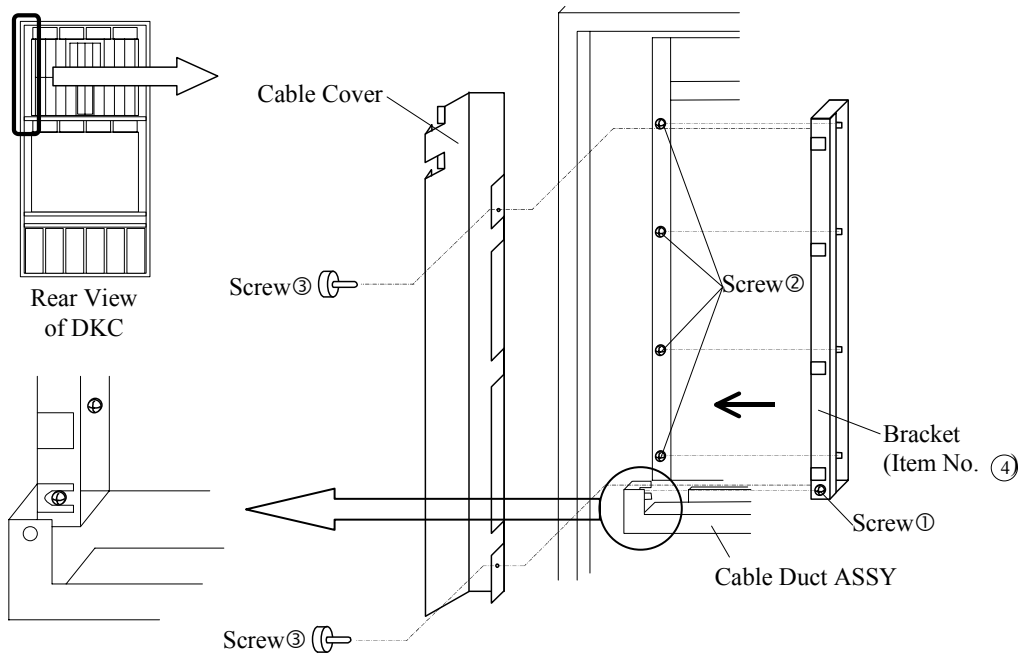

Fig. 3.21-11 Attachment of Covers (Item No.④ in Parts List)

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r. Attach the cable cover and bracket.
r-1. Loosen the screw①.
r-2. Attach the cable cover. In this step, do not fasten the screws③.
r-3. Slide the bracket from left–hand side, and attach it.
r-4. Fix the bracket with the four screw②.
r-5. Fix the cable duct ASSY with the screw①.
r-6. Fix the cable cover with the two screws③.

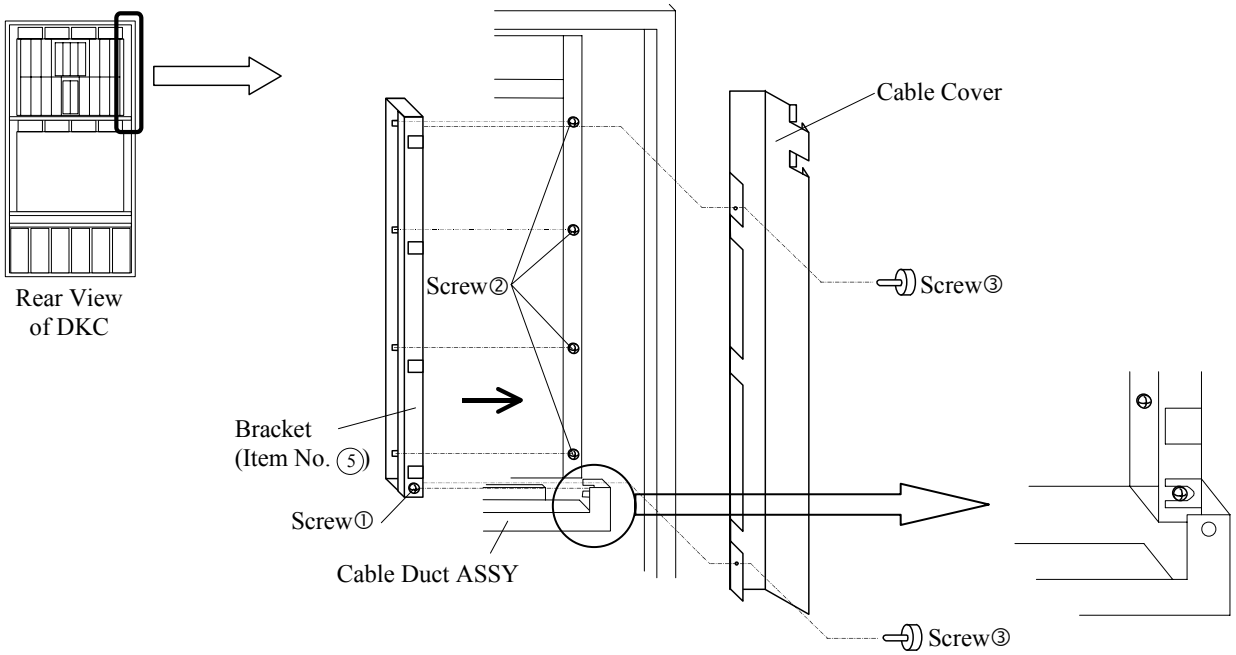

Fig. 3.21-12 Attachment of Covers (Item No.⑤ in Parts List)

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s. Route the cable from the rear side of the DKC to the front side of it, and then lead it in through the notch of the Front Logic Box. Fix the cables with the repeat binder. Refer to Fig. 3.21-13 and Fig. 3.21-14.

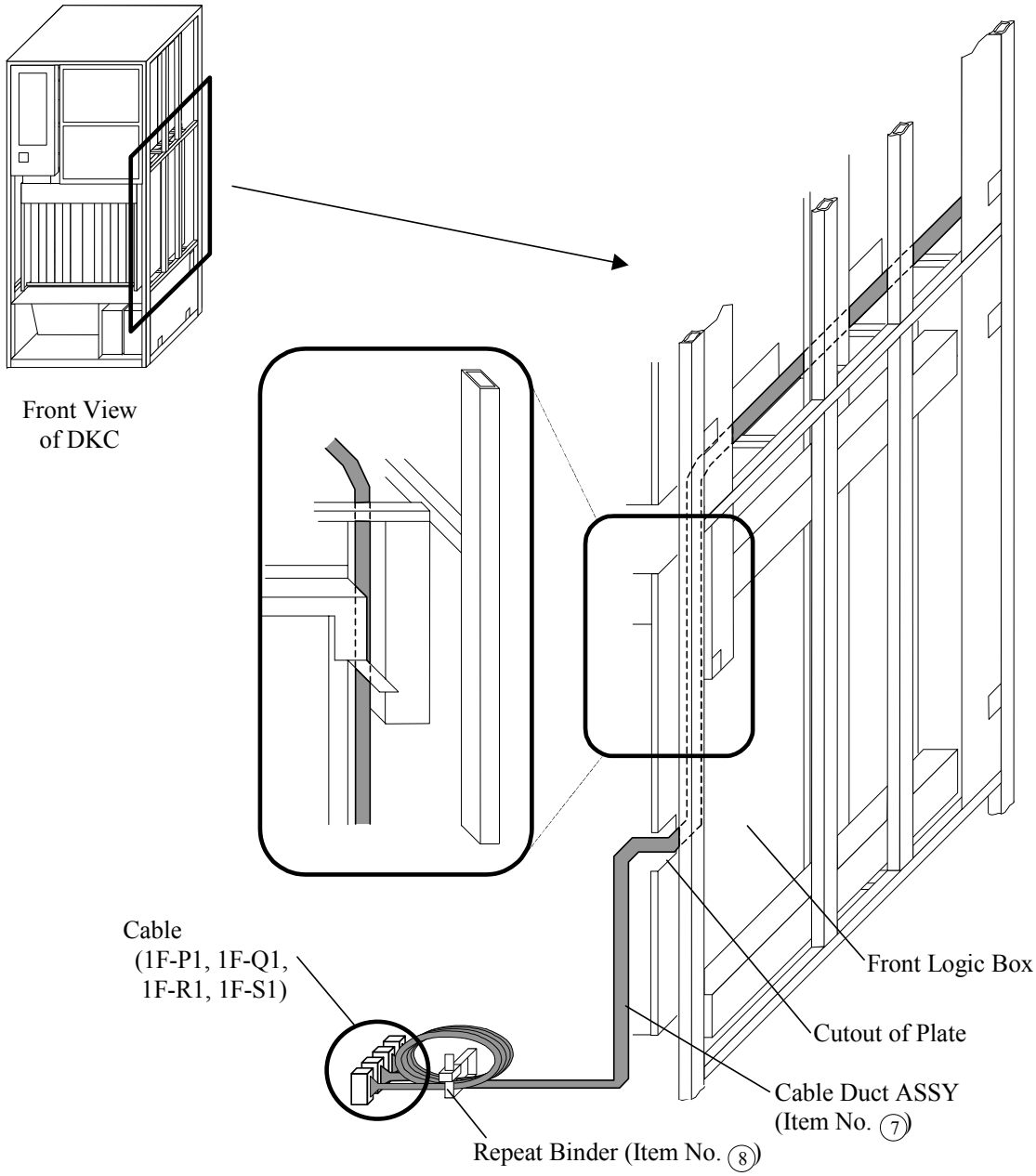

Fig. 3.21-13 Attachment of Cables (Item Nos. 7 and 8 in Parts List)

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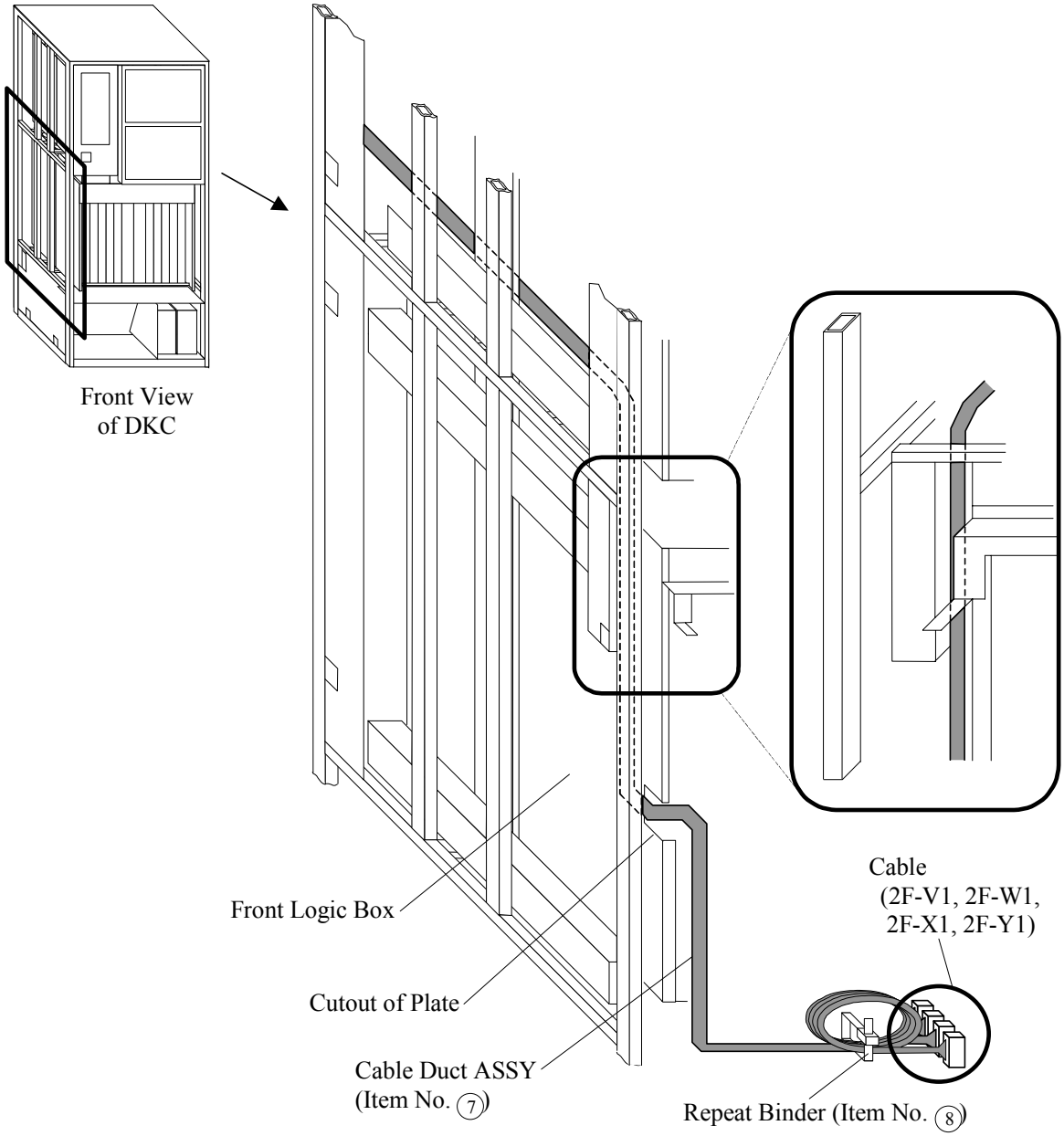

Fig. 3.21-14 Attachment of Cables (Item Nos.⑦ and ⑧ in Parts List)

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t. Attach the cover in the reverse order of step 2 c through j.

u. Stick the new label (3/12VPS) on the label stuck on the inlet cable.

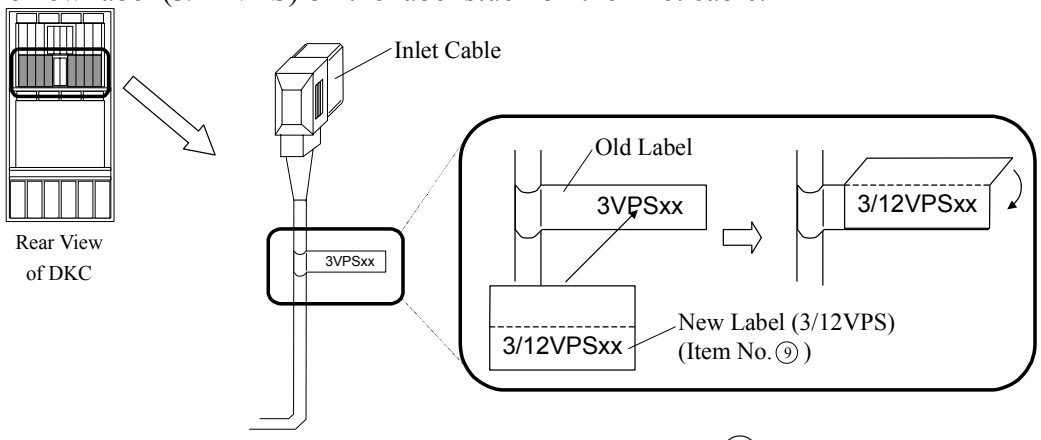
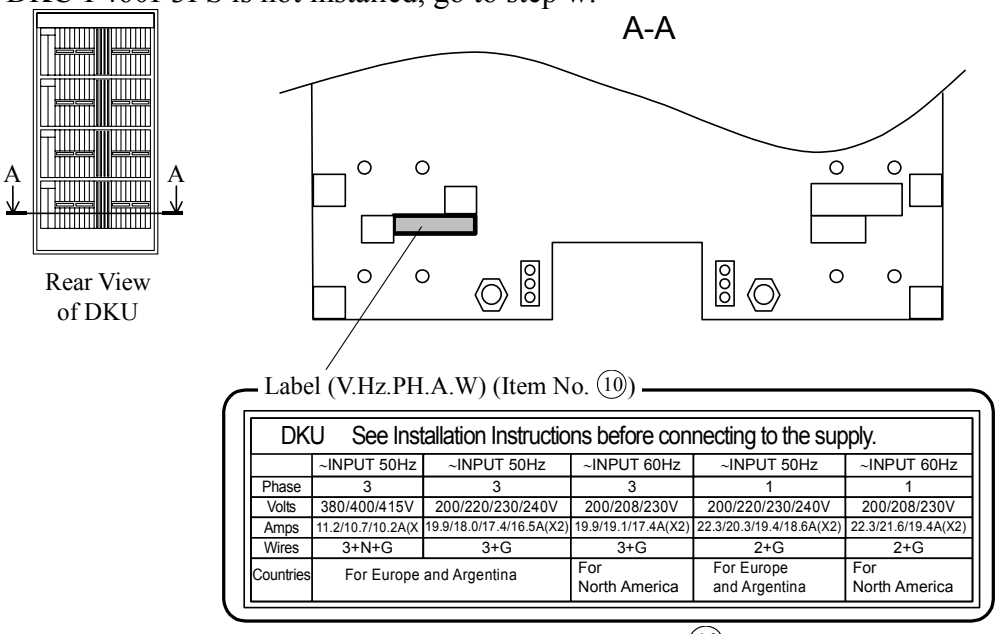


Fig. 3.21-15 Attachment of Labels (Item No.⑨ in Parts List)

Table 3.21-3 Label Name on the Inlet Cable

No.	Old Label	New Label
1	3VPS1A	3/12VPS1A
2	3VPS1B	3/12VPS1B
3	3VPS1C	3/12VPS1C
4	3VPS1D	3/12VPS1D
5	3VPS2A	3/12VPS2A
6	3VPS2B	3/12VPS2B
7	3VPS2C	3/12VPS2C
8	3VPS2D	3/12VPS2D

v. When the DKC-F460I-3PS is installed, stick the new label (V.Hz.PH.A.W) on the label stuck on all DKU frames.
When the DKC-F460I-3PS is not installed, go to step w.



DKU See Installation Instructions before connecting to the supply.

	~INPUT 50Hz	~INPUT 50Hz	~INPUT 60Hz	~INPUT 50Hz	~INPUT 60Hz
Phase	3	3	3	1	1
Volts	380/400/415V	200/220/230/240V	200/208/230V	200/220/230/240V	200/208/230V
Amps	11.2/10.7/10.2A(X	19.9/18.0/17.4/16.5A(X2)	19.9/19.1/17.4A(X2)	22.3/20.3/19.4/18.6A(X2)	22.3/21.6/19.4A(X2)
Wires	3+N+G	3+G	3+G	2+G	2+G
Countries	For Europe and Argentina		For North America	For Europe and Argentina	For North America

Fig. 3.21-16 Attachment of Label (Item No.⑩ in Parts List)

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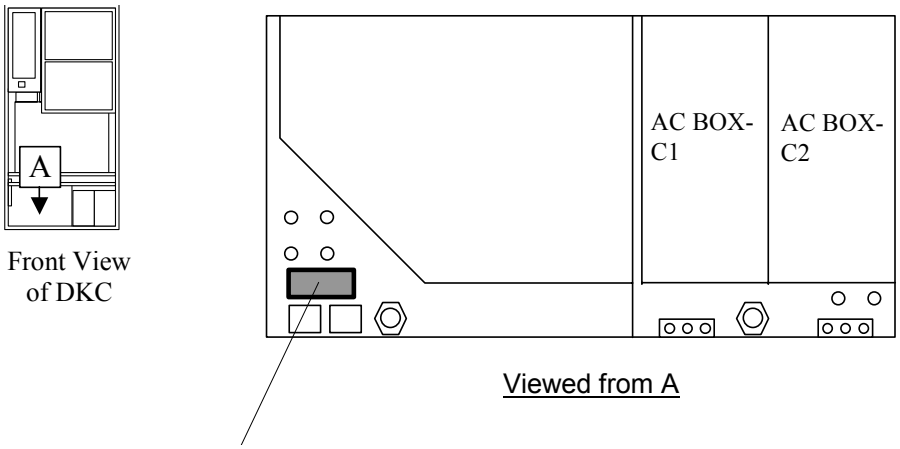
w. When the DKC-F460I-1PS, 1PSD or 3PSD is installed, stick the new label (V.Hz.PH.A.W) on the label stuck on the DKC frame.
When the DKC-F460I-1PS, 1PSD or 3PSD is not installed, go to step 3.



When the DKC-F460I-1PS is installed — Item No.⑪

DKC See Installation Instructions before connecting to the supply.		
	~INPUT 50Hz	~INPUT 60Hz
Phase	1	1
Volts	200/220/230/240V	200/208/230V
Amps	9.6/8.7/8.4/7.9A(X2)	9.6/9.2/8.4A(X2)
Wires	2+G	2+G
Countries	For Europe and Argentina	For North America

D#3265983-1 REV.0

When the DKC-F460I-1PSD or 3PSD is installed — Item No.⑫

DKC See Installation Instructions before connecting to the supply.					
	~INPUT 50Hz	~INPUT 50Hz	~INPUT 60Hz	~INPUT 50Hz	~INPUT 60Hz
Phase	3	3	3	1	1
Volts	380/400/415V	200/220/230/240V	200/208/230V	200/220/230/240V	200/208/230V
Amps	3.2/3.1/2.9A(X2)	6.1/5.5/5.4/5.1A(X2)	6.1/5.8/5.4A(X2)	[4.8(X2)/4.3(X2)/4.2(X2)/4.0A(X2)](X2)	[4.8(X2)/4.7(X2)/4.2A(X2)](X2)
Wires	3+N+G	3+G	3+G	2+G	2+G
Countries	For Europe and Argentina		For North America	For Europe and Argentina	For North America

D#3265984-1 REV.0

Fig. 3.21-17 Attachment of Label (Item Nos.⑪ and ⑫ in Parts List)

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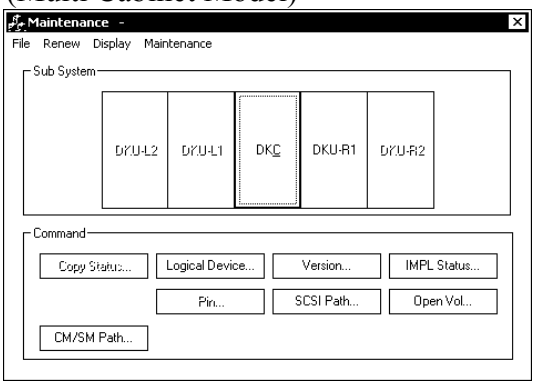
3. SVP MODE CHANGE

(1) <Initial screen>

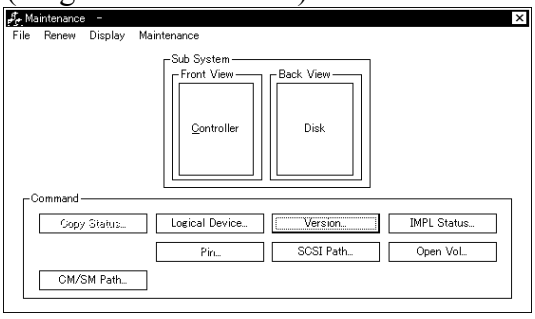
(2) <Operation mode change>
Change the mode to [Modify Mode].
Select (CL) [Maintenance].

(3) <Maintenance window>
The 'Maintenance' window is displayed.

(Multi Cabinet Model)



(Single Cabinet Model)



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4. FAN Assembly exchange

Replace the Fan Assembly (FPSFAN11), which is listed as No.1 in Table 3.21-4, following the replacement procedure (on pages INST03-NEN-140 to INST03-NEN-190). Then, replace the No.2 (FPSFAN12), No.3 (FPSFAN21), and so on in this order one by one.

Table 3.21-4 FAN Assembly exchange order

No.	Location No.	Parts Name	Cluster	Remark
1	FPSFAN11	FAN Assembly (B)	Cluster 1	
2	FPSFAN12			
3	FPSFAN21		Cluster 2	
4	FPSFAN22			
5	FLGFAN11	FAN Assembly (A)	Cluster 1	
6	FLGFAN12			
7	FLGFAN21		Cluster 2	
8	FLGFAN22			
9	RPSFAN11	FAN Assembly (B)	Cluster 1	
10	RPSFAN12			
11	RPSFAN21		Cluster 2	
12	RPSFAN22			
13	RLGFAN11	FAN Assembly (A)	Cluster 1	
14	RLGFAN12			
15	RLGFAN21		Cluster 2	
16	RLGFAN22			

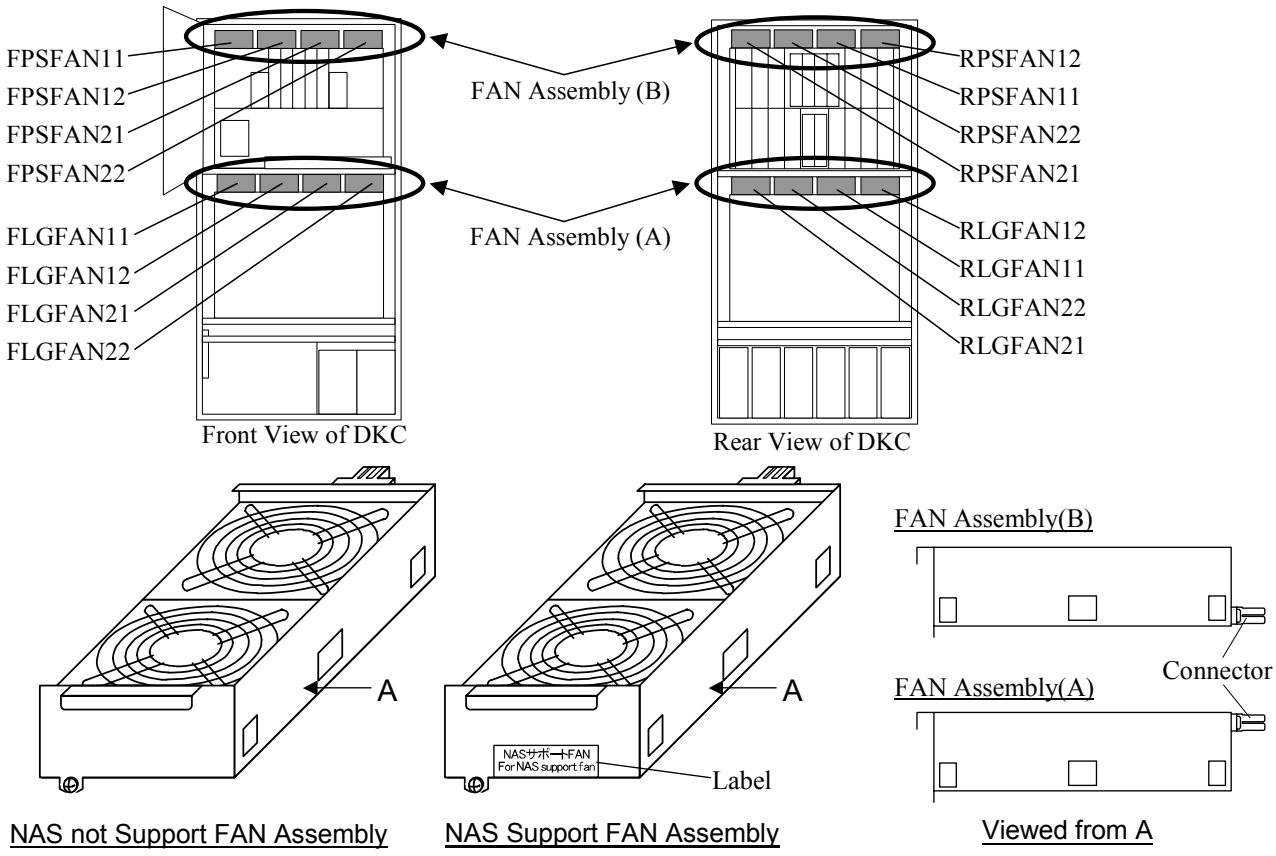

Fig. 3.21-18 Mounting Location of FAN Assembly

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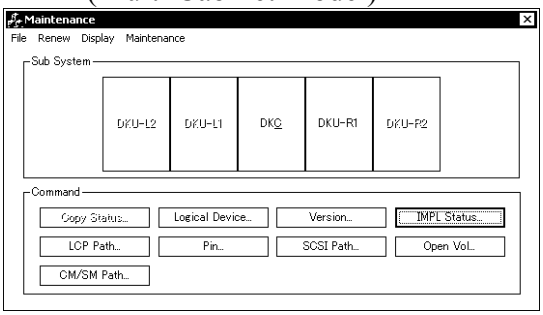
4-1 SVP PRE-PROCEDURE (FAN Assembly)

(1) <Maintenance window>

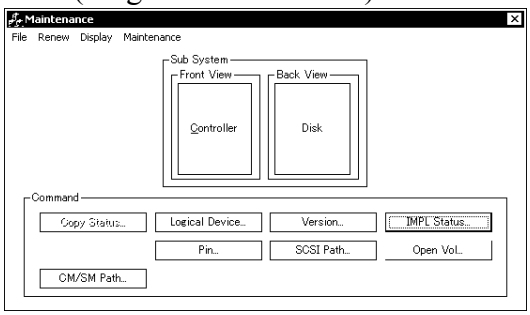
(Multi Cabinet Model)
In the 'Maintenance' window, check and select (CL) [DKC] to be replaced.

(Single Cabinet Model)
In the 'Maintenance' window, check and select (CL) [Controller] to be replaced.

(Multi Cabinet Model)



(Single Cabinet Model)

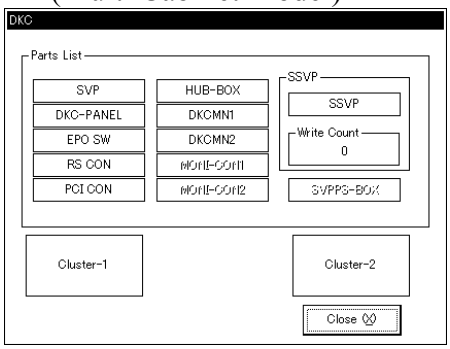


(2) <DKC window>

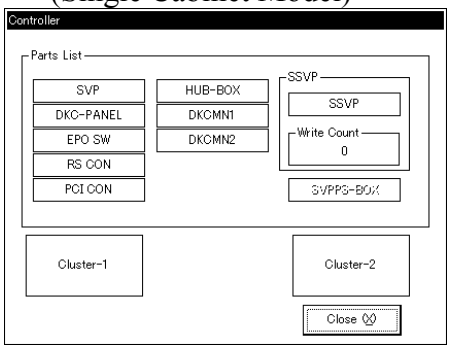
(Multi Cabinet Model)
Select (CL) [Cluster-n] in the 'DKC'.

(Single Cabinet Model)
Select (CL) [Cluster-n] in the 'Controller'.

(Multi Cabinet Model)



(Single Cabinet Model)



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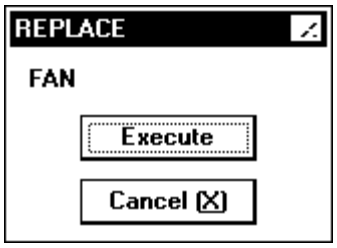
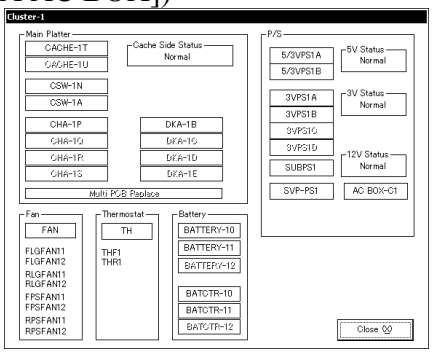
(3) <Select special part>
If any other message than the list is displayed, see the SVP Message Section (SVPMSG00-00).

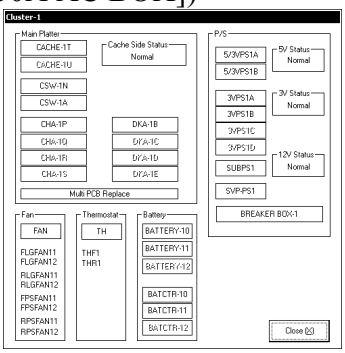
Select (CL) part [FAN] to be replaced from [Cluster-n] window and select (CL) [Execute].



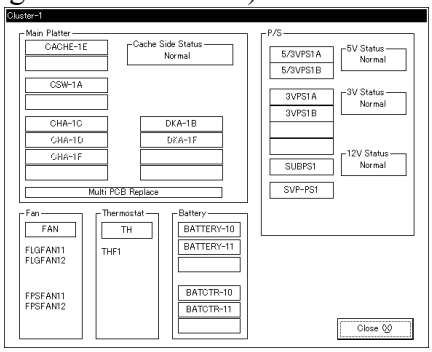
(Multi Cabinet Single Phase Model, Multi Cabinet 3 Phase Model [30A AC BOX])



(Multi Cabinet 3 Phase Model [Without 30A AC BOX])



(Single Cabinet Model)



(ex. Cluster-1)

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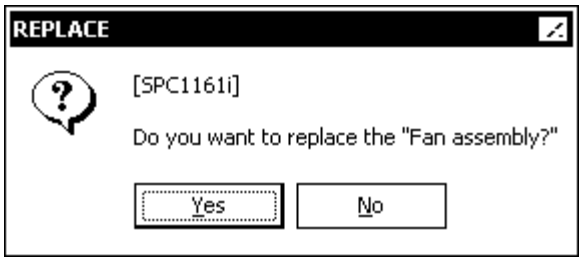
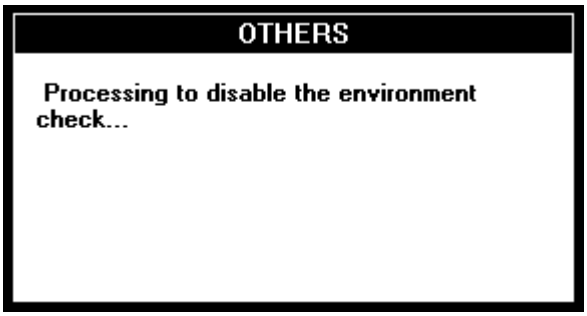
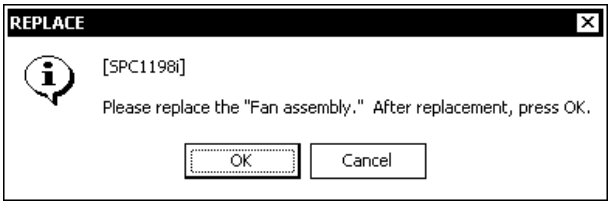
(4) <Check beginning of special part Replacement>
Select (CL) [Yes] in response to “Do you want to replace the "Fan assembly?"”.



(5) <Check environment monitor stopped state>
“Processing to disable the environment check...” is displayed.



(6) <Special part Replacement>
At this point refrain from pressing the [OK] button.
“Please replace the "Fan assembly." After replacement, press OK.” is displayed.
(Reply with [OK] after replacing the special part.)



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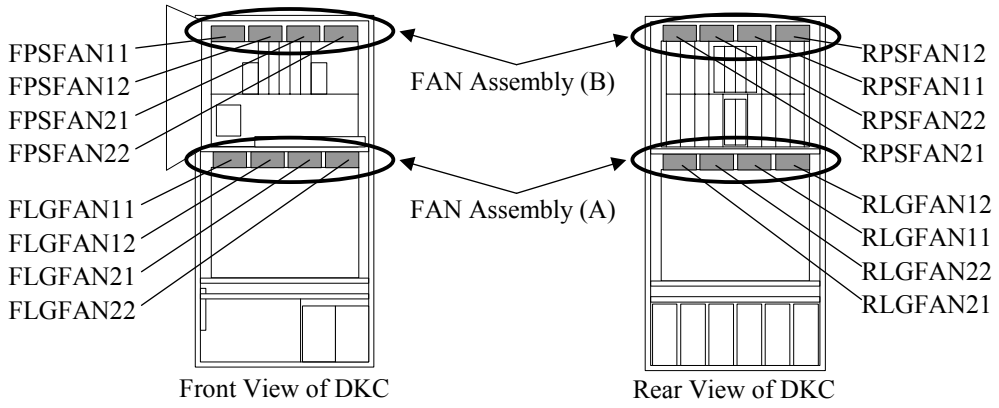
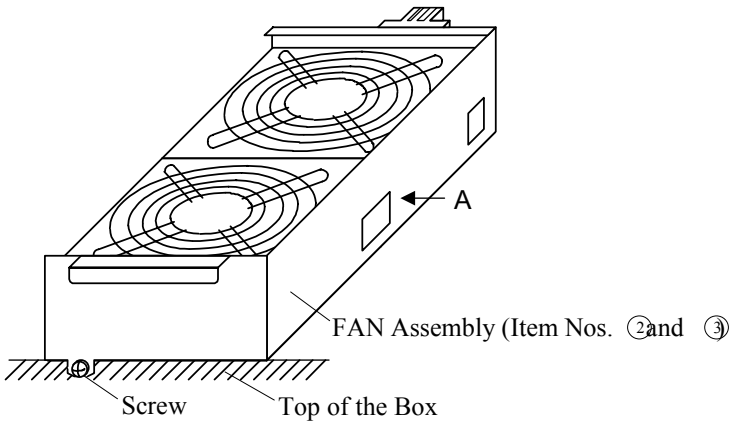
4-2 FAN Assembly Exchange

⚠ CAUTION

Hazardous rotating mechanism:
Can cause injury if touched. Stay clear of it when machine is running.

a. Loosen the screw and remove one FAN Assembly you intend to remove.
b. Insert the FAN Assembly for NAS and fasten the screw.





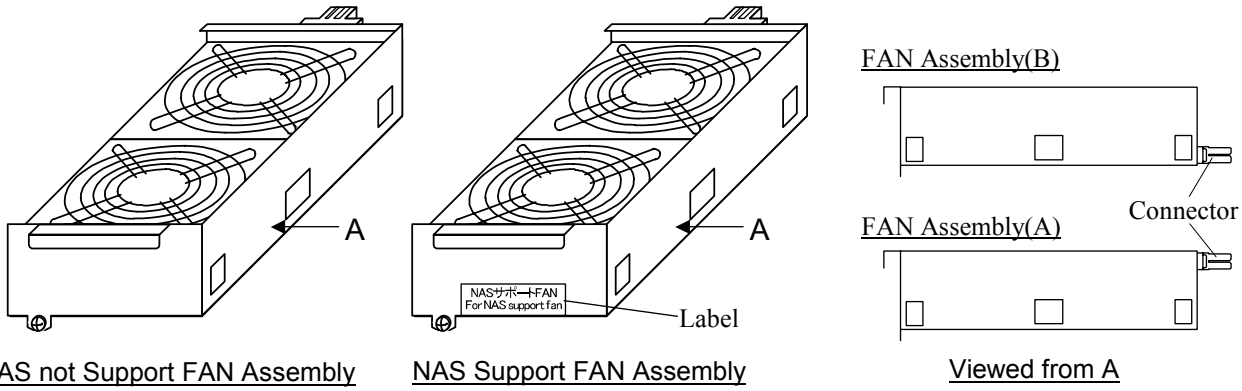


Fig. 3.21-19 Location of FAN Assembly (Item Nos.② and ③ in Parts List)

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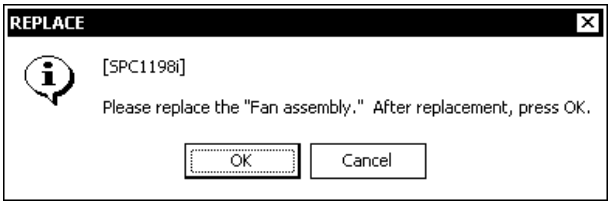
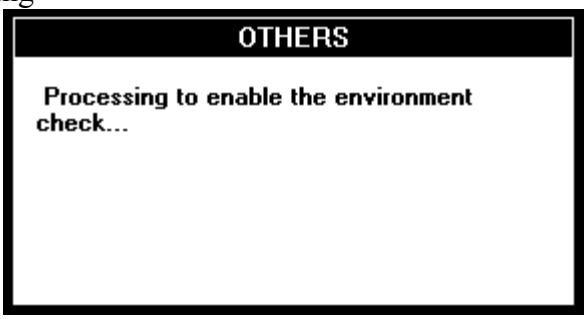
4-3 SVP POST-PROCEDURE (FAN Assembly)

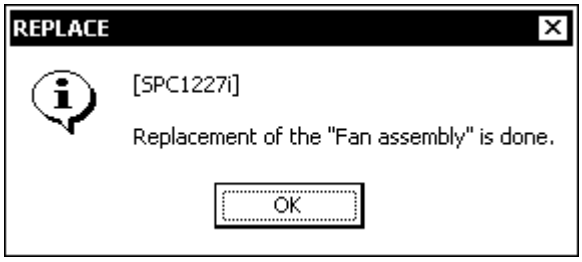
(1) <Check special part replacement>
Select (CL) [OK] in response to “Please replace the "Fan assembly." After replacement, press OK.”.



(2) <Checking the environment monitor start processing>
“Processing to enable the environment check...” is displayed.



(3) <Checking the end of replacement>
Select (CL) [OK] in response to “Replacement of the "Fan assembly" is done.”.



(4) <Confirm status>
Confirm the status display.
If button is normal (The string is normally display), go to step (5).
If button is abnormal (The string is blinking), replace the target part again, or see TROUBLE SHOOTING SECTION.

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(5) <SIM Complete>
See SVP02-580.

(Multi Cabinet Model)
Close 'Cluster-X' window.
Close 'DKC' window.
Close 'Maintenance' window.

(Single Cabinet Model)
Close 'Cluster-X' window.
Close 'Controller' window.
Close 'Maintenance' window.

(6) Repeat the carrying out of the procedure for the next Fan Assembly. When the replacement of all the Fan Assemblies is completed, go to Step 5.

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5. Power Supply Exchange

(1) Replace the power supply (3VPS1A), which is listed as No.1 in Table 3.21-5, with the 3/12V power supply (3/12VPS1A) following the replacement procedure (on pages INST03-NEN-210 to INST03-NEN-270). Then, replace the No.2 (3VPS1B), No.3 (3VPS2A), and so on in this order one by one.

> Note: When the first power supply is replaced, all the indications of the power supplies on the Maintenance window is changed from 3VPS to 3/12VPS. Although the indications of the power supplies that have not been replaced yet are also changed from 3VPS to 3/12VPS, the power supplies concerned must be replaced actually.

Table 3.21-5 Power Supply Exchange Order

No.	Location No.		Parts Name		Cluster	Remarks
	Old	New	Old	New		
1	3VPS1A	3/12VPS1A	3V PS	3/12V PS	Cluster 1	
2	3VPS1B	3/12VPS1B	3V PS	3/12V PS		
3	3VPS2A	3/12VPS2A	3V PS	3/12V PS	Cluster 2	
4	3VPS2B	3/12VPS2B	3V PS	3/12V PS		

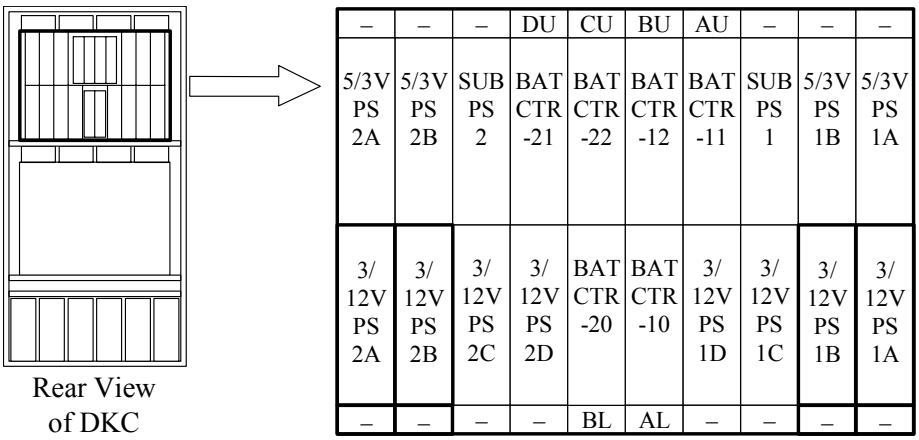

Fig. 3.21-20 Location of Power Supply

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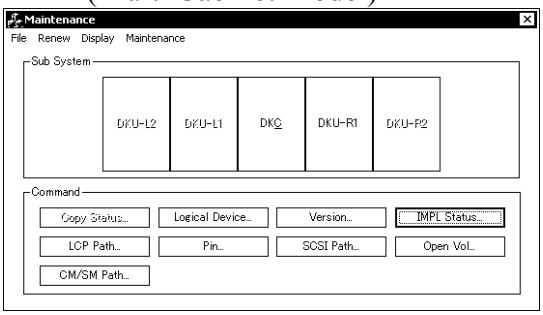
5-1 SVP Pre-Procedure (Power Supply)

(1) <Maintenance window>

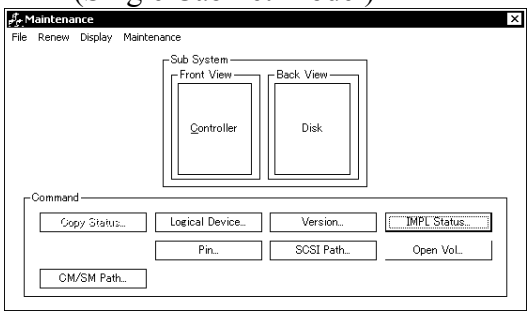
(Multi Cabinet Model)
In the 'Maintenance' window, check and select (CL) [DKC] to be replaced.

(Single Cabinet Model)
In the 'Maintenance' window, check and select (CL) [Controller] to be replaced.

(Multi Cabinet Model)



(Single Cabinet Model)

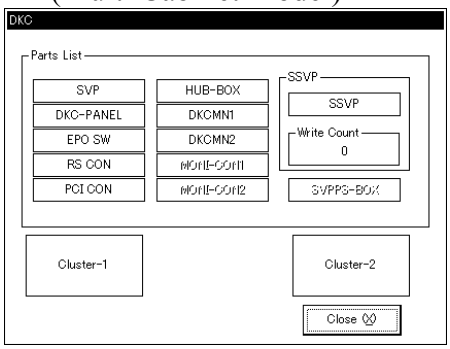


(2) <DKC window>

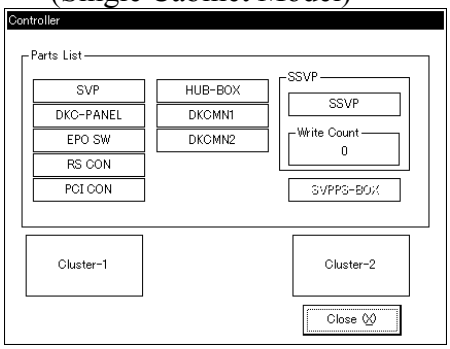
(Multi Cabinet Model)
Select (CL) [Cluster-n] in the 'DKC'.

(Single Cabinet Model)
Select (CL) [Cluster-n] in the 'Controller'.

(Multi Cabinet Model)



(Single Cabinet Model)



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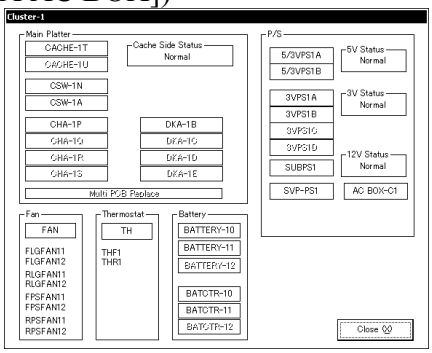
(3) <Select special part>
If any other message than the list is displayed, see the SVP Message Section (SVPMSG00-00).

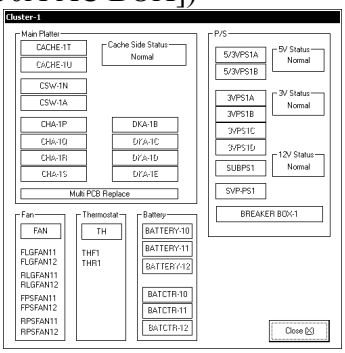
(Multi Cabinet Single Phase Model, Multi Cabinet 3 Phase Model [30A AC BOX])



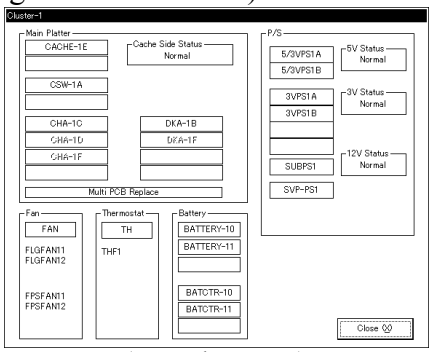
When replacing the first power supply:
Select (CL) the part to be replaced, that is, “3VPSn” in the “Cluster-n” window.
Note: The part name is indicated as “3/12VPSn” in the following explanations of the procedure. Please interpret it as “3VPSn” when refer to the procedure.
Go to Step (4).

When replacing the second or the following power supply:
Select (CL) the part to be replaced, that is, “3/12VPSn” in the “Cluster-n” window.
Go to Step (5).

(Multi Cabinet 3 Phase Model [Without 30A AC BOX])



(Single Cabinet Model)



(ex. Cluster-1)

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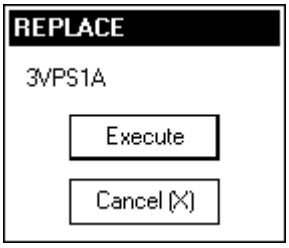
(4)

Check the [Install ENABLER] check box, select (CL) [OK] in response to “If you want to install the ENABLER KIT, select the [Install ENABLER] check box.”.

(ex. 3/12VPS1A)

(5)

Confirm windows for replacement is displayed. Select (CL) [Execute].



(ex. 3VPS1A)

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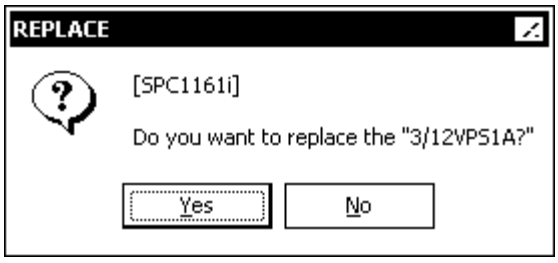
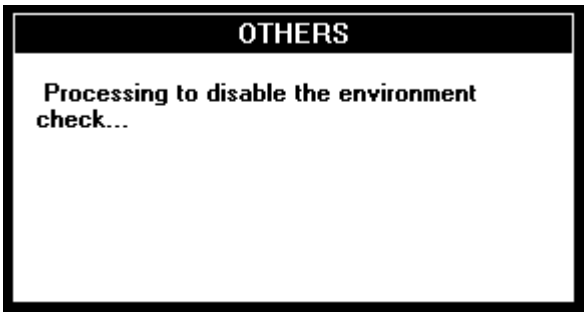
(6) <Check beginning of special part Replacement>
Select (CL) [Yes] in response to “Do you want to replace the "3/12VPSn?"”.



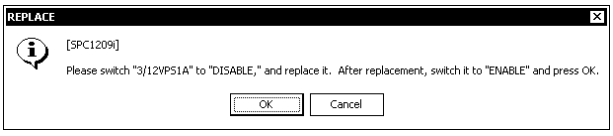
(ex. 3/12VPS1A)

(7) <Check matching power supply>
The SVP automatically checks the power supply to see if it is replaceable.

(8) <Environment monitor state>
“Processing to disable the environment check...” is displayed.



(9) <Special part replacement>
At this point refrain from pressing the [OK] button.
The message shown on the right is displayed.
(Reply with [OK] after replacing the special part.)



(ex. 3/12VPS1A)

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5-2 Power Supply Exchange

a. Set PS Enable/Disable Switch to Disable (DOWN).

⚠ CAUTION

A system down may be caused by setting the PS Enable/Disable switch of the power supply other than that to be replaced to “Disable”. Make sure that it is a power supply to be replaced.

b. Remove the power supply lever and disconnect the inlet cable.
c. Loosen the screw and remove the 3V power supply.
d. Confirm that PS Enable/Disable Switch of 3/12V power supply is set to Disable (DOWN).
e. Insert the 3/12V power supply and fasten the screw.
f. Connect the inlet cable (3/12VPSxx) and secure it with the lever.
g. Disconnect the dummy connector from the 3/12V power supply and connect the 12V power cable (3/12VPSxx-N) to it.

⚠ CAUTION

A system down may be caused if the 12V power cable is not connected to the power supply. Be sure to connect the 12V power cable to the power supply.

h. Set PS Enable/Disable Switch to Enable (UP).

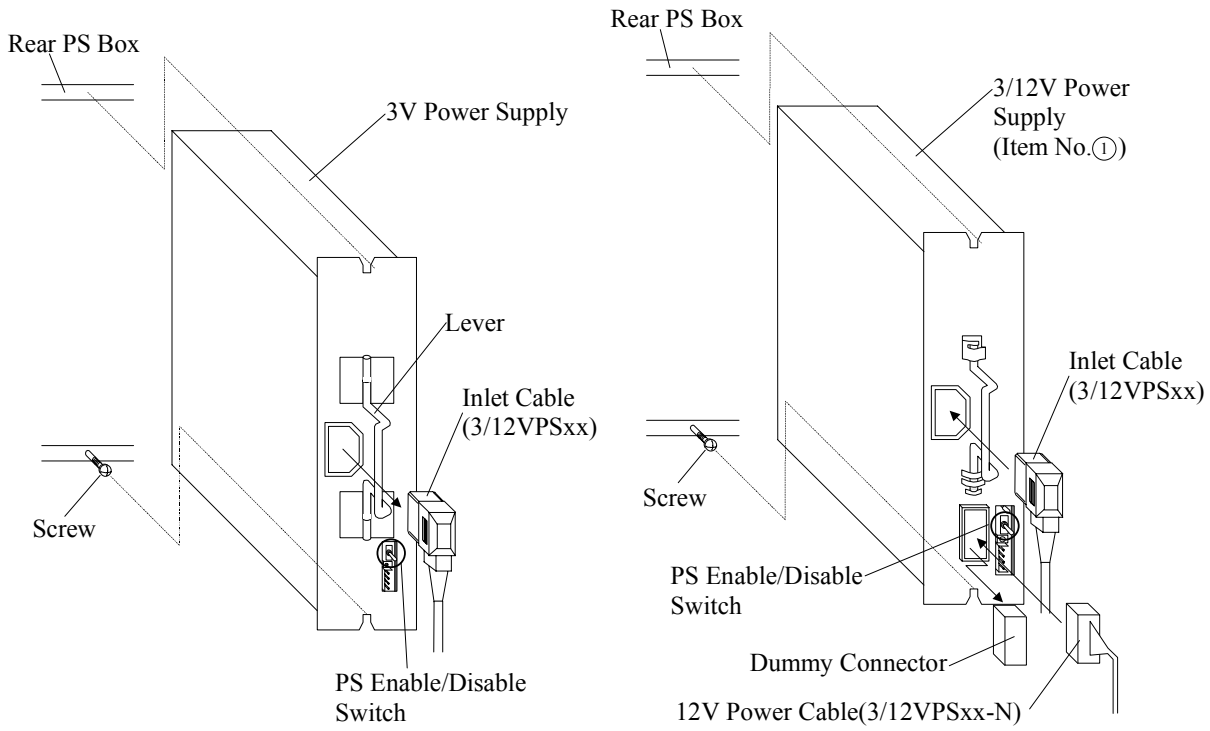

Fig. 3.21-21 Replacement of Power Supply (Item No.① in Parts List)

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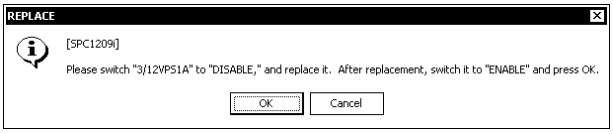
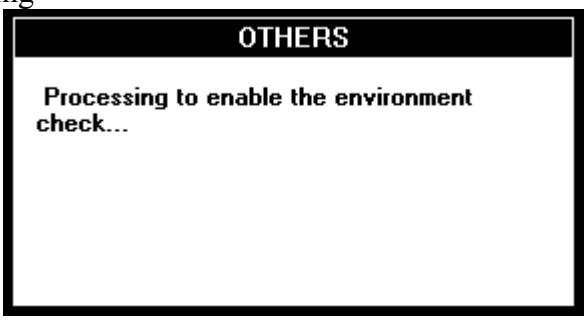
5-3 SVP Post-Procedure (Power Supply)

(1) <Check special part replacement>
Select (CL) [OK] in response to “Please switch "3/12VPSn" to "DISABLE," and replace it. After replacement, switch it to "ENABLE" and press OK.”.

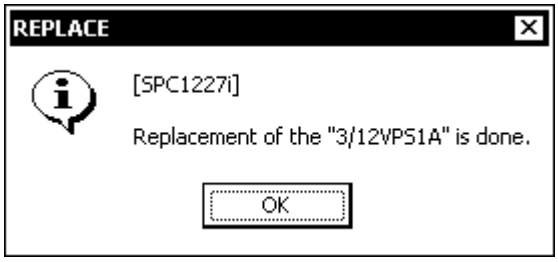


(ex. 3/12VPS1A)

(2) <Checking the environment monitor start processing>
“Processing to enable the environment check...” is displayed.



(3) <Checking the end of replacement>
Select (CL) [OK] in response to “Replacement of the "3/12VPSn" is done.”.



(ex. 3/12VPS1A)

(4) <Confirm status>
Confirm the status display.
If button is normal (The string is normally display), go to step (5).
If button is abnormal (The string is blinking), replace the target part again, or see TROUBLE SHOOTING SECTION.

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(5) <Confirm Cluster>
If Cluster is blocked, recover it.
See SVP02-1110.

(6) <SIM Complete>
See SVP02-580.

(Multi Cabinet Model)
Close 'Cluster-X' window.
Close 'DKC' window.
Close 'Maintenance' window.

(Single Cabinet Model)
Close 'Cluster-X' window.
Close 'Controller' window.
Close 'Maintenance' window.

(7) Repeat carrying out of the procedure for the next switching power supply. When the replacement of all the power supplies is completed, go to Step 6.

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6. SVP Post Procedure

(1) <SVP window>

(2) <Changing the SVP operation mode>
Change the mode to [View Mode].

7. Attach the cover.

a. Attach the Front Logic Box cover.

b. Attach the Rear PS Box cover for NAS. (Item No.⑥ in Parts List)

8. Attach the nameplate.

a. Attach the nameplate regardless of the model number from the left of the cover.

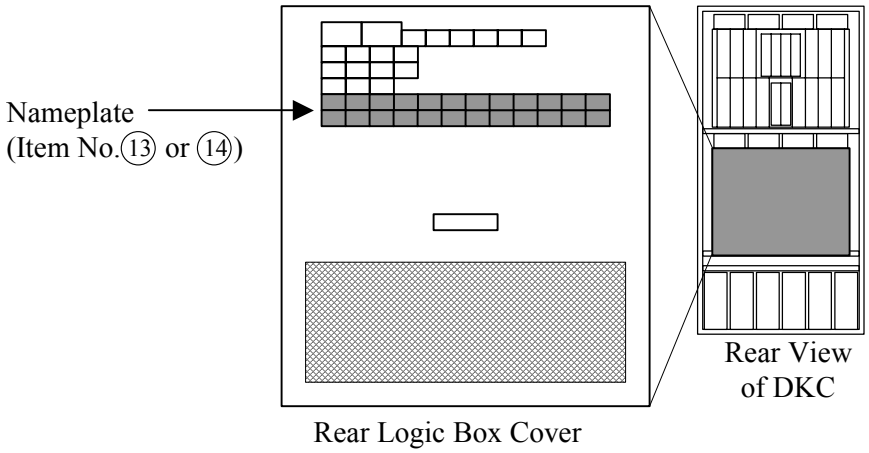

Fig. 3.21-22 Attachment of Nameplate (Item No.⑬ or ⑭ in Parts List)

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3.22 Installation of the NAS Available Additional Power Supply (DKC-F460I-NAPS)

Note: The NAS Available Additional Power Supply (DKC-F460I-NAPS) is indispensable option in the following case.
a: When the total numbers of the installation of CHA and DKA option are 4 or more.
b: When NAS CHA is installed in the CHA slot of 3rd CHA (Add.2) or 4th CHA (Add.3). (Even when the total number of the CHA/DKA options does not exceed four sets, the A/H-F65A2-NAPS must be installed if the NAS CHA is to be installed as the 3rd CHA or 4th CHA.)
c: When DKC-F460I-80 is installed in the existing DKC which adds NAS CHA. In this case, DKC-F460I-80 is exchanged for DKC-F460I-NAPS.
This model is applicable also to NAS CHA not support model as a substitute of DKC-F460I-80.

Table 3.22-1 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKC-F460I-NAPS	3/12VPS	5519715-A	4	
		Nameplate (HDS)	2105902-142	1	RSD
			2105903-142		HICAM
			2105903-242		HICEF
		Nameplate (HP)	2105902-242	1	RSD
			2105903-342		HICAM
			2105903-442		HICEF

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(1) Procedure for short circuit check on the power supply

a. Check the power supply for short circuit by connecting the voltage checking jig to the short circuit check point of the power supply as shown below.

b. Measure the resistance at the check points on the individual power supply before installation shown below. Confirm that the measured resistance values are over the value shown in the table below. If the resistance values are not over the value, replace it to the new part.

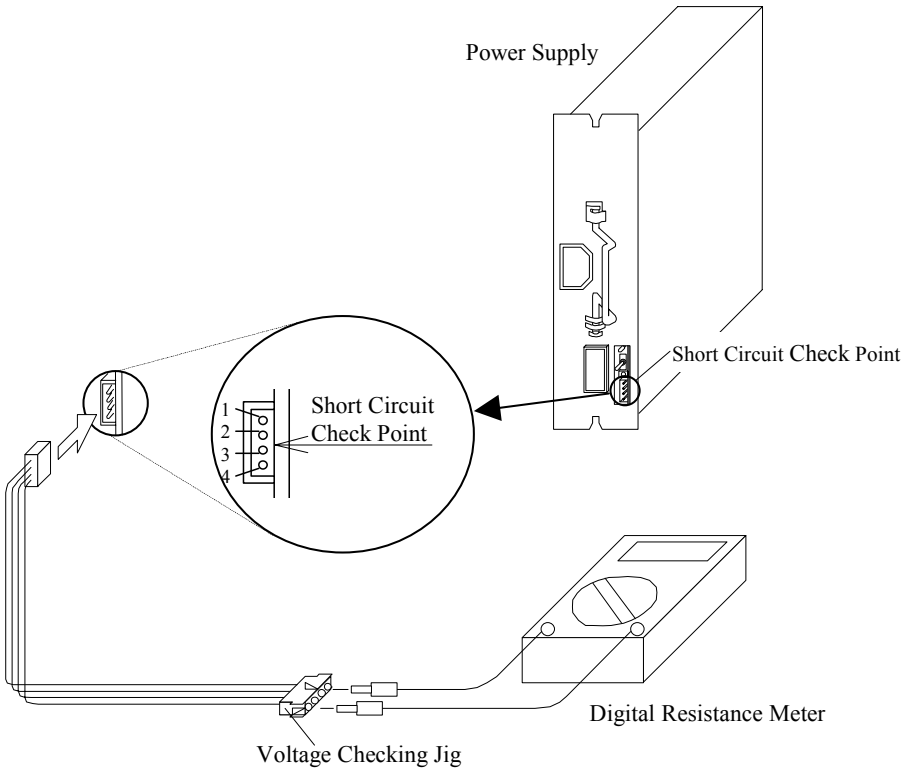

Fig. 3.22-1 Short Circuit Check Point

Table 3.22-2 Short Circuit Check Point

PS	Check pin	Resistance
3/12V PS	Between 1 and 4	1.7 kΩ
	Between 2 and 4	1.7 kΩ

Note: Pin number 4 is ground.

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(2) When adding the NAS Available Additional Power Supply (DKC-F460I-NAPS), the procedure for the addition varies depending on whether the DKC Additional Power Supply (DKC-F460I-80) has been installed or not. Go to the appropriate procedure referring to the following table.

Table 3.22-3 Work Procedure Table

No.	Condition of Work Procedure	Page
1	When the DKC Additional Power Supply (DKC-F460I-80) is not installed, and DKC-F460I-NAPS is installed in NAS CHA support model	INST03-NAP-30
2	When the DKC Additional Power Supply (DKC-F460I-80) is not installed, and DKC-F460I-NAPS is installed in NAS CHA not support model as a substitute of DKC-F460I-80	INST03-NAP-200
3	When the DKC Additional Power Supply (DKC-F460I-80) is installed	INST03-NAP-110

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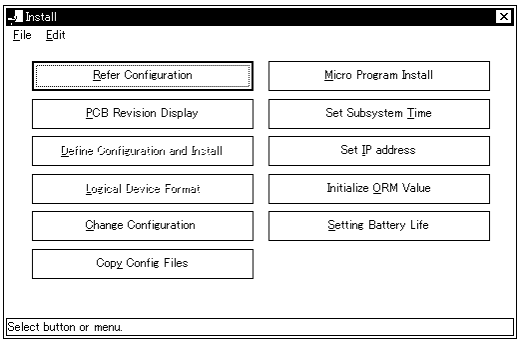
3.22.1 When the DKC Additional Power Supply (DKC-F460I-80) is not installed, and DKC-F460I-NAPS is installed in NAS CHA support model

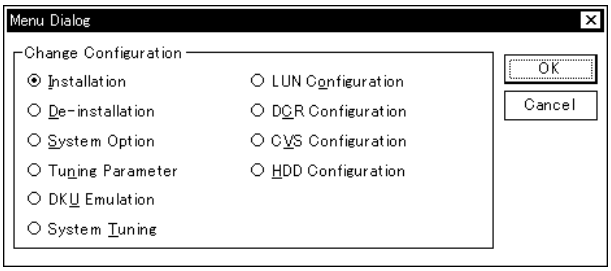
1. Setting up the New Device Structure Information

(1) <Mode Change>
Change the mode to Modify Mode.
Select (CL) [Install].

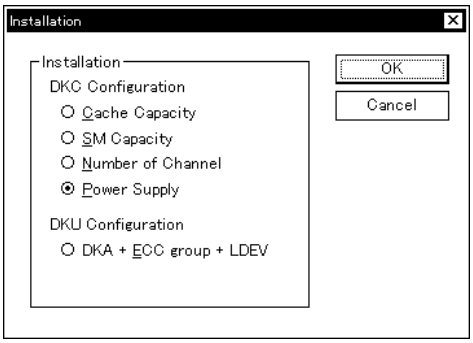
(2) <Start the 'Menu Dialog' screen>
Select (CL) [Change Configuration].



(3) <Start Device Structure Setup screen>
Select (CL) [Installation] in the 'Menu Dialog' dialog box and select (CL) [OK].



(4) <Select a part to be changed>
Select (CL) [Power Supply], and select (CL) [OK].



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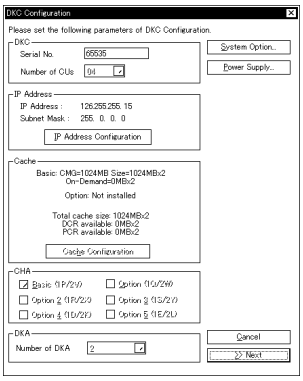
2. SVP pre procedure

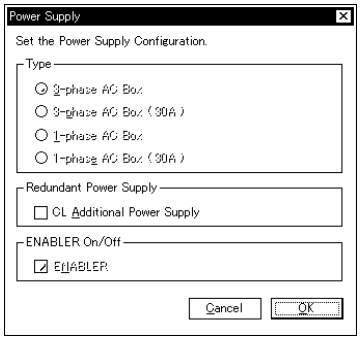
(1) <Update Configuration Information>
Select (CL) [Power Supply] in the 'DKC Configuration' screen.
Make sure that the entered item is correct and select (CL) [>>Next].

Note: In case of Single Cabinet Model, [Power Supply] is not displayed.

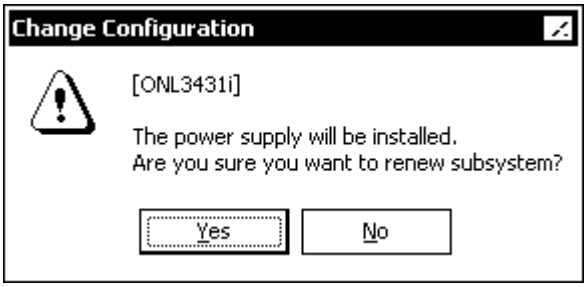


(2) <Define Redundant Power Supply>
Select (CL) redundant power supply to be added in the 'Redundant Power Supply'.
Select (CL) [OK]. Return to step (1).

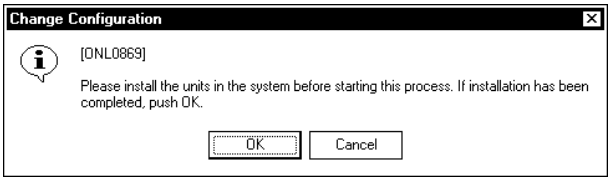
Note: If entered item is wrong, the part not to be installed or de-installed may be blocked.



(3) <Start installation>
Select (CL) [Yes] in response to "The power supply will be installed. Are you sure you want to renew subsystem?".



(4) The message shown in the right figure is displayed.



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3. Installation Procedure of the NAS Available Additional Power Supply

3-1 Confirmation of the PS Enable/Disable Switch

a. Confirm the PS Enable/Disable Switch is turned to (DOWN) Disable.

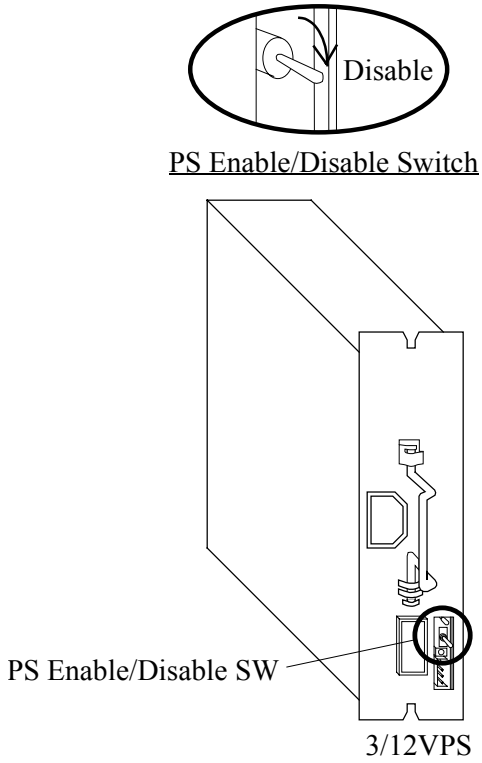

Fig. 3.22.1-1 Switch

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3-2 Installation of the additional power supply

a. Open the locking clamps and remove the inlet cables from the inserting locations. Refer to Table 3.22.1-1, Fig. 3.22.1-2, and Fig. 3.22.1-3.
b. Loosen the screws and remove the dummy plates.
c. Install the additional power supplies in the correct locations and fasten the screws. Refer to Table 3.22.1-1, Fig. 3.22.1-2, and Fig. 3.22.1-4.

Note: Dummy plates should be stored for future use in De-installation.

Table 3.22.1-1 Inserting Location

No.	Part Name	PS Location		Remarks
		Cluster 1	Cluster 2	
1	3/12V Power Supply	3/12VPS1C	3/12VPS2C	
2	3/12V Power Supply	3/12VPS1D	3/12VPS2D	

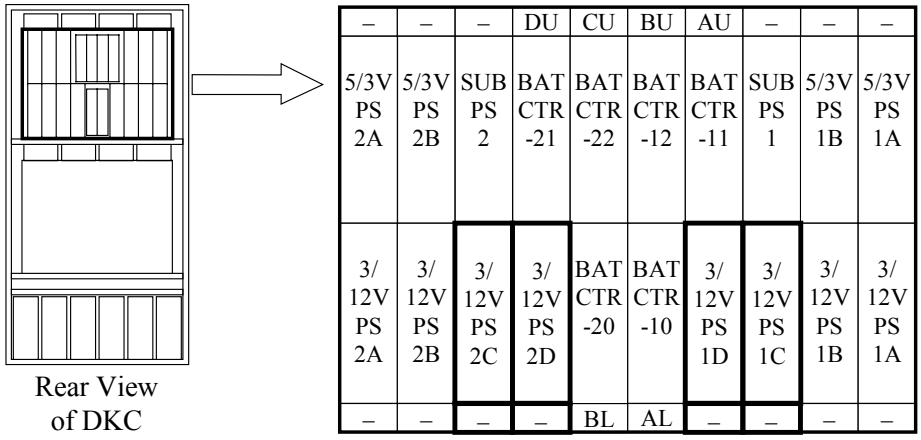

Fig. 3.22.1-2 Inserting Location

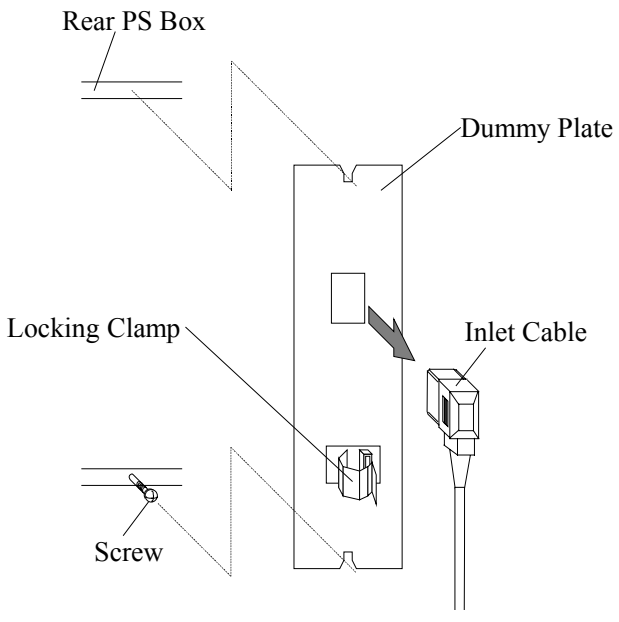

Fig. 3.22.1-3 Removal of Dummy Plate

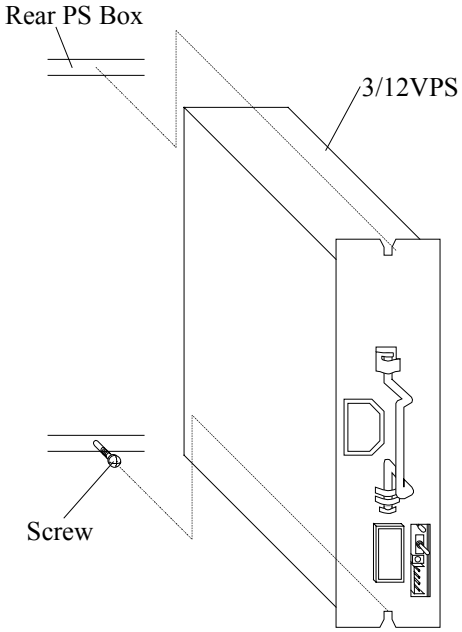

Fig. 3.22.1-4 Installation of Power Supply

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3-3 Connection of the cables

a. Connect the inlet cables to the power supplies and fix them with the lever.
b. Disconnect the dummy connectors from the power supplies and connect the 12V power cables to them.

⚠ CAUTION

A system down may be caused if the 12V power cable is not connected to the power supply. Be sure to connect the 12V power cable to the power supply.

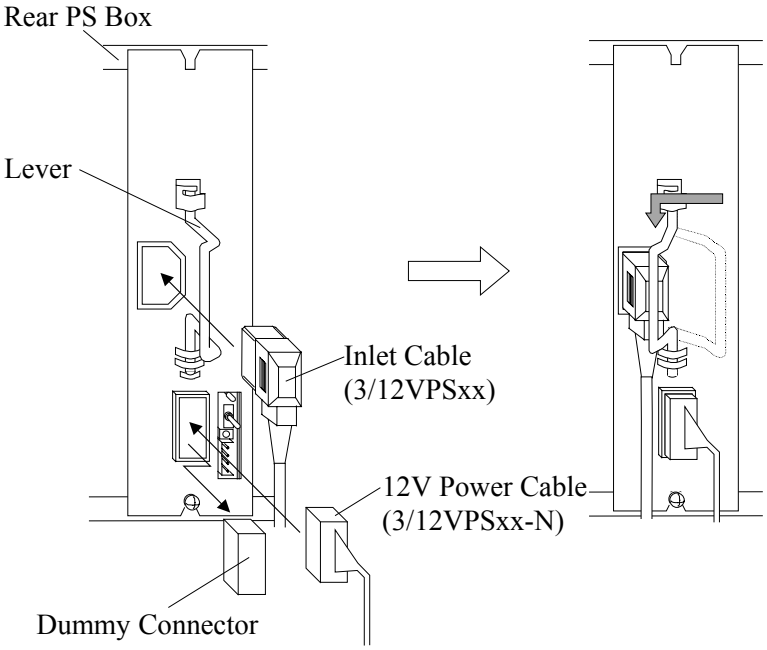

Fig. 3.22.1-5 Connection of Cable

3-4 Turn on the Additional Power Supply

a. Turn the PS Enable/Disable Switch to (UP) **Enable**.

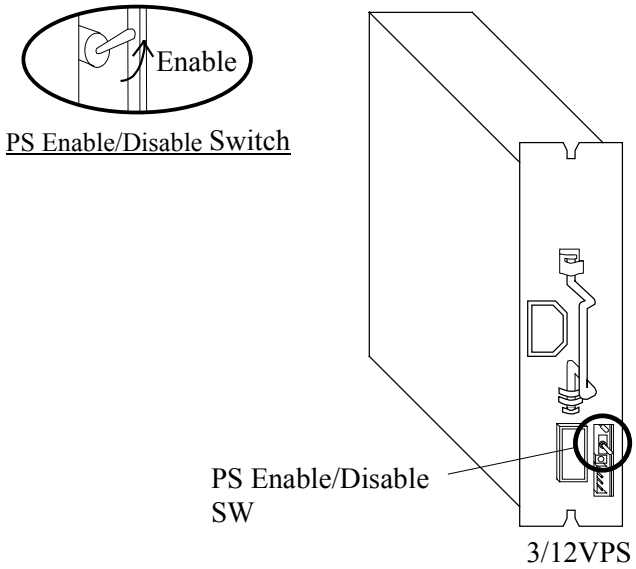

Fig. 3.22.1-6 Switch

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3-5 Attachment of the nameplate

a. Attach the nameplate regardless of the model number from the left of the cover.

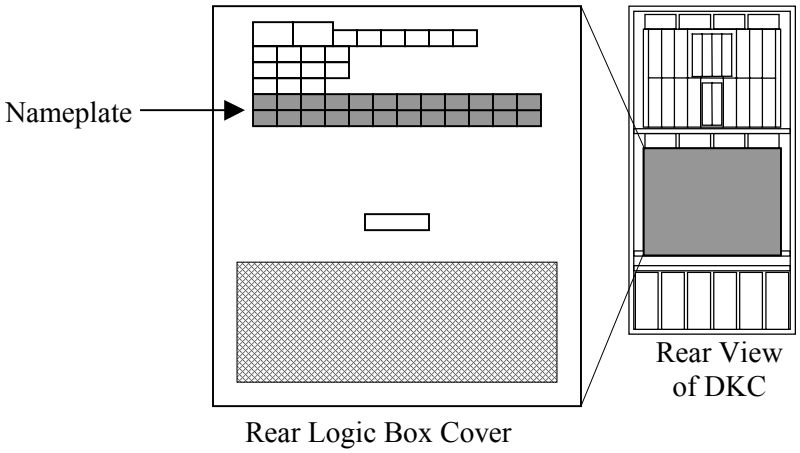

Fig. 3.22.1-7 Attachment of Nameplate

3-6 Check of DC voltage

a. See CHECK OF DC VOLTAGE in PERIODIC SECTION.

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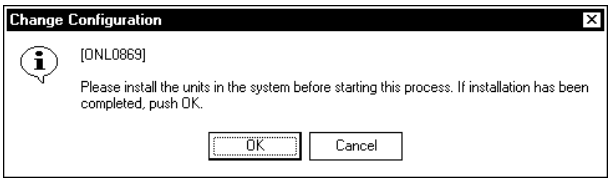
4. SVP post procedure

(1) <Check that hardware components are installed>
Select (CL) [OK] after making sure that all hardware components are installed correctly in response to "Please install the units in the system before starting this process.

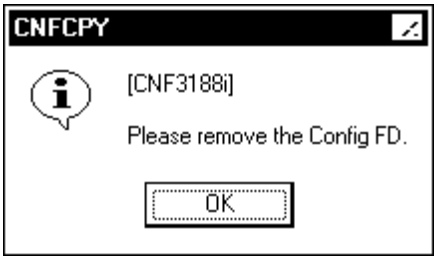
If installation has been completed, push OK.".



(2) <End of system update processing>
"Renewal process has completed. Please check subsystem status." is displayed when recovery processing on all installed components is completed. Select (CL) [OK] in response to this message.

(3)
"Reading subsystem configuration data..." is displayed.
"Please insert the Config FD in the FDD." is displayed.
Insert the configuration FD into FDD, select (CL) [OK].

(4)
When this procedure is completed, message "Please remove the Config FD." is displayed.
Remove the FD, select (CL) [OK].



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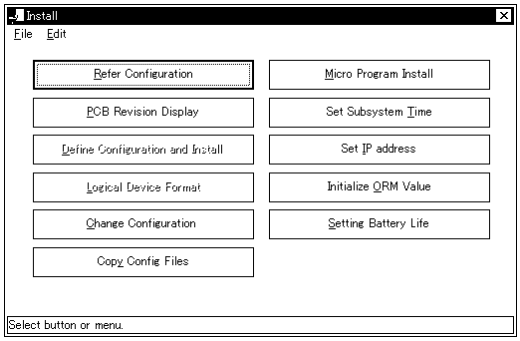
(5)

After the procedure is completed, return to “Install”.
Select (CL) [File]-[Exit].



(6) <Mode Change>
Change the mode to View Mode.

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3.22.2 When the DKC Additional Power Supply (DKC-F460I-80) is installed

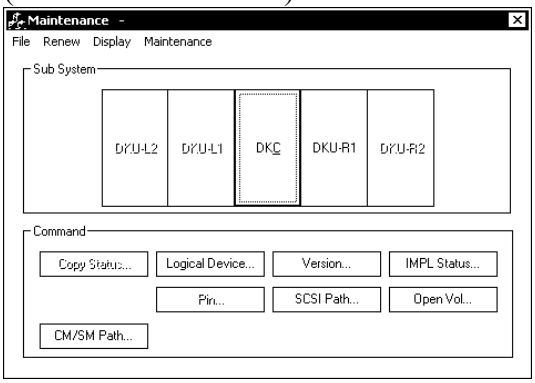
1. SVP MODE CHANGE

(1) <Initial screen>

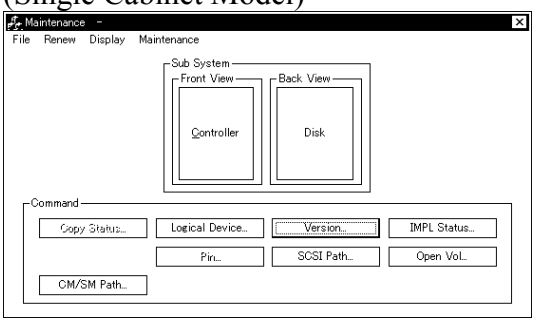
(2) <Operation mode change>
Change the mode to [Modify Mode].
Select (CL) [Maintenance].

(3) <Maintenance window>
The 'Maintenance' window is displayed.

(Multi Cabinet Model)



(Single Cabinet Model)



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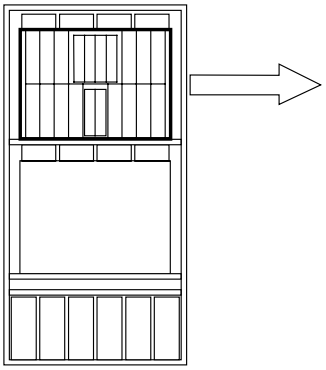
2. Explanation of Exchange Procedure

(1) Replace the power supply (3VPS1C), which is listed as No.1 in Table 3.22.2-1, with the 3/12V power supply (3/12VPS1C) following the replacement procedure (on pages INST03-NAP-130 to INST03-NAP-180). Then, replace the No.2 (3VPS1D), No.3 (3VPS2C), and so on in this order one by one.

> Note: When the first power supply is replaced, all the indications of the power supplies on the Maintenance window is changed from 3VPS to 3/12VPS. Although the indications of the power supplies that have not been replaced yet are also changed from 3VPS to 3/12VPS, the power supplies concerned must be replaced actually.

Table 3.22.2-1 Power Supply Exchange Order

No.	Location No.		Parts Name		Cluster	Remarks
	Old	New	Old	New		
1	3VPS1C	3/12VPS1C	3V PS	3/12V PS	Cluster 1	
2	3VPS1D	3/12VPS1D	3V PS	3/12V PS		
3	3VPS2C	3/12VPS2C	3V PS	3/12V PS	Cluster 2	
4	3VPS2D	3/12VPS2D	3V PS	3/12V PS		



Rear View of DKC

–	–	–	DU	CU	BU	AU	–	–	–
5/3V PS 2A	5/3V PS 2B	SUB PS 2	BAT CTR -21	BAT CTR -22	BAT CTR -12	BAT CTR -11	SUB PS 1	5/3V PS 1B	5/3V PS 1A
3/ 12V PS 2A	3/ 12V PS 2B	3/ 12V PS 2C	3/ 12V PS 2D	BAT CTR -20	BAT CTR -10	3/ 12V PS 1D	3/ 12V PS 1C	3/ 12V PS 1B	3/ 12V PS 1A
–	–	–	–	BL	AL	–	–	–	–

Fig. 3.22.2-1 Location of Power Supply

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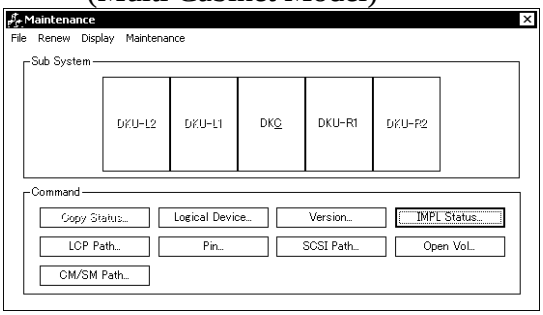
3 SVP Pre-Procedure (Power Supply)

(1) <Maintenance window>

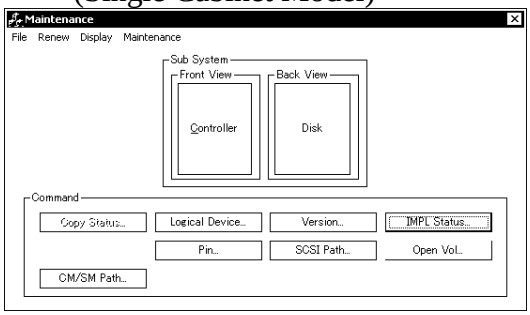
(Multi Cabinet Model)
In the 'Maintenance' window, check and select (CL) [DKC] to be replaced.

(Single Cabinet Model)
In the 'Maintenance' window, check and select (CL) [Controller] to be replaced.

(Multi Cabinet Model)



(Single Cabinet Model)

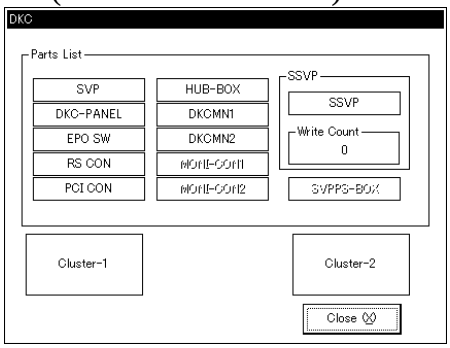


(2) <DKC window>

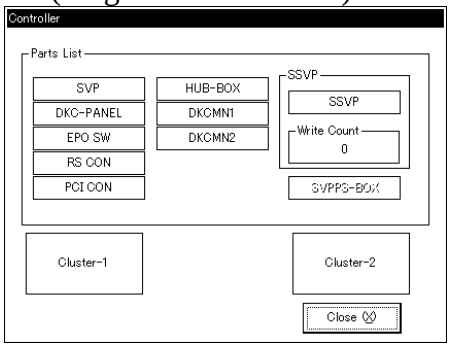
(Multi Cabinet Model)
Select (CL) [Cluster-n] in the 'DKC'.

(Single Cabinet Model)
Select (CL) [Cluster-n] in the 'Controller'.

(Multi Cabinet Model)



(Single Cabinet Model)



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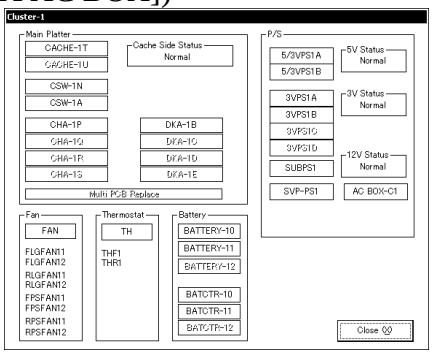
(3) <Select special part>
If any other message than the list is displayed, see the SVP Message Section (SVPMSG00-00).

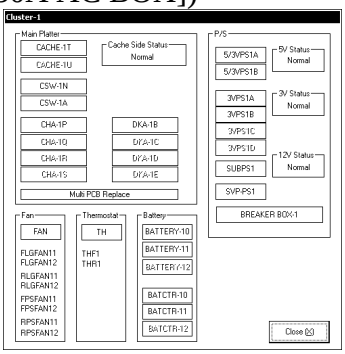
(Multi Cabinet Single Phase Model, Multi Cabinet 3 Phase Model [30A AC BOX])



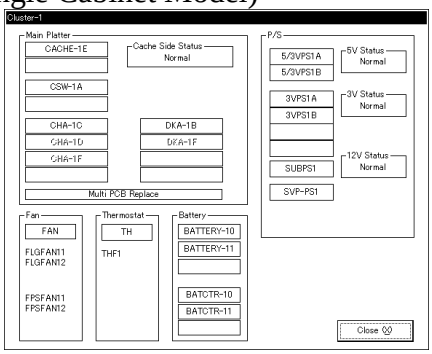
When replacing the first power supply:
Select (CL) the part to be replaced, that is, “3VPSn” in the “Cluster-n” window.
Note: The part name is indicated as “3/12VPSn” in the following explanations of the procedure. Please interpret it as “3VPSn” when refer to the procedure.
Go to Step (4).

When replacing the second or the following power supply:
Select (CL) the part to be replaced, that is, “3/12VPSn” in the “Cluster-n” window.
Go to Step (5).

(Multi Cabinet 3 Phase Model [Without 30A AC BOX])



(Single Cabinet Model)



(ex. Cluster-1)

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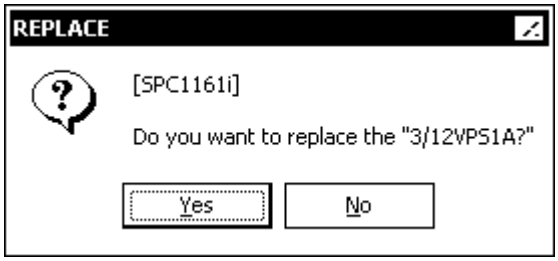
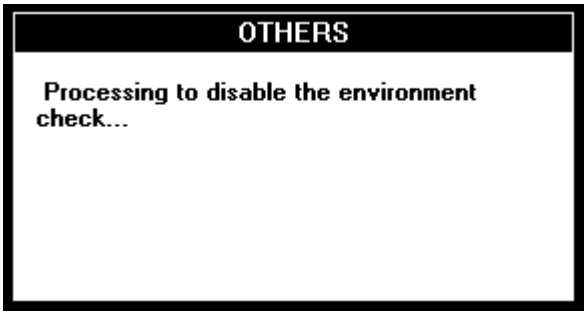
(4) <Check beginning of special part Replacement>
Select (CL) [Yes] in response to “Do you want to replace the "3/12VPSn?"”.



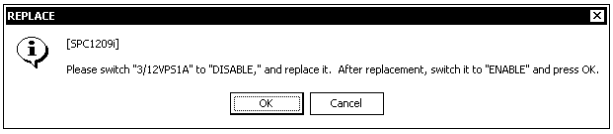
(ex. 3/12VPS1A)

(5) <Check matching power supply>
The SVP automatically checks the power supply to see if it is replaceable.

(6) <Environment monitor state>
“Processing to disable the environment check...” is displayed.



(7) <Special part replacement>
The message shown on the right is displayed. (Reply with [OK] after replacing the special part.)



(ex. 3/12VPS1A)

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4 Power Supply Exchange

a. Set PS Enable/Disable Switch to Disable (DOWN).

⚠ CAUTION

A system down may be caused by setting the PS Enable/Disable switch of the power supply other than that to be replaced to “Disable”. Make sure that it is a power supply to be replaced.

b. Remove the power supply lever and disconnect the inlet cable.
c. Loosen the screw and remove the 3V power supply.
d. Confirm that PS Enable/Disable Switch of 3/12V power supply is set to Disable (DOWN).
e. Insert the 3/12V power supply and fasten the screw.
f. Connect the inlet cable (3/12VPSxx) and secure it with the lever.
g. Disconnect the dummy connector from the 3/12V power supply and connect the 12V power cable (3/12VPSxx-N) to it.

⚠ CAUTION

A system down may be caused if the 12V power cable is not connected to the power supply. Be sure to connect the 12V power cable to the power supply.

h. Set PS Enable/Disable Switch to Enable (UP).

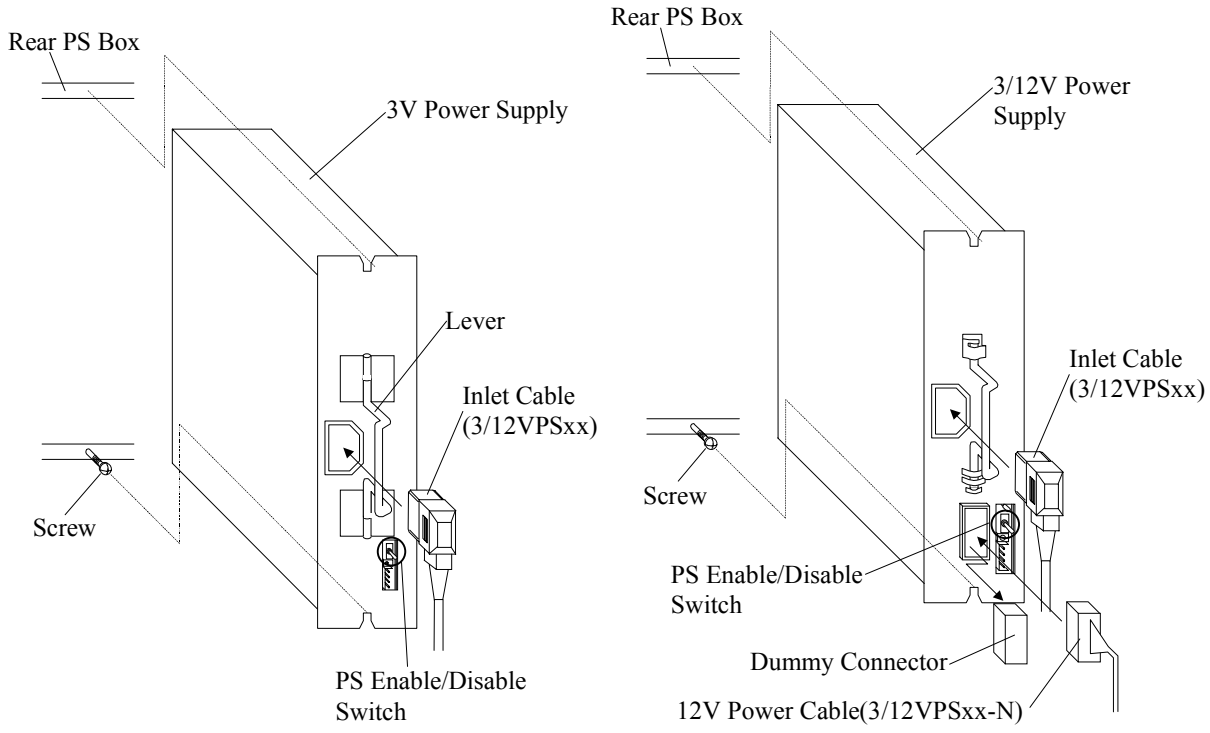

Fig. 3.22.2-2 Replacement of Power Supply

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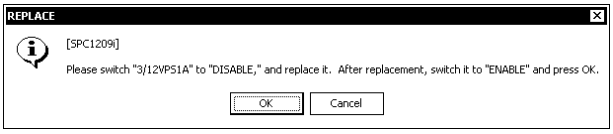
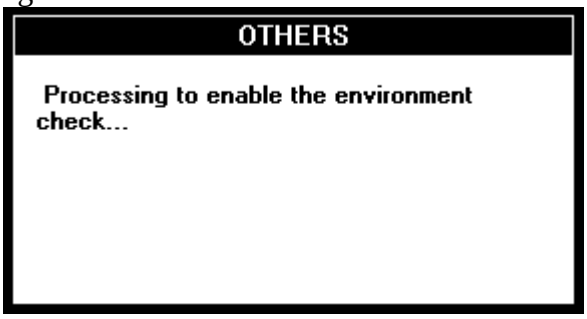
5 SVP Post-Procedure (Power Supply)

(1) <Check special part replacement>
Select (CL) [OK] in response to “Please switch "3/12VPSn" to "DISABLE," and replace it. After replacement, switch it to "ENABLE" and press OK.”.

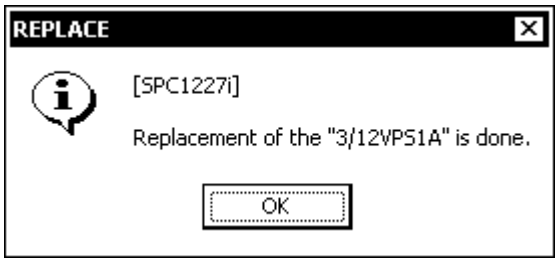


(ex. 3/12VPS1A)

(2) <Checking the environment monitor start processing>
“Processing to enable the environment check...” is displayed.



(3) <Checking the end of replacement>
Select (CL) [OK] in response to “Replacement of the "3/12VPSn" is done.”.



(ex. 3/12VPS1A)

(4) <Confirm status>
Confirm the status display.
If button is normal (The string is normally display), go to step (5).
If button is abnormal (The string is blinking), replace the target part again, or see TROUBLE SHOOTING SECTION.

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(5) <Confirm Cluster>
If Cluster is blocked, recover it.
See SVP02-1110.

(6) <SIM Complete>
See SVP02-580.

(Multi Cabinet Model)
Close ‘Cluster-X’ window.
Close ‘DKC’ window.
Close ‘Maintenance’ window.

(Single Cabinet Model)
Close ‘Cluster-X’ window.
Close ‘Controller’ window.
Close ‘Maintenance’ window.

(7) Repeat carrying out of the procedure for the next power supply. When the replacement of all the power supplies is completed, go to Step 6.

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6. SVP Post Procedure

(1) <SVP window>

(2) <Changing the SVP operation mode>
Change the mode to [View Mode].

7. Attachment of the nameplate

a. Attach the nameplate regardless of the model number from the left of the cover.

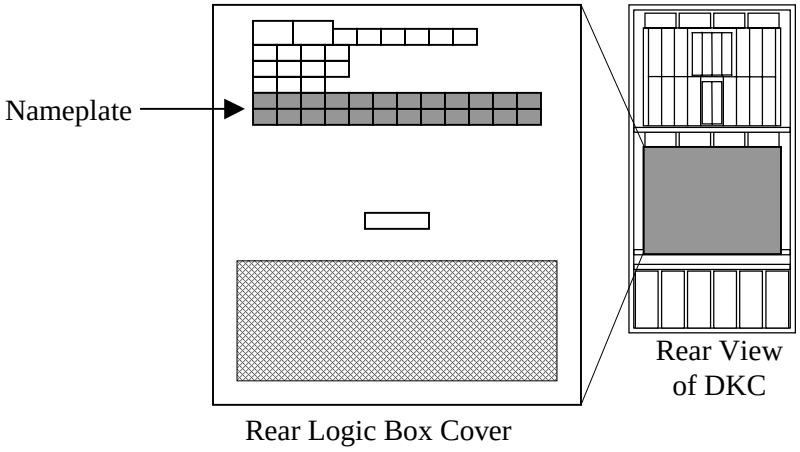

Fig. 3.22.2-3 Attachment of Nameplate

8. Check of DC voltage

a. See CHECK OF DC VOLTAGE in PERIODIC SECTION.

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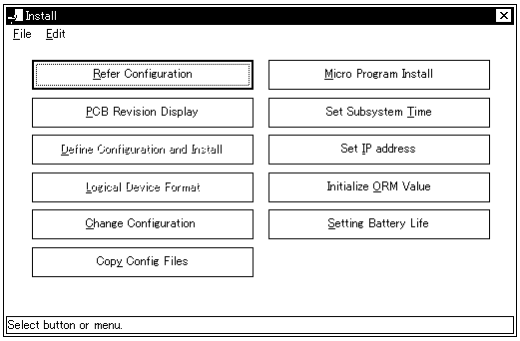
3.22.3 When the DKC Additional Power Supply (DKC-F460I-80) is not installed, and DKC-F460I-NAPS is installed in NAS CHA not support model as a substitute of DKC-F460I-80

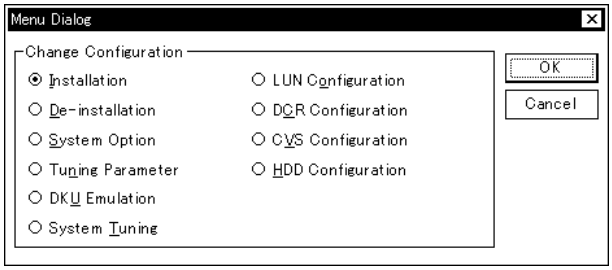
1. Setting up the New Device Structure Information

1. <Mode Change>
   Change the mode to Modify Mode.
   Select (CL) [Install].

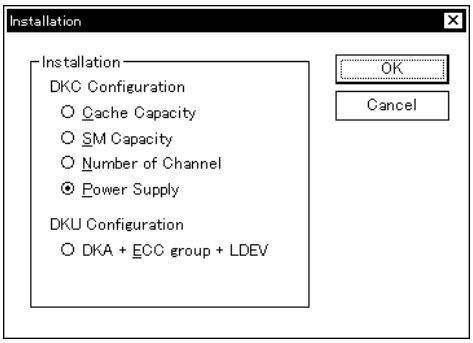
2. <Start the 'Menu Dialog' screen>
   Select (CL) [Change Configuration].



3. <Start Device Structure Setup screen>
   Select (CL) [Installation] in the 'Menu Dialog' dialog box and select (CL) [OK].



4. <Select a part to be changed>
   Select (CL) [Power Supply], and select (CL) [OK].



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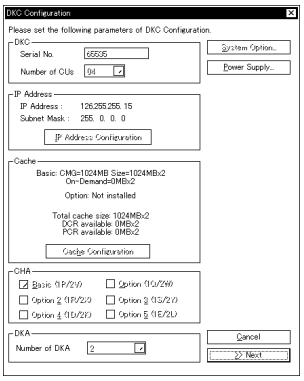
2. SVP pre procedure

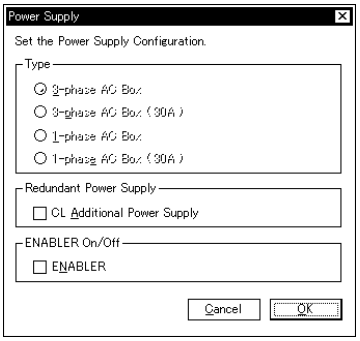
1. <Update Configuration Information>
   Select (CL) [Power Supply] in the 'DKC Configuration' screen.
   Make sure that the entered item is correct and select (CL) [>>Next].

   Note: In case of Single Cabinet Model, [Power Supply] is not displayed.

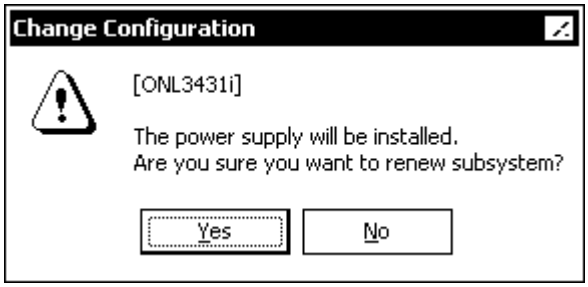


2. <Define Redundant Power Supply>
   Select (CL) redundant power supply to be added in the 'Redundant Power Supply'.
   Select (CL) [OK]. Return to step (1).

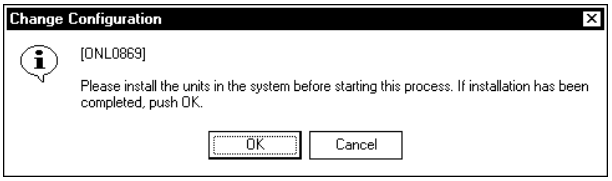
   Note: If entered item is wrong, the part not to be installed or d e-installed may be blocked.



3. <Start installation>
   Select (CL) [Yes] in response to "The power supply will be installed. Are you sure you want to renew subsystem?".



4. The message shown in the right figure is displayed.
   At this point refrain from pressing the [OK] button.



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3. Installation Procedure of the NAS Available Additional Power Supply

3-1 Confirmation of the PS Enable/Disable Switch

a. Confirm the PS Enable/Disable Switch is turned to (DOWN) Disable.

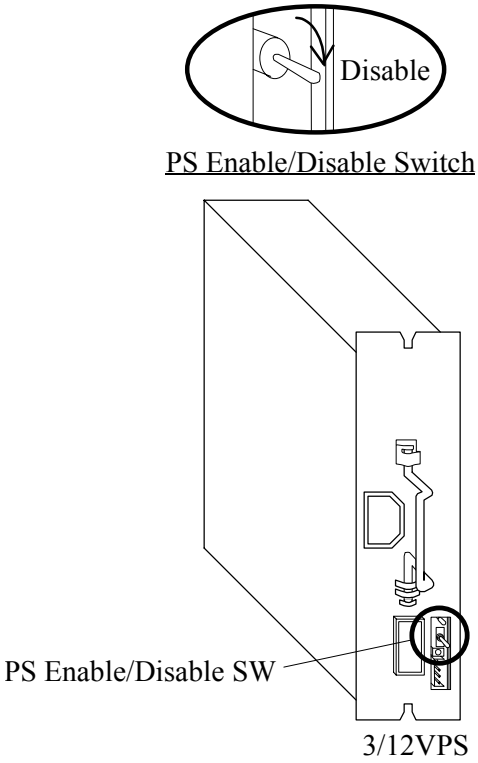

Fig. 3.22.3-1 Switch

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3-2 Installation of the additional power supply

a. Open the locking clamps and remove the inlet cables from the inserting locations. Refer to Table 3.22.3-1, Fig. 3.22.3-2, and Fig. 3.22.3-3.
b. Loosen the screws and remove the dummy plates.
c. Install the additional power supplies in the correct locations and fasten the screws. Refer to Table 3.22.3-1, Fig. 3.22.3-2, and Fig. 3.22.3-4.

Note: Dummy plates should be stored for future use in De-installation.

Table 3.22.3-1 Inserting Location

No.	Part Name	PS Location		Remarks
		Cluster 1	Cluster 2	
1	3/12V Power Supply	3VPS1C	3VPS2C	
2	3/12V Power Supply	3VPS1D	3VPS2D	

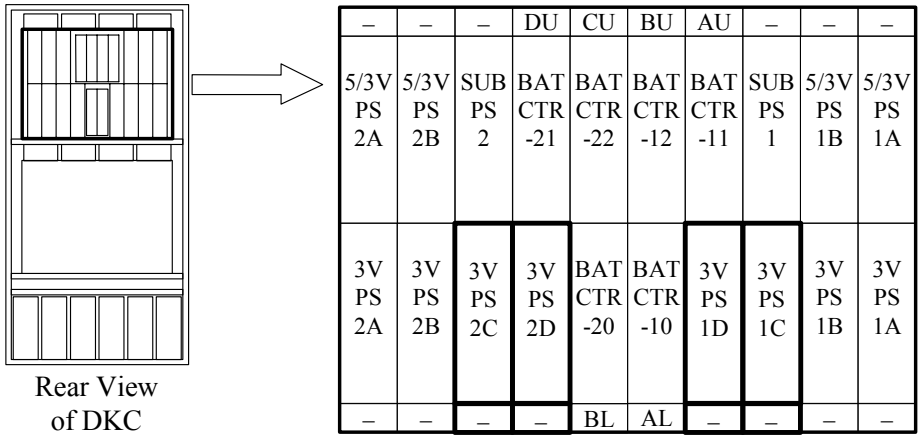

Fig. 3.22.3-2 Inserting Location

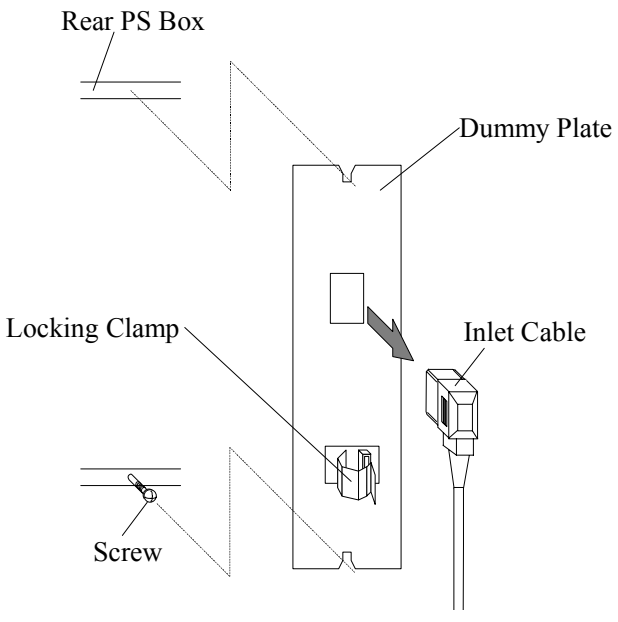

Fig. 3.22.3-3 Removal of Dummy Plate

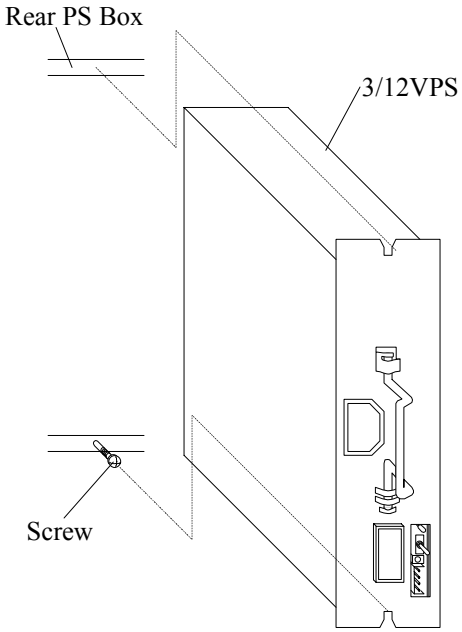

Fig. 3.22.3-4 Installation of Power Supply

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3-3 Connection of the cables

a. Connect the inlet cables to the power supplies and fix them with the lever.

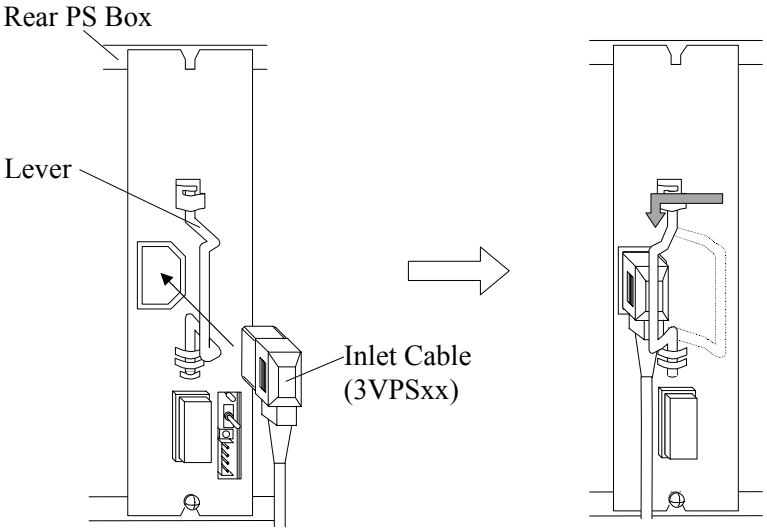

Fig. 3.22.3-5 Connection of Cable

3-4 Turn on the Additional Power Supply

a. Turn the PS Enable/Disable Switch to (UP) **Enable**.

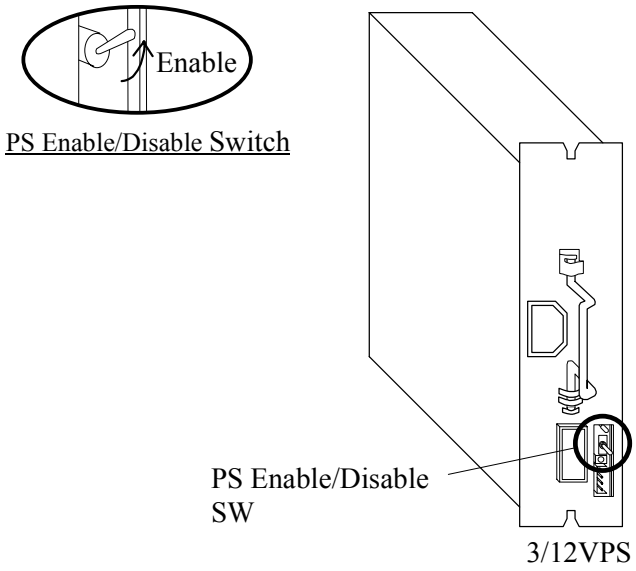

Fig. 3.22.3-6 Switch

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3-5 Attachment of the nameplate

a. Attach the nameplate regardless of the model number from the left of the cover.

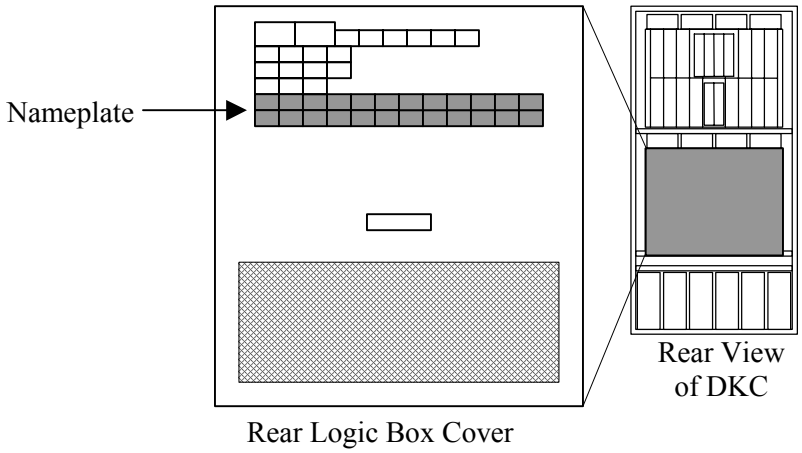

Fig. 3.22.3-7 Attachment of Nameplate

3-6 Check of DC voltage

a. See CHECK OF DC VOLTAGE in PERIODIC SECTION.

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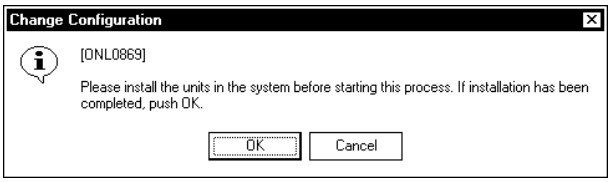
5. SVP post procedure

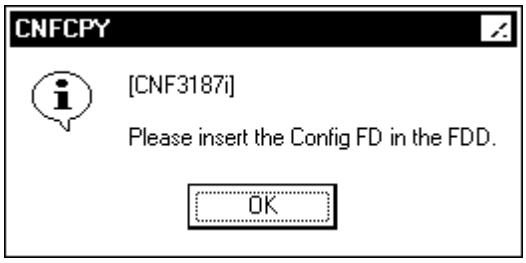
1. <Check that hardware components are installed>
   Select (CL) [OK] after making sure that all hardware components are installed correctly in response to “Please install the units in the system before starting this process.

   If installation has been completed, push OK.”.

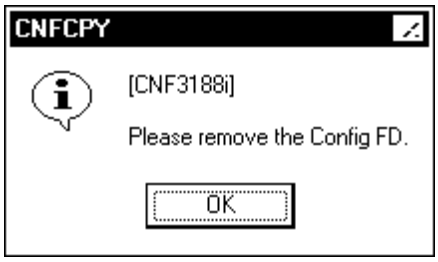


2. <End of system update processing>
   “Renewal process has completed. Please check subsystem status.” is displayed when recovery processing on all installed components is completed. Select (CL) [OK] in response to this message.

3.
   “Reading subsystem configuration data...” is displayed.
   “Please insert the Config FD in the FDD.” is displayed.
   Insert the configuration FD into FDD, select (CL) [OK].



4.
   When this procedure is completed, message “Please remove the Config FD.” is displayed.
   Remove the FD, select (CL) [OK].



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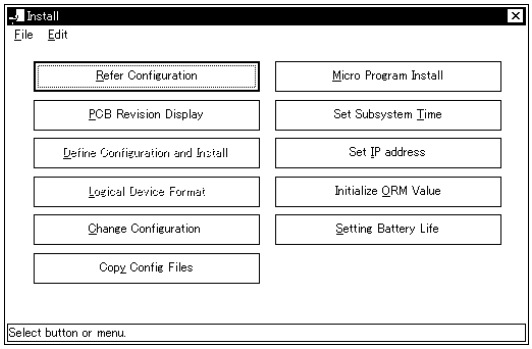
5.

After the procedure is completed, return to “Install”.
Select (CL) [File]-[Exit].



6. <Mode Change>
Change the mode to View Mode.

Return to the working table and do the rest of the work.

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4. Hardware De-Installation

4.1 De-Installation of DEV Interface Cable, HDD Canister and Additional Disk Adapter (DKC-F460I-200/L1C, DKU-F455I-36K4/36K1/72J4/72J1/72K4/72K1/146J4/146J1/146JF/146JS/146JQ/146JM/EXC)

Table 4.1-1 Parts List

No.	Model Number	Parts Name	Parts No.	Quantity	Remarks
1	DKC-F460I-200	Disk Adapter PCB	5513979-B	2	Color of PCB Lever: Blue
		Nameplate (HDS)	2105902-103	1	RSD
			2105903-103/203		HICAM/HICEF
		Nameplate (HP)	2105902-203	1	RSD
			2105903-303/403		HICAM/HICEF
2	DKC-F460I-L1C	DEV Interface Cable	5513878-A-R	16	
		Repeat Binder	5409042-3	8	250mm
		Nameplate (HDS)	2105902-118	1	RSD
			2105903-118/218		HICAM/HICEF
		Nameplate (HP)	2105902-218	1	RSD
			2105903-318/418		HICAM/HICEF
3	DKU-F455I-36K4	HDU450-36K1FC	5515544-A	4	
		Nameplate(HDS)	2105914-6/14/22	1	RSD/HICAM/HICEF
		Nameplate(HP)	2105914-50/54/58	1	RSD/HICAM/HICEF
4	DKU-F455I-36K1	HDU450-36K1FC	5515544-A	1	
		Nameplate(HDS)	2105914-5/13/21	1	RSD/HICAM/HICEF
		Nameplate(HP)	2105914-49/53/57	1	RSD/HICAM/HICEF
5	DKU-F455I-72J4	HDU450-72J1FC	5513873-A	4	
		Nameplate(HDS)	2105914-8/16/24	1	RSD/HICAM/HICEF
		Nameplate(HP)	2105914-52/56/60	1	RSD/HICAM/HICEF
6	DKU-F455I-72J1	HDU450-72J1FC	5513873-A	1	
		Nameplate(HDS)	2105914-7/15/23	1	RSD/HICAM/HICEF
		Nameplate(HP)	2105914-51/55/59	1	RSD/HICAM/HICEF
7	DKU-F455I-72K4	HDU450-72K1FC	5518492-A	4	
		Nameplate (HDS)	2105914-130/–/–	1	RSD/HICAM/HICEF
		Nameplate(HP)	2105914-174/–/–	1	RSD/HICAM/HICEF
8	DKU-F455I-72K1	HDU450-72K1FC	5518492-A	1	
		Nameplate(HDS)	2105914-129/–/–	1	RSD/HICAM/HICEF
		Nameplate(HP)	2105914-173/–/–	1	RSD/HICAM/HICEF
9	DKU-F455I-146J4	HDU450-146J1FC	5518491-A	4	
		Nameplate(HDS)	2105914-128/166/168	1	RSD/HICAM/HICEF
		Nameplate(HP)	2105914-160/162/164	1	RSD/HICAM/HICEF
10	DKU-F455I-146J1	HDU450-146J1FC	5518491-A	1	
		Nameplate(HDS)	2105914-127/165/167	1	RSD/HICAM/HICEF
		Nameplate(HP)	2105914-159/161/163	1	RSD/HICAM/HICEF

(To be continued.)

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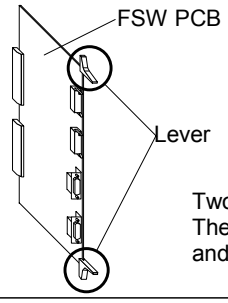
(Continued from preceding sheet.)

No.	Model Number	Parts Name	Parts No.	Quantity	Remarks
11	DKU-F455I-146JF	HDU450-146JSFC	5522731-A	4	
		Nameplate(HDS)	2105914-176/200/202	1	RSD/HICAM/HICEF
		Nameplate(HP)	2105914-194/196/198	1	RSD/HICAM/HICEF
12	DKU-F455I-146JS	HDU450-146JSFC	5522731-A	1	
		Nameplate(HDS)	2105914-175/199/201	1	RSD/HICAM/HICEF
		Nameplate(HP)	2105914-193/195/197	1	RSD/HICAM/HICEF
13	DKU-F455I-146JQ	HDU450-146JMFC	5522976-A	4	
		Nameplate(HDS)	2105914-204/222/224	1	RSD/HICAM/HICEF
		Nameplate(HP)	2105914-226/228/230	1	RSD/HICAM/HICEF
14	DKU-F455I-146JM	HDU450-146JMFC	5522976-A	1	
		Nameplate(HDS)	2105914-203/221/223	1	RSD/HICAM/HICEF
		Nameplate(HP)	2105914-225/227/229	1	RSD/HICAM/HICEF
15	DKU-F455I-EXC	DEV I/F Cable 2	5513860-A-R	16	
		Nameplate(HDS)	2105913-33/34/35	1	RSD/HICAM/HICEF
		Nameplate(HP)	2105913-39/40/41	1	RSD/HICAM/HICEF

NOTICE:



Two types of levers for inserting/ removing the FSW, large and small ones, are used. The levers were enlarged to make the operation easier, accordingly their performance and function are the same.

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4.1.1 Flowchart

There are ten cases (① to ⑩) of these removal works as shown in the following table because two or more options are to be removed at the same time. Perform the work referring to the flowchart of each work.

Case	Option De-Installation Procedure	Page
①	When performing removal of the data/spare HDD canister (DKU-F455I-36K1/36K4/72J1/72J4/72K1/72K4/146J1/146J4/146JS/146JF/146JM/146JQ)	INST04-DKA-30
②	When performing removal of the DKA (DKC-F460I-200)	INST04-DKA-30
③	When performing removal of the data/spare HDD and DKA (DKC-F460I-200, DKU-F455I-36K1/36K4/72J1/72J4/72K1/72K4/146J1/146J4/146JS/146JF/146JM/146JQ)	INST04-DKA-30
④	When performing removal of the data/spare HDD canister, DKA, and DEV interface cable that accompanies the removal of the DKU-R2 frame (DKC-F460I-200, DKU-F455I-36K1/36K4/72J1/72J4/72K1/72K4/146J1/146J4/146JS/146JF/146JM/146JQ/EXC)	INST04-DKA-40
⑤	When performing removal of the data/spare HDD canister, DKA, and DEV interface cable that accompanies the removal of the DKU-L1 frame (DKC-F460I-200/L1C, DKU-F455I-36K1/36K4/72J1/72J4/72K1/72K4/146J1/146J4/146JS/146JF/146JM/146JQ)	INST04-DKA-40
⑥	When performing removal of the data/spare HDD canister, DKA, and DEV interface cable that accompanies the removal of the DKU-L2 frame (DKC-F460I-200, DKU-F455I-36K1/36K4/72J1/72J4/72K1/72K4/146J1/146J4/146JS/146JF/146JM/146JQ/EXC)	INST04-DKA-50
⑦	When performing removal of the data/spare HDD canister, DKA, and DEV interface cable that accompanies the removal of the DKU-R2 and DKU-L1 frames (DKC-F460I-200/L1C, DKU-F455I-36K1/36K4/72J1/72J4/72K1/72K4/146J1/146J4/146JS/146JF/146JM/146JQ/EXC)	INST04-DKA-60
⑧	When performing removal of the data/spare HDD canister, DKA, and DEV interface cable that accompanies the removal of the DKU-R2 and DKU-L2 frames (DKC-F460I-200, DKU-F455I-36K1/36K4/72J1/72J4/72K1/72K4/146J1/146J4/146JS/146JF/146JM/146JQ/EXC)	INST04-DKA-70
⑨	When performing removal of the data/spare HDD canister, DKA, and DEV interface cable that accompanies the removal of the DKU-L1 and DKU-L2 frames (DKC-F460I-200/L1C, DKU-F455I-36K1/36K4/72J1/72J4/72K1/72K4/146J1/146J4/146JS/146JF/146JM/146JQ/EXC)	INST04-DKA-80
⑩	When performing removal of the data/spare HDD canister, DKA, and DEV interface cable that accompanies the removal of the DKU-R2, DKU-L1, and DKU-L2 frames (DKC-F460I-200/L1C, DKU-F455I-36K1/36K4/72J1/72J4/72K1/72K4/146J1/146J4/146JS/146JF/146JM/146JQ/EXC)	INST04-DKA-90

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① When performing removal of the data/spare HDD canister -- [INST04-DKA-100 through 250]

1. Setting up the New Device Structure Information
↓
2. SVP pre procedure
↓
3. De-Installation Procedure of HDD Canister
↓
4. SVP post procedure

② When performing removal of the DKA ---------- [INST04-DKA-260 through 350]

1. Setting up the New Device Structure Information
↓
2. SVP pre procedure
↓
3. De-Installation Procedure of Disk Adapter
↓
4. SVP post procedure

③ When performing removal of the data/spare HDD and DKA
---------- [INST04-DKA-360 through 550]

1. Setting up the New Device Structure Information
↓
2. SVP pre procedure
↓
3. De-Installation Procedure of HDD Canister
↓
4. De-Installation Procedure of Disk Adapter
↓
5. SVP post procedure
↓

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④ When performing removal of the data/spare HDD canister, DKA, and DEV interface cable that accompanies the removal of the DKU-R2 frame ---------- [INST04-DKA-560 through 840]

1. De-Installation Procedure of DEV Interface Cable 2 (1/3) (DKU-F455I-EXC)
   (Note 1) Remove the cable covers to disconnect the DEV interface cables.
   *** In this step, do not disconnect the DEV interface cable from operating DKU.**

↓

2. Setting up the New Device Structure Information

↓

3. SVP pre procedure

↓

4. De-Installation Procedure of HDD Canister

↓

5. De-Installation Procedure of DEV Interface Cable 2 (2/3) (DKU-F455I-EXC)
   (Note 2) Disconnect the DEV interface cable from operating DKU.

↓

6. De-Installation Procedure of Disk Adapter

↓

7. SVP post procedure

↓

8. De-Installation Procedure of DEV Interface Cable 2 (3/3) (DKU-F455I-EXC)
   (Note 3) Remove the DEV interface cable from DKU and attach the cable covers.

⑤ When performing removal of the data/spare HDD canister, DKA, and DEV interface cable that accompanies the removal of the DKU-L1 frame ---------[INST04-DKA-850 through 1100]

1. De-Installation Procedure of DEV Interface Cable 1 (1/3) (DKC-F460I-L1C)

↓

2. Setting up the New Device Structure Information

↓

3. SVP pre procedure

↓

4. De-Installation Procedure of HDD Canister

↓

5. De-Installation Procedure of DEV Interface Cable 2 (2/3) (DKC-F460I-L1C)

↓

6. De-Installation Procedure of Disk Adapter

↓

7. SVP post procedure

↓

8. De-Installation Procedure of DEV Interface Cable 1 (3/3) (DKC-F460I-L1C)

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⑥ When performing removal of the data/spare HDD canister, DKA, and DEV interface cable that accompanies the removal of the DKU-L2 frame -------[INST04-DKA-1110 through 1390]

1. De-Installation Procedure of DEV Interface Cable 2 (1/3) (DKU-F455I-EXC)
   (Note 1) Remove the cable covers to disconnect the DEV interface cables.
   *** In this step, do not disconnect the DEV interface cable from operating DKU.**

↓

2. Setting up the New Device Structure Information

↓

3. SVP pre procedure

↓

4. De-Installation Procedure of HDD Canister

↓

5. De-Installation Procedure of DEV Interface Cable 2 (2/3) (DKU-F455I-EXC)
   (Note 2) Disconnect the DEV interface cable from operating DKU.

↓

6. De-Installation Procedure of Disk Adapter

↓

7. SVP post procedure

↓

8. De-Installation Procedure of DEV Interface Cable 2 (3/3) (DKU-F455I-EXC)
   (Note 3) Remove the DEV interface cable from DKU and attach the cable covers.

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⑦ When performing removal of the data/spare HDD canister, DKA, and DEV interface cable that accompanies the removal of the DKU-R2 and DKU-L1 frames
----------[INST04-DKA-1400 through 1740]

1. De-Installation Procedure of DEV Interface Cable 2 (1/3) (DKU-F455I-EXC)
   (Note 1) Remove the cable covers to disconnect the DEV interface cables.
   *** In this step, do not disconnect the DEV interface cable from operating DKU.**

↓

2. De-Installation Procedure of DEV Interface Cable 1 (1/3) (DKC-F460I-L1C)

↓

3. Setting up the New Device Structure Information

↓

4. SVP pre procedure

↓

5. De-Installation Procedure of HDD Canister

↓

6. De-Installation Procedure of DEV Interface Cable 2 (2/3) (DKU-F455I-EXC)
   (Note 2) Disconnect the DEV interface cable from operating DKU.

↓

7. De-Installation Procedure of DEV Interface Cable (2/3) (DKC-F460I-L1C)

↓

8. De-Installation Procedure of Disk Adapter

↓

9. SVP post procedure

↓

10. De-Installation Procedure of DEV Interface Cable 2 (3/3) (DKU-F455I-EXC)
    (Note 3) Remove the DEV interface cable from DKU and attach the cable covers.

↓

11. De-Installation Procedure of DEV Interface Cable 1 (3/3) (DKC-F460I-L1C)

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⑧ When performing removal of the data/spare HDD canister, DKA, and DEV interface cable that accompanies the removal of the DKU-R2 and DKU-L2 frames
----------[INST04-DKA-1750 through 2120]

1. De-Installation Procedure of DEV Interface Cable 2 (1/3) (DKU-F455I-EXC)
   (Note 1) Remove the cable covers to disconnect the DEV interface cables.
   *** In this step, do not disconnect the DEV interface cable from operating DKU.**

↓

2. Setting up the New Device Structure Information

↓

3. SVP pre procedure

↓

4. De-Installation Procedure of HDD Canister

↓

5. De-Installation Procedure of DEV Interface Cable 2 (2/3) (DKU-F455I-EXC)
   (Note 2) Disconnect the DEV interface cable from operating DKU.

↓

6. De-Installation Procedure of Disk Adapter

↓

7. SVP post procedure

↓

8. De-Installation Procedure of DEV Interface Cable 2 (3/3) (DKU-F455I-EXC)
   (Note 3) Remove the DEV interface cable from DKU and attach the cable covers.

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⑨ When performing removal of the data/spare HDD canister, DKA, and DEV interface cable that accompanies the removal of the DKU-L1 and DKU-L2 frames

----------[INST04-DKA-2130 through 2470]

1. De-Installation Procedure of DEV Interface Cable 2 (1/3) (DKU-F455I-EXC)
   (Note 1) Remove the cable covers to disconnect the DEV interface cables.
   *** In this step, do not disconnect the DEV interface cable from operating DKU.**

↓

2. De-Installation Procedure of DEV Interface Cable 1 (1/3) (DKC-F460I-L1C)

↓

3. Setting up the New Device Structure Information

↓

4. SVP pre procedure

↓

5. De-Installation Procedure of HDD Canister

↓

6. De-Installation Procedure of DEV Interface Cable 2 (2/3) (DKU-F455I-EXC)
   (Note 2) Disconnect the DEV interface cable from operating DKU.

↓

7. De-Installation Procedure of DEV Interface Cable (2/3) (DKC-F460I-L1C)

↓

8. De-Installation Procedure of Disk Adapter

↓

9. SVP post procedure

↓

10. De-Installation Procedure of DEV Interface Cable 2 (3/3) (DKU-F455I-EXC)
    (Note 3) Remove the DEV interface cable from DKU and attach the cable covers.

↓

11. De-Installation Procedure of DEV Interface Cable 1 (3/3) (DKC-F460I-L1C)

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⑩ When performing removal of the data/spare HDD canister, DKA, and DEV interface cable that accompanies the removal of the DKU-R2, DKU-L1, and DKU-L2 frames
----------[INST04-DKA-2480 through 2910]

1. De-Installation Procedure of DEV Interface Cable 2 (1/3) (DKU-F455I-EXC)
   (Note 1) Remove the cable covers to disconnect the DEV interface cables.
   *** In this step, do not disconnect the DEV interface cable from operating DKU.**

↓

2. De-Installation Procedure of DEV Interface Cable 1 (1/3) (DKC-F460I-L1C)

↓

3. Setting up the New Device Structure Information

↓

4. SVP pre procedure

↓

5. De-Installation Procedure of HDD Canister

↓

6. De-Installation Procedure of DEV Interface Cable 2 (2/3) (DKU-F455I-EXC)
   (Note 2) Disconnect the DEV interface cable from operating DKU.

↓

7. De-Installation Procedure of DEV Interface Cable (2/3) (DKC-F460I-L1C)

↓

8. De-Installation Procedure of Disk Adapter

↓

9. SVP post procedure

↓

10. De-Installation Procedure of DEV Interface Cable 2 (3/3) (DKU-F455I-EXC)
    (Note 3) Remove the DEV interface cable from DKU and attach the cable covers.

↓

11. De-Installation Procedure of DEV Interface Cable 1 (3/3) (DKC-F460I-L1C)

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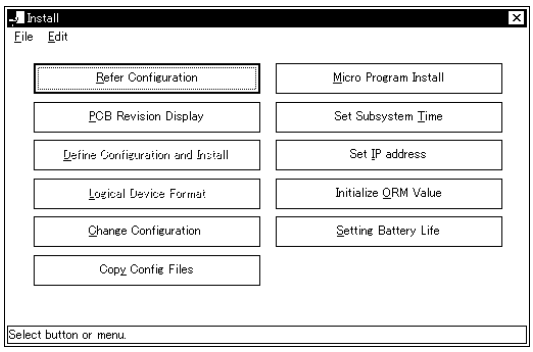
4.1.2 When performing removal of the data/spare HDD canister (DKU-F455I-36K4/36K1/72J4/72J1/72K4/72K1/146J4/146J1/146JF/146JS/146JQ/146JM)

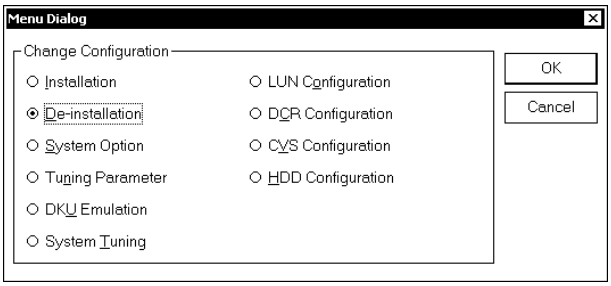
1. Setting up the New Device Structure Information

1. <Mode Change>
   Change the mode to Modify Mode.
   Select (CL) [Install].

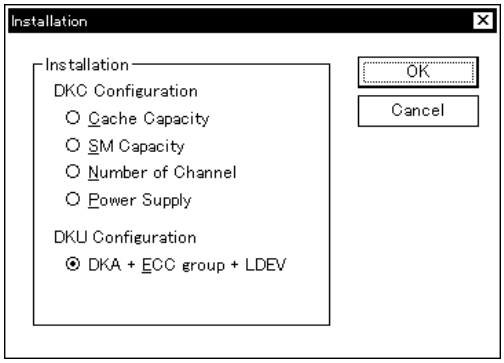
2. <Start the 'Menu Dialog' screen>
   Select (CL) [Change Configuration].



3. <Start Device Structure Setup screen>
   Select (CL) [De-Installation] in the 'Menu Dialog' dialog box and select (CL) [OK].



4. <Select a part to be changed>
   Select (CL) [DKA + ECC group + LDEV], and select (CL) [OK].



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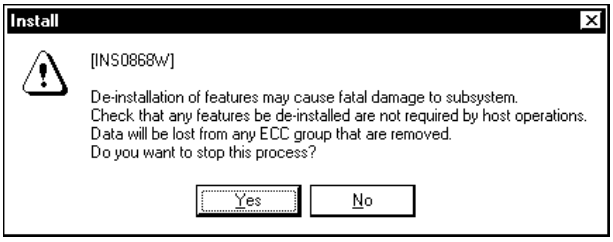
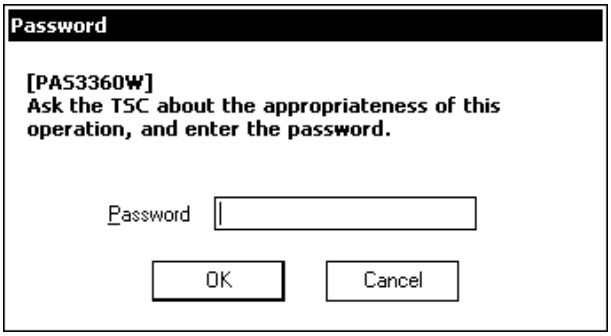
5.

Select (CL) [No] in response to “De-installation of features may cause fatal damage to subsystem. Check that any features be de-installed are not required by host operations. Data will be lost from any ECC group that are removed. Do you want to stop this process?”.



6. <Input password>
Enter the password and select (CL) [OK].



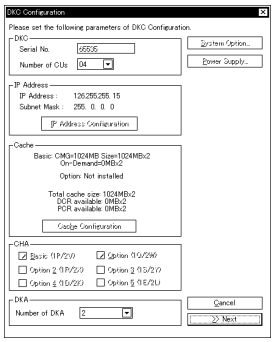
NOTICE
This is a special (exceptional) operation that can cause a serious failure such as a system down or a data loss if a wrong part to be removed is selected, and requires an input of a password. Ask the technical support center about the appropriateness of the operation, and input the password after getting an approval of executing the operation.

7. <Update Configuration Information>
Set the item to be de-installed for DKC and DKA in the ‘DKC Configuration’ window.

When decreasing the CUs, change the “Number of CUs”.

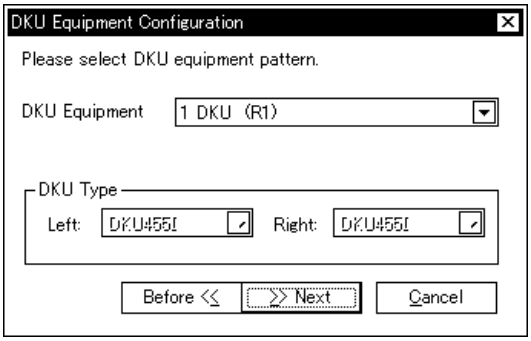
Note: A part other than the CU and DKA cannot be removed at the same time.

Make sure that the entered item is correct and select (CL) [>>Next].



7-1. <Altering DKU frame information>
Define the DKU frame in the DKU Equipment Configuration window.

After making the setting, select the [>> Next]. The routine proceeds to Step 8.
When the [Before <<] is selected, the window returns to the preceding one.
Return to Step 7.



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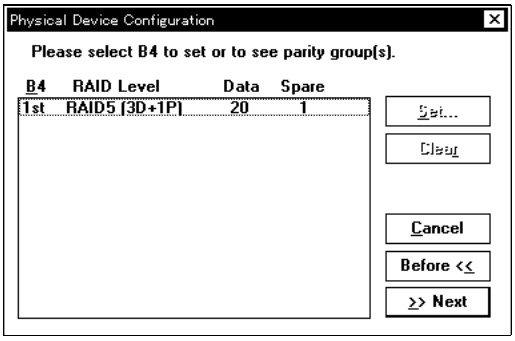
8. Change Drive Configuration Information>
Set drive configuration according to the 'Physical Device Configuration' screen displaying the mounted B4 based on the result of setting of DKU mount pattern.
Detailed procedure is shown below.
[Set...]: Defines the parity group or spare disk. The routine proceeds to Step 8-1.
[Clear...]: Cancels the setting of the B4.
After setting up all items, select (CL) [>>Next].
Selecting (CL) [Before<<] returns you to the previous screen.



[For the case of the multi cabinet model]

B4	Location	B4	Location
1st	HDU-R10, 11, 12, 13	7th	HDU-L20, 21, 22, 23
2nd	HDU-R14, 15, 16, 17	8th	HDU-L24, 25, 26, 27
3rd	HDU-L10, 11, 12, 13	9th	HDU-R30, 31, 32, 33
4th	HDU-L14, 15, 16, 17	10th	HDU-R34, 35, 36, 37
5th	HDU-R20, 21, 22, 23	11th	HDU-L30, 31, 32, 33
6th	HDU-R24, 25, 26, 27	12th	HDU-L34, 35, 36, 37

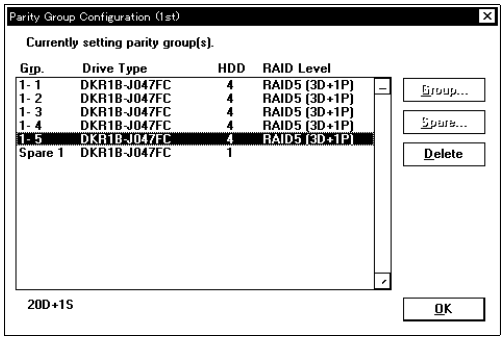
Note: The 9th to 12th of the B4 are valid only when the DKUs for the RAID 400 are connected.

[For the case of the single cabinet model]

B4	Location	Remarks
1st	HDU-R0, 1, 2, 3	HDD-X00 ~ X0F
2nd	HDU-R0, 1, 2, 3	HDD-X10 ~ X1F

8-1. <Define Parity Group>
Select (CL) the group to be de-installed and select (CL) [Delete] in the 'Parity Group Configuration' dialog box.
After setting, select (CL) [OK]. Return to step 8.

Grp*: A parity group where RAID Concatenation is installed.



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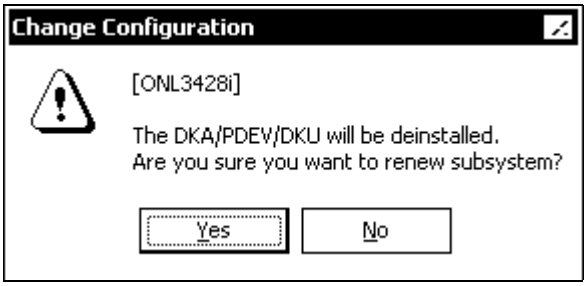
2. SVP pre procedure

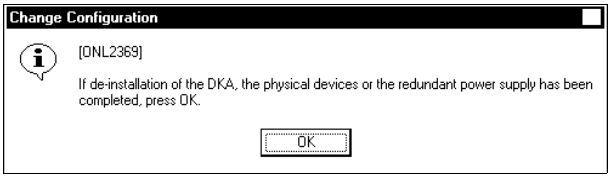
1. <Start de-installation>
   Select (CL) [Yes] in response to “The DKA/PDEV/DKU will be deinstalled. Are you sure you want to renew subsystem?”.

   When [No] is selected (CL), returns to INST04-DKA-100 step 2.



2.

   At this point refrain from pressing the [OK] button.
   “If de-installation of the DKA, the physical devices or the redundant power supply has been completed, press OK.” shown in the right figure.



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3. De-Installation Procedure of HDD Canister

3-1 Confirmation of position to de-install HDD canister

(i) RAID5(3D+1P)/RAID1(2D+2D)

Relations between the installation locations of the RAID groups and the RAID group numbers set through the SVP are shown in Table 4.1.2-1.

Table 4.1.2-1 Relation between HDDs installation order and RAID group number (3D+1P/2D+2D) (1/2)

	DKC	R1 DKU			R2 DKU		
		RAID Group Installation Order	RAID Group No.	HDD Location	RAID Group Installation Order	RAID Group No.	HDD Location
Upper	2nd DKA Pair	032	2-1	HDDR1y-00	096	6-1	HDDR2y-00
		033	2-2	HDDR1y-01	097	6-2	HDDR2y-01
		034	2-3	HDDR1y-02	098	6-3	HDDR2y-02
		035	2-4	HDDR1y-03	099	6-4	HDDR2y-03
		036	2-5	HDDR1y-04	100	6-5	HDDR2y-04
		037	2-6	HDDR1y-05	101	6-6	HDDR2y-05
		038	2-7	HDDR1y-06	102	6-7	HDDR2y-06
		039	2-8	HDDR1y-07	103	6-8	HDDR2y-07
		040	2-9	HDDR1y-08	104	6-9	HDDR2y-08
		041	2-10	HDDR1y-09	105	6-10	HDDR2y-09
		042	2-11	HDDR1y-0A	106	6-11	HDDR2y-0A
		043	2-12	HDDR1y-0B	107	6-12	HDDR2y-0B
		044	2-13	HDDR1y-0C	108	6-13	HDDR2y-0C
		045	2-14	HDDR1y-0D	109	6-14	HDDR2y-0D
		046	2-15	HDDR1y-0E	110	6-15	HDDR2y-0E
		047(Spare) *2	2-16	HDDR1y-0F	111	6-16	HDDR2y-0F
		048	2-17	HDDR1y-10	112	6-17	HDDR2y-10
		049	2-18	HDDR1y-11	113	6-18	HDDR2y-11
		050	2-19	HDDR1y-12	114	6-19	HDDR2y-12
		051	2-20	HDDR1y-13	115	6-20	HDDR2y-13
		052	2-21	HDDR1y-14	116	6-21	HDDR2y-14
		053	2-22	HDDR1y-15	117	6-22	HDDR2y-15
		054	2-23	HDDR1y-16	118	6-23	HDDR2y-16
		055	2-24	HDDR1y-17	119	6-24	HDDR2y-17
		056	2-25	HDDR1y-18	120	6-25	HDDR2y-18
		057	2-26	HDDR1y-19	121	6-26	HDDR2y-19
		058	2-27	HDDR1y-1A	122	6-27	HDDR2y-1A
		059	2-28	HDDR1y-1B	123	6-28	HDDR2y-1B
		060	2-29	HDDR1y-1C	124	6-29	HDDR2y-1C
		061	2-30	HDDR1y-1D	125	6-30	HDDR2y-1D
		062	2-31	HDDR1y-1E	126	6-31	HDDR2y-1E
		063	2-32	HDDR1y-1F	127	6-32	HDDR2y-1F
Lower	1st DKA Pair	001	1-1	HDDR1x-00	064	5-1	HDDR2x-00
		002	1-2	HDDR1x-01	065	5-2	HDDR2x-01
		003	1-3	HDDR1x-02	066	5-3	HDDR2x-02
		004	1-4	HDDR1x-03	067	5-4	HDDR2x-03
		005	1-5	HDDR1x-04	068	5-5	HDDR2x-04
		006	1-6	HDDR1x-05	069	5-6	HDDR2x-05
		007	1-7	HDDR1x-06	070	5-7	HDDR2x-06
		008	1-8	HDDR1x-07	071	5-8	HDDR2x-07
		009	1-9	HDDR1x-08	072	5-9	HDDR2x-08
		010	1-10	HDDR1x-09	073	5-10	HDDR2x-09
		011	1-11	HDDR1x-0A	074	5-11	HDDR2x-0A
		012	1-12	HDDR1x-0B	075	5-12	HDDR2x-0B
		013	1-13	HDDR1x-0C	076	5-13	HDDR2x-0C
		014	1-14	HDDR1x-0D	077	5-14	HDDR2x-0D
		015	1-15	HDDR1x-0E	078	5-15	HDDR2x-0E
		Spare *1	1-16	HDDR1x-0F	079	5-16	HDDR2x-0F
		016	1-17	HDDR1x-10	080	5-17	HDDR2x-10
		017	1-18	HDDR1x-11	081	5-18	HDDR2x-11
		018	1-19	HDDR1x-12	082	5-19	HDDR2x-12
		019	1-20	HDDR1x-13	083	5-20	HDDR2x-13
		020	1-21	HDDR1x-14	084	5-21	HDDR2x-14
		021	1-22	HDDR1x-15	085	5-22	HDDR2x-15
		022	1-23	HDDR1x-16	086	5-23	HDDR2x-16
		023	1-24	HDDR1x-17	087	5-24	HDDR2x-17
		024	1-25	HDDR1x-18	088	5-25	HDDR2x-18
		025	1-26	HDDR1x-19	089	5-26	HDDR2x-19
		026	1-27	HDDR1x-1A	090	5-27	HDDR2x-1A
		027	1-28	HDDR1x-1B	091	5-28	HDDR2x-1B
		028	1-29	HDDR1x-1C	092	5-29	HDDR2x-1C
		029	1-30	HDDR1x-1D	093	5-30	HDDR2x-1D
		030	1-31	HDDR1x-1E	094	5-31	HDDR2x-1E
		031	1-32	HDDR1x-1F	095	5-32	HDDR2x-1F

*1: To be left vacant or a spare disk is to be installed. *2: A data or spare disk is to be installed.

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Table 4.1.2-1 Relation between HDDs installation order and RAID group number (3D+1P/2D+2D) (2/2)

	L2 DKU			L1 DKU			DKC
	RAID Group Installation Order	RAID Group No.	HDD Location	RAID Group Installation Order	RAID Group No.	HDD Location	
Upper	223	8-1	HDDL2y-00	159	4-1	HDDL1y-00	4th DKA Pair
	224	8-2	HDDL2y-01	160	4-2	HDDL1y-01	
	225	8-3	HDDL2y-02	161	4-3	HDDL1y-02	
	226	8-4	HDDL2y-03	162	4-4	HDDL1y-03	
	227	8-5	HDDL2y-04	163	4-5	HDDL1y-04	
	228	8-6	HDDL2y-05	164	4-6	HDDL1y-05	
	229	8-7	HDDL2y-06	165	4-7	HDDL1y-06	
	230	8-8	HDDL2y-07	166	4-8	HDDL1y-07	
	231	8-9	HDDL2y-08	167	4-9	HDDL1y-08	
	232	8-10	HDDL2y-09	168	4-10	HDDL1y-09	
	233	8-11	HDDL2y-0A	169	4-11	HDDL1y-0A	
	234	8-12	HDDL2y-0B	170	4-12	HDDL1y-0B	
	235	8-13	HDDL2y-0C	171	4-13	HDDL1y-0C	
	236	8-14	HDDL2y-0D	172	4-14	HDDL1y-0D	
	237	8-15	HDDL2y-0E	173	4-15	HDDL1y-0E	
	238	8-16	HDDL2y-0F	174(Spare) *2	4-16	HDDL1y-0F	
	239	8-17	HDDL2y-10	175	4-17	HDDL1y-10	
	240	8-18	HDDL2y-11	176	4-18	HDDL1y-11	
	241	8-19	HDDL2y-12	177	4-19	HDDL1y-12	
	242	8-20	HDDL2y-13	178	4-20	HDDL1y-13	
	243	8-21	HDDL2y-14	179	4-21	HDDL1y-14	
	244	8-22	HDDL2y-15	180	4-22	HDDL1y-15	
	245	8-23	HDDL2y-16	181	4-23	HDDL1y-16	
	246	8-24	HDDL2y-17	182	4-24	HDDL1y-17	
	247	8-25	HDDL2y-18	183	4-25	HDDL1y-18	
	248	8-26	HDDL2y-19	184	4-26	HDDL1y-19	
	249	8-27	HDDL2y-1A	185	4-27	HDDL1y-1A	
	250	8-28	HDDL2y-1B	186	4-28	HDDL1y-1B	
	251	8-29	HDDL2y-1C	187	4-29	HDDL1y-1C	
	252	8-30	HDDL2y-1D	188	4-30	HDDL1y-1D	
	253	8-31	HDDL2y-1E	189	4-31	HDDL1y-1E	
	254	8-32	HDDL2y-1F	190	4-32	HDDL1y-1F	
Lower	191	7-1	HDDL2x-00	128	3-1	HDDL1x-00	3rd DKA Pair
	192	7-2	HDDL2x-01	129	3-2	HDDL1x-01	
	193	7-3	HDDL2x-02	130	3-3	HDDL1x-02	
	194	7-4	HDDL2x-03	131	3-4	HDDL1x-03	
	195	7-5	HDDL2x-04	132	3-5	HDDL1x-04	
	196	7-6	HDDL2x-05	133	3-6	HDDL1x-05	
	197	7-7	HDDL2x-06	134	3-7	HDDL1x-06	
	198	7-8	HDDL2x-07	135	3-8	HDDL1x-07	
	199	7-9	HDDL2x-08	136	3-9	HDDL1x-08	
	200	7-10	HDDL2x-09	137	3-10	HDDL1x-09	
	201	7-11	HDDL2x-0A	138	3-11	HDDL1x-0A	
	202	7-12	HDDL2x-0B	139	3-12	HDDL1x-0B	
	203	7-13	HDDL2x-0C	140	3-13	HDDL1x-0C	
	204	7-14	HDDL2x-0D	141	3-14	HDDL1x-0D	
	205	7-15	HDDL2x-0E	142	3-15	HDDL1x-0E	
	206	7-16	HDDL2x-0F	Spare *1	3-16	HDDL1x-0F	
	207	7-17	HDDL2x-10	143	3-17	HDDL1x-10	
	208	7-18	HDDL2x-11	144	3-18	HDDL1x-11	
	209	7-19	HDDL2x-12	145	3-19	HDDL1x-12	
	210	7-20	HDDL2x-13	146	3-20	HDDL1x-13	
	211	7-21	HDDL2x-14	147	3-21	HDDL1x-14	
	212	7-22	HDDL2x-15	148	3-22	HDDL1x-15	
	213	7-23	HDDL2x-16	149	3-23	HDDL1x-16	
	214	7-24	HDDL2x-17	150	3-24	HDDL1x-17	
	215	7-25	HDDL2x-18	151	3-25	HDDL1x-18	
	216	7-26	HDDL2x-19	152	3-26	HDDL1x-19	
	217	7-27	HDDL2x-1A	153	3-27	HDDL1x-1A	
	218	7-28	HDDL2x-1B	154	3-28	HDDL1x-1B	
	219	7-29	HDDL2x-1C	155	3-29	HDDL1x-1C	
	220	7-30	HDDL2x-1D	156	3-30	HDDL1x-1D	
	221	7-31	HDDL2x-1E	157	3-31	HDDL1x-1E	
	222	7-32	HDDL2x-1F	158	3-32	HDDL1x-1F	

*1: To be left vacant or a spare disk is to be installed. *2: A data or spare disk is to be installed.

*3: HDDL1x-00 (x: HDU Box No. 0, 1, 2, 3), HDDL1y-00 (y: HDU Box No. 4, 5, 6, 7)

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(1) Make sure of the location where the RAID group is de-installed and that where the HDD canister is to be removed.

No.	Model Number	Model Name	Data and Parity
1	DKU-F455I-36K4/72J4/72K4/146J4/146JF/146JQ	4 HDD Canisters	Data and Parity Drive

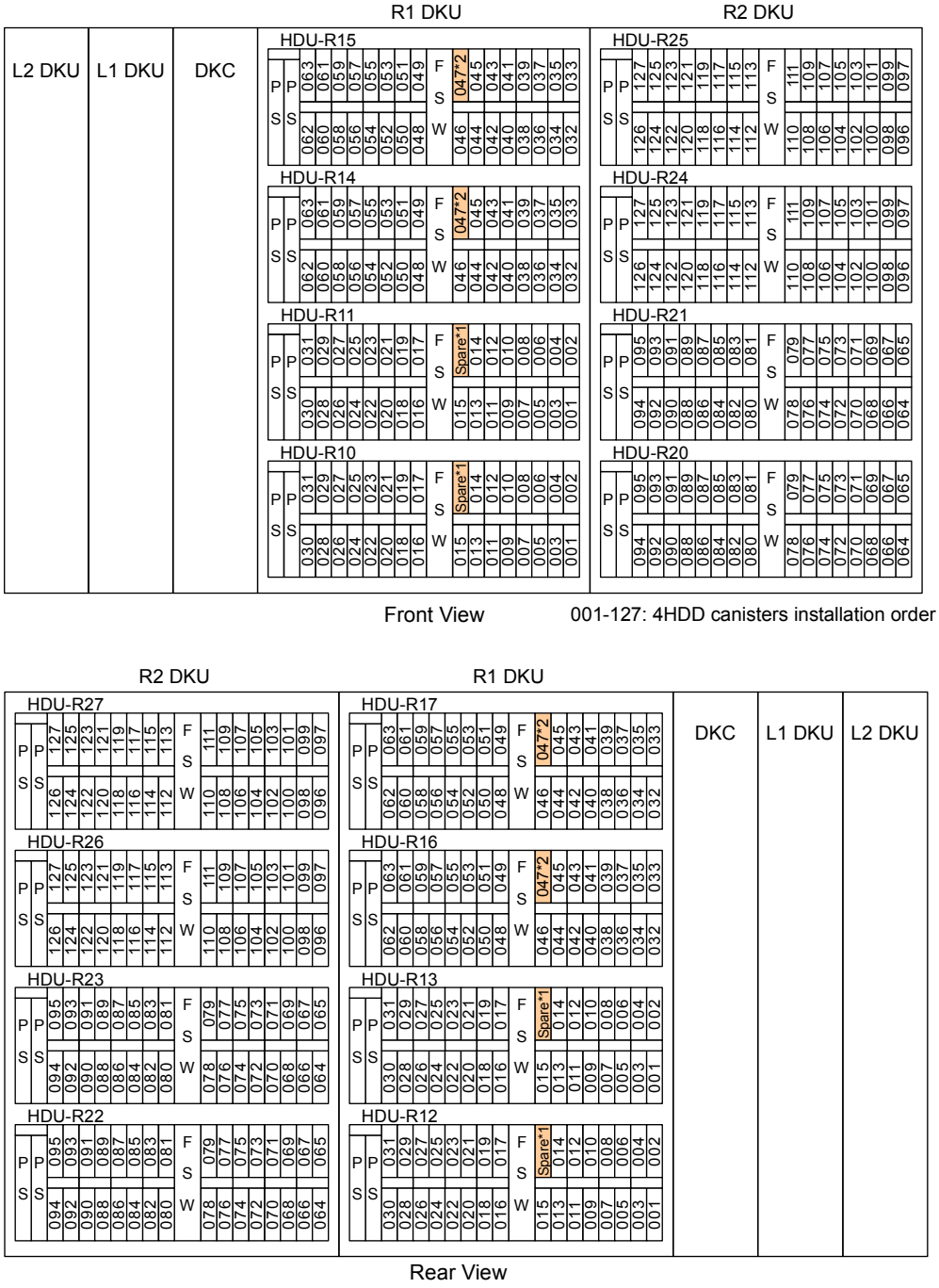

Fig. 4.1.2-1 (3D+1P) or (2D+2P) Data Drive/Parity Drive Expansion Sequence (1/2)

The relationship between HDDs installation order and RAID group number is shown in the Table 4.1.2-1.

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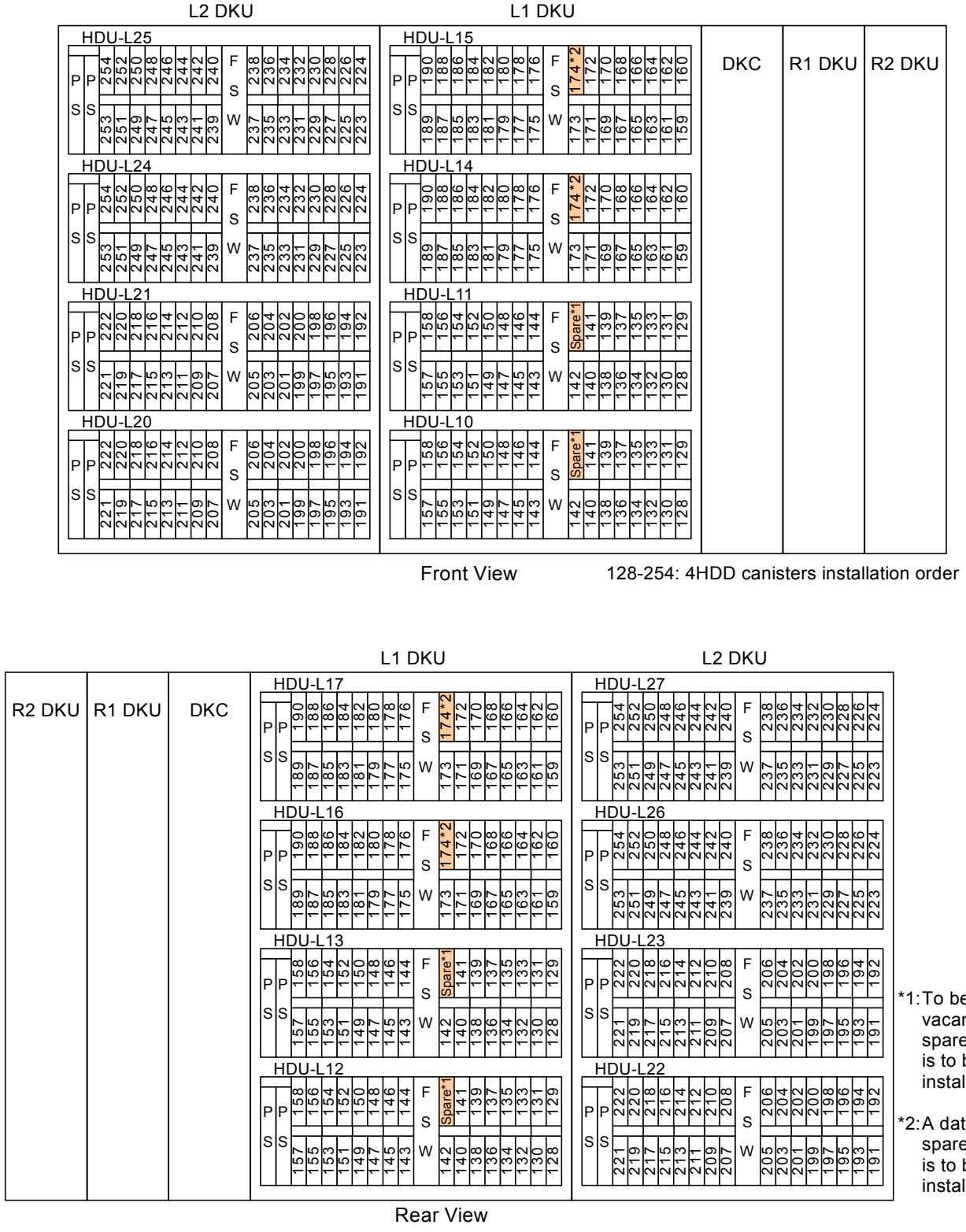

Fig. 4.1.2-1 (3D+1P) or (2D+2P) Data Drive/Parity Drive Expansion Sequence (2/2)

The relationship between HDDs installation order and RAID group number is shown in the Table 4.1.2-1.

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(ii) RAID5 (7D+1P)

Relations between the installation locations of the RAID groups and the RAID group numbers set through the SVP are shown in Table 4.1.2-2.

Table 4.1.2-2 Relation between HDDs installation order and RAID group number (7D+1P) (1/2)

DKC	R1 DKU			R2 DKU		
	RAID Group Installation Order	RAID Group No.	HDD Location	RAID Group Installation Order	RAID Group No.	HDD Location
1st / 2nd DKA Pair	001	1-1 , (2-1)	HDDR1x-00	032	5-1, (6-1)	HDDR2x-00
	002	1-2 , (2-2)	HDDR1x-01	033	5-2, (6-2)	HDDR2x-01
	003	1-3 , (2-3)	HDDR1x-02	034	5-3, (6-3)	HDDR2x-02
	004	1-4 , (2-4)	HDDR1x-03	035	5-4, (6-4)	HDDR2x-03
	005	1-5 , (2-5)	HDDR1x-04	036	5-5, (6-5)	HDDR2x-04
	006	1-6 , (2-6)	HDDR1x-05	037	5-6, (6-6)	HDDR2x-05
	007	1-7 , (2-7)	HDDR1x-06	038	5-7, (6-7)	HDDR2x-06
	008	1-8 , (2-8)	HDDR1x-07	039	5-8, (6-8)	HDDR2x-07
	009	1-9 , (2-9)	HDDR1x-08	040	5-9, (6-9)	HDDR2x-08
	010	1-10 , (2-10)	HDDR1x-09	041	5-10, (6-10)	HDDR2x-09
	011	1-11 , (2-11)	HDDR1x-0A	042	5-11, (6-11)	HDDR2x-0A
	012	1-12 , (2-12)	HDDR1x-0B	043	5-12, (6-12)	HDDR2x-0B
	013	1-13 , (2-13)	HDDR1x-0C	044	5-13, (6-13)	HDDR2x-0C
	014	1-14 , (2-14)	HDDR1x-0D	045	5-14, (6-14)	HDDR2x-0D
	015	1-15 , (2-15)	HDDR1x-0E	046	5-15, (6-15)	HDDR2x-0E
	(Spare) *1	1-16 , (2-16)	HDDR1x-0F	047	5-16, (6-16)	HDDR2x-0F
	016	1-17 , (2-17)	HDDR1x-10	048	5-17, (6-17)	HDDR2x-10
	017	1-18 , (2-18)	HDDR1x-11	049	5-18, (6-18)	HDDR2x-11
	018	1-19 , (2-19)	HDDR1x-12	050	5-19, (6-19)	HDDR2x-12
	019	1-20 , (2-20)	HDDR1x-13	051	5-20, (6-20)	HDDR2x-13
	020	1-21 , (2-21)	HDDR1x-14	052	5-21, (6-21)	HDDR2x-14
	021	1-22 , (2-22)	HDDR1x-15	053	5-22, (6-22)	HDDR2x-15
	022	1-23 , (2-23)	HDDR1x-16	054	5-23, (6-23)	HDDR2x-16
	023	1-24 , (2-24)	HDDR1x-17	055	5-24, (6-24)	HDDR2x-17
	024	1-25 , (2-25)	HDDR1x-18	056	5-25, (6-25)	HDDR2x-18
	025	1-26 , (2-26)	HDDR1x-19	057	5-26, (6-26)	HDDR2x-19
	026	1-27 , (2-27)	HDDR1x-1A	058	5-27, (6-27)	HDDR2x-1A
	027	1-28 , (2-28)	HDDR1x-1B	059	5-28, (6-28)	HDDR2x-1B
	028	1-29 , (2-29)	HDDR1x-1C	060	5-29, (6-29)	HDDR2x-1C
	029	1-30 , (2-30)	HDDR1x-1D	061	5-30, (6-30)	HDDR2x-1D
	030	1-31 , (2-31)	HDDR1x-1E	062	5-31, (6-31)	HDDR2x-1E
	031	1-32 , (2-32)	HDDR1x-1F	063	5-32, (6-32)	HDDR2x-1F

*1: To be left vacant or a spare disk is to be installed. *2: HDDL1x-00 (x: HDU Box No. 0, 1, 2, …, 7)

- Install RAID 5 (7D+1P) forming pairs using the same number of the two RAID groups (RAID groups 1 and 2, 3 and 4, 5 and 6, and 7 and 8) of RAID 5 (3D+1P).
  (Example: RAID group numbers 1-1 and 2-1)
  The types of HDDs to be installed in each pair must be the same.
- In the case of RAID 5 (7D+1P), only odd RAID numbers are displayed on the SVP. (Group numbers shown in parentheses in the table above are not displayed.)
- When RAID 5 (3D+1P) or RAID 1 (2D+2D) and RAID 5 (7D+1P) are configured mixture, note that duplicated group numbers are excluded.
  Example: When Group No. 1-1 is configured for RAID 5 (7D+1P), Group No. 2-1 is excluded and cannot be configure for RAID 5 (3D+1P).

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Table 4.1.2-2 Relation between HDDs installation order and RAID group number (7D+1P) (2/2)

L2 DKU			L1 DKU			DKC
RAID Group Installation Order	RAID Group No.	HDD Location	RAID Group Installation Order	RAID Group No.	HDD Location	
095	7-1, (8-1)	HDDL2x-00	064	3-1 , (4-1)	HDDL1x-00	
096	7-2, (8-2)	HDDL2x-01	065	3-2 , (4-2)	HDDL1x-01	
097	7-3, (8-3)	HDDL2x-02	066	3-3 , (4-3)	HDDL1x-02	
098	7-4, (8-4)	HDDL2x-03	067	3-4 , (4-4)	HDDL1x-03	
099	7-5, (8-5)	HDDL2x-04	068	3-5 , (4-5)	HDDL1x-04	
100	7-6, (8-6)	HDDL2x-05	069	3-6 , (4-6)	HDDL1x-05	
101	7-7, (8-7)	HDDL2x-06	070	3-7 , (4-7)	HDDL1x-06	
102	7-8, (8-8)	HDDL2x-07	071	3-8 , (4-8)	HDDL1x-07	
103	7-9, (8-9)	HDDL2x-08	072	3-9 , (4-9)	HDDL1x-08	
104	7-10, (8-10)	HDDL2x-09	073	3-10 , (4-10)	HDDL1x-09	
105	7-11, (8-11)	HDDL2x-0A	074	3-11 , (4-11)	HDDL1x-0A	
106	7-12, (8-12)	HDDL2x-0B	075	3-12 , (4-12)	HDDL1x-0B	
107	7-13, (8-13)	HDDL2x-0C	076	3-13 , (4-13)	HDDL1x-0C	
108	7-14, (8-14)	HDDL2x-0D	077	3-14 , (4-14)	HDDL1x-0D	
109	7-15, (8-15)	HDDL2x-0E	078	3-15 , (4-15)	HDDL1x-0E	3rd / 4th
110	7-16, (8-16)	HDDL2x-0F	(Spare) *1	3-16 , (4-16)	HDDL1x-0F	DKA
111	7-17, (8-17)	HDDL2x-10	079	3-17 , (4-17)	HDDL1x-10	Pair
112	7-18, (8-18)	HDDL2x-11	080	3-18 , (4-18)	HDDL1x-11	
113	7-19, (8-19)	HDDL2x-12	081	3-19 , (4-19)	HDDL1x-12	
114	7-20, (8-20)	HDDL2x-13	082	3-20 , (4-20)	HDDL1x-13	
115	7-21, (8-21)	HDDL2x-14	083	3-21 , (4-21)	HDDL1x-14	
116	7-22, (8-22)	HDDL2x-15	084	3-22 , (4-22)	HDDL1x-15	
117	7-23, (8-23)	HDDL2x-16	085	3-23 , (4-23)	HDDL1x-16	
118	7-24, (8-24)	HDDL2x-17	086	3-24 , (4-24)	HDDL1x-17	
119	7-25, (8-25)	HDDL2x-18	087	3-25 , (4-25)	HDDL1x-18	
120	7-26, (8-26)	HDDL2x-19	088	3-26 , (4-26)	HDDL1x-19	
121	7-27, (8-27)	HDDL2x-1A	089	3-27 , (4-27)	HDDL1x-1A	
122	7-28, (8-28)	HDDL2x-1B	090	3-28 , (4-28)	HDDL1x-1B	
123	7-29, (8-29)	HDDL2x-1C	091	3-29 , (4-29)	HDDL1x-1C	
124	7-30, (8-30)	HDDL2x-1D	092	3-30 , (4-30)	HDDL1x-1D	
125	7-31, (8-31)	HDDL2x-1E	093	3-31 , (4-31)	HDDL1x-1E	
126	7-32, (8-32)	HDDL2x-1F	094	3-32 , (4-32)	HDDL1x-1F	

*1: To be left vacant or a spare disk is to be installed. *2: HDDL1x-00 (x: HDU Box No. 0, 1, 2, …, 7)

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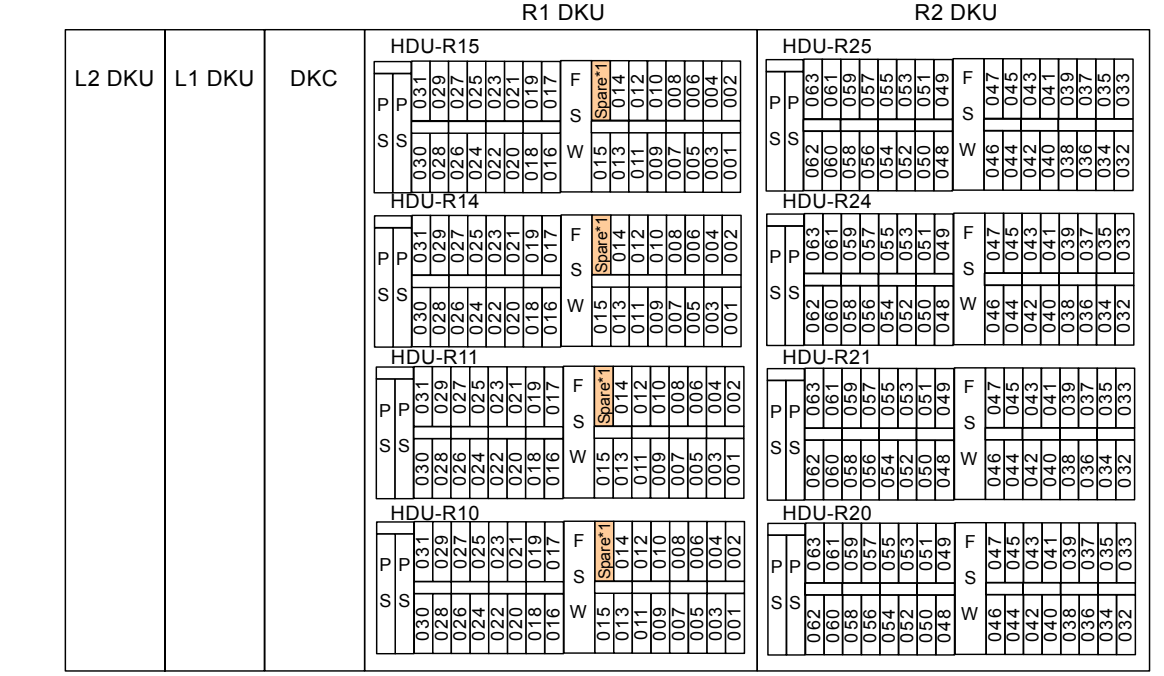
(1) Make sure of the location where the RAID group is de-installed and that where the HDD canister is to be removed.

No.	Model Number	Model Name	Data and Parity
1	DKU-F455I-36K4/72J4/72K4/146J4/146JF/146JQ	4 HDD Canisters x 2sets	Data and Parity Drive



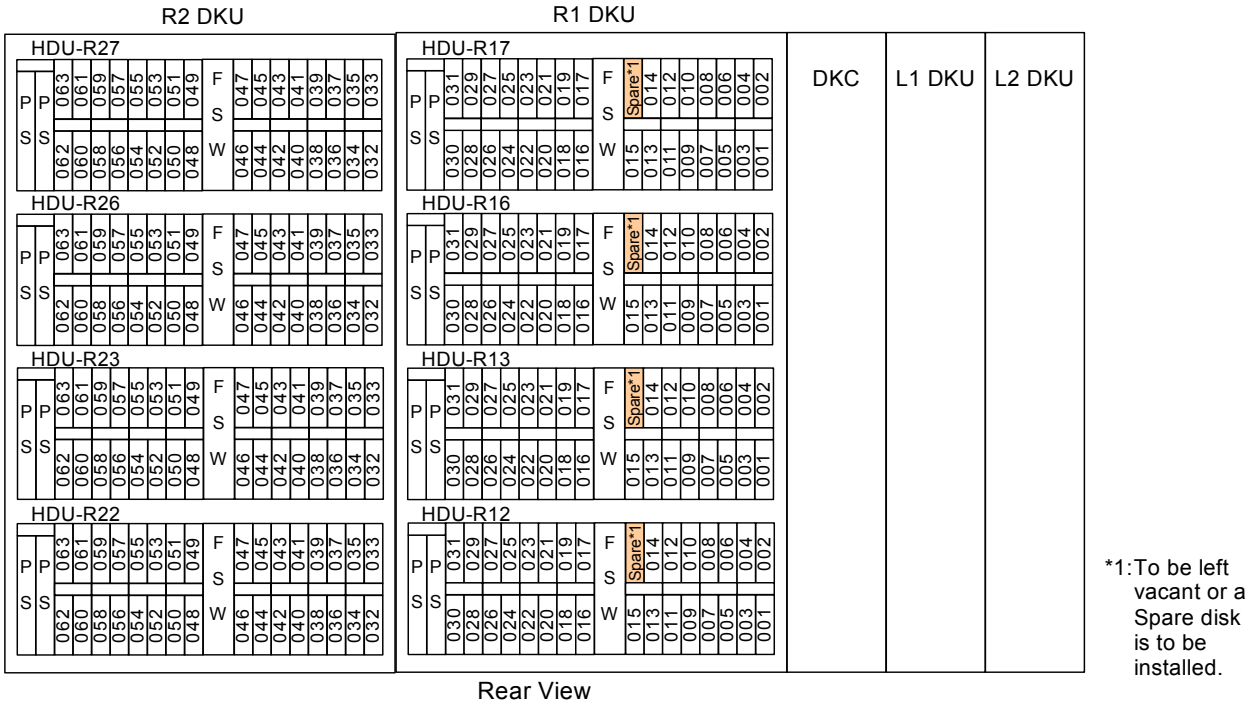


Fig. 4.1.2-2 (7D+1P) Data Drive/Parity Drive Expansion Sequence (1/2)

The relationship between HDDs installation order and RAID group number is shown in the Table 4.1.2-2.

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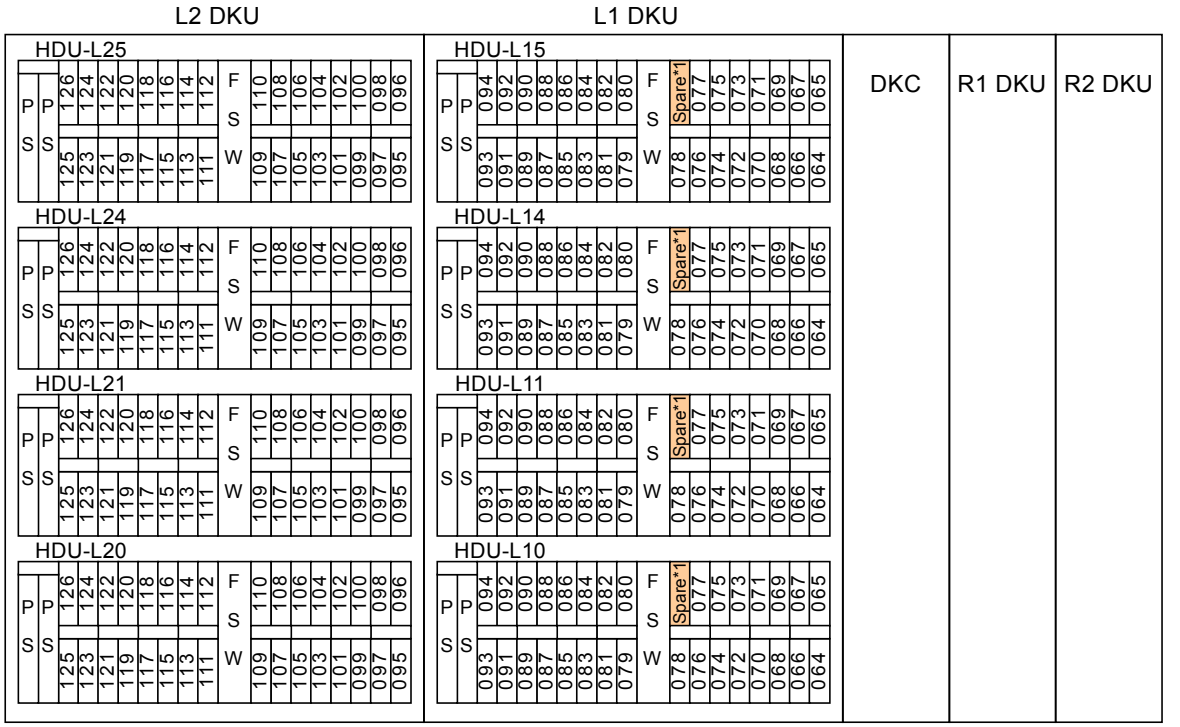

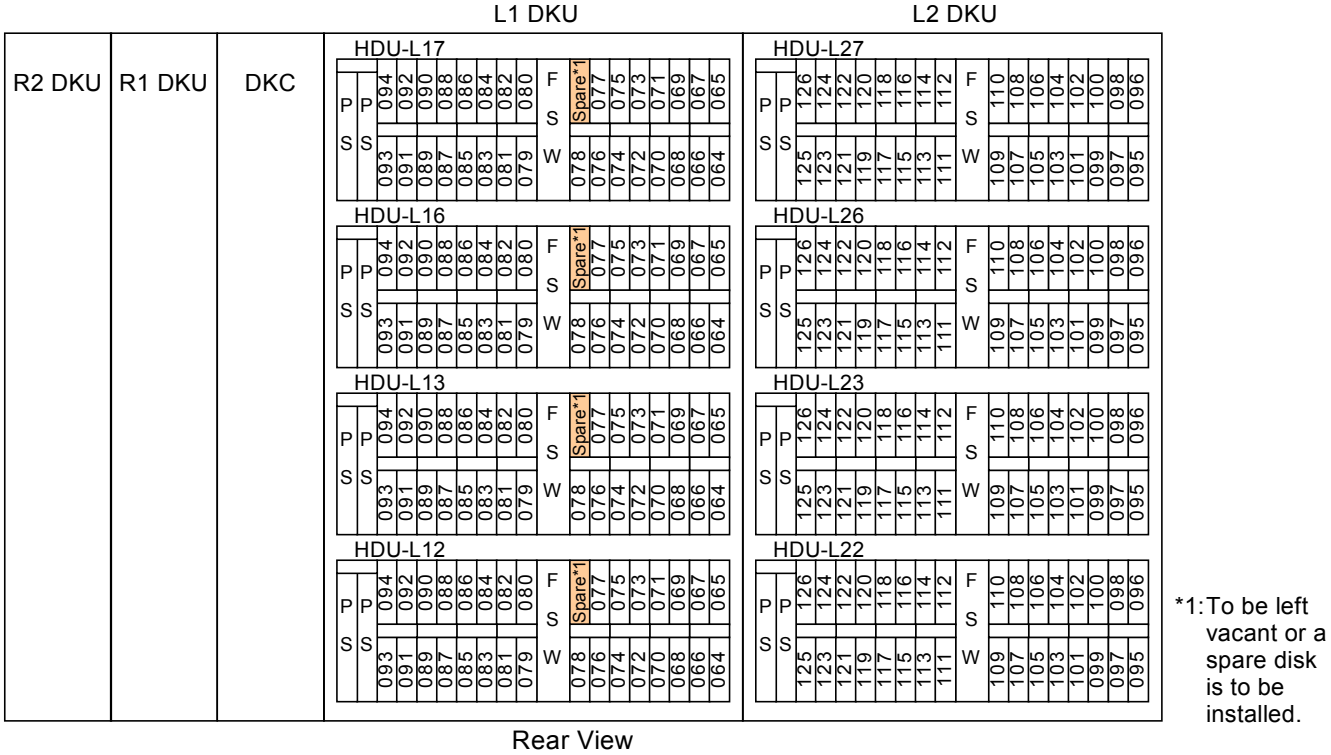

Fig. 4.1.2-2 (7D+1P) Data Drive/Parity Drive Expansion Sequence (2/2)

The relationship between HDDs installation order and RAID group number is shown in the Table 4.1.2-2.

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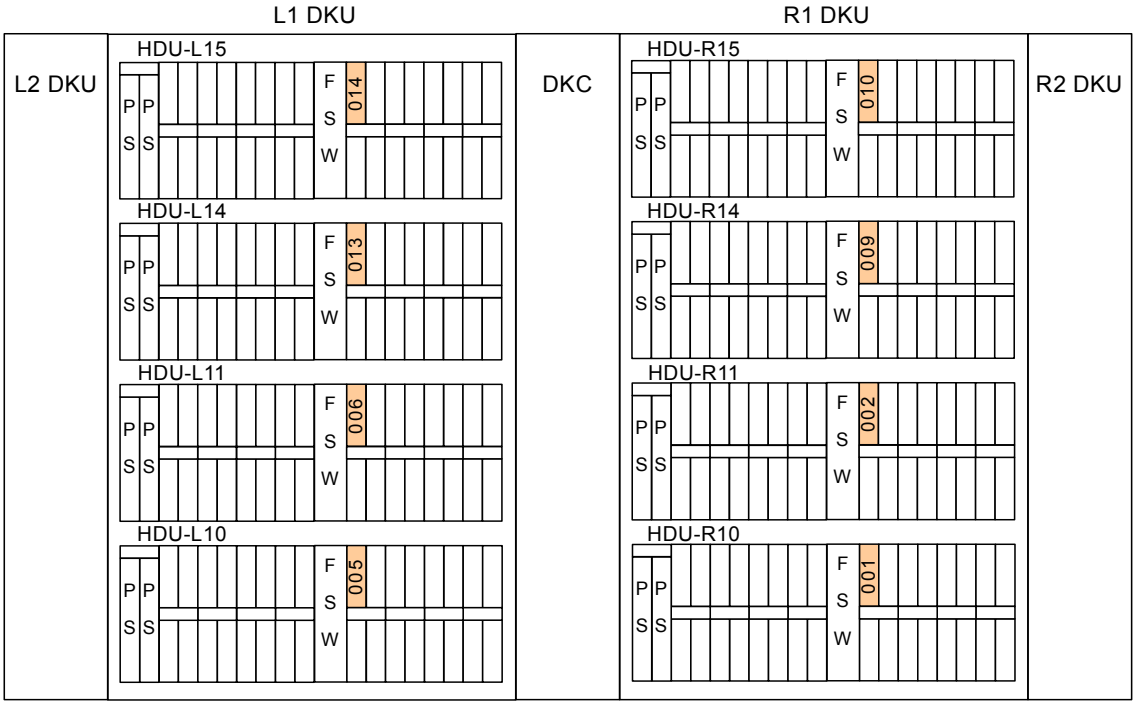
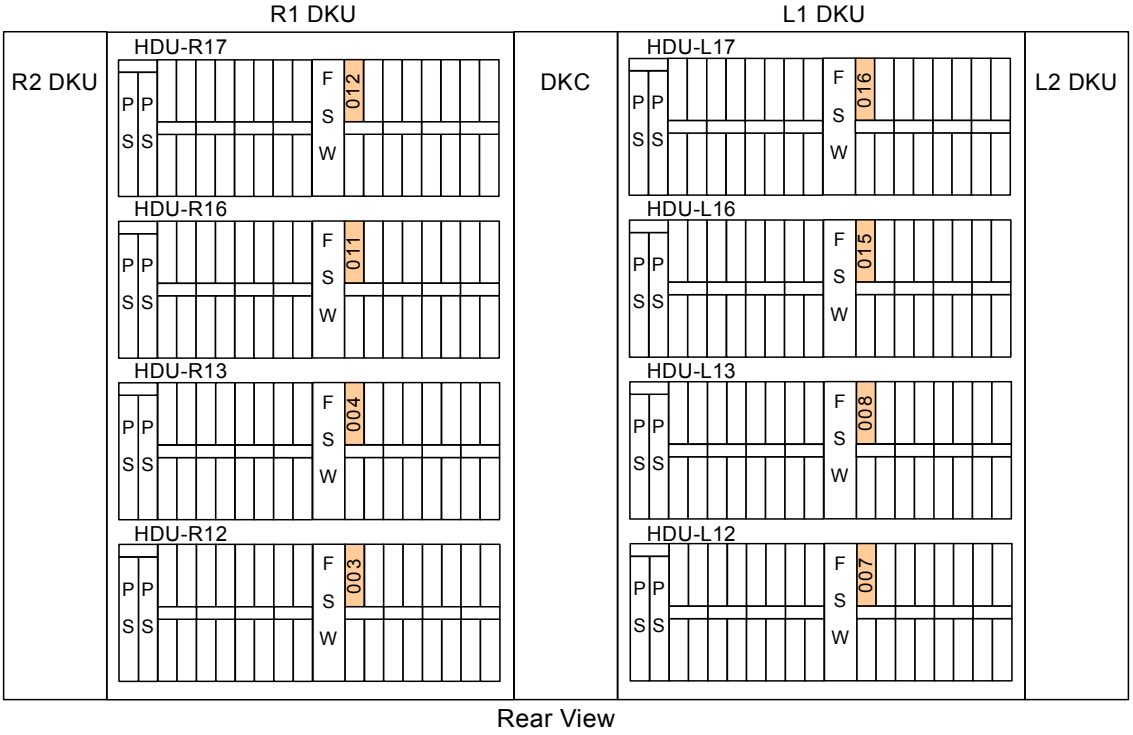
(iii) Spare HDD

No.	Model Number	Model Name	Data and Parity
1	DKU-F455I-36K1/72J1/72K1/146J1/146JS/146JM	1 HDD Canister	Spare Drive



Front View

001-016: Spare HDD canister installation order



Rear View

Fig. 4.1.2-3 Spare Drive Expansion Sequence

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3-2 Confirmation of Shut Down LED.

a. Confirm the Shut Down LED on the JMP PCB. (It should be RED.)

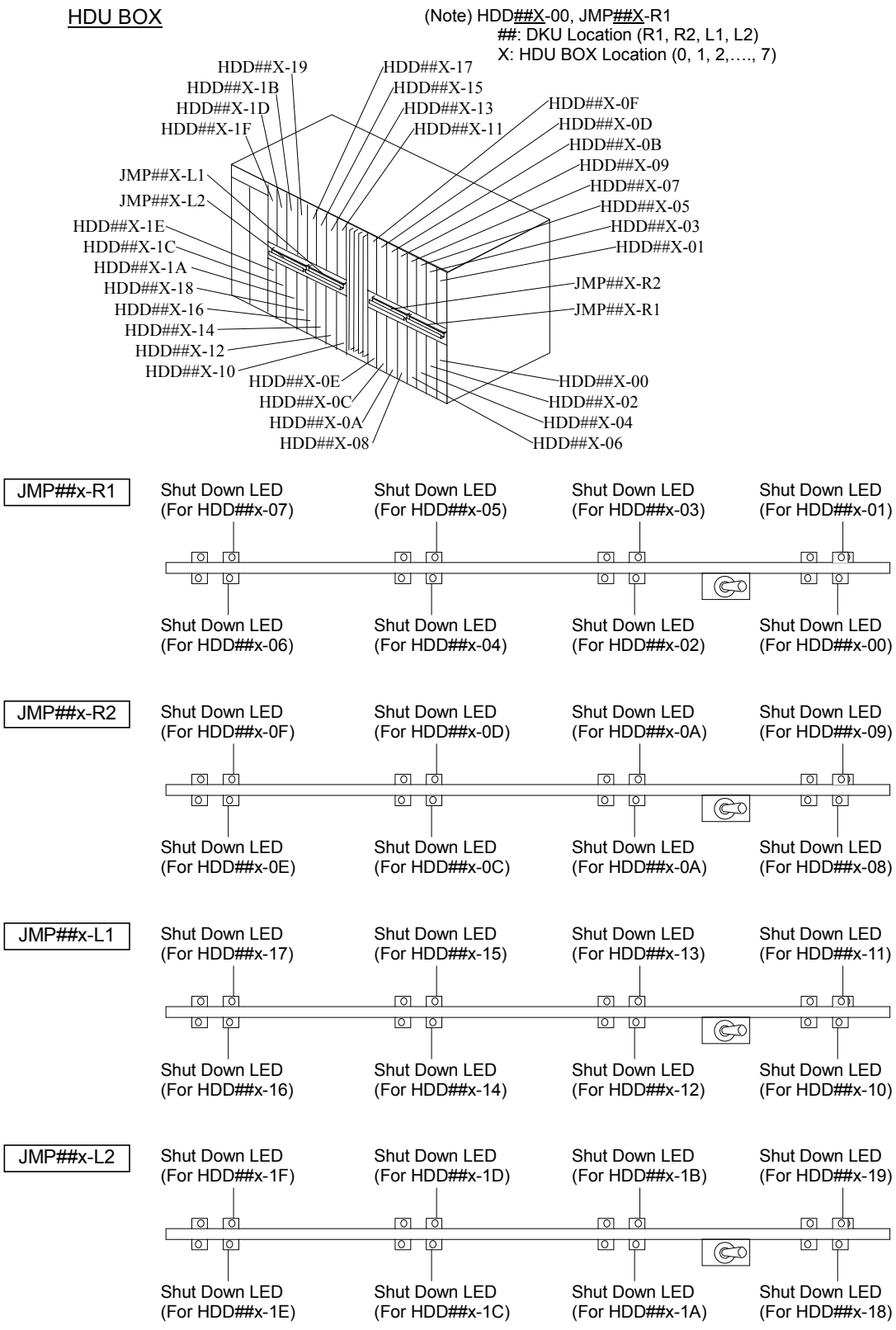

Fig. 4.1.2-4 Location of Shut Down LED

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3-3 De-installation of the HDD canister.

Notice:
Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

CAUTION

A system down may be caused by a removal of an HDD canister other than that to be removed. Make sure that it is the HDD canister to be removed.

a. After pushing up the stopper on the front side of the HDD canister, pull the handle toward you to remove the HDD canister.
b. Insert the dummy canister to the HDU Box.

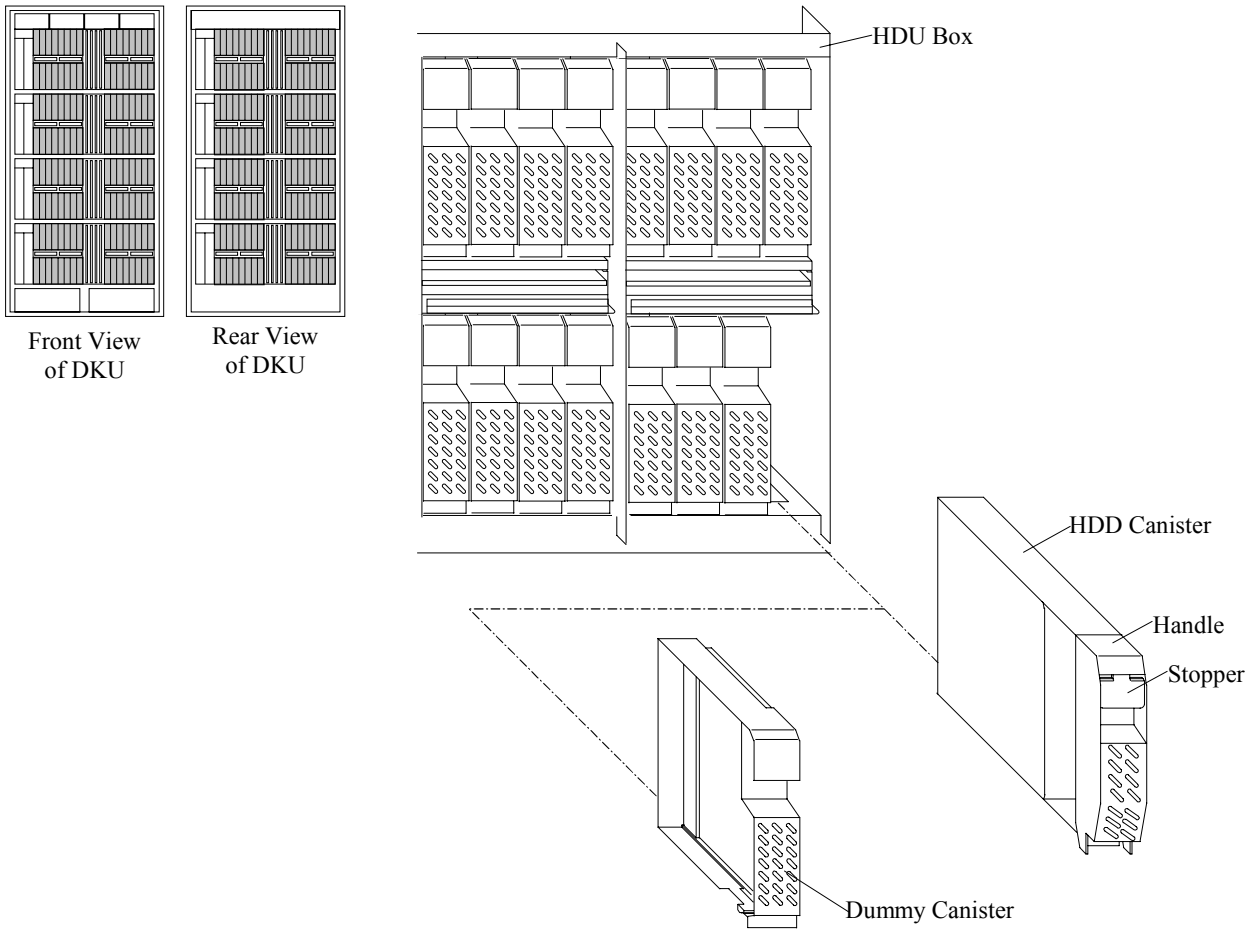

Fig. 4.1.2-5 De-Installation of HDD Canister

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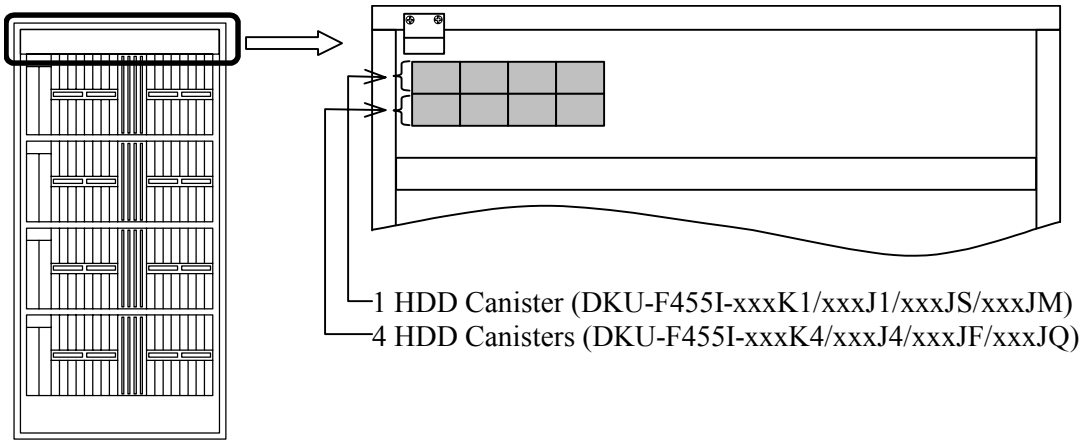
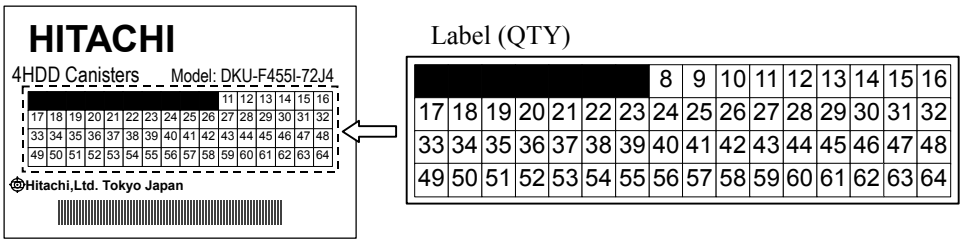
3-4 Change of the nameplate.

a. Affix a necessary portion of the Label (QTY)(Accessory of DKC; DWG No.3264290-1) in layers on the name plate and paint out numbers less than the number concerned with black oil felt pen.



[Example]

When DKU-F455I-72J4s are removed from 10 sets to 7sets



							8	9	10	11	12	13	14	15	16
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64

Fig. 4.1.2-6 Change of Nameplate

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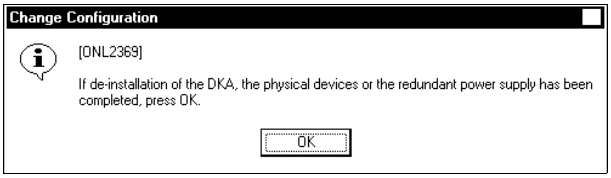
4. SVP post procedure

1.

Select (CL) [OK] in response to "If de-installation of the DKA, the physical devices or the redundant power supply has been completed, press OK." shown in the right figure.



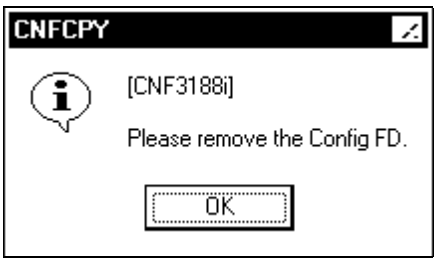
2. <Check the end of de-installation procedure>
"Renewal process has completed. Please check subsystem status." shown in the right figure displayed. Select (CL) [OK] in response to this message.

3.

"Reading subsystem configuration data..." is displayed.
"Please insert the Config FD in the FDD." is displayed.
Insert the configuration FD into FDD, select (CL) [OK].

4.

When this procedure is completed, message "Please remove the Config FD." is displayed.
Remove the FD, select (CL) [OK].



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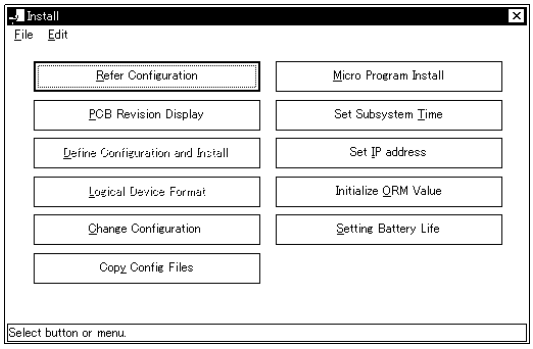
5.

After the procedure is completed, return to ‘Install’.
Select (CL) [File]-[Exit].



6. <Mode Change>
Change the mode to View Mode.

Return to the work table (INST02-60) and perform rest of the works.

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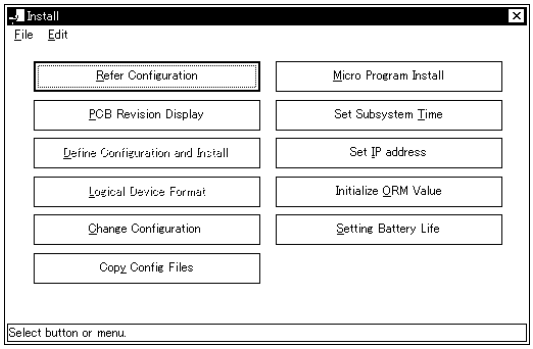
4.1.3 When performing removal of the DKA (DKC-F460I-200)

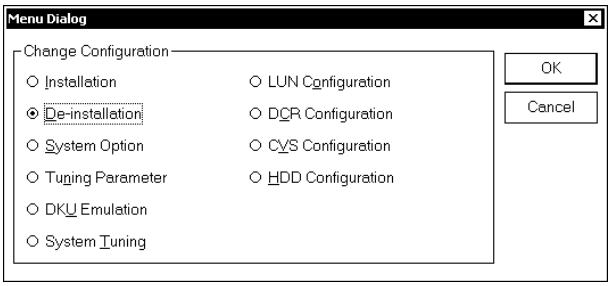
1. Setting up the New Device Structure Information

1. <Mode Change>
   Change the mode to Modify Mode.
   Select (CL) [Install].

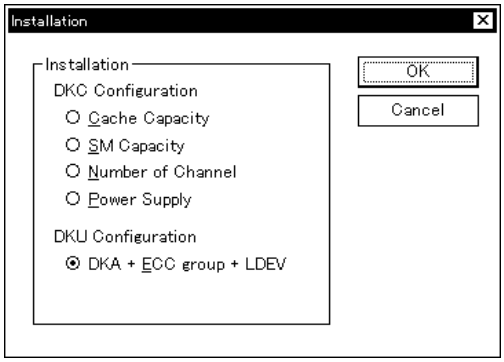
2. <Start the 'Menu Dialog' screen>
   Select (CL) [Change Configuration].



3. <Start Device Structure Setup screen>
   Select (CL) [De-Installation] in the 'Menu Dialog' dialog box and select (CL) [OK].



4. <Select a part to be changed>
   Select (CL) [DKA + ECC group + LDEV], and select (CL) [OK].



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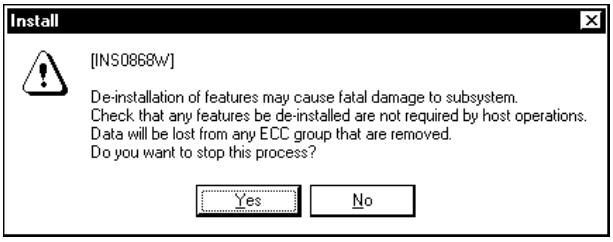
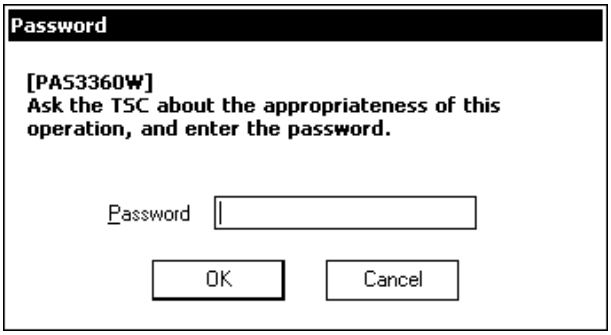
5.

Select (CL) [No] in response to “De-installation of features may cause fatal damage to subsystem. Check that any features be de-installed are not required by host operations. Data will be lost from any ECC group that are removed. Do you want to stop this process?”.



6. <Input password>
Enter the password and select (CL) [OK].



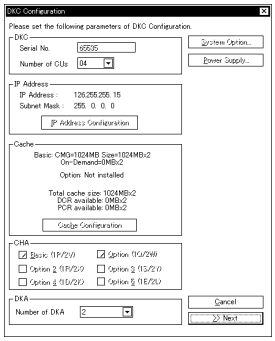
NOTICE
This is a special (exceptional) operation that can cause a serious failure such as a system down or a data loss if a wrong part to be removed is selected, and requires an input of a password. Ask the technical support center about the appropriateness of the operation, and input the password after getting an approval of executing the operation.

7. <Update Configuration Information>
Set the item to be de-installed for DKC and DKA in the ‘DKC Configuration’ window.

When decreasing the CUs, change the “Number of CUs”.
When decreasing the DKAs, change the “Number of DKA”.

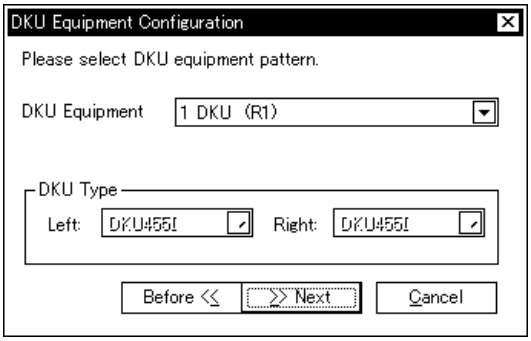
Note: A part other than the CU and DKA cannot be removed at the same time.

Make sure that the entered item is correct and select (CL) [>>Next].



7-1. <Altering DKU frame information>
Define the DKU frame in the DKU Equipment Configuration window.

After making the setting, select the [>> Next]. The routine proceeds to Step 8.
When the [Before <<] is selected, the window returns to the preceding one.
Return to Step 7.



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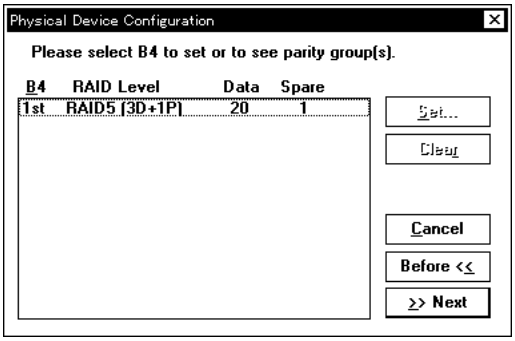
8. Change Drive Configuration Information>



Set drive configuration according to the 'Physical Device Configuration' screen displaying the mounted B4 based on the result of setting of DKU mount pattern.
In the case of only DKA de-installation, select (CL) [>>Next]. Go to step 2.
Detailed procedure is shown below.
[Set...]: Defines the parity group or spare disk. The routine proceeds to Step 8-1.
[Clear...]: Cancels the setting of the B4.
After setting up all items, select (CL) [>>Next].
Selecting (CL) [Before<<] returns you to the previous screen.

[For the case of the multi cabinet model]

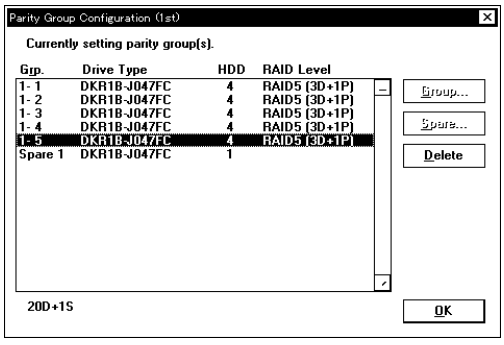
B4	Location	B4	Location
1st	HDU-R10, 11, 12, 13	7th	HDU-L20, 21, 22, 23
2nd	HDU-R14, 15, 16, 17	8th	HDU-L24, 25, 26, 27
3rd	HDU-L10, 11, 12, 13	9th	HDU-R30, 31, 32, 33
4th	HDU-L14, 15, 16, 17	10th	HDU-R34, 35, 36, 37
5th	HDU-R20, 21, 22, 23	11th	HDU-L30, 31, 32, 33
6th	HDU-R24, 25, 26, 27	12th	HDU-L34, 35, 36, 37

Note: The 9th to 12th of the B4 are valid only when the DKUs for the RAID 400 are connected.

[For the case of the single cabinet model]

B4	Location	Remarks
1st	HDU-R0, 1, 2, 3	HDD-X00 ~ X0F
2nd	HDU-R0, 1, 2, 3	HDD-X10 ~ X1F

8-1. <Define Parity Group>



Select (CL) the group to be de-installed and select (CL) [Delete] in the 'Parity Group Configuration' dialog box.
After setting, select (CL) [OK]. Return to step 8.

Grp*: A parity group where RAID Concatenation is installed.

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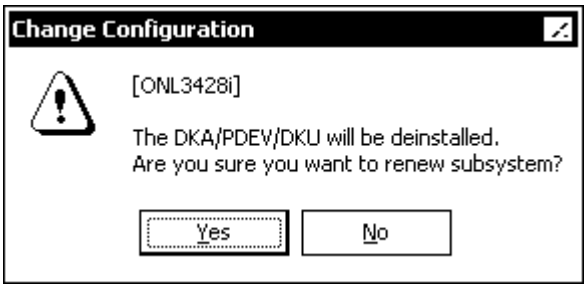
2. SVP pre procedure

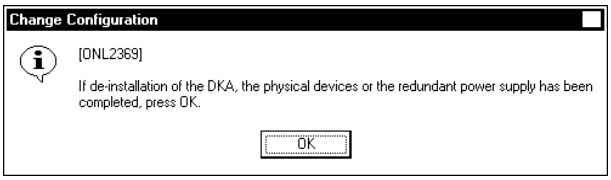
1. <Start de-installation>
   Select (CL) [Yes] in response to “The DKA/PDEV/DKU will be deinstalled. Are you sure you want to renew subsystem?”.

   When [No] is selected (CL), returns to INST04-DKA-260 step 2.



2.

   At this point refrain from pressing the [OK] button.
   “If de-installation of the DKA, the physical devices or the redundant power supply has been completed, press OK.” shown in the right figure.



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3. De-Installation Procedure of Disk Adapter

Note: Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

3-1 Confirmation of the Shut Down LED (Only Non-Disruptive Procedure)

a. Confirm that Shut Down LED is on. (Fig. 4.1.3-1) If the LED is not on, connect the Maintenance Jumper to the Shut Down Connector.

⚠ CAUTION

A system down may be caused if the Maintenance jumper is inserted in a PCB other than that to be removed. Make sure that it is the PCB to be removed.

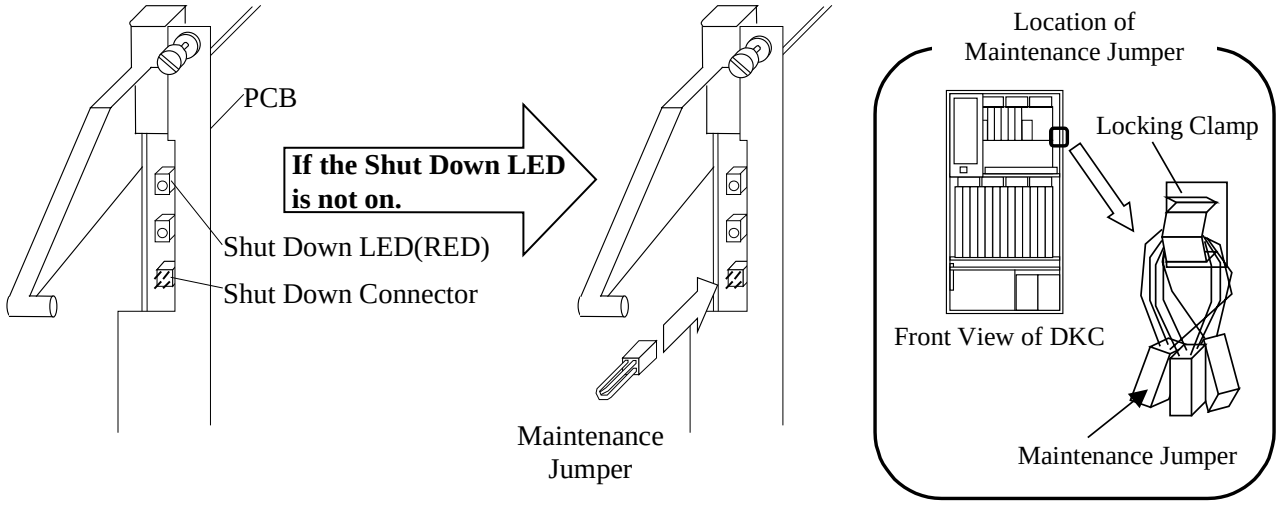

Fig. 4.1.3-1 Shut Down LED

Table 4.1.3-1 Removal Location (Rear of the unit)

Cluster	CL2							CL1				
Slot No.	M	L	K	J	H	G	F	E	D	C	B	A
Function	CSW	DKA	DKA	DKA	DKA	CACHE	CACHE	DKA	DKA	DKA	DKA	CSW
Location No.	CSW -2M	DKA -2L	DKA -2K	DKA -2J	DKA -2H	CACHE -2G	CACHE -2F	DKA -1E	DKA -1D	DKA -1C	DKA -1B	CSW -1A
Order of addition		Add.3	Add.2	Add.1	Basic			Add.3	Add.2	Add.1	Basic	
Number of DKAs set through the SVP		–	–	–	2			–	–	–	2	
		–	–	4				–	–	4		
		–	6					–	6			
		8						8				

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3-2 Disconnection of the DEV Interface cables

In case of Add.1

a. Disconnect the cable from the sub-edge of PCB.

⚠ CAUTION

A serious failure occurs if a wrong cable or connector is removed.
Since a label bearing a connection destination is affixed on each cable or connector to be removed, work very carefully referring to it and the wiring diagram.

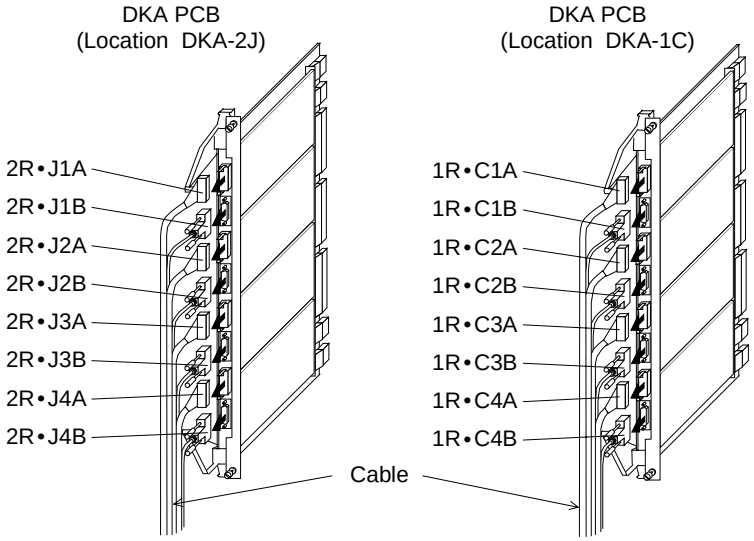

Fig. 4.1.3-2 Disconnection of DEV Interface Cables (Add.1)

In case of Add.2

a. Disconnect the cable from the sub-edge of PCB.

⚠ CAUTION

A serious failure occurs if a wrong cable or connector is removed.
Since a label bearing a connection destination is affixed on each cable or connector to be removed, work very carefully referring to it and the wiring diagram.

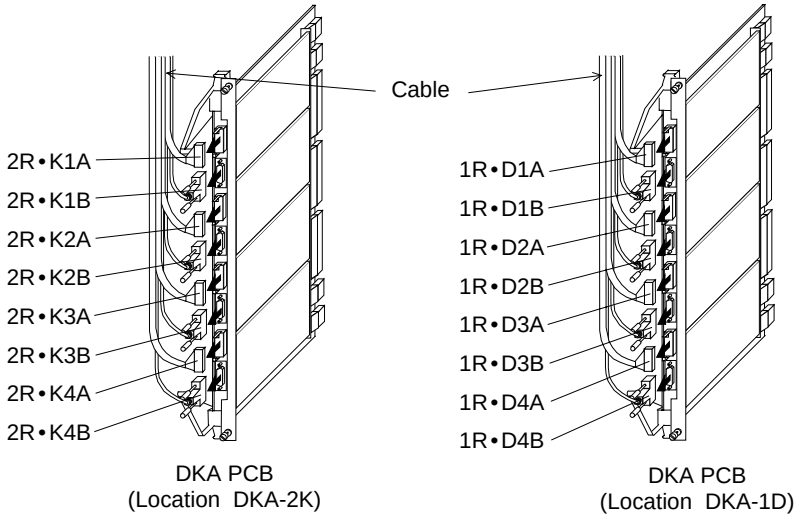

Fig. 4.1.3-3 Disconnection of DEV Interface Cables (Add.2)

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In case of Add.3

a. Disconnect the cable from the sub-edge of PCB.

CAUTION

A serious failure occurs if a wrong cable or connector is removed.
Since a label bearing a connection destination is affixed on each cable or connector to be removed, work very carefully referring to it and the wiring diagram.

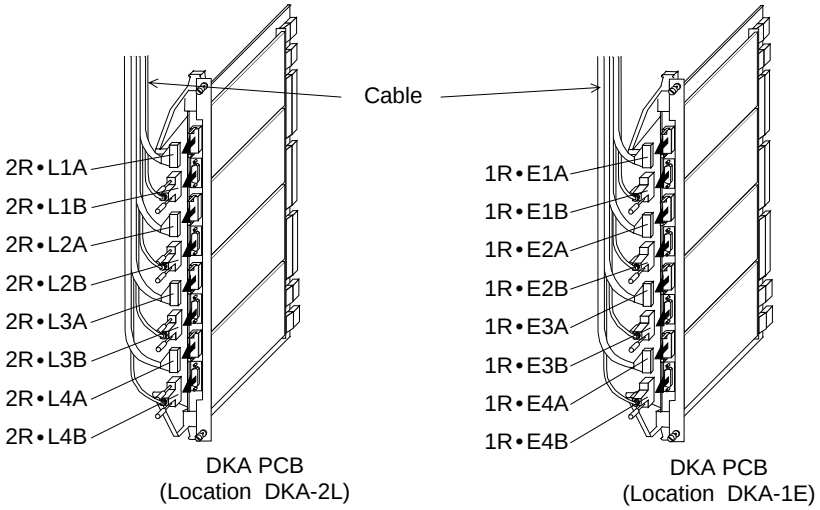

Fig.4.1.3-4 Disconnection of DEV Interface Cable (Add.3)

3-3 Removal of the PCBs

a. Remove the two screws and remove the PCBs from the correct locations in the Rear Logic Box referring to Fig. 4.1.3-5.
b. Attach the dummy plates referring to Fig. 4.1.3-6.

CAUTION

A serious failure occurs if a wrong PCB is removed.
Remove the PCB after making sure that the Shut Down LED is on.

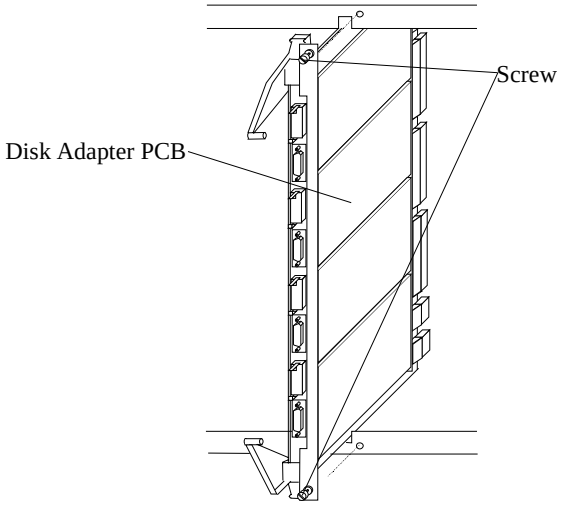

Fig. 4.1.3-5 Removal of PCB

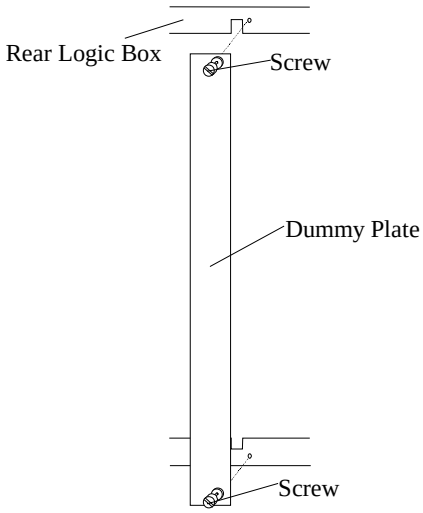

Fig. 4.1.3-6 Attachment of Dummy Plate

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3-4 Removal of the Nameplate

a. Remove the nameplate from the Rear Logic Box cover.

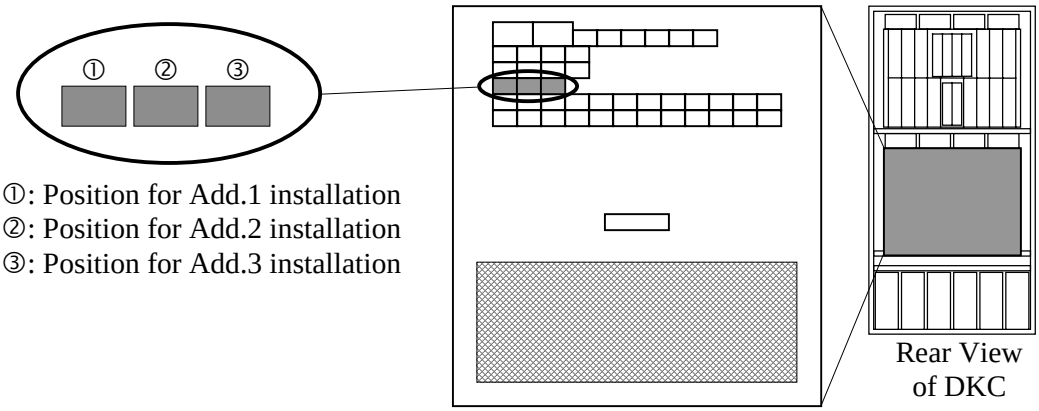

Fig. 4.1.3-7 Removal of Nameplate

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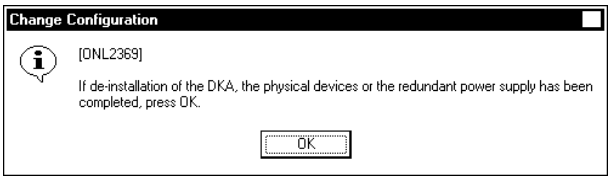
4. SVP post procedure

1.

Select (CL) [OK] in response to "If de-installation of the DKA, the physical devices or the redundant power supply has been completed, press OK." shown in the right figure.



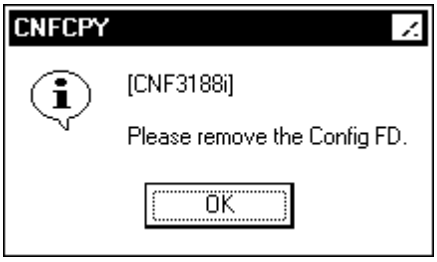
2. <Check the end of de-installation procedure>
"Renewal process has completed. Please check subsystem status." shown in the right figure displayed. Select (CL) [OK] in response to this message.

3.

"Reading subsystem configuration data..." is displayed.
"Please insert the Config FD in the FDD." is displayed.
Insert the configuration FD into FDD, select (CL) [OK].

4.

When this procedure is completed, message "Please remove the Config FD." is displayed.
Remove the FD, select (CL) [OK].



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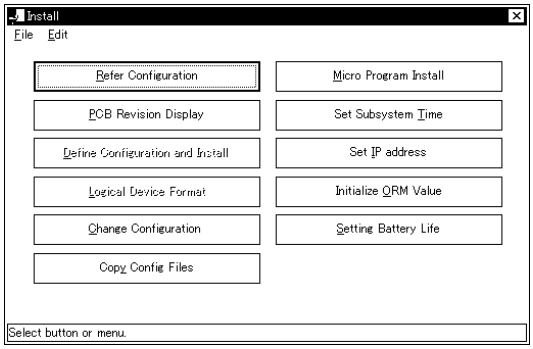
5.

After the procedure is completed, return to ‘Install’.
Select (CL) [File]-[Exit].



6. <Mode Change>
Change the mode to View Mode.

Return to the work table (INST02-60) and perform rest of the works.

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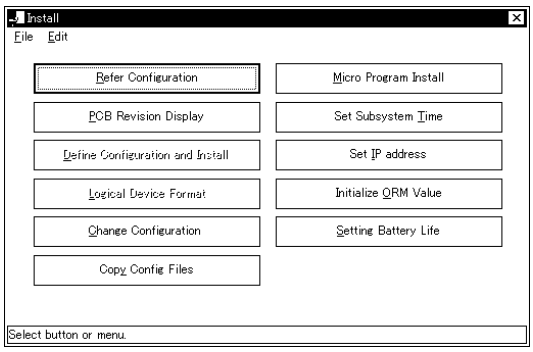
4.1.4 When performing removal of the data/spare HDD and DKA (DKC-F460I-200, DKU-F455I-36K4/36K1/72J4/72J1/72K4/72K1/146J4/146J1/146JF/146JS/146JQ/146JM)

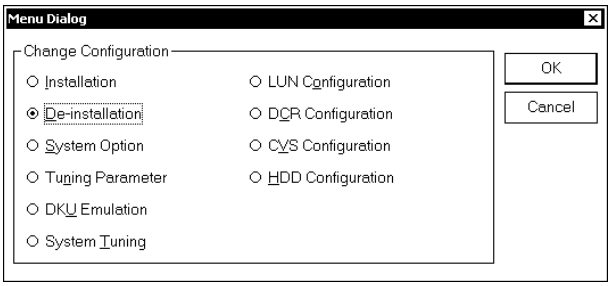
1. Setting up the New Device Structure Information

1. <Mode Change>
   Change the mode to Modify Mode.
   Select (CL) [Install].

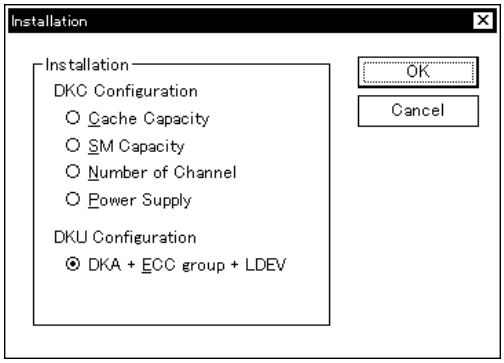
2. <Start the 'Menu Dialog' screen>
   Select (CL) [Change Configuration].



3. <Start Device Structure Setup screen>
   Select (CL) [De-Installation] in the 'Menu Dialog' dialog box and select (CL) [OK].



4. <Select a part to be changed>
   Select (CL) [DKA + ECC group + LDEV], and select (CL) [OK].



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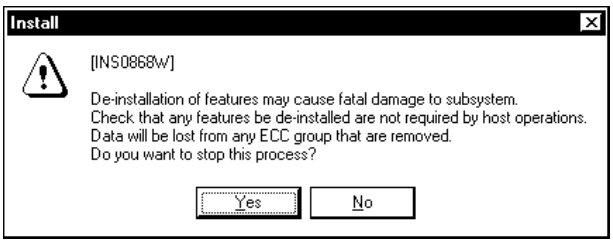
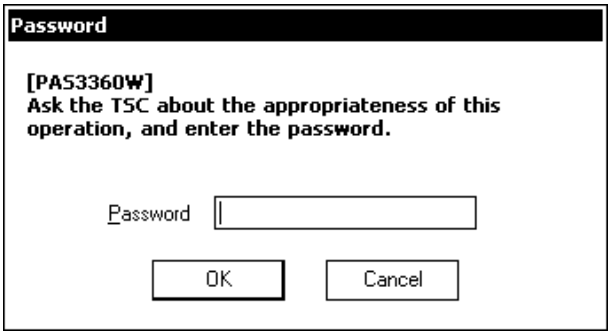
5.

Select (CL) [No] in response to “De-installation of features may cause fatal damage to subsystem. Check that any features be de-installed are not required by host operations. Data will be lost from any ECC group that are removed. Do you want to stop this process?”.



6. <Input password>
Enter the password and select (CL) [OK].



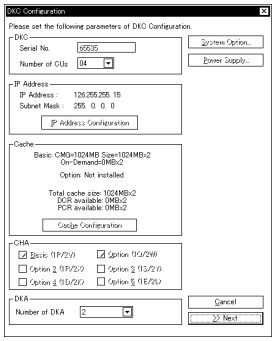
NOTICE
This is a special (exceptional) operation that can cause a serious failure such as a system down or a data loss if a wrong part to be removed is selected, and requires an input of a password. Ask the technical support center about the appropriateness of the operation, and input the password after getting an approval of executing the operation.

7. <Update Configuration Information>
Set the item to be de-installed for DKC and DKA in the ‘DKC Configuration’ window.

When decreasing the CUs, change the “Number of CUs”.
When decreasing the DKAs, change the “Number of DKA”.

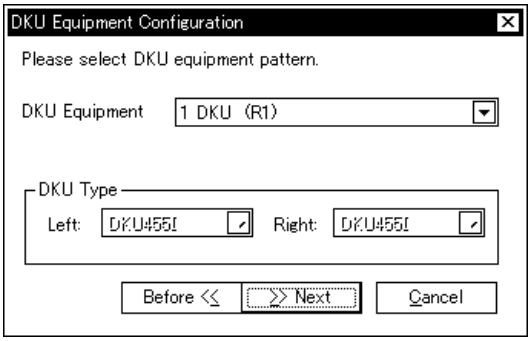
Note: A part other than the CU and DKA cannot be removed at the same time.

Make sure that the entered item is correct and select (CL) [>>Next].



7-1. <Altering DKU frame information>
Define the DKU frame in the DKU Equipment Configuration window.

After making the setting, select the [>> Next]. The routine proceeds to Step 8.
When the [Before <<] is selected, the window returns to the preceding one.
Return to Step 7.



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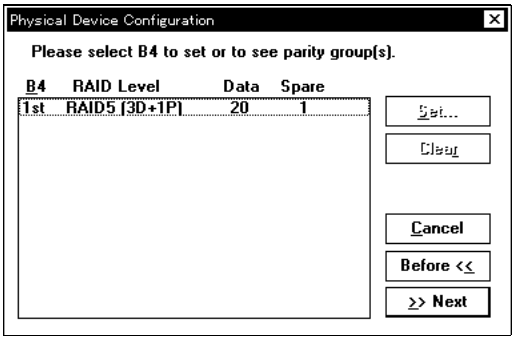
8. Change Drive Configuration Information>
Set drive configuration according to the 'Physical Device Configuration' screen displaying the mounted B4 based on the result of setting of DKU mount pattern.
Detailed procedure is shown below.
[Set...]: Defines the parity group or spare disk. The routine proceeds to Step 8-1.
[Clear...]: Cancels the setting of the B4.
After setting up all items, select (CL) [>>Next].
Selecting (CL) [Before<<] returns you to the previous screen.



[For the case of the multi cabinet model]

B4	Location	B4	Location
1st	HDU-R10, 11, 12, 13	7th	HDU-L20, 21, 22, 23
2nd	HDU-R14, 15, 16, 17	8th	HDU-L24, 25, 26, 27
3rd	HDU-L10, 11, 12, 13	9th	HDU-R30, 31, 32, 33
4th	HDU-L14, 15, 16, 17	10th	HDU-R34, 35, 36, 37
5th	HDU-R20, 21, 22, 23	11th	HDU-L30, 31, 32, 33
6th	HDU-R24, 25, 26, 27	12th	HDU-L34, 35, 36, 37

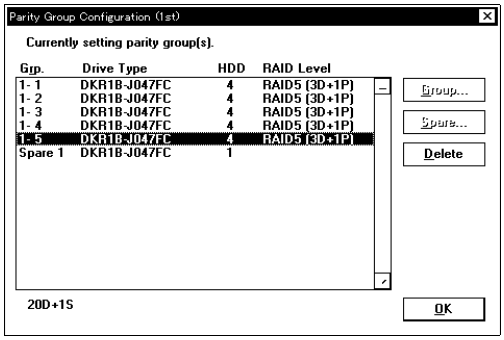
Note: The 9th to 12th of the B4 are valid only when the DKUs for the RAID 400 are connected.

[For the case of the single cabinet model]

B4	Location	Remarks
1st	HDU-R0, 1, 2, 3	HDD-X00 ~ X0F
2nd	HDU-R0, 1, 2, 3	HDD-X10 ~ X1F

8-1. <Define Parity Group>
Select (CL) the group to be de-installed and select (CL) [Delete] in the 'Parity Group Configuration' dialog box.
After setting, select (CL) [OK]. Return to step 8.

Grp*: A parity group where RAID Concatenation is installed.



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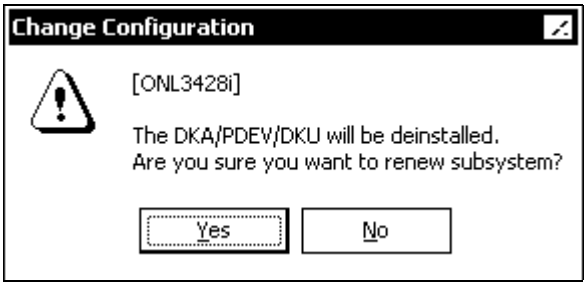
2. SVP pre procedure

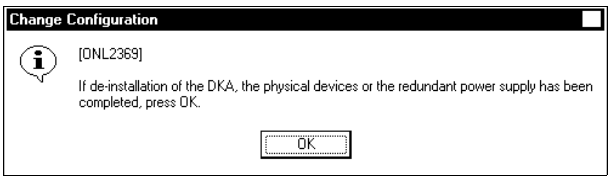
1. <Start de-installation>
   Select (CL) [Yes] in response to “The DKA/PDEV/DKU will be deinstalled. Are you sure you want to renew subsystem?”.

   When [No] is selected (CL), returns to INST04-DKA-360 step 2.



2.

   At this point refrain from pressing the [OK] button.
   “If de-installation of the DKA, the physical devices or the redundant power supply has been completed, press OK.” shown in the right figure.



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3. De-Installation Procedure of HDD Canister

3-1 Confirmation of position to de-install HDD canister

(i) RAID5(3D+1P)/RAID1(2D+2D)

Relations between the installation locations of the RAID groups and the RAID group numbers set through the SVP are shown in Table 4.1.4-1.

Table 4.1.4-1 Relation between HDDs installation order and RAID group number (3D+1P/2D+2D) (1/2)

	DKC	R1 DKU			R2 DKU		
		RAID Group Installation Order	RAID Group No.	HDD Location	RAID Group Installation Order	RAID Group No.	HDD Location
Upper	2nd DKA Pair	032	2-1	HDDR1y-00	096	6-1	HDDR2y-00
		033	2-2	HDDR1y-01	097	6-2	HDDR2y-01
		034	2-3	HDDR1y-02	098	6-3	HDDR2y-02
		035	2-4	HDDR1y-03	099	6-4	HDDR2y-03
		036	2-5	HDDR1y-04	100	6-5	HDDR2y-04
		037	2-6	HDDR1y-05	101	6-6	HDDR2y-05
		038	2-7	HDDR1y-06	102	6-7	HDDR2y-06
		039	2-8	HDDR1y-07	103	6-8	HDDR2y-07
		040	2-9	HDDR1y-08	104	6-9	HDDR2y-08
		041	2-10	HDDR1y-09	105	6-10	HDDR2y-09
		042	2-11	HDDR1y-0A	106	6-11	HDDR2y-0A
		043	2-12	HDDR1y-0B	107	6-12	HDDR2y-0B
		044	2-13	HDDR1y-0C	108	6-13	HDDR2y-0C
		045	2-14	HDDR1y-0D	109	6-14	HDDR2y-0D
		046	2-15	HDDR1y-0E	110	6-15	HDDR2y-0E
		047(Spare) *2	2-16	HDDR1y-0F	111	6-16	HDDR2y-0F
		048	2-17	HDDR1y-10	112	6-17	HDDR2y-10
		049	2-18	HDDR1y-11	113	6-18	HDDR2y-11
		050	2-19	HDDR1y-12	114	6-19	HDDR2y-12
		051	2-20	HDDR1y-13	115	6-20	HDDR2y-13
		052	2-21	HDDR1y-14	116	6-21	HDDR2y-14
		053	2-22	HDDR1y-15	117	6-22	HDDR2y-15
		054	2-23	HDDR1y-16	118	6-23	HDDR2y-16
		055	2-24	HDDR1y-17	119	6-24	HDDR2y-17
		056	2-25	HDDR1y-18	120	6-25	HDDR2y-18
		057	2-26	HDDR1y-19	121	6-26	HDDR2y-19
		058	2-27	HDDR1y-1A	122	6-27	HDDR2y-1A
		059	2-28	HDDR1y-1B	123	6-28	HDDR2y-1B
		060	2-29	HDDR1y-1C	124	6-29	HDDR2y-1C
		061	2-30	HDDR1y-1D	125	6-30	HDDR2y-1D
		062	2-31	HDDR1y-1E	126	6-31	HDDR2y-1E
		063	2-32	HDDR1y-1F	127	6-32	HDDR2y-1F
Lower	1st DKA Pair	001	1-1	HDDR1x-00	064	5-1	HDDR2x-00
		002	1-2	HDDR1x-01	065	5-2	HDDR2x-01
		003	1-3	HDDR1x-02	066	5-3	HDDR2x-02
		004	1-4	HDDR1x-03	067	5-4	HDDR2x-03
		005	1-5	HDDR1x-04	068	5-5	HDDR2x-04
		006	1-6	HDDR1x-05	069	5-6	HDDR2x-05
		007	1-7	HDDR1x-06	070	5-7	HDDR2x-06
		008	1-8	HDDR1x-07	071	5-8	HDDR2x-07
		009	1-9	HDDR1x-08	072	5-9	HDDR2x-08
		010	1-10	HDDR1x-09	073	5-10	HDDR2x-09
		011	1-11	HDDR1x-0A	074	5-11	HDDR2x-0A
		012	1-12	HDDR1x-0B	075	5-12	HDDR2x-0B
		013	1-13	HDDR1x-0C	076	5-13	HDDR2x-0C
		014	1-14	HDDR1x-0D	077	5-14	HDDR2x-0D
		015	1-15	HDDR1x-0E	078	5-15	HDDR2x-0E
		Spare *1	1-16	HDDR1x-0F	079	5-16	HDDR2x-0F
		016	1-17	HDDR1x-10	080	5-17	HDDR2x-10
		017	1-18	HDDR1x-11	081	5-18	HDDR2x-11
		018	1-19	HDDR1x-12	082	5-19	HDDR2x-12
		019	1-20	HDDR1x-13	083	5-20	HDDR2x-13
		020	1-21	HDDR1x-14	084	5-21	HDDR2x-14
		021	1-22	HDDR1x-15	085	5-22	HDDR2x-15
		022	1-23	HDDR1x-16	086	5-23	HDDR2x-16
		023	1-24	HDDR1x-17	087	5-24	HDDR2x-17
		024	1-25	HDDR1x-18	088	5-25	HDDR2x-18
		025	1-26	HDDR1x-19	089	5-26	HDDR2x-19
		026	1-27	HDDR1x-1A	090	5-27	HDDR2x-1A
		027	1-28	HDDR1x-1B	091	5-28	HDDR2x-1B
		028	1-29	HDDR1x-1C	092	5-29	HDDR2x-1C
		029	1-30	HDDR1x-1D	093	5-30	HDDR2x-1D
		030	1-31	HDDR1x-1E	094	5-31	HDDR2x-1E
		031	1-32	HDDR1x-1F	095	5-32	HDDR2x-1F

*1: To be left vacant or a spare disk is to be installed. *2: A data or spare disk is to be installed.

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Table 4.1.4-1 Relation between HDDs installation order and RAID group number (3D+1P/2D+2D) (2/2)

	L2 DKU			L1 DKU			DKC
	RAID Group Installation Order	RAID Group No.	HDD Location	RAID Group Installation Order	RAID Group No.	HDD Location	
Upper	223	8-1	HDDL2y-00	159	4-1	HDDL1y-00	4th DKA Pair
	224	8-2	HDDL2y-01	160	4-2	HDDL1y-01	
	225	8-3	HDDL2y-02	161	4-3	HDDL1y-02	
	226	8-4	HDDL2y-03	162	4-4	HDDL1y-03	
	227	8-5	HDDL2y-04	163	4-5	HDDL1y-04	
	228	8-6	HDDL2y-05	164	4-6	HDDL1y-05	
	229	8-7	HDDL2y-06	165	4-7	HDDL1y-06	
	230	8-8	HDDL2y-07	166	4-8	HDDL1y-07	
	231	8-9	HDDL2y-08	167	4-9	HDDL1y-08	
	232	8-10	HDDL2y-09	168	4-10	HDDL1y-09	
	233	8-11	HDDL2y-0A	169	4-11	HDDL1y-0A	
	234	8-12	HDDL2y-0B	170	4-12	HDDL1y-0B	
	235	8-13	HDDL2y-0C	171	4-13	HDDL1y-0C	
	236	8-14	HDDL2y-0D	172	4-14	HDDL1y-0D	
	237	8-15	HDDL2y-0E	173	4-15	HDDL1y-0E	
	238	8-16	HDDL2y-0F	174(Spare) *2	4-16	HDDL1y-0F	
	239	8-17	HDDL2y-10	175	4-17	HDDL1y-10	
	240	8-18	HDDL2y-11	176	4-18	HDDL1y-11	
	241	8-19	HDDL2y-12	177	4-19	HDDL1y-12	
	242	8-20	HDDL2y-13	178	4-20	HDDL1y-13	
	243	8-21	HDDL2y-14	179	4-21	HDDL1y-14	
	244	8-22	HDDL2y-15	180	4-22	HDDL1y-15	
	245	8-23	HDDL2y-16	181	4-23	HDDL1y-16	
	246	8-24	HDDL2y-17	182	4-24	HDDL1y-17	
	247	8-25	HDDL2y-18	183	4-25	HDDL1y-18	
	248	8-26	HDDL2y-19	184	4-26	HDDL1y-19	
	249	8-27	HDDL2y-1A	185	4-27	HDDL1y-1A	
	250	8-28	HDDL2y-1B	186	4-28	HDDL1y-1B	
	251	8-29	HDDL2y-1C	187	4-29	HDDL1y-1C	
	252	8-30	HDDL2y-1D	188	4-30	HDDL1y-1D	
	253	8-31	HDDL2y-1E	189	4-31	HDDL1y-1E	
	254	8-32	HDDL2y-1F	190	4-32	HDDL1y-1F	
Lower	191	7-1	HDDL2x-00	128	3-1	HDDL1x-00	3rd DKA Pair
	192	7-2	HDDL2x-01	129	3-2	HDDL1x-01	
	193	7-3	HDDL2x-02	130	3-3	HDDL1x-02	
	194	7-4	HDDL2x-03	131	3-4	HDDL1x-03	
	195	7-5	HDDL2x-04	132	3-5	HDDL1x-04	
	196	7-6	HDDL2x-05	133	3-6	HDDL1x-05	
	197	7-7	HDDL2x-06	134	3-7	HDDL1x-06	
	198	7-8	HDDL2x-07	135	3-8	HDDL1x-07	
	199	7-9	HDDL2x-08	136	3-9	HDDL1x-08	
	200	7-10	HDDL2x-09	137	3-10	HDDL1x-09	
	201	7-11	HDDL2x-0A	138	3-11	HDDL1x-0A	
	202	7-12	HDDL2x-0B	139	3-12	HDDL1x-0B	
	203	7-13	HDDL2x-0C	140	3-13	HDDL1x-0C	
	204	7-14	HDDL2x-0D	141	3-14	HDDL1x-0D	
	205	7-15	HDDL2x-0E	142	3-15	HDDL1x-0E	
	206	7-16	HDDL2x-0F	Spare *1	3-16	HDDL1x-0F	
	207	7-17	HDDL2x-10	143	3-17	HDDL1x-10	
	208	7-18	HDDL2x-11	144	3-18	HDDL1x-11	
	209	7-19	HDDL2x-12	145	3-19	HDDL1x-12	
	210	7-20	HDDL2x-13	146	3-20	HDDL1x-13	
	211	7-21	HDDL2x-14	147	3-21	HDDL1x-14	
	212	7-22	HDDL2x-15	148	3-22	HDDL1x-15	
	213	7-23	HDDL2x-16	149	3-23	HDDL1x-16	
	214	7-24	HDDL2x-17	150	3-24	HDDL1x-17	
	215	7-25	HDDL2x-18	151	3-25	HDDL1x-18	
	216	7-26	HDDL2x-19	152	3-26	HDDL1x-19	
	217	7-27	HDDL2x-1A	153	3-27	HDDL1x-1A	
	218	7-28	HDDL2x-1B	154	3-28	HDDL1x-1B	
	219	7-29	HDDL2x-1C	155	3-29	HDDL1x-1C	
	220	7-30	HDDL2x-1D	156	3-30	HDDL1x-1D	
	221	7-31	HDDL2x-1E	157	3-31	HDDL1x-1E	
	222	7-32	HDDL2x-1F	158	3-32	HDDL1x-1F	

*1: To be left vacant or a spare disk is to be installed. *2: A data or spare disk is to be installed.
*3: HDDL1x-00 (x: HDU Box No. 0, 1, 2, 3), HDDL1y-00 (y: HDU Box No. 4, 5, 6, 7)

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(1) Make sure of the location where the RAID group is de-installed and that where the HDD canister is to be removed.

No.	Model Number	Model Name	Data and Parity
1	DKU-F455I-36K4/72J4/72K4/146J4/146JF/146JQ	4 HDD Canisters	Data and Parity Drive

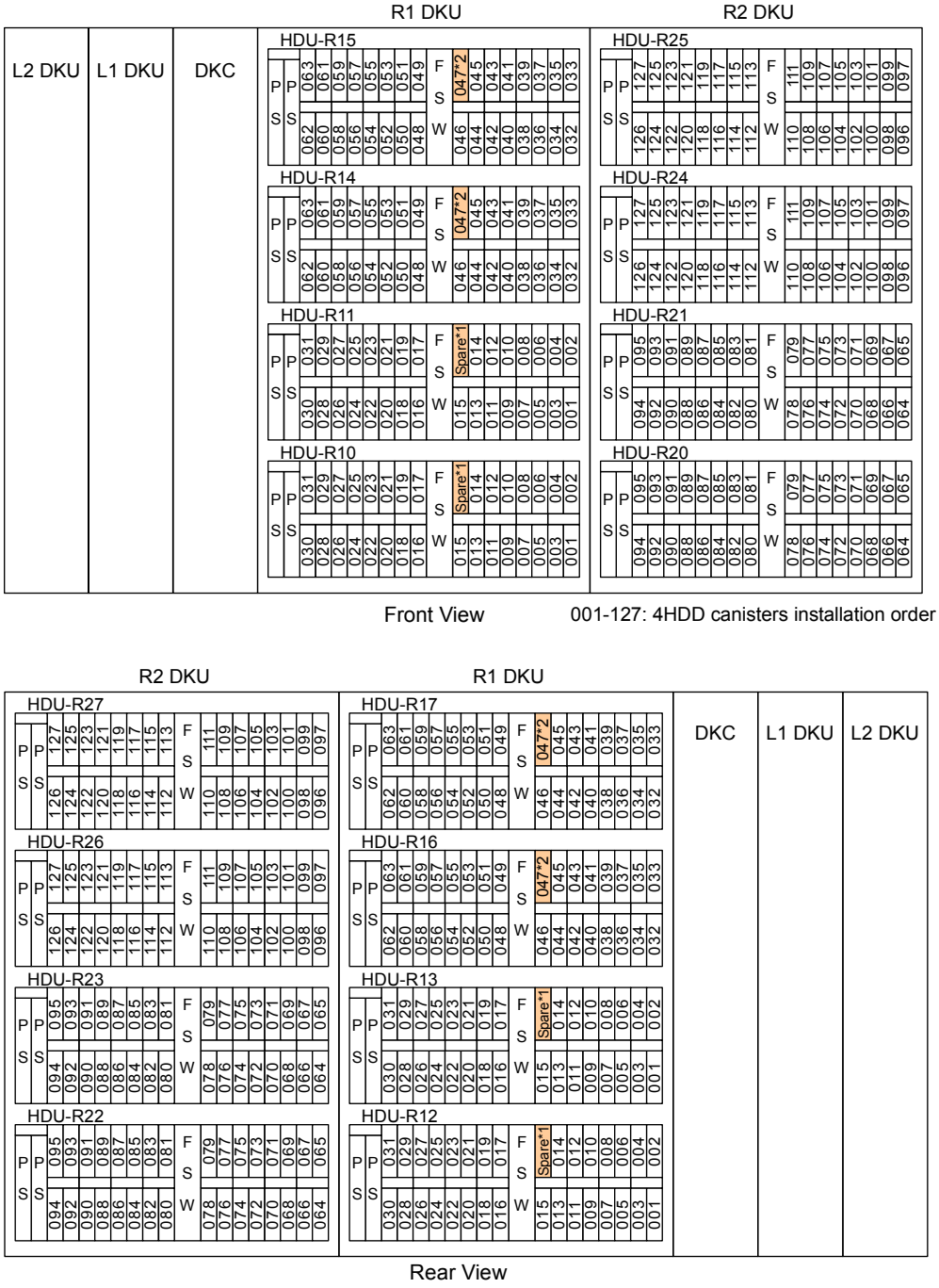

Fig. 4.1.4-1 (3D+1P) or (2D+2P) Data Drive/Parity Drive Expansion Sequence (1/2)

The relationship between HDDs installation order and RAID group number is shown in the Table 4.1.4-1.

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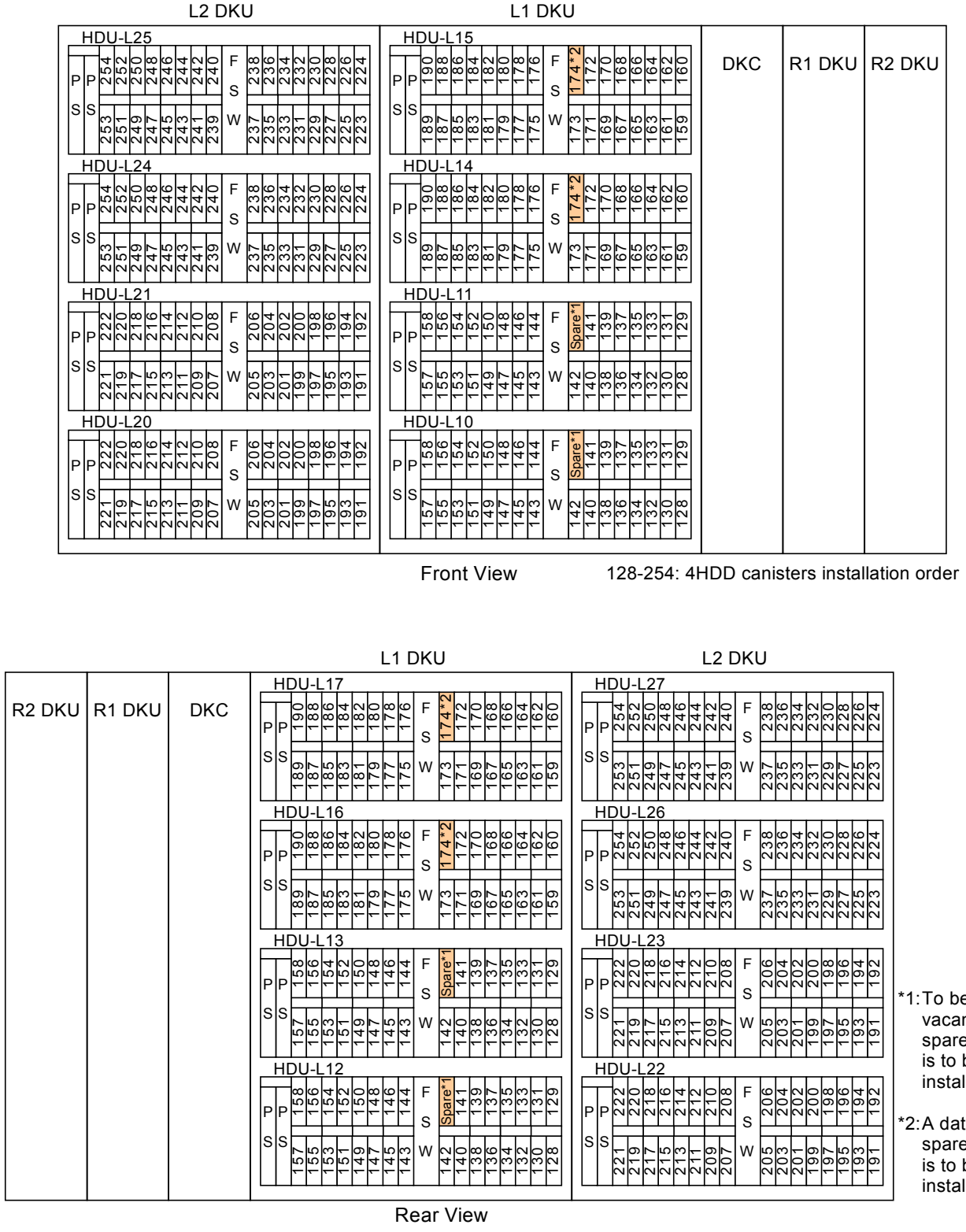

Fig. 4.1.4-1 (3D+1P) or (2D+2P) Data Drive/Parity Drive Expansion Sequence (2/2)

The relationship between HDDs installation order and RAID group number is shown in the Table 4.1.4-1.

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(ii) RAID5 (7D+1P)

Relations between the installation locations of the RAID groups and the RAID group numbers set through the SVP are shown in Table 4.1.4-2.

Table 4.1.4-2 Relation between HDDs installation order and RAID group number (7D+1P) (1/2)

DKC	R1 DKU			R2 DKU		
	RAID Group Installation Order	RAID Group No.	HDD Location	RAID Group Installation Order	RAID Group No.	HDD Location
1st / 2nd DKA Pair	001	1-1 , (2-1)	HDDR1x-00	032	5-1, (6-1)	HDDR2x-00
	002	1-2 , (2-2)	HDDR1x-01	033	5-2, (6-2)	HDDR2x-01
	003	1-3 , (2-3)	HDDR1x-02	034	5-3, (6-3)	HDDR2x-02
	004	1-4 , (2-4)	HDDR1x-03	035	5-4, (6-4)	HDDR2x-03
	005	1-5 , (2-5)	HDDR1x-04	036	5-5, (6-5)	HDDR2x-04
	006	1-6 , (2-6)	HDDR1x-05	037	5-6, (6-6)	HDDR2x-05
	007	1-7 , (2-7)	HDDR1x-06	038	5-7, (6-7)	HDDR2x-06
	008	1-8 , (2-8)	HDDR1x-07	039	5-8, (6-8)	HDDR2x-07
	009	1-9 , (2-9)	HDDR1x-08	040	5-9, (6-9)	HDDR2x-08
	010	1-10 , (2-10)	HDDR1x-09	041	5-10, (6-10)	HDDR2x-09
	011	1-11 , (2-11)	HDDR1x-0A	042	5-11, (6-11)	HDDR2x-0A
	012	1-12 , (2-12)	HDDR1x-0B	043	5-12, (6-12)	HDDR2x-0B
	013	1-13 , (2-13)	HDDR1x-0C	044	5-13, (6-13)	HDDR2x-0C
	014	1-14 , (2-14)	HDDR1x-0D	045	5-14, (6-14)	HDDR2x-0D
	015	1-15 , (2-15)	HDDR1x-0E	046	5-15, (6-15)	HDDR2x-0E
	(Spare) *1	1-16 , (2-16)	HDDR1x-0F	047	5-16, (6-16)	HDDR2x-0F
	016	1-17 , (2-17)	HDDR1x-10	048	5-17, (6-17)	HDDR2x-10
	017	1-18 , (2-18)	HDDR1x-11	049	5-18, (6-18)	HDDR2x-11
	018	1-19 , (2-19)	HDDR1x-12	050	5-19, (6-19)	HDDR2x-12
	019	1-20 , (2-20)	HDDR1x-13	051	5-20, (6-20)	HDDR2x-13
	020	1-21 , (2-21)	HDDR1x-14	052	5-21, (6-21)	HDDR2x-14
	021	1-22 , (2-22)	HDDR1x-15	053	5-22, (6-22)	HDDR2x-15
	022	1-23 , (2-23)	HDDR1x-16	054	5-23, (6-23)	HDDR2x-16
	023	1-24 , (2-24)	HDDR1x-17	055	5-24, (6-24)	HDDR2x-17
	024	1-25 , (2-25)	HDDR1x-18	056	5-25, (6-25)	HDDR2x-18
	025	1-26 , (2-26)	HDDR1x-19	057	5-26, (6-26)	HDDR2x-19
	026	1-27 , (2-27)	HDDR1x-1A	058	5-27, (6-27)	HDDR2x-1A
	027	1-28 , (2-28)	HDDR1x-1B	059	5-28, (6-28)	HDDR2x-1B
	028	1-29 , (2-29)	HDDR1x-1C	060	5-29, (6-29)	HDDR2x-1C
	029	1-30 , (2-30)	HDDR1x-1D	061	5-30, (6-30)	HDDR2x-1D
	030	1-31 , (2-31)	HDDR1x-1E	062	5-31, (6-31)	HDDR2x-1E
	031	1-32 , (2-32)	HDDR1x-1F	063	5-32, (6-32)	HDDR2x-1F

*1: To be left vacant or a spare disk is to be installed. *2: HDDL1x-00 (x: HDU Box No. 0, 1, 2, …, 7)

- Install RAID 5 (7D+1P) forming pairs using the same number of the two RAID groups (RAID groups 1 and 2, 3 and 4, 5 and 6, and 7 and 8) of RAID 5 (3D+1P).
  (Example: RAID group numbers 1-1 and 2-1)
  The types of HDDs to be installed in each pair must be the same.
- In the case of RAID 5 (7D+1P), only odd RAID numbers are displayed on the SVP. (Group numbers shown in parentheses in the table above are not displayed.)
- When RAID 5 (3D+1P) or RAID 1 (2D+2D) and RAID 5 (7D+1P) are configured mixture, note that duplicated group numbers are excluded.
  Example: When Group No. 1-1 is configured for RAID 5 (7D+1P), Group No. 2-1 is excluded and cannot be configure for RAID 5 (3D+1P).

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Table 4.1.4-2 Relation between HDDs installation order and RAID group number (7D+1P) (2/2)

L2 DKU			L1 DKU			DKC
RAID Group Installation Order	RAID Group No.	HDD Location	RAID Group Installation Order	RAID Group No.	HDD Location	
095	7-1, (8-1)	HDDL2x-00	064	3-1 , (4-1)	HDDL1x-00	
096	7-2, (8-2)	HDDL2x-01	065	3-2 , (4-2)	HDDL1x-01	
097	7-3, (8-3)	HDDL2x-02	066	3-3 , (4-3)	HDDL1x-02	
098	7-4, (8-4)	HDDL2x-03	067	3-4 , (4-4)	HDDL1x-03	
099	7-5, (8-5)	HDDL2x-04	068	3-5 , (4-5)	HDDL1x-04	
100	7-6, (8-6)	HDDL2x-05	069	3-6 , (4-6)	HDDL1x-05	
101	7-7, (8-7)	HDDL2x-06	070	3-7 , (4-7)	HDDL1x-06	
102	7-8, (8-8)	HDDL2x-07	071	3-8 , (4-8)	HDDL1x-07	
103	7-9, (8-9)	HDDL2x-08	072	3-9 , (4-9)	HDDL1x-08	
104	7-10, (8-10)	HDDL2x-09	073	3-10 , (4-10)	HDDL1x-09	
105	7-11, (8-11)	HDDL2x-0A	074	3-11 , (4-11)	HDDL1x-0A	
106	7-12, (8-12)	HDDL2x-0B	075	3-12 , (4-12)	HDDL1x-0B	
107	7-13, (8-13)	HDDL2x-0C	076	3-13 , (4-13)	HDDL1x-0C	
108	7-14, (8-14)	HDDL2x-0D	077	3-14 , (4-14)	HDDL1x-0D	
109	7-15, (8-15)	HDDL2x-0E	078	3-15 , (4-15)	HDDL1x-0E	3rd / 4th
110	7-16, (8-16)	HDDL2x-0F	(Spare) *1	3-16 , (4-16)	HDDL1x-0F	DKA
111	7-17, (8-17)	HDDL2x-10	079	3-17 , (4-17)	HDDL1x-10	Pair
112	7-18, (8-18)	HDDL2x-11	080	3-18 , (4-18)	HDDL1x-11	
113	7-19, (8-19)	HDDL2x-12	081	3-19 , (4-19)	HDDL1x-12	
114	7-20, (8-20)	HDDL2x-13	082	3-20 , (4-20)	HDDL1x-13	
115	7-21, (8-21)	HDDL2x-14	083	3-21 , (4-21)	HDDL1x-14	
116	7-22, (8-22)	HDDL2x-15	084	3-22 , (4-22)	HDDL1x-15	
117	7-23, (8-23)	HDDL2x-16	085	3-23 , (4-23)	HDDL1x-16	
118	7-24, (8-24)	HDDL2x-17	086	3-24 , (4-24)	HDDL1x-17	
119	7-25, (8-25)	HDDL2x-18	087	3-25 , (4-25)	HDDL1x-18	
120	7-26, (8-26)	HDDL2x-19	088	3-26 , (4-26)	HDDL1x-19	
121	7-27, (8-27)	HDDL2x-1A	089	3-27 , (4-27)	HDDL1x-1A	
122	7-28, (8-28)	HDDL2x-1B	090	3-28 , (4-28)	HDDL1x-1B	
123	7-29, (8-29)	HDDL2x-1C	091	3-29 , (4-29)	HDDL1x-1C	
124	7-30, (8-30)	HDDL2x-1D	092	3-30 , (4-30)	HDDL1x-1D	
125	7-31, (8-31)	HDDL2x-1E	093	3-31 , (4-31)	HDDL1x-1E	
126	7-32, (8-32)	HDDL2x-1F	094	3-32 , (4-32)	HDDL1x-1F	

*1: To be left vacant or a spare disk is to be installed. *2: HDDL1x-00 (x: HDU Box No. 0, 1, 2, …, 7)

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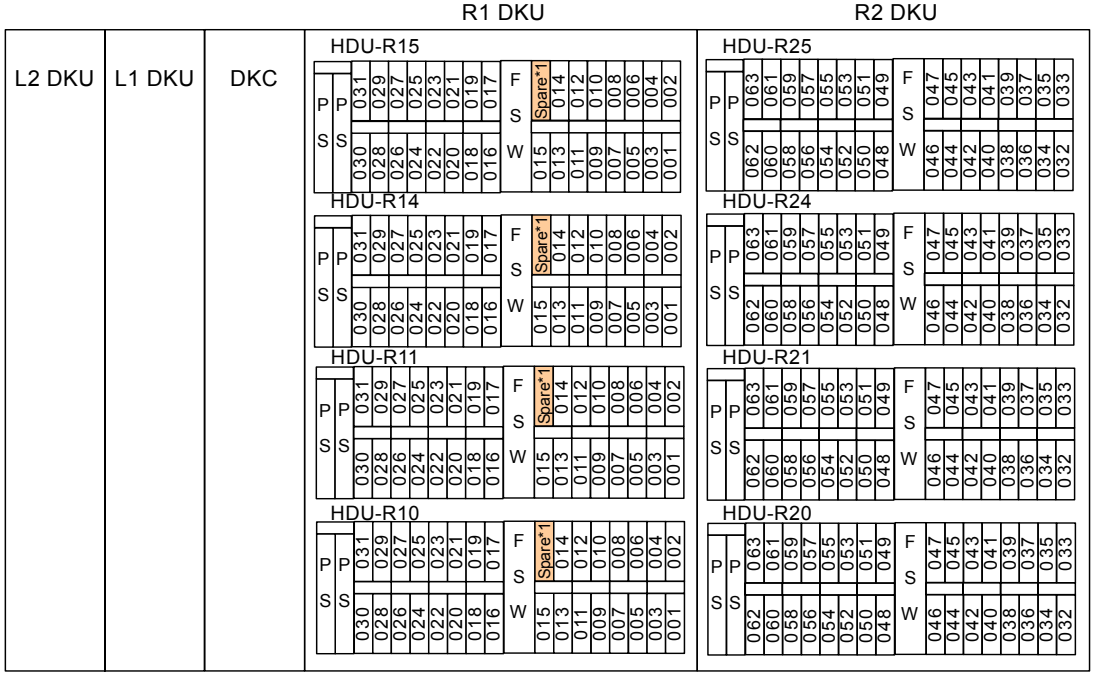
(1) Make sure of the location where the RAID group is de-installed and that where the HDD canister is to be removed.

No.	Model Number	Model Name	Data and Parity
1	DKU-F455I-36K4/72J4/72K4/146J4/146JF/146JQ	4 HDD Canisters x 2sets	Data and Parity Drive



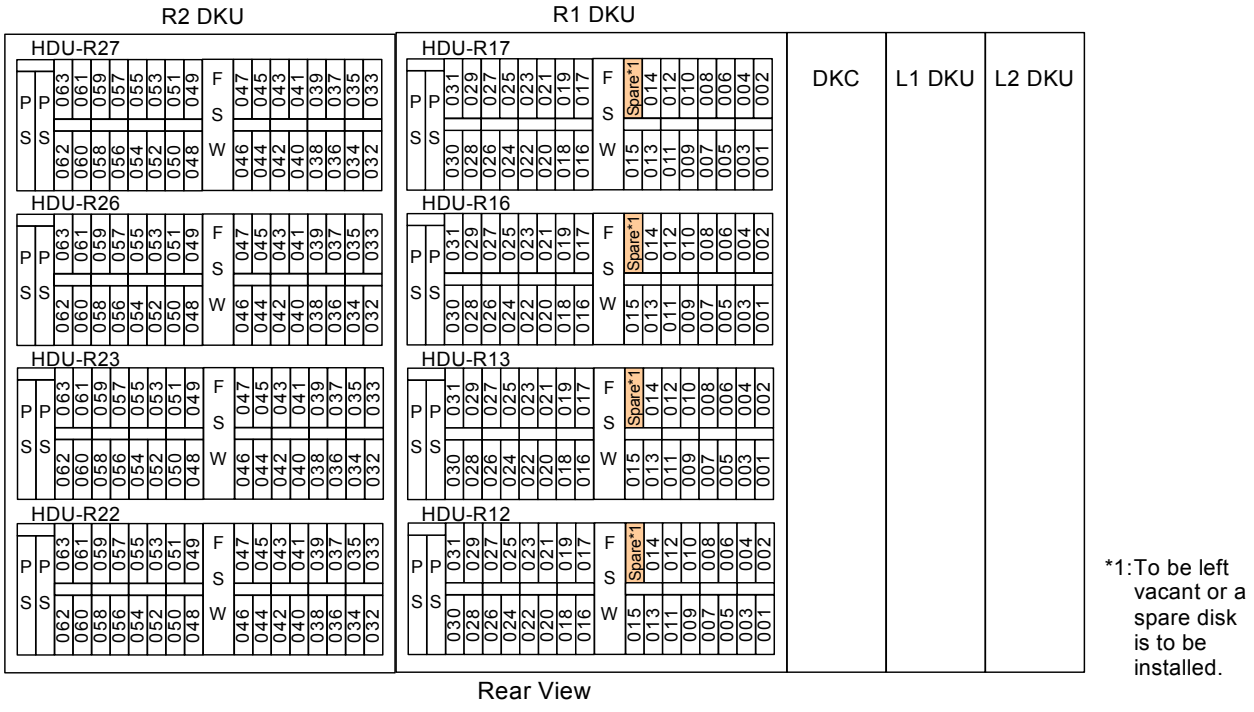


Fig. 4.1.4-2 (7D+1P) Data Drive/Parity Drive Expansion Sequence (1/2)

The relationship between HDDs installation order and RAID group number is shown in the Table 4.1.4-2.

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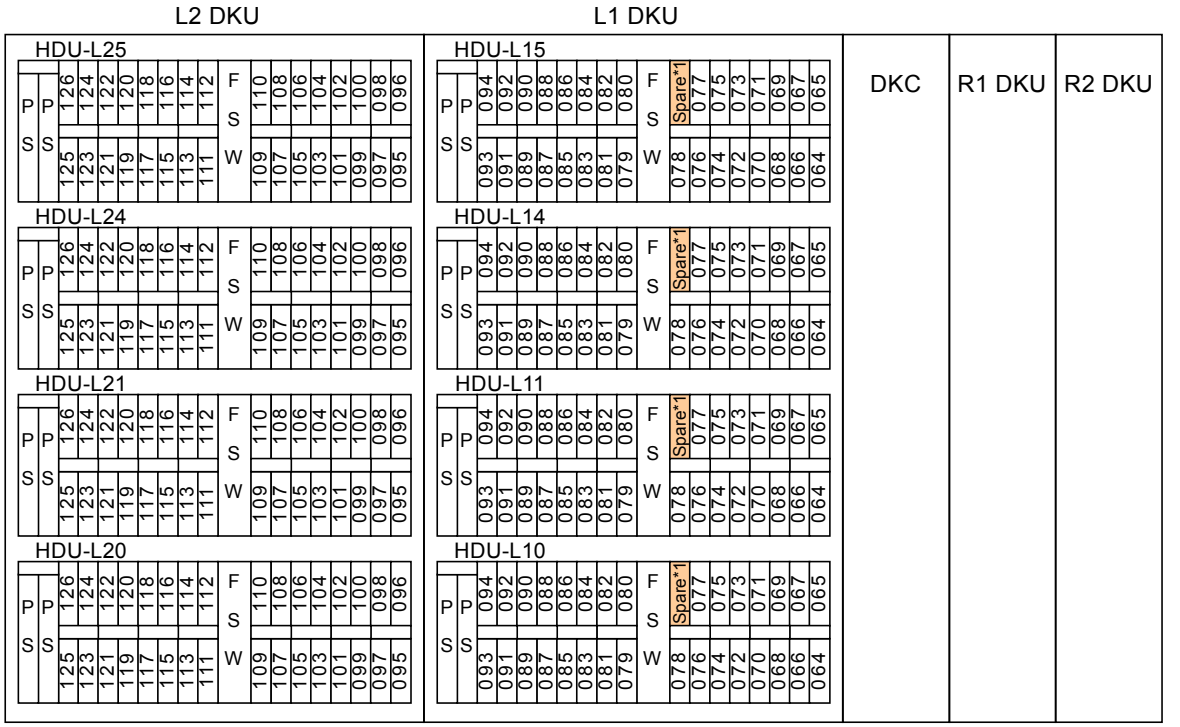

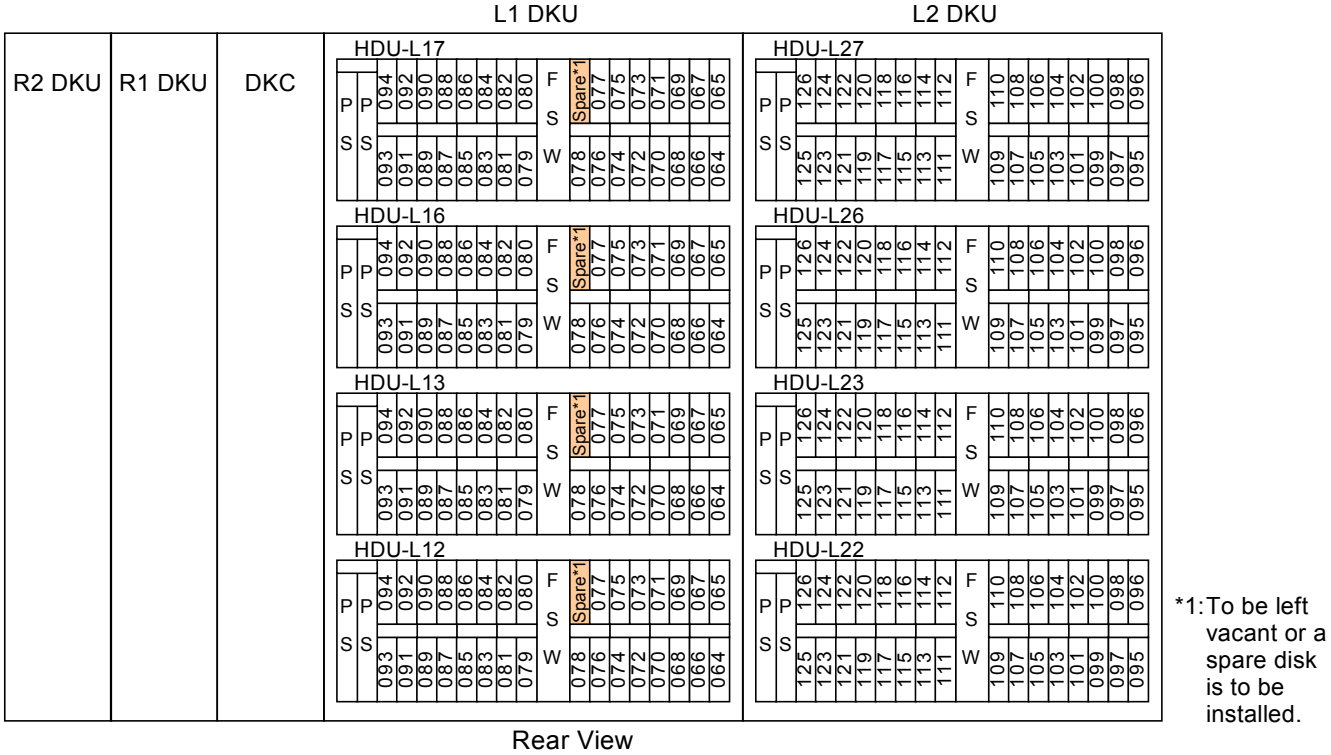

Fig. 4.1.4-2 (7D+1P) Data Drive/Parity Drive Expansion Sequence (2/2)

The relationship between HDDs installation order and RAID group number is shown in the Table 4.1.4-2.

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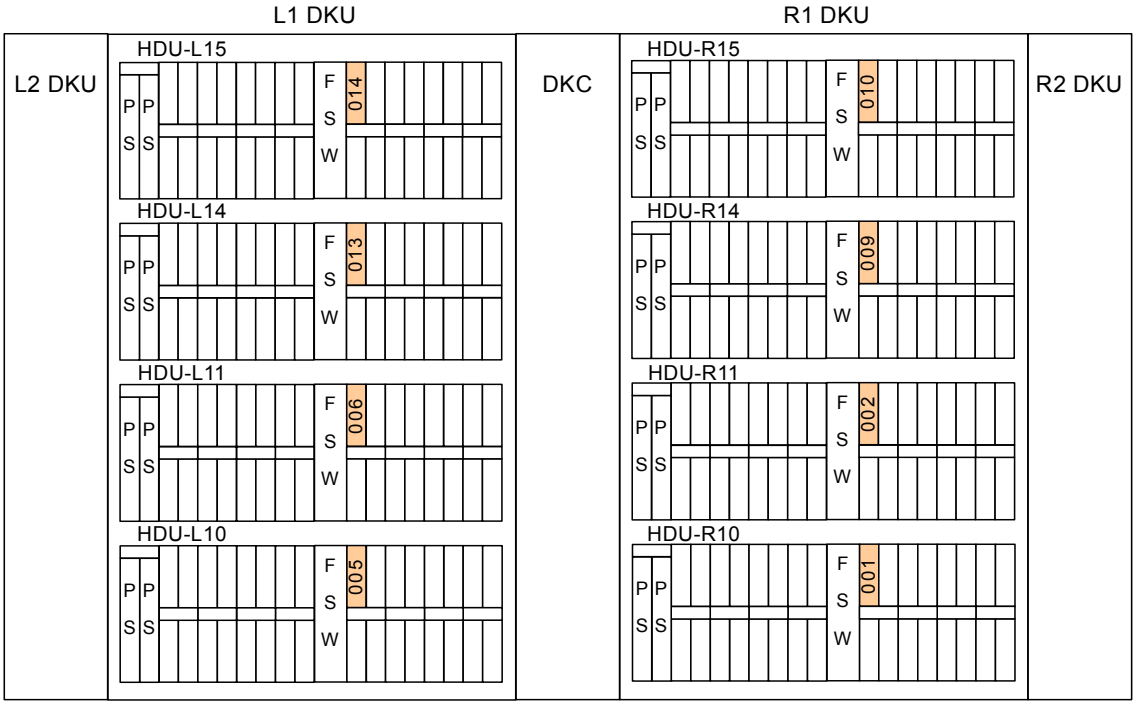
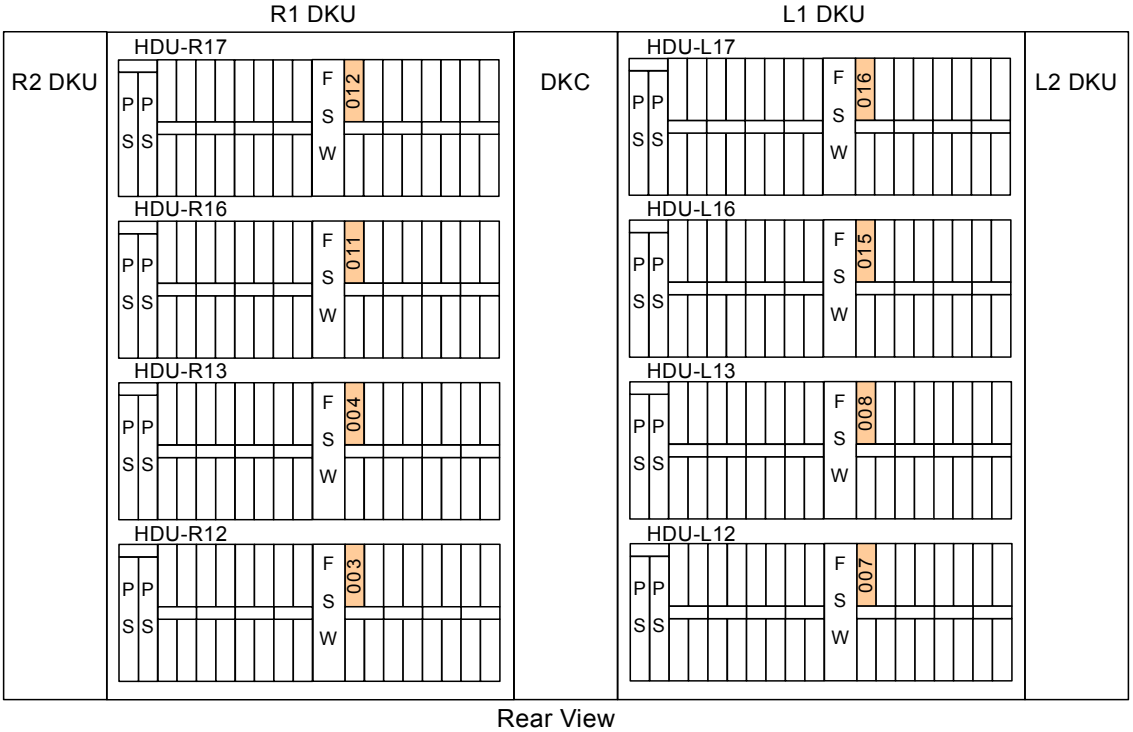
(iii) Spare HDD

No.	Model Number	Model Name	Data and Parity
1	DKU-F455I-36K1/72J1/72K1/146J1/146JS/146JM	1 HDD Canister	Spare Drive



Front View

001-016: Spare HDD canister installation order



Rear View

Fig. 4.1.4-3 Spare Drive Expansion Sequence

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3-2 Confirmation of Shut Down LED.

a. Confirm the Shut Down LED on the JMP PCB. (It should be RED.)

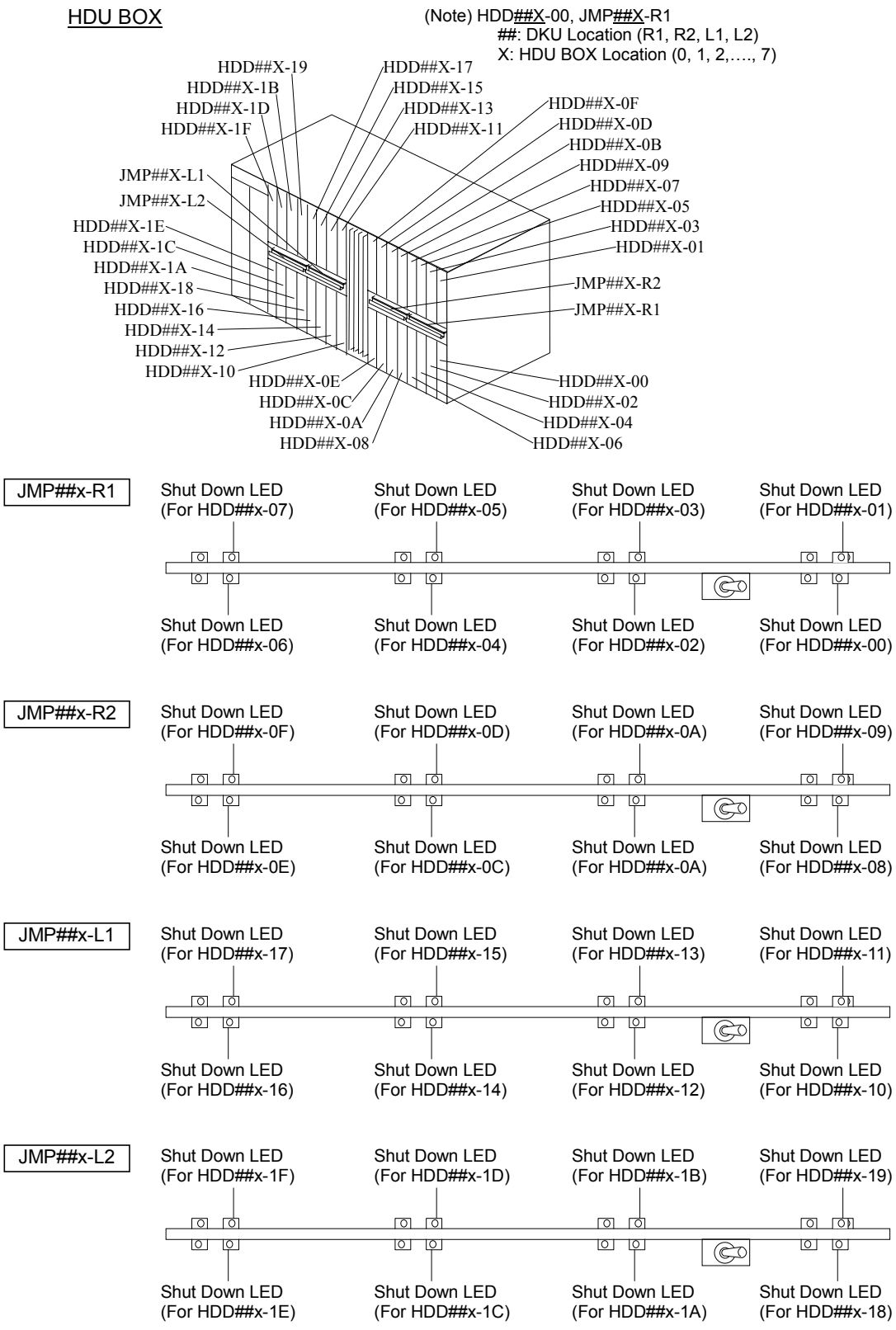

Fig. 4.1.4-4 Location of Shut Down LED

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3-3 De-installation of the HDD canister.

Notice:
Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

CAUTION

A system down may be caused by a removal of an HDD canister other than that to be removed. Make sure that it is the HDD canister to be removed.

a. After pushing up the stopper on the front side of the HDD canister, pull the handle toward you to remove the HDD canister.
b. Insert the dummy canister to the HDU Box.

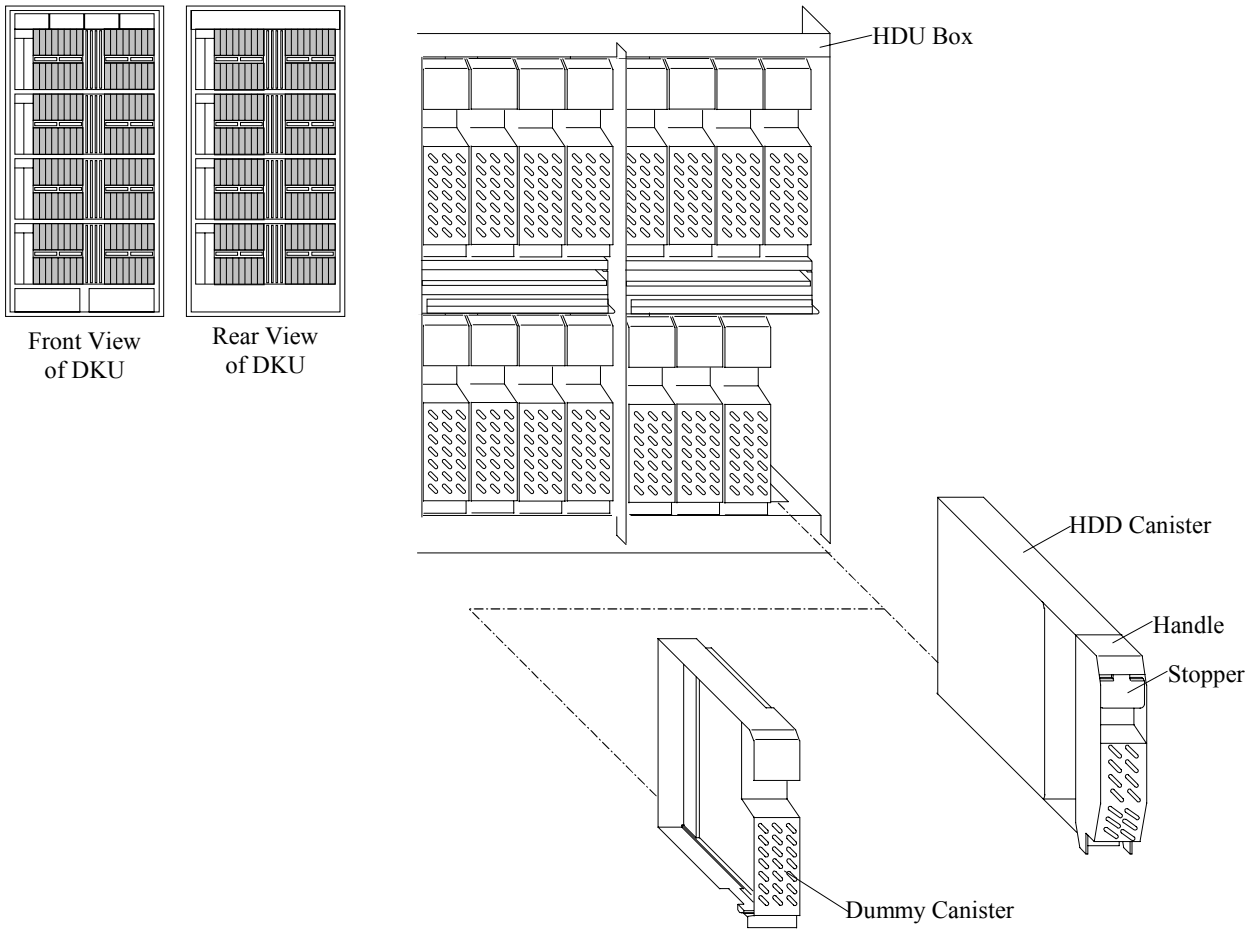

Fig. 4.1.4-5 De-Installation of HDD Canister

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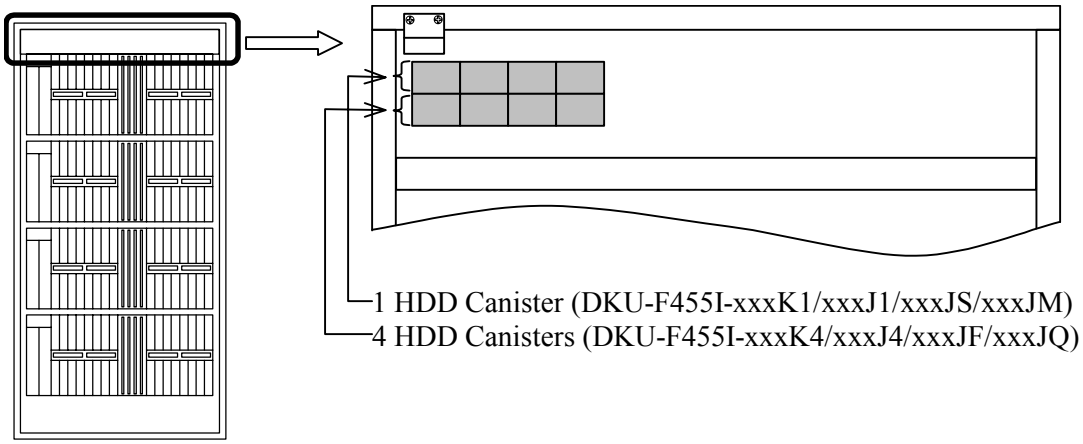
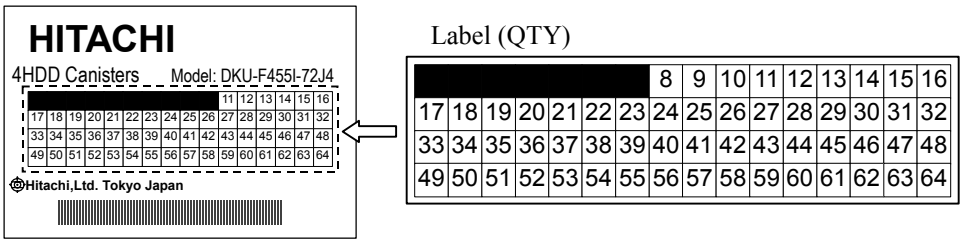
3-4 Change of the nameplate.

a. Affix a necessary portion of the Label (QTY)(Accessory of DKC; DWG No.3264290-1) in layers on the name plate and paint out numbers less than the number concerned with black oil felt pen.



[Example]

When DKU-F455I-72J4s are removed from 10 sets to 7sets



							8	9	10	11	12	13	14	15	16
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64

Fig. 4.1.4-6 Change of Nameplate

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4. De-Installation Procedure of Disk Adapter

Note: Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

4-1 Confirmation of the Shut Down LED (Only Non-Disruptive Procedure)

a. Confirm that Shut Down LED is on. (Fig. 4.1.4-7) If the LED is not on, connect the Maintenance Jumper to the Shut Down Connector.

⚠ CAUTION

A system down may be caused if the Maintenance jumper is inserted in a PCB other than that to be removed. Make sure that it is the PCB to be removed.

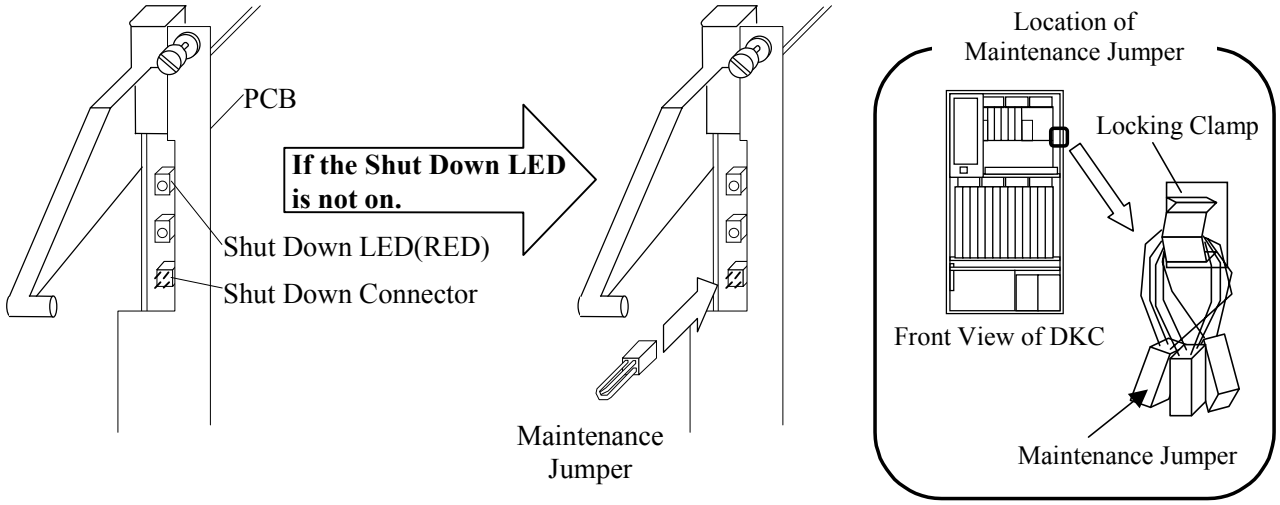

Fig. 4.1.4-7 Shut Down LED

Table 4.1.4-3 Removal Location (Rear of the unit)

Cluster	CL2							CL1				
Slot No.	M	L	K	J	H	G	F	E	D	C	B	A
Function	CSW	DKA	DKA	DKA	DKA	CACHE	CACHE	DKA	DKA	DKA	DKA	CSW
Location No.	CSW -2M	DKA -2L	DKA -2K	DKA -2J	DKA -2H	CACHE -2G	CACHE -2F	DKA -1E	DKA -1D	DKA -1C	DKA -1B	CSW -1A
Order of addition		Add.3	Add.2	Add.1	Basic			Add.3	Add.2	Add.1	Basic	
Number of DKAs set through the SVP		–	–	–	2			–	–	–	2	
		–	–	4				–	–	4		
		–	6					–	6			
		8						8				

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4-2 Disconnection of the DEV Interface cables

In case of Add.1

a. Disconnect the cable from the sub-edge of PCB.

⚠ CAUTION

A serious failure occurs if a wrong cable or connector is removed.
Since a label bearing a connection destination is affixed on each cable or connector to be removed, work very carefully referring to it and the wiring diagram.

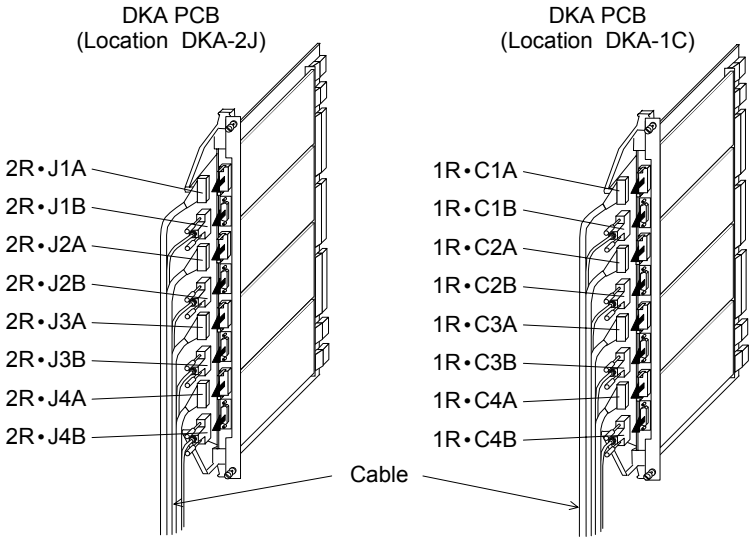

Fig. 4.1.4-8 Disconnection of DEV Interface Cables (Add.1)

In case of Add.2

a. Disconnect the cable from the sub-edge of PCB.

⚠ CAUTION

A serious failure occurs if a wrong cable or connector is removed.
Since a label bearing a connection destination is affixed on each cable or connector to be removed, work very carefully referring to it and the wiring diagram.

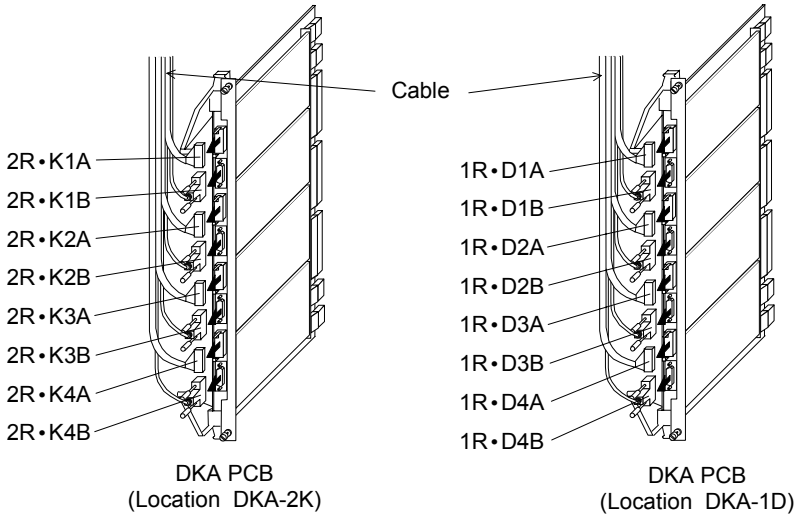

Fig. 4.1.4-9 Disconnection of DEV Interface Cables (Add.2)

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In case of Add.3

a. Disconnect the cable from the sub-edge of PCB.

⚠ CAUTION

A serious failure occurs if a wrong cable or connector is removed.
Since a label bearing a connection destination is affixed on each cable or connector to be removed, work very carefully referring to it and the wiring diagram.

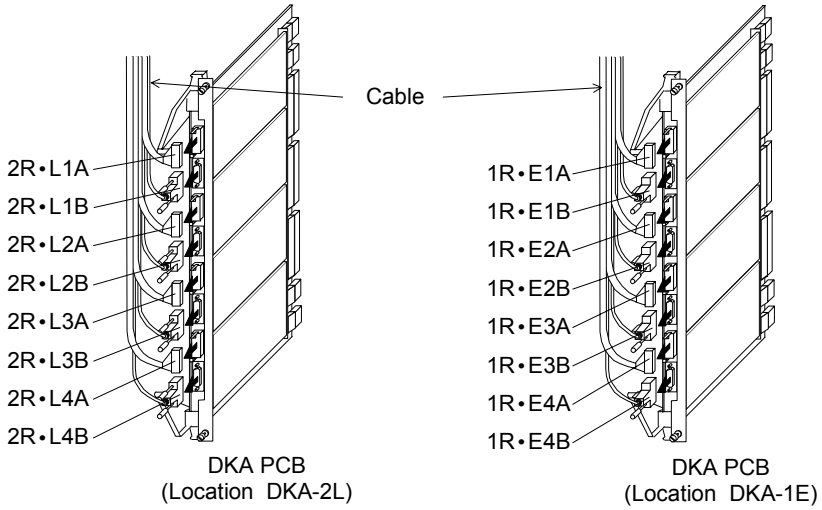

Fig.4.1.4-10 Disconnection of DEV Interface Cable (Add.3)

4-3 Removal of the PCBs

a. Remove the two screws and remove the PCBs from the correct locations in the Rear Logic Box referring to Fig. 4.1.4-11.
b. Attach the dummy plates referring to Fig. 4.1.4-12.

⚠ CAUTION

A serious failure occurs if a wrong PCB is removed.
Remove the PCB after making sure that the Shut Down LED is on.

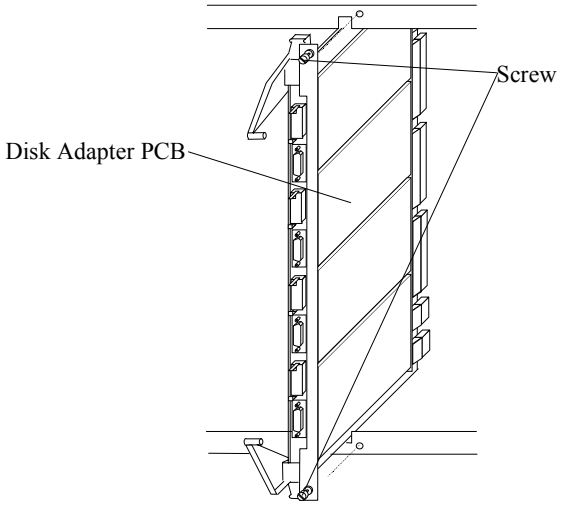

Fig. 4.1.4-11 Removal of PCB

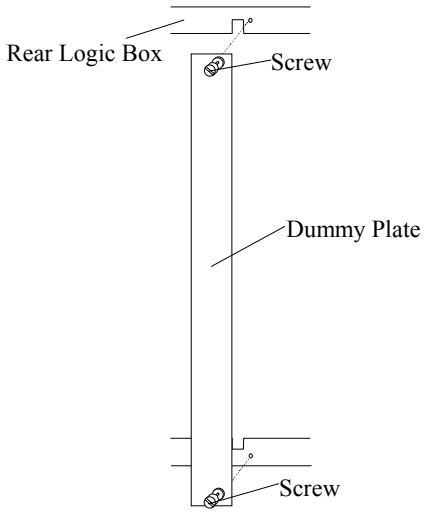

Fig. 4.1.4-12 Attachment of Dummy Plate

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4-4 Removal of the Nameplate

a. Remove the nameplate from the Rear Logic Box cover.

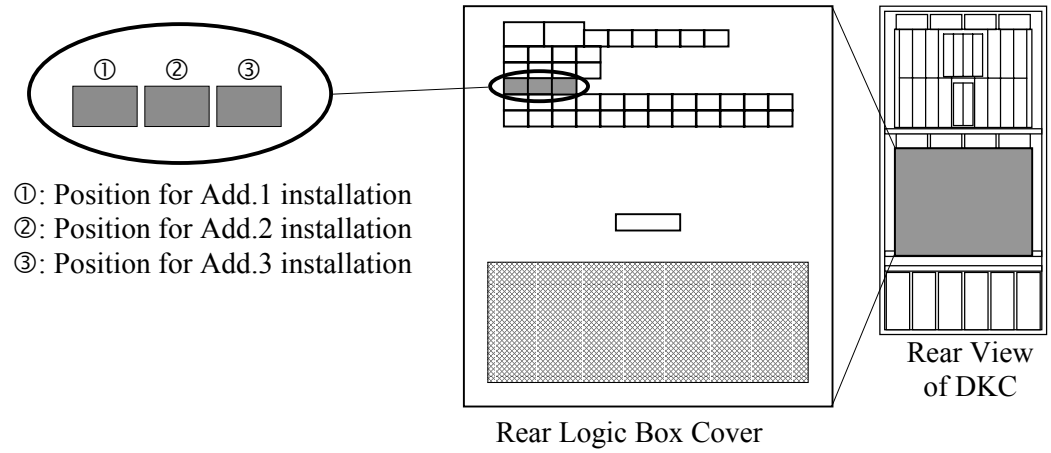

Fig. 4.1.4-13 Removal of Nameplate

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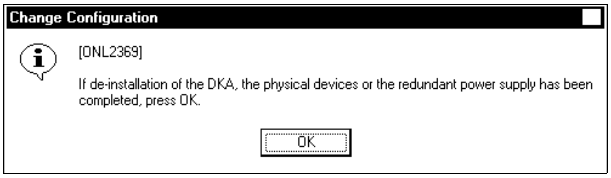
5. SVP post procedure

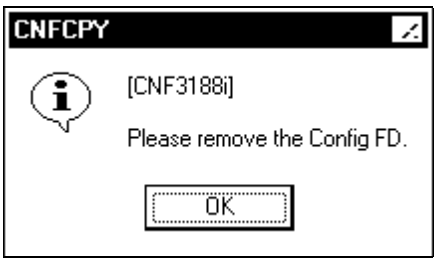
1. Select (CL) [OK] in response to "If de-installation of the DKA, the physical devices or the redundant power supply has been completed, press OK." shown in the right figure.



2. <Check the end of de-installation procedure>
"Renewal process has completed. Please check subsystem status." shown in the right figure displayed. Select (CL) [OK] in response to this message.

3. "Reading subsystem configuration data..." is displayed.
"Please insert the Config FD in the FDD." is displayed.
Insert the configuration FD into FDD, select (CL) [OK].

4. When this procedure is completed, message "Please remove the Config FD." is displayed.
Remove the FD, select (CL) [OK].



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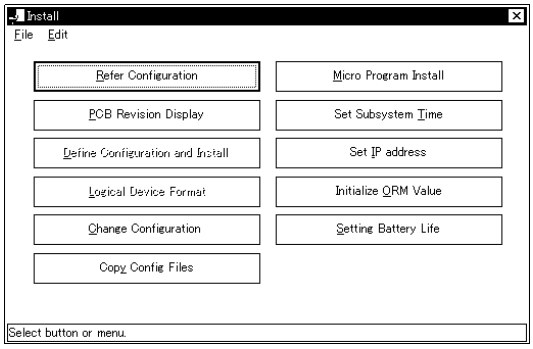
5.

After the procedure is completed, return to ‘Install’.
Select (CL) [File]-[Exit].



6. <Mode Change>
Change the mode to View Mode.

Return to the work table (INST02-60) and perform rest of the works.

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4.1.5 When performing removal of the data/spare HDD canister, DKA, and DEV interface cable that accompanies the removal of the DKU-R2 frame (DKC-F460I-200, DKU-F455I-36K4/36K1/72J4/72J1/72K4/72K1/146J4/146J1/146JF/146JS/146JQ/146JM/EXC)

1. De-Installation Procedure of DEV Interface Cable 2 (1/3) (DKU-F455I-EXC)

> Caution:
> When the main circuit breaker of the DKU is turned off before the DEV interface cable (DKU-F455I-EXC) is removed, the DKU Voltage Alarm is detected (the ALARM LED on the operator panel comes on and the SIM=BF20XX or BF22XX is issued). Therefore, turn off the main circuit breaker of the DKU after removing the DEV interface cable. The turning off of the DKU main circuit breaker is to be done later in another procedure explained on page INST04-DKU-10.

Between HDU-R10-R17 and HDU-R20-R27

a. Loosen the screws and remove the cable covers from the DKU frames.

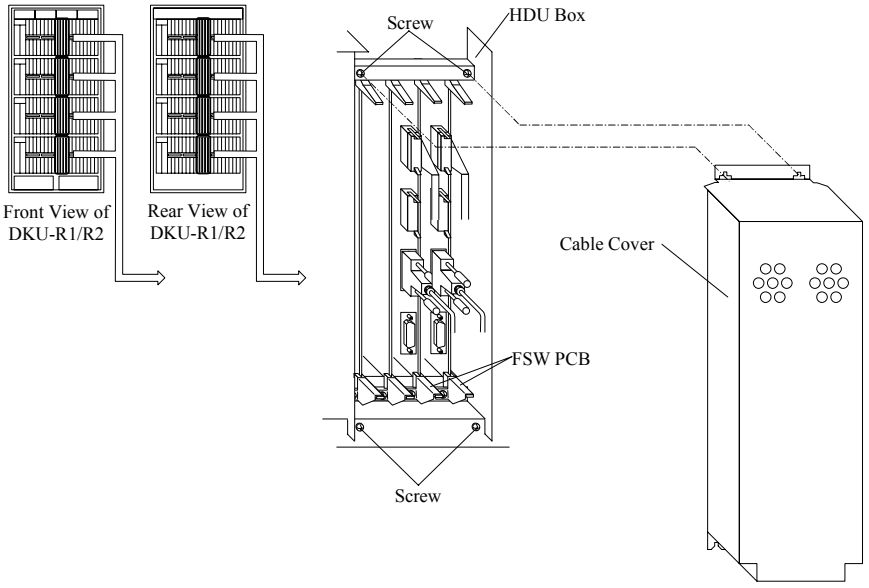

Fig. 4.1.5-1 Removal of Cable Covers

b. Loosen the screws and remove the cable covers from the DKU frames.

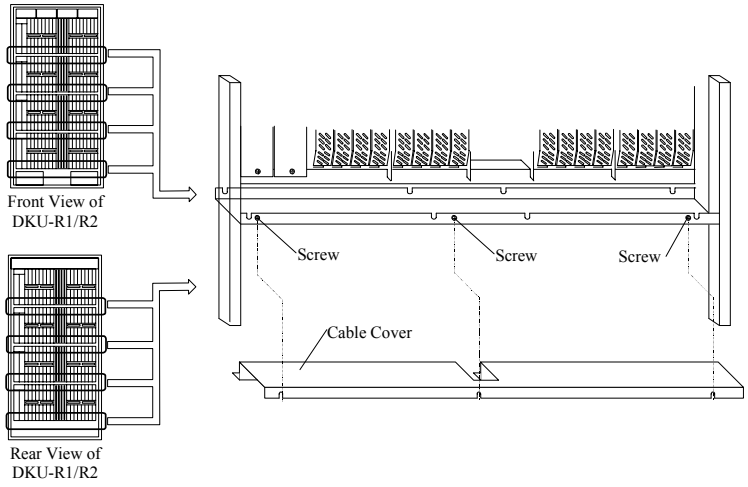

Fig.4.1.5-2 Removal of Cable Covers

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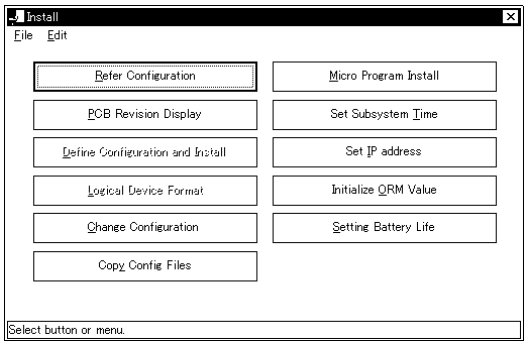
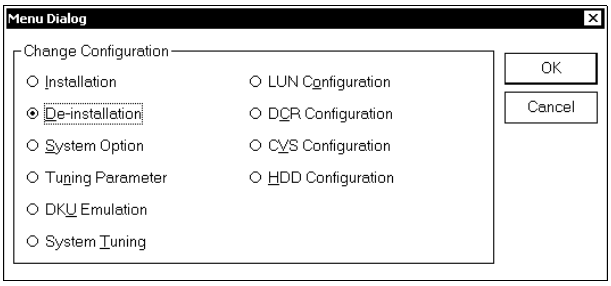
2. Setting up the New Device Structure Information

1. <Mode Change>
   Change the mode to Modify Mode.
   Select (CL) [Install].

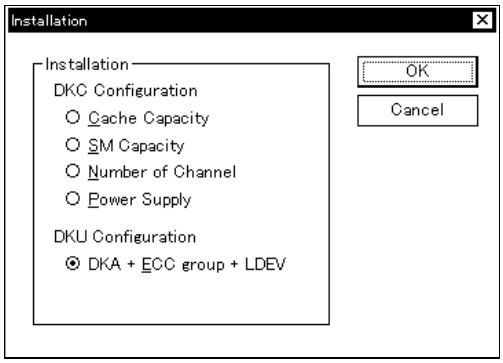
2. <Start the 'Menu Dialog' screen>
   Select (CL) [Change Configuration].



3. <Start Device Structure Setup screen>
   Select (CL) [De-Installation] in the 'Menu Dialog' dialog box and select (CL) [OK].



4. <Select a part to be changed>
   Select (CL) [DKA + ECC group + LDEV], and select (CL) [OK].



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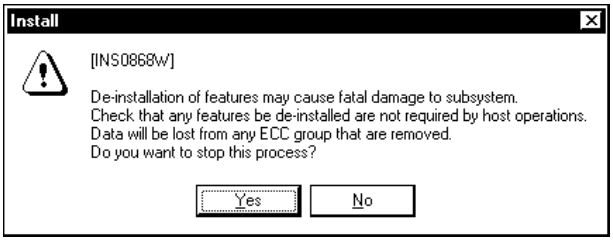
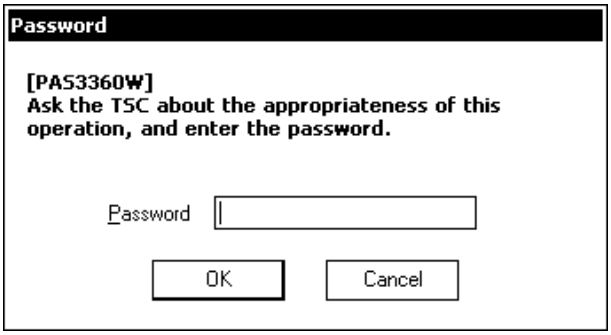
5.

Select (CL) [No] in response to “De-installation of features may cause fatal damage to subsystem. Check that any features be de-installed are not required by host operations. Data will be lost from any ECC group that are removed. Do you want to stop this process?”.



6. <Input password>
Enter the password and select (CL) [OK].



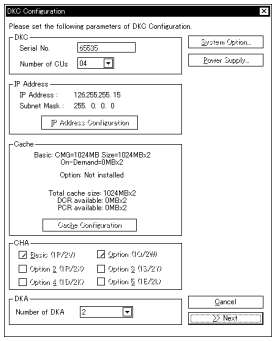
NOTICE
This is a special (exceptional) operation that can cause a serious failure such as a system down or a data loss if a wrong part to be removed is selected, and requires an input of a password. Ask the technical support center about the appropriateness of the operation, and input the password after getting an approval of executing the operation.

7. <Update Configuration Information>
Set the item to be de-installed for DKC and DKA in the ‘DKC Configuration’ window.

When decreasing the CUs, change the “Number of CUs”.
When decreasing the DKAs, change the “Number of DKA”.

Note: A part other than the CU and DKA cannot be removed at the same time.

Make sure that the entered item is correct and select (CL) [>>Next].



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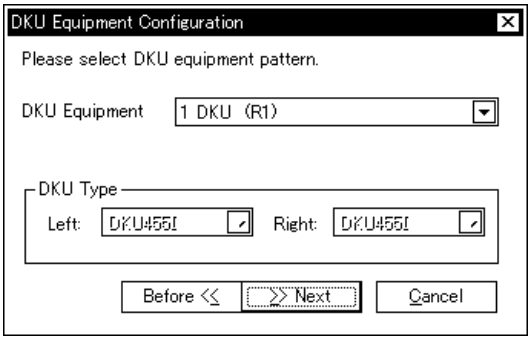
7-1. <Altering DKU frame information>

Define the DKU frame in the DKU Equipment Configuration window.

Make an altered setting in which the DKU-R2 is deleted from the DKUs currently set.

Current setting	Altered setting
2DKUs (R1, R2)	1DKU (R1)
4DKUs (R1, L1, R2, L2)	3DKUs (R1, L1, L2)

Note: After the setting is made, the B4 of the deleted DKU is not displayed.



After making the setting, select the [>> Next]. The routine proceeds to Step 8.

When the [Before <<] is selected, the window returns to the preceding one.

Return to Step 7.

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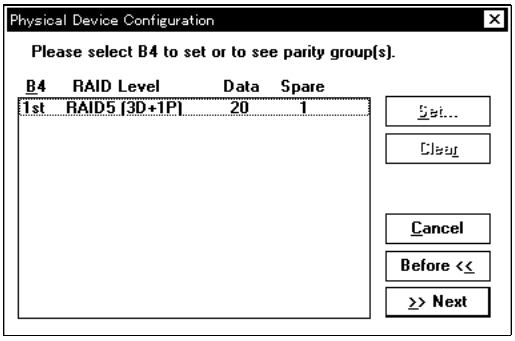
8. Change Drive Configuration Information>
Set drive configuration according to the 'Physical Device Configuration' screen displaying the mounted B4 based on the result of setting of DKU mount pattern.
Detailed procedure is shown below.
[Set...]: Defines the parity group or spare disk. The routine proceeds to Step 8-1.
[Clear...]: Cancels the setting of the B4.
After setting up all items, select (CL) [>>Next].
Selecting (CL) [Before<<] returns you to the previous screen.



[For the case of the multi cabinet model]

B4	Location	B4	Location
1st	HDU-R10, 11, 12, 13	7th	HDU-L20, 21, 22, 23
2nd	HDU-R14, 15, 16, 17	8th	HDU-L24, 25, 26, 27
3rd	HDU-L10, 11, 12, 13	9th	HDU-R30, 31, 32, 33
4th	HDU-L14, 15, 16, 17	10th	HDU-R34, 35, 36, 37
5th	HDU-R20, 21, 22, 23	11th	HDU-L30, 31, 32, 33
6th	HDU-R24, 25, 26, 27	12th	HDU-L34, 35, 36, 37

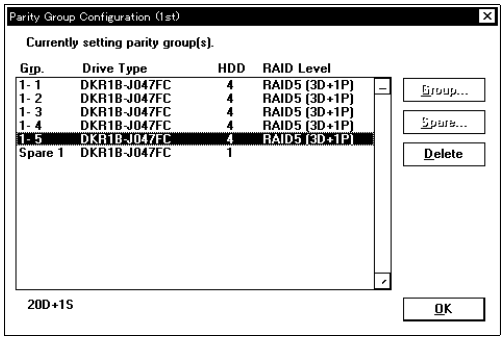
Note: The 9th to 12th of the B4 are valid only when the DKUs for the RAID 400 are connected.

[For the case of the single cabinet model]

B4	Location	Remarks
1st	HDU-R0, 1, 2, 3	HDD-X00 ~ X0F
2nd	HDU-R0, 1, 2, 3	HDD-X10 ~ X1F

8-1. <Define Parity Group>
Select (CL) the group to be de-installed and select (CL) [Delete] in the 'Parity Group Configuration' dialog box.
After setting, select (CL) [OK]. Return to step 8.

Grp*: A parity group where RAID Concatenation is installed.



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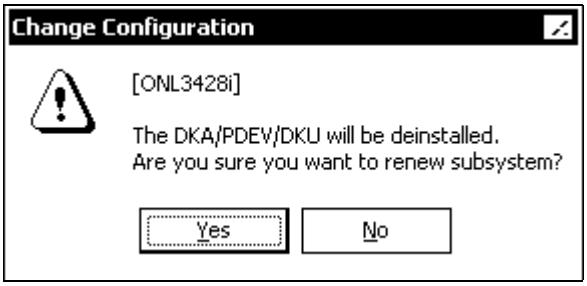
3. SVP pre procedure

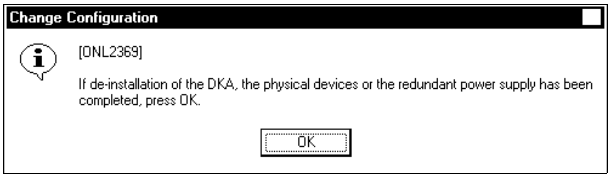
1. <Start de-installation>
   Select (CL) [Yes] in response to "The DKA/PDEV/DKU will be deinstalled. Are you sure you want to renew subsystem?".

   When [No] is selected (CL), returns to INST04-DKA-570 step 2.



2.

   At this point refrain from pressing the [OK] button.
   "If de-installation of the DKA, the physical devices or the redundant power supply has been completed, press OK." shown in the right figure.



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4. De-Installation Procedure of HDD Canister

4-1 Confirmation of position to de-install HDD canister

(i) RAID5(3D+1P)/RAID1(2D+2D)

Relations between the installation locations of the RAID groups and the RAID group numbers set through the SVP are shown in Table 4.1.5-1.

Table 4.1.5-1 Relation between HDDs installation order and RAID group number (3D+1P/2D+2D) (1/2)

	DKC	R1 DKU			R2 DKU		
		RAID Group Installation Order	RAID Group No.	HDD Location	RAID Group Installation Order	RAID Group No.	HDD Location
Upper	2nd DKA Pair	032	2-1	HDDR1y-00	096	6-1	HDDR2y-00
		033	2-2	HDDR1y-01	097	6-2	HDDR2y-01
		034	2-3	HDDR1y-02	098	6-3	HDDR2y-02
		035	2-4	HDDR1y-03	099	6-4	HDDR2y-03
		036	2-5	HDDR1y-04	100	6-5	HDDR2y-04
		037	2-6	HDDR1y-05	101	6-6	HDDR2y-05
		038	2-7	HDDR1y-06	102	6-7	HDDR2y-06
		039	2-8	HDDR1y-07	103	6-8	HDDR2y-07
		040	2-9	HDDR1y-08	104	6-9	HDDR2y-08
		041	2-10	HDDR1y-09	105	6-10	HDDR2y-09
		042	2-11	HDDR1y-0A	106	6-11	HDDR2y-0A
		043	2-12	HDDR1y-0B	107	6-12	HDDR2y-0B
		044	2-13	HDDR1y-0C	108	6-13	HDDR2y-0C
		045	2-14	HDDR1y-0D	109	6-14	HDDR2y-0D
		046	2-15	HDDR1y-0E	110	6-15	HDDR2y-0E
		047(Spare) *2	2-16	HDDR1y-0F	111	6-16	HDDR2y-0F
		048	2-17	HDDR1y-10	112	6-17	HDDR2y-10
		049	2-18	HDDR1y-11	113	6-18	HDDR2y-11
		050	2-19	HDDR1y-12	114	6-19	HDDR2y-12
		051	2-20	HDDR1y-13	115	6-20	HDDR2y-13
		052	2-21	HDDR1y-14	116	6-21	HDDR2y-14
		053	2-22	HDDR1y-15	117	6-22	HDDR2y-15
		054	2-23	HDDR1y-16	118	6-23	HDDR2y-16
		055	2-24	HDDR1y-17	119	6-24	HDDR2y-17
		056	2-25	HDDR1y-18	120	6-25	HDDR2y-18
		057	2-26	HDDR1y-19	121	6-26	HDDR2y-19
		058	2-27	HDDR1y-1A	122	6-27	HDDR2y-1A
		059	2-28	HDDR1y-1B	123	6-28	HDDR2y-1B
		060	2-29	HDDR1y-1C	124	6-29	HDDR2y-1C
		061	2-30	HDDR1y-1D	125	6-30	HDDR2y-1D
		062	2-31	HDDR1y-1E	126	6-31	HDDR2y-1E
		063	2-32	HDDR1y-1F	127	6-32	HDDR2y-1F
Lower	1st DKA Pair	001	1-1	HDDR1x-00	064	5-1	HDDR2x-00
		002	1-2	HDDR1x-01	065	5-2	HDDR2x-01
		003	1-3	HDDR1x-02	066	5-3	HDDR2x-02
		004	1-4	HDDR1x-03	067	5-4	HDDR2x-03
		005	1-5	HDDR1x-04	068	5-5	HDDR2x-04
		006	1-6	HDDR1x-05	069	5-6	HDDR2x-05
		007	1-7	HDDR1x-06	070	5-7	HDDR2x-06
		008	1-8	HDDR1x-07	071	5-8	HDDR2x-07
		009	1-9	HDDR1x-08	072	5-9	HDDR2x-08
		010	1-10	HDDR1x-09	073	5-10	HDDR2x-09
		011	1-11	HDDR1x-0A	074	5-11	HDDR2x-0A
		012	1-12	HDDR1x-0B	075	5-12	HDDR2x-0B
		013	1-13	HDDR1x-0C	076	5-13	HDDR2x-0C
		014	1-14	HDDR1x-0D	077	5-14	HDDR2x-0D
		015	1-15	HDDR1x-0E	078	5-15	HDDR2x-0E
		Spare *1	1-16	HDDR1x-0F	079	5-16	HDDR2x-0F
		016	1-17	HDDR1x-10	080	5-17	HDDR2x-10
		017	1-18	HDDR1x-11	081	5-18	HDDR2x-11
		018	1-19	HDDR1x-12	082	5-19	HDDR2x-12
		019	1-20	HDDR1x-13	083	5-20	HDDR2x-13
		020	1-21	HDDR1x-14	084	5-21	HDDR2x-14
		021	1-22	HDDR1x-15	085	5-22	HDDR2x-15
		022	1-23	HDDR1x-16	086	5-23	HDDR2x-16
		023	1-24	HDDR1x-17	087	5-24	HDDR2x-17
		024	1-25	HDDR1x-18	088	5-25	HDDR2x-18
		025	1-26	HDDR1x-19	089	5-26	HDDR2x-19
		026	1-27	HDDR1x-1A	090	5-27	HDDR2x-1A
		027	1-28	HDDR1x-1B	091	5-28	HDDR2x-1B
		028	1-29	HDDR1x-1C	092	5-29	HDDR2x-1C
		029	1-30	HDDR1x-1D	093	5-30	HDDR2x-1D
		030	1-31	HDDR1x-1E	094	5-31	HDDR2x-1E
		031	1-32	HDDR1x-1F	095	5-32	HDDR2x-1F

*1: To be left vacant or a spare disk is to be installed. *2: A data or spare disk is to be installed.

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Table 4.1.5-1 Relation between HDDs installation order and RAID group number (3D+1P/2D+2D) (2/2)

	L2 DKU			L1 DKU			DKC
	RAID Group Installation Order	RAID Group No.	HDD Location	RAID Group Installation Order	RAID Group No.	HDD Location	
Upper	223	8-1	HDDL2y-00	159	4-1	HDDL1y-00	4th DKA Pair
	224	8-2	HDDL2y-01	160	4-2	HDDL1y-01	
	225	8-3	HDDL2y-02	161	4-3	HDDL1y-02	
	226	8-4	HDDL2y-03	162	4-4	HDDL1y-03	
	227	8-5	HDDL2y-04	163	4-5	HDDL1y-04	
	228	8-6	HDDL2y-05	164	4-6	HDDL1y-05	
	229	8-7	HDDL2y-06	165	4-7	HDDL1y-06	
	230	8-8	HDDL2y-07	166	4-8	HDDL1y-07	
	231	8-9	HDDL2y-08	167	4-9	HDDL1y-08	
	232	8-10	HDDL2y-09	168	4-10	HDDL1y-09	
	233	8-11	HDDL2y-0A	169	4-11	HDDL1y-0A	
	234	8-12	HDDL2y-0B	170	4-12	HDDL1y-0B	
	235	8-13	HDDL2y-0C	171	4-13	HDDL1y-0C	
	236	8-14	HDDL2y-0D	172	4-14	HDDL1y-0D	
	237	8-15	HDDL2y-0E	173	4-15	HDDL1y-0E	
	238	8-16	HDDL2y-0F	174(Spare) *2	4-16	HDDL1y-0F	
	239	8-17	HDDL2y-10	175	4-17	HDDL1y-10	
	240	8-18	HDDL2y-11	176	4-18	HDDL1y-11	
	241	8-19	HDDL2y-12	177	4-19	HDDL1y-12	
	242	8-20	HDDL2y-13	178	4-20	HDDL1y-13	
	243	8-21	HDDL2y-14	179	4-21	HDDL1y-14	
	244	8-22	HDDL2y-15	180	4-22	HDDL1y-15	
	245	8-23	HDDL2y-16	181	4-23	HDDL1y-16	
	246	8-24	HDDL2y-17	182	4-24	HDDL1y-17	
	247	8-25	HDDL2y-18	183	4-25	HDDL1y-18	
	248	8-26	HDDL2y-19	184	4-26	HDDL1y-19	
	249	8-27	HDDL2y-1A	185	4-27	HDDL1y-1A	
	250	8-28	HDDL2y-1B	186	4-28	HDDL1y-1B	
	251	8-29	HDDL2y-1C	187	4-29	HDDL1y-1C	
	252	8-30	HDDL2y-1D	188	4-30	HDDL1y-1D	
	253	8-31	HDDL2y-1E	189	4-31	HDDL1y-1E	
	254	8-32	HDDL2y-1F	190	4-32	HDDL1y-1F	
Lower	191	7-1	HDDL2x-00	128	3-1	HDDL1x-00	3rd DKA Pair
	192	7-2	HDDL2x-01	129	3-2	HDDL1x-01	
	193	7-3	HDDL2x-02	130	3-3	HDDL1x-02	
	194	7-4	HDDL2x-03	131	3-4	HDDL1x-03	
	195	7-5	HDDL2x-04	132	3-5	HDDL1x-04	
	196	7-6	HDDL2x-05	133	3-6	HDDL1x-05	
	197	7-7	HDDL2x-06	134	3-7	HDDL1x-06	
	198	7-8	HDDL2x-07	135	3-8	HDDL1x-07	
	199	7-9	HDDL2x-08	136	3-9	HDDL1x-08	
	200	7-10	HDDL2x-09	137	3-10	HDDL1x-09	
	201	7-11	HDDL2x-0A	138	3-11	HDDL1x-0A	
	202	7-12	HDDL2x-0B	139	3-12	HDDL1x-0B	
	203	7-13	HDDL2x-0C	140	3-13	HDDL1x-0C	
	204	7-14	HDDL2x-0D	141	3-14	HDDL1x-0D	
	205	7-15	HDDL2x-0E	142	3-15	HDDL1x-0E	
	206	7-16	HDDL2x-0F	Spare *1	3-16	HDDL1x-0F	
	207	7-17	HDDL2x-10	143	3-17	HDDL1x-10	
	208	7-18	HDDL2x-11	144	3-18	HDDL1x-11	
	209	7-19	HDDL2x-12	145	3-19	HDDL1x-12	
	210	7-20	HDDL2x-13	146	3-20	HDDL1x-13	
	211	7-21	HDDL2x-14	147	3-21	HDDL1x-14	
	212	7-22	HDDL2x-15	148	3-22	HDDL1x-15	
	213	7-23	HDDL2x-16	149	3-23	HDDL1x-16	
	214	7-24	HDDL2x-17	150	3-24	HDDL1x-17	
	215	7-25	HDDL2x-18	151	3-25	HDDL1x-18	
	216	7-26	HDDL2x-19	152	3-26	HDDL1x-19	
	217	7-27	HDDL2x-1A	153	3-27	HDDL1x-1A	
	218	7-28	HDDL2x-1B	154	3-28	HDDL1x-1B	
	219	7-29	HDDL2x-1C	155	3-29	HDDL1x-1C	
	220	7-30	HDDL2x-1D	156	3-30	HDDL1x-1D	
	221	7-31	HDDL2x-1E	157	3-31	HDDL1x-1E	
	222	7-32	HDDL2x-1F	158	3-32	HDDL1x-1F	

*1: To be left vacant or a spare disk is to be installed. *2: A data or spare disk is to be installed.

*3: HDDL1x-00 (x: HDU Box No. 0, 1, 2, 3), HDDL1y-00 (y: HDU Box No. 4, 5, 6, 7)

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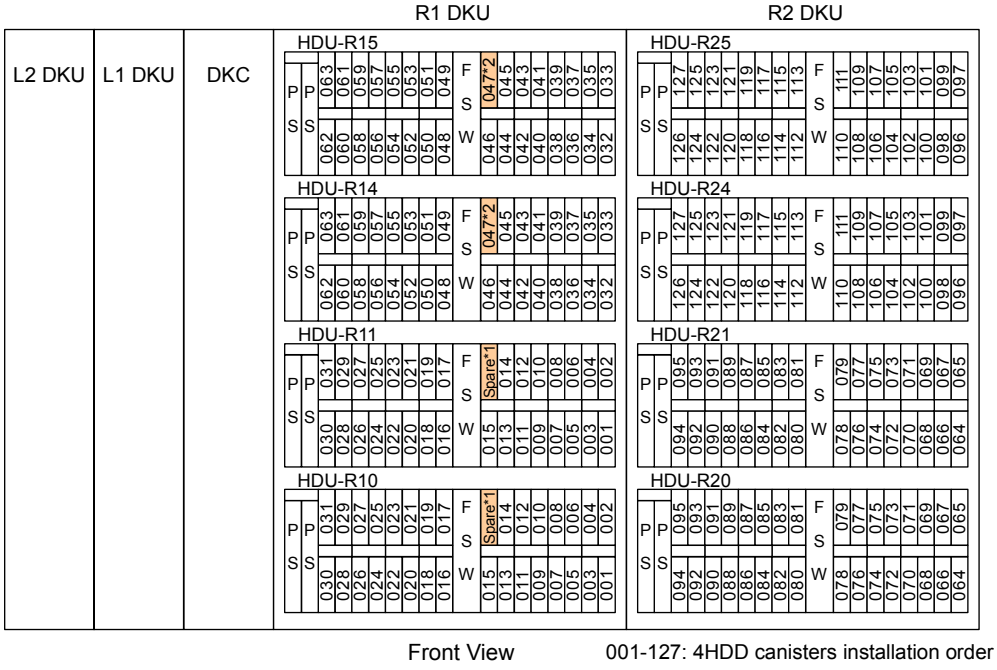
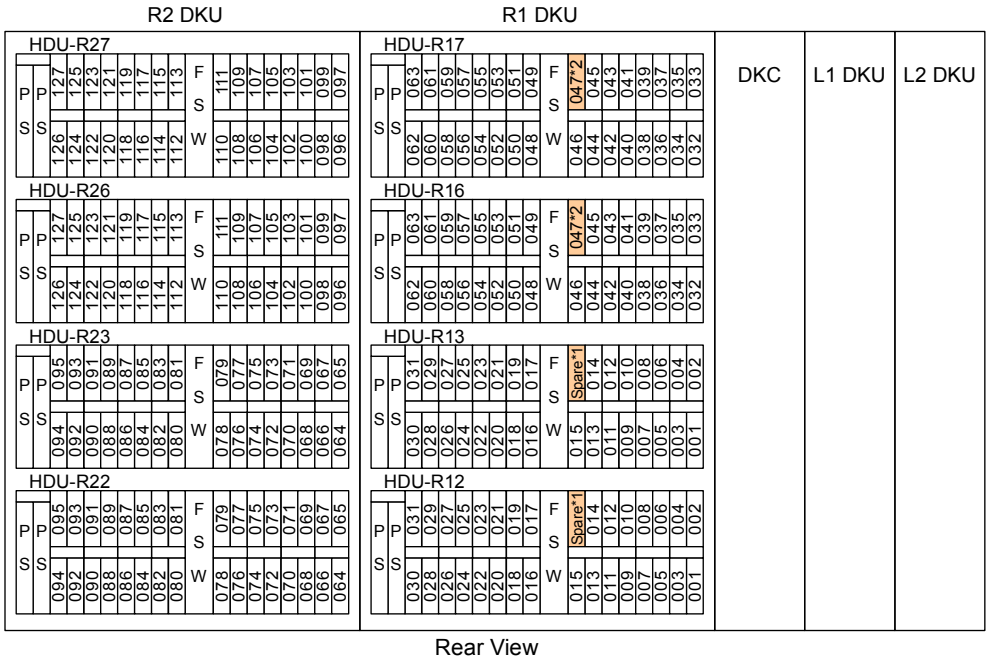
(1) Make sure of the location where the RAID group is de-installed and that where the HDD canister is to be removed.

No.	Model Number	Model Name	Data and Parity
1	DKU-F455I-36K4/72J4/72K4/146J4/146JF/146JQ	4 HDD Canisters	Data and Parity Drive





*1: To be left vacant or a spare disk is to be installed.

*2: A data or spare disk is to be installed.

Fig. 4.1.5-3 (3D+1P) or (2D+2P) Data Drive/Parity Drive Expansion Sequence (1/2)

The relationship between HDDs installation order and RAID group number is shown in the Table 4.1.5-1.

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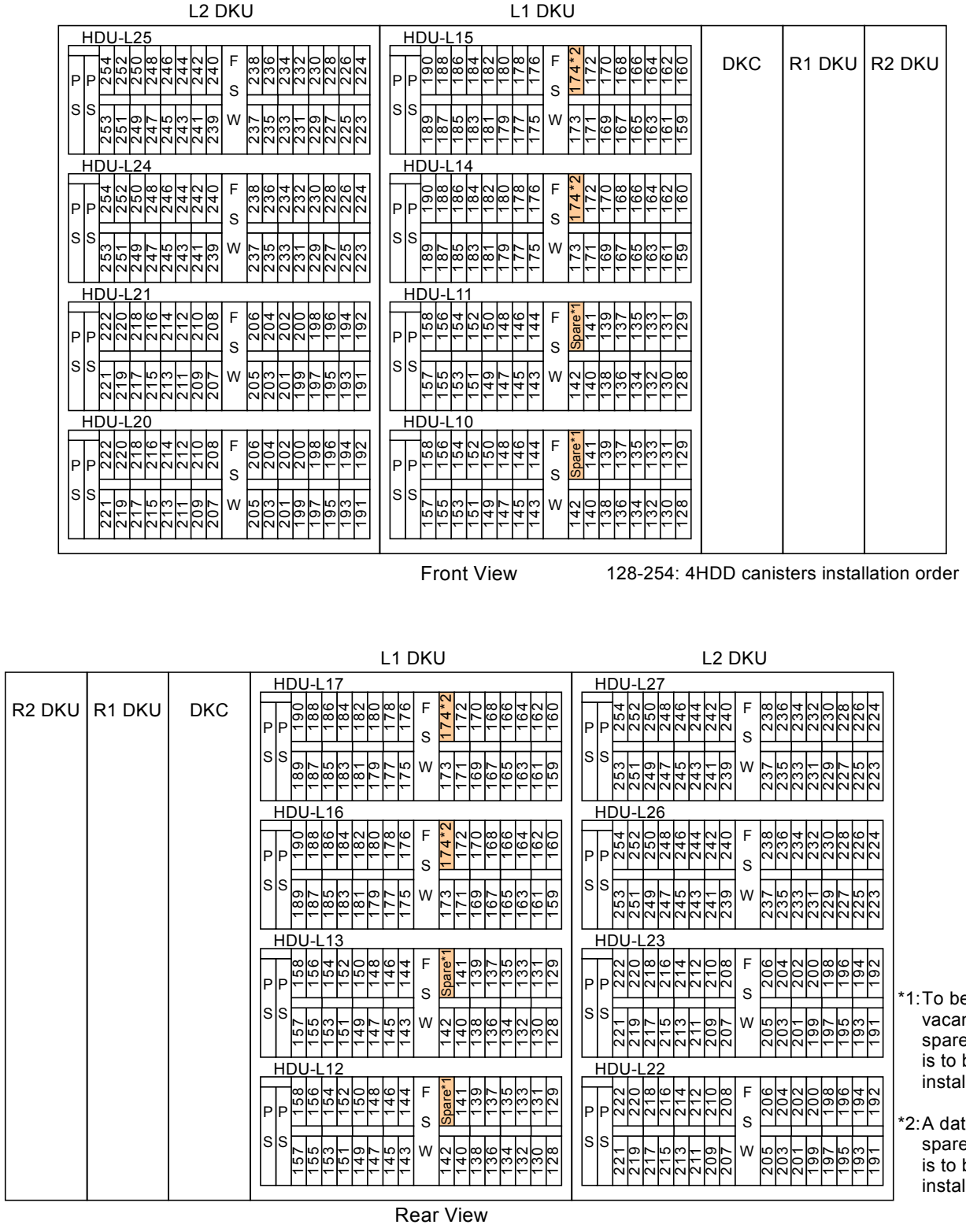

Fig. 4.1.5-3 (3D+1P) or (2D+2P) Data Drive/Parity Drive Expansion Sequence (2/2)

The relationship between HDDs installation order and RAID group number is shown in the Table 4.1.5-1.

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(ii) RAID5 (7D+1P)

Relations between the installation locations of the RAID groups and the RAID group numbers set through the SVP are shown in Table 4.1.5-2.

Table 4.1.5-2 Relation between HDDs installation order and RAID group number (7D+1P) (1/2)

DKC	R1 DKU			R2 DKU		
	RAID Group Installation Order	RAID Group No.	HDD Location	RAID Group Installation Order	RAID Group No.	HDD Location
1st / 2nd DKA Pair	001	1-1 , (2-1)	HDDR1x-00	032	5-1, (6-1)	HDDR2x-00
	002	1-2 , (2-2)	HDDR1x-01	033	5-2, (6-2)	HDDR2x-01
	003	1-3 , (2-3)	HDDR1x-02	034	5-3, (6-3)	HDDR2x-02
	004	1-4 , (2-4)	HDDR1x-03	035	5-4, (6-4)	HDDR2x-03
	005	1-5 , (2-5)	HDDR1x-04	036	5-5, (6-5)	HDDR2x-04
	006	1-6 , (2-6)	HDDR1x-05	037	5-6, (6-6)	HDDR2x-05
	007	1-7 , (2-7)	HDDR1x-06	038	5-7, (6-7)	HDDR2x-06
	008	1-8 , (2-8)	HDDR1x-07	039	5-8, (6-8)	HDDR2x-07
	009	1-9 , (2-9)	HDDR1x-08	040	5-9, (6-9)	HDDR2x-08
	010	1-10 , (2-10)	HDDR1x-09	041	5-10, (6-10)	HDDR2x-09
	011	1-11 , (2-11)	HDDR1x-0A	042	5-11, (6-11)	HDDR2x-0A
	012	1-12 , (2-12)	HDDR1x-0B	043	5-12, (6-12)	HDDR2x-0B
	013	1-13 , (2-13)	HDDR1x-0C	044	5-13, (6-13)	HDDR2x-0C
	014	1-14 , (2-14)	HDDR1x-0D	045	5-14, (6-14)	HDDR2x-0D
	015	1-15 , (2-15)	HDDR1x-0E	046	5-15, (6-15)	HDDR2x-0E
	(Spare) *1	1-16 , (2-16)	HDDR1x-0F	047	5-16, (6-16)	HDDR2x-0F
	016	1-17 , (2-17)	HDDR1x-10	048	5-17, (6-17)	HDDR2x-10
	017	1-18 , (2-18)	HDDR1x-11	049	5-18, (6-18)	HDDR2x-11
	018	1-19 , (2-19)	HDDR1x-12	050	5-19, (6-19)	HDDR2x-12
	019	1-20 , (2-20)	HDDR1x-13	051	5-20, (6-20)	HDDR2x-13
	020	1-21 , (2-21)	HDDR1x-14	052	5-21, (6-21)	HDDR2x-14
	021	1-22 , (2-22)	HDDR1x-15	053	5-22, (6-22)	HDDR2x-15
	022	1-23 , (2-23)	HDDR1x-16	054	5-23, (6-23)	HDDR2x-16
	023	1-24 , (2-24)	HDDR1x-17	055	5-24, (6-24)	HDDR2x-17
	024	1-25 , (2-25)	HDDR1x-18	056	5-25, (6-25)	HDDR2x-18
	025	1-26 , (2-26)	HDDR1x-19	057	5-26, (6-26)	HDDR2x-19
	026	1-27 , (2-27)	HDDR1x-1A	058	5-27, (6-27)	HDDR2x-1A
	027	1-28 , (2-28)	HDDR1x-1B	059	5-28, (6-28)	HDDR2x-1B
	028	1-29 , (2-29)	HDDR1x-1C	060	5-29, (6-29)	HDDR2x-1C
	029	1-30 , (2-30)	HDDR1x-1D	061	5-30, (6-30)	HDDR2x-1D
	030	1-31 , (2-31)	HDDR1x-1E	062	5-31, (6-31)	HDDR2x-1E
	031	1-32 , (2-32)	HDDR1x-1F	063	5-32, (6-32)	HDDR2x-1F

*1: To be left vacant or a spare disk is to be installed. *2: HDDL1x-00 (x: HDU Box No. 0, 1, 2, …, 7)

- Install RAID 5 (7D+1P) forming pairs using the same number of the two RAID groups (RAID groups 1 and 2, 3 and 4, 5 and 6, and 7 and 8) of RAID 5 (3D+1P).
  (Example: RAID group numbers 1-1 and 2-1)
  The types of HDDs to be installed in each pair must be the same.
- In the case of RAID 5 (7D+1P), only odd RAID numbers are displayed on the SVP. (Group numbers shown in parentheses in the table above are not displayed.)
- When RAID 5 (3D+1P) or RAID 1 (2D+2D) and RAID 5 (7D+1P) are configured mixture, note that duplicated group numbers are excluded.
  Example: When Group No. 1-1 is configured for RAID 5 (7D+1P), Group No. 2-1 is excluded and cannot be configure for RAID 5 (3D+1P).

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Table 4.1.5-2 Relation between HDDs installation order and RAID group number (7D+1P) (2/2)

L2 DKU			L1 DKU			DKC
RAID Group Installation Order	RAID Group No.	HDD Location	RAID Group Installation Order	RAID Group No.	HDD Location	
095	7-1, (8-1)	HDDL2x-00	064	3-1 , (4-1)	HDDL1x-00	
096	7-2, (8-2)	HDDL2x-01	065	3-2 , (4-2)	HDDL1x-01	
097	7-3, (8-3)	HDDL2x-02	066	3-3 , (4-3)	HDDL1x-02	
098	7-4, (8-4)	HDDL2x-03	067	3-4 , (4-4)	HDDL1x-03	
099	7-5, (8-5)	HDDL2x-04	068	3-5 , (4-5)	HDDL1x-04	
100	7-6, (8-6)	HDDL2x-05	069	3-6 , (4-6)	HDDL1x-05	
101	7-7, (8-7)	HDDL2x-06	070	3-7 , (4-7)	HDDL1x-06	
102	7-8, (8-8)	HDDL2x-07	071	3-8 , (4-8)	HDDL1x-07	
103	7-9, (8-9)	HDDL2x-08	072	3-9 , (4-9)	HDDL1x-08	
104	7-10, (8-10)	HDDL2x-09	073	3-10 , (4-10)	HDDL1x-09	
105	7-11, (8-11)	HDDL2x-0A	074	3-11 , (4-11)	HDDL1x-0A	
106	7-12, (8-12)	HDDL2x-0B	075	3-12 , (4-12)	HDDL1x-0B	
107	7-13, (8-13)	HDDL2x-0C	076	3-13 , (4-13)	HDDL1x-0C	
108	7-14, (8-14)	HDDL2x-0D	077	3-14 , (4-14)	HDDL1x-0D	
109	7-15, (8-15)	HDDL2x-0E	078	3-15 , (4-15)	HDDL1x-0E	3rd / 4th
110	7-16, (8-16)	HDDL2x-0F	(Spare) *1	3-16 , (4-16)	HDDL1x-0F	DKA
111	7-17, (8-17)	HDDL2x-10	079	3-17 , (4-17)	HDDL1x-10	Pair
112	7-18, (8-18)	HDDL2x-11	080	3-18 , (4-18)	HDDL1x-11	
113	7-19, (8-19)	HDDL2x-12	081	3-19 , (4-19)	HDDL1x-12	
114	7-20, (8-20)	HDDL2x-13	082	3-20 , (4-20)	HDDL1x-13	
115	7-21, (8-21)	HDDL2x-14	083	3-21 , (4-21)	HDDL1x-14	
116	7-22, (8-22)	HDDL2x-15	084	3-22 , (4-22)	HDDL1x-15	
117	7-23, (8-23)	HDDL2x-16	085	3-23 , (4-23)	HDDL1x-16	
118	7-24, (8-24)	HDDL2x-17	086	3-24 , (4-24)	HDDL1x-17	
119	7-25, (8-25)	HDDL2x-18	087	3-25 , (4-25)	HDDL1x-18	
120	7-26, (8-26)	HDDL2x-19	088	3-26 , (4-26)	HDDL1x-19	
121	7-27, (8-27)	HDDL2x-1A	089	3-27 , (4-27)	HDDL1x-1A	
122	7-28, (8-28)	HDDL2x-1B	090	3-28 , (4-28)	HDDL1x-1B	
123	7-29, (8-29)	HDDL2x-1C	091	3-29 , (4-29)	HDDL1x-1C	
124	7-30, (8-30)	HDDL2x-1D	092	3-30 , (4-30)	HDDL1x-1D	
125	7-31, (8-31)	HDDL2x-1E	093	3-31 , (4-31)	HDDL1x-1E	
126	7-32, (8-32)	HDDL2x-1F	094	3-32 , (4-32)	HDDL1x-1F	

*1: To be left vacant or a spare disk is to be installed. *2: HDDL1x-00 (x: HDU Box No. 0, 1, 2, …, 7)

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(1) Make sure of the location where the RAID group is de-installed and that where the HDD canister is to be removed.

No.	Model Number	Model Name	Data and Parity
1	DKU-F455I-36K4/72J4/72K4/146J4/146JF/146JQ	4 HDD Canisters x 2sets	Data and Parity Drive

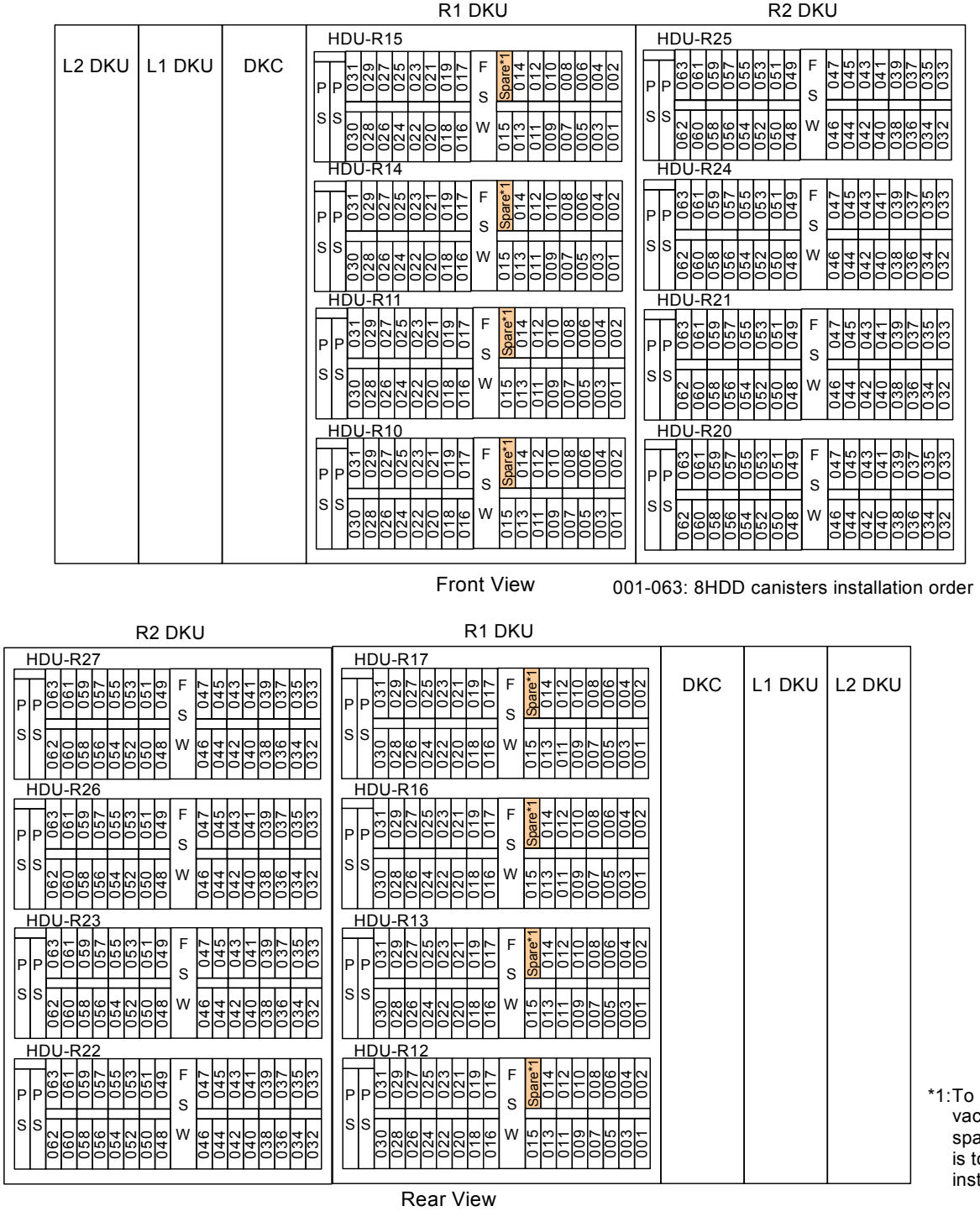

Fig. 4.1.5-4 (7D+1P) Data Drive/Parity Drive Expansion Sequence (1/2)

The relationship between HDDs installation order and RAID group number is shown in the Table 4.1.5-2.

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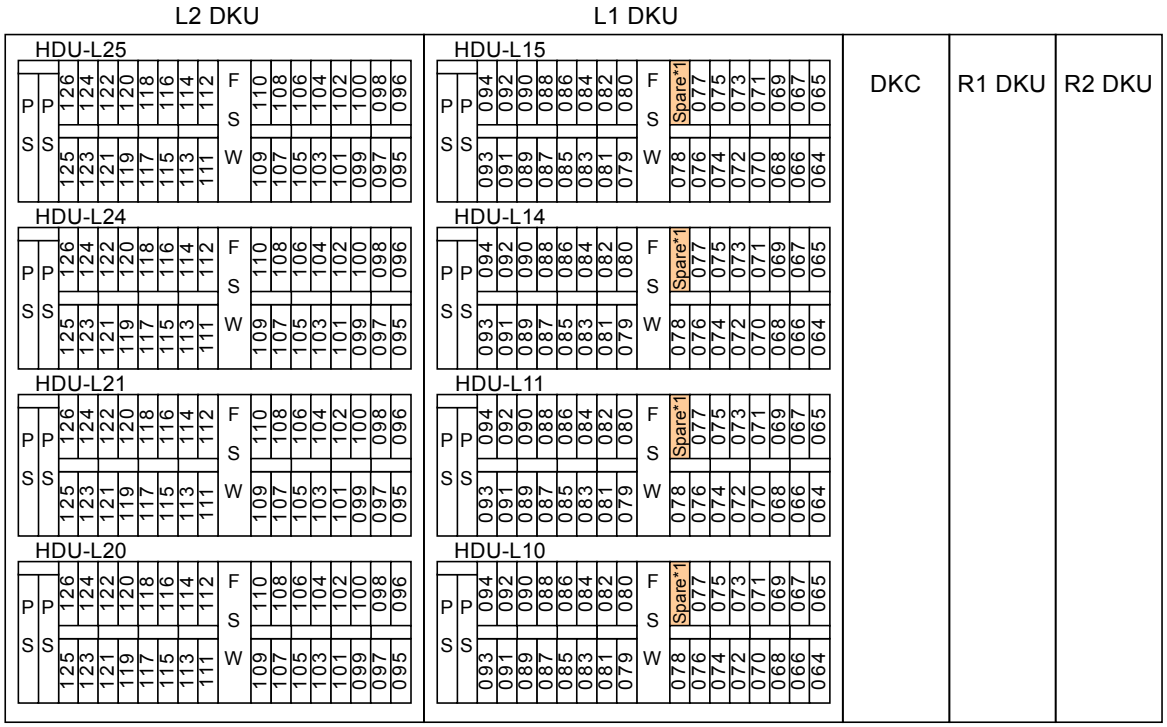

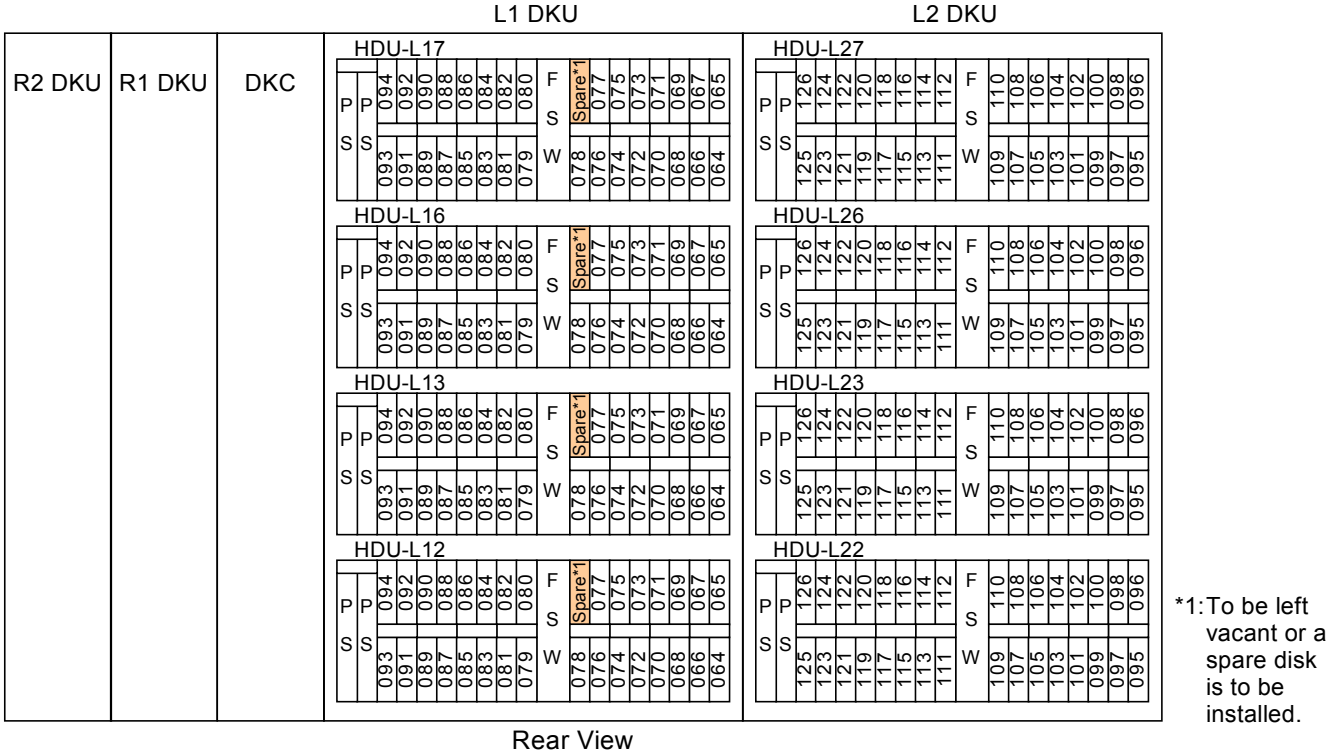

Fig. 4.1.5-4 (7D+1P) Data Drive/Parity Drive Expansion Sequence (2/2)

The relationship between HDDs installation order and RAID group number is shown in the Table 4.1.5-2.

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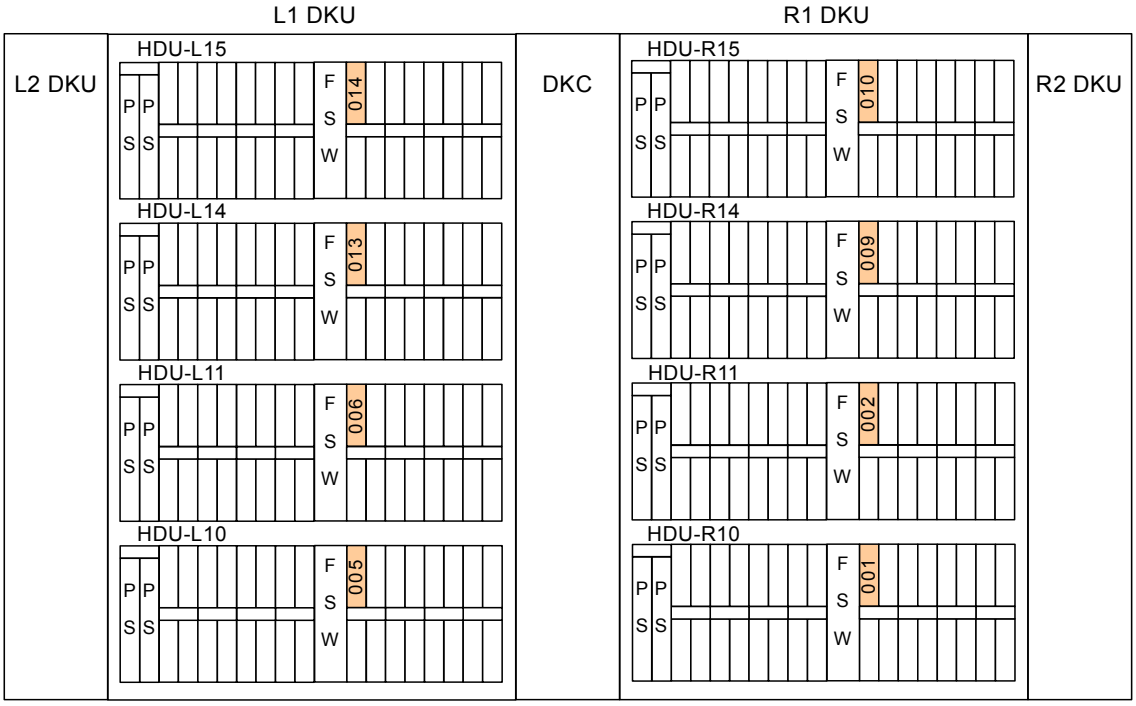
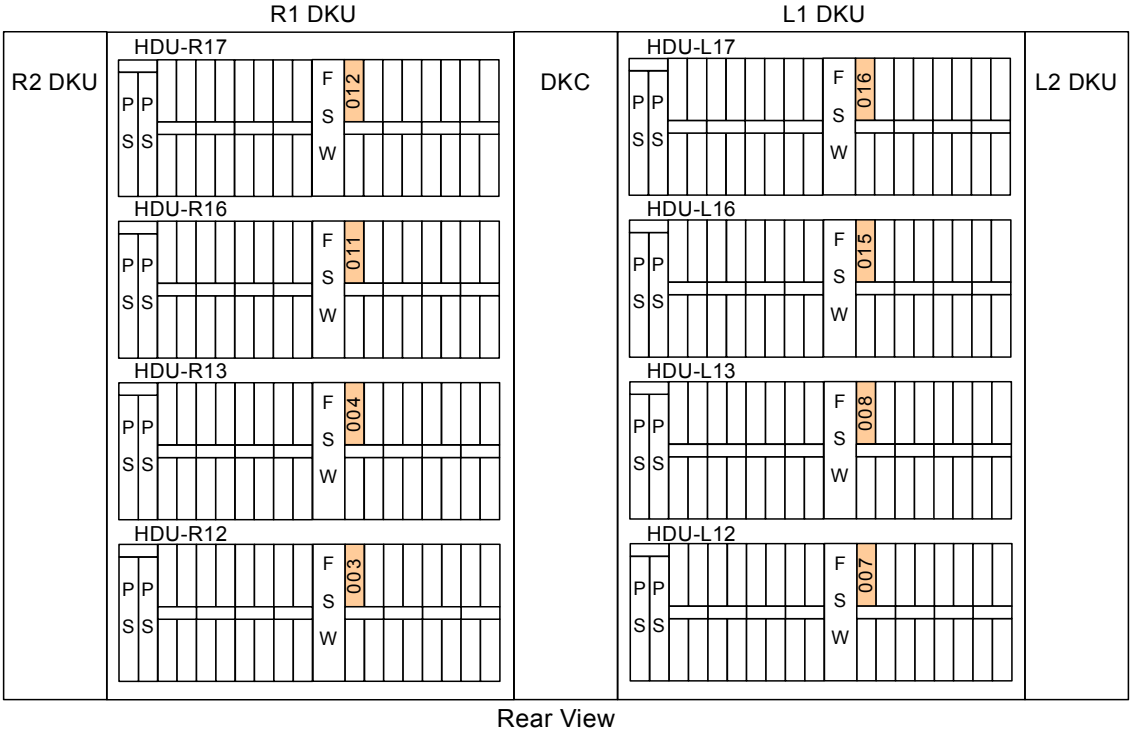
(iii) Spare HDD

No.	Model Number	Model Name	Data and Parity
1	DKU-F455I-36K1/72J1/72K1/146J1/146JS/146JM	1 HDD Canister	Spare Drive



Front View

001-016: Spare HDD canister installation order



Rear View

Fig. 4.1.5-5 Spare Drive Expansion Sequence

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4-2 Confirmation of Shut Down LED.

a. Confirm the Shut Down LED on the JMP PCB. (It should be RED.)

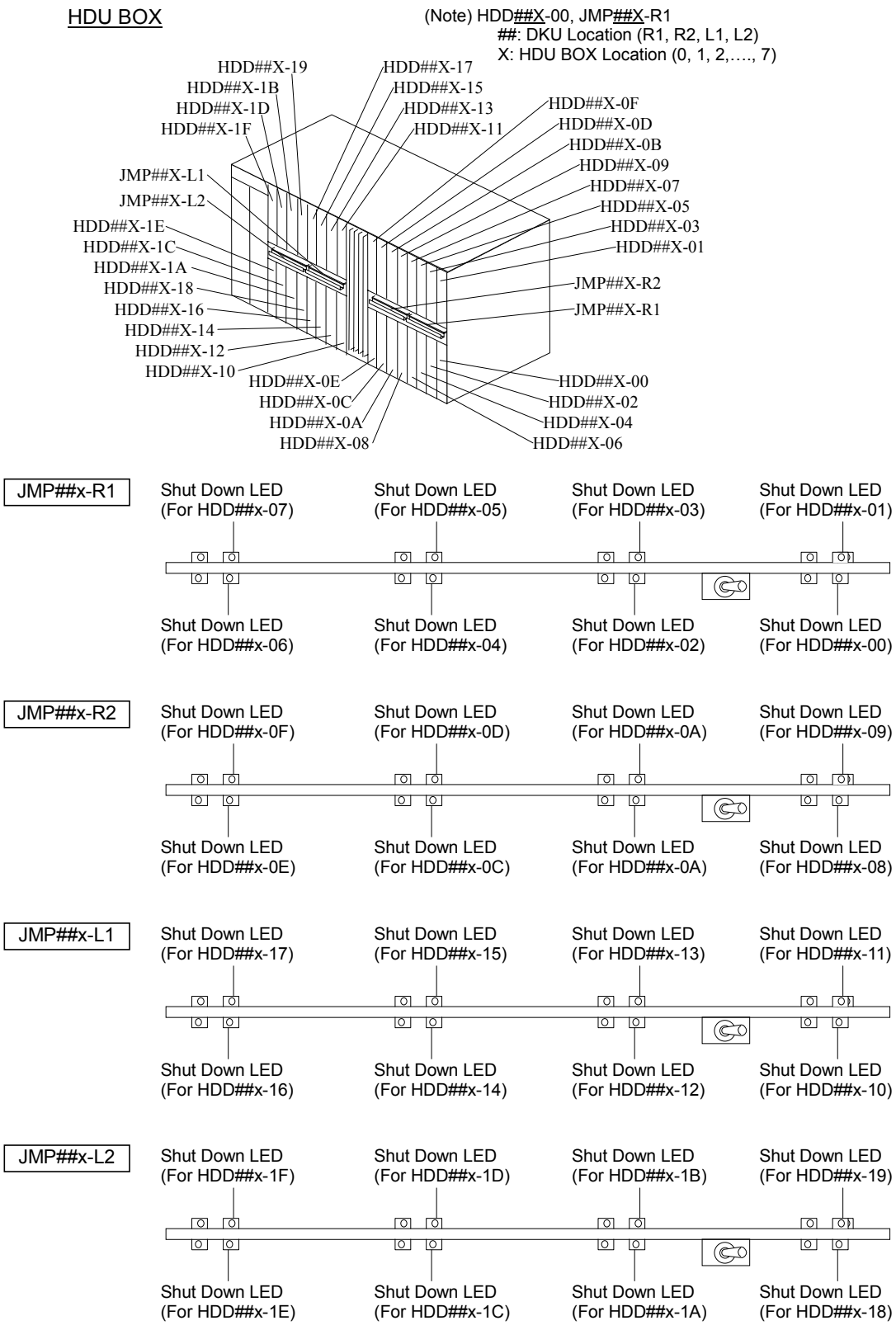

Fig. 4.1.5-6 Location of Shut Down LED

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4-3 De-installation of the HDD canister.

Notice:
Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

CAUTION

A system down may be caused by a removal of an HDD canister other than that to be removed. Make sure that it is the HDD canister to be removed.

a. After pushing up the stopper on the front side of the HDD canister, pull the handle toward you to remove the HDD canister.
b. Insert the dummy canister to the HDU Box.

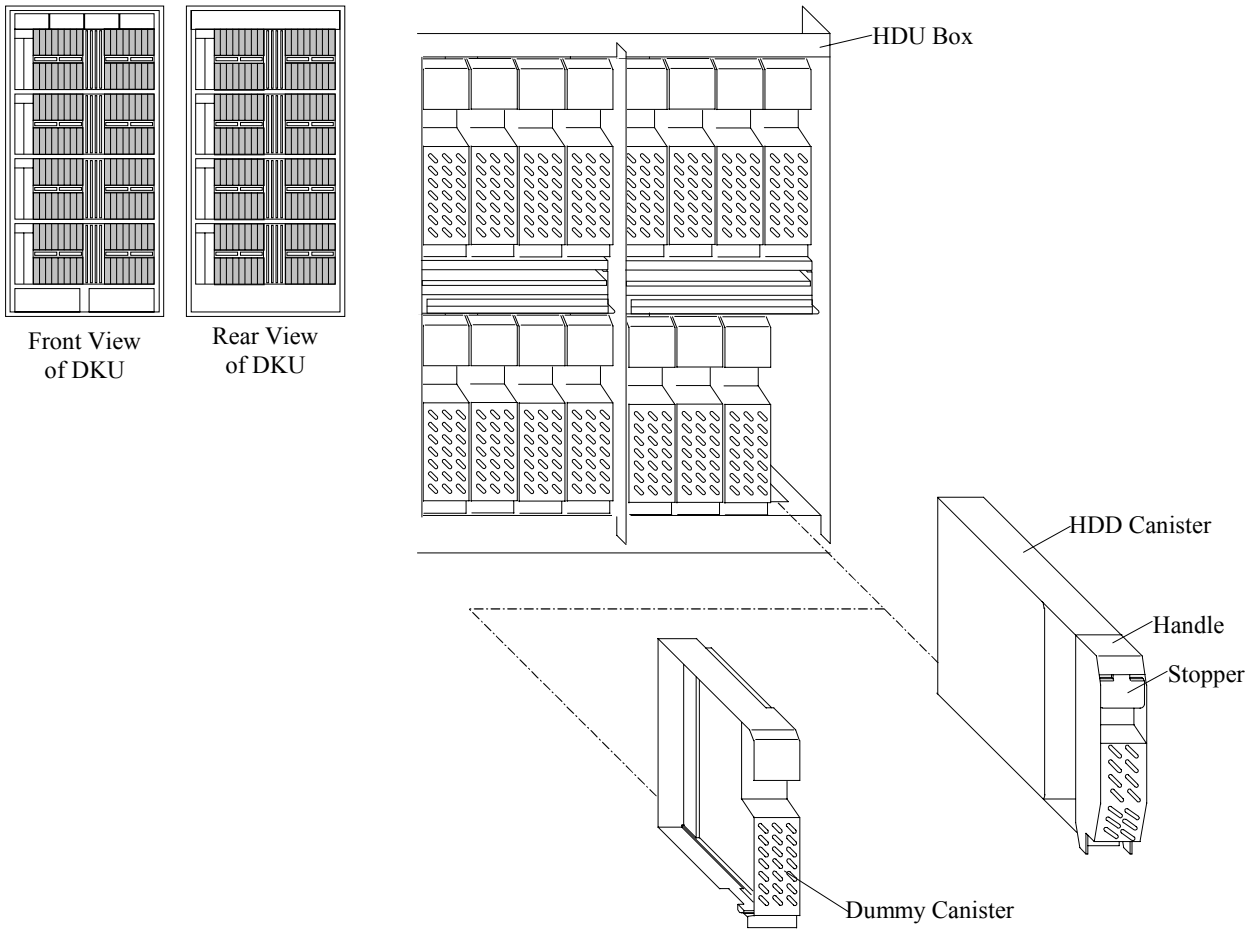

Fig. 4.1.5-7 De-Installation of HDD Canister

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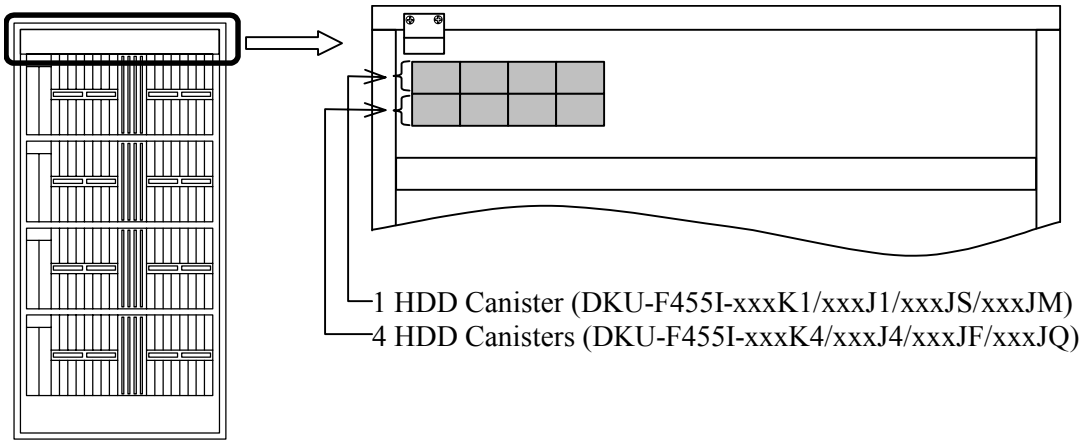
4-4 Change of the nameplate.

a. Affix a necessary portion of the Label (QTY)(Accessory of DKC; DWG No.3264290-1) in layers on the name plate and paint out numbers less than the number concerned with black oil felt pen.



[Example]

When DKU-F455I-72J4s are removed from 10 sets to 7sets

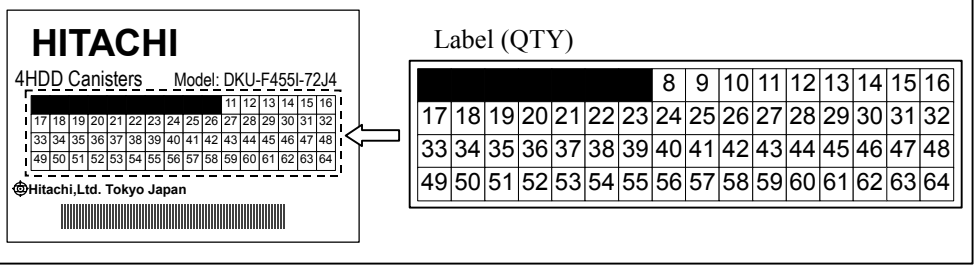


Fig. 4.1.5-8 Change of Nameplate

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5. De-Installation Procedure of DEV Interface Cable 2 (2/3) (DKU-F455I-EXC)

Caution:
When the DEV interface cable is removed from the FSW PCB, the power applied to the DKU to be removed is turned off automatically for each HDU Box from which the cable is removed.

Between HDU-R10-R17 and HDU-R20-R27

a. Disconnect the DEV interface cables from the FSW PCBs in the DKU-R1 frame referring to figures 4.1.5-9 and 4.1.5-10.

⚠ CAUTION

A serious failure occurs if a wrong cable or connector is removed.
Since a label bearing a connection destination is affixed on each cable or connector to be removed, work very carefully referring to it and the wiring diagram.

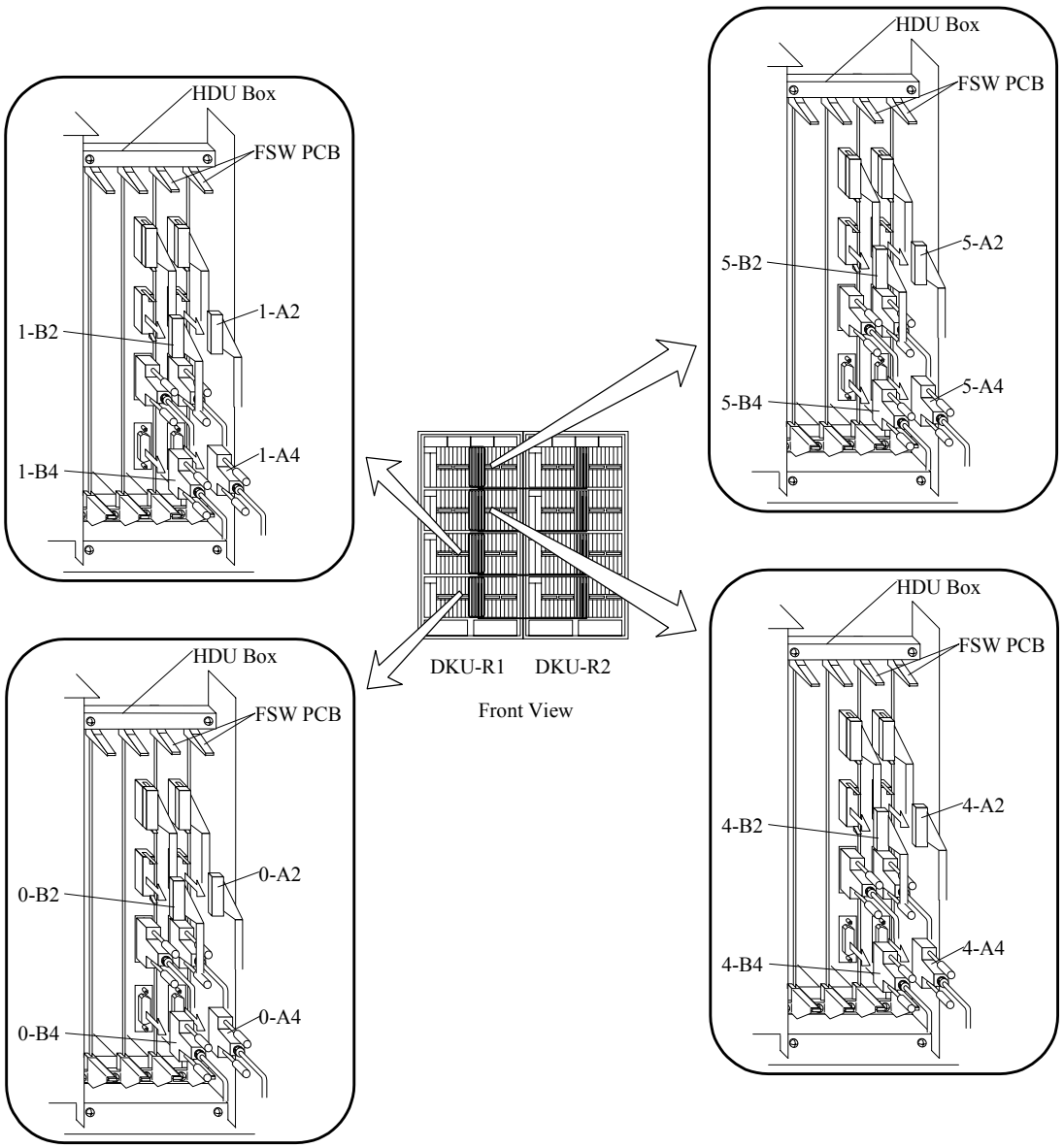

Fig. 4.1.5-9 Connection of the DEV Interface Cables

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⚠ CAUTION

A serious failure occurs if a wrong cable or connector is removed.
Since a label bearing a connection destination is affixed on each cable or connector to be removed, work very carefully referring to it and the wiring diagram.

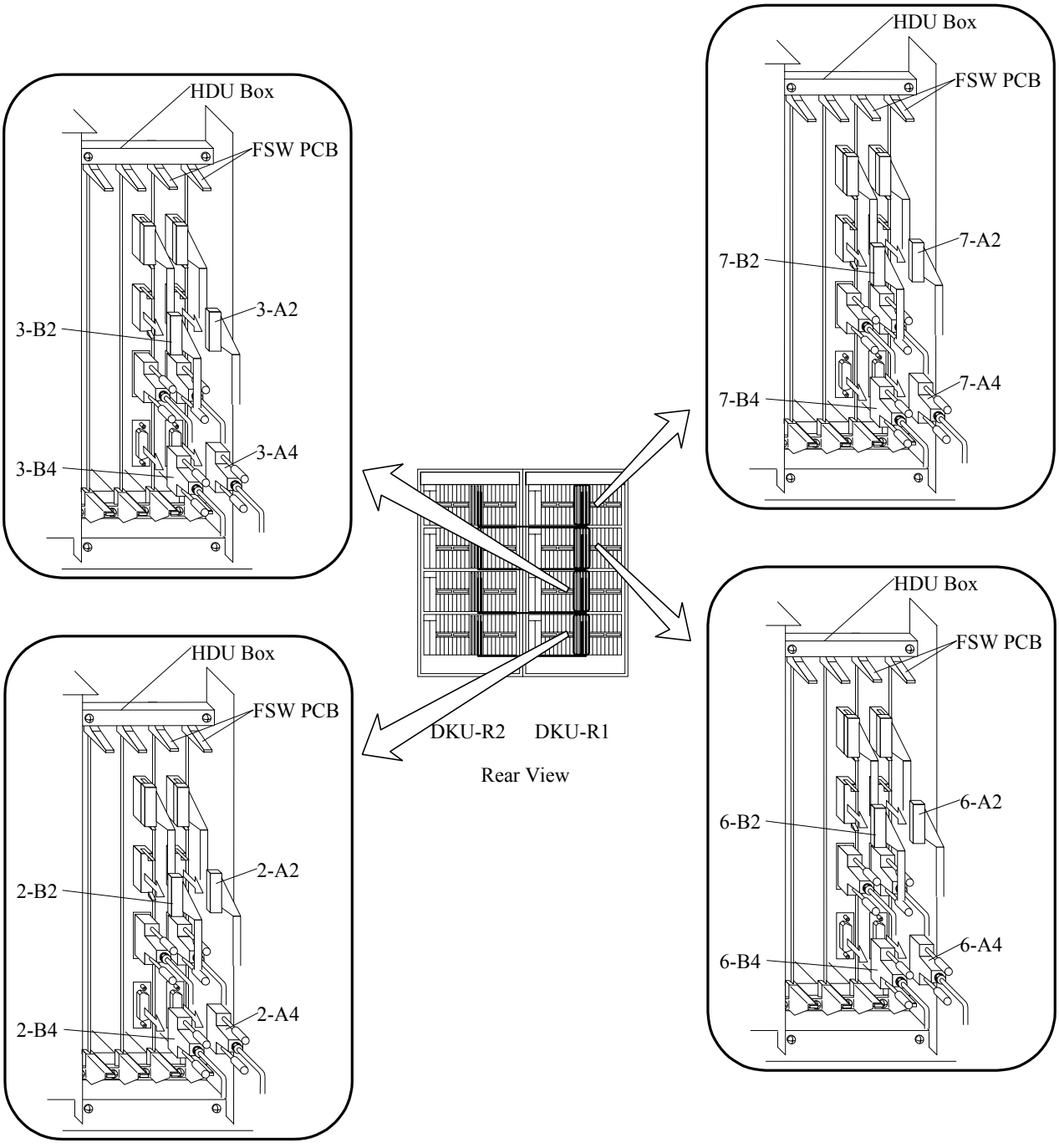

Fig. 4.1.5-10 Connection of the DEV Interface Cables

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6. De-Installation Procedure of Disk Adapter

When the additional disk adapter is not to be removed, go to Step 7, “SVP post procedure”.

Note: Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

6-1 Confirmation of the Shut Down LED (Only Non-Disruptive Procedure)

a. Confirm that Shut Down LED is on. (Fig. 4.1.5-11) If the LED is not on, connect the Maintenance Jumper to the Shut Down Connector.

⚠ CAUTION

A system down may be caused if the Maintenance jumper is inserted in a PCB other than that to be removed. Make sure that it is the PCB to be removed.

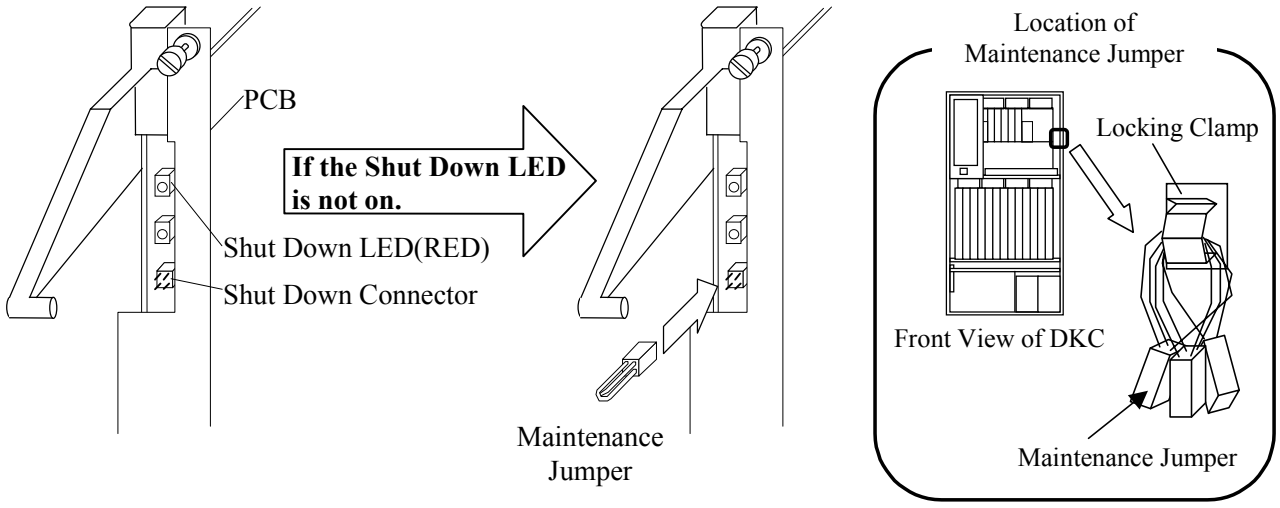

Fig. 4.1.5-11 Shut Down LED

Table 4.1.5-3 Removal Location (Rear of the unit)

Cluster	CL2							CL1				
Slot No.	M	L	K	J	H	G	F	E	D	C	B	A
Function	CSW	DKA	DKA	DKA	DKA	CACHE	CACHE	DKA	DKA	DKA	DKA	CSW
Location No.	CSW -2M	DKA -2L	DKA -2K	DKA -2J	DKA -2H	CACHE -2G	CACHE -2F	DKA -1E	DKA -1D	DKA -1C	DKA -1B	CSW -1A
Order of addition		Add.3	Add.2	Add.1	Basic			Add.3	Add.2	Add.1	Basic	
Number of DKAs set through the SVP		–	–	–	2			–	–	–	2	
		–	–	4				–	–	4		
		–	6					–	6			
		8						8				

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6-2 Disconnection of the DEV Interface cables

In case of Add.1

a. Disconnect the cable from the sub-edge of PCB.

⚠ CAUTION

A serious failure occurs if a wrong cable or connector is removed.
Since a label bearing a connection destination is affixed on each cable or connector to be removed, work very carefully referring to it and the wiring diagram.

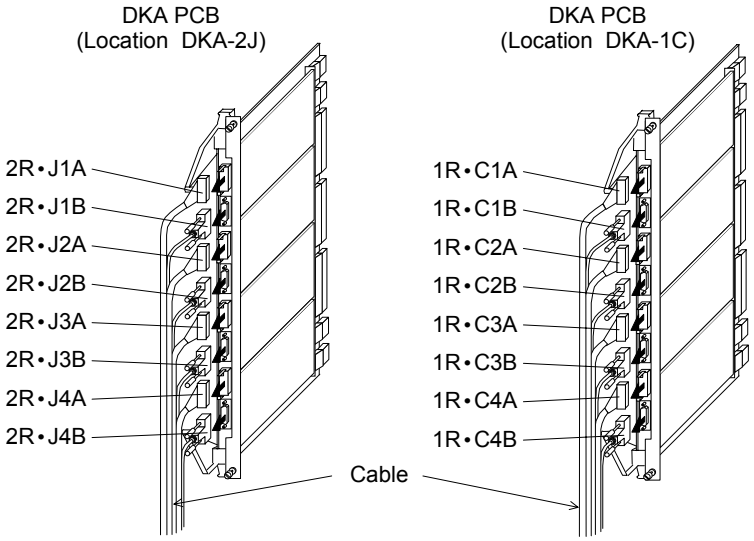

Fig. 4.1.5-12 Disconnection of DEV Interface Cables (Add.1)

In case of Add.2

a. Disconnect the cable from the sub-edge of PCB.

⚠ CAUTION

A serious failure occurs if a wrong cable or connector is removed.
Since a label bearing a connection destination is affixed on each cable or connector to be removed, work very carefully referring to it and the wiring diagram.

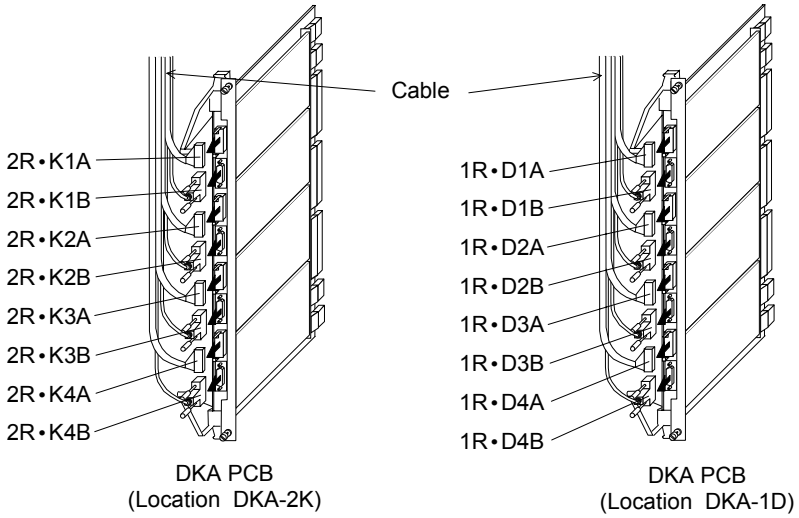

Fig. 4.1.5-13 Disconnection of DEV Interface Cables (Add.2)

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In case of Add.3

a. Disconnect the cable from the sub-edge of PCB.

⚠ CAUTION

A serious failure occurs if a wrong cable or connector is removed.
Since a label bearing a connection destination is affixed on each cable or connector to be removed, work very carefully referring to it and the wiring diagram.

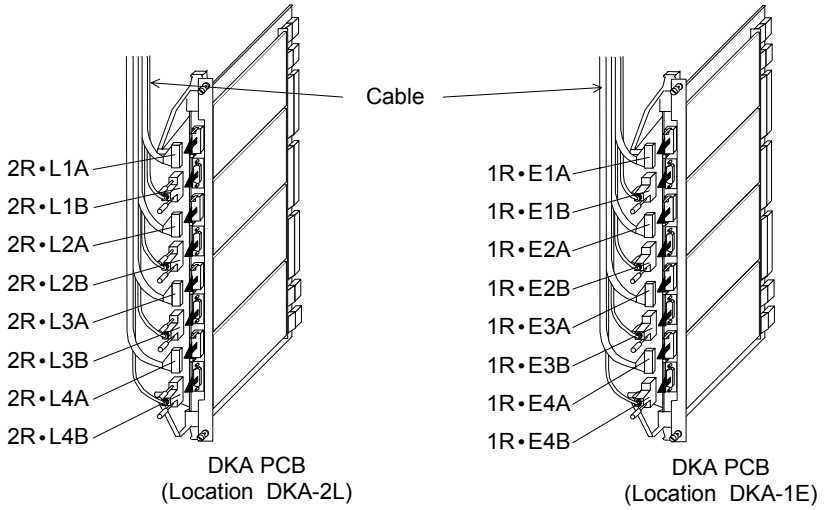

Fig.4.1.5-14 Disconnection of DEV Interface Cable (Add.3)

6-3 Removal of the PCBs

a. Remove the two screws and remove the PCBs from the correct locations in the Rear Logic Box referring to Fig. 4.1.5-15.
b. Attach the dummy plates referring to Fig. 4.1.5-16.

⚠ CAUTION

A serious failure occurs if a wrong PCB is removed.
Remove the PCB after making sure that the Shut Down LED is on.

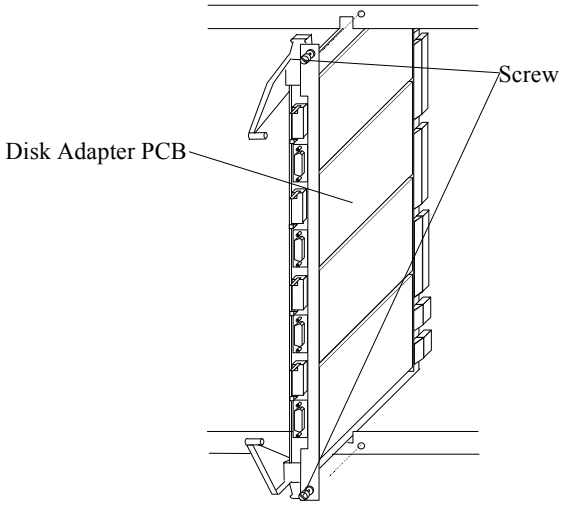

Fig. 4.1.5-15 Removal of PCB

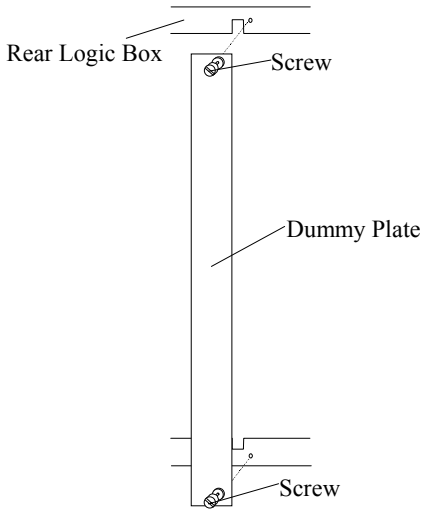

Fig. 4.1.5-16 Attachment of Dummy Plate

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6-4 Removal of the Nameplate

a. Remove the nameplate from the Rear Logic Box cover.

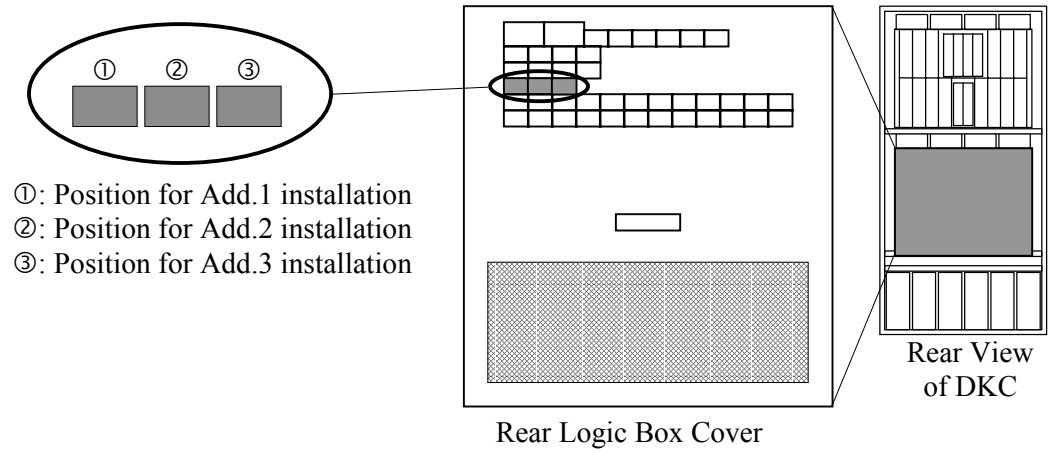

Fig. 4.1.5-17 Removal of Nameplate

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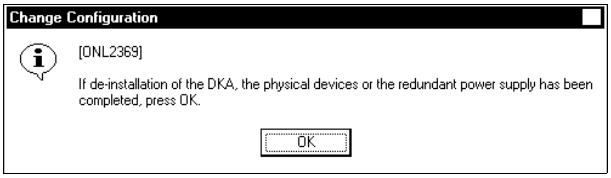
7. SVP post procedure

1.

Select (CL) [OK] in response to "If de-installation of the DKA, the physical devices or the redundant power supply has been completed, press OK." shown in the right figure.



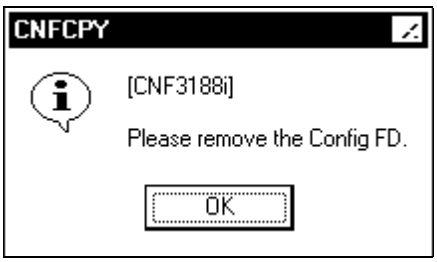
2. <Check the end of de-installation procedure>
"Renewal process has completed. Please check subsystem status." shown in the right figure displayed. Select (CL) [OK] in response to this message.

3.

"Reading subsystem configuration data..." is displayed.
"Please insert the Config FD in the FDD." is displayed.
Insert the configuration FD into FDD, select (CL) [OK].

4.

When this procedure is completed, message "Please remove the Config FD." is displayed.
Remove the FD, select (CL) [OK].



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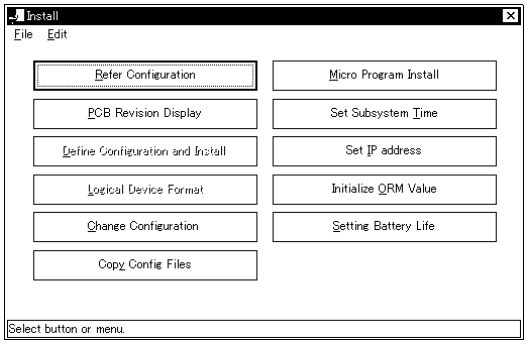
5.

After the procedure is completed, return to ‘Install’.
Select (CL) [File]-[Exit].



6. <Mode Change>
Change the mode to View Mode.

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8. De-Installation Procedure of DEV Interface Cable 2 (3/3) (DKU-F455I-EXC)

Between HDU-R10-R17 and HDU-R20-R27

a. Disconnect the DEV interface cables from the FSW PCBs in the DKU-R2 frame referring to Fig. 4.1.5-18 through Fig. 4.1.5-21.
b. Take out the DEV interface cable, which has been removed from the FSW PCB, from the DKU frame.

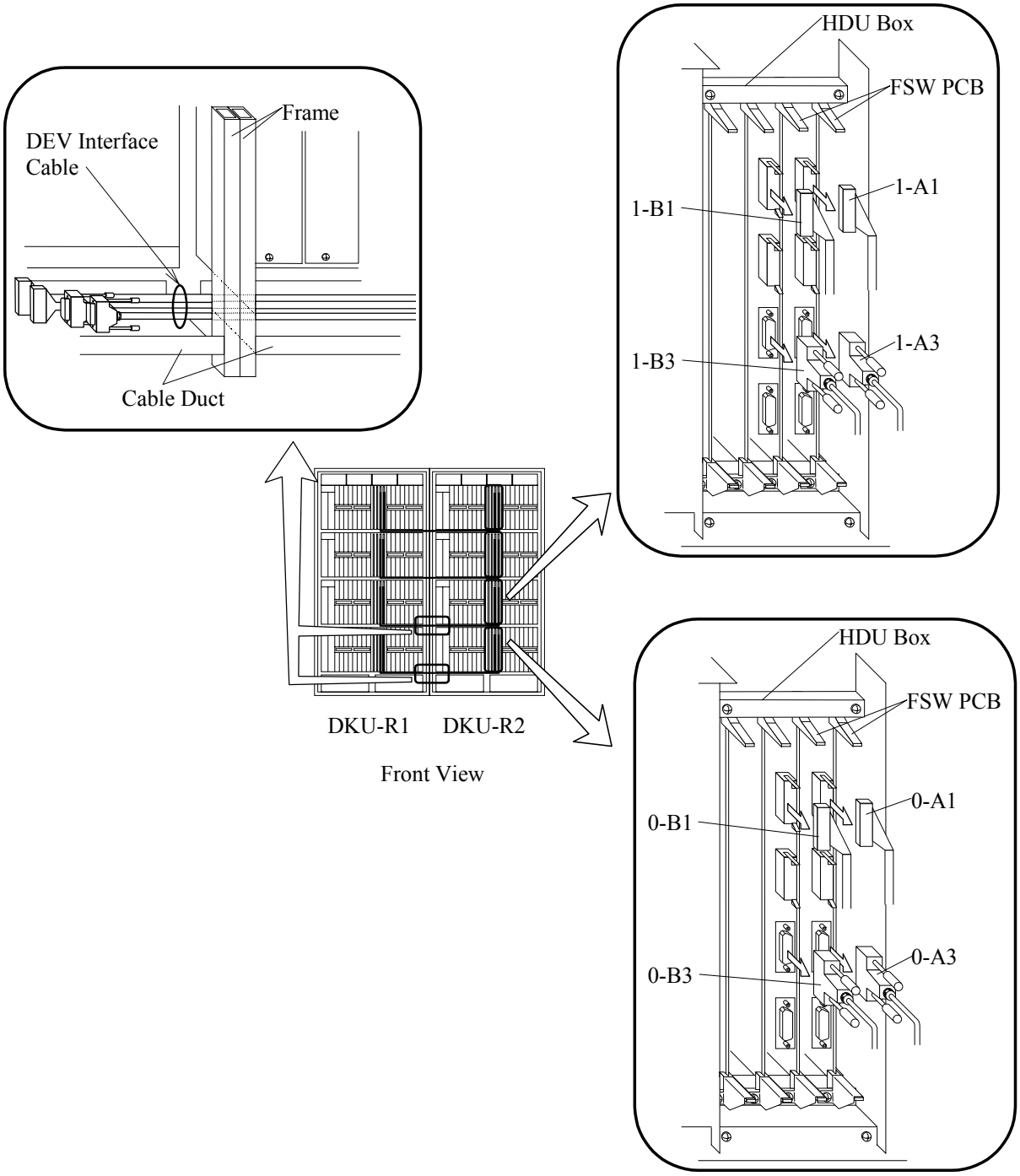

Fig. 4.1.5-18 Disconnection of the DEV Interface Cables

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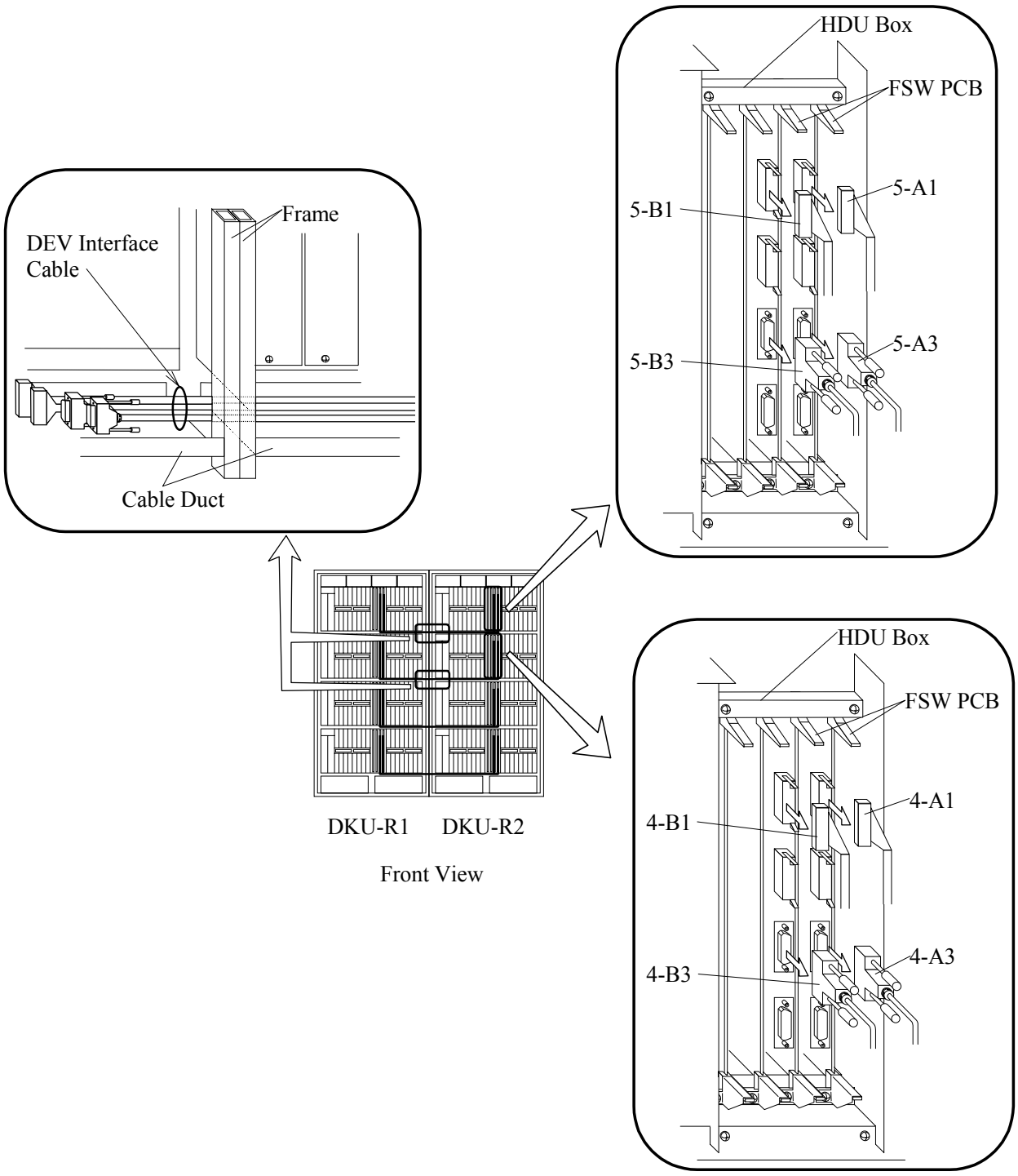

Fig. 4.1.5-19 Disconnection of the DEV Interface Cables

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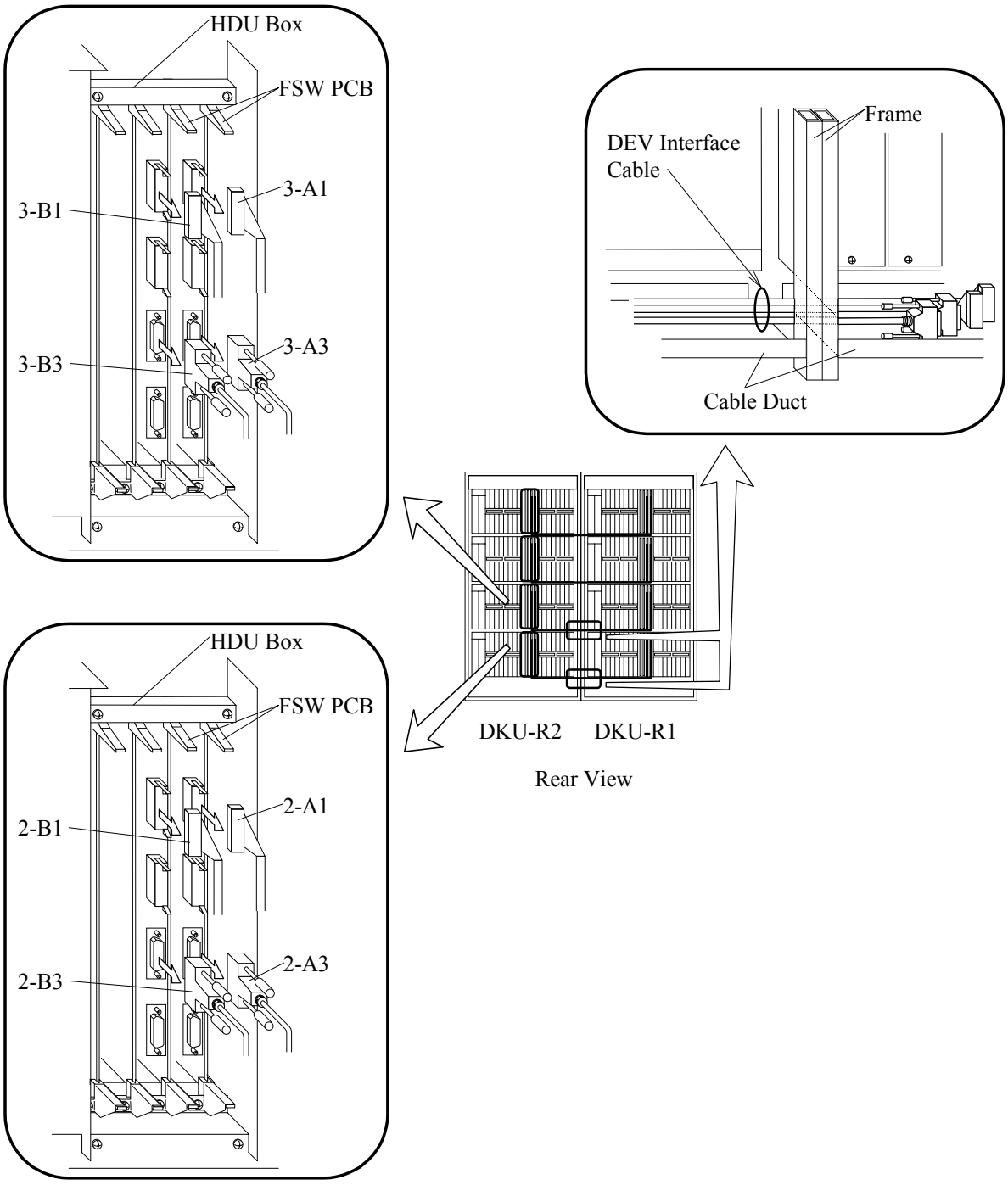

Fig. 4.1.5-20 Disconnection of the DEV Interface Cables

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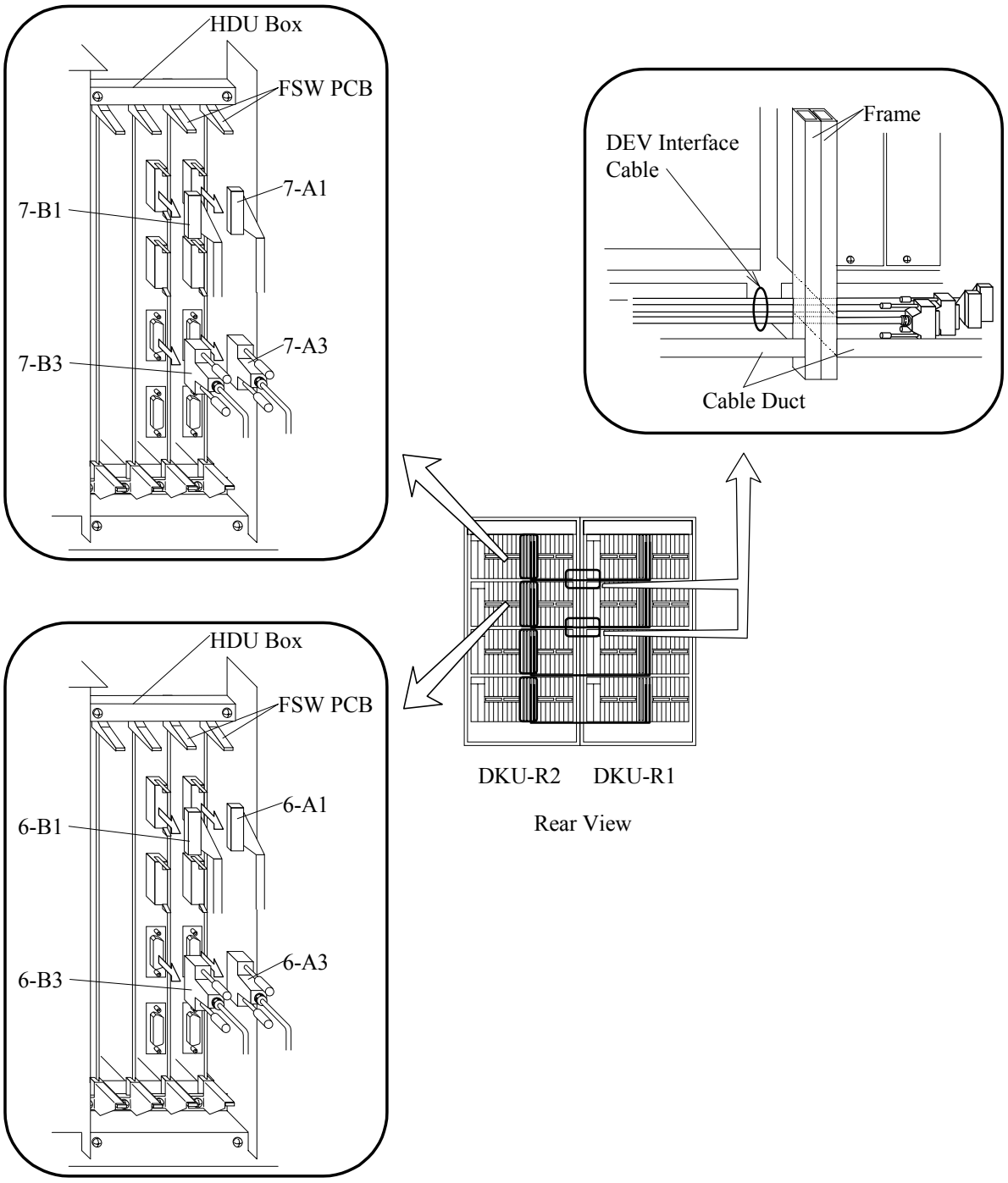

Fig. 4.1.5-21 Disconnection of the DEV Interface Cables

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c. Attach the cable covers with the screws.

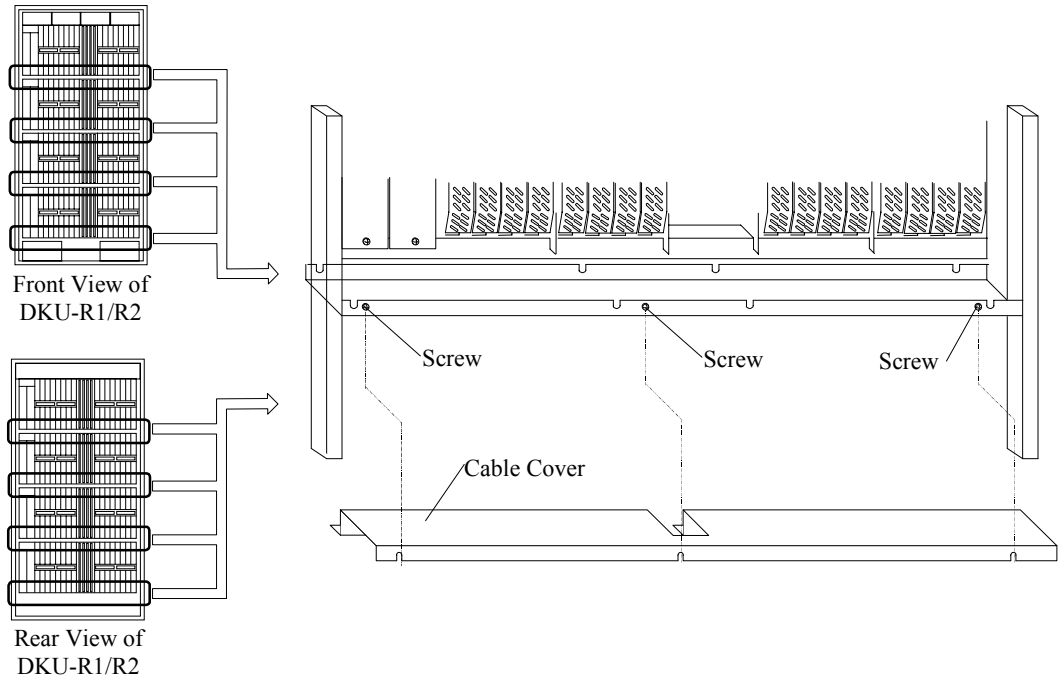

Fig. 4.1.5-22 Attachment of the Cable Cover

d. Attach the cable covers with the screws.

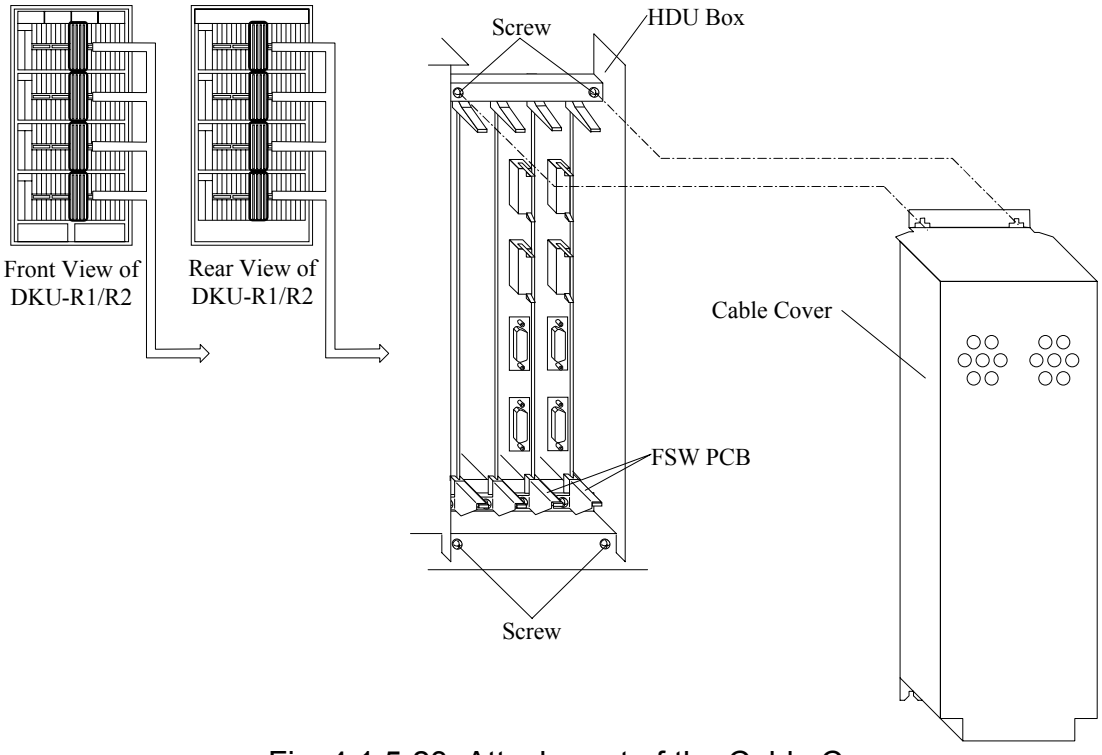

Fig. 4.1.5-23 Attachment of the Cable Cover

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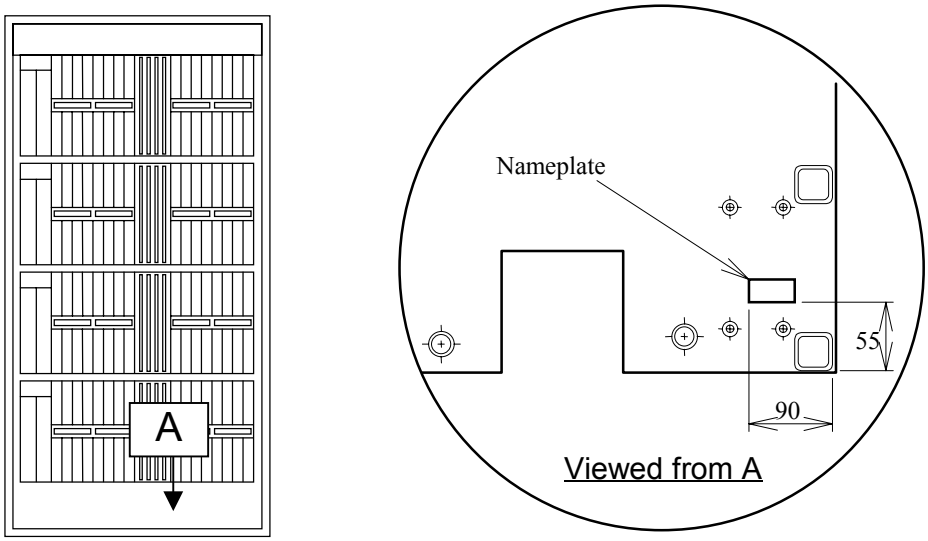
e. Remove the nameplate from the DKU-R2 frame.



Rear View of
DKU-R2

Fig. 4.1.5-24 Removal of the Nameplate

f. Return to the work table (INST02-60) and perform rest of the works.

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4.1.6 When performing removal of the data/spare HDD canister, DKA, and DEV interface cable that accompanies the removal of the DKU-L1 frame (DKC-F460I-200/L1C, DKU-F455I-36K4/36K1/72J4/72J1/72K4/72K1/146J4/146J1/146JF/146JS/ 146JQ/146JM)

1. De-Installation Procedure of DEV Interface Cable 1 (1/3) (DKC-F460I-L1C)

> Caution:
> When the main circuit breaker of the DKU is turned off before the DEV interface cable (DKU-F455I-EXC) is removed, the DKU Voltage Alarm is detected (the ALARM LED on the operator panel comes on and the SIM=BF20XX or BF22XX is issued). Therefore, turn off the main circuit breaker of the DKU after removing the DEV interface cable. The turning off of the DKU main circuit breaker is to be done later in another procedure explained on page INST04-DKU-10.

a. Loosen the screws and remove the cable covers from the DKU frames.

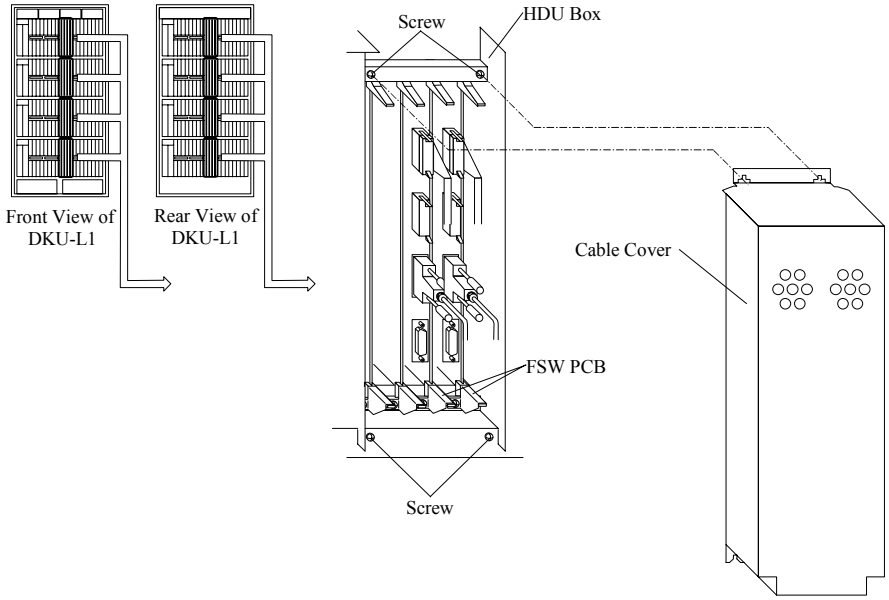

Fig. 4.1.6-1 Removal of Cable Covers

b. Loosen the screws and remove the cable covers from the DKU frames.

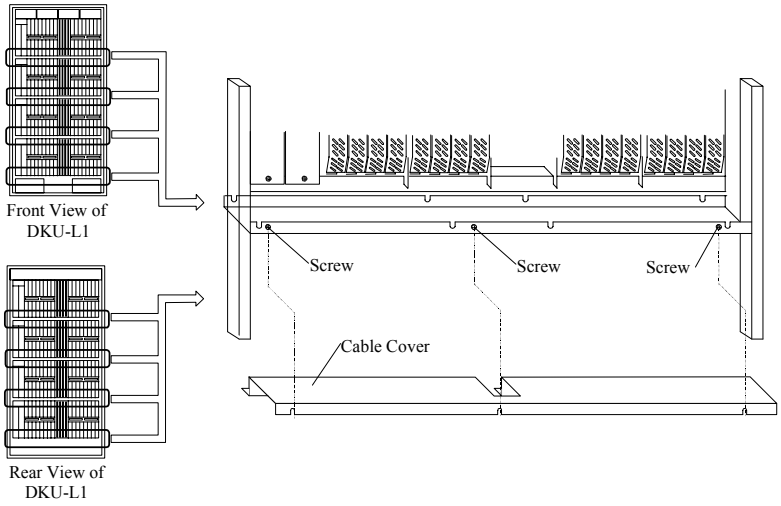

Fig. 4.1.6-2 Removal of Cable Covers

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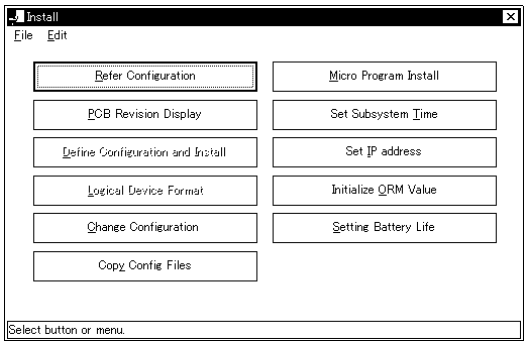
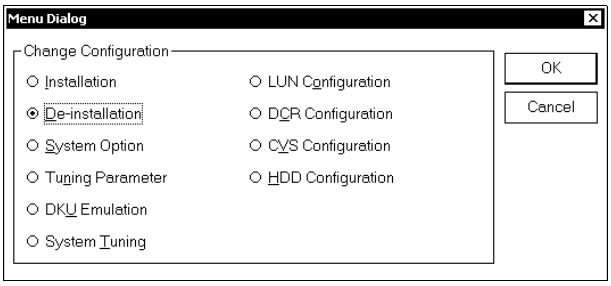
2. Setting up the New Device Structure Information

1. <Mode Change>
   Change the mode to Modify Mode.
   Select (CL) [Install].

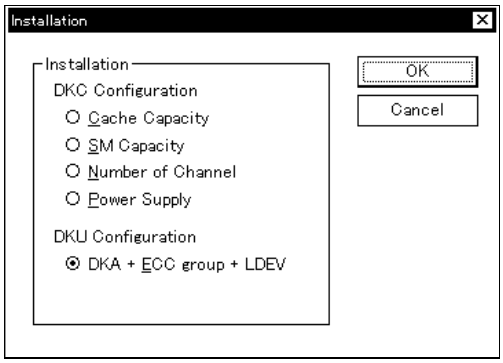
2. <Start the 'Menu Dialog' screen>
   Select (CL) [Change Configuration].



3. <Start Device Structure Setup screen>
   Select (CL) [De-Installation] in the 'Menu Dialog' dialog box and select (CL) [OK].



4. <Select a part to be changed>
   Select (CL) [DKA + ECC group + LDEV], and select (CL) [OK].



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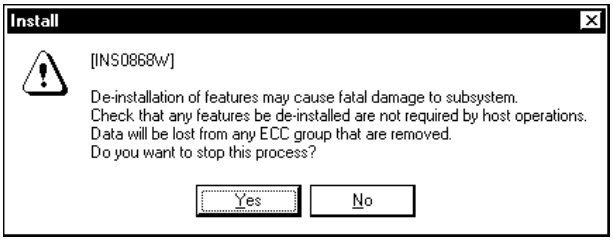
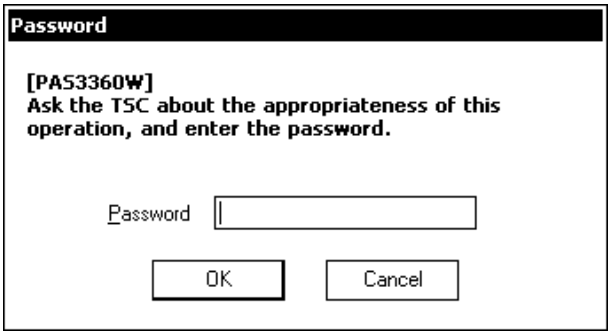
5.

Select (CL) [No] in response to “De-installation of features may cause fatal damage to subsystem. Check that any features be de-installed are not required by host operations. Data will be lost from any ECC group that are removed. Do you want to stop this process?”.



6. <Input password>
Enter the password and select (CL) [OK].



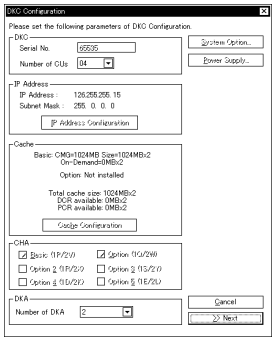
NOTICE
This is a special (exceptional) operation that can cause a serious failure such as a system down or a data loss if a wrong part to be removed is selected, and requires an input of a password. Ask the technical support center about the appropriateness of the operation, and input the password after getting an approval of executing the operation.

7. <Update Configuration Information>
Set the item to be de-installed for DKC and DKA in the ‘DKC Configuration’ window.

When decreasing the CUs, change the “Number of CUs”.
When decreasing the DKAs, change the “Number of DKA”.

Note: A part other than the CU and DKA cannot be removed at the same time.

Make sure that the entered item is correct and select (CL) [>>Next].



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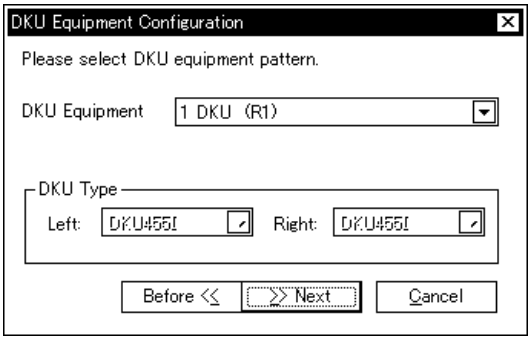
7-1. <Altering DKU frame information>

Define the DKU frame in the DKU Equipment Configuration window.

Make an altered setting in which the DKU-L1 is deleted from the DKUs currently set.

Current setting	Altered setting
2DKUs (R1, L1)	1DKU (R1)
3DKUs (R1, L1, R2)	2DKUs (R1, R2)

Note: After the setting is made, the B4 of the deleted DKU is not displayed.



After making the setting, select the [>> Next]. The routine proceeds to Step 8.
When the [Before <<] is selected, the window returns to the preceding one.
Return to Step 7.

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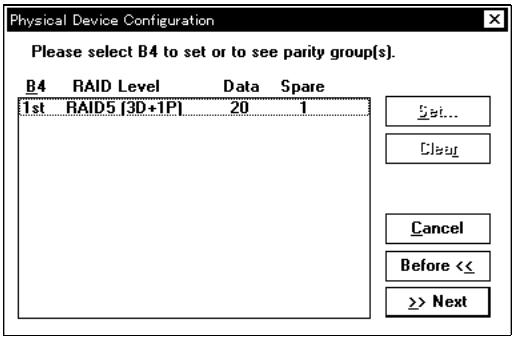
8. Change Drive Configuration Information>
Set drive configuration according to the 'Physical Device Configuration' screen displaying the mounted B4 based on the result of setting of DKU mount pattern.
Detailed procedure is shown below.
[Set...]: Defines the parity group or spare disk. The routine proceeds to Step 8-1.
[Clear...]: Cancels the setting of the B4.
After setting up all items, select (CL) [>>Next].
Selecting (CL) [Before<<] returns you to the previous screen.



[For the case of the multi cabinet model]

B4	Location	B4	Location
1st	HDU-R10, 11, 12, 13	7th	HDU-L20, 21, 22, 23
2nd	HDU-R14, 15, 16, 17	8th	HDU-L24, 25, 26, 27
3rd	HDU-L10, 11, 12, 13	9th	HDU-R30, 31, 32, 33
4th	HDU-L14, 15, 16, 17	10th	HDU-R34, 35, 36, 37
5th	HDU-R20, 21, 22, 23	11th	HDU-L30, 31, 32, 33
6th	HDU-R24, 25, 26, 27	12th	HDU-L34, 35, 36, 37

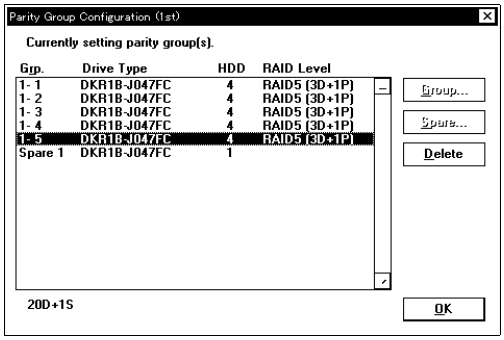
Note: The 9th to 12th of the B4 are valid only when the DKUs for the RAID 400 are connected.

[For the case of the single cabinet model]

B4	Location	Remarks
1st	HDU-R0, 1, 2, 3	HDD-X00 ~ X0F
2nd	HDU-R0, 1, 2, 3	HDD-X10 ~ X1F

8-1. <Define Parity Group>
Select (CL) the group to be de-installed and select (CL) [Delete] in the 'Parity Group Configuration' dialog box.
After setting, select (CL) [OK]. Return to step 8.

Grp*: A parity group where RAID Concatenation is installed.



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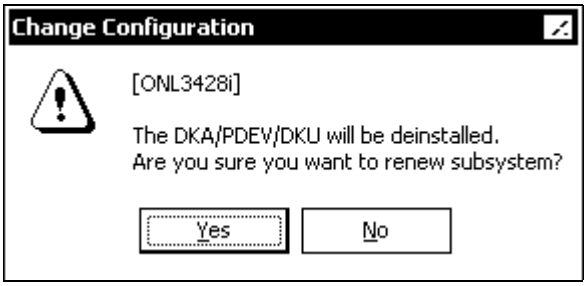
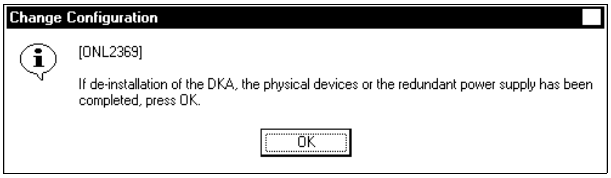
3. SVP pre procedure

1. <Start de-installation>
   Select (CL) [Yes] in response to "The DKA/PDEV/DKU will be deinstalled. Are you sure you want to renew subsystem?".

   When [No] is selected (CL), returns to INST04-DKA-860 step 2.



2.
   At this point refrain from pressing the [OK] button.
   "If de-installation of the DKA, the physical devices or the redundant power supply has been completed, press OK." shown in the right figure.



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4. De-Installation Procedure of HDD Canister

4-1 Confirmation of position to de-install HDD canister

(i) RAID5(3D+1P)/RAID1(2D+2D)

Relations between the installation locations of the RAID groups and the RAID group numbers set through the SVP are shown in Table 4.1.6-1.

Table 4.1.6-1 Relation between HDDs installation order and RAID group number (3D+1P/2D+2D) (1/2)

	DKC	R1 DKU			R2 DKU		
		RAID Group Installation Order	RAID Group No.	HDD Location	RAID Group Installation Order	RAID Group No.	HDD Location
Upper	2nd DKA Pair	032	2-1	HDDR1y-00	096	6-1	HDDR2y-00
		033	2-2	HDDR1y-01	097	6-2	HDDR2y-01
		034	2-3	HDDR1y-02	098	6-3	HDDR2y-02
		035	2-4	HDDR1y-03	099	6-4	HDDR2y-03
		036	2-5	HDDR1y-04	100	6-5	HDDR2y-04
		037	2-6	HDDR1y-05	101	6-6	HDDR2y-05
		038	2-7	HDDR1y-06	102	6-7	HDDR2y-06
		039	2-8	HDDR1y-07	103	6-8	HDDR2y-07
		040	2-9	HDDR1y-08	104	6-9	HDDR2y-08
		041	2-10	HDDR1y-09	105	6-10	HDDR2y-09
		042	2-11	HDDR1y-0A	106	6-11	HDDR2y-0A
		043	2-12	HDDR1y-0B	107	6-12	HDDR2y-0B
		044	2-13	HDDR1y-0C	108	6-13	HDDR2y-0C
		045	2-14	HDDR1y-0D	109	6-14	HDDR2y-0D
		046	2-15	HDDR1y-0E	110	6-15	HDDR2y-0E
		047(Spare) *2	2-16	HDDR1y-0F	111	6-16	HDDR2y-0F
		048	2-17	HDDR1y-10	112	6-17	HDDR2y-10
		049	2-18	HDDR1y-11	113	6-18	HDDR2y-11
		050	2-19	HDDR1y-12	114	6-19	HDDR2y-12
		051	2-20	HDDR1y-13	115	6-20	HDDR2y-13
		052	2-21	HDDR1y-14	116	6-21	HDDR2y-14
		053	2-22	HDDR1y-15	117	6-22	HDDR2y-15
		054	2-23	HDDR1y-16	118	6-23	HDDR2y-16
		055	2-24	HDDR1y-17	119	6-24	HDDR2y-17
		056	2-25	HDDR1y-18	120	6-25	HDDR2y-18
		057	2-26	HDDR1y-19	121	6-26	HDDR2y-19
		058	2-27	HDDR1y-1A	122	6-27	HDDR2y-1A
		059	2-28	HDDR1y-1B	123	6-28	HDDR2y-1B
		060	2-29	HDDR1y-1C	124	6-29	HDDR2y-1C
		061	2-30	HDDR1y-1D	125	6-30	HDDR2y-1D
		062	2-31	HDDR1y-1E	126	6-31	HDDR2y-1E
		063	2-32	HDDR1y-1F	127	6-32	HDDR2y-1F
Lower	1st DKA Pair	001	1-1	HDDR1x-00	064	5-1	HDDR2x-00
		002	1-2	HDDR1x-01	065	5-2	HDDR2x-01
		003	1-3	HDDR1x-02	066	5-3	HDDR2x-02
		004	1-4	HDDR1x-03	067	5-4	HDDR2x-03
		005	1-5	HDDR1x-04	068	5-5	HDDR2x-04
		006	1-6	HDDR1x-05	069	5-6	HDDR2x-05
		007	1-7	HDDR1x-06	070	5-7	HDDR2x-06
		008	1-8	HDDR1x-07	071	5-8	HDDR2x-07
		009	1-9	HDDR1x-08	072	5-9	HDDR2x-08
		010	1-10	HDDR1x-09	073	5-10	HDDR2x-09
		011	1-11	HDDR1x-0A	074	5-11	HDDR2x-0A
		012	1-12	HDDR1x-0B	075	5-12	HDDR2x-0B
		013	1-13	HDDR1x-0C	076	5-13	HDDR2x-0C
		014	1-14	HDDR1x-0D	077	5-14	HDDR2x-0D
		015	1-15	HDDR1x-0E	078	5-15	HDDR2x-0E
		Spare *1	1-16	HDDR1x-0F	079	5-16	HDDR2x-0F
		016	1-17	HDDR1x-10	080	5-17	HDDR2x-10
		017	1-18	HDDR1x-11	081	5-18	HDDR2x-11
		018	1-19	HDDR1x-12	082	5-19	HDDR2x-12
		019	1-20	HDDR1x-13	083	5-20	HDDR2x-13
		020	1-21	HDDR1x-14	084	5-21	HDDR2x-14
		021	1-22	HDDR1x-15	085	5-22	HDDR2x-15
		022	1-23	HDDR1x-16	086	5-23	HDDR2x-16
		023	1-24	HDDR1x-17	087	5-24	HDDR2x-17
		024	1-25	HDDR1x-18	088	5-25	HDDR2x-18
		025	1-26	HDDR1x-19	089	5-26	HDDR2x-19
		026	1-27	HDDR1x-1A	090	5-27	HDDR2x-1A
		027	1-28	HDDR1x-1B	091	5-28	HDDR2x-1B
		028	1-29	HDDR1x-1C	092	5-29	HDDR2x-1C
		029	1-30	HDDR1x-1D	093	5-30	HDDR2x-1D
		030	1-31	HDDR1x-1E	094	5-31	HDDR2x-1E
		031	1-32	HDDR1x-1F	095	5-32	HDDR2x-1F

*1: To be left vacant or a spare disk is to be installed. *2: A data or spare disk is to be installed.

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Table 4.1.6-1 Relation between HDDs installation order and RAID group number (3D+1P/2D+2D) (2/2)

	L2 DKU			L1 DKU			DKC
	RAID Group Installation Order	RAID Group No.	HDD Location	RAID Group Installation Order	RAID Group No.	HDD Location	
Upper	223	8-1	HDDL2y-00	159	4-1	HDDL1y-00	4th DKA Pair
	224	8-2	HDDL2y-01	160	4-2	HDDL1y-01	
	225	8-3	HDDL2y-02	161	4-3	HDDL1y-02	
	226	8-4	HDDL2y-03	162	4-4	HDDL1y-03	
	227	8-5	HDDL2y-04	163	4-5	HDDL1y-04	
	228	8-6	HDDL2y-05	164	4-6	HDDL1y-05	
	229	8-7	HDDL2y-06	165	4-7	HDDL1y-06	
	230	8-8	HDDL2y-07	166	4-8	HDDL1y-07	
	231	8-9	HDDL2y-08	167	4-9	HDDL1y-08	
	232	8-10	HDDL2y-09	168	4-10	HDDL1y-09	
	233	8-11	HDDL2y-0A	169	4-11	HDDL1y-0A	
	234	8-12	HDDL2y-0B	170	4-12	HDDL1y-0B	
	235	8-13	HDDL2y-0C	171	4-13	HDDL1y-0C	
	236	8-14	HDDL2y-0D	172	4-14	HDDL1y-0D	
	237	8-15	HDDL2y-0E	173	4-15	HDDL1y-0E	
	238	8-16	HDDL2y-0F	174(Spare) *2	4-16	HDDL1y-0F	
	239	8-17	HDDL2y-10	175	4-17	HDDL1y-10	
	240	8-18	HDDL2y-11	176	4-18	HDDL1y-11	
	241	8-19	HDDL2y-12	177	4-19	HDDL1y-12	
	242	8-20	HDDL2y-13	178	4-20	HDDL1y-13	
	243	8-21	HDDL2y-14	179	4-21	HDDL1y-14	
	244	8-22	HDDL2y-15	180	4-22	HDDL1y-15	
	245	8-23	HDDL2y-16	181	4-23	HDDL1y-16	
	246	8-24	HDDL2y-17	182	4-24	HDDL1y-17	
	247	8-25	HDDL2y-18	183	4-25	HDDL1y-18	
	248	8-26	HDDL2y-19	184	4-26	HDDL1y-19	
	249	8-27	HDDL2y-1A	185	4-27	HDDL1y-1A	
	250	8-28	HDDL2y-1B	186	4-28	HDDL1y-1B	
	251	8-29	HDDL2y-1C	187	4-29	HDDL1y-1C	
	252	8-30	HDDL2y-1D	188	4-30	HDDL1y-1D	
	253	8-31	HDDL2y-1E	189	4-31	HDDL1y-1E	
	254	8-32	HDDL2y-1F	190	4-32	HDDL1y-1F	
Lower	191	7-1	HDDL2x-00	128	3-1	HDDL1x-00	3rd DKA Pair
	192	7-2	HDDL2x-01	129	3-2	HDDL1x-01	
	193	7-3	HDDL2x-02	130	3-3	HDDL1x-02	
	194	7-4	HDDL2x-03	131	3-4	HDDL1x-03	
	195	7-5	HDDL2x-04	132	3-5	HDDL1x-04	
	196	7-6	HDDL2x-05	133	3-6	HDDL1x-05	
	197	7-7	HDDL2x-06	134	3-7	HDDL1x-06	
	198	7-8	HDDL2x-07	135	3-8	HDDL1x-07	
	199	7-9	HDDL2x-08	136	3-9	HDDL1x-08	
	200	7-10	HDDL2x-09	137	3-10	HDDL1x-09	
	201	7-11	HDDL2x-0A	138	3-11	HDDL1x-0A	
	202	7-12	HDDL2x-0B	139	3-12	HDDL1x-0B	
	203	7-13	HDDL2x-0C	140	3-13	HDDL1x-0C	
	204	7-14	HDDL2x-0D	141	3-14	HDDL1x-0D	
	205	7-15	HDDL2x-0E	142	3-15	HDDL1x-0E	
	206	7-16	HDDL2x-0F	Spare *1	3-16	HDDL1x-0F	
	207	7-17	HDDL2x-10	143	3-17	HDDL1x-10	
	208	7-18	HDDL2x-11	144	3-18	HDDL1x-11	
	209	7-19	HDDL2x-12	145	3-19	HDDL1x-12	
	210	7-20	HDDL2x-13	146	3-20	HDDL1x-13	
	211	7-21	HDDL2x-14	147	3-21	HDDL1x-14	
	212	7-22	HDDL2x-15	148	3-22	HDDL1x-15	
	213	7-23	HDDL2x-16	149	3-23	HDDL1x-16	
	214	7-24	HDDL2x-17	150	3-24	HDDL1x-17	
	215	7-25	HDDL2x-18	151	3-25	HDDL1x-18	
	216	7-26	HDDL2x-19	152	3-26	HDDL1x-19	
	217	7-27	HDDL2x-1A	153	3-27	HDDL1x-1A	
	218	7-28	HDDL2x-1B	154	3-28	HDDL1x-1B	
	219	7-29	HDDL2x-1C	155	3-29	HDDL1x-1C	
	220	7-30	HDDL2x-1D	156	3-30	HDDL1x-1D	
	221	7-31	HDDL2x-1E	157	3-31	HDDL1x-1E	
	222	7-32	HDDL2x-1F	158	3-32	HDDL1x-1F	

*1: To be left vacant or a spare disk is to be installed. *2: A data or spare disk is to be installed.

*3: HDDL1x-00 (x: HDU Box No. 0, 1, 2, 3), HDDL1y-00 (y: HDU Box No. 4, 5, 6, 7)

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(1) Make sure of the location where the RAID group is de-installed and that where the HDD canister is to be removed.

No.	Model Number	Model Name	Data and Parity
1	DKU-F455I-36K4/72J4/72K4/146J4/146JF/146JQ	4 HDD Canisters	Data and Parity Drive

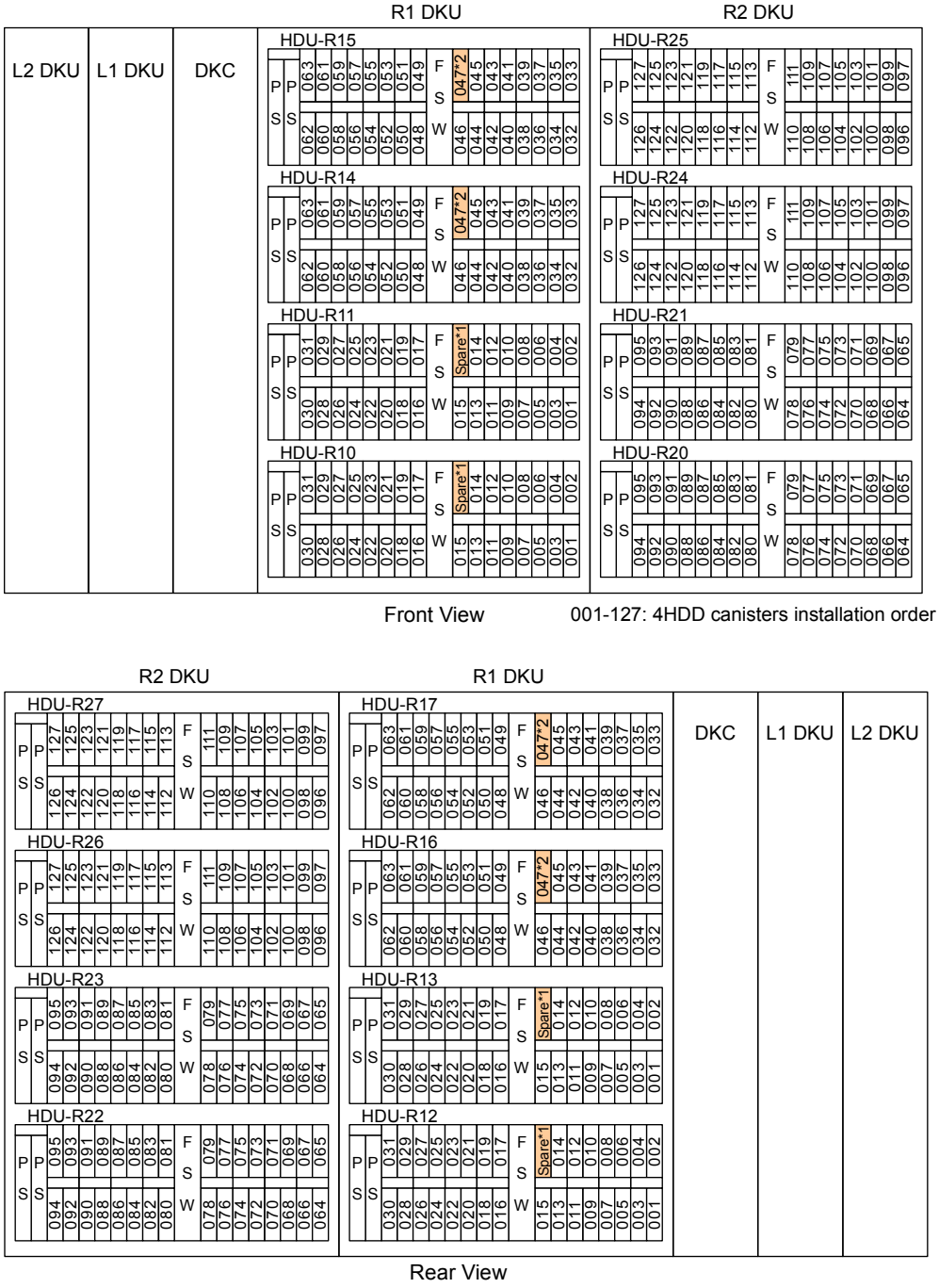

Fig. 4.1.6-3 (3D+1P) or (2D+2P) Data Drive/Parity Drive Expansion Sequence (1/2)

The relationship between HDDs installation order and RAID group number is shown in the Table 4.1.6-1.

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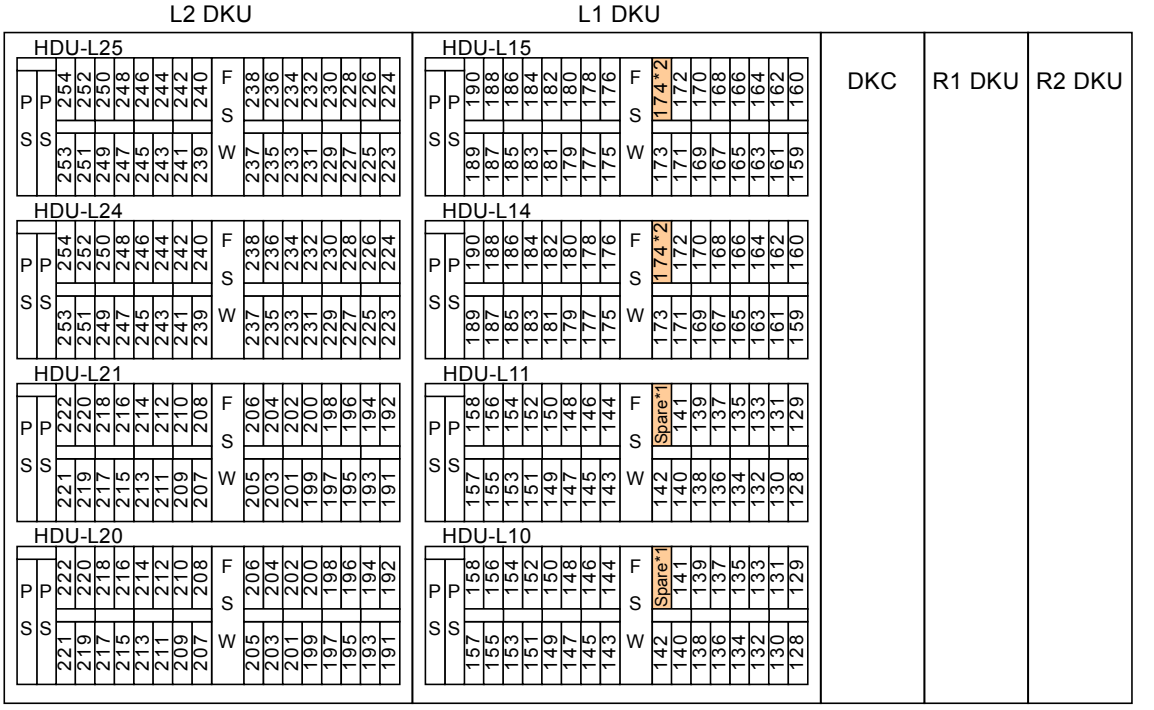

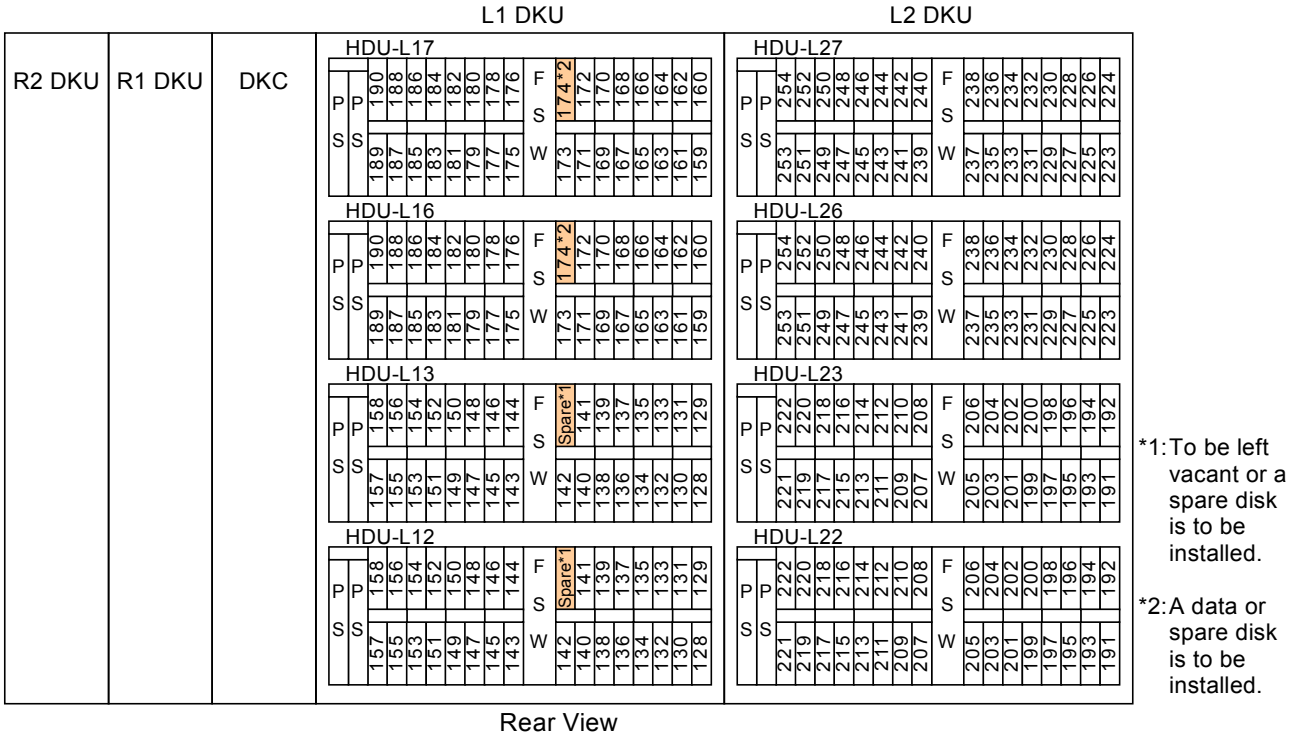

Fig. 4.1.6-3 (3D+1P) or (2D+2P) Data Drive/Parity Drive Expansion Sequence (2/2)

The relationship between HDDs installation order and RAID group number is shown in the Table 4.1.6-1.

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(ii) RAID5 (7D+1P)

Relations between the installation locations of the RAID groups and the RAID group numbers set through the SVP are shown in Table 4.1.6-2.

Table 4.1.6-2 Relation between HDDs installation order and RAID group number (7D+1P) (1/2)

DKC	R1 DKU			R2 DKU		
	RAID Group Installation Order	RAID Group No.	HDD Location	RAID Group Installation Order	RAID Group No.	HDD Location
1st / 2nd DKA Pair	001	1-1 , (2-1)	HDDR1x-00	032	5-1, (6-1)	HDDR2x-00
	002	1-2 , (2-2)	HDDR1x-01	033	5-2, (6-2)	HDDR2x-01
	003	1-3 , (2-3)	HDDR1x-02	034	5-3, (6-3)	HDDR2x-02
	004	1-4 , (2-4)	HDDR1x-03	035	5-4, (6-4)	HDDR2x-03
	005	1-5 , (2-5)	HDDR1x-04	036	5-5, (6-5)	HDDR2x-04
	006	1-6 , (2-6)	HDDR1x-05	037	5-6, (6-6)	HDDR2x-05
	007	1-7 , (2-7)	HDDR1x-06	038	5-7, (6-7)	HDDR2x-06
	008	1-8 , (2-8)	HDDR1x-07	039	5-8, (6-8)	HDDR2x-07
	009	1-9 , (2-9)	HDDR1x-08	040	5-9, (6-9)	HDDR2x-08
	010	1-10 , (2-10)	HDDR1x-09	041	5-10, (6-10)	HDDR2x-09
	011	1-11 , (2-11)	HDDR1x-0A	042	5-11, (6-11)	HDDR2x-0A
	012	1-12 , (2-12)	HDDR1x-0B	043	5-12, (6-12)	HDDR2x-0B
	013	1-13 , (2-13)	HDDR1x-0C	044	5-13, (6-13)	HDDR2x-0C
	014	1-14 , (2-14)	HDDR1x-0D	045	5-14, (6-14)	HDDR2x-0D
	015	1-15 , (2-15)	HDDR1x-0E	046	5-15, (6-15)	HDDR2x-0E
	(Spare) *1	1-16 , (2-16)	HDDR1x-0F	047	5-16, (6-16)	HDDR2x-0F
	016	1-17 , (2-17)	HDDR1x-10	048	5-17, (6-17)	HDDR2x-10
	017	1-18 , (2-18)	HDDR1x-11	049	5-18, (6-18)	HDDR2x-11
	018	1-19 , (2-19)	HDDR1x-12	050	5-19, (6-19)	HDDR2x-12
	019	1-20 , (2-20)	HDDR1x-13	051	5-20, (6-20)	HDDR2x-13
	020	1-21 , (2-21)	HDDR1x-14	052	5-21, (6-21)	HDDR2x-14
	021	1-22 , (2-22)	HDDR1x-15	053	5-22, (6-22)	HDDR2x-15
	022	1-23 , (2-23)	HDDR1x-16	054	5-23, (6-23)	HDDR2x-16
	023	1-24 , (2-24)	HDDR1x-17	055	5-24, (6-24)	HDDR2x-17
	024	1-25 , (2-25)	HDDR1x-18	056	5-25, (6-25)	HDDR2x-18
	025	1-26 , (2-26)	HDDR1x-19	057	5-26, (6-26)	HDDR2x-19
	026	1-27 , (2-27)	HDDR1x-1A	058	5-27, (6-27)	HDDR2x-1A
	027	1-28 , (2-28)	HDDR1x-1B	059	5-28, (6-28)	HDDR2x-1B
	028	1-29 , (2-29)	HDDR1x-1C	060	5-29, (6-29)	HDDR2x-1C
	029	1-30 , (2-30)	HDDR1x-1D	061	5-30, (6-30)	HDDR2x-1D
	030	1-31 , (2-31)	HDDR1x-1E	062	5-31, (6-31)	HDDR2x-1E
	031	1-32 , (2-32)	HDDR1x-1F	063	5-32, (6-32)	HDDR2x-1F

*1: To be left vacant or a spare disk is to be installed. *2: HDDL1x-00 (x: HDU Box No. 0, 1, 2, …, 7)

- Install RAID 5 (7D+1P) forming pairs using the same number of the two RAID groups (RAID groups 1 and 2, 3 and 4, 5 and 6, and 7 and 8) of RAID 5 (3D+1P).
  (Example: RAID group numbers 1-1 and 2-1)
  The types of HDDs to be installed in each pair must be the same.
- In the case of RAID 5 (7D+1P), only odd RAID numbers are displayed on the SVP. (Group numbers shown in parentheses in the table above are not displayed.)
- When RAID 5 (3D+1P) or RAID 1 (2D+2D) and RAID 5 (7D+1P) are configured mixture, note that duplicated group numbers are excluded.
  Example: When Group No. 1-1 is configured for RAID 5 (7D+1P), Group No. 2-1 is excluded and cannot be configure for RAID 5 (3D+1P).

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Table 4.1.6-2 Relation between HDDs installation order and RAID group number (7D+1P) (1/2)

L2 DKU			L1 DKU			DKC
RAID Group Installation Order	RAID Group No.	HDD Location	RAID Group Installation Order	RAID Group No.	HDD Location	
095	7-1, (8-1)	HDDL2x-00	064	3-1 , (4-1)	HDDL1x-00	
096	7-2, (8-2)	HDDL2x-01	065	3-2 , (4-2)	HDDL1x-01	
097	7-3, (8-3)	HDDL2x-02	066	3-3 , (4-3)	HDDL1x-02	
098	7-4, (8-4)	HDDL2x-03	067	3-4 , (4-4)	HDDL1x-03	
099	7-5, (8-5)	HDDL2x-04	068	3-5 , (4-5)	HDDL1x-04	
100	7-6, (8-6)	HDDL2x-05	069	3-6 , (4-6)	HDDL1x-05	
101	7-7, (8-7)	HDDL2x-06	070	3-7 , (4-7)	HDDL1x-06	
102	7-8, (8-8)	HDDL2x-07	071	3-8 , (4-8)	HDDL1x-07	
103	7-9, (8-9)	HDDL2x-08	072	3-9 , (4-9)	HDDL1x-08	
104	7-10, (8-10)	HDDL2x-09	073	3-10 , (4-10)	HDDL1x-09	
105	7-11, (8-11)	HDDL2x-0A	074	3-11 , (4-11)	HDDL1x-0A	
106	7-12, (8-12)	HDDL2x-0B	075	3-12 , (4-12)	HDDL1x-0B	
107	7-13, (8-13)	HDDL2x-0C	076	3-13 , (4-13)	HDDL1x-0C	
108	7-14, (8-14)	HDDL2x-0D	077	3-14 , (4-14)	HDDL1x-0D	
109	7-15, (8-15)	HDDL2x-0E	078	3-15 , (4-15)	HDDL1x-0E	3rd / 4th
110	7-16, (8-16)	HDDL2x-0F	(Spare) *1	3-16 , (4-16)	HDDL1x-0F	DKA
111	7-17, (8-17)	HDDL2x-10	079	3-17 , (4-17)	HDDL1x-10	Pair
112	7-18, (8-18)	HDDL2x-11	080	3-18 , (4-18)	HDDL1x-11	
113	7-19, (8-19)	HDDL2x-12	081	3-19 , (4-19)	HDDL1x-12	
114	7-20, (8-20)	HDDL2x-13	082	3-20 , (4-20)	HDDL1x-13	
115	7-21, (8-21)	HDDL2x-14	083	3-21 , (4-21)	HDDL1x-14	
116	7-22, (8-22)	HDDL2x-15	084	3-22 , (4-22)	HDDL1x-15	
117	7-23, (8-23)	HDDL2x-16	085	3-23 , (4-23)	HDDL1x-16	
118	7-24, (8-24)	HDDL2x-17	086	3-24 , (4-24)	HDDL1x-17	
119	7-25, (8-25)	HDDL2x-18	087	3-25 , (4-25)	HDDL1x-18	
120	7-26, (8-26)	HDDL2x-19	088	3-26 , (4-26)	HDDL1x-19	
121	7-27, (8-27)	HDDL2x-1A	089	3-27 , (4-27)	HDDL1x-1A	
122	7-28, (8-28)	HDDL2x-1B	090	3-28 , (4-28)	HDDL1x-1B	
123	7-29, (8-29)	HDDL2x-1C	091	3-29 , (4-29)	HDDL1x-1C	
124	7-30, (8-30)	HDDL2x-1D	092	3-30 , (4-30)	HDDL1x-1D	
125	7-31, (8-31)	HDDL2x-1E	093	3-31 , (4-31)	HDDL1x-1E	
126	7-32, (8-32)	HDDL2x-1F	094	3-32 , (4-32)	HDDL1x-1F	

*1: To be left vacant or a spare disk is to be installed. *2: HDDL1x-00 (x: HDU Box No. 0, 1, 2, …, 7)

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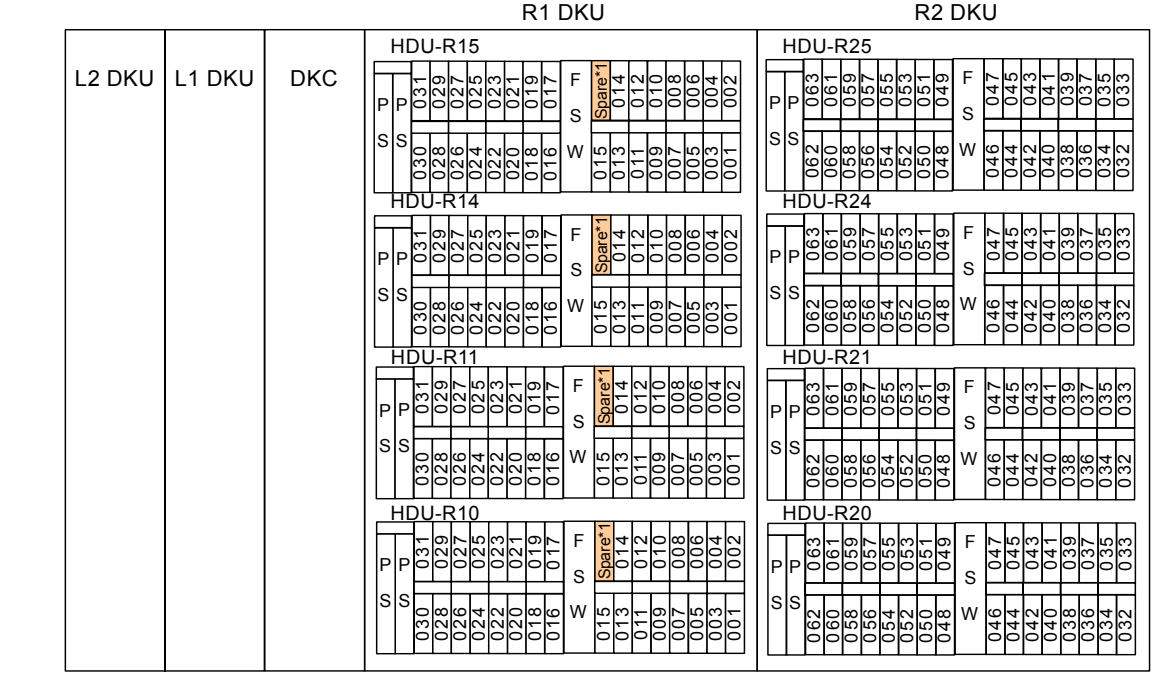
(1) Make sure of the location where the RAID group is de-installed and that where the HDD canister is to be removed.

No.	Model Number	Model Name	Data and Parity
1	DKU-F455I-36K4/72J4/72K4/146J4/146JF/146JQ	4 HDD Canisters x 2sets	Data and Parity Drive



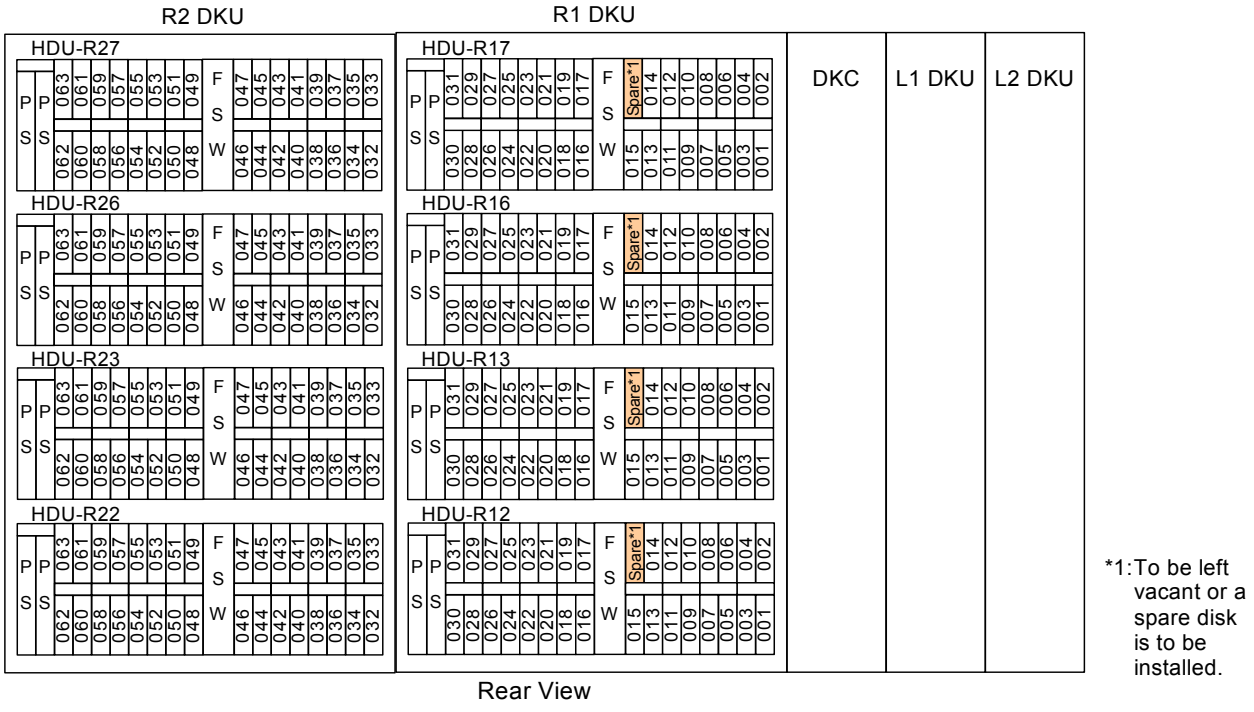


Fig. 4.1.6-4 (7D+1P) Data Drive/Parity Drive Expansion Sequence (1/2)

The relationship between HDDs installation order and RAID group number is shown in the Table 4.1.6-2.

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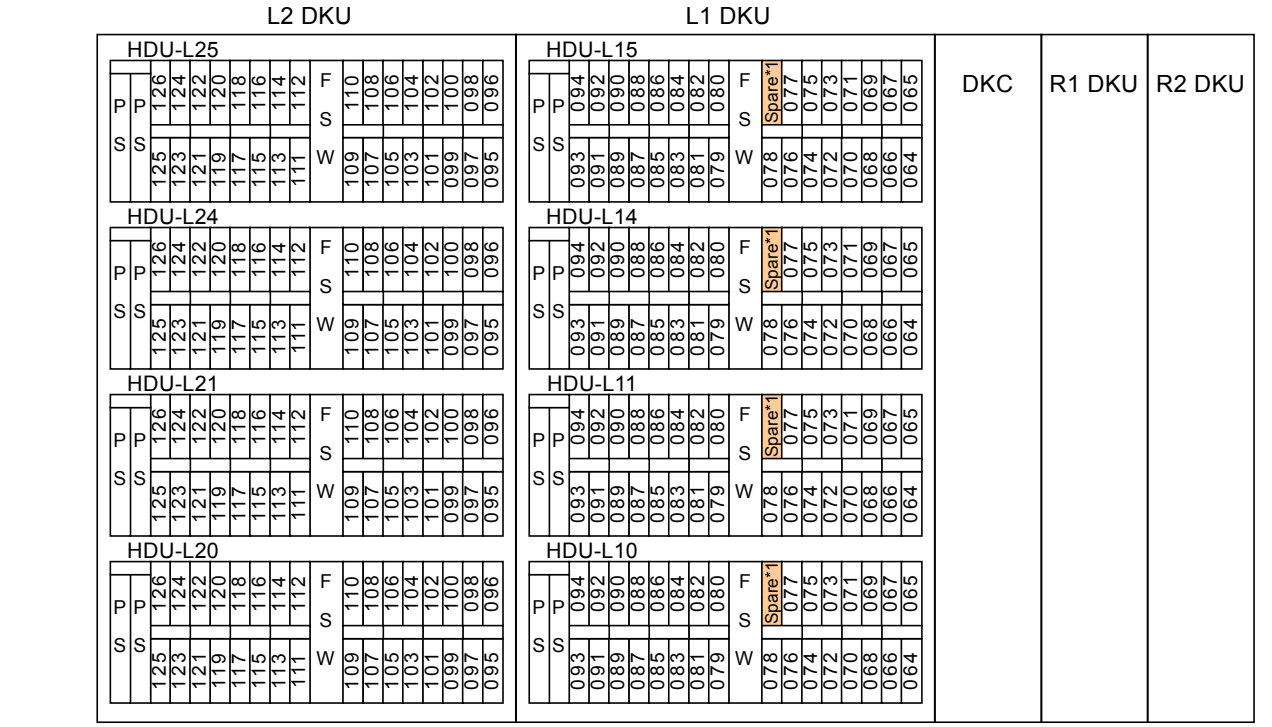

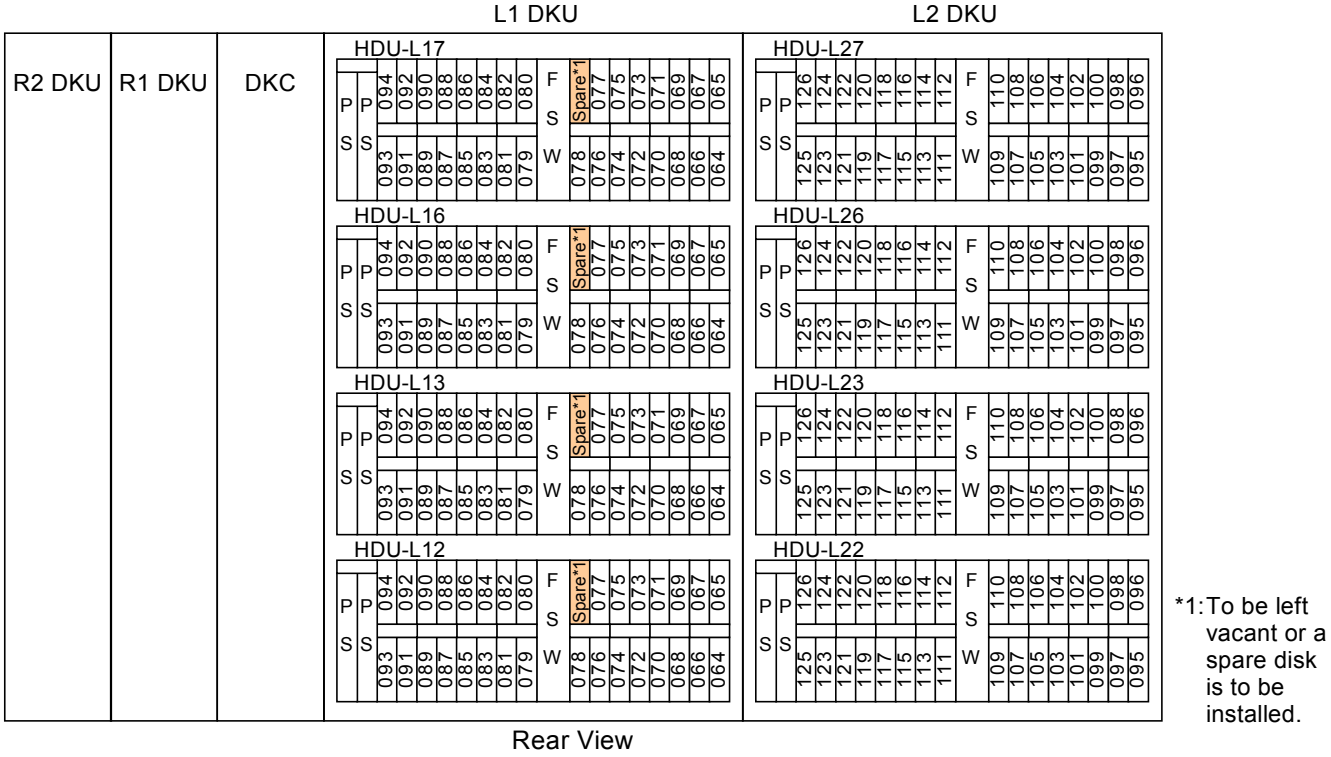

Fig. 4.1.6-4 (7D+1P) Data Drive/Parity Drive Expansion Sequence (2/2)

The relationship between HDDs installation order and RAID group number is shown in the Table 4.1.6-2.

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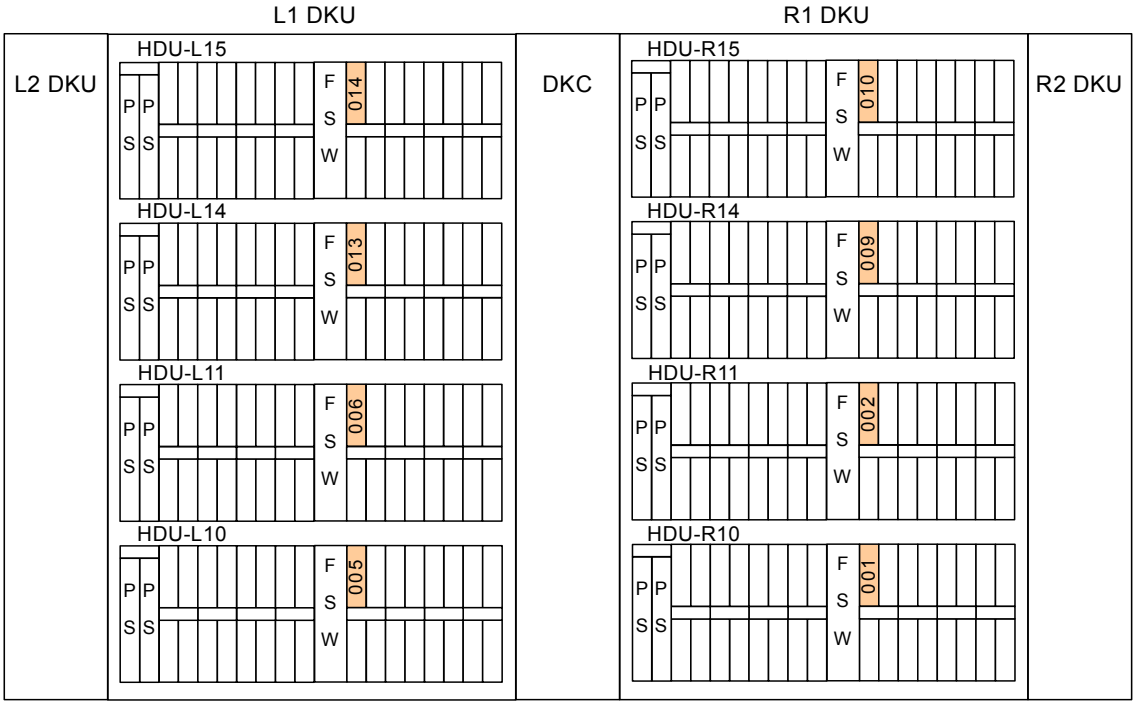
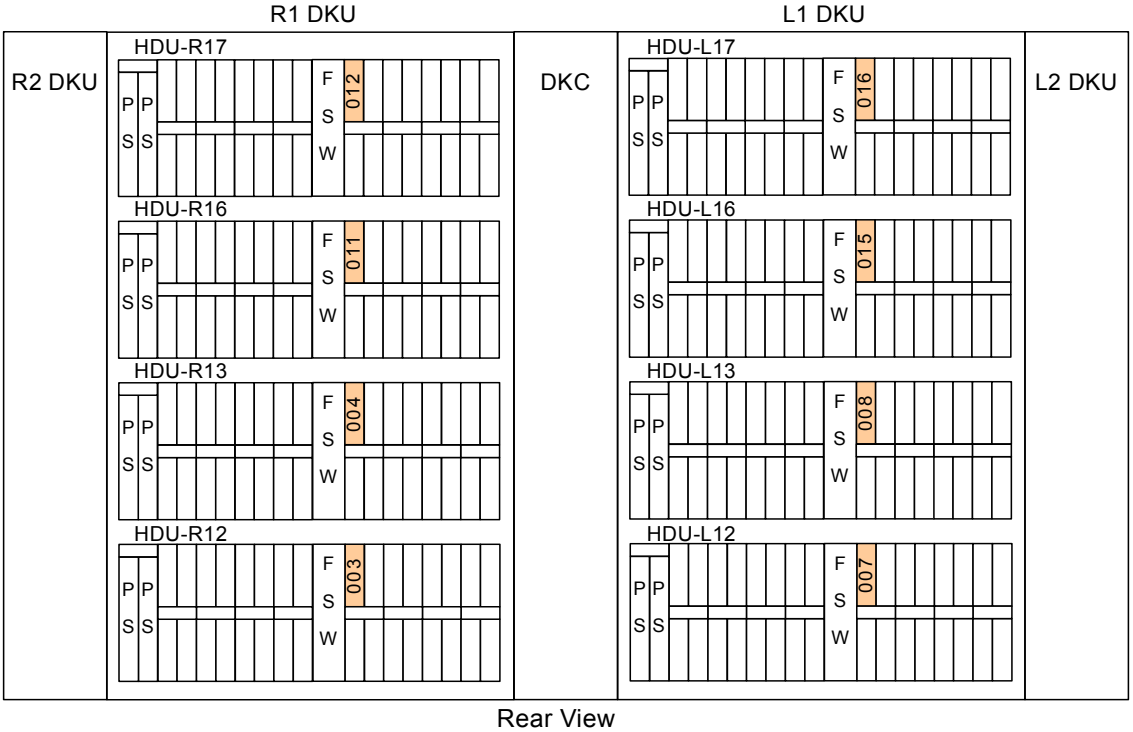
(iii) Spare HDD

No.	Model Number	Model Name	Data and Parity
1	DKU-F455I-36K1/72J1/72K1/146J1/146JS/146JM	1 HDD Canister	Spare Drive



Front View

001-016: Spare HDD canister installation order



Rear View

Fig. 4.1.6-5 Spare Drive Expansion Sequence

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4-2 Confirmation of Shut Down LED.

a. Confirm the Shut Down LED on the JMP PCB. (It should be RED.)

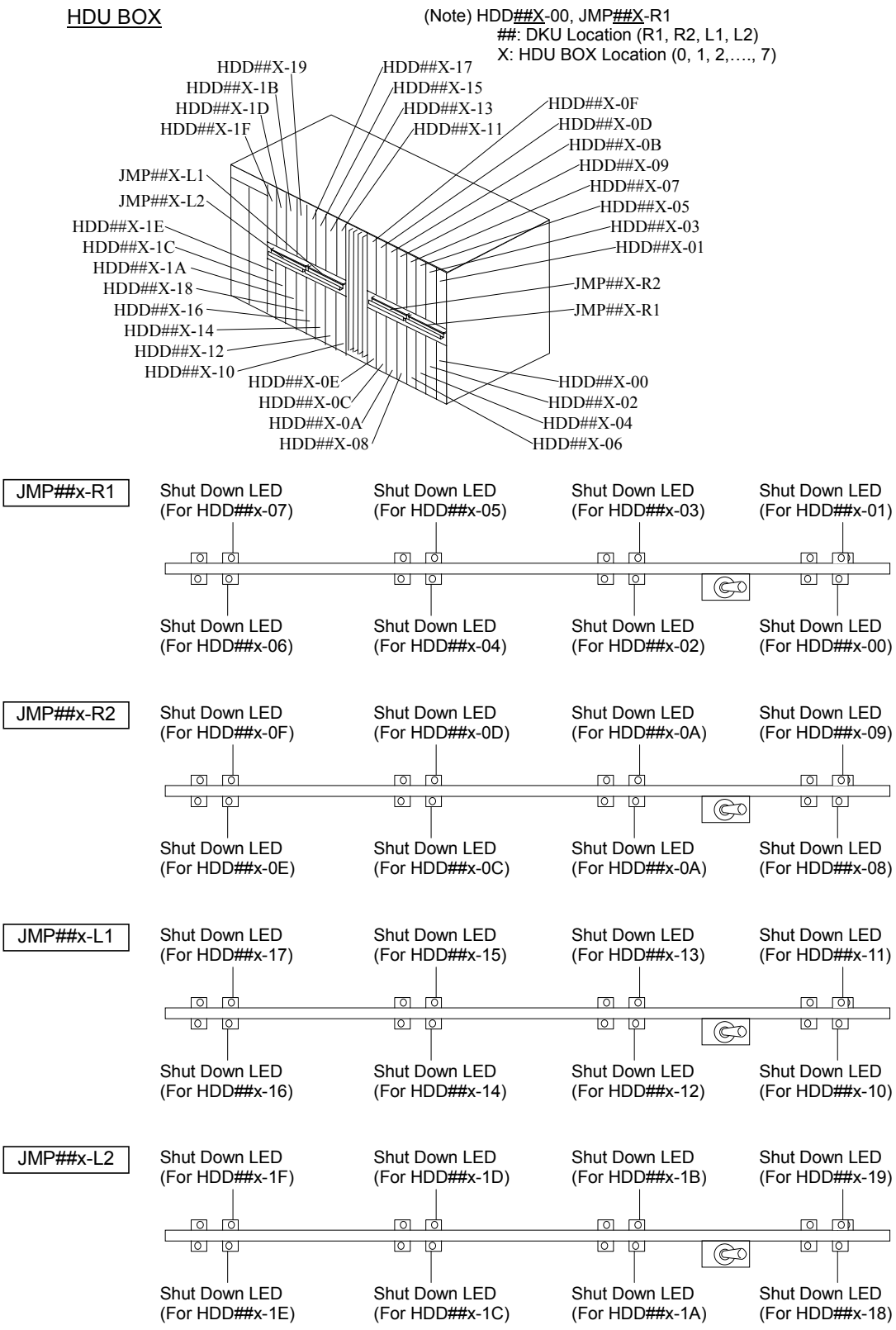

Fig. 4.1.6-6 Location of Shut Down LED

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4-3 De-installation of the HDD canister.

Notice:
Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

⚠ CAUTION

A system down may be caused by a removal of an HDD canister other than that to be removed. Make sure that it is the HDD canister to be removed.

a. After pushing up the stopper on the front side of the HDD canister, pull the handle toward you to remove the HDD canister.
b. Insert the dummy canister to the HDU Box.

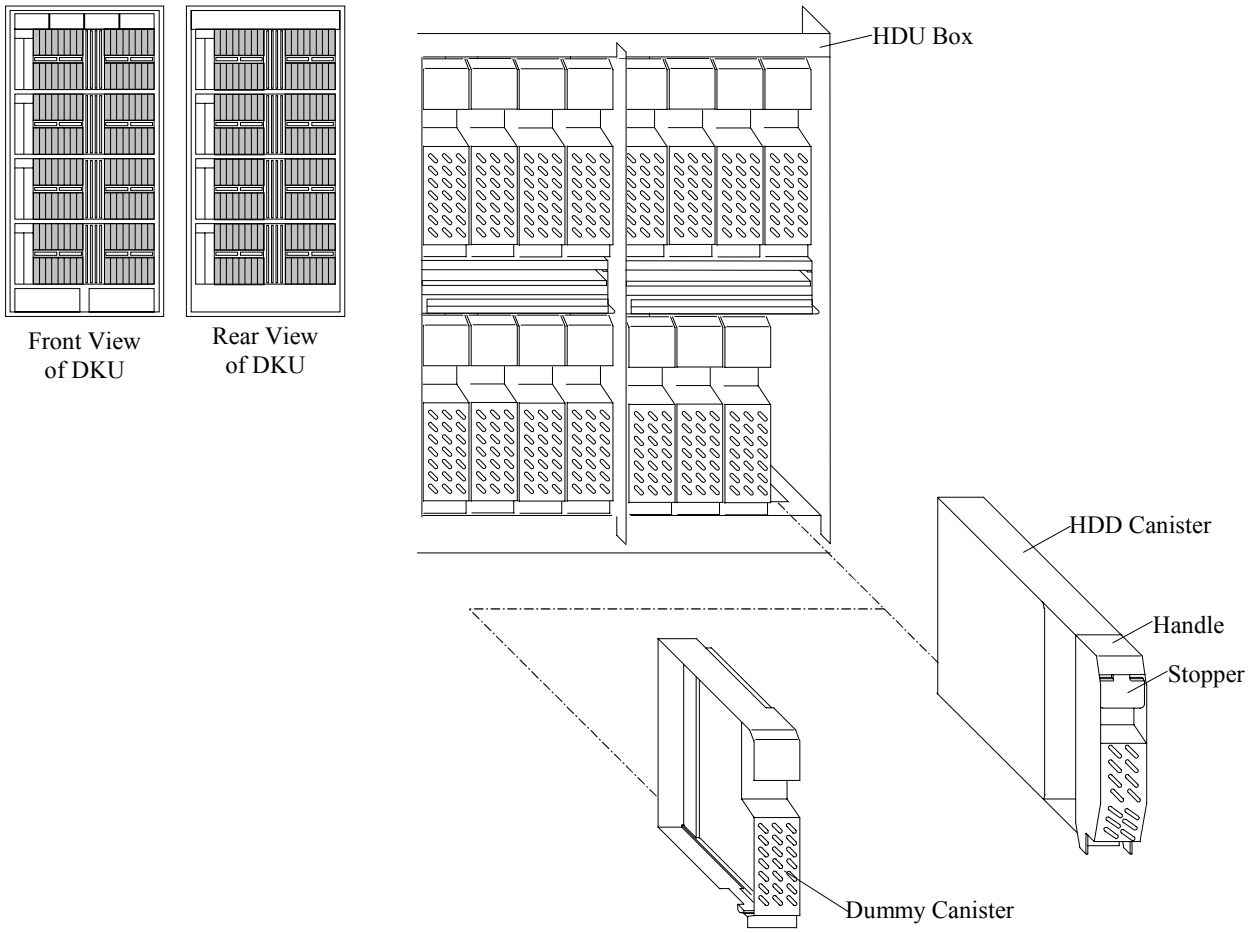

Fig. 4.1.6-7 De-Installation of HDD Canister

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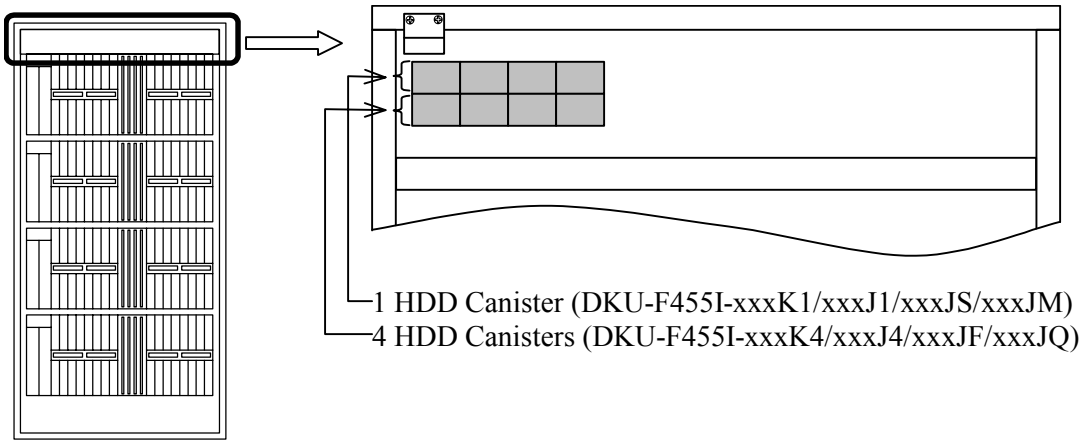
4-4 Change of the nameplate.

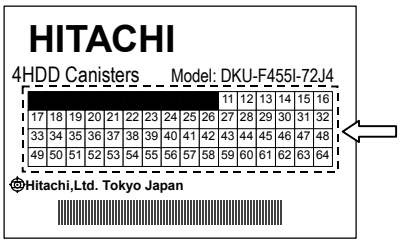
a. Affix a necessary portion of the Label (QTY)(Accessory of DKC; DWG No.3264290-1) in layers on the name plate and paint out numbers less than the number concerned with black oil felt pen.



Rear View
of DKU

[Example]

When DKU-F455I-72J4s are removed from 10 sets to 7sets



Label (QTY)

							8	9	10	11	12	13	14	15	16
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64

Fig. 4.1.6-8 Change of Nameplate

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5. De-Installation Procedure of DEV Interface Cable (2/3) (DKC-F460I-L1C)

a. Disconnect the DEV interface cables from the sub-edges on the disk adapter PCBs that are installed in locations Nos. D and K in the Rear Logic Box.

⚠ CAUTION

A serious failure occurs if a wrong cable or connector is removed.
Since a label bearing a connection destination is affixed on each cable or connector to be removed, work very carefully referring to it and the wiring diagram.

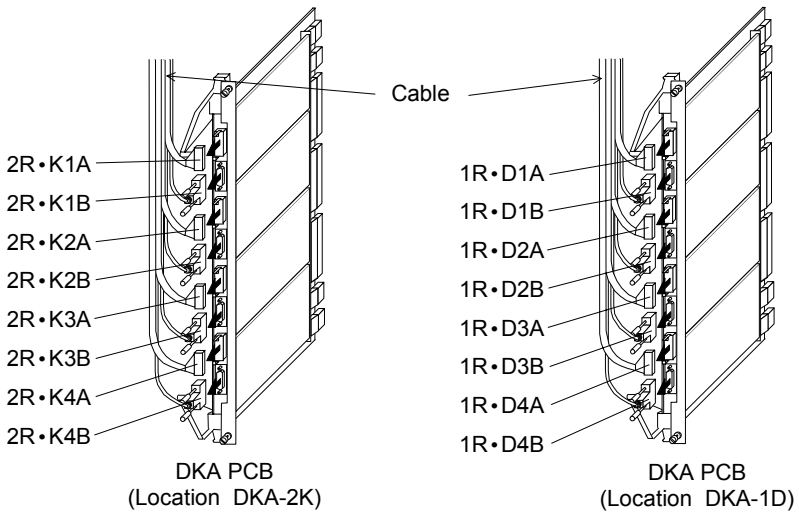

Fig. 4.1.6-9 DEV Interface Cable Disconnecting Diagram (Disk Adapter PCB Side)

b. Disconnect the DEV interface cables from the sub-edges on the disk adapter PCBs that are installed in locations Nos. E and L in the Rear Logic Box.

⚠ CAUTION

A serious failure occurs if a wrong cable or connector is removed.
Since a label bearing a connection destination is affixed on each cable or connector to be removed, work very carefully referring to it and the wiring diagram.

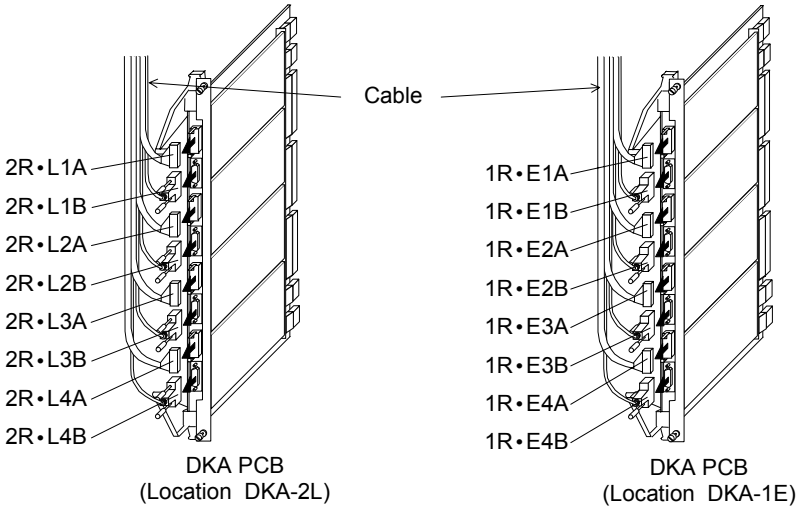

Fig. 4.1.6-10 DEV Interface Cable Disconnecting Diagram (Disk Adapter PCB Side)

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6. De-Installation Procedure of Disk Adapter

Note: Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

6-1 Confirmation of the Shut Down LED (Only Non-Disruptive Procedure)

a. Confirm that Shut Down LED is on. (Fig. 4.1.6-11) If the LED is not on, connect the Maintenance Jumper to the Shut Down Connector.

⚠ CAUTION

A system down may be caused if the Maintenance jumper is inserted in a PCB other than that to be removed. Make sure that it is the PCB to be removed.

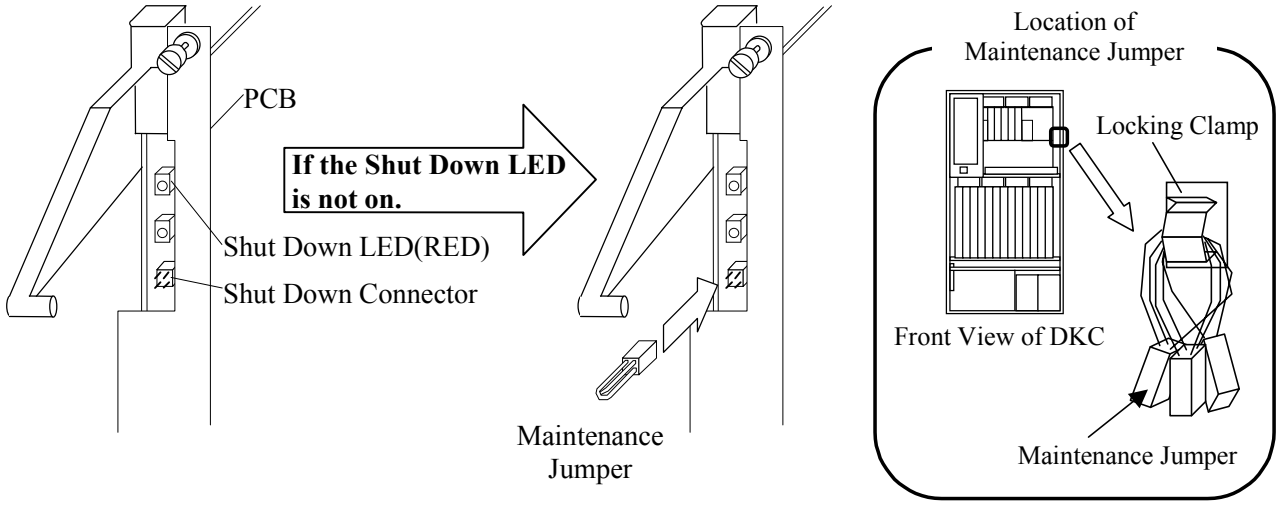

Fig. 4.1.6-11 Shut Down LED

Table 4.1.6-3 Removal Location (Rear of the unit)

Cluster	CL2							CL1				
Slot No.	M	L	K	J	H	G	F	E	D	C	B	A
Function	CSW	DKA	DKA	DKA	DKA	CACHE	CACHE	DKA	DKA	DKA	DKA	CSW
Location No.	CSW -2M	DKA -2L	DKA -2K	DKA -2J	DKA -2H	CACHE -2G	CACHE -2F	DKA -1E	DKA -1D	DKA -1C	DKA -1B	CSW -1A
Order of addition		Add.3	Add.2	Add.1	Basic			Add.3	Add.2	Add.1	Basic	
Number of DKAs set through the SVP		–	–	–	2			–	–	–	2	
		–	–	4				–	–	4		
		–	6					–	6			
		8						8				

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6-2 Disconnection of the DEV Interface cables

In case of Add.1

a. Disconnect the cable from the sub-edge of PCB.

⚠ CAUTION

A serious failure occurs if a wrong cable or connector is removed.
Since a label bearing a connection destination is affixed on each cable or connector to be removed, work very carefully referring to it and the wiring diagram.

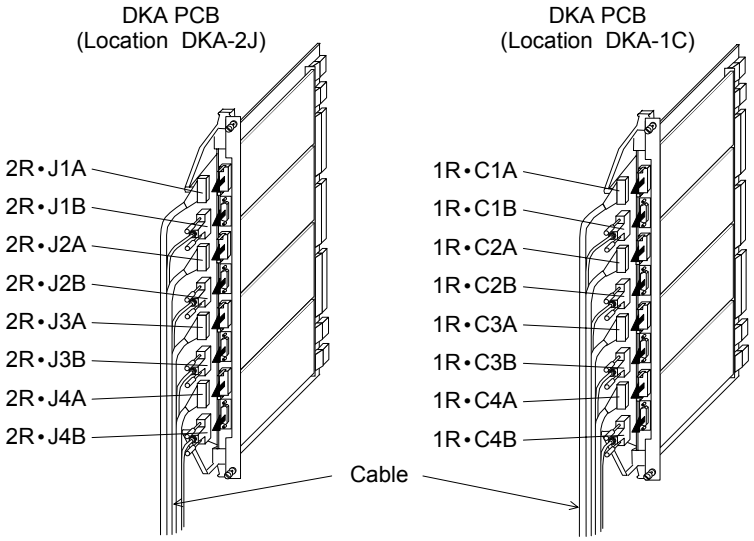

Fig. 4.1.6-12 Disconnection of DEV Interface Cables (Add.1)

In case of Add.2

a. Disconnect the cable from the sub-edge of PCB.

⚠ CAUTION

A serious failure occurs if a wrong cable or connector is removed.
Since a label bearing a connection destination is affixed on each cable or connector to be removed, work very carefully referring to it and the wiring diagram.

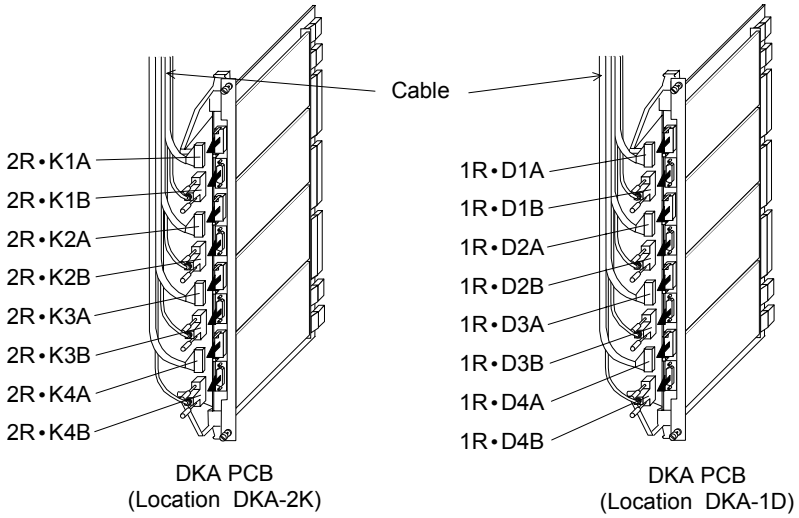

Fig. 4.1.6-13 Disconnection of DEV Interface Cables (Add.2)

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In case of Add.3

a. Disconnect the cable from the sub-edge of PCB.

⚠ CAUTION

A serious failure occurs if a wrong cable or connector is removed.
Since a label bearing a connection destination is affixed on each cable or connector to be removed, work very carefully referring to it and the wiring diagram.

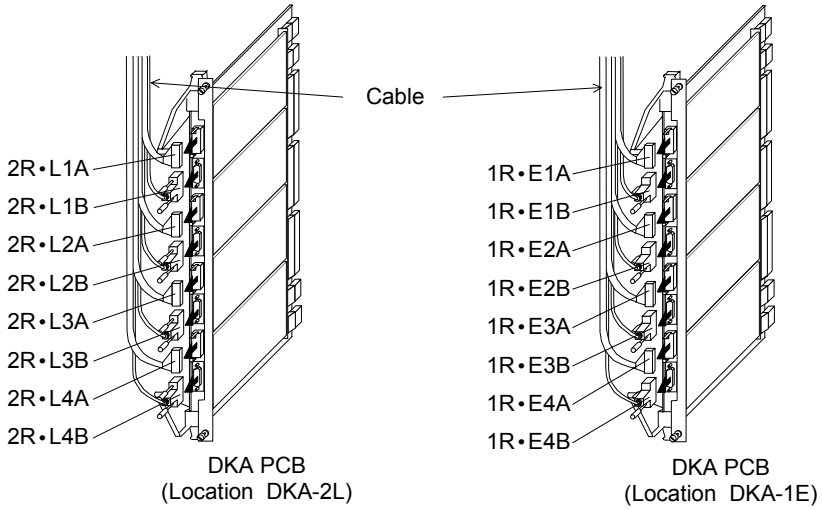

Fig.4.1.6-14 Disconnection of DEV Interface Cable (Add.3)

6-3 Removal of the PCBs

a. Remove the two screws and remove the PCBs from the correct locations in the Rear Logic Box referring to Fig. 4.1.6-15.
b. Attach the dummy plates referring to Fig. 4.1.6-16.

⚠ CAUTION

A serious failure occurs if a wrong PCB is removed.
Remove the PCB after making sure that the Shut Down LED is on.

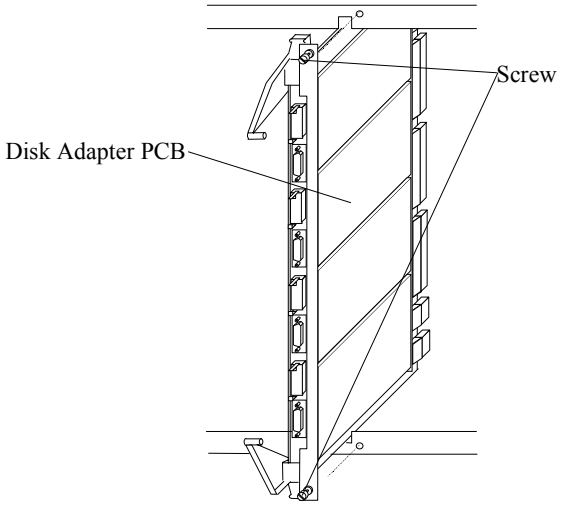

Fig. 4.1.6-15 Removal of PCB

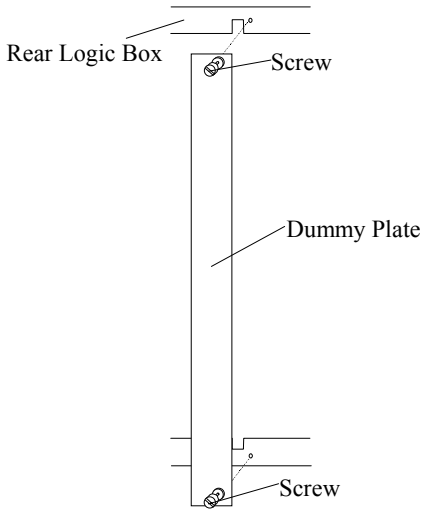

Fig. 4.1.6-16 Attachment of Dummy Plate

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6-4 Removal of the Nameplate

a. Remove the nameplate from the Rear Logic Box cover.

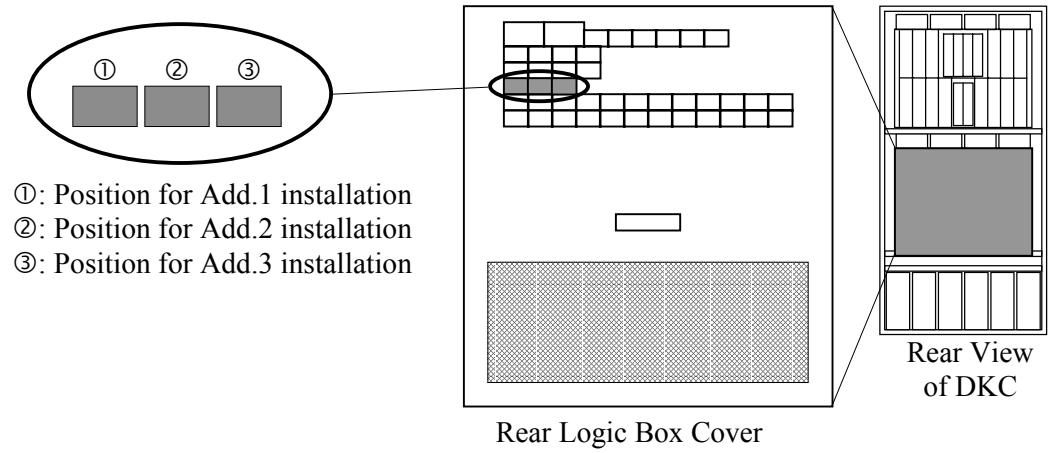

Fig. 4.1.6-17 Removal of Nameplate

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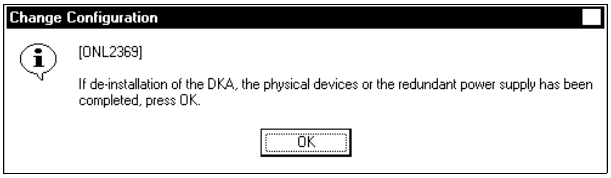
7. SVP post procedure

1.

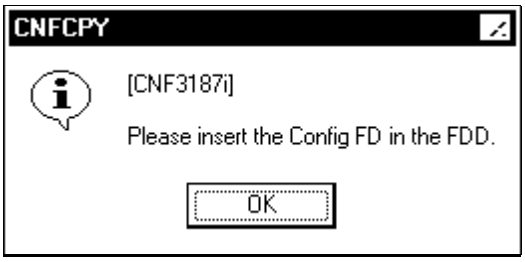
Select (CL) [OK] in response to "If de-installation of the DKA, the physical devices or the redundant power supply has been completed, press OK." shown in the right figure.



2. <Check the end of de-installation procedure>
"Renewal process has completed. Please check subsystem status." shown in the right figure displayed. Select (CL) [OK] in response to this message.

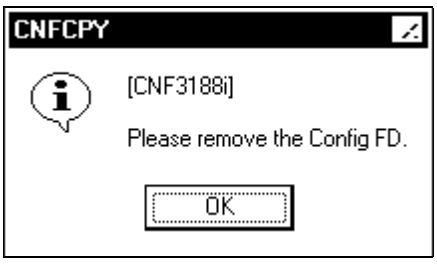
3.

"Reading subsystem configuration data..." is displayed.
"Please insert the Config FD in the FDD." is displayed.
Insert the configuration FD into FDD, select (CL) [OK].



4.

When this procedure is completed, message "Please remove the Config FD." is displayed.
Remove the FD, select (CL) [OK].



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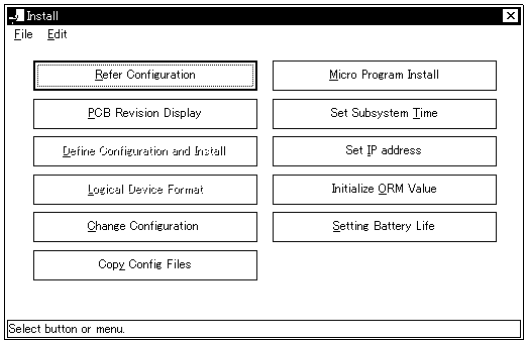
5.

After the procedure is completed, return to ‘Install’.
Select (CL) [File]-[Exit].



6. <Mode Change>
Change the mode to View Mode.

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8. De-Installation Procedure of DEV Interface Cable 1 (3/3) (DKC-F460I-L1C)

a. Refer to Fig. 4.1.6-18 and Fig. 4.1.6-19. Connect the DEV interface cables to the sub-edges on the FSW PCBs in the HDU box.
b. Take out the DEV interface cable, which has been removed from the FSW PCB, from the DKU frame.

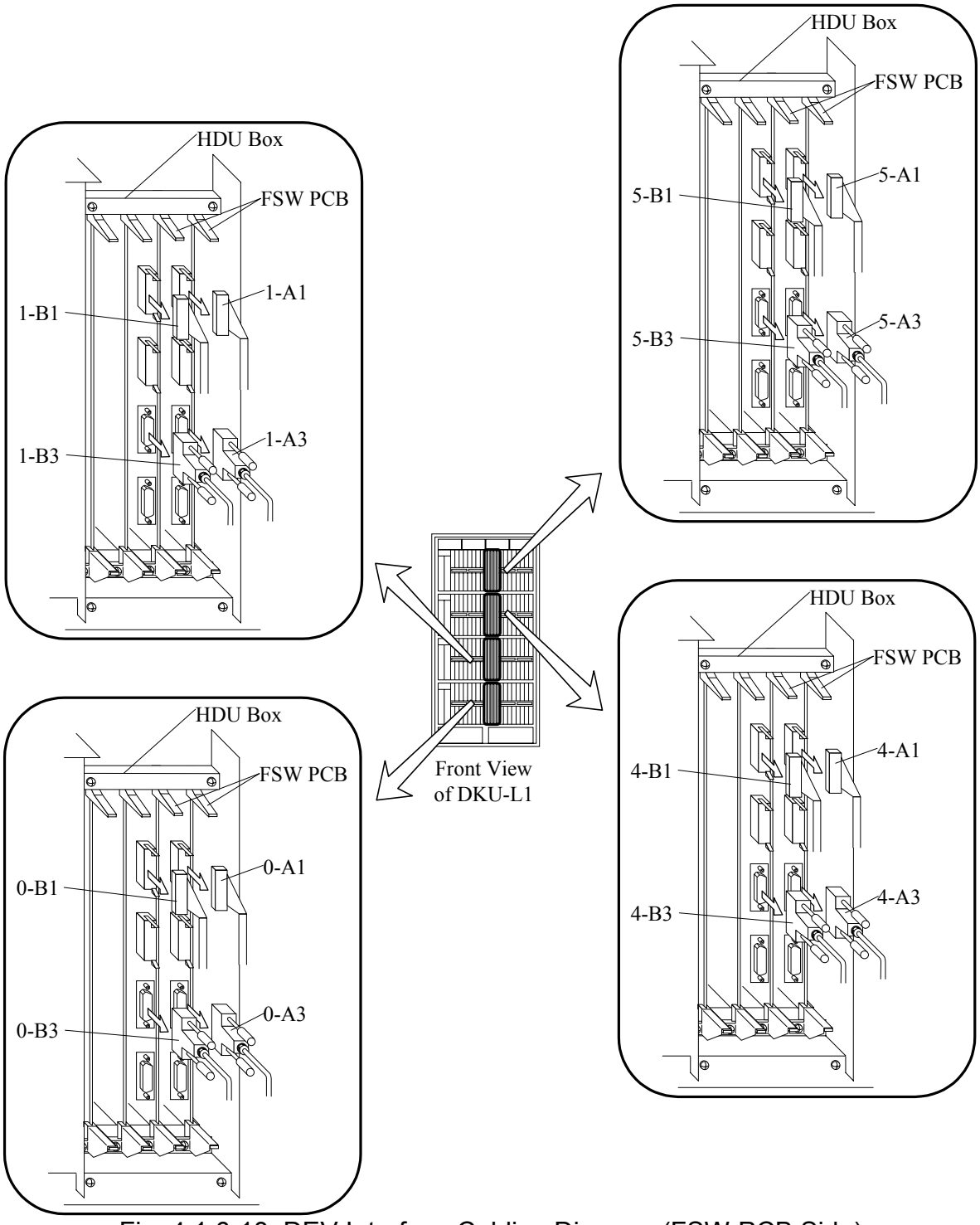

Fig. 4.1.6-18 DEV Interface Cabling Diagram (FSW PCB Side)

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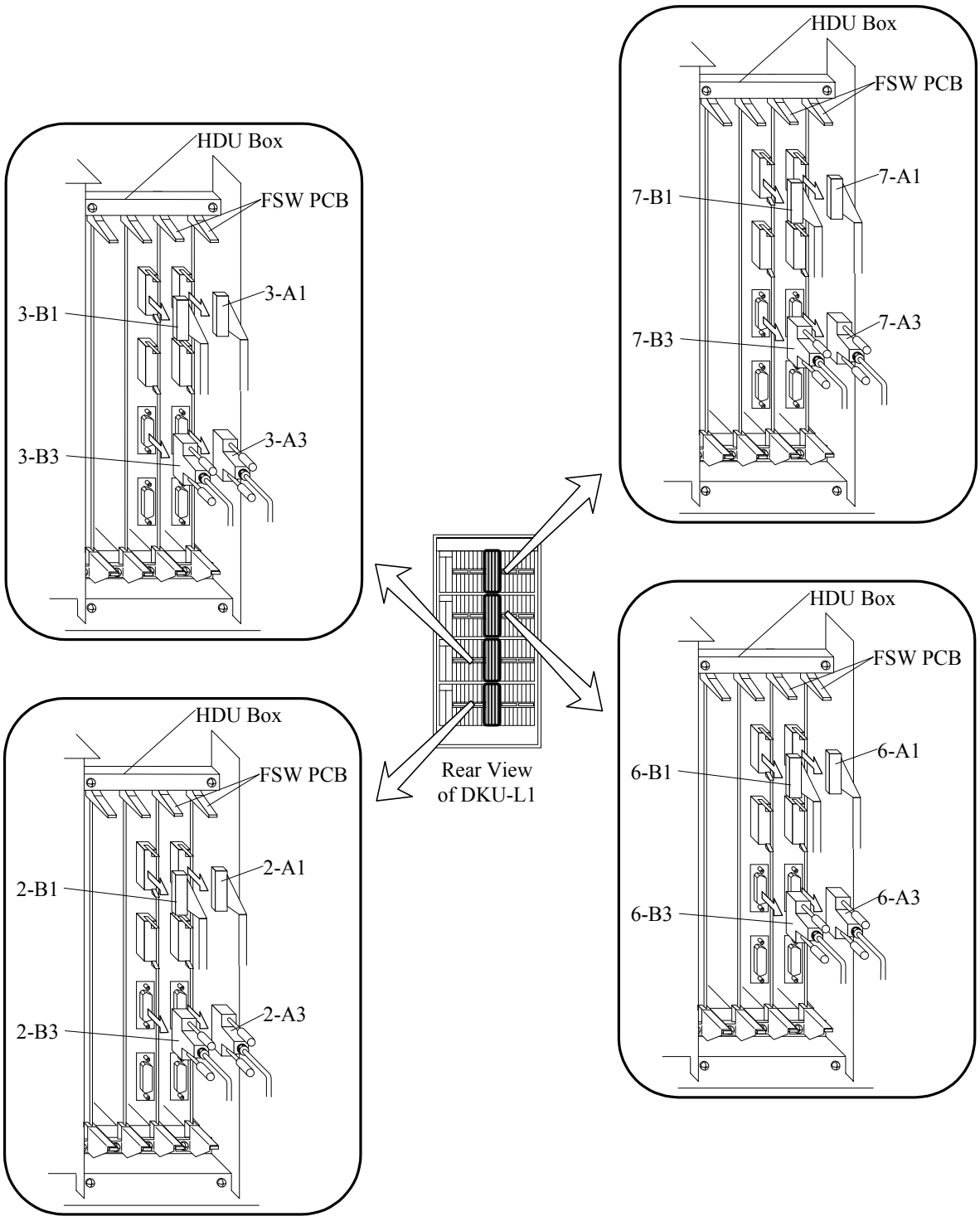

Fig. 4.1.6-19 DEV Interface Cabling Diagram (FSW PCB Side)

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c. Attach the cable covers with the screws.

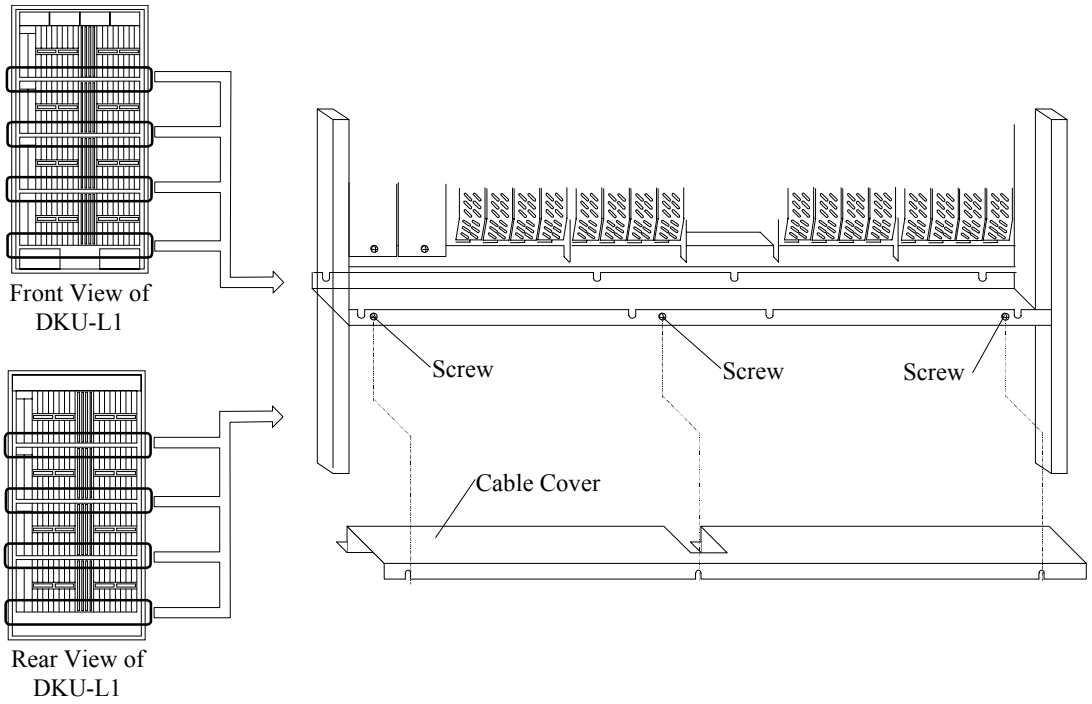

Fig. 4.1.6-20 Attachment of Cable Covers

d. Attach the cable covers with the screws.

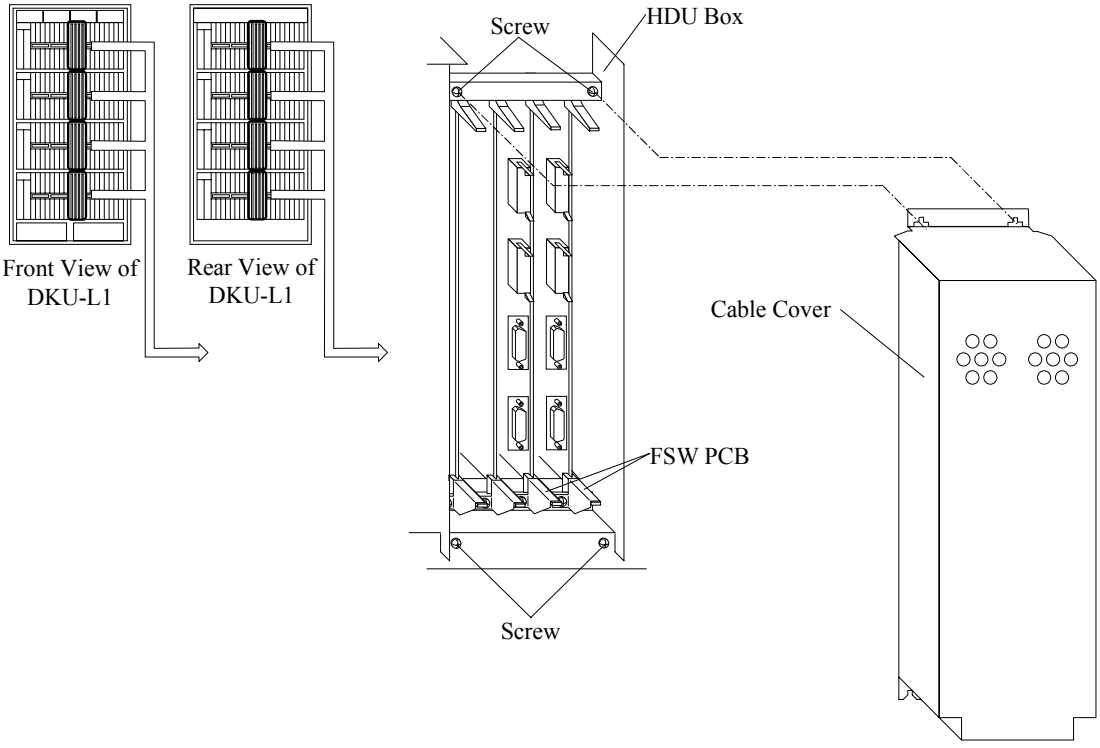

Fig. 4.1.6-21 Attachment of Cable Covers

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e. Remove the nameplate from the cover.

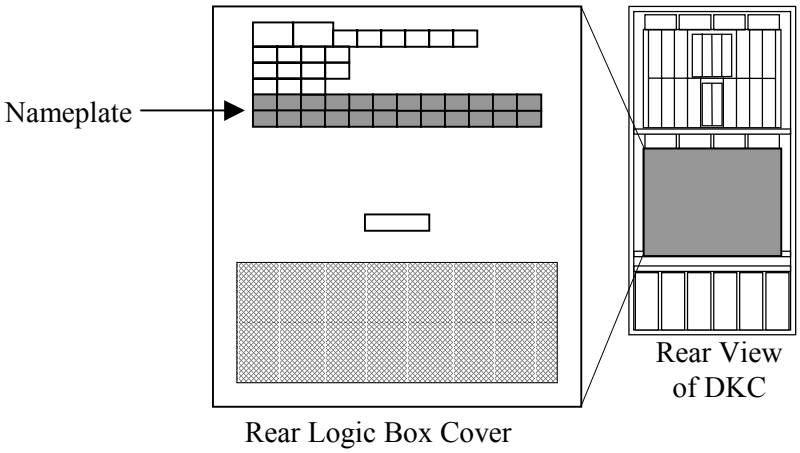

Fig. 4.1.6-22 Removal of Nameplate

f. Return to the work table (INST02-60) and perform rest of the works.

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4.1.7 When performing removal of the data/spare HDD canister, DKA, and DEV interface cable that accompanies the removal of the DKU-L2 frame (DKC-F460I-200, DKU-F455I-36K4/36K1/72J4/72J1/72K4/72K1/146J4/146J1/146JF/146JS/146JQ/146JM/EXC)

1. De-Installation Procedure of DEV Interface Cable 2 (1/3) (DKU-F455I-EXC)

> Caution:
> When the main circuit breaker of the DKU is turned off before the DEV interface cable (DKU-F455I-EXC) is removed, the DKU Voltage Alarm is detected (the ALARM LED on the operator panel comes on and the SIM=BF20XX or BF22XX is issued). Therefore, turn off the main circuit breaker of the DKU after removing the DEV interface cable. The turning off of the DKU main circuit breaker is to be done later in another procedure explained on page INST04-DKU-10.

Between HDU-L10-L17 and HDU-L20-L27

a. Loosen the screws and remove the cable covers from the DKU frames.

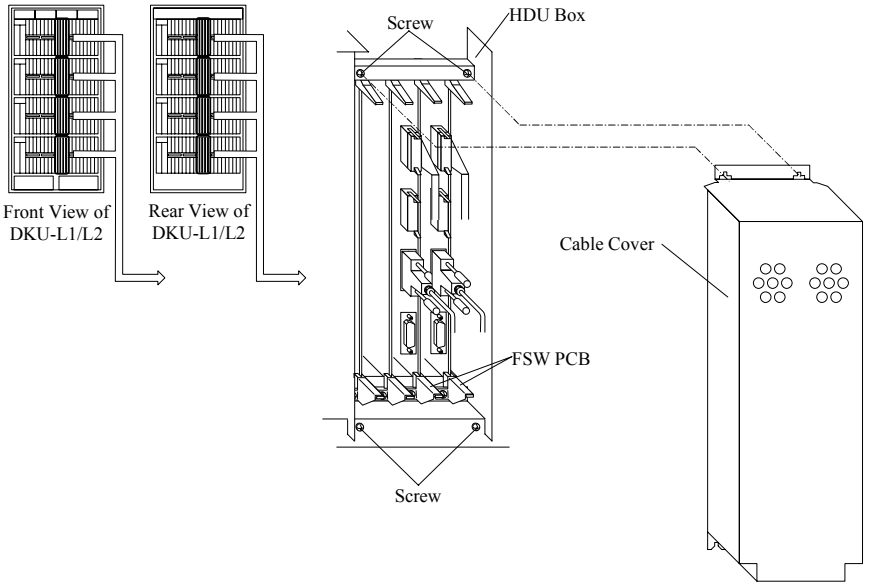

Fig. 4.1.7-1 Removal of Cable Covers

b. Loosen the screws and remove the cable covers from the DKU frames.

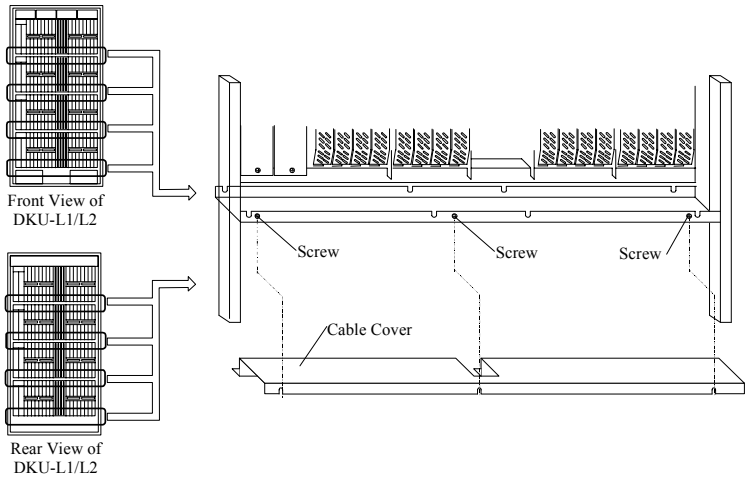

Fig. 4.1.7-2 Removal of Cable Covers

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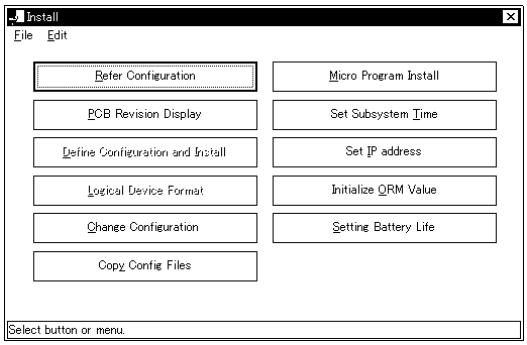
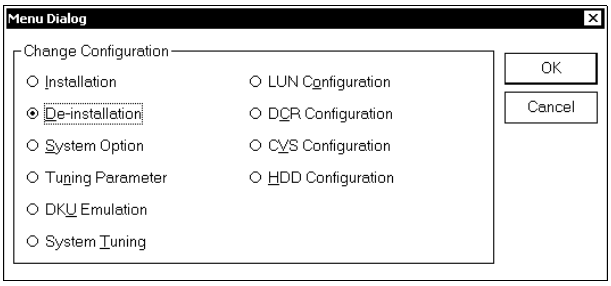
2. Setting up the New Device Structure Information

1. <Mode Change>
   Change the mode to Modify Mode.
   Select (CL) [Install].

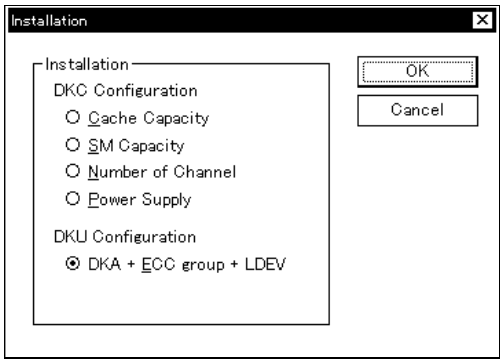
2. <Start the 'Menu Dialog' screen>
   Select (CL) [Change Configuration].



3. <Start Device Structure Setup screen>
   Select (CL) [De-Installation] in the 'Menu Dialog' dialog box and select (CL) [OK].



4. <Select a part to be changed>
   Select (CL) [DKA + ECC group + LDEV], and select (CL) [OK].



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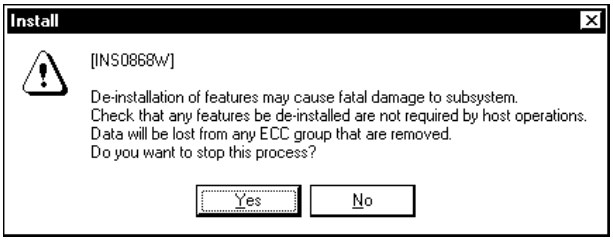
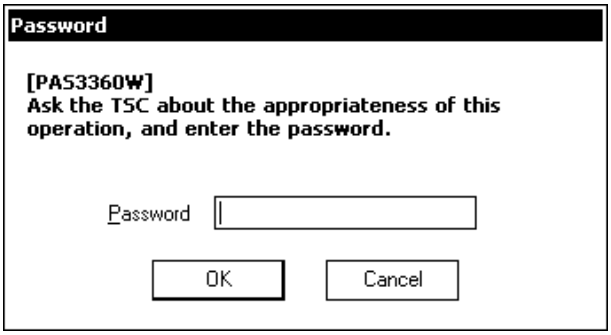
5.

Select (CL) [No] in response to “De-installation of features may cause fatal damage to subsystem. Check that any features be de-installed are not required by host operations. Data will be lost from any ECC group that are removed. Do you want to stop this process?”.



6. <Input password>
Enter the password and select (CL) [OK].



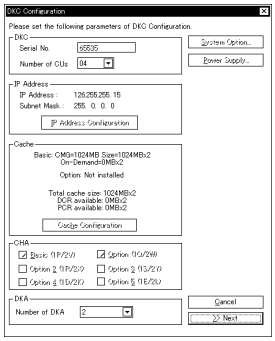
NOTICE
This is a special (exceptional) operation that can cause a serious failure such as a system down or a data loss if a wrong part to be removed is selected, and requires an input of a password. Ask the technical support center about the appropriateness of the operation, and input the password after getting an approval of executing the operation.

7. <Update Configuration Information>
Set the item to be de-installed for DKC and DKA in the ‘DKC Configuration’ window.

When decreasing the CUs, change the “Number of CUs”.
When decreasing the DKAs, change the “Number of DKA”.

Note: A part other than the CU and DKA cannot be removed at the same time.

Make sure that the entered item is correct and select (CL) [>>Next].



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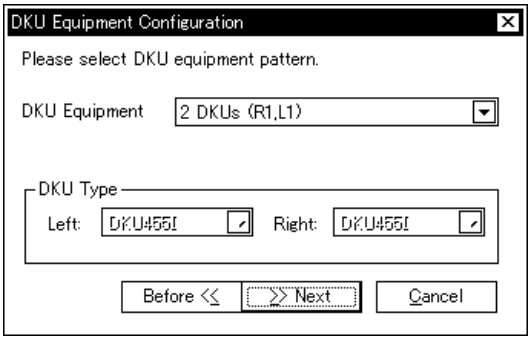
7-1. <Altering DKU frame information>

Define the DKU frame in the DKU Equipment Configuration window.

Make an altered setting in which the DKU-L2 is deleted from the DKUs currently set.

Current setting	Altered setting
3DKUs (R1, L1, L2)	2DKU (R1, L1)
4DKUs (R1, L1, R2, L2)	3DKUs (R1, L1, R2)

Note: After the setting is made, the B4 of the deleted DKU is not displayed.



After making the setting, select the [>> Next]. The routine proceeds to Step 8.
When the [Before <<] is selected, the window returns to the preceding one.
Return to Step 7.

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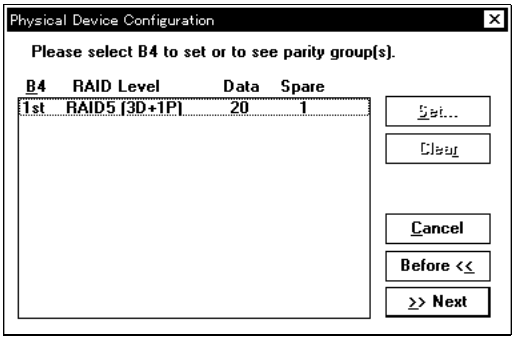
8. Change Drive Configuration Information>
Set drive configuration according to the 'Physical Device Configuration' screen displaying the mounted B4 based on the result of setting of DKU mount pattern.
Detailed procedure is shown below.
[Set...]: Defines the parity group or spare disk. The routine proceeds to Step 8-1.
[Clear...]: Cancels the setting of the B4.
After setting up all items, select (CL) [>>Next].
Selecting (CL) [Before<<] returns you to the previous screen.



[For the case of the multi cabinet model]

B4	Location	B4	Location
1st	HDU-R10, 11, 12, 13	7th	HDU-L20, 21, 22, 23
2nd	HDU-R14, 15, 16, 17	8th	HDU-L24, 25, 26, 27
3rd	HDU-L10, 11, 12, 13	9th	HDU-R30, 31, 32, 33
4th	HDU-L14, 15, 16, 17	10th	HDU-R34, 35, 36, 37
5th	HDU-R20, 21, 22, 23	11th	HDU-L30, 31, 32, 33
6th	HDU-R24, 25, 26, 27	12th	HDU-L34, 35, 36, 37

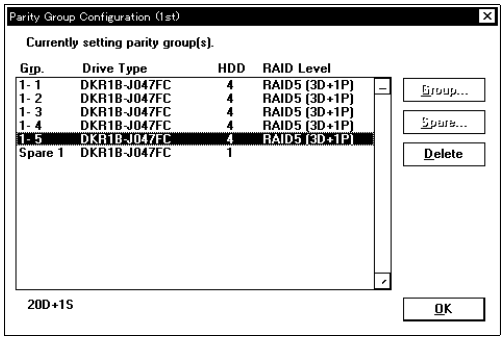
Note: The 9th to 12th of the B4 are valid only when the DKUs for the RAID 400 are connected.

[For the case of the single cabinet model]

B4	Location	Remarks
1st	HDU-R0, 1, 2, 3	HDD-X00 ~ X0F
2nd	HDU-R0, 1, 2, 3	HDD-X10 ~ X1F

8-1. <Define Parity Group>
Select (CL) the group to be de-installed and select (CL) [Delete] in the 'Parity Group Configuration' dialog box.
After setting, select (CL) [OK]. Return to step 8.

Grp*: A parity group where RAID Concatenation is installed.



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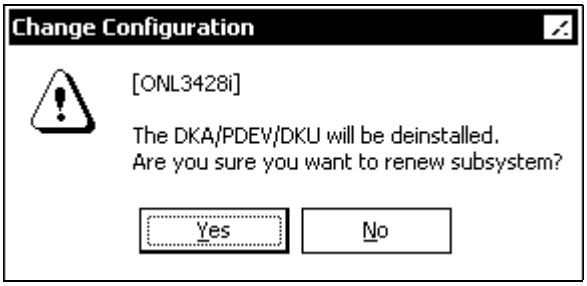
3. SVP pre procedure

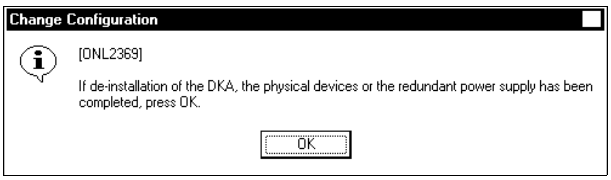
1. <Start de-installation>
   Select (CL) [Yes] in response to “The DKA/PDEV/DKU will be deinstalled. Are you sure you want to renew subsystem?”.

   When [No] is selected (CL), returns to INST04-DKA-1120 step 2.



2.

   At this point refrain from pressing the [OK] button.
   “If de-installation of the DKA, the physical devices or the redundant power supply has been completed, press OK.” shown in the right figure.



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4. De-Installation Procedure of HDD Canister

4-1 Confirmation of position to de-install HDD canister

(i) RAID5(3D+1P)/RAID1(2D+2D)

Relations between the installation locations of the RAID groups and the RAID group numbers set through the SVP are shown in Table 4.1.7-1.

Table 4.1.7-1 Relation between HDDs installation order and RAID group number (3D+1P/2D+2D) (1/2)

	DKC	R1 DKU			R2 DKU		
		RAID Group Installation Order	RAID Group No.	HDD Location	RAID Group Installation Order	RAID Group No.	HDD Location
Upper	2nd DKA Pair	032	2-1	HDDR1y-00	096	6-1	HDDR2y-00
		033	2-2	HDDR1y-01	097	6-2	HDDR2y-01
		034	2-3	HDDR1y-02	098	6-3	HDDR2y-02
		035	2-4	HDDR1y-03	099	6-4	HDDR2y-03
		036	2-5	HDDR1y-04	100	6-5	HDDR2y-04
		037	2-6	HDDR1y-05	101	6-6	HDDR2y-05
		038	2-7	HDDR1y-06	102	6-7	HDDR2y-06
		039	2-8	HDDR1y-07	103	6-8	HDDR2y-07
		040	2-9	HDDR1y-08	104	6-9	HDDR2y-08
		041	2-10	HDDR1y-09	105	6-10	HDDR2y-09
		042	2-11	HDDR1y-0A	106	6-11	HDDR2y-0A
		043	2-12	HDDR1y-0B	107	6-12	HDDR2y-0B
		044	2-13	HDDR1y-0C	108	6-13	HDDR2y-0C
		045	2-14	HDDR1y-0D	109	6-14	HDDR2y-0D
		046	2-15	HDDR1y-0E	110	6-15	HDDR2y-0E
		047(Spare) *2	2-16	HDDR1y-0F	111	6-16	HDDR2y-0F
		048	2-17	HDDR1y-10	112	6-17	HDDR2y-10
		049	2-18	HDDR1y-11	113	6-18	HDDR2y-11
		050	2-19	HDDR1y-12	114	6-19	HDDR2y-12
		051	2-20	HDDR1y-13	115	6-20	HDDR2y-13
		052	2-21	HDDR1y-14	116	6-21	HDDR2y-14
		053	2-22	HDDR1y-15	117	6-22	HDDR2y-15
		054	2-23	HDDR1y-16	118	6-23	HDDR2y-16
		055	2-24	HDDR1y-17	119	6-24	HDDR2y-17
		056	2-25	HDDR1y-18	120	6-25	HDDR2y-18
		057	2-26	HDDR1y-19	121	6-26	HDDR2y-19
		058	2-27	HDDR1y-1A	122	6-27	HDDR2y-1A
		059	2-28	HDDR1y-1B	123	6-28	HDDR2y-1B
		060	2-29	HDDR1y-1C	124	6-29	HDDR2y-1C
		061	2-30	HDDR1y-1D	125	6-30	HDDR2y-1D
		062	2-31	HDDR1y-1E	126	6-31	HDDR2y-1E
		063	2-32	HDDR1y-1F	127	6-32	HDDR2y-1F
Lower	1st DKA Pair	001	1-1	HDDR1x-00	064	5-1	HDDR2x-00
		002	1-2	HDDR1x-01	065	5-2	HDDR2x-01
		003	1-3	HDDR1x-02	066	5-3	HDDR2x-02
		004	1-4	HDDR1x-03	067	5-4	HDDR2x-03
		005	1-5	HDDR1x-04	068	5-5	HDDR2x-04
		006	1-6	HDDR1x-05	069	5-6	HDDR2x-05
		007	1-7	HDDR1x-06	070	5-7	HDDR2x-06
		008	1-8	HDDR1x-07	071	5-8	HDDR2x-07
		009	1-9	HDDR1x-08	072	5-9	HDDR2x-08
		010	1-10	HDDR1x-09	073	5-10	HDDR2x-09
		011	1-11	HDDR1x-0A	074	5-11	HDDR2x-0A
		012	1-12	HDDR1x-0B	075	5-12	HDDR2x-0B
		013	1-13	HDDR1x-0C	076	5-13	HDDR2x-0C
		014	1-14	HDDR1x-0D	077	5-14	HDDR2x-0D
		015	1-15	HDDR1x-0E	078	5-15	HDDR2x-0E
		Spare *1	1-16	HDDR1x-0F	079	5-16	HDDR2x-0F
		016	1-17	HDDR1x-10	080	5-17	HDDR2x-10
		017	1-18	HDDR1x-11	081	5-18	HDDR2x-11
		018	1-19	HDDR1x-12	082	5-19	HDDR2x-12
		019	1-20	HDDR1x-13	083	5-20	HDDR2x-13
		020	1-21	HDDR1x-14	084	5-21	HDDR2x-14
		021	1-22	HDDR1x-15	085	5-22	HDDR2x-15
		022	1-23	HDDR1x-16	086	5-23	HDDR2x-16
		023	1-24	HDDR1x-17	087	5-24	HDDR2x-17
		024	1-25	HDDR1x-18	088	5-25	HDDR2x-18
		025	1-26	HDDR1x-19	089	5-26	HDDR2x-19
		026	1-27	HDDR1x-1A	090	5-27	HDDR2x-1A
		027	1-28	HDDR1x-1B	091	5-28	HDDR2x-1B
		028	1-29	HDDR1x-1C	092	5-29	HDDR2x-1C
		029	1-30	HDDR1x-1D	093	5-30	HDDR2x-1D
		030	1-31	HDDR1x-1E	094	5-31	HDDR2x-1E
		031	1-32	HDDR1x-1F	095	5-32	HDDR2x-1F

*1: To be left vacant or a spare disk is to be installed. *2: A data or spare disk is to be installed.

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Table 4.1.7-1 Relation between HDDs installation order and RAID group number (3D+1P/2D+2D) (2/2)

	L2 DKU			L1 DKU			DKC
	RAID Group Installation Order	RAID Group No.	HDD Location	RAID Group Installation Order	RAID Group No.	HDD Location	
Upper	223	8-1	HDDL2y-00	159	4-1	HDDL1y-00	4th DKA Pair
	224	8-2	HDDL2y-01	160	4-2	HDDL1y-01	
	225	8-3	HDDL2y-02	161	4-3	HDDL1y-02	
	226	8-4	HDDL2y-03	162	4-4	HDDL1y-03	
	227	8-5	HDDL2y-04	163	4-5	HDDL1y-04	
	228	8-6	HDDL2y-05	164	4-6	HDDL1y-05	
	229	8-7	HDDL2y-06	165	4-7	HDDL1y-06	
	230	8-8	HDDL2y-07	166	4-8	HDDL1y-07	
	231	8-9	HDDL2y-08	167	4-9	HDDL1y-08	
	232	8-10	HDDL2y-09	168	4-10	HDDL1y-09	
	233	8-11	HDDL2y-0A	169	4-11	HDDL1y-0A	
	234	8-12	HDDL2y-0B	170	4-12	HDDL1y-0B	
	235	8-13	HDDL2y-0C	171	4-13	HDDL1y-0C	
	236	8-14	HDDL2y-0D	172	4-14	HDDL1y-0D	
	237	8-15	HDDL2y-0E	173	4-15	HDDL1y-0E	
	238	8-16	HDDL2y-0F	174(Spare) *2	4-16	HDDL1y-0F	
	239	8-17	HDDL2y-10	175	4-17	HDDL1y-10	
	240	8-18	HDDL2y-11	176	4-18	HDDL1y-11	
	241	8-19	HDDL2y-12	177	4-19	HDDL1y-12	
	242	8-20	HDDL2y-13	178	4-20	HDDL1y-13	
	243	8-21	HDDL2y-14	179	4-21	HDDL1y-14	
	244	8-22	HDDL2y-15	180	4-22	HDDL1y-15	
	245	8-23	HDDL2y-16	181	4-23	HDDL1y-16	
	246	8-24	HDDL2y-17	182	4-24	HDDL1y-17	
	247	8-25	HDDL2y-18	183	4-25	HDDL1y-18	
	248	8-26	HDDL2y-19	184	4-26	HDDL1y-19	
	249	8-27	HDDL2y-1A	185	4-27	HDDL1y-1A	
	250	8-28	HDDL2y-1B	186	4-28	HDDL1y-1B	
	251	8-29	HDDL2y-1C	187	4-29	HDDL1y-1C	
	252	8-30	HDDL2y-1D	188	4-30	HDDL1y-1D	
	253	8-31	HDDL2y-1E	189	4-31	HDDL1y-1E	
	254	8-32	HDDL2y-1F	190	4-32	HDDL1y-1F	
Lower	191	7-1	HDDL2x-00	128	3-1	HDDL1x-00	3rd DKA Pair
	192	7-2	HDDL2x-01	129	3-2	HDDL1x-01	
	193	7-3	HDDL2x-02	130	3-3	HDDL1x-02	
	194	7-4	HDDL2x-03	131	3-4	HDDL1x-03	
	195	7-5	HDDL2x-04	132	3-5	HDDL1x-04	
	196	7-6	HDDL2x-05	133	3-6	HDDL1x-05	
	197	7-7	HDDL2x-06	134	3-7	HDDL1x-06	
	198	7-8	HDDL2x-07	135	3-8	HDDL1x-07	
	199	7-9	HDDL2x-08	136	3-9	HDDL1x-08	
	200	7-10	HDDL2x-09	137	3-10	HDDL1x-09	
	201	7-11	HDDL2x-0A	138	3-11	HDDL1x-0A	
	202	7-12	HDDL2x-0B	139	3-12	HDDL1x-0B	
	203	7-13	HDDL2x-0C	140	3-13	HDDL1x-0C	
	204	7-14	HDDL2x-0D	141	3-14	HDDL1x-0D	
	205	7-15	HDDL2x-0E	142	3-15	HDDL1x-0E	
	206	7-16	HDDL2x-0F	Spare *1	3-16	HDDL1x-0F	
	207	7-17	HDDL2x-10	143	3-17	HDDL1x-10	
	208	7-18	HDDL2x-11	144	3-18	HDDL1x-11	
	209	7-19	HDDL2x-12	145	3-19	HDDL1x-12	
	210	7-20	HDDL2x-13	146	3-20	HDDL1x-13	
	211	7-21	HDDL2x-14	147	3-21	HDDL1x-14	
	212	7-22	HDDL2x-15	148	3-22	HDDL1x-15	
	213	7-23	HDDL2x-16	149	3-23	HDDL1x-16	
	214	7-24	HDDL2x-17	150	3-24	HDDL1x-17	
	215	7-25	HDDL2x-18	151	3-25	HDDL1x-18	
	216	7-26	HDDL2x-19	152	3-26	HDDL1x-19	
	217	7-27	HDDL2x-1A	153	3-27	HDDL1x-1A	
	218	7-28	HDDL2x-1B	154	3-28	HDDL1x-1B	
	219	7-29	HDDL2x-1C	155	3-29	HDDL1x-1C	
	220	7-30	HDDL2x-1D	156	3-30	HDDL1x-1D	
	221	7-31	HDDL2x-1E	157	3-31	HDDL1x-1E	
	222	7-32	HDDL2x-1F	158	3-32	HDDL1x-1F	

*1: To be left vacant or a spare disk is to be installed. *2: A data or spare disk is to be installed.
*3: HDDL1x-00 (x: HDU Box No. 0, 1, 2, 3), HDDL1y-00 (y: HDU Box No. 4, 5, 6, 7)

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(1) Make sure of the location where the RAID group is de-installed and that where the HDD canister is to be removed.

No.	Model Number	Model Name	Data and Parity
1	DKU-F455I-36K4/72J4/72K4/146J4/146JF/146JQ	4 HDD Canisters	Data and Parity Drive

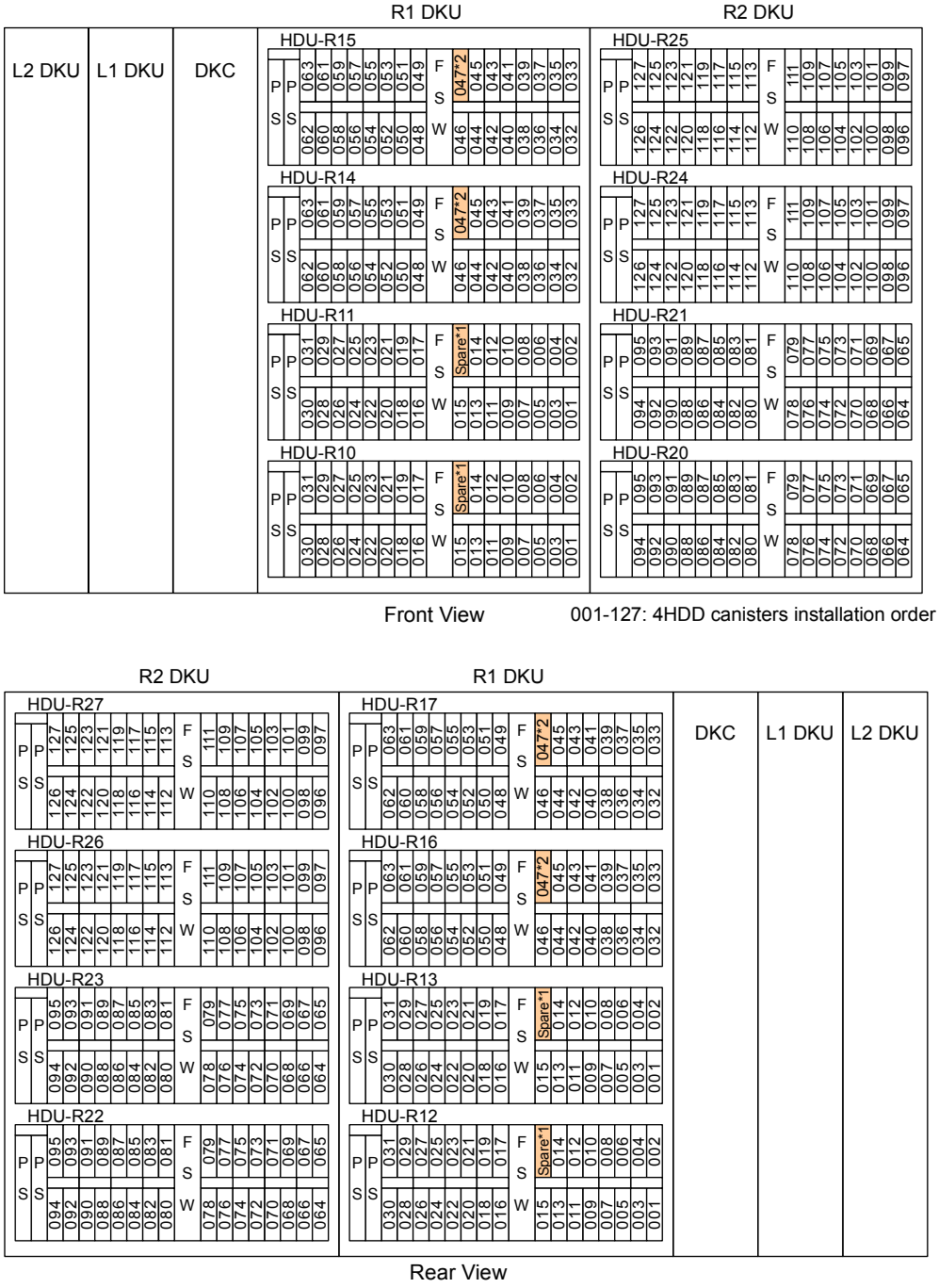

Fig. 4.1.7-3 (3D+1P) or (2D+2P) Data Drive/Parity Drive Expansion Sequence (1/2)

The relationship between HDDs installation order and RAID group number is shown in the Table 4.1.7-1.

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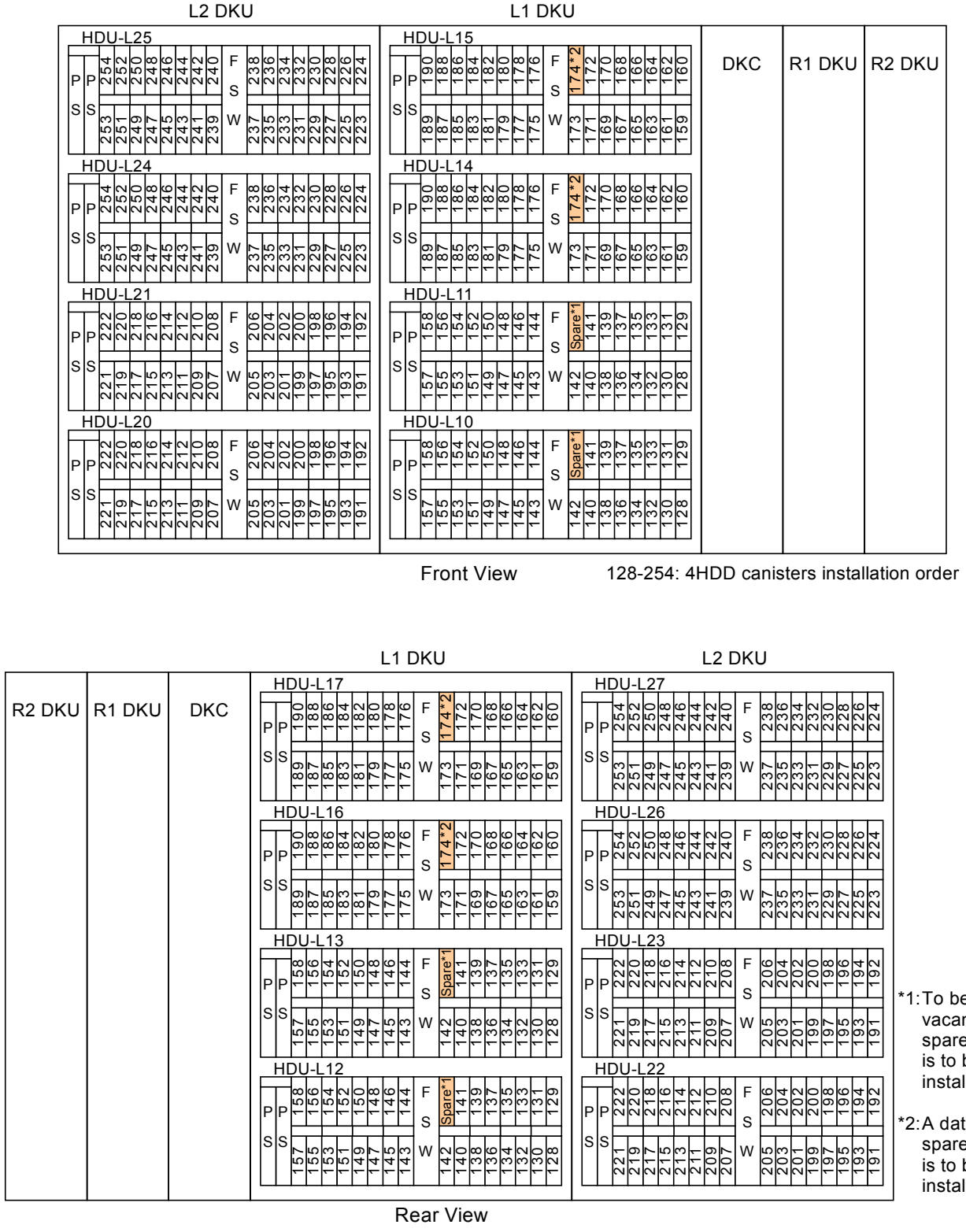

Fig. 4.1.7-3 (3D+1P) or (2D+2P) Data Drive/Parity Drive Expansion Sequence (2/2)

The relationship between HDDs installation order and RAID group number is shown in the Table 4.1.7-1.

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(ii) RAID5 (7D+1P)

Relations between the installation locations of the RAID groups and the RAID group numbers set through the SVP are shown in Table 4.1.7-2.

Table 4.1.7-2 Relation between HDDs installation order and RAID group number (7D+1P) (1/2)

DKC	R1 DKU			R2 DKU		
	RAID Group Installation Order	RAID Group No.	HDD Location	RAID Group Installation Order	RAID Group No.	HDD Location
1st / 2nd DKA Pair	001	1-1 , (2-1)	HDDR1x-00	032	5-1, (6-1)	HDDR2x-00
	002	1-2 , (2-2)	HDDR1x-01	033	5-2, (6-2)	HDDR2x-01
	003	1-3 , (2-3)	HDDR1x-02	034	5-3, (6-3)	HDDR2x-02
	004	1-4 , (2-4)	HDDR1x-03	035	5-4, (6-4)	HDDR2x-03
	005	1-5 , (2-5)	HDDR1x-04	036	5-5, (6-5)	HDDR2x-04
	006	1-6 , (2-6)	HDDR1x-05	037	5-6, (6-6)	HDDR2x-05
	007	1-7 , (2-7)	HDDR1x-06	038	5-7, (6-7)	HDDR2x-06
	008	1-8 , (2-8)	HDDR1x-07	039	5-8, (6-8)	HDDR2x-07
	009	1-9 , (2-9)	HDDR1x-08	040	5-9, (6-9)	HDDR2x-08
	010	1-10 , (2-10)	HDDR1x-09	041	5-10, (6-10)	HDDR2x-09
	011	1-11 , (2-11)	HDDR1x-0A	042	5-11, (6-11)	HDDR2x-0A
	012	1-12 , (2-12)	HDDR1x-0B	043	5-12, (6-12)	HDDR2x-0B
	013	1-13 , (2-13)	HDDR1x-0C	044	5-13, (6-13)	HDDR2x-0C
	014	1-14 , (2-14)	HDDR1x-0D	045	5-14, (6-14)	HDDR2x-0D
	015	1-15 , (2-15)	HDDR1x-0E	046	5-15, (6-15)	HDDR2x-0E
	(Spare) *1	1-16 , (2-16)	HDDR1x-0F	047	5-16, (6-16)	HDDR2x-0F
	016	1-17 , (2-17)	HDDR1x-10	048	5-17, (6-17)	HDDR2x-10
	017	1-18 , (2-18)	HDDR1x-11	049	5-18, (6-18)	HDDR2x-11
	018	1-19 , (2-19)	HDDR1x-12	050	5-19, (6-19)	HDDR2x-12
	019	1-20 , (2-20)	HDDR1x-13	051	5-20, (6-20)	HDDR2x-13
	020	1-21 , (2-21)	HDDR1x-14	052	5-21, (6-21)	HDDR2x-14
	021	1-22 , (2-22)	HDDR1x-15	053	5-22, (6-22)	HDDR2x-15
	022	1-23 , (2-23)	HDDR1x-16	054	5-23, (6-23)	HDDR2x-16
	023	1-24 , (2-24)	HDDR1x-17	055	5-24, (6-24)	HDDR2x-17
	024	1-25 , (2-25)	HDDR1x-18	056	5-25, (6-25)	HDDR2x-18
	025	1-26 , (2-26)	HDDR1x-19	057	5-26, (6-26)	HDDR2x-19
	026	1-27 , (2-27)	HDDR1x-1A	058	5-27, (6-27)	HDDR2x-1A
	027	1-28 , (2-28)	HDDR1x-1B	059	5-28, (6-28)	HDDR2x-1B
	028	1-29 , (2-29)	HDDR1x-1C	060	5-29, (6-29)	HDDR2x-1C
	029	1-30 , (2-30)	HDDR1x-1D	061	5-30, (6-30)	HDDR2x-1D
	030	1-31 , (2-31)	HDDR1x-1E	062	5-31, (6-31)	HDDR2x-1E
	031	1-32 , (2-32)	HDDR1x-1F	063	5-32, (6-32)	HDDR2x-1F

*1: To be left vacant or a spare disk is to be installed. *2: HDDL1x-00 (x: HDU Box No. 0, 1, 2, …, 7)

- Install RAID 5 (7D+1P) forming pairs using the same number of the two RAID groups (RAID groups 1 and 2, 3 and 4, 5 and 6, and 7 and 8) of RAID 5 (3D+1P).
  (Example: RAID group numbers 1-1 and 2-1)
  The types of HDDs to be installed in each pair must be the same.
- In the case of RAID 5 (7D+1P), only odd RAID numbers are displayed on the SVP. (Group numbers shown in parentheses in the table above are not displayed.)
- When RAID 5 (3D+1P) or RAID 1 (2D+2D) and RAID 5 (7D+1P) are configured mixture, note that duplicated group numbers are excluded.
  Example: When Group No. 1-1 is configured for RAID 5 (7D+1P), Group No. 2-1 is excluded and cannot be configure for RAID 5 (3D+1P).

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Table 4.1.7-2 Relation between HDDs installation order and RAID group number (7D+1P) (2/2)

L2 DKU			L1 DKU			DKC
RAID Group Installation Order	RAID Group No.	HDD Location	RAID Group Installation Order	RAID Group No.	HDD Location	
095	7-1, (8-1)	HDDL2x-00	064	3-1 , (4-1)	HDDL1x-00	
096	7-2, (8-2)	HDDL2x-01	065	3-2 , (4-2)	HDDL1x-01	
097	7-3, (8-3)	HDDL2x-02	066	3-3 , (4-3)	HDDL1x-02	
098	7-4, (8-4)	HDDL2x-03	067	3-4 , (4-4)	HDDL1x-03	
099	7-5, (8-5)	HDDL2x-04	068	3-5 , (4-5)	HDDL1x-04	
100	7-6, (8-6)	HDDL2x-05	069	3-6 , (4-6)	HDDL1x-05	
101	7-7, (8-7)	HDDL2x-06	070	3-7 , (4-7)	HDDL1x-06	
102	7-8, (8-8)	HDDL2x-07	071	3-8 , (4-8)	HDDL1x-07	
103	7-9, (8-9)	HDDL2x-08	072	3-9 , (4-9)	HDDL1x-08	
104	7-10, (8-10)	HDDL2x-09	073	3-10 , (4-10)	HDDL1x-09	
105	7-11, (8-11)	HDDL2x-0A	074	3-11 , (4-11)	HDDL1x-0A	
106	7-12, (8-12)	HDDL2x-0B	075	3-12 , (4-12)	HDDL1x-0B	
107	7-13, (8-13)	HDDL2x-0C	076	3-13 , (4-13)	HDDL1x-0C	
108	7-14, (8-14)	HDDL2x-0D	077	3-14 , (4-14)	HDDL1x-0D	
109	7-15, (8-15)	HDDL2x-0E	078	3-15 , (4-15)	HDDL1x-0E	3rd / 4th
110	7-16, (8-16)	HDDL2x-0F	(Spare) *1	3-16 , (4-16)	HDDL1x-0F	DKA
111	7-17, (8-17)	HDDL2x-10	079	3-17 , (4-17)	HDDL1x-10	Pair
112	7-18, (8-18)	HDDL2x-11	080	3-18 , (4-18)	HDDL1x-11	
113	7-19, (8-19)	HDDL2x-12	081	3-19 , (4-19)	HDDL1x-12	
114	7-20, (8-20)	HDDL2x-13	082	3-20 , (4-20)	HDDL1x-13	
115	7-21, (8-21)	HDDL2x-14	083	3-21 , (4-21)	HDDL1x-14	
116	7-22, (8-22)	HDDL2x-15	084	3-22 , (4-22)	HDDL1x-15	
117	7-23, (8-23)	HDDL2x-16	085	3-23 , (4-23)	HDDL1x-16	
118	7-24, (8-24)	HDDL2x-17	086	3-24 , (4-24)	HDDL1x-17	
119	7-25, (8-25)	HDDL2x-18	087	3-25 , (4-25)	HDDL1x-18	
120	7-26, (8-26)	HDDL2x-19	088	3-26 , (4-26)	HDDL1x-19	
121	7-27, (8-27)	HDDL2x-1A	089	3-27 , (4-27)	HDDL1x-1A	
122	7-28, (8-28)	HDDL2x-1B	090	3-28 , (4-28)	HDDL1x-1B	
123	7-29, (8-29)	HDDL2x-1C	091	3-29 , (4-29)	HDDL1x-1C	
124	7-30, (8-30)	HDDL2x-1D	092	3-30 , (4-30)	HDDL1x-1D	
125	7-31, (8-31)	HDDL2x-1E	093	3-31 , (4-31)	HDDL1x-1E	
126	7-32, (8-32)	HDDL2x-1F	094	3-32 , (4-32)	HDDL1x-1F	

*1: To be left vacant or a spare disk is to be installed. *2: HDDL1x-00 (x: HDU Box No. 0, 1, 2, …, 7)

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(1) Make sure of the location where the RAID group is de-installed and that where the HDD canister is to be removed.

No.	Model Number	Model Name	Data and Parity
1	DKU-F455I-36K4/72J4/72K4/146J4/146JF/146JQ	4 HDD Canisters x 2sets	Data and Parity Drive

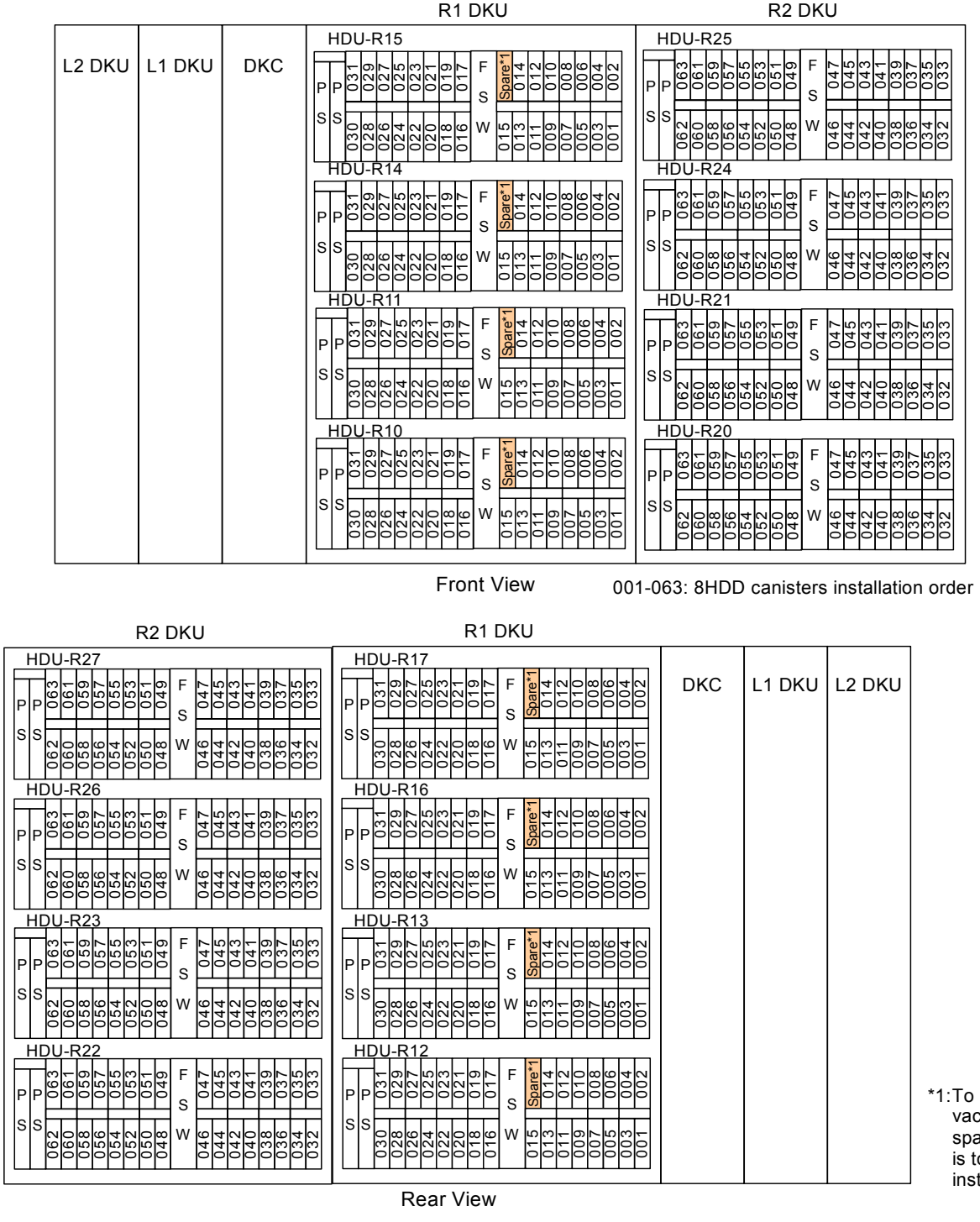

Fig. 4.1.7-4 (7D+1P) Data Drive/Parity Drive Expansion Sequence (1/2)

The relationship between HDDs installation order and RAID group number is shown in the Table 4.1.7-2.

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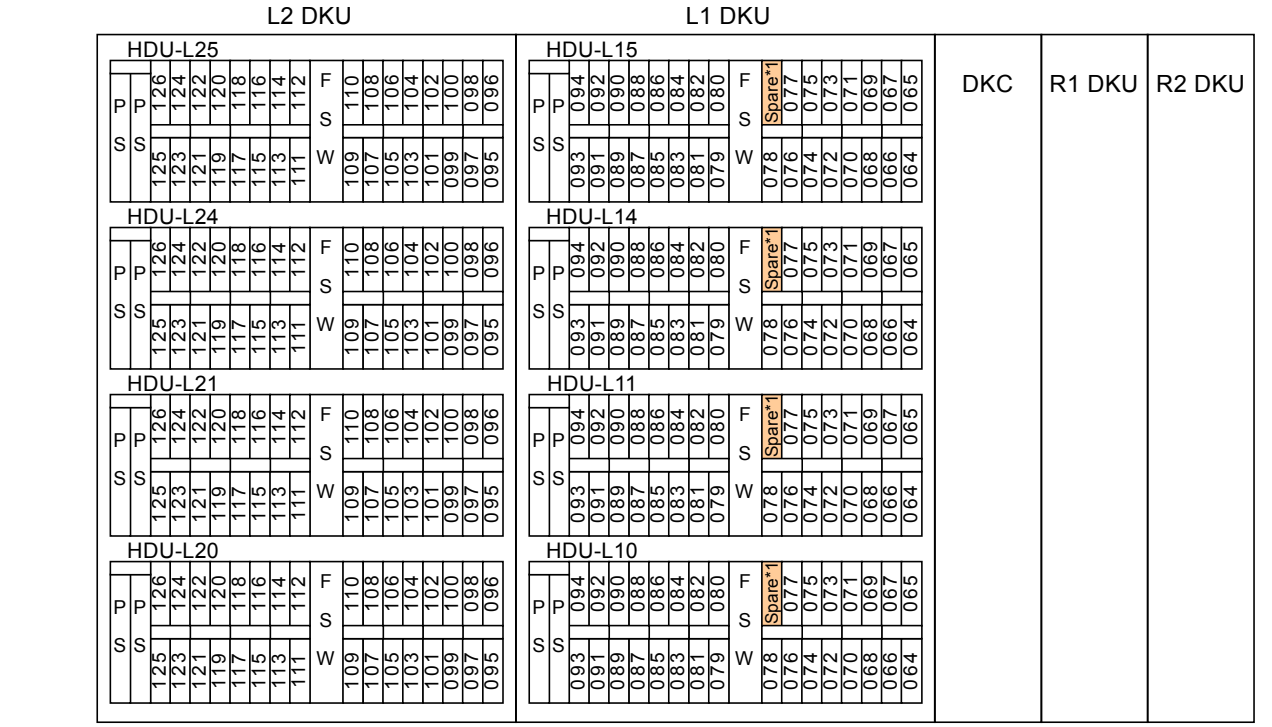

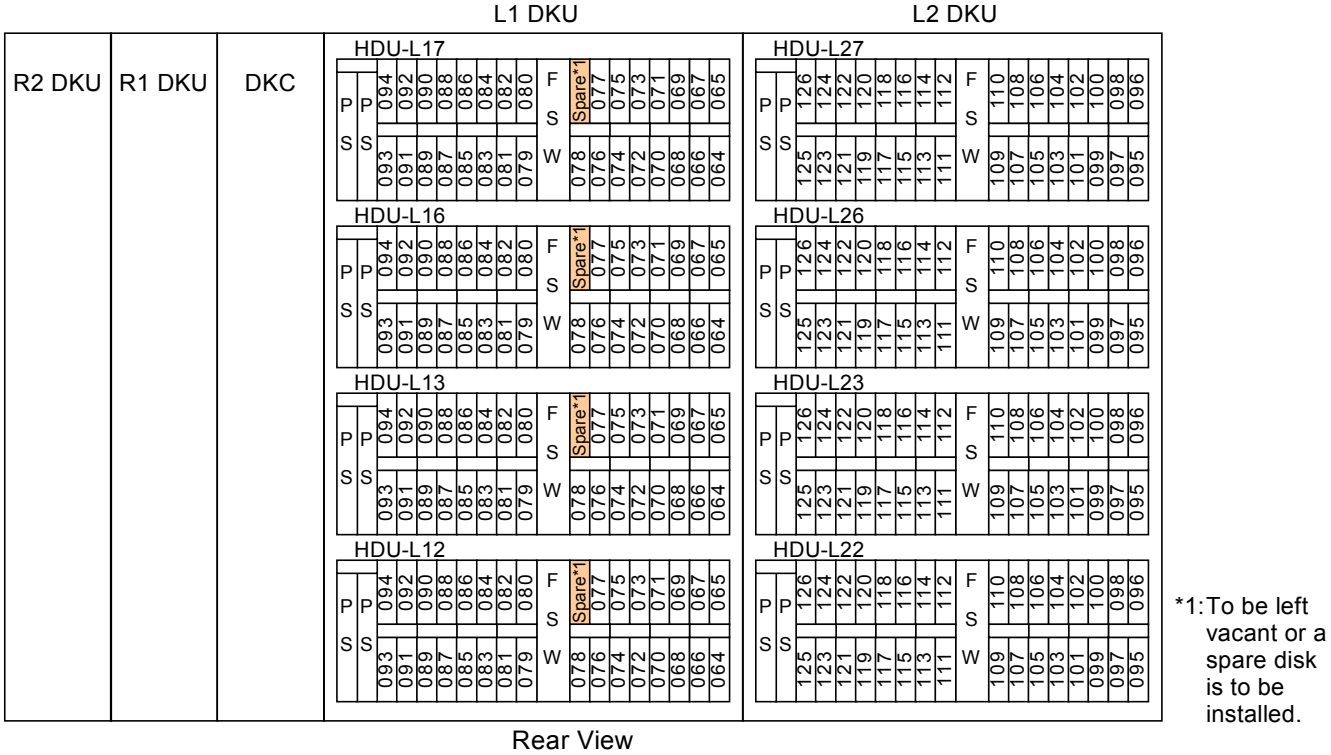

Fig. 4.1.7-4 (7D+1P) Data Drive/Parity Drive Expansion Sequence (2/2)

The relationship between HDDs installation order and RAID group number is shown in the Table 4.1.7-2.

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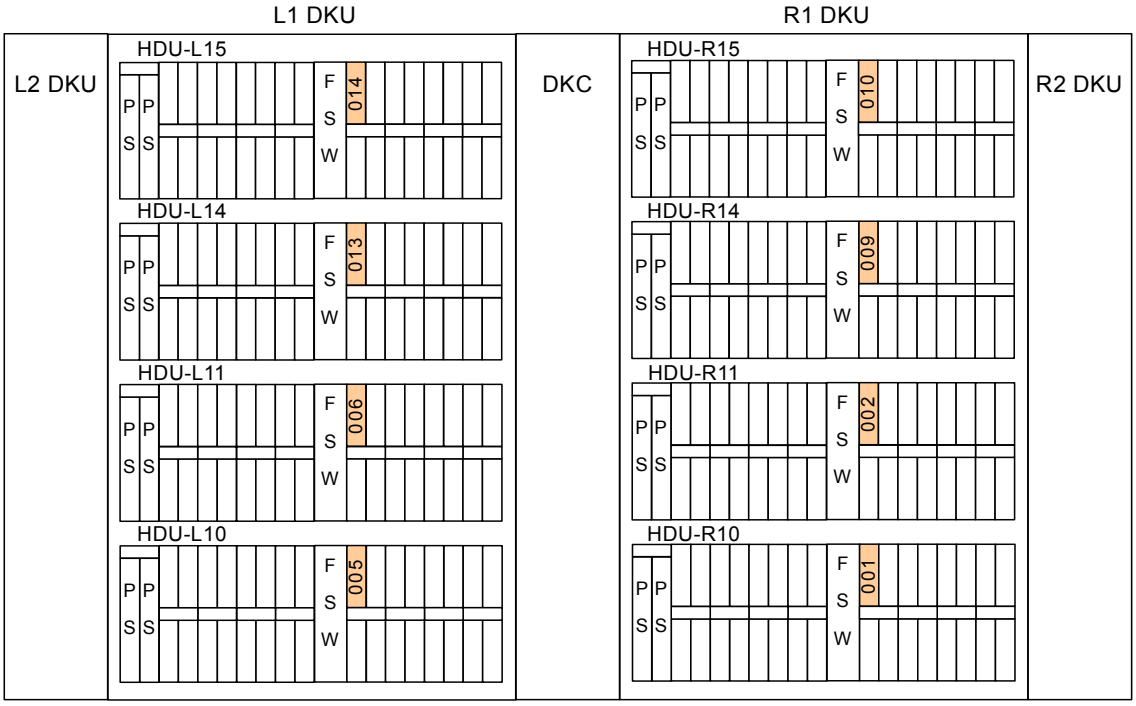
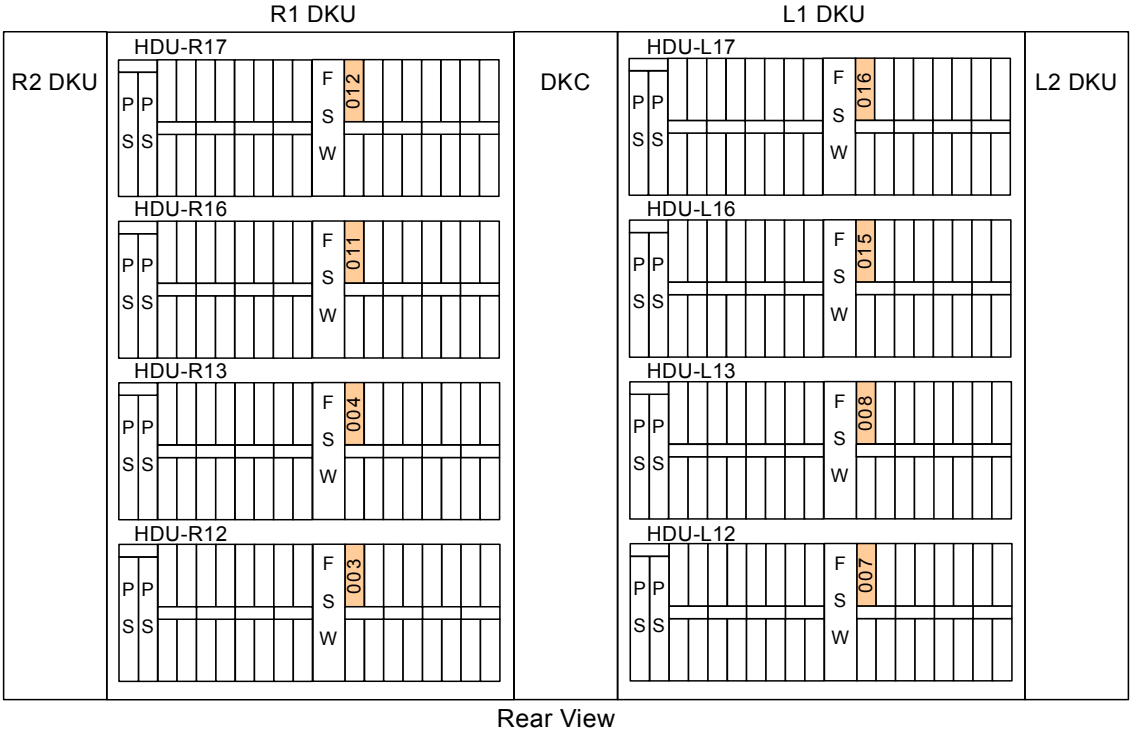
(iii) Spare HDD

No.	Model Number	Model Name	Data and Parity
1	DKU-F455I-36K1/72J1/72K1/146J1/146JS/146JM	1 HDD Canister	Spare Drive



Front View

001-016: Spare HDD canister installation order



Rear View

Fig. 4.1.7-5 Spare Drive Expansion Sequence

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4-2 Confirmation of Shut Down LED.

a. Confirm the Shut Down LED on the JMP PCB. (It should be RED.)

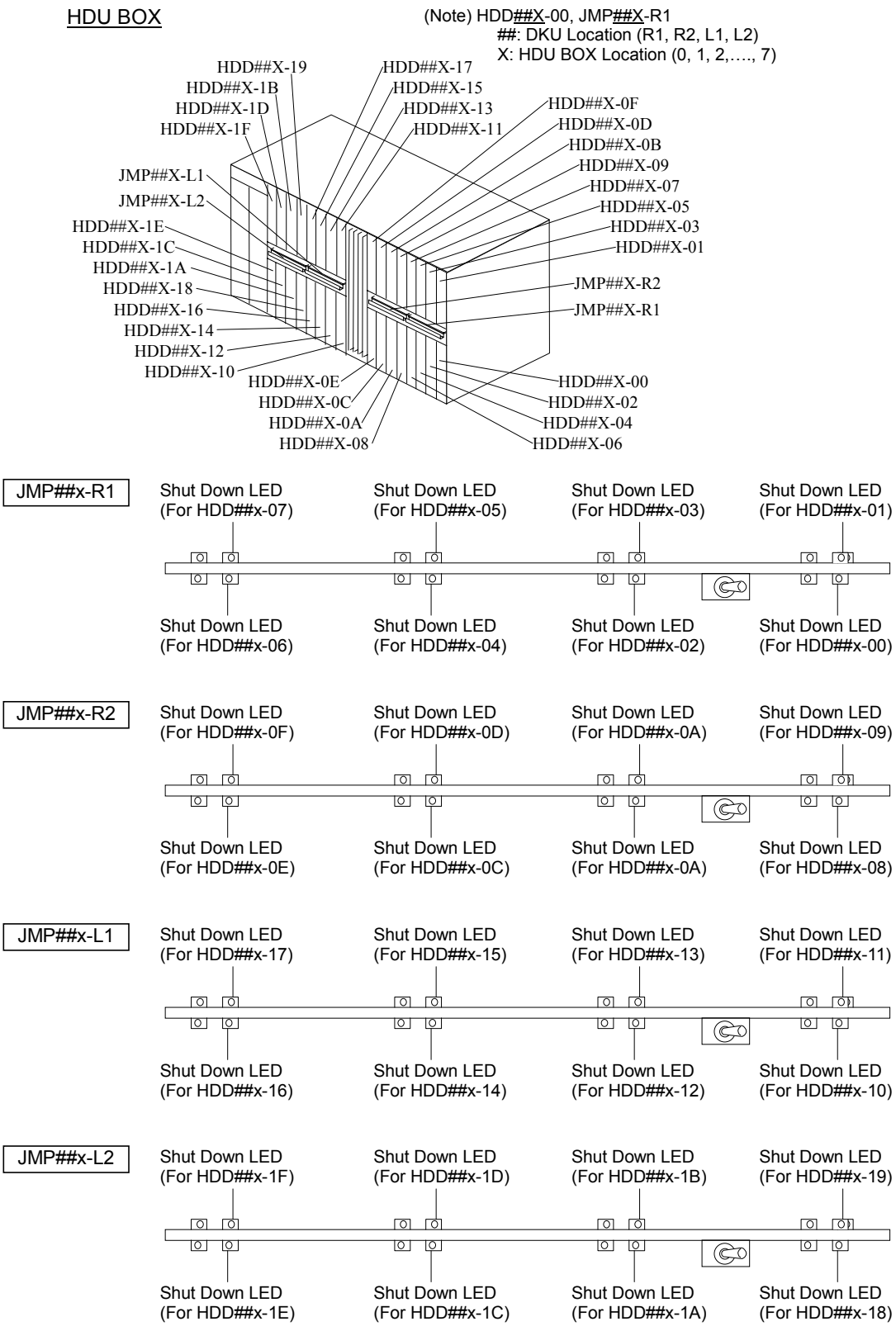

Fig. 4.1.7-6 Location of Shut Down LED

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4-3 De-installation of the HDD canister.

Notice:
Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

CAUTION

A system down may be caused by a removal of an HDD canister other than that to be removed. Make sure that it is the HDD canister to be removed.

a. After pushing up the stopper on the front side of the HDD canister, pull the handle toward you to remove the HDD canister.
b. Insert the dummy canister to the HDU Box.

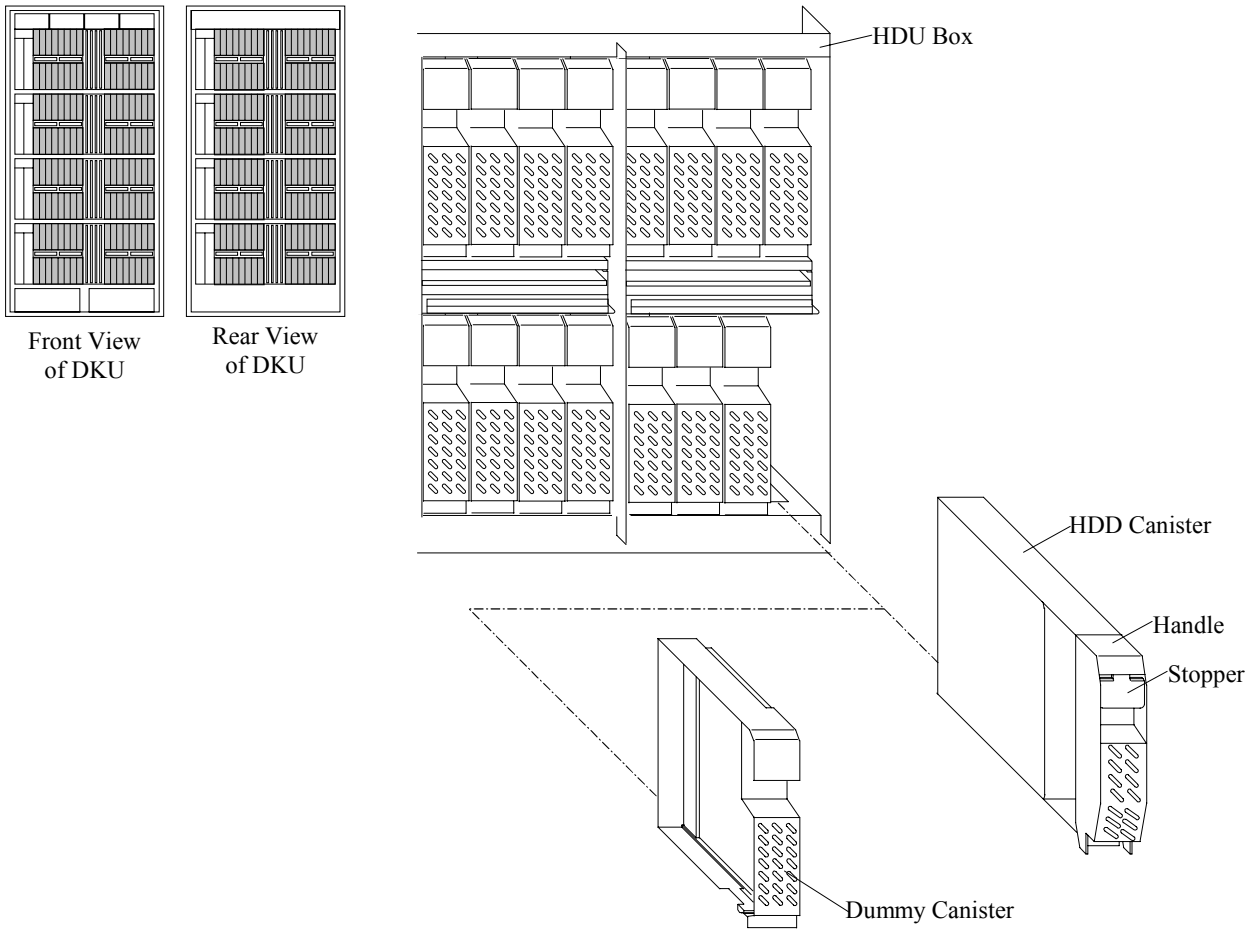

Fig. 4.1.7-7 De-Installation of HDD Canister

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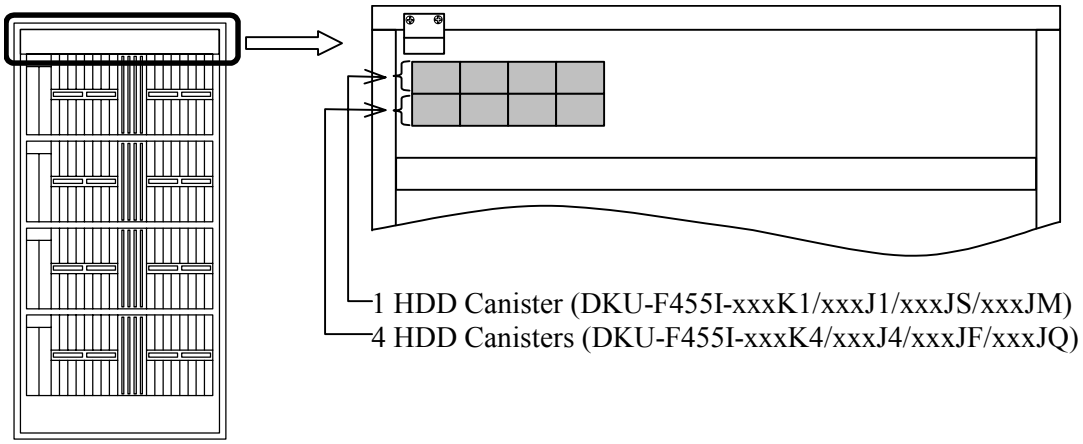
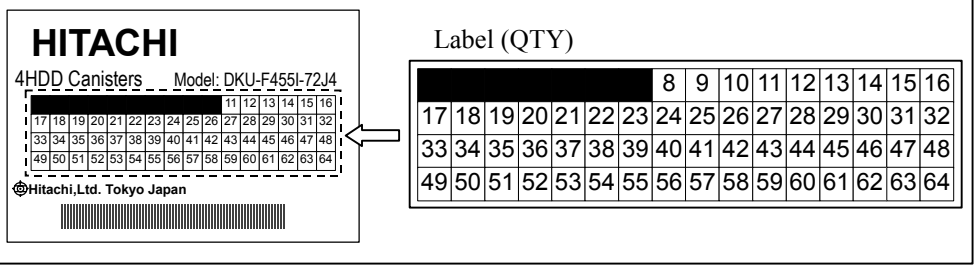
4-4 Change of the nameplate.

a. Affix a necessary portion of the Label (QTY)(Accessory of DKC; DWG No.3264290-1) in layers on the name plate and paint out numbers less than the number concerned with black oil felt pen.



[Example]

When DKU-F455I-72J4s are removed from 10 sets to 7sets



							8	9	10	11	12	13	14	15	16
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64

Fig. 4.1.7-8 Change of Nameplate

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5. De-Installation Procedure of DEV Interface Cable 2 (2/3) (DKU-F455I-EXC)

Caution:
When the DEV interface cable is removed from the FSW PCB, the power applied to the DKU to be removed is turned off automatically for each HDU Box from which the cable is removed.

Between HDU-L10-L17 and HDU-L20-L27

a. Disconnect the DEV interface cables from the FSW PCBs in the DKU-L1 frame referring to figures 4.1.7-9 and 4.1.7-10.

⚠ CAUTION

A serious failure occurs if a wrong cable or connector is removed.
Since a label bearing a connection destination is affixed on each cable or connector to be removed, work very carefully referring to it and the wiring diagram.

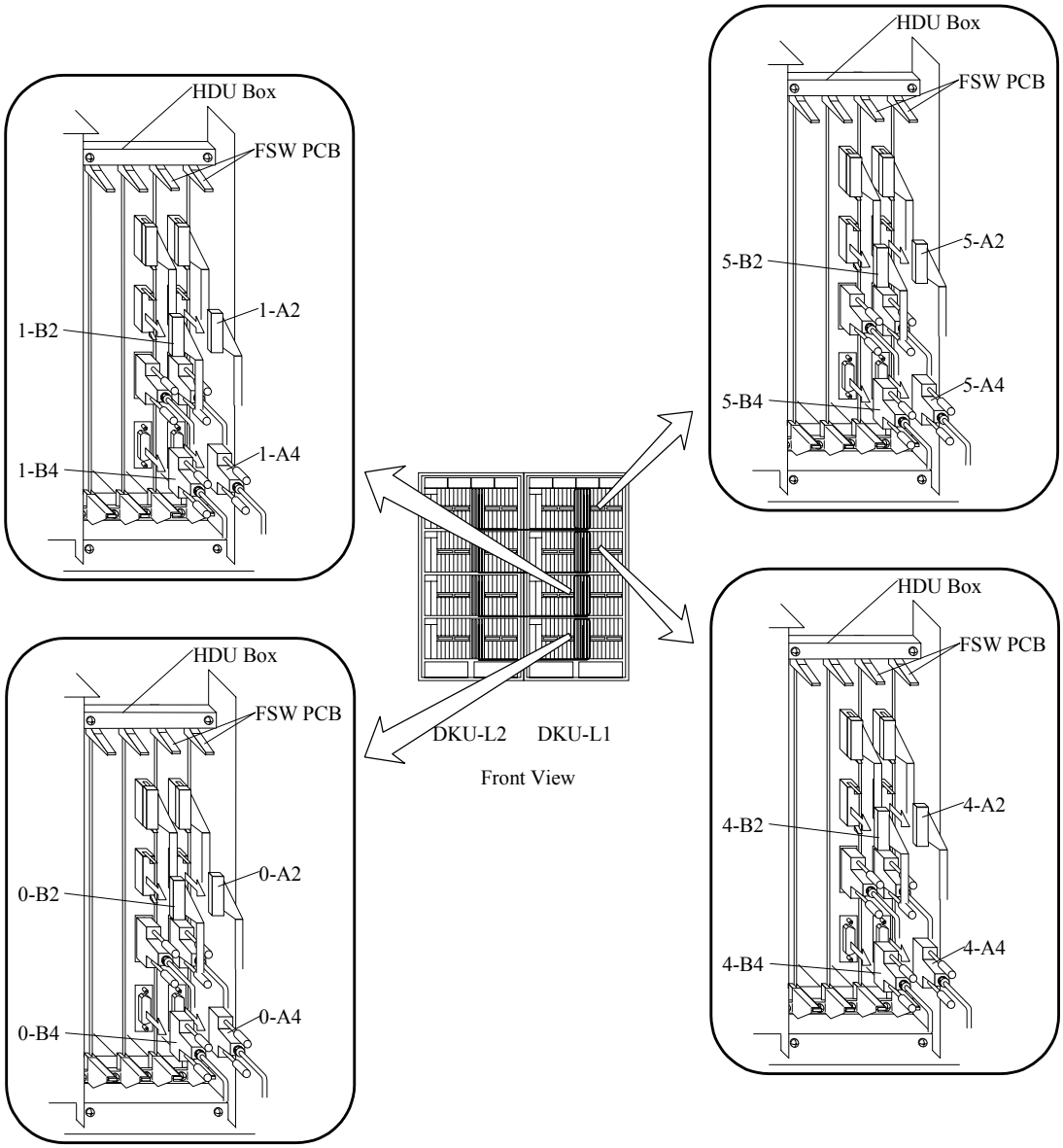

Fig. 4.1.7-9 Connection of the DEV Interface Cables

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⚠ CAUTION

A serious failure occurs if a wrong cable or connector is removed.
Since a label bearing a connection destination is affixed on each cable or connector to be removed, work very carefully referring to it and the wiring diagram.

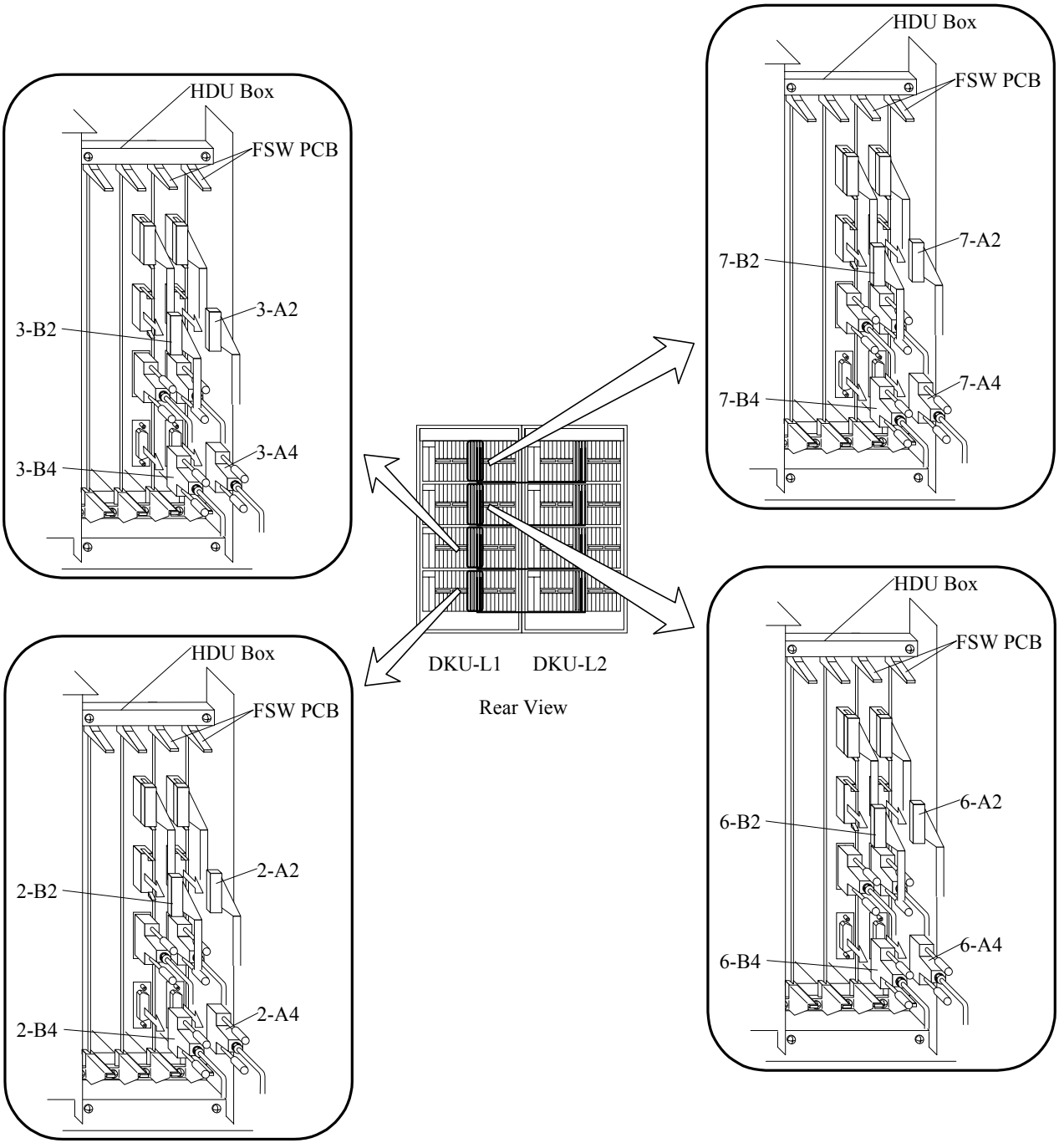

Fig. 4.1.7-10 Connection of the DEV Interface Cables

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6. De-Installation Procedure of Disk Adapter

When the additional disk adapter is not to be removed, go to Step 7, “SVP post procedure”.

Note: Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

6-1 Confirmation of the Shut Down LED (Only Non-Disruptive Procedure)

a. Confirm that Shut Down LED is on. (Fig. 4.1.7-11) If the LED is not on, connect the Maintenance Jumper to the Shut Down Connector.

⚠ CAUTION

A system down may be caused if the Maintenance jumper is inserted in a PCB other than that to be removed. Make sure that it is the PCB to be removed.

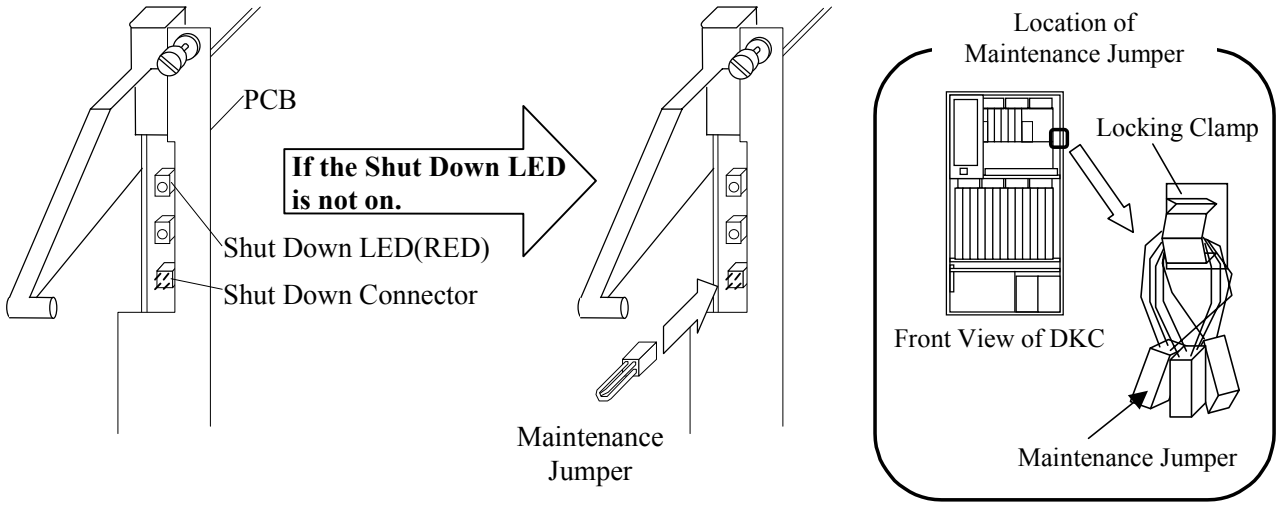

Fig. 4.1.7-11 Shut Down LED

Table 4.1.7-3 Removal Location (Rear of the unit)

Cluster	CL2							CL1				
Slot No.	M	L	K	J	H	G	F	E	D	C	B	A
Function	CSW	DKA	DKA	DKA	DKA	CACHE	CACHE	DKA	DKA	DKA	DKA	CSW
Location No.	CSW -2M	DKA -2L	DKA -2K	DKA -2J	DKA -2H	CACHE -2G	CACHE -2F	DKA -1E	DKA -1D	DKA -1C	DKA -1B	CSW -1A
Order of addition		Add.3	Add.2	Add.1	Basic			Add.3	Add.2	Add.1	Basic	
Number of DKAs set through the SVP		–	–	–	2			–	–	–	2	
		–	–	4				–	–	4		
		–	6					–	6			
		8						8				

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6-2 Disconnection of the DEV Interface cables

In case of Add.1

a. Disconnect the cable from the sub-edge of PCB.

⚠ CAUTION

A serious failure occurs if a wrong cable or connector is removed.
Since a label bearing a connection destination is affixed on each cable or connector to be removed, work very carefully referring to it and the wiring diagram.

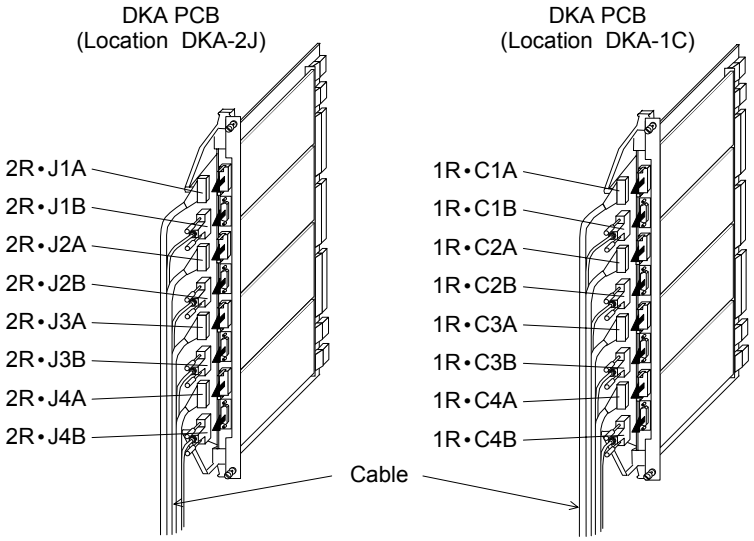

Fig. 4.1.7-12 Disconnection of DEV Interface Cables (Add.1)

In case of Add.2

a. Disconnect the cable from the sub-edge of PCB.

⚠ CAUTION

A serious failure occurs if a wrong cable or connector is removed.
Since a label bearing a connection destination is affixed on each cable or connector to be removed, work very carefully referring to it and the wiring diagram.

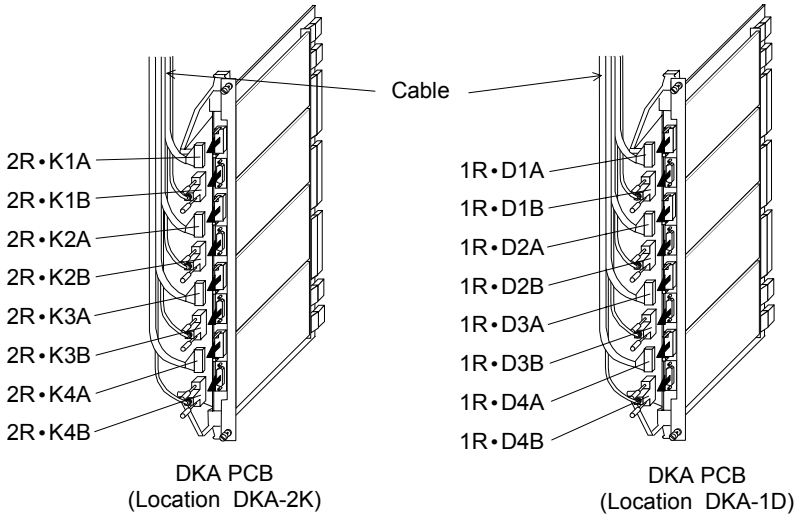

Fig. 4.1.7-13 Disconnection of DEV Interface Cables (Add.2)

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In case of Add.3

a. Disconnect the cable from the sub-edge of PCB.

⚠ CAUTION

A serious failure occurs if a wrong cable or connector is removed.
Since a label bearing a connection destination is affixed on each cable or connector to be removed, work very carefully referring to it and the wiring diagram.

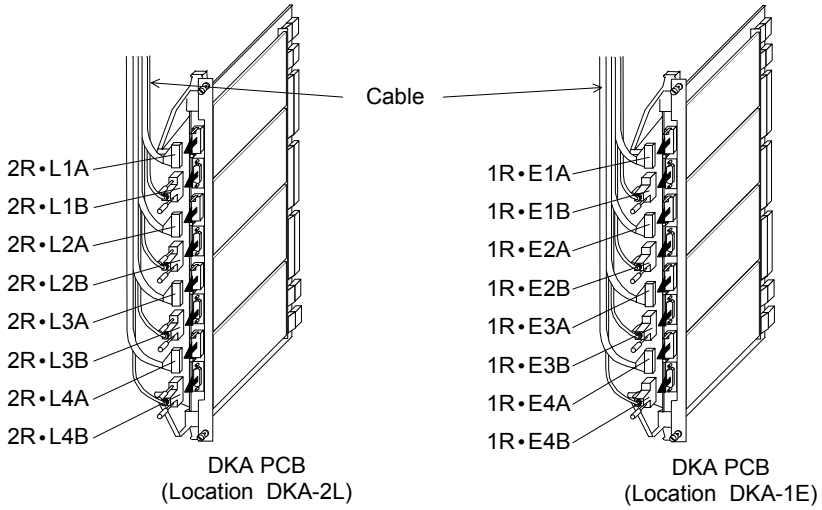

Fig.4.1.7-14 Disconnection of DEV Interface Cable (Add.3)

6-3 Removal of the PCBs

a. Remove the two screws and remove the PCBs from the correct locations in the Rear Logic Box referring to Fig. 4.1.7-15.
b. Attach the dummy plates referring to Fig. 4.1.7-16.

⚠ CAUTION

A serious failure occurs if a wrong PCB is removed.
Remove the PCB after making sure that the Shut Down LED is on.

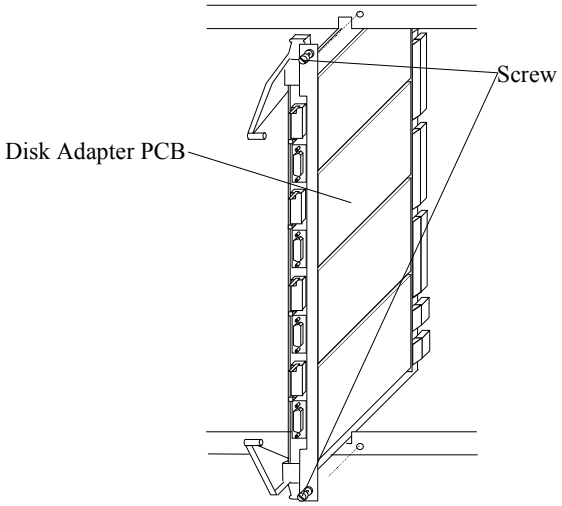

Fig. 4.1.7-15 Removal of PCB

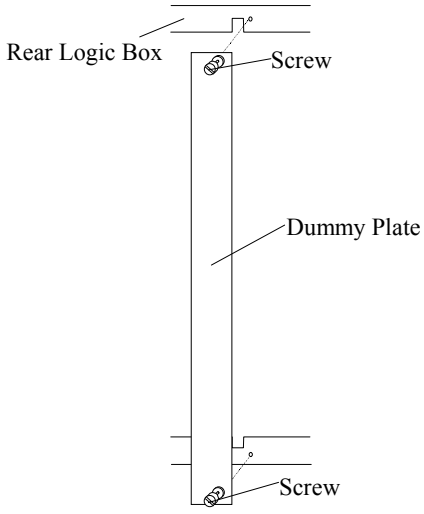

Fig. 4.1.7-16 Attachment of Dummy Plate

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6-4 Removal of the Nameplate

a. Remove the nameplate from the Rear Logic Box cover.

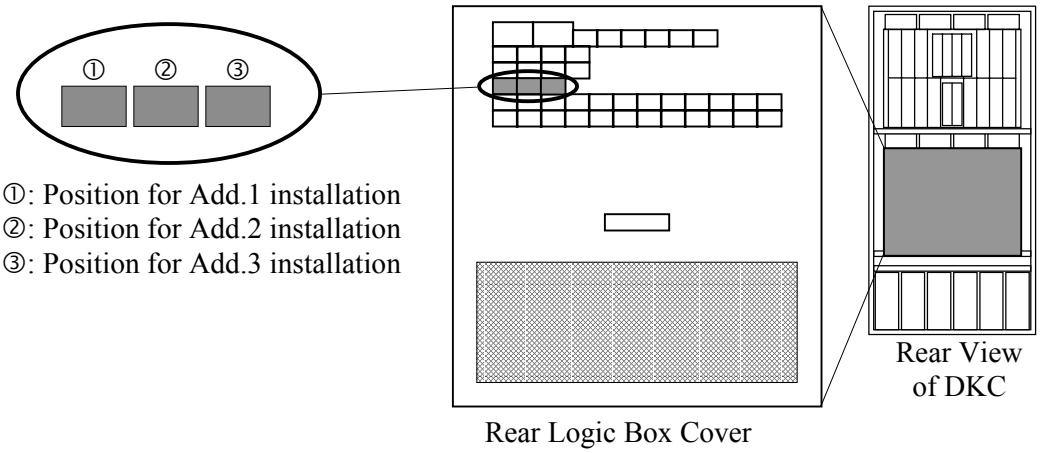

Fig. 4.1.7-17 Removal of Nameplate

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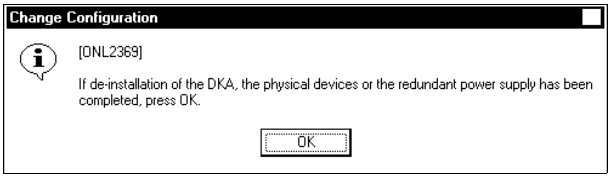
7. SVP post procedure

1.

Select (CL) [OK] in response to "If de-installation of the DKA, the physical devices or the redundant power supply has been completed, press OK." shown in the right figure.



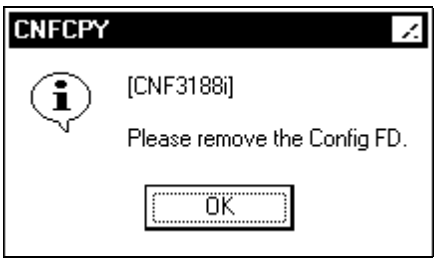
2. <Check the end of de-installation procedure>
"Renewal process has completed. Please check subsystem status." shown in the right figure displayed. Select (CL) [OK] in response to this message.

3.

"Reading subsystem configuration data..." is displayed.
"Please insert the Config FD in the FDD." is displayed.
Insert the configuration FD into FDD, select (CL) [OK].

4.

When this procedure is completed, message "Please remove the Config FD." is displayed.
Remove the FD, select (CL) [OK].



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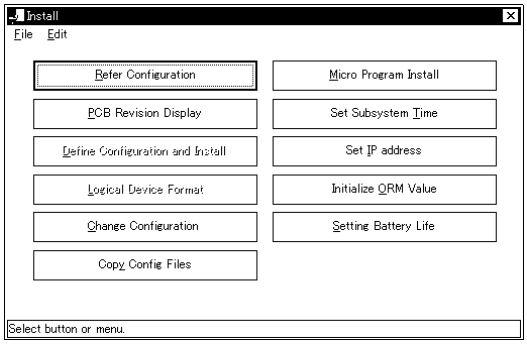
5.

After the procedure is completed, return to ‘Install’.
Select (CL) [File]-[Exit].



6. <Mode Change>
Change the mode to View Mode.

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10. De-Installation Procedure of DEV Interface Cable 2 (3/3) (DKU-F455I-EXC)

Between HDU-L10-L17 and HDU-L20-L27

a. Disconnect the DEV interface cables from the FSW PCBs in the DKU-L2 frame referring to Fig. 4.1.7-18 through Fig. 4.1.7-21.
b. Take out the DEV interface cable, which has been removed from the FSW PCB, from the DKU frame.

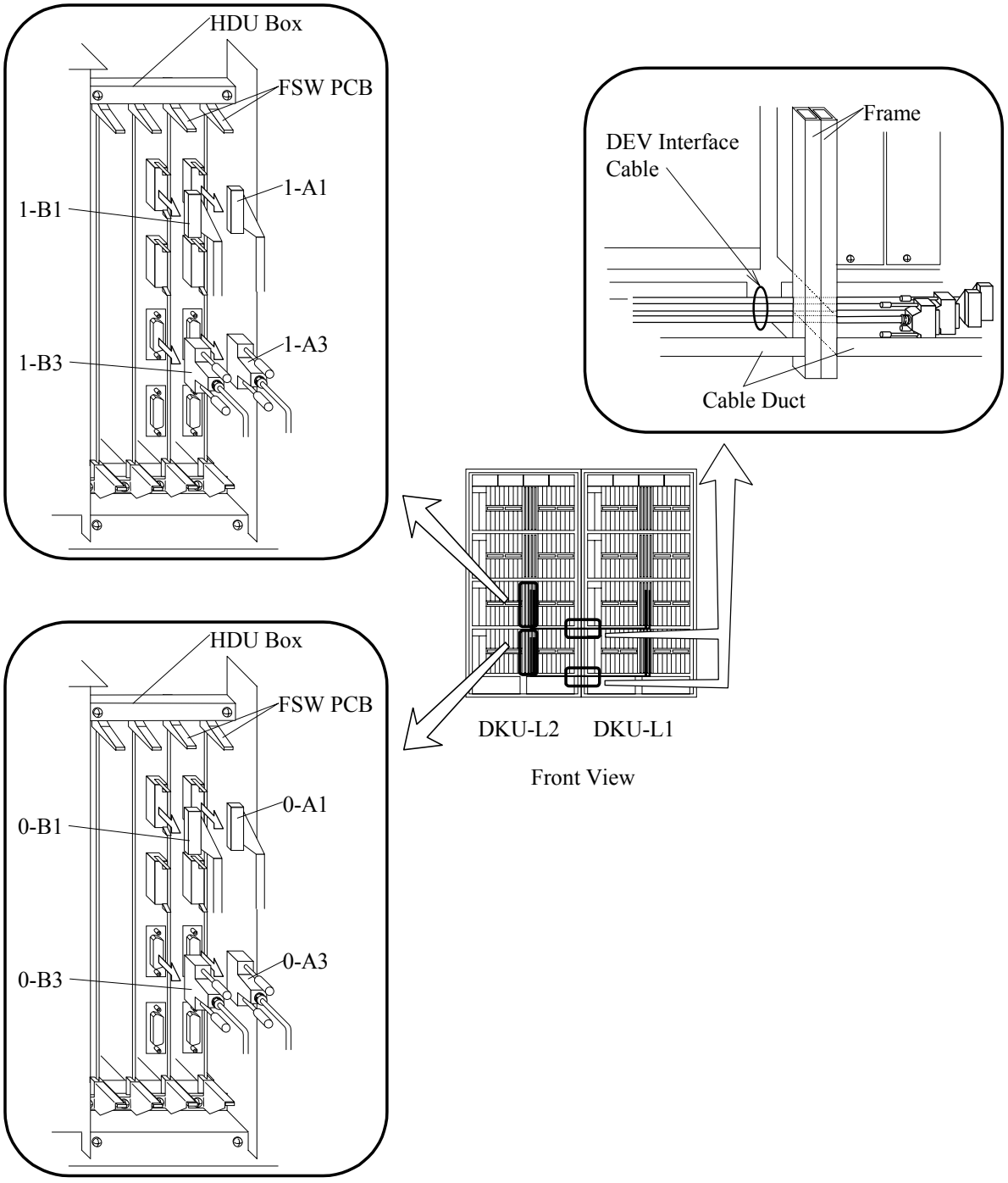

Fig. 4.1.7-18 Disconnection of the DEV Interface Cables

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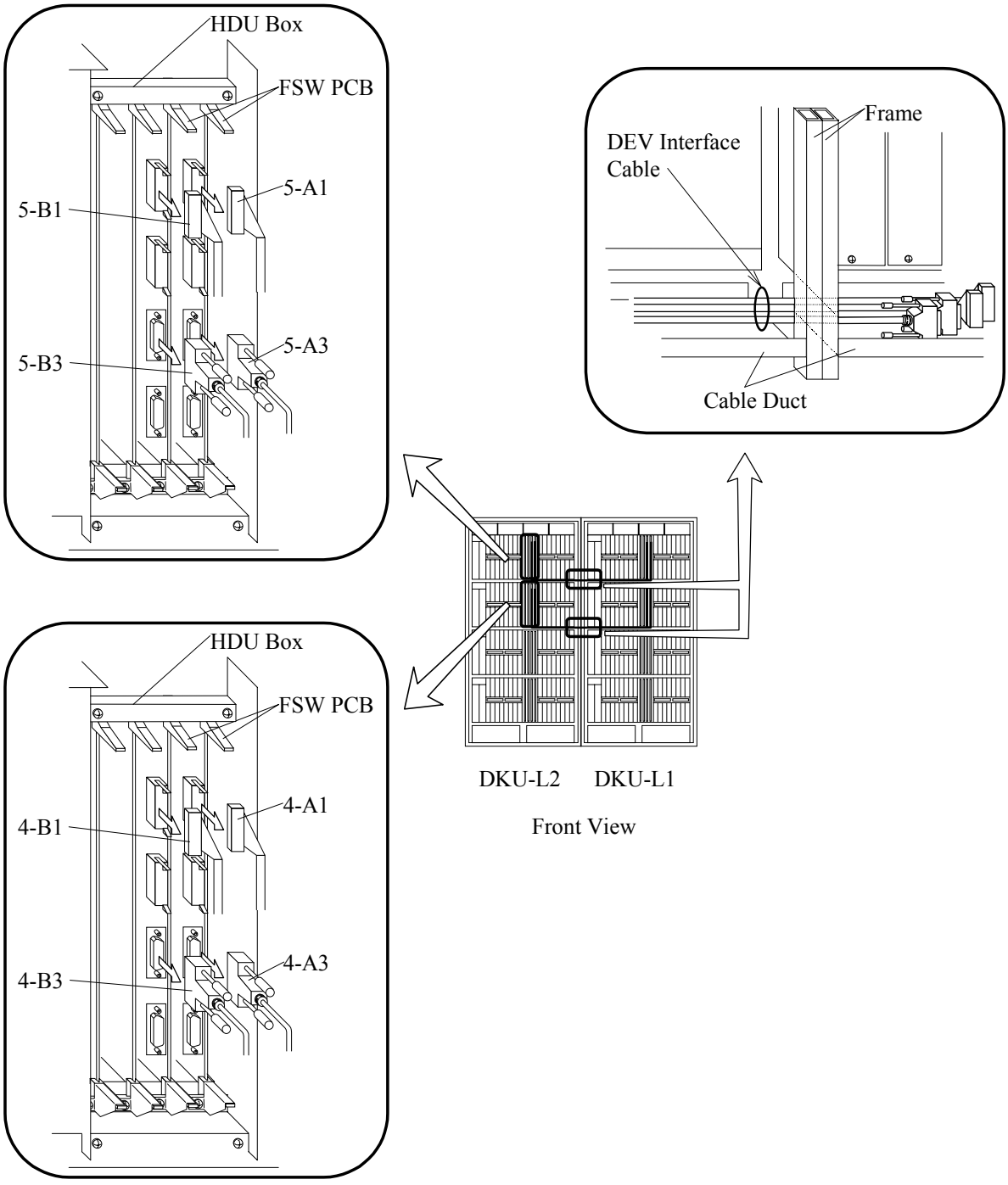

Fig. 4.1.7-19 Disconnection of the DEV Interface Cables

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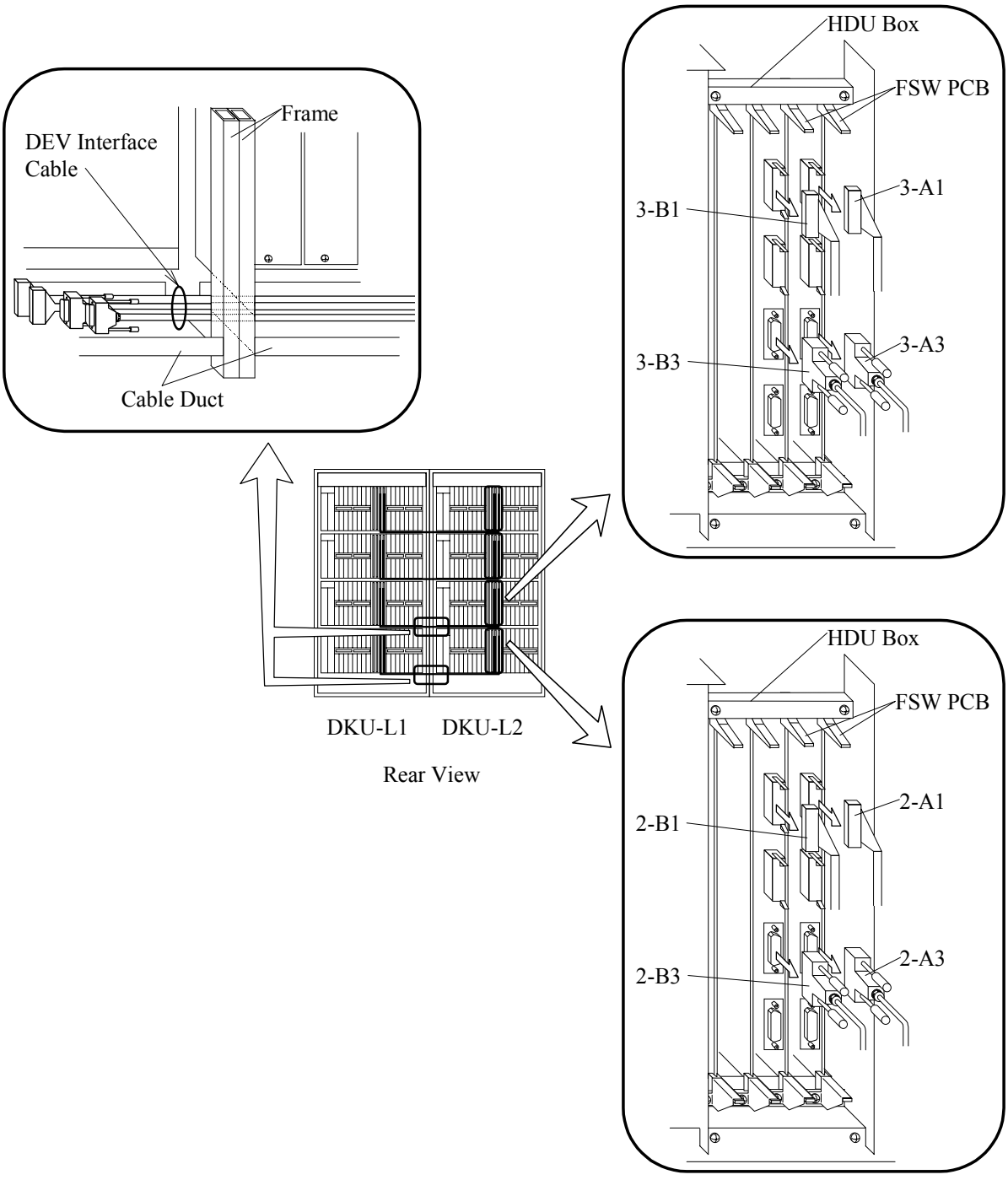

Fig. 4.1.7-20 Disconnection of the DEV Interface Cables

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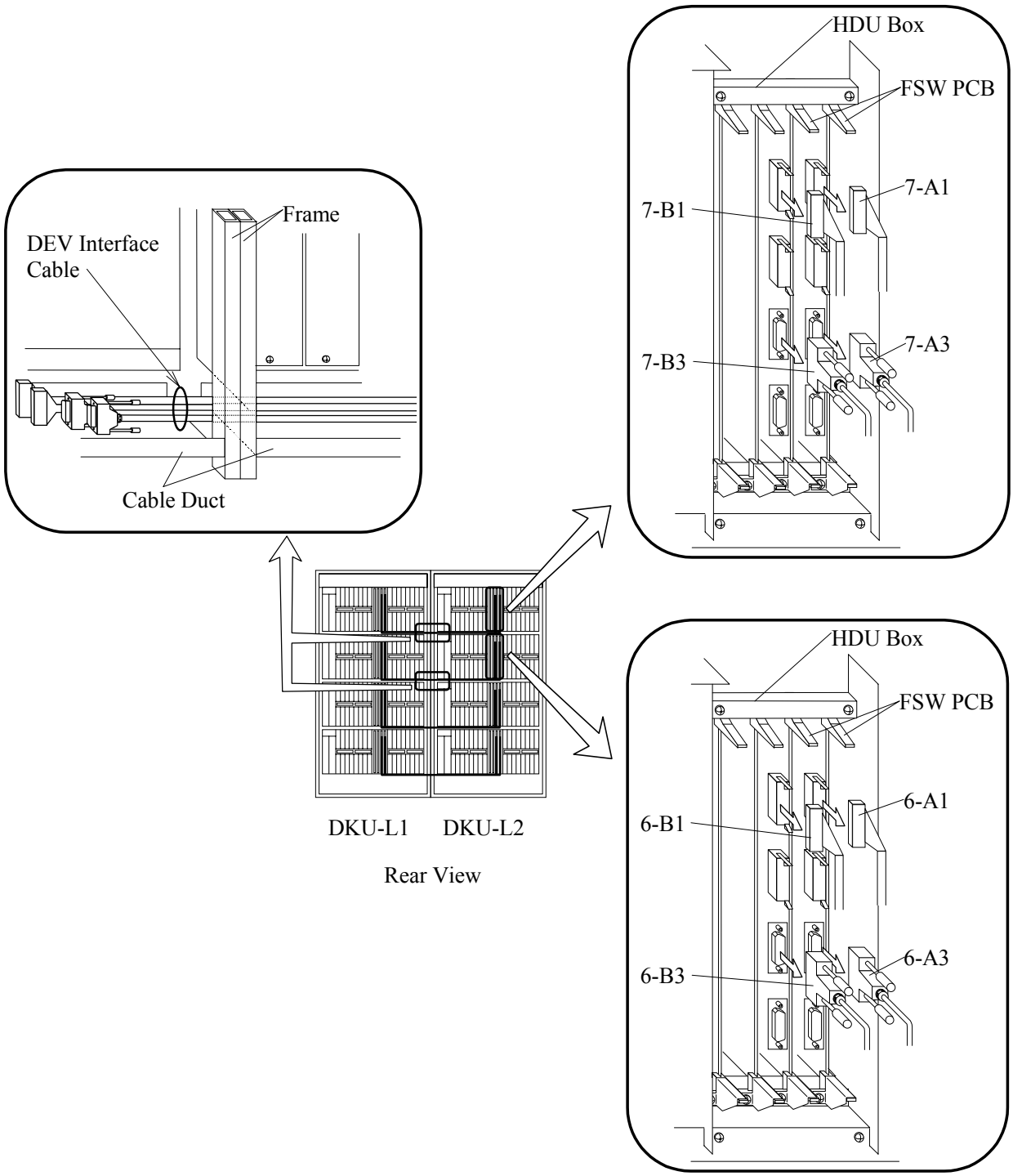

Fig. 4.1.7-21 Disconnection of the DEV Interface Cables

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c. Attach the cable covers with the screws.

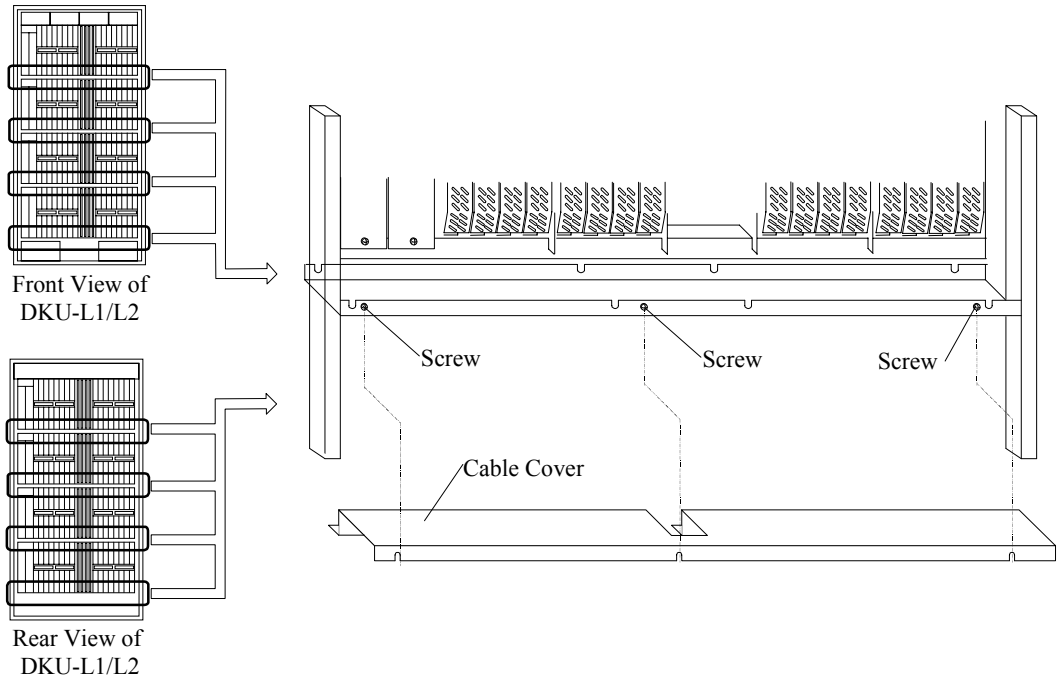

Fig. 4.1.7-22 Attachment of the Cable Cover

d. Attach the cable covers with the screws.

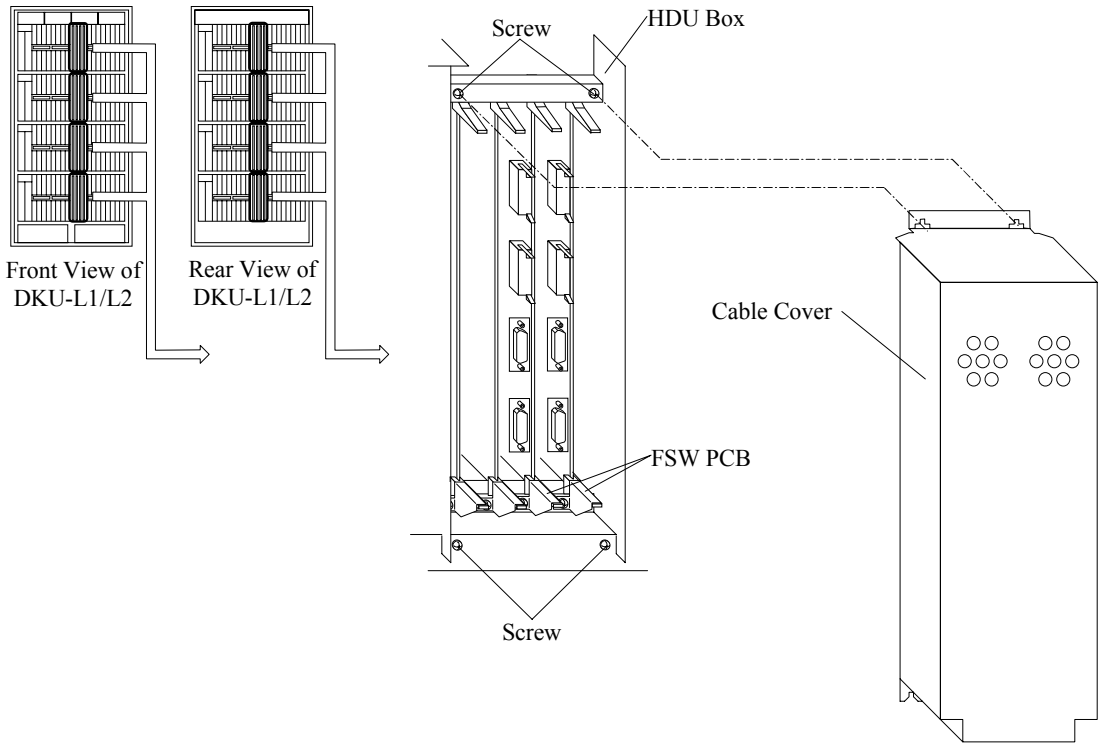

Fig. 4.1.7-23 Attachment of the Cable Cover

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e. Remove the nameplate from the DKU-L2 frame.

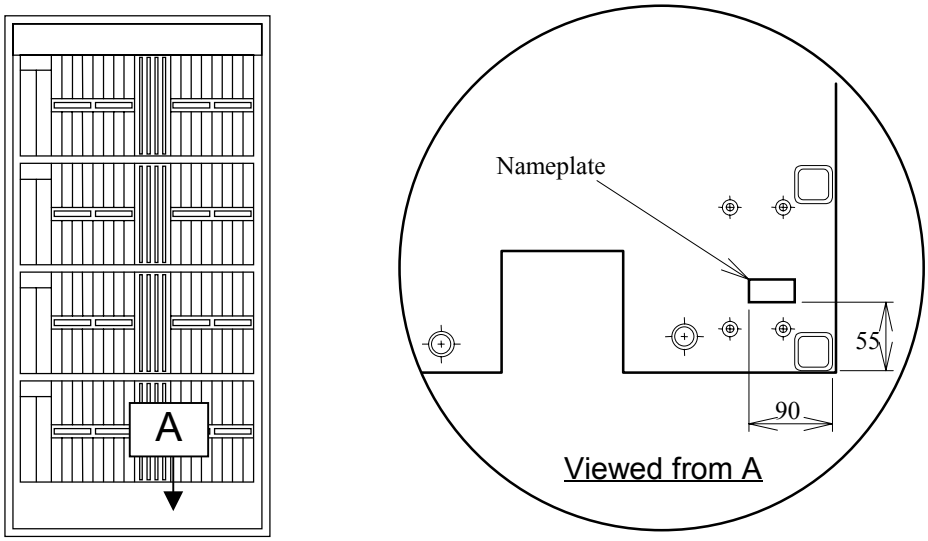

Fig. 4.1.7-24 Removal of the Nameplate

f. Return to the work table (INST02-60) and perform rest of the works.

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4.1.8 When performing removal of the data/spare HDD canister, DKA, and DEV interface cable that accompanies the removal of the DKU-R2 and DKU-L1 frames (DKC-F460I-200/L1C, DKU-F455I-36K4/36K1/72J4/72J1/72K4/72K1/146J4/146J1/146JF/146JS/146JQ/146JM/EXC)

1. De-Installation Procedure of DEV Interface Cable 2 (1/3) (DKU-F455I-EXC)

> Caution:
> When the main circuit breaker of the DKU is turned off before the DEV interface cable (DKU-F455I-EXC) is removed, the DKU Voltage Alarm is detected (the ALARM LED on the operator panel comes on and the SIM=BF20XX or BF22XX is issued). Therefore, turn off the main circuit breaker of the DKU after removing the DEV interface cable. The turning off of the DKU main circuit breaker is to be done later in another procedure explained on page INST04-DKU-10.

Between HDU-R10-R17 and HDU-R20-R27

a. Loosen the screws and remove the cable covers from the DKU frames.

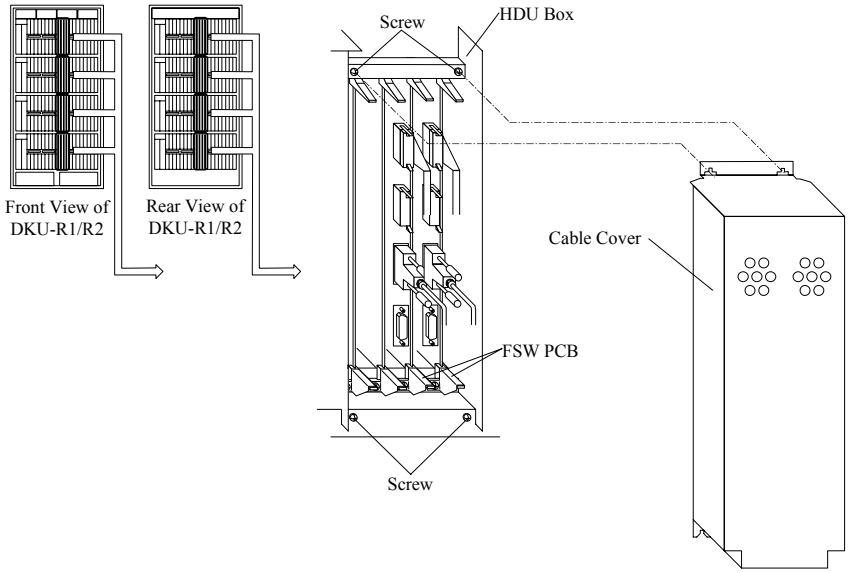

Fig. 4.1.8-1 Removal of Cable Covers

b. Loosen the screws and remove the cable covers from the DKU frames.

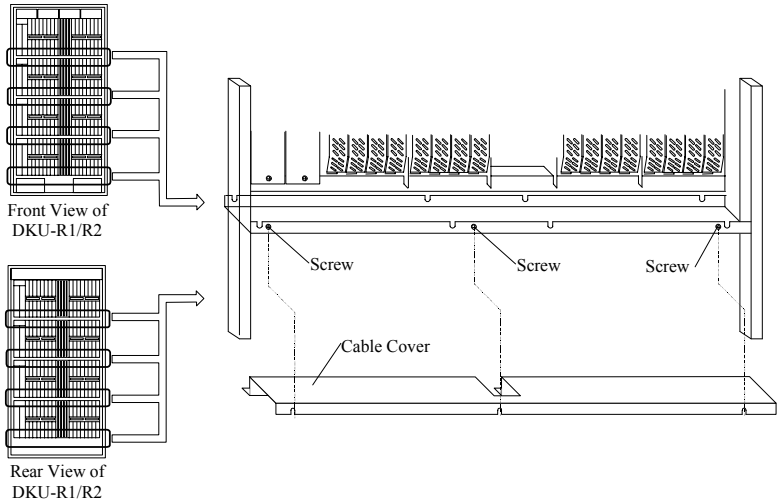

Fig.4.1.8-2 Removal of Cable Covers

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2. De-Installation Procedure of DEV Interface Cable 1 (1/3) (DKC-F460I-L1C)

a. Loosen the screws and remove the cable covers from the DKU frames.

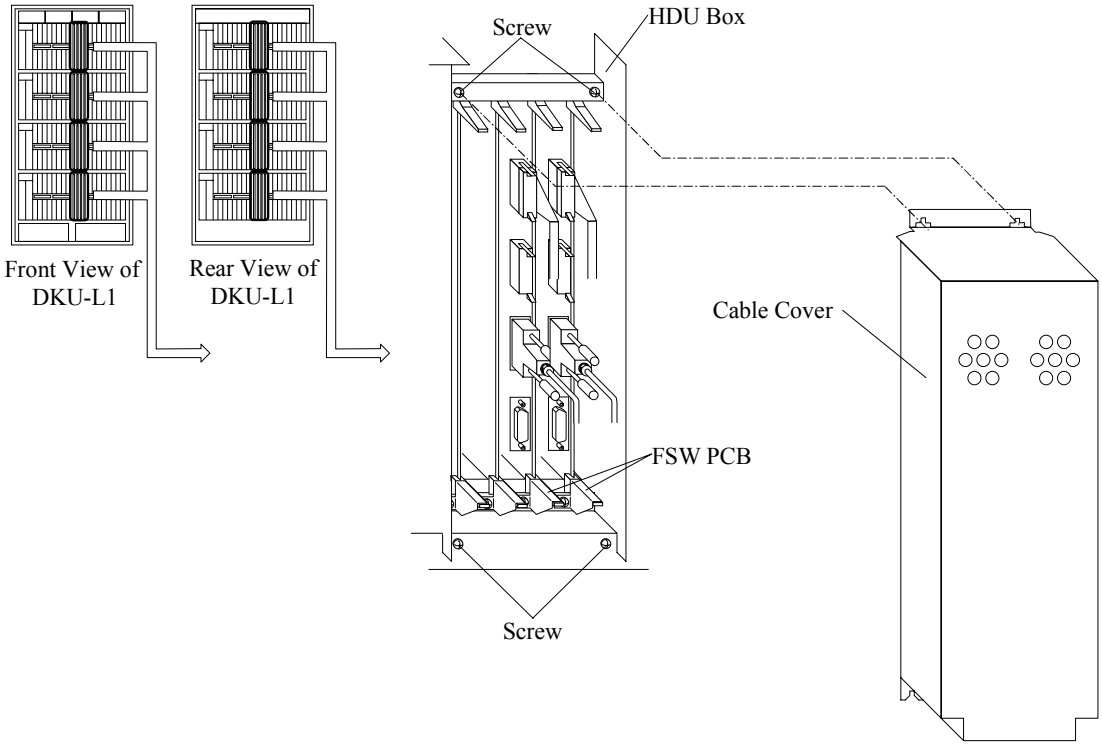

Fig. 4.1.8-3 Removal of Cable Covers

b. Loosen the screws and remove the cable covers from the DKU frames.

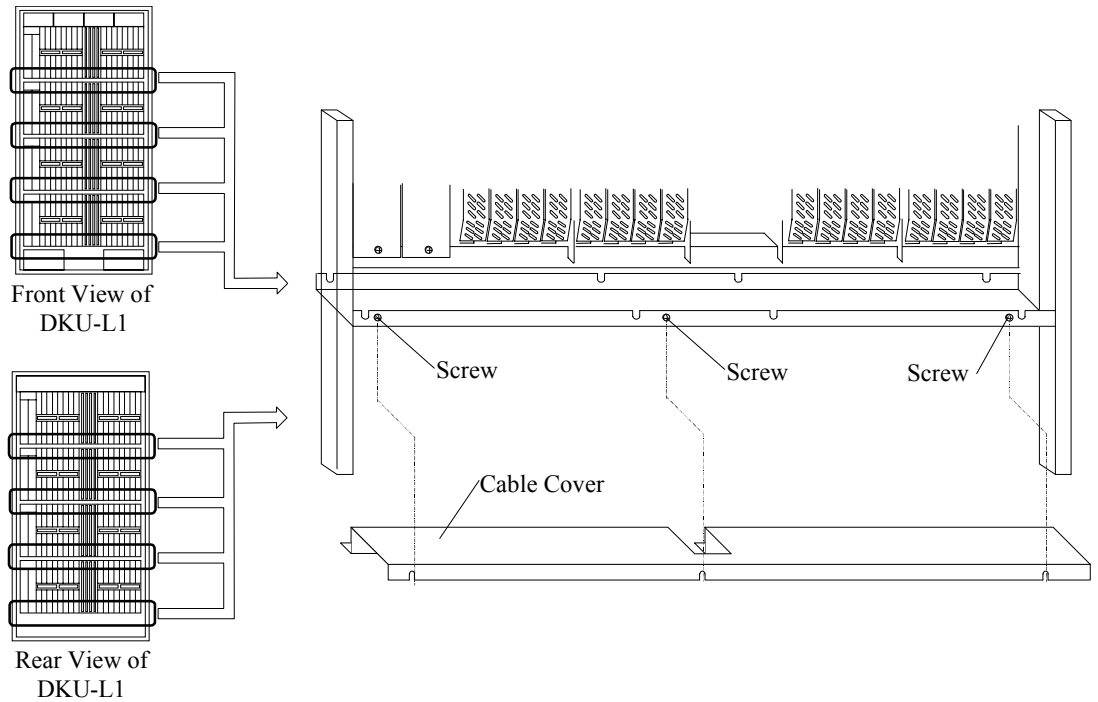

Fig. 4.1.8-4 Removal of Cable Covers

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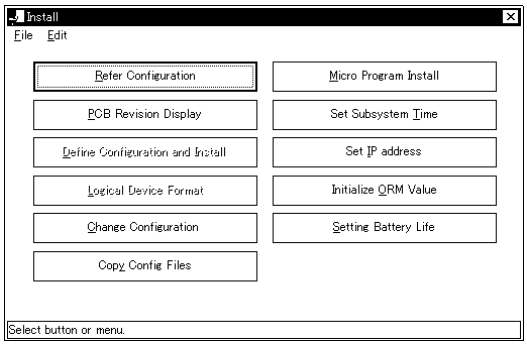
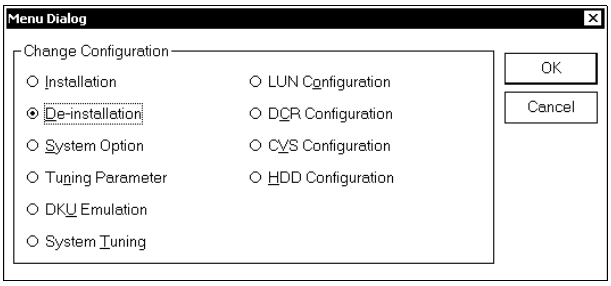
3. Setting up the New Device Structure Information

1. <Mode Change>
   Change the mode to Modify Mode.
   Select (CL) [Install].

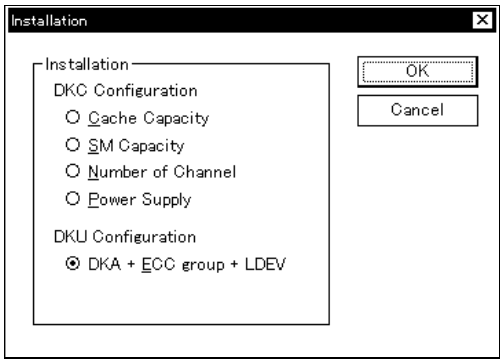
2. <Start the 'Menu Dialog' screen>
   Select (CL) [Change Configuration].



3. <Start Device Structure Setup screen>
   Select (CL) [De-Installation] in the 'Menu Dialog' dialog box and select (CL) [OK].



4. <Select a part to be changed>
   Select (CL) [DKA + ECC group + LDEV], and select (CL) [OK].



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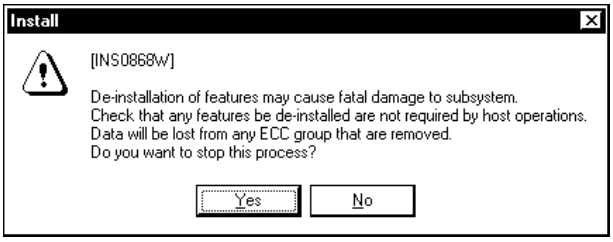
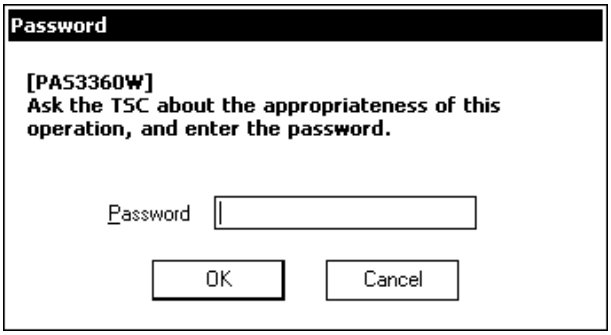
5.

Select (CL) [No] in response to “De-installation of features may cause fatal damage to subsystem. Check that any features be de-installed are not required by host operations. Data will be lost from any ECC group that are removed. Do you want to stop this process?”.



6. <Input password>
Enter the password and select (CL) [OK].



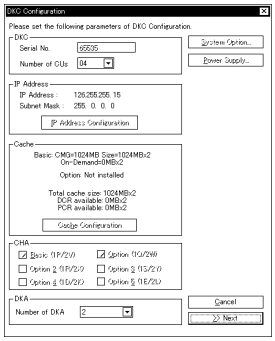
NOTICE
This is a special (exceptional) operation that can cause a serious failure such as a system down or a data loss if a wrong part to be removed is selected, and requires an input of a password. Ask the technical support center about the appropriateness of the operation, and input the password after getting an approval of executing the operation.

7. <Update Configuration Information>
Set the item to be de-installed for DKC and DKA in the ‘DKC Configuration’ window.

When decreasing the CUs, change the “Number of CUs”.
When decreasing the DKAs, change the “Number of DKA”.

Note: A part other than the CU and DKA cannot be removed at the same time.

Make sure that the entered item is correct and select (CL) [>>Next].



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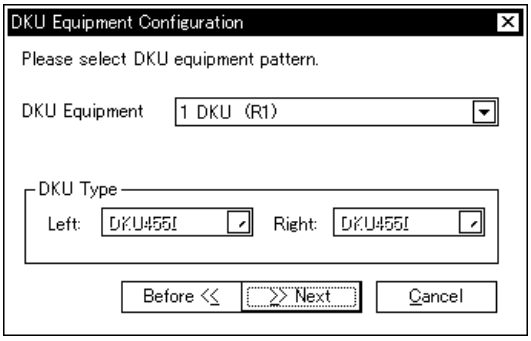
7-1. <Altering DKU frame information>

Define the DKU frame in the DKU Equipment Configuration window.

Make an altered setting in which the DKU-R2 and DKU-L1 are deleted from the DKUs currently set.

Current setting	Altered setting
3DKUs (R1, L1, R2)	1DKU (R1)

Note: After the setting is made, the B4 of the deleted DKU is not displayed.



After making the setting, select the [>> Next]. The routine proceeds to Step 8.

When the [Before <<] is selected, the window returns to the preceding one.

Return to Step 7.

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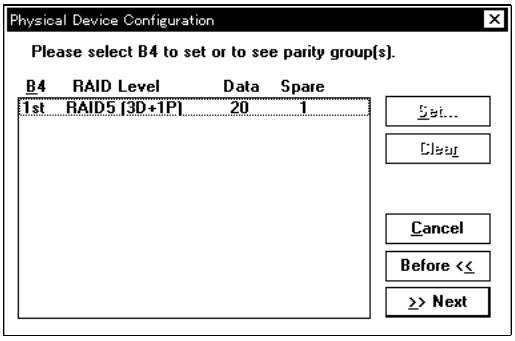
8. Change Drive Configuration Information>
Set drive configuration according to the 'Physical Device Configuration' screen displaying the mounted B4 based on the result of setting of DKU mount pattern.
Detailed procedure is shown below.
[Set...]: Defines the parity group or spare disk. The routine proceeds to Step 8-1.
[Clear...]: Cancels the setting of the B4.
After setting up all items, select (CL) [>>Next].
Selecting (CL) [Before<<] returns you to the previous screen.



[For the case of the multi cabinet model]

B4	Location	B4	Location
1st	HDU-R10, 11, 12, 13	7th	HDU-L20, 21, 22, 23
2nd	HDU-R14, 15, 16, 17	8th	HDU-L24, 25, 26, 27
3rd	HDU-L10, 11, 12, 13	9th	HDU-R30, 31, 32, 33
4th	HDU-L14, 15, 16, 17	10th	HDU-R34, 35, 36, 37
5th	HDU-R20, 21, 22, 23	11th	HDU-L30, 31, 32, 33
6th	HDU-R24, 25, 26, 27	12th	HDU-L34, 35, 36, 37

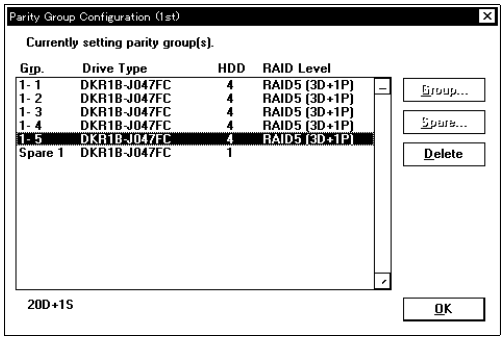
Note: The 9th to 12th of the B4 are valid only when the DKUs for the RAID 400 are connected.

[For the case of the single cabinet model]

B4	Location	Remarks
1st	HDU-R0, 1, 2, 3	HDD-X00 ~ X0F
2nd	HDU-R0, 1, 2, 3	HDD-X10 ~ X1F

8-1. <Define Parity Group>
Select (CL) the group to be de-installed and select (CL) [Delete] in the 'Parity Group Configuration' dialog box.
After setting, select (CL) [OK]. Return to step 8.

Grp*: A parity group where RAID Concatenation is installed.



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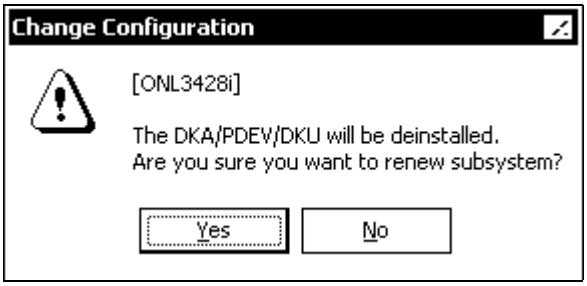
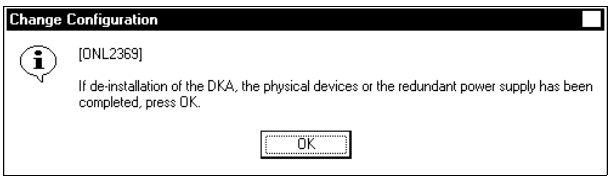
4. SVP pre procedure

1. <Start de-installation>
   Select (CL) [Yes] in response to “The DKA/PDEV/DKU will be deinstalled. Are you sure you want to renew subsystem?”.

   When [No] is selected (CL), returns to INST04-DKA-1420 step 2.



2.
   At this point refrain from pressing the [OK] button.
   “If de-installation of the DKA, the physical devices or the redundant power supply has been completed, press OK.” shown in the right figure.



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5. De-Installation Procedure of HDD Canister

5-1 Confirmation of position to de-install HDD canister

(i) RAID5(3D+1P)/RAID1(2D+2D)

Relations between the installation locations of the RAID groups and the RAID group numbers set through the SVP are shown in Table 4.1.8-1.

Table 4.1.8-1 Relation between HDDs installation order and RAID group number (3D+1P/2D+2D) (1/2)

	DKC	R1 DKU			R2 DKU		
		RAID Group Installation Order	RAID Group No.	HDD Location	RAID Group Installation Order	RAID Group No.	HDD Location
Upper	2nd DKA Pair	032	2-1	HDDR1y-00	096	6-1	HDDR2y-00
		033	2-2	HDDR1y-01	097	6-2	HDDR2y-01
		034	2-3	HDDR1y-02	098	6-3	HDDR2y-02
		035	2-4	HDDR1y-03	099	6-4	HDDR2y-03
		036	2-5	HDDR1y-04	100	6-5	HDDR2y-04
		037	2-6	HDDR1y-05	101	6-6	HDDR2y-05
		038	2-7	HDDR1y-06	102	6-7	HDDR2y-06
		039	2-8	HDDR1y-07	103	6-8	HDDR2y-07
		040	2-9	HDDR1y-08	104	6-9	HDDR2y-08
		041	2-10	HDDR1y-09	105	6-10	HDDR2y-09
		042	2-11	HDDR1y-0A	106	6-11	HDDR2y-0A
		043	2-12	HDDR1y-0B	107	6-12	HDDR2y-0B
		044	2-13	HDDR1y-0C	108	6-13	HDDR2y-0C
		045	2-14	HDDR1y-0D	109	6-14	HDDR2y-0D
		046	2-15	HDDR1y-0E	110	6-15	HDDR2y-0E
		047(Spare) *2	2-16	HDDR1y-0F	111	6-16	HDDR2y-0F
		048	2-17	HDDR1y-10	112	6-17	HDDR2y-10
		049	2-18	HDDR1y-11	113	6-18	HDDR2y-11
		050	2-19	HDDR1y-12	114	6-19	HDDR2y-12
		051	2-20	HDDR1y-13	115	6-20	HDDR2y-13
		052	2-21	HDDR1y-14	116	6-21	HDDR2y-14
		053	2-22	HDDR1y-15	117	6-22	HDDR2y-15
		054	2-23	HDDR1y-16	118	6-23	HDDR2y-16
		055	2-24	HDDR1y-17	119	6-24	HDDR2y-17
		056	2-25	HDDR1y-18	120	6-25	HDDR2y-18
		057	2-26	HDDR1y-19	121	6-26	HDDR2y-19
		058	2-27	HDDR1y-1A	122	6-27	HDDR2y-1A
		059	2-28	HDDR1y-1B	123	6-28	HDDR2y-1B
		060	2-29	HDDR1y-1C	124	6-29	HDDR2y-1C
		061	2-30	HDDR1y-1D	125	6-30	HDDR2y-1D
		062	2-31	HDDR1y-1E	126	6-31	HDDR2y-1E
		063	2-32	HDDR1y-1F	127	6-32	HDDR2y-1F
Lower	1st DKA Pair	001	1-1	HDDR1x-00	064	5-1	HDDR2x-00
		002	1-2	HDDR1x-01	065	5-2	HDDR2x-01
		003	1-3	HDDR1x-02	066	5-3	HDDR2x-02
		004	1-4	HDDR1x-03	067	5-4	HDDR2x-03
		005	1-5	HDDR1x-04	068	5-5	HDDR2x-04
		006	1-6	HDDR1x-05	069	5-6	HDDR2x-05
		007	1-7	HDDR1x-06	070	5-7	HDDR2x-06
		008	1-8	HDDR1x-07	071	5-8	HDDR2x-07
		009	1-9	HDDR1x-08	072	5-9	HDDR2x-08
		010	1-10	HDDR1x-09	073	5-10	HDDR2x-09
		011	1-11	HDDR1x-0A	074	5-11	HDDR2x-0A
		012	1-12	HDDR1x-0B	075	5-12	HDDR2x-0B
		013	1-13	HDDR1x-0C	076	5-13	HDDR2x-0C
		014	1-14	HDDR1x-0D	077	5-14	HDDR2x-0D
		015	1-15	HDDR1x-0E	078	5-15	HDDR2x-0E
		Spare *1	1-16	HDDR1x-0F	079	5-16	HDDR2x-0F
		016	1-17	HDDR1x-10	080	5-17	HDDR2x-10
		017	1-18	HDDR1x-11	081	5-18	HDDR2x-11
		018	1-19	HDDR1x-12	082	5-19	HDDR2x-12
		019	1-20	HDDR1x-13	083	5-20	HDDR2x-13
		020	1-21	HDDR1x-14	084	5-21	HDDR2x-14
		021	1-22	HDDR1x-15	085	5-22	HDDR2x-15
		022	1-23	HDDR1x-16	086	5-23	HDDR2x-16
		023	1-24	HDDR1x-17	087	5-24	HDDR2x-17
		024	1-25	HDDR1x-18	088	5-25	HDDR2x-18
		025	1-26	HDDR1x-19	089	5-26	HDDR2x-19
		026	1-27	HDDR1x-1A	090	5-27	HDDR2x-1A
		027	1-28	HDDR1x-1B	091	5-28	HDDR2x-1B
		028	1-29	HDDR1x-1C	092	5-29	HDDR2x-1C
		029	1-30	HDDR1x-1D	093	5-30	HDDR2x-1D
		030	1-31	HDDR1x-1E	094	5-31	HDDR2x-1E
		031	1-32	HDDR1x-1F	095	5-32	HDDR2x-1F

*1: To be left vacant or a spare disk is to be installed. *2: A data or spare disk is to be installed.

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Table 4.1.8-1 Relation between HDDs installation order and RAID group number (3D+1P/2D+2D) (1/2)

	L2 DKU			L1 DKU			DKC
	RAID Group Installation Order	RAID Group No.	HDD Location	RAID Group Installation Order	RAID Group No.	HDD Location	
Upper	223	8-1	HDDL2y-00	159	4-1	HDDL1y-00	4th DKA Pair
	224	8-2	HDDL2y-01	160	4-2	HDDL1y-01	
	225	8-3	HDDL2y-02	161	4-3	HDDL1y-02	
	226	8-4	HDDL2y-03	162	4-4	HDDL1y-03	
	227	8-5	HDDL2y-04	163	4-5	HDDL1y-04	
	228	8-6	HDDL2y-05	164	4-6	HDDL1y-05	
	229	8-7	HDDL2y-06	165	4-7	HDDL1y-06	
	230	8-8	HDDL2y-07	166	4-8	HDDL1y-07	
	231	8-9	HDDL2y-08	167	4-9	HDDL1y-08	
	232	8-10	HDDL2y-09	168	4-10	HDDL1y-09	
	233	8-11	HDDL2y-0A	169	4-11	HDDL1y-0A	
	234	8-12	HDDL2y-0B	170	4-12	HDDL1y-0B	
	235	8-13	HDDL2y-0C	171	4-13	HDDL1y-0C	
	236	8-14	HDDL2y-0D	172	4-14	HDDL1y-0D	
	237	8-15	HDDL2y-0E	173	4-15	HDDL1y-0E	
	238	8-16	HDDL2y-0F	174(Spare) *2	4-16	HDDL1y-0F	
	239	8-17	HDDL2y-10	175	4-17	HDDL1y-10	
	240	8-18	HDDL2y-11	176	4-18	HDDL1y-11	
	241	8-19	HDDL2y-12	177	4-19	HDDL1y-12	
	242	8-20	HDDL2y-13	178	4-20	HDDL1y-13	
	243	8-21	HDDL2y-14	179	4-21	HDDL1y-14	
	244	8-22	HDDL2y-15	180	4-22	HDDL1y-15	
	245	8-23	HDDL2y-16	181	4-23	HDDL1y-16	
	246	8-24	HDDL2y-17	182	4-24	HDDL1y-17	
	247	8-25	HDDL2y-18	183	4-25	HDDL1y-18	
	248	8-26	HDDL2y-19	184	4-26	HDDL1y-19	
	249	8-27	HDDL2y-1A	185	4-27	HDDL1y-1A	
	250	8-28	HDDL2y-1B	186	4-28	HDDL1y-1B	
	251	8-29	HDDL2y-1C	187	4-29	HDDL1y-1C	
	252	8-30	HDDL2y-1D	188	4-30	HDDL1y-1D	
	253	8-31	HDDL2y-1E	189	4-31	HDDL1y-1E	
	254	8-32	HDDL2y-1F	190	4-32	HDDL1y-1F	
Lower	191	7-1	HDDL2x-00	128	3-1	HDDL1x-00	3rd DKA Pair
	192	7-2	HDDL2x-01	129	3-2	HDDL1x-01	
	193	7-3	HDDL2x-02	130	3-3	HDDL1x-02	
	194	7-4	HDDL2x-03	131	3-4	HDDL1x-03	
	195	7-5	HDDL2x-04	132	3-5	HDDL1x-04	
	196	7-6	HDDL2x-05	133	3-6	HDDL1x-05	
	197	7-7	HDDL2x-06	134	3-7	HDDL1x-06	
	198	7-8	HDDL2x-07	135	3-8	HDDL1x-07	
	199	7-9	HDDL2x-08	136	3-9	HDDL1x-08	
	200	7-10	HDDL2x-09	137	3-10	HDDL1x-09	
	201	7-11	HDDL2x-0A	138	3-11	HDDL1x-0A	
	202	7-12	HDDL2x-0B	139	3-12	HDDL1x-0B	
	203	7-13	HDDL2x-0C	140	3-13	HDDL1x-0C	
	204	7-14	HDDL2x-0D	141	3-14	HDDL1x-0D	
	205	7-15	HDDL2x-0E	142	3-15	HDDL1x-0E	
	206	7-16	HDDL2x-0F	Spare *1	3-16	HDDL1x-0F	
	207	7-17	HDDL2x-10	143	3-17	HDDL1x-10	
	208	7-18	HDDL2x-11	144	3-18	HDDL1x-11	
	209	7-19	HDDL2x-12	145	3-19	HDDL1x-12	
	210	7-20	HDDL2x-13	146	3-20	HDDL1x-13	
	211	7-21	HDDL2x-14	147	3-21	HDDL1x-14	
	212	7-22	HDDL2x-15	148	3-22	HDDL1x-15	
	213	7-23	HDDL2x-16	149	3-23	HDDL1x-16	
	214	7-24	HDDL2x-17	150	3-24	HDDL1x-17	
	215	7-25	HDDL2x-18	151	3-25	HDDL1x-18	
	216	7-26	HDDL2x-19	152	3-26	HDDL1x-19	
	217	7-27	HDDL2x-1A	153	3-27	HDDL1x-1A	
	218	7-28	HDDL2x-1B	154	3-28	HDDL1x-1B	
	219	7-29	HDDL2x-1C	155	3-29	HDDL1x-1C	
	220	7-30	HDDL2x-1D	156	3-30	HDDL1x-1D	
	221	7-31	HDDL2x-1E	157	3-31	HDDL1x-1E	
	222	7-32	HDDL2x-1F	158	3-32	HDDL1x-1F	

*1: To be left vacant or a spare disk is to be installed. *2: A data or spare disk is to be installed.
*3: HDDL1x-00 (x: HDU Box No. 0, 1, 2, 3), HDDL1y-00 (y: HDU Box No. 4, 5, 6, 7)

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(1) Make sure of the location where the RAID group is de-installed and that where the HDD canister is to be removed.

No.	Model Number	Model Name	Data and Parity
1	DKU-F455I-36K4/72J4/72K4/146J4/146JF/146JQ	4 HDD Canisters	Data and Parity Drive

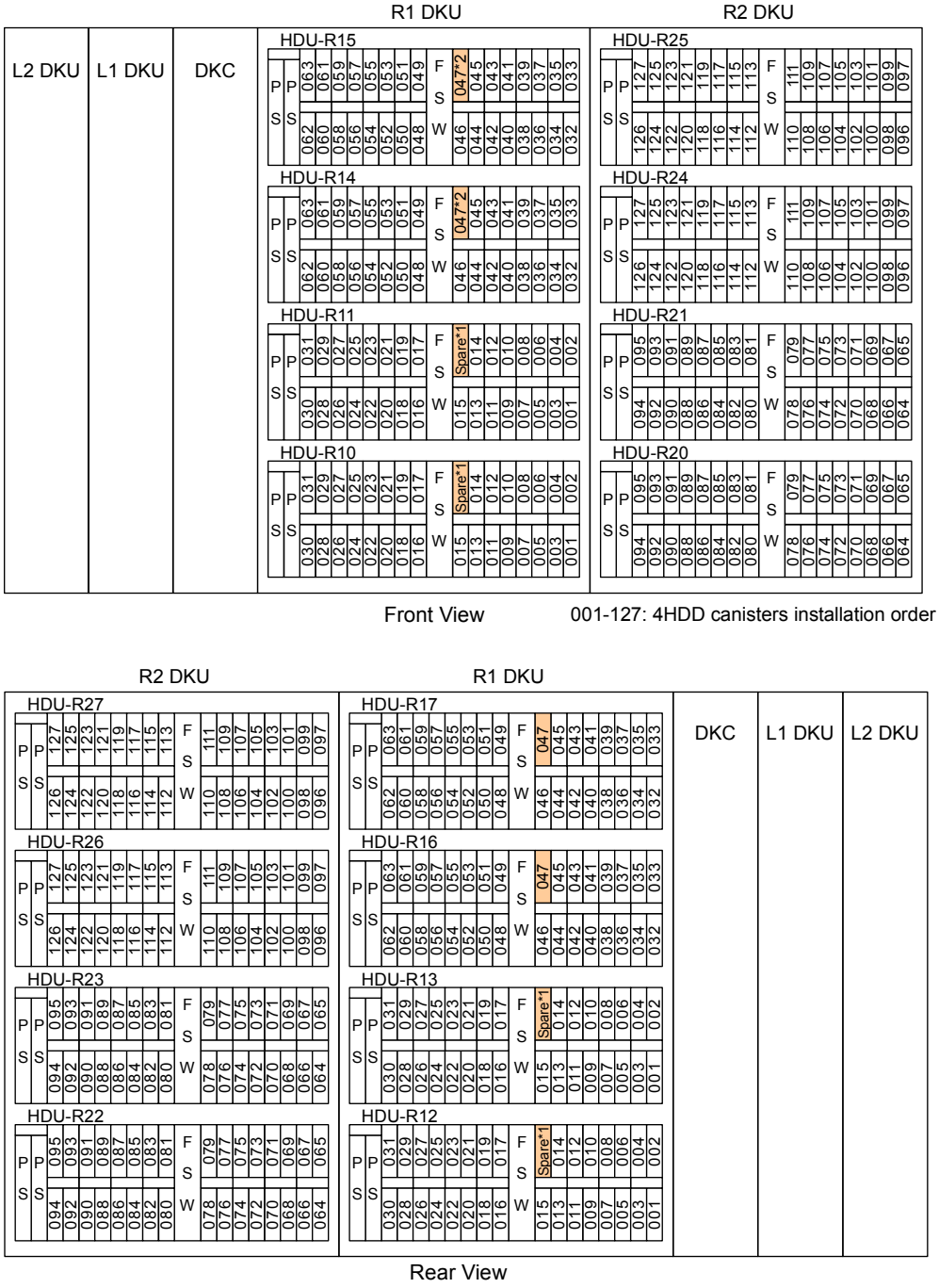

Fig. 4.1.8-5 (3D+1P) or (2D+2P) Data Drive/Parity Drive Expansion Sequence (1/2)

The relationship between HDDs installation order and RAID group number is shown in the Table 4.1.8-1.

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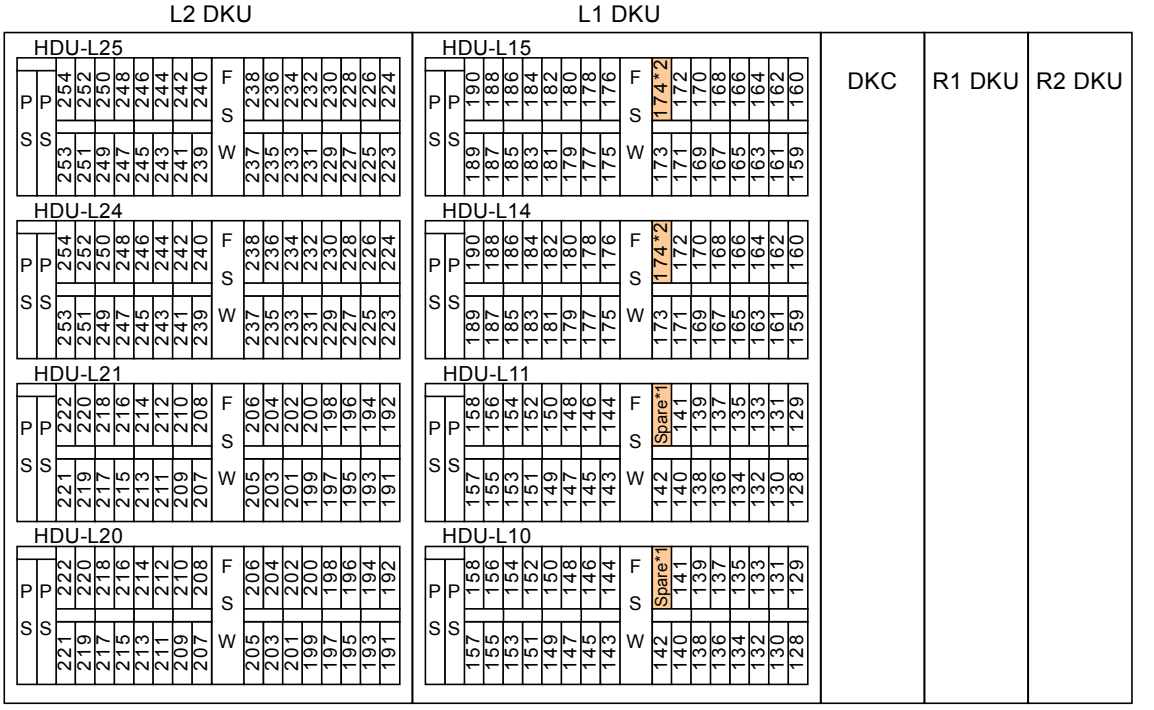

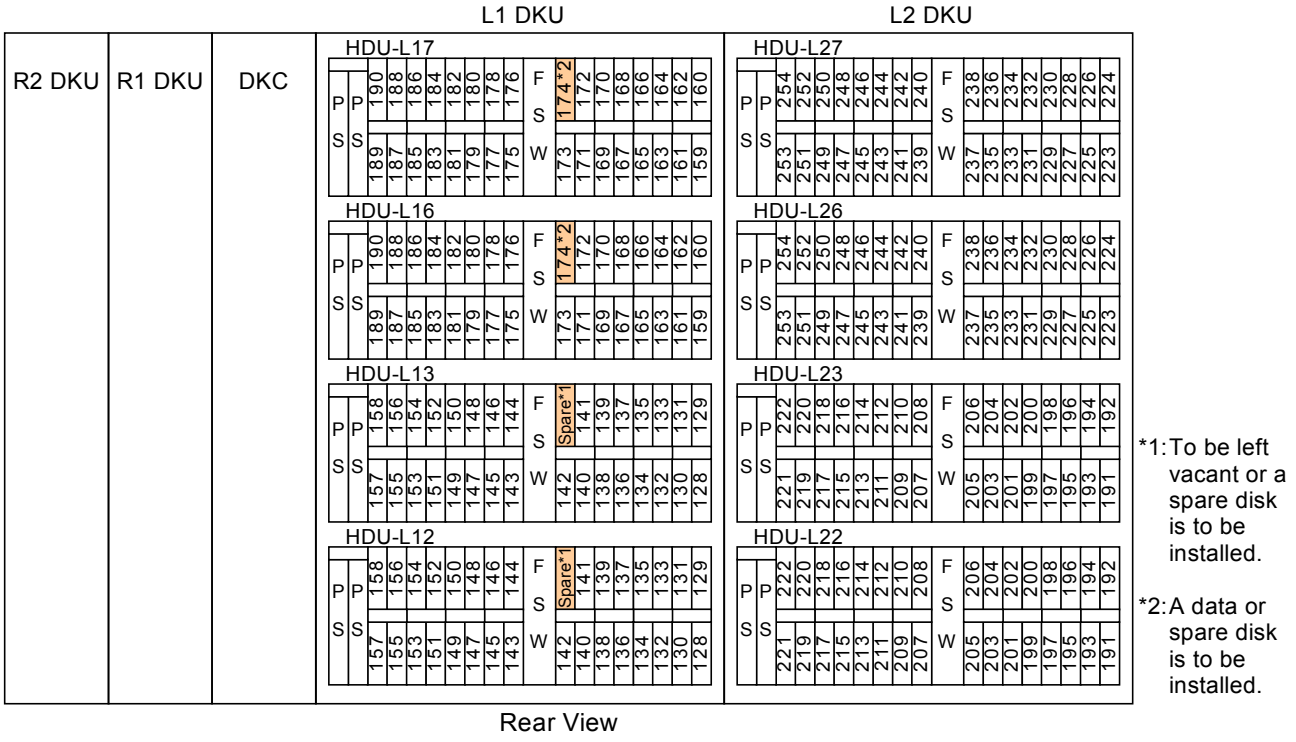

Fig. 4.1.8-5 (3D+1P) or (2D+2P) Data Drive/Parity Drive Expansion Sequence (2/2)

The relationship between HDDs installation order and RAID group number is shown in the Table 4.1.8-1.

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(ii) RAID5 (7D+1P)

Relations between the installation locations of the RAID groups and the RAID group numbers set through the SVP are shown in Table 4.1.8-2.

Table 4.1.8-2 Relation between HDDs installation order and RAID group number (7D+1P) (1/2)

DKC	R1 DKU			R2 DKU		
	RAID Group Installation Order	RAID Group No.	HDD Location	RAID Group Installation Order	RAID Group No.	HDD Location
1st / 2nd DKA Pair	001	1-1 , (2-1)	HDDR1x-00	032	5-1, (6-1)	HDDR2x-00
	002	1-2 , (2-2)	HDDR1x-01	033	5-2, (6-2)	HDDR2x-01
	003	1-3 , (2-3)	HDDR1x-02	034	5-3, (6-3)	HDDR2x-02
	004	1-4 , (2-4)	HDDR1x-03	035	5-4, (6-4)	HDDR2x-03
	005	1-5 , (2-5)	HDDR1x-04	036	5-5, (6-5)	HDDR2x-04
	006	1-6 , (2-6)	HDDR1x-05	037	5-6, (6-6)	HDDR2x-05
	007	1-7 , (2-7)	HDDR1x-06	038	5-7, (6-7)	HDDR2x-06
	008	1-8 , (2-8)	HDDR1x-07	039	5-8, (6-8)	HDDR2x-07
	009	1-9 , (2-9)	HDDR1x-08	040	5-9, (6-9)	HDDR2x-08
	010	1-10 , (2-10)	HDDR1x-09	041	5-10, (6-10)	HDDR2x-09
	011	1-11 , (2-11)	HDDR1x-0A	042	5-11, (6-11)	HDDR2x-0A
	012	1-12 , (2-12)	HDDR1x-0B	043	5-12, (6-12)	HDDR2x-0B
	013	1-13 , (2-13)	HDDR1x-0C	044	5-13, (6-13)	HDDR2x-0C
	014	1-14 , (2-14)	HDDR1x-0D	045	5-14, (6-14)	HDDR2x-0D
	015	1-15 , (2-15)	HDDR1x-0E	046	5-15, (6-15)	HDDR2x-0E
	(Spare) *1	1-16 , (2-16)	HDDR1x-0F	047	5-16, (6-16)	HDDR2x-0F
	016	1-17 , (2-17)	HDDR1x-10	048	5-17, (6-17)	HDDR2x-10
	017	1-18 , (2-18)	HDDR1x-11	049	5-18, (6-18)	HDDR2x-11
	018	1-19 , (2-19)	HDDR1x-12	050	5-19, (6-19)	HDDR2x-12
	019	1-20 , (2-20)	HDDR1x-13	051	5-20, (6-20)	HDDR2x-13
	020	1-21 , (2-21)	HDDR1x-14	052	5-21, (6-21)	HDDR2x-14
	021	1-22 , (2-22)	HDDR1x-15	053	5-22, (6-22)	HDDR2x-15
	022	1-23 , (2-23)	HDDR1x-16	054	5-23, (6-23)	HDDR2x-16
	023	1-24 , (2-24)	HDDR1x-17	055	5-24, (6-24)	HDDR2x-17
	024	1-25 , (2-25)	HDDR1x-18	056	5-25, (6-25)	HDDR2x-18
	025	1-26 , (2-26)	HDDR1x-19	057	5-26, (6-26)	HDDR2x-19
	026	1-27 , (2-27)	HDDR1x-1A	058	5-27, (6-27)	HDDR2x-1A
	027	1-28 , (2-28)	HDDR1x-1B	059	5-28, (6-28)	HDDR2x-1B
	028	1-29 , (2-29)	HDDR1x-1C	060	5-29, (6-29)	HDDR2x-1C
	029	1-30 , (2-30)	HDDR1x-1D	061	5-30, (6-30)	HDDR2x-1D
	030	1-31 , (2-31)	HDDR1x-1E	062	5-31, (6-31)	HDDR2x-1E
	031	1-32 , (2-32)	HDDR1x-1F	063	5-32, (6-32)	HDDR2x-1F

*1: To be left vacant or a spare disk is to be installed. *2: HDDL1x-00 (x: HDU Box No. 0, 1, 2, …, 7)

- Install RAID 5 (7D+1P) forming pairs using the same number of the two RAID groups (RAID groups 1 and 2, 3 and 4, 5 and 6, and 7 and 8) of RAID 5 (3D+1P).
  (Example: RAID group numbers 1-1 and 2-1)
  The types of HDDs to be installed in each pair must be the same.
- In the case of RAID 5 (7D+1P), only odd RAID numbers are displayed on the SVP. (Group numbers shown in parentheses in the table above are not displayed.)
- When RAID 5 (3D+1P) or RAID 1 (2D+2D) and RAID 5 (7D+1P) are configured mixture, note that duplicated group numbers are excluded.
  Example: When Group No. 1-1 is configured for RAID 5 (7D+1P), Group No. 2-1 is excluded and cannot be configure for RAID 5 (3D+1P).

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Table 4.1.8-2 Relation between HDDs installation order and RAID group number (7D+1P) (2/2)

L2 DKU			L1 DKU			DKC
RAID Group Installation Order	RAID Group No.	HDD Location	RAID Group Installation Order	RAID Group No.	HDD Location	
095	7-1, (8-1)	HDDL2x-00	064	3-1 , (4-1)	HDDL1x-00	
096	7-2, (8-2)	HDDL2x-01	065	3-2 , (4-2)	HDDL1x-01	
097	7-3, (8-3)	HDDL2x-02	066	3-3 , (4-3)	HDDL1x-02	
098	7-4, (8-4)	HDDL2x-03	067	3-4 , (4-4)	HDDL1x-03	
099	7-5, (8-5)	HDDL2x-04	068	3-5 , (4-5)	HDDL1x-04	
100	7-6, (8-6)	HDDL2x-05	069	3-6 , (4-6)	HDDL1x-05	
101	7-7, (8-7)	HDDL2x-06	070	3-7 , (4-7)	HDDL1x-06	
102	7-8, (8-8)	HDDL2x-07	071	3-8 , (4-8)	HDDL1x-07	
103	7-9, (8-9)	HDDL2x-08	072	3-9 , (4-9)	HDDL1x-08	
104	7-10, (8-10)	HDDL2x-09	073	3-10 , (4-10)	HDDL1x-09	
105	7-11, (8-11)	HDDL2x-0A	074	3-11 , (4-11)	HDDL1x-0A	
106	7-12, (8-12)	HDDL2x-0B	075	3-12 , (4-12)	HDDL1x-0B	
107	7-13, (8-13)	HDDL2x-0C	076	3-13 , (4-13)	HDDL1x-0C	
108	7-14, (8-14)	HDDL2x-0D	077	3-14 , (4-14)	HDDL1x-0D	
109	7-15, (8-15)	HDDL2x-0E	078	3-15 , (4-15)	HDDL1x-0E	3rd / 4th
110	7-16, (8-16)	HDDL2x-0F	(Spare) *1	3-16 , (4-16)	HDDL1x-0F	DKA
111	7-17, (8-17)	HDDL2x-10	079	3-17 , (4-17)	HDDL1x-10	Pair
112	7-18, (8-18)	HDDL2x-11	080	3-18 , (4-18)	HDDL1x-11	
113	7-19, (8-19)	HDDL2x-12	081	3-19 , (4-19)	HDDL1x-12	
114	7-20, (8-20)	HDDL2x-13	082	3-20 , (4-20)	HDDL1x-13	
115	7-21, (8-21)	HDDL2x-14	083	3-21 , (4-21)	HDDL1x-14	
116	7-22, (8-22)	HDDL2x-15	084	3-22 , (4-22)	HDDL1x-15	
117	7-23, (8-23)	HDDL2x-16	085	3-23 , (4-23)	HDDL1x-16	
118	7-24, (8-24)	HDDL2x-17	086	3-24 , (4-24)	HDDL1x-17	
119	7-25, (8-25)	HDDL2x-18	087	3-25 , (4-25)	HDDL1x-18	
120	7-26, (8-26)	HDDL2x-19	088	3-26 , (4-26)	HDDL1x-19	
121	7-27, (8-27)	HDDL2x-1A	089	3-27 , (4-27)	HDDL1x-1A	
122	7-28, (8-28)	HDDL2x-1B	090	3-28 , (4-28)	HDDL1x-1B	
123	7-29, (8-29)	HDDL2x-1C	091	3-29 , (4-29)	HDDL1x-1C	
124	7-30, (8-30)	HDDL2x-1D	092	3-30 , (4-30)	HDDL1x-1D	
125	7-31, (8-31)	HDDL2x-1E	093	3-31 , (4-31)	HDDL1x-1E	
126	7-32, (8-32)	HDDL2x-1F	094	3-32 , (4-32)	HDDL1x-1F	

*1: To be left vacant or a spare disk is to be installed. *2: HDDL1x-00 (x: HDU Box No. 0, 1, 2, …, 7)

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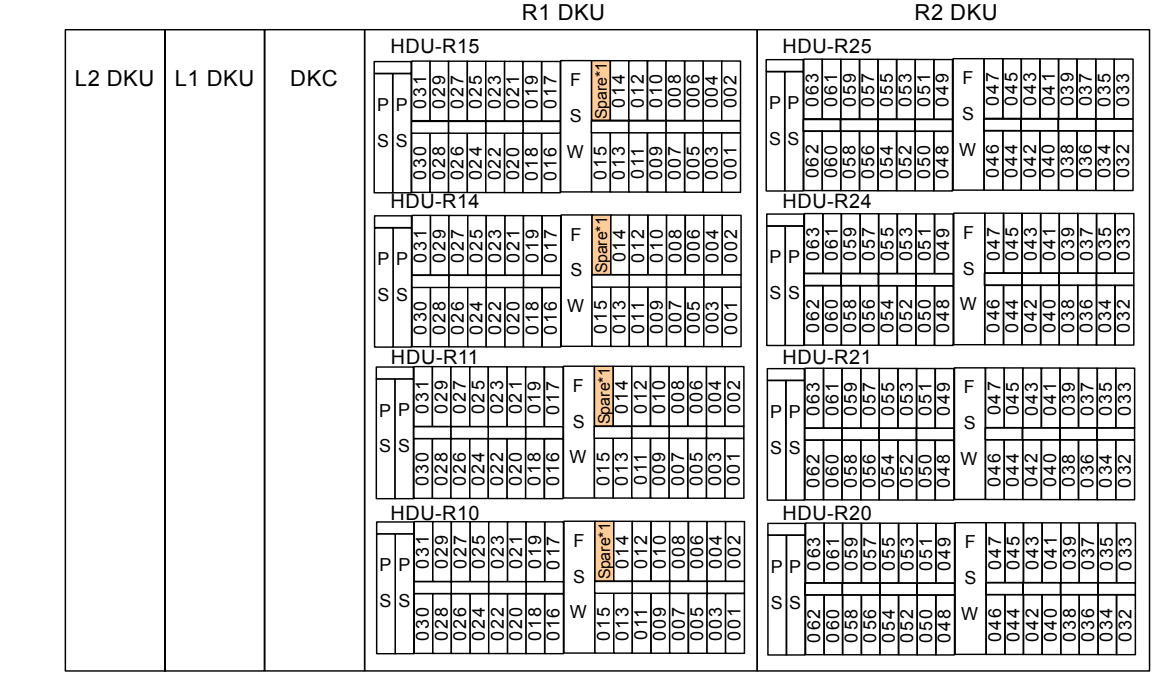
(1) Make sure of the location where the RAID group is de-installed and that where the HDD canister is to be removed.

No.	Model Number	Model Name	Data and Parity
1	DKU-F455I-36K4/72J4/72K4/146J4/146JF/146JQ	4 HDD Canisters x 2sets	Data and Parity Drive



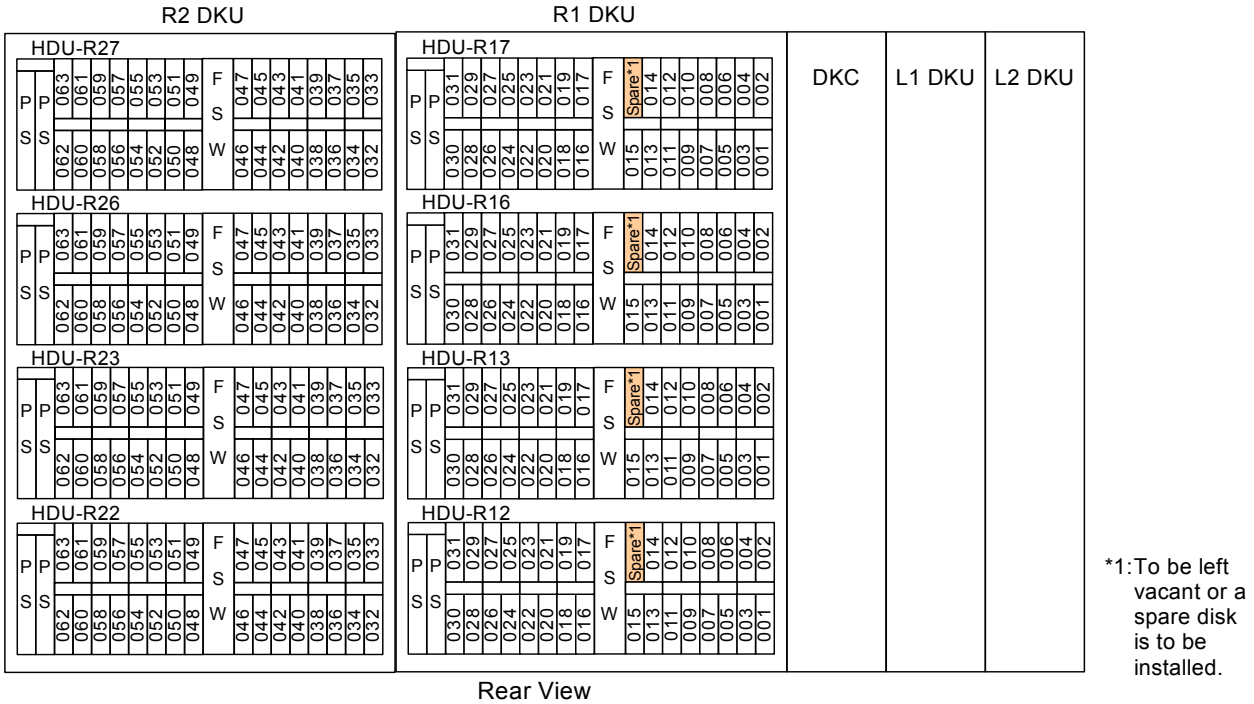


Fig. 4.1.8-6 (7D+1P) Data Drive/Parity Drive Expansion Sequence (1/2)

The relationship between HDDs installation order and RAID group number is shown in the Table 4.1.8-2.

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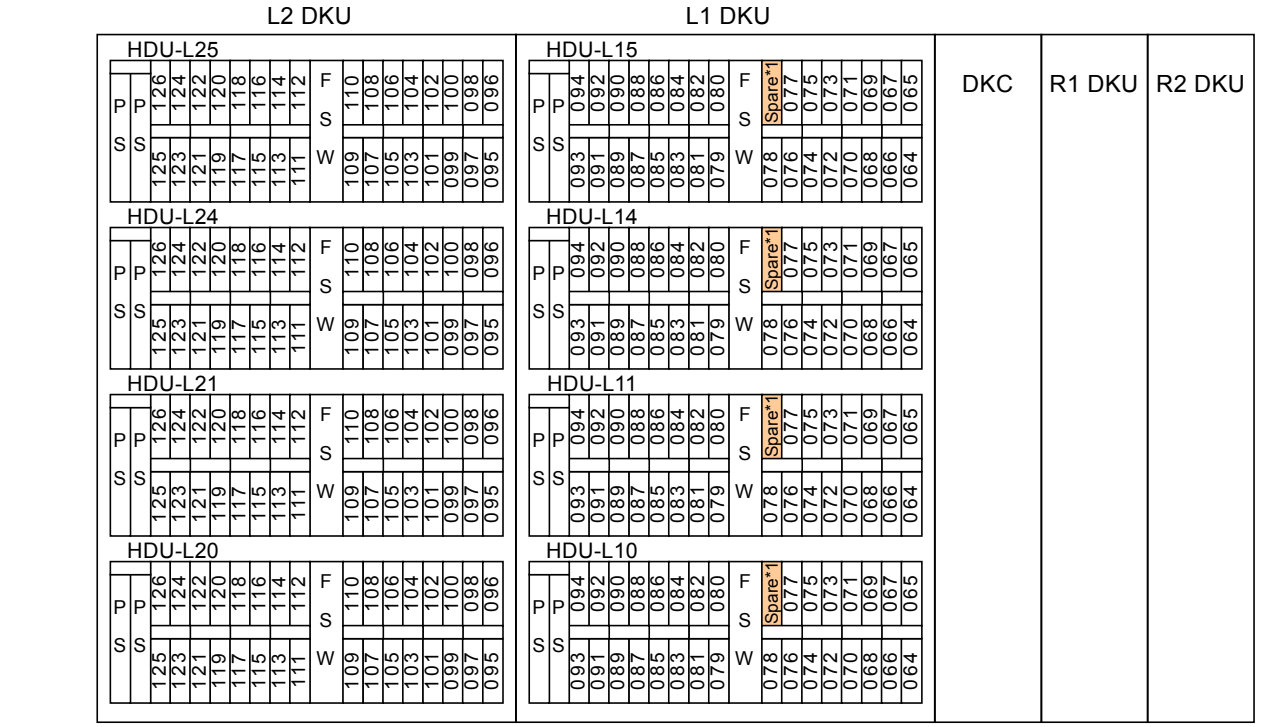

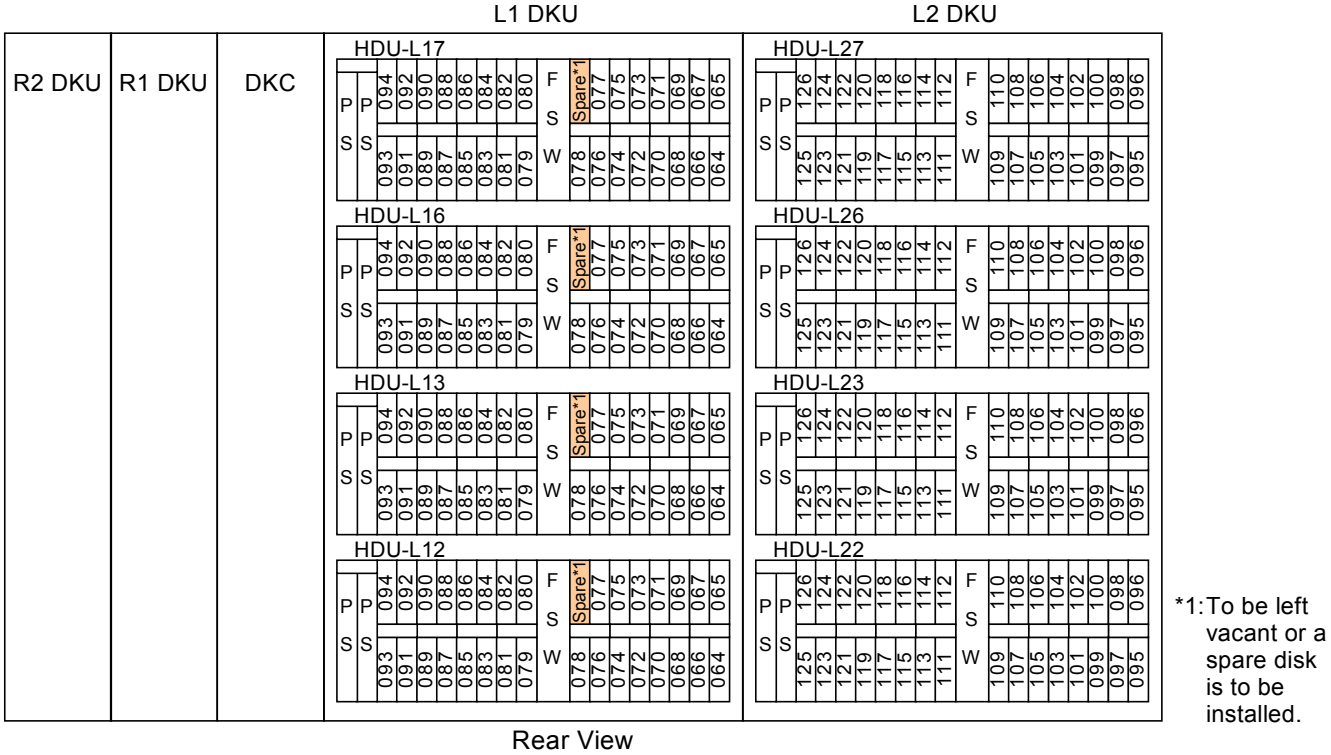

Fig. 4.1.8-6 (7D+1P) Data Drive/Parity Drive Expansion Sequence (2/2)

The relationship between HDDs installation order and RAID group number is shown in the Table 4.1.8-2.

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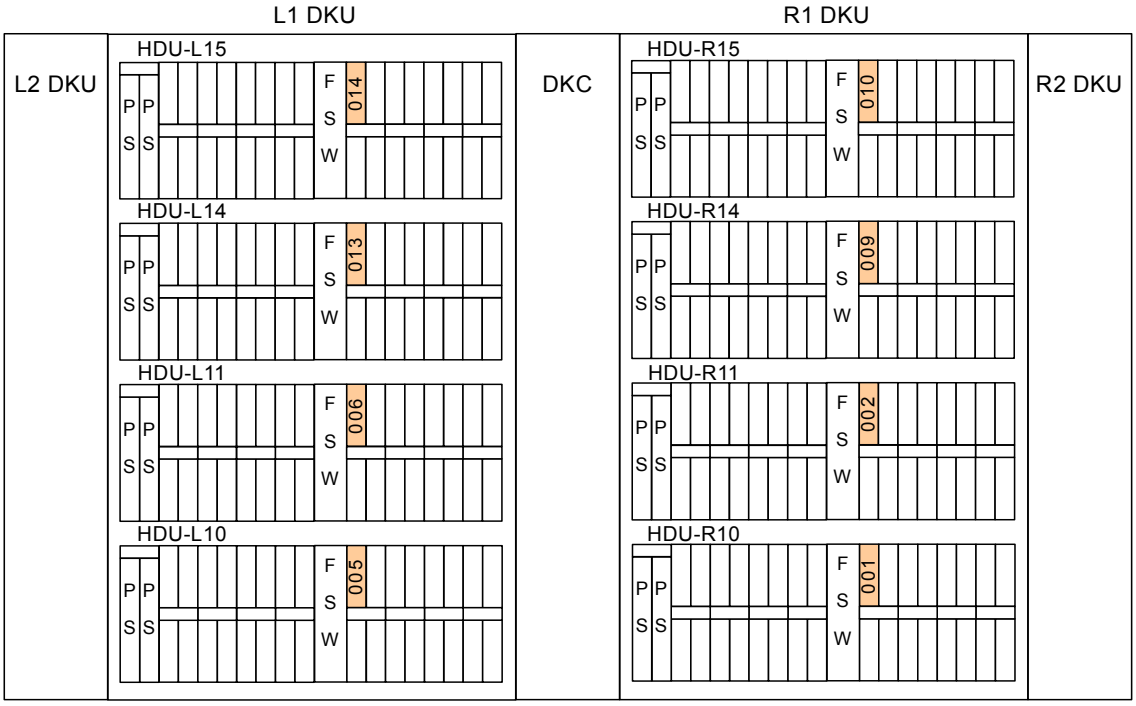
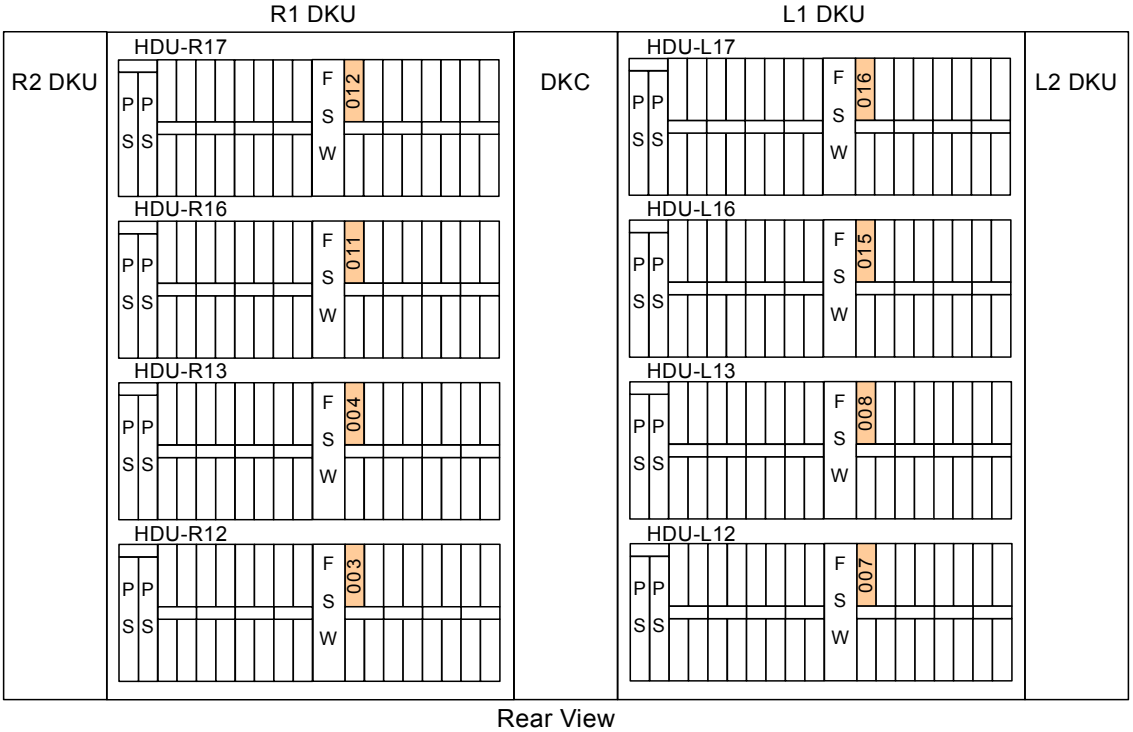
(iii) Spare HDD

No.	Model Number	Model Name	Data and Parity
1	DKU-F455I-36K1/72J1/72K1/146J1/146JS/146JM	1 HDD Canister	Spare Drive



Front View

001-016: Spare HDD canister installation order



Rear View

Fig. 4.1.8-7 Spare Drive Expansion Sequence

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5-2 Confirmation of Shut Down LED.

a. Confirm the Shut Down LED on the JMP PCB. (It should be RED.)

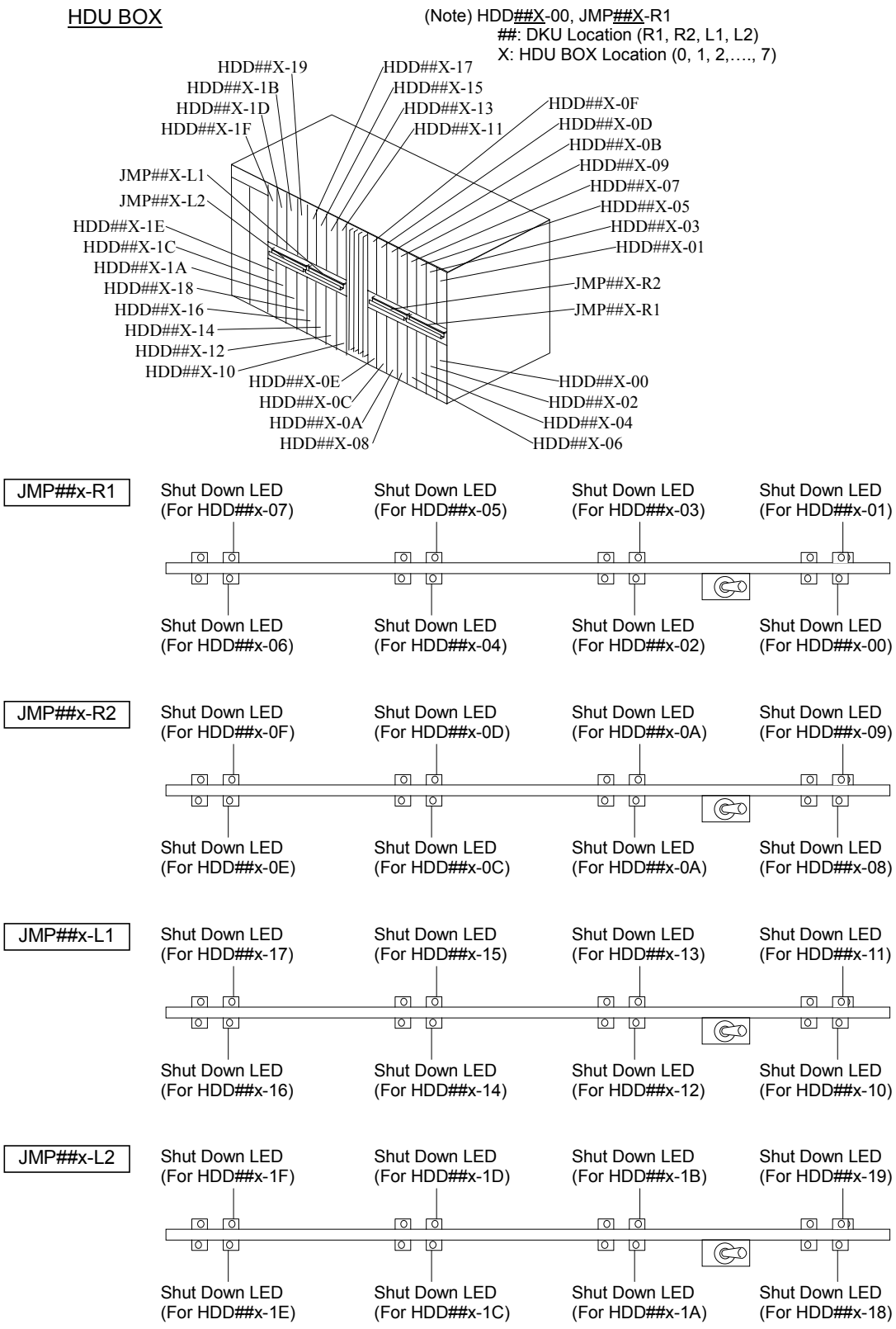

Fig. 4.1.8-8 Location of Shut Down LED

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5-3 De-installation of the HDD canister.

Notice:
Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

CAUTION

A system down may be caused by a removal of an HDD canister other than that to be removed. Make sure that it is the HDD canister to be removed.

a. After pushing up the stopper on the front side of the HDD canister, pull the handle toward you to remove the HDD canister.
b. Insert the dummy canister to the HDU Box.

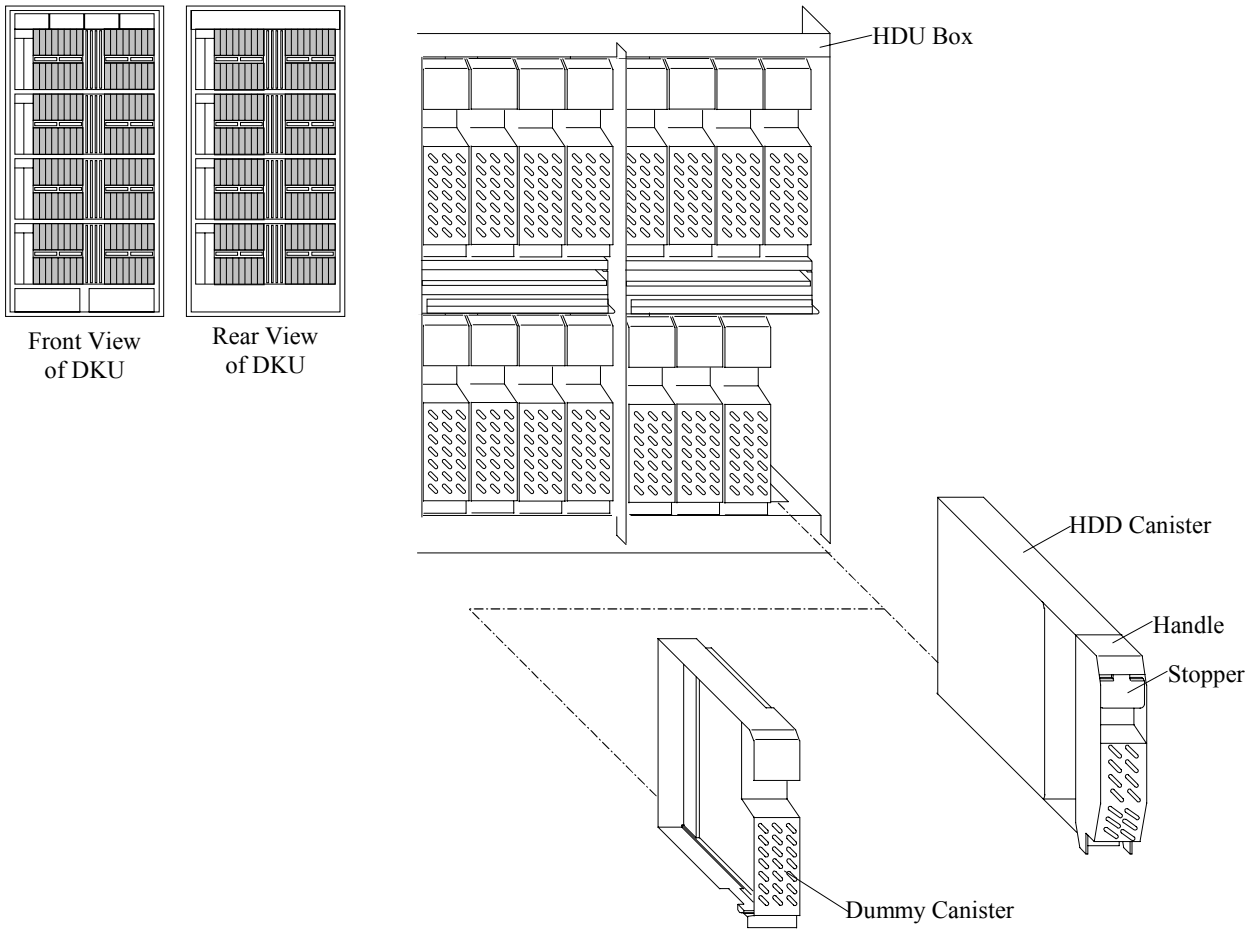

Fig. 4.1.8-9 De-Installation of HDD Canister

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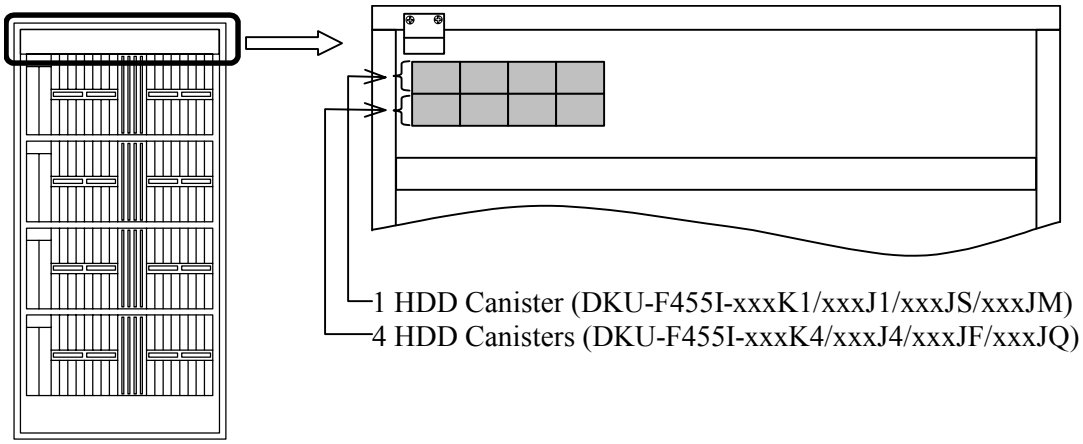
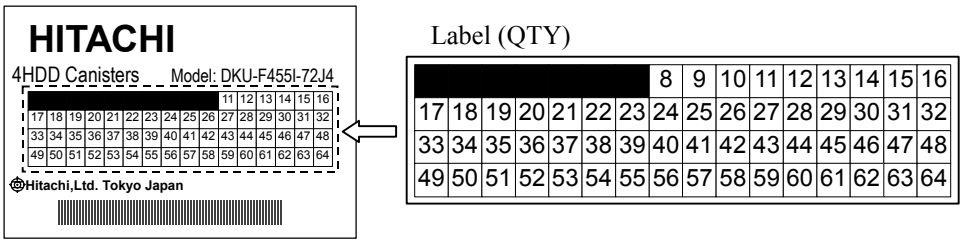
5-4 Change of the nameplate.

a. Affix a necessary portion of the Label (QTY)(Accessory of DKC; DWG No.3264290-1) in layers on the name plate and paint out numbers less than the number concerned with black oil felt pen.



[Example]

When DKU-F455I-72J4s are removed from 10 sets to 7sets



							8	9	10	11	12	13	14	15	16
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64

Fig. 4.1.8-10 Change of Nfameplate

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6. De-Installation Procedure of DEV Interface Cable 2 (2/3) (DKU-F455I-EXC)

Caution:
When the DEV interface cable is removed from the FSW PCB, the power applied to the DKU to be removed is turned off automatically for each HDU Box from which the cable is removed.

Between HDU-R10-R17 and HDU-R20-R27

a. Disconnect the DEV interface cables from the FSW PCBs in the DKU-R1 frame referring to figures 4.1.8-11 and 4.1.8-12.

⚠ CAUTION

A serious failure occurs if a wrong cable or connector is removed.
Since a label bearing a connection destination is affixed on each cable or connector to be removed, work very carefully referring to it and the wiring diagram.

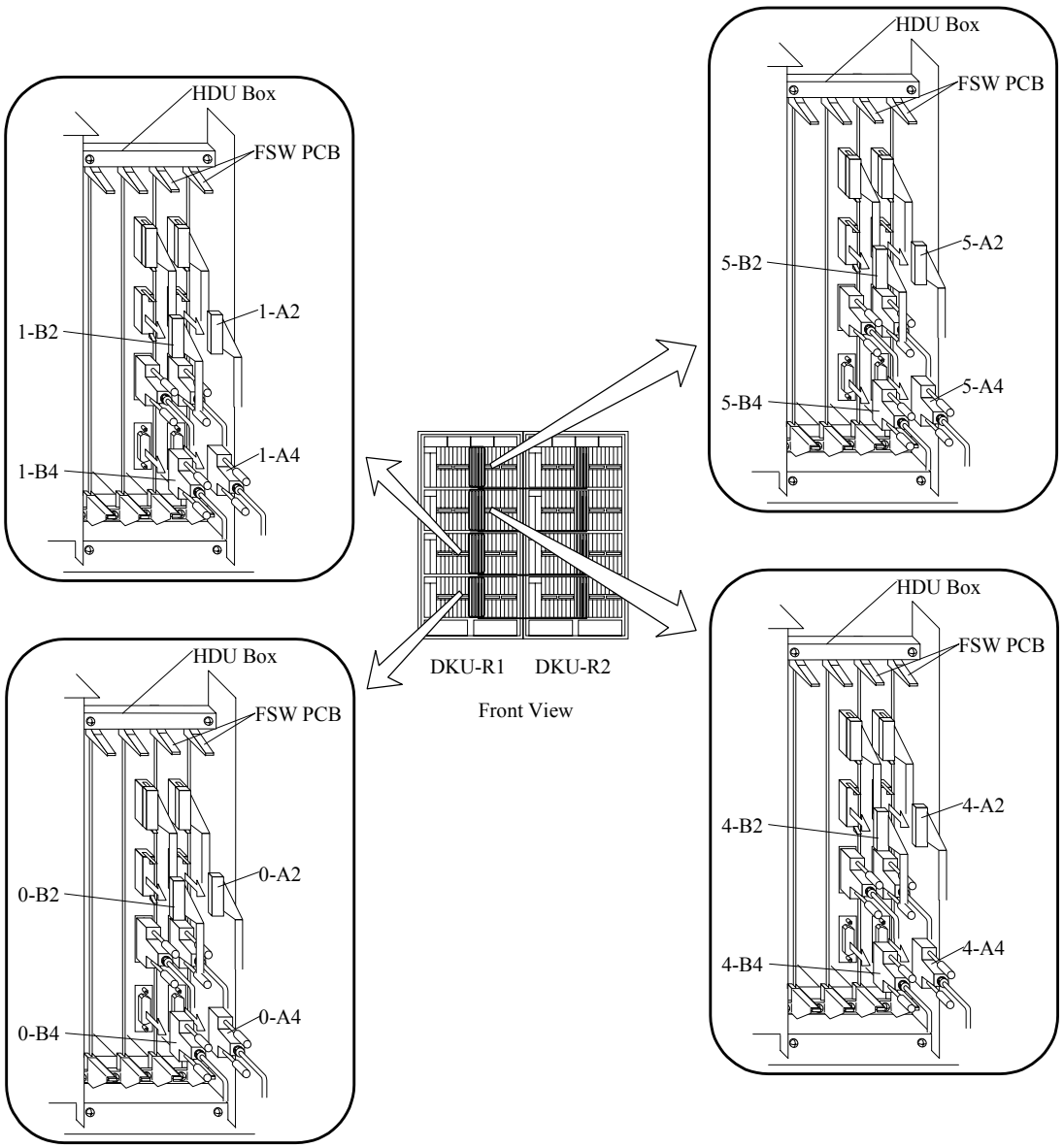

Fig. 4.1.8-11 Connection of the DEV Interface Cables

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⚠ CAUTION

A serious failure occurs if a wrong cable or connector is removed.
Since a label bearing a connection destination is affixed on each cable or connector to be removed, work very carefully referring to it and the wiring diagram.

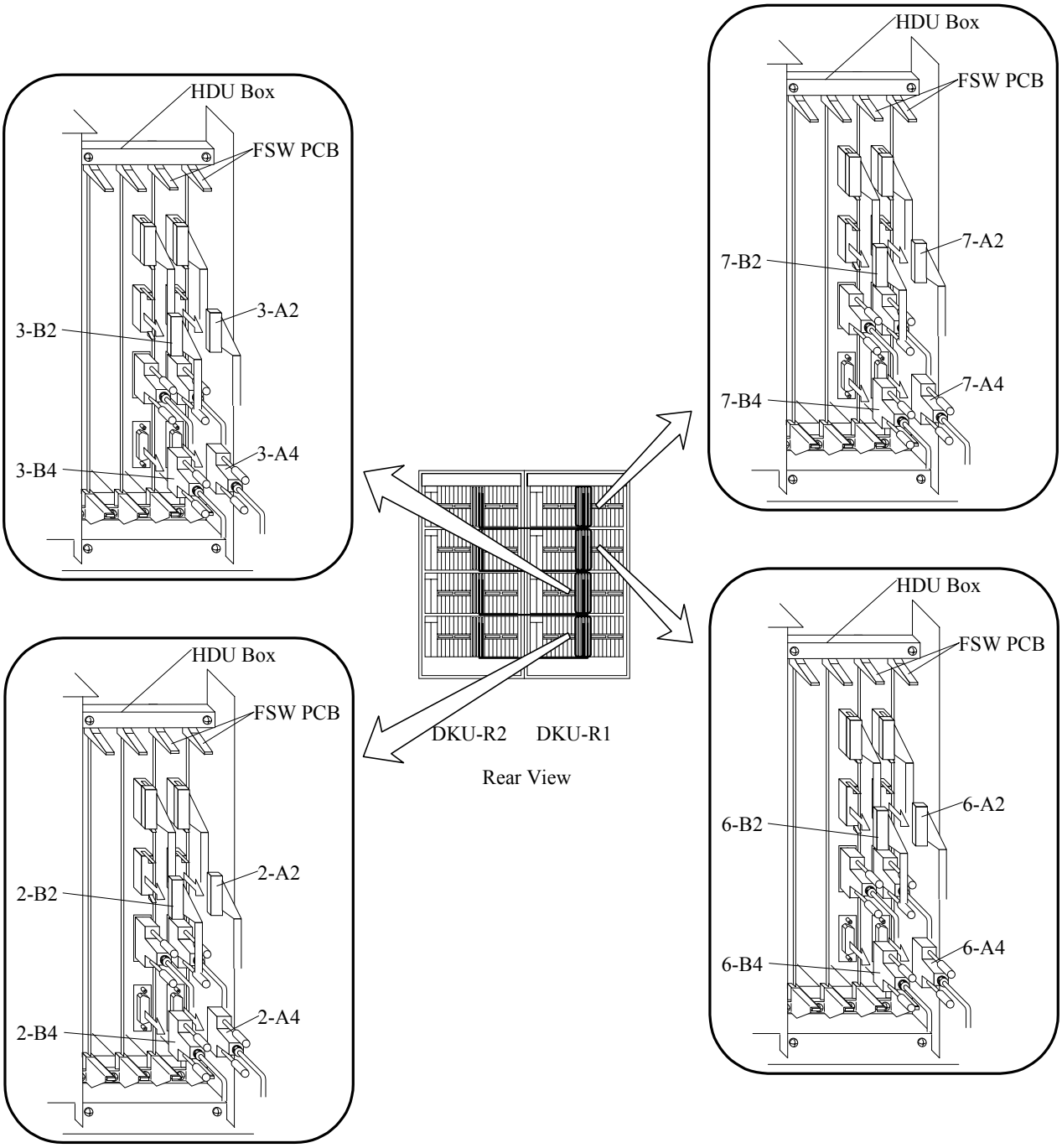

Fig. 4.1.8-12 Connection of the DEV Interface Cables

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7. De-Installation Procedure of DEV Interface Cable (2/3) (DKC-F460I-L1C)

a. Disconnect the DEV interface cables from the sub-edges on the disk adapter PCBs that are installed in locations Nos. D and K in the Rear Logic Box.

⚠ CAUTION

A serious failure occurs if a wrong cable or connector is removed.
Since a label bearing a connection destination is affixed on each cable or connector to be removed, work very carefully referring to it and the wiring diagram.

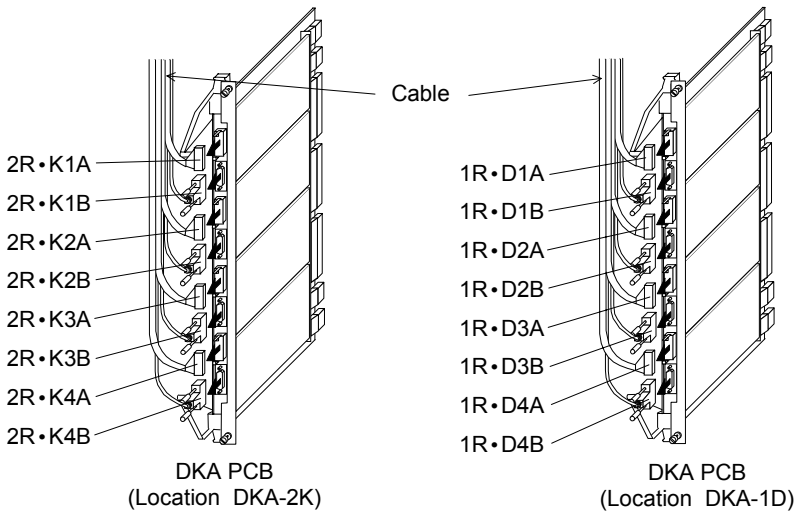

Fig. 4.1.8-13 DEV Interface Cable Disconnecting Diagram (Disk Adapter PCB Side)

b. Disconnect the DEV interface cables from the sub-edges on the disk adapter PCBs that are installed in locations Nos. E and L in the Rear Logic Box.

⚠ CAUTION

A serious failure occurs if a wrong cable or connector is removed.
Since a label bearing a connection destination is affixed on each cable or connector to be removed, work very carefully referring to it and the wiring diagram.

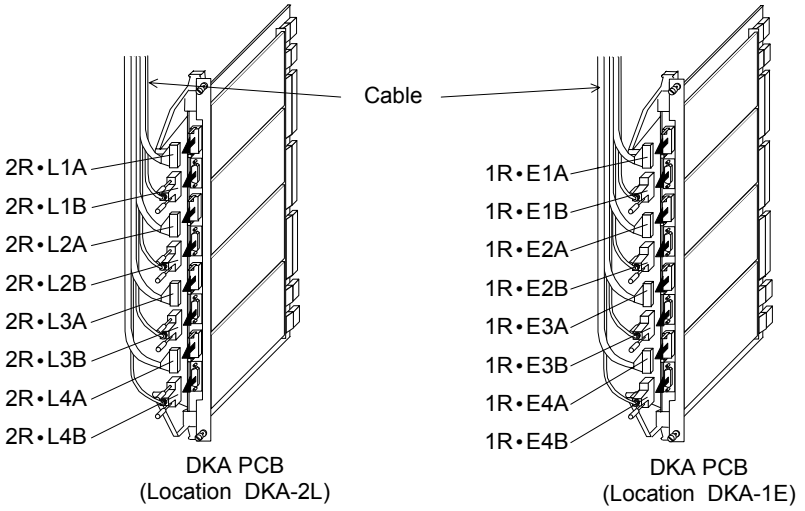

Fig. 4.1.8-14 DEV Interface Cable Disconnecting Diagram (Disk Adapter PCB Side)

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8. De-Installation Procedure of Disk Adapter

Note: Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

8-1 Confirmation of the Shut Down LED (Only Non-Disruptive Procedure)

a. Confirm that Shut Down LED is on. (Fig. 4.1.8-15) If the LED is not on, connect the Maintenance Jumper to the Shut Down Connector.

⚠ CAUTION

A system down may be caused if the Maintenance jumper is inserted in a PCB other than that to be removed. Make sure that it is the PCB to be removed.

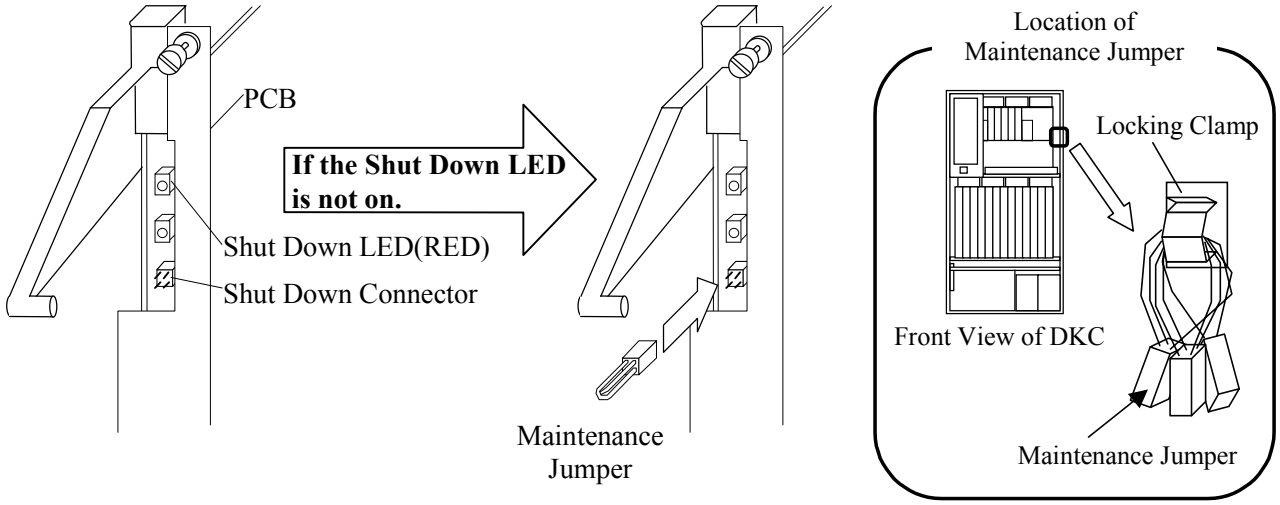

Fig. 4.1.8-15 Shut Down LED

Table 4.1.8-3 Removal Location (Rear of the unit)

Cluster	CL2							CL1				
Slot No.	M	L	K	J	H	G	F	E	D	C	B	A
Function	CSW	DKA	DKA	DKA	DKA	CACHE	CACHE	DKA	DKA	DKA	DKA	CSW
Location No.	CSW -2M	DKA -2L	DKA -2K	DKA -2J	DKA -2H	CACHE -2G	CACHE -2F	DKA -1E	DKA -1D	DKA -1C	DKA -1B	CSW -1A
Order of addition		Add.3	Add.2	Add.1	Basic			Add.3	Add.2	Add.1	Basic	
Number of DKAs set through the SVP		–	–	–	2			–	–	–	2	
		–	–	4				–	–	4		
		–	6					–	6			
		8						8				

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8-2 Disconnection of the DEV Interface cables

In case of Add.1

a. Disconnect the cable from the sub-edge of PCB.

⚠ CAUTION

A serious failure occurs if a wrong cable or connector is removed.
Since a label bearing a connection destination is affixed on each cable or connector to be removed, work very carefully referring to it and the wiring diagram.

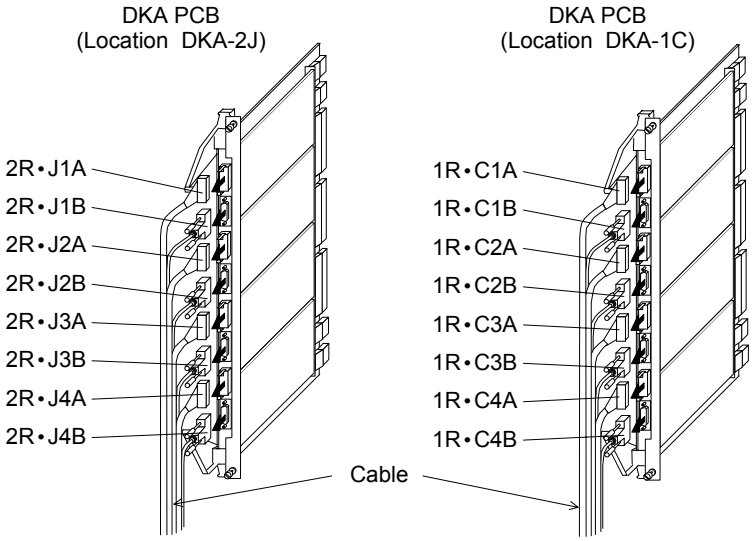

Fig. 4.1.8-16 Disconnection of DEV Interface Cables (Add.1)

In case of Add.2

a. Disconnect the cable from the sub-edge of PCB.

⚠ CAUTION

A serious failure occurs if a wrong cable or connector is removed.
Since a label bearing a connection destination is affixed on each cable or connector to be removed, work very carefully referring to it and the wiring diagram.

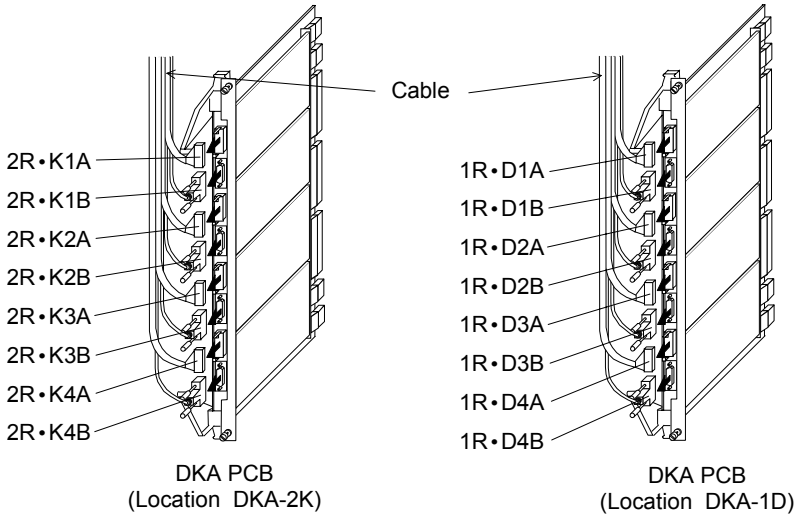

Fig. 4.1.8-17 Disconnection of DEV Interface Cables (Add.2)

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In case of Add.3

a. Disconnect the cable from the sub-edge of PCB.

⚠ CAUTION

A serious failure occurs if a wrong cable or connector is removed.
Since a label bearing a connection destination is affixed on each cable or connector to be removed, work very carefully referring to it and the wiring diagram.

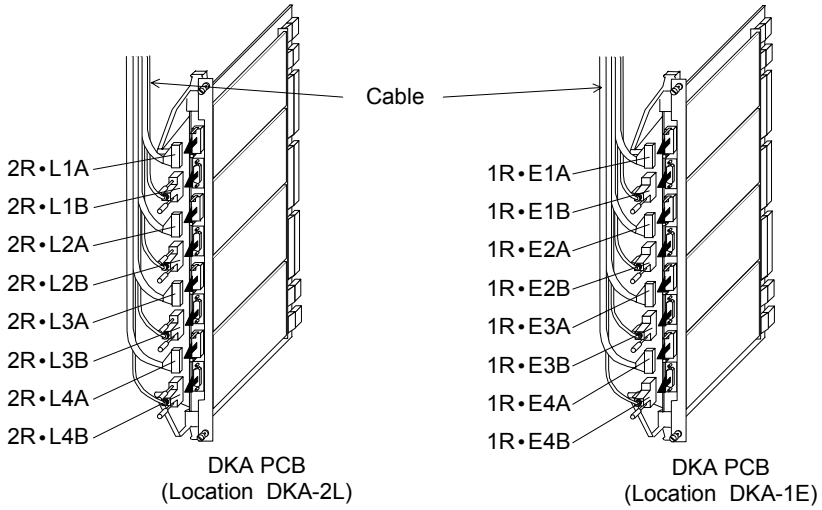

Fig.4.1.8-18 Disconnection of DEV Interface Cable (Add.3)

8-3 Removal of the PCBs

a. Remove the two screws and remove the PCBs from the correct locations in the Rear Logic Box referring to Fig. 4.1.8-19.
b. Attach the dummy plates referring to Fig. 4.1.8-20.

⚠ CAUTION

A serious failure occurs if a wrong PCB is removed.
Remove the PCB after making sure that the Shut Down LED is on.

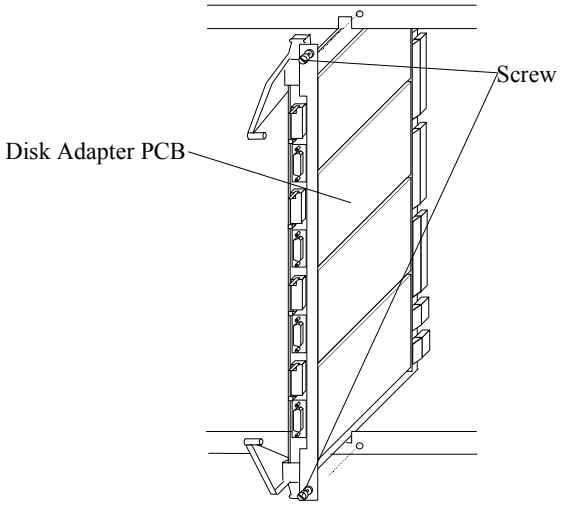

Fig. 4.1.8-19 Removal of PCB

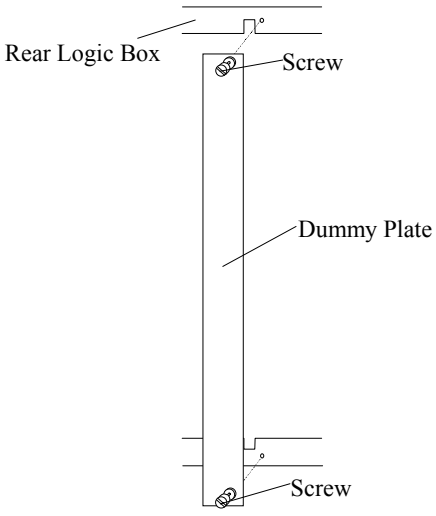

Fig. 4.1.8-20 Attachment of Dummy Plate

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8-4 Removal of the Nameplate

a. Remove the nameplate from the Rear Logic Box cover.

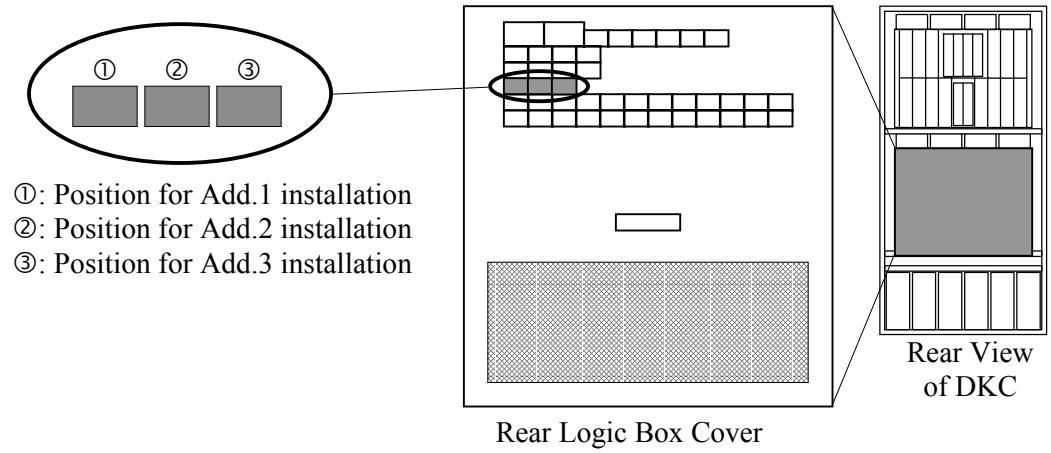

Fig. 4.1.8-21 Removal of Nameplate

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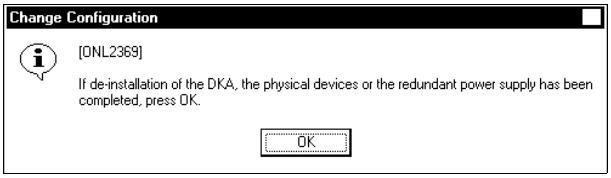
9. SVP post procedure

1.

Select (CL) [OK] in response to "If de-installation of the DKA, the physical devices or the redundant power supply has been completed, press OK." shown in the right figure.



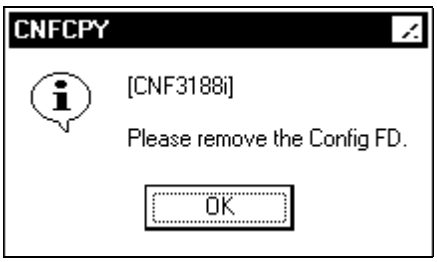
2. <Check the end of de-installation procedure>
"Renewal process has completed. Please check subsystem status." shown in the right figure displayed. Select (CL) [OK] in response to this message.

3.

"Reading subsystem configuration data..." is displayed.
"Please insert the Config FD in the FDD." is displayed.
Insert the configuration FD into FDD, select (CL) [OK].

4.

When this procedure is completed, message "Please remove the Config FD." is displayed.
Remove the FD, select (CL) [OK].



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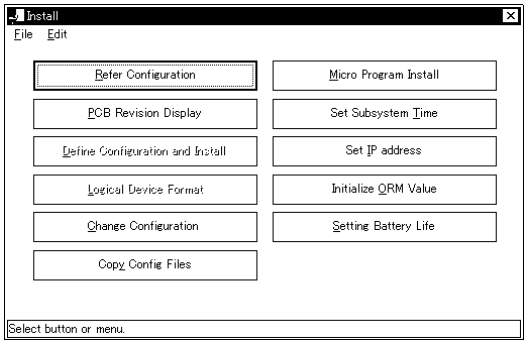
5.

After the procedure is completed, return to ‘Install’.
Select (CL) [File]-[Exit].



6. <Mode Change>
Change the mode to View Mode.

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10. De-Installation Procedure of DEV Interface Cable 2 (3/3) (DKU-F455I-EXC)

Between HDU-R10-R17 and HDU-R20-R27

a. Disconnect the DEV interface cables from the FSW PCBs in the DKU-R2 frame referring to Fig. 4.1.8-22 through Fig. 4.1.8-25.
b. Take out the DEV interface cable, which has been removed from the FSW PCB, from the DKU frame.

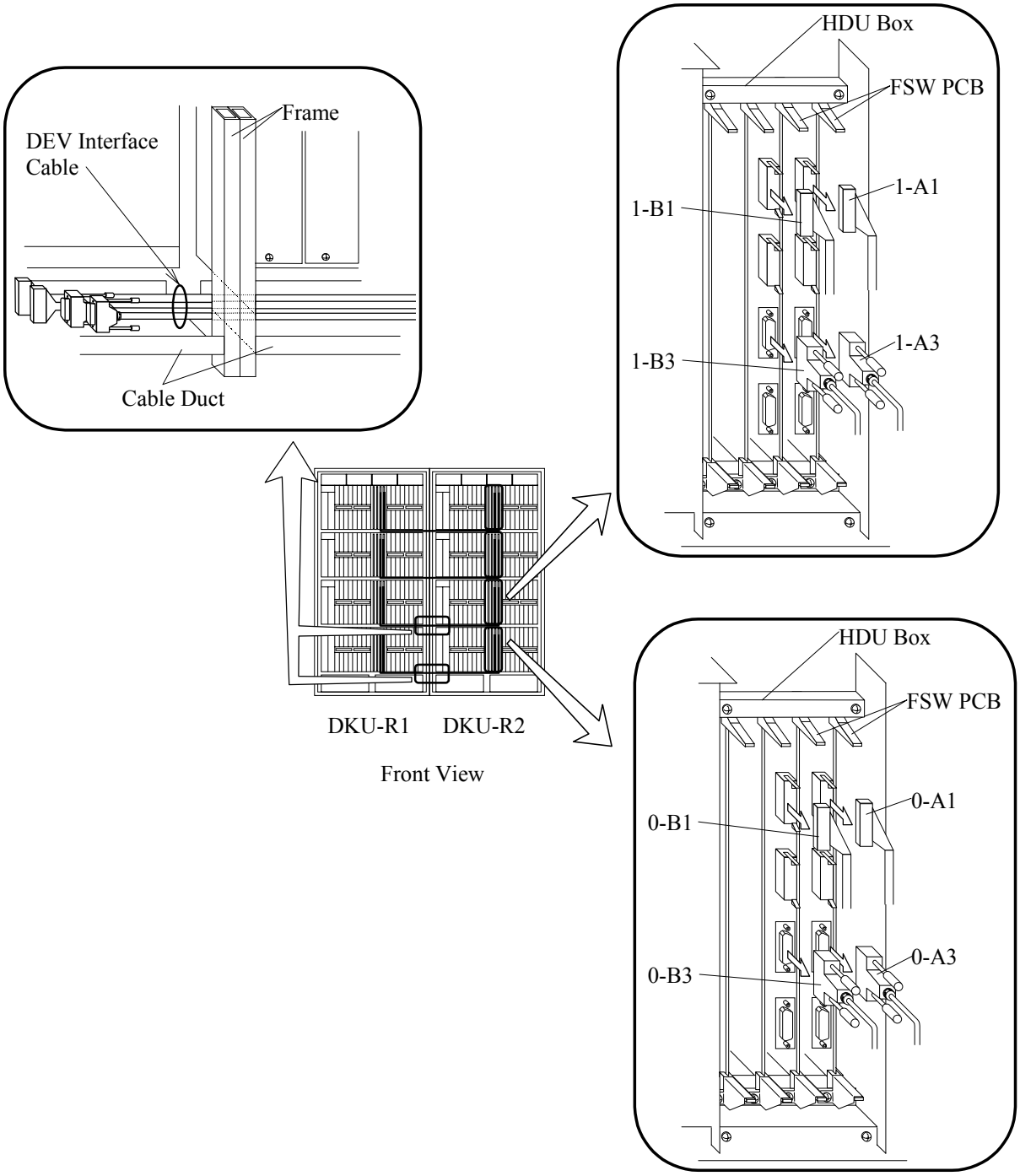

Fig. 4.1.8-22 Disconnection of the DEV Interface Cables

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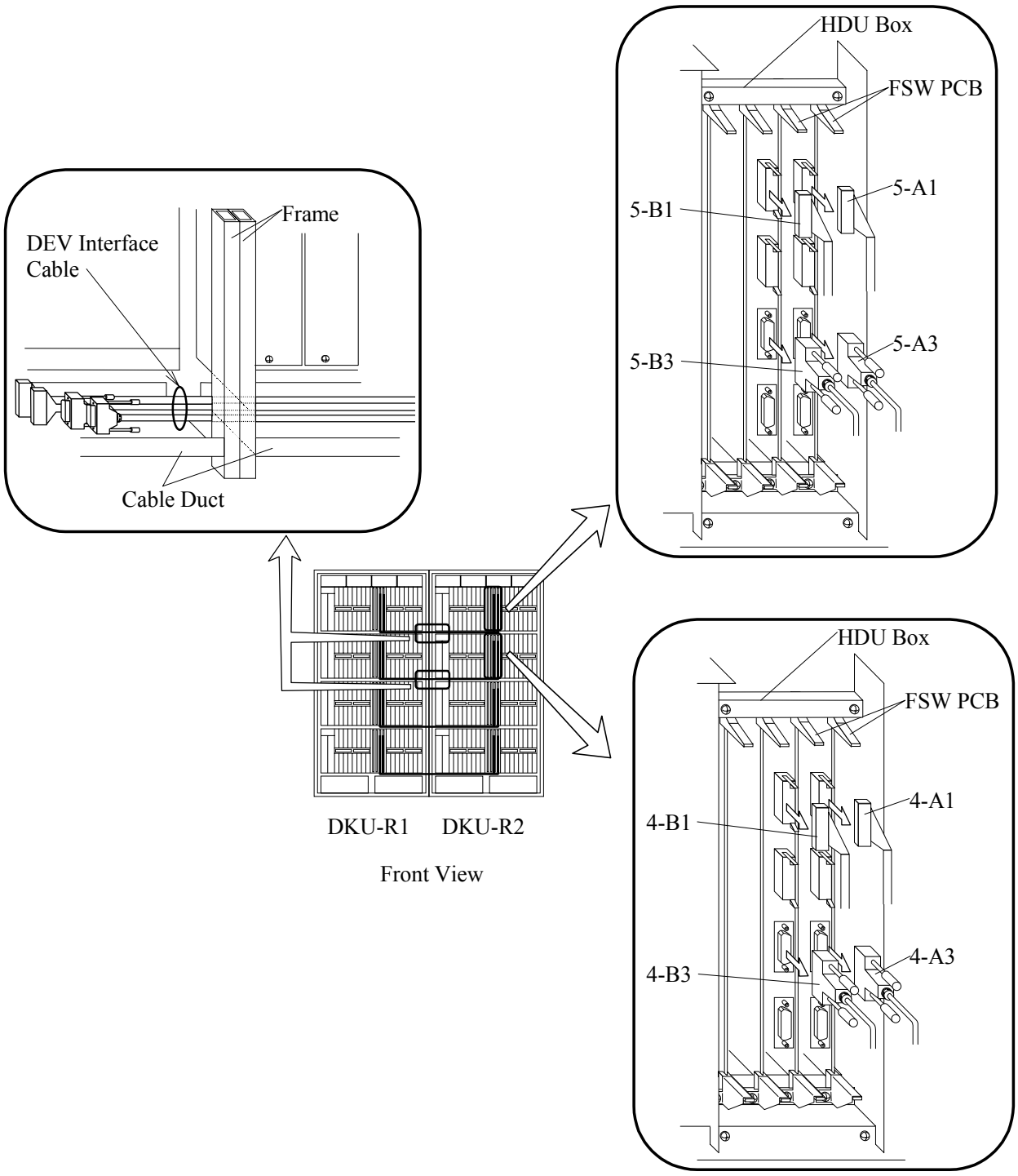

Fig. 4.1.8-23 Disconnection of the DEV Interface Cables

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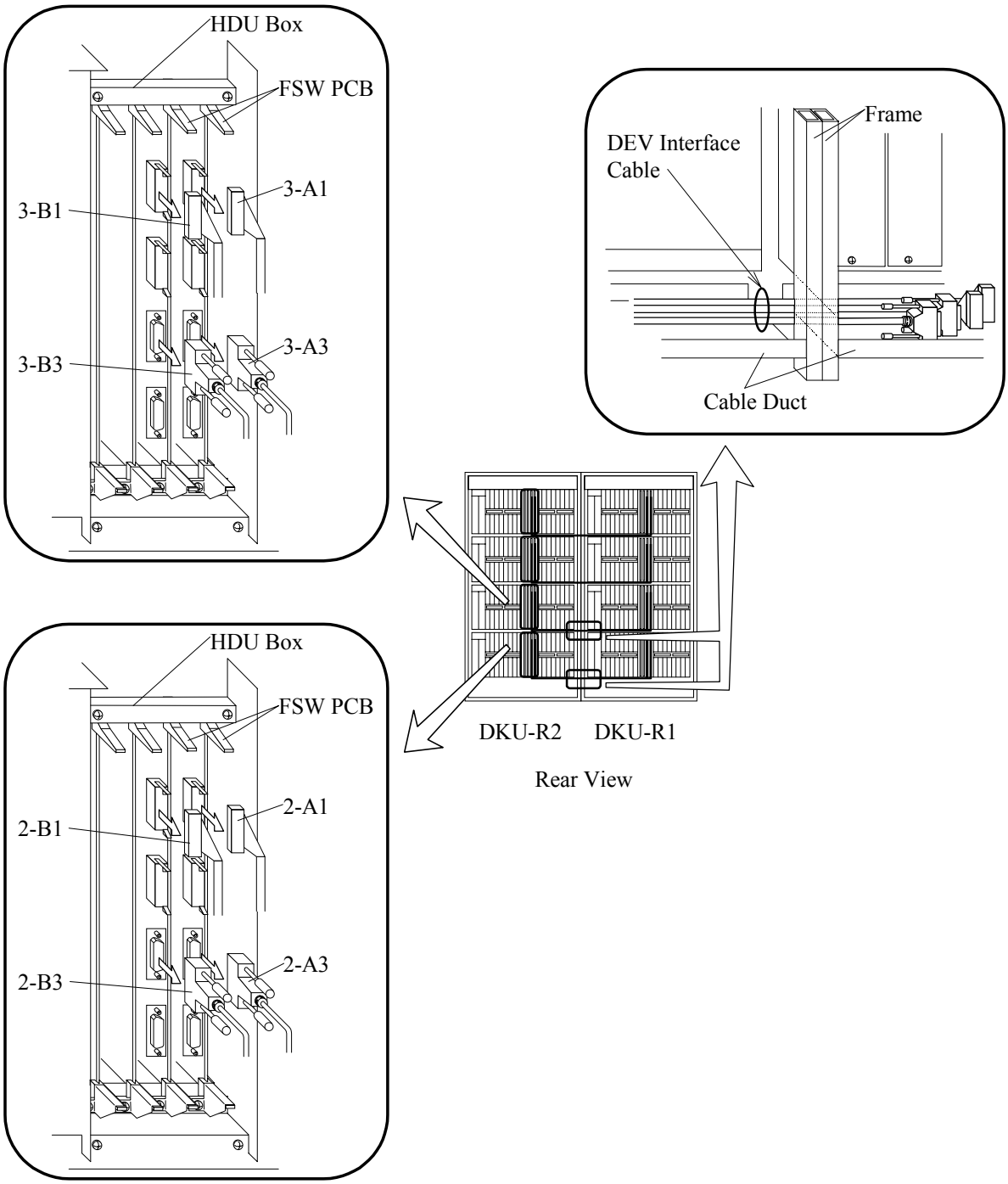

Fig. 4.1.8-24 Disconnection of the DEV Interface Cables

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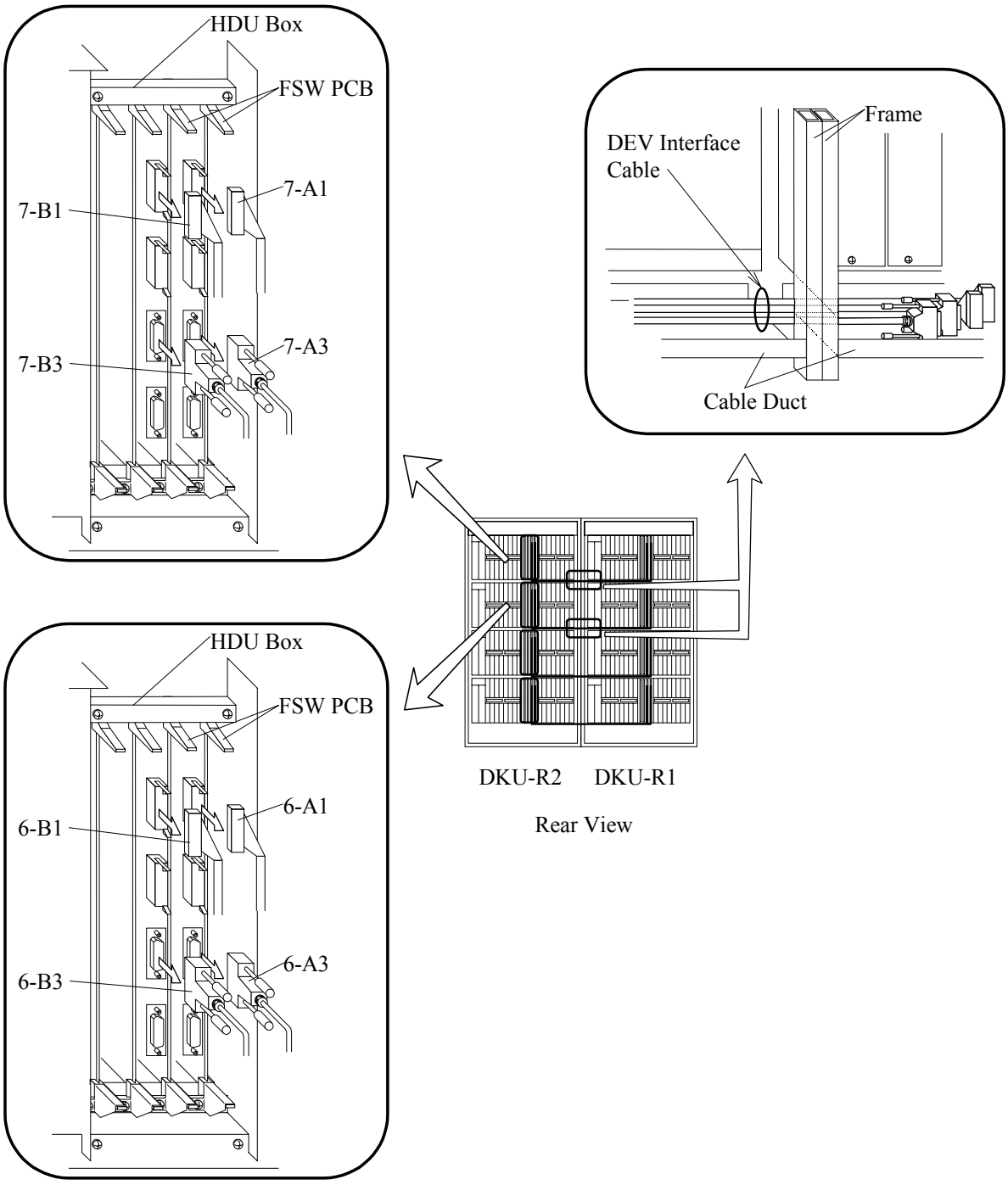

Fig. 4.1.8-25 Disconnection of the DEV Interface Cables

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c. Attach the cable covers with the screws.

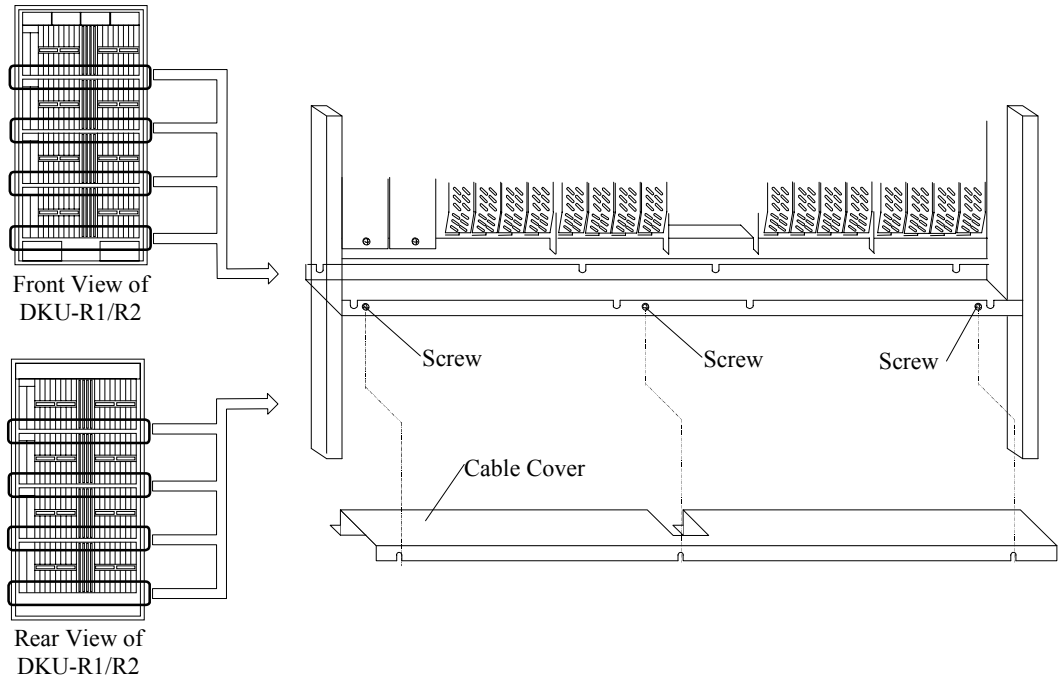

Fig. 4.1.8-26 Attachment of the Cable Cover

d. Attach the cable covers with the screws.

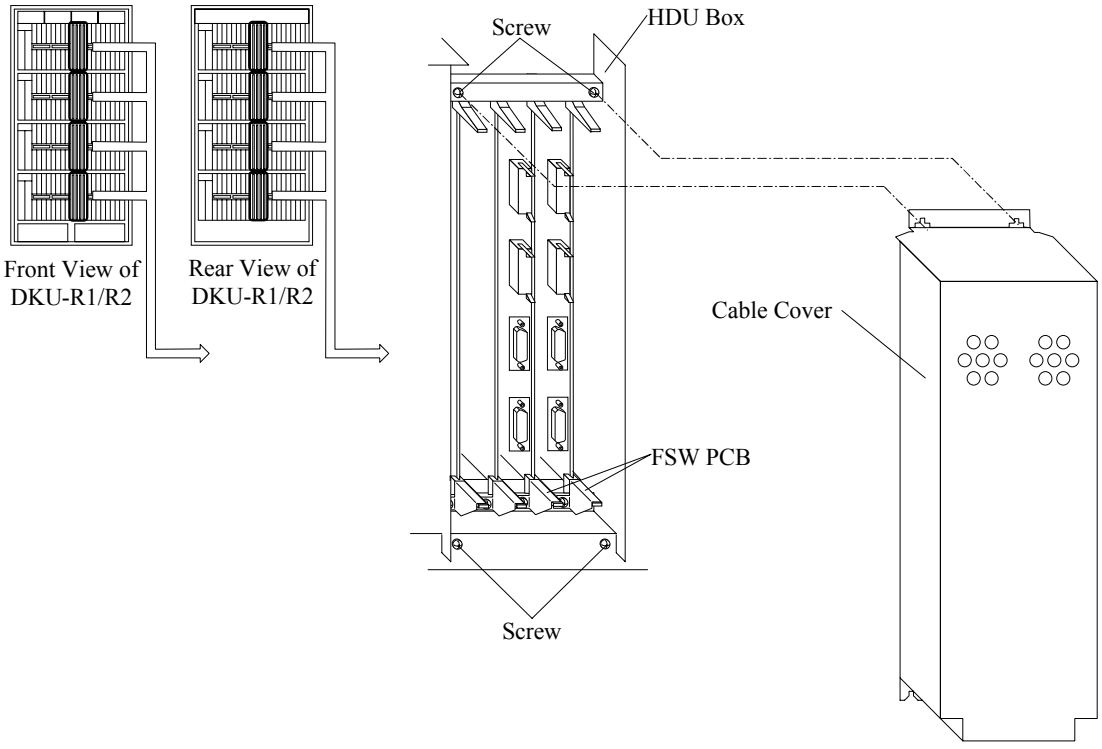

Fig. 4.1.8-27 Attachment of the Cable Cover

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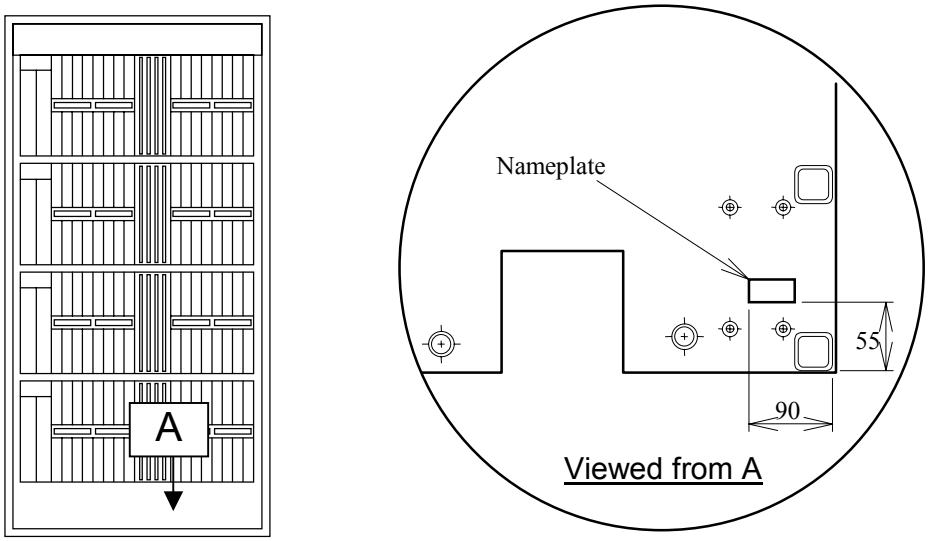
e. Remove the nameplate from the R2 DKU frame.



Rear View of
R2 DKU

Fig. 4.1.8-28 Removal of the Nameplate

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11. De-Installation Procedure of DEV Interface Cable 1 (3/3) (DKC-F460I-L1C)

a. Refer to Fig. 4.1.8-29 and Fig. 4.1.8-30. Connect the DEV interface cables to the sub-edges on the FSW PCBs in the HDU box.
b. Take out the DEV interface cable, which has been removed from the FSW PCB, from the DKU frame.

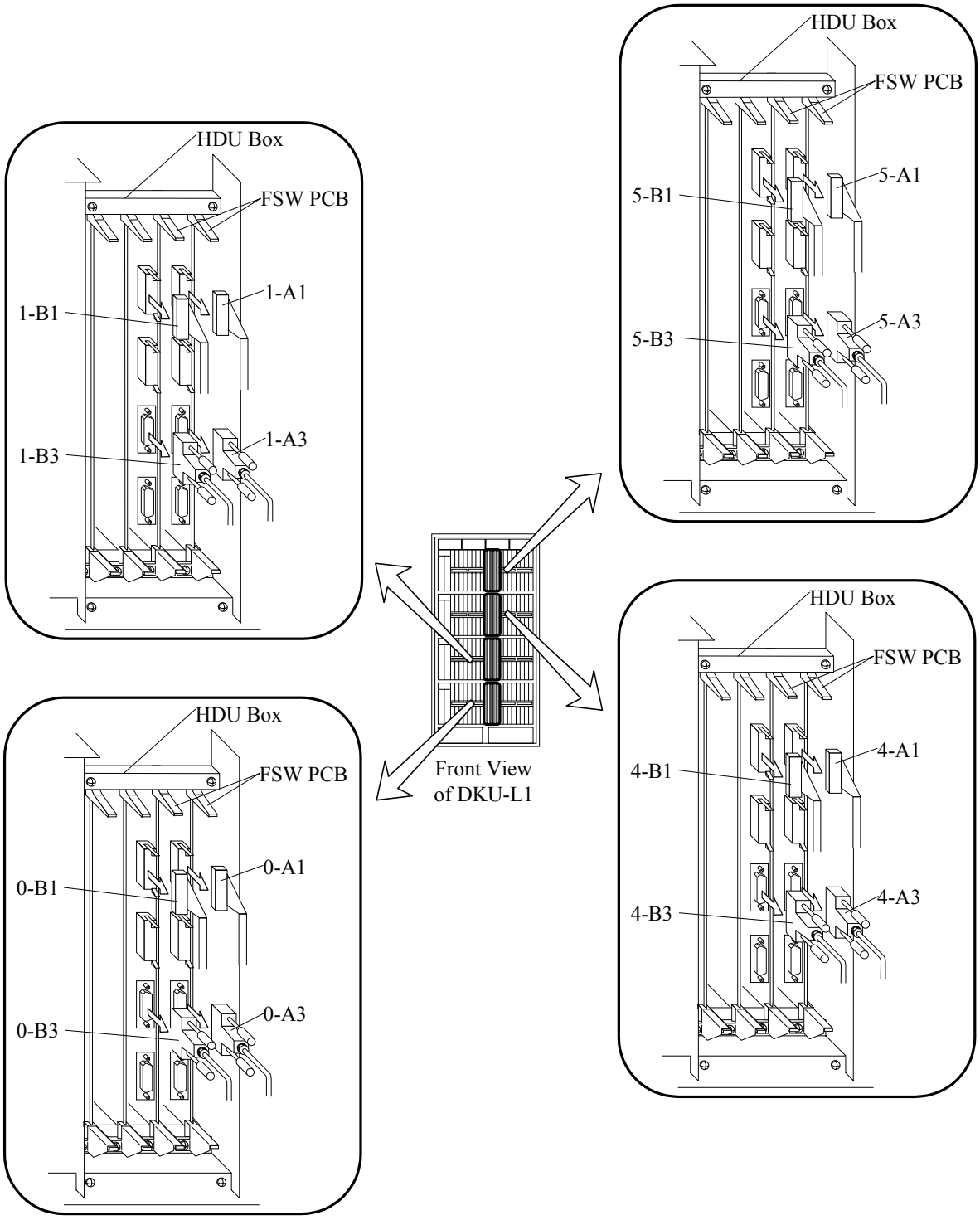

Fig. 4.1.8-29 DEV Interface Cabling Diagram (FSW PCB Side)

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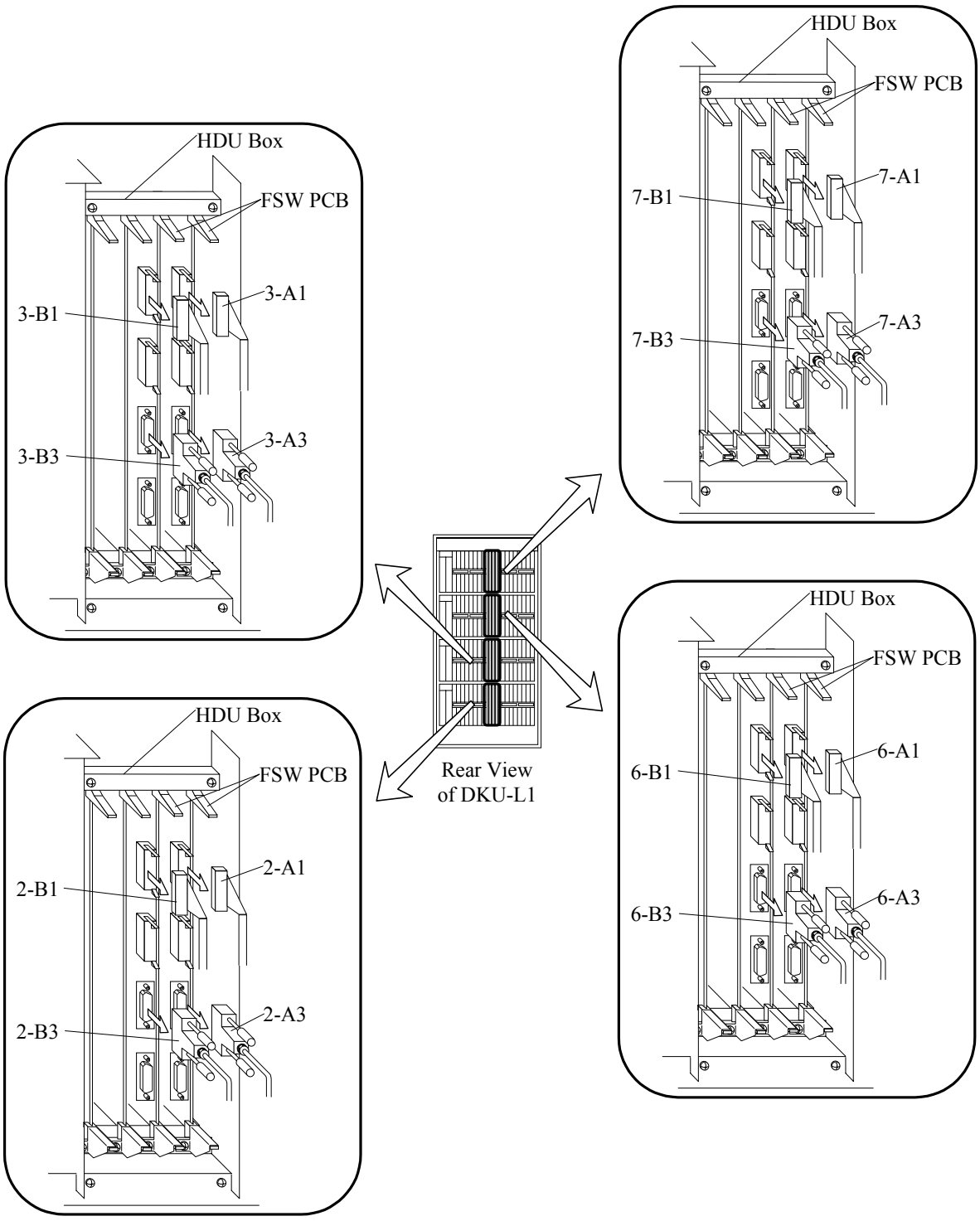

Fig. 4.1.8-30 DEV Interface Cabling Diagram (FSW PCB Side)

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c. Attach the cable covers with the screws.

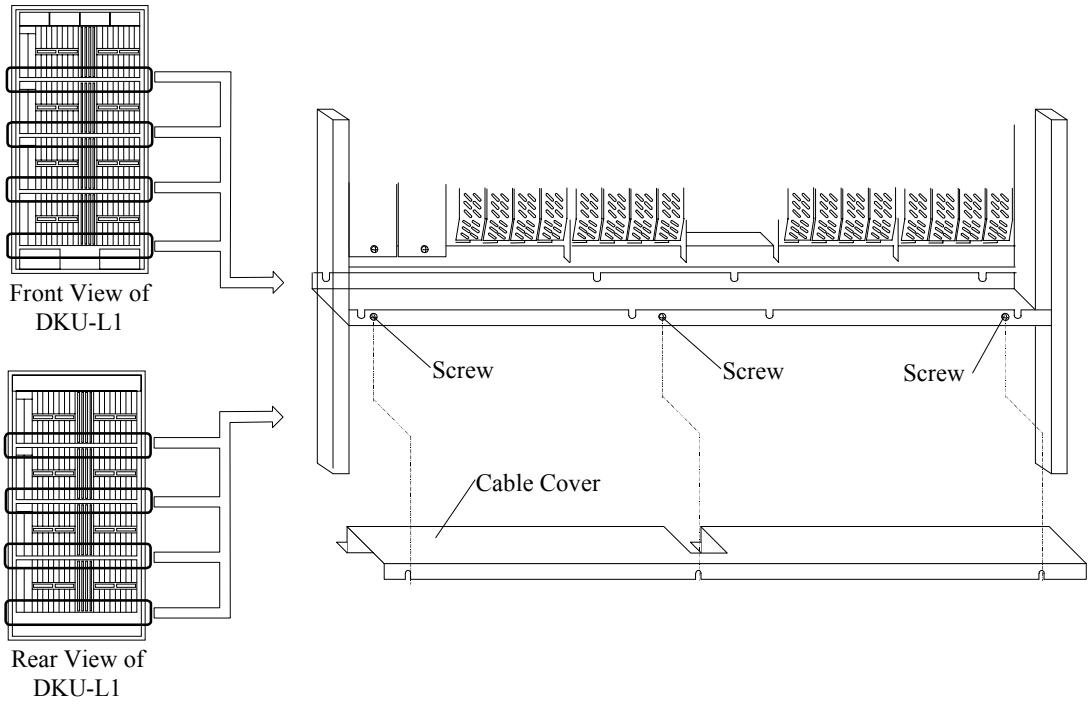

Fig. 4.1.8-31 Attachment of Cable Covers

d. Attach the cable covers with the screws.

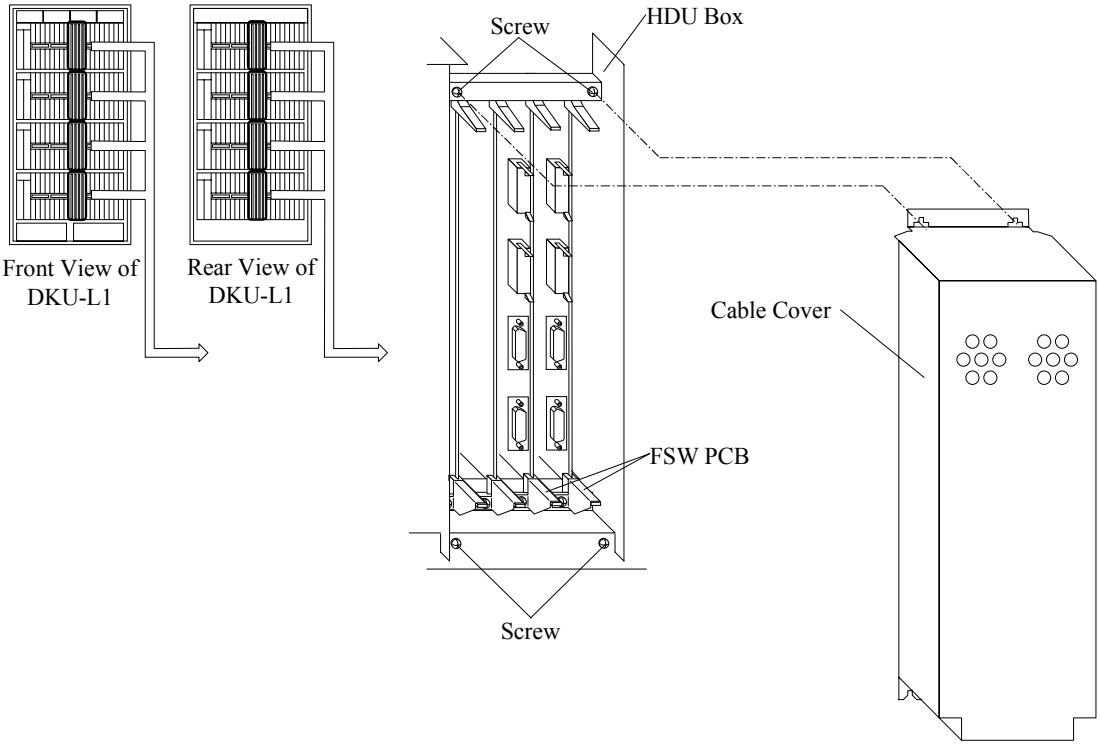

Fig. 4.1.8-32 Attachment of Cable Covers

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e. Remove the nameplate from the cover.

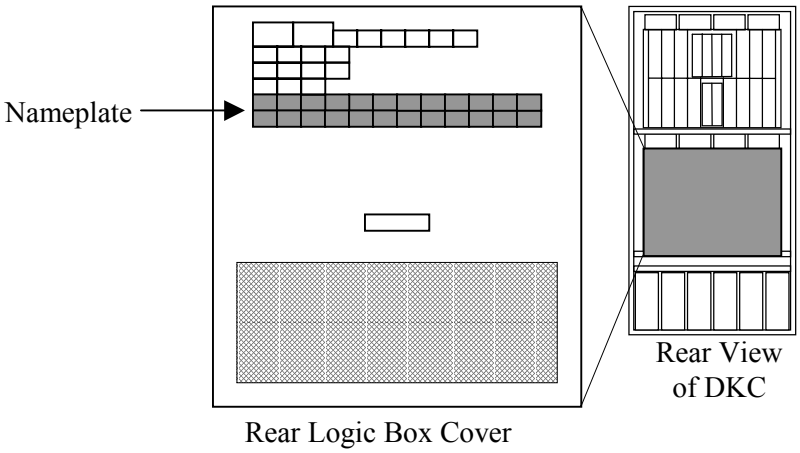

Fig. 4.1.8-33 Removal of Nameplate

f. Return to the work table (INST02-60) and perform rest of the works.

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4.1.9 When performing removal of the data/spare HDD canister, DKA, and DEV interface cable that accompanies the removal of the DKU-R2 and DKU-L2 frames (DKC-F460I-200, DKU-F455I-36K4/36K1/72J4/72J1/72K4/72K1/146J4/146J1/146JF/146JS/146JQ/146JM/EXC)

1. De-Installation Procedure of DEV Interface Cable 2 (1/3) (DKU-F455I-EXC)

> Caution:
> When the main circuit breaker of the DKU is turned off before the DEV interface cable (DKU-F455I-EXC) is removed, the DKU Voltage Alarm is detected (the ALARM LED on the operator panel comes on and the SIM=BF20XX or BF22XX is issued). Therefore, turn off the main circuit breaker of the DKU after removing the DEV interface cable. The turning off of the DKU main circuit breaker is to be done later in another procedure explained on page INST04-DKU-10.

Between HDU-R10-R17 and HDU-R20-R27

a. Loosen the screws and remove the cable covers from the DKU frames.

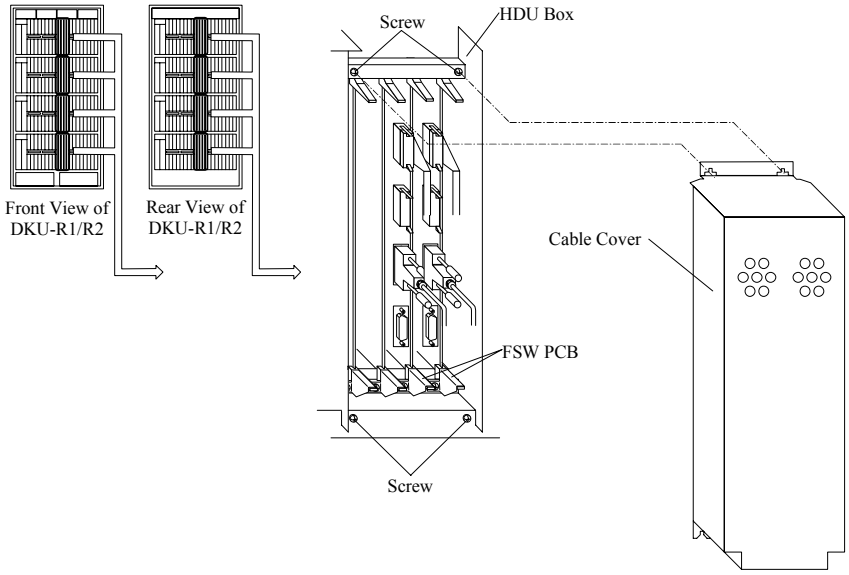

Fig. 4.1.9-1 Removal of Cable Covers

b. Loosen the screws and remove the cable covers from the DKU frames.

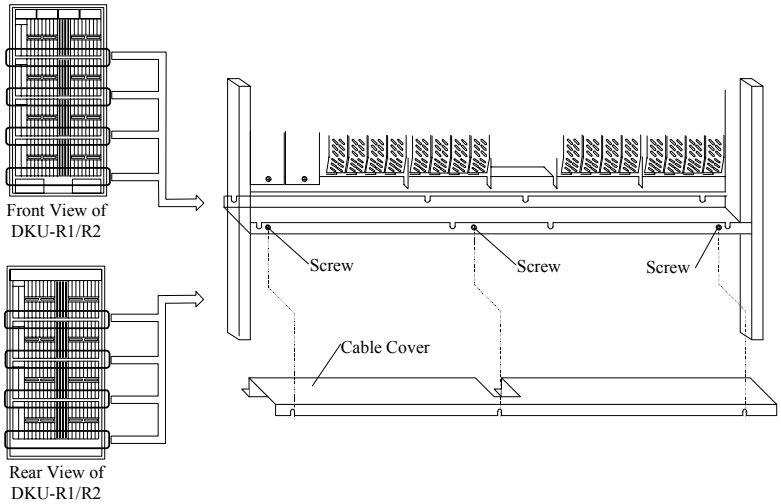

Fig.4.1.9-2 Removal of Cable Covers

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Between HDU-L10-L17 and HDU-L20-L27

a. Loosen the screws and remove the cable covers from the DKU frames.

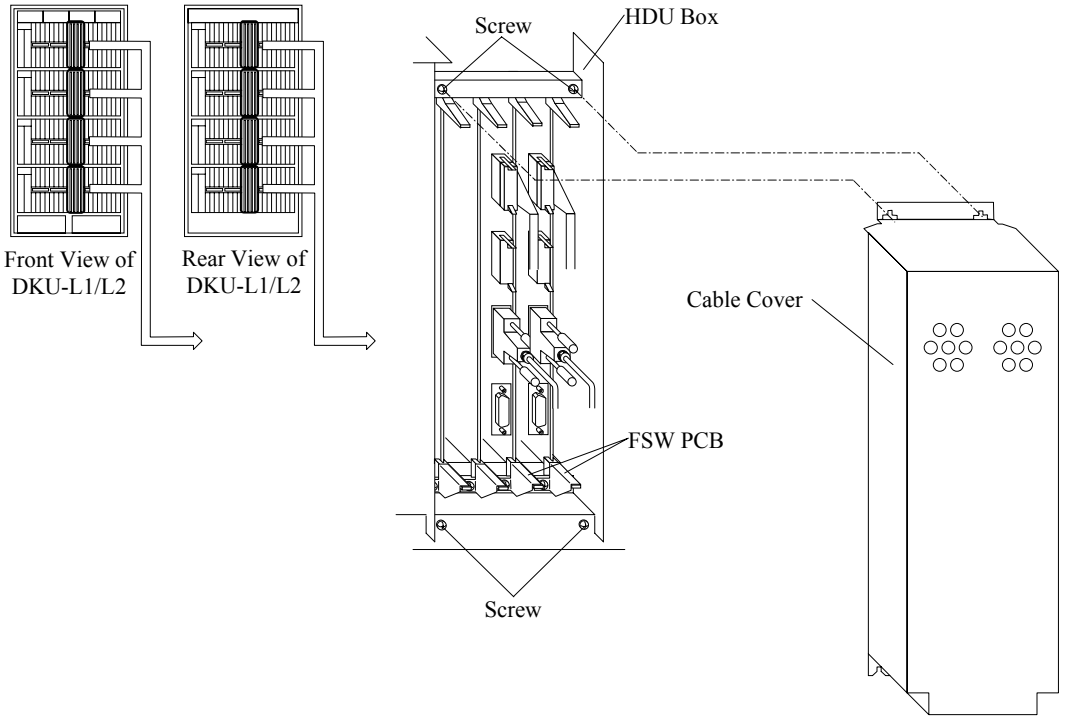

Fig. 4.1.9-3 Removal of Cable Covers

b. Loosen the screws and remove the cable covers from the DKU frames.

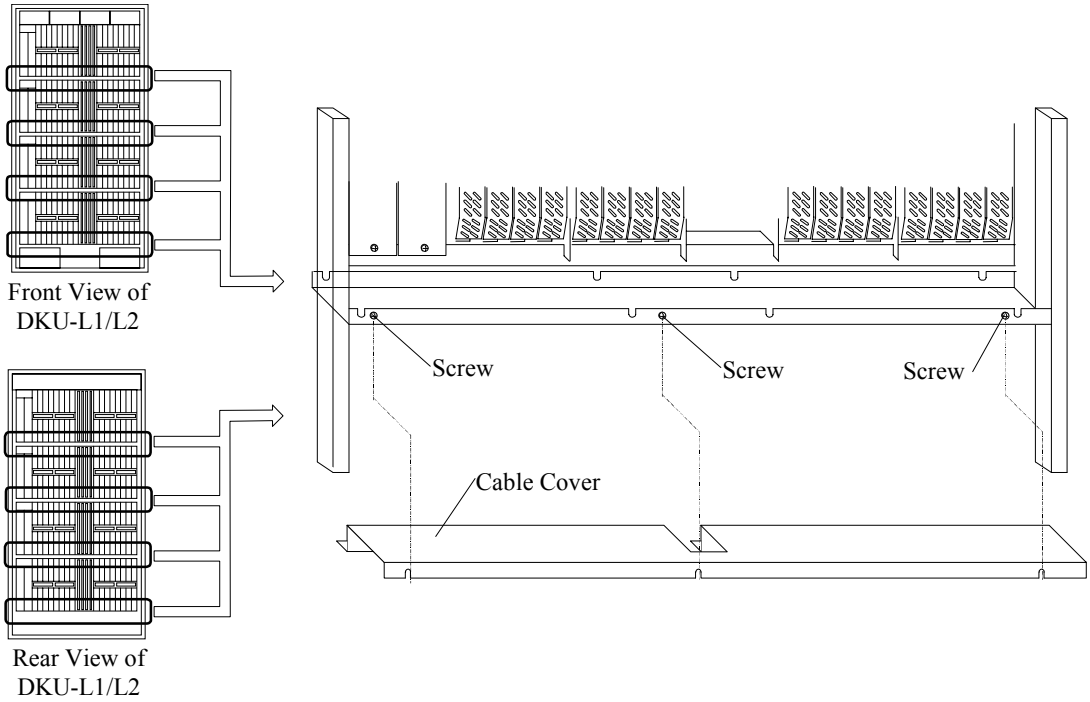

Fig. 4.1.9-4 Removal of Cable Covers

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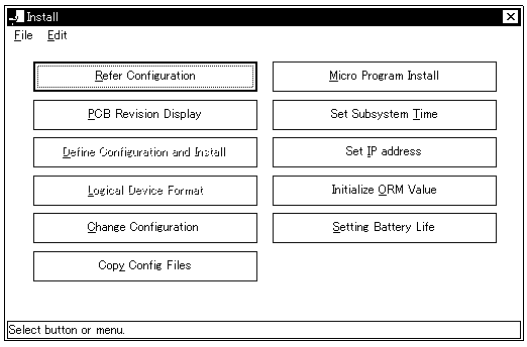
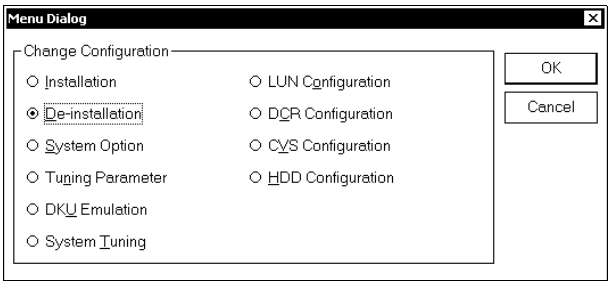
2. Setting up the New Device Structure Information

1. <Mode Change>
   Change the mode to Modify Mode.
   Select (CL) [Install].

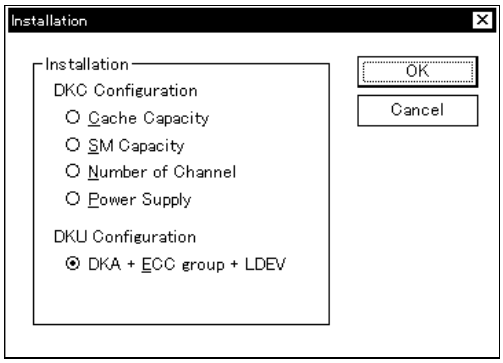
2. <Start the 'Menu Dialog' screen>
   Select (CL) [Change Configuration].



3. <Start Device Structure Setup screen>
   Select (CL) [De-Installation] in the 'Menu Dialog' dialog box and select (CL) [OK].



4. <Select a part to be changed>
   Select (CL) [DKA + ECC group + LDEV], and select (CL) [OK].



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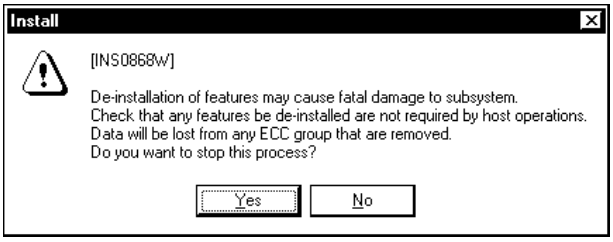
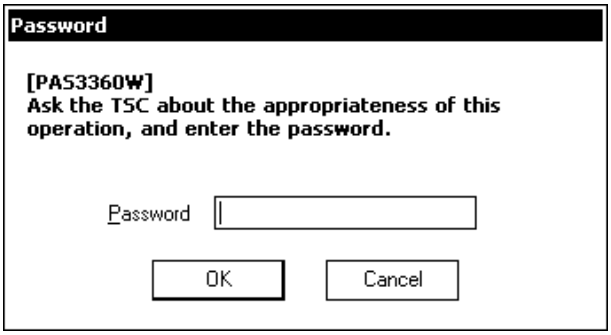
5.

Select (CL) [No] in response to “De-installation of features may cause fatal damage to subsystem. Check that any features be de-installed are not required by host operations. Data will be lost from any ECC group that are removed. Do you want to stop this process?”.



6. <Input password>
Enter the password and select (CL) [OK].



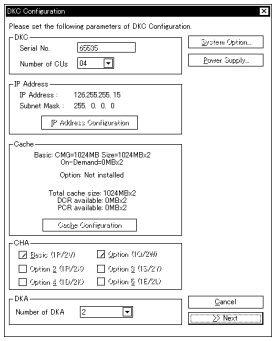
NOTICE
This is a special (exceptional) operation that can cause a serious failure such as a system down or a data loss if a wrong part to be removed is selected, and requires an input of a password. Ask the technical support center about the appropriateness of the operation, and input the password after getting an approval of executing the operation.

7. <Update Configuration Information>
Set the item to be de-installed for DKC and DKA in the ‘DKC Configuration’ window.

When decreasing the CUs, change the “Number of CUs”.
When decreasing the DKAs, change the “Number of DKA”.

Note: A part other than the CU and DKA cannot be removed at the same time.

Make sure that the entered item is correct and select (CL) [>>Next].



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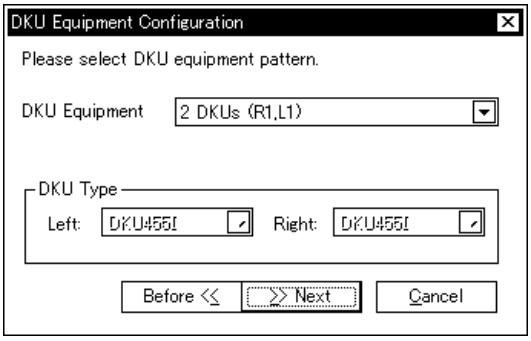
7-1. <Altering DKU frame information>

Define the DKU frame in the DKU Equipment Configuration window.

Make an altered setting in which the DKU-R2 and DKU-L2 are deleted from the DKUs currently set.

Current setting	Altered setting
4DKUs (R1, L1, R2, L2)	2DKUs (R1, L1)

Note: After the setting is made, the B4 of the deleted DKU is not displayed.



After making the setting, select the [>> Next]. The routine proceeds to Step 8.

When the [Before <<] is selected, the window returns to the preceding one.

Return to Step 7.

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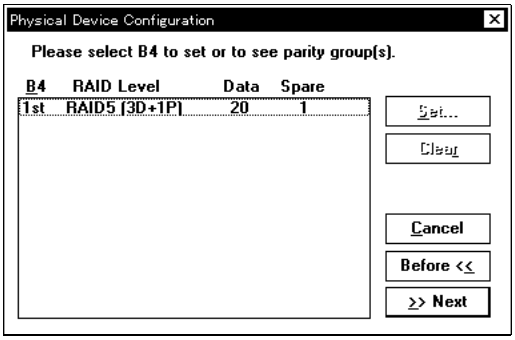
8. Change Drive Configuration Information>
Set drive configuration according to the 'Physical Device Configuration' screen displaying the mounted B4 based on the result of setting of DKU mount pattern.
Detailed procedure is shown below.
[Set...]: Defines the parity group or spare disk. The routine proceeds to Step 8-1.
[Clear...]: Cancels the setting of the B4.
After setting up all items, select (CL) [>>Next].
Selecting (CL) [Before<<] returns you to the previous screen.



[For the case of the multi cabinet model]

B4	Location	B4	Location
1st	HDU-R10, 11, 12, 13	7th	HDU-L20, 21, 22, 23
2nd	HDU-R14, 15, 16, 17	8th	HDU-L24, 25, 26, 27
3rd	HDU-L10, 11, 12, 13	9th	HDU-R30, 31, 32, 33
4th	HDU-L14, 15, 16, 17	10th	HDU-R34, 35, 36, 37
5th	HDU-R20, 21, 22, 23	11th	HDU-L30, 31, 32, 33
6th	HDU-R24, 25, 26, 27	12th	HDU-L34, 35, 36, 37

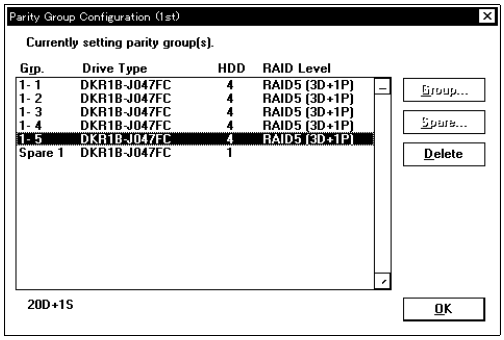
Note: The 9th to 12th of the B4 are valid only when the DKUs for the RAID 400 are connected.

[For the case of the single cabinet model]

B4	Location	Remarks
1st	HDU-R0, 1, 2, 3	HDD-X00 ~ X0F
2nd	HDU-R0, 1, 2, 3	HDD-X10 ~ X1F

8-1. <Define Parity Group>
Select (CL) the group to be de-installed and select (CL) [Delete] in the 'Parity Group Configuration' dialog box.
After setting, select (CL) [OK]. Return to step 8.

Grp*: A parity group where RAID Concatenation is installed.



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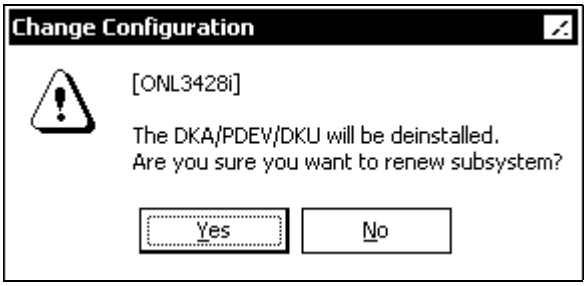
3. SVP pre procedure

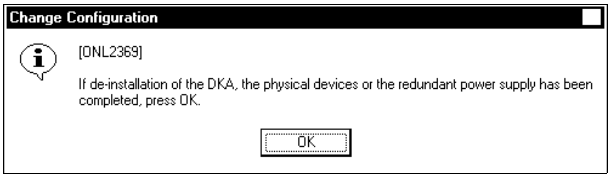
1. <Start de-installation>
   Select (CL) [Yes] in response to "The DKA/PDEV/DKU will be deinstalled. Are you sure you want to renew subsystem?".

   When [No] is selected (CL), returns to INST04-DKA-1770 step 2.



2.

   At this point refrain from pressing the [OK] button.
   "If de-installation of the DKA, the physical devices or the redundant power supply has been completed, press OK." shown in the right figure.



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4. De-Installation Procedure of HDD Canister

4-1 Confirmation of position to de-install HDD canister

(i) RAID5(3D+1P)/RAID1(2D+2D)

Relations between the installation locations of the RAID groups and the RAID group numbers set through the SVP are shown in Table 4.1.9-1.

Table 4.1.9-1 Relation between HDDs installation order and RAID group number (3D+1P/2D+2D) (1/2)

	DKC	R1 DKU			R2 DKU		
		RAID Group Installation Order	RAID Group No.	HDD Location	RAID Group Installation Order	RAID Group No.	HDD Location
Upper	2nd DKA Pair	032	2-1	HDDR1y-00	096	6-1	HDDR2y-00
		033	2-2	HDDR1y-01	097	6-2	HDDR2y-01
		034	2-3	HDDR1y-02	098	6-3	HDDR2y-02
		035	2-4	HDDR1y-03	099	6-4	HDDR2y-03
		036	2-5	HDDR1y-04	100	6-5	HDDR2y-04
		037	2-6	HDDR1y-05	101	6-6	HDDR2y-05
		038	2-7	HDDR1y-06	102	6-7	HDDR2y-06
		039	2-8	HDDR1y-07	103	6-8	HDDR2y-07
		040	2-9	HDDR1y-08	104	6-9	HDDR2y-08
		041	2-10	HDDR1y-09	105	6-10	HDDR2y-09
		042	2-11	HDDR1y-0A	106	6-11	HDDR2y-0A
		043	2-12	HDDR1y-0B	107	6-12	HDDR2y-0B
		044	2-13	HDDR1y-0C	108	6-13	HDDR2y-0C
		045	2-14	HDDR1y-0D	109	6-14	HDDR2y-0D
		046	2-15	HDDR1y-0E	110	6-15	HDDR2y-0E
		047(Spare) *2	2-16	HDDR1y-0F	111	6-16	HDDR2y-0F
		048	2-17	HDDR1y-10	112	6-17	HDDR2y-10
		049	2-18	HDDR1y-11	113	6-18	HDDR2y-11
		050	2-19	HDDR1y-12	114	6-19	HDDR2y-12
		051	2-20	HDDR1y-13	115	6-20	HDDR2y-13
		052	2-21	HDDR1y-14	116	6-21	HDDR2y-14
		053	2-22	HDDR1y-15	117	6-22	HDDR2y-15
		054	2-23	HDDR1y-16	118	6-23	HDDR2y-16
		055	2-24	HDDR1y-17	119	6-24	HDDR2y-17
		056	2-25	HDDR1y-18	120	6-25	HDDR2y-18
		057	2-26	HDDR1y-19	121	6-26	HDDR2y-19
		058	2-27	HDDR1y-1A	122	6-27	HDDR2y-1A
		059	2-28	HDDR1y-1B	123	6-28	HDDR2y-1B
		060	2-29	HDDR1y-1C	124	6-29	HDDR2y-1C
		061	2-30	HDDR1y-1D	125	6-30	HDDR2y-1D
		062	2-31	HDDR1y-1E	126	6-31	HDDR2y-1E
		063	2-32	HDDR1y-1F	127	6-32	HDDR2y-1F
Lower	1st DKA Pair	001	1-1	HDDR1x-00	064	5-1	HDDR2x-00
		002	1-2	HDDR1x-01	065	5-2	HDDR2x-01
		003	1-3	HDDR1x-02	066	5-3	HDDR2x-02
		004	1-4	HDDR1x-03	067	5-4	HDDR2x-03
		005	1-5	HDDR1x-04	068	5-5	HDDR2x-04
		006	1-6	HDDR1x-05	069	5-6	HDDR2x-05
		007	1-7	HDDR1x-06	070	5-7	HDDR2x-06
		008	1-8	HDDR1x-07	071	5-8	HDDR2x-07
		009	1-9	HDDR1x-08	072	5-9	HDDR2x-08
		010	1-10	HDDR1x-09	073	5-10	HDDR2x-09
		011	1-11	HDDR1x-0A	074	5-11	HDDR2x-0A
		012	1-12	HDDR1x-0B	075	5-12	HDDR2x-0B
		013	1-13	HDDR1x-0C	076	5-13	HDDR2x-0C
		014	1-14	HDDR1x-0D	077	5-14	HDDR2x-0D
		015	1-15	HDDR1x-0E	078	5-15	HDDR2x-0E
		Spare *1	1-16	HDDR1x-0F	079	5-16	HDDR2x-0F
		016	1-17	HDDR1x-10	080	5-17	HDDR2x-10
		017	1-18	HDDR1x-11	081	5-18	HDDR2x-11
		018	1-19	HDDR1x-12	082	5-19	HDDR2x-12
		019	1-20	HDDR1x-13	083	5-20	HDDR2x-13
		020	1-21	HDDR1x-14	084	5-21	HDDR2x-14
		021	1-22	HDDR1x-15	085	5-22	HDDR2x-15
		022	1-23	HDDR1x-16	086	5-23	HDDR2x-16
		023	1-24	HDDR1x-17	087	5-24	HDDR2x-17
		024	1-25	HDDR1x-18	088	5-25	HDDR2x-18
		025	1-26	HDDR1x-19	089	5-26	HDDR2x-19
		026	1-27	HDDR1x-1A	090	5-27	HDDR2x-1A
		027	1-28	HDDR1x-1B	091	5-28	HDDR2x-1B
		028	1-29	HDDR1x-1C	092	5-29	HDDR2x-1C
		029	1-30	HDDR1x-1D	093	5-30	HDDR2x-1D
		030	1-31	HDDR1x-1E	094	5-31	HDDR2x-1E
		031	1-32	HDDR1x-1F	095	5-32	HDDR2x-1F

*1: To be left vacant or a spare disk is to be installed. *2: A data or spare disk is to be installed.

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Table 4.1.9-1 Relation between HDDs installation order and RAID group number (3D+1P/2D+2D) (2/2)

	L2 DKU			L1 DKU			DKC
	RAID Group Installation Order	RAID Group No.	HDD Location	RAID Group Installation Order	RAID Group No.	HDD Location	
Upper	223	8-1	HDDL2y-00	159	4-1	HDDL1y-00	4th DKA Pair
	224	8-2	HDDL2y-01	160	4-2	HDDL1y-01	
	225	8-3	HDDL2y-02	161	4-3	HDDL1y-02	
	226	8-4	HDDL2y-03	162	4-4	HDDL1y-03	
	227	8-5	HDDL2y-04	163	4-5	HDDL1y-04	
	228	8-6	HDDL2y-05	164	4-6	HDDL1y-05	
	229	8-7	HDDL2y-06	165	4-7	HDDL1y-06	
	230	8-8	HDDL2y-07	166	4-8	HDDL1y-07	
	231	8-9	HDDL2y-08	167	4-9	HDDL1y-08	
	232	8-10	HDDL2y-09	168	4-10	HDDL1y-09	
	233	8-11	HDDL2y-0A	169	4-11	HDDL1y-0A	
	234	8-12	HDDL2y-0B	170	4-12	HDDL1y-0B	
	235	8-13	HDDL2y-0C	171	4-13	HDDL1y-0C	
	236	8-14	HDDL2y-0D	172	4-14	HDDL1y-0D	
	237	8-15	HDDL2y-0E	173	4-15	HDDL1y-0E	
	238	8-16	HDDL2y-0F	174(Spare) *2	4-16	HDDL1y-0F	
	239	8-17	HDDL2y-10	175	4-17	HDDL1y-10	
	240	8-18	HDDL2y-11	176	4-18	HDDL1y-11	
	241	8-19	HDDL2y-12	177	4-19	HDDL1y-12	
	242	8-20	HDDL2y-13	178	4-20	HDDL1y-13	
	243	8-21	HDDL2y-14	179	4-21	HDDL1y-14	
	244	8-22	HDDL2y-15	180	4-22	HDDL1y-15	
	245	8-23	HDDL2y-16	181	4-23	HDDL1y-16	
	246	8-24	HDDL2y-17	182	4-24	HDDL1y-17	
	247	8-25	HDDL2y-18	183	4-25	HDDL1y-18	
	248	8-26	HDDL2y-19	184	4-26	HDDL1y-19	
	249	8-27	HDDL2y-1A	185	4-27	HDDL1y-1A	
	250	8-28	HDDL2y-1B	186	4-28	HDDL1y-1B	
	251	8-29	HDDL2y-1C	187	4-29	HDDL1y-1C	
	252	8-30	HDDL2y-1D	188	4-30	HDDL1y-1D	
	253	8-31	HDDL2y-1E	189	4-31	HDDL1y-1E	
	254	8-32	HDDL2y-1F	190	4-32	HDDL1y-1F	
Lower	191	7-1	HDDL2x-00	128	3-1	HDDL1x-00	3rd DKA Pair
	192	7-2	HDDL2x-01	129	3-2	HDDL1x-01	
	193	7-3	HDDL2x-02	130	3-3	HDDL1x-02	
	194	7-4	HDDL2x-03	131	3-4	HDDL1x-03	
	195	7-5	HDDL2x-04	132	3-5	HDDL1x-04	
	196	7-6	HDDL2x-05	133	3-6	HDDL1x-05	
	197	7-7	HDDL2x-06	134	3-7	HDDL1x-06	
	198	7-8	HDDL2x-07	135	3-8	HDDL1x-07	
	199	7-9	HDDL2x-08	136	3-9	HDDL1x-08	
	200	7-10	HDDL2x-09	137	3-10	HDDL1x-09	
	201	7-11	HDDL2x-0A	138	3-11	HDDL1x-0A	
	202	7-12	HDDL2x-0B	139	3-12	HDDL1x-0B	
	203	7-13	HDDL2x-0C	140	3-13	HDDL1x-0C	
	204	7-14	HDDL2x-0D	141	3-14	HDDL1x-0D	
	205	7-15	HDDL2x-0E	142	3-15	HDDL1x-0E	
	206	7-16	HDDL2x-0F	Spare *1	3-16	HDDL1x-0F	
	207	7-17	HDDL2x-10	143	3-17	HDDL1x-10	
	208	7-18	HDDL2x-11	144	3-18	HDDL1x-11	
	209	7-19	HDDL2x-12	145	3-19	HDDL1x-12	
	210	7-20	HDDL2x-13	146	3-20	HDDL1x-13	
	211	7-21	HDDL2x-14	147	3-21	HDDL1x-14	
	212	7-22	HDDL2x-15	148	3-22	HDDL1x-15	
	213	7-23	HDDL2x-16	149	3-23	HDDL1x-16	
	214	7-24	HDDL2x-17	150	3-24	HDDL1x-17	
	215	7-25	HDDL2x-18	151	3-25	HDDL1x-18	
	216	7-26	HDDL2x-19	152	3-26	HDDL1x-19	
	217	7-27	HDDL2x-1A	153	3-27	HDDL1x-1A	
	218	7-28	HDDL2x-1B	154	3-28	HDDL1x-1B	
	219	7-29	HDDL2x-1C	155	3-29	HDDL1x-1C	
	220	7-30	HDDL2x-1D	156	3-30	HDDL1x-1D	
	221	7-31	HDDL2x-1E	157	3-31	HDDL1x-1E	
	222	7-32	HDDL2x-1F	158	3-32	HDDL1x-1F	

*1: To be left vacant or a spare disk is to be installed. *2: A data or spare disk is to be installed.
*3: HDDL1x-00 (x: HDU Box No. 0, 1, 2, 3), HDDL1y-00 (y: HDU Box No. 4, 5, 6, 7)

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(1) Make sure of the location where the RAID group is de-installed and that where the HDD canister is to be removed.

No.	Model Number	Model Name	Data and Parity
1	DKU-F455I-36K4/72J4/72K4/146J4/146JF/146JQ	4 HDD Canisters	Data and Parity Drive

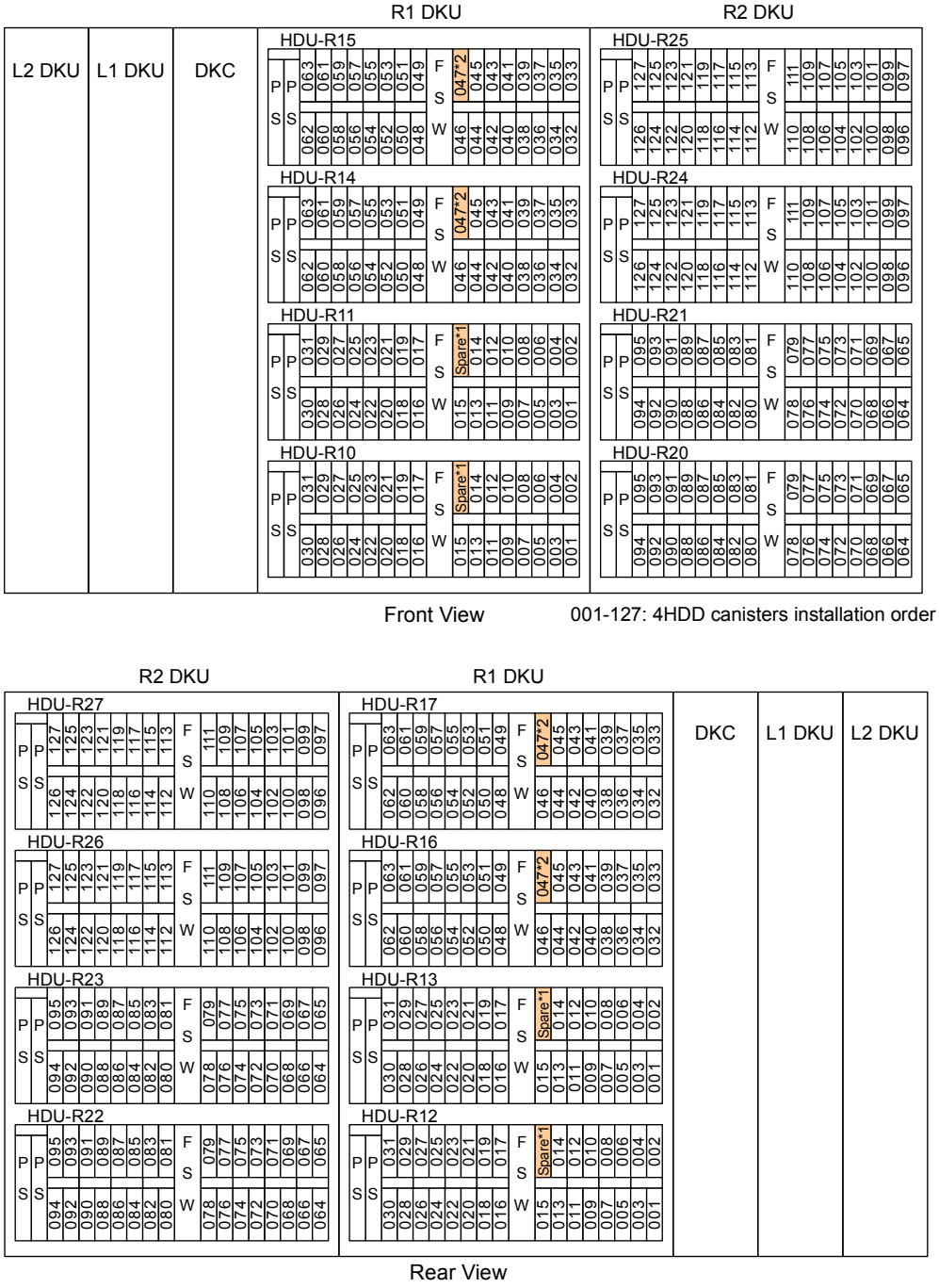

Fig. 4.1.9-5 (3D+1P) or (2D+2P) Data Drive/Parity Drive Expansion Sequence (1/2)

The relationship between HDDs installation order and RAID group number is shown in the Table 4.1.9-1.

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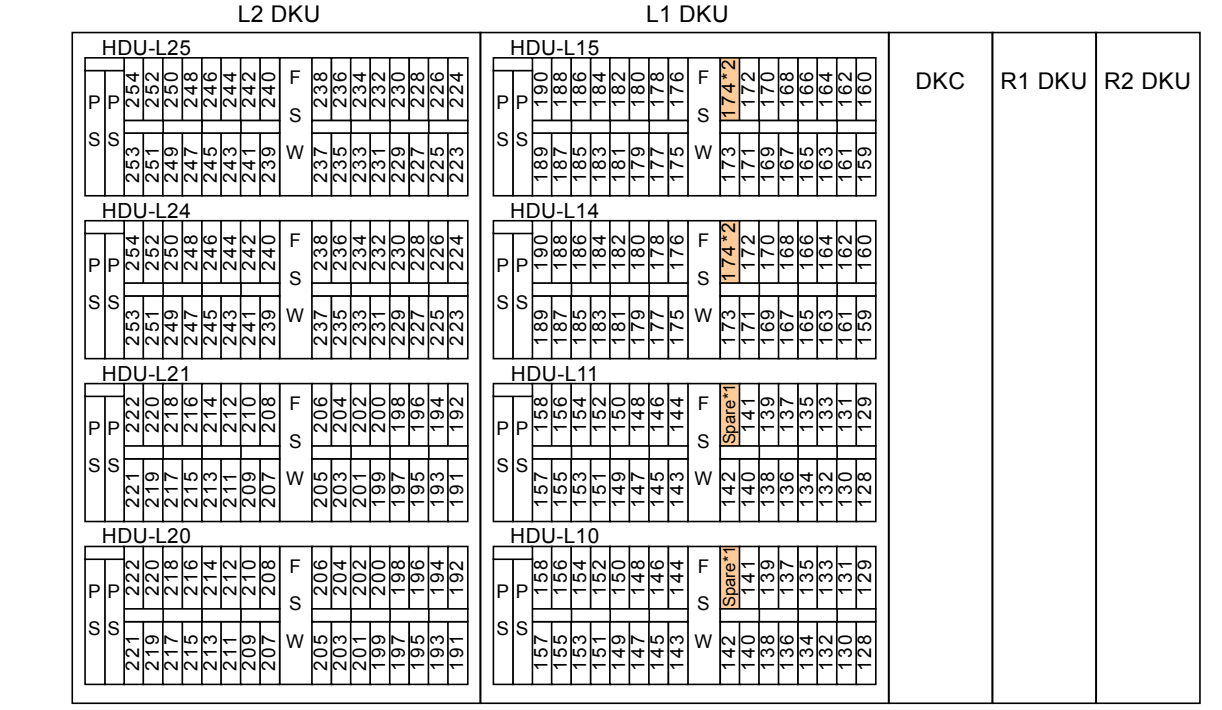

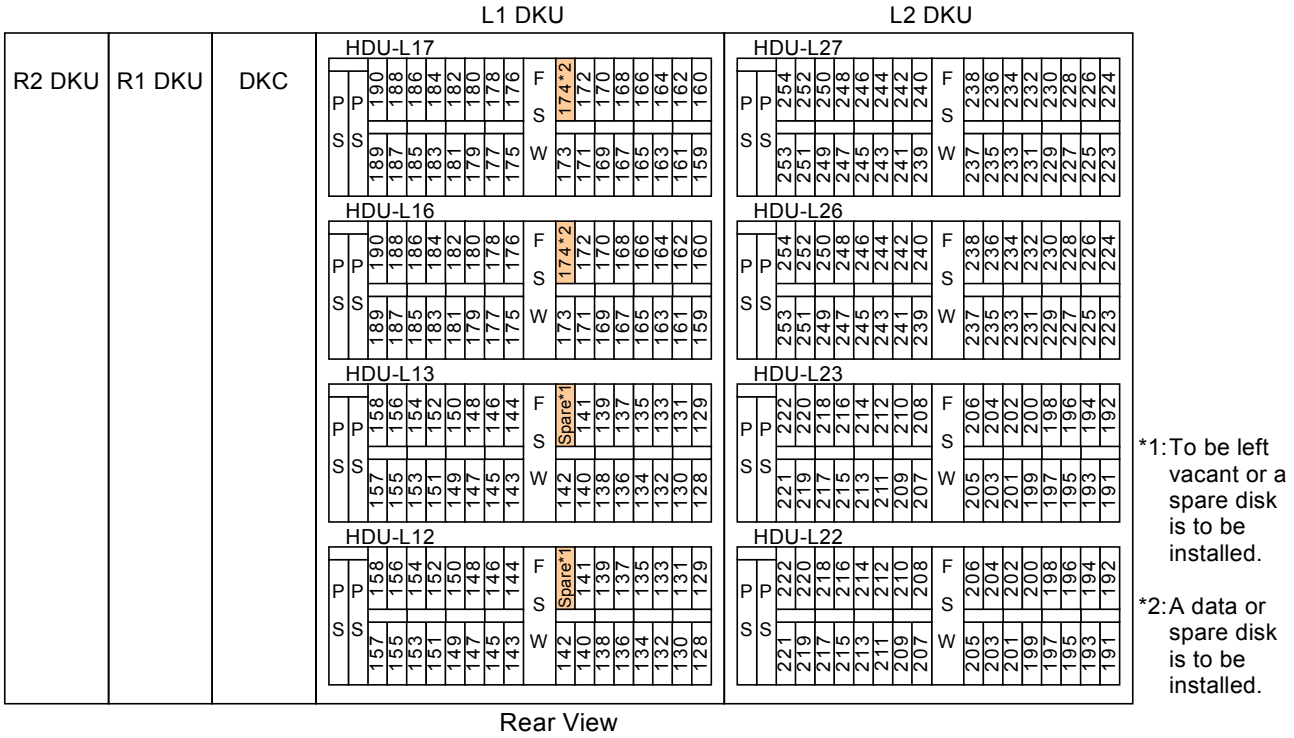

Fig. 4.1.9-5 (3D+1P) or (2D+2P) Data Drive/Parity Drive Expansion Sequence (2/2)

The relationship between HDDs installation order and RAID group number is shown in the Table 4.1.9-1.

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(ii) RAID5 (7D+1P)

Relations between the installation locations of the RAID groups and the RAID group numbers set through the SVP are shown in Table 4.1.9-2.

Table 4.1.9-2 Relation between HDDs installation order and RAID group number (7D+1P) (1/2)

DKC	R1 DKU			R2 DKU		
	RAID Group Installation Order	RAID Group No.	HDD Location	RAID Group Installation Order	RAID Group No.	HDD Location
1st / 2nd DKA Pair	001	1-1 , (2-1)	HDDR1x-00	032	5-1, (6-1)	HDDR2x-00
	002	1-2 , (2-2)	HDDR1x-01	033	5-2, (6-2)	HDDR2x-01
	003	1-3 , (2-3)	HDDR1x-02	034	5-3, (6-3)	HDDR2x-02
	004	1-4 , (2-4)	HDDR1x-03	035	5-4, (6-4)	HDDR2x-03
	005	1-5 , (2-5)	HDDR1x-04	036	5-5, (6-5)	HDDR2x-04
	006	1-6 , (2-6)	HDDR1x-05	037	5-6, (6-6)	HDDR2x-05
	007	1-7 , (2-7)	HDDR1x-06	038	5-7, (6-7)	HDDR2x-06
	008	1-8 , (2-8)	HDDR1x-07	039	5-8, (6-8)	HDDR2x-07
	009	1-9 , (2-9)	HDDR1x-08	040	5-9, (6-9)	HDDR2x-08
	010	1-10 , (2-10)	HDDR1x-09	041	5-10, (6-10)	HDDR2x-09
	011	1-11 , (2-11)	HDDR1x-0A	042	5-11, (6-11)	HDDR2x-0A
	012	1-12 , (2-12)	HDDR1x-0B	043	5-12, (6-12)	HDDR2x-0B
	013	1-13 , (2-13)	HDDR1x-0C	044	5-13, (6-13)	HDDR2x-0C
	014	1-14 , (2-14)	HDDR1x-0D	045	5-14, (6-14)	HDDR2x-0D
	015	1-15 , (2-15)	HDDR1x-0E	046	5-15, (6-15)	HDDR2x-0E
	(Spare) *1	1-16 , (2-16)	HDDR1x-0F	047	5-16, (6-16)	HDDR2x-0F
	016	1-17 , (2-17)	HDDR1x-10	048	5-17, (6-17)	HDDR2x-10
	017	1-18 , (2-18)	HDDR1x-11	049	5-18, (6-18)	HDDR2x-11
	018	1-19 , (2-19)	HDDR1x-12	050	5-19, (6-19)	HDDR2x-12
	019	1-20 , (2-20)	HDDR1x-13	051	5-20, (6-20)	HDDR2x-13
	020	1-21 , (2-21)	HDDR1x-14	052	5-21, (6-21)	HDDR2x-14
	021	1-22 , (2-22)	HDDR1x-15	053	5-22, (6-22)	HDDR2x-15
	022	1-23 , (2-23)	HDDR1x-16	054	5-23, (6-23)	HDDR2x-16
	023	1-24 , (2-24)	HDDR1x-17	055	5-24, (6-24)	HDDR2x-17
	024	1-25 , (2-25)	HDDR1x-18	056	5-25, (6-25)	HDDR2x-18
	025	1-26 , (2-26)	HDDR1x-19	057	5-26, (6-26)	HDDR2x-19
	026	1-27 , (2-27)	HDDR1x-1A	058	5-27, (6-27)	HDDR2x-1A
	027	1-28 , (2-28)	HDDR1x-1B	059	5-28, (6-28)	HDDR2x-1B
	028	1-29 , (2-29)	HDDR1x-1C	060	5-29, (6-29)	HDDR2x-1C
	029	1-30 , (2-30)	HDDR1x-1D	061	5-30, (6-30)	HDDR2x-1D
	030	1-31 , (2-31)	HDDR1x-1E	062	5-31, (6-31)	HDDR2x-1E
	031	1-32 , (2-32)	HDDR1x-1F	063	5-32, (6-32)	HDDR2x-1F

*1: To be left vacant or a spare disk is to be installed. *2: HDDL1x-00 (x: HDU Box No. 0, 1, 2, …, 7)

- Install RAID 5 (7D+1P) forming pairs using the same number of the two RAID groups (RAID groups 1 and 2, 3 and 4, 5 and 6, and 7 and 8) of RAID 5 (3D+1P).
  (Example: RAID group numbers 1-1 and 2-1)
  The types of HDDs to be installed in each pair must be the same.
- In the case of RAID 5 (7D+1P), only odd RAID numbers are displayed on the SVP. (Group numbers shown in parentheses in the table above are not displayed.)
- When RAID 5 (3D+1P) or RAID 1 (2D+2D) and RAID 5 (7D+1P) are configured mixture, note that duplicated group numbers are excluded.
  Example: When Group No. 1-1 is configured for RAID 5 (7D+1P), Group No. 2-1 is excluded and cannot be configure for RAID 5 (3D+1P).

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Table 4.1.9-2 Relation between HDDs installation order and RAID group number (7D+1P) (2/2)

L2 DKU			L1 DKU			DKC
RAID Group Installation Order	RAID Group No.	HDD Location	RAID Group Installation Order	RAID Group No.	HDD Location	
095	7-1, (8-1)	HDDL2x-00	064	3-1 , (4-1)	HDDL1x-00	
096	7-2, (8-2)	HDDL2x-01	065	3-2 , (4-2)	HDDL1x-01	
097	7-3, (8-3)	HDDL2x-02	066	3-3 , (4-3)	HDDL1x-02	
098	7-4, (8-4)	HDDL2x-03	067	3-4 , (4-4)	HDDL1x-03	
099	7-5, (8-5)	HDDL2x-04	068	3-5 , (4-5)	HDDL1x-04	
100	7-6, (8-6)	HDDL2x-05	069	3-6 , (4-6)	HDDL1x-05	
101	7-7, (8-7)	HDDL2x-06	070	3-7 , (4-7)	HDDL1x-06	
102	7-8, (8-8)	HDDL2x-07	071	3-8 , (4-8)	HDDL1x-07	
103	7-9, (8-9)	HDDL2x-08	072	3-9 , (4-9)	HDDL1x-08	
104	7-10, (8-10)	HDDL2x-09	073	3-10 , (4-10)	HDDL1x-09	
105	7-11, (8-11)	HDDL2x-0A	074	3-11 , (4-11)	HDDL1x-0A	
106	7-12, (8-12)	HDDL2x-0B	075	3-12 , (4-12)	HDDL1x-0B	
107	7-13, (8-13)	HDDL2x-0C	076	3-13 , (4-13)	HDDL1x-0C	
108	7-14, (8-14)	HDDL2x-0D	077	3-14 , (4-14)	HDDL1x-0D	
109	7-15, (8-15)	HDDL2x-0E	078	3-15 , (4-15)	HDDL1x-0E	3rd / 4th
110	7-16, (8-16)	HDDL2x-0F	(Spare) *1	3-16 , (4-16)	HDDL1x-0F	DKA
111	7-17, (8-17)	HDDL2x-10	079	3-17 , (4-17)	HDDL1x-10	Pair
112	7-18, (8-18)	HDDL2x-11	080	3-18 , (4-18)	HDDL1x-11	
113	7-19, (8-19)	HDDL2x-12	081	3-19 , (4-19)	HDDL1x-12	
114	7-20, (8-20)	HDDL2x-13	082	3-20 , (4-20)	HDDL1x-13	
115	7-21, (8-21)	HDDL2x-14	083	3-21 , (4-21)	HDDL1x-14	
116	7-22, (8-22)	HDDL2x-15	084	3-22 , (4-22)	HDDL1x-15	
117	7-23, (8-23)	HDDL2x-16	085	3-23 , (4-23)	HDDL1x-16	
118	7-24, (8-24)	HDDL2x-17	086	3-24 , (4-24)	HDDL1x-17	
119	7-25, (8-25)	HDDL2x-18	087	3-25 , (4-25)	HDDL1x-18	
120	7-26, (8-26)	HDDL2x-19	088	3-26 , (4-26)	HDDL1x-19	
121	7-27, (8-27)	HDDL2x-1A	089	3-27 , (4-27)	HDDL1x-1A	
122	7-28, (8-28)	HDDL2x-1B	090	3-28 , (4-28)	HDDL1x-1B	
123	7-29, (8-29)	HDDL2x-1C	091	3-29 , (4-29)	HDDL1x-1C	
124	7-30, (8-30)	HDDL2x-1D	092	3-30 , (4-30)	HDDL1x-1D	
125	7-31, (8-31)	HDDL2x-1E	093	3-31 , (4-31)	HDDL1x-1E	
126	7-32, (8-32)	HDDL2x-1F	094	3-32 , (4-32)	HDDL1x-1F	

*1: To be left vacant or a spare disk is to be installed. *2: HDDL1x-00 (x: HDU Box No. 0, 1, 2, …, 7)

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(1) Make sure of the location where the RAID group is de-installed and that where the HDD canister is to be removed.

No.	Model Number	Model Name	Data and Parity
1	DKU-F455I-36K4/72J4/72K4/146J4/146JF/146JQ	4 HDD Canisters x 2sets	Data and Parity Drive

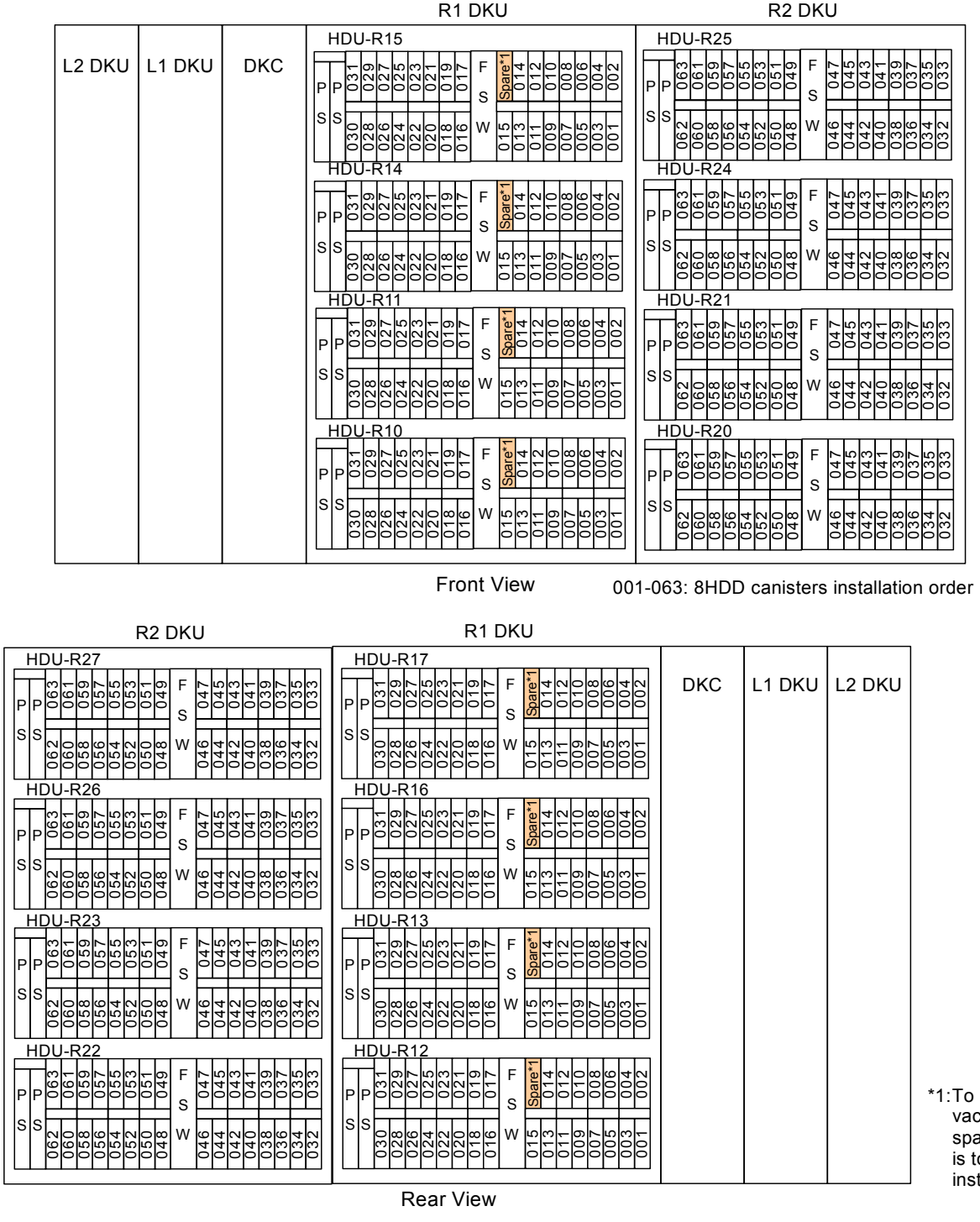

Fig. 4.1.9-6 (7D+1P) Data Drive/Parity Drive Expansion Sequence (1/2)

The relationship between HDDs installation order and RAID group number is shown in the Table 4.1.9-2.

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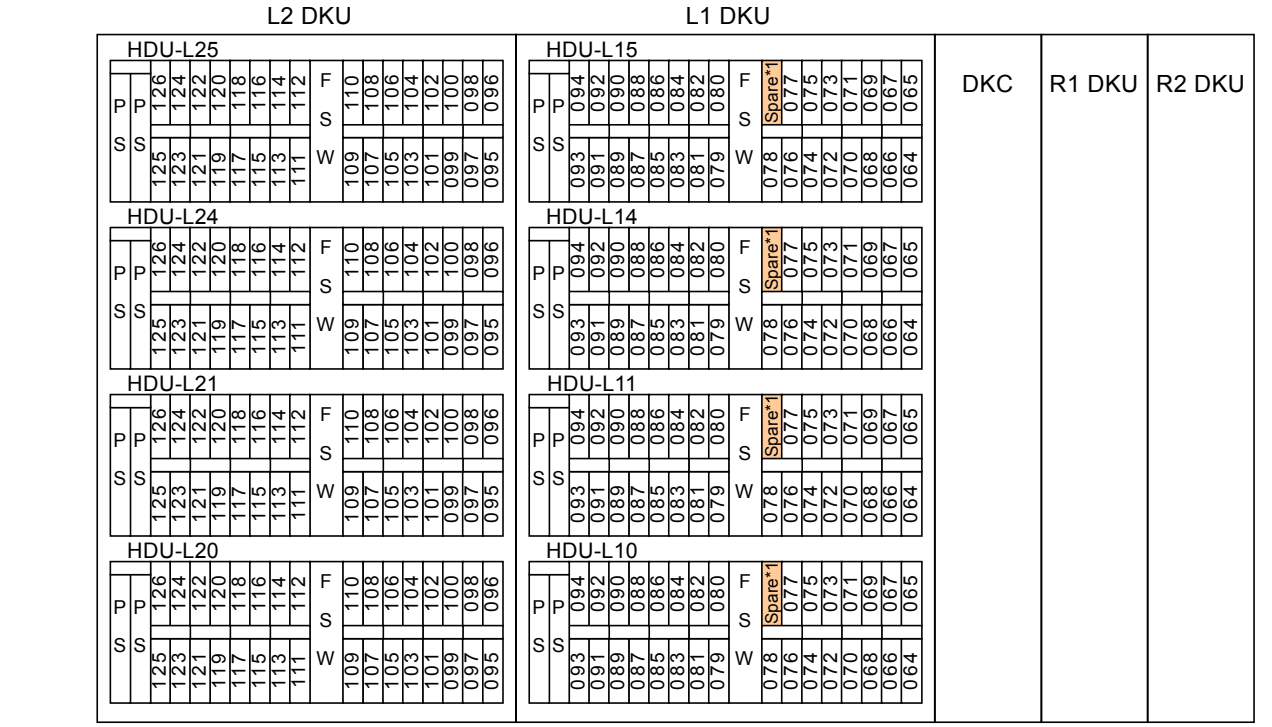

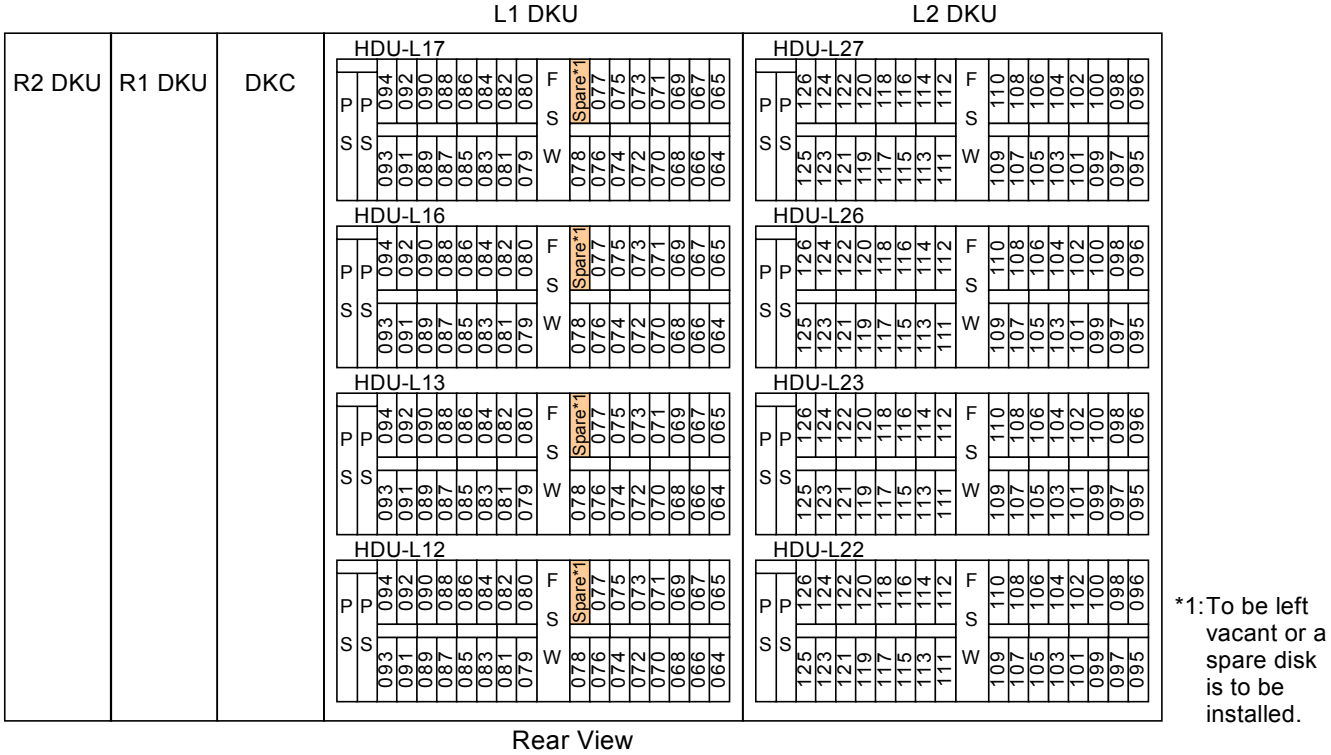

Fig. 4.1.9-6 (7D+1P) Data Drive/Parity Drive Expansion Sequence (2/2)

The relationship between HDDs installation order and RAID group number is shown in the Table 4.1.9-2.

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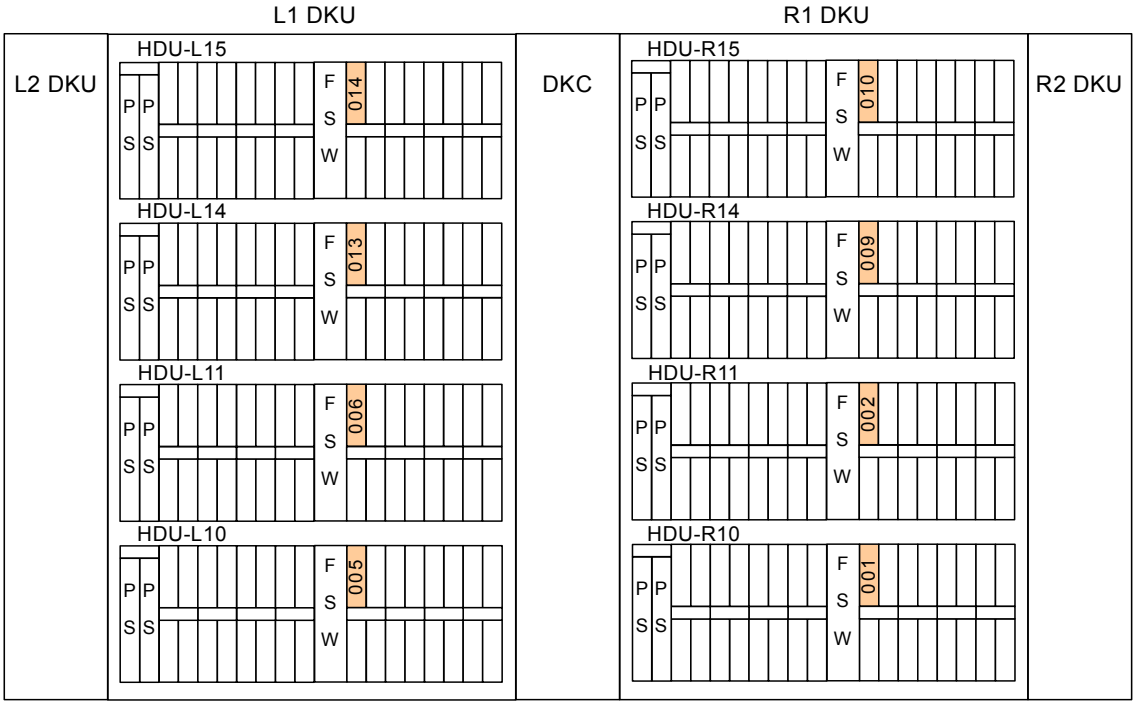
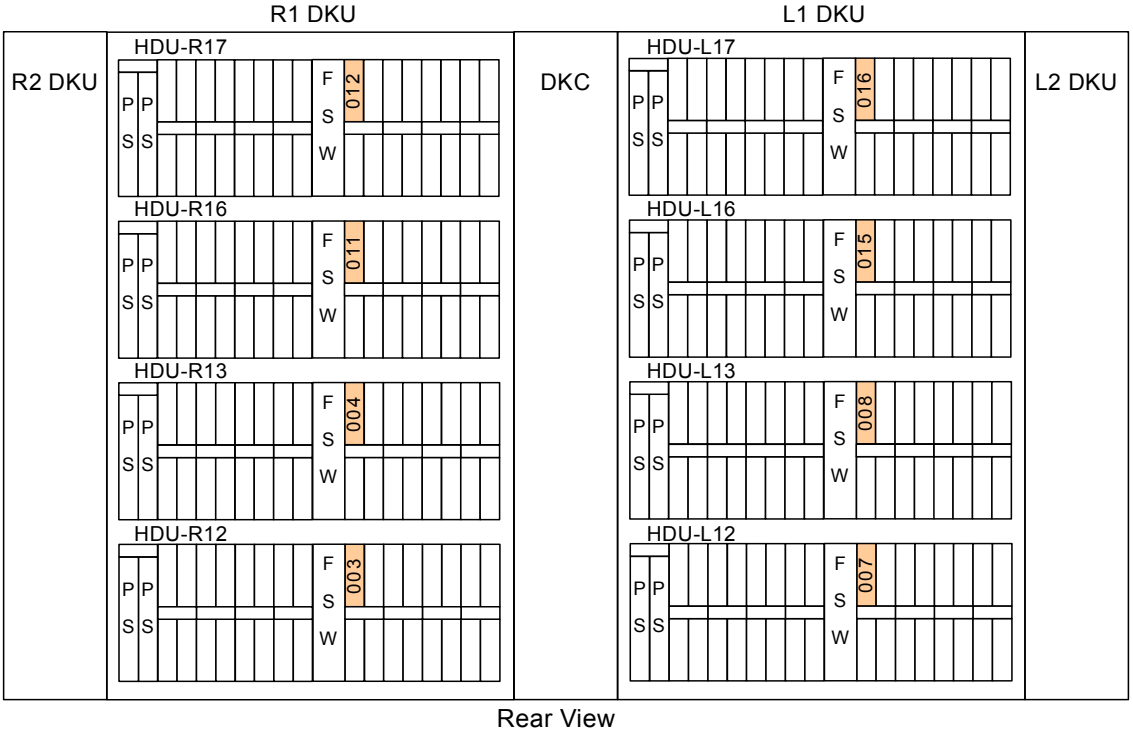
(iii) Spare HDD

No.	Model Number	Model Name	Data and Parity
1	DKU-F455I-36K1/72J1/72K1/146J1/146JS/146JM	1 HDD Canister	Spare Drive



Front View

001-016: Spare HDD canister installation order



Rear View

Fig. 4.1.9-7 Spare Drive Expansion Sequence

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4-2 Confirmation of Shut Down LED.

a. Confirm the Shut Down LED on the JMP PCB. (It should be RED.)

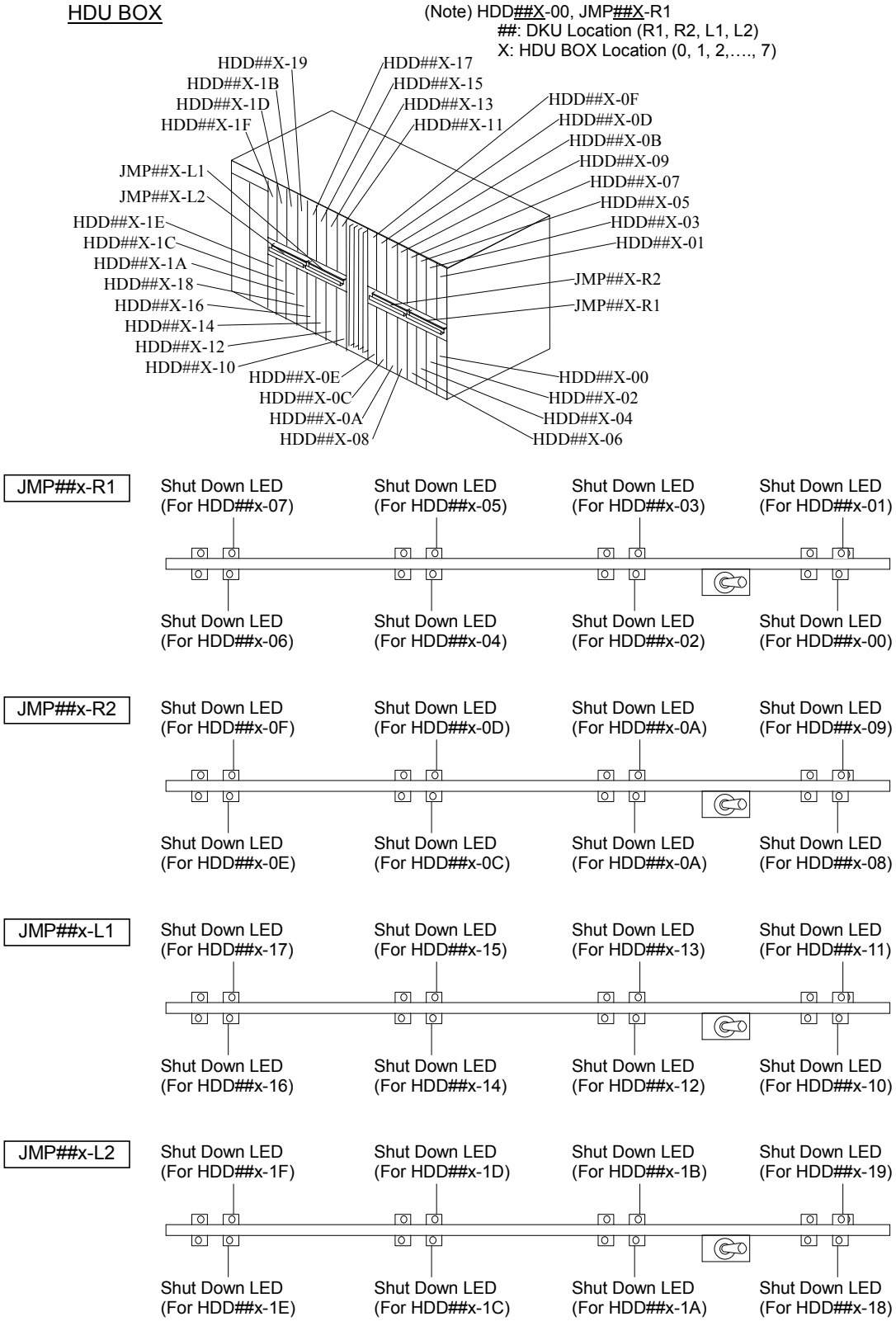

Fig. 4.1.9-8 Location of Shut Down LED

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4-3 De-installation of the HDD canister.

Notice:
Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

⚠ CAUTION

A system down may be caused by a removal of an HDD canister other than that to be removed. Make sure that it is the HDD canister to be removed.

a. After pushing up the stopper on the front side of the HDD canister, pull the handle toward you to remove the HDD canister.
b. Insert the dummy canister to the HDU Box.

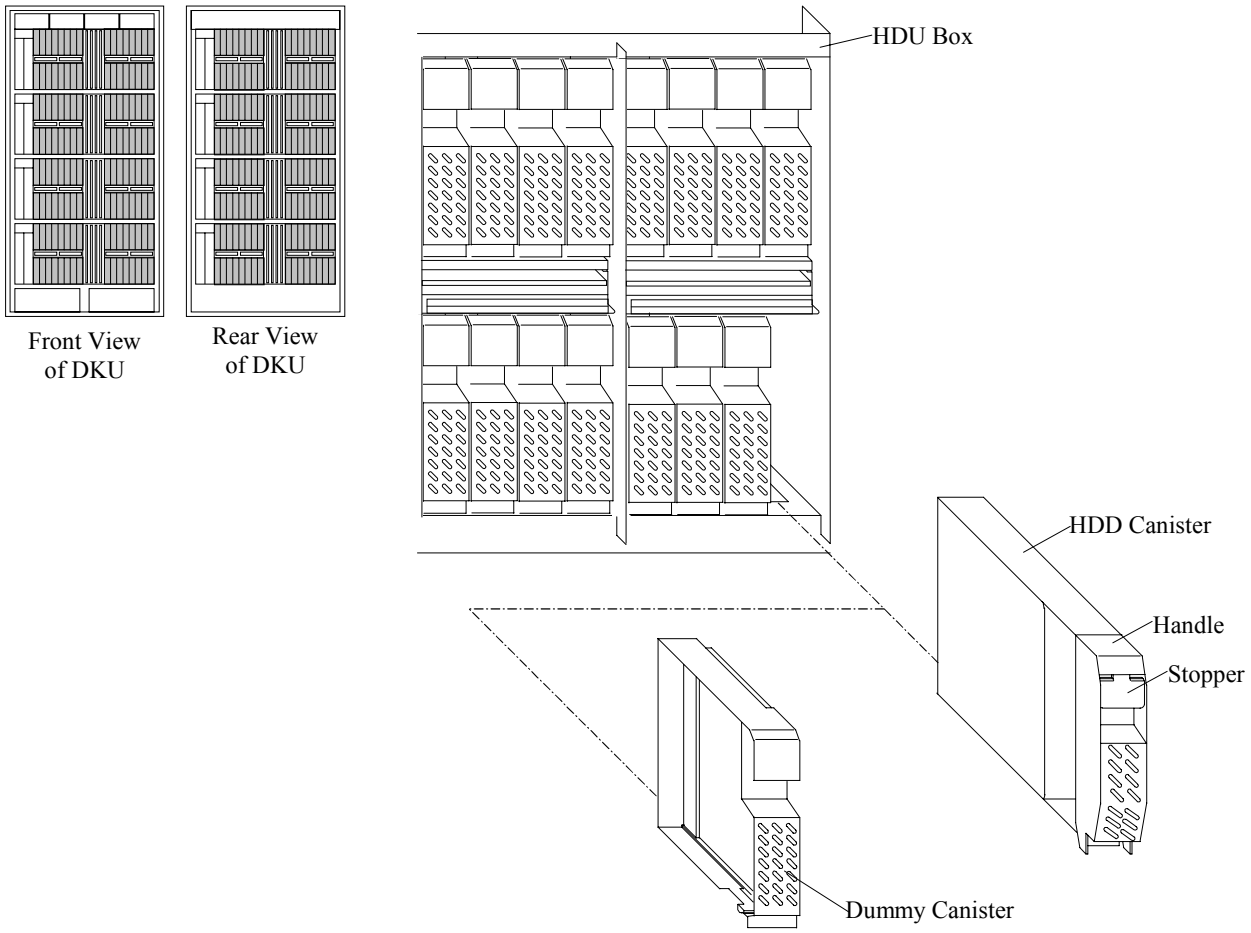

Fig. 4.1.9-9 De-Installation of HDD Canister

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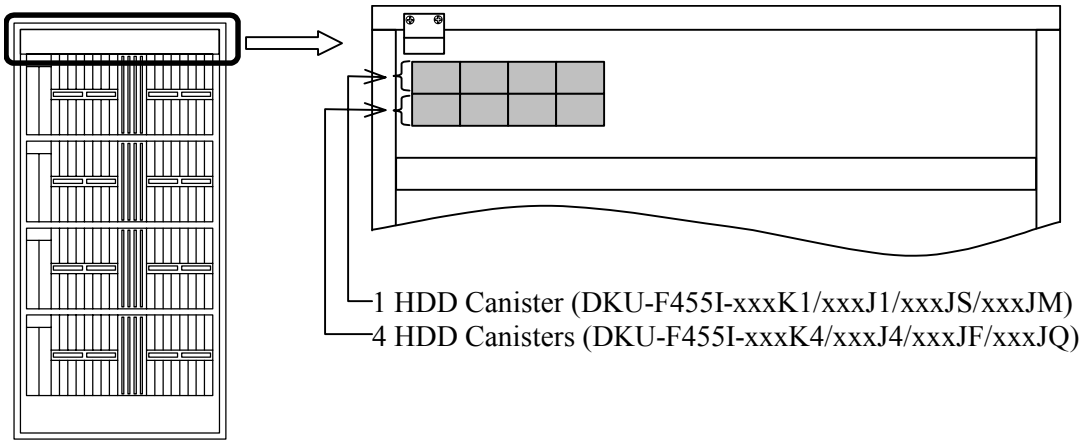
4-4 Change of the nameplate.

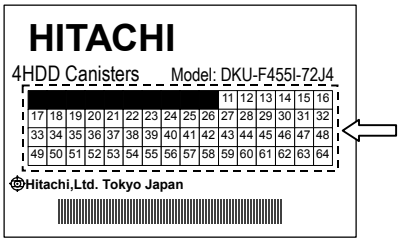
a. Affix a necessary portion of the Label (QTY)(Accessory of DKC; DWG No.3264290-1) in layers on the name plate and paint out numbers less than the number concerned with black oil felt pen.



Rear View
of DKU

[Example]

When DKU-F455I-72J4s are removed from 10 sets to 7sets



Label (QTY)

							8	9	10	11	12	13	14	15	16
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64

Fig. 4.1.9-10 Change of Nameplate

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5. De-Installation Procedure of DEV Interface Cable 2 (2/3) (DKU-F455I-EXC)

Caution:
When the DEV interface cable is removed from the FSW PCB, the power applied to the DKU to be removed is turned off automatically for each HDU Box from which the cable is removed.

Between HDU-R10-R17 and HDU-R20-R27

a. Disconnect the DEV interface cables from the FSW PCBs in the DKU-R1 frame referring to figures 4.1.9-11 and 4.1.9-12.

⚠ CAUTION

A serious failure occurs if a wrong cable or connector is removed.
Since a label bearing a connection destination is affixed on each cable or connector to be removed, work very carefully referring to it and the wiring diagram.

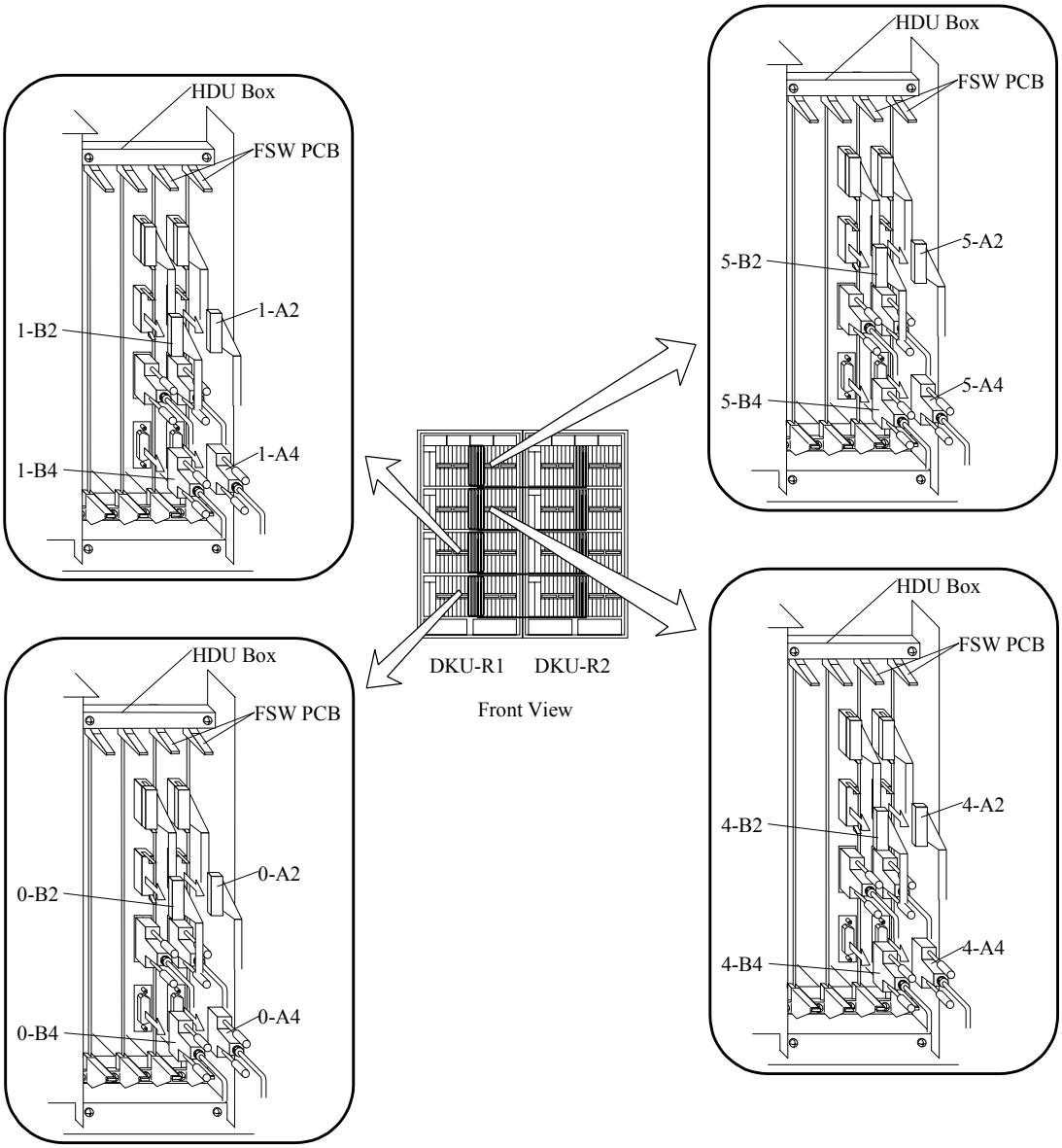

Fig. 4.1.9-11 Connection of the DEV Interface Cables

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⚠ CAUTION

A serious failure occurs if a wrong cable or connector is removed.
Since a label bearing a connection destination is affixed on each cable or connector to be removed, work very carefully referring to it and the wiring diagram.

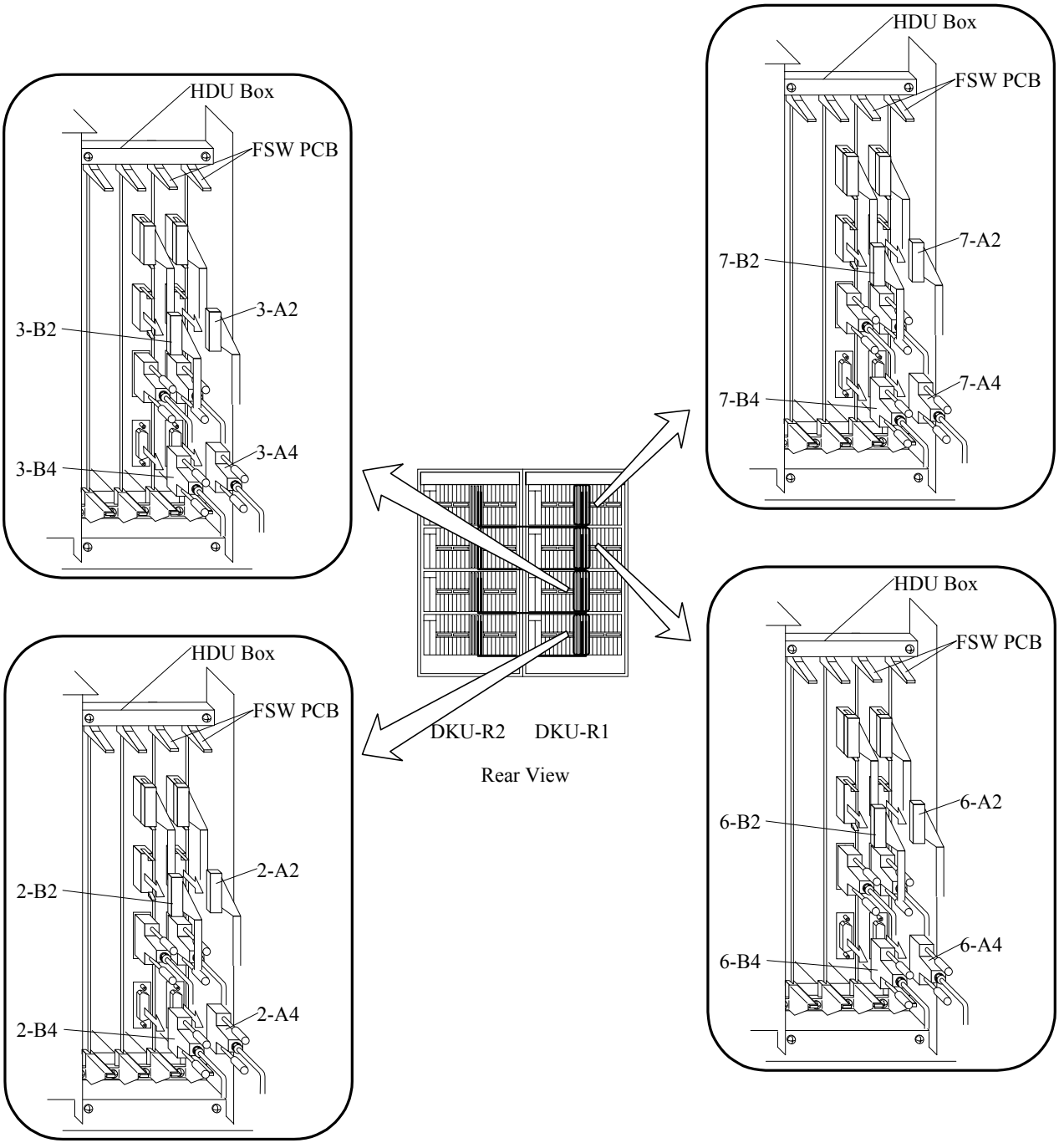

Fig. 4.1.9-12 Connection of the DEV Interface Cables

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Between HDU-L10-L17 and HDU-L20-L27

a. Disconnect the DEV interface cables from the FSW PCBs in the DKU-L1 frame referring to figures 4.1.9-13 and 4.1.9-14.

⚠ CAUTION

A serious failure occurs if a wrong cable or connector is removed.
Since a label bearing a connection destination is affixed on each cable or connector to be removed, work very carefully referring to it and the wiring diagram.

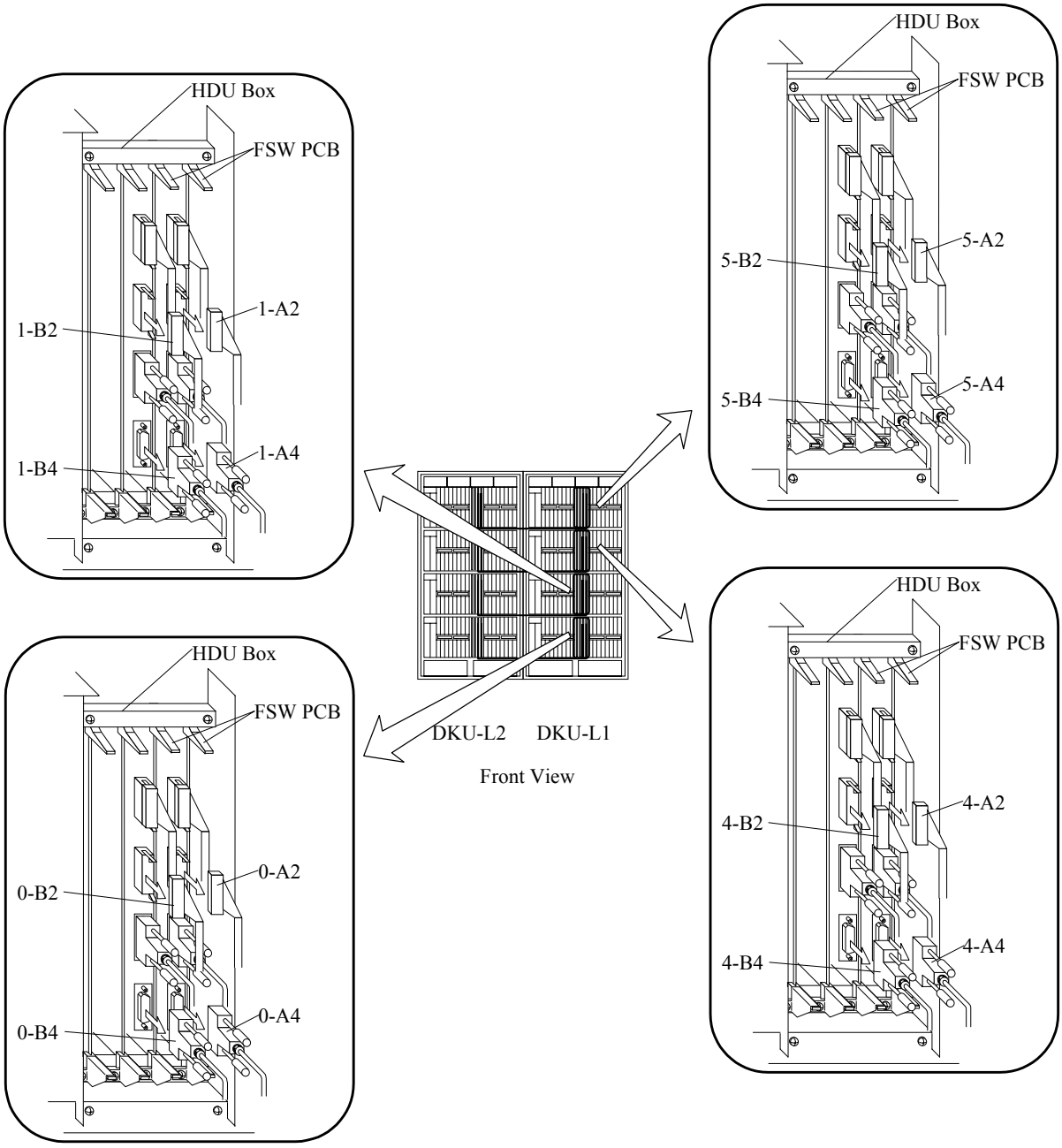

Fig. 4.1.9-13 Connection of the DEV Interface Cables

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⚠ CAUTION

A serious failure occurs if a wrong cable or connector is removed.
Since a label bearing a connection destination is affixed on each cable or connector to be removed, work very carefully referring to it and the wiring diagram.

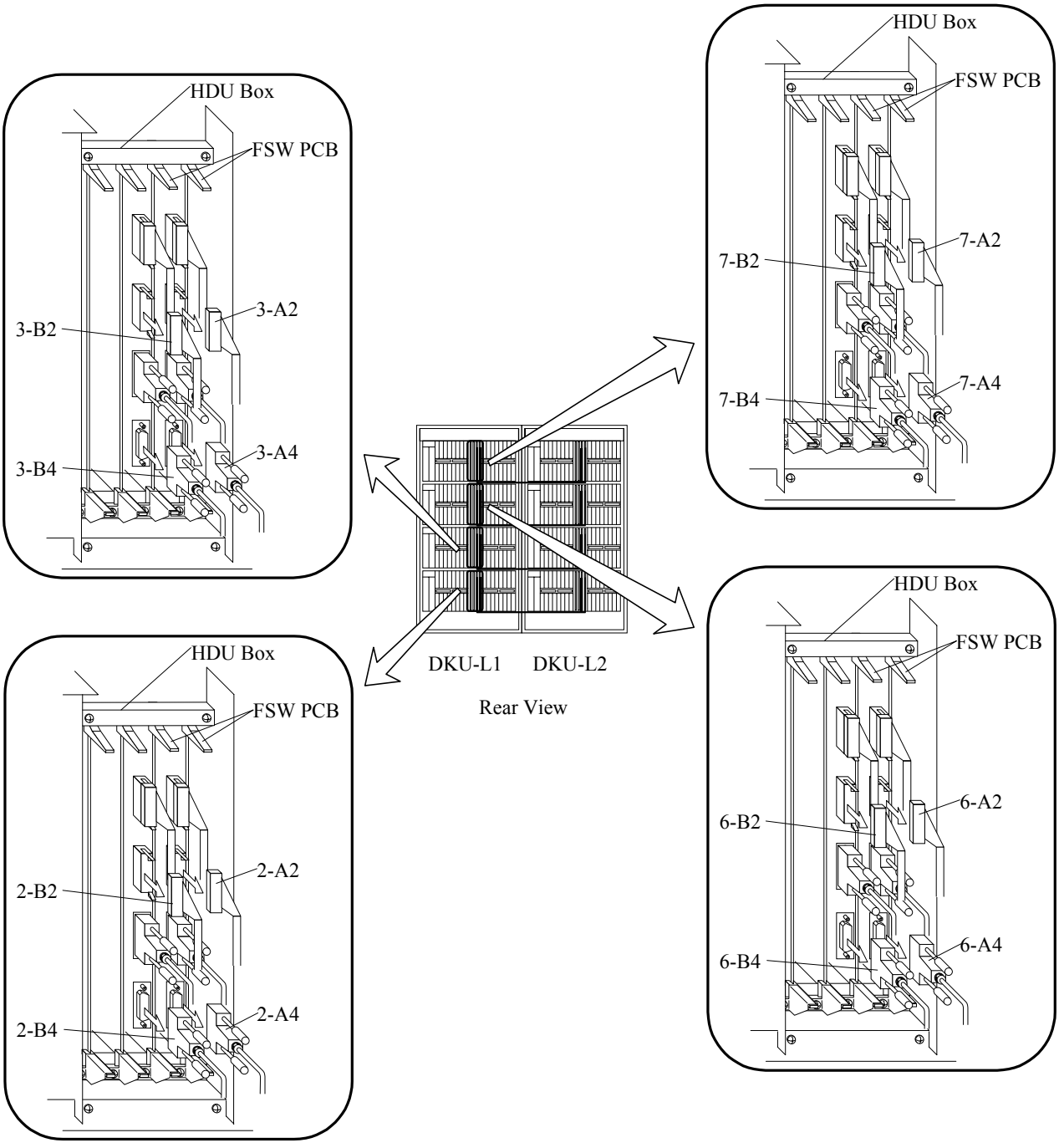

Fig. 4.1.9-14 Connection of the DEV Interface Cables

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6. De-Installation Procedure of Disk Adapter

When the additional disk adapter is not to be removed, go to Step 7, “SVP post procedure”.

Note: Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

6-1 Confirmation of the Shut Down LED (Only Non-Disruptive Procedure)

a. Confirm that Shut Down LED is on. (Fig. 4.1.9-15) If the LED is not on, connect the Maintenance Jumper to the Shut Down Connector.

⚠ CAUTION

A system down may be caused if the Maintenance jumper is inserted in a PCB other than that to be removed. Make sure that it is the PCB to be removed.

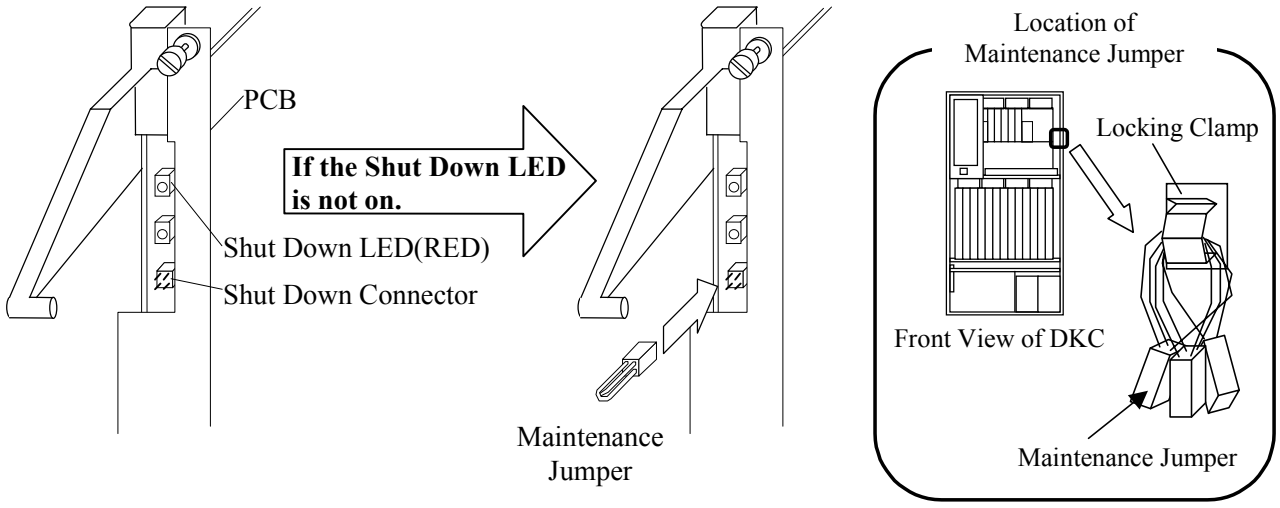

Fig. 4.1.9-15 Shut Down LED

Table 4.1.9-3 Removal Location (Rear of the unit)

Cluster	CL2							CL1				
Slot No.	M	L	K	J	H	G	F	E	D	C	B	A
Function	CSW	DKA	DKA	DKA	DKA	CACHE	CACHE	DKA	DKA	DKA	DKA	CSW
Location No.	CSW -2M	DKA -2L	DKA -2K	DKA -2J	DKA -2H	CACHE -2G	CACHE -2F	DKA -1E	DKA -1D	DKA -1C	DKA -1B	CSW -1A
Order of addition		Add.3	Add.2	Add.1	Basic			Add.3	Add.2	Add.1	Basic	
Number of DKAs set through the SVP		–	–	–	2			–	–	–	2	
		–	–	4				–	–	4		
		–	6					–	6			
		8						8				

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6-2 Disconnection of the DEV Interface cables

In case of Add.1

a. Disconnect the cable from the sub-edge of PCB.

⚠ CAUTION

A serious failure occurs if a wrong cable or connector is removed.
Since a label bearing a connection destination is affixed on each cable or connector to be removed, work very carefully referring to it and the wiring diagram.

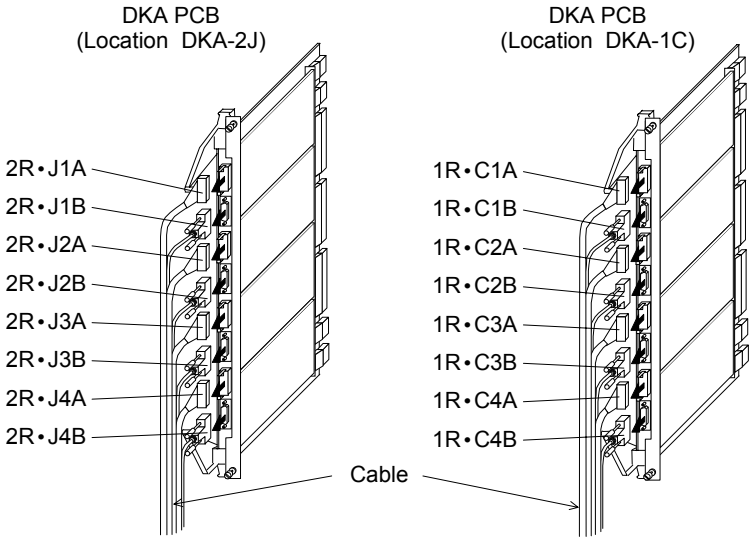

Fig. 4.1.9-16 Disconnection of DEV Interface Cables (Add.1)

In case of Add.2

a. Disconnect the cable from the sub-edge of PCB.

⚠ CAUTION

A serious failure occurs if a wrong cable or connector is removed.
Since a label bearing a connection destination is affixed on each cable or connector to be removed, work very carefully referring to it and the wiring diagram.

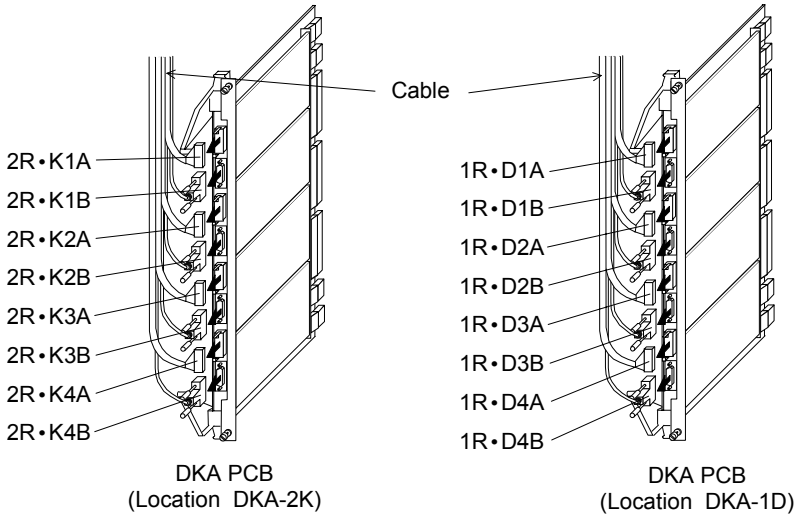

Fig. 4.1.9-17 Disconnection of DEV Interface Cables (Add.2)

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In case of Add.3

a. Disconnect the cable from the sub-edge of PCB.

⚠ CAUTION

A serious failure occurs if a wrong cable or connector is removed.
Since a label bearing a connection destination is affixed on each cable or connector to be removed, work very carefully referring to it and the wiring diagram.

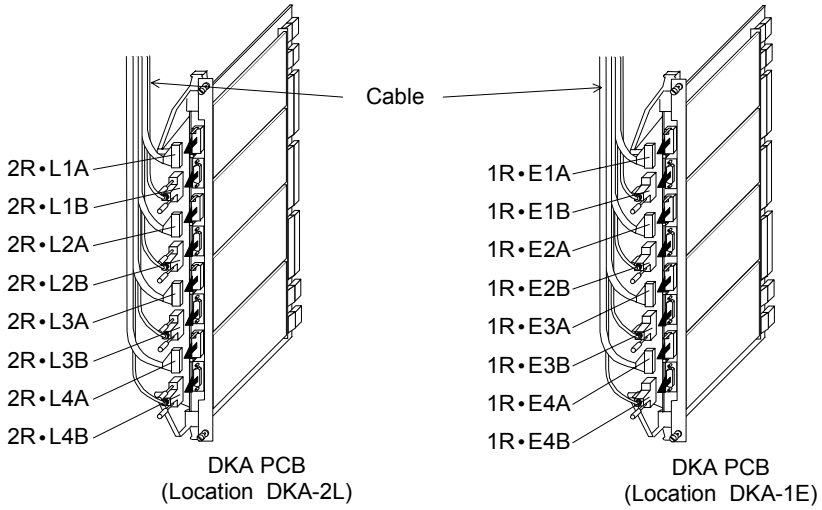

Fig.4.1.9-18 Disconnection of DEV Interface Cable (Add.3)

6-3 Removal of the PCBs

a. Remove the two screws and remove the PCBs from the correct locations in the Rear Logic Box referring to Fig. 4.1.9-19.
b. Attach the dummy plates referring to Fig. 4.1.9-20.

⚠ CAUTION

A serious failure occurs if a wrong PCB is removed.
Remove the PCB after making sure that the Shut Down LED is on.

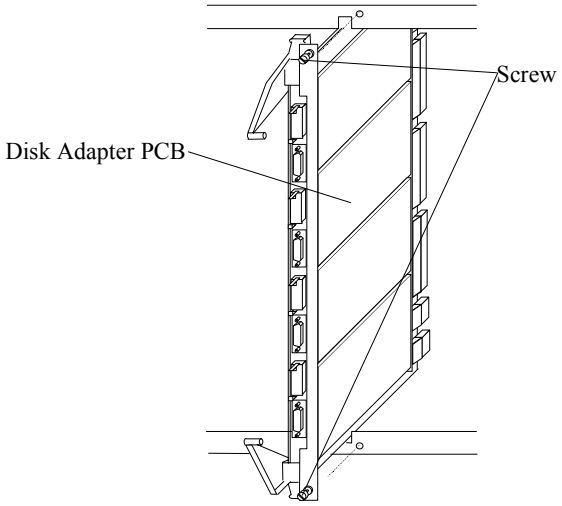

Fig. 4.1.9-19 Removal of PCB

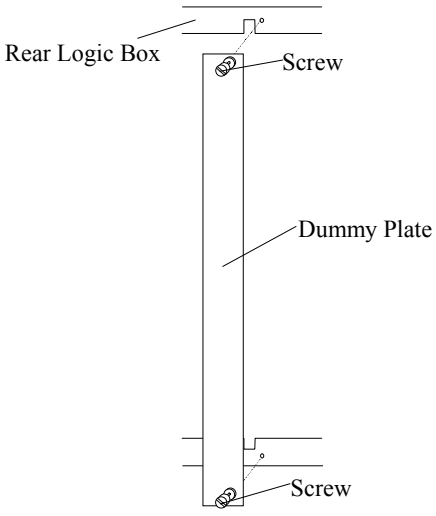

Fig. 4.1.9-20 Attachment of Dummy Plate

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6-4 Removal of the Nameplate

a. Remove the nameplate from the Rear Logic Box cover.

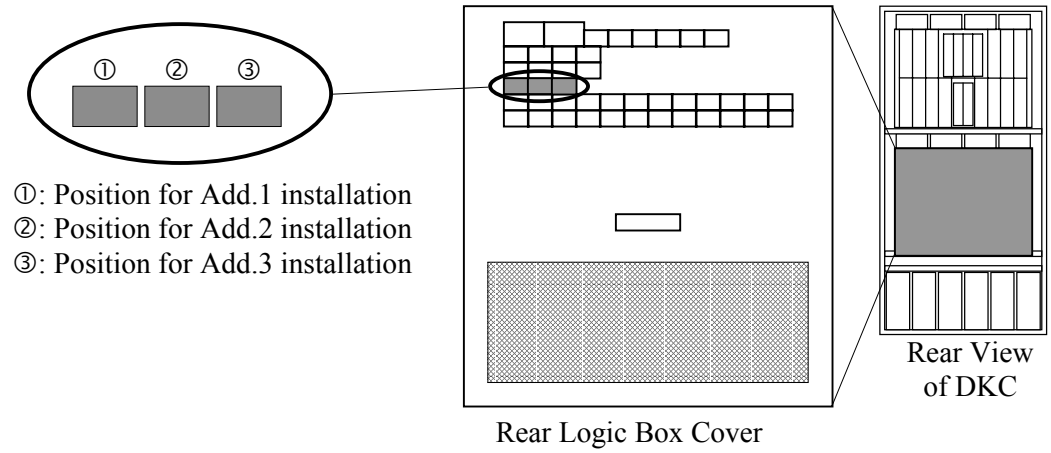

Fig. 4.1.9-21 Removal of Nameplate

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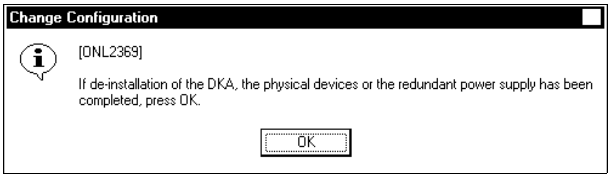
7. SVP post procedure

1.

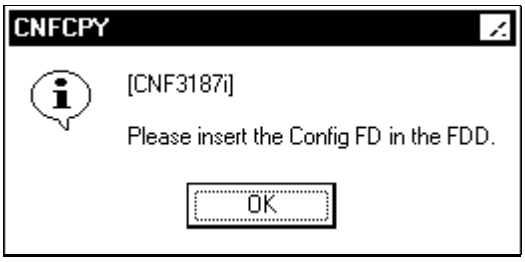
Select (CL) [OK] in response to "If de-installation of the DKA, the physical devices or the redundant power supply has been completed, press OK." shown in the right figure.



2. <Check the end of de-installation procedure>
"Renewal process has completed. Please check subsystem status." shown in the right figure displayed. Select (CL) [OK] in response to this message.

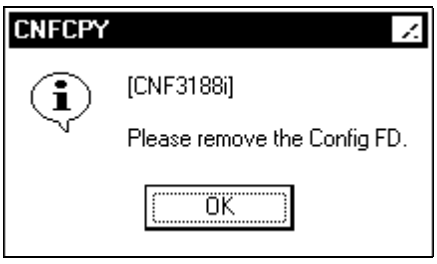
3.

"Reading subsystem configuration data..." is displayed.
"Please insert the Config FD in the FDD." is displayed.
Insert the configuration FD into FDD, select (CL) [OK].



4.

When this procedure is completed, message "Please remove the Config FD." is displayed.
Remove the FD, select (CL) [OK].



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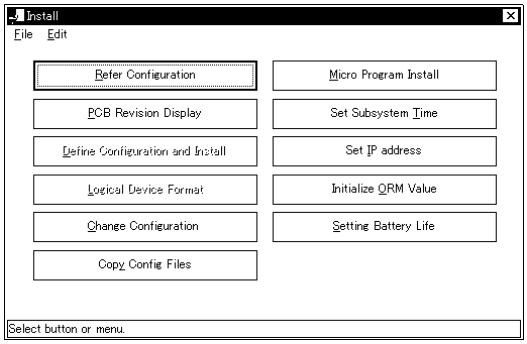
5.

After the procedure is completed, return to ‘Install’.
Select (CL) [File]-[Exit].



6. <Mode Change>
Change the mode to View Mode.

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8. De-Installation Procedure of DEV Interface Cable 2 (3/3) (DKU-F455I-EXC)

Between HDU-R10-R17 and HDU-R20-R27

a. Disconnect the DEV interface cables from the FSW PCBs in the DKU-R2 frame referring to Fig. 4.1.9-22 through Fig. 4.1.9-25.
b. Take out the DEV interface cable, which has been removed from the FSW PCB, from the DKU frame.

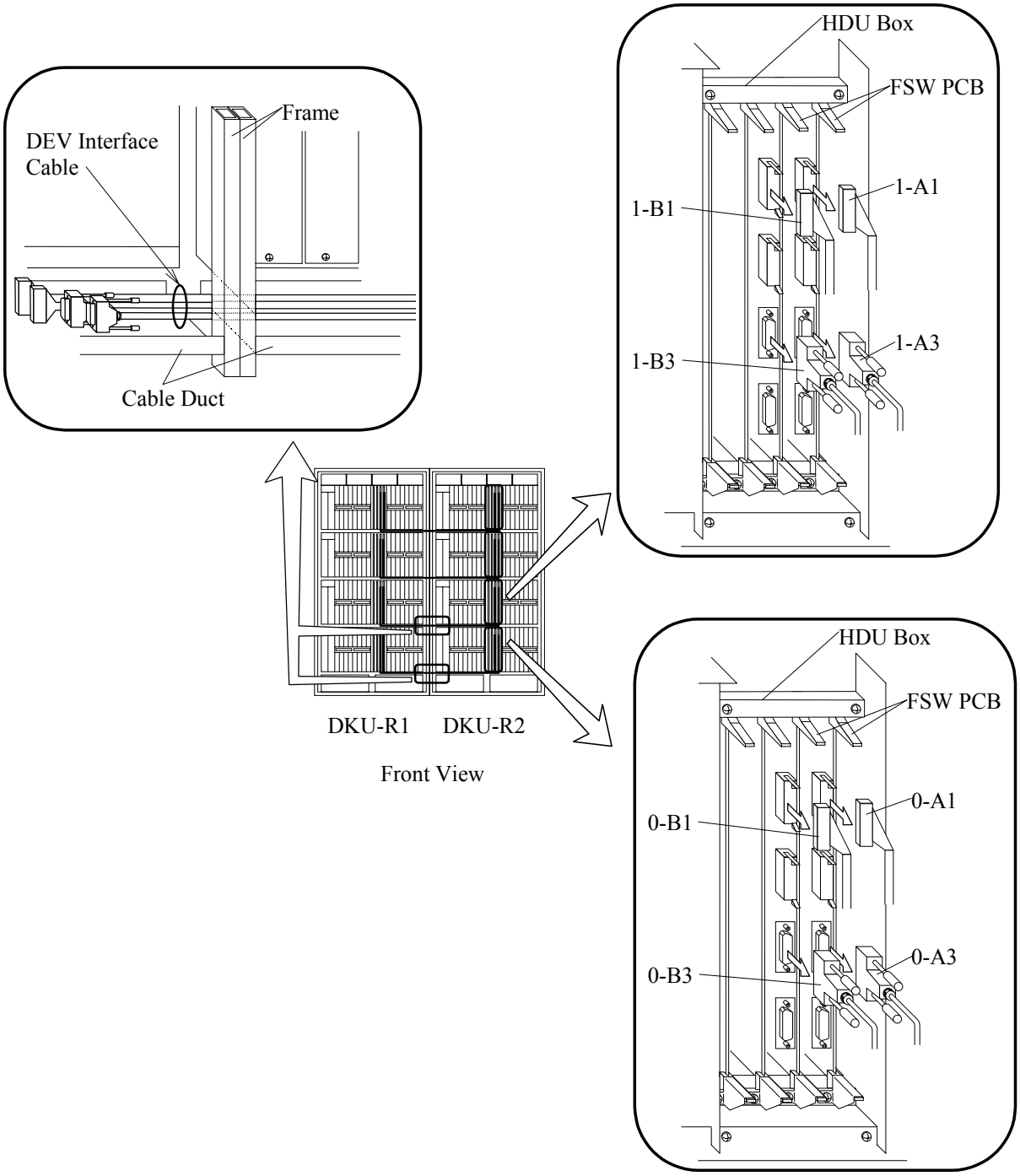

Fig. 4.1.9-22 Disconnection of the DEV Interface Cables

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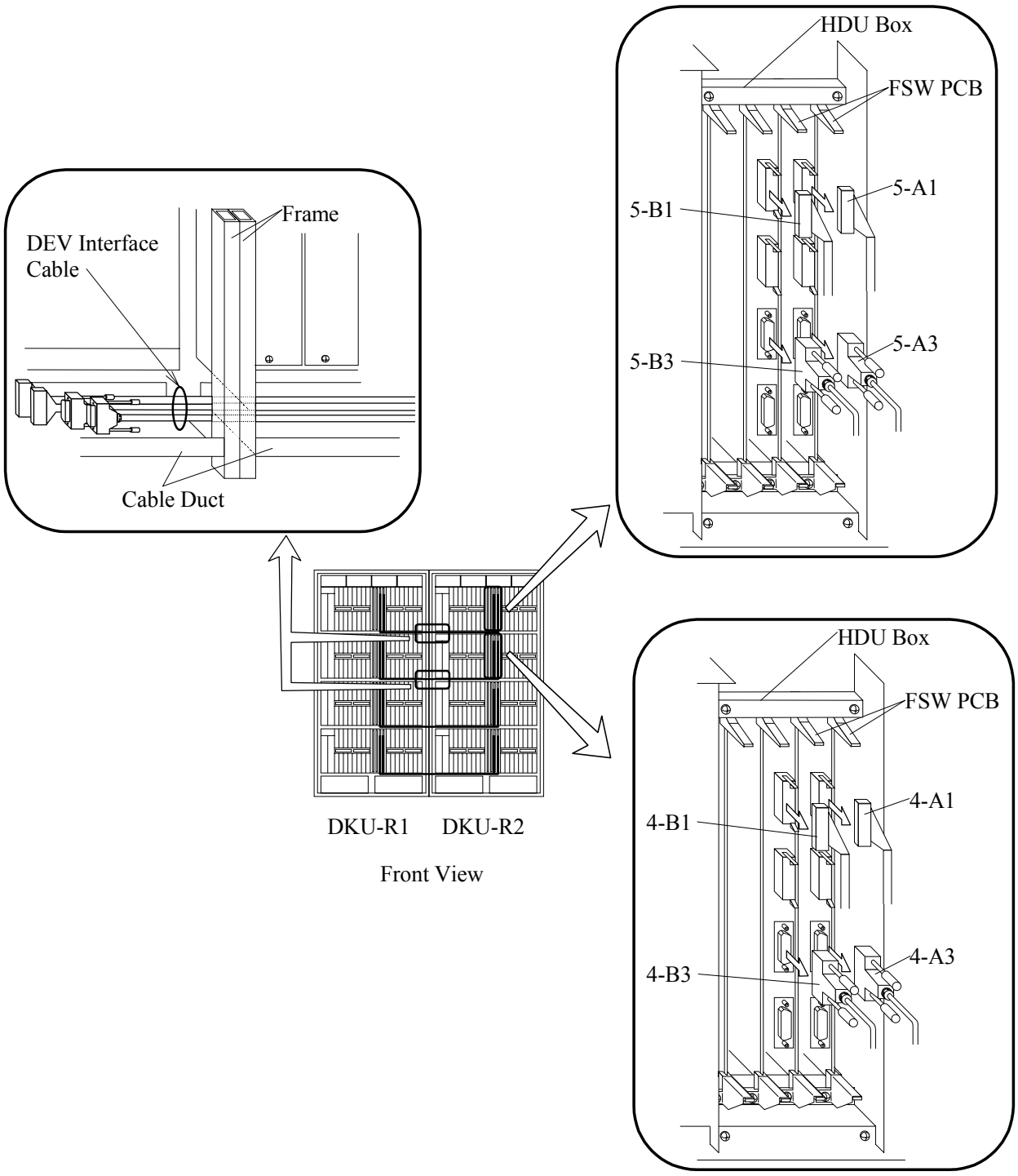

Fig. 4.1.9-23 Disconnection of the DEV Interface Cables

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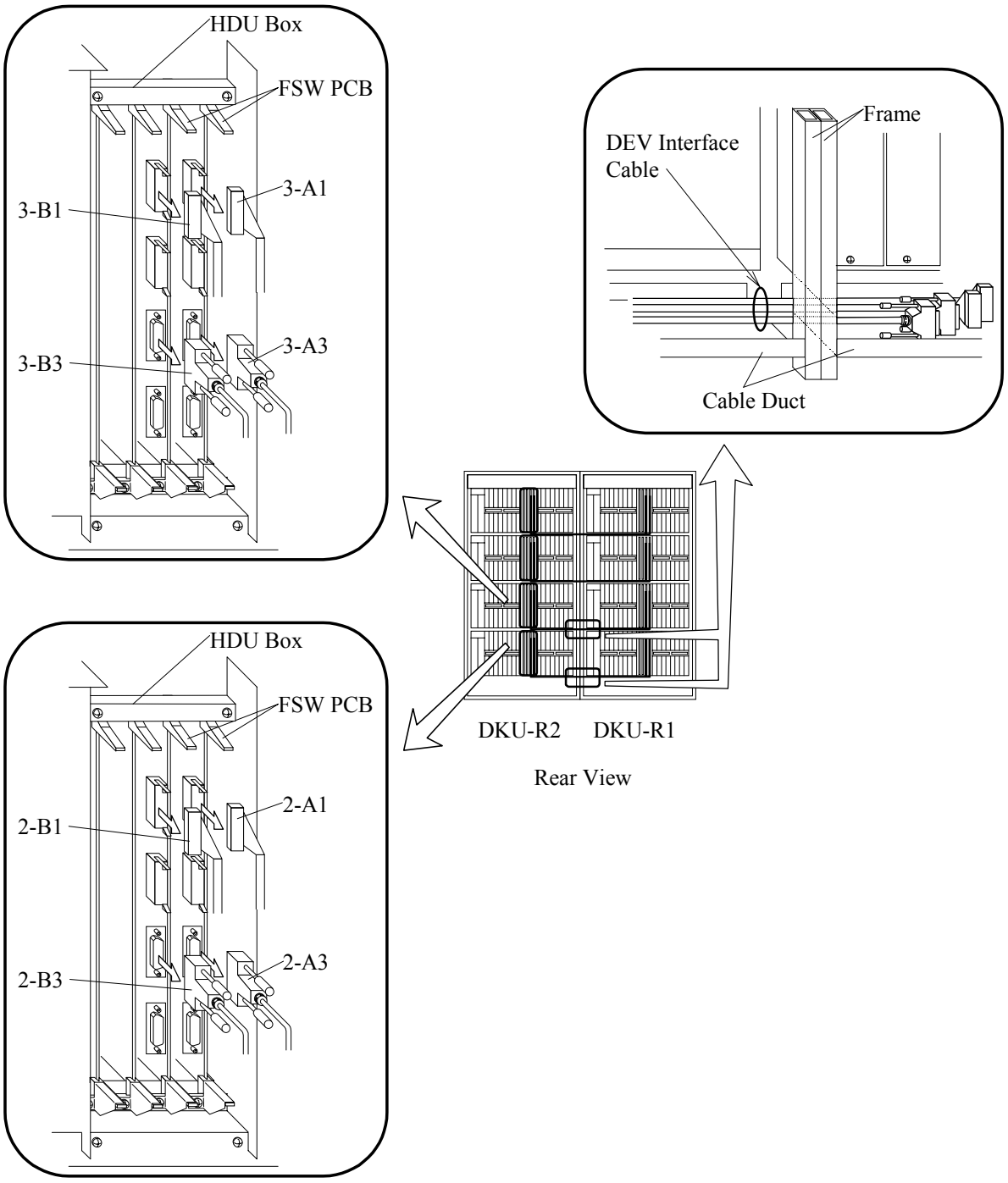

Fig. 4.1.9-24 Disconnection of the DEV Interface Cables

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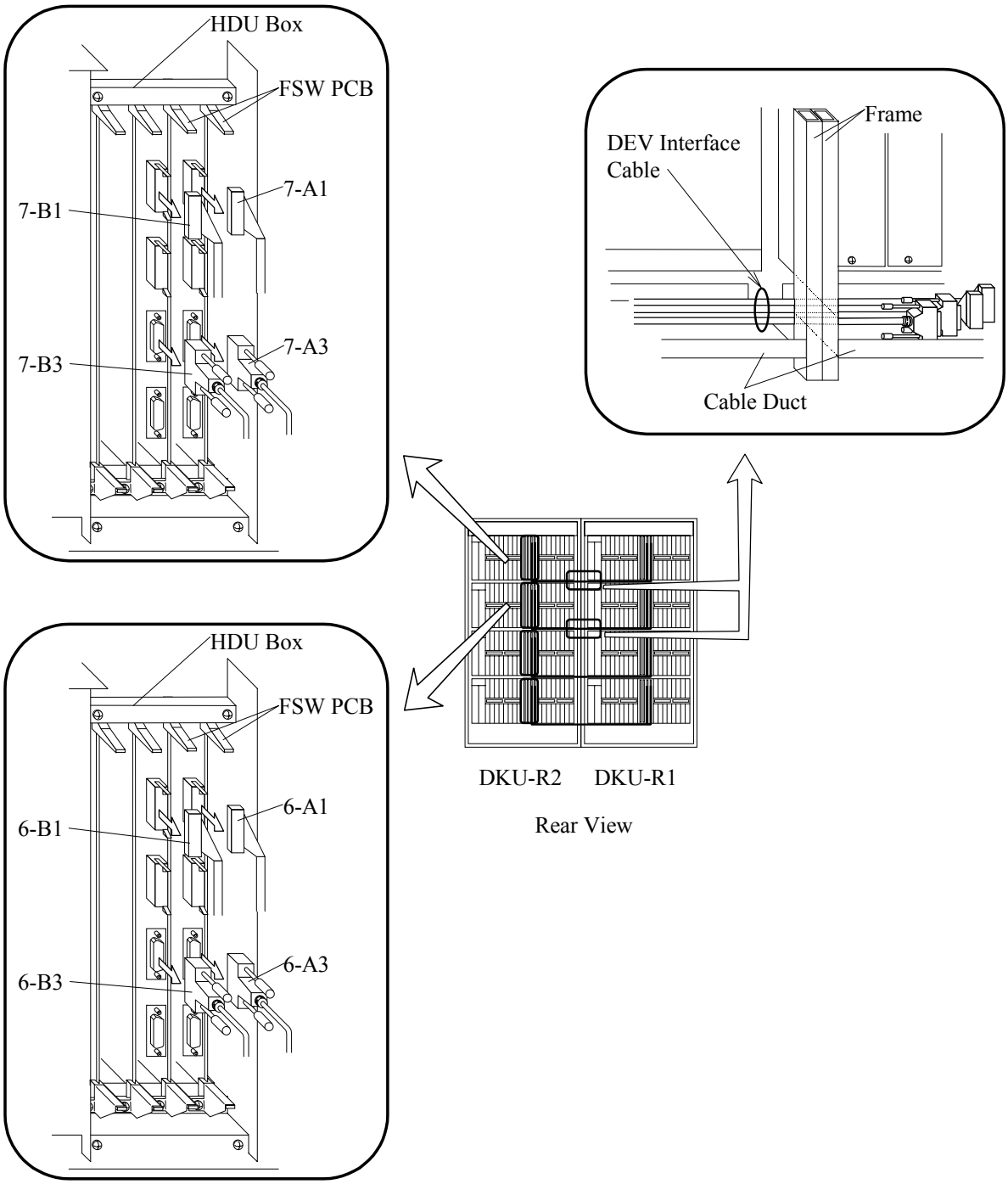

Fig. 4.1.9-25 Disconnection of the DEV Interface Cables

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c. Attach the cable covers with the screws.

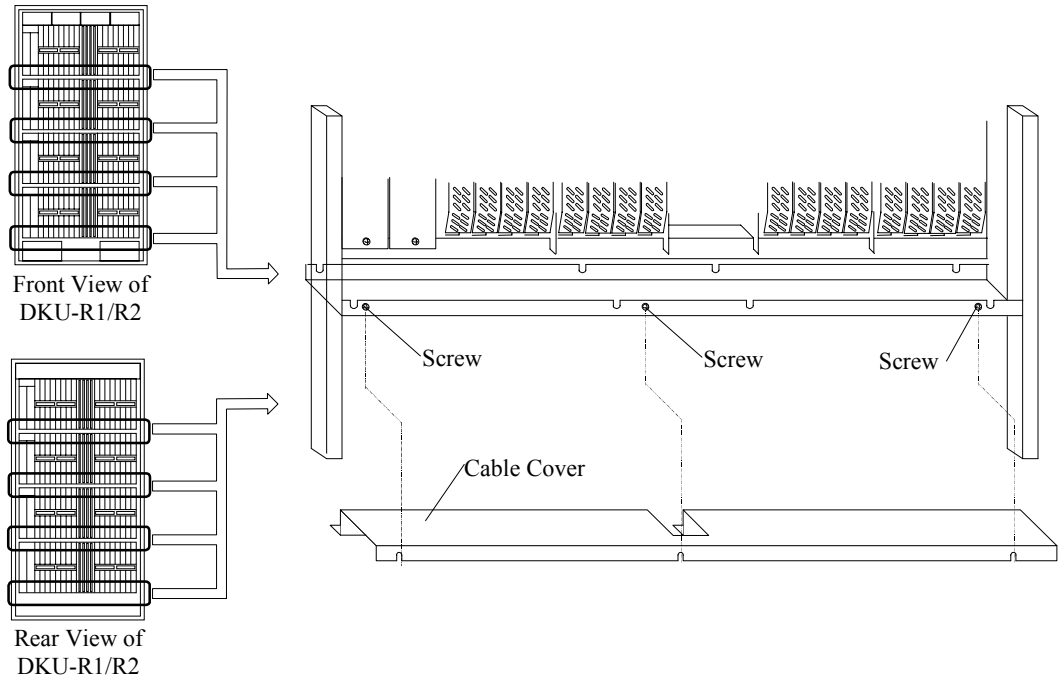

Fig. 4.1.9-26 Attachment of the Cable Cover

d. Attach the cable covers with the screws.

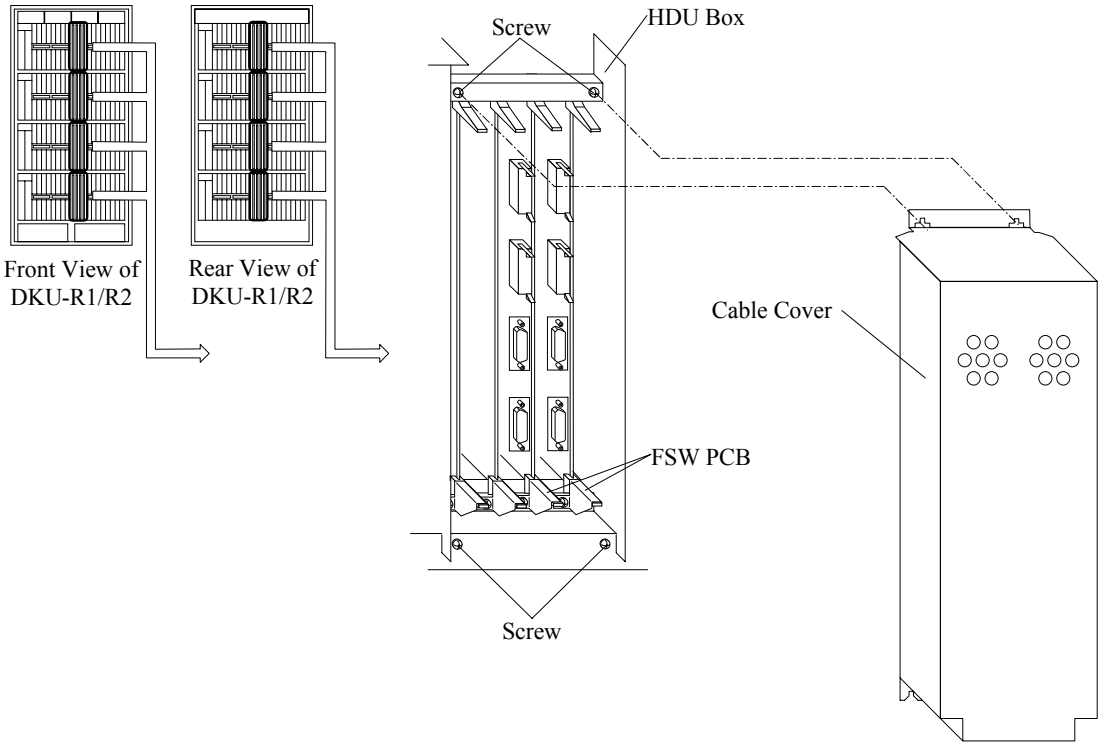

Fig. 4.1.9-27 Attachment of the Cable Cover

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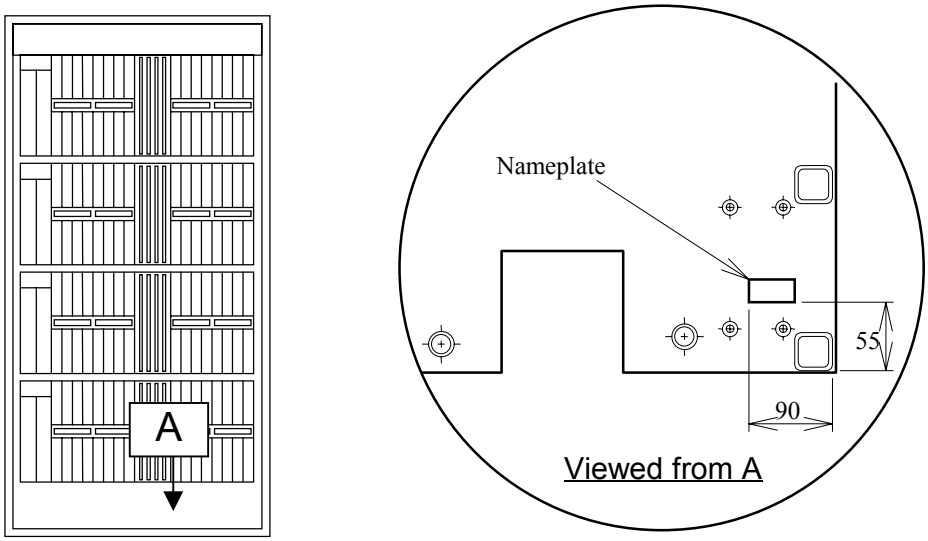
e. Remove the nameplate from the DKU-R2 frame.



Rear View of
DKU-R2

Fig. 4.1.9-28 Removal of the Nameplate

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Between HDU-L10-L17 and HDU-L20-L27

a. Disconnect the DEV interface cables from the FSW PCBs in the DKU-L2 frame referring to Fig. 4.1.9-29 through Fig. 4.1.9-32.
b. Take out the DEV interface cable, which has been removed from the FSW PCB, from the DKU frame.

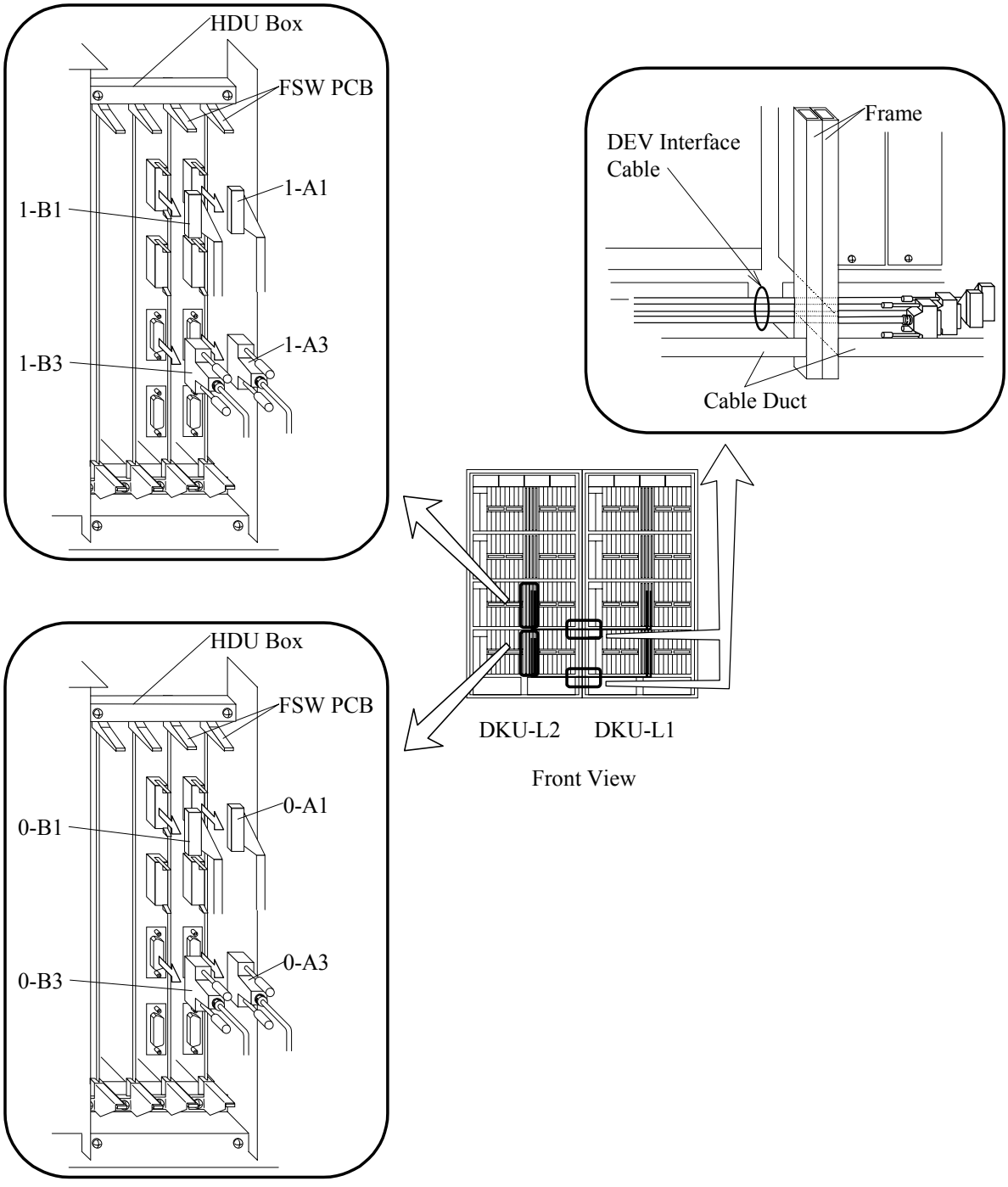

Fig. 4.1.9-29 Disconnection of the DEV Interface Cables

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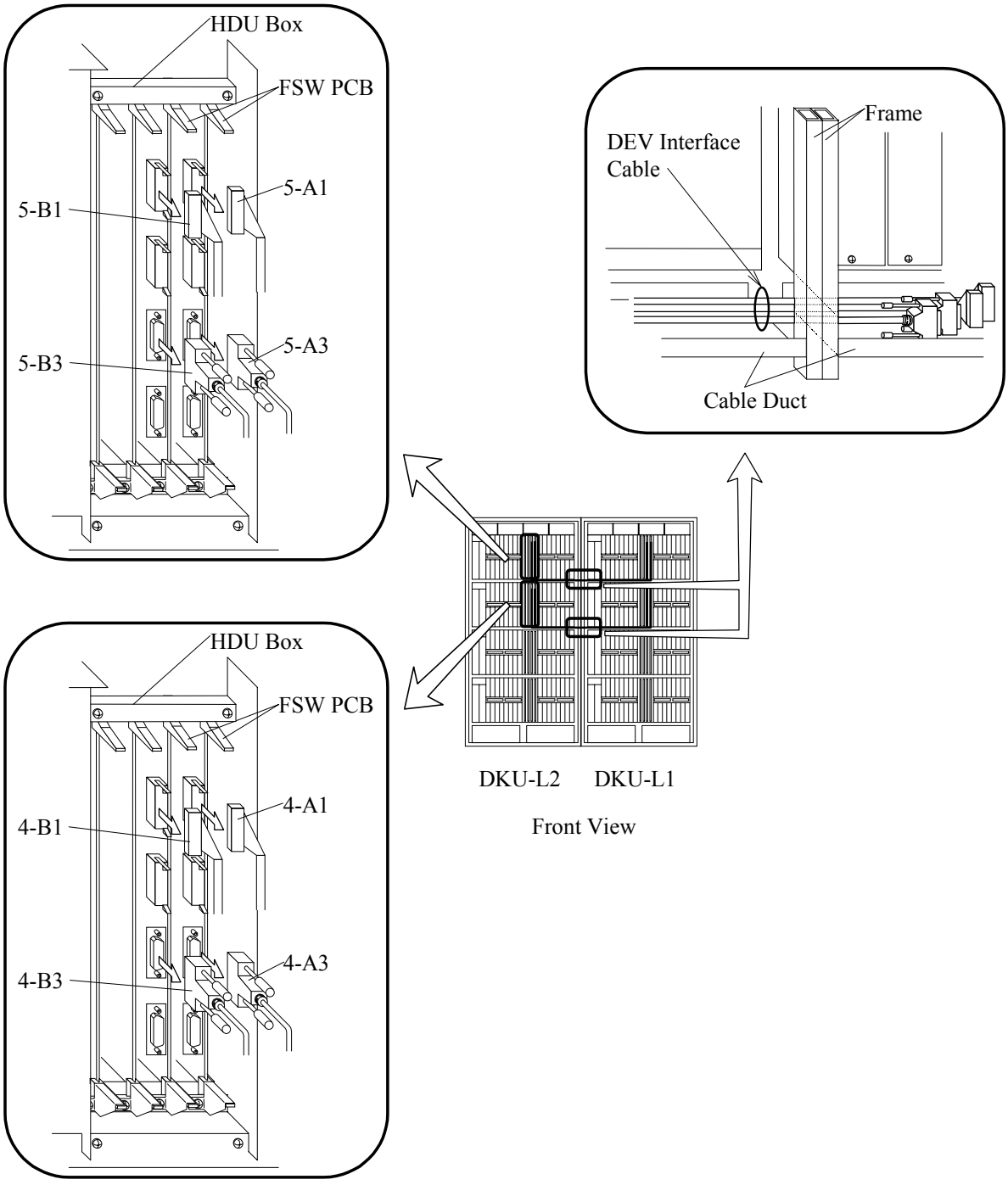

Fig. 4.1.9-30 Disconnection of the DEV Interface Cables

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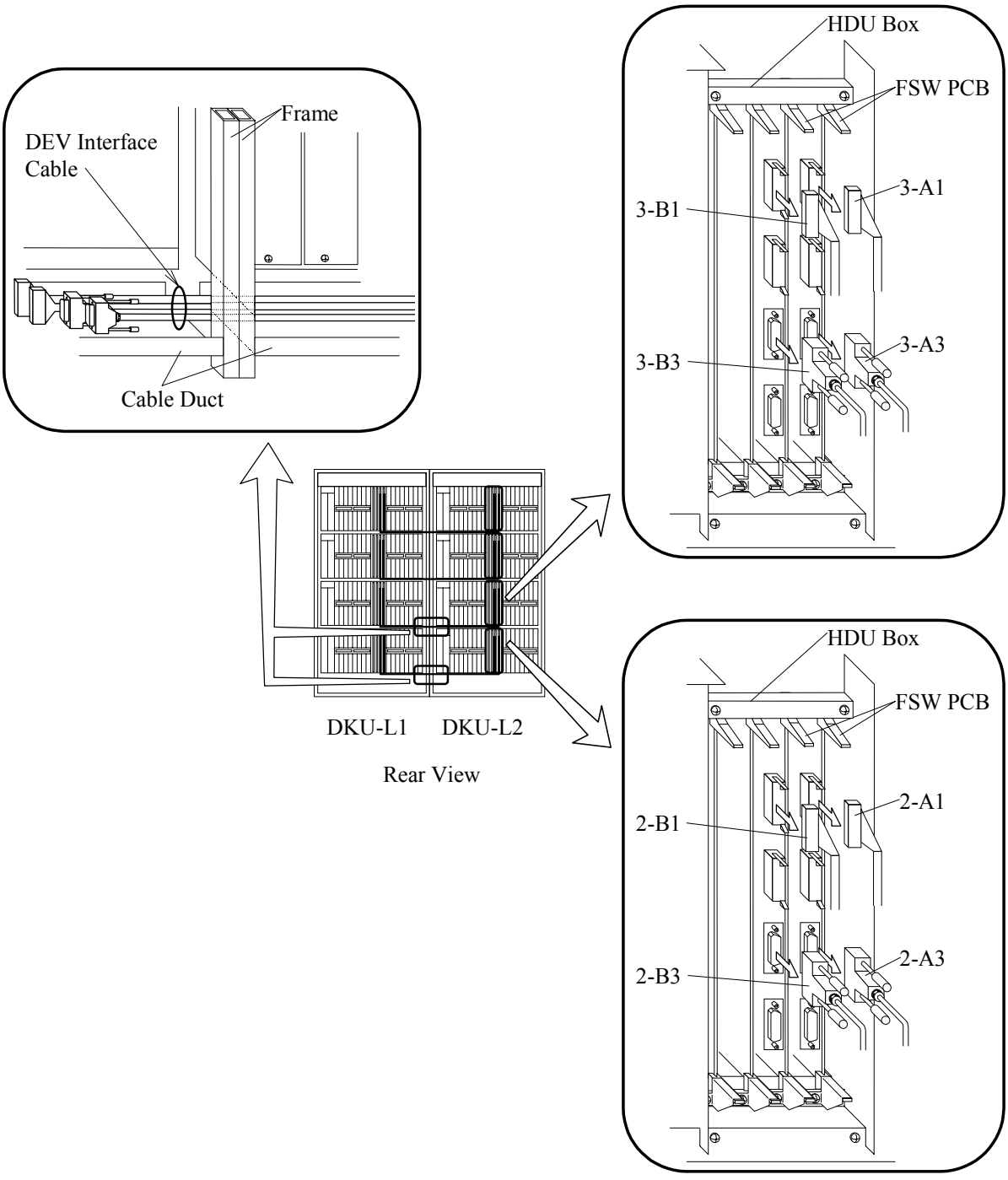

Fig. 4.1.9-31 Disconnection of the DEV Interface Cables

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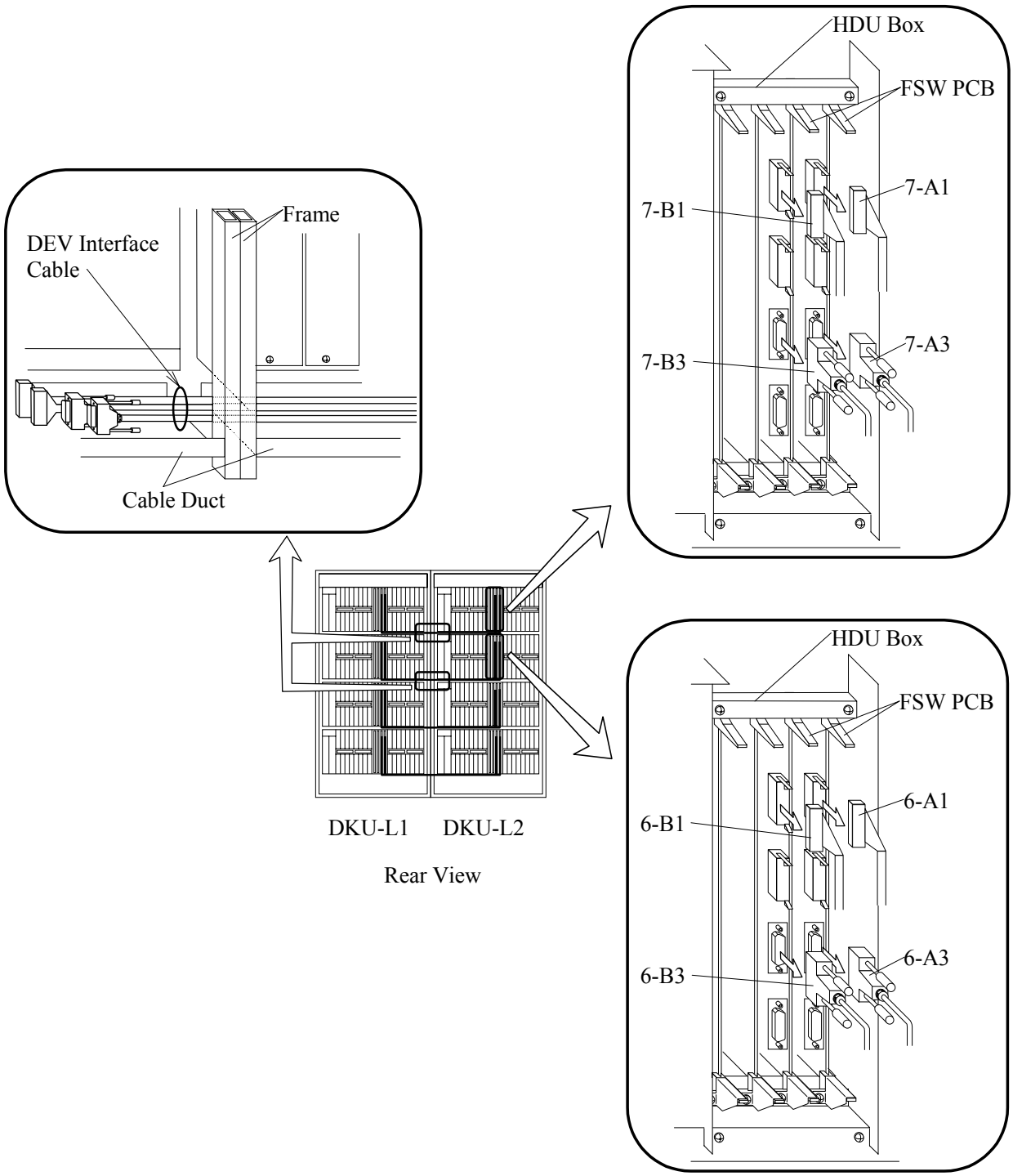

Fig. 4.1.9-32 Disconnection of the DEV Interface Cables

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c. Attach the cable covers with the screws.

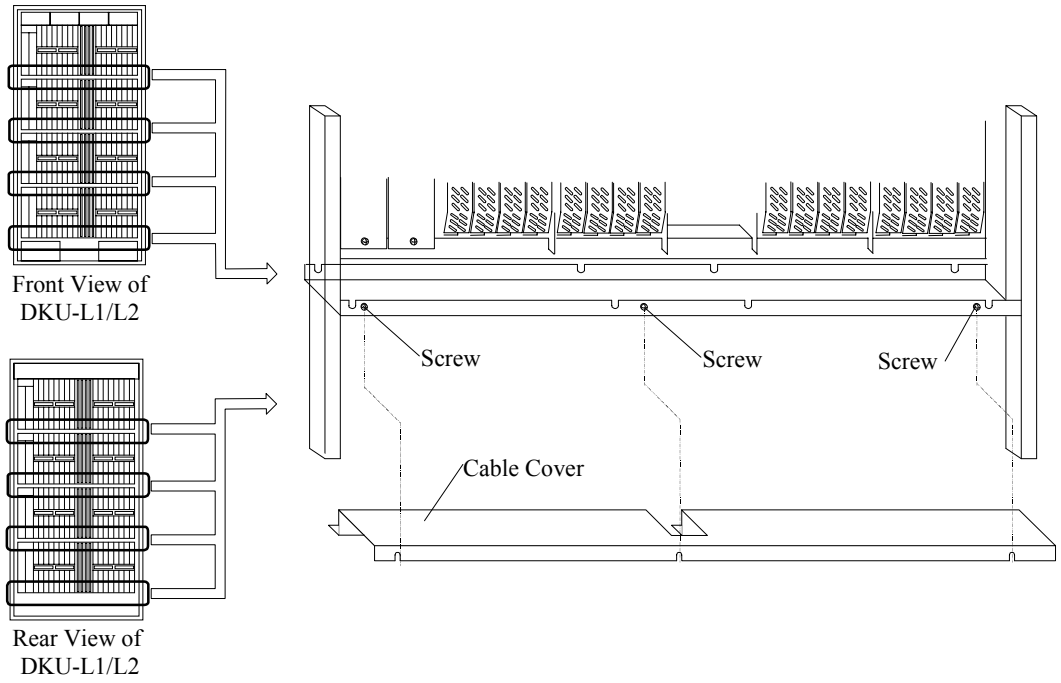

Fig. 4.1.9-33 Attachment of the Cable Cover

d. Attach the cable covers with the screws.

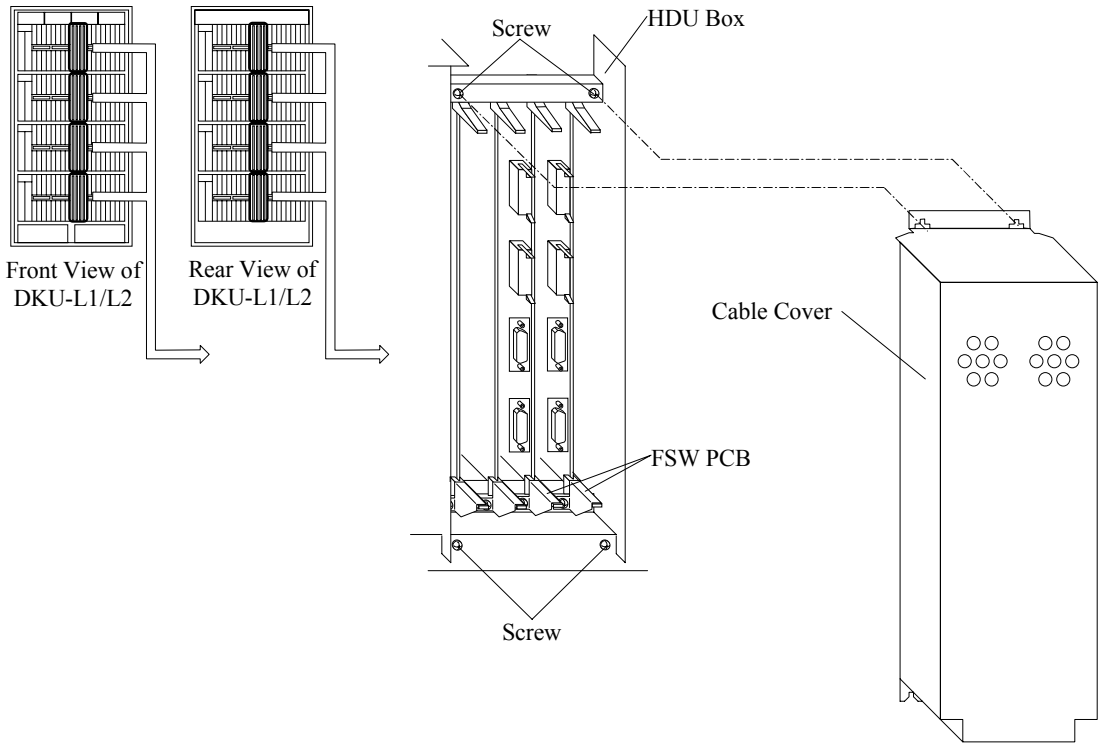

Fig. 4.1.9-34 Attachment of the Cable Cover

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e. Remove the nameplate from the DKU-L2 frame.

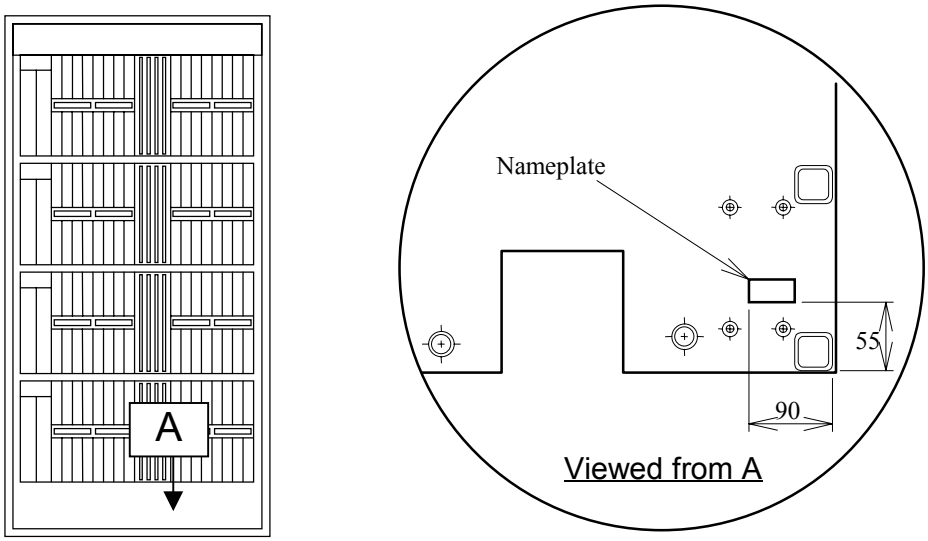

Fig. 4.1.9-35 Removal of the Nameplate

f. Return to the work table (INST02-60) and perform rest of the works.

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4.1.10 When performing removal of the data/spare HDD canister, DKA, and DEV interface cable that accompanies the removal of the DKU-L1 and DKU-L2 frames (DKC-F460I-200/L1C, DKU-F455I-36K4/36K1/72J4/72J1/72K4/72K1/146J4/146J1/146JF/146JS/146JQ/146JM/EXC)

1. De-Installation Procedure of DEV Interface Cable 2 (1/3) (DKU-F455I-EXC)

> Caution:
> When the main circuit breaker of the DKU is turned off before the DEV interface cable (DKU-F455I-EXC) is removed, the DKU Voltage Alarm is detected (the ALARM LED on the operator panel comes on and the SIM=BF20XX or BF22XX is issued). Therefore, turn off the main circuit breaker of the DKU after removing the DEV interface cable. The turning off of the DKU main circuit breaker is to be done later in another procedure explained on page INST04-DKU-10.

Between HDU-L10-L17 and HDU-L20-L27

a. Loosen the screws and remove the cable covers from the DKU frames.

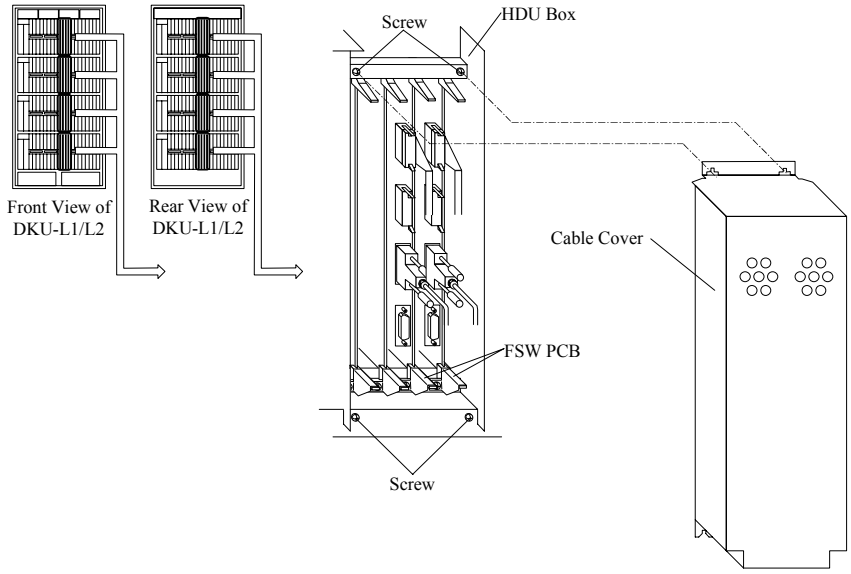

Fig. 4.1.10-1 Removal of Cable Covers

b. Loosen the screws and remove the cable covers from the DKU frames.

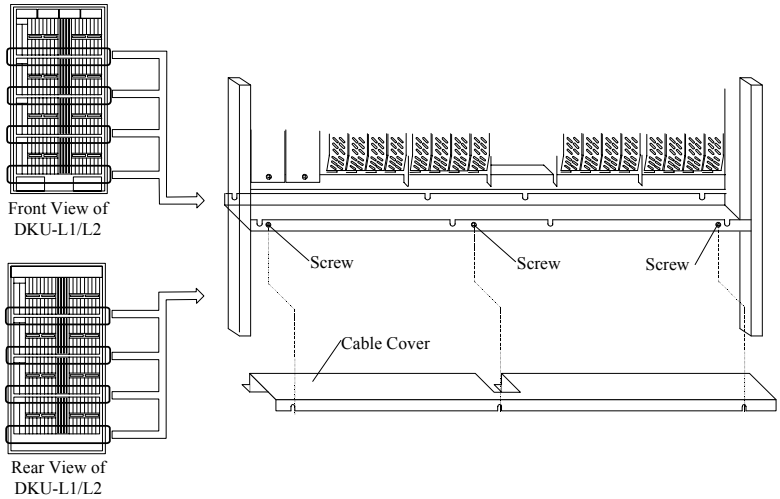

Fig. 4.1.10-2 Removal of Cable Covers

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2. De-Installation Procedure of DEV Interface Cable 1 (1/3) (DKC-F460I-L1C)

a. Loosen the screws and remove the cable covers from the DKU frames.

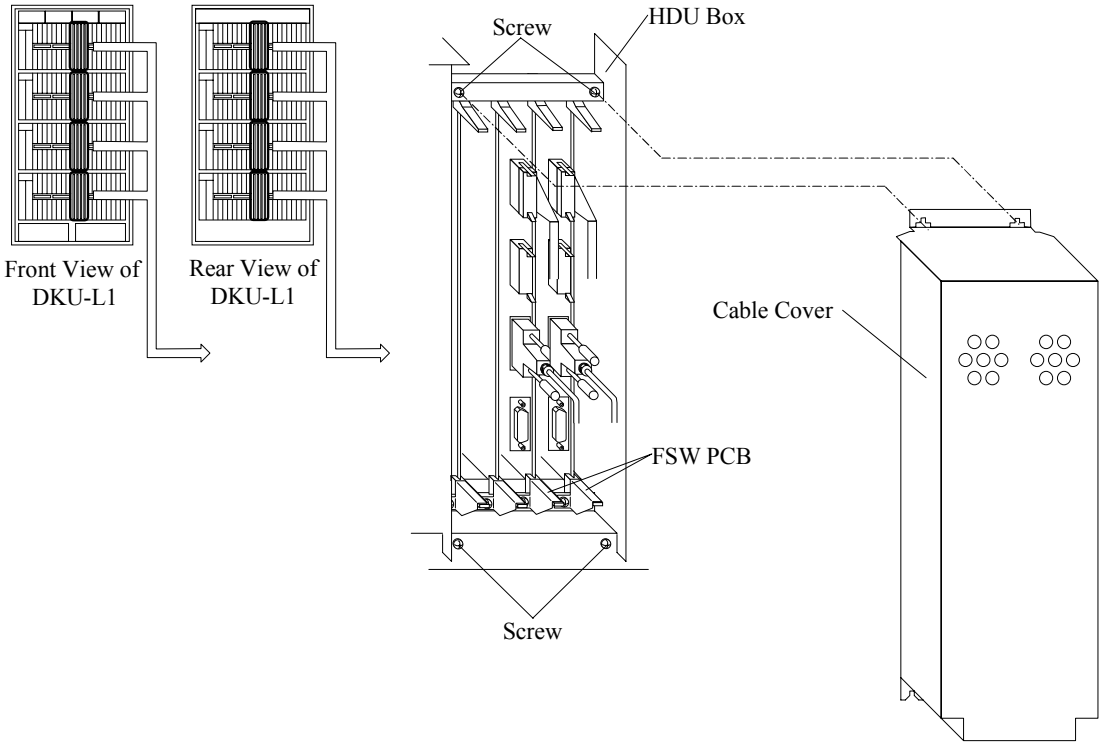

Fig. 4.1.10-3 Removal of Cable Covers

b. Loosen the screws and remove the cable covers from the DKU frames.

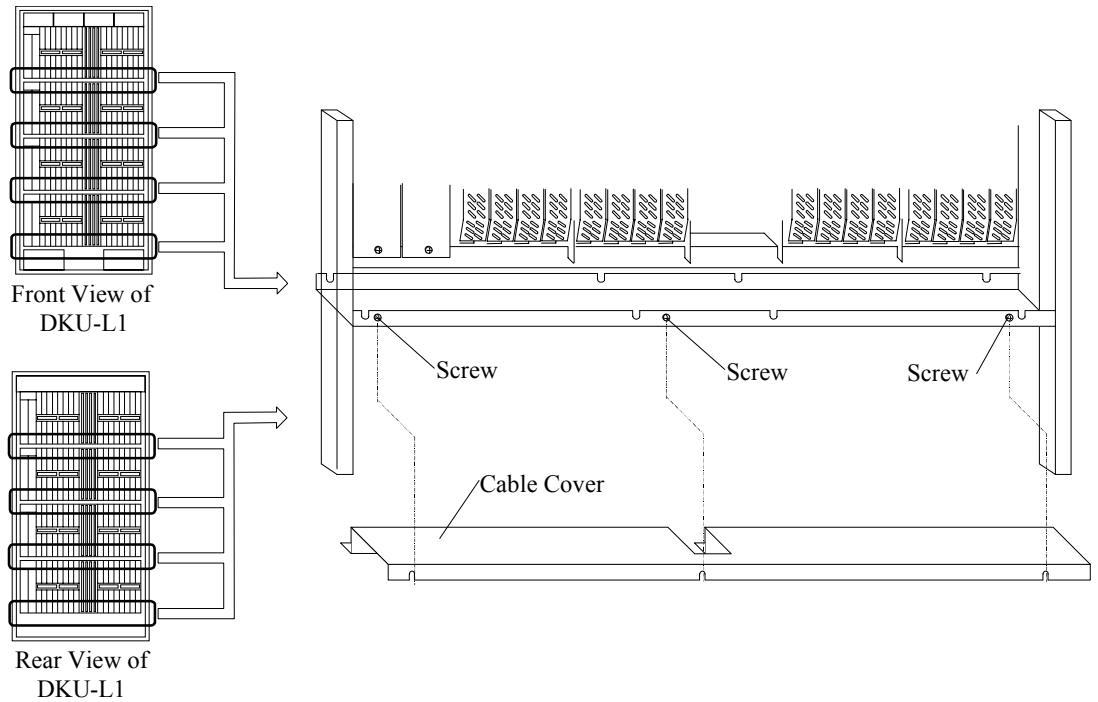

Fig. 4.1.10-4 Removal of Cable Covers

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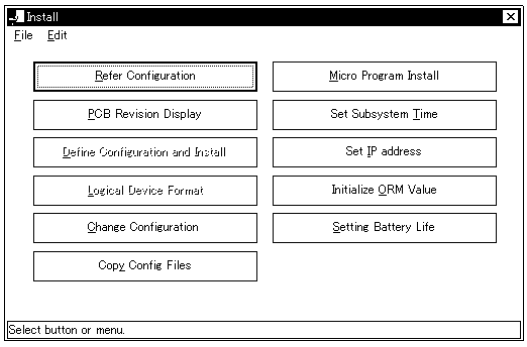
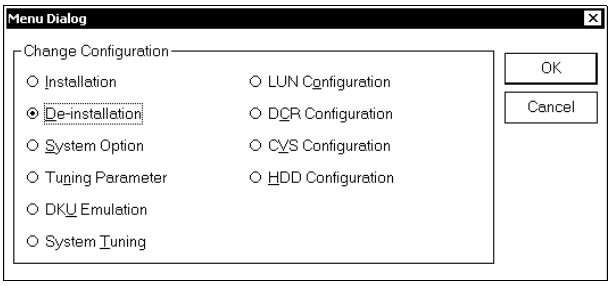
3. Setting up the New Device Structure Information

1. <Mode Change>
   Change the mode to Modify Mode.
   Select (CL) [Install].

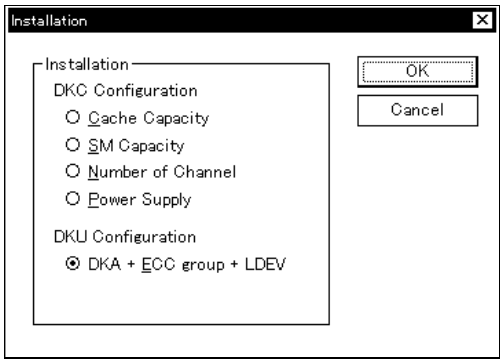
2. <Start the 'Menu Dialog' screen>
   Select (CL) [Change Configuration].



3. <Start Device Structure Setup screen>
   Select (CL) [De-Installation] in the 'Menu Dialog' dialog box and select (CL) [OK].



4. <Select a part to be changed>
   Select (CL) [DKA + ECC group + LDEV], and select (CL) [OK].



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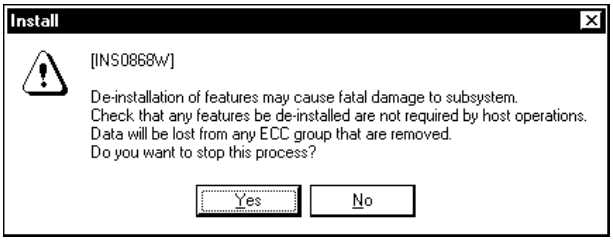
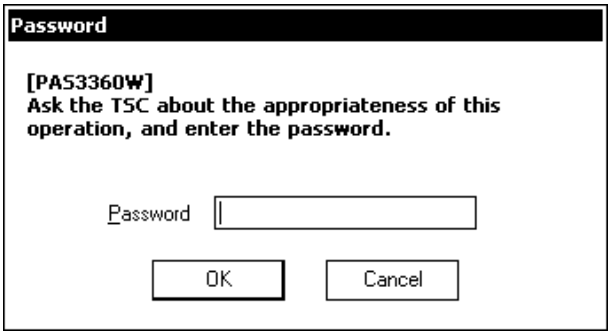
5.

Select (CL) [No] in response to “De-installation of features may cause fatal damage to subsystem. Check that any features be de-installed are not required by host operations. Data will be lost from any ECC group that are removed. Do you want to stop this process?”.



6. <Input password>
Enter the password and select (CL) [OK].



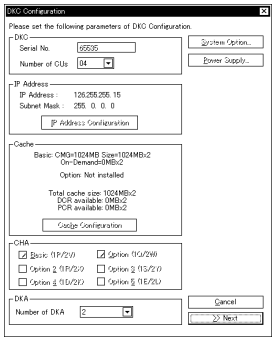
NOTICE
This is a special (exceptional) operation that can cause a serious failure such as a system down or a data loss if a wrong part to be removed is selected, and requires an input of a password. Ask the technical support center about the appropriateness of the operation, and input the password after getting an approval of executing the operation.

7. <Update Configuration Information>
Set the item to be de-installed for DKC and DKA in the ‘DKC Configuration’ window.

When decreasing the CUs, change the “Number of CUs”.
When decreasing the DKAs, change the “Number of DKA”.

Note: A part other than the CU and DKA cannot be removed at the same time.

Make sure that the entered item is correct and select (CL) [>>Next].



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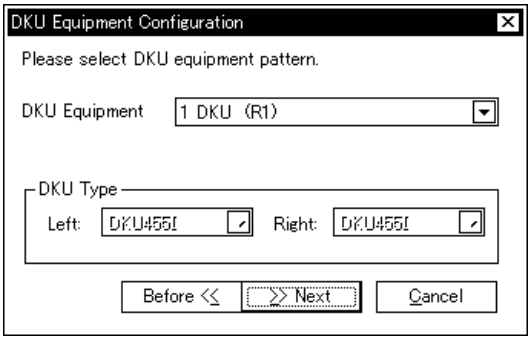
7-1. <Altering DKU frame information>

Define the DKU frame in the DKU Equipment Configuration window.

Make an altered setting in which the DKU-L1 and DKU-L2 are deleted from the DKUs currently set.

Current setting	Altered setting
3DKUs (R1, L1, L2)	1DKU (R1)
4DKUs (R1, L1, R2, L2)	2DKUs (R1, R2)

Note: After the setting is made, the B4 of the deleted DKU is not displayed.



After making the setting, select the [>> Next]. The routine proceeds to Step 8.

When the [Before <<] is selected, the window returns to the preceding one.

Return to Step 7.

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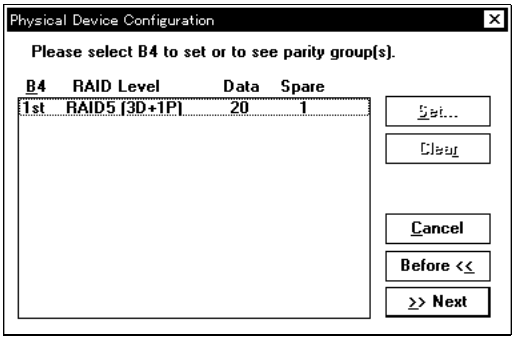
8. Change Drive Configuration Information>
Set drive configuration according to the 'Physical Device Configuration' screen displaying the mounted B4 based on the result of setting of DKU mount pattern.
Detailed procedure is shown below.
[Set...]: Defines the parity group or spare disk. The routine proceeds to Step 8-1.
[Clear...]: Cancels the setting of the B4.
After setting up all items, select (CL) [>>Next].
Selecting (CL) [Before<<] returns you to the previous screen.



[For the case of the multi cabinet model]

B4	Location	B4	Location
1st	HDU-R10, 11, 12, 13	7th	HDU-L20, 21, 22, 23
2nd	HDU-R14, 15, 16, 17	8th	HDU-L24, 25, 26, 27
3rd	HDU-L10, 11, 12, 13	9th	HDU-R30, 31, 32, 33
4th	HDU-L14, 15, 16, 17	10th	HDU-R34, 35, 36, 37
5th	HDU-R20, 21, 22, 23	11th	HDU-L30, 31, 32, 33
6th	HDU-R24, 25, 26, 27	12th	HDU-L34, 35, 36, 37

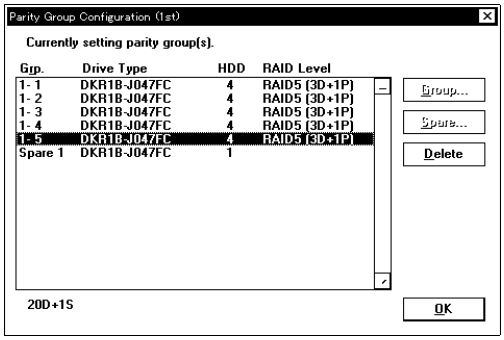
Note: The 9th to 12th of the B4 are valid only when the DKUs for the RAID 400 are connected.

[For the case of the single cabinet model]

B4	Location	Remarks
1st	HDU-R0, 1, 2, 3	HDD-X00 ~ X0F
2nd	HDU-R0, 1, 2, 3	HDD-X10 ~ X1F

8-1. <Define Parity Group>
Select (CL) the group to be de-installed and select (CL) [Delete] in the 'Parity Group Configuration' dialog box.
After setting, select (CL) [OK]. Return to step 8.

Grp*: A parity group where RAID Concatenation is installed.



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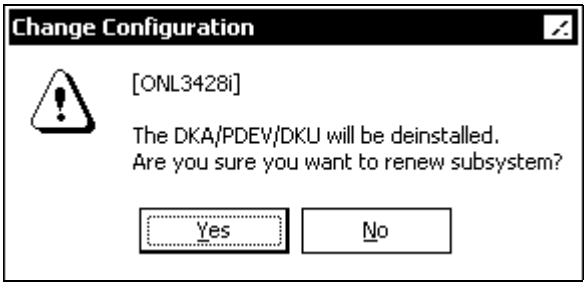
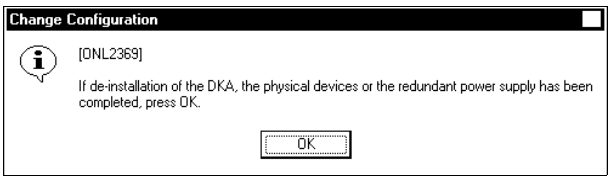
4. SVP pre procedure

1. <Start de-installation>
   Select (CL) [Yes] in response to “The DKA/PDEV/DKU will be deinstalled. Are you sure you want to renew subsystem?”.

   When [No] is selected (CL), returns to INST04-DKA-2150 step 2.



2.
   At this point refrain from pressing the [OK] button.
   “If de-installation of the DKA, the physical devices or the redundant power supply has been completed, press OK.” shown in the right figure.



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5. De-Installation Procedure of HDD Canister

5-1 Confirmation of position to de-install HDD canister

(i) RAID5(3D+1P)/RAID1(2D+2D)

Relations between the installation locations of the RAID groups and the RAID group numbers set through the SVP are shown in Table 4.1.10-1.

Table 4.1.10-1 Relation between HDDs installation order and RAID group number (3D+1P/2D+2D) (1/2)

	DKC	R1 DKU			R2 DKU		
		RAID Group Installation Order	RAID Group No.	HDD Location	RAID Group Installation Order	RAID Group No.	HDD Location
Upper	2nd DKA Pair	032	2-1	HDDR1y-00	096	6-1	HDDR2y-00
		033	2-2	HDDR1y-01	097	6-2	HDDR2y-01
		034	2-3	HDDR1y-02	098	6-3	HDDR2y-02
		035	2-4	HDDR1y-03	099	6-4	HDDR2y-03
		036	2-5	HDDR1y-04	100	6-5	HDDR2y-04
		037	2-6	HDDR1y-05	101	6-6	HDDR2y-05
		038	2-7	HDDR1y-06	102	6-7	HDDR2y-06
		039	2-8	HDDR1y-07	103	6-8	HDDR2y-07
		040	2-9	HDDR1y-08	104	6-9	HDDR2y-08
		041	2-10	HDDR1y-09	105	6-10	HDDR2y-09
		042	2-11	HDDR1y-0A	106	6-11	HDDR2y-0A
		043	2-12	HDDR1y-0B	107	6-12	HDDR2y-0B
		044	2-13	HDDR1y-0C	108	6-13	HDDR2y-0C
		045	2-14	HDDR1y-0D	109	6-14	HDDR2y-0D
		046	2-15	HDDR1y-0E	110	6-15	HDDR2y-0E
		047(Spare) *2	2-16	HDDR1y-0F	111	6-16	HDDR2y-0F
		048	2-17	HDDR1y-10	112	6-17	HDDR2y-10
		049	2-18	HDDR1y-11	113	6-18	HDDR2y-11
		050	2-19	HDDR1y-12	114	6-19	HDDR2y-12
		051	2-20	HDDR1y-13	115	6-20	HDDR2y-13
		052	2-21	HDDR1y-14	116	6-21	HDDR2y-14
		053	2-22	HDDR1y-15	117	6-22	HDDR2y-15
		054	2-23	HDDR1y-16	118	6-23	HDDR2y-16
		055	2-24	HDDR1y-17	119	6-24	HDDR2y-17
		056	2-25	HDDR1y-18	120	6-25	HDDR2y-18
		057	2-26	HDDR1y-19	121	6-26	HDDR2y-19
		058	2-27	HDDR1y-1A	122	6-27	HDDR2y-1A
		059	2-28	HDDR1y-1B	123	6-28	HDDR2y-1B
		060	2-29	HDDR1y-1C	124	6-29	HDDR2y-1C
		061	2-30	HDDR1y-1D	125	6-30	HDDR2y-1D
		062	2-31	HDDR1y-1E	126	6-31	HDDR2y-1E
		063	2-32	HDDR1y-1F	127	6-32	HDDR2y-1F
Lower	1st DKA Pair	001	1-1	HDDR1x-00	064	5-1	HDDR2x-00
		002	1-2	HDDR1x-01	065	5-2	HDDR2x-01
		003	1-3	HDDR1x-02	066	5-3	HDDR2x-02
		004	1-4	HDDR1x-03	067	5-4	HDDR2x-03
		005	1-5	HDDR1x-04	068	5-5	HDDR2x-04
		006	1-6	HDDR1x-05	069	5-6	HDDR2x-05
		007	1-7	HDDR1x-06	070	5-7	HDDR2x-06
		008	1-8	HDDR1x-07	071	5-8	HDDR2x-07
		009	1-9	HDDR1x-08	072	5-9	HDDR2x-08
		010	1-10	HDDR1x-09	073	5-10	HDDR2x-09
		011	1-11	HDDR1x-0A	074	5-11	HDDR2x-0A
		012	1-12	HDDR1x-0B	075	5-12	HDDR2x-0B
		013	1-13	HDDR1x-0C	076	5-13	HDDR2x-0C
		014	1-14	HDDR1x-0D	077	5-14	HDDR2x-0D
		015	1-15	HDDR1x-0E	078	5-15	HDDR2x-0E
		Spare *1	1-16	HDDR1x-0F	079	5-16	HDDR2x-0F
		016	1-17	HDDR1x-10	080	5-17	HDDR2x-10
		017	1-18	HDDR1x-11	081	5-18	HDDR2x-11
		018	1-19	HDDR1x-12	082	5-19	HDDR2x-12
		019	1-20	HDDR1x-13	083	5-20	HDDR2x-13
		020	1-21	HDDR1x-14	084	5-21	HDDR2x-14
		021	1-22	HDDR1x-15	085	5-22	HDDR2x-15
		022	1-23	HDDR1x-16	086	5-23	HDDR2x-16
		023	1-24	HDDR1x-17	087	5-24	HDDR2x-17
		024	1-25	HDDR1x-18	088	5-25	HDDR2x-18
		025	1-26	HDDR1x-19	089	5-26	HDDR2x-19
		026	1-27	HDDR1x-1A	090	5-27	HDDR2x-1A
		027	1-28	HDDR1x-1B	091	5-28	HDDR2x-1B
		028	1-29	HDDR1x-1C	092	5-29	HDDR2x-1C
		029	1-30	HDDR1x-1D	093	5-30	HDDR2x-1D
		030	1-31	HDDR1x-1E	094	5-31	HDDR2x-1E
		031	1-32	HDDR1x-1F	095	5-32	HDDR2x-1F

*1: To be left vacant or a spare disk is to be installed. *2: A data or spare disk is to be installed.

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Table 4.1.10-1 Relation between HDDs installation order and RAID group number (3D+1P/2D+2D) (2/2)

	L2 DKU			L1 DKU			DKC
	RAID Group Installation Order	RAID Group No.	HDD Location	RAID Group Installation Order	RAID Group No.	HDD Location	
Upper	223	8-1	HDDL2y-00	159	4-1	HDDL1y-00	4th DKA Pair
	224	8-2	HDDL2y-01	160	4-2	HDDL1y-01	
	225	8-3	HDDL2y-02	161	4-3	HDDL1y-02	
	226	8-4	HDDL2y-03	162	4-4	HDDL1y-03	
	227	8-5	HDDL2y-04	163	4-5	HDDL1y-04	
	228	8-6	HDDL2y-05	164	4-6	HDDL1y-05	
	229	8-7	HDDL2y-06	165	4-7	HDDL1y-06	
	230	8-8	HDDL2y-07	166	4-8	HDDL1y-07	
	231	8-9	HDDL2y-08	167	4-9	HDDL1y-08	
	232	8-10	HDDL2y-09	168	4-10	HDDL1y-09	
	233	8-11	HDDL2y-0A	169	4-11	HDDL1y-0A	
	234	8-12	HDDL2y-0B	170	4-12	HDDL1y-0B	
	235	8-13	HDDL2y-0C	171	4-13	HDDL1y-0C	
	236	8-14	HDDL2y-0D	172	4-14	HDDL1y-0D	
	237	8-15	HDDL2y-0E	173	4-15	HDDL1y-0E	
	238	8-16	HDDL2y-0F	174(Spare) *2	4-16	HDDL1y-0F	
	239	8-17	HDDL2y-10	175	4-17	HDDL1y-10	
	240	8-18	HDDL2y-11	176	4-18	HDDL1y-11	
	241	8-19	HDDL2y-12	177	4-19	HDDL1y-12	
	242	8-20	HDDL2y-13	178	4-20	HDDL1y-13	
	243	8-21	HDDL2y-14	179	4-21	HDDL1y-14	
	244	8-22	HDDL2y-15	180	4-22	HDDL1y-15	
	245	8-23	HDDL2y-16	181	4-23	HDDL1y-16	
	246	8-24	HDDL2y-17	182	4-24	HDDL1y-17	
	247	8-25	HDDL2y-18	183	4-25	HDDL1y-18	
	248	8-26	HDDL2y-19	184	4-26	HDDL1y-19	
	249	8-27	HDDL2y-1A	185	4-27	HDDL1y-1A	
	250	8-28	HDDL2y-1B	186	4-28	HDDL1y-1B	
	251	8-29	HDDL2y-1C	187	4-29	HDDL1y-1C	
	252	8-30	HDDL2y-1D	188	4-30	HDDL1y-1D	
	253	8-31	HDDL2y-1E	189	4-31	HDDL1y-1E	
	254	8-32	HDDL2y-1F	190	4-32	HDDL1y-1F	
Lower	191	7-1	HDDL2x-00	128	3-1	HDDL1x-00	3rd DKA Pair
	192	7-2	HDDL2x-01	129	3-2	HDDL1x-01	
	193	7-3	HDDL2x-02	130	3-3	HDDL1x-02	
	194	7-4	HDDL2x-03	131	3-4	HDDL1x-03	
	195	7-5	HDDL2x-04	132	3-5	HDDL1x-04	
	196	7-6	HDDL2x-05	133	3-6	HDDL1x-05	
	197	7-7	HDDL2x-06	134	3-7	HDDL1x-06	
	198	7-8	HDDL2x-07	135	3-8	HDDL1x-07	
	199	7-9	HDDL2x-08	136	3-9	HDDL1x-08	
	200	7-10	HDDL2x-09	137	3-10	HDDL1x-09	
	201	7-11	HDDL2x-0A	138	3-11	HDDL1x-0A	
	202	7-12	HDDL2x-0B	139	3-12	HDDL1x-0B	
	203	7-13	HDDL2x-0C	140	3-13	HDDL1x-0C	
	204	7-14	HDDL2x-0D	141	3-14	HDDL1x-0D	
	205	7-15	HDDL2x-0E	142	3-15	HDDL1x-0E	
	206	7-16	HDDL2x-0F	Spare *1	3-16	HDDL1x-0F	
	207	7-17	HDDL2x-10	143	3-17	HDDL1x-10	
	208	7-18	HDDL2x-11	144	3-18	HDDL1x-11	
	209	7-19	HDDL2x-12	145	3-19	HDDL1x-12	
	210	7-20	HDDL2x-13	146	3-20	HDDL1x-13	
	211	7-21	HDDL2x-14	147	3-21	HDDL1x-14	
	212	7-22	HDDL2x-15	148	3-22	HDDL1x-15	
	213	7-23	HDDL2x-16	149	3-23	HDDL1x-16	
	214	7-24	HDDL2x-17	150	3-24	HDDL1x-17	
	215	7-25	HDDL2x-18	151	3-25	HDDL1x-18	
	216	7-26	HDDL2x-19	152	3-26	HDDL1x-19	
	217	7-27	HDDL2x-1A	153	3-27	HDDL1x-1A	
	218	7-28	HDDL2x-1B	154	3-28	HDDL1x-1B	
	219	7-29	HDDL2x-1C	155	3-29	HDDL1x-1C	
	220	7-30	HDDL2x-1D	156	3-30	HDDL1x-1D	
	221	7-31	HDDL2x-1E	157	3-31	HDDL1x-1E	
	222	7-32	HDDL2x-1F	158	3-32	HDDL1x-1F	

*1: To be left vacant or a spare disk is to be installed. *2: A data or spare disk is to be installed.

*3: HDDL1x-00 (x: HDU Box No. 0, 1, 2, 3), HDDL1y-00 (y: HDU Box No. 4, 5, 6, 7)

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(1) Make sure of the location where the RAID group is de-installed and that where the HDD canister is to be removed.

No.	Model Number	Model Name	Data and Parity
1	DKU-F455I-36K4/72J4/72K4/146J4/146JF/146JQ	4 HDD Canisters	Data and Parity Drive

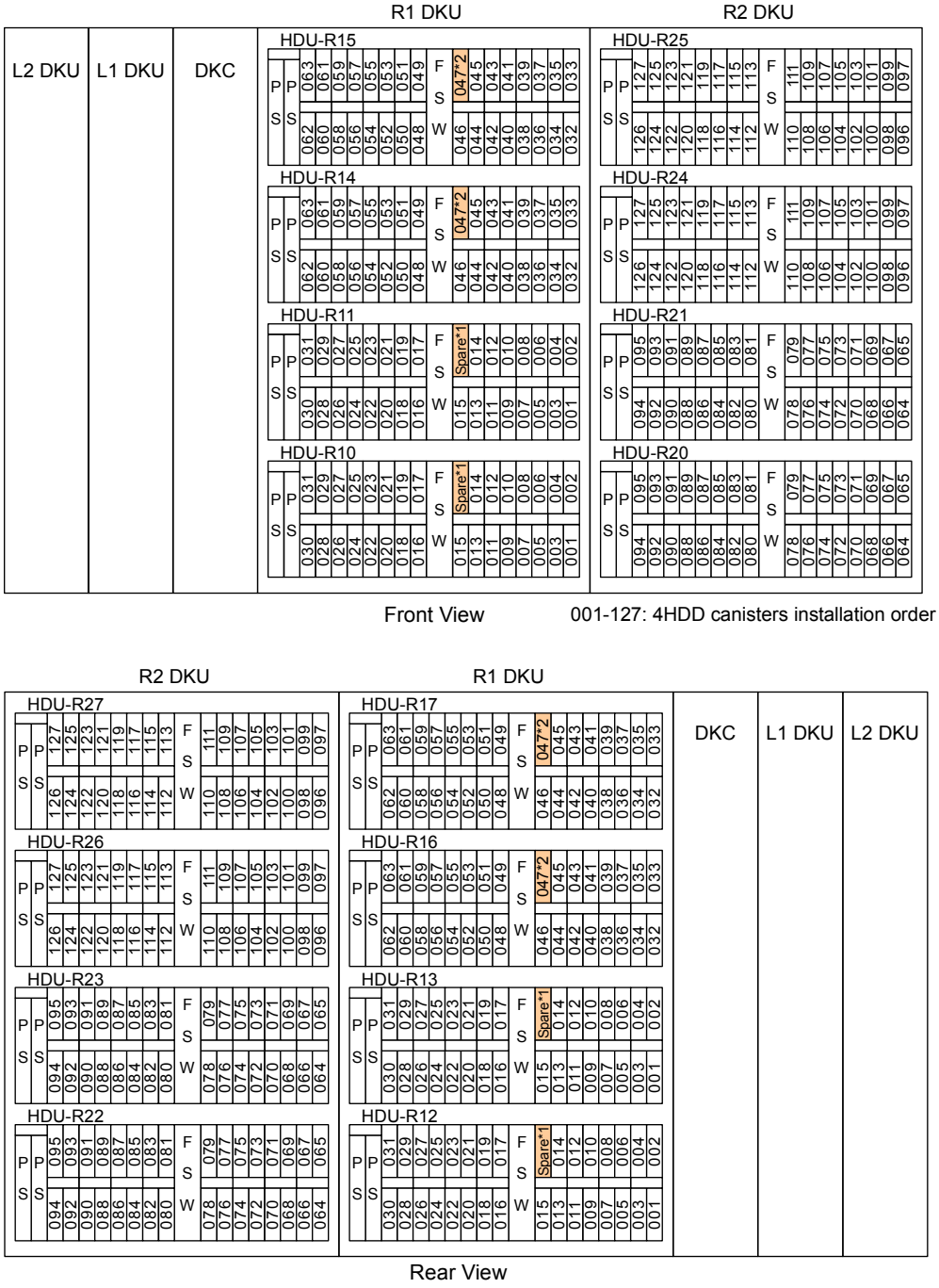

Fig. 4.1.10-5 (3D+1P) or (2D+2P) Data Drive/Parity Drive Expansion Sequence (1/2)

The relationship between HDDs installation order and RAID group number is shown in the Table 4.1.10-1.

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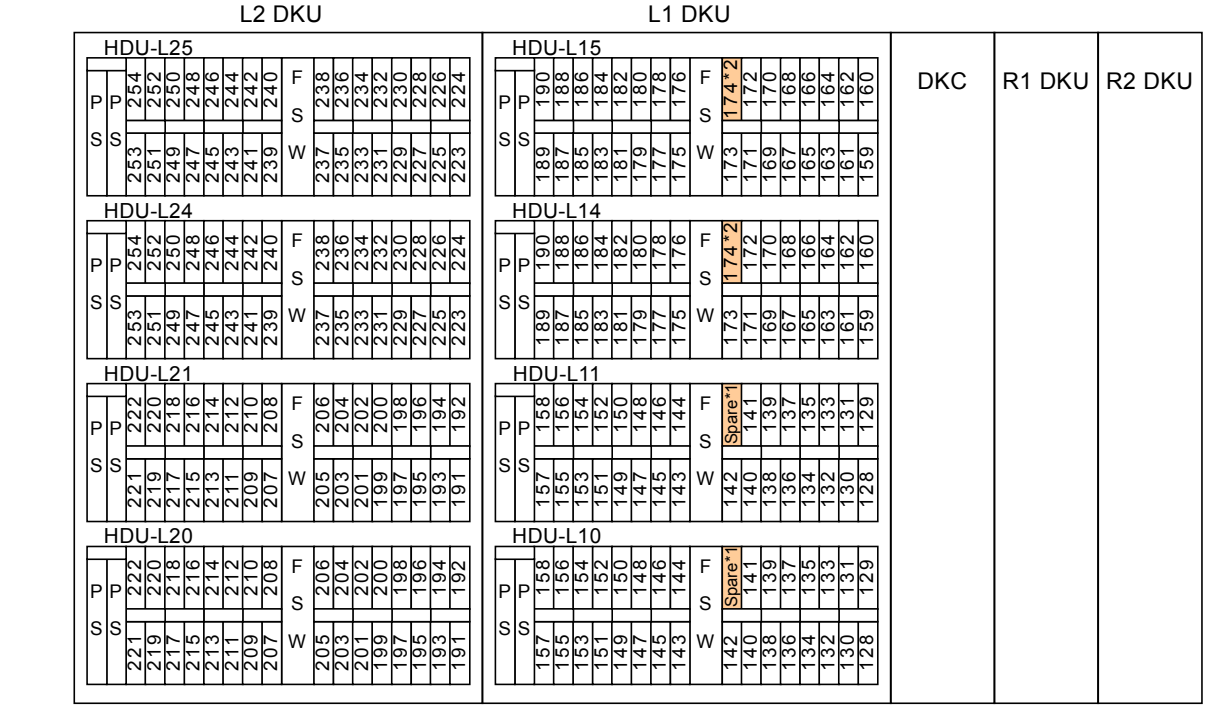

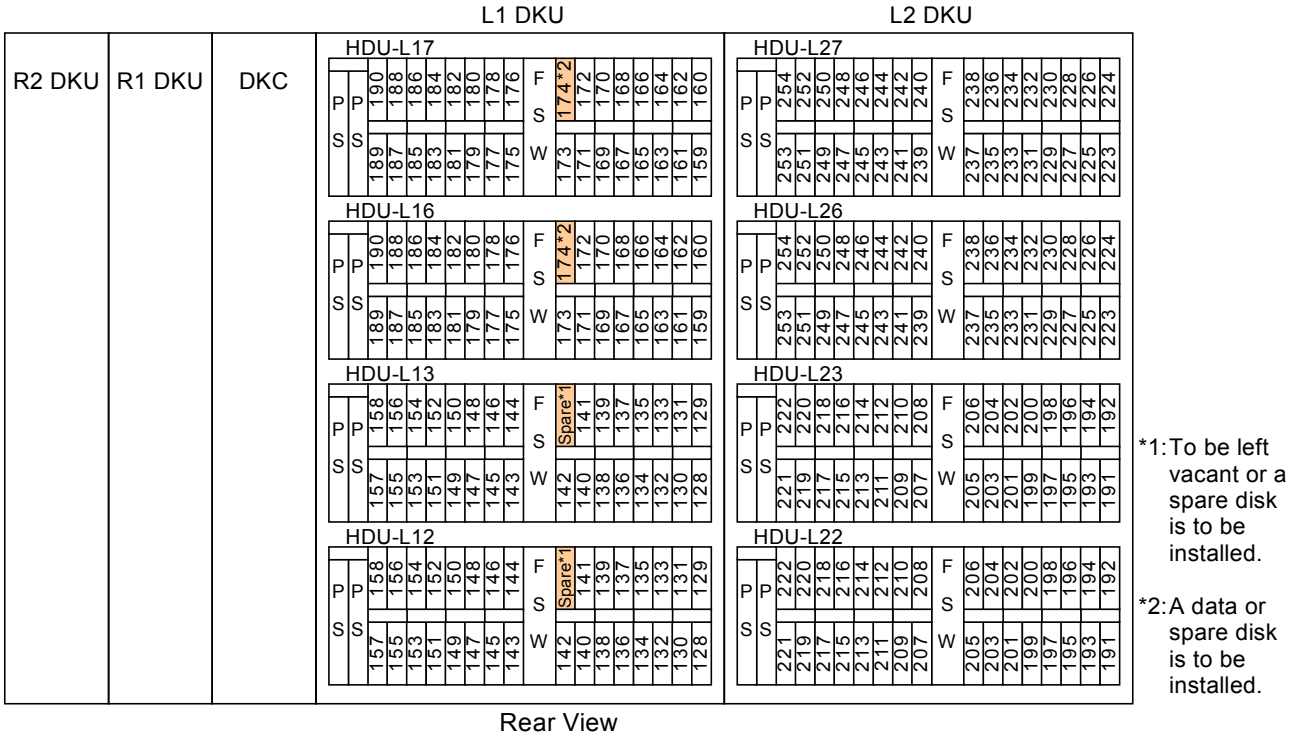

Fig. 4.1.10-5 (3D+1P) or (2D+2P) Data Drive/Parity Drive Expansion Sequence (2/2)

The relationship between HDDs installation order and RAID group number is shown in the Table 4.1.10-1.

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(ii) RAID5 (7D+1P)

Relations between the installation locations of the RAID groups and the RAID group numbers set through the SVP are shown in Table 4.1.10-2.

Table 4.1.10-2 Relation between HDDs installation order and RAID group number (7D+1P) (1/2)

DKC	R1 DKU			R2 DKU		
	RAID Group Installation Order	RAID Group No.	HDD Location	RAID Group Installation Order	RAID Group No.	HDD Location
1st / 2nd DKA Pair	001	1-1 , (2-1)	HDDR1x-00	032	5-1, (6-1)	HDDR2x-00
	002	1-2 , (2-2)	HDDR1x-01	033	5-2, (6-2)	HDDR2x-01
	003	1-3 , (2-3)	HDDR1x-02	034	5-3, (6-3)	HDDR2x-02
	004	1-4 , (2-4)	HDDR1x-03	035	5-4, (6-4)	HDDR2x-03
	005	1-5 , (2-5)	HDDR1x-04	036	5-5, (6-5)	HDDR2x-04
	006	1-6 , (2-6)	HDDR1x-05	037	5-6, (6-6)	HDDR2x-05
	007	1-7 , (2-7)	HDDR1x-06	038	5-7, (6-7)	HDDR2x-06
	008	1-8 , (2-8)	HDDR1x-07	039	5-8, (6-8)	HDDR2x-07
	009	1-9 , (2-9)	HDDR1x-08	040	5-9, (6-9)	HDDR2x-08
	010	1-10 , (2-10)	HDDR1x-09	041	5-10, (6-10)	HDDR2x-09
	011	1-11 , (2-11)	HDDR1x-0A	042	5-11, (6-11)	HDDR2x-0A
	012	1-12 , (2-12)	HDDR1x-0B	043	5-12, (6-12)	HDDR2x-0B
	013	1-13 , (2-13)	HDDR1x-0C	044	5-13, (6-13)	HDDR2x-0C
	014	1-14 , (2-14)	HDDR1x-0D	045	5-14, (6-14)	HDDR2x-0D
	015	1-15 , (2-15)	HDDR1x-0E	046	5-15, (6-15)	HDDR2x-0E
	(Spare) *1	1-16 , (2-16)	HDDR1x-0F	047	5-16, (6-16)	HDDR2x-0F
	016	1-17 , (2-17)	HDDR1x-10	048	5-17, (6-17)	HDDR2x-10
	017	1-18 , (2-18)	HDDR1x-11	049	5-18, (6-18)	HDDR2x-11
	018	1-19 , (2-19)	HDDR1x-12	050	5-19, (6-19)	HDDR2x-12
	019	1-20 , (2-20)	HDDR1x-13	051	5-20, (6-20)	HDDR2x-13
	020	1-21 , (2-21)	HDDR1x-14	052	5-21, (6-21)	HDDR2x-14
	021	1-22 , (2-22)	HDDR1x-15	053	5-22, (6-22)	HDDR2x-15
	022	1-23 , (2-23)	HDDR1x-16	054	5-23, (6-23)	HDDR2x-16
	023	1-24 , (2-24)	HDDR1x-17	055	5-24, (6-24)	HDDR2x-17
	024	1-25 , (2-25)	HDDR1x-18	056	5-25, (6-25)	HDDR2x-18
	025	1-26 , (2-26)	HDDR1x-19	057	5-26, (6-26)	HDDR2x-19
	026	1-27 , (2-27)	HDDR1x-1A	058	5-27, (6-27)	HDDR2x-1A
	027	1-28 , (2-28)	HDDR1x-1B	059	5-28, (6-28)	HDDR2x-1B
	028	1-29 , (2-29)	HDDR1x-1C	060	5-29, (6-29)	HDDR2x-1C
	029	1-30 , (2-30)	HDDR1x-1D	061	5-30, (6-30)	HDDR2x-1D
	030	1-31 , (2-31)	HDDR1x-1E	062	5-31, (6-31)	HDDR2x-1E
	031	1-32 , (2-32)	HDDR1x-1F	063	5-32, (6-32)	HDDR2x-1F

*1: To be left vacant or a spare disk is to be installed. *2: HDDL1x-00 (x: HDU Box No. 0, 1, 2, …, 7)

- Install RAID 5 (7D+1P) forming pairs using the same number of the two RAID groups (RAID groups 1 and 2, 3 and 4, 5 and 6, and 7 and 8) of RAID 5 (3D+1P).
  (Example: RAID group numbers 1-1 and 2-1)
  The types of HDDs to be installed in each pair must be the same.
- In the case of RAID 5 (7D+1P), only odd RAID numbers are displayed on the SVP. (Group numbers shown in parentheses in the table above are not displayed.)
- When RAID 5 (3D+1P) or RAID 1 (2D+2D) and RAID 5 (7D+1P) are configured mixture, note that duplicated group numbers are excluded.
  Example: When Group No. 1-1 is configured for RAID 5 (7D+1P), Group No. 2-1 is excluded and cannot be configure for RAID 5 (3D+1P).

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Table 4.1.10-2 Relation between HDDs installation order and RAID group number (7D+1P) (2/2)

L2 DKU			L1 DKU			DKC
RAID Group Installation Order	RAID Group No.	HDD Location	RAID Group Installation Order	RAID Group No.	HDD Location	
095	7-1, (8-1)	HDDL2x-00	064	3-1 , (4-1)	HDDL1x-00	
096	7-2, (8-2)	HDDL2x-01	065	3-2 , (4-2)	HDDL1x-01	
097	7-3, (8-3)	HDDL2x-02	066	3-3 , (4-3)	HDDL1x-02	
098	7-4, (8-4)	HDDL2x-03	067	3-4 , (4-4)	HDDL1x-03	
099	7-5, (8-5)	HDDL2x-04	068	3-5 , (4-5)	HDDL1x-04	
100	7-6, (8-6)	HDDL2x-05	069	3-6 , (4-6)	HDDL1x-05	
101	7-7, (8-7)	HDDL2x-06	070	3-7 , (4-7)	HDDL1x-06	
102	7-8, (8-8)	HDDL2x-07	071	3-8 , (4-8)	HDDL1x-07	
103	7-9, (8-9)	HDDL2x-08	072	3-9 , (4-9)	HDDL1x-08	
104	7-10, (8-10)	HDDL2x-09	073	3-10 , (4-10)	HDDL1x-09	
105	7-11, (8-11)	HDDL2x-0A	074	3-11 , (4-11)	HDDL1x-0A	
106	7-12, (8-12)	HDDL2x-0B	075	3-12 , (4-12)	HDDL1x-0B	
107	7-13, (8-13)	HDDL2x-0C	076	3-13 , (4-13)	HDDL1x-0C	
108	7-14, (8-14)	HDDL2x-0D	077	3-14 , (4-14)	HDDL1x-0D	
109	7-15, (8-15)	HDDL2x-0E	078	3-15 , (4-15)	HDDL1x-0E	3rd / 4th DKA Pair
110	7-16, (8-16)	HDDL2x-0F	(Spare) *1	3-16 , (4-16)	HDDL1x-0F	
111	7-17, (8-17)	HDDL2x-10	079	3-17 , (4-17)	HDDL1x-10	
112	7-18, (8-18)	HDDL2x-11	080	3-18 , (4-18)	HDDL1x-11	
113	7-19, (8-19)	HDDL2x-12	081	3-19 , (4-19)	HDDL1x-12	
114	7-20, (8-20)	HDDL2x-13	082	3-20 , (4-20)	HDDL1x-13	
115	7-21, (8-21)	HDDL2x-14	083	3-21 , (4-21)	HDDL1x-14	
116	7-22, (8-22)	HDDL2x-15	084	3-22 , (4-22)	HDDL1x-15	
117	7-23, (8-23)	HDDL2x-16	085	3-23 , (4-23)	HDDL1x-16	
118	7-24, (8-24)	HDDL2x-17	086	3-24 , (4-24)	HDDL1x-17	
119	7-25, (8-25)	HDDL2x-18	087	3-25 , (4-25)	HDDL1x-18	
120	7-26, (8-26)	HDDL2x-19	088	3-26 , (4-26)	HDDL1x-19	
121	7-27, (8-27)	HDDL2x-1A	089	3-27 , (4-27)	HDDL1x-1A	
122	7-28, (8-28)	HDDL2x-1B	090	3-28 , (4-28)	HDDL1x-1B	
123	7-29, (8-29)	HDDL2x-1C	091	3-29 , (4-29)	HDDL1x-1C	
124	7-30, (8-30)	HDDL2x-1D	092	3-30 , (4-30)	HDDL1x-1D	
125	7-31, (8-31)	HDDL2x-1E	093	3-31 , (4-31)	HDDL1x-1E	
126	7-32, (8-32)	HDDL2x-1F	094	3-32 , (4-32)	HDDL1x-1F	

*1: To be left vacant or a spare disk is to be installed. *2: HDDL1x-00 (x: HDU Box No. 0, 1, 2, …, 7)

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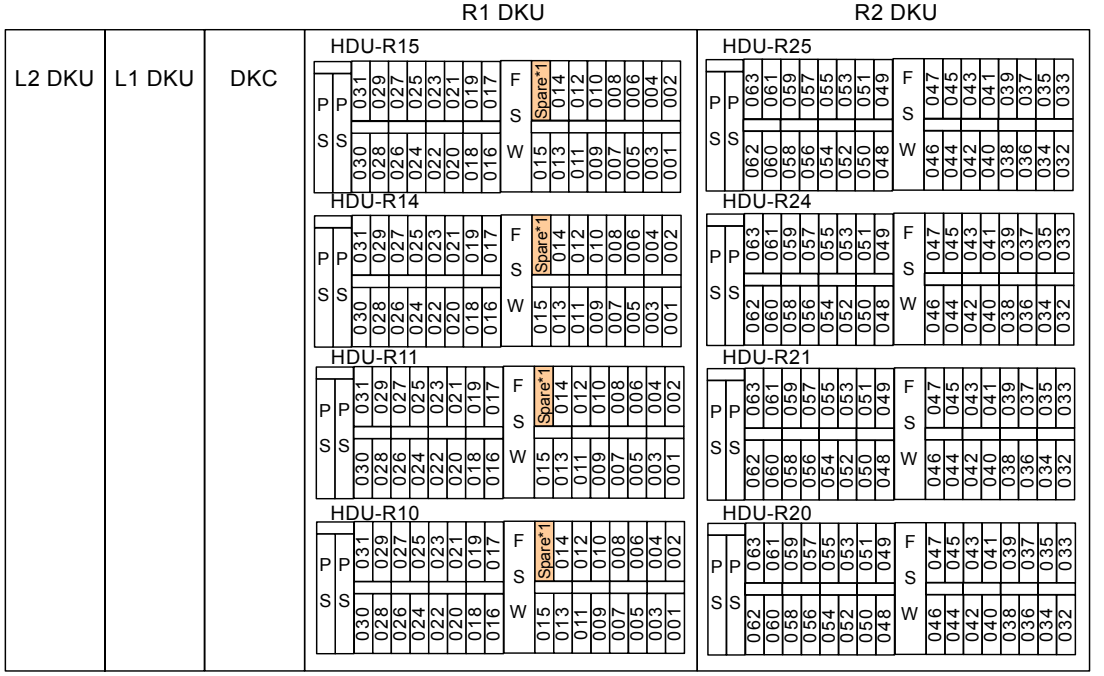
(1) Make sure of the location where the RAID group is de-installed and that where the HDD canister is to be removed.

No.	Model Number	Model Name	Data and Parity
1	DKU-F455I-36K4/72J4/72K4/146J4/146JF/146JQ	4 HDD Canisters x 2sets	Data and Parity Drive



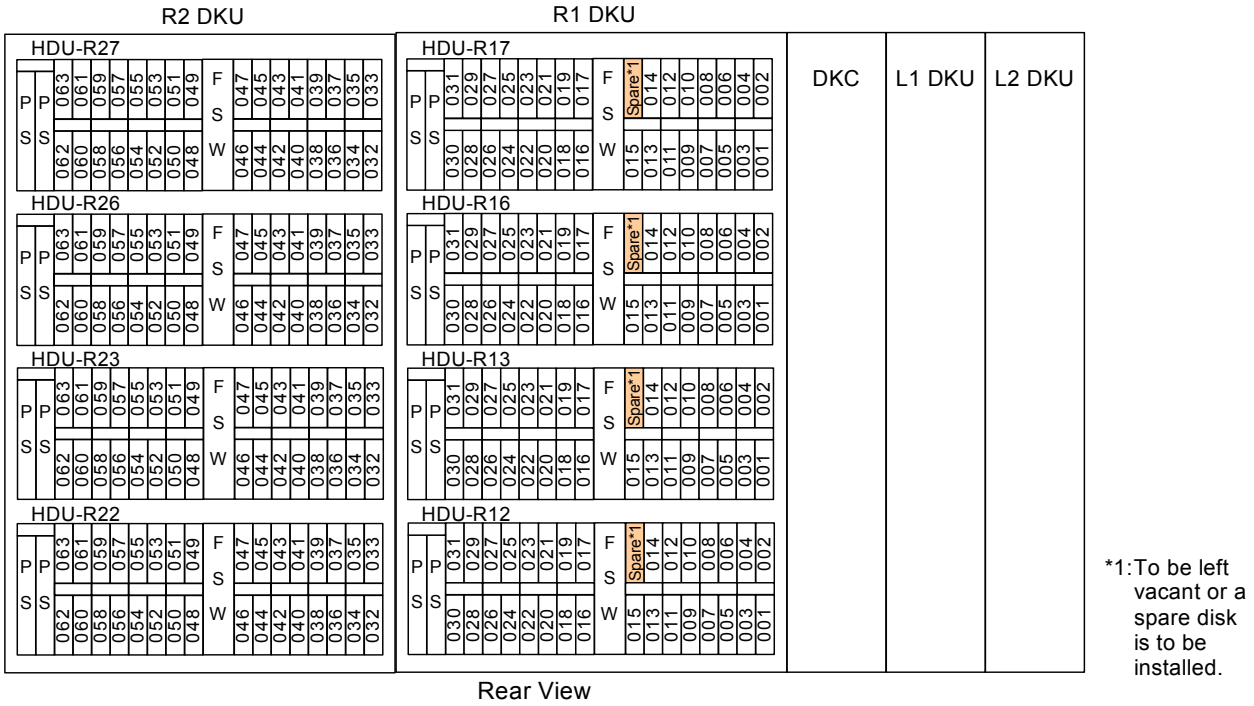


Fig. 4.1.10-6 (7D+1P) Data Drive/Parity Drive Expansion Sequence (1/2)

The relationship between HDDs installation order and RAID group number is shown in the Table 4.1.10-2.

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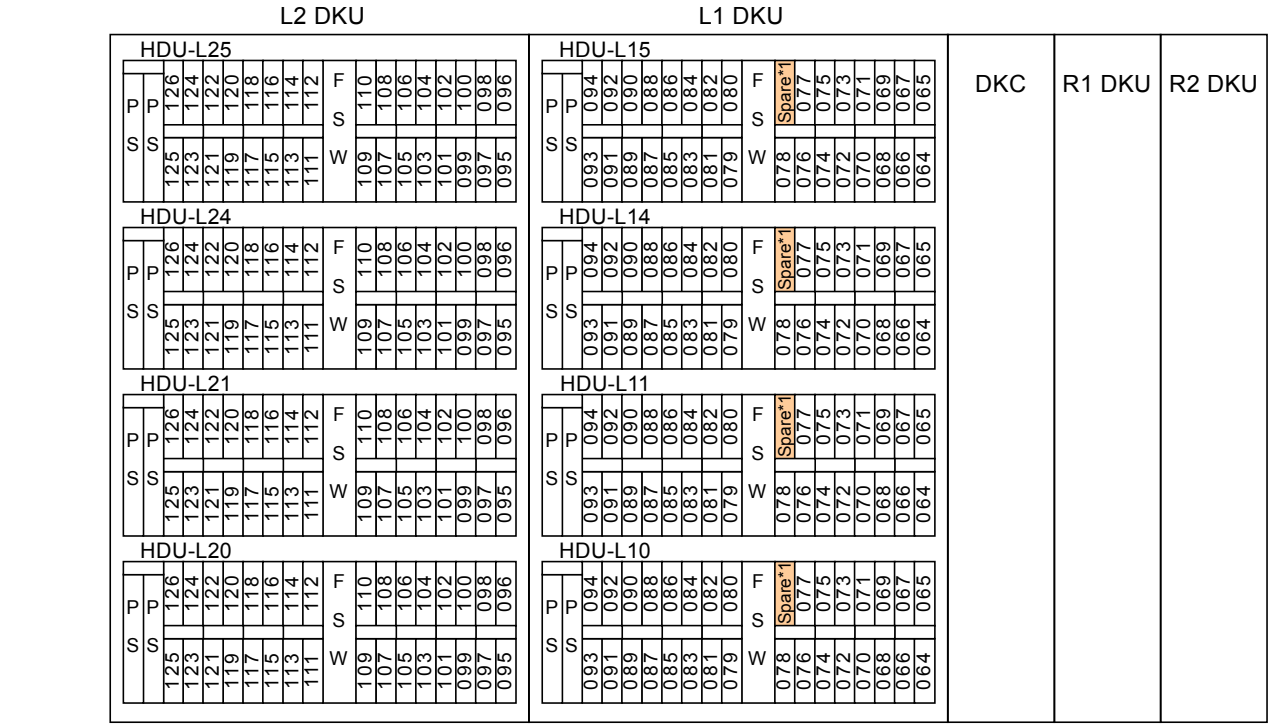

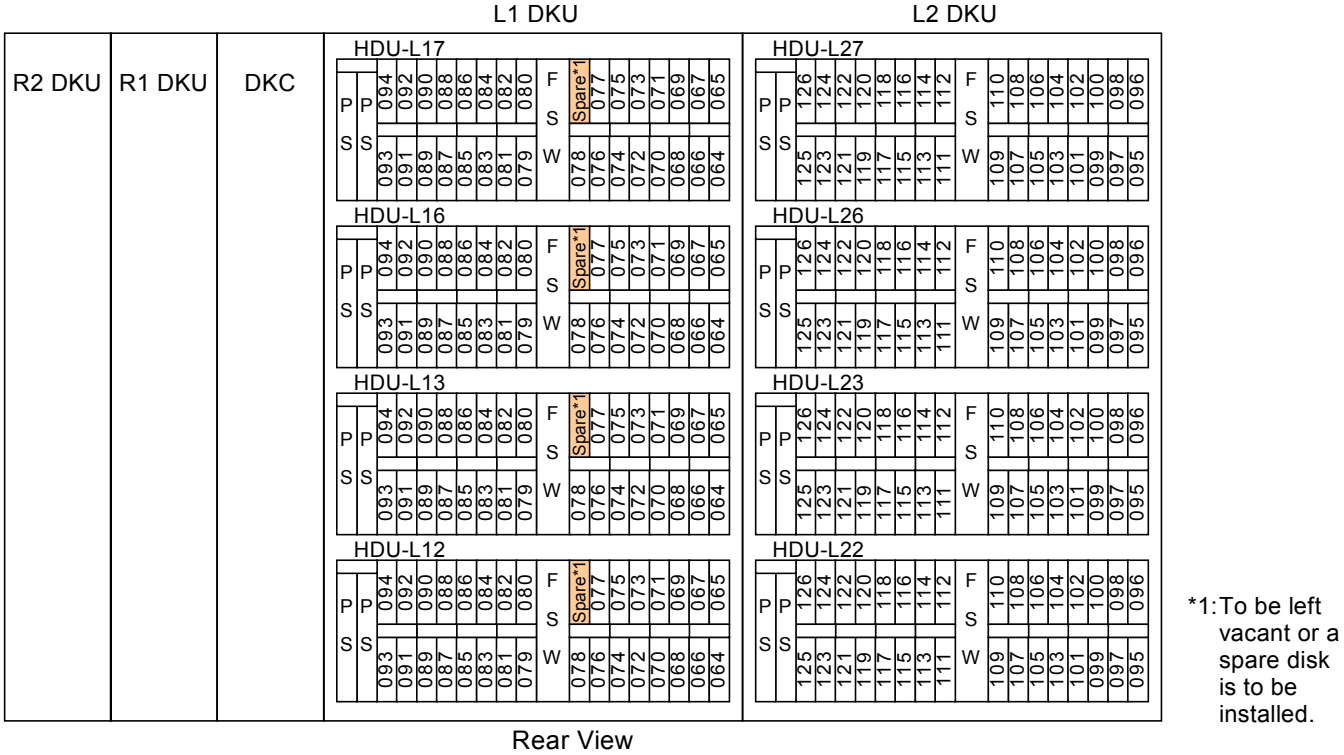

Fig. 4.1.10-6 (7D+1P) Data Drive/Parity Drive Expansion Sequence (2/2)

The relationship between HDDs installation order and RAID group number is shown in the Table 4.1.10-2.

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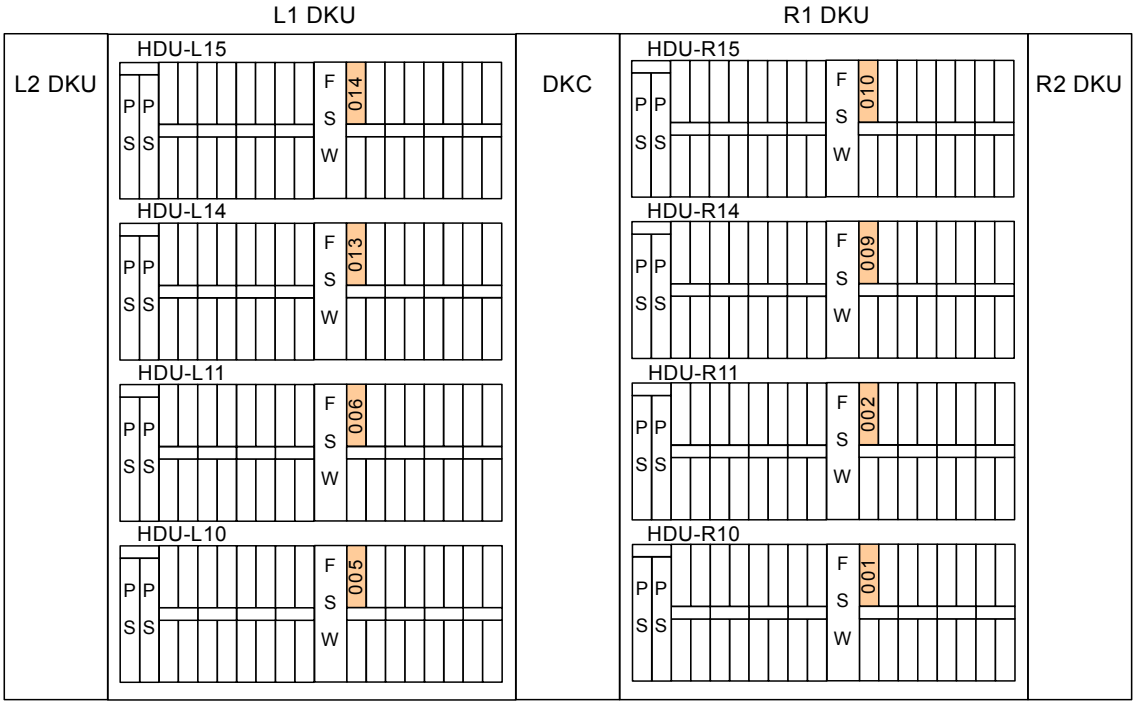
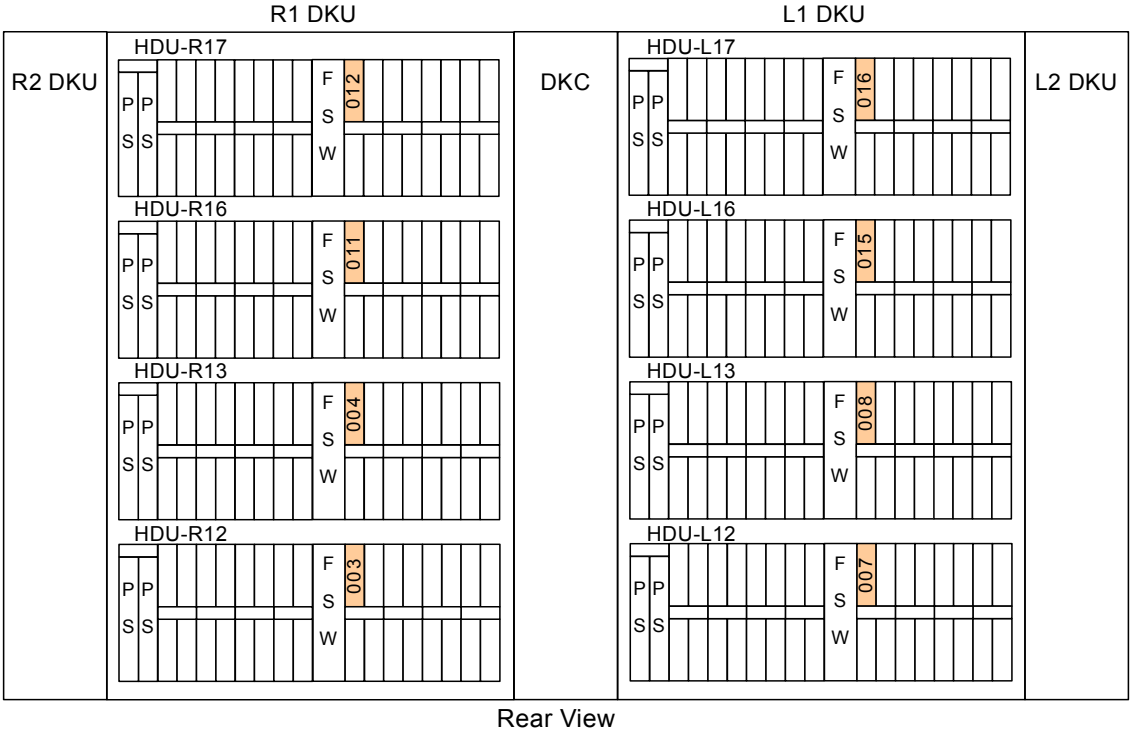
(iii) Spare HDD

No.	Model Number	Model Name	Data and Parity
1	DKU-F455I-36K1/72J1/72K1/146J1/146JS/146JM	1 HDD Canister	Spare Drive



Front View

001-016: Spare HDD canister installation order



Rear View

Fig. 4.1.10-7 Spare Drive Expansion Sequence

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5-2 Confirmation of Shut Down LED.

a. Confirm the Shut Down LED on the JMP PCB. (It should be RED.)

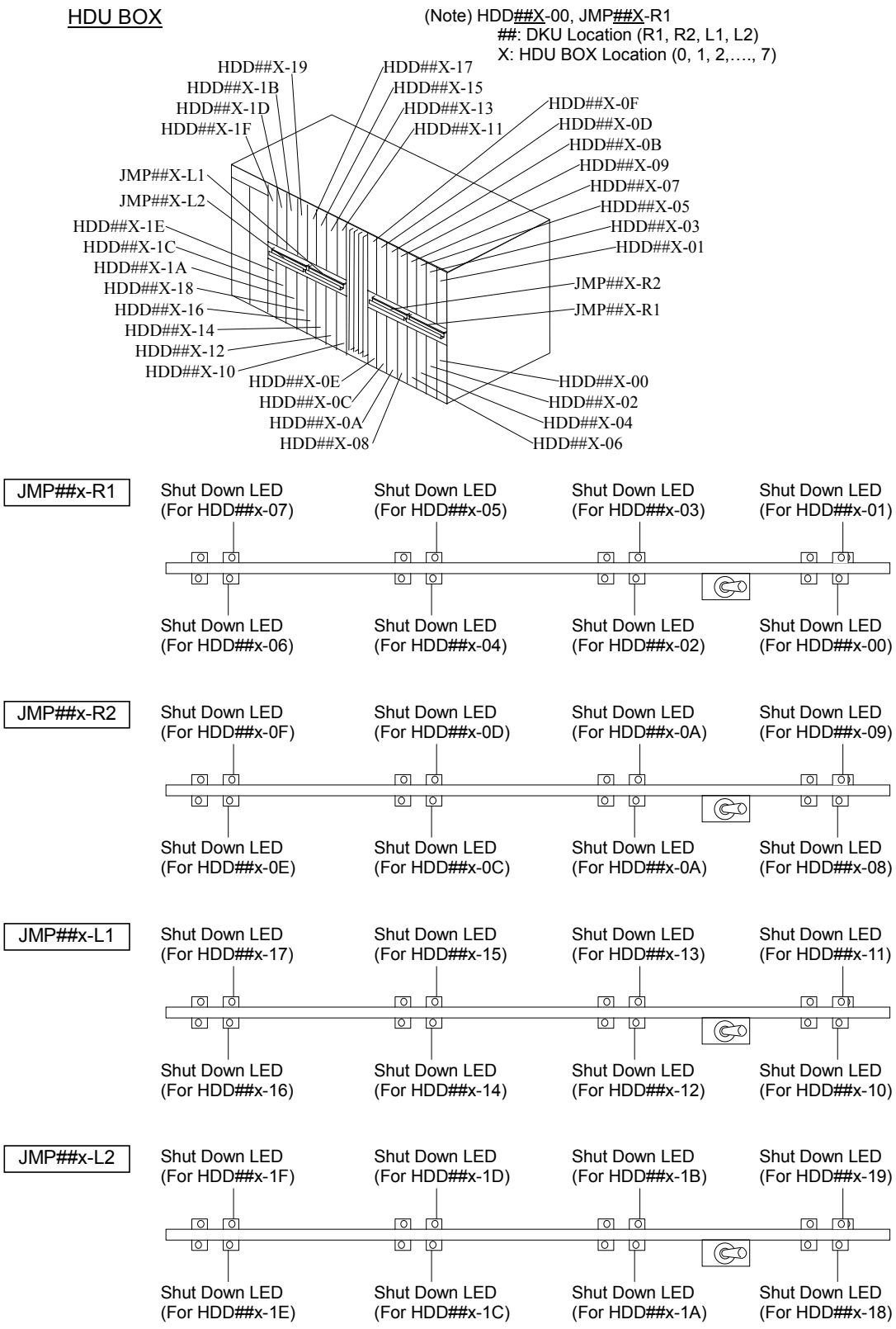

Fig. 4.1.10-8 Location of Shut Down LED

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5-3 De-installation of the HDD canister.

Notice:
Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

CAUTION

A system down may be caused by a removal of an HDD canister other than that to be removed. Make sure that it is the HDD canister to be removed.

a. After pushing up the stopper on the front side of the HDD canister, pull the handle toward you to remove the HDD canister.
b. Insert the dummy canister to the HDU Box.

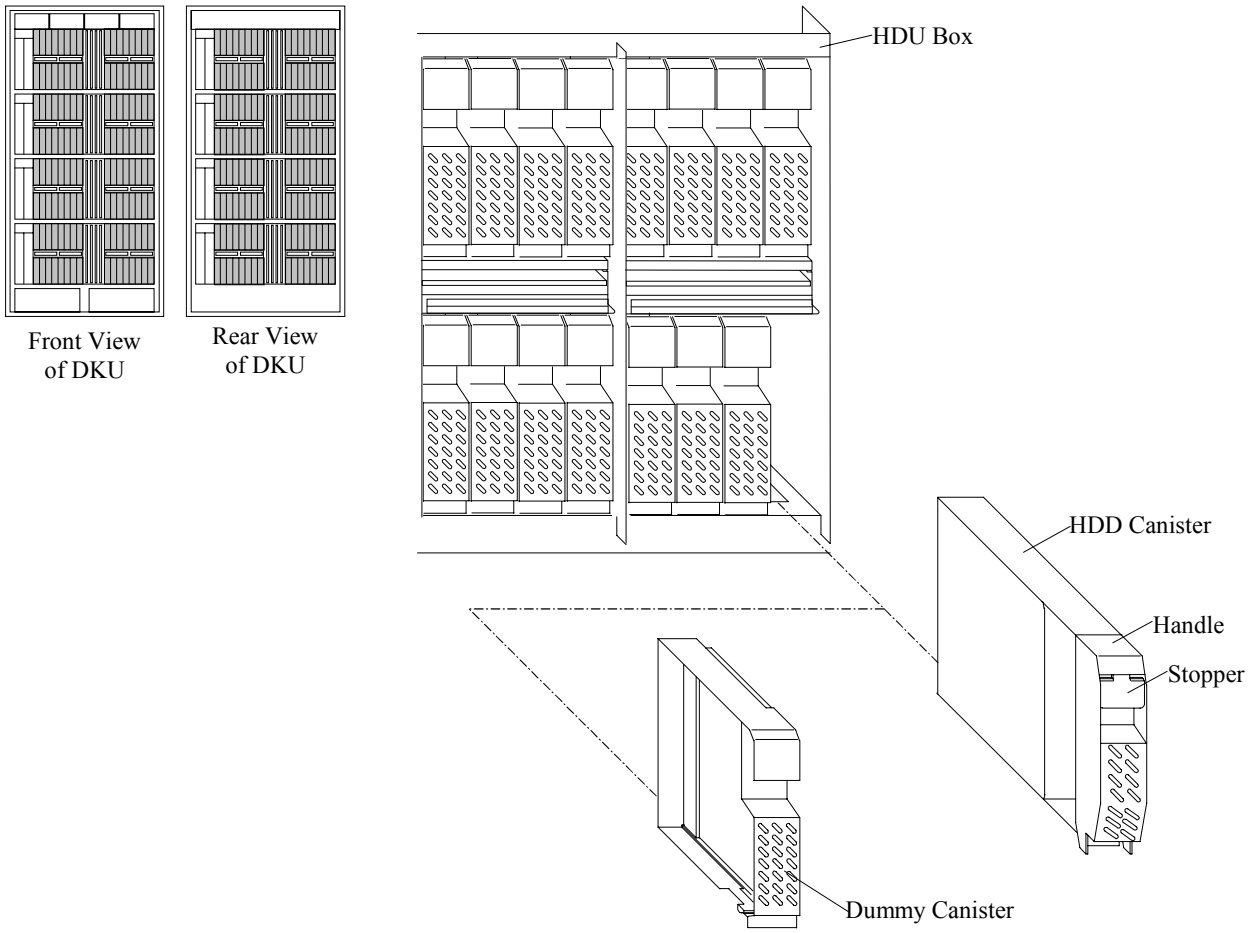

Fig. 4.1.10-9 De-Installation of HDD Canister

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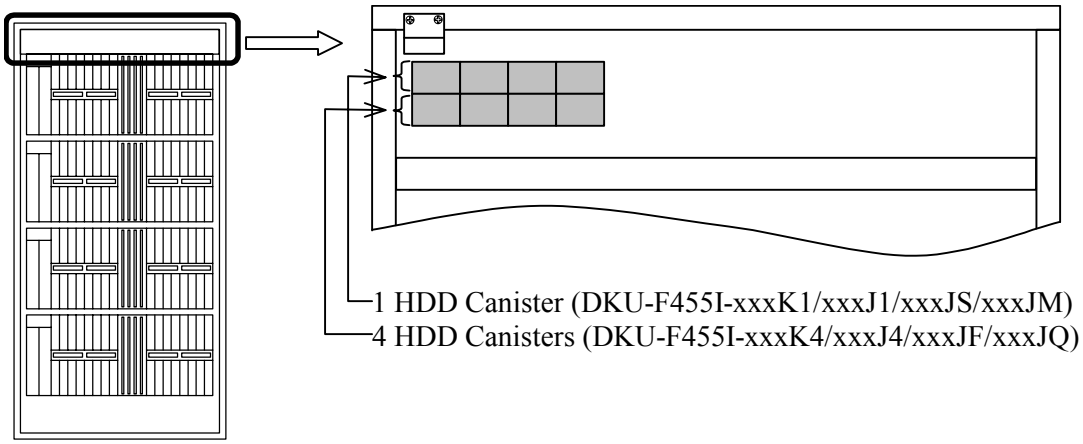
5-4 Change of the nameplate.

a. Affix a necessary portion of the Label (QTY)(Accessory of DKC; DWG No.3264290-1) in layers on the name plate and paint out numbers less than the number concerned with black oil felt pen.



[Example]

When DKU-F455I-72J4s are removed from 10 sets to 7sets

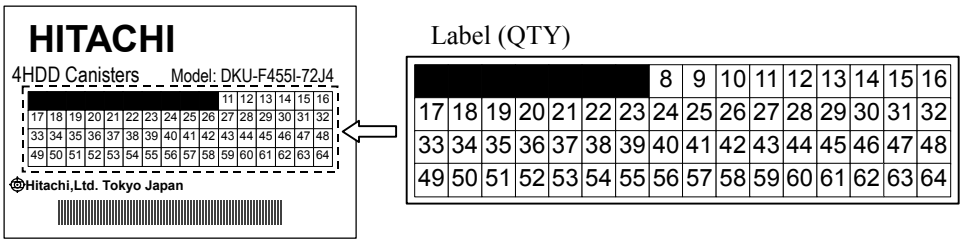


Fig. 4.1.10-10 Change of Nameplate

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6. De-Installation Procedure of DEV Interface Cable 2 (2/3) (DKU-F455I-EXC)

Caution:
When the DEV interface cable is removed from the FSW PCB, the power applied to the DKU to be removed is turned off automatically for each HDU Box from which the cable is removed.

Between HDU-L10-L17 and HDU-L20-L27

a. Disconnect the DEV interface cables from the FSW PCBs in the DKU-L1 frame referring to figures 4.1.10-11 and 4.1.10-12.

⚠ CAUTION

A serious failure occurs if a wrong cable or connector is removed.
Since a label bearing a connection destination is affixed on each cable or connector to be removed, work very carefully referring to it and the wiring diagram.

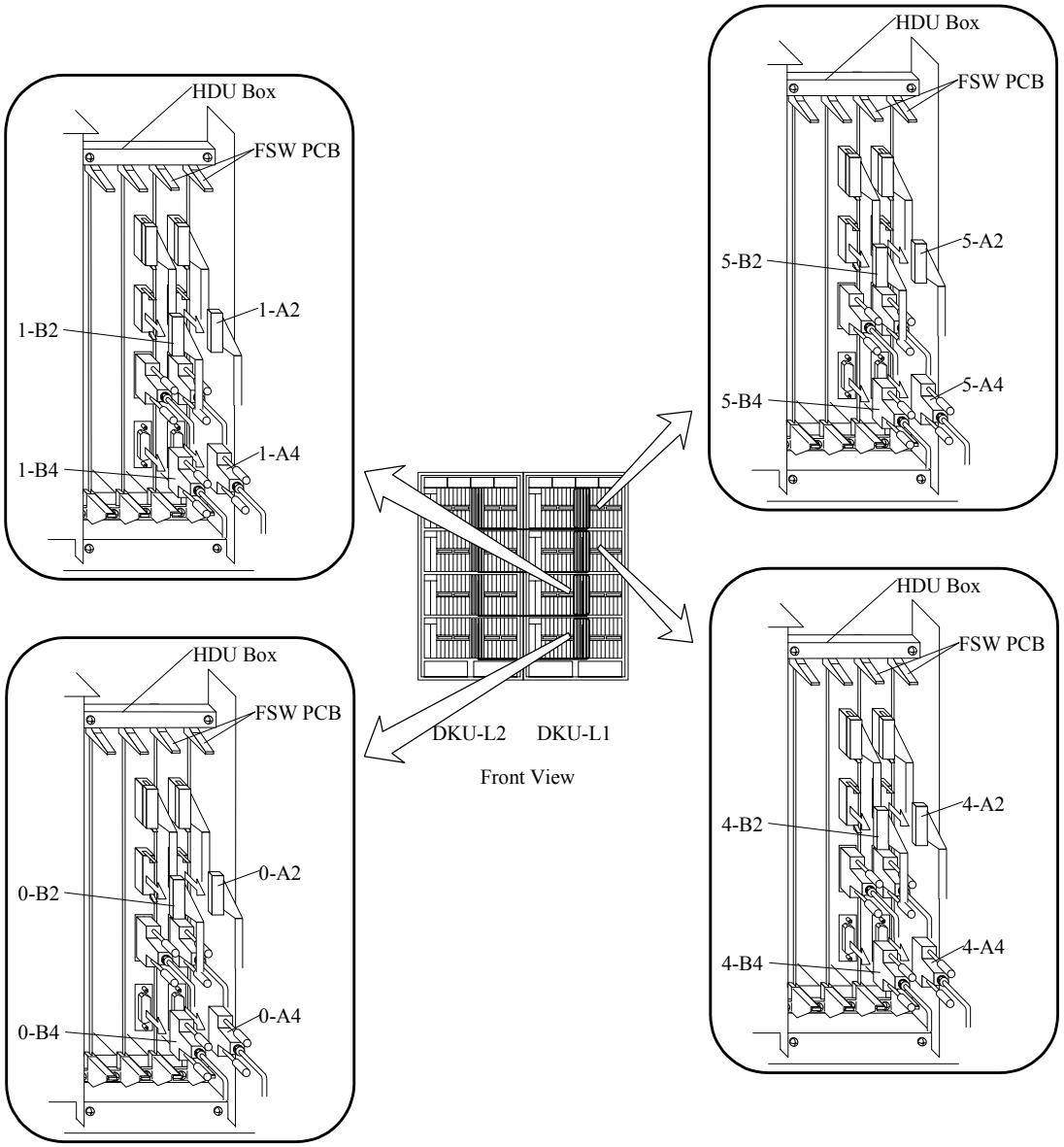

Fig. 4.1.10-11 Connection of the DEV Interface Cables

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⚠ CAUTION

A serious failure occurs if a wrong cable or connector is removed.
Since a label bearing a connection destination is affixed on each cable or connector to be removed, work very carefully referring to it and the wiring diagram.

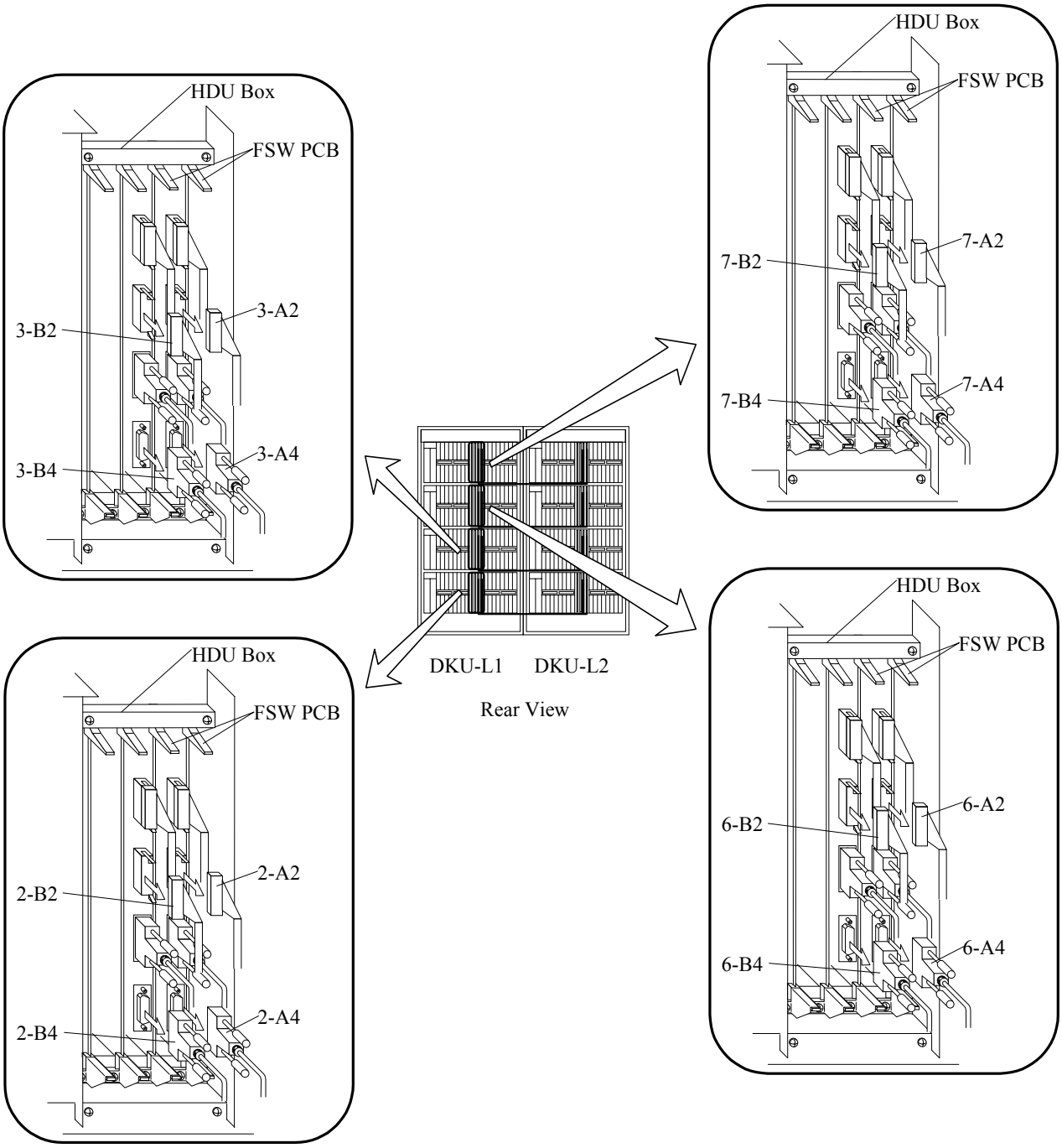

Fig. 4.1.10-12 Connection of the DEV Interface Cables

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7. De-Installation Procedure of DEV Interface Cable (2/3) (DKC-F460I-L1C)

a. Disconnect the DEV interface cables from the sub-edges on the disk adapter PCBs that are installed in locations Nos. D and K in the Rear Logic Box.

⚠ CAUTION

A serious failure occurs if a wrong cable or connector is removed.
Since a label bearing a connection destination is affixed on each cable or connector to be removed, work very carefully referring to it and the wiring diagram.

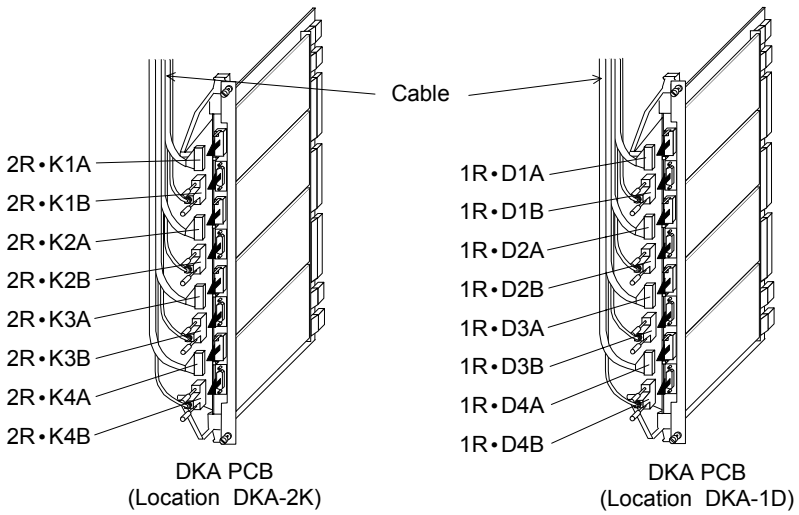

Fig. 4.1.10-13 DEV Interface Cable Disconnecting Diagram (Disk Adapter PCB Side)

b. Disconnect the DEV interface cables from the sub-edges on the disk adapter PCBs that are installed in locations Nos. E and L in the Rear Logic Box.

⚠ CAUTION

A serious failure occurs if a wrong cable or connector is removed.
Since a label bearing a connection destination is affixed on each cable or connector to be removed, work very carefully referring to it and the wiring diagram.

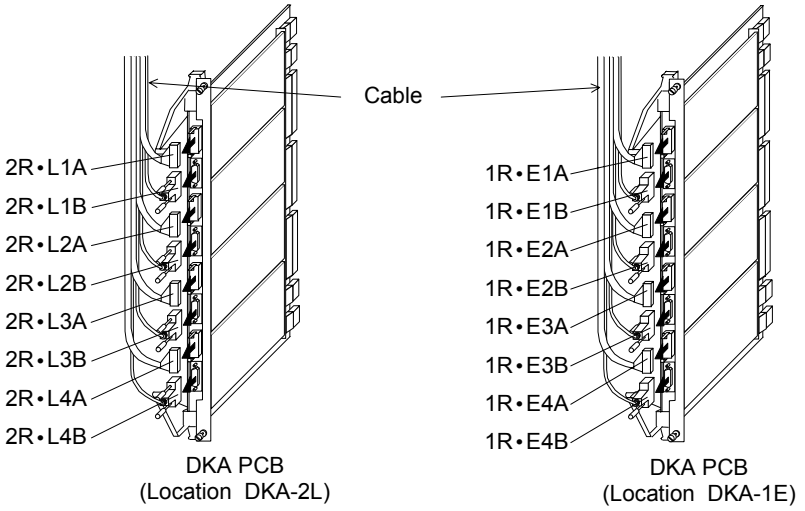

Fig. 4.1.10-14 DEV Interface Cable Disconnecting Diagram (Disk Adapter PCB Side)

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8. De-Installation Procedure of Disk Adapter

Note: Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

8-1 Confirmation of the Shut Down LED (Only Non-Disruptive Procedure)

a. Confirm that Shut Down LED is on. (Fig. 4.1.10-15) If the LED is not on, connect the Maintenance Jumper to the Shut Down Connector.

⚠ CAUTION

A system down may be caused if the Maintenance jumper is inserted in a PCB other than that to be removed. Make sure that it is the PCB to be removed.

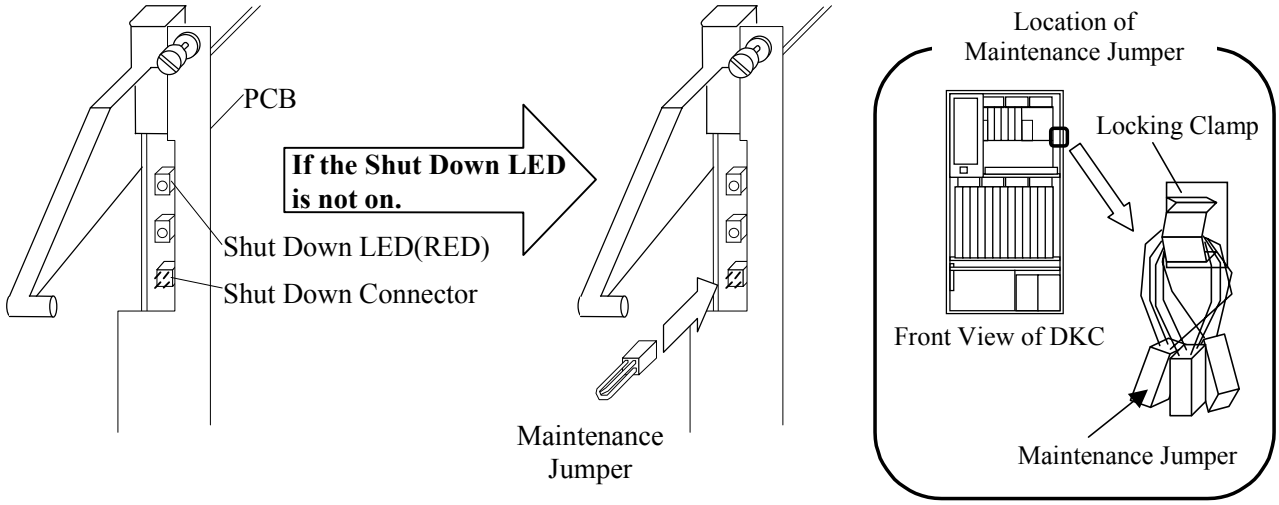

Fig. 4.1.10-15 Shut Down LED

Table 4.1.10-3 Removal Location (Rear of the unit)

Cluster	CL2							CL1				
Slot No.	M	L	K	J	H	G	F	E	D	C	B	A
Function	CSW	DKA	DKA	DKA	DKA	CACHE	CACHE	DKA	DKA	DKA	DKA	CSW
Location No.	CSW -2M	DKA -2L	DKA -2K	DKA -2J	DKA -2H	CACHE -2G	CACHE -2F	DKA -1E	DKA -1D	DKA -1C	DKA -1B	CSW -1A
Order of addition		Add.3	Add.2	Add.1	Basic			Add.3	Add.2	Add.1	Basic	
Number of DKAs set through the SVP		–	–	–	2			–	–	–	2	
		–	–	4				–	–	4		
		–	6					–	6			
		8						8				

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8-2 Disconnection of the DEV Interface cables

In case of Add.1

a. Disconnect the cable from the sub-edge of PCB.

⚠ CAUTION

A serious failure occurs if a wrong cable or connector is removed.
Since a label bearing a connection destination is affixed on each cable or connector to be removed, work very carefully referring to it and the wiring diagram.

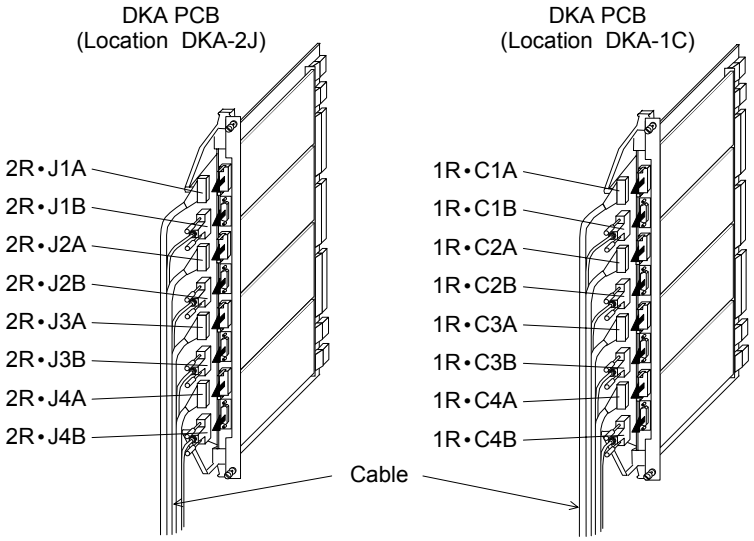

Fig. 4.1.10-16 Disconnection of DEV Interface Cables (Add.1)

In case of Add.2

a. Disconnect the cable from the sub-edge of PCB.

⚠ CAUTION

A serious failure occurs if a wrong cable or connector is removed.
Since a label bearing a connection destination is affixed on each cable or connector to be removed, work very carefully referring to it and the wiring diagram.

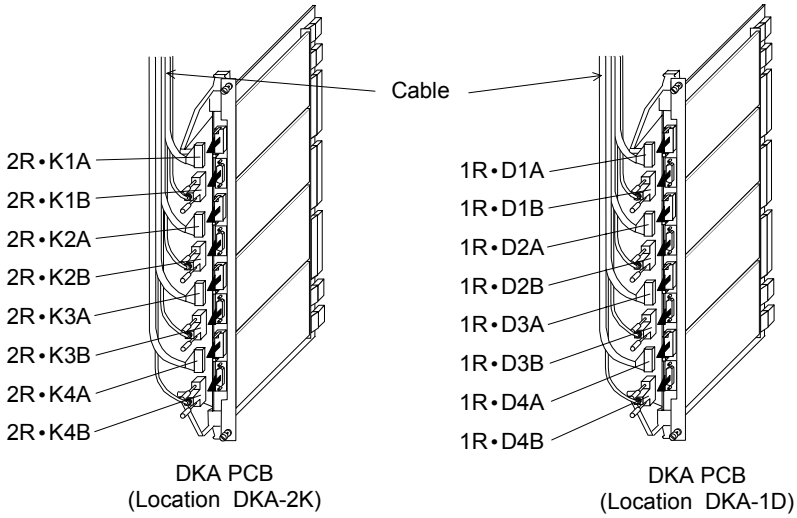

Fig. 4.1.10-17 Disconnection of DEV Interface Cables (Add.2)

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In case of Add.3

a. Disconnect the cable from the sub-edge of PCB.

⚠ CAUTION

A serious failure occurs if a wrong cable or connector is removed.
Since a label bearing a connection destination is affixed on each cable or connector to be removed, work very carefully referring to it and the wiring diagram.

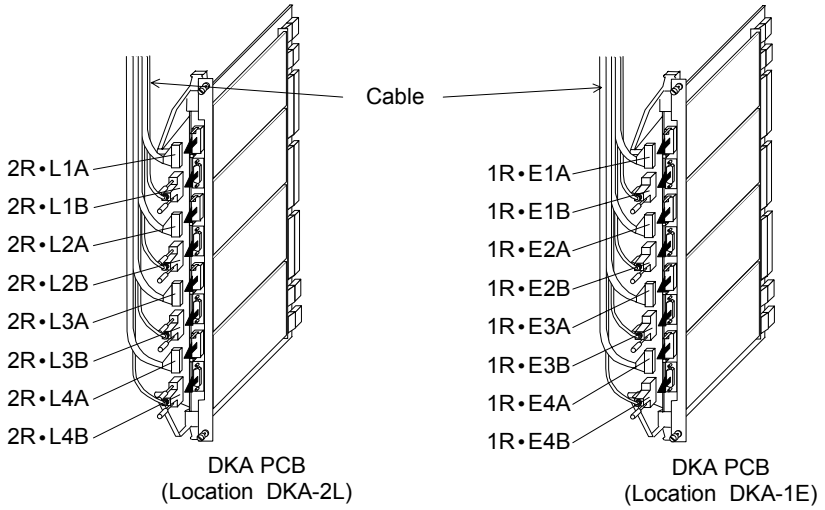

Fig.4.1.10-18 Disconnection of DEV Interface Cable (Add.3)

8-3 Removal of the PCBs

a. Remove the two screws and remove the PCBs from the correct locations in the Rear Logic Box referring to Fig. 4.1.10-19.
b. Attach the dummy plates referring to Fig. 4.1.10-20.

⚠ CAUTION

A serious failure occurs if a wrong PCB is removed.
Remove the PCB after making sure that the Shut Down LED is on.

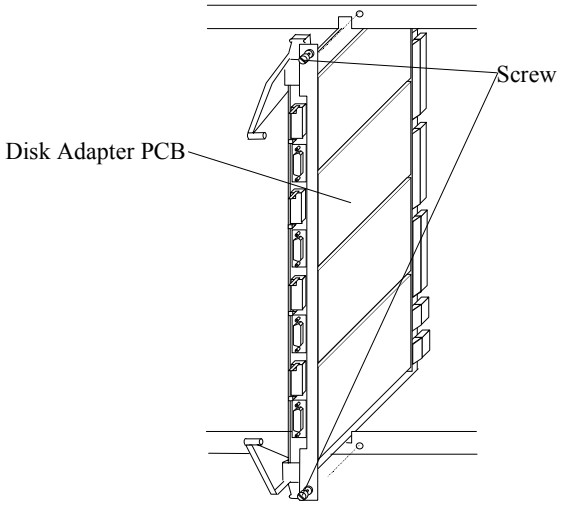

Fig. 4.1.10-19 Removal of PCB

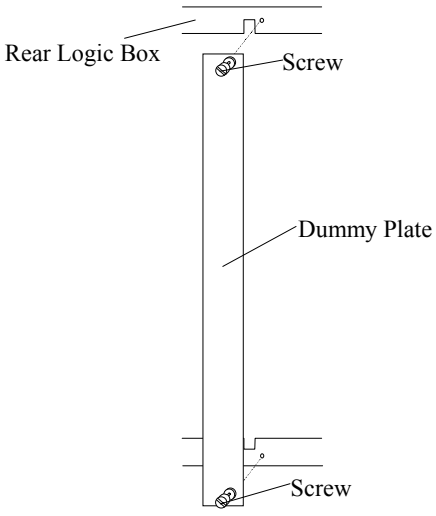

Fig. 4.1.10-20 Attachment of Dummy Plate

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8-4 Removal of the Nameplate

a. Remove the nameplate from the Rear Logic Box cover.

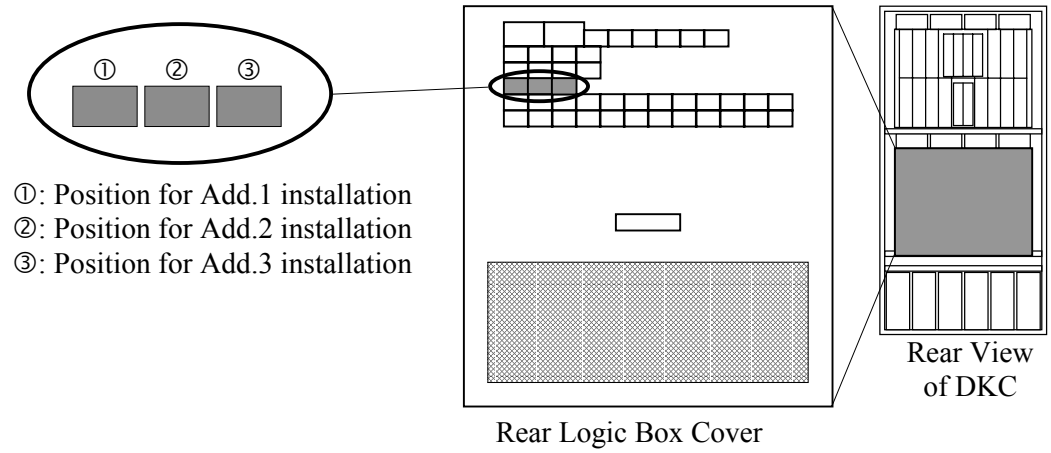

Fig. 4.1.10-21 Removal of Nameplate

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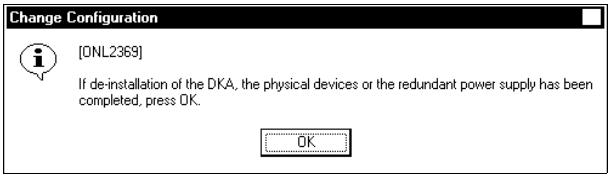
9. SVP post procedure

1.

Select (CL) [OK] in response to "If de-installation of the DKA, the physical devices or the redundant power supply has been completed, press OK." shown in the right figure.



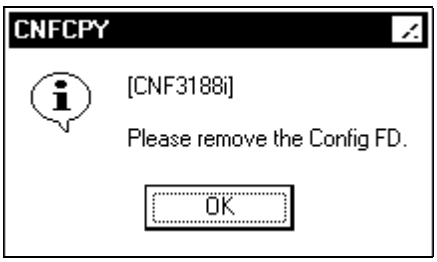
2. <Check the end of de-installation procedure>
"Renewal process has completed. Please check subsystem status." shown in the right figure displayed. Select (CL) [OK] in response to this message.

3.

"Reading subsystem configuration data..." is displayed.
"Please insert the Config FD in the FDD." is displayed.
Insert the configuration FD into FDD, select (CL) [OK].

4.

When this procedure is completed, message "Please remove the Config FD." is displayed.
Remove the FD, select (CL) [OK].



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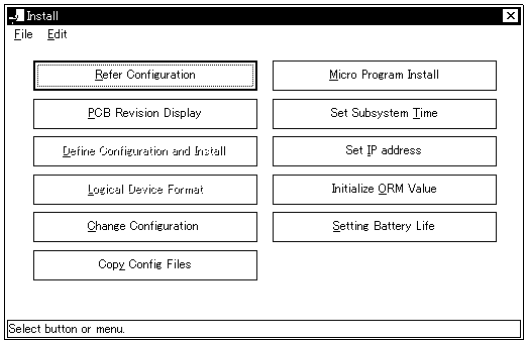
5.

After the procedure is completed, return to ‘Install’.
Select (CL) [File]-[Exit].



6. <Mode Change>
Change the mode to View Mode.

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10. De-Installation Procedure of DEV Interface Cable 2 (3/3) (DKU-F455I-EXC)

Between HDU-L10-L17 and HDU-L20-L27

a. Disconnect the DEV interface cables from the FSW PCBs in the DKU-L2 frame referring to Fig. 4.1.10-22 through Fig. 4.1.10-25.
b. Take out the DEV interface cable, which has been removed from the FSW PCB, from the DKU frame.

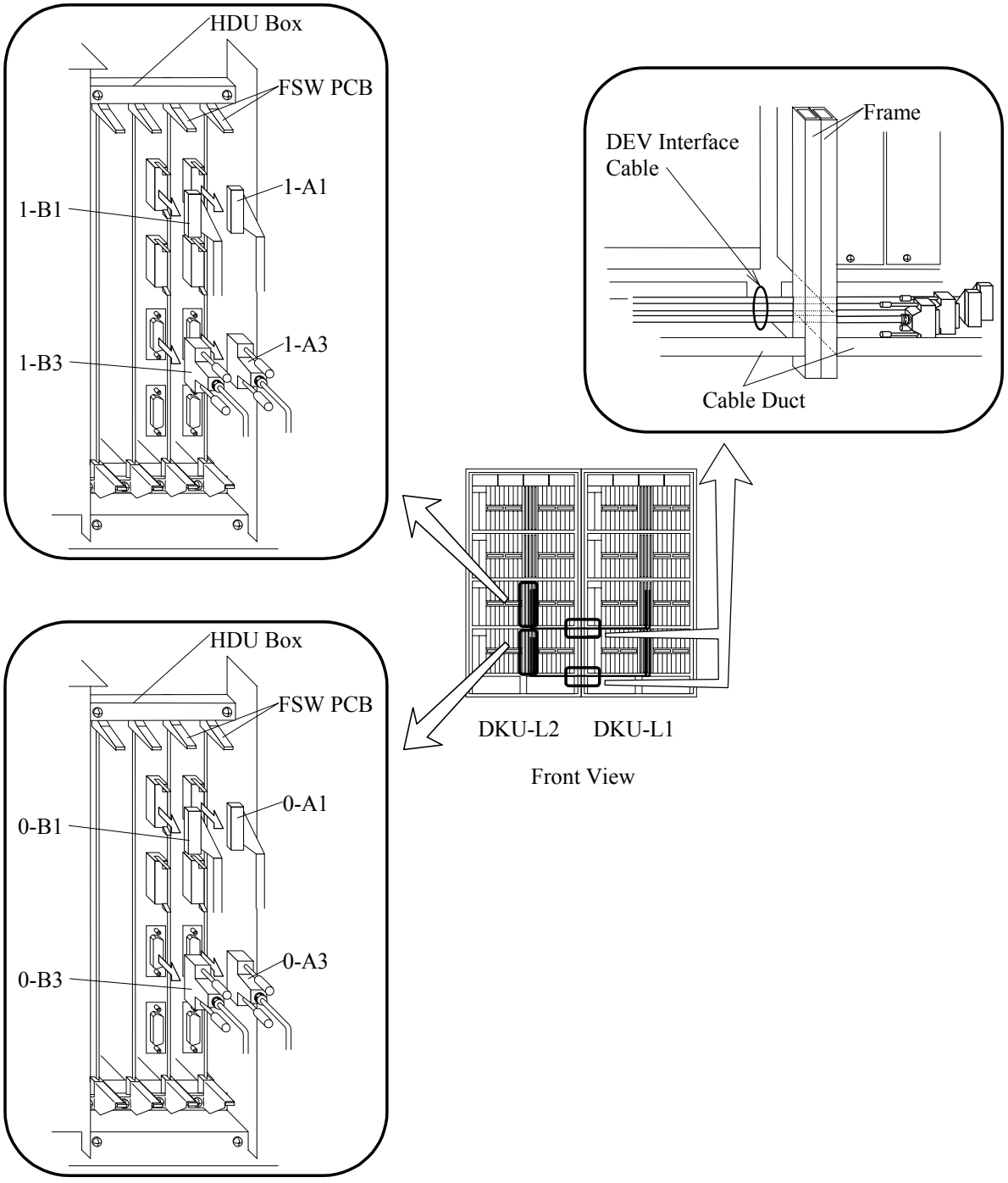

Fig. 4.1.10-22 Disconnection of the DEV Interface Cables

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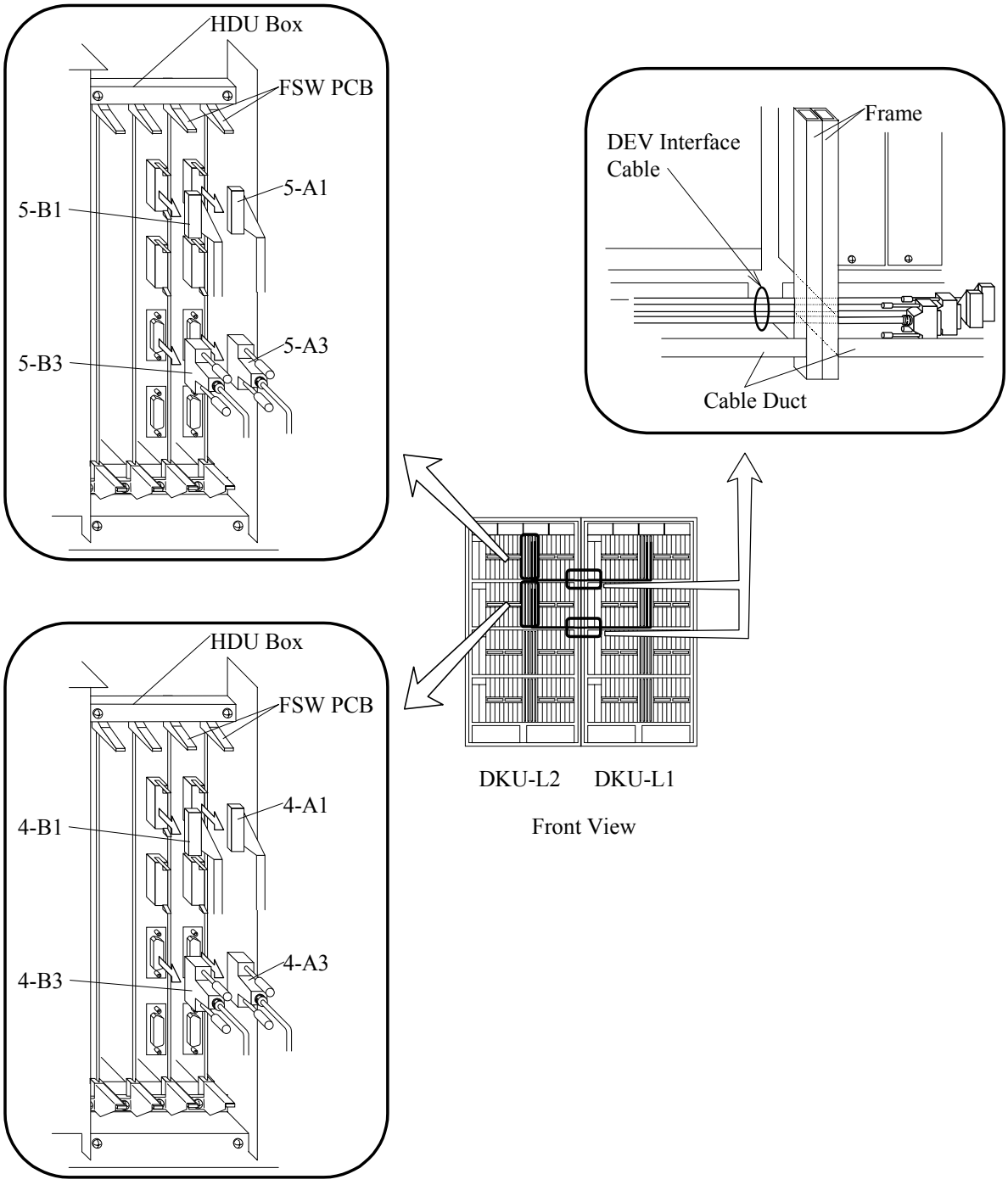

Fig. 4.1.10-23 Disconnection of the DEV Interface Cables

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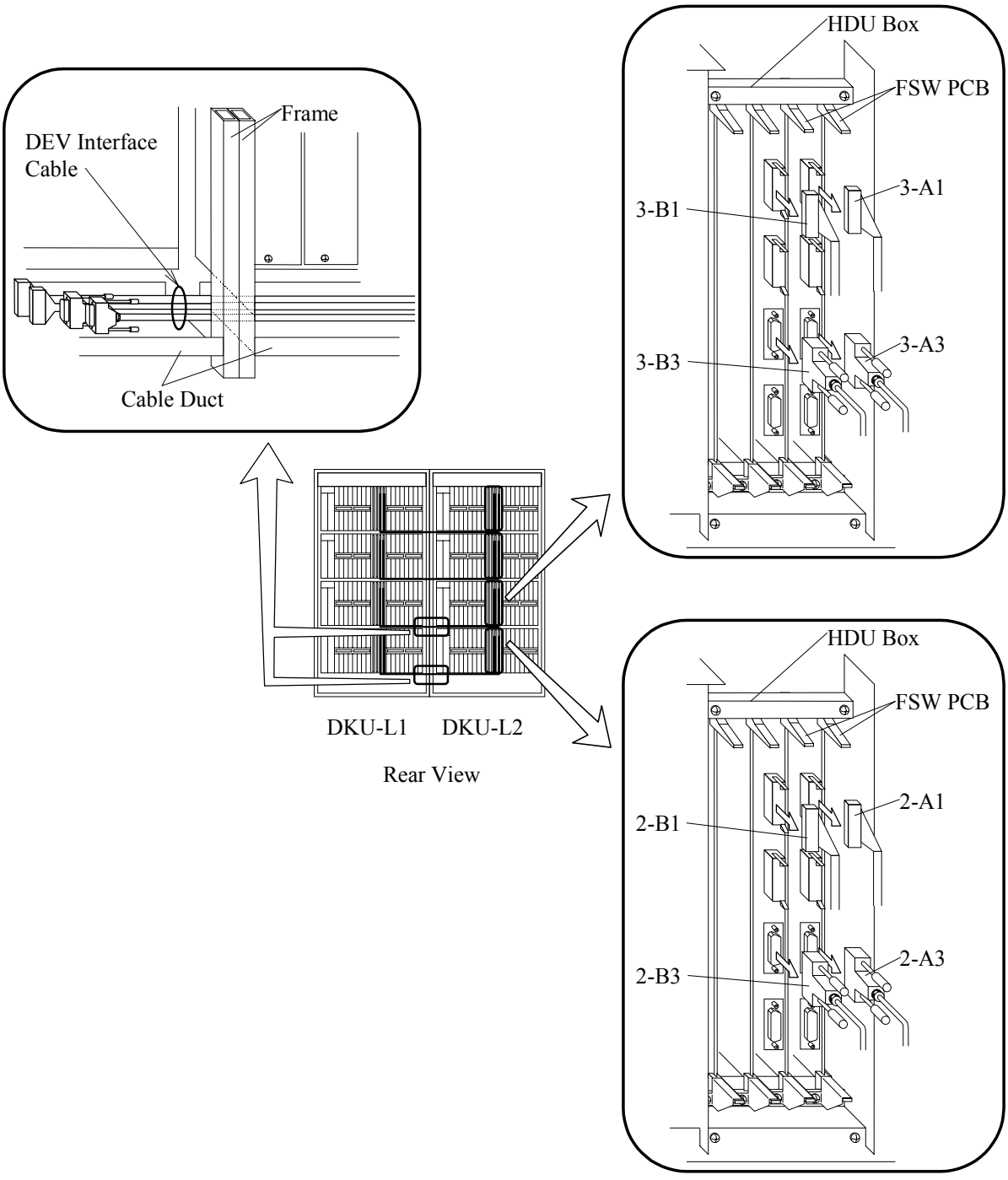

Fig. 4.1.10-24 Disconnection of the DEV Interface Cables

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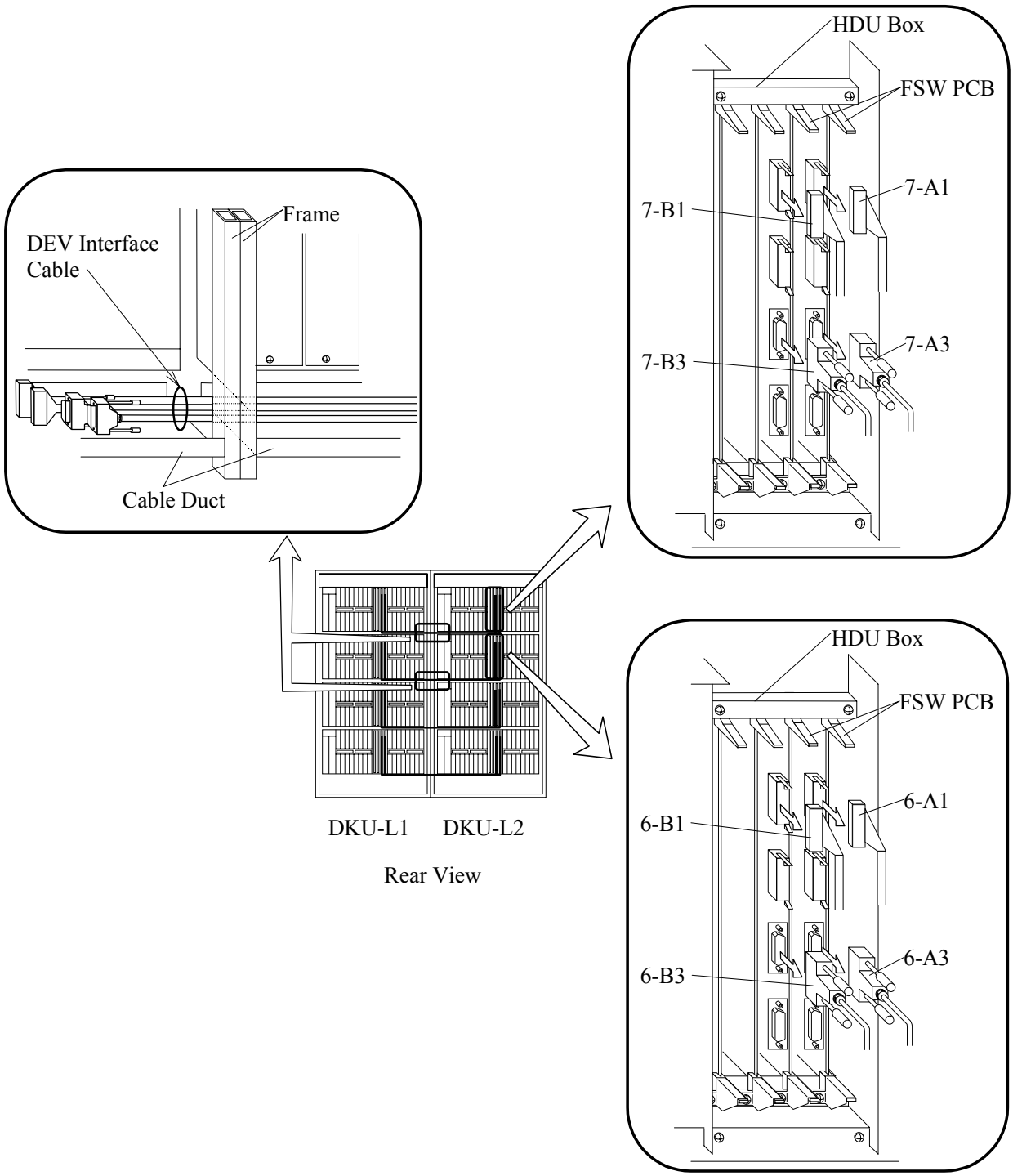

Fig. 4.1.10-25 Disconnection of the DEV Interface Cables

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c. Attach the cable covers with the screws.

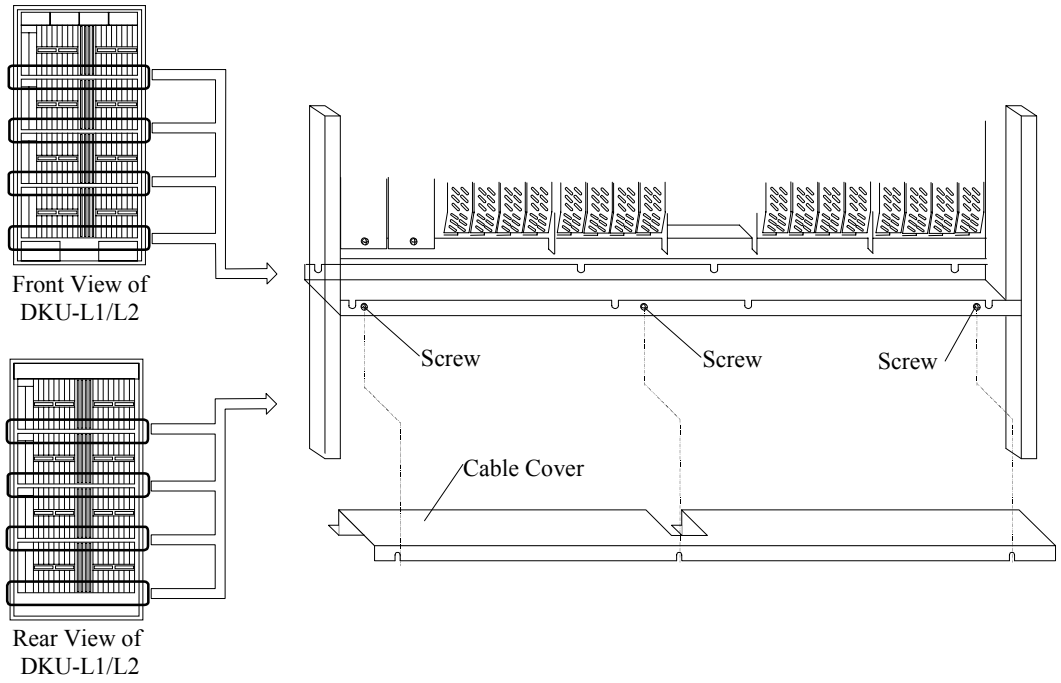

Fig. 4.1.10-26 Attachment of the Cable Cover

d. Attach the cable covers with the screws.

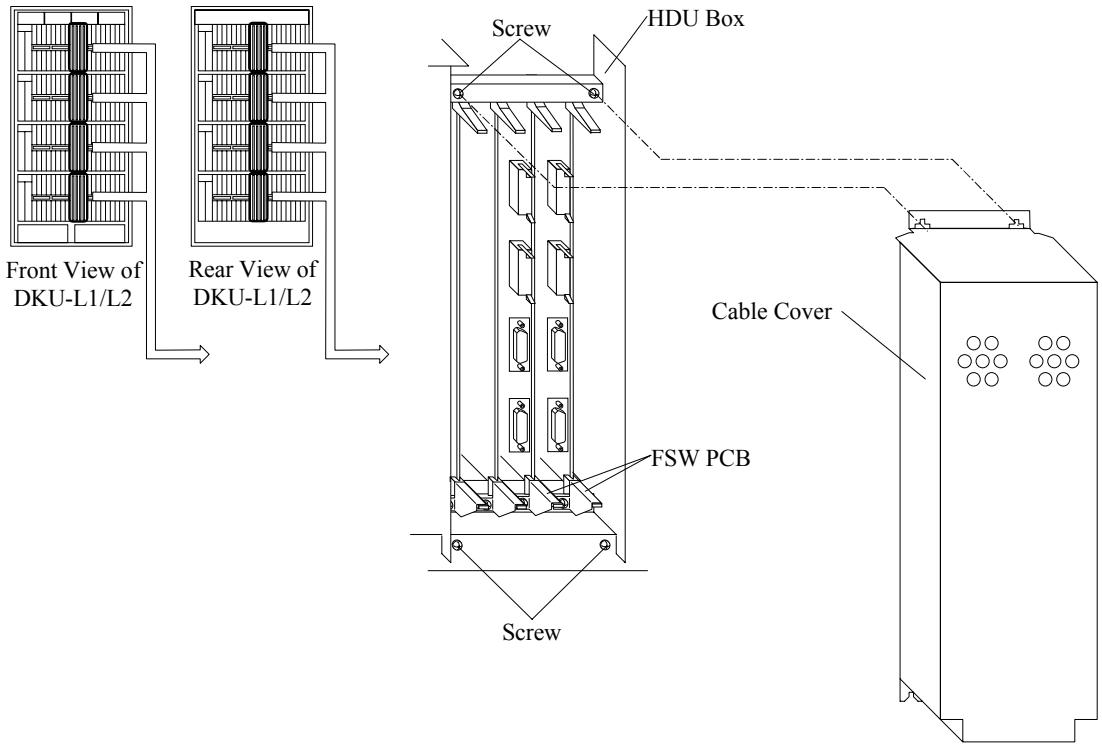

Fig. 4.1.10-27 Attachment of the Cable Cover

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e. Remove the nameplate from the DKU-L2 frame.

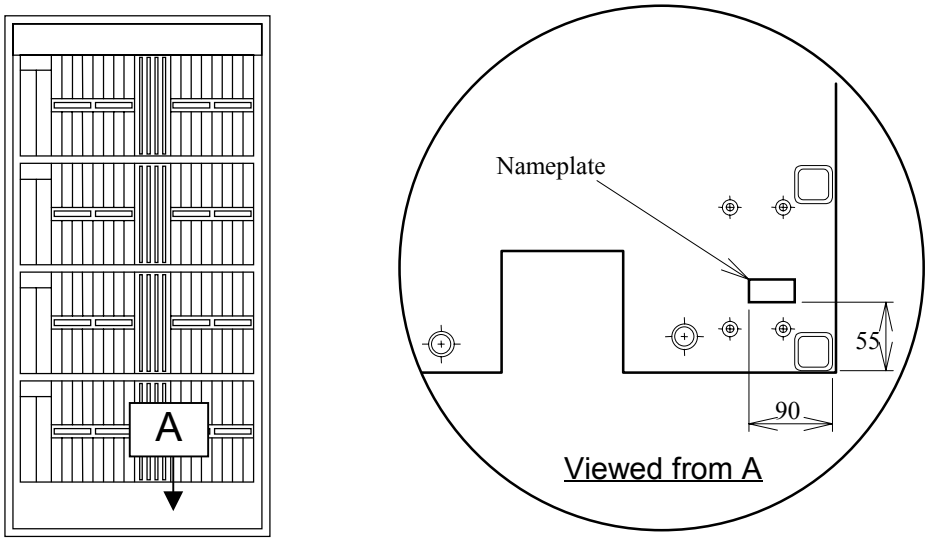

Fig. 4.1.10-28 Removal of the Nameplate

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11. De-Installation Procedure of DEV Interface Cable 1 (3/3) (DKC-F460I-L1C)

a. Refer to Fig. 4.1.10-29 and Fig. 4.1.10-30. Connect the DEV interface cables to the sub-edges on the FSW PCBs in the HDU box.
b. Take out the DEV interface cable, which has been removed from the FSW PCB, from the DKU frame.

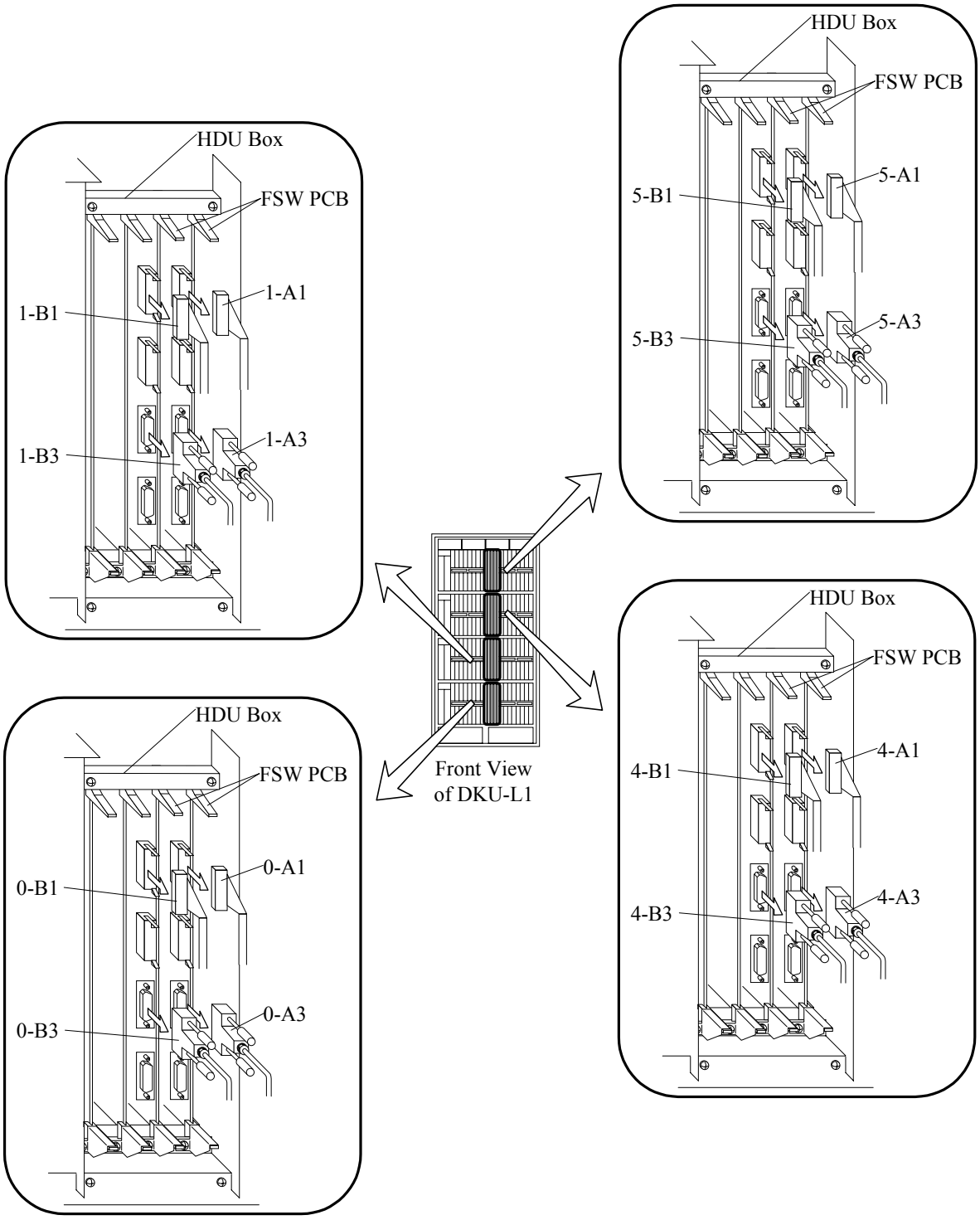

Fig. 4.1.10-29 DEV Interface Cabling Diagram (FSW PCB Side)

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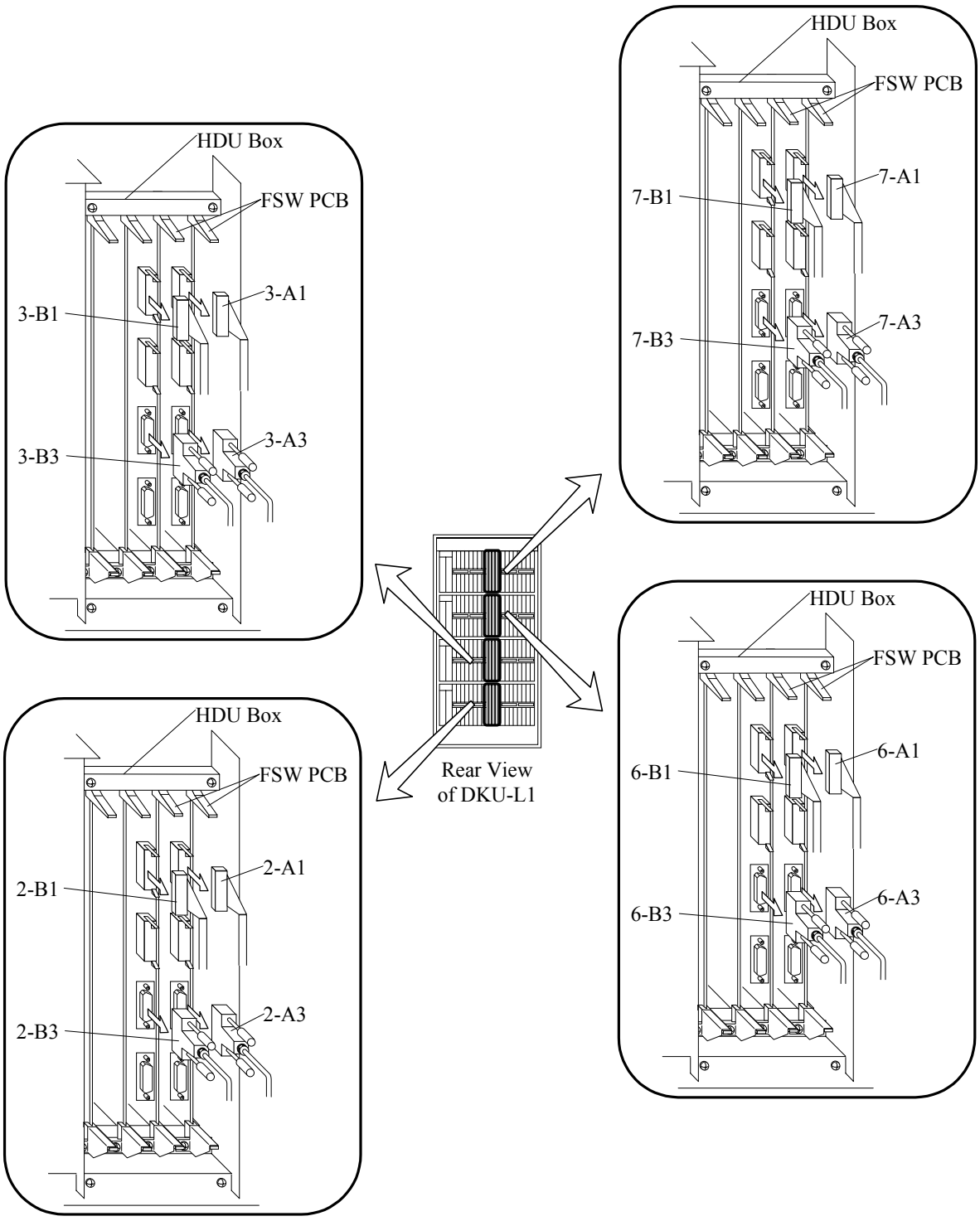

Fig. 4.1.10-30 DEV Interface Cabling Diagram (FSW PCB Side)

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c. Attach the cable covers with the screws.

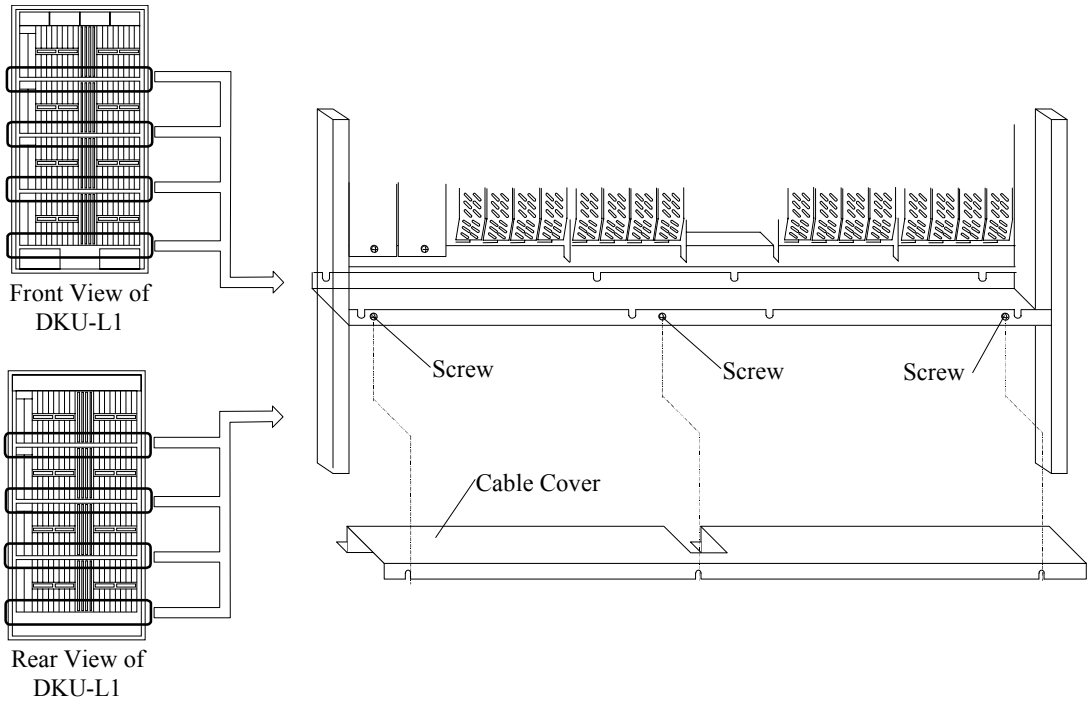

Fig. 4.1.10-31 Attachment of Cable Covers

d. Attach the cable covers with the screws.

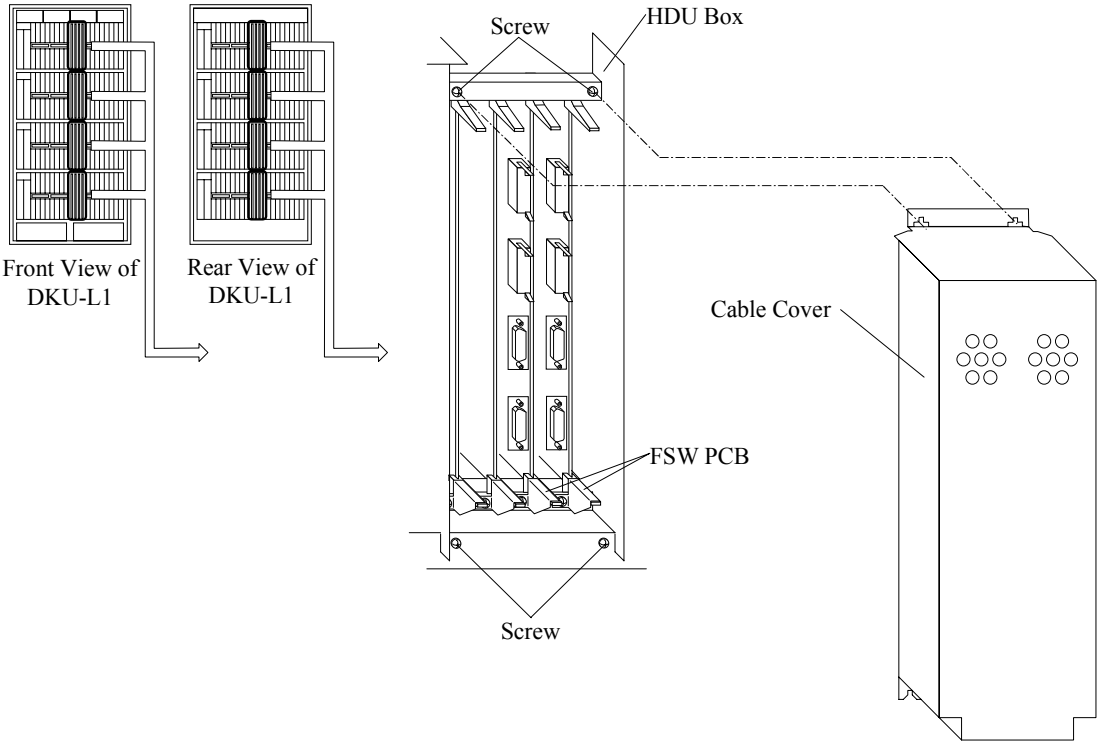

Fig. 4.1.10-32 Attachment of Cable Covers

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e. Remove the nameplate from the cover.

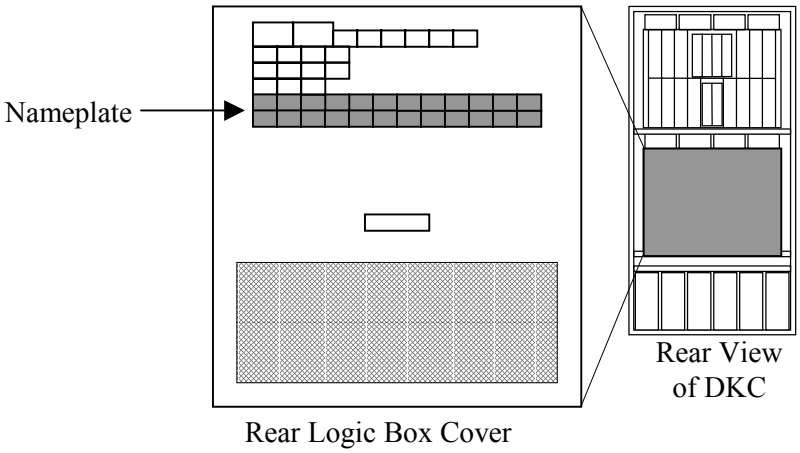

Fig. 4.1.10-33 Removal of Nameplate

f. Return to the work table (INST02-60) and perform rest of the works.

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4.1.11 When performing removal of the data/spare HDD canister, DKA, and DEV interface cable that accompanies the removal of the DKU-R2, DKU-L1, and DKU-L2 frames (DKC-F460I-200/L1C, DKU-F455I-36K4/36K1/72J4/72J1/72K4/72K1/146J4/146J1/146JF/146JS/146JQ/146JM/EXC)

1. De-Installation Procedure of DEV Interface Cable 2 (1/3) (DKU-F455I-EXC)

> Caution:
> When the main circuit breaker of the DKU is turned off before the DEV interface cable (DKU-F455I-EXC) is removed, the DKU Voltage Alarm is detected (the ALARM LED on the operator panel comes on and the SIM=BF20XX or BF22XX is issued). Therefore, turn off the main circuit breaker of the DKU after removing the DEV interface cable. The turning off of the DKU main circuit breaker is to be done later in another procedure explained on page INST04-DKU-10.

Between HDU-R10-R17 and HDU-R20-R27

a. Loosen the screws and remove the cable covers from the DKU frames.

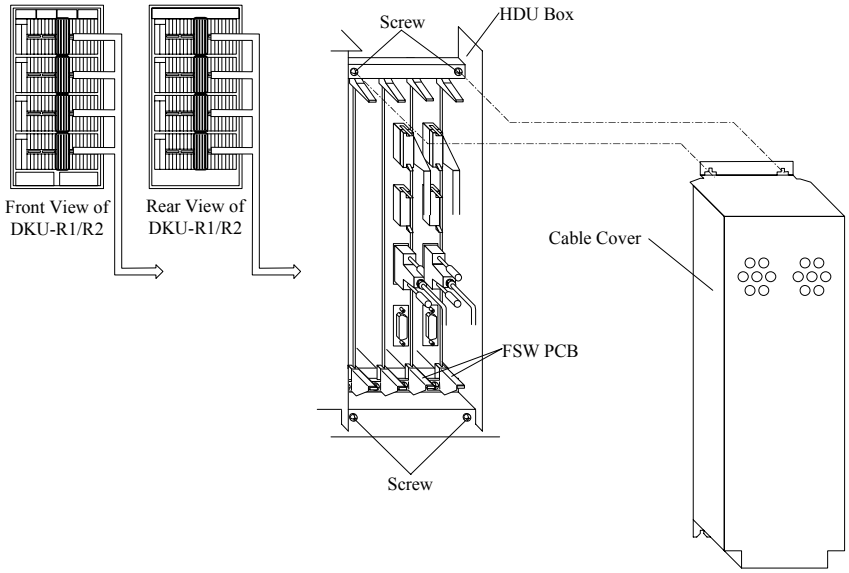

Fig. 4.1.11-1 Removal of Cable Covers

b. Loosen the screws and remove the cable covers from the DKU frames.

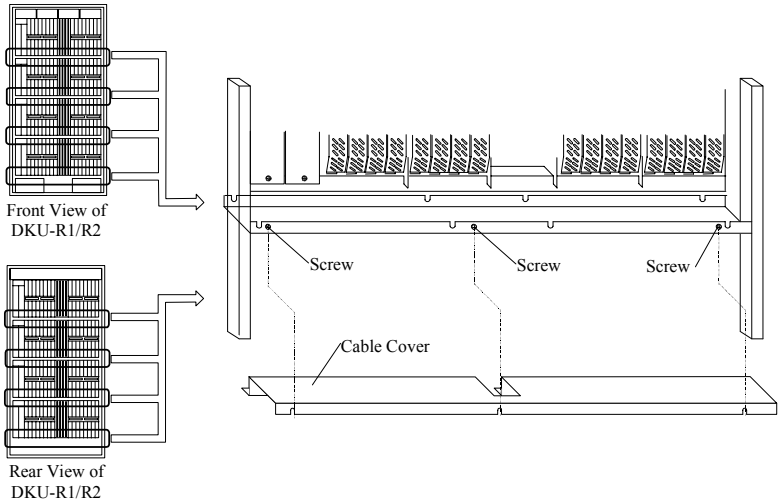

Fig.4.1.11-2 Removal of Cable Covers

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Between HDU-L10-L17 and HDU-L20-L27

a. Loosen the screws and remove the cable covers from the DKU frames.

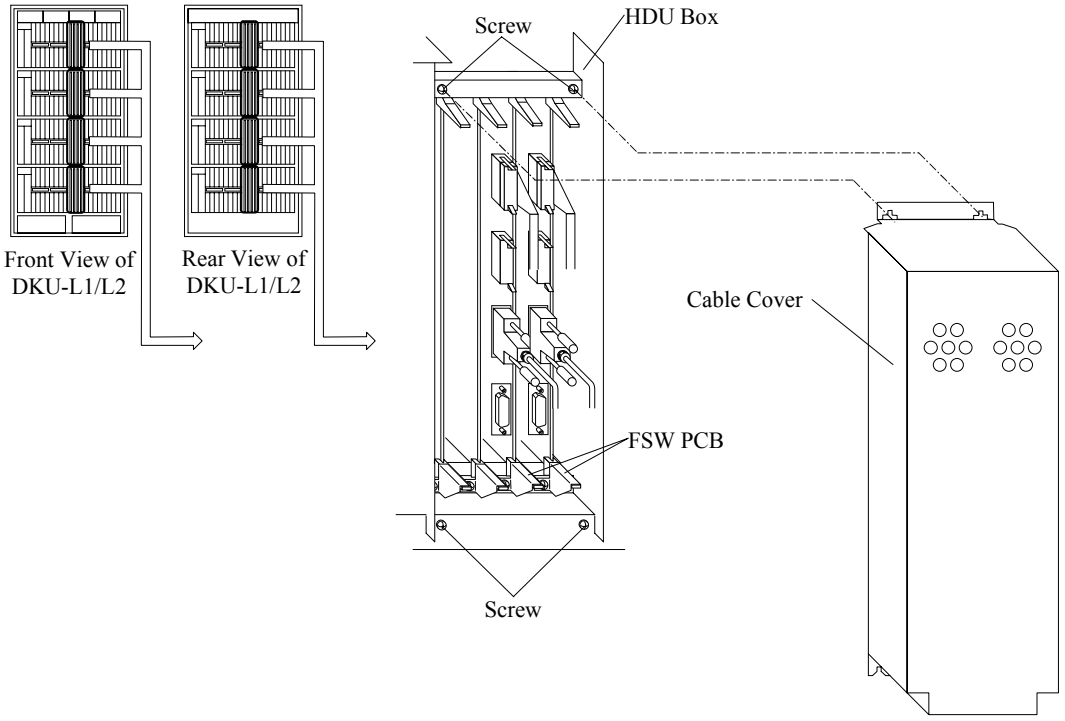

Fig. 4.1.11-3 Removal of Cable Covers

b. Loosen the screws and remove the cable covers from the DKU frames.

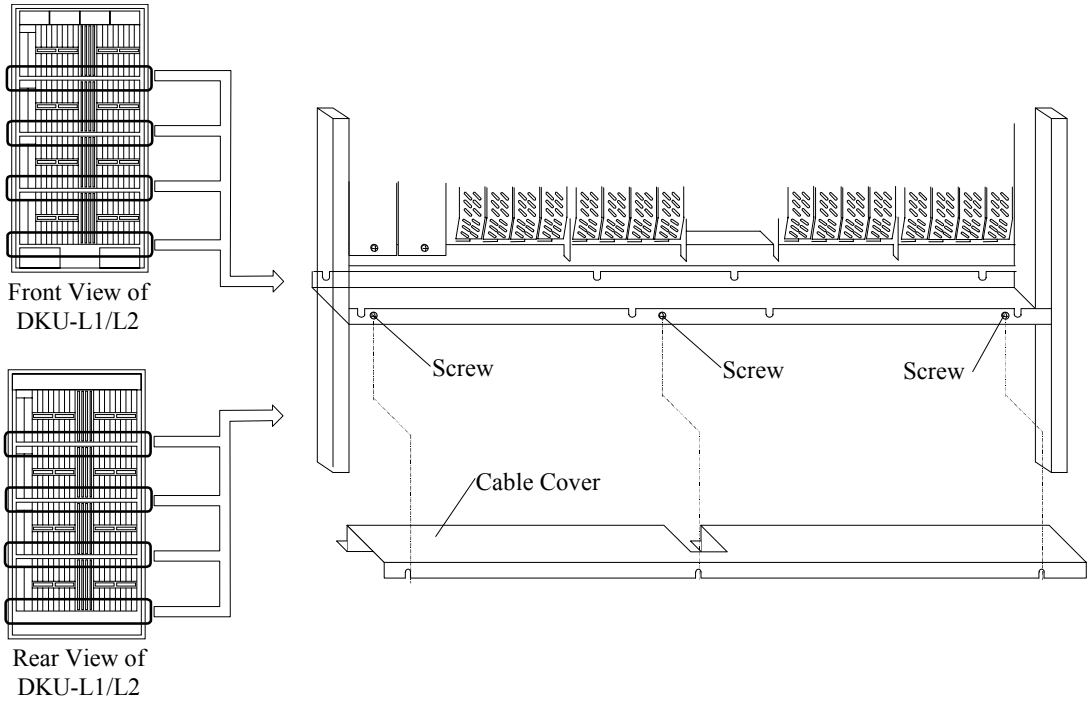

Fig. 4.1.11-4 Removal of Cable Covers

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2. De-Installation Procedure of DEV Interface Cable 1 (1/3) (DKC-F460I-L1C)

a. Loosen the screws and remove the cable covers from the DKU frames.

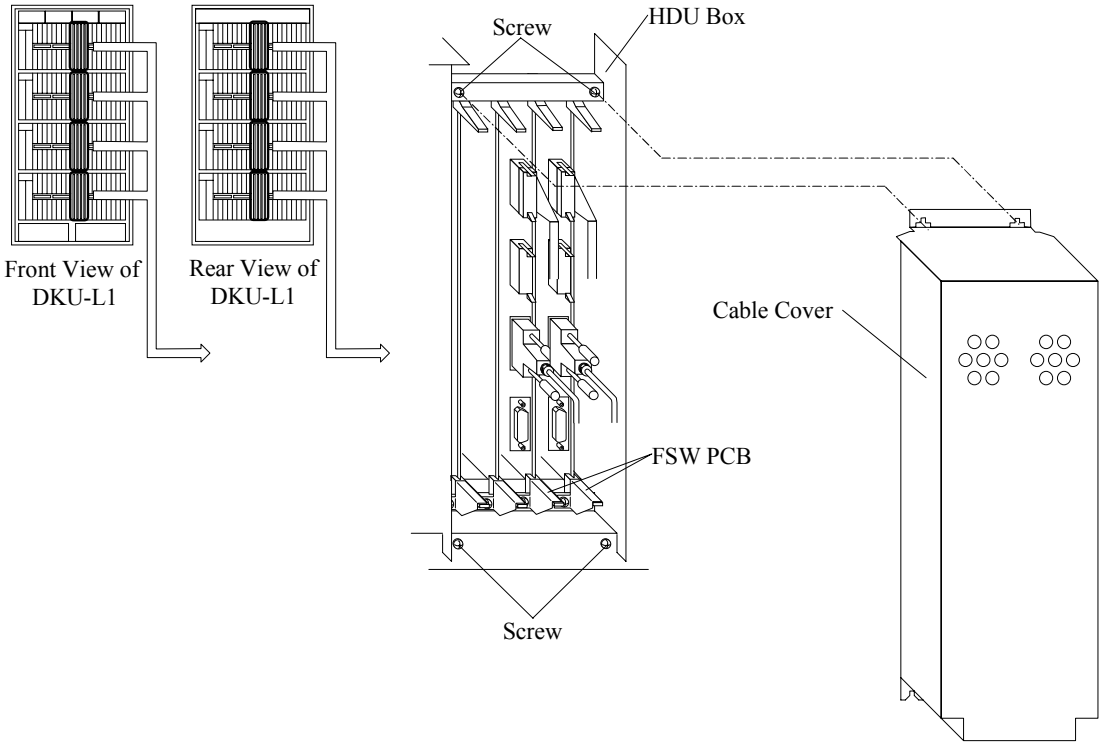

Fig. 4.1.11-5 Removal of Cable Covers

b. Loosen the screws and remove the cable covers from the DKU frames.

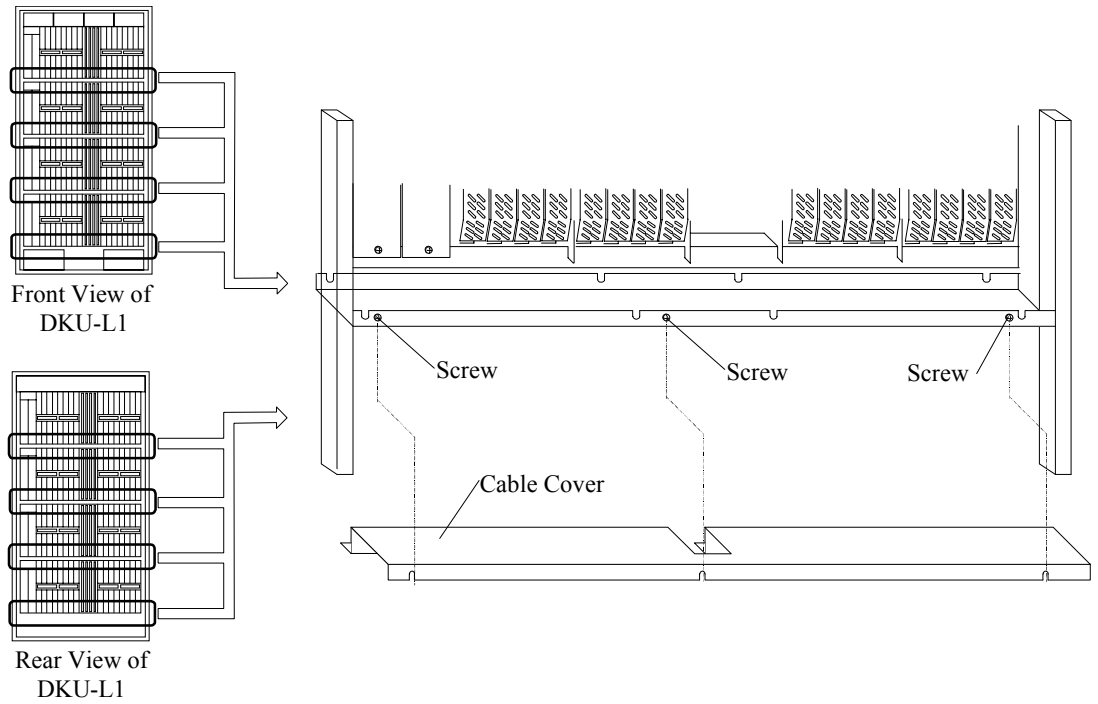

Fig. 4.1.11-6 Removal of Cable Covers

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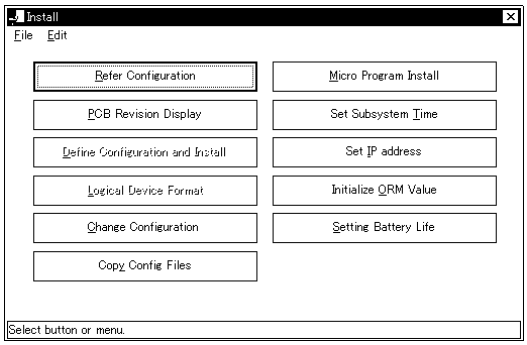
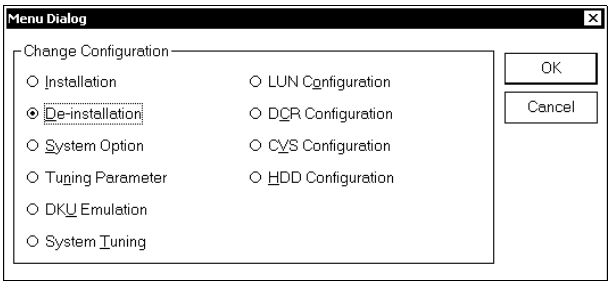
3. Setting up the New Device Structure Information

1. <Mode Change>
   Change the mode to Modify Mode.
   Select (CL) [Install].

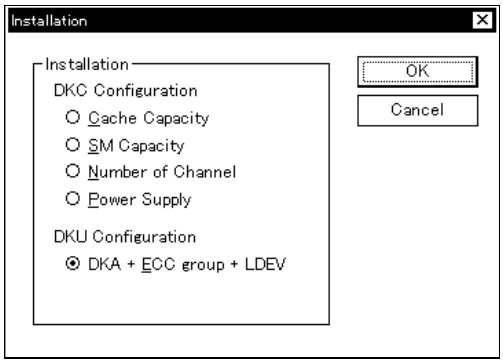
2. <Start the 'Menu Dialog' screen>
   Select (CL) [Change Configuration].



3. <Start Device Structure Setup screen>
   Select (CL) [De-Installation] in the 'Menu Dialog' dialog box and select (CL) [OK].



4. <Select a part to be changed>
   Select (CL) [DKA + ECC group + LDEV], and select (CL) [OK].



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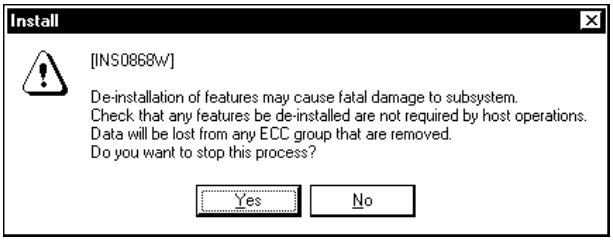
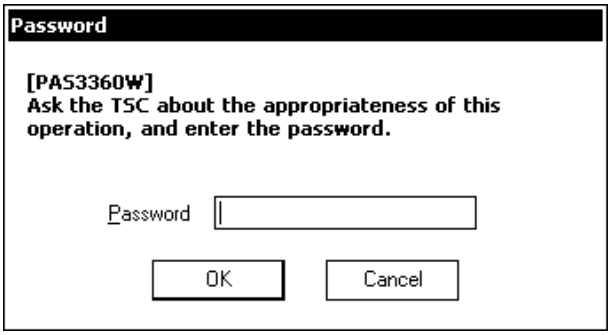
5.

Select (CL) [No] in response to “De-installation of features may cause fatal damage to subsystem. Check that any features be de-installed are not required by host operations. Data will be lost from any ECC group that are removed. Do you want to stop this process?”.



6. <Input password>
Enter the password and select (CL) [OK].



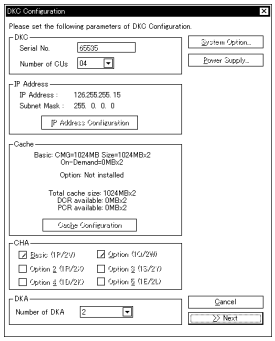
NOTICE
This is a special (exceptional) operation that can cause a serious failure such as a system down or a data loss if a wrong part to be removed is selected, and requires an input of a password. Ask the technical support center about the appropriateness of the operation, and input the password after getting an approval of executing the operation.

7. <Update Configuration Information>
Set the item to be de-installed for DKC and DKA in the ‘DKC Configuration’ window.

When decreasing the CUs, change the “Number of CUs”.
When decreasing the DKAs, change the “Number of DKA”.

Note: A part other than the CU and DKA cannot be removed at the same time.

Make sure that the entered item is correct and select (CL) [>>Next].



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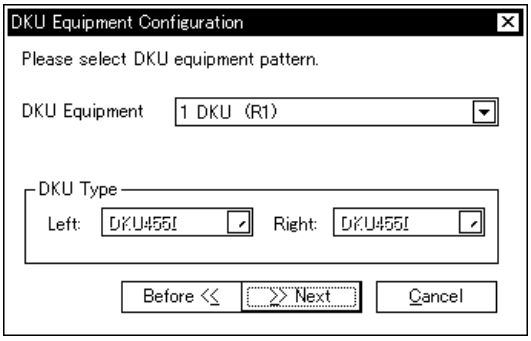
7-1. <Altering DKU frame information>

Define the DKU frame in the DKU Equipment Configuration window.

Make an altered setting in which the DKU-R2, DKU-L1, and DKU-L2 are deleted from the DKUs currently set.

Current setting	Altered setting
4DKUs (R1, L1, R2, L2)	1DKU (R1)

Note: After the setting is made, the B4 of the deleted DKU is not displayed.



After making the setting, select the [>> Next]. The routine proceeds to Step 8.

When the [Before <<] is selected, the window returns to the preceding one.

Return to Step 7.

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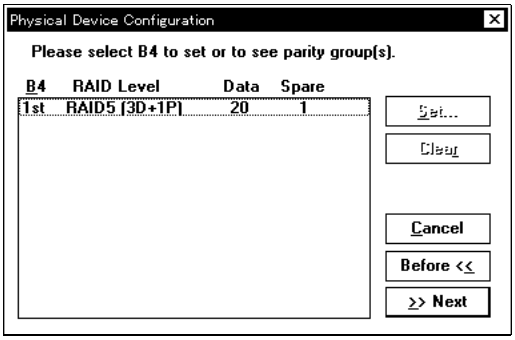
8. Change Drive Configuration Information>
Set drive configuration according to the 'Physical Device Configuration' screen displaying the mounted B4 based on the result of setting of DKU mount pattern.
Detailed procedure is shown below.
[Set...]: Defines the parity group or spare disk. The routine proceeds to Step 8-1.
[Clear...]: Cancels the setting of the B4.
After setting up all items, select (CL) [>>Next].
Selecting (CL) [Before<<] returns you to the previous screen.



[For the case of the multi cabinet model]

B4	Location	B4	Location
1st	HDU-R10, 11, 12, 13	7th	HDU-L20, 21, 22, 23
2nd	HDU-R14, 15, 16, 17	8th	HDU-L24, 25, 26, 27
3rd	HDU-L10, 11, 12, 13	9th	HDU-R30, 31, 32, 33
4th	HDU-L14, 15, 16, 17	10th	HDU-R34, 35, 36, 37
5th	HDU-R20, 21, 22, 23	11th	HDU-L30, 31, 32, 33
6th	HDU-R24, 25, 26, 27	12th	HDU-L34, 35, 36, 37

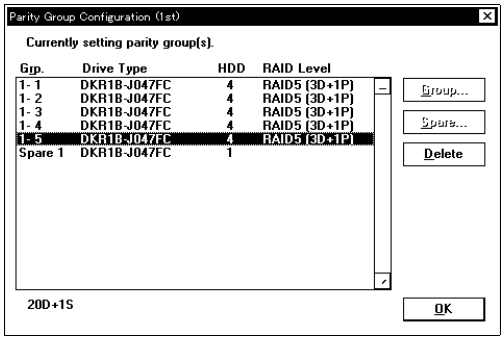
Note: The 9th to 12th of the B4 are valid only when the DKUs for the RAID 400 are connected.

[For the case of the single cabinet model]

B4	Location	Remarks
1st	HDU-R0, 1, 2, 3	HDD-X00 ~ X0F
2nd	HDU-R0, 1, 2, 3	HDD-X10 ~ X1F

8-1. <Define Parity Group>
Select (CL) the group to be de-installed and select (CL) [Delete] in the 'Parity Group Configuration' dialog box.
After setting, select (CL) [OK]. Return to step 8.

Grp*: A parity group where RAID Concatenation is installed.



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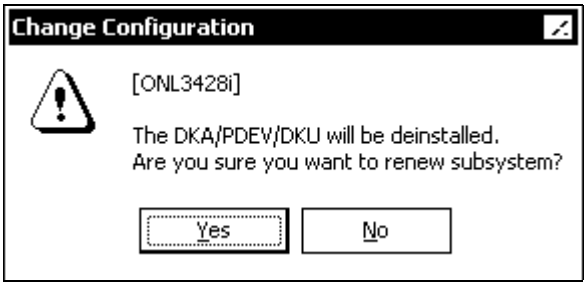
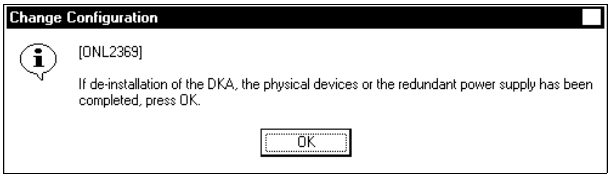
4. SVP pre procedure

1. <Start de-installation>
   Select (CL) [Yes] in response to "The DKA/PDEV/DKU will be deinstalled. Are you sure you want to renew subsystem?".

   When [No] is selected (CL), returns to INST04-DKA-2510 step 2.



2.
   At this point refrain from pressing the [OK] button.
   "If de-installation of the DKA, the physical devices or the redundant power supply has been completed, press OK." shown in the right figure.



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5. De-Installation Procedure of HDD Canister

5-1 Confirmation of position to de-install HDD canister

(i) RAID5(3D+1P)/RAID1(2D+2D)

Relations between the installation locations of the RAID groups and the RAID group numbers set through the SVP are shown in Table 4.1.11-1.

Table 4.1.11-1 Relation between HDDs installation order and RAID group number (3D+1P/2D+2D) (1/2)

	DKC	R1 DKU			R2 DKU		
		RAID Group Installation Order	RAID Group No.	HDD Location	RAID Group Installation Order	RAID Group No.	HDD Location
Upper	2nd DKA Pair	032	2-1	HDDR1y-00	096	6-1	HDDR2y-00
		033	2-2	HDDR1y-01	097	6-2	HDDR2y-01
		034	2-3	HDDR1y-02	098	6-3	HDDR2y-02
		035	2-4	HDDR1y-03	099	6-4	HDDR2y-03
		036	2-5	HDDR1y-04	100	6-5	HDDR2y-04
		037	2-6	HDDR1y-05	101	6-6	HDDR2y-05
		038	2-7	HDDR1y-06	102	6-7	HDDR2y-06
		039	2-8	HDDR1y-07	103	6-8	HDDR2y-07
		040	2-9	HDDR1y-08	104	6-9	HDDR2y-08
		041	2-10	HDDR1y-09	105	6-10	HDDR2y-09
		042	2-11	HDDR1y-0A	106	6-11	HDDR2y-0A
		043	2-12	HDDR1y-0B	107	6-12	HDDR2y-0B
		044	2-13	HDDR1y-0C	108	6-13	HDDR2y-0C
		045	2-14	HDDR1y-0D	109	6-14	HDDR2y-0D
		046	2-15	HDDR1y-0E	110	6-15	HDDR2y-0E
		047(Spare) *2	2-16	HDDR1y-0F	111	6-16	HDDR2y-0F
		048	2-17	HDDR1y-10	112	6-17	HDDR2y-10
		049	2-18	HDDR1y-11	113	6-18	HDDR2y-11
		050	2-19	HDDR1y-12	114	6-19	HDDR2y-12
		051	2-20	HDDR1y-13	115	6-20	HDDR2y-13
		052	2-21	HDDR1y-14	116	6-21	HDDR2y-14
		053	2-22	HDDR1y-15	117	6-22	HDDR2y-15
		054	2-23	HDDR1y-16	118	6-23	HDDR2y-16
		055	2-24	HDDR1y-17	119	6-24	HDDR2y-17
		056	2-25	HDDR1y-18	120	6-25	HDDR2y-18
		057	2-26	HDDR1y-19	121	6-26	HDDR2y-19
		058	2-27	HDDR1y-1A	122	6-27	HDDR2y-1A
		059	2-28	HDDR1y-1B	123	6-28	HDDR2y-1B
		060	2-29	HDDR1y-1C	124	6-29	HDDR2y-1C
		061	2-30	HDDR1y-1D	125	6-30	HDDR2y-1D
		062	2-31	HDDR1y-1E	126	6-31	HDDR2y-1E
		063	2-32	HDDR1y-1F	127	6-32	HDDR2y-1F
Lower	1st DKA Pair	001	1-1	HDDR1x-00	064	5-1	HDDR2x-00
		002	1-2	HDDR1x-01	065	5-2	HDDR2x-01
		003	1-3	HDDR1x-02	066	5-3	HDDR2x-02
		004	1-4	HDDR1x-03	067	5-4	HDDR2x-03
		005	1-5	HDDR1x-04	068	5-5	HDDR2x-04
		006	1-6	HDDR1x-05	069	5-6	HDDR2x-05
		007	1-7	HDDR1x-06	070	5-7	HDDR2x-06
		008	1-8	HDDR1x-07	071	5-8	HDDR2x-07
		009	1-9	HDDR1x-08	072	5-9	HDDR2x-08
		010	1-10	HDDR1x-09	073	5-10	HDDR2x-09
		011	1-11	HDDR1x-0A	074	5-11	HDDR2x-0A
		012	1-12	HDDR1x-0B	075	5-12	HDDR2x-0B
		013	1-13	HDDR1x-0C	076	5-13	HDDR2x-0C
		014	1-14	HDDR1x-0D	077	5-14	HDDR2x-0D
		015	1-15	HDDR1x-0E	078	5-15	HDDR2x-0E
		Spare *1	1-16	HDDR1x-0F	079	5-16	HDDR2x-0F
		016	1-17	HDDR1x-10	080	5-17	HDDR2x-10
		017	1-18	HDDR1x-11	081	5-18	HDDR2x-11
		018	1-19	HDDR1x-12	082	5-19	HDDR2x-12
		019	1-20	HDDR1x-13	083	5-20	HDDR2x-13
		020	1-21	HDDR1x-14	084	5-21	HDDR2x-14
		021	1-22	HDDR1x-15	085	5-22	HDDR2x-15
		022	1-23	HDDR1x-16	086	5-23	HDDR2x-16
		023	1-24	HDDR1x-17	087	5-24	HDDR2x-17
		024	1-25	HDDR1x-18	088	5-25	HDDR2x-18
		025	1-26	HDDR1x-19	089	5-26	HDDR2x-19
		026	1-27	HDDR1x-1A	090	5-27	HDDR2x-1A
		027	1-28	HDDR1x-1B	091	5-28	HDDR2x-1B
		028	1-29	HDDR1x-1C	092	5-29	HDDR2x-1C
		029	1-30	HDDR1x-1D	093	5-30	HDDR2x-1D
		030	1-31	HDDR1x-1E	094	5-31	HDDR2x-1E
		031	1-32	HDDR1x-1F	095	5-32	HDDR2x-1F

*1: To be left vacant or a spare disk is to be installed. *2: A data or spare disk is to be installed.

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Table 4.1.11-1 Relation between HDDs installation order and RAID group number (3D+1P/2D+2D) (2/2)

	L2 DKU			L1 DKU			DKC
	RAID Group Installation Order	RAID Group No.	HDD Location	RAID Group Installation Order	RAID Group No.	HDD Location	
Upper	223	8-1	HDDL2y-00	159	4-1	HDDL1y-00	4th DKA Pair
	224	8-2	HDDL2y-01	160	4-2	HDDL1y-01	
	225	8-3	HDDL2y-02	161	4-3	HDDL1y-02	
	226	8-4	HDDL2y-03	162	4-4	HDDL1y-03	
	227	8-5	HDDL2y-04	163	4-5	HDDL1y-04	
	228	8-6	HDDL2y-05	164	4-6	HDDL1y-05	
	229	8-7	HDDL2y-06	165	4-7	HDDL1y-06	
	230	8-8	HDDL2y-07	166	4-8	HDDL1y-07	
	231	8-9	HDDL2y-08	167	4-9	HDDL1y-08	
	232	8-10	HDDL2y-09	168	4-10	HDDL1y-09	
	233	8-11	HDDL2y-0A	169	4-11	HDDL1y-0A	
	234	8-12	HDDL2y-0B	170	4-12	HDDL1y-0B	
	235	8-13	HDDL2y-0C	171	4-13	HDDL1y-0C	
	236	8-14	HDDL2y-0D	172	4-14	HDDL1y-0D	
	237	8-15	HDDL2y-0E	173	4-15	HDDL1y-0E	
	238	8-16	HDDL2y-0F	174(Spare) *2	4-16	HDDL1y-0F	
	239	8-17	HDDL2y-10	175	4-17	HDDL1y-10	
	240	8-18	HDDL2y-11	176	4-18	HDDL1y-11	
	241	8-19	HDDL2y-12	177	4-19	HDDL1y-12	
	242	8-20	HDDL2y-13	178	4-20	HDDL1y-13	
	243	8-21	HDDL2y-14	179	4-21	HDDL1y-14	
	244	8-22	HDDL2y-15	180	4-22	HDDL1y-15	
	245	8-23	HDDL2y-16	181	4-23	HDDL1y-16	
	246	8-24	HDDL2y-17	182	4-24	HDDL1y-17	
	247	8-25	HDDL2y-18	183	4-25	HDDL1y-18	
	248	8-26	HDDL2y-19	184	4-26	HDDL1y-19	
	249	8-27	HDDL2y-1A	185	4-27	HDDL1y-1A	
	250	8-28	HDDL2y-1B	186	4-28	HDDL1y-1B	
	251	8-29	HDDL2y-1C	187	4-29	HDDL1y-1C	
	252	8-30	HDDL2y-1D	188	4-30	HDDL1y-1D	
	253	8-31	HDDL2y-1E	189	4-31	HDDL1y-1E	
	254	8-32	HDDL2y-1F	190	4-32	HDDL1y-1F	
Lower	191	7-1	HDDL2x-00	128	3-1	HDDL1x-00	3rd DKA Pair
	192	7-2	HDDL2x-01	129	3-2	HDDL1x-01	
	193	7-3	HDDL2x-02	130	3-3	HDDL1x-02	
	194	7-4	HDDL2x-03	131	3-4	HDDL1x-03	
	195	7-5	HDDL2x-04	132	3-5	HDDL1x-04	
	196	7-6	HDDL2x-05	133	3-6	HDDL1x-05	
	197	7-7	HDDL2x-06	134	3-7	HDDL1x-06	
	198	7-8	HDDL2x-07	135	3-8	HDDL1x-07	
	199	7-9	HDDL2x-08	136	3-9	HDDL1x-08	
	200	7-10	HDDL2x-09	137	3-10	HDDL1x-09	
	201	7-11	HDDL2x-0A	138	3-11	HDDL1x-0A	
	202	7-12	HDDL2x-0B	139	3-12	HDDL1x-0B	
	203	7-13	HDDL2x-0C	140	3-13	HDDL1x-0C	
	204	7-14	HDDL2x-0D	141	3-14	HDDL1x-0D	
	205	7-15	HDDL2x-0E	142	3-15	HDDL1x-0E	
	206	7-16	HDDL2x-0F	Spare *1	3-16	HDDL1x-0F	
	207	7-17	HDDL2x-10	143	3-17	HDDL1x-10	
	208	7-18	HDDL2x-11	144	3-18	HDDL1x-11	
	209	7-19	HDDL2x-12	145	3-19	HDDL1x-12	
	210	7-20	HDDL2x-13	146	3-20	HDDL1x-13	
	211	7-21	HDDL2x-14	147	3-21	HDDL1x-14	
	212	7-22	HDDL2x-15	148	3-22	HDDL1x-15	
	213	7-23	HDDL2x-16	149	3-23	HDDL1x-16	
	214	7-24	HDDL2x-17	150	3-24	HDDL1x-17	
	215	7-25	HDDL2x-18	151	3-25	HDDL1x-18	
	216	7-26	HDDL2x-19	152	3-26	HDDL1x-19	
	217	7-27	HDDL2x-1A	153	3-27	HDDL1x-1A	
	218	7-28	HDDL2x-1B	154	3-28	HDDL1x-1B	
	219	7-29	HDDL2x-1C	155	3-29	HDDL1x-1C	
	220	7-30	HDDL2x-1D	156	3-30	HDDL1x-1D	
	221	7-31	HDDL2x-1E	157	3-31	HDDL1x-1E	
	222	7-32	HDDL2x-1F	158	3-32	HDDL1x-1F	

*1: To be left vacant or a spare disk is to be installed. *2: A data or spare disk is to be installed.

*3: HDDL1x-00 (x: HDU Box No. 0, 1, 2, 3), HDDL1y-00 (y: HDU Box No. 4, 5, 6, 7)

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(1) Make sure of the location where the RAID group is de-installed and that where the HDD canister is to be removed.

No.	Model Number	Model Name	Data and Parity
1	DKU-F455I-36K4/72J4/72K4/146J4/146JF/146JQ	4 HDD Canisters	Data and Parity Drive

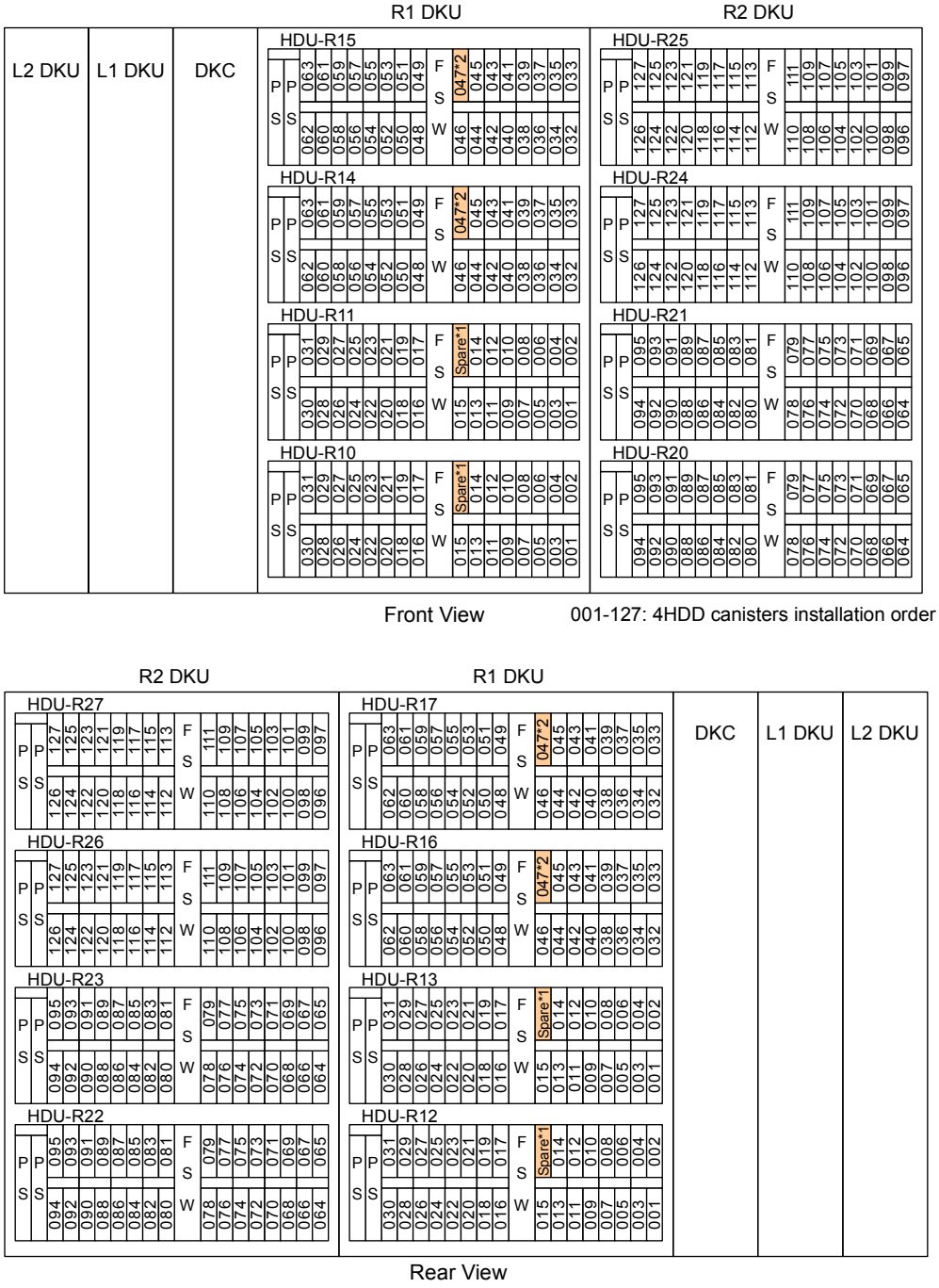

Fig. 4.1.11-7 (3D+1P) or (2D+2P) Data Drive/Parity Drive Expansion Sequence (1/2)

The relationship between HDDs installation order and RAID group number is shown in the Table 4.1.11-1.

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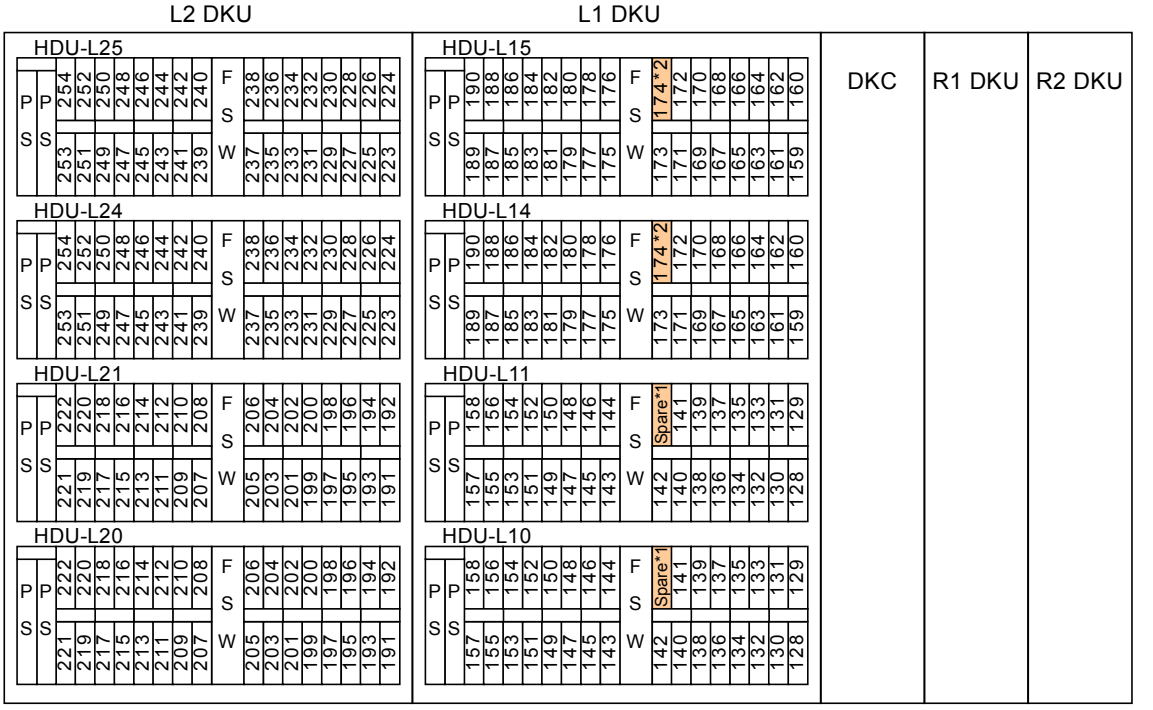

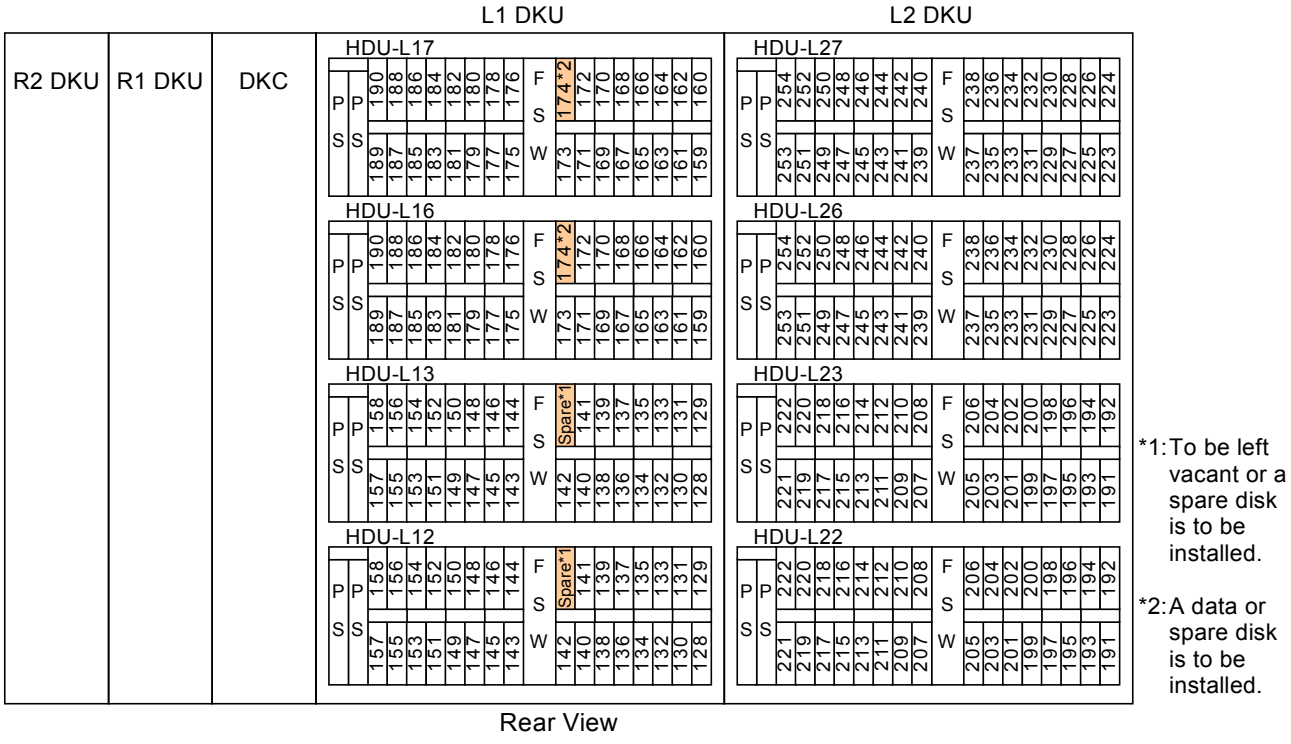

Fig. 4.1.11-7 (3D+1P) or (2D+2P) Data Drive/Parity Drive Expansion Sequence (2/2)

The relationship between HDDs installation order and RAID group number is shown in the Table 4.1.11-1.

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(ii) RAID5 (7D+1P)

Relations between the installation locations of the RAID groups and the RAID group numbers set through the SVP are shown in Table 4.1.11-2.

Table 4.1.11-2 Relation between HDDs installation order and RAID group number (7D+1P) (1/2)

DKC	R1 DKU			R2 DKU		
	RAID Group Installation Order	RAID Group No.	HDD Location	RAID Group Installation Order	RAID Group No.	HDD Location
1st / 2nd DKA Pair	001	1-1 , (2-1)	HDDR1x-00	032	5-1, (6-1)	HDDR2x-00
	002	1-2 , (2-2)	HDDR1x-01	033	5-2, (6-2)	HDDR2x-01
	003	1-3 , (2-3)	HDDR1x-02	034	5-3, (6-3)	HDDR2x-02
	004	1-4 , (2-4)	HDDR1x-03	035	5-4, (6-4)	HDDR2x-03
	005	1-5 , (2-5)	HDDR1x-04	036	5-5, (6-5)	HDDR2x-04
	006	1-6 , (2-6)	HDDR1x-05	037	5-6, (6-6)	HDDR2x-05
	007	1-7 , (2-7)	HDDR1x-06	038	5-7, (6-7)	HDDR2x-06
	008	1-8 , (2-8)	HDDR1x-07	039	5-8, (6-8)	HDDR2x-07
	009	1-9 , (2-9)	HDDR1x-08	040	5-9, (6-9)	HDDR2x-08
	010	1-10 , (2-10)	HDDR1x-09	041	5-10, (6-10)	HDDR2x-09
	011	1-11 , (2-11)	HDDR1x-0A	042	5-11, (6-11)	HDDR2x-0A
	012	1-12 , (2-12)	HDDR1x-0B	043	5-12, (6-12)	HDDR2x-0B
	013	1-13 , (2-13)	HDDR1x-0C	044	5-13, (6-13)	HDDR2x-0C
	014	1-14 , (2-14)	HDDR1x-0D	045	5-14, (6-14)	HDDR2x-0D
	015	1-15 , (2-15)	HDDR1x-0E	046	5-15, (6-15)	HDDR2x-0E
	(Spare) *1	1-16 , (2-16)	HDDR1x-0F	047	5-16, (6-16)	HDDR2x-0F
	016	1-17 , (2-17)	HDDR1x-10	048	5-17, (6-17)	HDDR2x-10
	017	1-18 , (2-18)	HDDR1x-11	049	5-18, (6-18)	HDDR2x-11
	018	1-19 , (2-19)	HDDR1x-12	050	5-19, (6-19)	HDDR2x-12
	019	1-20 , (2-20)	HDDR1x-13	051	5-20, (6-20)	HDDR2x-13
	020	1-21 , (2-21)	HDDR1x-14	052	5-21, (6-21)	HDDR2x-14
	021	1-22 , (2-22)	HDDR1x-15	053	5-22, (6-22)	HDDR2x-15
	022	1-23 , (2-23)	HDDR1x-16	054	5-23, (6-23)	HDDR2x-16
	023	1-24 , (2-24)	HDDR1x-17	055	5-24, (6-24)	HDDR2x-17
	024	1-25 , (2-25)	HDDR1x-18	056	5-25, (6-25)	HDDR2x-18
	025	1-26 , (2-26)	HDDR1x-19	057	5-26, (6-26)	HDDR2x-19
	026	1-27 , (2-27)	HDDR1x-1A	058	5-27, (6-27)	HDDR2x-1A
	027	1-28 , (2-28)	HDDR1x-1B	059	5-28, (6-28)	HDDR2x-1B
	028	1-29 , (2-29)	HDDR1x-1C	060	5-29, (6-29)	HDDR2x-1C
	029	1-30 , (2-30)	HDDR1x-1D	061	5-30, (6-30)	HDDR2x-1D
	030	1-31 , (2-31)	HDDR1x-1E	062	5-31, (6-31)	HDDR2x-1E
	031	1-32 , (2-32)	HDDR1x-1F	063	5-32, (6-32)	HDDR2x-1F

*1: To be left vacant or a spare disk is to be installed. *2: HDDL1x-00 (x: HDU Box No. 0, 1, 2, …, 7)

- Install RAID 5 (7D+1P) forming pairs using the same number of the two RAID groups (RAID groups 1 and 2, 3 and 4, 5 and 6, and 7 and 8) of RAID 5 (3D+1P).
  (Example: RAID group numbers 1-1 and 2-1)
  The types of HDDs to be installed in each pair must be the same.
- In the case of RAID 5 (7D+1P), only odd RAID numbers are displayed on the SVP. (Group numbers shown in parentheses in the table above are not displayed.)
- When RAID 5 (3D+1P) or RAID 1 (2D+2D) and RAID 5 (7D+1P) are configured mixture, note that duplicated group numbers are excluded.
  Example: When Group No. 1-1 is configured for RAID 5 (7D+1P), Group No. 2-1 is excluded and cannot be configure for RAID 5 (3D+1P).

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Table 4.1.11-2 Relation between HDDs installation order and RAID group number (7D+1P) (2/2)

L2 DKU			L1 DKU			DKC
RAID Group Installation Order	RAID Group No.	HDD Location	RAID Group Installation Order	RAID Group No.	HDD Location	
095	7-1, (8-1)	HDDL2x-00	064	3-1 , (4-1)	HDDL1x-00	
096	7-2, (8-2)	HDDL2x-01	065	3-2 , (4-2)	HDDL1x-01	
097	7-3, (8-3)	HDDL2x-02	066	3-3 , (4-3)	HDDL1x-02	
098	7-4, (8-4)	HDDL2x-03	067	3-4 , (4-4)	HDDL1x-03	
099	7-5, (8-5)	HDDL2x-04	068	3-5 , (4-5)	HDDL1x-04	
100	7-6, (8-6)	HDDL2x-05	069	3-6 , (4-6)	HDDL1x-05	
101	7-7, (8-7)	HDDL2x-06	070	3-7 , (4-7)	HDDL1x-06	
102	7-8, (8-8)	HDDL2x-07	071	3-8 , (4-8)	HDDL1x-07	
103	7-9, (8-9)	HDDL2x-08	072	3-9 , (4-9)	HDDL1x-08	
104	7-10, (8-10)	HDDL2x-09	073	3-10 , (4-10)	HDDL1x-09	
105	7-11, (8-11)	HDDL2x-0A	074	3-11 , (4-11)	HDDL1x-0A	
106	7-12, (8-12)	HDDL2x-0B	075	3-12 , (4-12)	HDDL1x-0B	
107	7-13, (8-13)	HDDL2x-0C	076	3-13 , (4-13)	HDDL1x-0C	
108	7-14, (8-14)	HDDL2x-0D	077	3-14 , (4-14)	HDDL1x-0D	
109	7-15, (8-15)	HDDL2x-0E	078	3-15 , (4-15)	HDDL1x-0E	3rd / 4th
110	7-16, (8-16)	HDDL2x-0F	(Spare) *1	3-16 , (4-16)	HDDL1x-0F	DKA
111	7-17, (8-17)	HDDL2x-10	079	3-17 , (4-17)	HDDL1x-10	Pair
112	7-18, (8-18)	HDDL2x-11	080	3-18 , (4-18)	HDDL1x-11	
113	7-19, (8-19)	HDDL2x-12	081	3-19 , (4-19)	HDDL1x-12	
114	7-20, (8-20)	HDDL2x-13	082	3-20 , (4-20)	HDDL1x-13	
115	7-21, (8-21)	HDDL2x-14	083	3-21 , (4-21)	HDDL1x-14	
116	7-22, (8-22)	HDDL2x-15	084	3-22 , (4-22)	HDDL1x-15	
117	7-23, (8-23)	HDDL2x-16	085	3-23 , (4-23)	HDDL1x-16	
118	7-24, (8-24)	HDDL2x-17	086	3-24 , (4-24)	HDDL1x-17	
119	7-25, (8-25)	HDDL2x-18	087	3-25 , (4-25)	HDDL1x-18	
120	7-26, (8-26)	HDDL2x-19	088	3-26 , (4-26)	HDDL1x-19	
121	7-27, (8-27)	HDDL2x-1A	089	3-27 , (4-27)	HDDL1x-1A	
122	7-28, (8-28)	HDDL2x-1B	090	3-28 , (4-28)	HDDL1x-1B	
123	7-29, (8-29)	HDDL2x-1C	091	3-29 , (4-29)	HDDL1x-1C	
124	7-30, (8-30)	HDDL2x-1D	092	3-30 , (4-30)	HDDL1x-1D	
125	7-31, (8-31)	HDDL2x-1E	093	3-31 , (4-31)	HDDL1x-1E	
126	7-32, (8-32)	HDDL2x-1F	094	3-32 , (4-32)	HDDL1x-1F	

*1: To be left vacant or a spare disk is to be installed. *2: HDDL1x-00 (x: HDU Box No. 0, 1, 2, …, 7)

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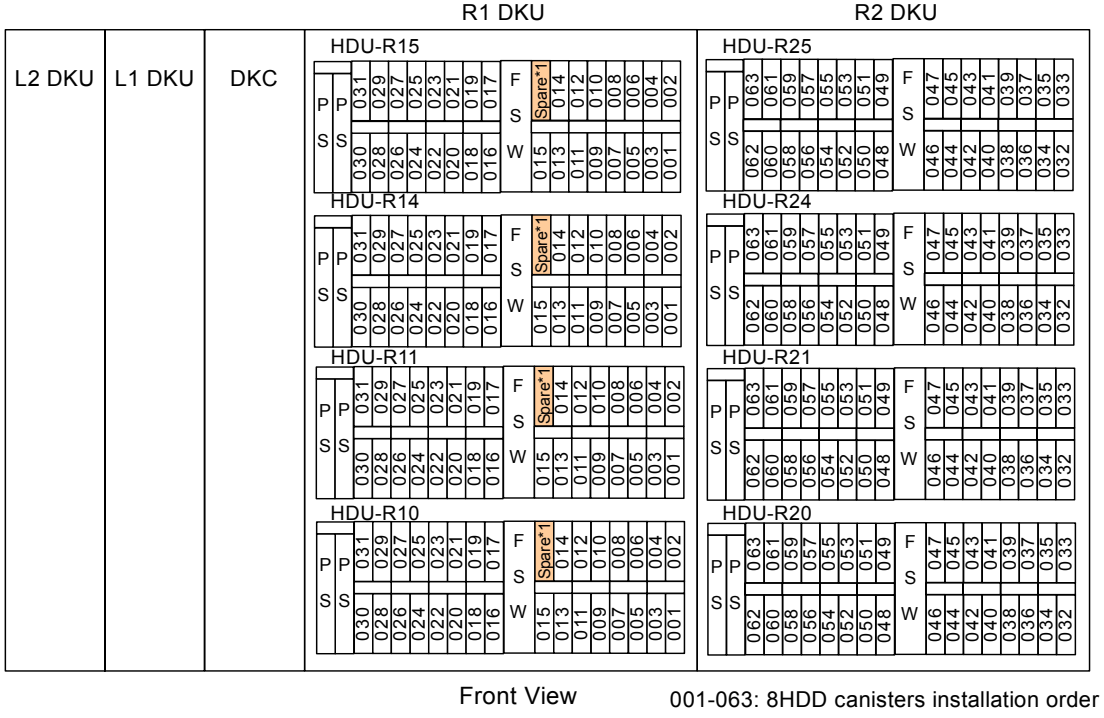
(1) Make sure of the location where the RAID group is de-installed and that where the HDD canister is to be removed.

No.	Model Number	Model Name	Data and Parity
1	DKU-F455I-36K4/72J4/72K4/146J4/146JF/146JQ	4 HDD Canisters x 2sets	Data and Parity Drive



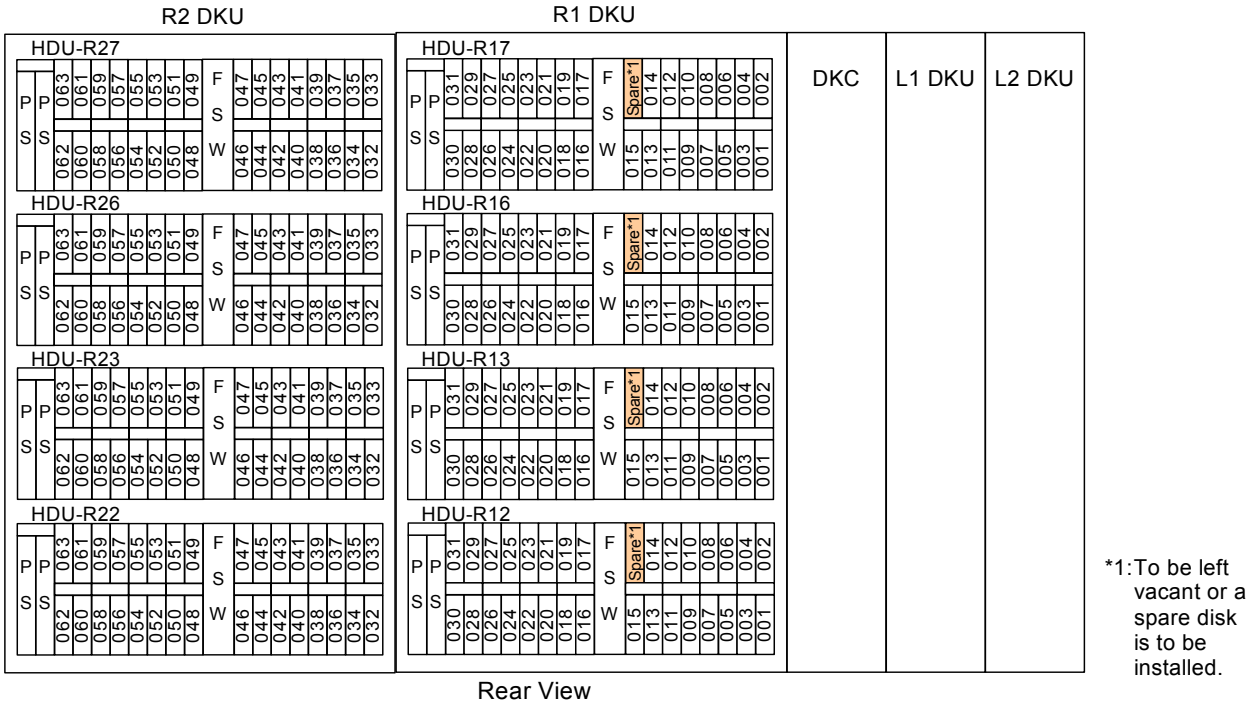


Fig. 4.1.11-8 (7D+1P) Data Drive/Parity Drive Expansion Sequence (1/2)

The relationship between HDDs installation order and RAID group number is shown in the Table 4.1.11-2.

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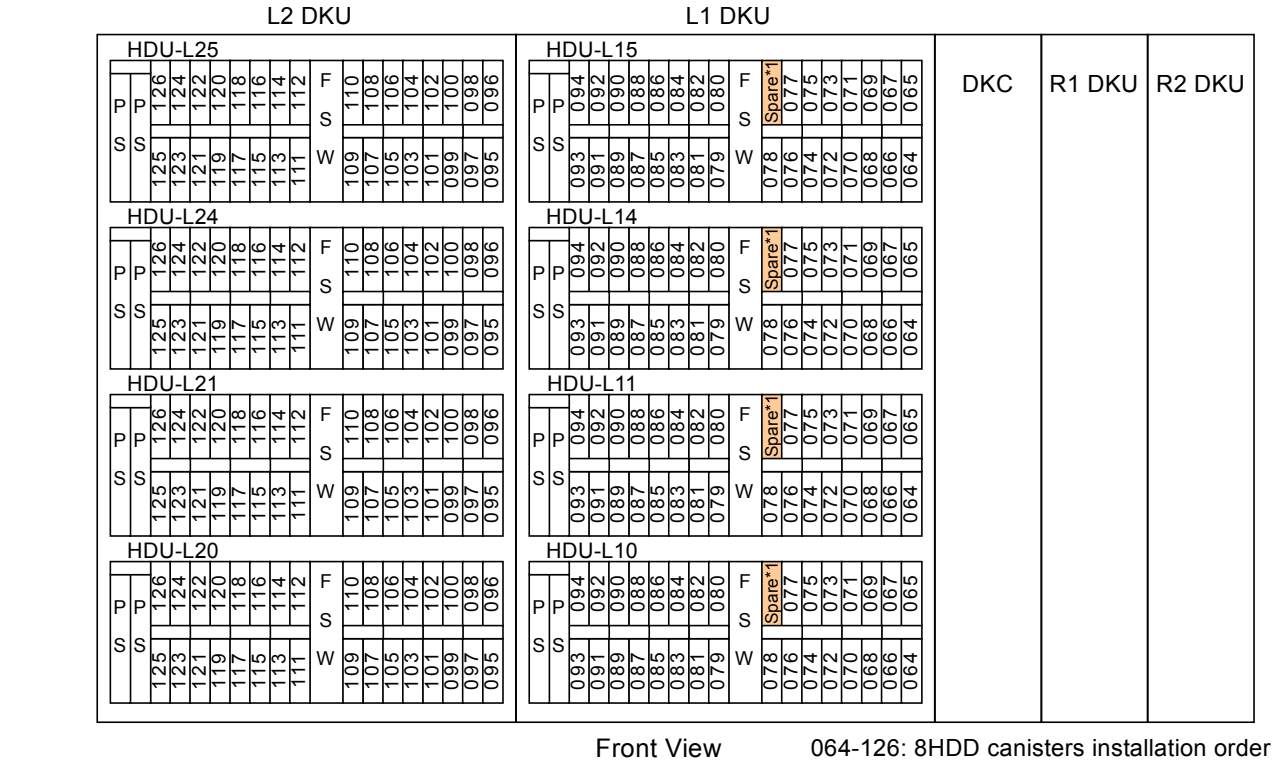

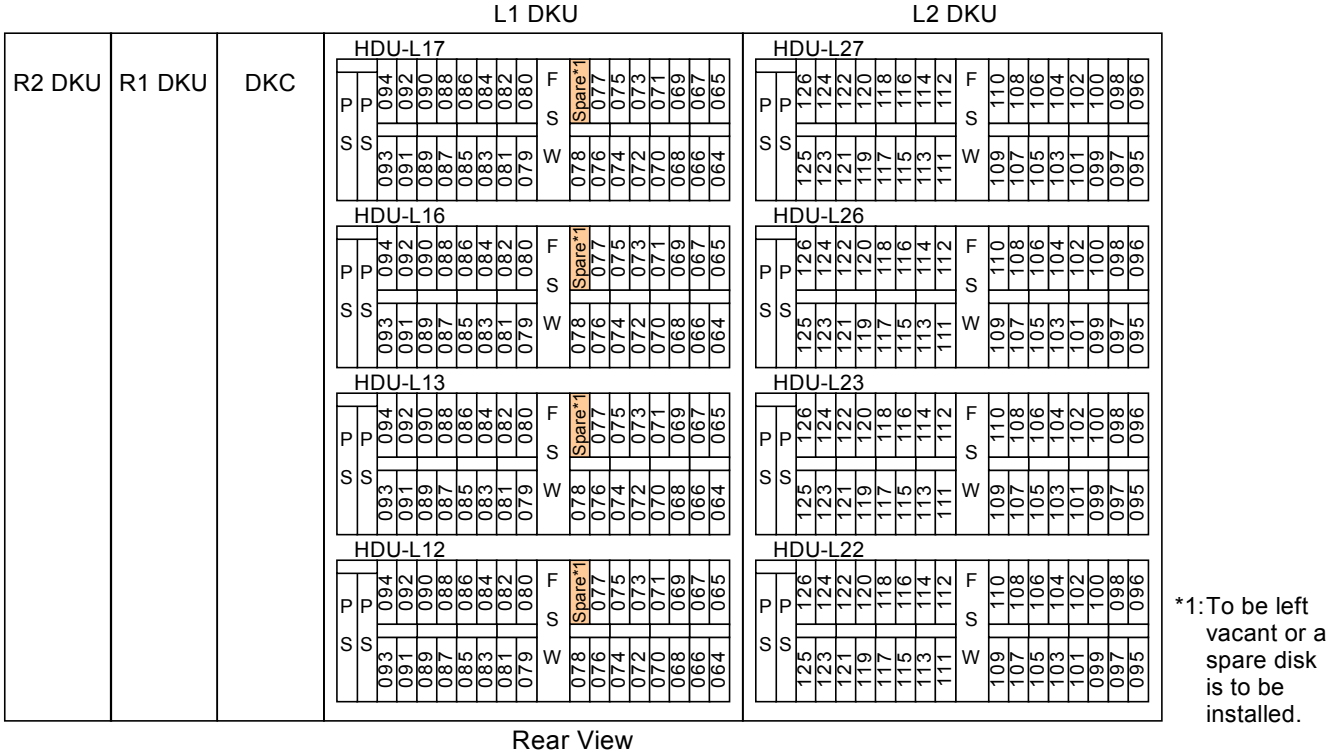

Fig. 4.1.11-8 (7D+1P) Data Drive/Parity Drive Expansion Sequence (2/2)

The relationship between HDDs installation order and RAID group number is shown in the Table 4.1.11-2.

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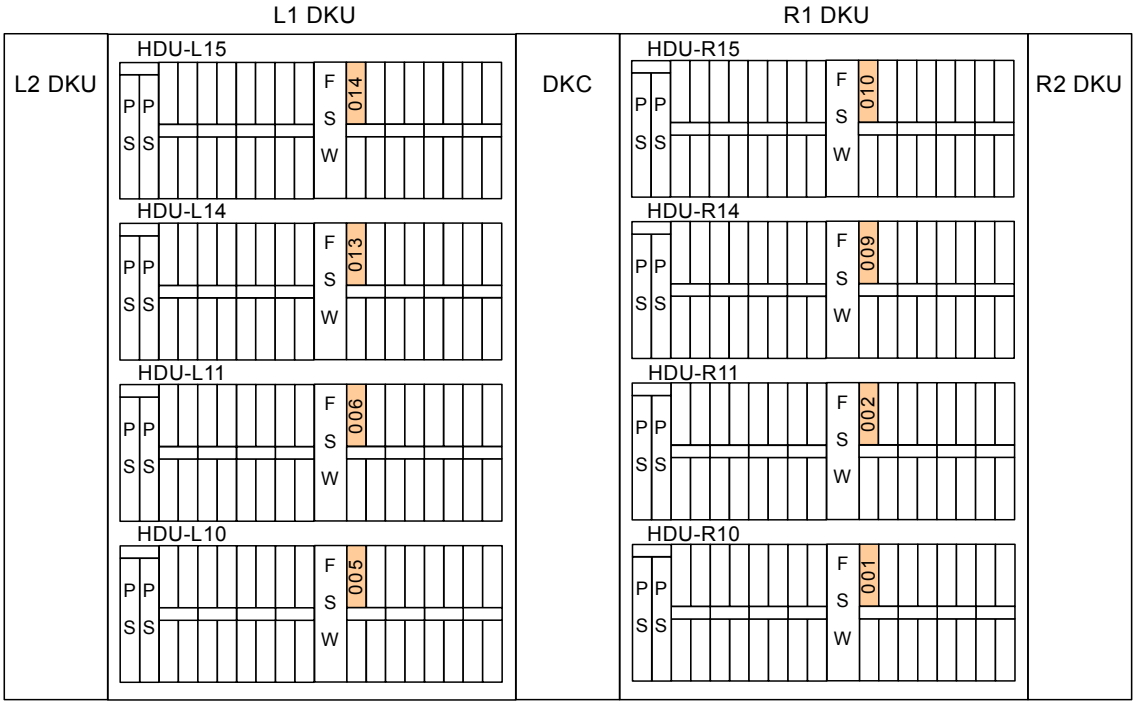
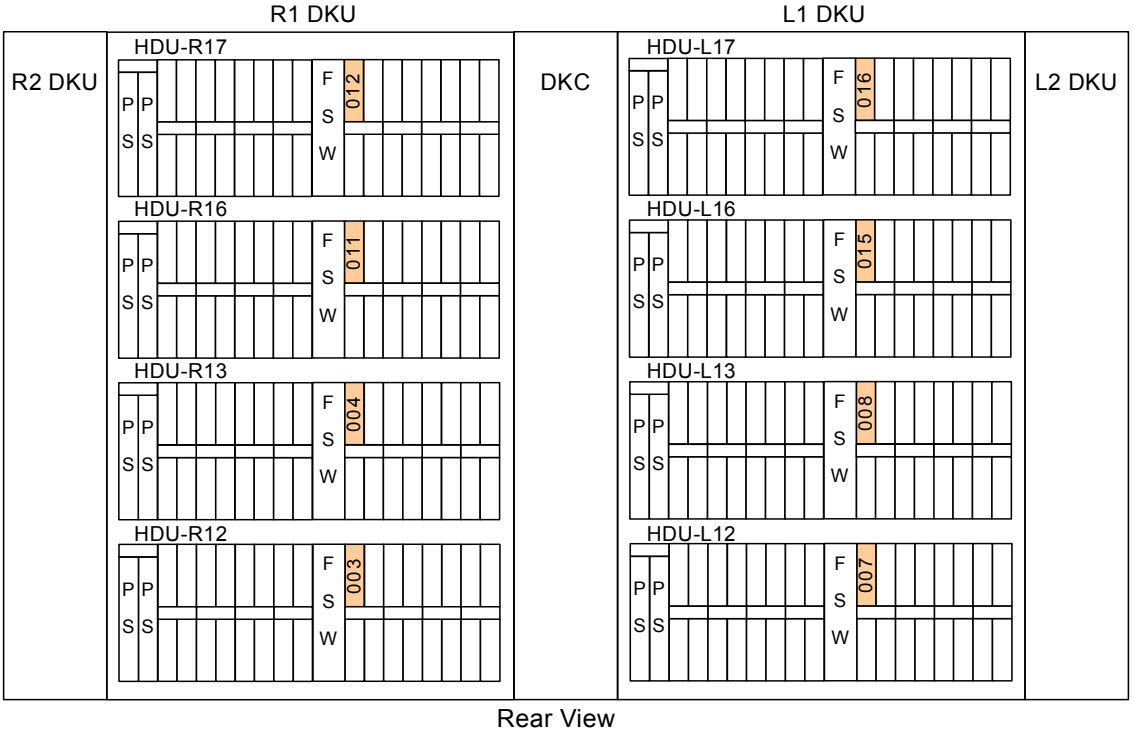
(iii) Spare HDD

No.	Model Number	Model Name	Data and Parity
1	DKU-F455I-36K1/72J1/72K1/146J1/146JS/146JM	1 HDD Canister	Spare Drive



Front View

001-016: Spare HDD canister installation order



Rear View

Fig. 4.1.11-9 Spare Drive Expansion Sequence

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5-2 Confirmation of Shut Down LED.

a. Confirm the Shut Down LED on the JMP PCB. (It should be RED.)

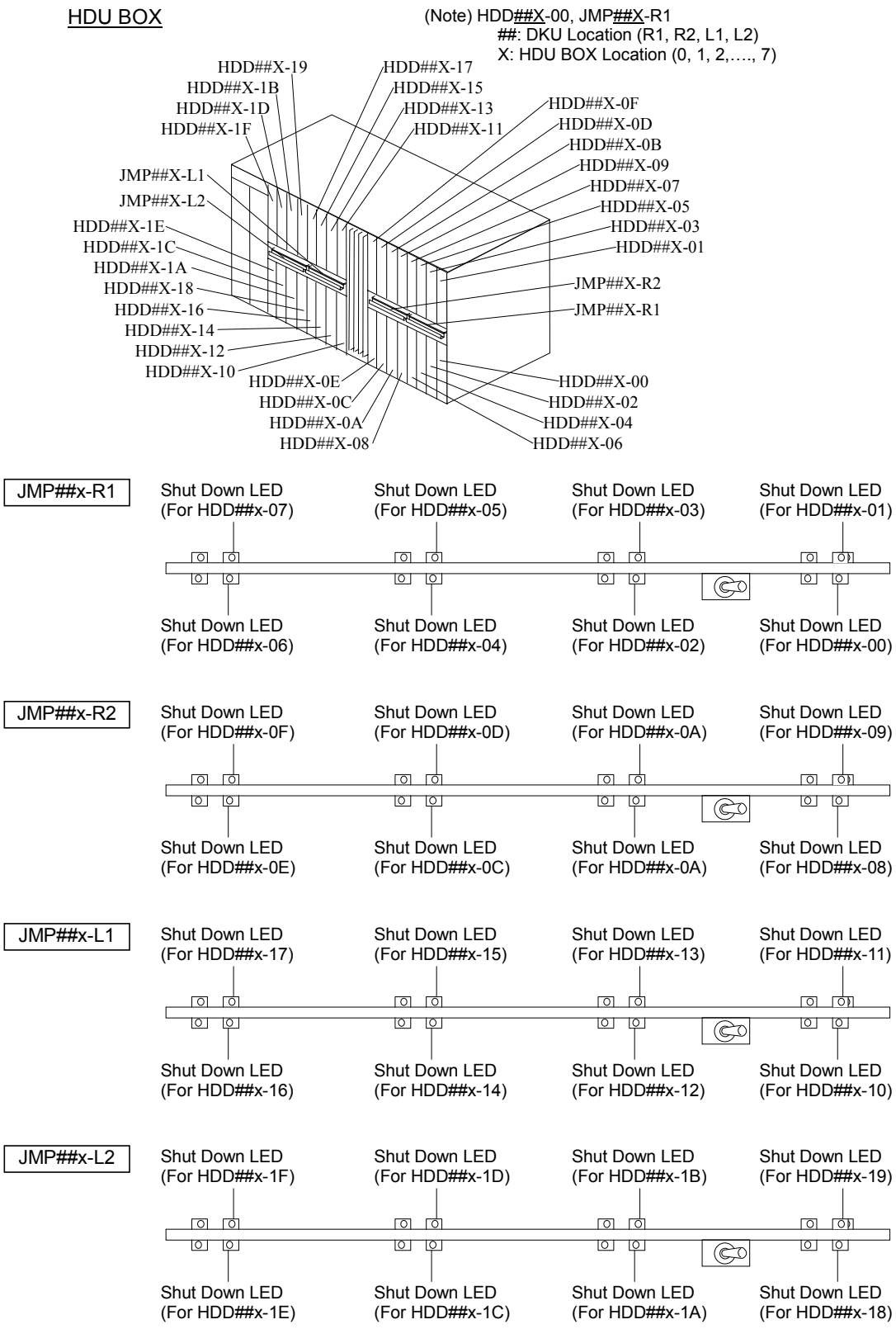

Fig. 4.1.11-10 Location of Shut Down LED

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5-3 De-installation of the HDD canister.

Notice:
Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

CAUTION

A system down may be caused by a removal of an HDD canister other than that to be removed. Make sure that it is the HDD canister to be removed.

a. After pushing up the stopper on the front side of the HDD canister, pull the handle toward you to remove the HDD canister.
b. Insert the dummy canister to the HDU Box.

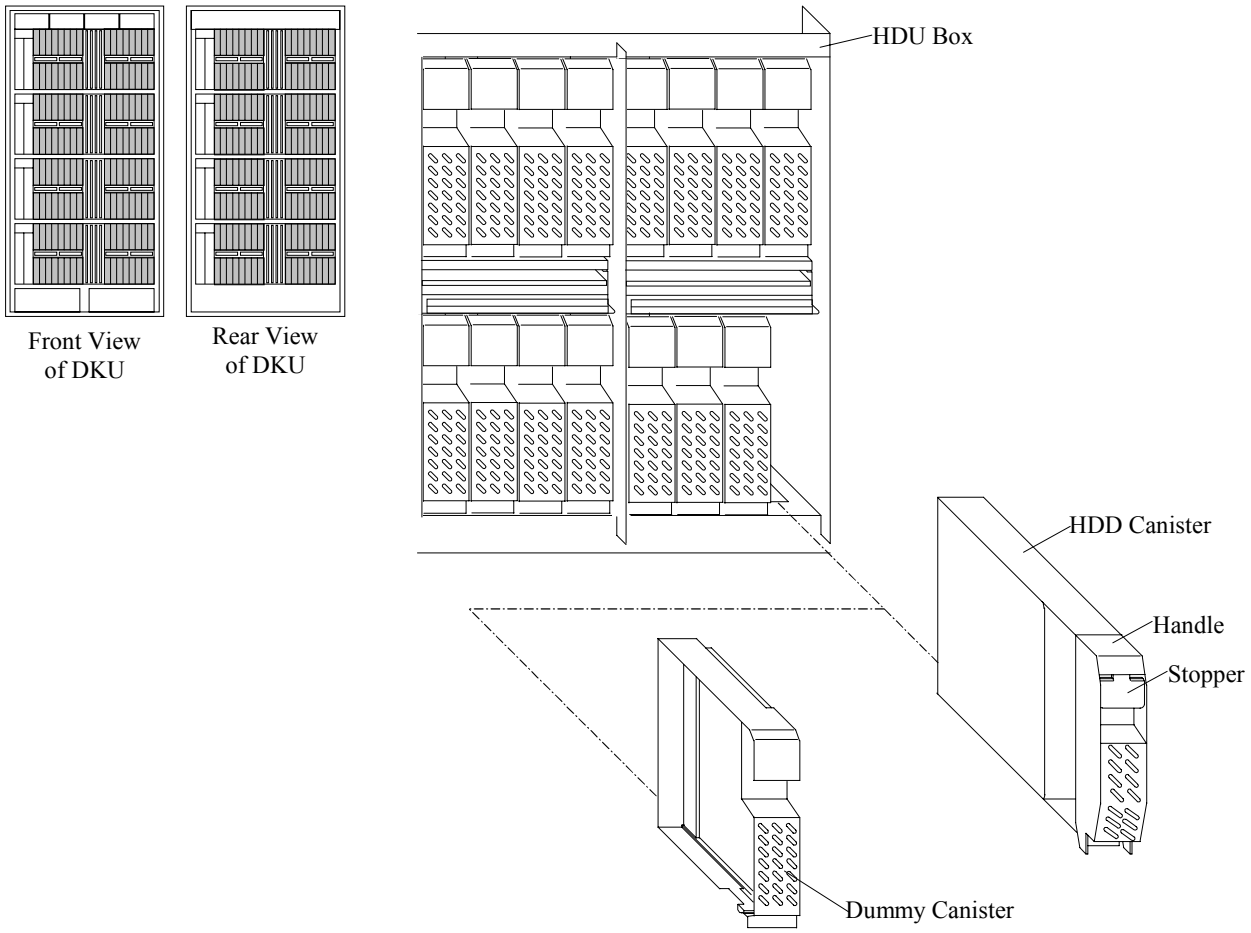

Fig. 4.1.11-11 De-Installation of HDD Canister

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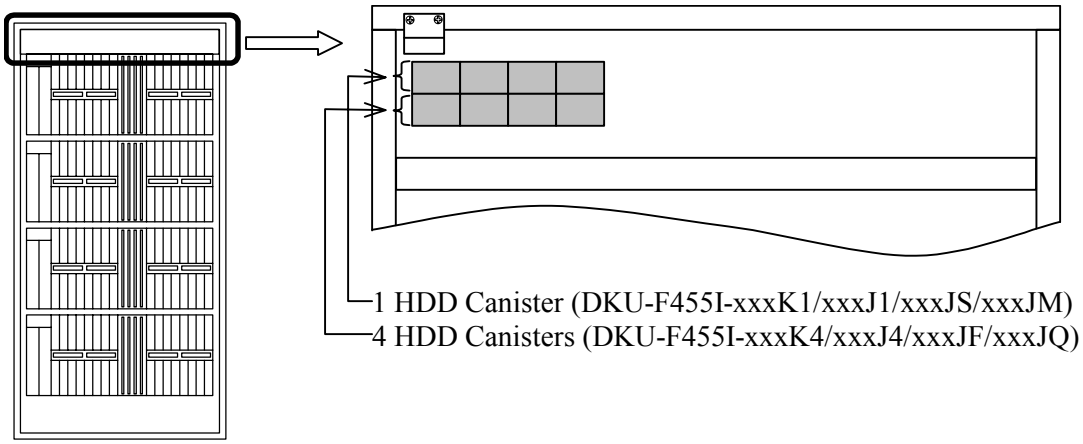
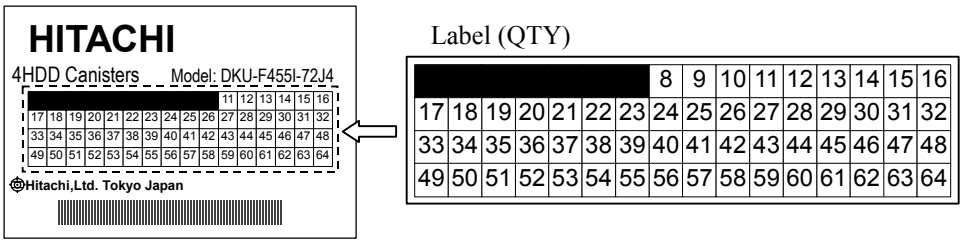
5-4 Change of the nameplate.

a. Affix a necessary portion of the Label (QTY)(Accessory of DKC; DWG No.3264290-1) in layers on the name plate and paint out numbers less than the number concerned with black oil felt pen.



[Example]

When DKU-F455I-72J4s are removed from 10 sets to 7sets



							8	9	10	11	12	13	14	15	16
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64

Fig. 4.1.11-12 Change of Nameplate

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6. De-Installation Procedure of DEV Interface Cable 2 (2/3) (DKU-F455I-EXC)

Caution:
When the DEV interface cable is removed from the FSW PCB, the power applied to the DKU to be removed is turned off automatically for each HDU Box from which the cable is removed.

Between HDU-R10-R17 and HDU-R20-R27

a. Disconnect the DEV interface cables from the FSW PCBs in the DKU-R1 frame referring to figures 4.1.11-13 and 4.1.11-14.

⚠ CAUTION

A serious failure occurs if a wrong cable or connector is removed.
Since a label bearing a connection destination is affixed on each cable or connector to be removed, work very carefully referring to it and the wiring diagram.

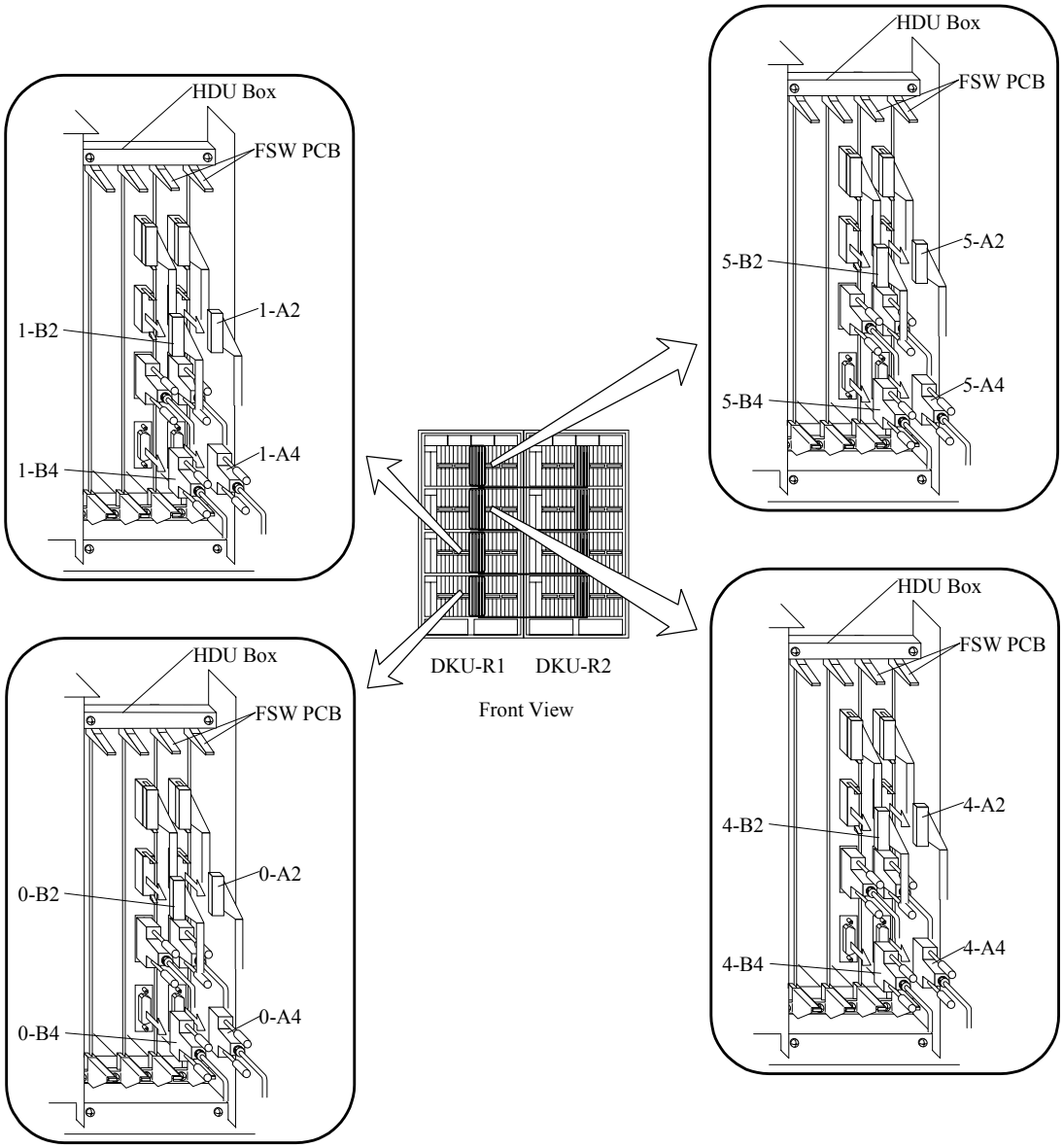

Fig. 4.1.11-13 Connection of the DEV Interface Cables

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⚠ CAUTION

A serious failure occurs if a wrong cable or connector is removed.
Since a label bearing a connection destination is affixed on each cable or connector to be removed, work very carefully referring to it and the wiring diagram.

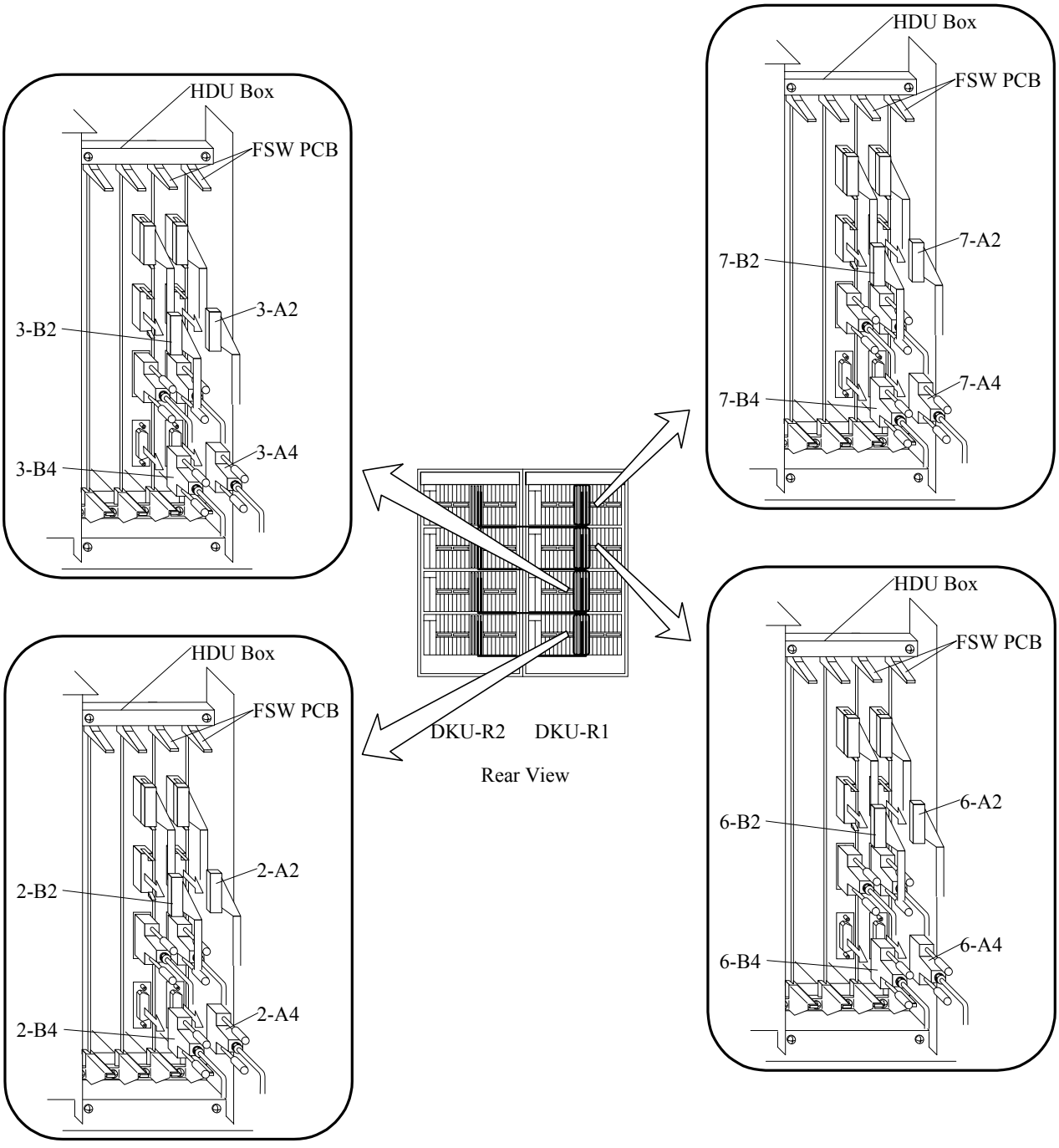

Fig. 4.1.11-14 Connection of the DEV Interface Cables

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Between HDU-L10-L17 and HDU-L20-L27

a. Disconnect the DEV interface cables from the FSW PCBs in the DKU-L1 frame referring to figures 4.1.11-15 and 4.1.11-16.

⚠ CAUTION

A serious failure occurs if a wrong cable or connector is removed.
Since a label bearing a connection destination is affixed on each cable or connector to be removed, work very carefully referring to it and the wiring diagram.

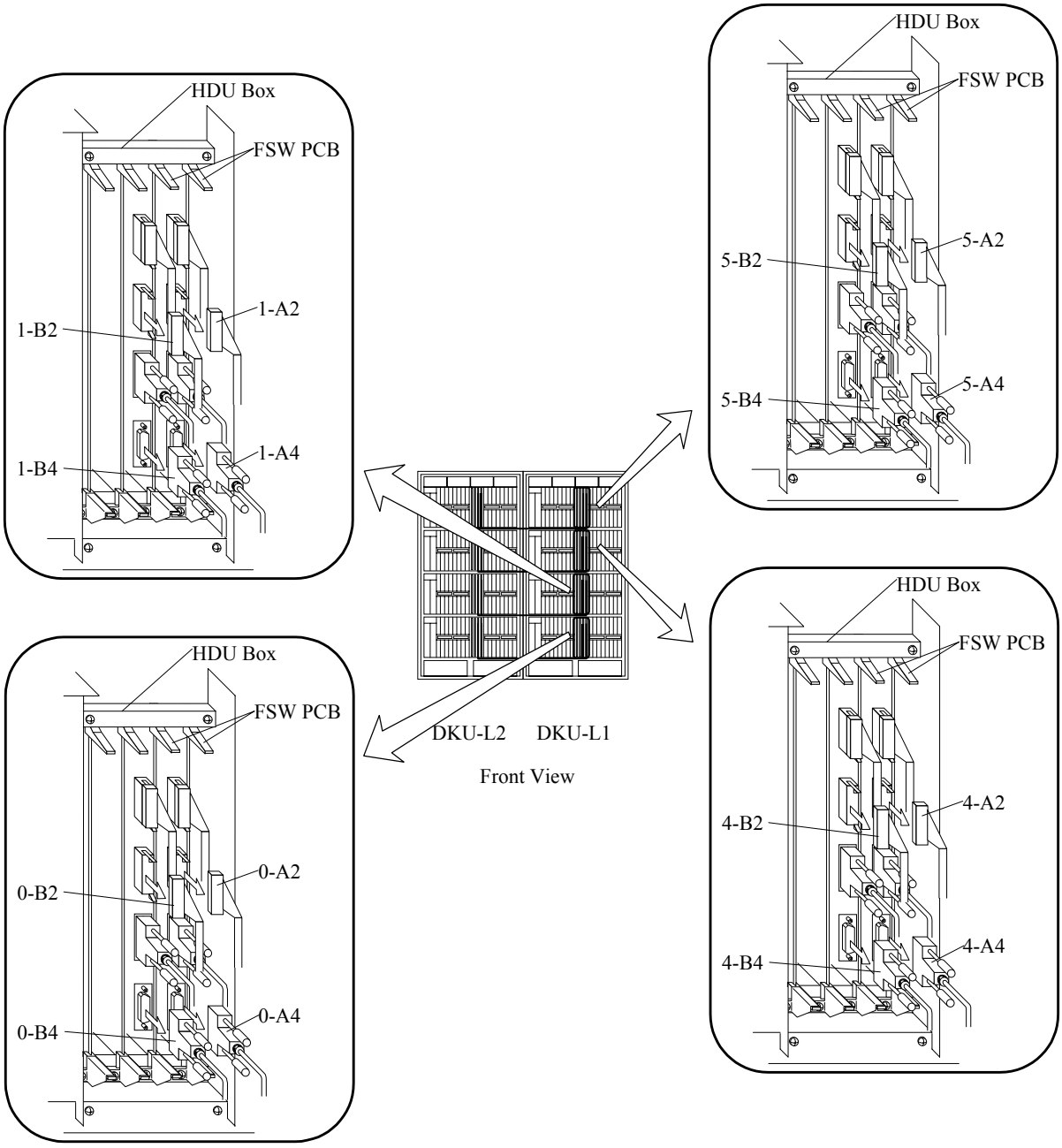

Fig. 4.1.11-15 Connection of the DEV Interface Cables

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⚠ CAUTION

A serious failure occurs if a wrong cable or connector is removed.
Since a label bearing a connection destination is affixed on each cable or connector to be removed, work very carefully referring to it and the wiring diagram.

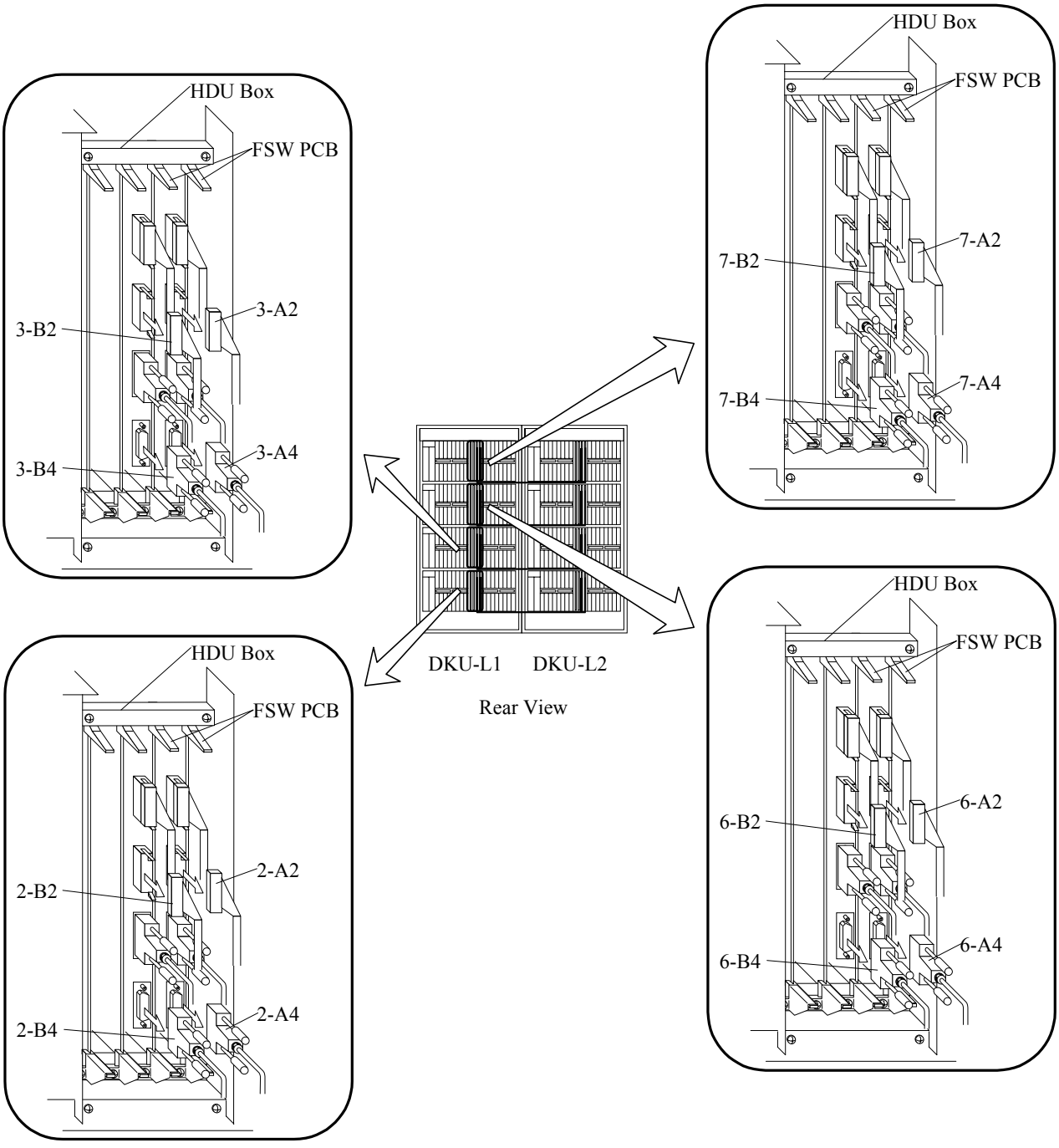

Fig. 4.1.11-16 Connection of the DEV Interface Cables

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7. De-Installation Procedure of DEV Interface Cable (2/3) (DKC-F460I-L1C)

a. Disconnect the DEV interface cables from the sub-edges on the disk adapter PCBs that are installed in locations Nos. D and K in the Rear Logic Box.

⚠ CAUTION

A serious failure occurs if a wrong cable or connector is removed.
Since a label bearing a connection destination is affixed on each cable or connector to be removed, work very carefully referring to it and the wiring diagram.

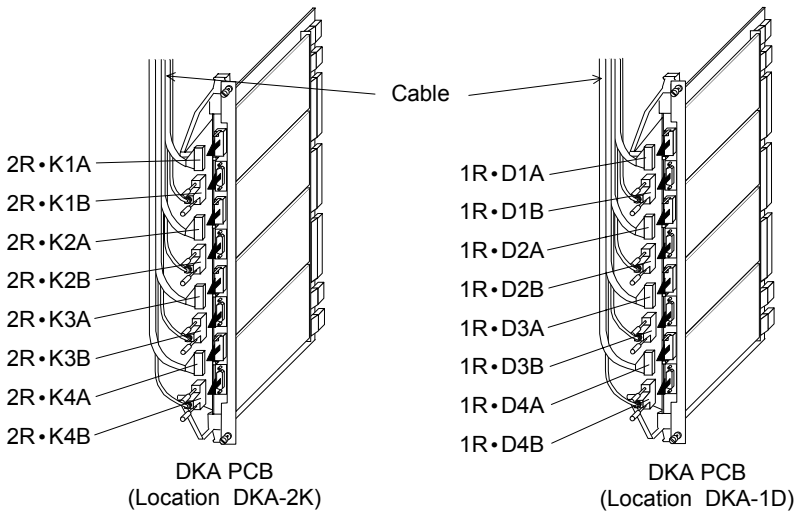

Fig. 4.1.11-17 DEV Interface Cable Disconnecting Diagram (Disk Adapter PCB Side)

b. Disconnect the DEV interface cables from the sub-edges on the disk adapter PCBs that are installed in locations Nos. E and L in the Rear Logic Box.

⚠ CAUTION

A serious failure occurs if a wrong cable or connector is removed.
Since a label bearing a connection destination is affixed on each cable or connector to be removed, work very carefully referring to it and the wiring diagram.

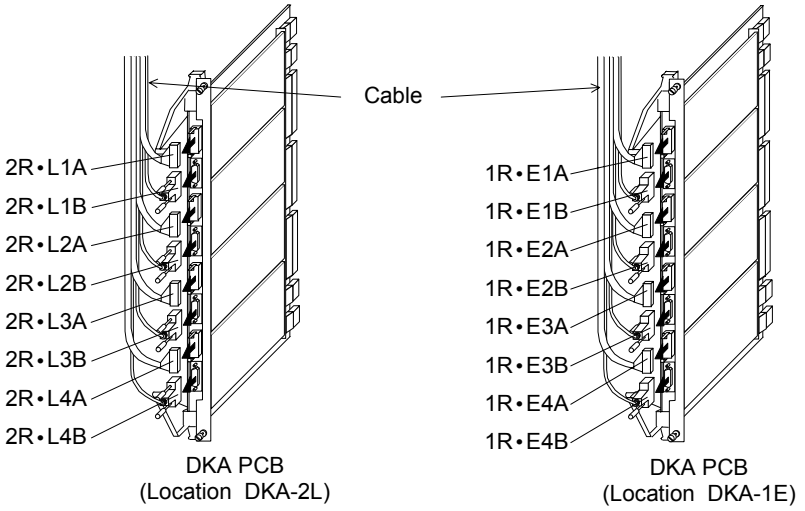

Fig. 4.1.11-18 DEV Interface Cable Disconnecting Diagram (Disk Adapter PCB Side)

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8. De-Installation Procedure of Disk Adapter

Note: Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

8-1 Confirmation of the Shut Down LED (Only Non-Disruptive Procedure)

a. Confirm that Shut Down LED is on. (Fig. 4.1.11-19) If the LED is not on, connect the Maintenance Jumper to the Shut Down Connector.

⚠ CAUTION

A system down may be caused if the Maintenance jumper is inserted in a PCB other than that to be removed. Make sure that it is the PCB to be removed.

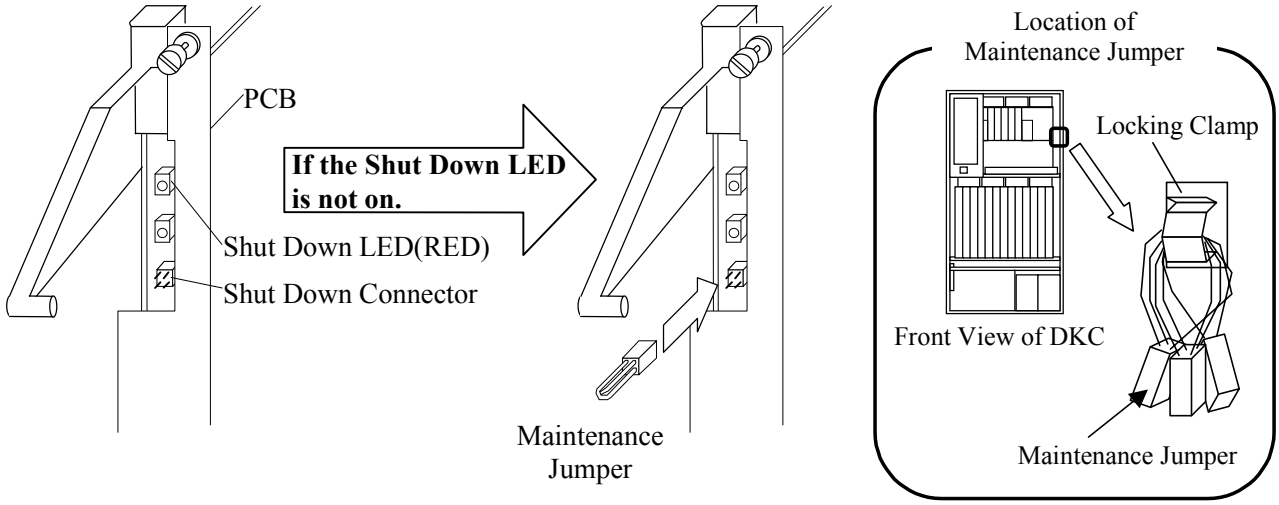

Fig. 4.1.11-19 Shut Down LED

Table 4.1.11-3 Removal Location (Rear of the unit)

Cluster	CL2							CL1				
Slot No.	M	L	K	J	H	G	F	E	D	C	B	A
Function	CSW	DKA	DKA	DKA	DKA	CACHE	CACHE	DKA	DKA	DKA	DKA	CSW
Location No.	CSW -2M	DKA -2L	DKA -2K	DKA -2J	DKA -2H	CACHE -2G	CACHE -2F	DKA -1E	DKA -1D	DKA -1C	DKA -1B	CSW -1A
Order of addition		Add.3	Add.2	Add.1	Basic			Add.3	Add.2	Add.1	Basic	
Number of DKAs set through the SVP		–	–	–	2			–	–	–	2	
		–	–	4				–	–	4		
		–	6					–	6			
		8						8				

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8-2 Disconnection of the DEV Interface cables

In case of Add.1

a. Disconnect the cable from the sub-edge of PCB.

⚠ CAUTION

A serious failure occurs if a wrong cable or connector is removed.
Since a label bearing a connection destination is affixed on each cable or connector to be removed, work very carefully referring to it and the wiring diagram.

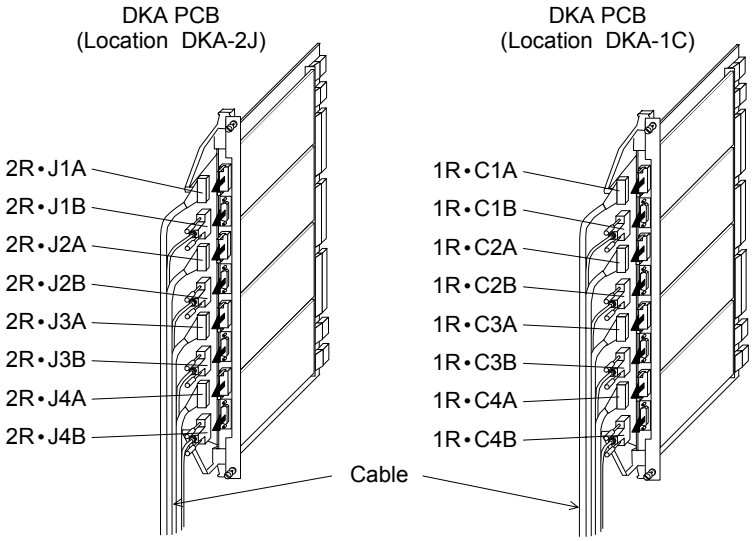

Fig. 4.1.11-20 Disconnection of DEV Interface Cables (Add.1)

In case of Add.2

a. Disconnect the cable from the sub-edge of PCB.

⚠ CAUTION

A serious failure occurs if a wrong cable or connector is removed.
Since a label bearing a connection destination is affixed on each cable or connector to be removed, work very carefully referring to it and the wiring diagram.

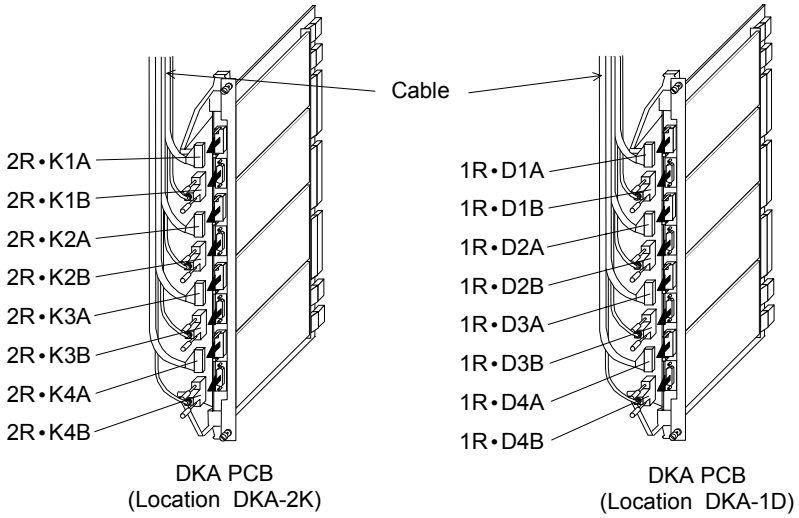

Fig. 4.1.11-21 Disconnection of DEV Interface Cables (Add.2)

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In case of Add.3

a. Disconnect the cable from the sub-edge of PCB.

⚠ CAUTION

A serious failure occurs if a wrong cable or connector is removed.
Since a label bearing a connection destination is affixed on each cable or connector to be removed, work very carefully referring to it and the wiring diagram.

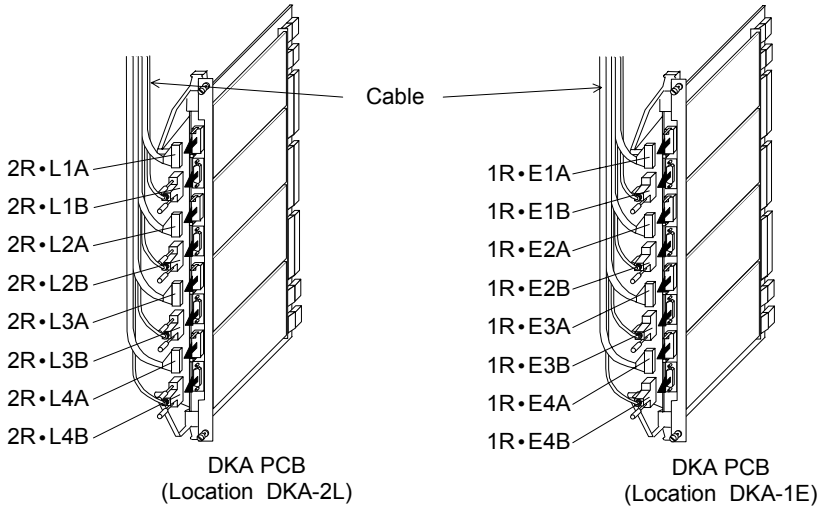

Fig.4.1.11-22 Disconnection of DEV Interface Cable (Add.3)

8-3 Removal of the PCBs

a. Remove the two screws and remove the PCBs from the correct locations in the Rear Logic Box referring to Fig. 4.1.11-23.
b. Attach the dummy plates referring to Fig. 4.1.11-24.

⚠ CAUTION

A serious failure occurs if a wrong PCB is removed.
Remove the PCB after making sure that the Shut Down LED is on.

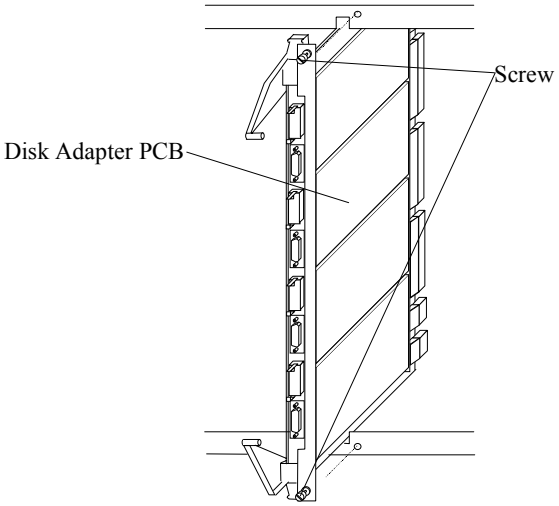

Fig. 4.1.11-23 Removal of PCB

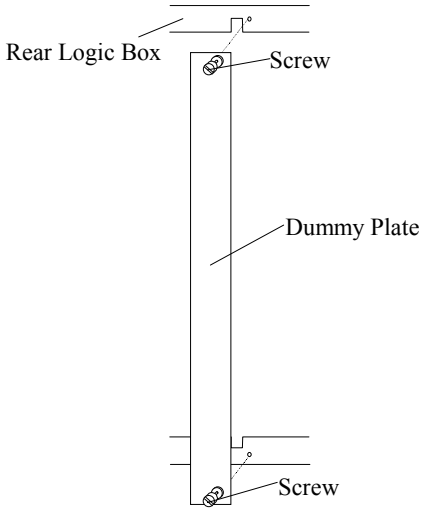

Fig. 4.1.11-24 Attachment of Dummy Plate

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8-4 Removal of the Nameplate

a. Remove the nameplate from the Rear Logic Box cover.

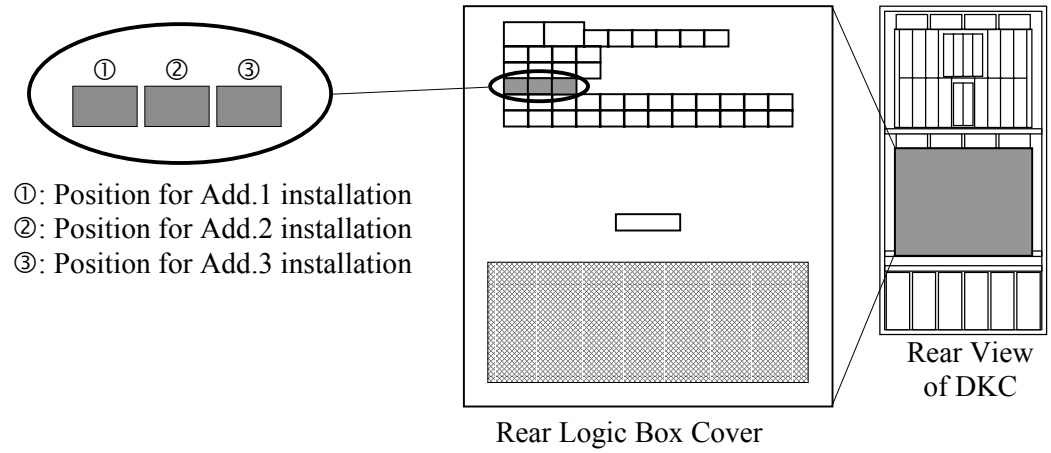

Fig. 4.1.11-25 Removal of Nameplate

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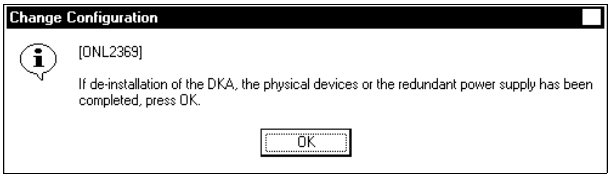
9. SVP post procedure

1.

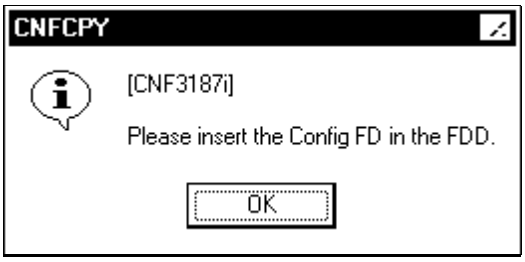
Select (CL) [OK] in response to "If de-installation of the DKA, the physical devices or the redundant power supply has been completed, press OK." shown in the right figure.



2. <Check the end of de-installation procedure>
"Renewal process has completed. Please check subsystem status." shown in the right figure displayed. Select (CL) [OK] in response to this message.

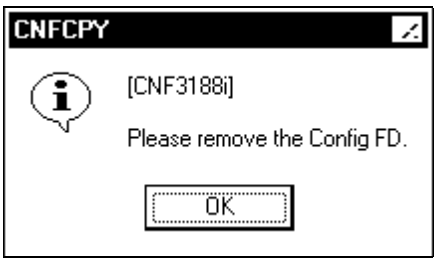
3.

"Reading subsystem configuration data..." is displayed.
"Please insert the Config FD in the FDD." is displayed.
Insert the configuration FD into FDD, select (CL) [OK].



4.

When this procedure is completed, message "Please remove the Config FD." is displayed.
Remove the FD, select (CL) [OK].



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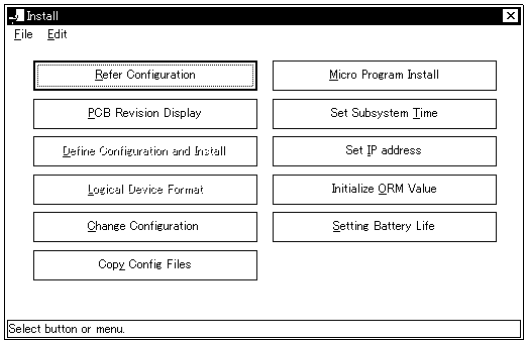
5.

After the procedure is completed, return to ‘Install’.
Select (CL) [File]-[Exit].



6. <Mode Change>
Change the mode to View Mode.

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10. De-Installation Procedure of DEV Interface Cable 2 (3/3) (DKU-F455I-EXC)

Between HDU-R10-R17 and HDU-R20-R27

a. Disconnect the DEV interface cables from the FSW PCBs in the DKU-R2 frame referring to Fig. 4.1.11-26 through Fig. 4.1.11-29.
b. Take out the DEV interface cable, which has been removed from the FSW PCB, from the DKU frame.

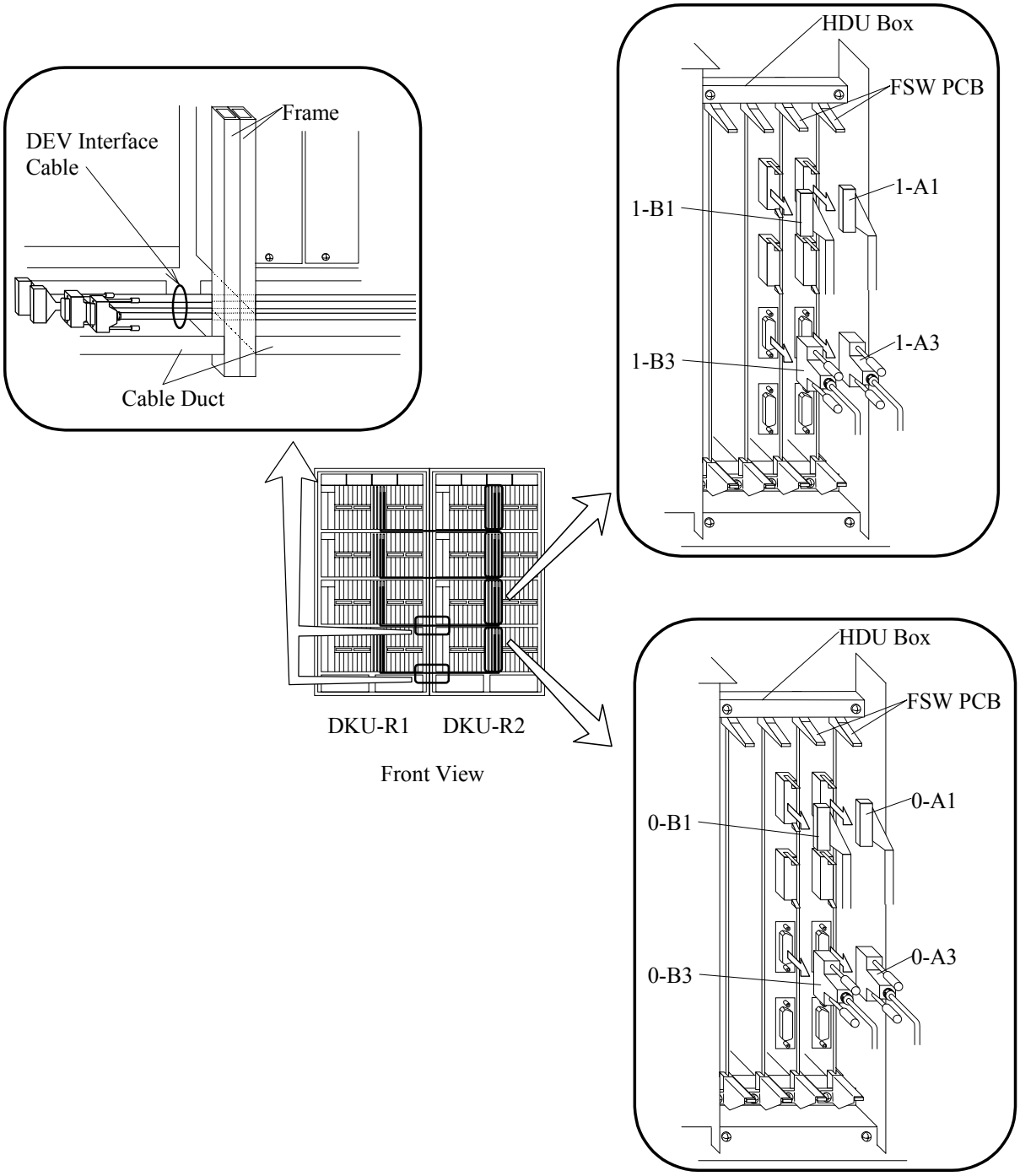

Fig. 4.1.11-26 Disconnection of the DEV Interface Cables

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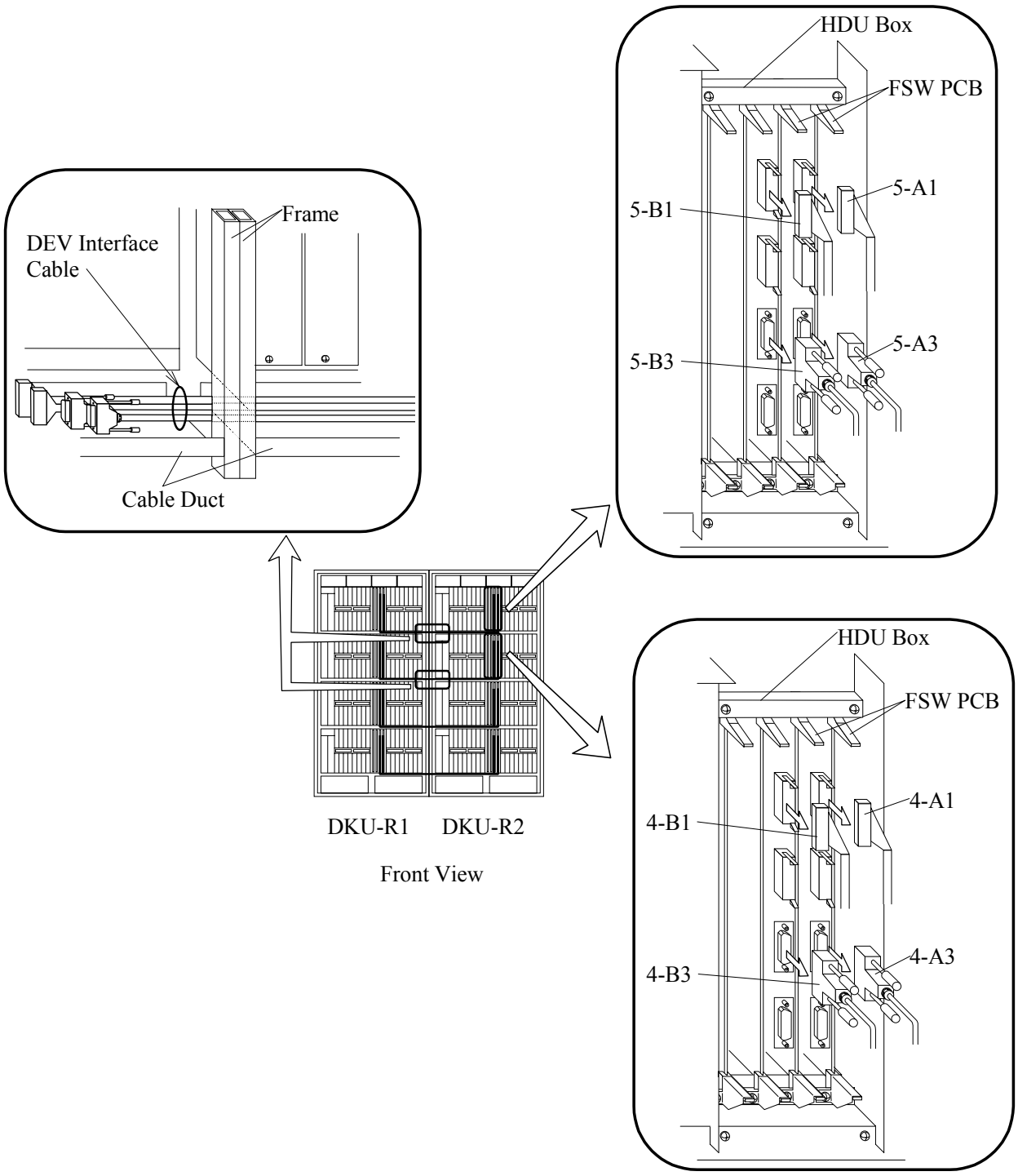

Fig. 4.1.11-27 Disconnection of the DEV Interface Cables

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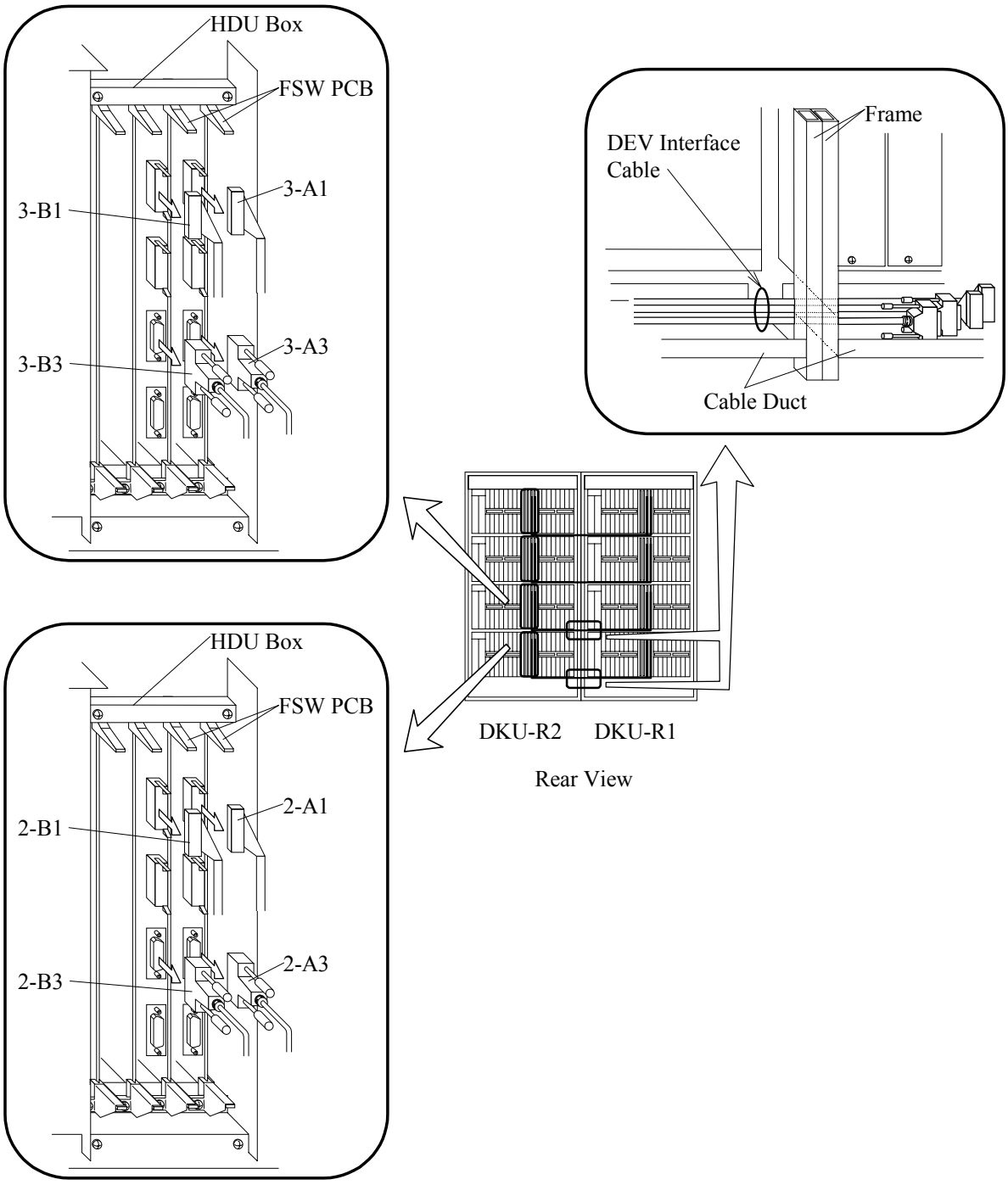

Fig. 4.1.11-28 Disconnection of the DEV Interface Cables

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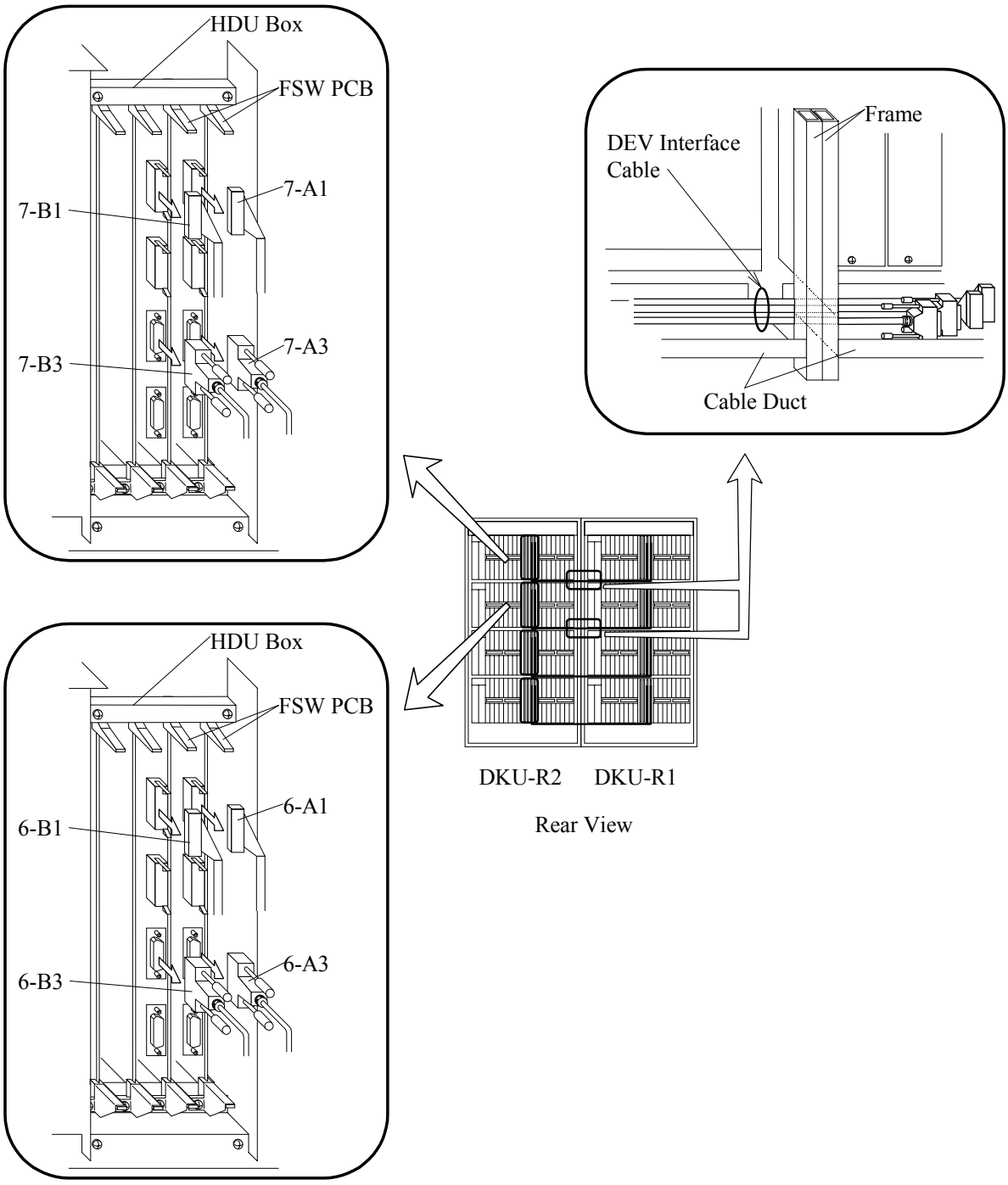

Fig. 4.1.11-29 Disconnection of the DEV Interface Cables

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c. Attach the cable covers with the screws.

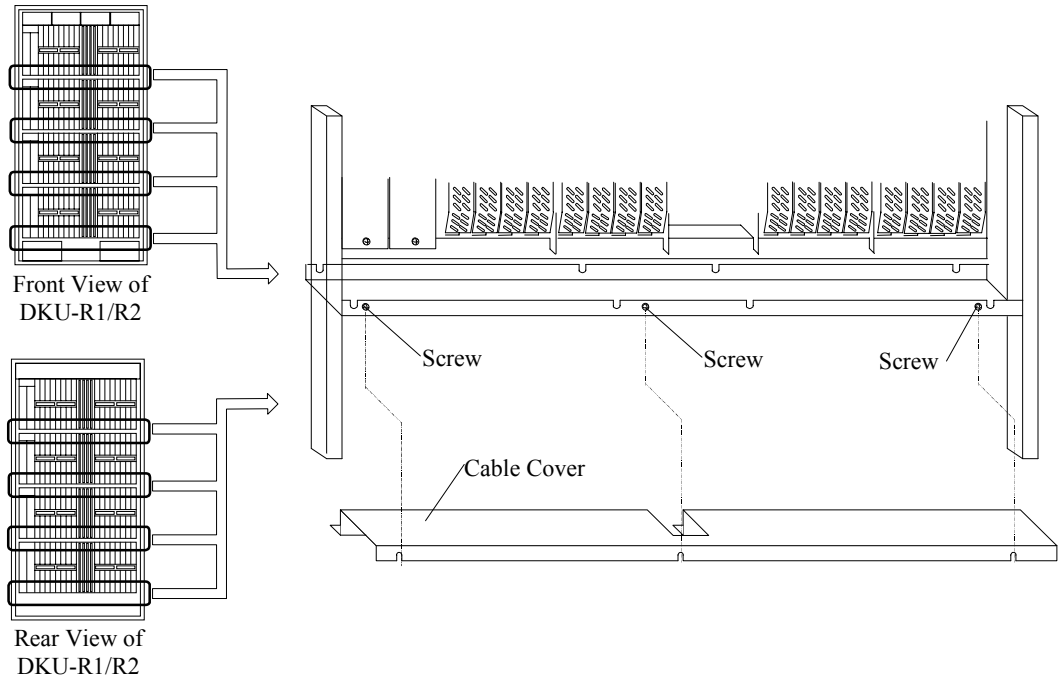

Fig. 4.1.11-30 Attachment of the Cable Cover

d. Attach the cable covers with the screws.

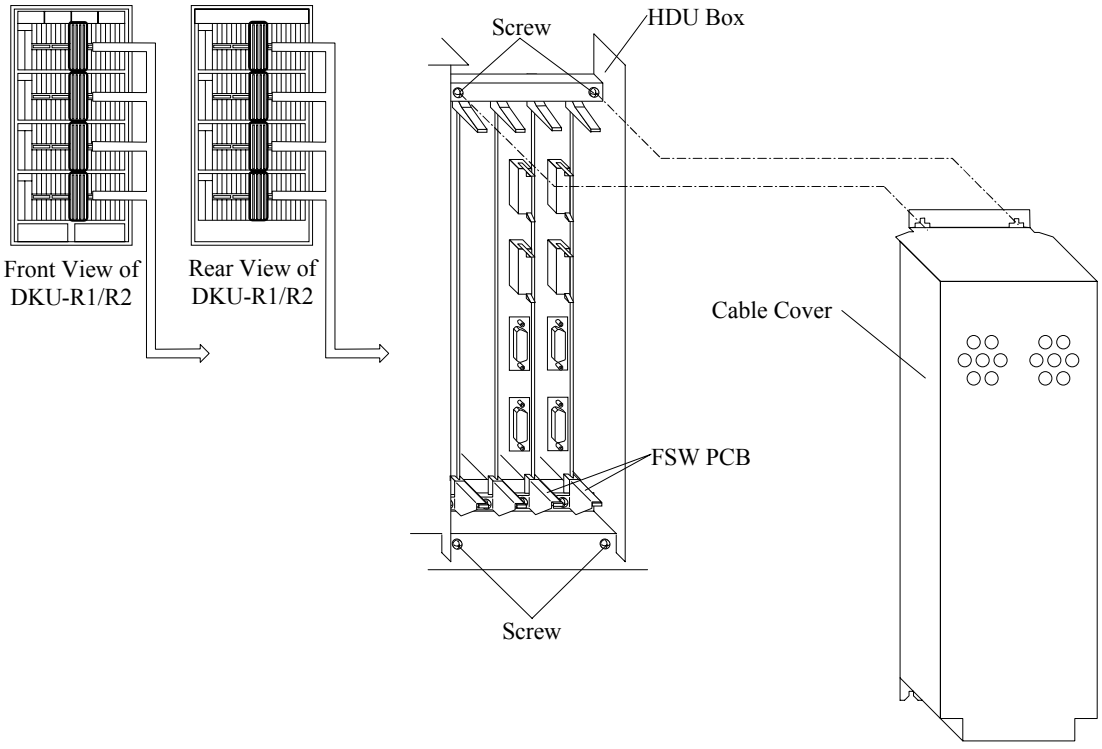

Fig. 4.1.11-31 Attachment of the Cable Cover

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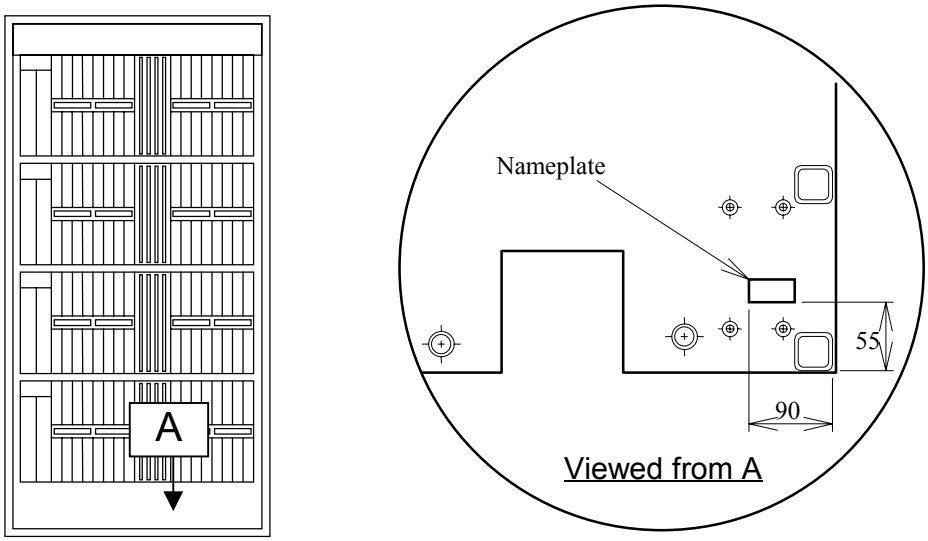
e. Remove the nameplate from the R2 DKU frame.



Rear View of
R2 DKU

Fig. 4.1.11-32 Removal of the Nameplate

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Between HDU-L10-L17 and HDU-L20-L27

a. Disconnect the DEV interface cables from the FSW PCBs in the DKU-L2 frame referring to Fig. 4.1.11-33 through Fig. 4.1.11-36.
b. Take out the DEV interface cable, which has been removed from the FSW PCB, from the DKU frame.

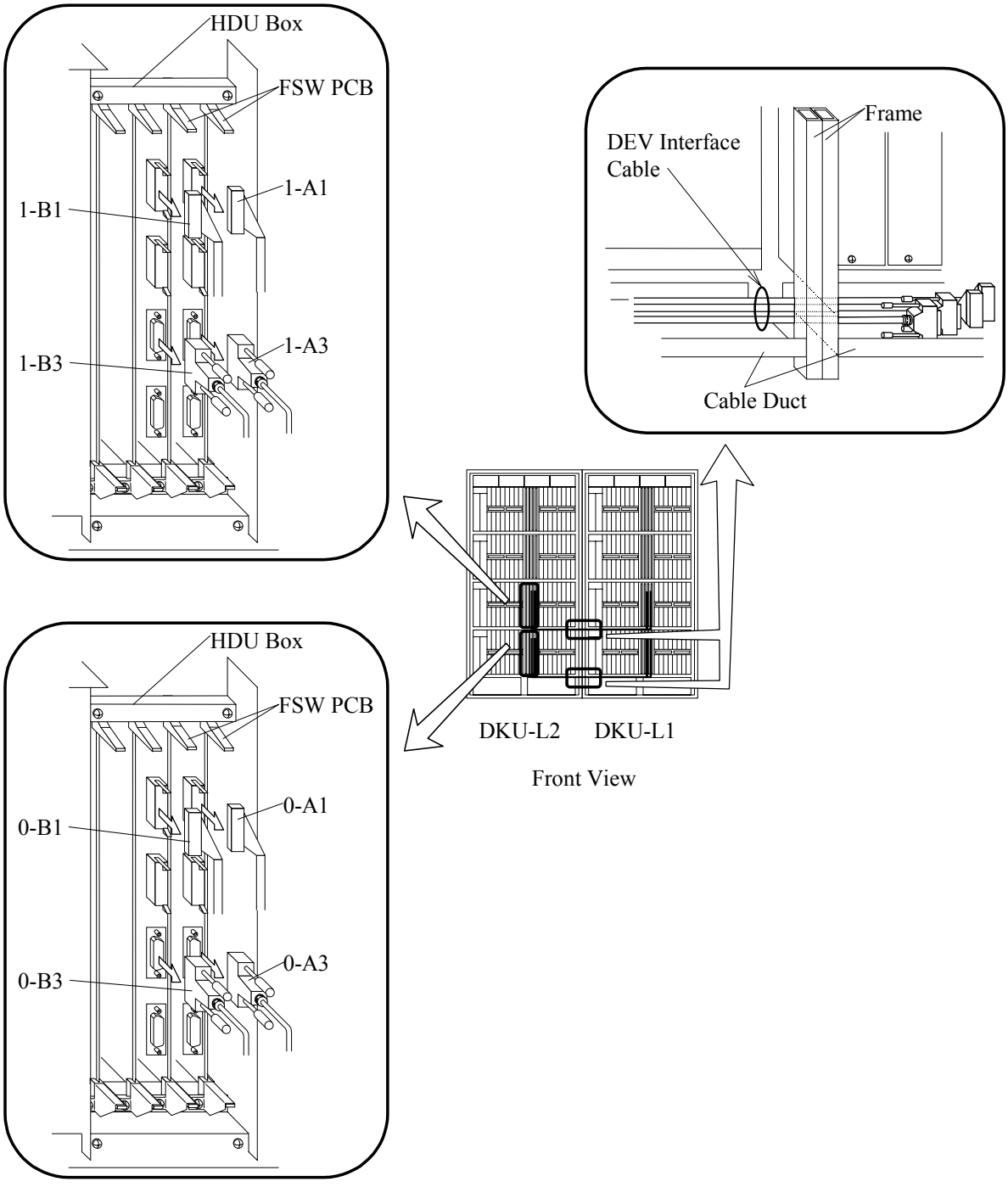

Fig. 4.1.11-33 Disconnection of the DEV Interface Cables

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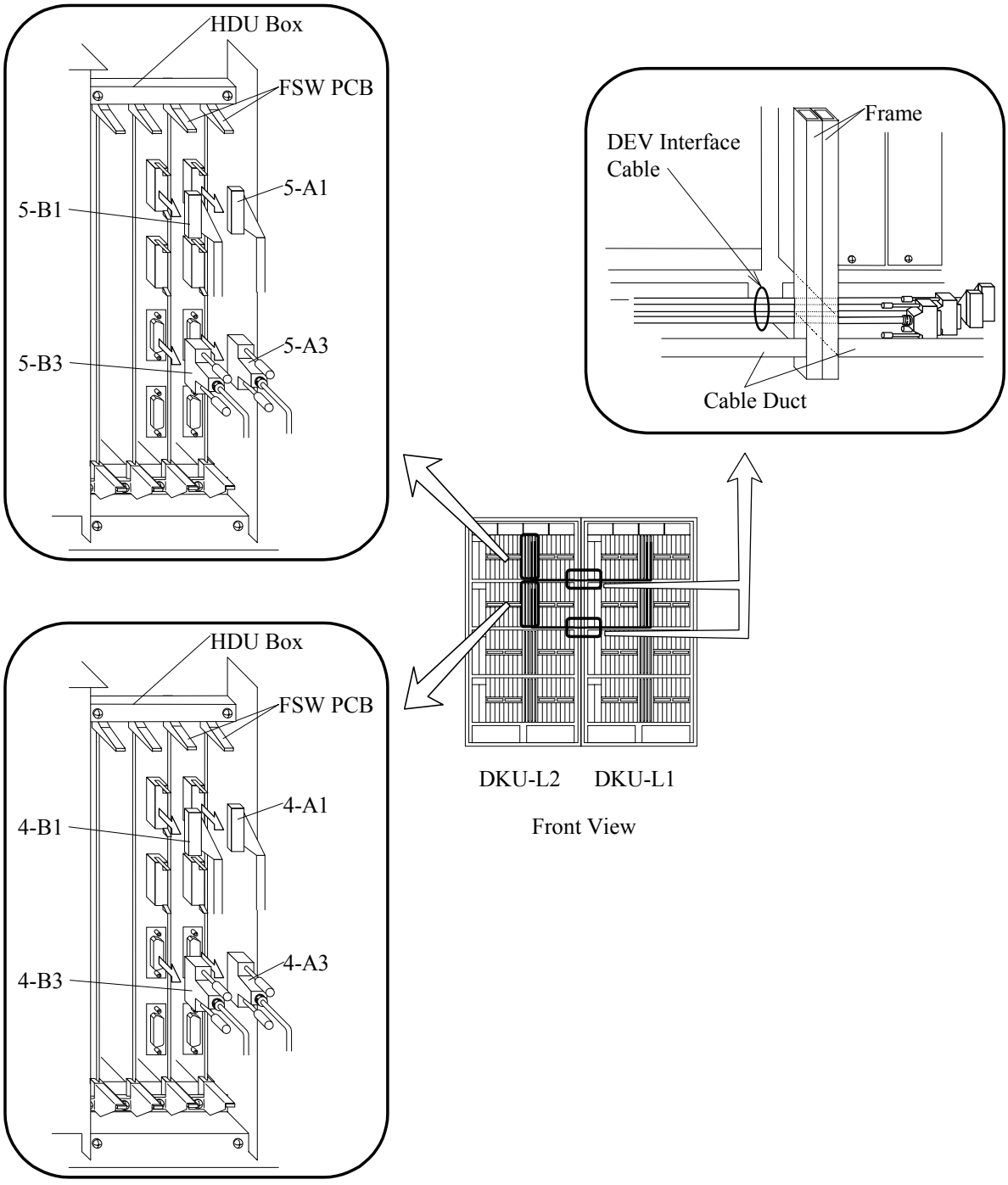

Fig. 4.1.11-34 Disconnection of the DEV Interface Cables

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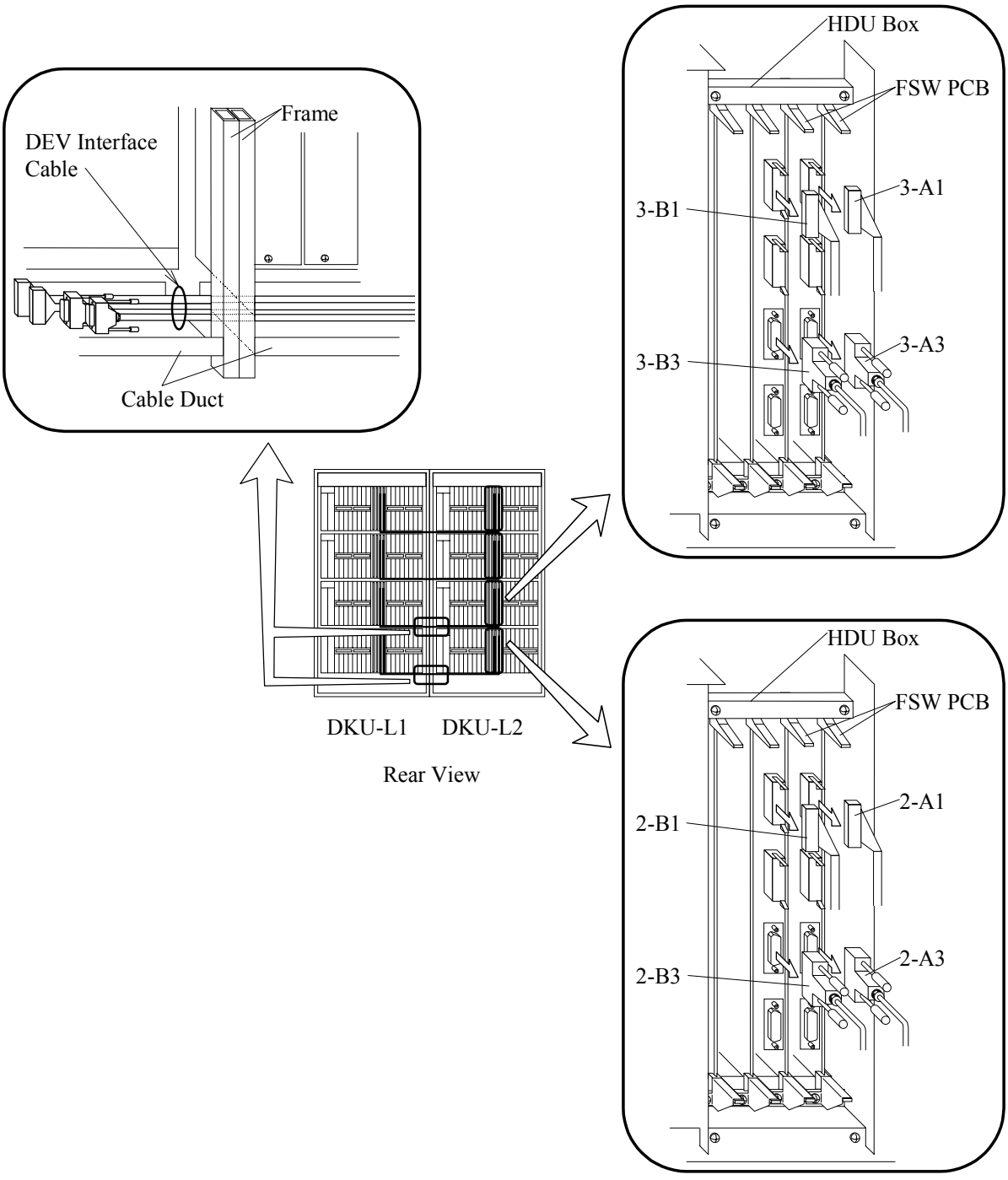

Fig. 4.1.11-35 Disconnection of the DEV Interface Cables

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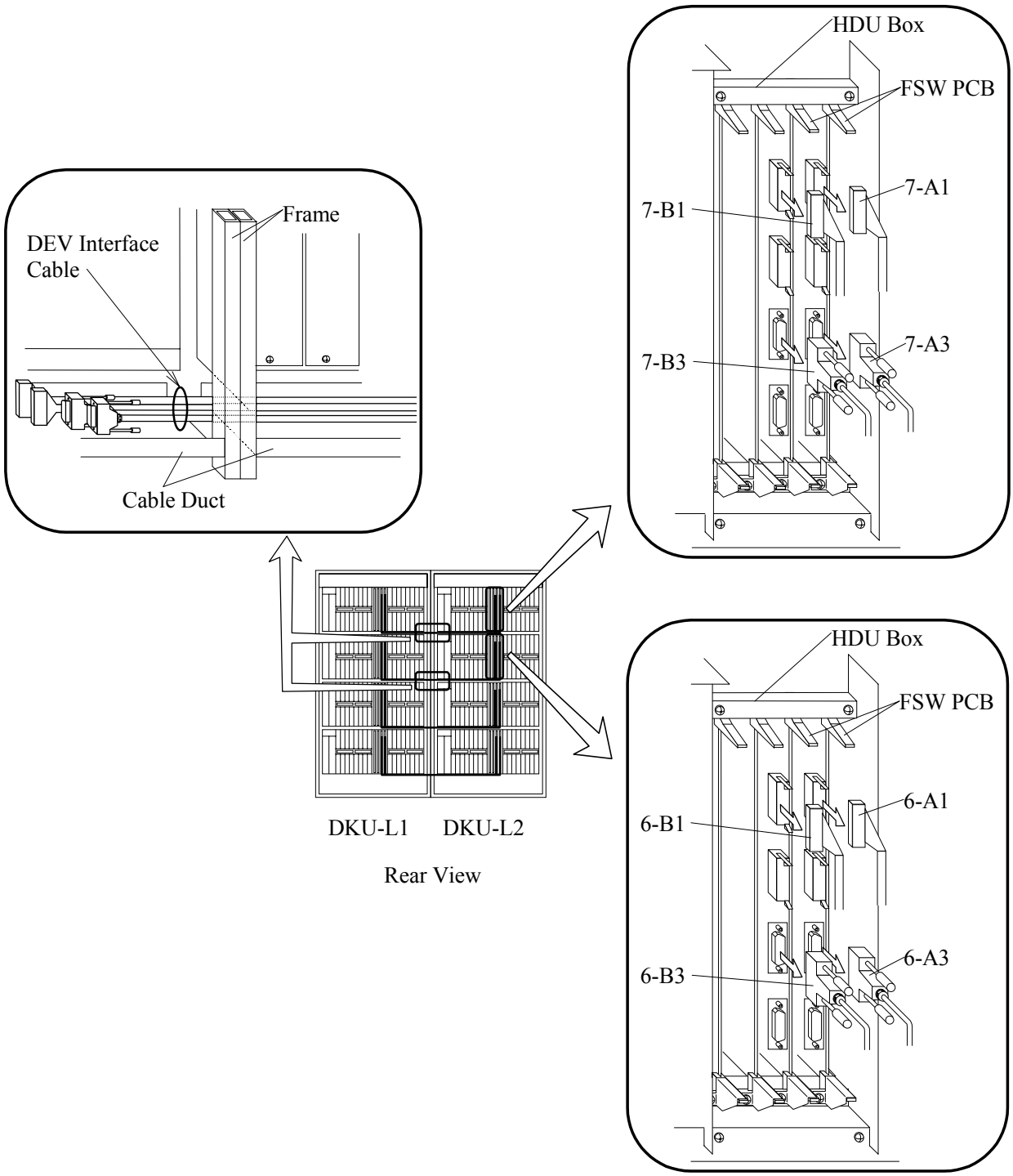

Fig. 4.1.11-36 Disconnection of the DEV Interface Cables

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c. Attach the cable covers with the screws.

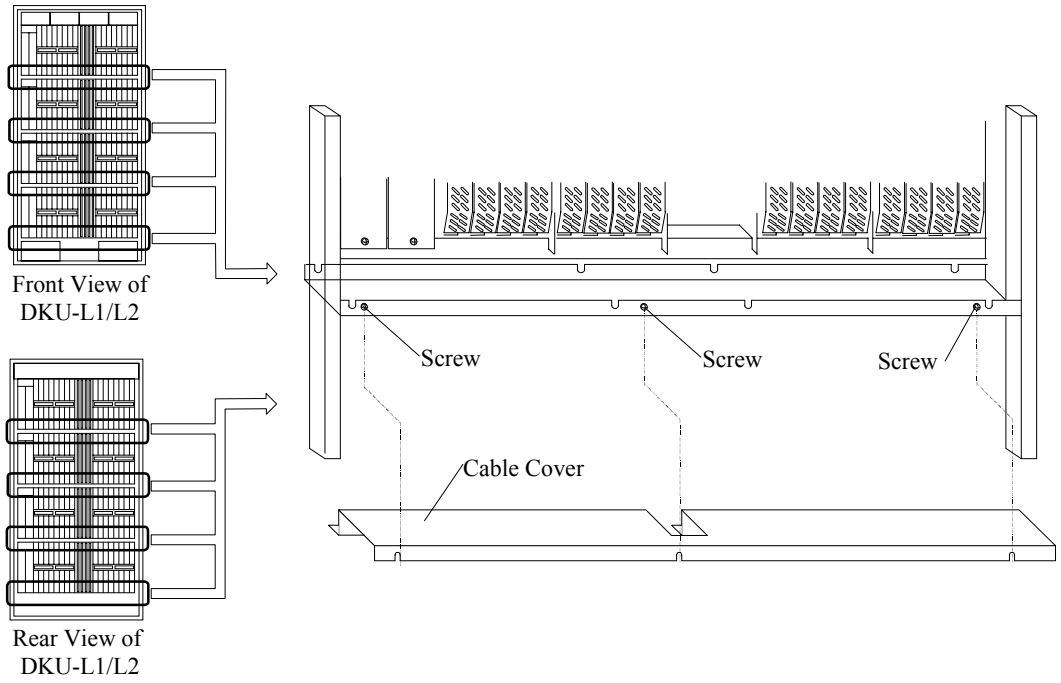

Fig. 4.1.11-37 Attachment of the Cable Cover

d. Attach the cable covers with the screws.

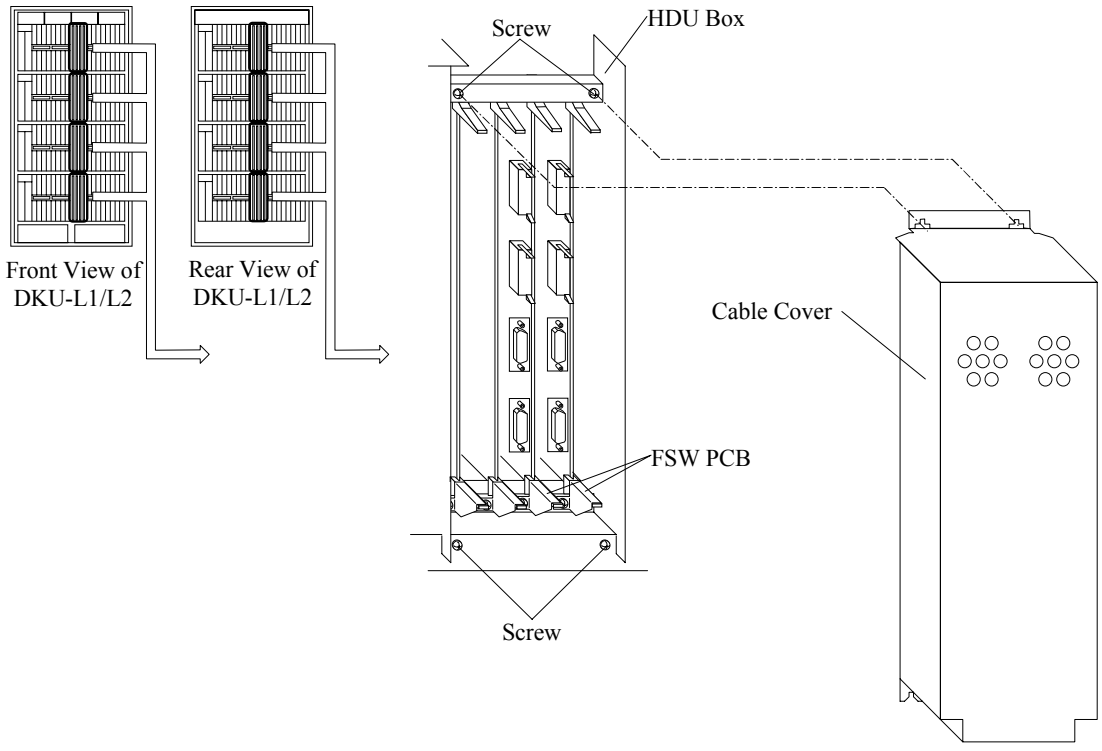

Fig. 4.1.11-38 Attachment of the Cable Cover

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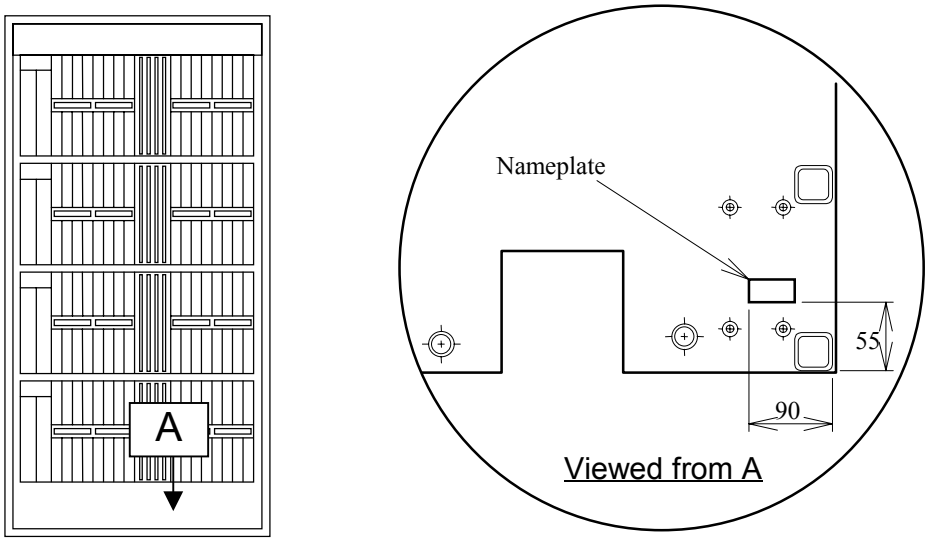
e. Remove the nameplate from the DKU-L2 frame.



Rear View of
DKU-L2

Fig. 4.1.11-39 Removal of the Nameplate

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11. De-Installation Procedure of DEV Interface Cable 1 (3/3) (DKC-F460I-L1C)

a. Refer to Fig. 4.1.11-40 and Fig. 4.1.11-41. Connect the DEV interface cables to the sub-edges on the FSW PCBs in the HDU box.
b. Take out the DEV interface cable, which has been removed from the FSW PCB, from the DKU frame.

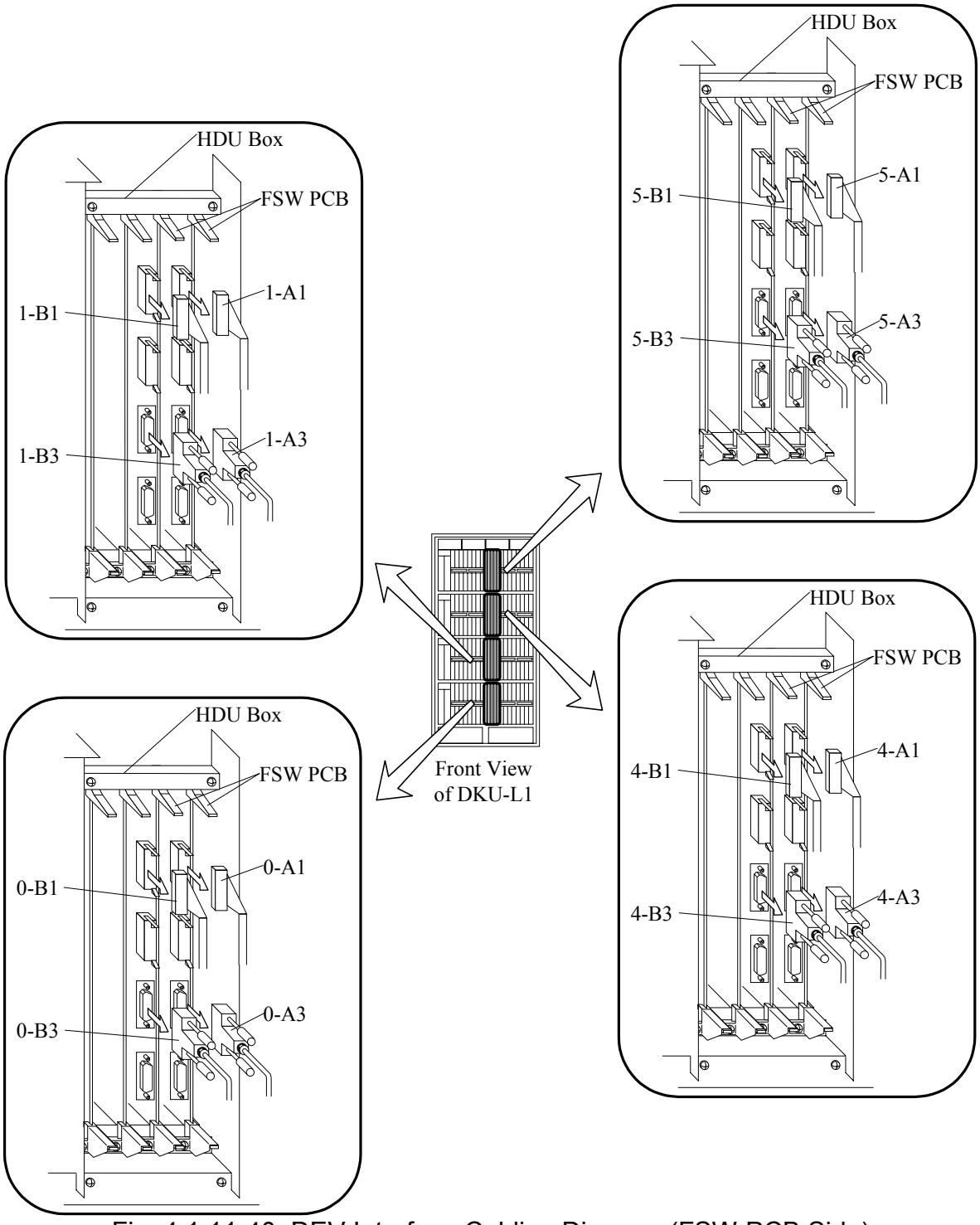

Fig. 4.1.11-40 DEV Interface Cabling Diagram (FSW PCB Side)

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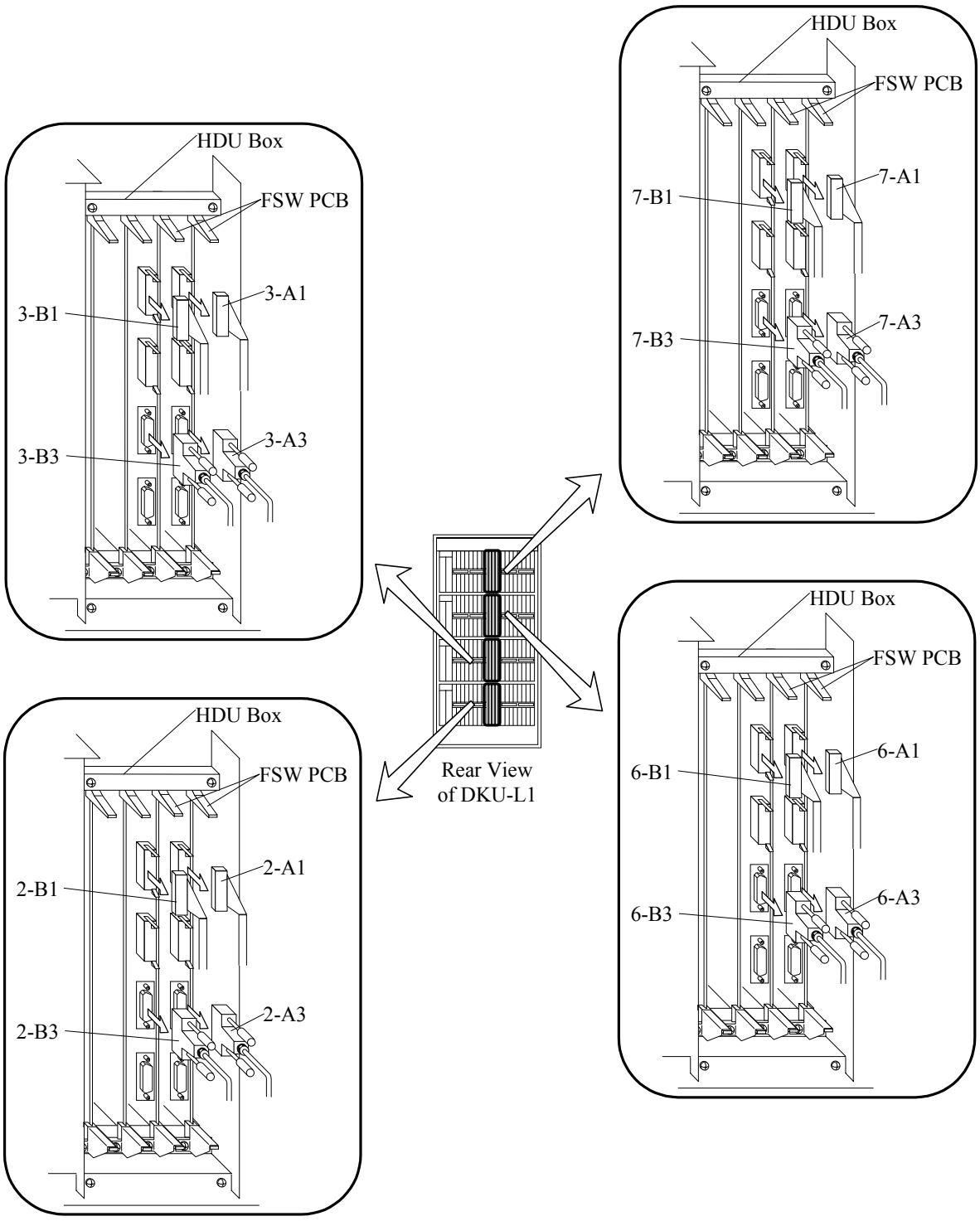

Fig. 4.1.11-41 DEV Interface Cabling Diagram (FSW PCB Side)

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c. Attach the cable covers with the screws.

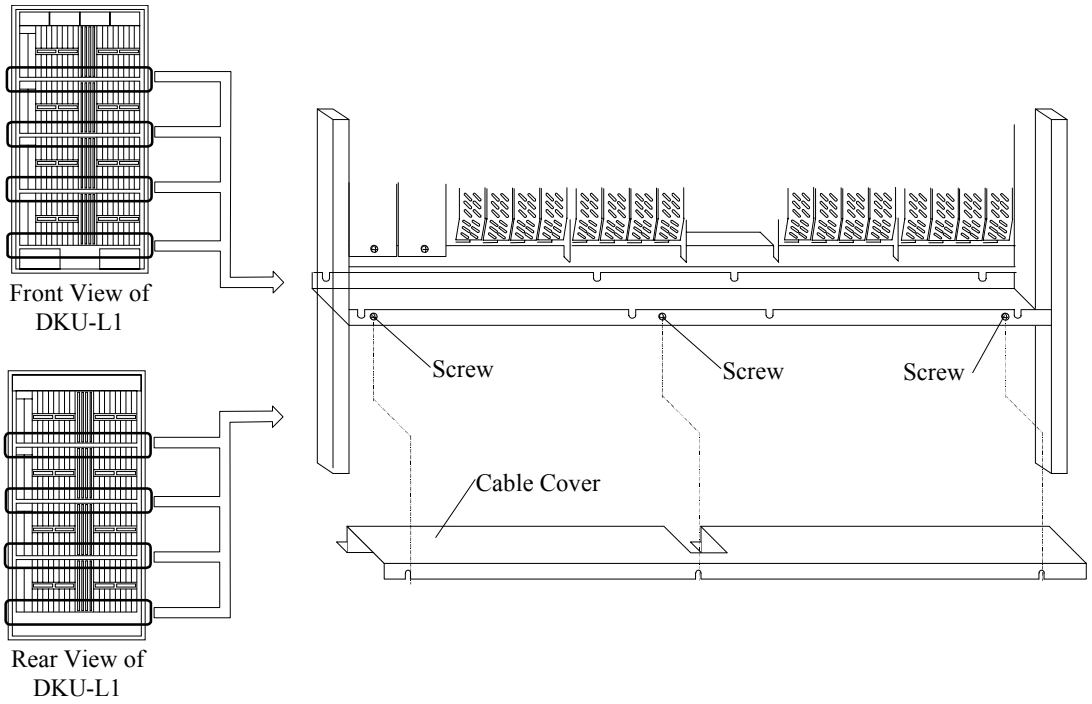

Fig. 4.1.11-42 Attachment of Cable Covers

d. Attach the cable covers with the screws.

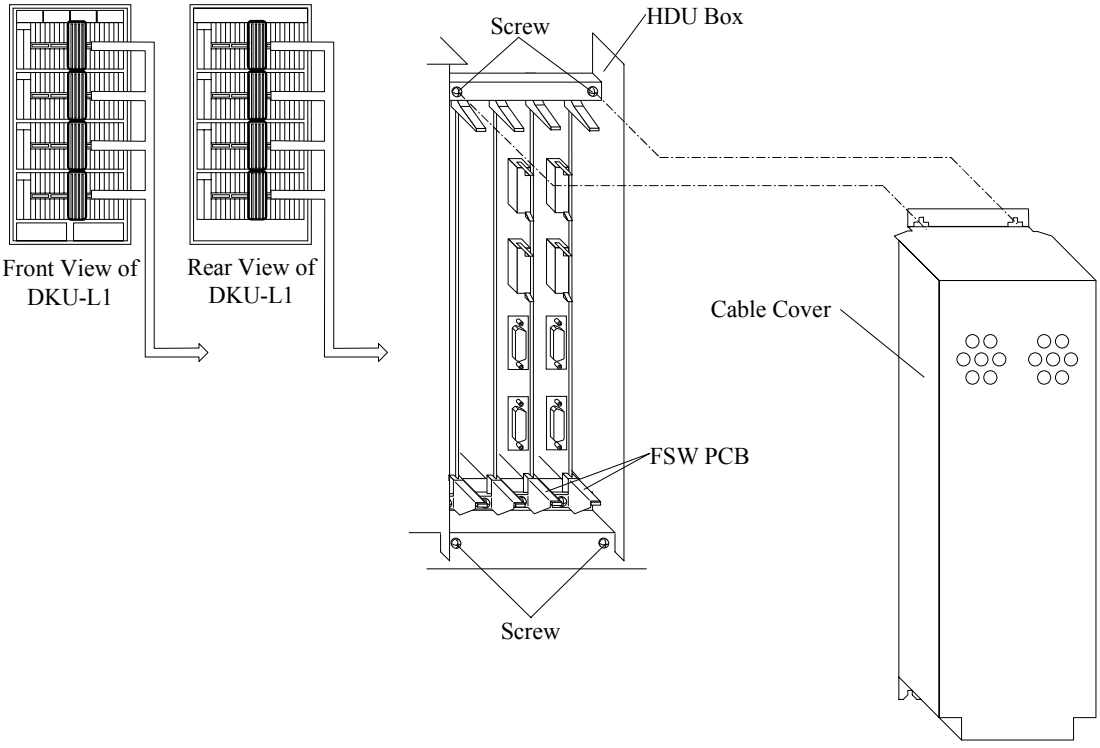

Fig. 4.1.11-43 Attachment of Cable Covers

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e. Remove the nameplate from the cover.

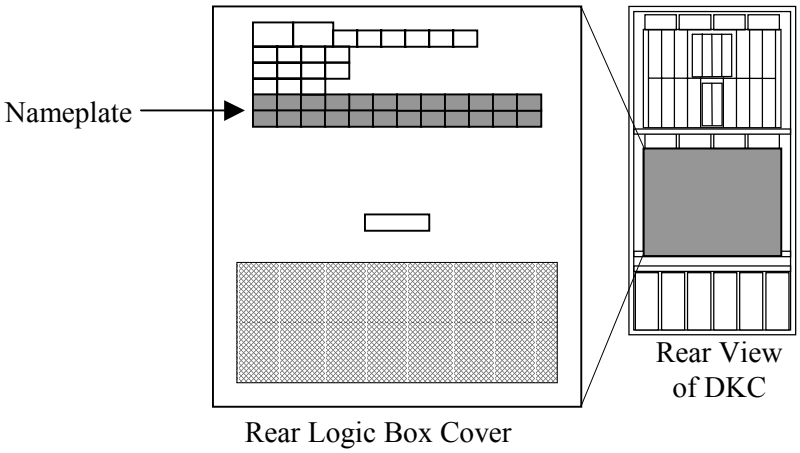

Fig. 4.1.11-44 Removal of Nameplate

f. Return to the work table (INST02-60) and perform rest of the works.

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4.2 De-Installation of Disk Unit (DKU455I-18)

4.2.1 De-Installation Procedure of Disk Unit

Caution:
Perform this removal work in the state in which the DKU frame and all the parts in the DKU frame have been removed from the DKC configuration after the work No.1 explained on page INST02-30 has been done. The system goes down if the DKU frame that should have been removed is left in the DKC configuration.

1. Power OFF of Disk Unit being De-Installed
   a. Turn off the circuit breaker (CB101) on the AC Boxes of the Disk Unit.

Table 4.2.1-1 De-Installed Disk Unit

No.	De-Installed Disk Unit	AC Box	Remarks
1	DKU-L2	AC BOX-L20, -L21	
2	DKU-L1	AC BOX-L10, -L11	
3	DKU-R2	AC BOX-R20, -R21	

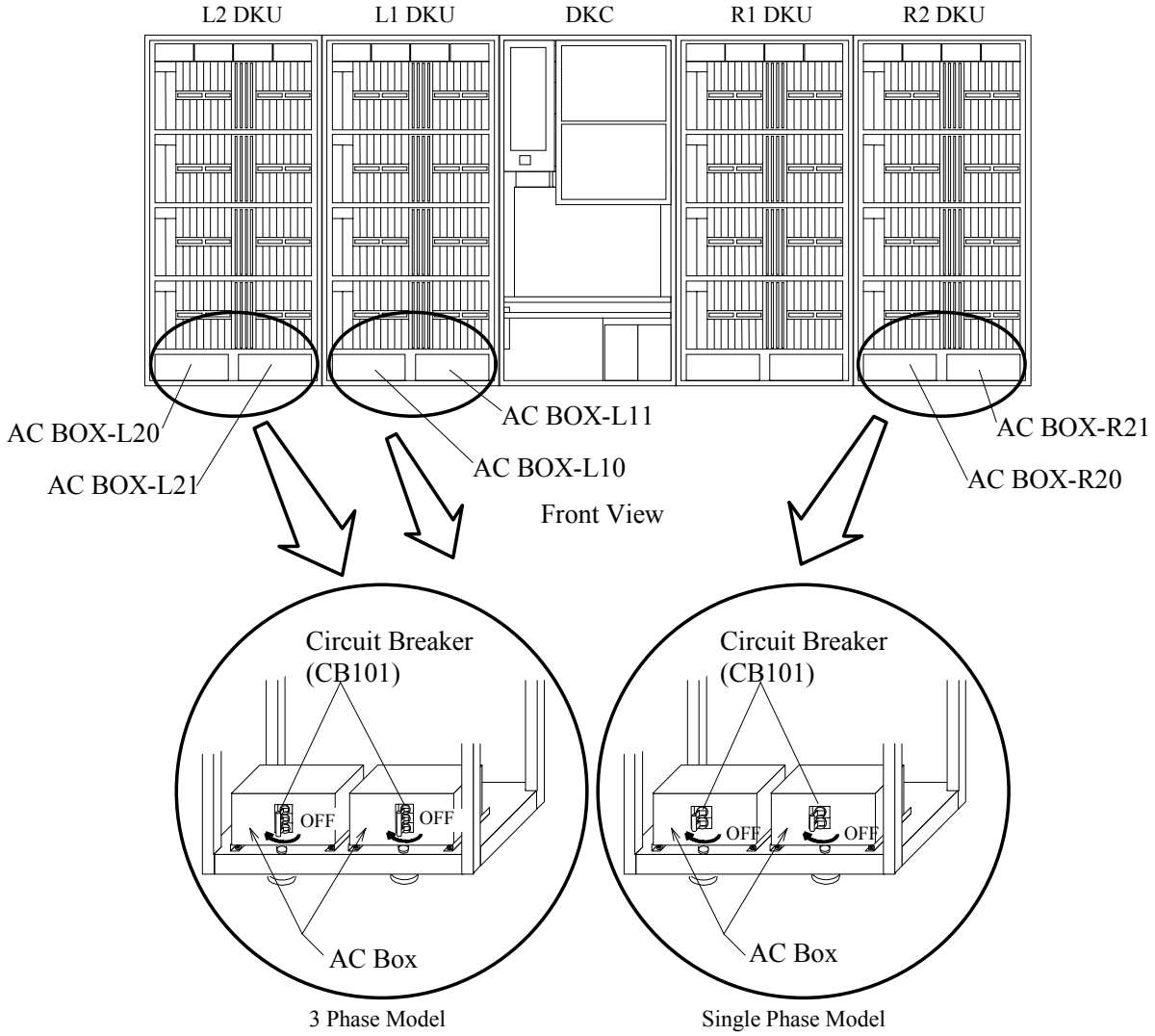

Fig. 4.2.1-1 AC Boxes and DKUMN PCBs

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2. Logic Box Covers Removal

Note: When the third Disk Unit is connected to the Disk Controller Unit, must be removed the following covers.

a. Open the four hooks and remove the Front Logic Box Cover from the Disk Controller.
b. Remove the two screws and remove the cable cover.

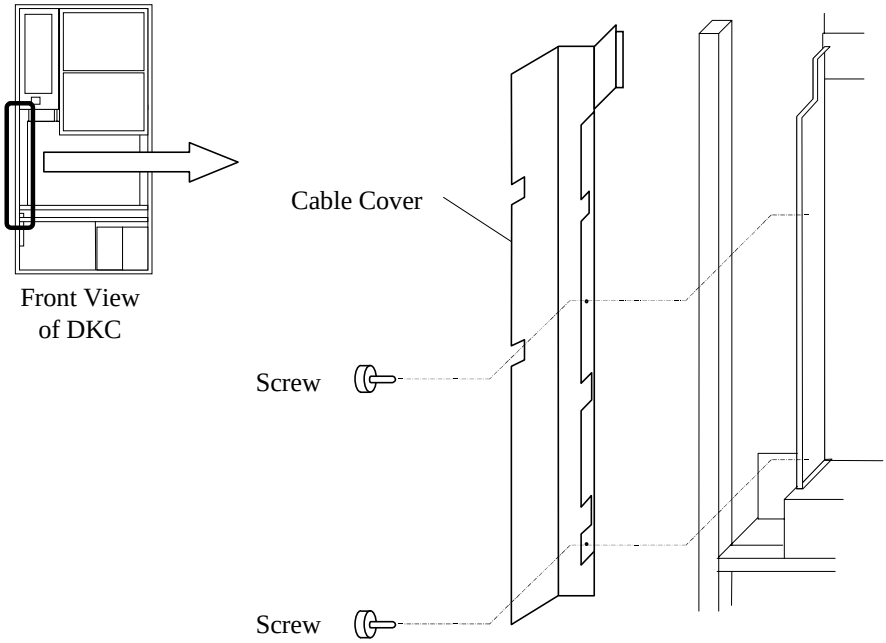

Fig. 4.2.1-2 How to open the Cover (DKC front side)

c. Open the four hooks and remove the Rear Logic Box Cover.
d. Remove the two screws and remove the cable cover.

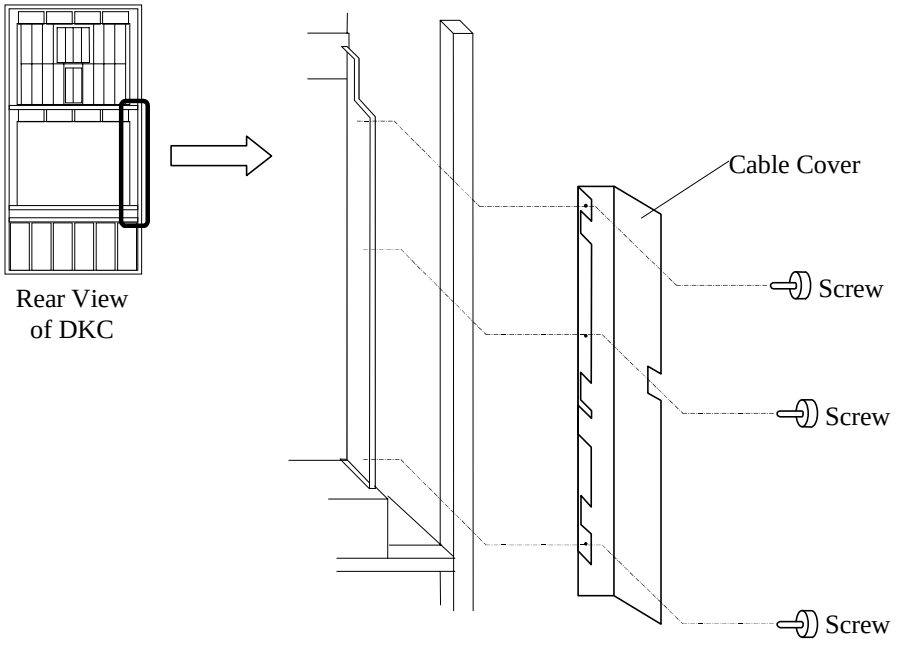

Fig. 4.2.1-3 How to open the Cover (DKC rear side)

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3 Kick Plate De-Installation

a. Remove kick plate in the reverse order of installation.

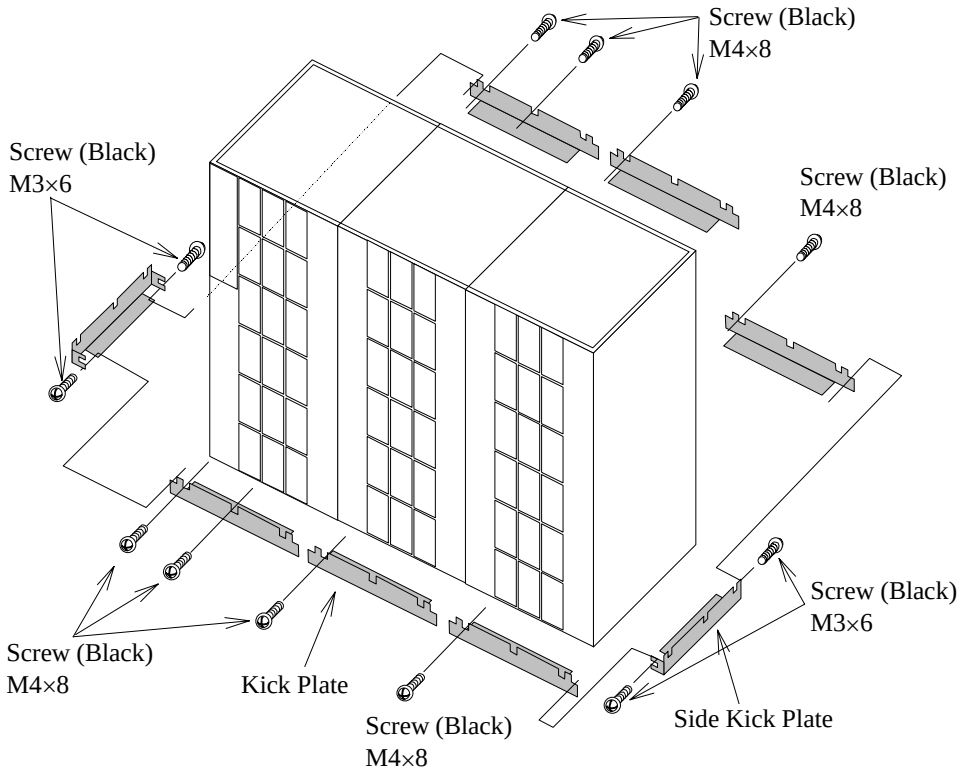

Fig. 4.2.1-4 Removal of Kick Plate (Two Disk Units)

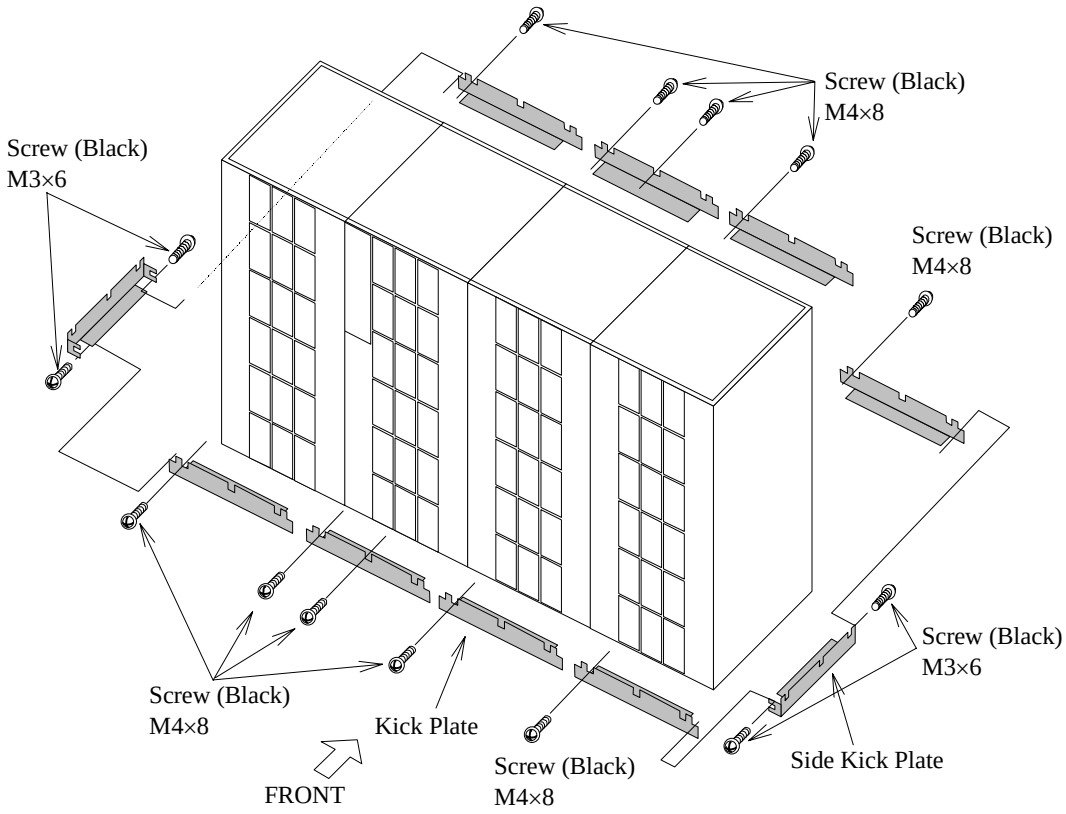

Fig. 4.2.1-5 Removal of Kick Plate(Three Disk Units)

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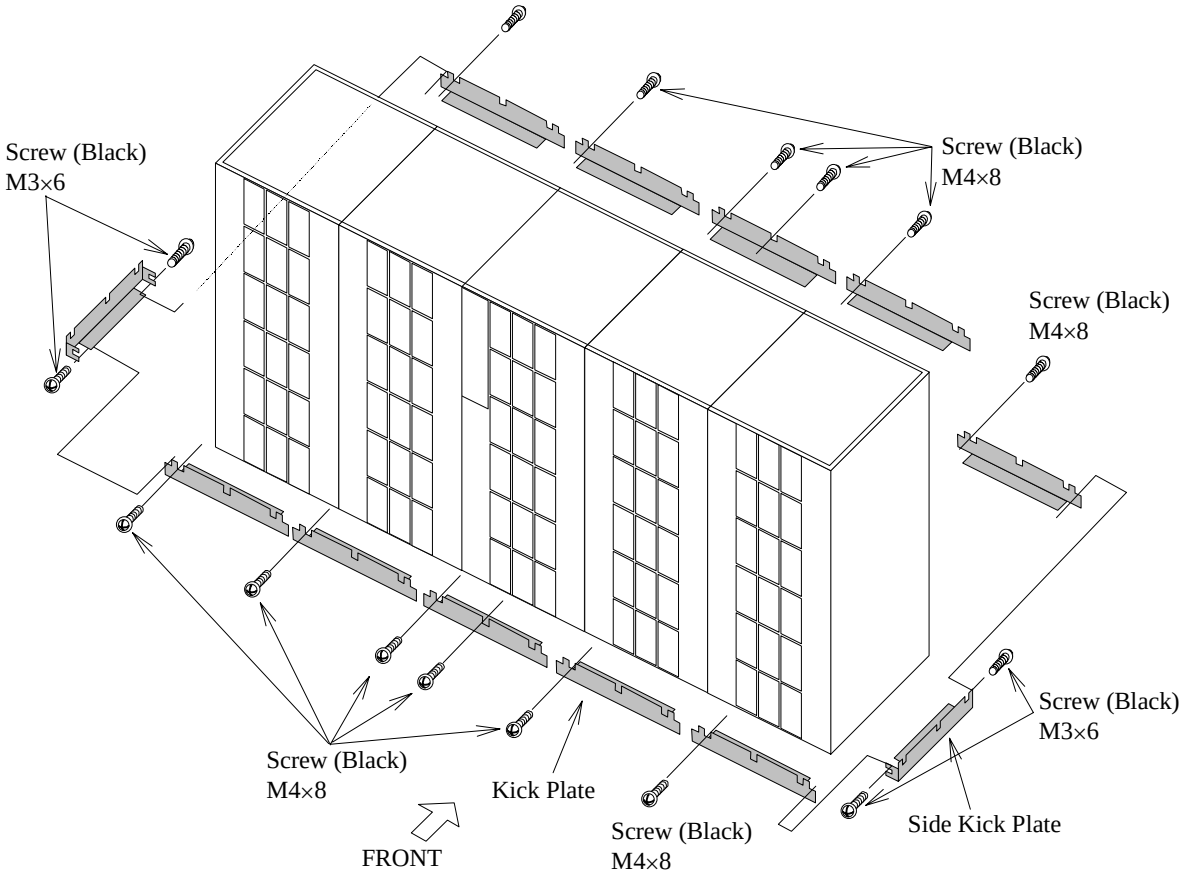

Fig. 4.2.1-6 Removal of Kick Plate (Four Disk Units)

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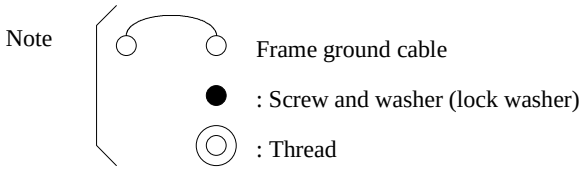
4 Side Cover and Frame Ground Cable Removal
Remove the side cover(s) and frame ground cable in the reverse order of installation.

DKU-L2

a. Remove the frame ground cable.
b. Remove the side cover from the DKU-L2.
c. Disconnect the frames.
d. Attach the left side cover to the DKC or DKU-L1 together with the frame ground cable.



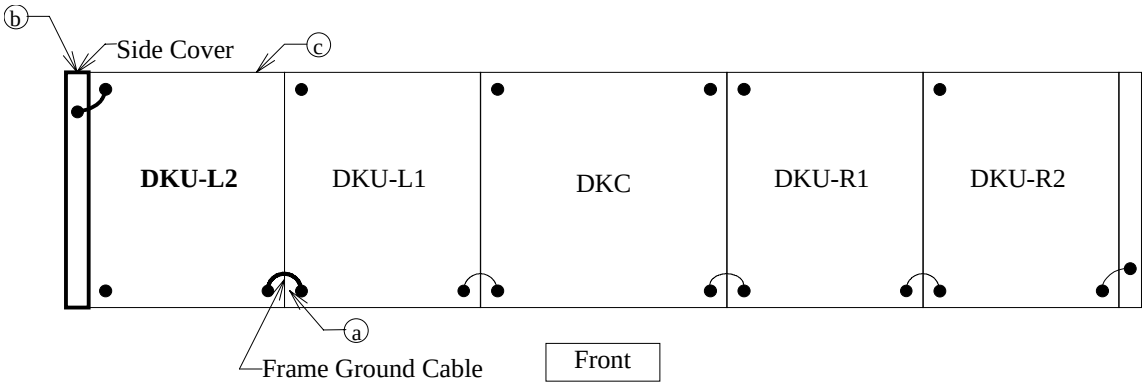


Fig. 4.2.1-7 Removal of Frame Ground Cable

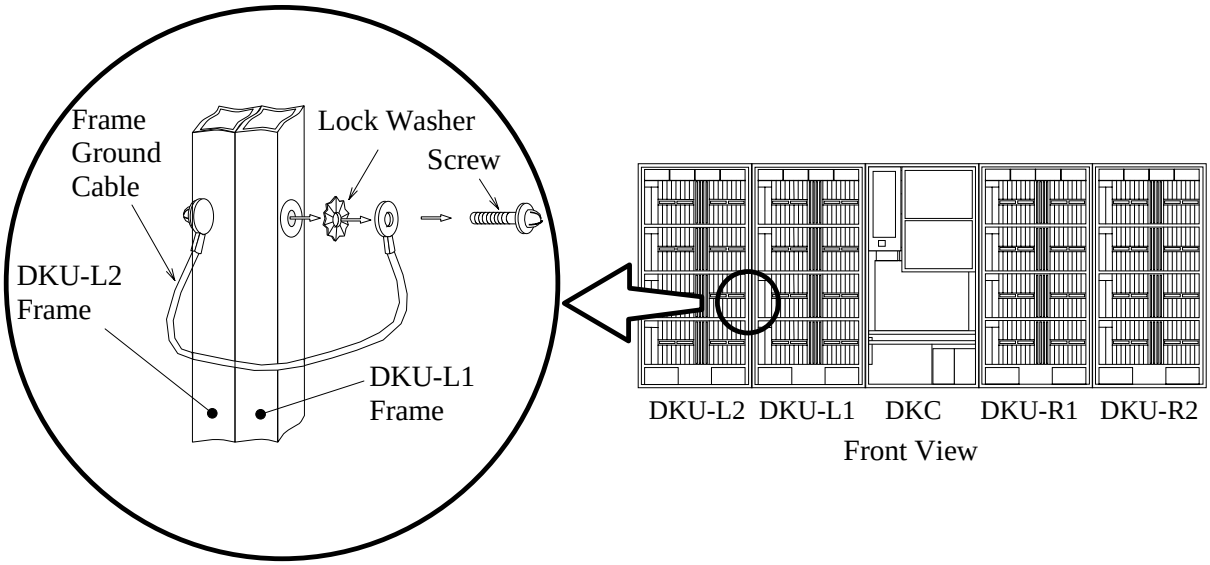


Fig. 4.2.1-8 Removal of Frame Ground Cable

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DKU-L1

a. Remove the frame ground cable.
b. Remove the side cover from the DKU-L1.
c. Disconnect the frames.
d. Remove the DEV Interface Cables from the DKC [INST04-DKU-100].
e. Attach the left side cover of the DKC with the frame ground cable.

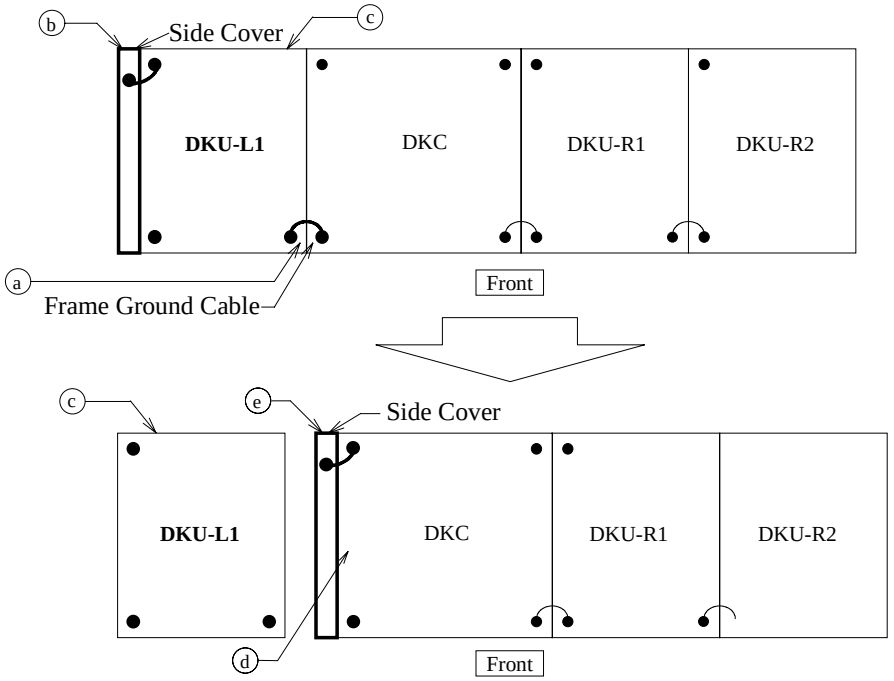

Fig. 4.2.1-9 Removal of Frame Ground Cable

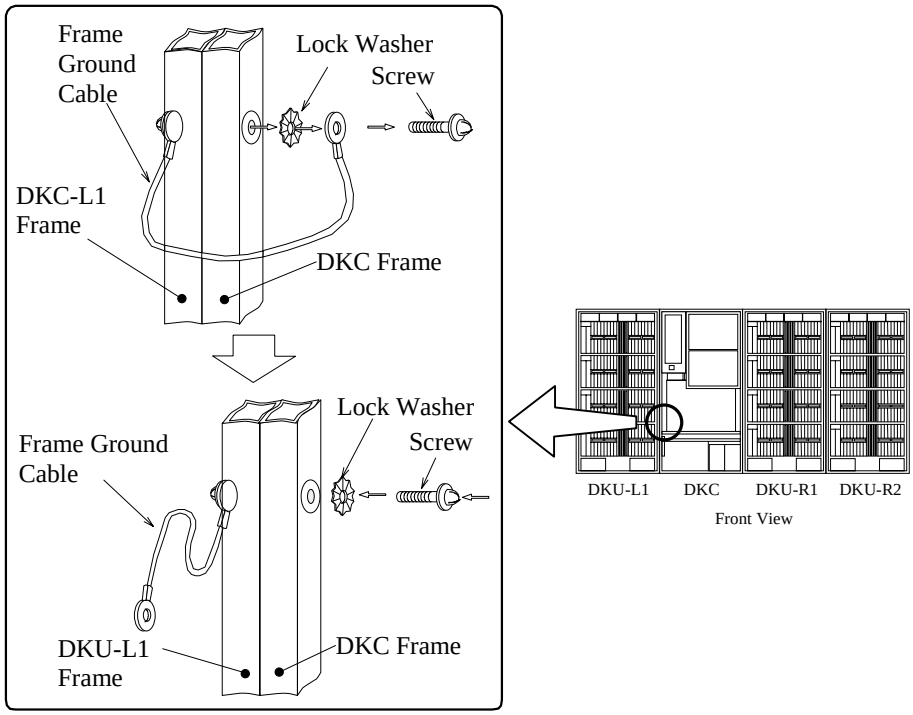

Fig. 4.2.1-10 Removal of Frame Ground Cable

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DKU-R1

a. Remove the frame ground cable.
b. Remove the side cover from the DKU-R1.
c. Disconnect the frames.
d. Attach the right side cover to the DKC or DKU-R1 together with the frame ground cable.

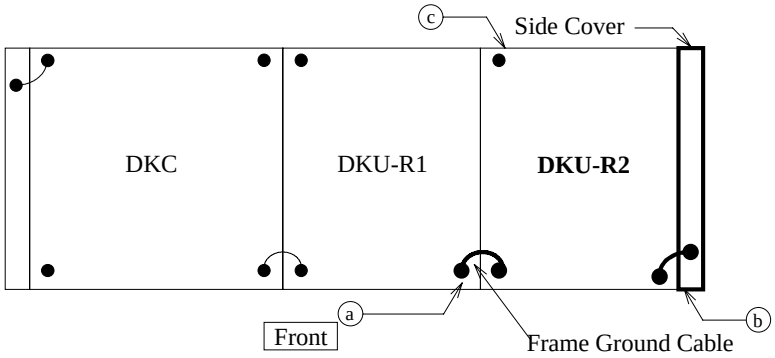

Fig. 4.2.1-11 Removal of Frame Ground Cable

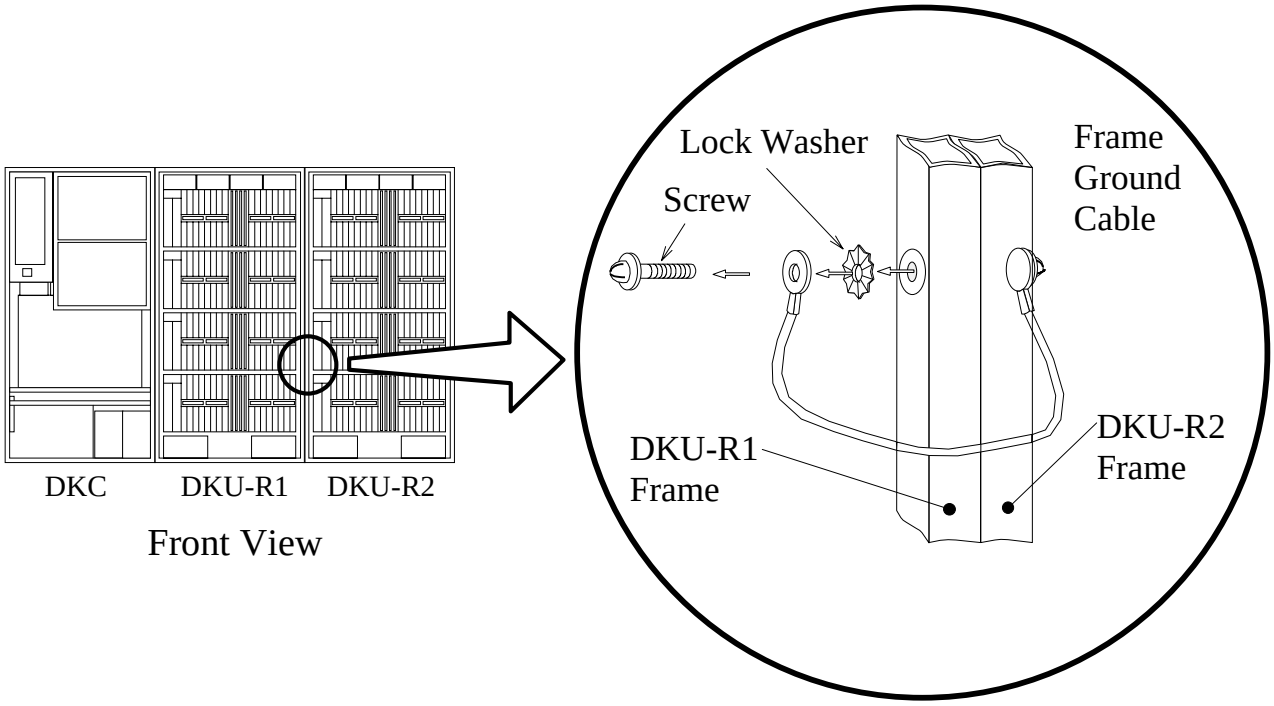

Fig. 4.2.1-12 Removal of Frame Ground Cable

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5. Frame Disconnection
   a. Disconnect the frames in the reverse order of frame connection.

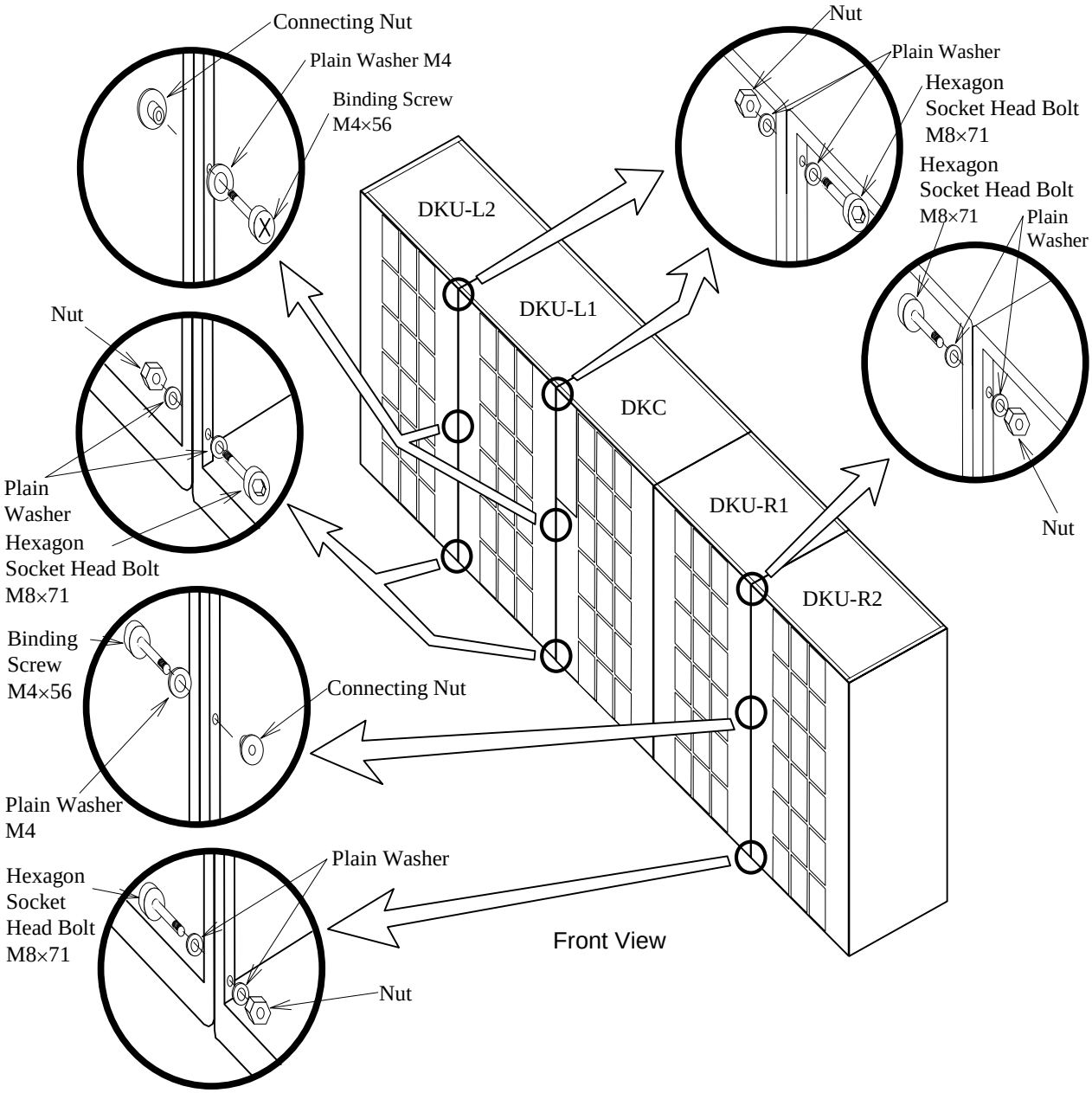

Fig. 4.2.1-13 Disconnection of Frame

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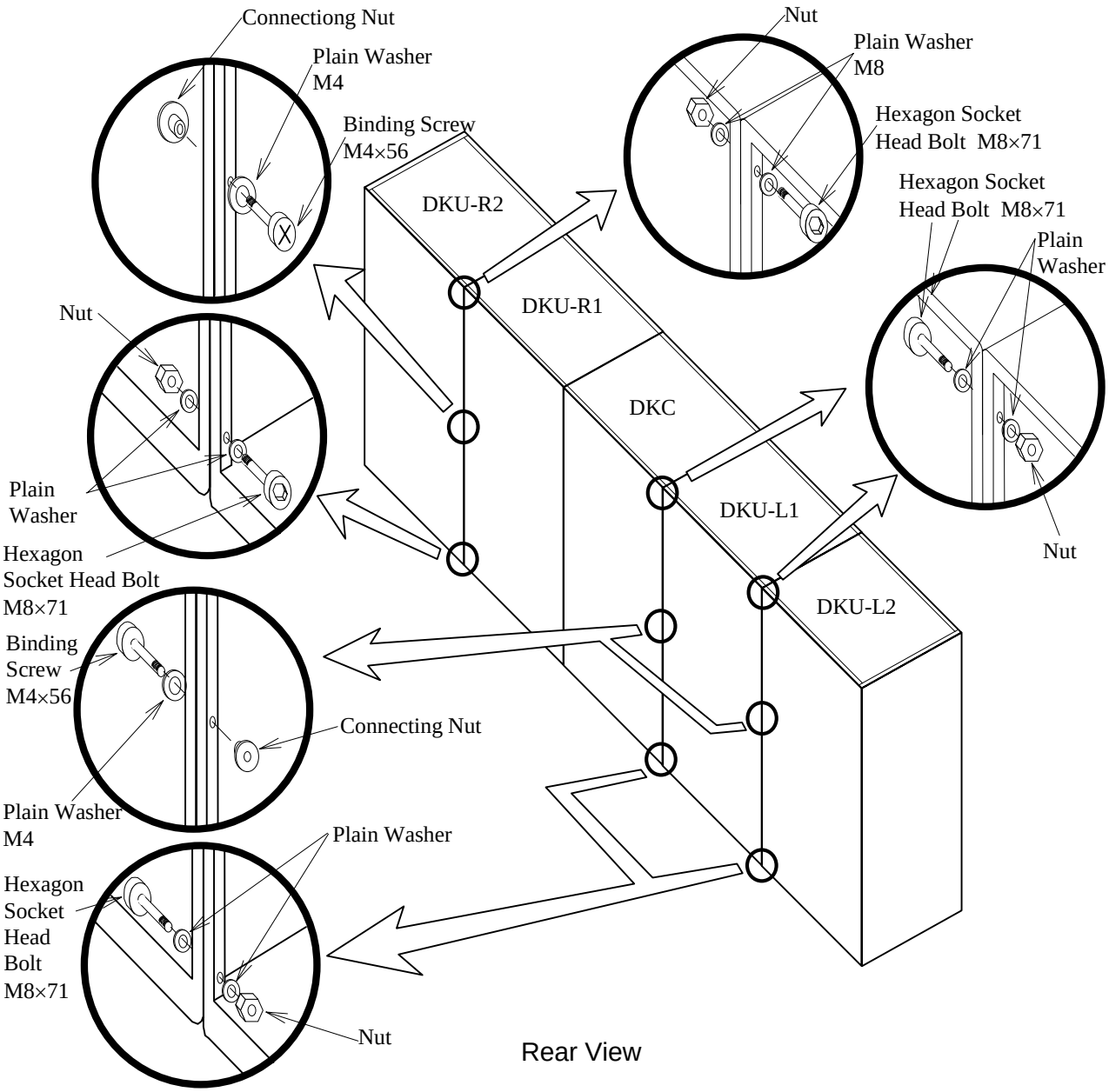

Fig. 4.2.1-14 Disconnection of Frame

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6. Removal of DEV Interface Cables (only DKU-L1)
   When the DKU-L1 is removed, remove the DEV Interface Cables from the DKC.
   When the DKU-L1 is not removed, go to step 7.

6-1 Pulling out DEV Interface Cables

a. Loosen the screws and remove the cable covers from the DKU-L1 frames.

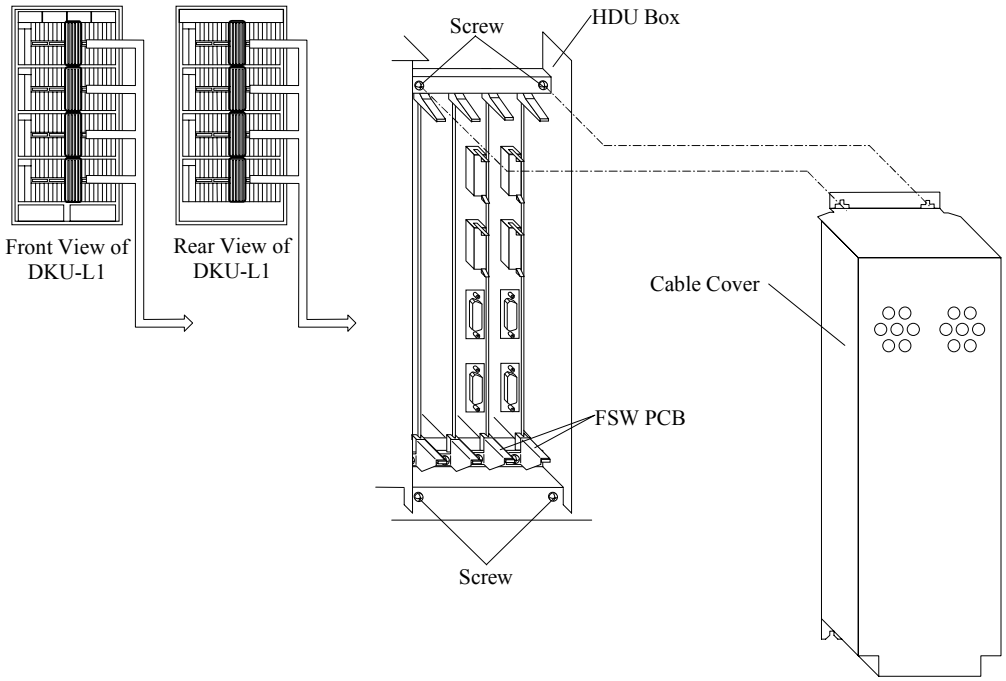

Fig. 4.2.1-15 Removal of Cable Covers

b. Loosen the screws and remove the cable covers from the DKU-L1 frames.

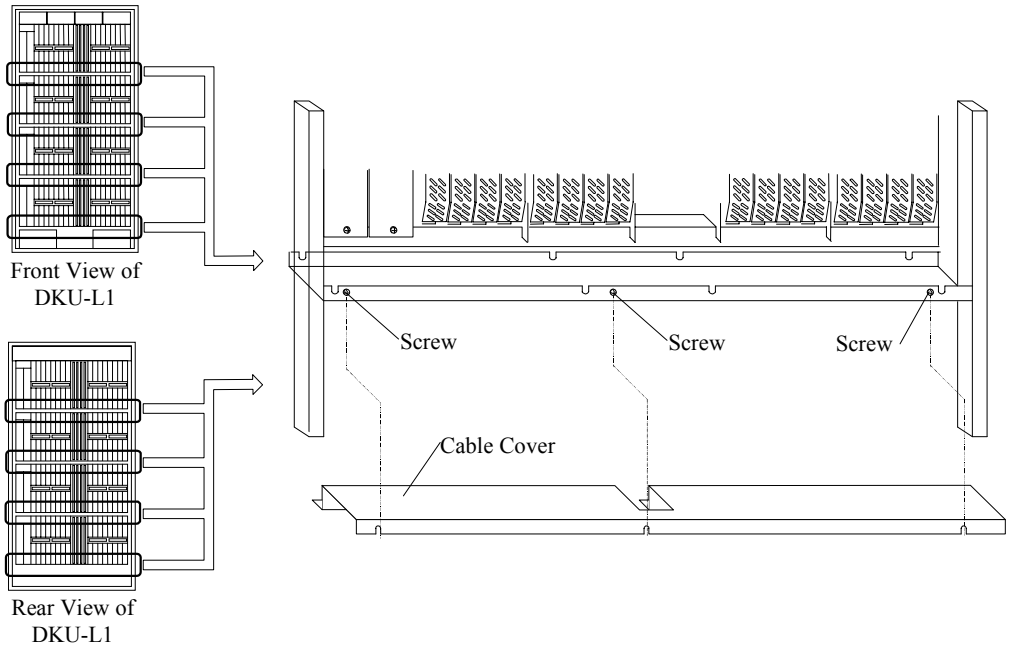

Fig. 4.2.1-16 Removal of Cable Covers

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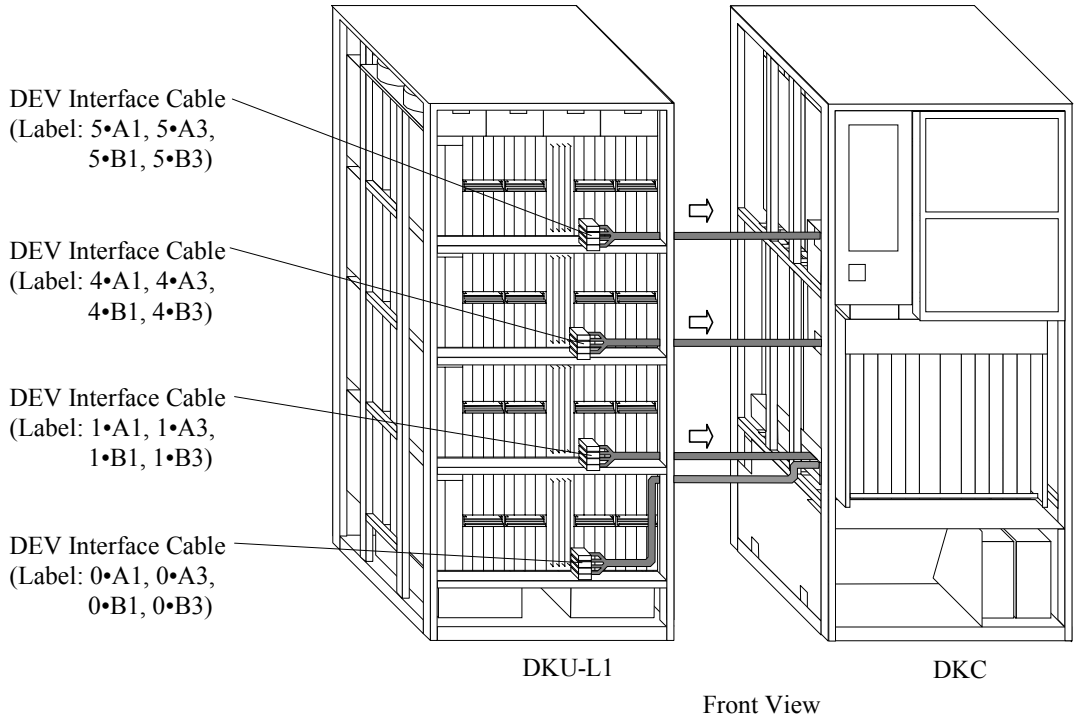
c. While moving the DKU-L1 frame, pull out the DEV interface cables for the connection between the DKC and DKU-L1 toward the DKC side.



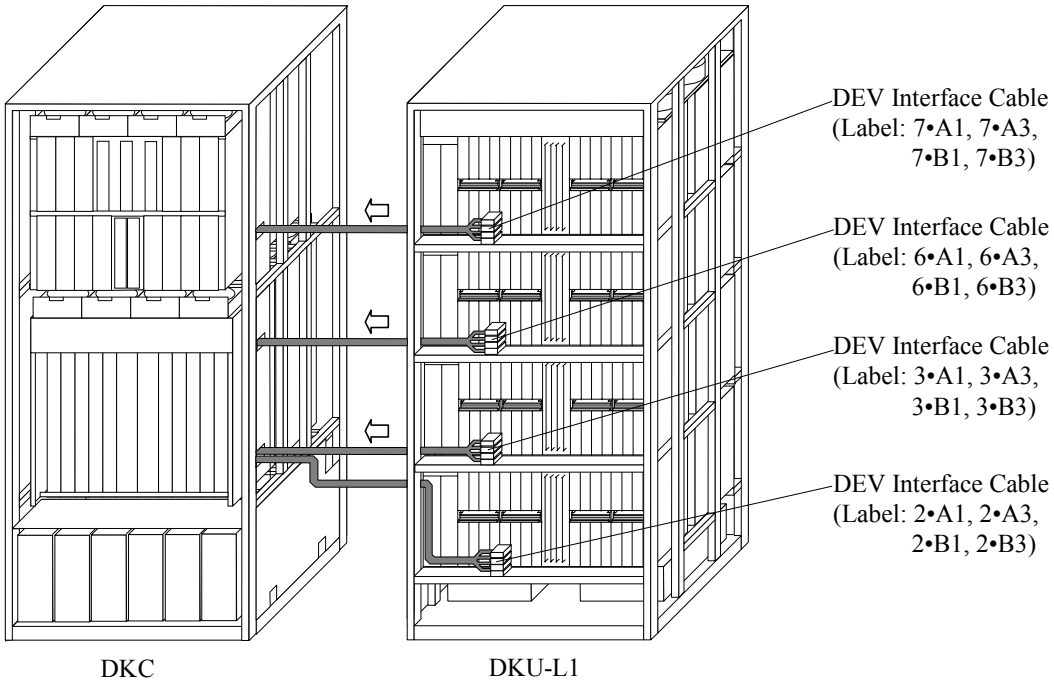


Fig. 4.2.1-17 Removal of DEV Interface Cables

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6-2 Removal of Cable Covers

a. Remove the Front Logic Box cover from the DKC. (Refer to INST03-COM-10.)

b. Remove the two screws and remove the cable cover.

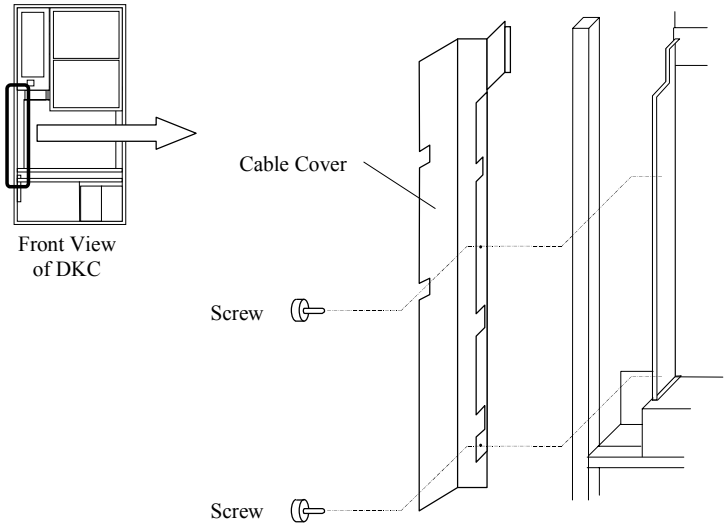

Fig. 4.2.1-18 Removal of Cover

c. Loosen the two screws ① and remove the Upper SH Box covers.

d. Loosen the five screws ② and remove the Lower SH Box covers.

e. Loosen the four screws ③ and remove the SH side plate.

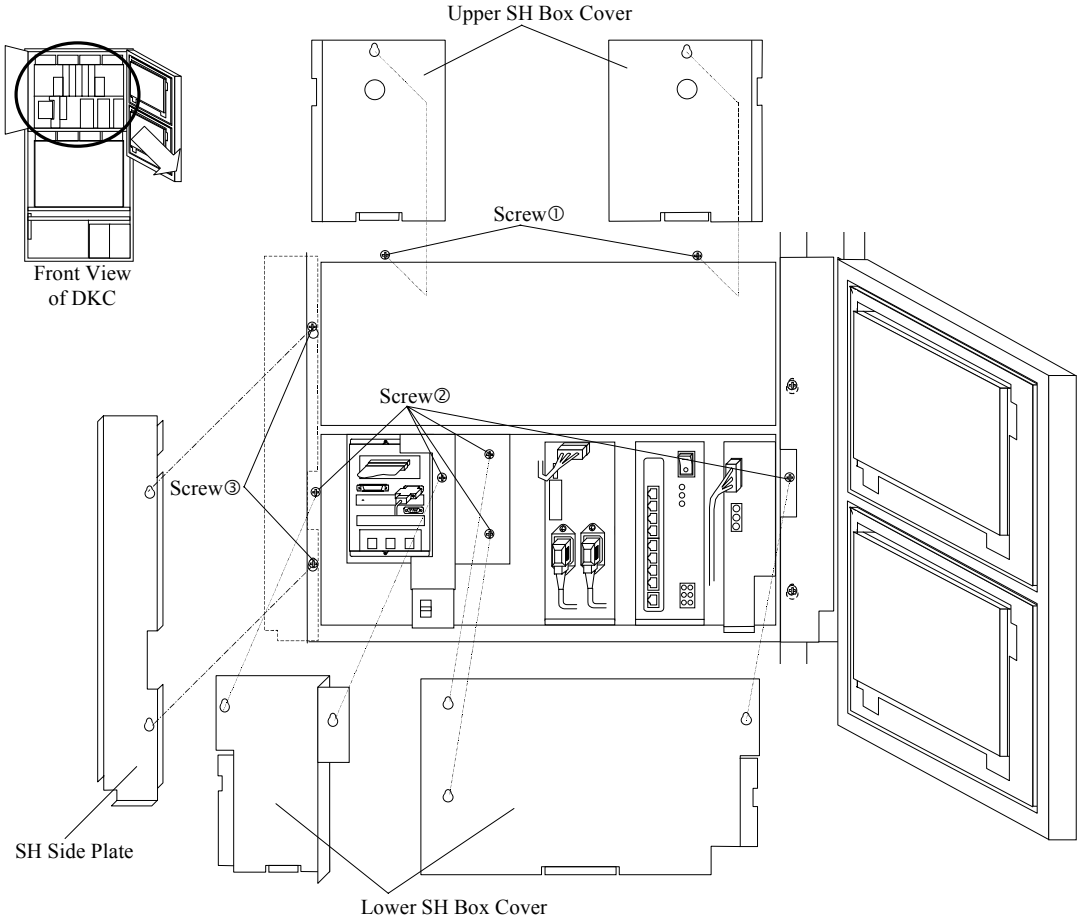

Fig. 4.2.1-19 Removal of Covers

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f. Loosen the two screws ① and remove the cable cover ①.
g. Loosen the two screws ② and remove the cable cover ②.
h. Loosen the screw ③ and remove the cable cover ③.
i. Loosen the two screws ④ and remove the cable cover ④.

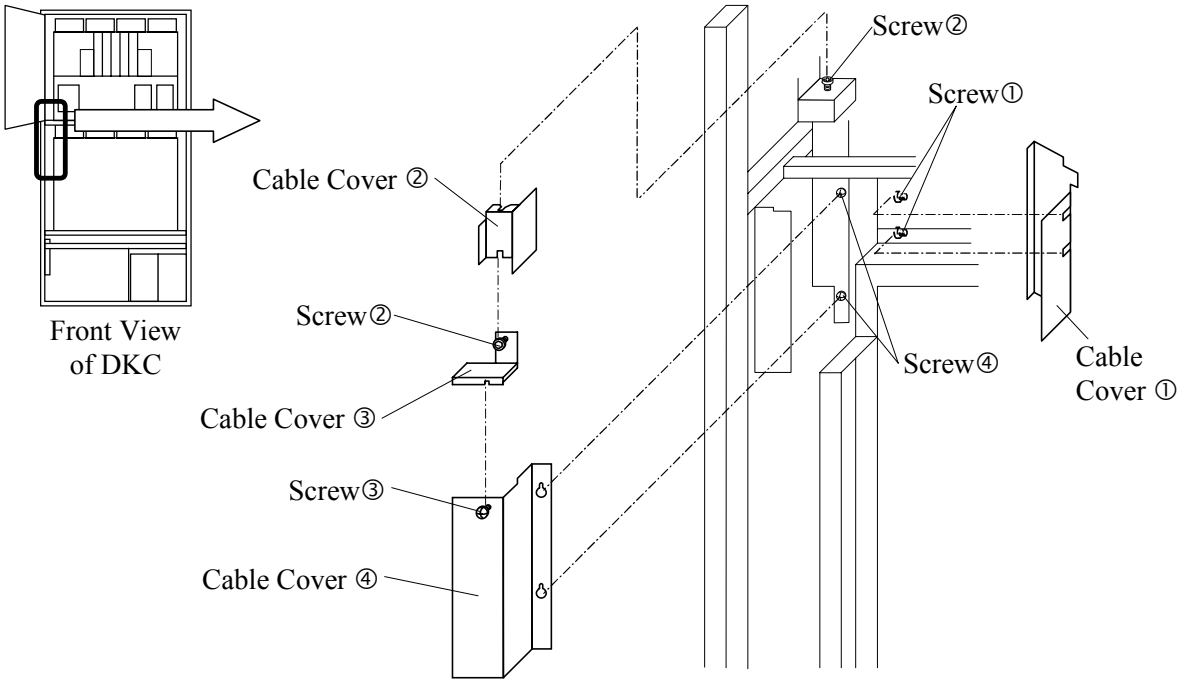

Fig. 4.2.1-20 Removal of Covers

j. Loosen the three screws and remove the cable cover.

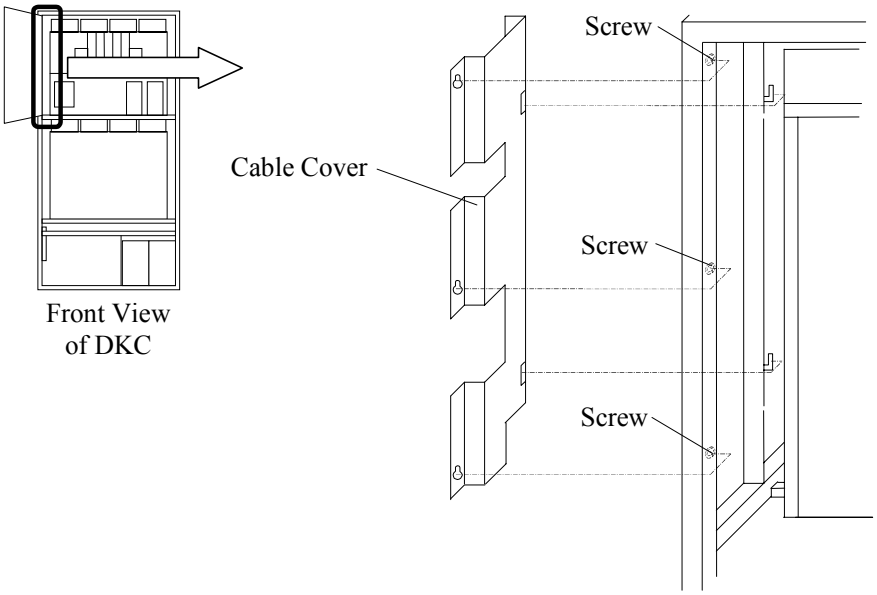

Fig. 4.2.1-21 Removal of Cover

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k. Loosen the two screws and remove the cable duct cover.

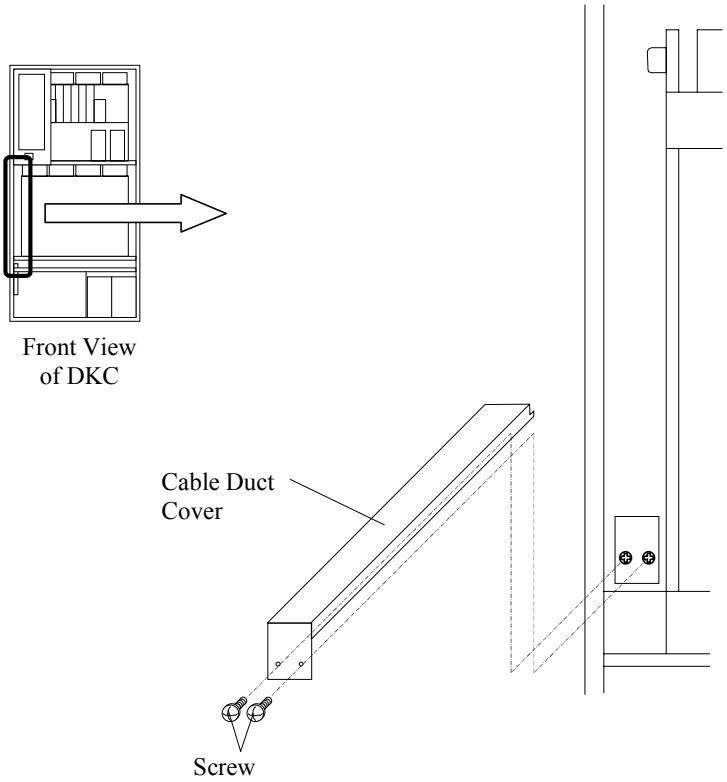

Fig. 4.2.1-22 Removal of Cable Duct Cover

m. Remove the Rear Logic Box cover and Rear PS Box cover. (Refer to INST03-COM-20 through 30.)

n. Remove the two screws and remove the cable cover.

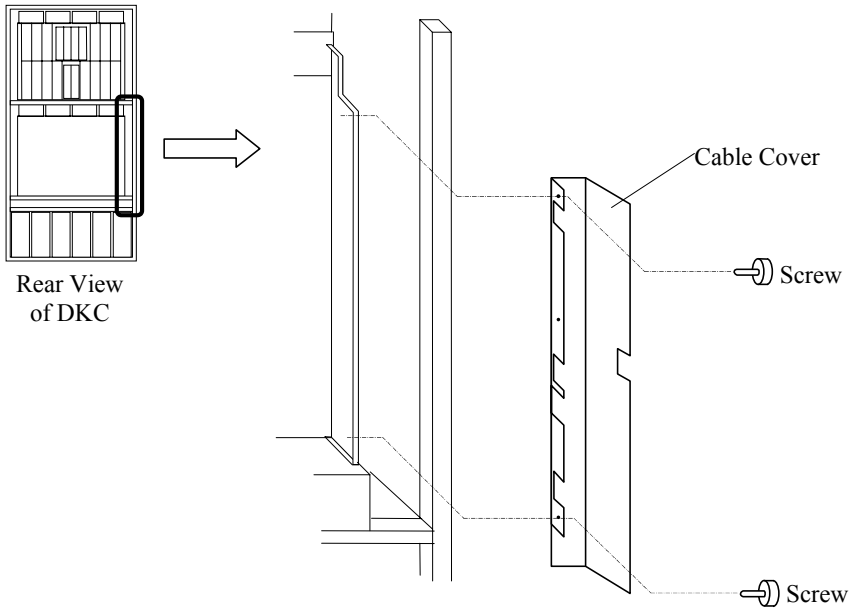

Fig. 4.2.1-23 Removal of Cover

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p. Loosen the three screws① and remove the cable cover①. Then, loosen the two screws② and remove the cable cover②.

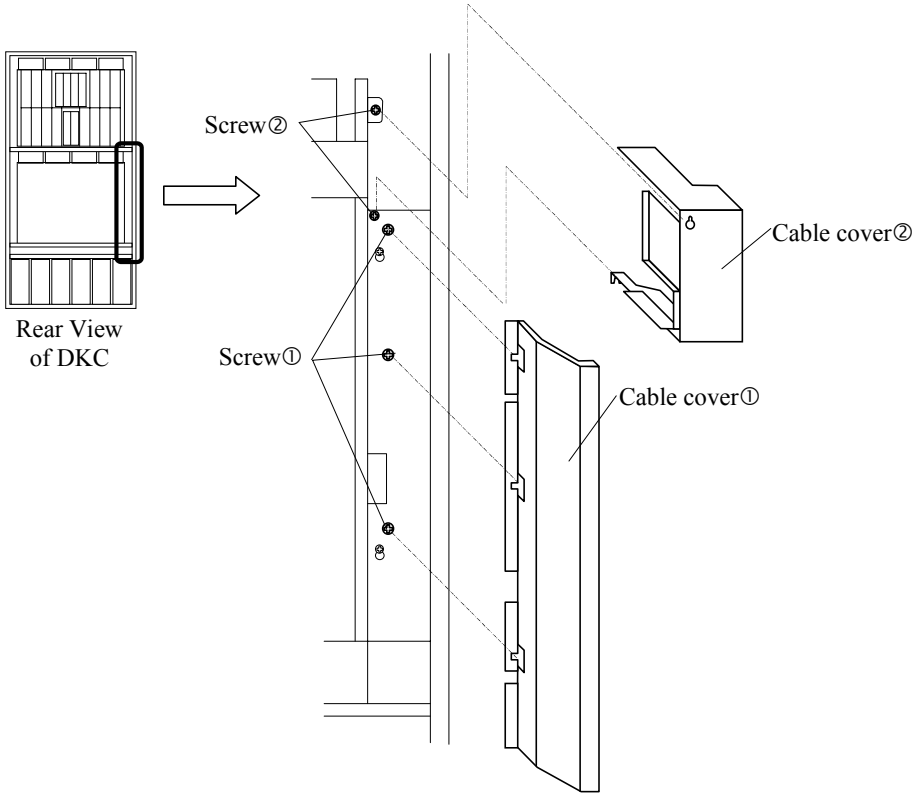

Fig. 4.2.1-24 Removal of Cover

q. Remove the two screws and remove the cable cover.

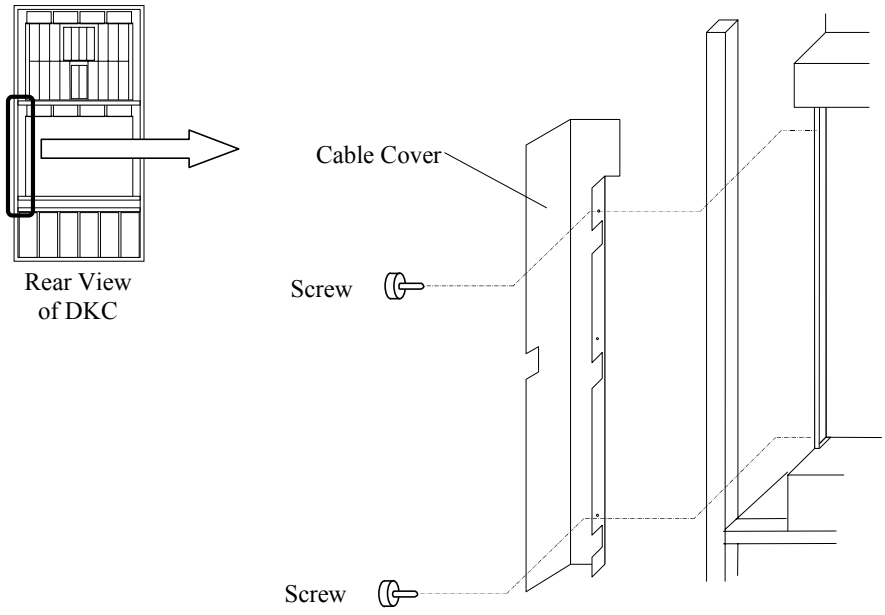

Fig. 4.2.1-25 Removal of Cable Cover

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r. Loosen the five screws and remove the bracket.

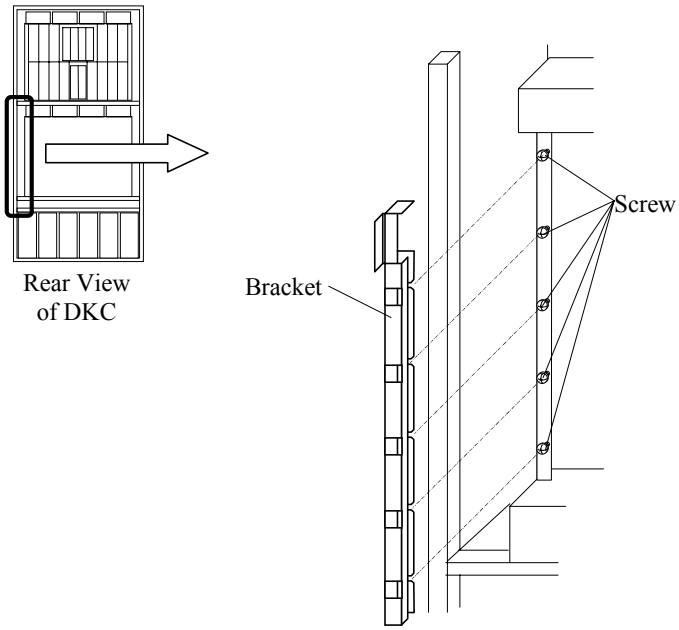

Fig. 4.2.1-26 Removal of Bracket

s. Loosen the three screws and remove the cable cover from the cable clamp located at the top of the Rear Logic Box.

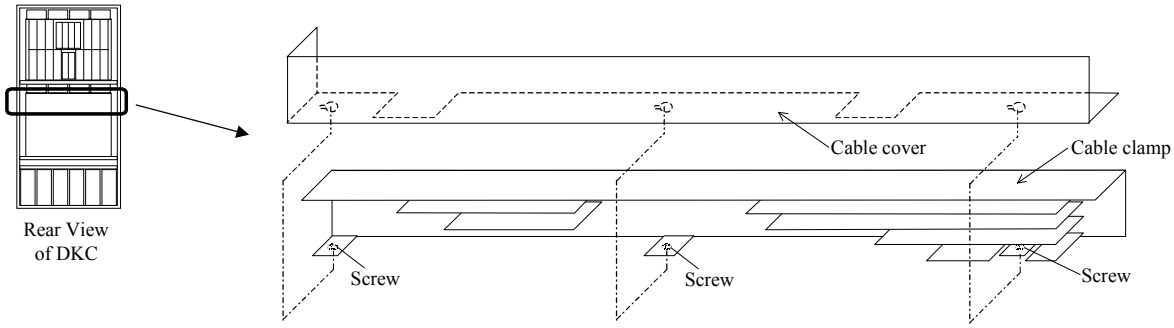

Fig. 4.2.1-27 Removal of Cable Cover

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t. Loosen the two screws and remove the cable cover.

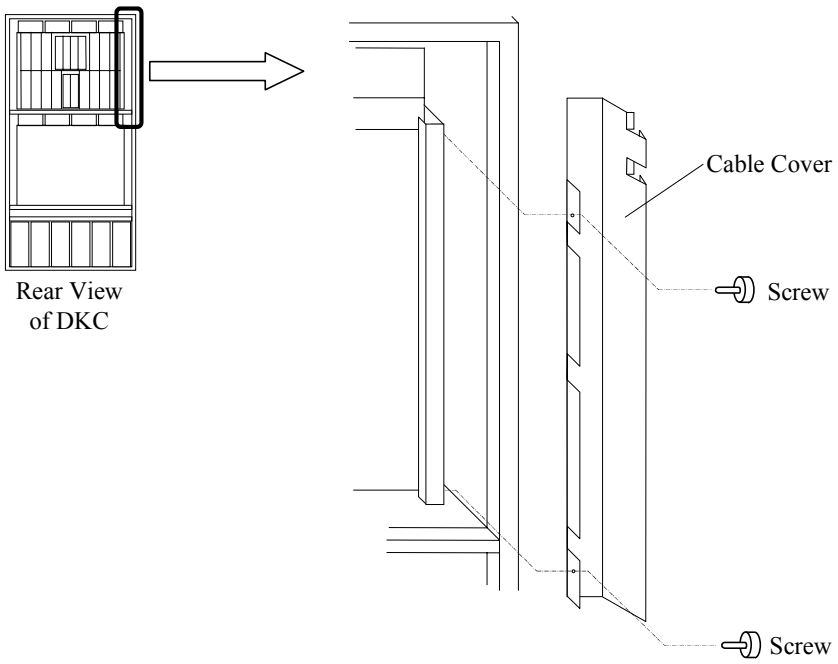

Fig. 4.2.1-28 Removal of Cable Cover

u. Loosen the four screws and remove the cable cover. Rotate the cable cover 90 degrees and pull out it forward.

⚠ CAUTION

When you rotate the cable cover, don't contact the cable cover to the bus bar.

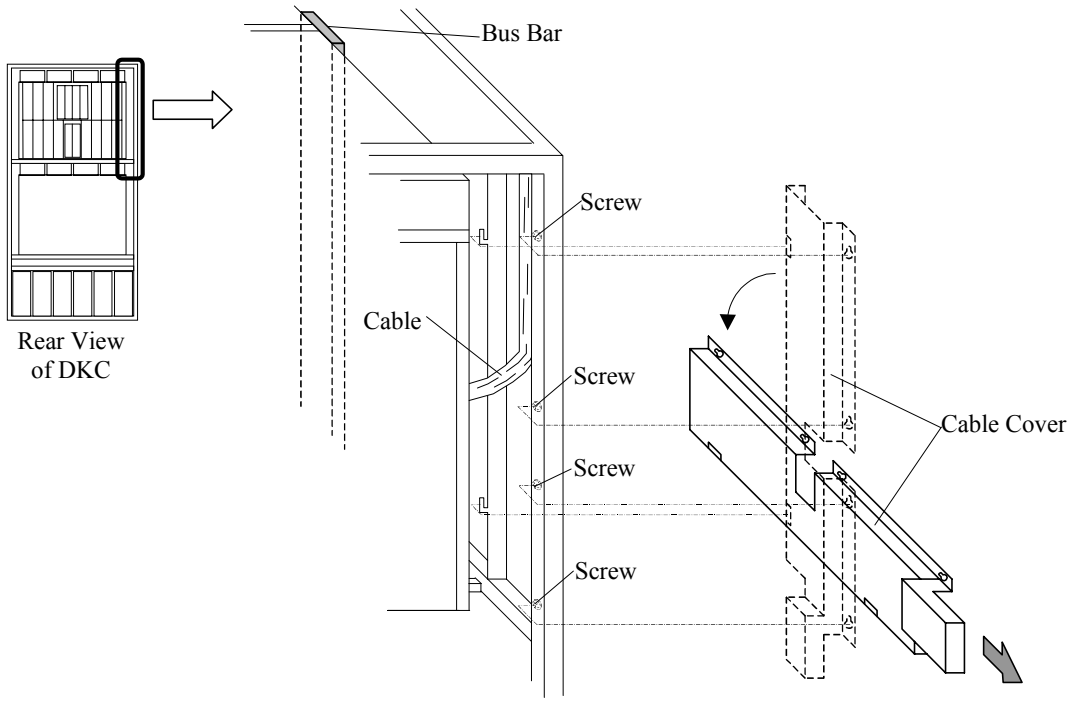

Fig. 4.2.1-29 Removal of Cable Cover

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6-3 Removal of DEV Interface cables

a. Remove the DEV interface cables for the DKU-L1 from the cable clamp located at the top of the Rear Logic Box. Remove the cable in order of ①, ②, ③ and ④.

Note:
Since a label bearing a connection destination is affixed on each cable/connector, work very carefully referring to it and the wiring diagram.

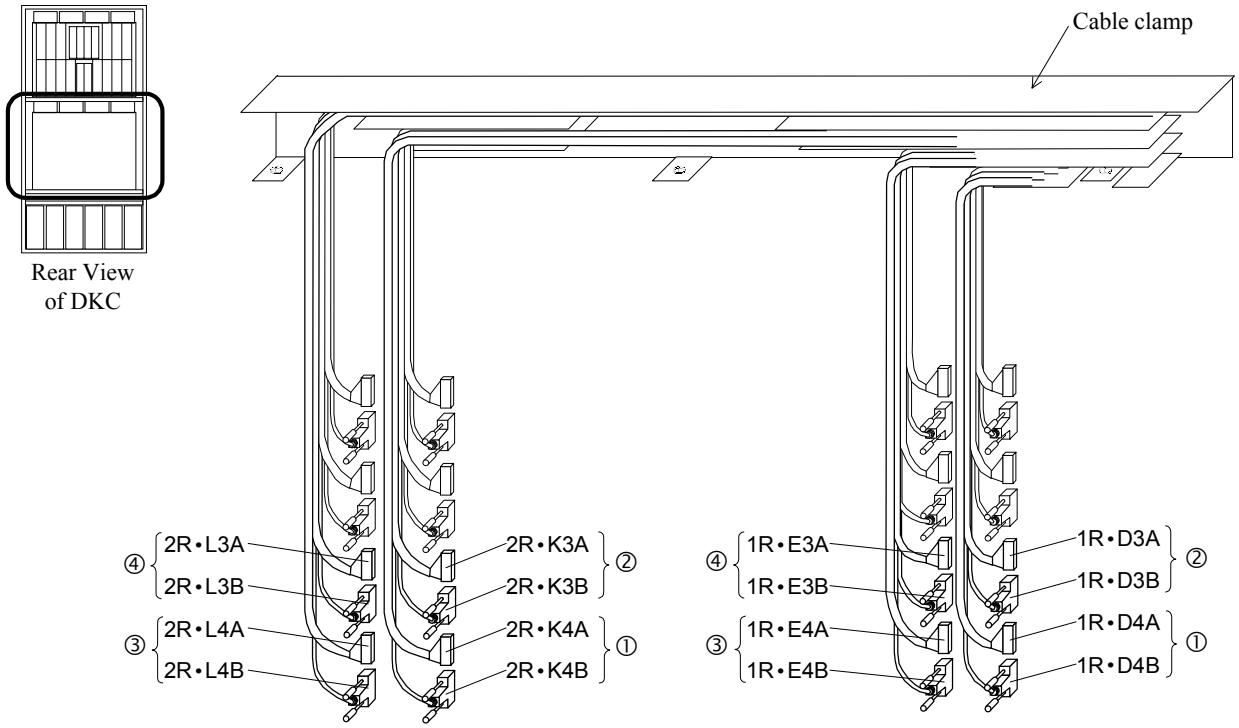

Fig. 4.2.1-30 Removal of DEV Interface Cables

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b. Remove the DEV interface cables for the DKU-L1 from the cable entrance on the sheet steel part. Remove the repeat binder from the cables.

Table 4.2.1-2 DEV Interface Cable List

No.	Cable No. (DKA Side)	Cable No. (FSW Side)	Remarks
1	1R-E4A	7-A1	
	1R-E4B	7-A3	
2	2R-L4A	7-B1	
	2R-L4B	7-B3	

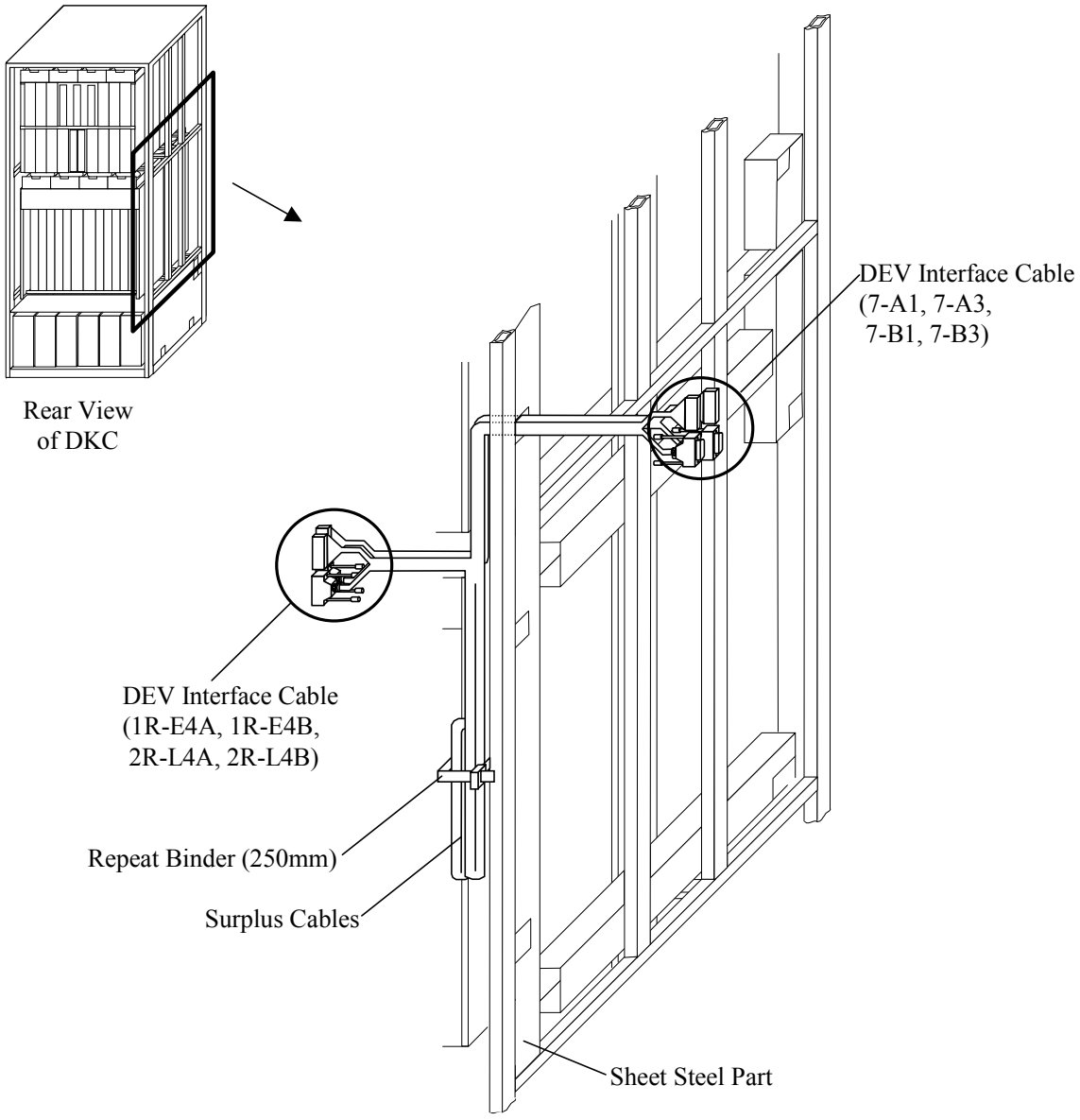

Fig. 4.2.1-31 Removal of DEV Interface Cables

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c. Remove the DEV interface cables for the DKU-L1 from the cable entrance on the sheet steel part. Remove the repeat binder from the cables.

Table 4.2.1-3 DEV Interface Cable List

No.	Cable No. (DKA Side)	Cable No. (FSW Side)	Remarks
1	1R-E3A	6-A1	
	1R-E3B	6-A3	
2	2R-L3A	6-B1	
	2R-L3B	6-B3	

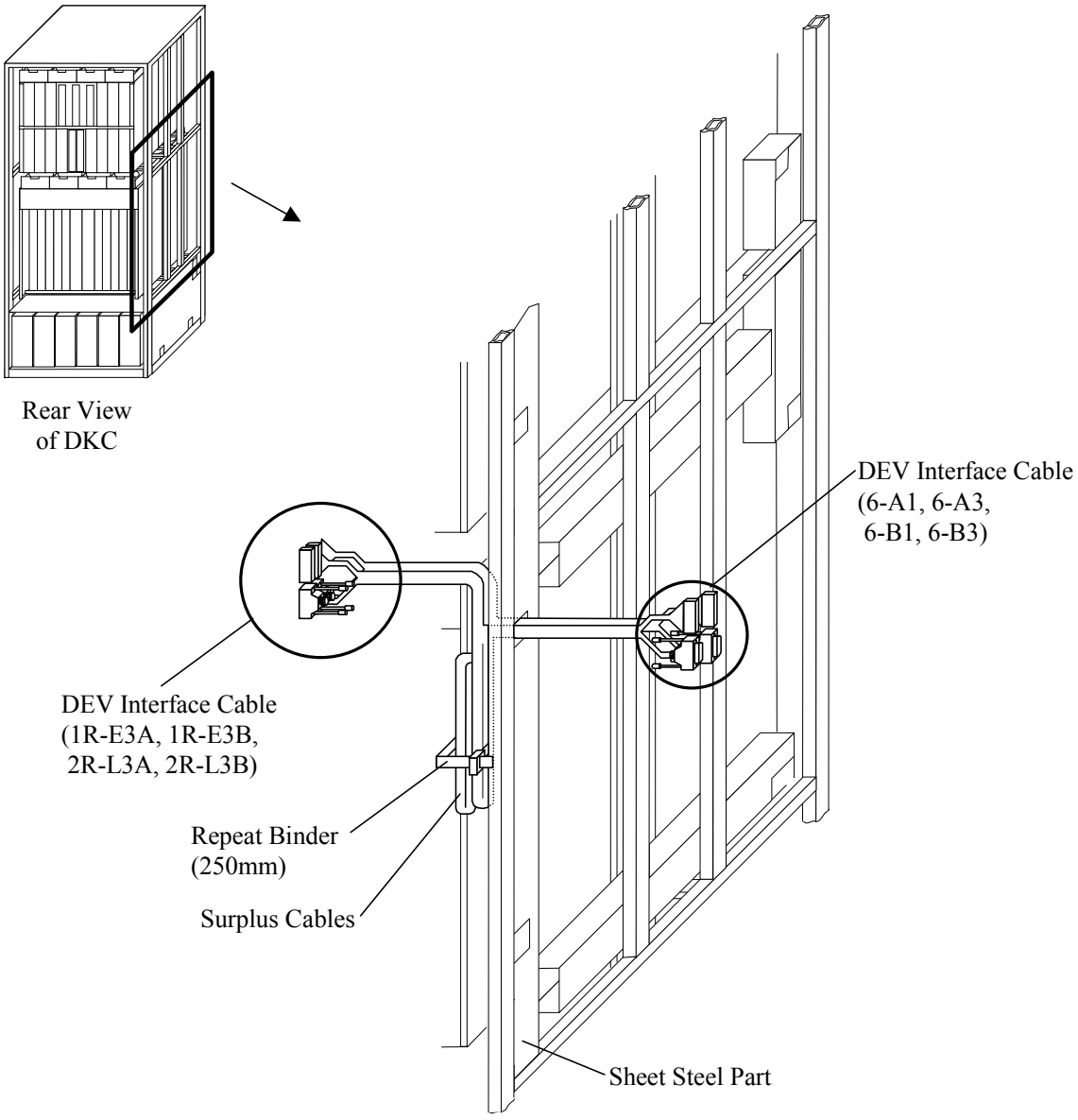

Fig. 4.2.1-32 Removal of DEV Interface Cables

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d. Remove the DEV interface cables for the DKU-L1 from the cable entrance on the sheet steel part. Remove the repeat binder from the cables.

Table 4.2.1-4 DEV Interface Cable List

No.	Cable No. (DKA Side)	Cable No. (FSW Side)	Remarks
1	1R-D4A	3-A1	
	1R-D4B	3-A3	
2	2R-K4A	3-B1	
	2R-K4B	3-B3	

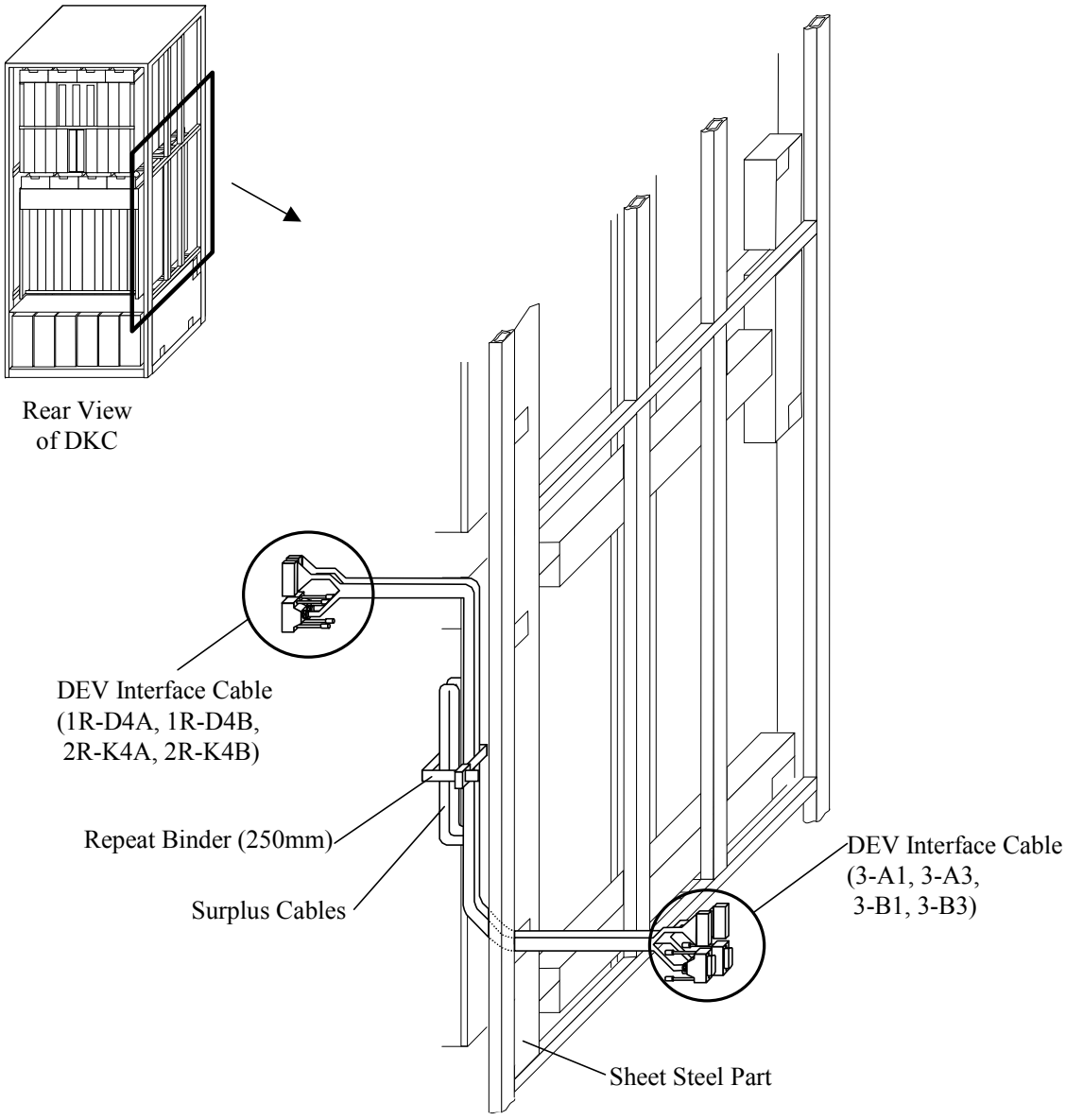

Fig. 4.2.1-33 Removal of DEV Interface Cables

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e. Remove the DEV interface cables for the DKU-L1 from the cable entrance on the sheet steel part. Remove the repeat binder from the cables.

Table 4.2.1-5 DEV Interface Cable List

No.	Cable No. (DKA Side)	Cable No. (FSW Side)	Remarks
1	1R-D3A	2-A1	
	1R-D3B	2-A3	
2	2R-K3A	2-B1	
	2R-K3B	2-B3	

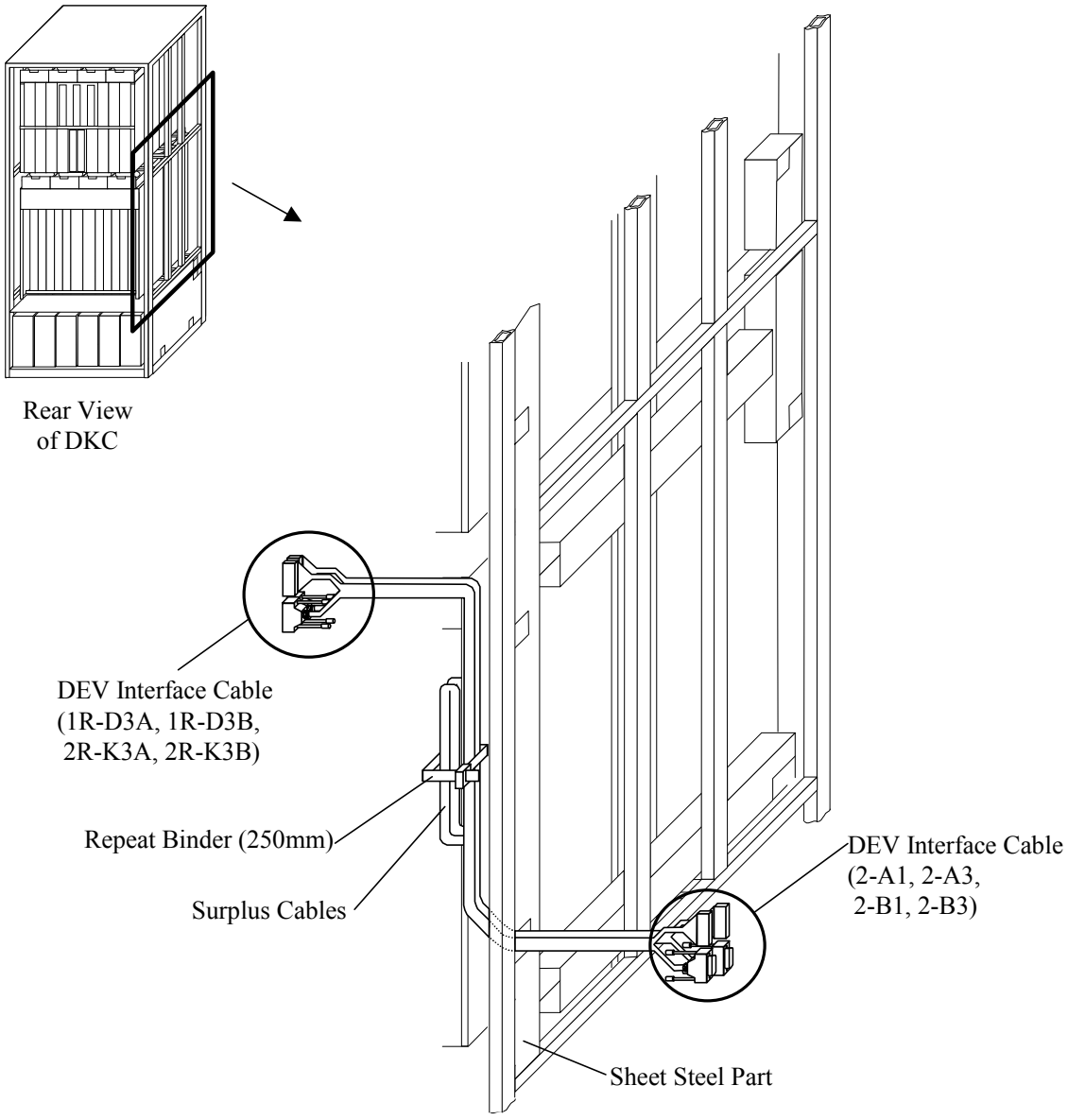

Fig. 4.2.1-34 Removal of DEV Interface Cables

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f. Remove the two screws and remove the cable duct cover.

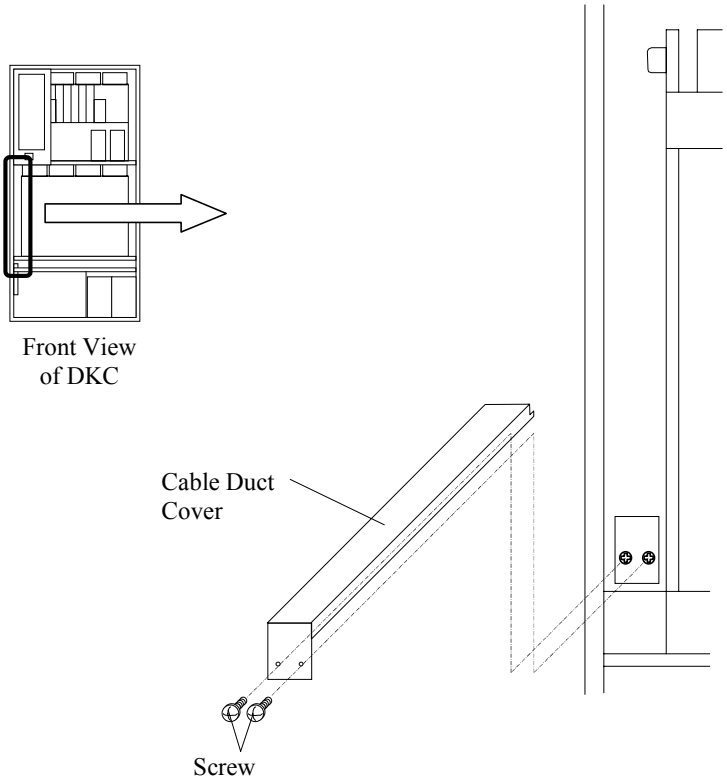

Fig. 4.2.1-35 Removal of Cable Duct Cover

g. Loosen the screw and remove the cable duct cover.

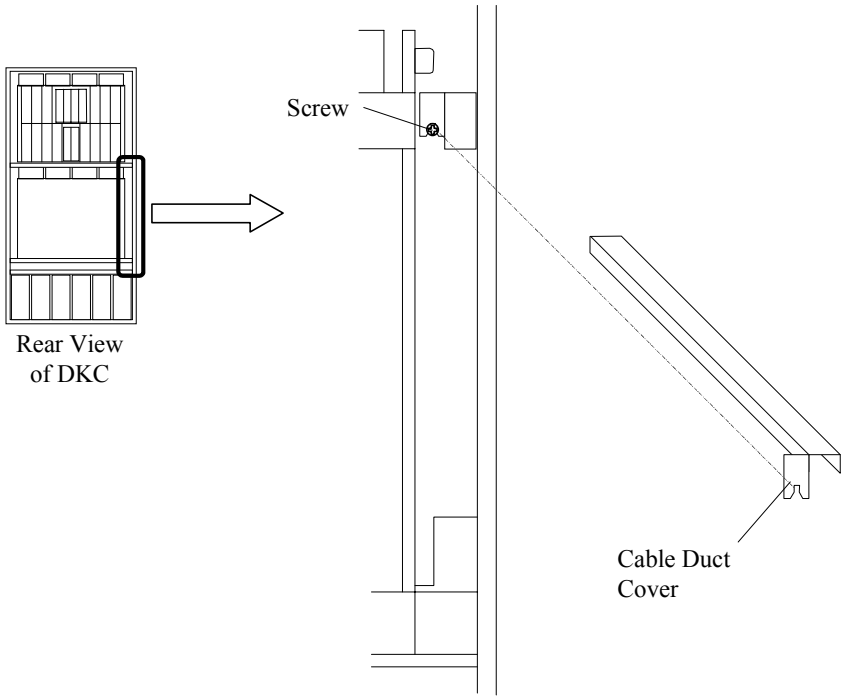

Fig. 4.2.1-36 Removal of Cable Duct Cover

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h. Loosen the two screws and remove the cable cover.

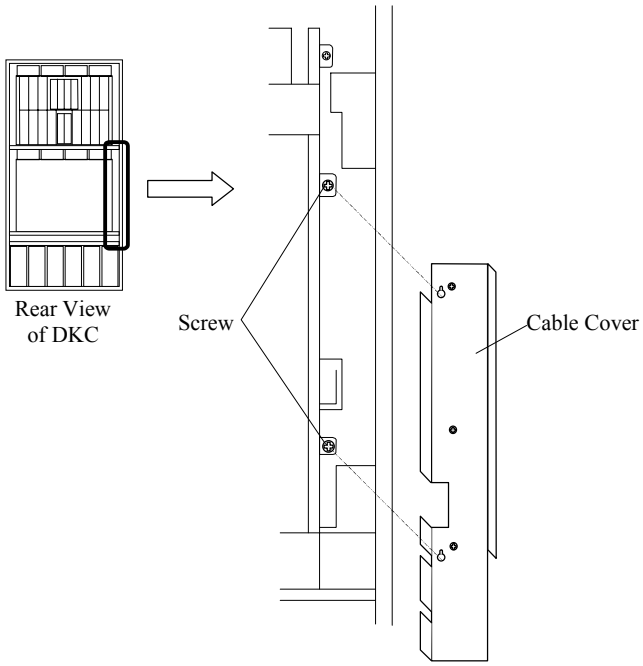

Fig. 4.2.1-37 Removal of Cable Cover

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i. Remove the DEV interface cables for the DKU-L1 from the cable clamp located at the top of the Rear Logic Box. Remove the cable in order of ①, ②, ③ and ④.

Note:
Since a label bearing a connection destination is affixed on each cable/connector, work very carefully referring to it and the wiring diagram.

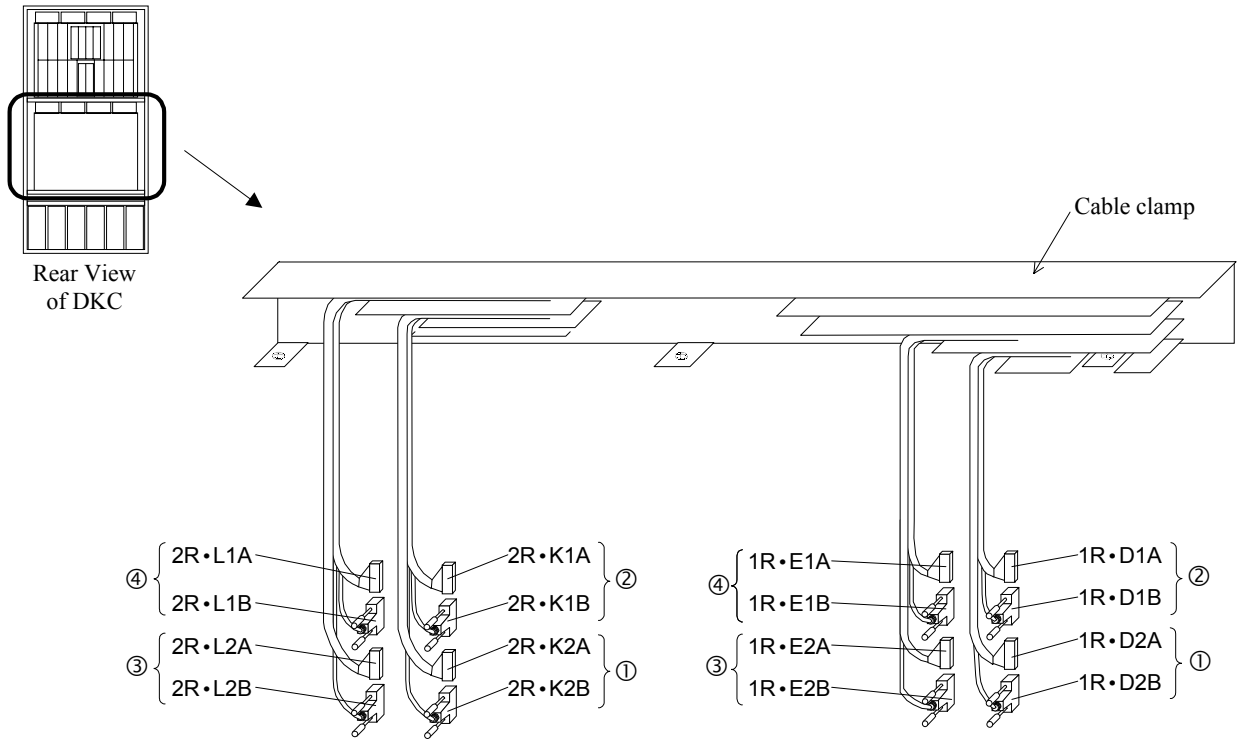

Fig. 4.2.1-38 Removal of DEV Interface Cables

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j. Remove the DEV interface cables for the DKU-L1 from the cable duct. Remove the repeat binder from the cables.

Table 4.2.1-6 DEV Interface Cable List

No.	Cable No. (DKA Side)	Cable No. (FSW Side)	Remarks
1	1R-E2A	5-A1	
	1R-E2B	5-A3	
2	2R-L2A	5-B1	
	2R-L2B	5-B3	

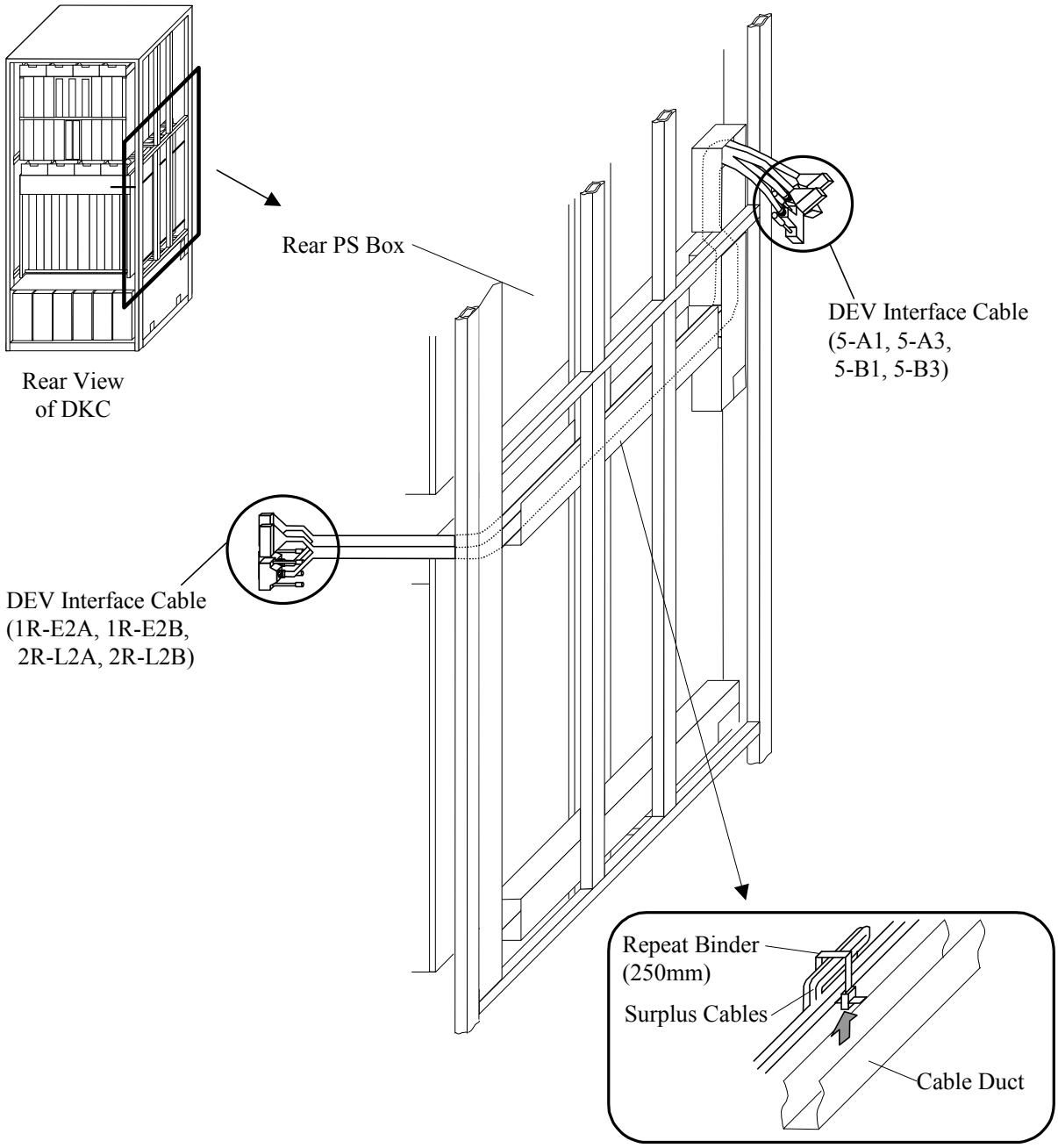

Fig. 4.2.1-39 Removal of DEV Interface Cables

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k. Remove the DEV interface cables for the DKU-L1 from the cable duct. Remove the repeat binder from the cables.

Table 4.2.1-7 DEV Interface Cable List

No.	Cable No. (DKA Side)	Cable No. (FSW Side)	Remarks
1	1R-E1A	4-A1	
	1R-E1B	4-A3	
2	2R-L1A	4-B1	
	2R-L1B	4-B3	

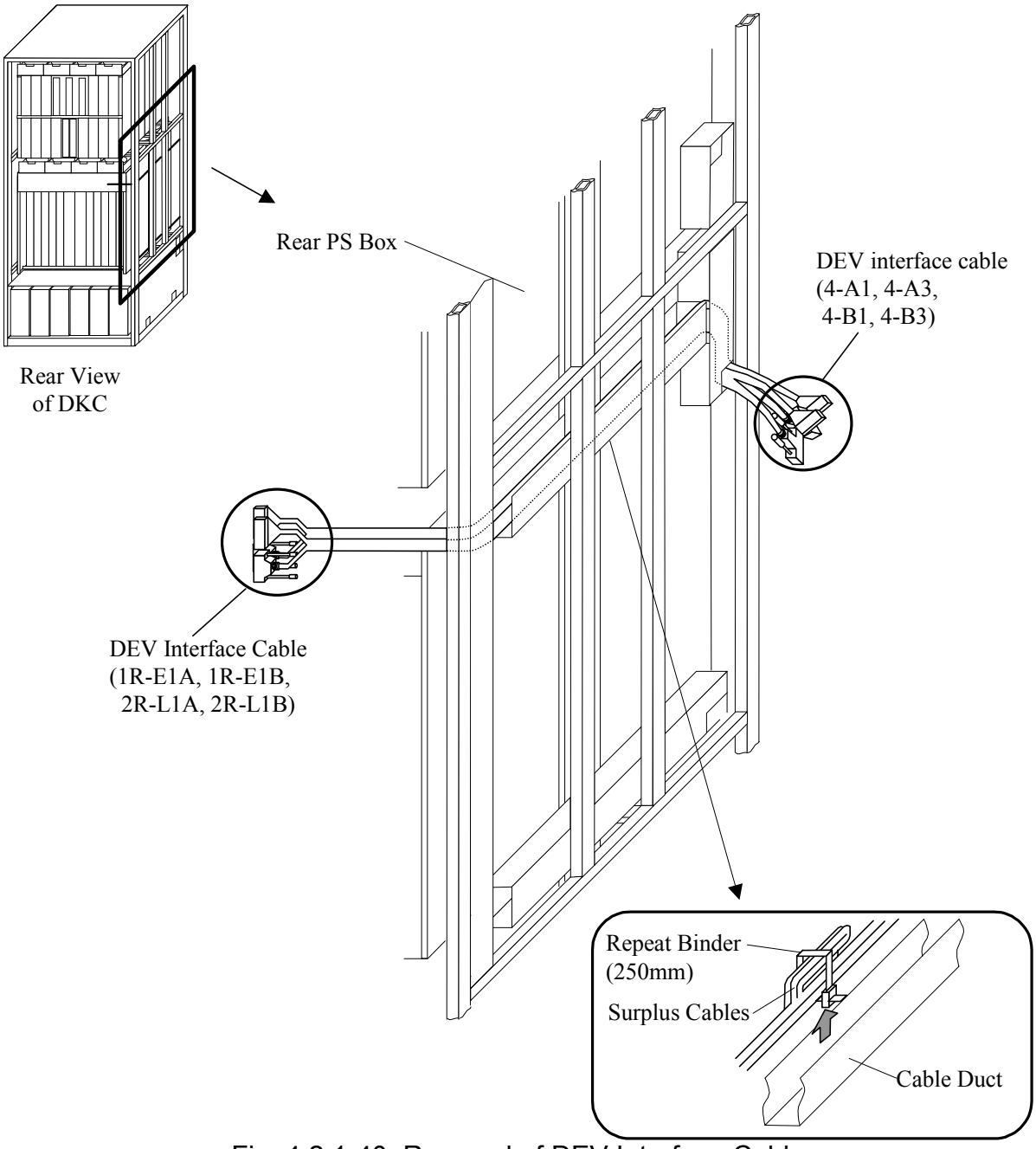

Fig. 4.2.1-40 Removal of DEV Interface Cables

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m. Remove the DEV interface cables for the DKU-L1 from the cable duct. Remove the repeat binder from the cables.

Table 4.2.1-8 DEV Interface Cable List

No.	Cable No. (DKA Side)	Cable No. (FSW Side)	Remarks
1	1R-D2A	1-A1	
	1R-D2B	1-A3	
2	2R-K2A	1-B1	
	2R-K2B	1-B3	

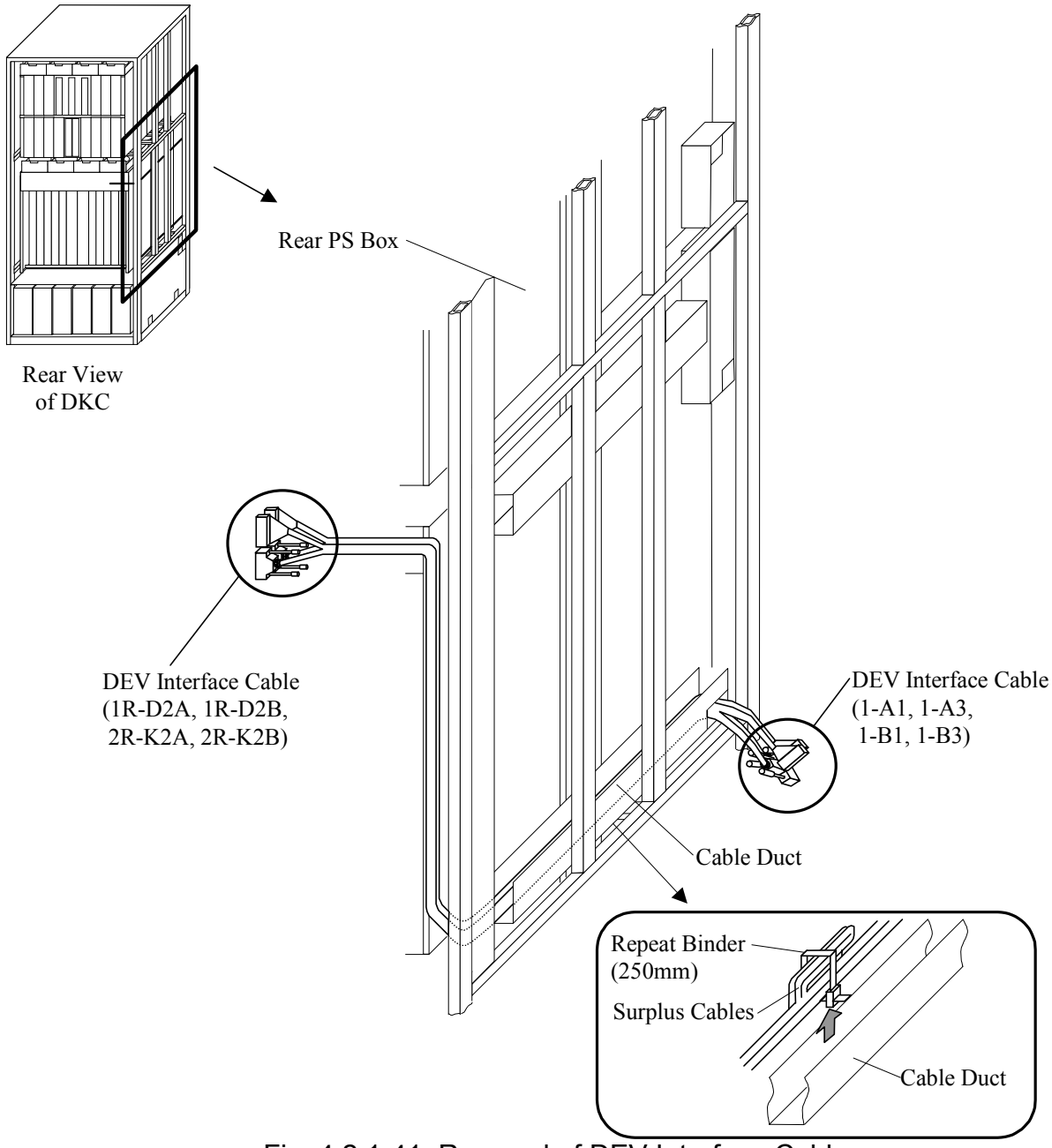

Fig. 4.2.1-41 Removal of DEV Interface Cables

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n. Remove the DEV interface cables for the DKU-L1 from the cable duct. Remove the repeat binder from the cables.

Table 4.2.1-9 DEV Interface Cable List

No.	Cable No. (DKA Side)	Cable No. (FSW Side)	Remarks
1	1R-D1A	0-A1	
	1R-D1B	0-A3	
2	2R-K1A	0-B1	
	2R-K1B	0-B3	

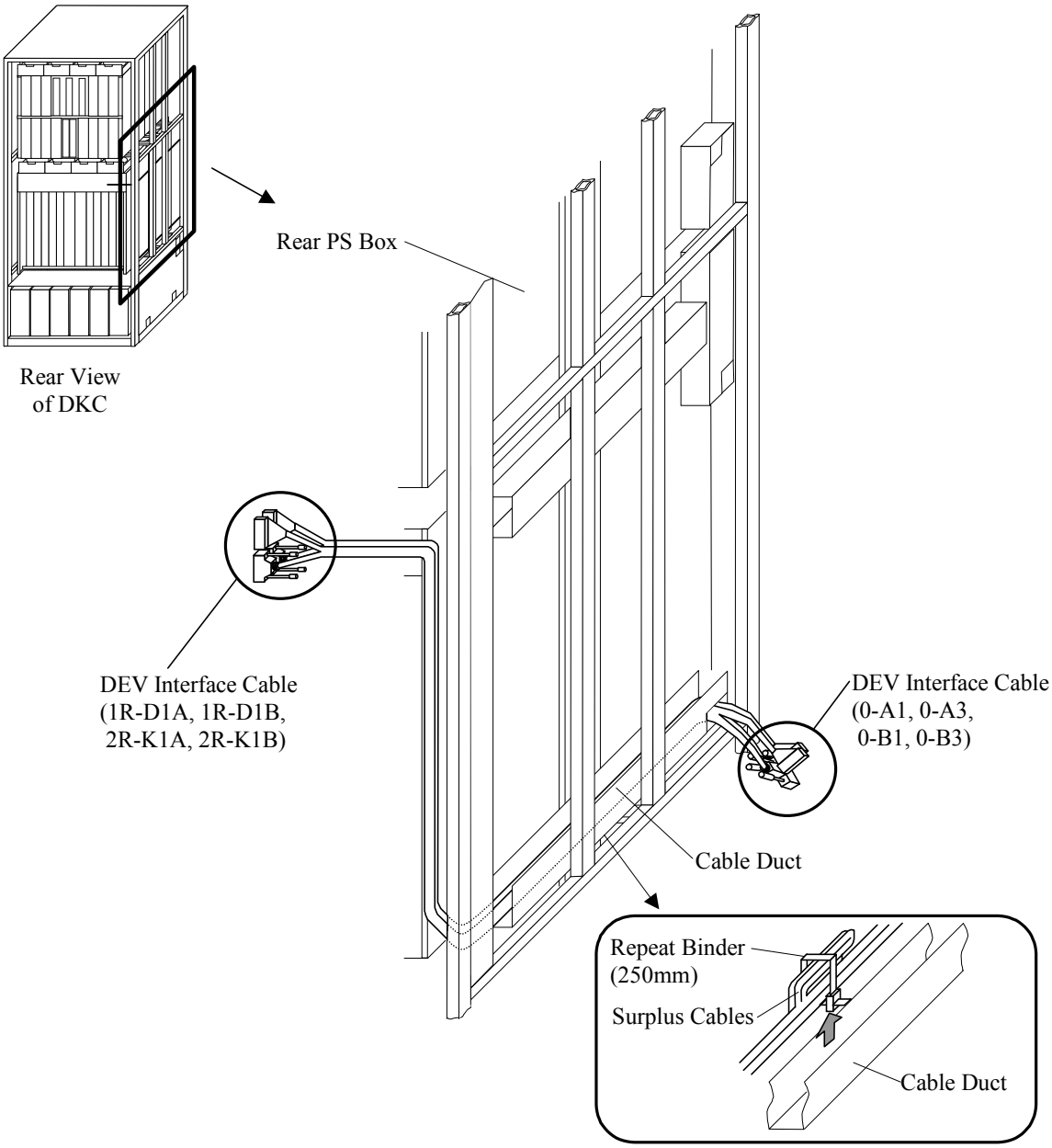

Fig. 4.2.1-42 Removal of DEV Interface Cables

6-4 Attachment of Cable Covers

a. Attach the cable covers in the reverse order of step 2-f through h.

b. Attach the cable covers in the reverse order of step 1.

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7. Side Cover Re-Installation
   a. Attach the side cover to the end of the frame. See Table 4.2.1-10.

Table 4.2.1-10 Removal and Re-installation of Side Cover

Configuration	DKU-L2	DKU-L1	DKC	DKU-R1	DKU-R2
De-Installation of DKU-R2		Side Cover			Side Cover
De-Installation of DKU-L1					
De-Installation of DKU-L2					

   b. Attach the side cover to the end of the string with the four binding screws and washers.

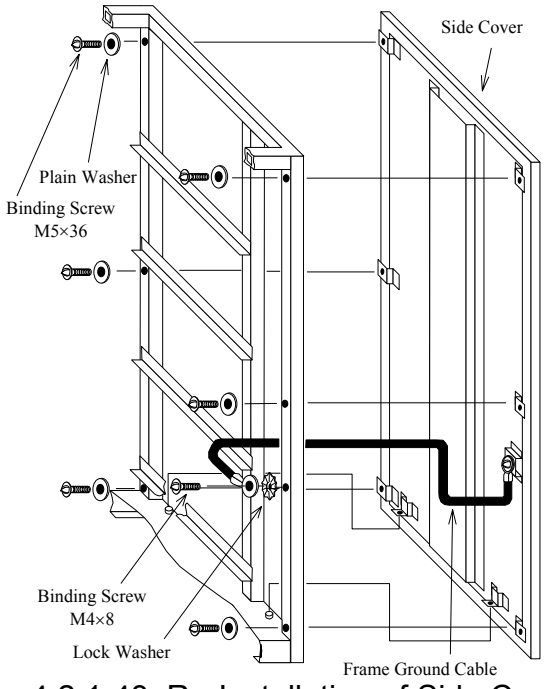

Fig. 4.2.1-43 Re-Installation of Side Cover

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8. Power Cable Assy Fixing
   a. Loosen the four screws.

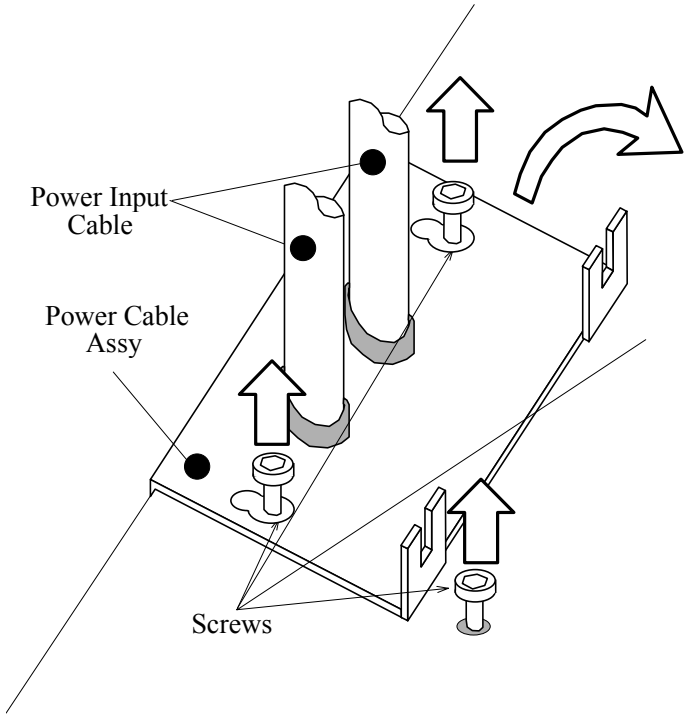

Fig. 4.2.1-44 Fixing of Power Cable Assy

   b. Secure the power cable Assy with the screws.

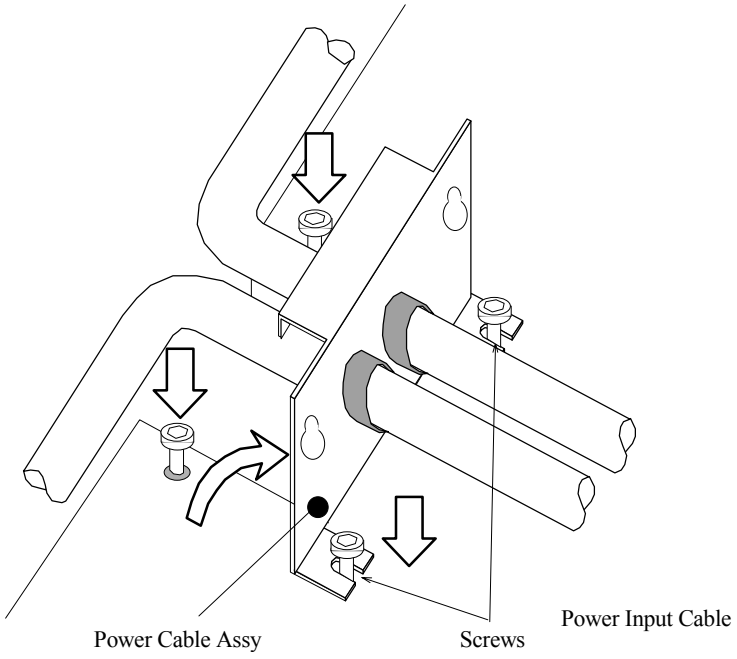

Fig. 4.2.1-45 Fixing of Power Cable Assy

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4.3 De-Installation of Shared Memory and Cache Memory

4.3.1 De-Installation of Additional Shared Memory (DKC-F460I-S512/S1024)

Table 4.3.1-1 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKC-F460I-S512	SH287-B	5513978-B	2	Shared Memory Module (256MB)
2	DKC-F460I-S1024	SH287-C	5513978-C	2	Shared Memory Module (512MB)
		Nameplate (HDS)	2105902-146	1	RSD
			2105903-146		HICAM
			2105903-246		HICEF
		Nameplate (HP)	2105902-246	1	RSD
			2105903-346		HICAM
			2105903-446		HICEF

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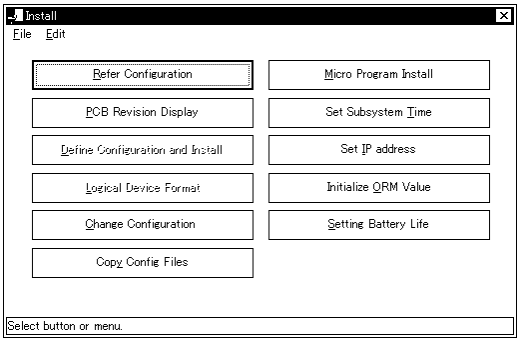
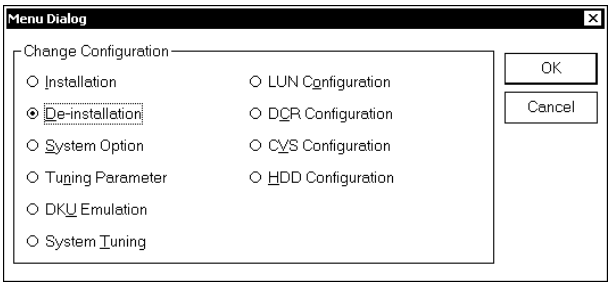
1. Setting up the New Device Structure Information

1. <Mode Change>
   Change the mode to Modify Mode.
   Select (CL) [Install].

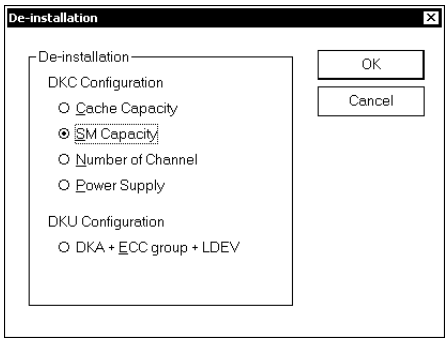
2. <Start the 'Menu Dialog' screen>
   Select (CL) [Change Configuration].



3. <Start Device Structure Setup screen>
   Select (CL) [De-Installation] in the 'Menu Dialog' dialog box and select (CL) [OK].



4. <Select a part to be changed>
   Select (CL) [SM Capacity], and select (CL) [OK].



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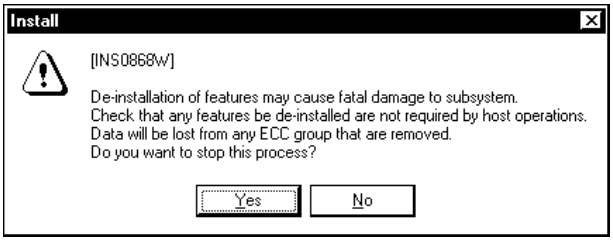
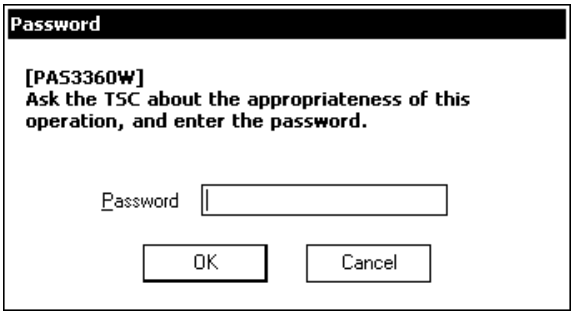
5.

Select (CL) [No] in response to "De-installation of features may cause fatal damage to subsystem. Check that any features be de-installed are not required by host operations. Data will be lost from any ECC group that are removed. Do you want to stop this process?".

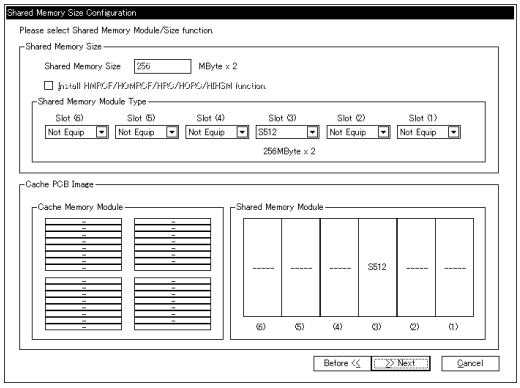


6. <Input password>
Enter the password and select (CL) [OK].



NOTICE
This is a special (exceptional) operation that can cause a serious failure such as a system down or a data loss if a wrong part to be removed is selected, and requires an input of a password. Ask the technical support center about the appropriateness of the operation, and input the password after getting an approval of executing the operation.

7. <Define Shared Memory Size>
Define the shared memory size in the 'Shared Memory Size Configuration' dialog box.



When you want to reduce the SM for the HMRCF/ HOMRCF/HRC/HORC/HIMSM function, remove the check mark that has been put to the "Install HMRCF/HOMRCF/HRC/HOMRCF/HIMSM Function.". (There may be no change in SM capacity.)

Note: Select 'Shared Memory Module Type' in order of "Slot(1) → Slot(2) → Slot(3) → Slot(4) → Slot(5) → Slot(6)".

If the installed SM after the reduction conforms to that shown in the "Cache PCB Image", select (CL) the [>>Next] button.

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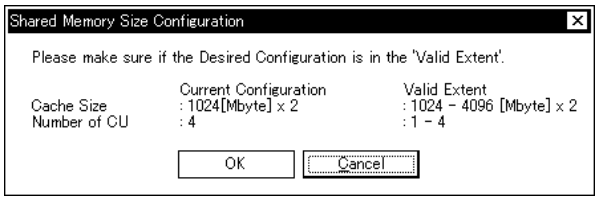
8.

Make sure if the desired configuration (Current Configuration) is in the valid extent (Valid Extent).

In the valid extent : Select (CL) [OK].
Out of the valid extent : Select (CL) [Cancel].



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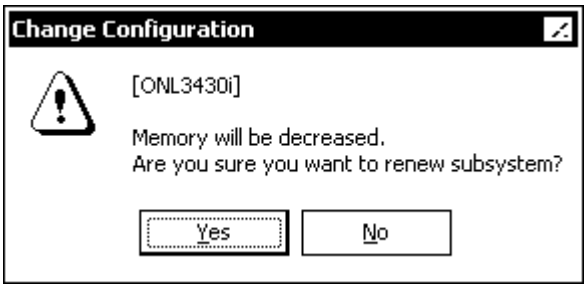
2. SVP pre procedure on the Cluster 1.

1. <Start de-installation>
   Select (CL) [Yes] in response to “Memory will be decreased. Are you sure you want to renew subsystem?”.

   If there is change in SM capacity, go to INST04-SM-40 step 2.
   If there is no change in SM capacity, go to INST04-SM-180 step 3.

   When [No] is selected (CL), returns to INST04-SM-20 step 3.

2. <Memory blocking on one side>
   When blocking of cluster 1 of shared memory is completed, “The Shared Memory PCB is being blocked...” is displayed.

3.
   “Lighting LED of the PCB...” is displayed.

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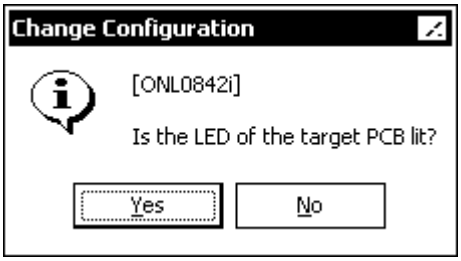
4. <Check shut down LED>
   Select (CL)
   * [Yes] if LED is on
   * [No] if LED is off
   in response to “Is the LED of the target PCB lit?”.

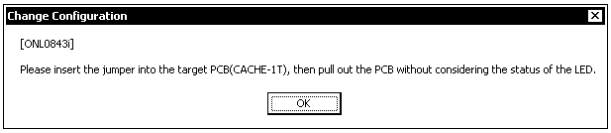


   <Forcing shut down LED on>

CAUTION

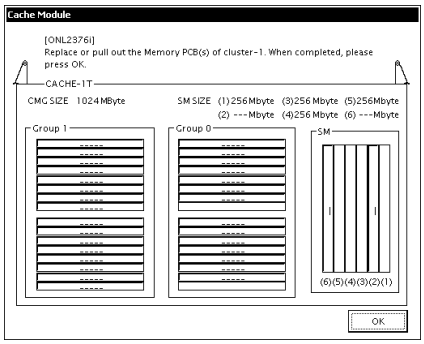
If the jumper is inserted in the wrong PCB, a system down may be caused.

   If [No] is selected:
   Insert a jumper in response to “Please insert the jumper into the target PCB(CACHE-nn), then pull out the PCB without considering the status of the LED”.
   (Refer INST03-SM-50)



5. <Perform cache hardware de-installation>
   At this point refrain from pressing the [OK] button.
   When “Replace or pull out the Memory PCB(s) of cluster-1. When completed, please press OK.” is displayed, perform the hardware de-installation steps according to the cache hardware de-installation procedure.

   Make sure of the installation location of the module to be removed and remove the correct module.
   (Uninstalled module is displayed as looks depressed; the PCB to be removed is displayed in gray.)



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3. Remove the Shared Memory on the Cluster 1.
   Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

3-1. Remove the PCB.

a. While referring to Fig. 4.3.1-1 and Table 4.3.1-2, check the Shut Down LED on the Cache Memory PCB in the Front Logic Box. Connect the Maintenance Jumper to the Shut Down Connector if the Shut Down LED is not on.

⚠ CAUTION

A system down may be caused if the Maintenance jumper is inserted in a PCB other than that to be removed. Make sure that it is the PCB to be removed.

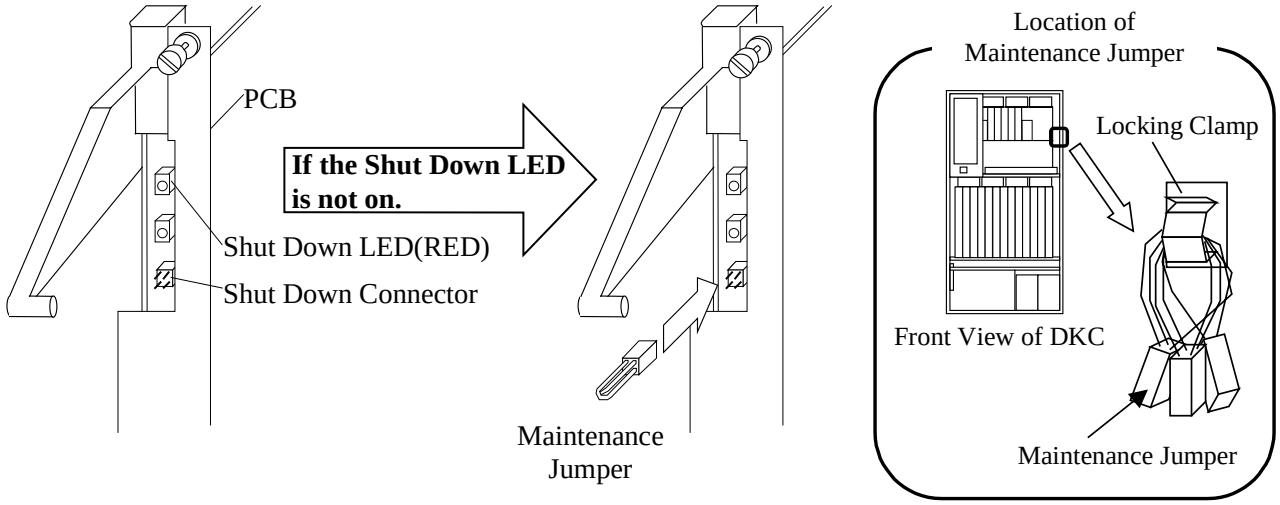

Fig. 4.3.1-1 Location of the Shut Down LED

Table 4.3.1-2 Location of the Cache PCB

Cluster	PCB Name	Box	Slot No.	Location No.	Remarks
1	WP490-A	Front Logic Box	T	CACHE-1T	Cache Memory PCB

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b. Remove the two screws and remove the Cache Memory PCB. Refer to Fig. 4.3.1-2 and Table 4.3.1-2.

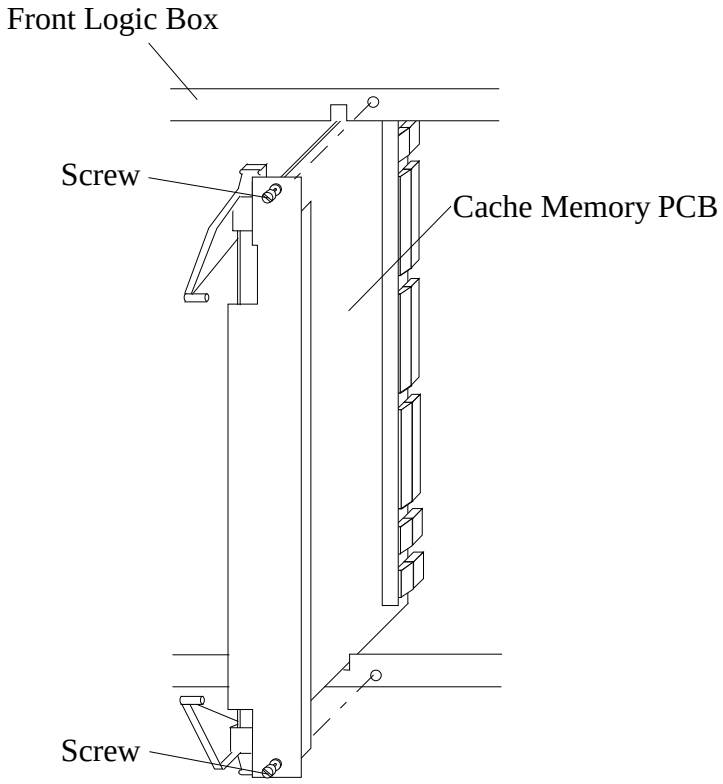

Fig. 4.3.1-2 Removal of the Cache Memory PCB

c. Remove the Maintenance Jumper if it is mounted.

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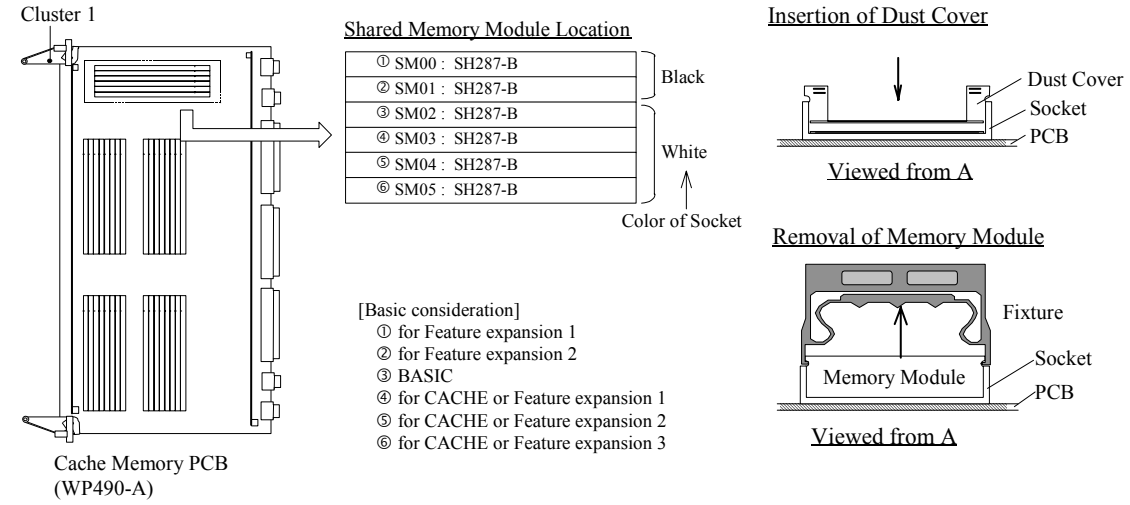
3-2. Remove the Shared Memory Modules.

Notice
The required capacity of the shared memory varies depending on whether the HRC/HORC/HMRCF/HOMRCF/HIHSM/ShadowImage-FlashCopy® version2 function is supported or not.
Calculate the required shared memory capacity referring to Table 4.3.1-31, Table 4.3.1-41 or Table 4.3.1-44 when none of the functions is supported (in the case of basic configuration) or Table 4.3.1-32, Table 4.3.1-42 or Table 4.3.1-45 when at least one of the functions is supported.
When supporting the ShadowImage-FlashCopy® version2 function, calculate the required capacity of the shared memory referring to Table 4.3.1-33, 4.3.1-43, or 4.3.1-46.

a. Remove the extra Shared Memory Modules according to the required Shared Memory capacity referring to Fig. 4.3.1-3 or Fig. 4.3.1-4, Table 4.3.1-31, Table 4.3.1-32, Table 4.3.1-33, Table 4.3.1-41, Table 4.3.1-42, Table 4.3.1-43, Table 4.3.1-44 and Table 4.3.1-45.
b. Insert the dust covers into the vacant sockets.

Composition of only DKC-F460I-S512



Composition of only DKC-F460I-S1024

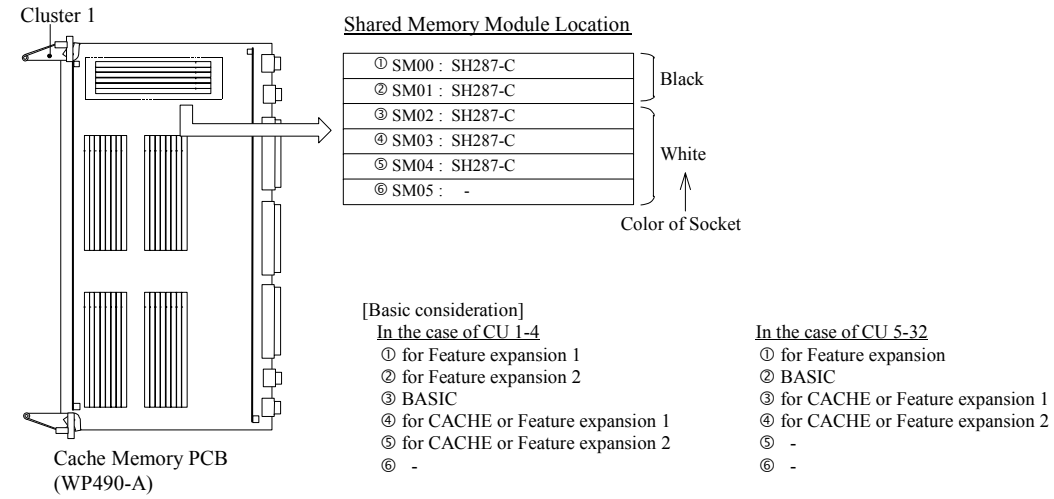


Fig. 4.3.1-3 Inserting Location of the Shared Memory Module

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Table 4.3.1-31 Number of SMs and Corresponding Shared Memory Capacity (DKC-F460I-S512 only installed and HRC/HORC/HMRCF/HOMRCF/HIHSM/ ShadowImage-FlashCopy® version2 not support)

Cache Memory Capacity	Number of CU:1-4 (to 1024LDEV)			Number of CU:5-8 (to 2048LDEV)			Number of CU:9-16 (to 4096LDEV)			Number of CU:17-32 (to 8192LDEV)			
	SM (MB)	S512	Install loc. *1	SM (MB)	S512	Install loc. *1	SM (MB)	S512	Install loc. *1	SM (MB)	S512	Install loc. *1	
2GB	512	1	③	1536	3	③①④	1536	3	③①④	2048	4	③①②④	
4GB	512	1	③	1536	3	③①④	1536	3	③①④	2048	4	③①②④	
6GB	512	1	③	1536	3	③①④	1536	3	③①④	2048	4	③①②④	
8GB	512	1	③	1536	3	③①④	1536	3	③①④	2048	4	③①②④	
10GB	1024	2	③④	1536	3	③①④	1536	3	③①④	2048	4	③①②④	
12GB	1024	2	③④	1536	3	③①④	1536	3	③①④	2048	4	③①②④	
14GB	1024	2	③④	1536	3	③①④	1536	3	③①④	2048	4	③①②④	
16GB	1024	2	③④	1536	3	③①④	1536	3	③①④	2048	4	③①②④	
18GB	1024	2	③④	1536	3	③①④	2048	4	③①④⑤	2560	5	③①②④⑤	
20GB	1024	2	③④	1536	3	③①④	2048	4	③①④⑤	2560	5	③①②④⑤	
22GB	1024	2	③④	1536	3	③①④	2048	4	③①④⑤	2560	5	③①②④⑤	
24GB	1024	2	③④	1536	3	③①④	2048	4	③①④⑤	2560	5	③①②④⑤	
26GB	1024	2	③④	1536	3	③①④	2048	4	③①④⑤	2560	5	③①②④⑤	
28GB	1024	2	③④	1536	3	③①④	2048	4	③①④⑤	2560	5	③①②④⑤	
30GB	1024	2	③④	1536	3	③①④	2048	4	③①④⑤	2560	5	③①②④⑤	
32GB	1024	2	③④	1536	3	③①④	2048	4	③①④⑤	2560	5	③①②④⑤	
34GB	1024	2	③④	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤	
36GB	1024	2	③④	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤	
38GB	1024	2	③④	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤	
40GB	1024	2	③④	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤	
42GB	1024	2	③④	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤	
44GB	1024	2	③④	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤	
46GB	1536	3	③④⑤	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤	
48GB	1536	3	③④⑤	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤	
50GB	1536	3	③④⑤	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤	
52GB	1536	3	③④⑤	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤	
54GB	1536	3	③④⑤	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤	
56GB	1536	3	③④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥	
58GB	1536	3	③④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥	
60GB	1536	3	③④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥	*5
62GB	1536	3	③④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥	
64GB	1536	3	③④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥	
Subsystem Capacity *2	to 18TB			to 72TB			to 144TB			over 144TB			
Number of HDD Canister Options *3	DKU-F455I-36K4: 128 DKU-F455I-72J4/K4: 64 DKU-F455I-146J4/JF/JQ: 32 DKU-F405I-18J4: 256 *4 DKU-F405I-47J4: 98 *4 DKU-F405I-72J4/K4: 64 *4 DKU-F405I-180H4: 24 *4			DKU-F455I-36K4: 256 DKU-F455I-72J4/K4: 256 DKU-F455I-146J4/JF/JQ: 128 DKU-F405I-18J4: 256 *4 DKU-F405I-47J4: 256 *4 DKU-F405I-72J4/K4: 256 *4 DKU-F405I-180H4: 96 *4			DKU-F455I-36K4: 256 DKU-F455I-72J4/K4: 256 DKU-F455I-146J4/JF/JQ: 256 DKU-F405I-18J4: 256 *4 DKU-F405I-47J4: 256 *4 DKU-F405I-72J4/K4: 256 *4 DKU-F405I-180H4: 128 *4			DKU-F455I-36K4: 256 DKU-F455I-72J4/K4: 256 DKU-F455I-146J4/JF/JQ: 256 DKU-F405I-18J4: 256 *4 DKU-F405I-47J4: 256 *4 DKU-F405I-72J4/K4: 256 *4 DKU-F405I-180H4: 128 *4	

Note. *1: Location ① through ⑥ represent the Shared Memory Module locations shown in Fig. 4.3.1-3.

*2: This is raw capacity. You have to increase SM capacity, when subsystem raw capacity exceeds this. When the HDD option is intermixed in one subsystem, subsystem capacity must not exceed this.

*3: The number of HDD canister options controllable by the LDEV numbers and SM capacities. You have to increase SM capacity, when the number of HDD canister options exceeds.

*4: When DKU405I is connected to DKC460I.

*5: When HRC/HMRCF supported, cache memory must be de-installed refer to Table 4.3.1-32.

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Table 4.3.1-32 Number of SMs and Corresponding Shared Memory Capacity (DKC-F460I-S512 only installed and HRC/HORC/HMRCF/HOMRCF/HIHSM supported)

Cache Memory Capacity	Number of CU:1-4 (to 1024LDEV)			Number of CU:5-8 (to 2048LDEV)			Number of CU:9-16 (to 4096LDEV)			Number of CU:17-32 & TPF (to 8192LDEV)			
	SM (MB)	S512	Install loc. *1	SM (MB)	S512	Install loc. *1	SM (MB)	S512	Install loc. *1	SM (MB)	S512	Install loc. *1	
2GB	1024	2	③④	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤	
4GB	1024	2	③④	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤	
6GB	1024	2	③④	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤	
8GB	1024	2	③④	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤	
10GB	1536	3	③④⑤	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤	
12GB	1536	3	③④⑤	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤	
14GB	1536	3	③④⑤	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤	
16GB	1536	3	③④⑤	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤	
18GB	1536	3	③④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥	
20GB	1536	3	③④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥	
22GB	1536	3	③④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥	
24GB	1536	3	③④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥	
26GB	1536	3	③④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥	
28GB	1536	3	③④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥	
30GB	1536	3	③④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥	
32GB	1536	3	③④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥	
34GB	1536	3	③④⑤	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥	
36GB	1536	3	③④⑤	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥	
38GB	1536	3	③④⑤	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥	
40GB	1536	3	③④⑤	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥	
42GB	1536	3	③④⑤	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥	
44GB	1536	3	③④⑤	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥	
46GB	2048	4	③④⑤⑥	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥	
48GB	2048	4	③④⑤⑥	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥	
50GB	2048	4	③④⑤⑥	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥	
52GB	2048	4	③④⑤⑥	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥	
54GB	2048	4	③④⑤⑥	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥	
56GB	2048	4	③④⑤⑥	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥	
58GB	2048	4	③④⑤⑥	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥	
60GB	2048	4	③④⑤⑥	2560	5	③①④⑤⑥	-	-	-	-	-	-	*5
62GB	2048	4	③④⑤⑥	2560	5	③①④⑤⑥	-	-	-	-	-	-	*5
64GB	2048	4	③④⑤⑥	2560	5	③①④⑤⑥	-	-	-	-	-	-	*5
Subsystem Capacity *2	to 18TB			to 72TB			to 144TB			over 144TB			
Number of HDD Canister Options *3	DKU-F455I-36K4: 128 DKU-F455I-72J4/K4: 64 DKU-F455I-146J4/JF/JQ: 32 DKU-F405I-18J4: 256 *4 DKU-F405I-47J4: 98 *4 DKU-F405I-72J4/K4: 64 *4 DKU-F405I-180H4: 24 *4			DKU-F455I-36K4: 256 DKU-F455I-72J4/K4: 256 DKU-F455I-146J4/JF/JQ: 128 DKU-F405I-18J4: 256 *4 DKU-F405I-47J4: 256 *4 DKU-F405I-72J4/K4: 256 *4 DKU-F405I-180H4: 96 *4			DKU-F455I-36K4: 256 DKU-F455I-72J4/K4: 256 DKU-F455I-146J4/JF/JQ: 256 DKU-F405I-18J4: 256 *4 DKU-F405I-47J4: 256 *4 DKU-F405I-72J4/K4: 256 *4 DKU-F405I-180H4: 128 *4			DKU-F455I-36K4: 256 DKU-F455I-72J4/K4: 256 DKU-F455I-146J4/JF/JQ: 256 DKU-F405I-18J4: 256 *4 DKU-F405I-47J4: 256 *4 DKU-F405I-72J4/K4: 256 *4 DKU-F405I-180H4: 128 *4			

Note. *1: Location ① through ⑥ represent the Shared Memory Module locations shown in Fig. 4.3.1-3.

*2: This is raw capacity. You have to increase SM capacity, when subsystem raw capacity exceeds this. When the HDD option is intermixed in one subsystem, subsystem capacity must not exceed this.

*3: The number of HDD canister options controllable by the LDEV numbers and SM capacities. You have to increase SM capacity, when the number of HDD canister options exceeds.

*4: When DKU405I is connected to DKC460I.

*5: When HRC/HMRCF supported, cache memory (over 60 G bytes) can't set up in the '-' mark.

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Table 4.3.1-33 Number of SMs and Corresponding Shared Memory Capacity (DKC-F460I-S512 only installed and ShadowImage-FlashCopy® version2 supported)

Cache Memory Capacity	Number of CU:1-4 (to 1024LDEV)			Number of CU:5-8 (to 2048LDEV)			Number of CU:9-16 (to 4096LDEV)			Number of CU:17-32 & TPF (to 8192LDEV)			
	SM (MB)	S512	Install loc. *1	SM (MB)	S512	Install loc. *1	SM (MB)	S512	Install loc. *1	SM (MB)	S512	Install loc. *1	
2GB	1536	3	③①④	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤	
4GB	1536	3	③①④	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤	
6GB	1536	3	③①④	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤	
8GB	1536	3	③①④	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤	
10GB	2048	4	③①④⑤	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤	
12GB	2048	4	③①④⑤	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤	
14GB	2048	4	③①④⑤	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤	
16GB	2048	4	③①④⑤	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤	
18GB	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥	
20GB	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥	
22GB	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥	
24GB	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥	
26GB	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥	
28GB	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥	
30GB	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥	
32GB	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥	
34GB	2048	4	③①④⑤	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥	
36GB	2048	4	③①④⑤	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥	
38GB	2048	4	③①④⑤	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥	
40GB	2048	4	③①④⑤	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥	
42GB	2048	4	③①④⑤	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥	
44GB	2048	4	③①④⑤	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥	
46GB	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥	
48GB	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥	
50GB	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥	
52GB	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥	
54GB	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥	
56GB	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥	
58GB	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥	
60GB	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	-	-	-	-	-	-	*5
62GB	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	-	-	-	-	-	-	*5
64GB	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	-	-	-	-	-	-	*5
Subsystem Capacity *2	to 18TB			to 72TB			to 144TB			over 144TB			
Number of HDD Canister Options *3	DKU-F455I-36K4: 128 DKU-F455I-72J4/K4: 64 DKU-F455I-146J4/JF/JQ: 32 DKU-F405I-18J4: 256 *4 DKU-F405I-47J4: 98 *4 DKU-F405I-72J4/K4: 64 *4 DKU-F405I-180H4: 24 *4			DKU-F455I-36K4: 256 DKU-F455I-72J4/K4: 256 DKU-F455I-146J4/JF/JQ: 128 DKU-F405I-18J4: 256 *4 DKU-F405I-47J4: 256 *4 DKU-F405I-72J4/K4: 256 *4 DKU-F405I-180H4: 96 *4			DKU-F455I-36K4: 256 DKU-F455I-72J4/K4: 256 DKU-F455I-146J4/JF/JQ: 256 DKU-F405I-18J4: 256 *4 DKU-F405I-47J4: 256 *4 DKU-F405I-72J4/K4: 256 *4 DKU-F405I-180H4: 128 *4			DKU-F455I-36K4: 256 DKU-F455I-72J4/K4: 256 DKU-F455I-146J4/JF/JQ: 256 DKU-F405I-18J4: 256 *4 DKU-F405I-47J4: 256 *4 DKU-F405I-72J4/K4: 256 *4 DKU-F405I-180H4: 128 *4			

Note. *1: Location ① through ⑥ represent the Shared Memory Module locations shown in Fig. 4.3.1-3.

*2: This is raw capacity. You have to increase SM capacity, when subsystem raw capacity exceeds this. When the HDD option is intermixed in one subsystem, subsystem capacity must not exceed this.

*3: The number of HDD canister options controllable by the LDEV numbers and SM capacities. You have to increase SM capacity, when the number of HDD canister options exceeds.

*4: When DKU405I is connected to DKC460I.

*5: When HRC/HMRCF supported, cache memory (over 60 G bytes) can't set up in the '-' mark.

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Table 4.3.1-41 Number of SMs and Corresponding Shared Memory Capacity (DKC-F460I-S1024 only installed and HRC/HORC/HMRCF/HOMRCF/HIHSM/ ShadowImage-FlashCopy® version2 not support)

Cache Memory Capacity *5	Number of CU:1-4 (to 1024LDEV)			Number of CU:5-8 (to 2048LDEV)			Number of CU:9-16 (to 4096LDEV)			Number of CU:17-32 (to 8192LDEV)		
	SM (MB)	S1024	Install loc. *1	SM (MB)	S1024	Install loc. *1	SM (MB)	S1024	Install loc. *1	SM (MB)	S1024	Install loc. *1
68GB	2048	2	③④	3072	3	①②③	3072	3	①②③	3072	3	①②③
72GB	2048	2	③④	3072	3	①②③	3072	3	①②③	3072	3	①②③
76GB	2048	2	③④	3072	3	①②③	3072	3	①②③	3072	3	①②③
80GB	2048	2	③④	3072	3	①②③	3072	3	①②③	3072	3	①②③
84GB	2048	2	③④	3072	3	①②③	3072	3	①②③	3072	3	①②③
88GB	2048	2	③④	3072	3	①②③	3072	3	①②③	3072	3	①②③
92GB	2048	2	③④	3072	3	①②③	3072	3	①②③	3072	3	①②③
96GB	2048	2	③④	3072	3	①②③	4096	4	①②③④	4096	4	①②③④
100GB	2048	2	③④	3072	3	①②③	4096	4	①②③④	4096	4	①②③④
104GB	2048	2	③④	3072	3	①②③	4096	4	①②③④	4096	4	①②③④
108GB	2048	2	③④	3072	3	①②③	4096	4	①②③④	4096	4	①②③④
112GB	2048	2	③④	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
116GB	2048	2	③④	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
120GB	2048	2	③④	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
124GB	3072	3	③④⑤	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
128GB	3072	3	③④⑤	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
Subsystem Capacity *2	to 18TB			to 72TB			to 144TB			over 144TB		
Number of HDD Canister Options *3	DKU-F455I-36K4: 128 DKU-F455I-72J4/K4: 64 DKU-F455I-146J4/JF: 32 DKU-F405I-18J4: 256*4 DKU-F405I-47J4: 98*4 DKU-F405I-72J4: 64*4 DKU-F405I-180H4: 24*4			DKU-F455I-36K4: 256 DKU-F455I-72J4/K4: 256 DKU-F455I-146J4/JF: 128 DKU-F405I-18J4: 256*4 DKU-F405I-47J4: 256*4 DKU-F405I-72J4: 256*4 DKU-F405I-180H4: 96*4			DKU-F455I-36K4: 256 DKU-F455I-72J4/K4: 256 DKU-F455I-146J4/JF: 256 DKU-F405I-18J4: 256*4 DKU-F405I-47J4: 256*4 DKU-F405I-72J4: 256*4 DKU-F405I-180H4: 128*4			DKU-F455I-36K4: 256 DKU-F455I-72J4/K4: 256 DKU-F455I-146J4/JF: 256 DKU-F405I-18J4: 256*4 DKU-F405I-47J4: 256*4 DKU-F405I-72J4: 256*4 DKU-F405I-180H4: 128*4		

Note. *1: Location ① through ⑤ represent the Shared Memory Module locations shown in Fig. 4.3.1-3.

*2: This is raw capacity. You have to increase SM capacity, when subsystem raw capacity exceeds this. When the HDD option is intermixed in one subsystem, subsystem capacity must not exceed this.

*3: The number of HDD canister options controllable by the LDEV numbers and SM capacities. You have to increase SM capacity, when the number of HDD canister options exceeds.

*4: When DKU405I is connected to DKC460I.

*5: When Cache Memory capacity is 64GB or less, refer to the Table 4.3.1-31 or Table 4.3.1-44.

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Table 4.3.1-42 Number of SMs and Corresponding Shared Memory Capacity (DKC-F460I-S1024 only installed and HRC/HORC/HMRCF/HOMRCF/HIHSM supported)

Cache Memory Capacity *5	Number of CU:1-4 (to 1024LDEV)			Number of CU:5-8 (to 2048LDEV)			Number of CU:9-16 (to 4096LDEV)			Number of CU:17-32 & TPF (to 8192LDEV)		
	SM (MB)	S1024	Install loc. *1	SM (MB)	S1024	Install loc. *1	SM (MB)	S1024	Install loc. *1	SM (MB)	S1024	Install loc. *1
68GB	2048	2	③④	3072	3	①②③	4096	4	①②③④	4096	4	①②③④
72GB	2048	2	③④	3072	3	①②③	4096	4	①②③④	4096	4	①②③④
76GB	2048	2	③④	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
80GB	2048	2	③④	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
84GB	2048	2	③④	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
88GB	3072	3	③④⑤	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
92GB	3072	3	③④⑤	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
96GB	3072	3	③④⑤	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
100GB	3072	3	③④⑤	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
104GB	3072	3	③④⑤	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
108GB	3072	3	③④⑤	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
112GB	3072	3	③④⑤	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
116GB	3072	3	③④⑤	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
120GB	3072	3	③④⑤	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
124GB	3072	3	③④⑤	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
128GB	3072	3	③④⑤	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
Subsystem Capacity *2	to 18TB			to 72TB			to 144TB			over 144TB		
Number of HDD Canister Options *3	DKU-F455I-36K4: 128 DKU-F455I-72J4/K4: 64 DKU-F455I-146J4/JF: 32 DKU-F405I-18J4: 256*4 DKU-F405I-47J4: 98*4 DKU-F405I-72J4: 64*4 DKU-F405I-180H4: 24*4			DKU-F455I-36K4: 256 DKU-F455I-72J4/K4: 256 DKU-F455I-146J4/JF: 128 DKU-F405I-18J4: 256*4 DKU-F405I-47J4: 256*4 DKU-F405I-72J4: 256*4 DKU-F405I-180H4: 96*4			DKU-F455I-36K4: 256 DKU-F455I-72J4/K4: 256 DKU-F455I-146J4/JF: 256 DKU-F405I-18J4: 256*4 DKU-F405I-47J4: 256*4 DKU-F405I-72J4: 256*4 DKU-F405I-180H4: 128*4			DKU-F455I-36K4: 256 DKU-F455I-72J4/K4: 256 DKU-F455I-146J4/JF: 256 DKU-F405I-18J4: 256*4 DKU-F405I-47J4: 256*4 DKU-F405I-72J4: 256*4 DKU-F405I-180H4: 128*4		

Note. *1: Location ① through ⑤ represent the Shared Memory Module locations shown in Fig. 4.3.1-3.

*2: This is raw capacity. You have to increase SM capacity, when subsystem raw capacity exceeds this. When the HDD option is intermixed in one subsystem, subsystem capacity must not exceed this.

*3: The number of HDD canister options controllable by the LDEV numbers and SM capacities. You have to increase SM capacity, when the number of HDD canister options exceeds.

*4: When DKU405I is connected to DKC460I.

*5: When Cache Memory capacity is 64GB or less, refer to the Table 4.3.1-32 or Table 4.3.1-45.

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Table 4.3.1-43 Number of SMs and Corresponding Shared Memory Capacity
(DKC-F460I-S1024 only installed and ShadowImage-FlashCopy® version2 supported)

Cache Memory Capacity *5	Number of CU:1-4 (to 1024LDEV)			Number of CU:5-8 (to 2048LDEV)			Number of CU:9-16 (to 4096LDEV)			Number of CU:17-32 & TPF (to 8192LDEV)		
	SM (MB)	S1024	Install loc. *1	SM (MB)	S1024	Install loc. *1	SM (MB)	S1024	Install loc. *1	SM (MB)	S1024	Install loc. *1
68GB	3072	3	①②③	3072	3	①②③	4096	4	①②③④	4096	4	①②③④
72GB	3072	3	①②③	3072	3	①②③	4096	4	①②③④	4096	4	①②③④
76GB	3072	3	①②③	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
80GB	3072	3	①②③	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
84GB	3072	3	①②③	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
88GB	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
92GB	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
96GB	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
100GB	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
104GB	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
108GB	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
112GB	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
116GB	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
120GB	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
124GB	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
128GB	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
Subsystem Capacity *2	to 18TB			to 72TB			to 144TB			over 144TB		
Number of HDD Canister Options *3	DKU-F455I-36K4: 128 DKU-F455I-72J4/K4: 64 DKU-F455I-146J4/JF: 32 DKU-F405I-18J4: 256*4 DKU-F405I-47J4: 98*4 DKU-F405I-72J4: 64*4 DKU-F405I-180H4: 24*4			DKU-F455I-36K4: 256 DKU-F455I-72J4/K4: 256 DKU-F455I-146J4/JF: 128 DKU-F405I-18J4: 256*4 DKU-F405I-47J4: 256*4 DKU-F405I-72J4: 256*4 DKU-F405I-180H4: 96*4			DKU-F455I-36K4: 256 DKU-F455I-72J4/K4: 256 DKU-F455I-146J4/JF: 256 DKU-F405I-18J4: 256*4 DKU-F405I-47J4: 256*4 DKU-F405I-72J4: 256*4 DKU-F405I-180H4: 128*4			DKU-F455I-36K4: 256 DKU-F455I-72J4/K4: 256 DKU-F455I-146J4/JF: 256 DKU-F405I-18J4: 256*4 DKU-F405I-47J4: 256*4 DKU-F405I-72J4: 256*4 DKU-F405I-180H4: 128*4		

Note. *1: Location ① through ⑤ represent the Shared Memory Module locations shown in Fig. 4.3.1-3.
*2: This is raw capacity. You have to increase SM capacity, when subsystem raw capacity exceeds this. When the HDD option is intermixed in one subsystem, subsystem capacity must not exceed this.
*3: The number of HDD canister options controllable by the LDEV numbers and SM capacities. You have to increase SM capacity, when the number of HDD canister options exceeds.
*4: When DKU405I is connected to DKC460I.
*5: When Cache Memory capacity is 64GB or less, refer to the Table 4.3.1-33 or Table 4.3.1-46.

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Mixture composition of DKC-F460I-S512 and DKC-F460I-S1024

The mixture composition of DKC-F460I-S512 and DKC-F460I-S1024 is allowed. However, depending on cache capacity, it may have to constitute from DKC-F460I-S512 or DKC-F460I-S1024 independent one. (Refer to Table 4.3.1-44, 4.3.1-45 and 4.3.1-46 for details.)
The mixture pattern of DKC-F460I-S512 and DKC-F460 I-S1024 is shown in the following table. Since it is decided for every pattern, it must be careful of the installing location of two shared memory modules.
In order to prevent a maintenance mistake, it recommends constituting from DKC-F460I-S512 or DKC-F460I-S1024 independent one. (Refer to Table 4.3.1-43A and 4.3.1-43B)

Table 4.3.1-43A Shared Memory Module Mixture Pattern
(Composition of only DKC-F460I-S512)

Install location	Mixture Pattern											
	A	B	C	D	E	F	G	H	I	J	K	L
①	-	-	-	-	S512	S512	S512	S512	S512	S512	S512	S512
②	-	-	-	-	-	-	-	-	S512	S512	S512	S512
③	S512	S512	S512	S512	S512	S512	S512	S512	S512	S512	S512	S512
④	-	S512	S512	S512	-	S512	S512	S512	-	S512	S512	S512
⑤	-	-	S512	S512	-	-	S512	S512	-	-	S512	S512
⑥	-	-	-	S512	-	-	-	S512	-	-	-	S512
Total SM Capacity	0.5GB	1.0GB	1.5GB	2.0GB	1.0GB	1.5GB	2.0GB	2.5GB	1.5GB	2.0GB	2.5GB	3.0GB

Table 4.3.1-43B Shared Memory Module Mixture Pattern

Install location	Mixture Pattern														
	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
①	-	-	-	-	S512	S512	S512	S512	S512	S512	S512	S1024	S1024	S1024	S1024
②	-	-	-	-	-	-	-	-	S512	S512	S512	S1024	S1024	S1024	S1024
③	S1024	S1024	S1024	S1024	S1024	S1024	S1024	S1024	S1024	S1024	S1024	S512	S1024	S1024	S1024
④	S512	S1024	S1024	S1024	S512	S1024	S1024	S1024	S1024	S1024	S1024	-	-	S512	S1024
⑤	-	-	S512	S1024	-	-	S512	S1024	-	S512	S1024	-	-	-	-
⑥	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total SM Capacity	1.5GB	2.0GB	2.5GB	3.0GB	2.0GB	2.5GB	3.0GB	3.5GB	3.0GB	3.5GB	4.0GB	2.5GB	3.0GB	3.5GB	4.0GB

Note. 1: Location ①-⑥ shows actual location of shared memory module on Cache PCB. (Refer to Fig. 4.3.1-4)
2: S1024 means installing the shared memory module which constitutes DKC-F460I-S1024 option.
3: S512 means installing the shared memory module which constitutes DKC-F460I-S512 option.

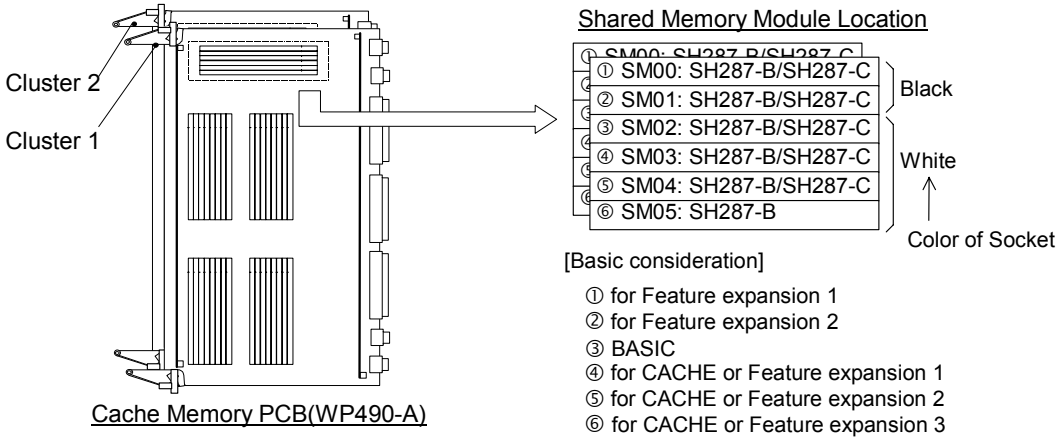

Fig. 4.3.1-4 Actual location of shared memory module

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Table 4.3.1-44 Size of Cache Memory and Shared Memory (TrueCopy/ShadowImage/ ShadowImage-FlashCopy® version2/Cruise Control function not supported)

Cache Memory Capacity	Number of CU:1-4 (to 1024LDEV)				Number of CU:5-8 (to 2048LDEV)				Number of CU:9-16 (to 4096LDEV)				Number of CU:17-32 (to 8192LDEV)			
	SM *1 Cap. (MB)	Number of SM options S1024	Number of SM options S512	Mixture Pattern *5	SM *1 Cap. (MB)	Number of SM options S1024	Number of SM options S512	Mixture Pattern *5	SM *1 Cap. (MB)	Number of SM options S1024	Number of SM options S512	Mixture Pattern *5	SM *1 Cap. (MB)	Number of SM options S1024	Number of SM options S512	Mixture Pattern *5
2GB	512	-	1	A	1536	-	3	F	1536	-	3	F	2048	-	4	J
4GB	512	-	1	A	1536	-	3	F	1536	-	3	F	2048	-	4	J
6GB	512	-	1	A	1536	-	3	F	1536	-	3	F	2048	-	4	J
8GB	512	-	1	A	1536	-	3	F	1536	-	3	F	2048	-	4	J
10GB	1024	-	2	B	1536	-	3	F	1536	-	3	F	2048	-	4	J
12GB	1024	-	2	B	1536	-	3	F	1536	-	3	F	2048	-	4	J
14GB	1024	-	2	B	1536	-	3	F	1536	-	3	F	2048	-	4	J
16GB	1024	-	2	B	1536	-	3	F	1536	-	3	F	2048	-	4	J
18GB	1024	-	2	B	1536	-	3	F	2048 or 2560 or 3072	Refer to mix pattern table *6		G, e, f, l, m	2560 or 3072	Refer to mix pattern table *6		K, i, l, m
20GB	1024	-	2	B	1536	-	3	F								
22GB	1024	-	2	B	1536	-	3	F								
24GB	1024	-	2	B	1536	-	3	F								
26GB	1024	-	2	B	1536	-	3	F								
28GB	1024	-	2	B	1536	-	3	F								
30GB	1024	-	2	B	1536	-	3	F								
32GB	1024	-	2	B	1536	-	3	F								
36GB	1024	-	2	B	2048 or 2560 or 3072	Refer to mix pattern table *6		G, e, f, l, m								
40GB	1024	-	2	B												
44GB	1024	-	2	B												
48GB	1536 or 2048	Refer to mix pattern table *6		a, b												
52GB																
56GB									2560 or 3072	Refer to mix pattern table *6		H, f, m	3072	Refer to mix pattern table *6		L, i, m
60GB																
64GB																
68GB	1536	1	1	a	2048 or 2560	Refer to mix pattern table *6		f, m	3072	3	0	m	3072	2	2	i
72GB	1536	1	1	a					3072	3	0	m	3072	2	2	i
76GB	1536	1	1	a	3072	3	0	m	3072	3	0	m	3072	2	2	i
80GB	1536	1	1	a	3072	3	0	m	3072	3	0	m	3072	2	2	i
84GB	2048	2	0	b	3072	3	0	m	3072	3	0	m	3072	2	2	i
88GB	2048	2	0	b	3072	3	0	m	3072	3	0	m	3072	2	2	i
92GB	2048	2	0	b	3072	3	0	m	3072	3	0	m	3072	2	2	i
96GB	2048	2	0	b	3072	3	0	m	3072 or 3584	Refer to mix. pattern table *6		g, h, n	3584 or 4096	Refer to mix. pattern table *6		j, k, n
100GB	2048	2	0	b	3072	3	0	m				g, h, n				j, k, n
104GB	2048	2	0	b	3072	3	0	m				g, h, n				j, k, n
108GB	2048	2	0	b	3072	3	0	m				g, h, n				j, k, n
112GB	2048	2	0	b	3072 or 3584	Refer to mix. pattern table *6		g, h, n				g, h, n				j, k, n
116GB	2048	2	0	b				g, h, n				g, h, n				j, k, n
120GB	2048	2	0	b				g, h, n				g, h, n				j, k, n
124GB	2560	2	1	c				g, h, n				g, h, n				j, k, n
128GB	2560	2	1	c				g, h, n				g, h, n				j, k, n
Subsystem Capacity *2	to 18TB				to 72TB				to 144TB				over 144TB			
Number of HDD Canister Option *3	DKU-F455I-36K4:			128	DKU-F455I-36K4:			256	DKU-F455I-36K4:			256	DKU-F455I-36K4:			256
	DKU-F455I-72J4/72K4:			64	DKU-F455I-72J4/72K4:			256	DKU-F455I-72J4/72K4:			256	DKU-F455I-72J4/72K4:			256
	DKU-F455I-146J4:			32	DKU-F455I-146J4:			128	DKU-F455I-146J4:			256	DKU-F455I-146J4:			256
	DKU-F405I-18J4:			256 *4	DKU-F405I-18J4:			256 *4	DKU-F405I-18J4:			256 *4	DKU-F405I-18J4:			256 *4
	DKU-F405I-47J4:			98 *4	DKU-F405I-47J4:			256 *4	DKU-F405I-47J4:			256 *4	DKU-F405I-47J4:			256 *4
	DKU-F405I-72J4:			64 *4	DKU-F405I-72J4:			256 *4	DKU-F405I-72J4:			256 *4	DKU-F405I-72J4:			256 *4
	DKU-F405I-180H4:			24 *4	DKU-F405I-180H4:			96 *4	DKU-F405I-180H4:			128 *4	DKU-F405I-180H4:			128 *4

Note. *1: This is required SM capacity, when DKC-F460I-S1024 and DKC-F460I-S512 are intermixed. When constituted only from DKC-F460I-S1024, it differs from required SM capacity.

*2: This is raw capacity. You have to increase SM capacity, when subsystem raw capacity exceeds this. When the HDD option is intermixed in one subsystem, subsystem capacity must not exceed this.

*3: The number of HDD canister options controllable by the LDEV numbers and SM capacities. You have to increase SM capacity, when the number of HDD canister options exceeds.

*4: When DKU405I is connected to DKC460I.

*5: 'A' to 'L' should refer a Table 4.3.1-43A, and refer to the Table 4.3.1-43B for 'o' from 'a'. The memory module corresponding to each mixture pattern is installed in the install locations ①-⑥.

*6: You have to choose one from some mixture patterns.

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Table 4.3.1-45 Size of Cache Memory and Shared Memory (TrueCopy/ShadowImage/Cruise Control function supported)

Cache Memory Capacity	Number of CU:1-4 (to 1024LDEV)				Number of CU:5-8 (to 2048LDEV)				Number of CU:9-16 (to 4096LDEV)				Number of CU:17-32 (to 8192LDEV)			
	SM *1 Cap. (MB)	Number of SM options S1024	Number of SM options S512	Mixture Pattern *5	SM *1 Cap. (MB)	Number of SM options S1024	Number of SM options S512	Mixture Pattern *5	SM *1 Cap. (MB)	Number of SM options S1024	Number of SM options S512	Mixture Pattern *5	SM *1 Cap. (MB)	Number of SM options S1024	Number of SM options S512	Mixture Pattern *5
2GB	1024	-	2	B	2048 or 2560 or 3072	Refer to mix. pattern table *6		G, e, f, l, m	2048 or 2560 or 3072	Refer to mix. pattern table *6		G, e, f, l, m	2560 or 3072	Refer to mix. pattern table *6		K, i, l, m
4GB	1024	-	2	B												
6GB	1024	-	2	B												
8GB	1024	-	2	B												
10GB	1536	-	3	C												
12GB	1536	-	3	C												
14GB	1536	-	3	C												
16GB	1536	-	3	C												
18GB	1536	-	3	C					2560 or 3072	Refer to mix. pattern table *6		H, f,m	3072	Refer to mix. pattern table *6		L, i, m
20GB	1536	-	3	C												
22GB	1536	-	3	C												
24GB	1536	-	3	C												
26GB	1536	-	3	C												
28GB	1536	-	3	C												
30GB	1536	-	3	C												
32GB	1536	-	3	C												
36GB	1536	-	3	C	2560 or 3072	Refer to mix. pattern table *6		H, f, m								
40GB	1536	-	3	C												
44GB	1536	-	3	C												
48GB	2048	Refer to mix. pattern table *6		D, b												
52GB																
56GB																
60GB									3072 or 3584	Refer to mix. pattern table *6		g, h	3584 or 4096	Refer to mix. pattern table *6		j, k, n, o
64GB																
68GB	2048	2	0	b	3072	3	0	m	3072 or 3584	Refer to mix. pattern table *6		g, h, n	3584 or 4096	Refer to mix. pattern table *6		j, k, n
72GB	2048	2	0	b	3072	3	0	m				g, h, n				j, k, n
76GB	2048	2	0	b	3072 or 3584	Refer to mix. pattern table *6		g, h, n				g, h, n				j, k, n
80GB	2048	2	0	b				g, h, n				g, h, n				j, k, n
84GB	2048	2	0	b				g, h, n				g, h, n				j, k, n
88GB	2560	2	1	c				g, h, n				g, h, n				j, k, n
92GB	2560	2	1	c				g, h, n				g, h, n				j, k, n
96GB	2560	2	1	c				g, h, n				g, h, n				j, k, n
100GB	2560	2	1	c				g, h, n	4096	4	0	o	4096	4	0	o
104GB	2560	2	1	c				g, h, n	4096	4	0	o	4096	4	0	o
108GB	2560	2	1	c				g, h, n	4096	4	0	o	4096	4	0	o
112GB	2560	2	1	c				g, h, n	4096	4	0	o	4096	4	0	o
116GB	2560	2	1	c	4096	4	0	o	4096	4	0	o	4096	4	0	o
120GB	2560	2	1	c	4096	4	0	o	4096	4	0	o	4096	4	0	o
124GB	2560	2	1	c	4096	4	0	o	4096	4	0	o	4096	4	0	o
128GB	3072	3	0	d	4096	4	0	o	4096	4	0	o	4096	4	0	o
Subsystem Capacity *2	to 18TB				to 72TB				to 144TB				over 144TB			
Number of HDD Canister Option *3	DKU-F455I-36K4:			128	DKU-F455I-36K4:			256	DKU-F455I-36K4:			256	DKU-F455I-36K4:			256
	DKU-F455I-72J4/72K4:			64	DKU-F455I-72J4/72K4:			256	DKU-F455I-72J4/72K4:			256	DKU-F455I-72J4/72K4:			256
	DKU-F455I-146J4:			32	DKU-F455I-146J4:			128	DKU-F455I-146J4:			256	DKU-F455I-146J4:			256
	DKU-F405I-18J4:			256 *4	DKU-F405I-18J4:			256 *4	DKU-F405I-18J4:			256 *4	DKU-F405I-18J4:			256 *4
	DKU-F405I-47J4:			98 *4	DKU-F405I-47J4:			256 *4	DKU-F405I-47J4:			256 *4	DKU-F405I-47J4:			256 *4
	DKU-F405I-72J4:			64 *4	DKU-F405I-72J4:			256 *4	DKU-F405I-72J4:			256 *4	DKU-F405I-72J4:			256 *4
	DKU-F405I-180H4:			24 *4	DKU-F405I-180H4:			96 *4	DKU-F405I-180H4:			128 *4	DKU-F405I-180H4:			128 *4

Note. *1: This is required SM capacity, when DKC-F460I-S1024 and DKC-F460I-S512 are intermixed. When constituted only from DKC-F460I-S1024, it differs from required SM capacity.

*2: This is raw capacity. You have to increase SM capacity, when subsystem raw capacity exceeds this. When the HDD option is intermixed in one subsystem, subsystem capacity must not exceed this.

*3: The number of HDD canister options controllable by the LDEV numbers and SM capacities. You have to increase SM capacity, when the number of HDD canister options exceeds.

*4: When DKU405I is connected to DKC460I.

*5: 'A' to 'L' should refer a Table 4.3.1-43A, and refer to the Table 4.3.1-43B for 'o' from 'a'. The memory module corresponding to each mixture pattern is installed in the install locations ①-⑥.

*6: You have to choose one from some mixture patterns.

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Table 4.3.1-46 Size of Cache Memory and Shared Memory (ShadowImage-FlashCopy® version2supported)

Cache Memory Capacity	Number of CU:1-4 (to 1024LDEV)				Number of CU:5-8 (to 2048LDEV)				Number of CU:9-16 (to 4096LDEV)				Number of CU:17-32 (to 8192LDEV)			
	SM *1 Cap. (MB)	Number of SM options S1024	Number of SM options S512	Mixture Pattern *5	SM *1 Cap. (MB)	Number of SM options S1024	Number of SM options S512	Mixture Pattern *5	SM *1 Cap. (MB)	Number of SM options S1024	Number of SM options S512	Mixture Pattern *5	SM *1 Cap. (MB)	Number of SM options S1024	Number of SM options S512	Mixture Pattern *5
2GB	1536	-	3	F	2048 or 2560 or 3072	Refer to mix. pattern table *6		G, e, f, l, m	2048 or 2560 or 3072	Refer to mix. pattern table *6		G, e, f, l, m	2560 or 3072	Refer to mix. pattern table *6		K, i, l, m
4GB	1536	-	3	F												
6GB	1536	-	3	F												
8GB	1536	-	3	F												
10GB	2048	-	4	G												
12GB	2048	-	4	G												
14GB	2048	-	4	G												
16GB	2048	-	4	G												
18GB	2048	-	4	G					2560 or 3072	Refer to mix. pattern table *6		H, f,m	3072	Refer to mix. pattern table *6		L, i, m
20GB	2048	-	4	G												
22GB	2048	-	4	G												
24GB	2048	-	4	G												
26GB	2048	-	4	G												
28GB	2048	-	4	G												
30GB	2048	-	4	G												
32GB	2048	-	4	G												
36GB	2048	-	4	G	2560 or 3072	Refer to mix. pattern table *6		H, f, m								
40GB	2048	-	4	G												
44GB	2048	-	4	G												
48GB	2560	Refer to mix. pattern table *6		H, f												
52GB																
56GB																
60GB									3072 or 3584	Refer to mix. pattern table *6		g, h	3584 or 4096	Refer to mix. pattern table *6		j, k, n, o
64GB																
68GB	2560	2	1	f	3072	3	0	m	3072 or 3584	Refer to mix. pattern table *6		g, h, n	3584 or 4096	Refer to mix. pattern table *6		j, k, n
72GB	2560	2	1	f	3072	3	0	m				g, h, n				j, k, n
76GB	2560	2	1	f	3072 or 3584	Refer to mix. pattern table *6		g, h, n				g, h, n				j, k, n
80GB	2560	2	1	f				g, h, n				g, h, n				j, k, n
84GB	2560	2	1	f				g, h, n				g, h, n				j, k, n
88GB	3072	2	2	g				g, h, n				g, h, n				j, k, n
92GB	3072	2	2	g				g, h, n				g, h, n				j, k, n
96GB	3072	2	2	g				g, h, n				g, h, n				j, k, n
100GB	3072	2	2	g				g, h, n	4096	4	0	o	4096	4	0	o
104GB	3072	2	2	g				g, h, n	4096	4	0	o	4096	4	0	o
108GB	3072	2	2	g				g, h, n	4096	4	0	o	4096	4	0	o
112GB	3072	2	2	g				g, h, n	4096	4	0	o	4096	4	0	o
116GB	3072	2	2	g	4096	4	0	o	4096	4	0	o	4096	4	0	o
120GB	3072	2	2	g	4096	4	0	o	4096	4	0	o	4096	4	0	o
124GB	3072	2	2	g	4096	4	0	o	4096	4	0	o	4096	4	0	o
128GB	3584	3	1	h	4096	4	0	o	4096	4	0	o	4096	4	0	o
Subsystem Capacity *2	to 18TB				to 72TB				to 144TB				over 144TB			
Number of HDD Canister Option *3	DKU-F455I-36K4: 128 DKU-F455I-72J4/72K4: 64 DKU-F455I-146J4: 32 DKU-F405I-18J4: 256 *4 DKU-F405I-47J4: 98 *4 DKU-F405I-72J4: 64 *4 DKU-F405I-180H4: 24 *4				DKU-F455I-36K4: 256 DKU-F455I-72J4/72K4: 256 DKU-F455I-146J4: 128 DKU-F405I-18J4: 256 *4 DKU-F405I-47J4: 256 *4 DKU-F405I-72J4: 256 *4 DKU-F405I-180H4: 96 *4				DKU-F455I-36K4: 256 DKU-F455I-72J4/72K4: 256 DKU-F455I-146J4: 256 DKU-F405I-18J4: 256 *4 DKU-F405I-47J4: 256 *4 DKU-F405I-72J4: 256 *4 DKU-F405I-180H4: 128 *4				DKU-F455I-36K4: 256 DKU-F455I-72J4/72K4: 256 DKU-F455I-146J4: 256 DKU-F405I-18J4: 256 *4 DKU-F405I-47J4: 256 *4 DKU-F405I-72J4: 256 *4 DKU-F405I-180H4: 128 *4			

Note. *1: This is required SM capacity, when DKC-F460I-S1024 and DKC-F460I-S512 are intermixed. When constituted only from DKC-F460I-S1024, it differs from required SM capacity.

*2: This is raw capacity. You have to increase SM capacity, when subsystem raw capacity exceeds this. When the HDD option is intermixed in one subsystem, subsystem capacity must not exceed this.

*3: The number of HDD canister options controllable by the LDEV numbers and SM capacities. You have to increase SM capacity, when the number of HDD canister options exceeds.

*4: When DKU405I is connected to DKC460I.

*5: 'A' to 'L' should refer a Table 4.3.1-43A, and refer to the Table 4.3.1-43B for 'o' from 'a'. The memory module corresponding to each mixture pattern is installed in the install locations ①-⑥.

*6: You have to choose one from some mixture patterns.

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3-3. Insert the PCB.

a. Insert the Cache Memory PCB into the Front Logic Box referring to Table 4.3.1-5.

b. Fasten the two screws.

Table 4.3.1-5 Location of the Cache PCB

Cluster	PCB Name	Box	Slot No.	Location No.	Remarks
1	WP490-A	Front Logic Box	T	CACHE-1T	Cache Memory PCB

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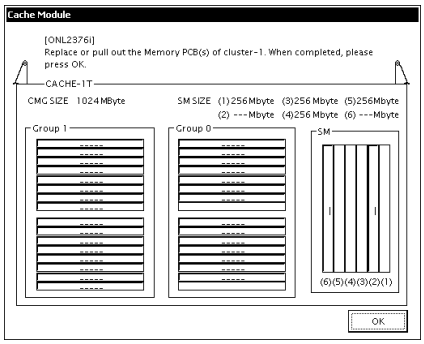
4. SVP post procedure on the Cluster 1 and pre procedure on the Cluster 2.

1.

After the hardware procedure for one side of cache memory is completed, select (CL) [OK] in response to “Replace or pull out the Memory PCBs of cluster-1. When completed, please press [OK].”.

“INLINE CUDG is running...” is displayed.



2.

When CUDG is completed, the recovery processing is automatically started with the messages.

“Restoring the Cache Memory PCB...”

“Restoring the Shared Memory PCB...”

3.

When the recovery processing is complete, processing proceeds to blocking of the cluster 2 of shared memory.

4. <Memory blocking on cluster 2>
When blocking of cluster 2 of shared memory is completed, “The Shared Memory PCB is being blocked...” is displayed.

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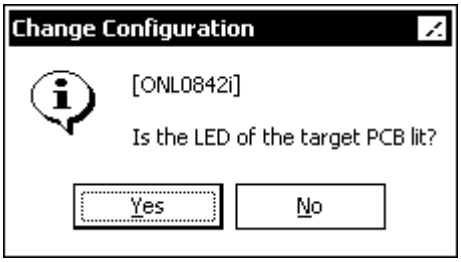
5.

"Lighting LED of the PCB..." is displayed.

6. <Check shut down LED>
Select (CL)
* [Yes] if LED is on
* [No] if LED is off
in response to "Is the LED of the target PCB lit?".

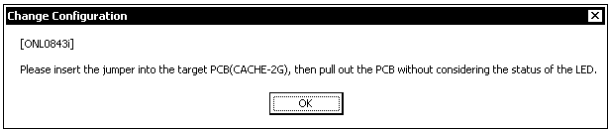


<Forcing shut down LED on>

CAUTION

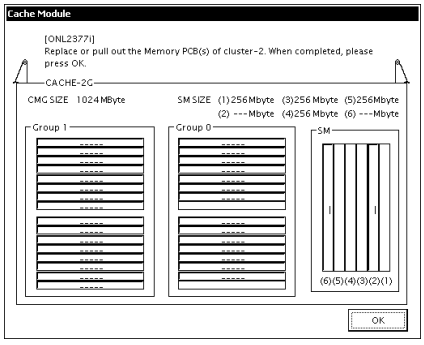
If the jumper is inserted in the wrong PCB, a system down may be caused.

If [No] is selected:
Insert a jumper in response to "Please insert the jumper into the target PCB(CACHE-nn), then pull out the PCB without considering the status of the LED".
(Refer INST03-SM-120)



7. <Perform cache hardware de-installation>
At this point refrain from pressing the [OK] button.
When "Replace or pull out the Memory PCB(s) of cluster-2. When completed, please press OK." is displayed, perform the hardware de-installation steps according to the cache hardware de-installation procedure.

Make sure of the installation location of the module to be removed and remove the correct module.
(Uninstalled module is displayed as looks depressed; the PCB to be removed is displayed in gray.)



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5. Remove the Shared Memory on the Cluster 2.
   Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

5-1. Remove the PCB.

a. While referring to Fig. 4.3.1-4 and Table 4.3.1-6, check the Shut Down LED on the Cache Memory PCB in the Rear Logic Box. Connect the Maintenance Jumper to the Shut Down Connector if the Shut Down LED is not on.

CAUTION

A system down may be caused if the Maintenance jumper is inserted in a PCB other than that to be removed. Make sure that it is the PCB to be removed.

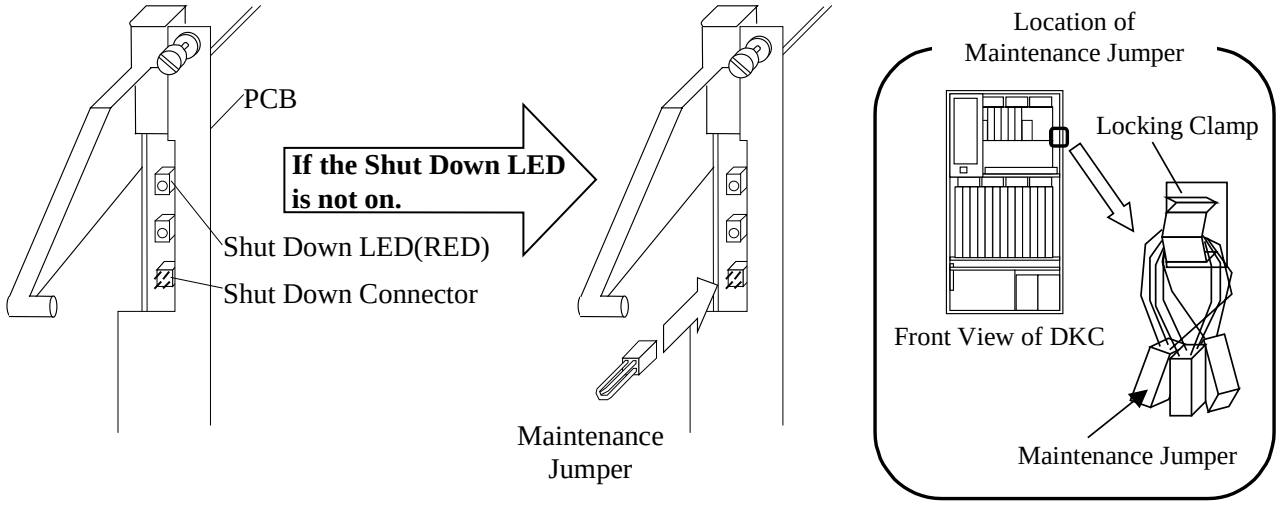

Fig. 4.3.1-4 Location of the Shut Down LED

Table 4.3.1-6 Location of the Cache PCB

Cluster	PCB Name	Box	Slot No.	Location No.	Remarks
2	WP490-A	Rear Logic Box	G	CACHE-2G	Cache Memory PCB

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b. Remove the two screws and remove the Cache Memory PCB. Refer to Fig. 4.3.1-5 and Table 4.3.1-6.

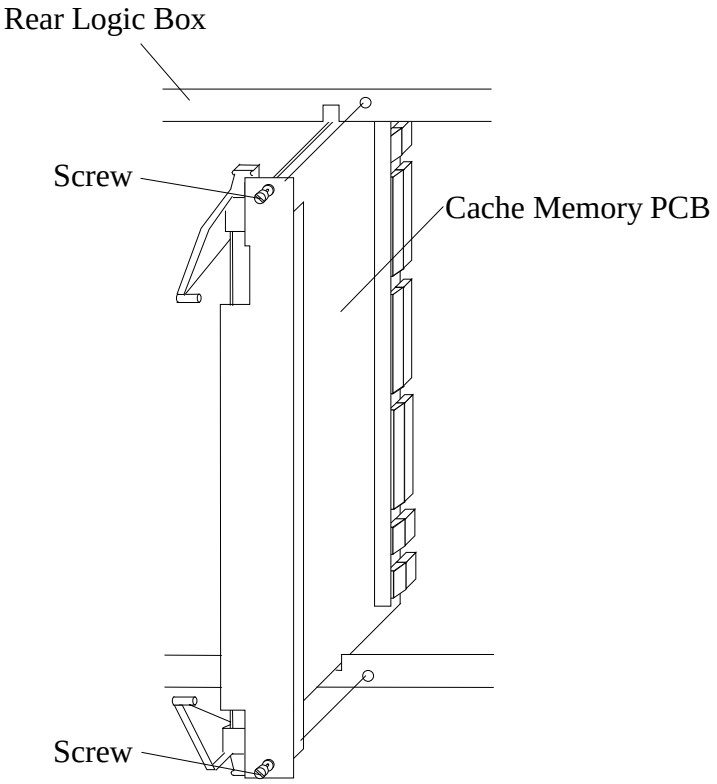

Fig. 4.3.1-5 Removal of the Cache Memory PCB

c. Remove the Maintenance Jumper if it is mounted.

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5-2. Remove the Shared Memory Modules.

Notice
The required capacity of the shared memory varies depending on whether the HRC/HORC/HMRCF/HOMRCF/HIHSM/HIHSM/ShadowImage-FlashCopy® version2 function is supported or not.
Calculate the required shared memory capacity referring to Table 4.3.1-71, Table 4.3.1-81 or Table 4.3.1-84 when none of the functions is supported (in the case of basic configuration) or Table 4.3.1-72, Table 4.3.1-82 or Table 4.3.1-85 when at least one of the functions is supported.
When supporting the ShadowImage-FlashCopy® version2 function, calculate the required capacity of the shared memory referring to Table 4.3.1-73, 4.3.1-83, or 4.3.1-86.

a. Remove the extra Shared Memory Modules according to the required Shared Memory capacity referring to Fig. 4.3.1-6 and Fig. 4.3.1-7, Table 4.3.1-71, Table 4.3.1-72, Table 4.3.1-73, Table 4.3.1-81, Table 4.3.1-82, Table 4.3.1-83, Table 4.3.1-84 and Table 4.3.1-85.
b. Insert the dust covers into the vacant sockets.

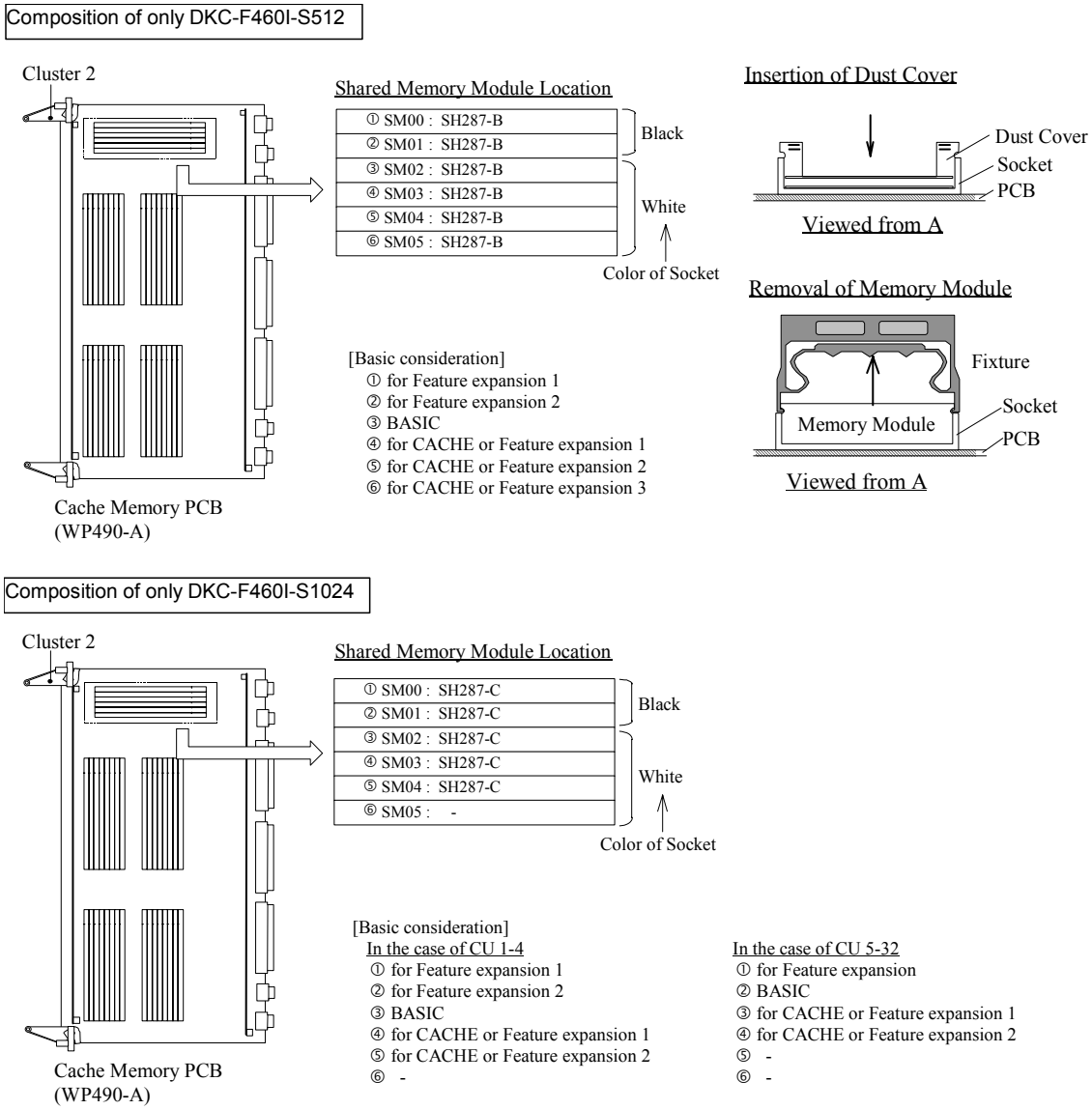

Fig. 4.3.1-6 Inserting Location of the Shared Memory Module

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Table 4.3.1-71 Number of SMs and Corresponding Shared Memory Capacity (DKC-F460I-S512 only installed and HRC/HORC/HMRCF/HOMRCF/HIHSM/ ShadowImage-FlashCopy® version2 not support)

Cache Memory Capacity	Number of CU:1-4 (to 1024LDEV)			Number of CU:5-8 (to 2048LDEV)			Number of CU:9-16 (to 4096LDEV)			Number of CU:17-32 (to 8192LDEV)		
	SM (MB)	S512	Install loc. *1	SM (MB)	S512	Install loc. *1	SM (MB)	S512	Install loc. *1	SM (MB)	S512	Install loc. *1
2GB	512	1	③	1536	3	③①④	1536	3	③①④	2048	4	③①②④
4GB	512	1	③	1536	3	③①④	1536	3	③①④	2048	4	③①②④
6GB	512	1	③	1536	3	③①④	1536	3	③①④	2048	4	③①②④
8GB	512	1	③	1536	3	③①④	1536	3	③①④	2048	4	③①②④
10GB	1024	2	③④	1536	3	③①④	1536	3	③①④	2048	4	③①②④
12GB	1024	2	③④	1536	3	③①④	1536	3	③①④	2048	4	③①②④
14GB	1024	2	③④	1536	3	③①④	1536	3	③①④	2048	4	③①②④
16GB	1024	2	③④	1536	3	③①④	1536	3	③①④	2048	4	③①②④
18GB	1024	2	③④	1536	3	③①④	2048	4	③①④⑤	2560	5	③①②④⑤
20GB	1024	2	③④	1536	3	③①④	2048	4	③①④⑤	2560	5	③①②④⑤
22GB	1024	2	③④	1536	3	③①④	2048	4	③①④⑤	2560	5	③①②④⑤
24GB	1024	2	③④	1536	3	③①④	2048	4	③①④⑤	2560	5	③①②④⑤
26GB	1024	2	③④	1536	3	③①④	2048	4	③①④⑤	2560	5	③①②④⑤
28GB	1024	2	③④	1536	3	③①④	2048	4	③①④⑤	2560	5	③①②④⑤
30GB	1024	2	③④	1536	3	③①④	2048	4	③①④⑤	2560	5	③①②④⑤
32GB	1024	2	③④	1536	3	③①④	2048	4	③①④⑤	2560	5	③①②④⑤
34GB	1024	2	③④	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤
36GB	1024	2	③④	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤
38GB	1024	2	③④	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤
40GB	1024	2	③④	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤
42GB	1024	2	③④	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤
44GB	1024	2	③④	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤
46GB	1536	3	③④⑤	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤
48GB	1536	3	③④⑤	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤
50GB	1536	3	③④⑤	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤
52GB	1536	3	③④⑤	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤
54GB	1536	3	③④⑤	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤
56GB	1536	3	③④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
58GB	1536	3	③④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
60GB	1536	3	③④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
62GB	1536	3	③④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
64GB	1536	3	③④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
Subsystem Capacity *2	to 18TB			to 72TB			to 144TB			over 144TB		
Number of HDD Canister Options *3	DKU-F455I-36K4: 128 DKU-F455I-72J4/K4: 64 DKU-F455I-146J4/JF/JQ: 32 DKU-F405I-18J4: 256 *4 DKU-F405I-47J4: 98 *4 DKU-F405I-72J4/K4: 64 *4 DKU-F405I-180H4: 24 *4			DKU-F455I-36K4: 256 DKU-F455I-72J4/K4: 256 DKU-F455I-146J4/JF/JQ: 128 DKU-F405I-18J4: 256 *4 DKU-F405I-47J4: 256 *4 DKU-F405I-72J4/K4: 256 *4 DKU-F405I-180H4: 96 *4			DKU-F455I-36K4: 256 DKU-F455I-72J4/K4: 256 DKU-F455I-146J4/JF/JQ: 256 DKU-F405I-18J4: 256 *4 DKU-F405I-47J4: 256 *4 DKU-F405I-72J4/K4: 256 *4 DKU-F405I-180H4: 128 *4			DKU-F455I-36K4: 256 DKU-F455I-72J4/K4: 256 DKU-F455I-146J4/JF/JQ: 256 DKU-F405I-18J4: 256 *4 DKU-F405I-47J4: 256 *4 DKU-F405I-72J4/K4: 256 *4 DKU-F405I-180H4: 128 *4		

Note. *1: Location ① through ⑥ represent the Shared Memory Module locations shown in Fig. 4.3.1-6.

*2: This is raw capacity. You have to increase SM capacity, when subsystem raw capacity exceeds this. When the HDD option is intermixed in one subsystem, subsystem capacity must not exceed this.

*3: The number of HDD canister options controllable by the LDEV numbers and SM capacities. You have to increase SM capacity, when the number of HDD canister options exceeds.

*4: When DKU405I is connected to DKC460I.

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Table 4.3.1-72 Number of SMs and Corresponding Shared Memory Capacity (DKC-F460I-S512 only installed and HRC/HORC/HMRCF/HOMRCF/HIHSM supported)

Cache Memory Capacity	Number of CU:1-4 (to 1024LDEV)			Number of CU:5-8 (to 2048LDEV)			Number of CU:9-16 (to 4096LDEV)			Number of CU:17-32 & TPF (to 8192LDEV)		
	SM (MB)	S512	Install loc. *1	SM (MB)	S512	Install loc. *1	SM (MB)	S512	Install loc. *1	SM (MB)	S512	Install loc. *1
2GB	1024	2	③④	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤
4GB	1024	2	③④	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤
6GB	1024	2	③④	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤
8GB	1024	2	③④	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤
10GB	1536	3	③④⑤	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤
12GB	1536	3	③④⑤	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤
14GB	1536	3	③④⑤	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤
16GB	1536	3	③④⑤	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤
18GB	1536	3	③④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
20GB	1536	3	③④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
22GB	1536	3	③④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
24GB	1536	3	③④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
26GB	1536	3	③④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
28GB	1536	3	③④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
30GB	1536	3	③④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
32GB	1536	3	③④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
34GB	1536	3	③④⑤	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
36GB	1536	3	③④⑤	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
38GB	1536	3	③④⑤	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
40GB	1536	3	③④⑤	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
42GB	1536	3	③④⑤	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
44GB	1536	3	③④⑤	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
46GB	2048	4	③④⑤⑥	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
48GB	2048	4	③④⑤⑥	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
50GB	2048	4	③④⑤⑥	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
52GB	2048	4	③④⑤⑥	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
54GB	2048	4	③④⑤⑥	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
56GB	2048	4	③④⑤⑥	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
58GB	2048	4	③④⑤⑥	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
60GB	2048	4	③④⑤⑥	2560	5	③①④⑤⑥	-	-	-	-	-	-
62GB	2048	4	③④⑤⑥	2560	5	③①④⑤⑥	-	-	-	-	-	-
64GB	2048	4	③④⑤⑥	2560	5	③①④⑤⑥	-	-	-	-	-	-
Subsystem Capacity *2	to 18TB			to 72TB			to 144TB			over 144TB		
Number of HDD Canister Options *3	DKU-F455I-36K4: 128 DKU-F455I-72J4/K4: 64 DKU-F455I-146J4/JF/JQ: 32 DKU-F405I-18J4: 256 *4 DKU-F405I-47J4: 98 *4 DKU-F405I-72J4/K4: 64 *4 DKU-F405I-180H4: 24 *4			DKU-F455I-36K4: 256 DKU-F455I-72J4/K4: 256 DKU-F455I-146J4/JF/JQ: 128 DKU-F405I-18J4: 256 *4 DKU-F405I-47J4: 256 *4 DKU-F405I-72J4/K4: 256 *4 DKU-F405I-180H4: 96 *4			DKU-F455I-36K4: 256 DKU-F455I-72J4/K4: 256 DKU-F455I-146J4/JF/JQ: 256 DKU-F405I-18J4: 256 *4 DKU-F405I-47J4: 256 *4 DKU-F405I-72J4/K4: 256 *4 DKU-F405I-180H4: 128 *4			DKU-F455I-36K4: 256 DKU-F455I-72J4/K4: 256 DKU-F455I-146J4/JF/JQ: 256 DKU-F405I-18J4: 256 *4 DKU-F405I-47J4: 256 *4 DKU-F405I-72J4/K4: 256 *4 DKU-F405I-180H4: 128 *4		

Note. *1: Location ① through ⑥ represent the Shared Memory Module locations shown in Fig. 4.3.1-6.

*2: This is raw capacity. You have to increase SM capacity, when subsystem raw capacity exceeds this. When the HDD option is intermixed in one subsystem, subsystem capacity must not exceed this.

*3: The number of HDD canister options controllable by the LDEV numbers and SM capacities. You have to increase SM capacity, when the number of HDD canister options exceeds.

*4: When DKU405I is connected to DKC460I.

*5: A Shared Memory can't be set up in the '-' mark.

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Table 4.3.1-73 Number of SMs and Corresponding Shared Memory Capacity (DKC-F460I-S512 only installed and ShadowImage-FlashCopy® version2 supported)

Cache Memory Capacity	Number of CU:1-4 (to 1024LDEV)			Number of CU:5-8 (to 2048LDEV)			Number of CU:9-16 (to 4096LDEV)			Number of CU:17-32 & TPF (to 8192LDEV)		
	SM (MB)	S512	Install loc. *1	SM (MB)	S512	Install loc. *1	SM (MB)	S512	Install loc. *1	SM (MB)	S512	Install loc. *1
2GB	1536	3	③①④	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤
4GB	1536	3	③①④	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤
6GB	1536	3	③①④	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤
8GB	1536	3	③①④	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤
10GB	2048	4	③①④⑤	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤
12GB	2048	4	③①④⑤	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤
14GB	2048	4	③①④⑤	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤
16GB	2048	4	③①④⑤	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤
18GB	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
20GB	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
22GB	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
24GB	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
26GB	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
28GB	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
30GB	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
32GB	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
34GB	2048	4	③①④⑤	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
36GB	2048	4	③①④⑤	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
38GB	2048	4	③①④⑤	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
40GB	2048	4	③①④⑤	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
42GB	2048	4	③①④⑤	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
44GB	2048	4	③①④⑤	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
46GB	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
48GB	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
50GB	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
52GB	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
54GB	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
56GB	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
58GB	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
60GB	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	-	-	-	-	-	-
62GB	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	-	-	-	-	-	-
64GB	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	-	-	-	-	-	-
Subsystem Capacity *2	to 18TB			to 72TB			to 144TB			over 144TB		
Number of HDD Canister Options *3	DKU-F455I-36K4: 128 DKU-F455I-72J4/K4: 64 DKU-F455I-146J4/JF/JQ: 32 DKU-F405I-18J4: 256 *4 DKU-F405I-47J4: 98 *4 DKU-F405I-72J4/K4: 64 *4 DKU-F405I-180H4: 24 *4			DKU-F455I-36K4: 256 DKU-F455I-72J4/K4: 256 DKU-F455I-146J4/JF/JQ: 128 DKU-F405I-18J4: 256 *4 DKU-F405I-47J4: 256 *4 DKU-F405I-72J4/K4: 256 *4 DKU-F405I-180H4: 96 *4			DKU-F455I-36K4: 256 DKU-F455I-72J4/K4: 256 DKU-F455I-146J4/JF/JQ: 256 DKU-F405I-18J4: 256 *4 DKU-F405I-47J4: 256 *4 DKU-F405I-72J4/K4: 256 *4 DKU-F405I-180H4: 128 *4			DKU-F455I-36K4: 256 DKU-F455I-72J4/K4: 256 DKU-F455I-146J4/JF/JQ: 256 DKU-F405I-18J4: 256 *4 DKU-F405I-47J4: 256 *4 DKU-F405I-72J4/K4: 256 *4 DKU-F405I-180H4: 128 *4		

Note. *1: Location ① through ⑥ represent the Shared Memory Module locations shown in Fig. 4.3.1-6.

*2: This is raw capacity. You have to increase SM capacity, when subsystem raw capacity exceeds this. When the HDD option is intermixed in one subsystem, subsystem capacity must not exceed this.

*3: The number of HDD canister options controllable by the LDEV numbers and SM capacities. You have to increase SM capacity, when the number of HDD canister options exceeds.

*4: When DKU405I is connected to DKC460I.

*5: A Shared Memory can't be set up in the '-' mark.

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Table 4.3.1-81 Number of SMs and Corresponding Shared Memory Capacity (DKC-F460I-S1024 only installed and HRC/HORC/HMRCF/HOMRCF/HIHSM/ ShadowImage-FlashCopy® version2 not support)

Cache Memory Capacity *5	Number of CU:1-4 (to 1024LDEV)			Number of CU:5-8 (to 2048LDEV)			Number of CU:9-16 (to 4096LDEV)			Number of CU:17-32 (to 8192LDEV)		
	SM (MB)	S1024	Install loc. *1	SM (MB)	S1024	Install loc. *1	SM (MB)	S1024	Install loc. *1	SM (MB)	S1024	Install loc. *1
68GB	2048	2	③④	3072	3	①②③	3072	3	①②③	3072	3	①②③
72GB	2048	2	③④	3072	3	①②③	3072	3	①②③	3072	3	①②③
76GB	2048	2	③④	3072	3	①②③	3072	3	①②③	3072	3	①②③
80GB	2048	2	③④	3072	3	①②③	3072	3	①②③	3072	3	①②③
84GB	2048	2	③④	3072	3	①②③	3072	3	①②③	3072	3	①②③
88GB	2048	2	③④	3072	3	①②③	3072	3	①②③	3072	3	①②③
92GB	2048	2	③④	3072	3	①②③	3072	3	①②③	3072	3	①②③
96GB	2048	2	③④	3072	3	①②③	4096	4	①②③④	4096	4	①②③④
100GB	2048	2	③④	3072	3	①②③	4096	4	①②③④	4096	4	①②③④
104GB	2048	2	③④	3072	3	①②③	4096	4	①②③④	4096	4	①②③④
108GB	2048	2	③④	3072	3	①②③	4096	4	①②③④	4096	4	①②③④
112GB	2048	2	③④	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
116GB	2048	2	③④	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
120GB	2048	2	③④	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
124GB	3072	3	③④⑤	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
128GB	3072	3	③④⑤	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
Subsystem Capacity *2	to 18TB			to 72TB			to 144TB			over 144TB		
Number of HDD Canister Options *3	DKU-F455I-36K4: 128 DKU-F455I-72J4/K4: 64 DKU-F455I-146J4/JF: 32 DKU-F405I-18J4: 256*4 DKU-F405I-47J4: 98*4 DKU-F405I-72J4: 64*4 DKU-F405I-180H4: 24*4			DKU-F455I-36K4: 256 DKU-F455I-72J4/K4: 256 DKU-F455I-146J4/JF: 128 DKU-F405I-18J4: 256*4 DKU-F405I-47J4: 256*4 DKU-F405I-72J4: 256*4 DKU-F405I-180H4: 96*4			DKU-F455I-36K4: 256 DKU-F455I-72J4/K4: 256 DKU-F455I-146J4/JF: 256 DKU-F405I-18J4: 256*4 DKU-F405I-47J4: 256*4 DKU-F405I-72J4: 256*4 DKU-F405I-180H4: 128*4			DKU-F455I-36K4: 256 DKU-F455I-72J4/K4: 256 DKU-F455I-146J4/JF: 256 DKU-F405I-18J4: 256*4 DKU-F405I-47J4: 256*4 DKU-F405I-72J4: 256*4 DKU-F405I-180H4: 128*4		

Note. *1: Location ① through ⑤ represent the Shared Memory Module locations shown in Fig. 4.3.1-6.

*2: This is raw capacity. You have to increase SM capacity, when subsystem raw capacity exceeds this. When the HDD option is intermixed in one subsystem, subsystem capacity must not exceed this.

*3: The number of HDD canister options controllable by the LDEV numbers and SM capacities. You have to increase SM capacity, when the number of HDD canister options exceeds.

*4: When DKU405I is connected to DKC460I.

*5: When Cache Memory capacity is 64GB or less, refer to the Table 4.3.1-71 or Table 4.3.1-84.

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Table 4.3.1-82 Number of SMs and Corresponding Shared Memory Capacity (DKC-F460I-S1024 only installed and HRC/HORC/HMRCF/HOMRCF/HIHSM supported)

Cache Memory Capacity *5	Number of CU:1-4 (to 1024LDEV)			Number of CU:5-8 (to 2048LDEV)			Number of CU:9-16 (to 4096LDEV)			Number of CU:17-32 & TPF (to 8192LDEV)		
	SM (MB)	S1024	Install loc. *1	SM (MB)	S1024	Install loc. *1	SM (MB)	S1024	Install loc. *1	SM (MB)	S1024	Install loc. *1
68GB	2048	2	③④	3072	3	①②③	4096	4	①②③④	4096	4	①②③④
72GB	2048	2	③④	3072	3	①②③	4096	4	①②③④	4096	4	①②③④
76GB	2048	2	③④	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
80GB	2048	2	③④	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
84GB	2048	2	③④	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
88GB	3072	3	③④⑤	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
92GB	3072	3	③④⑤	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
96GB	3072	3	③④⑤	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
100GB	3072	3	③④⑤	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
104GB	3072	3	③④⑤	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
108GB	3072	3	③④⑤	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
112GB	3072	3	③④⑤	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
116GB	3072	3	③④⑤	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
120GB	3072	3	③④⑤	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
124GB	3072	3	③④⑤	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
128GB	3072	3	③④⑤	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
Subsystem Capacity *2	to 18TB			to 72TB			to 144TB			over 144TB		
Number of HDD Canister Options *3	DKU-F455I-36K4: 128 DKU-F455I-72J4/K4: 64 DKU-F455I-146J4/JF: 32 DKU-F405I-18J4: 256*4 DKU-F405I-47J4: 98*4 DKU-F405I-72J4: 64*4 DKU-F405I-180H4: 24*4			DKU-F455I-36K4: 256 DKU-F455I-72J4/K4: 256 DKU-F455I-146J4/JF: 128 DKU-F405I-18J4: 256*4 DKU-F405I-47J4: 256*4 DKU-F405I-72J4: 256*4 DKU-F405I-180H4: 96*4			DKU-F455I-36K4: 256 DKU-F455I-72J4/K4: 256 DKU-F455I-146J4/JF: 256 DKU-F405I-18J4: 256*4 DKU-F405I-47J4: 256*4 DKU-F405I-72J4: 256*4 DKU-F405I-180H4: 128*4			DKU-F455I-36K4: 256 DKU-F455I-72J4/K4: 256 DKU-F455I-146J4/JF: 256 DKU-F405I-18J4: 256*4 DKU-F405I-47J4: 256*4 DKU-F405I-72J4: 256*4 DKU-F405I-180H4: 128*4		

Note. *1: Location ① through ⑤ represent the Shared Memory Module locations shown in Fig. 4.3.1-6.

*2: This is raw capacity. You have to increase SM capacity, when subsystem raw capacity exceeds this. When the HDD option is intermixed in one subsystem, subsystem capacity must not exceed this.

*3: The number of HDD canister options controllable by the LDEV numbers and SM capacities. You have to increase SM capacity, when the number of HDD canister options exceeds.

*4: When DKU405I is connected to DKC460I.

*5: When Cache Memory capacity is 64GB or less, refer to the Table 4.3.1-72 or Table 4.3.1-85.

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Table 4.3.1-83 Number of SMs and Corresponding Shared Memory Capacity
(DKC-F460I-S1024 only installed and ShadowImage-FlashCopy® version2 supported)

Cache Memory Capacity *5	Number of CU:1-4 (to 1024LDEV)			Number of CU:5-8 (to 2048LDEV)			Number of CU:9-16 (to 4096LDEV)			Number of CU:17-32 & TPF (to 8192LDEV)		
	SM (MB)	S1024	Install loc. *1	SM (MB)	S1024	Install loc. *1	SM (MB)	S1024	Install loc. *1	SM (MB)	S1024	Install loc. *1
68GB	3072	3	①②③	3072	3	①②③	4096	4	①②③④	4096	4	①②③④
72GB	3072	3	①②③	3072	3	①②③	4096	4	①②③④	4096	4	①②③④
76GB	3072	3	①②③	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
80GB	3072	3	①②③	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
84GB	3072	3	①②③	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
88GB	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
92GB	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
96GB	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
100GB	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
104GB	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
108GB	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
112GB	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
116GB	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
120GB	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
124GB	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
128GB	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④	4096	4	①②③④
Subsystem Capacity *2	to 18TB			to 72TB			to 144TB			over 144TB		
Number of HDD Canister Options *3	DKU-F455I-36K4: 128 DKU-F455I-72J4/K4: 64 DKU-F455I-146J4/JF: 32 DKU-F405I-18J4: 256*4 DKU-F405I-47J4: 98*4 DKU-F405I-72J4: 64*4 DKU-F405I-180H4: 24*4			DKU-F455I-36K4: 256 DKU-F455I-72J4/K4: 256 DKU-F455I-146J4/JF: 128 DKU-F405I-18J4: 256*4 DKU-F405I-47J4: 256*4 DKU-F405I-72J4: 256*4 DKU-F405I-180H4: 96*4			DKU-F455I-36K4: 256 DKU-F455I-72J4/K4: 256 DKU-F455I-146J4/JF: 256 DKU-F405I-18J4: 256*4 DKU-F405I-47J4: 256*4 DKU-F405I-72J4: 256*4 DKU-F405I-180H4: 128*4			DKU-F455I-36K4: 256 DKU-F455I-72J4/K4: 256 DKU-F455I-146J4/JF: 256 DKU-F405I-18J4: 256*4 DKU-F405I-47J4: 256*4 DKU-F405I-72J4: 256*4 DKU-F405I-180H4: 128*4		

Note. *1: Location ① through ⑤ represent the Shared Memory Module locations shown in Fig. 4.3.1-6.
*2: This is raw capacity. You have to increase SM capacity, when subsystem raw capacity exceeds this. When the HDD option is intermixed in one subsystem, subsystem capacity must not exceed this.
*3: The number of HDD canister options controllable by the LDEV numbers and SM capacities. You have to increase SM capacity, when the number of HDD canister options exceeds.
*4: When DKU405I is connected to DKC460I.
*5: When Cache Memory capacity is 64GB or less, refer to the Table 4.3.1-73 or Table 4.3.1-86.

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Mixture composition of DKC-F460I-S512 and DKC-F460I-S1024

The mixture composition of DKC-F460I-S512 and DKC-F460I-S1024 is allowed. However, depending on cache capacity, it may have to constitute from DKC-F460I-S512 or DKC-F460I-S1024 independent one. (Refer to Table 4.3.1-84, 4.3.1-85 and 4.3.1-86 for details.)
The mixture pattern of DKC-F460I-S512 and DKC-F460 I-S1024 is shown in the following table. Since it is decided for every pattern, it must be careful of the installing location of two shared memory modules.
In order to prevent a maintenance mistake, it recommends constituting from DKC-F460I-S512 or DKC-F460I-S1024 independent one. (Refer to Table 4.3.1-83A and 4.3.1-83B)

Table 4.3.1-83A Shared Memory Module Mixture Pattern
(Composition of only DKC-F460I-S512)

Install location	Mixture Pattern											
	A	B	C	D	E	F	G	H	I	J	K	L
①	-	-	-	-	S512	S512	S512	S512	S512	S512	S512	S512
②	-	-	-	-	-	-	-	-	S512	S512	S512	S512
③	S512	S512	S512	S512	S512	S512	S512	S512	S512	S512	S512	S512
④	-	S512	S512	S512	-	S512	S512	S512	-	S512	S512	S512
⑤	-	-	S512	S512	-	-	S512	S512	-	-	S512	S512
⑥	-	-	-	S512	-	-	-	S512	-	-	-	S512
Total SM Capacity	0.5GB	1.0GB	1.5GB	2.0GB	1.0GB	1.5GB	2.0GB	2.5GB	1.5GB	2.0GB	2.5GB	3.0GB

Table 4.3.1-83B Shared Memory Module Mixture Pattern

Install location	Mixture Pattern														
	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
①	-	-	-	-	S512	S512	S512	S512	S512	S512	S512	S1024	S1024	S1024	S1024
②	-	-	-	-	-	-	-	-	S512	S512	S512	S1024	S1024	S1024	S1024
③	S1024	S1024	S1024	S1024	S1024	S1024	S1024	S1024	S1024	S1024	S1024	S512	S1024	S1024	S1024
④	S512	S1024	S1024	S1024	S512	S1024	S1024	S1024	S1024	S1024	S1024	-	-	S512	S1024
⑤	-	-	S512	S1024	-	-	S512	S1024	-	S512	S1024	-	-	-	-
⑥	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total SM Capacity	1.5GB	2.0GB	2.5GB	3.0GB	2.0GB	2.5GB	3.0GB	3.5GB	3.0GB	3.5GB	4.0GB	2.5GB	3.0GB	3.5GB	4.0GB

Note. 1: Location ①-⑥ shows actual location of shared memory module on Cache PCB. (Refer to Fig. 4.3.1-7)
2: S1024 means installing the shared memory module which constitutes DKC-F460I-S1024 option.
3: S512 means installing the shared memory module which constitutes DKC-F460I-S512 option.

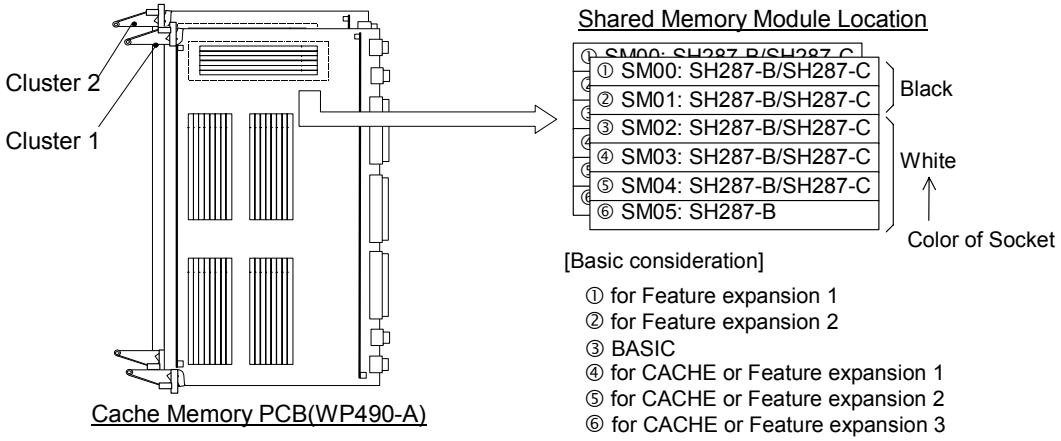

Fig. 4.3.1-7 Actual location of shared memory module

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Table 4.3.1-84 Size of Cache Memory and Shared Memory (TrueCopy/ShadowImage/ ShadowImage-FlashCopy® version2/Cruise Control function not supported)

Cache Memory Capacity	Number of CU:1-4 (to 1024LDEV)				Number of CU:5-8 (to 2048LDEV)				Number of CU:9-16 (to 4096LDEV)				Number of CU:17-32 (to 8192LDEV)			
	SM *1 Cap. (MB)	Number of SM options S1024	Number of SM options S512	Mixture Pattern *5	SM *1 Cap. (MB)	Number of SM options S1024	Number of SM options S512	Mixture Pattern *5	SM *1 Cap. (MB)	Number of SM options S1024	Number of SM options S512	Mixture Pattern *5	SM *1 Cap. (MB)	Number of SM options S1024	Number of SM options S512	Mixture Pattern *5
2GB	512	-	1	A	1536	-	3	F	1536	-	3	F	2048	-	4	J
4GB	512	-	1	A	1536	-	3	F	1536	-	3	F	2048	-	4	J
6GB	512	-	1	A	1536	-	3	F	1536	-	3	F	2048	-	4	J
8GB	512	-	1	A	1536	-	3	F	1536	-	3	F	2048	-	4	J
10GB	1024	-	2	B	1536	-	3	F	1536	-	3	F	2048	-	4	J
12GB	1024	-	2	B	1536	-	3	F	1536	-	3	F	2048	-	4	J
14GB	1024	-	2	B	1536	-	3	F	1536	-	3	F	2048	-	4	J
16GB	1024	-	2	B	1536	-	3	F	1536	-	3	F	2048	-	4	J
18GB	1024	-	2	B	1536	-	3	F	2048 or 2560 or 3072	Refer to mix pattern table *6		G, e, f, l, m	2560 or 3072	Refer to mix pattern table *6		K, i, l, m
20GB	1024	-	2	B	1536	-	3	F								
22GB	1024	-	2	B	1536	-	3	F								
24GB	1024	-	2	B	1536	-	3	F								
26GB	1024	-	2	B	1536	-	3	F								
28GB	1024	-	2	B	1536	-	3	F								
30GB	1024	-	2	B	1536	-	3	F								
32GB	1024	-	2	B	1536	-	3	F								
36GB	1024	-	2	B	2048 or 2560 or 3072	Refer to mix pattern table *6		G, e, f, l, m								
40GB	1024	-	2	B												
44GB	1024	-	2	B												
48GB	1536 or 2048	Refer to mix pattern table *6		a, b												
52GB																
56GB									2560 or 3072	Refer to mix pattern table *6		H, f, m	3072	Refer to mix pattern table *6		L, i, m
60GB																
64GB																
68GB	1536	1	1	a	2048 or 2560	Refer to mix pattern table *6		f, m	3072	3	0	m	3072	2	2	i
72GB	1536	1	1	a					3072	3	0	m	3072	2	2	i
76GB	1536	1	1	a	3072	3	0	m	3072	3	0	m	3072	2	2	i
80GB	1536	1	1	a	3072	3	0	m	3072	3	0	m	3072	2	2	i
84GB	2048	2	0	b	3072	3	0	m	3072	3	0	m	3072	2	2	i
88GB	2048	2	0	b	3072	3	0	m	3072	3	0	m	3072	2	2	i
92GB	2048	2	0	b	3072	3	0	m	3072	3	0	m	3072	2	2	i
96GB	2048	2	0	b	3072	3	0	m	3072 or 3584	Refer to mix. pattern table *6		g, h, n	3584 or 4096	Refer to mix. pattern table *6		j, k, n
100GB	2048	2	0	b	3072	3	0	m				g, h, n				j, k, n
104GB	2048	2	0	b	3072	3	0	m				g, h, n				j, k, n
108GB	2048	2	0	b	3072	3	0	m				g, h, n				j, k, n
112GB	2048	2	0	b	3072 or 3584	Refer to mix. pattern table *6		g, h, n				g, h, n				j, k, n
116GB	2048	2	0	b				g, h, n				g, h, n				j, k, n
120GB	2048	2	0	b				g, h, n				g, h, n				j, k, n
124GB	2560	2	1	c				g, h, n				g, h, n				j, k, n
128GB	2560	2	1	c				g, h, n				g, h, n				j, k, n
Subsystem Capacity *2	to 18TB				to 72TB				to 144TB				over 144TB			
Number of HDD Canister Option *3	DKU-F455I-36K4:			128	DKU-F455I-36K4:			256	DKU-F455I-36K4:			256	DKU-F455I-36K4:			256
	DKU-F455I-72J4/72K4:			64	DKU-F455I-72J4/72K4:			256	DKU-F455I-72J4/72K4:			256	DKU-F455I-72J4/72K4:			256
	DKU-F455I-146J4:			32	DKU-F455I-146J4:			128	DKU-F455I-146J4:			256	DKU-F455I-146J4:			256
	DKU-F405I-18J4:			256 *4	DKU-F405I-18J4:			256 *4	DKU-F405I-18J4:			256 *4	DKU-F405I-18J4:			256 *4
	DKU-F405I-47J4:			98 *4	DKU-F405I-47J4:			256 *4	DKU-F405I-47J4:			256 *4	DKU-F405I-47J4:			256 *4
	DKU-F405I-72J4:			64 *4	DKU-F405I-72J4:			256 *4	DKU-F405I-72J4:			256 *4	DKU-F405I-72J4:			256 *4
	DKU-F405I-180H4:			24 *4	DKU-F405I-180H4:			96 *4	DKU-F405I-180H4:			128 *4	DKU-F405I-180H4:			128 *4

Note. *1: This is required SM capacity, when DKC-F460I-S1024 and DKC-F460I-S512 are intermixed. When constituted only from DKC-F460I-S1024, it differs from required SM capacity.

*2: This is raw capacity. You have to increase SM capacity, when subsystem raw capacity exceeds this. When the HDD option is intermixed in one subsystem, subsystem capacity must not exceed this.

*3: The number of HDD canister options controllable by the LDEV numbers and SM capacities. You have to increase SM capacity, when the number of HDD canister options exceeds.

*4: When DKU405I is connected to DKC460I.

*5: 'A' to 'L' should refer a Table 4.3.1-83A, and refer to the Table 4.3.1-83B for 'o' from 'a'. The memory module corresponding to each mixture pattern is installed in the install locations ①-⑥.

*6: You have to choose one from some mixture patterns.

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Table 4.3.1-85 Size of Cache Memory and Shared Memory (TrueCopy/ShadowImage/Cruise Control function supported)

Cache Memory Capacity	Number of CU:1-4 (to 1024LDEV)				Number of CU:5-8 (to 2048LDEV)				Number of CU:9-16 (to 4096LDEV)				Number of CU:17-32 (to 8192LDEV)			
	SM *1 Cap. (MB)	Number of SM options S1024	Number of SM options S512	Mixture Pattern *5	SM *1 Cap. (MB)	Number of SM options S1024	Number of SM options S512	Mixture Pattern *5	SM *1 Cap. (MB)	Number of SM options S1024	Number of SM options S512	Mixture Pattern *5	SM *1 Cap. (MB)	Number of SM options S1024	Number of SM options S512	Mixture Pattern *5
2GB	1024	-	2	B	2048 or 2560 or 3072	Refer to mix. pattern table *6		G, e, f, l, m	2048 or 2560 or 3072	Refer to mix. pattern table *6		G, e, f, l, m	2560 or 3072	Refer to mix. pattern table *6		K, i, l, m
4GB	1024	-	2	B												
6GB	1024	-	2	B												
8GB	1024	-	2	B												
10GB	1536	-	3	C												
12GB	1536	-	3	C												
14GB	1536	-	3	C												
16GB	1536	-	3	C												
18GB	1536	-	3	C					2560 or 3072	Refer to mix. pattern table *6		H, f,m	3072	Refer to mix. pattern table *6		L, i, m
20GB	1536	-	3	C												
22GB	1536	-	3	C												
24GB	1536	-	3	C												
26GB	1536	-	3	C												
28GB	1536	-	3	C												
30GB	1536	-	3	C												
32GB	1536	-	3	C												
36GB	1536	-	3	C	2560 or 3072	Refer to mix. pattern table *6		H, f, m								
40GB	1536	-	3	C												
44GB	1536	-	3	C												
48GB	2048	Refer to mix. pattern table *6		D, b												
52GB																
56GB																
60GB									3072 or 3584	Refer to mix. pattern table *6		g, h	3584 or 4096	Refer to mix. pattern table *6		j, k, n, o
64GB																
68GB	2048	2	0	b	3072	3	0	m	3072 or 3584	Refer to mix. pattern table *6		g, h, n	3584 or 4096	Refer to mix. pattern table *6		j, k, n
72GB	2048	2	0	b	3072	3	0	m				g, h, n				j, k, n
76GB	2048	2	0	b	3072 or 3584	Refer to mix. pattern table *6		g, h, n				g, h, n				j, k, n
80GB	2048	2	0	b				g, h, n				g, h, n				j, k, n
84GB	2048	2	0	b				g, h, n				g, h, n				j, k, n
88GB	2560	2	1	c				g, h, n				g, h, n				j, k, n
92GB	2560	2	1	c				g, h, n				g, h, n				j, k, n
96GB	2560	2	1	c				g, h, n				g, h, n				j, k, n
100GB	2560	2	1	c				g, h, n	4096	4	0	o	4096	4	0	o
104GB	2560	2	1	c				g, h, n	4096	4	0	o	4096	4	0	o
108GB	2560	2	1	c				g, h, n	4096	4	0	o	4096	4	0	o
112GB	2560	2	1	c				g, h, n	4096	4	0	o	4096	4	0	o
116GB	2560	2	1	c	4096	4	0	o	4096	4	0	o	4096	4	0	o
120GB	2560	2	1	c	4096	4	0	o	4096	4	0	o	4096	4	0	o
124GB	2560	2	1	c	4096	4	0	o	4096	4	0	o	4096	4	0	o
128GB	3072	3	0	d	4096	4	0	o	4096	4	0	o	4096	4	0	o
Subsystem Capacity *2	to 18TB				to 72TB				to 144TB				over 144TB			
Number of HDD Canister Option *3	DKU-F455I-36K4:			128	DKU-F455I-36K4:			256	DKU-F455I-36K4:			256	DKU-F455I-36K4:			256
	DKU-F455I-72J4/72K4:			64	DKU-F455I-72J4/72K4:			256	DKU-F455I-72J4/72K4:			256	DKU-F455I-72J4/72K4:			256
	DKU-F455I-146J4:			32	DKU-F455I-146J4:			128	DKU-F455I-146J4:			256	DKU-F455I-146J4:			256
	DKU-F405I-18J4:			256 *4	DKU-F405I-18J4:			256 *4	DKU-F405I-18J4:			256 *4	DKU-F405I-18J4:			256 *4
	DKU-F405I-47J4:			98 *4	DKU-F405I-47J4:			256 *4	DKU-F405I-47J4:			256 *4	DKU-F405I-47J4:			256 *4
	DKU-F405I-72J4:			64 *4	DKU-F405I-72J4:			256 *4	DKU-F405I-72J4:			256 *4	DKU-F405I-72J4:			256 *4
	DKU-F405I-180H4:			24 *4	DKU-F405I-180H4:			96 *4	DKU-F405I-180H4:			128 *4	DKU-F405I-180H4:			128 *4

Note. *1: This is required SM capacity, when DKC-F460I-S1024 and DKC-F460I-S512 are intermixed. When constituted only from DKC-F460I-S1024, it differs from required SM capacity.

*2: This is raw capacity. You have to increase SM capacity, when subsystem raw capacity exceeds this. When the HDD option is intermixed in one subsystem, subsystem capacity must not exceed this.

*3: The number of HDD canister options controllable by the LDEV numbers and SM capacities. You have to increase SM capacity, when the number of HDD canister options exceeds.

*4: When DKU405I is connected to DKC460I.

*5: 'A' to 'L' should refer a Table 4.3.1-83A, and refer to the Table 4.3.1-83B for 'o' from 'a'. The memory module corresponding to each mixture pattern is installed in the install locations ①-⑥.

*6: You have to choose one from some mixture patterns.

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Table 4.3.1-86 Size of Cache Memory and Shared Memory (ShadowImage-FlashCopy® version2supported)

Cache Memory Capacity	Number of CU:1-4 (to 1024LDEV)				Number of CU:5-8 (to 2048LDEV)				Number of CU:9-16 (to 4096LDEV)				Number of CU:17-32 (to 8192LDEV)			
	SM *1 Cap. (MB)	Number of SM options S1024	Number of SM options S512	Mixture Pattern *5	SM *1 Cap. (MB)	Number of SM options S1024	Number of SM options S512	Mixture Pattern *5	SM *1 Cap. (MB)	Number of SM options S1024	Number of SM options S512	Mixture Pattern *5	SM *1 Cap. (MB)	Number of SM options S1024	Number of SM options S512	Mixture Pattern *5
2GB	1536	-	3	F	2048 or 2560 or 3072	Refer to mix. pattern table *6		G, e, f, l, m	2048 or 2560 or 3072	Refer to mix. pattern table *6		G, e, f, l, m	2560 or 3072	Refer to mix. pattern table *6		K, i, l, m
4GB	1536	-	3	F												
6GB	1536	-	3	F												
8GB	1536	-	3	F												
10GB	2048	-	4	G												
12GB	2048	-	4	G												
14GB	2048	-	4	G												
16GB	2048	-	4	G												
18GB	2048	-	4	G					2560 or 3072	Refer to mix. pattern table *6		H, f,m	3072	Refer to mix. pattern table *6		L, i, m
20GB	2048	-	4	G												
22GB	2048	-	4	G												
24GB	2048	-	4	G												
26GB	2048	-	4	G												
28GB	2048	-	4	G												
30GB	2048	-	4	G												
32GB	2048	-	4	G												
36GB	2048	-	4	G	2560 or 3072	Refer to mix. pattern table *6		H, f, m								
40GB	2048	-	4	G												
44GB	2048	-	4	G												
48GB	2560	Refer to mix. pattern table *6		H, f												
52GB																
56GB																
60GB									3072 or 3584	Refer to mix. pattern table *6		g, h	3584 or 4096	Refer to mix. pattern table *6		j, k, n, o
64GB																
68GB	2560	2	1	f	3072	3	0	m	3072 or 3584	Refer to mix. pattern table *6		g, h, n	3584 or 4096	Refer to mix. pattern table *6		j, k, n
72GB	2560	2	1	f	3072	3	0	m				g, h, n				j, k, n
76GB	2560	2	1	f	3072 or 3584	Refer to mix. pattern table *6		g, h, n				g, h, n				j, k, n
80GB	2560	2	1	f				g, h, n				g, h, n				j, k, n
84GB	2560	2	1	f				g, h, n				g, h, n				j, k, n
88GB	3072	2	2	g				g, h, n				g, h, n				j, k, n
92GB	3072	2	2	g				g, h, n				g, h, n				j, k, n
96GB	3072	2	2	g				g, h, n				g, h, n				j, k, n
100GB	3072	2	2	g				g, h, n	4096	4	0	o	4096	4	0	o
104GB	3072	2	2	g				g, h, n	4096	4	0	o	4096	4	0	o
108GB	3072	2	2	g				g, h, n	4096	4	0	o	4096	4	0	o
112GB	3072	2	2	g				g, h, n	4096	4	0	o	4096	4	0	o
116GB	3072	2	2	g	4096	4	0	o	4096	4	0	o	4096	4	0	o
120GB	3072	2	2	g	4096	4	0	o	4096	4	0	o	4096	4	0	o
124GB	3072	2	2	g	4096	4	0	o	4096	4	0	o	4096	4	0	o
128GB	3584	3	1	h	4096	4	0	o	4096	4	0	o	4096	4	0	o
Subsystem Capacity *2	to 18TB				to 72TB				to 144TB				over 144TB			
Number of HDD Canister Option *3	DKU-F455I-36K4: 128 DKU-F455I-72J4/72K4: 64 DKU-F455I-146J4: 32 DKU-F405I-18J4: 256 *4 DKU-F405I-47J4: 98 *4 DKU-F405I-72J4: 64 *4 DKU-F405I-180H4: 24 *4				DKU-F455I-36K4: 256 DKU-F455I-72J4/72K4: 256 DKU-F455I-146J4: 128 DKU-F405I-18J4: 256 *4 DKU-F405I-47J4: 256 *4 DKU-F405I-72J4: 256 *4 DKU-F405I-180H4: 96 *4				DKU-F455I-36K4: 256 DKU-F455I-72J4/72K4: 256 DKU-F455I-146J4: 256 DKU-F405I-18J4: 256 *4 DKU-F405I-47J4: 256 *4 DKU-F405I-72J4: 256 *4 DKU-F405I-180H4: 128 *4				DKU-F455I-36K4: 256 DKU-F455I-72J4/72K4: 256 DKU-F455I-146J4: 256 DKU-F405I-18J4: 256 *4 DKU-F405I-47J4: 256 *4 DKU-F405I-72J4: 256 *4 DKU-F405I-180H4: 128 *4			

Note. *1: This is required SM capacity, when DKC-F460I-S1024 and DKC-F460I-S512 are intermixed. When constituted only from DKC-F460I-S1024, it differs from required SM capacity.

*2: This is raw capacity. You have to increase SM capacity, when subsystem raw capacity exceeds this. When the HDD option is intermixed in one subsystem, subsystem capacity must not exceed this.

*3: The number of HDD canister options controllable by the LDEV numbers and SM capacities. You have to increase SM capacity, when the number of HDD canister options exceeds.

*4: When DKU405I is connected to DKC460I.

*5: 'A' to 'L' should refer a Table 4.3.1-83A, and refer to the Table 4.3.1-83B for 'o' from 'a'. The memory module corresponding to each mixture pattern is installed in the install locations ①-⑥.

*6: You have to choose one from some mixture patterns.

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5-3. Insert the PCB.

a. Insert the Cache Memory PCB into the Rear Logic Box referring to Table 4.3.1-9.
b. Fasten the two screws.

Table 4.3.1-9 Location of the Cache PCB

Cluster	PCB Name	Box	Slot No.	Location No.	Remarks
2	WP490-A	Rear Logic Box	G	CACHE-2G	Cache Memory PCB

5-4 Change the nameplate.

a. Affix a necessary portion of the Label (QTY)(Accessory of DKC; DWG No.3264290-1) in layers on the name plate and paint out numbers less than the number concerned with black oil felt pen.

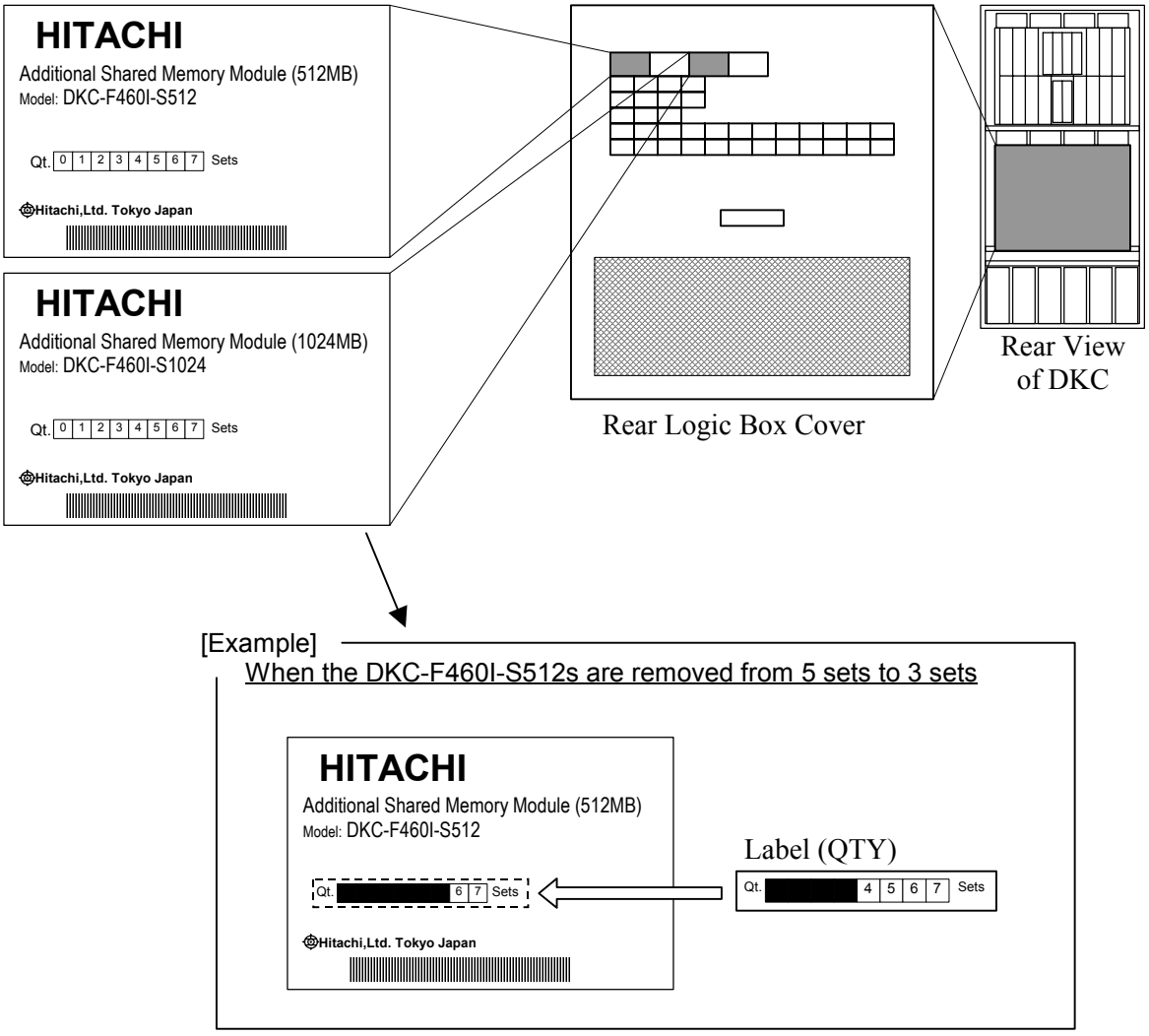

Fig. 4.3.1-7 Location of the Nameplate

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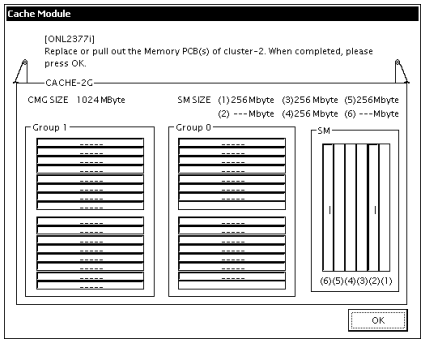
6. SVP post procedure on the Cluster2

1.

After the hardware procedure for cluster 2 of cache memory is completed, select (CL) [OK] in response to “Replace or pull out the Memory PCBs of cluster-2. When completed, please press [OK].”.

“INLINE CUDG is running...” is displayed.



2.

When CUDG is completed, the recovery processing is automatically started with the messages.

“Restoring the Cache Memory PCB...”
“Restoring the Shared Memory PCB...”

3. <Check the end of de-installation procedure>
“Renewal process has completed. Please check subsystem status.” shown in the right figure displayed. Select (CL) [OK] in response to this message.

4.

“Reading subsystem configuration data...” is displayed.
“Please insert the Config FD in the FDD.” is displayed.
Insert the configuration FD into FDD, select (CL) [OK].

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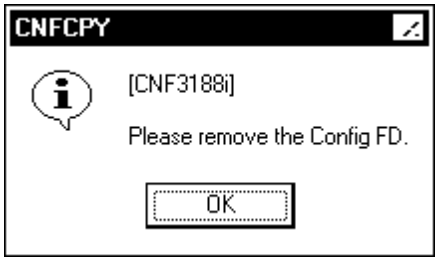
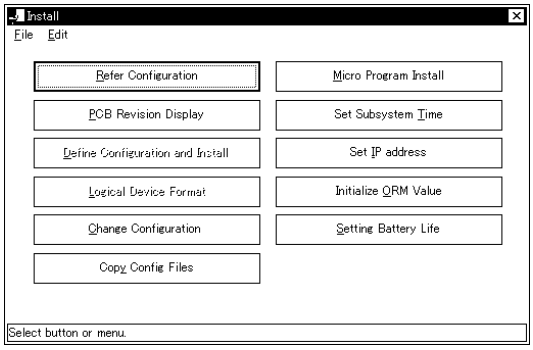
5. When this procedure is completed, the message “Please remove the Config FD.” is displayed.
Remove the FD, and select (CL) [OK].



6.
After the procedure is completed, return to [Install].
Select (CL) [File]-[Exit].



7. <Mode Change>
Change the mode to View Mode.

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4.3.2 De-Installation of Additional Cache Memory (DKC-F460I-41/42/2048/4096)

Table 4.3.2-1 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKC-F460I-41	WP490-B	5513976-B	2	Cache Memory PCB Color of PCB lever: Blue
		Nameplate (HDS)	2105902-115	1	RSD
			2105903-115/215		HICAM/HICEF
		Nameplate (HP)	2105902-215	1	RSD
			2105903-315/415		HICAM/HICEF
2	DKC-F460I-42	Battery Box	5513990-A	2	
		SH200-A	5509126-A	2	BATCTR PCB
		Nameplate (HDS)	2105902-116	1	RSD
			2105903-116/216		HICAM/HICEF
		Nameplate (HP)	2105902-216	1	RSD
			2105903-316/416		HICAM/HICEF
3	DKC-F460I-2048	SH288-B	5513977-B	4	Cache Memory Module (512 MB)
4	DKC-F460I-4096	SH288-C	5513977-C	4	Cache Memory Module (1024 MB)
		Nameplate (HDS)	2105902-145	1	RSD
			2105903-145/245		HICAM/HICEF
		Nameplate (HP)	2105902-245	1	RSD
			2105903-345/445		HICAM/HICEF

When changing to DKC-F460I-2048 from DKC-F460I-4096, Changing CM Modulegroup Size is required. (Refer to SVP02-1230)

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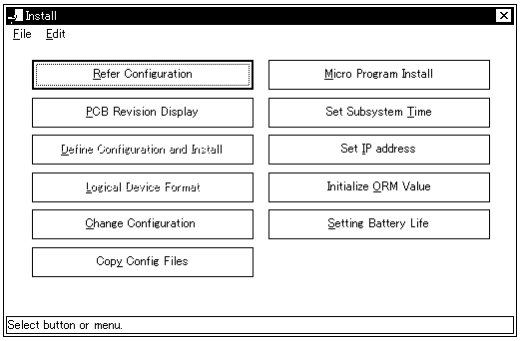
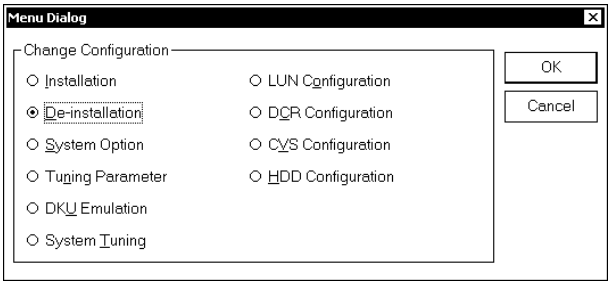
1. Setting up the New Device Structure Information

1. <Mode Change>
   Change the mode to Modify Mode.
   Select (CL) [Install].

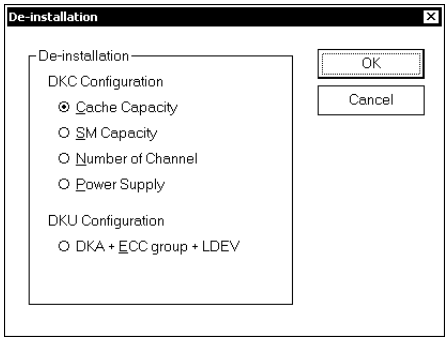
2. <Start the 'Menu Dialog' screen>
   Select (CL) [Change Configuration].



3. <Start Device Structure Setup screen>
   Select (CL) [De-Installation] in the 'Menu Dialog' dialog box and select (CL) [OK].



4. <Select a part to be changed>
   Select (CL) [Cache Capacity], and select (CL) [OK].



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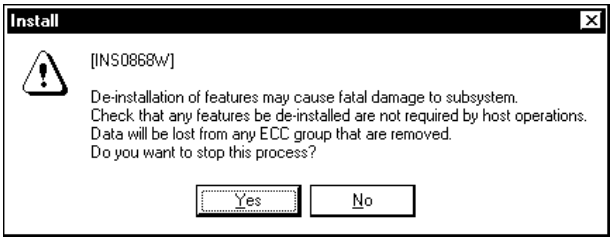
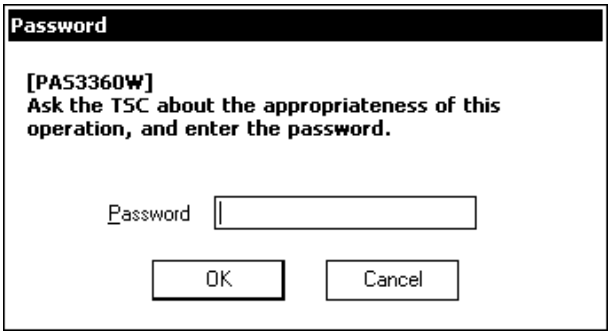
5.

Select (CL) [No] in response to “De-installation of features may cause fatal damage to subsystem. Check that any features be de-installed are not required by host operations. Data will be lost from any ECC group that are removed. Do you want to stop this process?”.



6. <Input password>
Enter the password and select (CL) [OK].



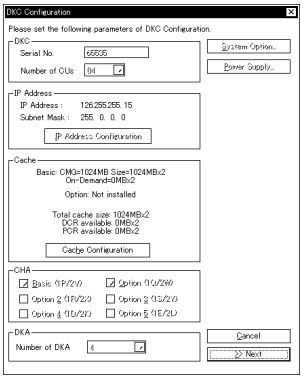
NOTICE
This is a special (exceptional) operation that can cause a serious failure such as a system down or a data loss if a wrong part to be removed is selected, and requires an input of a password. Ask the technical support center about the appropriateness of the operation, and input the password after getting an approval of executing the operation.

7. <Update Configuration Information>
Select (CL) [Cache Configuration] in the ‘DKC Configuration’ window. (Go to step 7-1.)

Note: It is not possible to install or de-install plural parts at the same time.

Make sure that all entered items are correct and select (CL) [>>Next].

Go to step 8.



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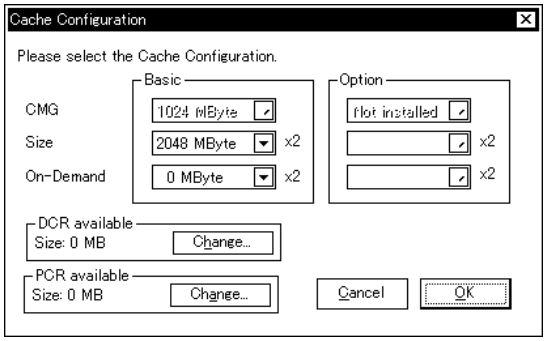
7-1. <Define Cache>

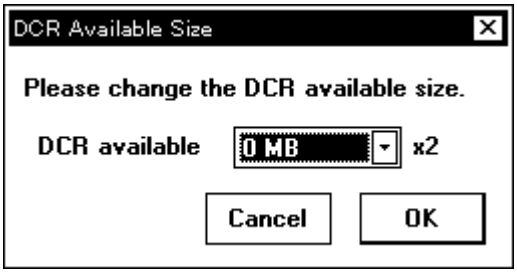
Define each item in the 'Cache Configuration' window.
If you want to change the DCR available size, select (CL) [Change...] of DCR available to change it.
(See SSD Optional Function Section)
If you want to change the PCR available size, select (CL) [Change...] of PCR available to change it.



7-2. <Define DCR Available Size>

Define the DCR available size in the 'DCR Available Size' dialog box.
And select (CL) [OK].

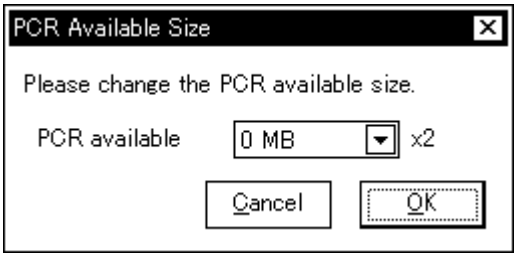
Return to step 7-1.



7-3. <Define PCR Available Size>

Define the PCR available size in the 'PCR Available Size' dialog box.
And select (CL) [OK].

Return to step 7-1.

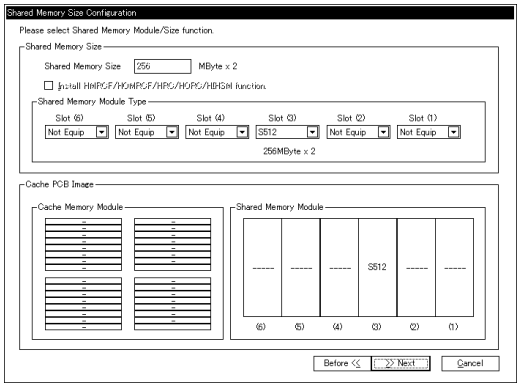


8. <Display SM size>

The 'Shared Memory size Configuration' dialog box is displayed.

Note: Select 'Shared Memory Module Type' in order of "Slot(1) → Slot(2) → Slot(3) → Slot(4) → Slot(5) → Slot(6)".

Select (CL) [>>Next].



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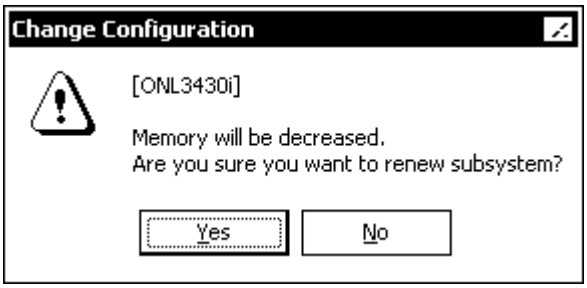
2. SVP pre procedure on the cluster 1.

1. <Start de-installation>
   Select (CL) [Yes] in response to “Memory will be decreased. Are you sure you want to renew subsystem?”.

   When [No] is selected (CL), returns to INST04-CM-20 step 3.



2. <Memory blocking on cluster 1>
   When blocking of cluster 1 of shared memory and Cache memory is completed, “The Cache Memory PCB is being blocked...” and “The Shared Memory PCB is being blocked...” are displayed.

3.
   “Lighting LED of the PCB...” is displayed.

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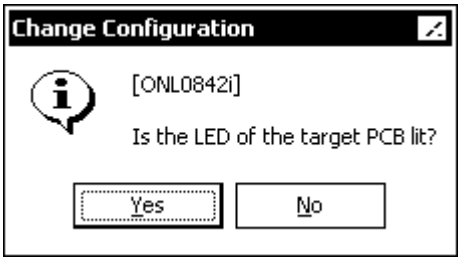
4. <Check shut down LED>
   Select (CL)
   * [Yes] if LED is on
   * [No] if LED is off
   in response to “Is the LED of the target PCB lit?”.

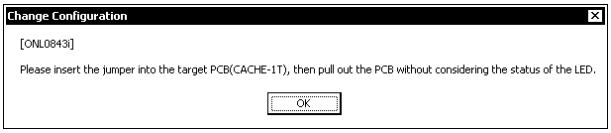


<Forcing shut down LED on>

CAUTION

If the jumper is inserted in the wrong PCB, a system down may be caused.

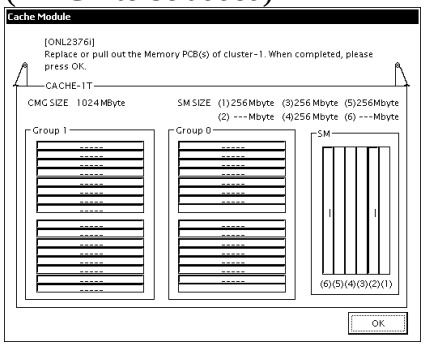
If [No] is selected:
Insert a jumper in response to “Please insert the jumper into the target PCB(CACHE-nn), then pull out the PCB without considering the status of the LED”.
(Refer INST04-CM-60)



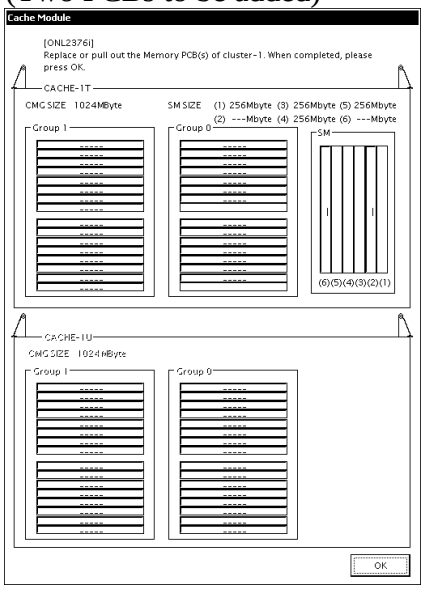
5. <Perform cache hardware de-installation>
   At this point refrain from pressing the [OK] button.
   When “Replace or pull out the Memory PCB(s) of cluster-1. When completed, select OK.” is displayed, perform the hardware de-installation steps according to the cache hardware de-installation procedure.

   Make sure of the installation location of the module to be removed and remove the correct module.
   (Uninstalled module is displayed as looks depressed; the PCB to be removed is displayed in gray.)

(A PCB to be added)



(Two PCBs to be added)



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3. Remove the Cache Memory on the cluster 1.
   Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

3-1. Remove the PCB.

a. While referring to Fig. 4.3.2-1, Table 4.3.2-2 and Table 4.3.2-3, check the Shut Down LED on the Cache Memory PCB. Connect the Maintenance Jumper to the Shut Down Connector if the Shut Down LED is not on.

⚠ CAUTION

A system down may be caused if the Maintenance jumper is inserted in a PCB other than that to be removed. Make sure that it is the PCB to be removed.

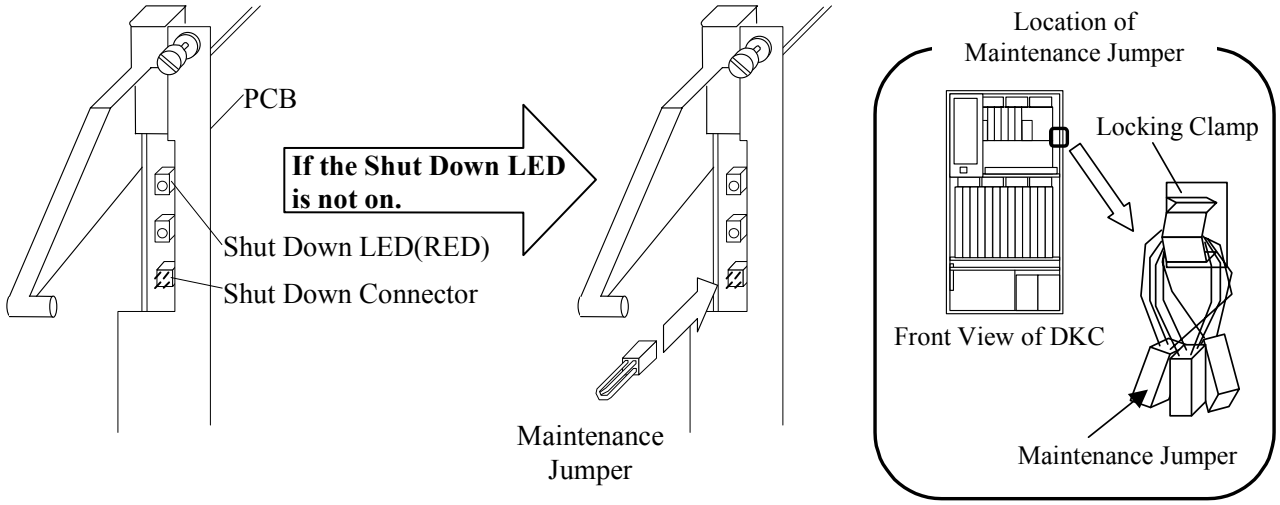

Fig. 4.3.2-1 Location of the Shut Down LED

Table 4.3.2-2 Location of the Cache Memory PCB (Standard Model Installation)

Cluster	PCB Name	Box	Slot No.	Location No.	Remarks
1	WP490-A	Front Logic Box	T	CACHE-1T	Cache Memory PCB (Note 1)
	WP490-B	Front Logic Box	U	CACHE-1U	Cache Memory PCB (Note 2)

Note 1: No PCB needs to be removed if 16 or more DKC-F460I-2048 or 4096 sets are left after de-installation, except when installing DKC-F460I-S512 or S1024 sets.

Note 2: Remove the PCB only when it is installed.

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Table 4.3.2-3 Location of the Cache Memory PCB (High Performance Model Installation)

Cluster	PCB Name	Box	Slot No.	Location No.	Remarks
1	WP490-A	Front Logic Box	T	CACHE-1T	Cache Memory PCB
	WP490-B	Front Logic Box	U	CACHE-1U	Cache Memory PCB

b. Remove the two screws and remove the Cache Memory PCB. Refer to Fig. 4.3.2-2, Table 4.3.2-2 and Table 4.3.2-3.

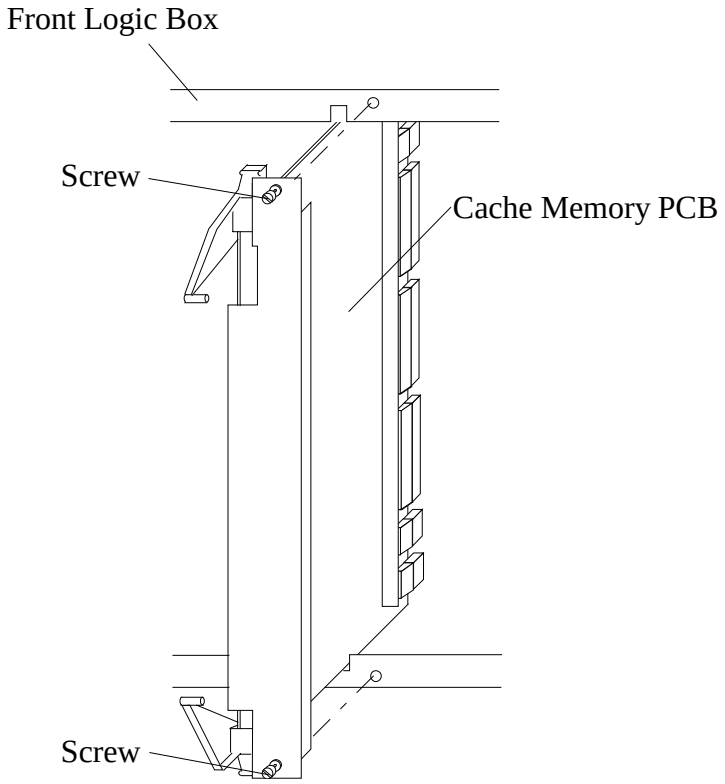

Fig. 4.3.2-2 Removal of the Cache Memory PCB

c. Remove the Maintenance Jumper if it is mounted.

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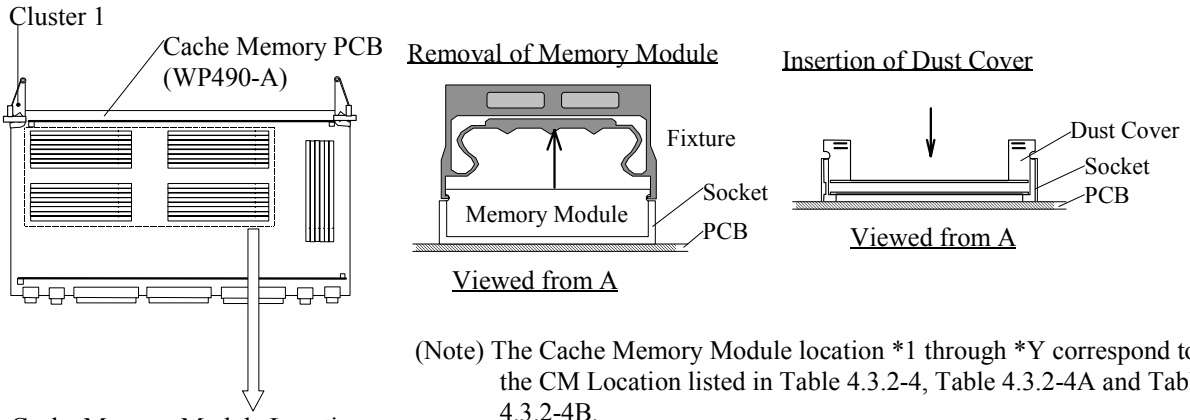
3-2. Remove the Cache Memory Modules.

a. Remove the extra Cache Memory Modules according to the required Cache Memory capacity referring to Fig. 4.3.2-3, Table 4.3.2-4, Table 4.3.2-4A and Table 4.3.2-4B.

b. Insert the dust covers into the vacant sockets.

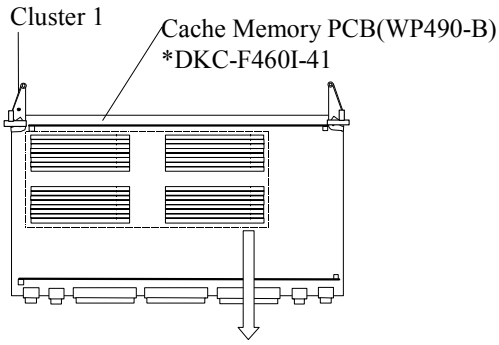


(Note) The Cache Memory Module location *1 through *Y correspond to the CM Location listed in Table 4.3.2-4, Table 4.3.2-4A and Table 4.3.2-4B.

Cache Memory Module Location

BCM007 (MG#15) : SH288-B or SH288-C *G	ACM007 (MG#14) : SH288-B or SH288-C *F
BCM006 (MG#13) : SH288-B or SH288-C *E	ACM006 (MG#12) : SH288-B or SH288-C *D
BCM005 (MG#11) : SH288-B or SH288-C *C	ACM005 (MG#10) : SH288-B or SH288-C *B
BCM004 (MG#9) : SH288-B or SH288-C *A	ACM004 (MG#8) : SH288-B or SH288-C *9
BCM003 (MG#7) : SH288-B or SH288-C *8	ACM003 (MG#6) : SH288-B or SH288-C *7
BCM002 (MG#5) : SH288-B or SH288-C *6	ACM002 (MG#4) : SH288-B or SH288-C *5
BCM001 (MG#3) : SH288-B or SH288-C *4	ACM001 (MG#2) : SH288-B or SH288-C *3
BCM000 (MG#1) : SH288-B or SH288-C *2	ACM000 (MG#0) : SH288-B or SH288-C *1

BCM107 (MG#15) : SH288-B or SH288-C *G	ACM107 (MG#14) : SH288-B or SH288-C *F
BCM106 (MG#13) : SH288-B or SH288-C *E	ACM106 (MG#12) : SH288-B or SH288-C *D
BCM105 (MG#11) : SH288-B or SH288-C *C	ACM105 (MG#10) : SH288-B or SH288-C *B
BCM104 (MG#9) : SH288-B or SH288-C *A	ACM104 (MG#8) : SH288-B or SH288-C *9
BCM103 (MG#7) : SH288-B or SH288-C *8	ACM103 (MG#6) : SH288-B or SH288-C *7
BCM102 (MG#5) : SH288-B or SH288-C *6	ACM102 (MG#4) : SH288-B or SH288-C *5
BCM101 (MG#3) : SH288-B or SH288-C *4	ACM101 (MG#2) : SH288-B or SH288-C *3
BCM100 (MG#1) : SH288-B or SH288-C *2	ACM100 (MG#0) : SH288-B or SH288-C *1



Cache Memory Module Location

BCM007 (MG#15) : SH288-B or SH288-C *Y	ACM007 (MG#14) : SH288-B or SH288-C *X
BCM006 (MG#13) : SH288-B or SH288-C *W	ACM006 (MG#12) : SH288-B or SH288-C *V
BCM005 (MG#11) : SH288-B or SH288-C *U	ACM005 (MG#10) : SH288-B or SH288-C *T
BCM004 (MG#9) : SH288-B or SH288-C *S	ACM004 (MG#8) : SH288-B or SH288-C *R
BCM003 (MG#7) : SH288-B or SH288-C *Q	ACM003 (MG#6) : SH288-B or SH288-C *P
BCM002 (MG#5) : SH288-B or SH288-C *N	ACM002 (MG#4) : SH288-B or SH288-C *M
BCM001 (MG#3) : SH288-B or SH288-C *L	ACM001 (MG#2) : SH288-B or SH288-C *K
BCM000 (MG#1) : SH288-B or SH288-C *J	ACM000 (MG#0) : SH288-B or SH288-C *H

BCM107 (MG#15) : SH288-B or SH288-C *Y	ACM107 (MG#14) : SH288-B or SH288-C *X
BCM106 (MG#13) : SH288-B or SH288-C *W	ACM106 (MG#12) : SH288-B or SH288-C *V
BCM105 (MG#11) : SH288-B or SH288-C *U	ACM105 (MG#10) : SH288-B or SH288-C *T
BCM104 (MG#9) : SH288-B or SH288-C *S	ACM104 (MG#8) : SH288-B or SH288-C *R
BCM103 (MG#7) : SH288-B or SH288-C *Q	ACM103 (MG#6) : SH288-B or SH288-C *P
BCM102 (MG#5) : SH288-B or SH288-C *N	ACM102 (MG#4) : SH288-B or SH288-C *M
BCM101 (MG#3) : SH288-B or SH288-C *L	ACM101 (MG#2) : SH288-B or SH288-C *K
BCM100 (MG#1) : SH288-B or SH288-C *J	ACM100 (MG#0) : SH288-B or SH288-C *H

Fig. 4.3.2-3 Inserting Location of the Cache Memory Module

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Table 4.3.2-4 Number of CMs and Corresponding Cache Memory Capacity
(Composition of only DKC-F460I-2048)

Cache Memory Capacity	Standard Model				High Performance Model				DKC-F460I-42 Additional Battery
	DKC-F460I-2048			DKC-F460I-41	DKC-F460I-2048			DKC-F460I-41	
	Install PCB		CM Location (Note 1)		Install PCB		CM Location (Note 1)		
	Basic PCB	Add. PCB			Basic PCB	Add. PCB			
2GB	1	0	*1	0	-	-	-	-	0
4GB	2	0	*2	0	1	1	*1, *H	1	0
6GB	3	0	*3	0	-	-	-	1	0
8GB	4	0	*4	0	2	2	*2, *J	1	0
10GB	5	0	*5	0	-	-	-	1	0
12GB	6	0	*6	0	3	3	*3, *K	1	0
14GB	7	0	*7	0	-	-	-	1	0
16GB	8	0	*8	0	4	4	*4, *L	1	0
18GB	9	0	*9	0	-	-	-	1	0
20GB	10	0	*A	0	5	5	*5, *M	1	0
22GB	11	0	*B	0	-	-	-	1	0
24GB	12	0	*C	0	6	6	*6, *N	1	0
26GB	13	0	*D	0	-	-	-	1	0
28GB	14	0	*E	0	7	7	*7, *P	1	0
30GB	15	0	*F	0	-	-	-	1	0
32GB	16	0	*G	0	8	8	*8, *Q	1	0
34GB	16	1	*H	1	-	-	-	1	1
36GB	16	2	*J	1	9	9	*9, *R	1	1
38GB	16	3	*K	1	-	-	-	1	1
40GB	16	4	*L	1	10	10	*A, *S	1	1
42GB	16	5	*M	1	-	-	-	1	1
44GB	16	6	*N	1	11	11	*B, *T	1	1
46GB	16	7	*P	1	-	-	-	1	1
48GB	16	8	*Q	1	12	12	*C, *U	1	1
50GB	16	9	*R	1	-	-	-	1	1
52GB	16	10	*S	1	13	13	*D, *V	1	1
54GB	16	11	*T	1	-	-	-	1	1
56GB	16	12	*U	1	14	14	*E, *W	1	1
58GB	16	13	*V	1	-	-	-	1	1
60GB	16	14	*W	1	15	15	*F, *X	1	1
62GB	16	15	*X	1	-	-	-	1	1
64GB	16	16	*Y	1	16	16	*G, *Y	1	1

Note 1: The CM locations (*1 through *Y) represent the Cache Memory Module locations shown in Fig. 4.3.2-3.

Note 2: A cache memory can't be set up in the '–' mark.

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Table 4.3.2-4A Number of CMs and Corresponding Cache Memory Capacity
(Composition of only DKC-F460I-4096)

Cache Memory Capacity	Standard Model				High Performance Model				DKC-F460I-42 Additional Battery
	DKC-F460I-4096			DKC-F460I-41	DKC-F460I-4096			DKC-F460I-41	
	Install PCB		CM Location (Note 1)		Install PCB		CM Location (Note 1)		
	Basic PCB	Add. PCB			Basic PCB	Add. PCB			
4GB	1	0	*1	0	-	-	-	-	0
8GB	2	0	*2	0	1	1	*1, *H	1	0
12GB	3	0	*3	0	-	-	-	1	0
16GB	4	0	*4	0	2	2	*2, *J	1	0
20GB	5	0	*5	0	-	-	-	1	0
24GB	6	0	*6	0	3	3	*3, *K	1	0
28GB	7	0	*7	0	-	-	-	1	0
32GB	8	0	*8	0	4	4	*4, *L	1	0
36GB	9	0	*9	0	-	-	-	1	0
40GB	10	0	*A	0	5	5	*5, *M	1	0
44GB	11	0	*B	0	-	-	-	1	0
48GB	12	0	*C	0	6	6	*6, *N	1	0
52GB	13	0	*D	0	-	-	-	1	0
56GB	14	0	*E	0	7	7	*7, *P	1	0
60GB	15	0	*F	0	-	-	-	1	0
64GB	16	0	*G	0	8	8	*8, *Q	1	0
68GB	16	1	*H	1	-	-	-	-	1
72GB	16	2	*J	1	9	9	*9, *R	1	1
76GB	16	3	*K	1	-	-	-	-	1
80GB	16	4	*L	1	10	10	*A, *S	1	1
84GB	16	5	*M	1	-	-	-	-	1
88GB	16	6	*N	1	11	11	*B, *T	1	1
92GB	16	7	*P	1	-	-	-	-	1
96GB	16	8	*Q	1	12	12	*C, *U	1	1
100GB	16	9	*R	1	-	-	-	-	1
104GB	16	10	*S	1	13	13	*D, *V	1	1
108GB	16	11	*T	1	-	-	-	-	1
112GB	16	12	*U	1	14	14	*E, *W	1	1
116GB	16	13	*V	1	-	-	-	-	1
120GB	16	14	*W	1	15	15	*F, *X	1	1
124GB	16	15	*X	1	-	-	-	-	1
128GB	16	16	*Y	1	16	16	*G, *Y	1	1

Note 1: The CM locations (*1 through *Y) represent the Cache Memory Module locations shown in Fig. 4.3.2-3.

Note 2: A cache memory can't be set up in the '–' mark.
High Performance model is effective when the cache memory is installed 16GB or more, and recommend the addition of 16GB.

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Table 4.3.2-4B Number of CMs and Corresponding Cache Memory Capacity
(Intermix Composition of DKC-F460I-2048 and DKC-F460I-4096)

Cache Memory Capacity	Pattern 1					Pattern 2				
	Install PCB		CM Location (Note 1)	DKC-F460I-41	DKC-F460I-42	Install PCB		CM Location (Note 1)	DKC-F460I-41	DKC-F460I-42
	Basic PCB	Add. PCB				Basic PCB	Add. PCB			
	F2048	F4096				F4096	F2048			
2GB	1	0	*1	0	0	-	-	-	-	-
4GB	2	0	*2	0	0	1	0	*1	0	0
6GB	3	0	*3	0	0	-	-	-	-	-
8GB	4	0	*4	0	0	2	0	*2	0	0
10GB	5	0	*5	0	0	-	-	-	-	-
12GB	6	0	*6	0	0	3	0	*3	0	0
14GB	7	0	*7	0	0	-	-	-	-	-
16GB	8	0	*8	0	0	4	0	*4	0	0
18GB	9	0	*9	0	0	-	-	-	-	-
20GB	10	0	*A	0	0	5	0	*5	0	0
22GB	11	0	*B	0	0	-	-	-	-	-
24GB	12	0	*C	0	0	6	0	*6	0	0
26GB	13	0	*D	0	0	-	-	-	-	-
28GB	14	0	*E	0	0	7	0	*7	0	0
30GB	15	0	*F	0	0	-	-	-	-	-
32GB	16	0	*G	0	0	8	0	*8	0	0
34GB	-	-	-	-	-	-	-	-	-	-
36GB	16	1	*H	1	1	9	0	*9	0	0
38GB	-	-	-	-	-	-	-	-	-	-
40GB	16	2	*J	1	1	10	0	*A	0	0
42GB	-	-	-	-	-	-	-	-	-	-
44GB	16	3	*K	1	1	11	0	*B	0	0
46GB	-	-	-	-	-	-	-	-	-	-
48GB	16	4	*L	1	1	12	0	*C	0	0
50GB	-	-	-	-	-	-	-	-	-	-
52GB	16	5	*M	1	1	13	0	*D	0	0
54GB	-	-	-	-	-	-	-	-	-	-
56GB	16	6	*N	1	1	14	0	*E	0	0
58GB	-	-	-	-	-	-	-	-	-	-
60GB	16	7	*P	1	1	15	0	*F	0	0
62GB	-	-	-	-	-	-	-	-	-	-
64GB	16	8	*Q	1	1	16	0	*G	0	0
66GB	-	-	-	-	-	16	1	*H	1	1
68GB	16	9	*R	1	1	16	2	*J	1	1
70GB	-	-	-	-	-	16	3	*K	1	1
72GB	16	10	*S	1	1	16	4	*L	1	1
74GB	-	-	-	-	-	16	5	*M	1	1
76GB	16	11	*T	1	1	16	6	*N	1	1
78GB	-	-	-	-	-	16	7	*P	1	1
80GB	16	12	*U	1	1	16	8	*Q	1	1
82GB	-	-	-	-	-	16	9	*R	1	1
84GB	16	13	*V	1	1	16	10	*S	1	1
86GB	-	-	-	-	-	16	11	*T	1	1
88GB	16	14	*W	1	1	16	12	*U	1	1
90GB	-	-	-	-	-	16	13	*V	1	1
92GB	16	15	*X	1	1	16	14	*W	1	1
94GB	-	-	-	-	-	16	15	*X	1	1
96GB	16	16	*Y	1	1	16	16	*Y	1	1

Note 1: The CM locations (*1 through *Y) represent the Cache Memory Module locations shown in Fig. 4.3.2-3.

Note 2: A cache memory can't be set up in the '–' mark.

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3-3. Insert the PCB.

a. When the Cache Access Throughput Expansion Kit (DKC-F460I-41) is removed, attach the dummy plate and fasten the two screws. Refer to Fig. 4.3.2-4.
   When the Cache Access Throughput Expansion Kit (DKC-F460I-41) is not removed, go to step b.
b. Install the Cache Memory PCB referring to Table 4.3.2-5.
c. Fasten the two screws.

Table 4.3.2-5 Location of the Cache Memory PCB

Cluster	PCB Name	Box	Slot No.	Location No.	Remarks
1	WP490-A	Front Logic Box	T	CACHE-1T	Cache Memory PCB (Note 1)
	WP490-B	Front Logic Box	U	CACHE-1U	Cache Memory PCB (Note 2)

Note 1: Insert the PCB when it is removed in step 3-1.
Note 2: Insert the PCB when DKC-F460I-41 is installed.

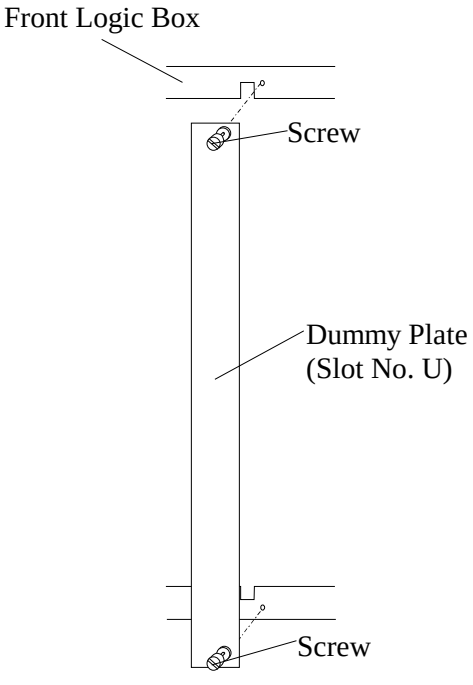

Fig. 4.3.2-4 Removal of the Dummy Plate

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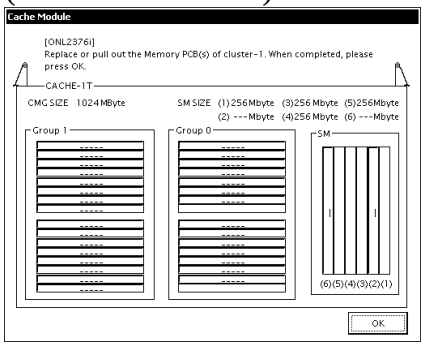
4. SVP post procedure on the cluster 1 and pre procedure on the cluster 2.

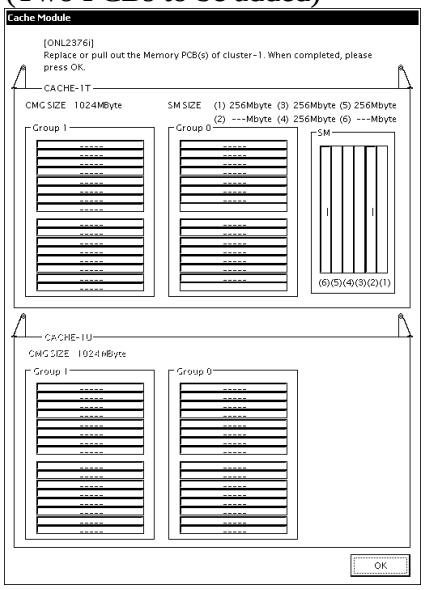
1.

After the hardware procedure for cluster 1 of cache memory is completed, select (CL) [OK] in response to “Replace or pull out the Memory PCBs of cluster-1. When completed, please press [OK].”.

(A PCB to be added)



(Two PCBs to be added)



2. <Cache CUDG executes>
“INLINE CUDG is running...” is displayed.

3.

When CUDG is completed, the recovery processing is automatically started with the messages.

“Restoring the Cache Memory PCB...”

“Shared memory renewal is in progress...”

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4. When the recovery processing is complete, processing proceeds to blocking of cluster 2 of shared memory.

5. <Memory blocking on cluster 2>
When blocking of cluster 2 of shared memory and Cache memory is completed, “The Cache Memory PCB is being blocked...” and “The Shared Memory PCB is being blocked...” are displayed.

6. “Lighting LED of the PCB...” is displayed.

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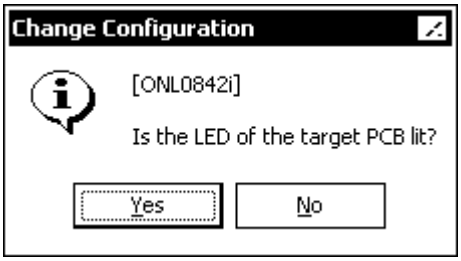
7. <Check shut down LED>
   Select (CL)
   * [Yes] if LED is on
   * [No] if LED is off
   in response to “Is the LED of the target PCB lit?”.

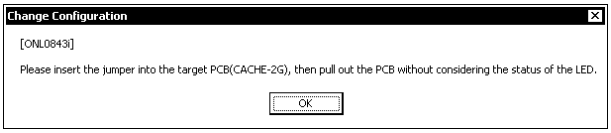


<Forcing shut down LED on>

CAUTION

If the jumper is inserted in the wrong PCB, a system down may be caused.

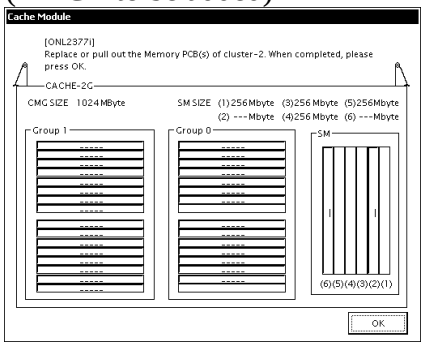
If [No] is selected:
Insert a jumper in response to “Please insert the jumper into the target PCB(CACHE-nn), then pull out the PCB without considering the status of the LED”.
(Refer INST04-CM-130)



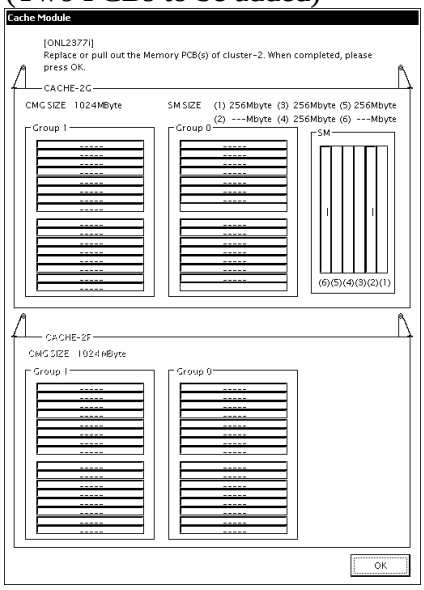
8. <Perform cache hardware de-installation>
   At this point refrain from pressing the [OK] button.
   When “Replace or pull out the Memory PCB(s) of cluster-2. When completed, select OK.” is displayed, perform the hardware de-installation steps according to the cache hardware de-installation procedure.

   Make sure of the installation location of the module to be removed and remove the correct module.
   (Uninstalled module is displayed as looks depressed; the PCB to be removed is displayed in gray.)

(A PCB to be added)



(Two PCBs to be added)



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5. Remove the Cache Memory on the cluster 2.
   Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

5-1. Remove the PCB.

a. While referring to Fig. 4.3.2-5, Table 4.3.2-6 and Table 4.3.2-7, check the Shut Down LED on the Cache Memory PCB. Connect the Maintenance Jumper to the Shut Down Connector if the Shut Down LED is not on.

⚠ CAUTION

A system down may be caused if the Maintenance jumper is inserted in a PCB other than that to be removed. Make sure that it is the PCB to be removed.

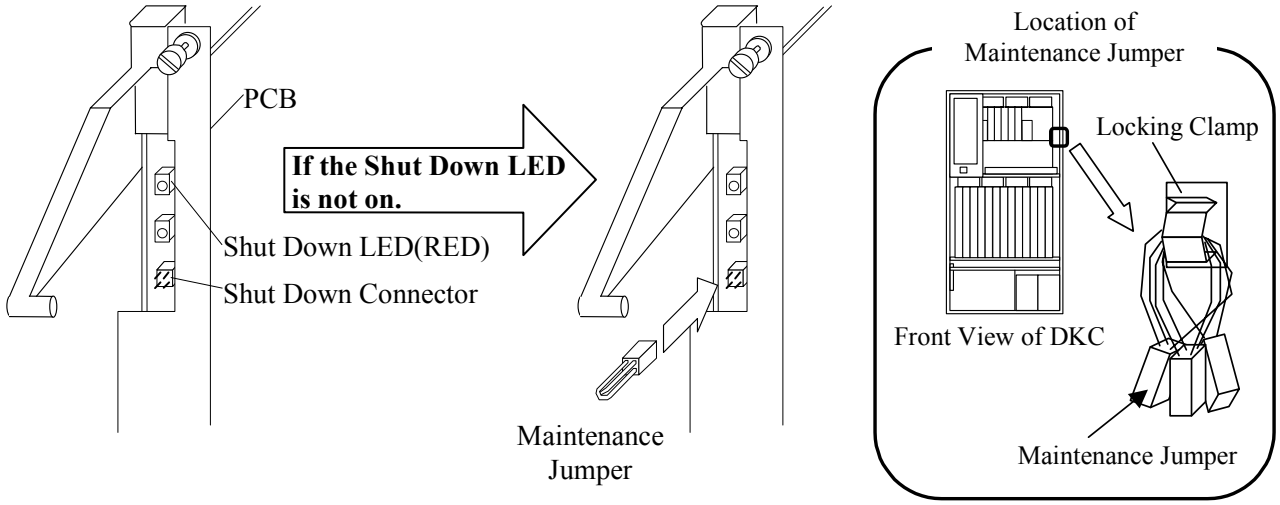

Fig. 4.3.2-5 Location of the Shut Down LED

Table 4.3.2-6 Location of the Cache Memory PCB (Standard Model Installation)

Cluster	PCB Name	Box	Slot No.	Location No.	Remarks
2	WP490-A	Rear Logic Box	G	CACHE-2G	Cache Memory PCB (Note 1)
	WP490-B	Rear Logic Box	F	CACHE-2F	Cache Memory PCB (Note 2)

Note 1: No PCB needs to be removed if 16 or more DKC-F460I-2048 or 4096 sets are left after de-installation, except when installing DKC-F460I-S512 or S1024 sets.

Note 2: Remove the PCB only when it is installed.

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Table 4.3.2-7 Location of the Cache Memory PCB
(High Performance Model Installation)

Cluster	PCB Name	Box	Slot No.	Location No.	Remarks
2	WP490-A	Rear Logic Box	G	CACHE-2G	Cache Memory PCB
	WP490-B	Rear Logic Box	F	CACHE-2F	Cache Memory PCB

b. Remove the two screws and remove the Cache Memory PCB. Refer to Fig. 4.3.2-6, Table 4.3.2-6 and Table 4.3.2-7.

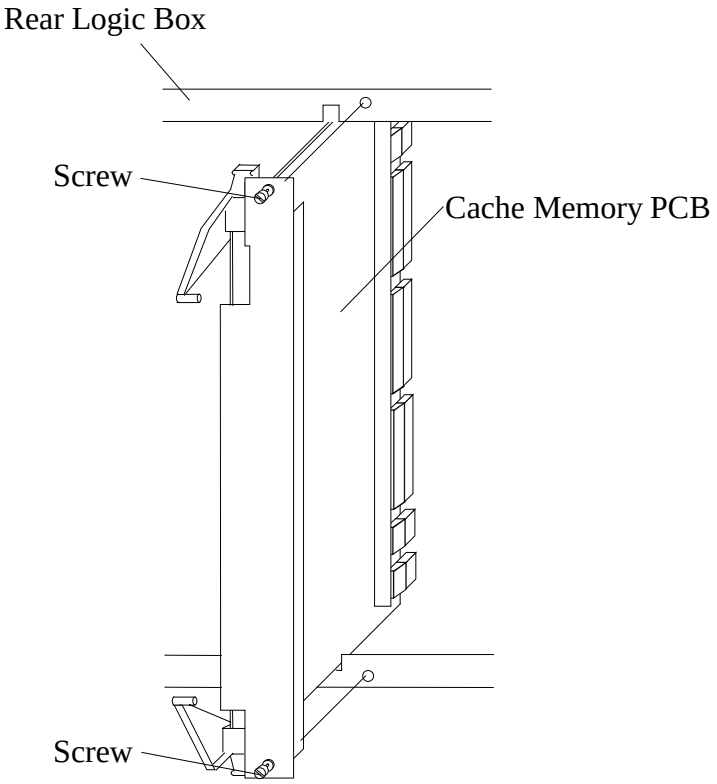

Fig. 4.3.2-6 Removal of the Cache Memory PCB

c. Remove the Maintenance Jumper if it is mounted.

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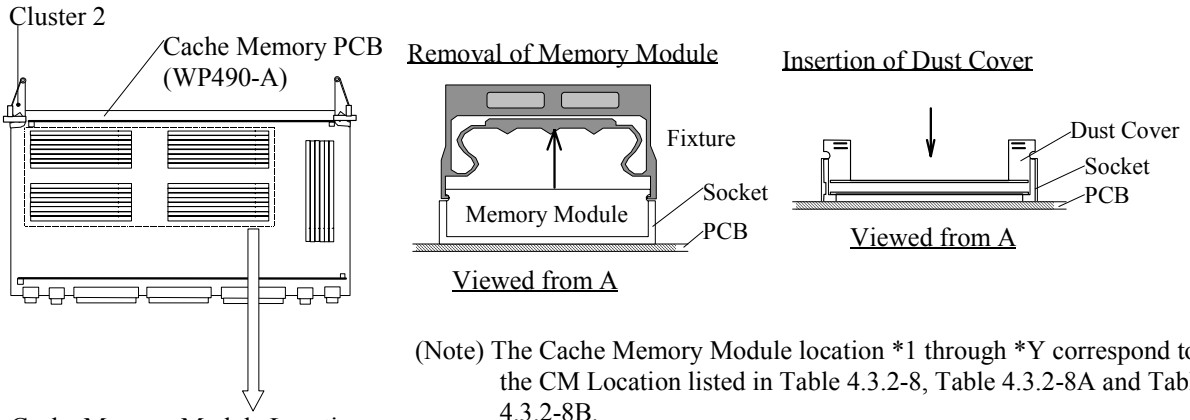
5-2. Remove the Cache Memory Modules.

a. Remove the Cache Memory Modules according to the required Cache Memory capacity referring to Fig. 4.3.2-7, Table 4.3.2-8, Table 4.3.2-8A and Table 4.3.2-8B.

b. Insert the dust covers into the vacant sockets.

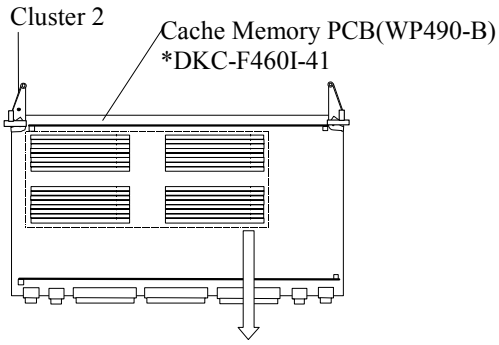


(Note) The Cache Memory Module location *1 through *Y correspond to the CM Location listed in Table 4.3.2-8, Table 4.3.2-8A and Table 4.3.2-8B.

Cache Memory Module Location

BCM007 (MG#15) : SH288-B or SH288-C *G	ACM007 (MG#14) : SH288-B or SH288-C *F
BCM006 (MG#13) : SH288-B or SH288-C *E	ACM006 (MG#12) : SH288-B or SH288-C *D
BCM005 (MG#11) : SH288-B or SH288-C *C	ACM005 (MG#10) : SH288-B or SH288-C *B
BCM004 (MG#9) : SH288-B or SH288-C *A	ACM004 (MG#8) : SH288-B or SH288-C *9
BCM003 (MG#7) : SH288-B or SH288-C *8	ACM003 (MG#6) : SH288-B or SH288-C *7
BCM002 (MG#5) : SH288-B or SH288-C *6	ACM002 (MG#4) : SH288-B or SH288-C *5
BCM001 (MG#3) : SH288-B or SH288-C *4	ACM001 (MG#2) : SH288-B or SH288-C *3
BCM000 (MG#1) : SH288-B or SH288-C *2	ACM000 (MG#0) : SH288-B or SH288-C *1

BCM107 (MG#15) : SH288-B or SH288-C *G	ACM107 (MG#14) : SH288-B or SH288-C *F
BCM106 (MG#13) : SH288-B or SH288-C *E	ACM106 (MG#12) : SH288-B or SH288-C *D
BCM105 (MG#11) : SH288-B or SH288-C *C	ACM105 (MG#10) : SH288-B or SH288-C *B
BCM104 (MG#9) : SH288-B or SH288-C *A	ACM104 (MG#8) : SH288-B or SH288-C *9
BCM103 (MG#7) : SH288-B or SH288-C *8	ACM103 (MG#6) : SH288-B or SH288-C *7
BCM102 (MG#5) : SH288-B or SH288-C *6	ACM102 (MG#4) : SH288-B or SH288-C *5
BCM101 (MG#3) : SH288-B or SH288-C *4	ACM101 (MG#2) : SH288-B or SH288-C *3
BCM100 (MG#1) : SH288-B or SH288-C *2	ACM100 (MG#0) : SH288-B or SH288-C *1



Cache Memory Module Location

BCM007 (MG#15) : SH288-B or SH288-C *Y	ACM007 (MG#14) : SH288-B or SH288-C *X
BCM006 (MG#13) : SH288-B or SH288-C *W	ACM006 (MG#12) : SH288-B or SH288-C *V
BCM005 (MG#11) : SH288-B or SH288-C *U	ACM005 (MG#10) : SH288-B or SH288-C *T
BCM004 (MG#9) : SH288-B or SH288-C *S	ACM004 (MG#8) : SH288-B or SH288-C *R
BCM003 (MG#7) : SH288-B or SH288-C *Q	ACM003 (MG#6) : SH288-B or SH288-C *P
BCM002 (MG#5) : SH288-B or SH288-C *N	ACM002 (MG#4) : SH288-B or SH288-C *M
BCM001 (MG#3) : SH288-B or SH288-C *L	ACM001 (MG#2) : SH288-B or SH288-C *K
BCM000 (MG#1) : SH288-B or SH288-C *J	ACM000 (MG#0) : SH288-B or SH288-C *H

BCM107 (MG#15) : SH288-B or SH288-C *Y	ACM107 (MG#14) : SH288-B or SH288-C *X
BCM106 (MG#13) : SH288-B or SH288-C *W	ACM106 (MG#12) : SH288-B or SH288-C *V
BCM105 (MG#11) : SH288-B or SH288-C *U	ACM105 (MG#10) : SH288-B or SH288-C *T
BCM104 (MG#9) : SH288-B or SH288-C *S	ACM104 (MG#8) : SH288-B or SH288-C *R
BCM103 (MG#7) : SH288-B or SH288-C *Q	ACM103 (MG#6) : SH288-B or SH288-C *P
BCM102 (MG#5) : SH288-B or SH288-C *N	ACM102 (MG#4) : SH288-B or SH288-C *M
BCM101 (MG#3) : SH288-B or SH288-C *L	ACM101 (MG#2) : SH288-B or SH288-C *K
BCM100 (MG#1) : SH288-B or SH288-C *J	ACM100 (MG#0) : SH288-B or SH288-C *H

Fig. 4.3.2-7 Inserting Location of the Cache Memory Module

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Table 4.3.2-8 Number of CMs and Corresponding Cache Memory Capacity
(Composition of only DKC-F460I-2048)

Cache Memory Capacity	Standard Model				High Performance Model				DKC-F460I-42 Additional Battery
	DKC-F460I-2048			DKC-F460I-41	DKC-F460I-2048			DKC-F460I-41	
	Install PCB		CM Location (Note 1)		Install PCB		CM Location (Note 1)		
	Basic PCB	Add. PCB			Basic PCB	Add. PCB			
2GB	1	0	*1	0	-	-	-	-	0
4GB	2	0	*2	0	1	1	*1, *H	1	0
6GB	3	0	*3	0	-	-	-	1	0
8GB	4	0	*4	0	2	2	*2, *J	1	0
10GB	5	0	*5	0	-	-	-	1	0
12GB	6	0	*6	0	3	3	*3, *K	1	0
14GB	7	0	*7	0	-	-	-	1	0
16GB	8	0	*8	0	4	4	*4, *L	1	0
18GB	9	0	*9	0	-	-	-	1	0
20GB	10	0	*A	0	5	5	*5, *M	1	0
22GB	11	0	*B	0	-	-	-	1	0
24GB	12	0	*C	0	6	6	*6, *N	1	0
26GB	13	0	*D	0	-	-	-	1	0
28GB	14	0	*E	0	7	7	*7, *P	1	0
30GB	15	0	*F	0	-	-	-	1	0
32GB	16	0	*G	0	8	8	*8, *Q	1	0
34GB	16	1	*H	1	-	-	-	1	1
36GB	16	2	*J	1	9	9	*9, *R	1	1
38GB	16	3	*K	1	-	-	-	1	1
40GB	16	4	*L	1	10	10	*A, *S	1	1
42GB	16	5	*M	1	-	-	-	1	1
44GB	16	6	*N	1	11	11	*B, *T	1	1
46GB	16	7	*P	1	-	-	-	1	1
48GB	16	8	*Q	1	12	12	*C, *U	1	1
50GB	16	9	*R	1	-	-	-	1	1
52GB	16	10	*S	1	13	13	*D, *V	1	1
54GB	16	11	*T	1	-	-	-	1	1
56GB	16	12	*U	1	14	14	*E, *W	1	1
58GB	16	13	*V	1	-	-	-	1	1
60GB	16	14	*W	1	15	15	*F, *X	1	1
62GB	16	15	*X	1	-	-	-	1	1
64GB	16	16	*Y	1	16	16	*G, *Y	1	1

Note 1: The CM locations (*1 through *Y) represent the Cache Memory Module locations shown in Fig. 4.3.2-7.

Note 2: A cache memory can't be set up in the '–' mark.

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Table 4.3.2-8A Number of CMs and Corresponding Cache Memory Capacity
(Composition of only DKC-F460I-4096)

Cache Memory Capacity	Standard Model				High Performance Model				DKC-F460I-42 Additional Battery
	DKC-F460I-4096			DKC-F460I-41	DKC-F460I-4096			DKC-F460I-41	
	Install PCB		CM Location (Note 1)		Install PCB		CM Location (Note 1)		
	Basic PCB	Add. PCB			Basic PCB	Add. PCB			
4GB	1	0	*1	0	-	-	-	-	0
8GB	2	0	*2	0	1	1	*1, *H	1	0
12GB	3	0	*3	0	-	-	-	1	0
16GB	4	0	*4	0	2	2	*2, *J	1	0
20GB	5	0	*5	0	-	-	-	1	0
24GB	6	0	*6	0	3	3	*3, *K	1	0
28GB	7	0	*7	0	-	-	-	1	0
32GB	8	0	*8	0	4	4	*4, *L	1	0
36GB	9	0	*9	0	-	-	-	1	0
40GB	10	0	*A	0	5	5	*5, *M	1	0
44GB	11	0	*B	0	-	-	-	1	0
48GB	12	0	*C	0	6	6	*6, *N	1	0
52GB	13	0	*D	0	-	-	-	1	0
56GB	14	0	*E	0	7	7	*7, *P	1	0
60GB	15	0	*F	0	-	-	-	1	0
64GB	16	0	*G	0	8	8	*8, *Q	1	0
68GB	16	1	*H	1	-	-	-	-	1
72GB	16	2	*J	1	9	9	*9, *R	1	1
76GB	16	3	*K	1	-	-	-	-	1
80GB	16	4	*L	1	10	10	*A, *S	1	1
84GB	16	5	*M	1	-	-	-	-	1
88GB	16	6	*N	1	11	11	*B, *T	1	1
92GB	16	7	*P	1	-	-	-	-	1
96GB	16	8	*Q	1	12	12	*C, *U	1	1
100GB	16	9	*R	1	-	-	-	-	1
104GB	16	10	*S	1	13	13	*D, *V	1	1
108GB	16	11	*T	1	-	-	-	-	1
112GB	16	12	*U	1	14	14	*E, *W	1	1
116GB	16	13	*V	1	-	-	-	-	1
120GB	16	14	*W	1	15	15	*F, *X	1	1
124GB	16	15	*X	1	-	-	-	-	1
128GB	16	16	*Y	1	16	16	*G, *Y	1	1

Note 1: The CM locations (*1 through *Y) represent the Cache Memory Module locations shown in Fig. 4.3.2-7.

Note 2: A cache memory can't be set up in the '–' mark.
High Performance model is effective when the cache memory is installed 16GB or more, and recommend the addition of 16GB.

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Table 4.3.2-8B Number of CMs and Corresponding Cache Memory Capacity
(Intermix Composition of DKC-F460I-2048 and DKC-F460I-4096)

Cache Memory Capacity	Pattern 1					Pattern 2				
	Install PCB		CM Location (Note 1)	DKC-F460I -41	DKC-F460I -42	Install PCB		CM Location (Note 1)	DKC-F460I -41	DKC-F460I -42
	Basic PCB	Add. PCB				Basic PCB	Add. PCB			
	F2048	F4096				F4096	F2048			
2GB	1	0	*1	0	0	-	-	-	-	-
4GB	2	0	*2	0	0	1	0	*1	0	0
6GB	3	0	*3	0	0	-	-	-	-	-
8GB	4	0	*4	0	0	2	0	*2	0	0
10GB	5	0	*5	0	0	-	-	-	-	-
12GB	6	0	*6	0	0	3	0	*3	0	0
14GB	7	0	*7	0	0	-	-	-	-	-
16GB	8	0	*8	0	0	4	0	*4	0	0
18GB	9	0	*9	0	0	-	-	-	-	-
20GB	10	0	*A	0	0	5	0	*5	0	0
22GB	11	0	*B	0	0	-	-	-	-	-
24GB	12	0	*C	0	0	6	0	*6	0	0
26GB	13	0	*D	0	0	-	-	-	-	-
28GB	14	0	*E	0	0	7	0	*7	0	0
30GB	15	0	*F	0	0	-	-	-	-	-
32GB	16	0	*G	0	0	8	0	*8	0	0
34GB	-	-	-	-	-	-	-	-	-	-
36GB	16	1	*H	1	1	9	0	*9	0	0
38GB	-	-	-	-	-	-	-	-	-	-
40GB	16	2	*J	1	1	10	0	*A	0	0
42GB	-	-	-	-	-	-	-	-	-	-
44GB	16	3	*K	1	1	11	0	*B	0	0
46GB	-	-	-	-	-	-	-	-	-	-
48GB	16	4	*L	1	1	12	0	*C	0	0
50GB	-	-	-	-	-	-	-	-	-	-
52GB	16	5	*M	1	1	13	0	*D	0	0
54GB	-	-	-	-	-	-	-	-	-	-
56GB	16	6	*N	1	1	14	0	*E	0	0
58GB	-	-	-	-	-	-	-	-	-	-
60GB	16	7	*P	1	1	15	0	*F	0	0
62GB	-	-	-	-	-	-	-	-	-	-
64GB	16	8	*Q	1	1	16	0	*G	0	0
66GB	-	-	-	-	-	16	1	*H	1	1
68GB	16	9	*R	1	1	16	2	*J	1	1
70GB	-	-	-	-	-	16	3	*K	1	1
72GB	16	10	*S	1	1	16	4	*L	1	1
74GB	-	-	-	-	-	16	5	*M	1	1
76GB	16	11	*T	1	1	16	6	*N	1	1
78GB	-	-	-	-	-	16	7	*P	1	1
80GB	16	12	*U	1	1	16	8	*Q	1	1
82GB	-	-	-	-	-	16	9	*R	1	1
84GB	16	13	*V	1	1	16	10	*S	1	1
86GB	-	-	-	-	-	16	11	*T	1	1
88GB	16	14	*W	1	1	16	12	*U	1	1
90GB	-	-	-	-	-	16	13	*V	1	1
92GB	16	15	*X	1	1	16	14	*W	1	1
94GB	-	-	-	-	-	16	15	*X	1	1
96GB	16	16	*Y	1	1	16	16	*Y	1	1

Note 1: The CM locations (*1 through *Y) represent the Cache Memory Module locations shown in Fig. 4.3.2-7.

Note 2: A cache memory can't be set up in the '–' mark.

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5-3. Insert the PCB.

a. When the Cache Access Throughput Expansion Kit (DKC-F460I-41) is removed, attach the dummy plate and fasten the two screws. Refer to Fig. 4.3.2-8.
   When the Cache Access Throughput Expansion Kit (DKC-F460I-41) is not removed, go to step b.
b. Install the Cache Memory PCB referring to Table 4.3.2-9.
c. Fasten the two screws.

Table 4.3.2-9 Location of the Cache Memory PCB

Cluster	PCB Name	Box	Slot No.	Location No.	Remarks
2	WP490-A	Rear Logic Box	G	CACHE-2G	Cache Memory PCB (Note 1)
	WP490-B	Rear Logic Box	F	CACHE-2F	Cache Memory PCB (Note 2)

Note 1: Insert the PCB when it is removed in step 5-1.
Note 2: Insert the PCB when DKC-F460I-41 is installed.

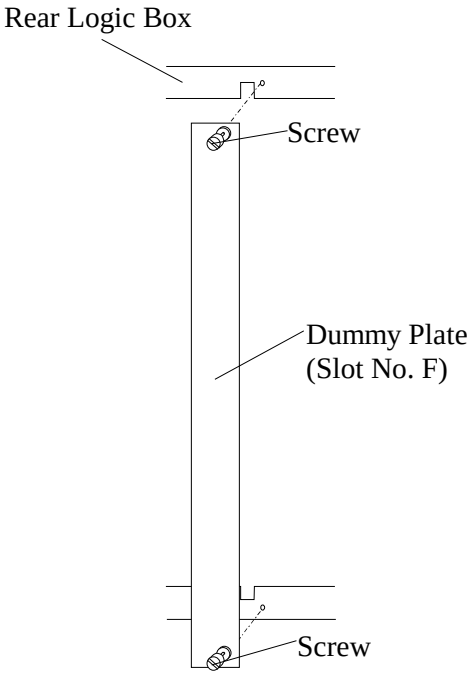

Fig. 4.1.2.3-8 Removal of the Dummy Plate

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5-4 Change the nameplate.

a. Affix a necessary portion of the Label (QTY)(Accessory of DKC; DWG No.3264290-1) in layers on the name plate and paint out numbers less than the number concerned with black oil felt pen.

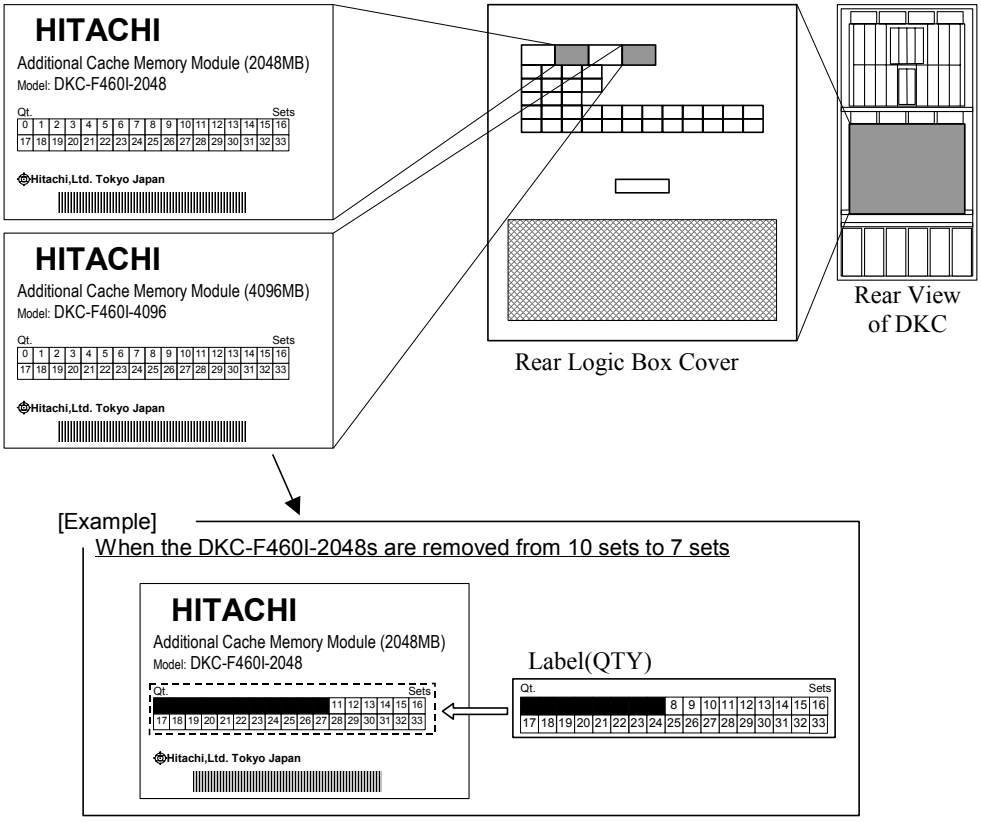

Fig. 4.3.2-9 Location of the Nameplate

b. When the Cache Access Throughput Expansion Kit (DKC-F460I-41) is removed, detach the DKC-F460I-41 nameplate from the cover.
When the Cache Access Throughput Expansion Kit (DKC-F460I-41) is not installed, go to step c.

c. When the Additional Battery for Cache Memory (DKC-F460I-42) is removed, detach the DKC-F460I-42 nameplate from the cover.
When the Additional Battery for Cache Memory (DKC-F460I-42) is not installed, go to step 6 SVP post procedure on the Cluster2.

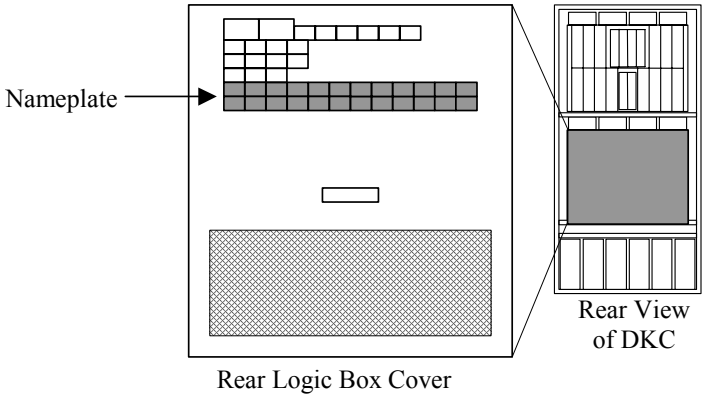

Fig. 4.3.2-10 Location of the Nameplate

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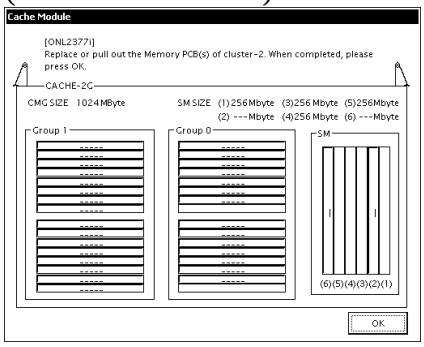
6. SVP post procedure on the Cluster2

1.

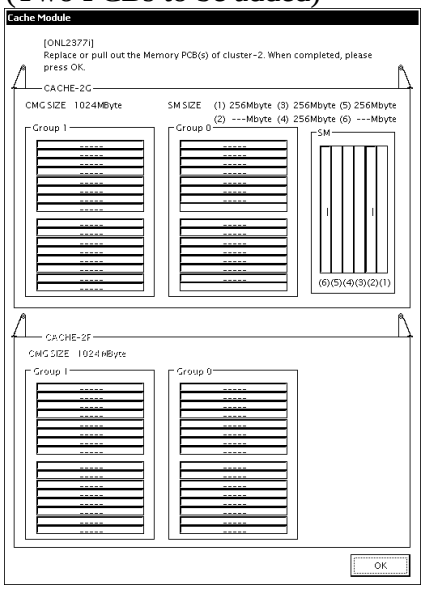
After the hardware procedure for one side of cache memory is completed, select (CL) [OK] in response to “Replace or pull out the Memory PCBs of cluster-2. When completed, please press [OK].”.

“INLINE CUDG is running...” is displayed.

(A PCB to be added)



(Two PCBs to be added)

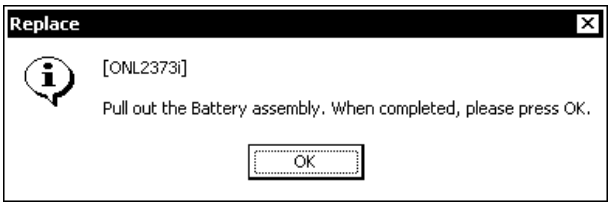


2.

When CUDG is completed, the recovery processing is automatically started with the messages.

“Restoring the Cache Memory PCB...”
“Restoring the Shared Memory PCB...”

3. <Perform Battery hardware de-installation>
“Pull out the Battery assembly. When completed, please press OK.” is displayed, when battery de-install is required.



When a message is displayed, perform the hardware de-installation steps according to the battery hardware de-installation procedure.

When a message is not displayed, go to INST04-CM-215 step 8. SVP post procedure on the Cluster2.

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7. Remove the Additional Battery for Cache Memory

7-1 When the Additional Battery for Cache Memory (DKC-F460I-42) is removed, remove the Battery Boxes and BATCTR PCBs.
When the Additional Battery for Cache Memory (DKC-F460I-42) is not removed, go to step 8 SVP post procedure on the Cluster2.

⚠ CAUTION

You must insert the PCB without Jumper Connector and then connect the Jumper Connector.
Otherwise the cache PCB will be blocked.

a. Disconnect the Jumper Connectors (BATJP) from BATCTR PCBs.
b. Loosen the two screws and remove the BATCTR PCBs (BATCTR-12 and BATCTR-22).
c. Attach the Jumper Connectors (BATJP) with the locking clamp.

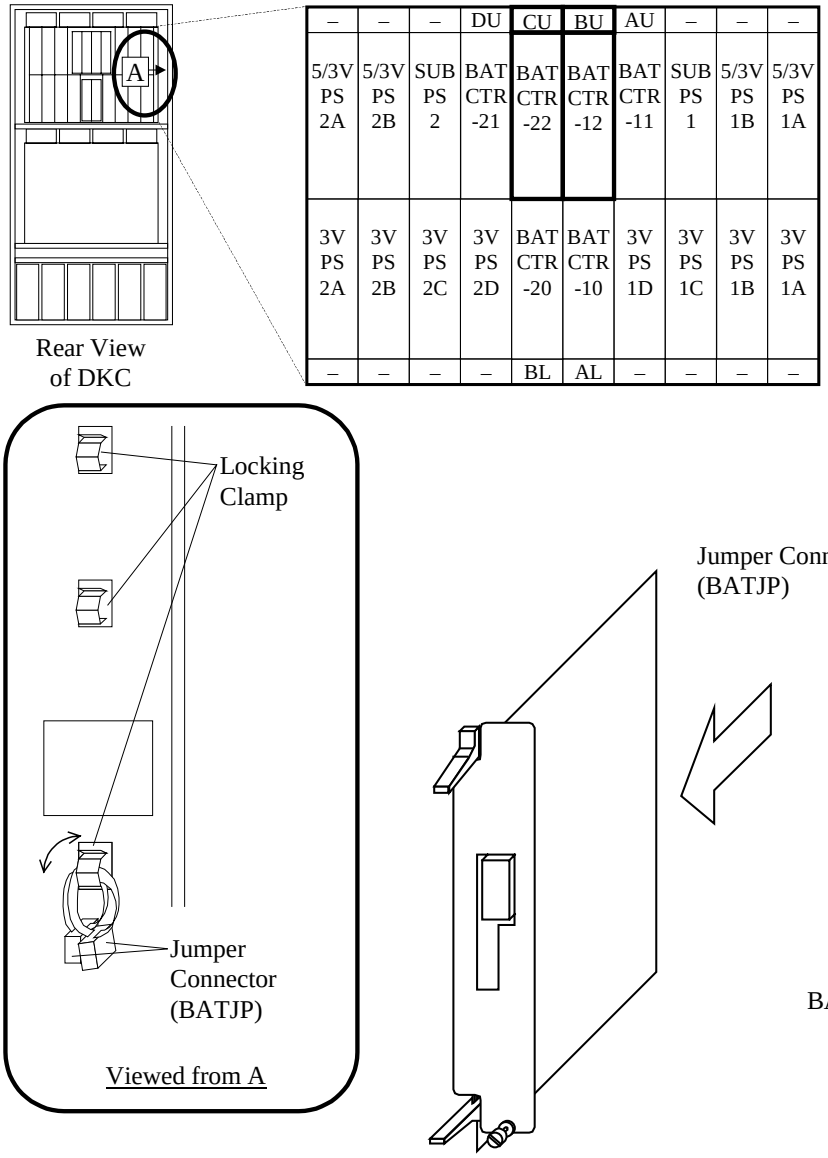

Fig. 4.3.2-11 Removal of the BATCTR

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d. Disconnect the cables from the Battery Boxes.

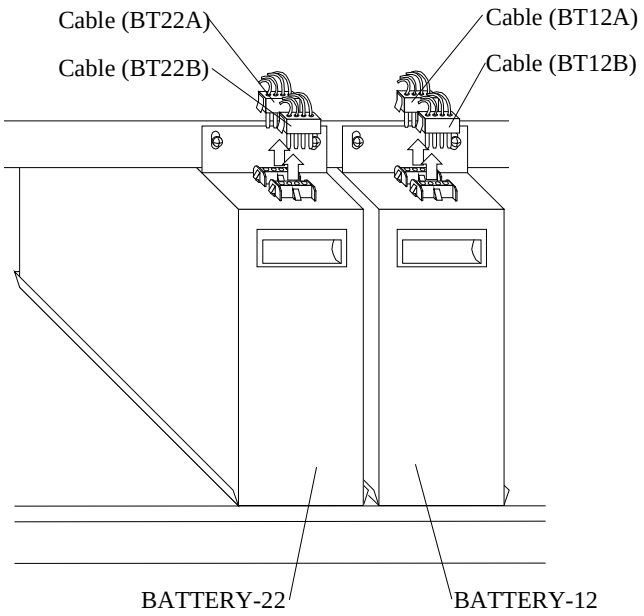

Fig. 4.3.2-12 Disconnect of Cables

e. Loosen the screws and remove the Battery Boxes (BATTERY-12 and BATTERY-22).

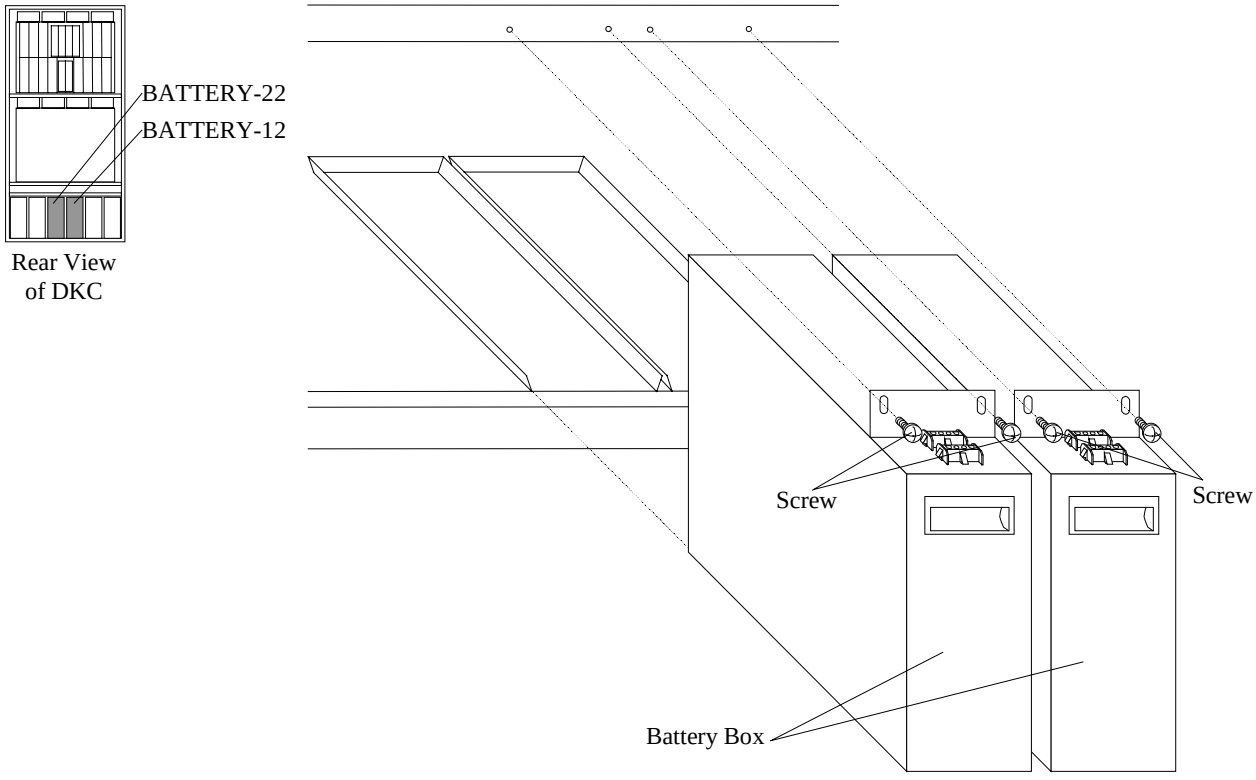

Fig. 4.3.2-13 Removal of Battery Boxes

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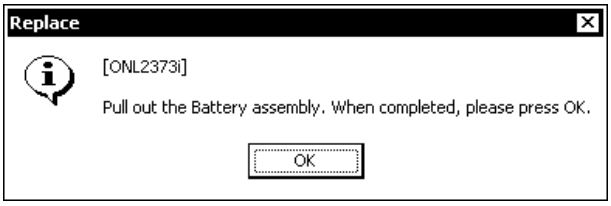
8. SVP post procedure on the Cluster2

1.

After the hardware procedure for battery is completed, select (CL) [OK] in response to "Pull out the Battery assembly. When completed, please press OK.".



2. <Check the end of de-installation procedure>
"Renewal process has completed. Please check subsystem status." shown in the right figure displayed. Select (CL) [OK] in response to this message.

3.

"Reading subsystem configuration data..." is displayed.
"Please insert the Config FD in the FDD." is displayed.
Insert the configuration FD into FDD, select (CL) [OK].

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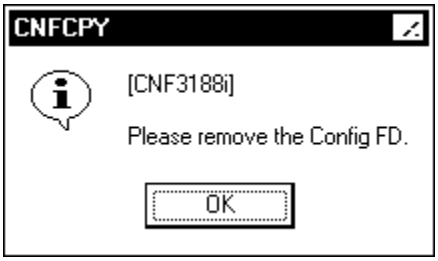
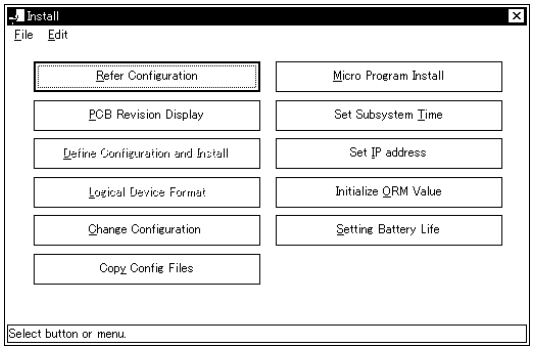
4. When this procedure is completed, the message “Please remove the Config FD.” is displayed. Remove the FD, and select (CL) [OK].



5. After the procedure is completed, return to [Install]. Select (CL) [File]-[Exit].



6. <Mode Change>
Change the mode to View Mode.

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4.4 De-installation of Channel Adapter

4.4.1 De-installation of Serial 8-port Adapter (DKC-F460I-8S/8SE)

Table 4.4.1-1 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKC-F460I-8S	Serial 4-port Adapter PCB	5513983-A	2	
		Holder	2084816-1	8	
		Cable Clamp	2105506-1	2	
		Nameplate (HDS)	2105902-106	1	RSD
			2105903-106		HICAM
			2105903-206		HICEF
		Nameplate (HP)	2105902-206	1	RSD
			2105903-306		HICAM
			2105903-406		HICEF
2	DKC-F460I-8SE	Serial 4-port Adapter PCB	5513983-B	2	
		Holder	2084816-1	8	
		Cable Clamp	2105506-1	2	
		Nameplate (HDS)	2105902-144	1	RSD
			2105903-144		HICAM
			2105903-244		HICEF
		Nameplate (HP)	2105902-244	1	RSD
			2105903-344		HICAM
			2105903-444		HICEF

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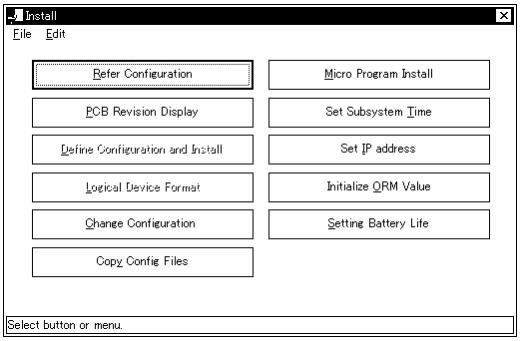
When the DKC-F460I-8S/8SE is removed from CHA locations

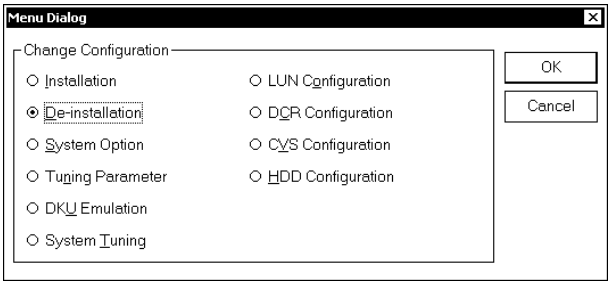
1. Setting up the New Device Structure Information

1. <Mode Change>
   Change the mode to Modify Mode.
   Select (CL) [Install].

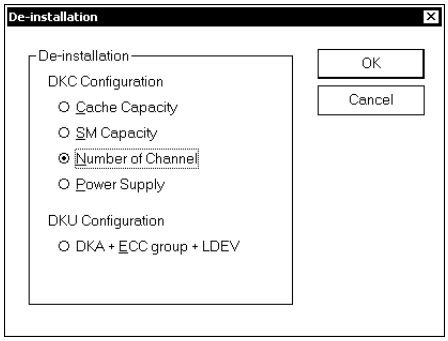
2. <Start the 'Menu Dialog' screen>
   Select (CL) [Change Configuration].



3. <Start Device Structure Setup screen>
   Select (CL) [De-Installation] in the 'Menu Dialog' dialog box and select (CL) [OK].



4. <Select a part to be changed>
   Select (CL) [Number of Channel], and select (CL) [OK].



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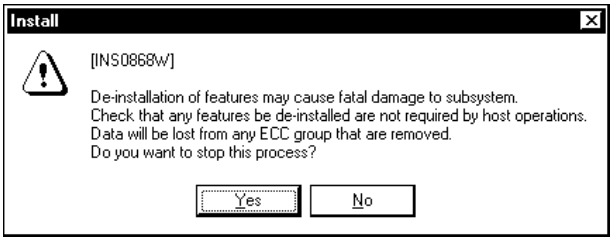
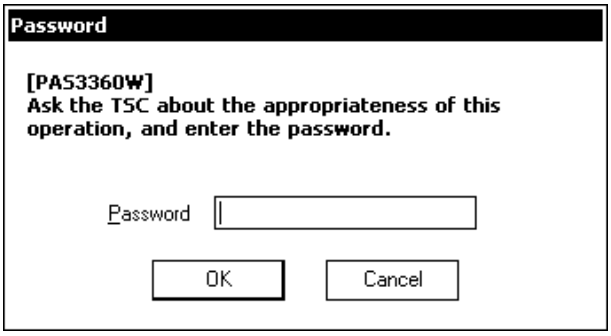
5.

Select (CL) [No] in response to “De-installation of features may cause fatal damage to subsystem. Check that any features be de-installed are not required by host operations. Data will be lost from any ECC group that are removed. Do you want to stop this process?”.

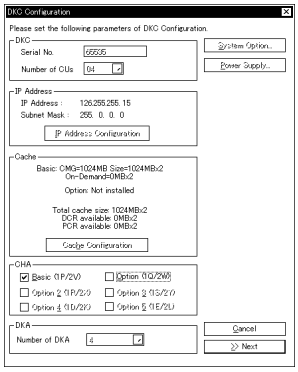


6. <Input password>
Enter the password and select (CL) [OK].



NOTICE
This is a special (exceptional) operation that can cause a serious failure such as a system down or a data loss if a wrong part to be removed is selected, and requires an input of a password. Ask the technical support center about the appropriateness of the operation, and input the password after getting an approval of executing the operation.

7. <Update Configuration Information>
Define the item to CHA in the ‘DKC Configuration’ window. Remove the mark of the corresponding check box.



Note 1: It is not possible to install or de-install plural parts at the same time.

Note 2: For Multiplatform configuration,
1. If you want to change Multiplatform into ALL SCSI, after de-installing mainframe volumes, then CHA must be de-installed.
2. If you want to change ALL SCSI into Multiplatform, after de-installing open volumes, then CHS/CHF/CHT must be de-installed.

Make sure that the entered item is correct and select (CL) [>>Next].

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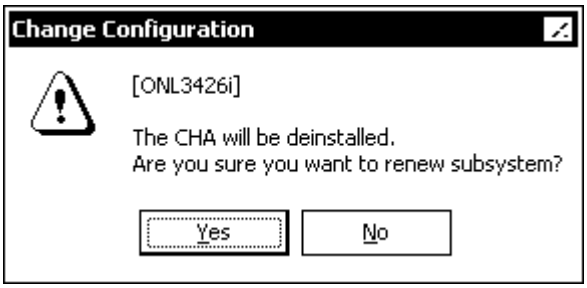
2. SVP pre procedure

1. <Start de-installation>
   Select (CL) [Yes] in response to “The CHA will be deinstalled. Are you sure you want to renew subsystem?”.

   When [No] is selected (CL), returns to INST04-8S-20 step 3.

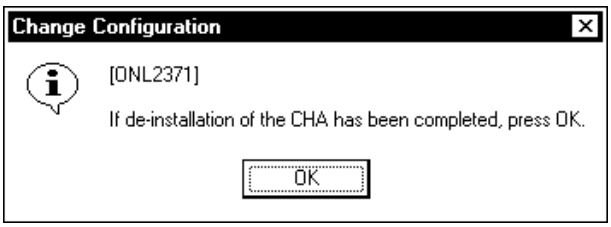


2. <Maintenance-block of PCBs other than cache or shared memory>
   At this moment, maintenance blocking is performed on PCBs other than memory systems with message “The CHA is being blocked...” is displayed.
   This processing is carried out on each component that is subject to de-installation.

3. <Update device structure information about PCBs other than cache or shared memory>
   “The CHA is being blocked...” and “Lighting LED of the PCB...” are displayed and the device structure information update processing is performed on the current component. When the update processing is completed, the device structure information on the current component is set to [EMPTY] and the shut down LED on the PCB is lit.

   When the update of device structure information on all PCBs other than those on the memory systems is completed, automatically one of the two following messages is displayed.

4.
   At this point refrain from pressing the [OK] button.
   “If de-installation of the CHA has been completed, press OK.” shown in the right figure.



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3 De-Installation Procedure of Serial 8-port Adapter

Note: Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

3-1 Confirmation of the Shut Down LED (Only Non-Disruptive Procedure)

a. Confirm that Shut Down LED is on.(Fig. 4.4.1-1). If the LED is not on, connect the Maintenance Jumper to the Shut Down Connector.

⚠ CAUTION

A system down may be caused if the Maintenance jumper is inserted in a PCB other than that to be removed. Make sure that it is the PCB to be removed.

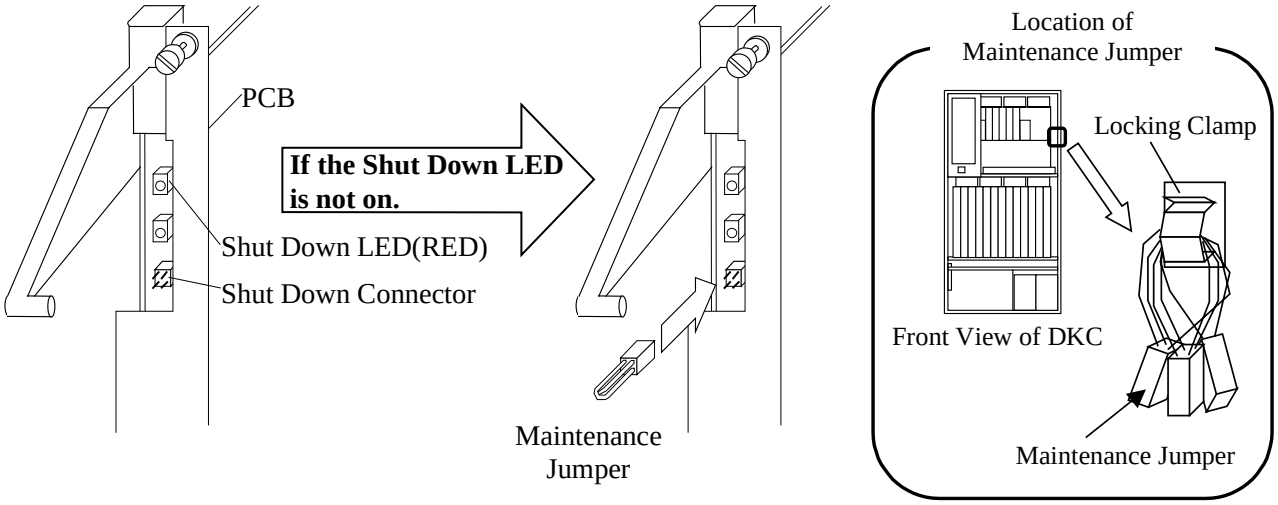

Fig. 4.4.1-1 Shut Down LED

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3-2 Disconnection of the optical fibre cables

a. When the Power Cable Kit (DKC-F460I-1EC, 1UC, 3ECD or 3UCD) is installed, loosen the two screws and remove the cover.
When the Power Cable Kit (DKC-F460I-1EC, 1UC, 3ECD or 3UCD) is not installed, go to step b.

DKC-F460I-1EC/1UC/3ECD/3UCD

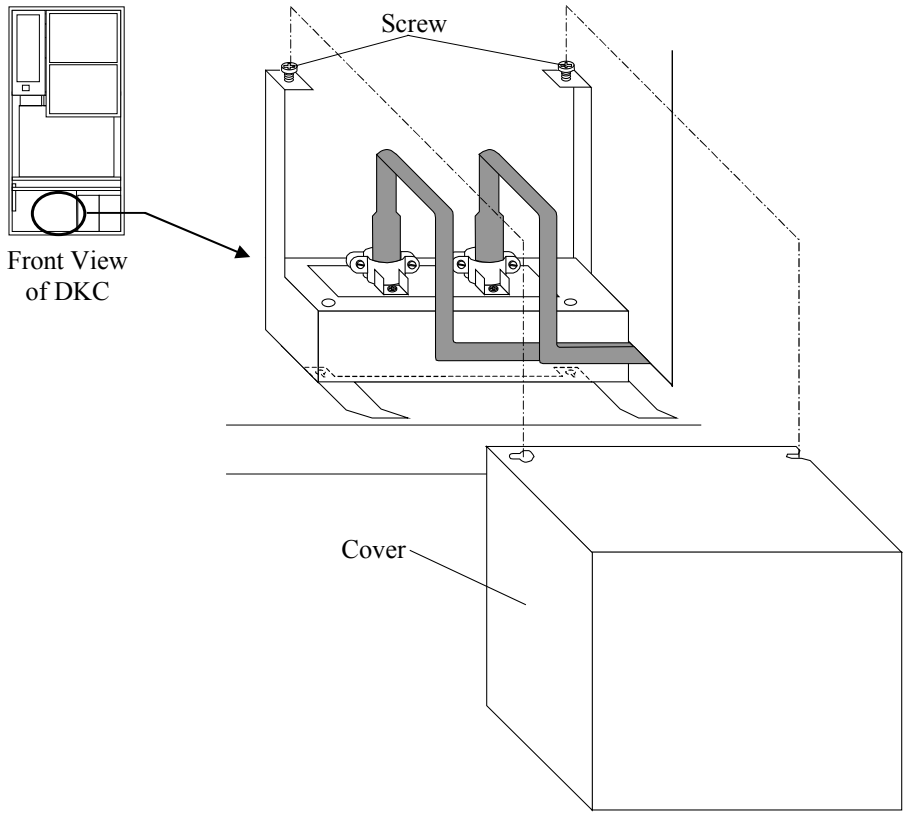

Fig. 4.4.1-2 Attachment of Cover

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b. Remove the brackets and cable clamp referring to Fig 4.4.1-3.
c. Disconnect the optical fibre cables and remove the holder referring to Fig 4.4.1-4.
d. Attach the brackets.
e. When the Power Cable Kit (DKC-F460I-1EC, 1UC, 3ECD or 3UCD) is installed, attach the cover with the two screws. Refer to Fig.4.4.1-2.
   When the Power Cable Kit (DKC-F460I-1EC, 1UC, 3ECD or 3UCD) is not installed, go to step 3-3.

Table 4.4.1-2 Removal Location (Front of the unit)

Cluster	CL1							CL2				
Slot No.	N	P	Q	R	S	T	U	V	W	X	Y	Z
Function	CSW	CHA	CHA	CHA	CHA	CACHE	CACHE	CHA	CHA	CHA	CHA	CSW
Location No.	CSW -1N	CHA -1P	CHA -1Q	CHA -1R	CHA -1S	CACHE -1T	CACHE -1U	CHA -2V	CHA -2W	CHA -2X	CHA -2Y	CSW -2Z
Order of addition		Basic	Add.1	Add.2	Add.3			Basic	Add.1	Add.2	Add.3	

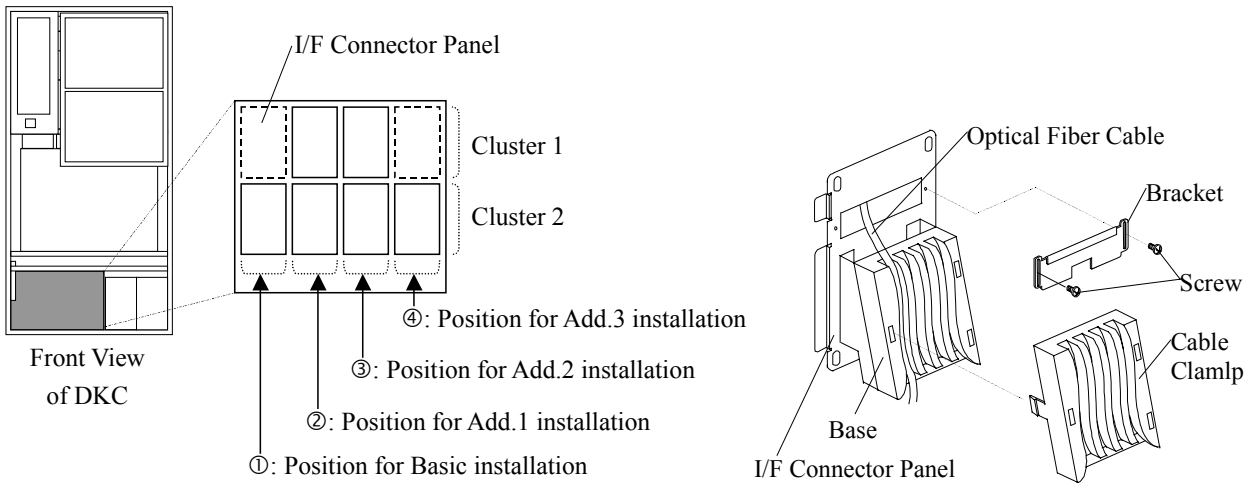

Fig 4.4.1-3 Removal of Bracket

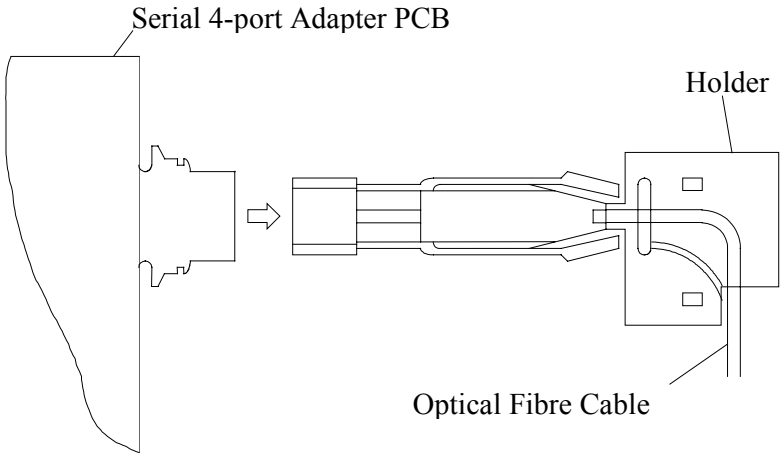

Fig. 4.4.1-4 Disconnection of Optical Fibre Cable

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3-3 Removal of the PCBs

a. Remove the two screws and remove the PCBs from the correct locations in the Front Logic Box referring to Fig. 4.4.1-5.
b. Attach the dummy plates referring to Fig. 4.4.1-6.

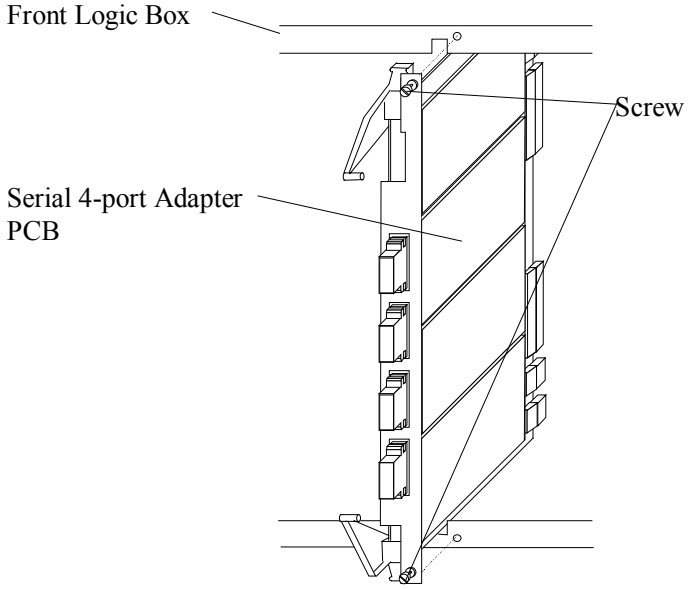

Fig. 4.4.1-5 Removal of PCB

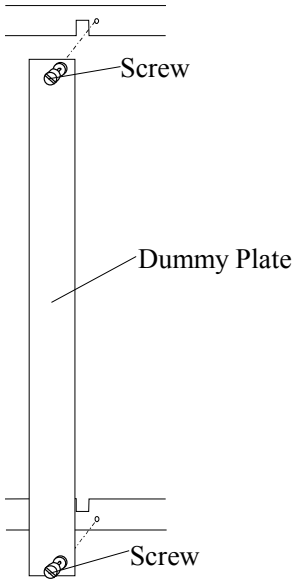

Fig. 4.4.1-6 Attachment of Dummy Plate

3-4 Removal of the Nameplate

a. Remove the nameplate referring to Fig. 4.4.1-7.

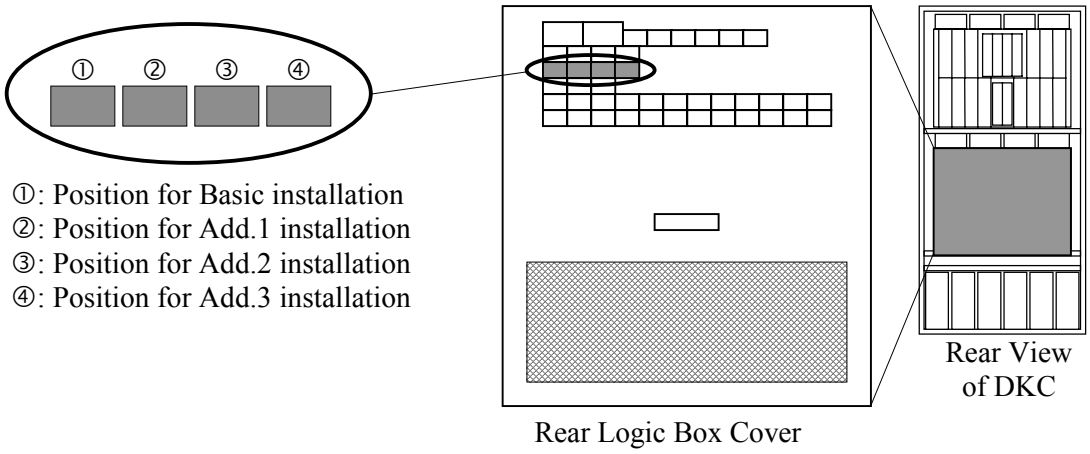

Fig. 4.4.1-7 Removal of Nameplate

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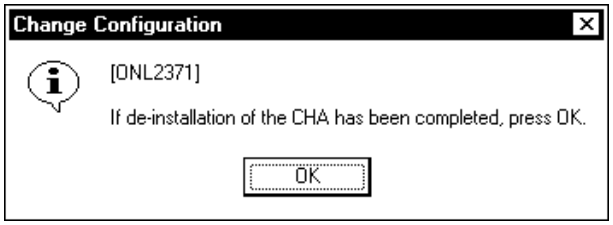
4. SVP post procedure

1.

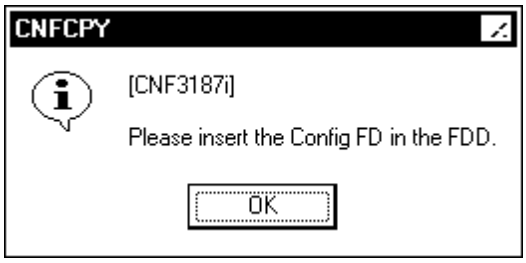
Select (CL) [OK] in response to "If de-installation of the CHA has been completed, press OK." shown in the right figure.



2. <Check the end of de-installation procedure>
"Renewal process has completed. Please check subsystem status." shown in the right figure displayed. Select (CL) [OK] in response to this message.

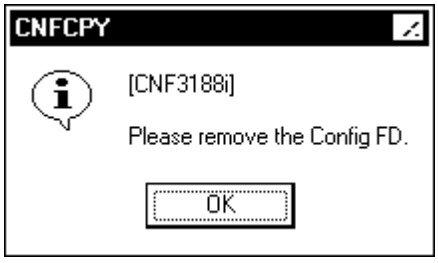
3.

"Reading subsystem configuration data..." is displayed.
"Please insert the Config FD in the FDD." is displayed.
Insert the configuration FD into FDD, select (CL) [OK].



4.

When this procedure is completed, message "Please remove the Config FD." is displayed.
Remove the FD, select (CL) [OK].



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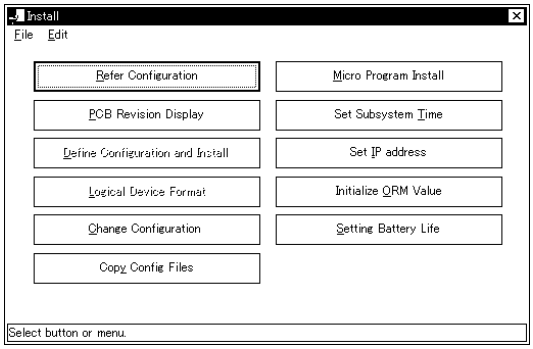
5.

After the procedure is completed, return to [Install].
Select (CL) [File]-[Exit].



6. <Mode Change>
Change the mode to View Mode.

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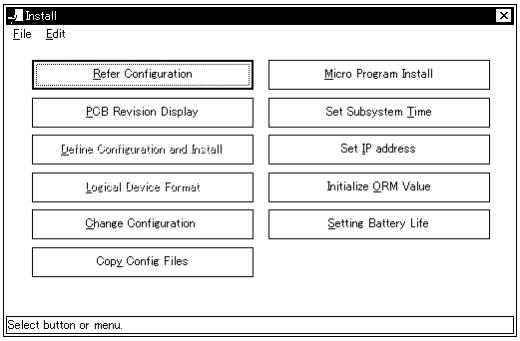
When the DKC-F460I-8SE is removed from DKA locations

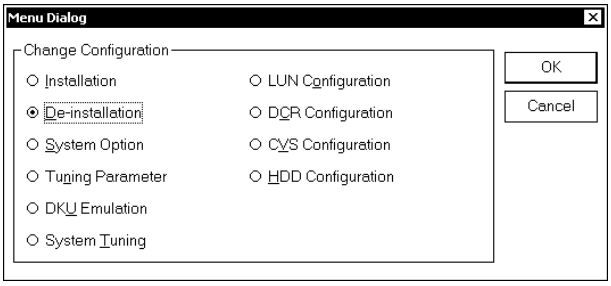
1. Setting up the New Device Structure Information

1. <Mode Change>
   Change the mode to Modify Mode.
   Select (CL) [Install].

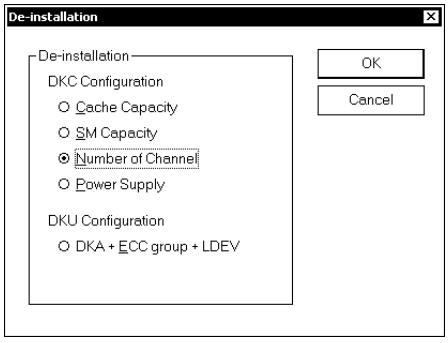
2. <Start the 'Menu Dialog' screen>
   Select (CL) [Change Configuration].



3. <Start Device Structure Setup screen>
   Select (CL) [De-Installation] in the 'Menu Dialog' dialog box and select (CL) [OK].



4. <Select a part to be changed>
   Select (CL) [Number of Channel], and select (CL) [OK].



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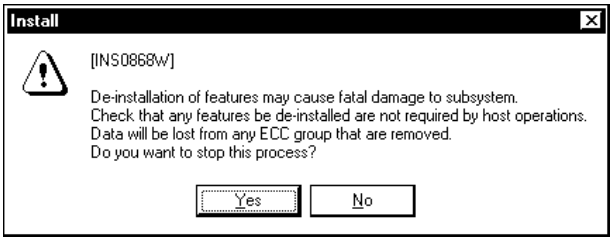
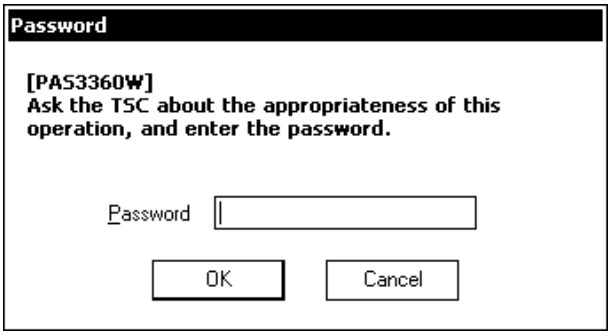
5.

Select (CL) [No] in response to "De-installation of features may cause fatal damage to subsystem. Check that any features be de-installed are not required by host operations. Data will be lost from any ECC group that are removed. Do you want to stop this process?".

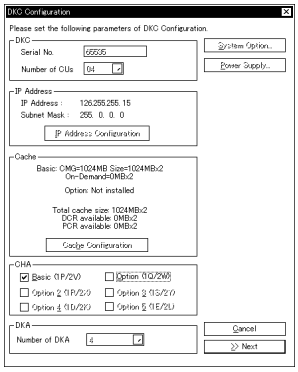


6. <Input password>
Enter the password and select (CL) [OK].



NOTICE
This is a special (exceptional) operation that can cause a serious failure such as a system down or a data loss if a wrong part to be removed is selected, and requires an input of a password. Ask the technical support center about the appropriateness of the operation, and input the password after getting an approval of executing the operation.

7. <Update Configuration Information>
Define the item to CHA in the 'DKC Configuration' window. Remove the mark of the corresponding check box.



Note 1: It is not possible to install or de-install plural parts at the same time.

Note 2: For Multiplatform configuration,
3. If you want to change Multiplatform into ALL SCSI, after de-installing mainframe volumes, then CHA must be de-installed.
4. If you want to change ALL SCSI into Multiplatform, after de-installing open volumes, then CHS/CHF/CHT must be de-installed.

Make sure that the entered item is correct and select (CL) [>>Next].

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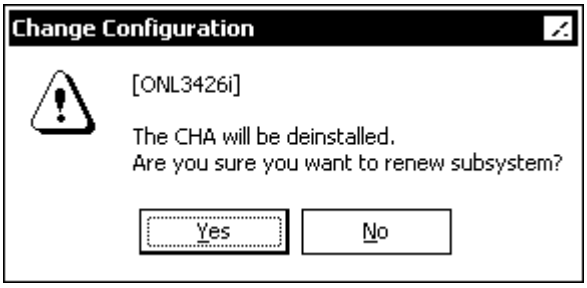
2. SVP pre procedure

1. <Start de-installation>
   Select (CL) [Yes] in response to “The CHA will be deinstalled. Are you sure you want to renew subsystem?”.

   When [No] is selected (CL), returns to INST04-8S-110 step 3.

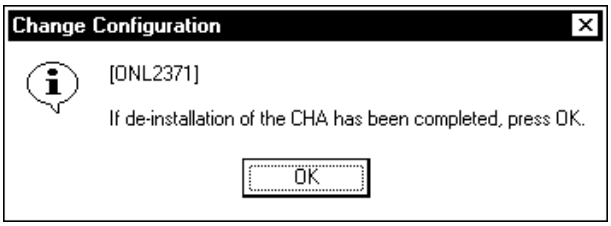


2. <Maintenance-block of PCBs other than cache or shared memory>
   At this moment, maintenance blocking is performed on PCBs other than memory systems with message “The CHA is being blocked...” is displayed.
   This processing is carried out on each component that is subject to de-installation.

3. <Update device structure information about PCBs other than cache or shared memory>
   “The CHA is being blocked...” and “Lighting LED of the PCB...” are displayed and the device structure information update processing is performed on the current component. When the update processing is completed, the device structure information on the current component is set to [EMPTY] and the shut down LED on the PCB is lit.

   When the update of device structure information on all PCBs other than those on the memory systems is completed, automatically one of the two following messages is displayed.

4.
   At this point refrain from pressing the [OK] button.
   “If de-installation of the CHA has been completed, press OK.” shown in the right figure.



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3 De-Installation Procedure of Serial 8-port Adapter

Note: Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

3-1 Confirmation of the Shut Down LED (Only Non-Disruptive Procedure)

a. Confirm that Shut Down LED is on.(Fig. 4.4.1-8). If the LED is not on, connect the Maintenance Jumper to the Shut Down Connector.

⚠ CAUTION

A system down may be caused if the Maintenance jumper is inserted in a PCB other than that to be removed. Make sure that it is the PCB to be removed.

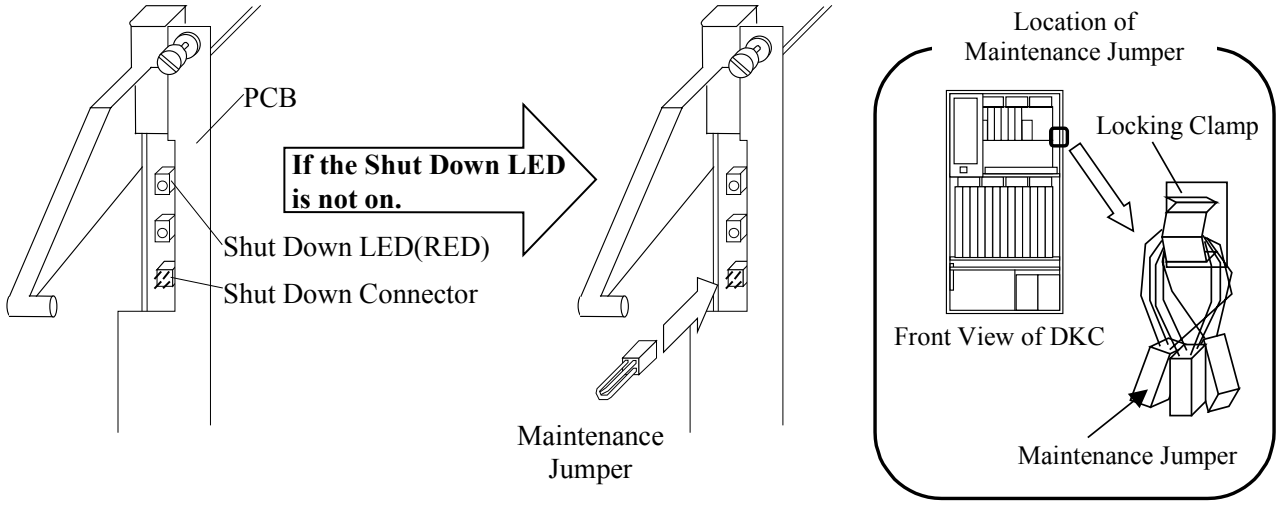

Fig. 4.4.1-8 Shut Down LED

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3-2 Disconnection of the optical fibre cables

a. When the Power Cable Kit (DKC-F460I-1EC, 1UC, 3ECD or 3UCD) is installed, loosen the two screws and remove the cover.
When the Power Cable Kit (DKC-F460I-1EC, 1UC, 3ECD or 3UCD) is not installed, go to step b.

DKC-F460I-1EC/1UC/3ECD/3UCD

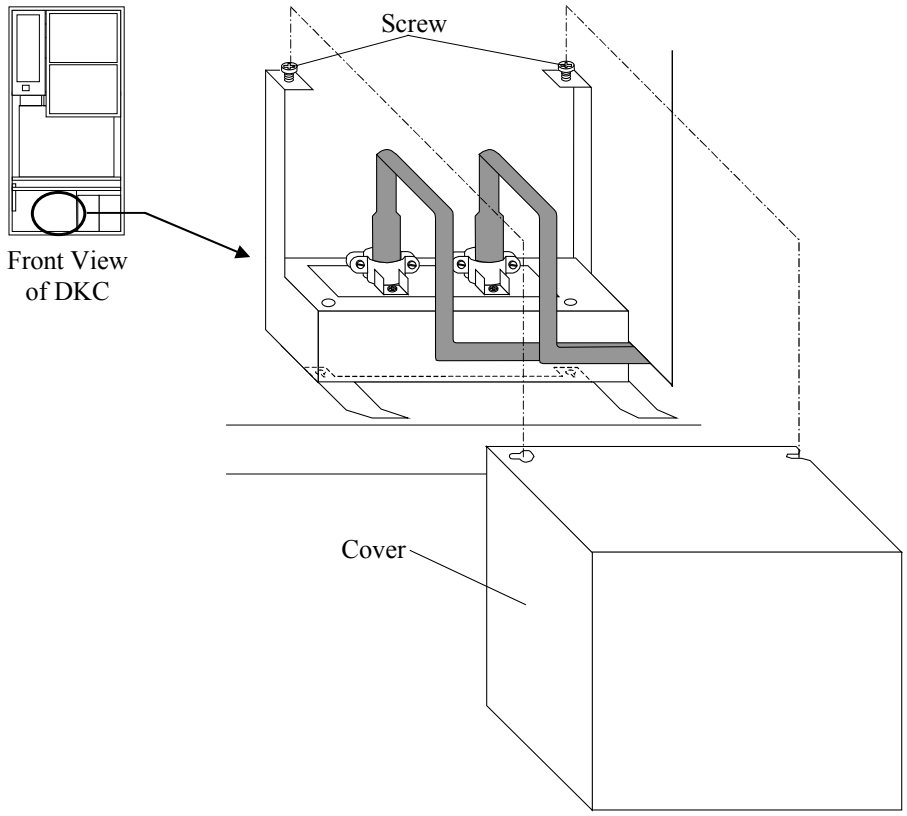

Fig. 4.4.1-9 Attachment of Cover

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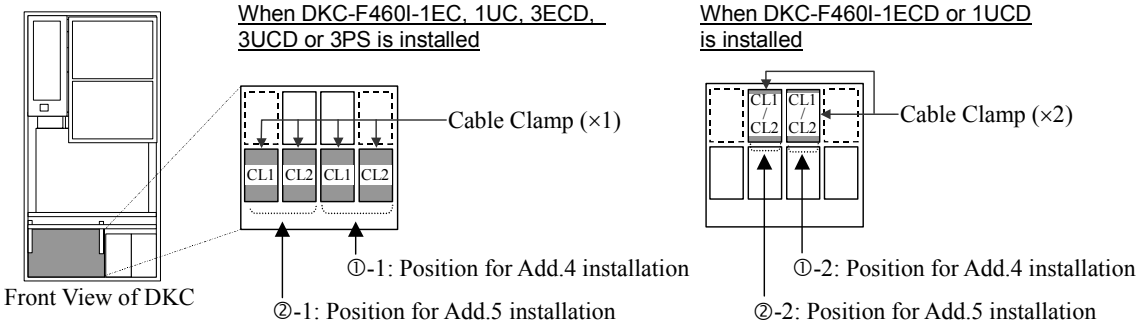
b. Remove the brackets and cable clamp referring to Fig 4.4.1-10.
c. Disconnect the optical fibre cables and remove the holder referring to Fig 4.4.1-11.
d. Attach the brackets.
e. When the Power Cable Kit (DKC-F460I-1EC, 1UC, 3ECD or 3UCD) is installed, attach the cover with the two screws. Refer to Fig.4.4.1-9.
   When the Power Cable Kit (DKC-F460I-1EC, 1UC, 3ECD or 3UCD) is not installed, go to step 3-3.

Table 4.4.1-3 Removal Location (Front of the unit)

Cluster	CL2									CL1						
Slot No.	M	L		K		J	H	G	F	E		D		C	B	A
Function	CSW	CHA	DKA	CHA	DKA	DKA	DKA	CACHE	CACHE	CHA	DKA	CHA	DKA	DKA	DKA	CSW
Location No.	CSW -2M	CHA -2L	DKA -2L	CHA -2K	DKA -2K	DKA -2J	DKA -2H	CACHE -2G	CACHE -2F	CHA -1E	DKA -1E	CHA -1D	DKA -1D	DKA -1C	DKA -1B	CSW -1A
Order of addition		Add.5		Add.4						Add.5		Add.4				



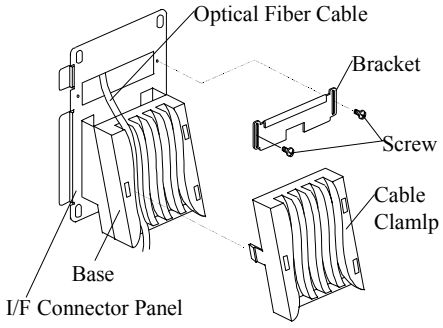


Fig 4.4.1-10 Removal of Bracket

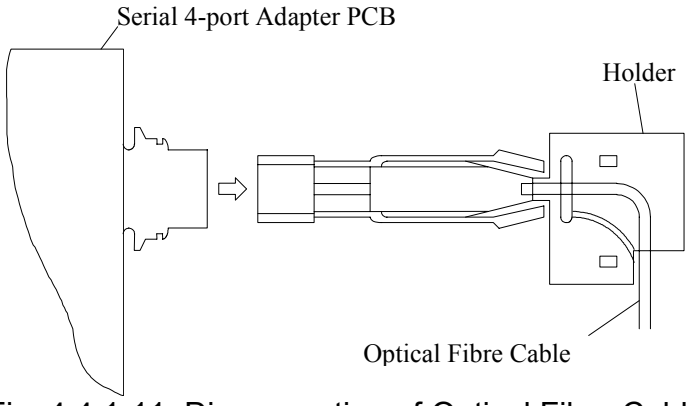


Fig. 4.4.1-11 Disconnection of Optical Fibre Cable

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3-3 Removal of the PCBs

a. Remove the two screws and remove the PCBs from the correct locations in the Rear Logic Box referring to Fig. 4.4.1-12.
b. Attach the dummy plates referring to Fig. 4.4.1-13.

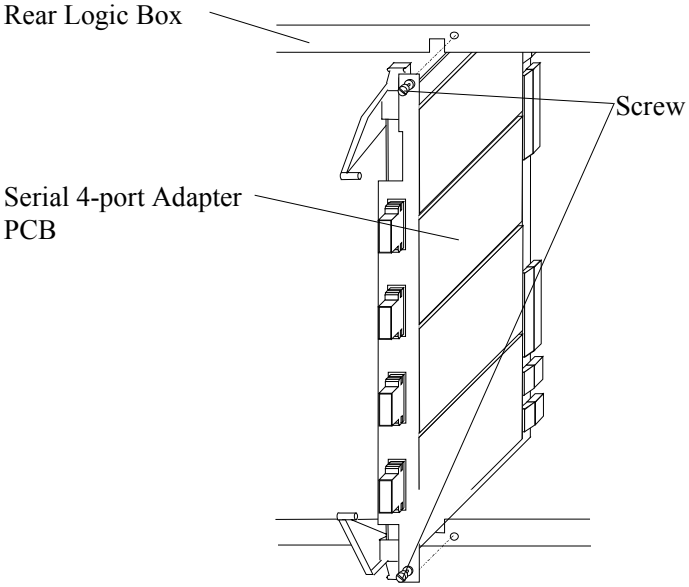

Fig. 4.4.1-12 Removal of PCB

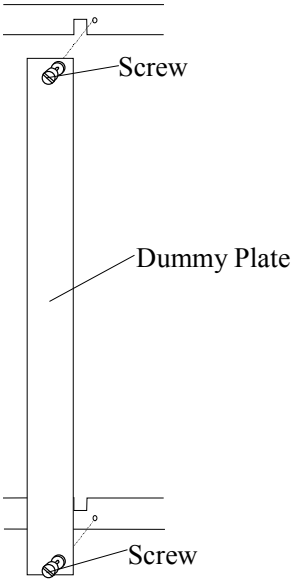

Fig. 4.4.1-13 Attachment of Dummy Plate

3-4 Removal of the Nameplate

a. Remove the nameplate referring to Fig. 4.4.1-14.

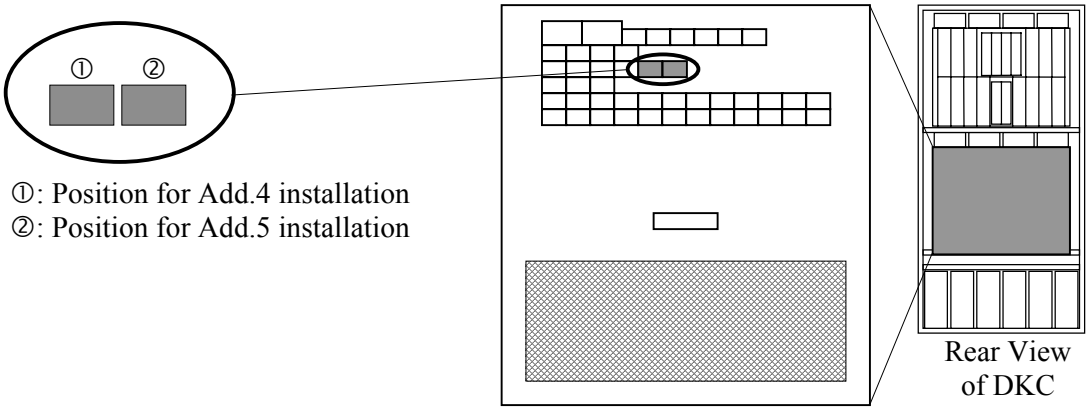

Fig. 4.4.1-14 Removal of Nameplate

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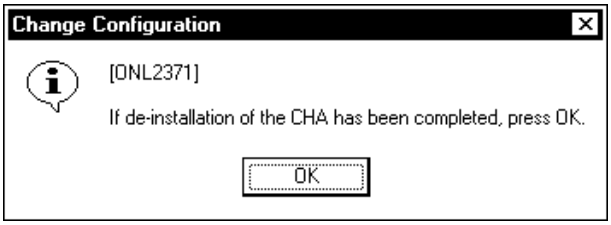
4. SVP post procedure

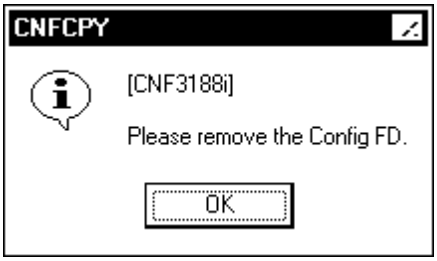
1. Select (CL) [OK] in response to "If de-installation of the CHA has been completed, press OK." shown in the right figure.



2. <Check the end of de-installation procedure>
"Renewal process has completed. Please check subsystem status." shown in the right figure displayed. Select (CL) [OK] in response to this message.

3. "Reading subsystem configuration data..." is displayed.
"Please insert the Config FD in the FDD." is displayed.
Insert the configuration FD into FDD, select (CL) [OK].

4. When this procedure is completed, message "Please remove the Config FD." is displayed.
Remove the FD, select (CL) [OK].



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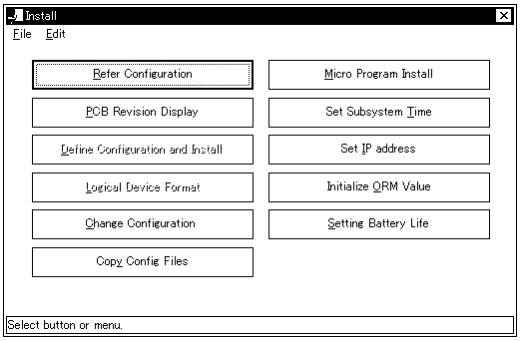
5.

After the procedure is completed, return to [Install].
Select (CL) [File]-[Exit].



6. <Mode Change>
Change the mode to View Mode.

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4.4.2 De-installation of Fibre 4/8-port Adapter (DKC-F460I-8GSE/4HSE/8HSE/8HLE/8GSF/4HSF/8HSF/8HLF)

Table 4.4.2-1 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKC-F460I-8GSE (Short Wavelength)	Fibre 4-port Adapter PCB	5513980-B	2	
		Cable Clamp	2105506-1	2	
		Nameplate (HDS)	2105902-107	1	RSD
			2105903-107		HICAM
			2105903-207		HICEF
		Nameplate (HP)	2105902-207	1	RSD
			2105903-307		HICAM
			2105903-407		HICEF
2	DKC-F460I-4HSE (Short Wavelength)	Fibre 2-port Adapter PCB	5513981-C	2	
		Cable Clamp	2105506-1	2	
		Nameplate (HDS)	2105902-108	1	RSD
			2105903-108		HICAM
			2105903-208		HICEF
		Nameplate (HP)	2105902-208	1	RSD
			2105903-308		HICAM
			2105903-408		HICEF
3	DKC-F460I-8HSE (Short Wavelength)	Fibre 4-port Adapter PCB	5513981-A	2	
		Cable Clamp	2105506-1	2	
		Nameplate (HDS)	2105902-109	1	RSD
			2105903-109		HICAM
			2105903-209		HICEF
		Nameplate (HP)	2105902-209	1	RSD
			2105903-309		HICAM
			2105903-409		HICEF
4	DKC-F460I-8HLE (Long Wavelength)	Fibre 4-port Adapter PCB	5513981-B	2	
		Cable Clamp	2105506-1	2	
		Nameplate (HDS)	2105902-110	1	RSD
			2105903-110		HICAM
			2105903-210		HICEF

(To be continued)

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(Continued from the preceding page)

No.	Model Number	Part Name	Part No.	Quantity	Remarks
5	DKC-F460I-8GSF (Check data assist support)	Fibre 4-port Adapter PCB	5518079-C	2	Color of PCB lever : Blue
		Cable Clamp	2105506-1	2	
		Nameplate (HDS)	2105902-136	1	RSD
			2105903-136		HICAM
			2105903-236		HICEF
		Nameplate (HP)	2105902-236	1	RSD
			2105903-336		HICAM
			2105903-436		HICEF
6	DKC-F460I-4HSF (Short Wavelength, Check data assist support)	Fibre 2-port Adapter PCB	5518079-D	2	Color of PCB lever : Blue
		Cable Clamp	2105506-1	2	
		Nameplate (HDS)	2105902-137	1	RSD
			2105903-137		HICAM
			2105903-237		HICEF
		Nameplate (HP)	2105902-237	1	RSD
			2105903-337		HICAM
			2105903-437		HICEF
7	DKC-F460I-8HSF (Short Wavelength, Check data assist support)	Fibre 4-port Adapter PCB	5518079-A	2	Color of PCB lever : Blue
		Cable Clamp	2105506-1	2	
		Nameplate (HDS)	2105902-138	1	RSD
			2105903-138		HICAM
			2105903-238		HICEF
		Nameplate (HP)	2105902-238	1	RSD
			2105903-338		HICAM
			2105903-438		HICEF
8	DKC-F460I-8HLF (Long Wavelength, Check data assist support)	Fibre 4-port Adapter PCB	5518079-B	2	Color of PCB lever : Blue
		Cable Clamp	2105506-1	2	
		Nameplate (HDS)	2105902-139	1	RSD
			2105903-139		HICAM
			2105903-239		HICEF

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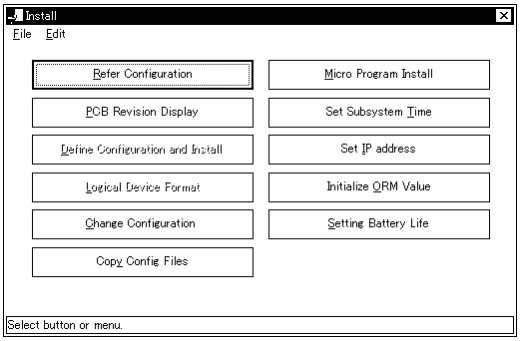
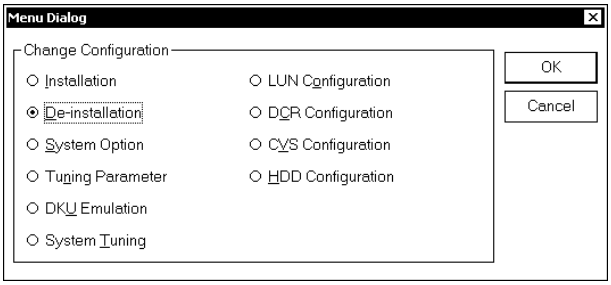
1. Setting up the New Device Structure Information

1. <Mode Change>
   Change the mode to Modify Mode.
   Select (CL) [Install].

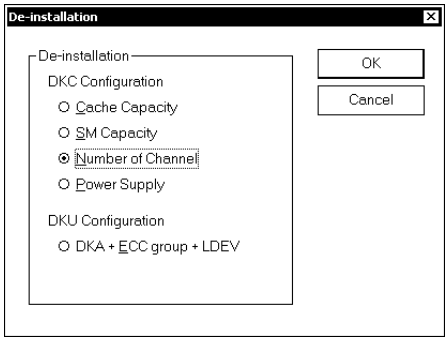
2. <Start the 'Menu Dialog' screen>
   Select (CL) [Change Configuration].



3. <Start Device Structure Setup screen>
   Select (CL) [De-Installation] in the 'Menu Dialog' dialog box and select (CL) [OK].



4. <Select a part to be changed>
   Select (CL) [Number of Channel], and select (CL) [OK].



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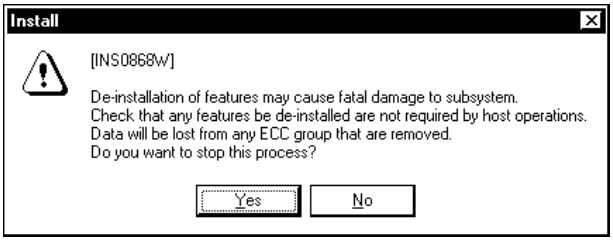
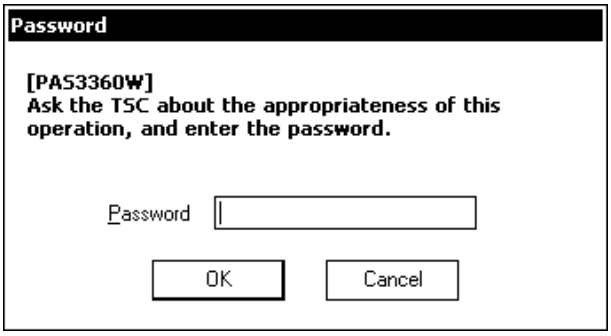
5.

Select (CL) [No] in response to "De-installation of features may cause fatal damage to subsystem. Check that any features be de-installed are not required by host operations. Data will be lost from any ECC group that are removed. Do you want to stop this process?".

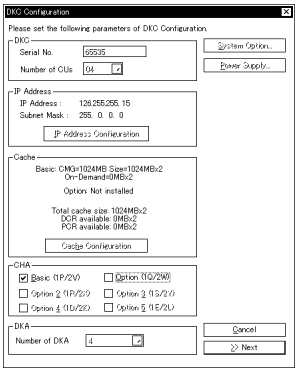


6. <Input password>
Enter the password and select (CL) [OK].



NOTICE
This is a special (exceptional) operation that can cause a serious failure such as a system down or a data loss if a wrong part to be removed is selected, and requires an input of a password. Ask the technical support center about the appropriateness of the operation, and input the password after getting an approval of executing the operation.

7. <Update Configuration Information>
Define the item to CHA in the 'DKC Configuration' window.
Remove the mark of the corresponding check box.



Note 1: It is not possible to install or de-install plural parts at the same time.

Note 2: For Multiplatform configuration,
1. If you want to change Multiplatform into ALL SCSI, after de-installing mainframe volumes, then CHA must be de-installed.
2. If you want to change ALL SCSI into Multiplatform, after de-installing open volumes, then CHS/CHF/CHT must be de-installed.

Make sure that the entered item is correct and select (CL) [>>Next].

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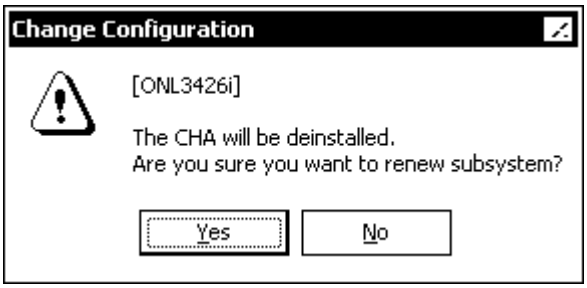
2. SVP pre procedure

1. <Start de-installation>
   Select (CL) [Yes] in response to “The CHA will be deinstalled. Are you sure you want to renew subsystem?”.

   When [No] is selected (CL), returns to INST04-FIB-20 step 3.



---

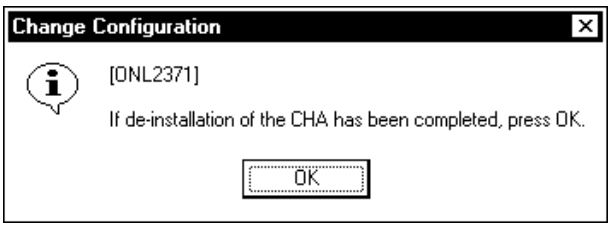
2. <Maintenance-block of PCBs other than cache or shared memory>
   At this moment, maintenance blocking is performed on PCBs other than memory systems with message “The CHA is being blocked...” is displayed.
   This processing is carried out on each component that is subject to de-installation.

---

3. <Update device structure information about PCBs other than cache or shared memory>
   “The CHA is being blocked...” and “Lighting LED of the PCB...” are displayed and the device structure information update processing is performed on the current component. When the update processing is completed, the device structure information on the current component is set to [EMPTY] and the shut down LED on the PCB is lit.

   When the update of device structure information on all PCBs other than those on the memory systems is completed, automatically one of the two following messages is displayed.

4.
   At this point refrain from pressing the [OK] button.
   “If de-installation of the CHA has been completed, press OK.” shown in the right figure.



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3 De-Installation Procedure of Fibre 4/8-port Adapter

Note: Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

3-1 Confirmation of the Shut Down LED (Only Non-Disruptive Procedure)

a. Confirm that Shut Down LED is on.(Fig. 4.4.2-1). If the LED is not on, connect the Maintenance Jumper to the Shut Down Connector.

⚠ CAUTION

A system down may be caused if the Maintenance jumper is inserted in a PCB other than that to be removed. Make sure that it is the PCB to be removed.

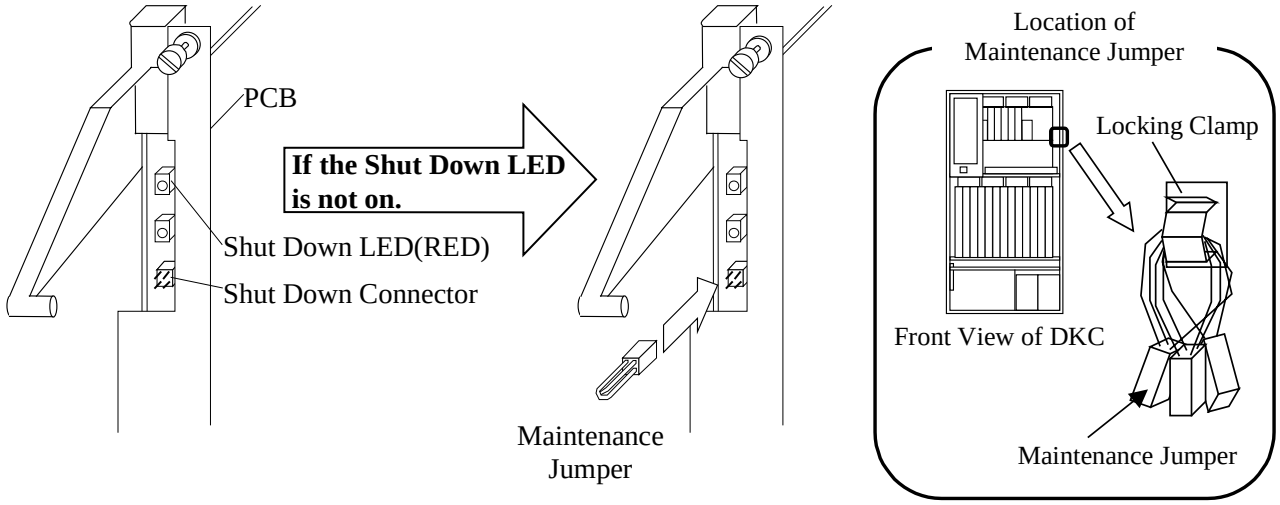

Fig. 4.4.2-1 Shut Down LED

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3-2 Disconnection of the optical fibre cables

a. Remove the brackets and cable clamp referring to Fig 4.4.2-2.
b. Disconnect the optical fibre cables referring to Fig 4.4.2-3.
c. Attach the brackets.

Table 4.4.2-2 Removal Location (Front of the unit)

Cluster	CL1							CL2				
Slot No.	N	P	Q	R	S	T	U	V	W	X	Y	Z
Function	CSW	CHA	CHA	CHA	CHA	CACHE	CACHE	CHA	CHA	CHA	CHA	CSW
Location No.	CSW -1N	CHA -1P	CHA -1Q	CHA -1R	CHA -1S	CACHE -1T	CACHE -1U	CHA -2V	CHA -2W	CHA -2X	CHA -2Y	CSW -2Z
Order of addition		Basic	Add.1	Add.2	Add.3			Basic	Add.1	Add.2	Add.3	

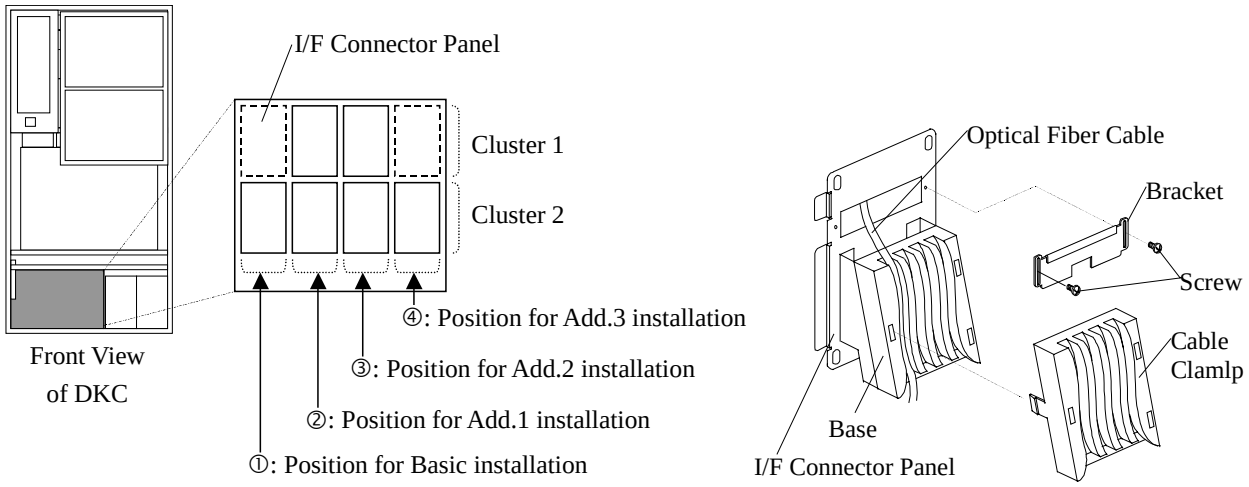

Fig 4.4.2-2 Removal of Bracket

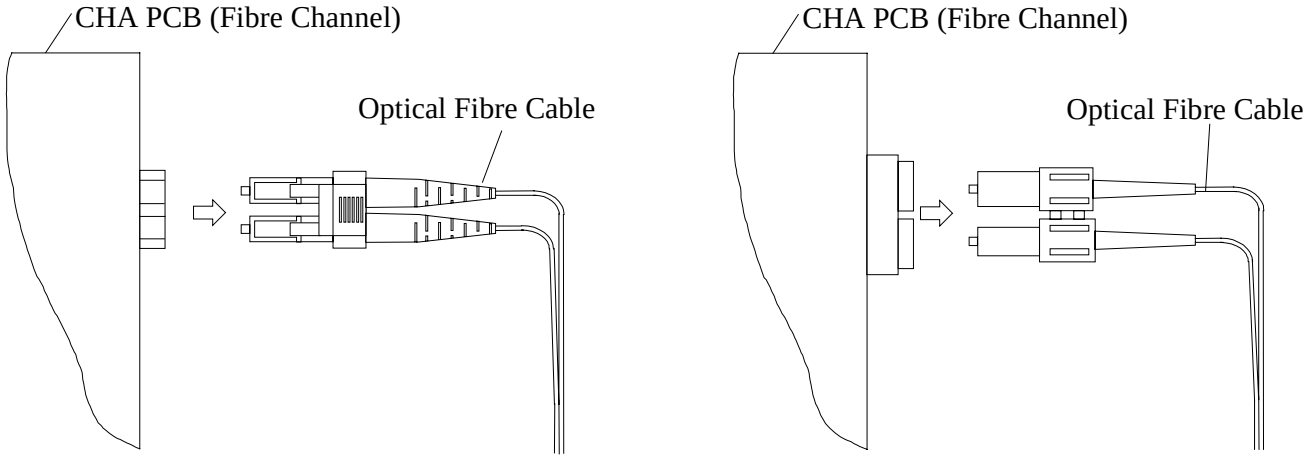

Fig. 4.4.2-3 Disconnection of Optical Fibre Cable

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3-3 Removal of the PCBs

a. Remove the two screws and remove the PCBs from the correct locations in the Front Logic Box referring to Fig. 4.4.2-4.
b. Attach the dummy plates referring to Fig. 4.4.2-5.

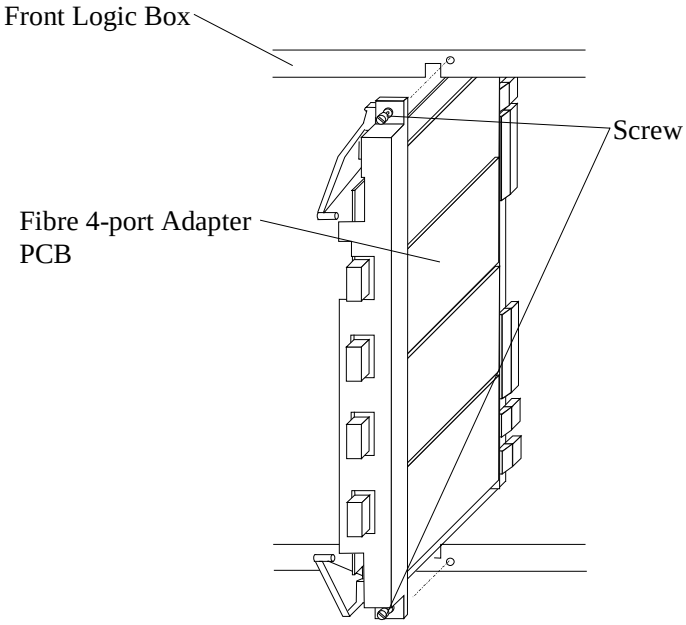

Fig. 4.4.2-4 Removal of PCB

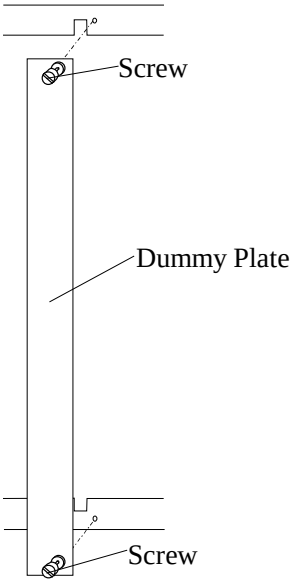

Fig. 4.4.2-5 Attachment of Dummy Plate

3-4 Removal of the Nameplate

a. Remove the nameplate referring to Fig. 4.4.2-6.

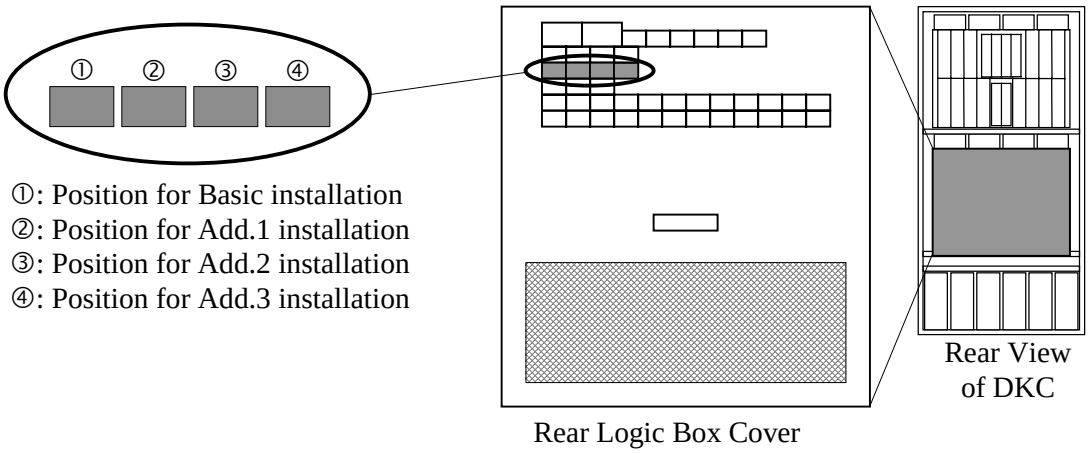

Fig. 4.4.2-6 Removal of Nameplate

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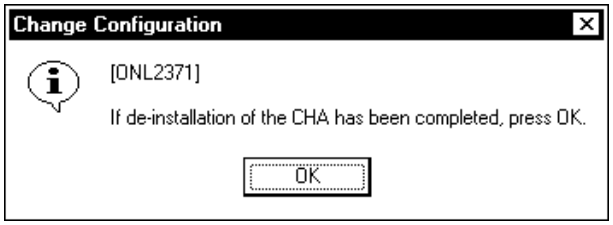
4. SVP post procedure

1.

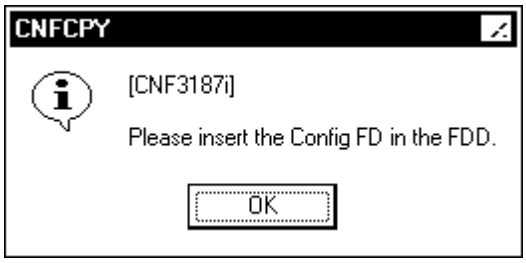
Select (CL) [OK] in response to "If de-installation of the CHA has been completed, press OK." shown in the right figure.



2. <Check the end of de-installation procedure>
"Renewal process has completed. Please check subsystem status." shown in the right figure displayed. Select (CL) [OK] in response to this message.

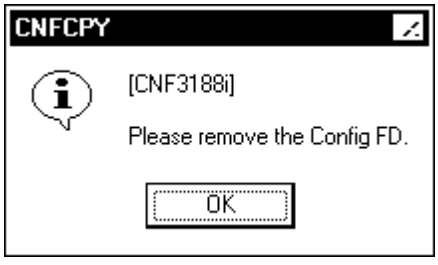
3.

"Reading subsystem configuration data..." is displayed.
"Please insert the Config FD in the FDD." is displayed.
Insert the configuration FD into FDD, select (CL) [OK].



4.

When this procedure is completed, message "Please remove the Config FD." is displayed.
Remove the FD, select (CL) [OK].



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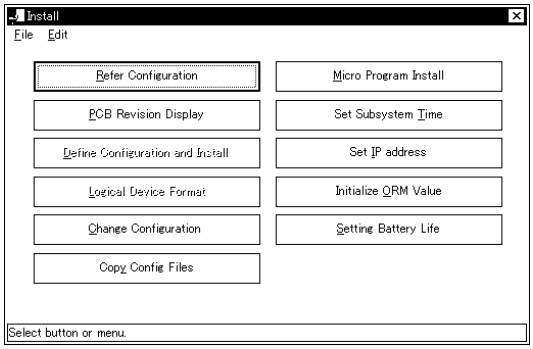
5.

After the procedure is completed, return to [Install].
Select (CL) [File]-[Exit].



6. <Mode Change>
Change the mode to View Mode.

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4.4.3 De-installation of Mainframe Fibre 8-port Adapter (DKC-F460I-8MS/8ML)

Table 4.4.3-1 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKC-F460I-8MS (Short Wavelength)	Fibre 4-port Adapter PCB	5513984-A	2	
		Cable Clamp	2105506-1	2	
		Nameplate (HDS)	2105902-112	1	RSD
			2105903-112		HICAM
			2105903-212		HICEF
2	DKC-F460I-8ML (Long Wavelength)	Fibre 4-port Adapter PCB	5513984-B	2	
		Cable Clamp	2105506-1	2	
		Nameplate (HDS)	2105902-113	1	RSD
			2105903-113		HICAM
			2105903-213		HICEF

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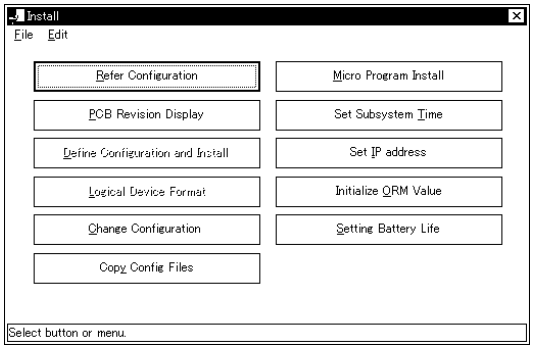
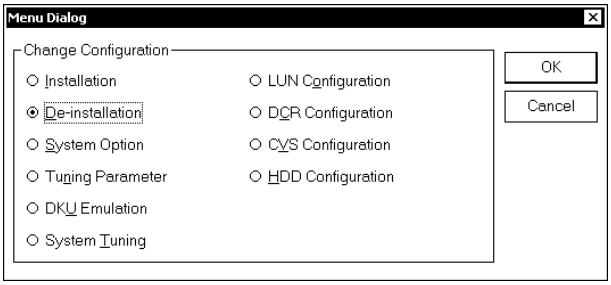
1. Setting up the New Device Structure Information

1. <Mode Change>
   Change the mode to Modify Mode.
   Select (CL) [Install].

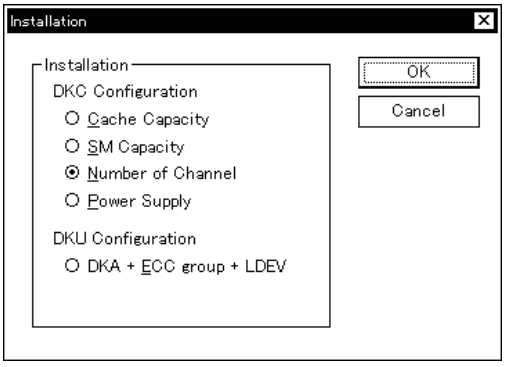
2. <Start the 'Menu Dialog' screen>
   Select (CL) [Change Configuration].



3. <Start Device Structure Setup screen>
   Select (CL) [De-Installation] in the 'Menu Dialog' dialog box and select (CL) [OK].



4. <Select a part to be changed>
   Select (CL) [Number of Channel], and select (CL) [OK].



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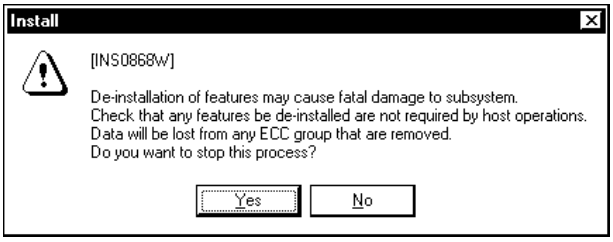
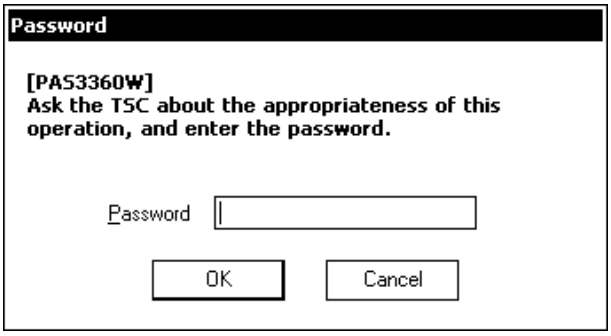
5.

Select (CL) [No] in response to “De-installation of features may cause fatal damage to subsystem. Check that any features be de-installed are not required by host operations. Data will be lost from any ECC group that are removed. Do you want to stop this process?”.

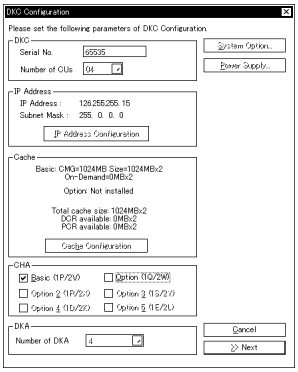


6. <Input password>
Enter the password and select (CL) [OK].



NOTICE
This is a special (exceptional) operation that can cause a serious failure such as a system down or a data loss if a wrong part to be removed is selected, and requires an input of a password. Ask the technical support center about the appropriateness of the operation, and input the password after getting an approval of executing the operation.

7. <Update Configuration Information>
Define the item to CHA in the ‘DKC Configuration’ window.



Note 1: It is not possible to install or de-install plural parts at the same time.

Note 2: For Multiplatform configuration,
1. If you want to change Multiplatform into ALL SCSI, after de-installing mainframe volumes, then CHA must be de-installed.
2. If you want to change ALL SCSI into Multiplatform, after de-installing open volumes, then CHS/CHF/CHT must be de-installed.

Make sure that the entered item is correct and select (CL) [>>Next].

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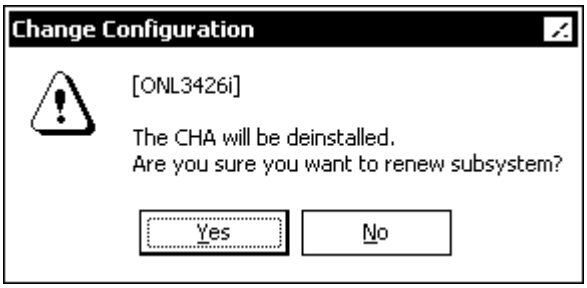
2. SVP pre procedure

1. <Start de-installation>
   Select (CL) [Yes] in response to “The CHA will be deinstalled. Are you sure you want to renew subsystem?”.

   When [No] is selected (CL), returns to INST04-MF-20 step 3.

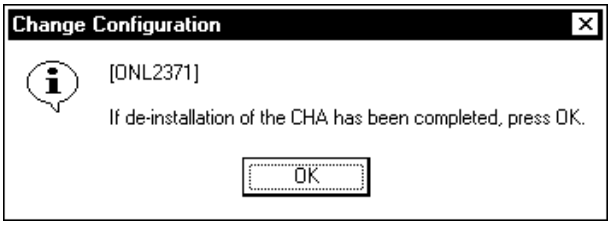


2. <Maintenance-block of PCBs other than cache or shared memory>
   At this moment, maintenance blocking is performed on PCBs other than memory systems with message “The CHA is being blocked...” is displayed.
   This processing is carried out on each component that is subject to de-installation.

3. <Update device structure information about PCBs other than cache or shared memory>
   “The CHA is being blocked...” and “Lighting LED of the PCB...” are displayed and the device structure information update processing is performed on the current component. When the update processing is completed, the device structure information on the current component is set to [EMPTY] and the shut down LED on the PCB is lit.

   When the update of device structure information on all PCBs other than those on the memory systems is completed, automatically one of the two following messages is displayed.

4.
   At this point refrain from pressing the [OK] button.
   “If de-installation of the CHA has been completed, press OK.” shown in the right figure.



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3 De-Installation Procedure of Mainframe Fibre 8-port Adapter

Note: Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

3-1 Confirmation of the Shut Down LED (Only Non-Disruptive Procedure)

a. Confirm that Shut Down LED is on.(Fig. 4.4.3-1). If the LED is not on, connect the Maintenance Jumper to the Shut Down Connector.

⚠ CAUTION

A system down may be caused if the Maintenance jumper is inserted in a PCB other than that to be removed. Make sure that it is the PCB to be removed.

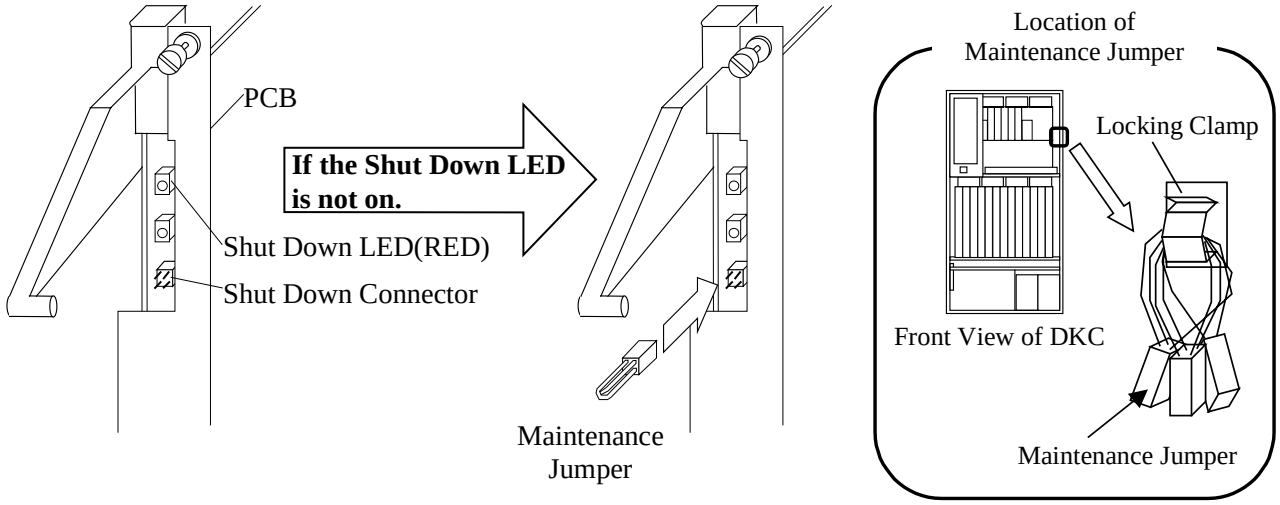

Fig. 4.4.3-1 Shut Down LED

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3-2 Disconnection of the optical fibre cables

a. Remove the brackets and cable clamp referring to Fig 4.4.3-2.
b. Disconnect the optical fibre cables referring to Fig 4.4.3-3.
c. Attach the brackets.

Table 4.4.3-2 Removal Location (Front of the unit)

Cluster	CL1							CL2				
Slot No.	N	P	Q	R	S	T	U	V	W	X	Y	Z
Function	CSW	CHA	CHA	CHA	CHA	CACHE	CACHE	CHA	CHA	CHA	CHA	CSW
Location No.	CSW -1N	CHA -1P	CHA -1Q	CHA -1R	CHA -1S	CACHE -1T	CACHE -1U	CHA -2V	CHA -2W	CHA -2X	CHA -2Y	CSW -2Z
Order of addition		Basic	Add.1	Add.2	Add.3			Basic	Add.1	Add.2	Add.3	

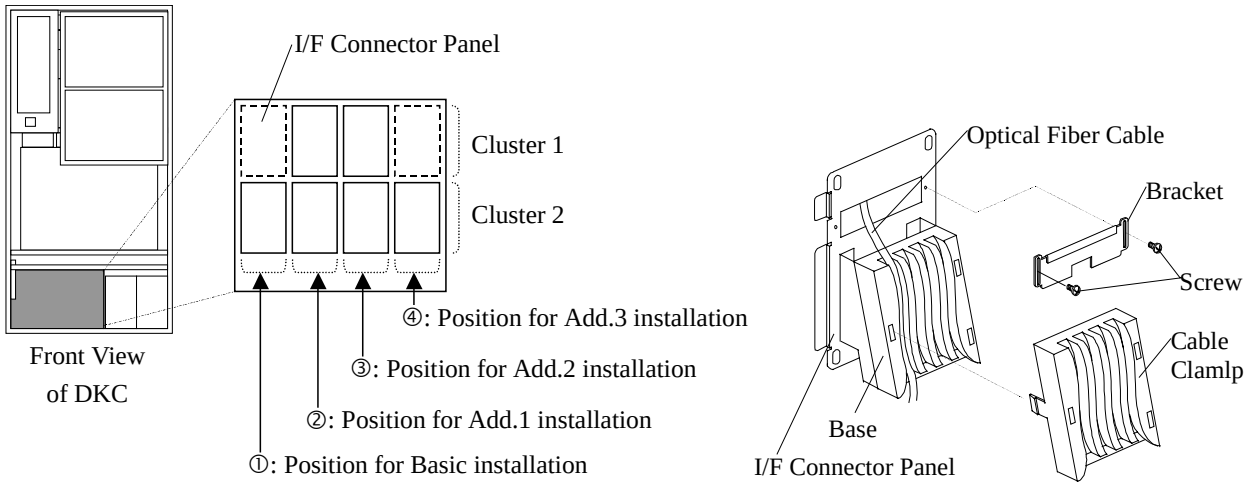

Fig 4.4.3-2 Removal of Bracket

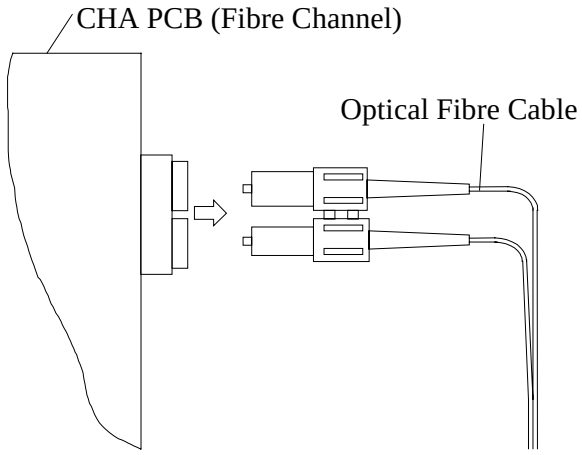

Fig. 4.4.3-3 Disconnection of Optical Fibre Cable

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3-3 Removal of the PCBs

a. Remove the two screws and remove the PCBs from the correct locations in the Front Logic Box referring to Fig. 4.4.3-4.
b. Attach the dummy plates referring to Fig. 4.4.3-5.

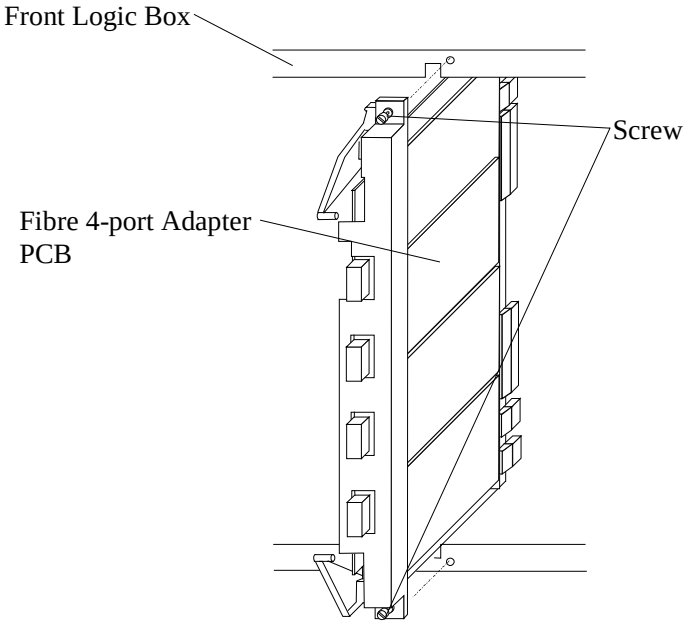

Fig. 4.4.3-4 Removal of PCB

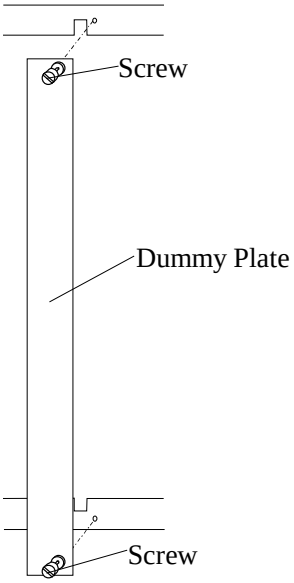

Fig. 4.4.3-5 Attachment of Dummy Plate

3-4 Removal of the Nameplate

a. Remove the nameplate referring to Fig. 4.4.3-6.

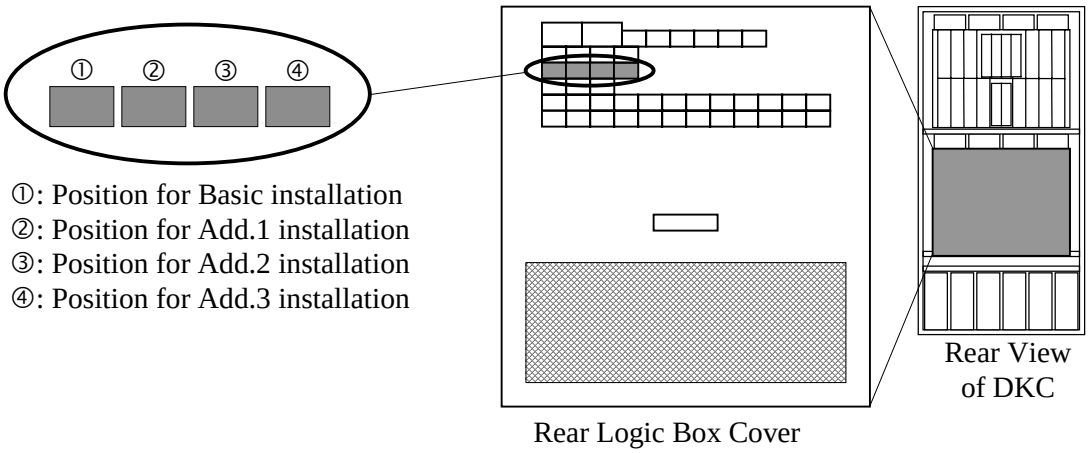

Fig. 4.4.3-6 Removal of Nameplate

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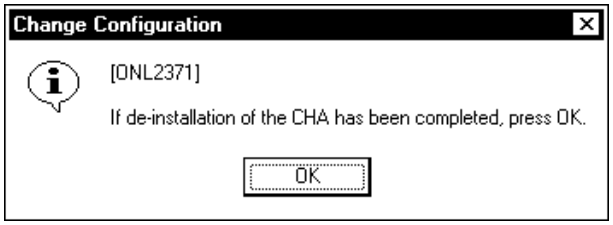
4. SVP post procedure

1.

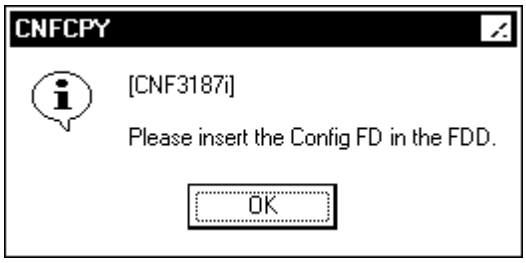
Select (CL) [OK] in response to "If de-installation of the CHA has been completed, press OK." shown in the right figure.



2. <Check the end of de-installation procedure>
"Renewal process has completed. Please check subsystem status." shown in the right figure displayed. Select (CL) [OK] in response to this message.

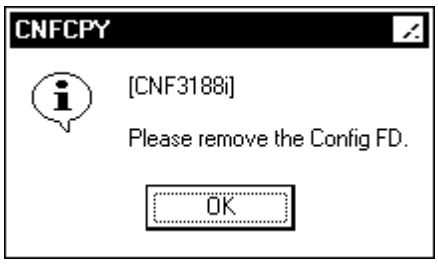
3.

"Reading subsystem configuration data..." is displayed.
"Please insert the Config FD in the FDD." is displayed.
Insert the configuration FD into FDD, select (CL) [OK].



4.

When this procedure is completed, message "Please remove the Config FD." is displayed.
Remove the FD, select (CL) [OK].



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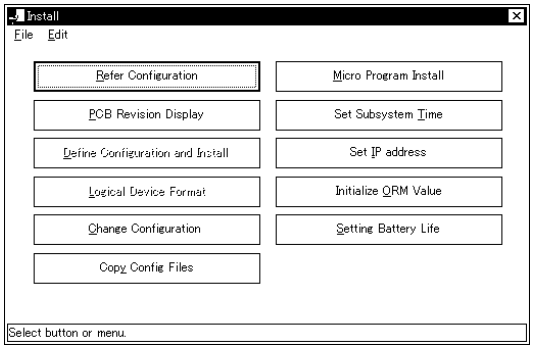
5.

After the procedure is completed, return to [Install].
Select (CL) [File]-[Exit].



6. <Mode Change>
Change the mode to View Mode.

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4.4.4 De-installation of Fibre 16-port Adapter for 1-2Gbps Short Wavelength (DKC-F460I-16HSF)

Table 4.4.4-1 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKC-F460I-16HSF (DB Validator support)	Fibre 8-port Adapter PCB	5518079-E	2	Color of PCB lever : Blue
		Cable Clamp	2105506-1	4	
		Nameplate (HDS)	2105902-140	1	RSD
			2105903-140		HICAM
			2105903-240		HICEF
		Nameplate (HP)	2105902-240	1	RSD
			2105903-340		HICAM
			2105903-440		HICEF

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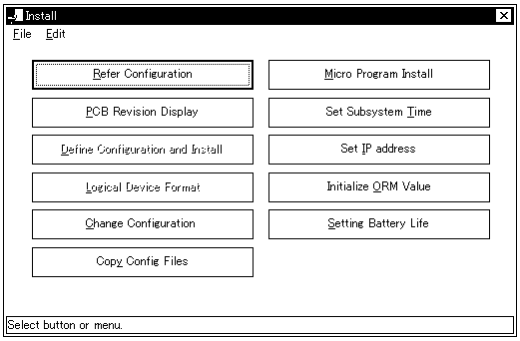
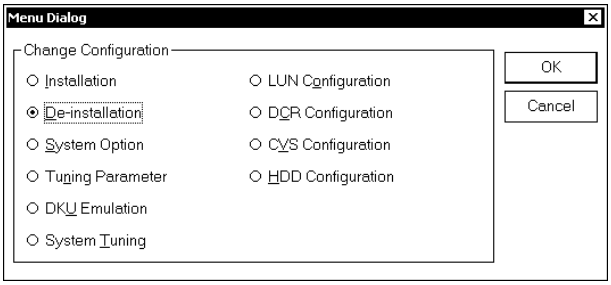
1. Setting up the New Device Structure Information

1. <Mode Change>
   Change the mode to Modify Mode.
   Select (CL) [Install].

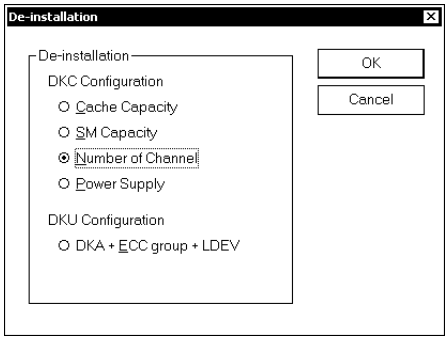
2. <Start the 'Menu Dialog' screen>
   Select (CL) [Change Configuration].



3. <Start Device Structure Setup screen>
   Select (CL) [De-installation] in the 'Menu Dialog' dialog box and select (CL) [OK].



4. <Select a part to be changed>
   Select (CL) [Number of Channel], and select (CL) [OK].



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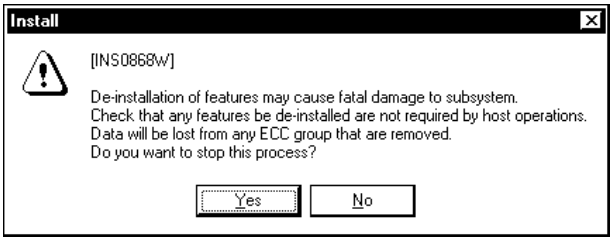
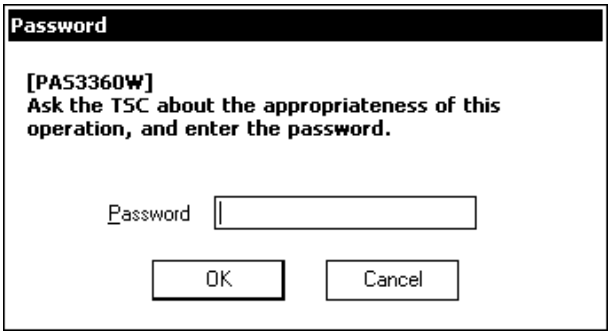
5.

Select (CL) [No] in response to "De-installation of features may cause fatal damage to subsystem. Check that any features be de-installed are not required by host operations. Data will be lost from any ECC group that are removed. Do you want to stop this process?".

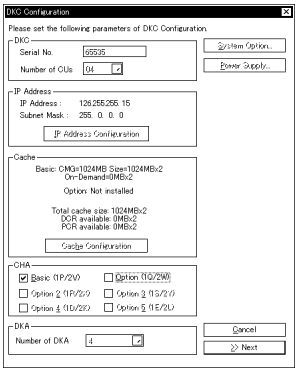


6. <Input password>
Enter the password and select (CL) [OK].



NOTICE
This is a special (exceptional) operation that can cause a serious failure such as a system down or a data loss if a wrong part to be removed is selected, and requires an input of a password. Ask the technical support center about the appropriateness of the operation, and input the password after getting an approval of executing the operation.

7. <Update Configuration Information>
Define the item to CHA in the 'DKC Configuration' window.



Note 1: It is not possible to install or de-install plural parts at the same time.

Note 2: For Multiplatform configuration,
1. If you want to change Multiplatform into ALL SCSI, after de-installing mainframe volumes, then CHA must be de-installed.
2. If you want to change ALL SCSI into Multiplatform, after de-installing open volumes, then CHS/CHF/CHT must be de-installed.

Make sure that the entered item is correct and select (CL) [>>Next].

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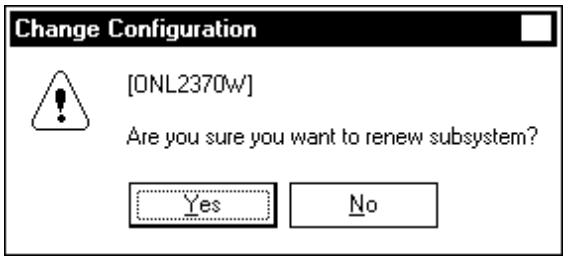
2. SVP pre procedure

1. <Start de-installation>
   Select (CL) [Yes] in response to “Are you sure you want to renew subsystem?”.

   When [No] is selected (CL), returns to INST04-16F-20 step 3.

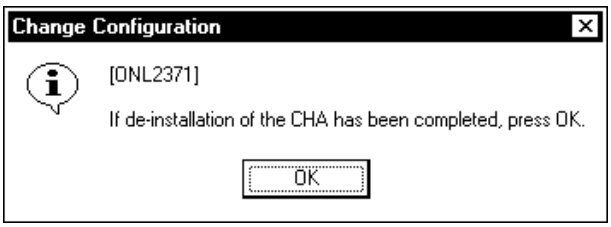


2. <Maintenance-block of PCBs other than cache or shared memory>
   At this moment, maintenance blocking is performed on PCBs other than memory systems with message “The CHA is being blocked...” is displayed.
   This processing is carried out on each component that is subject to de-installation.

3. <Update device structure information about PCBs other than cache or shared memory>
   “The CHA is being blocked...” and “Lighting LED of the PCB...” are displayed and the device structure information update processing is performed on the current component. When the update processing is completed, the device structure information on the current component is set to [EMPTY] and the shut down LED on the PCB is lit.

   When the update of device structure information on all PCBs other than those on the memory systems is completed, automatically one of the two following messages is displayed.

4.
   At this point refrain from pressing the [OK] button.
   “If de-installation of the CHA has been completed, press OK.” shown in the right figure.



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3 De-Installation Procedure of Fibre 16-port Adapter

Note: Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

3-1 Confirmation of the Shut Down LED (Only Non-Disruptive Procedure)

a. Confirm that Shut Down LED is on.(Fig. 4.4.4-1). If the LED is not on, connect the Maintenance Jumper to the Shut Down Connector.

⚠ CAUTION

A system down may be caused if the Maintenance jumper is inserted in a PCB other than that to be removed. Make sure that it is the PCB to be removed.

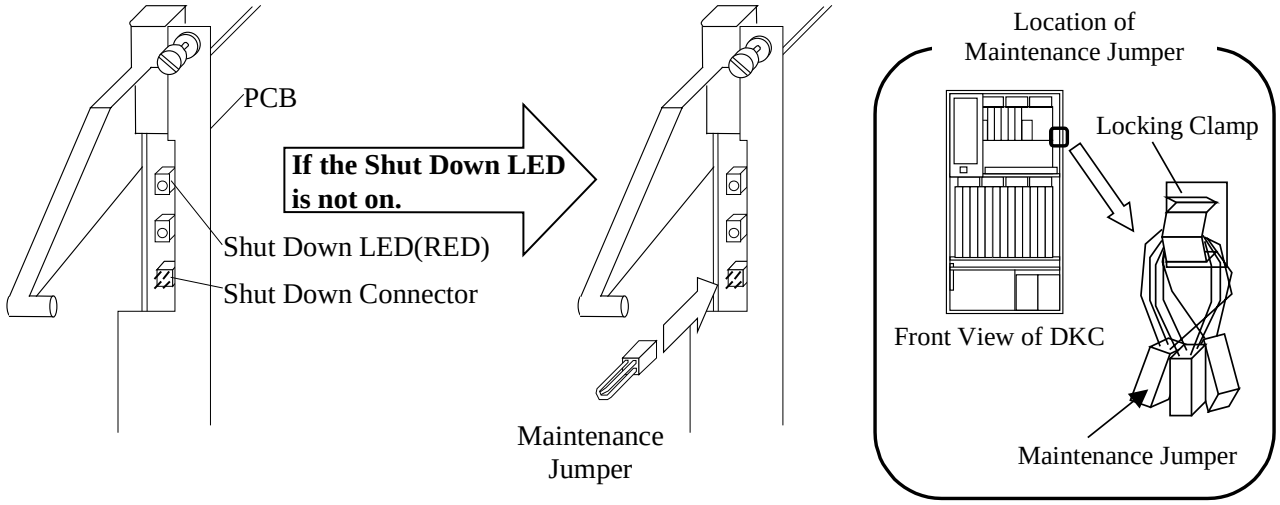

Fig. 4.4.4-1 Shut Down LED

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3-2 Disconnection of the optical fibre cables

a. Remove the brackets and cable clamp referring to Fig 4.4.4-2.
b. Disconnect the optical fibre cables referring to Fig 4.4.4-3.
c. Attach the brackets.

Table 4.4.4-2 Removal Location (Front of the unit)

Cluster	CL1							CL2				
Slot No.	N	P	Q	R	S	T	U	V	W	X	Y	Z
Function	CSW	CHA	CHA	CHA	CHA	CACHE	CACHE	CHA	CHA	CHA	CHA	CSW
Location No.	CSW -1N	CHA -1P	CHA -1Q	CHA -1R	CHA -1S	CACHE -1T	CACHE -1U	CHA -2V	CHA -2W	CHA -2X	CHA -2Y	CSW -2Z
Order of addition		Basic	Add.1	Add.2	Add.3			Basic	Add.1	Add.2	Add.3	

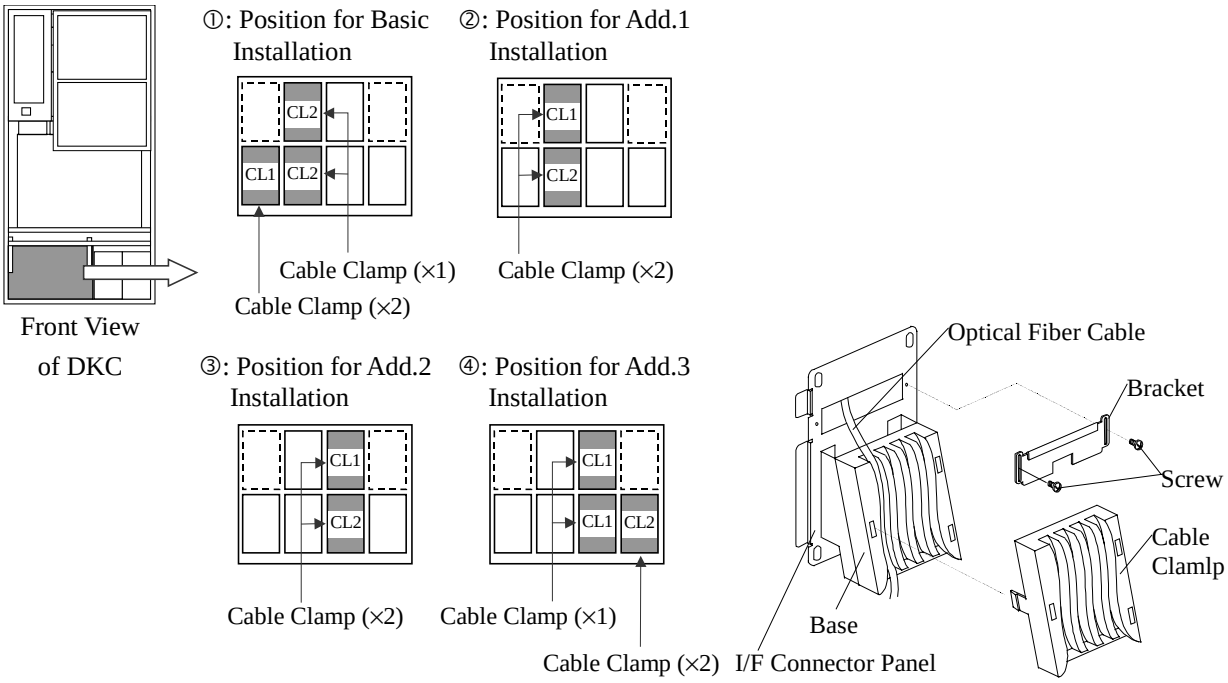

Fig 4.4.4-2 Removal of Bracket

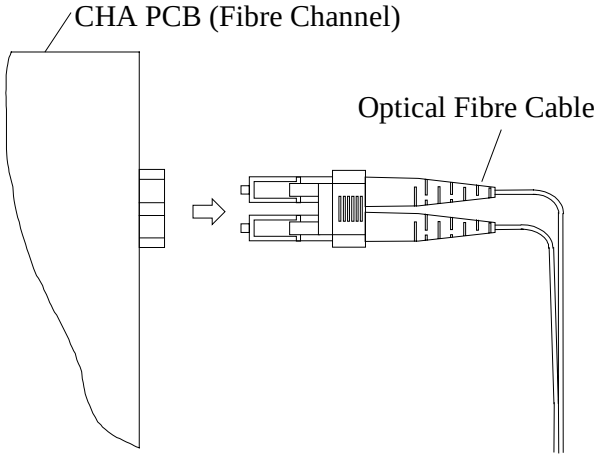

Fig. 4.4.4-3 Disconnection of Optical Fibre Cable

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3-3 Removal of the PCBs

a. Remove the two screws and remove the PCBs from the correct locations in the Front Logic Box referring to Fig. 4.4.4-4.
b. Attach the dummy plates referring to Fig. 4.4.4-5.

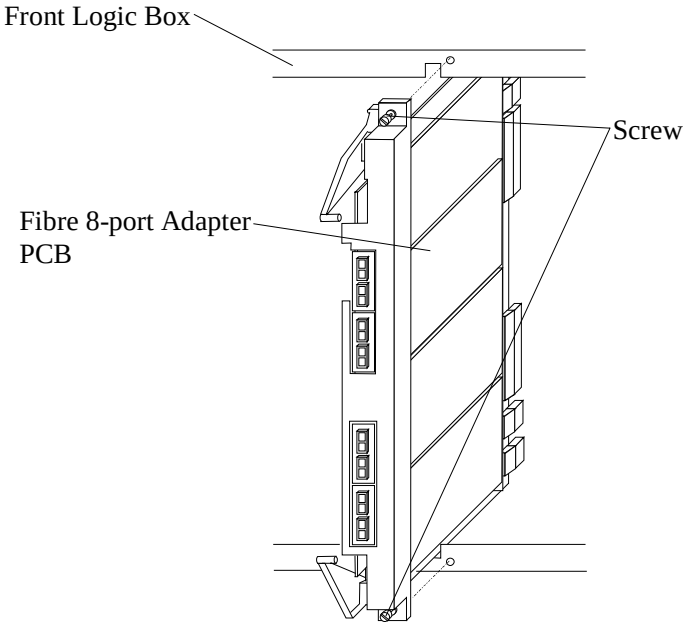

Fig. 4.4.4-4 Removal of PCB

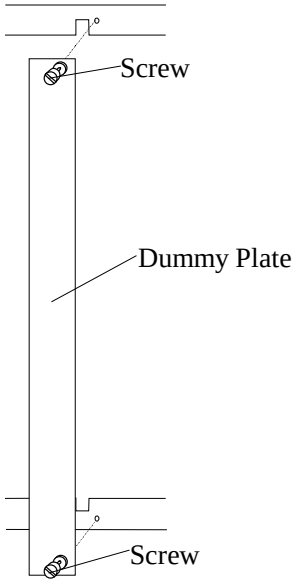

Fig. 4.4.4-5 Attachment of Dummy Plate

3-4 Removal of the Nameplate

a. Remove the nameplate referring to Fig. 4.4.4-6.

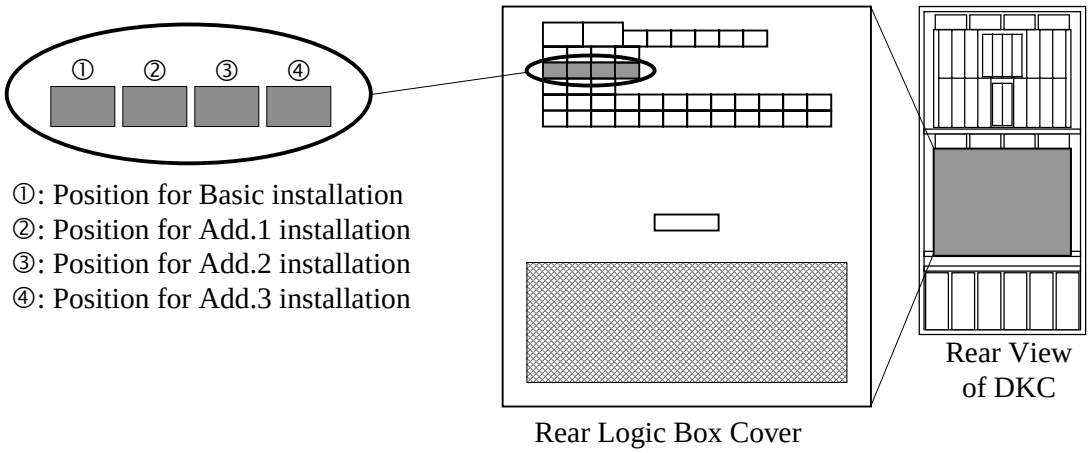

Fig. 4.4.4-6 Removal of Nameplate

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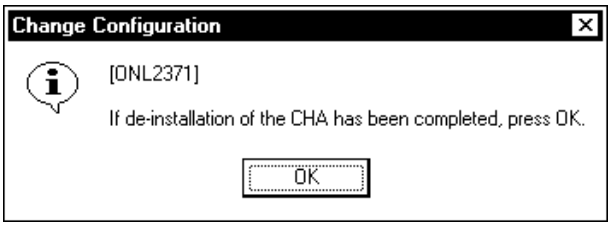
4. SVP post procedure

1.

Select (CL) [OK] in response to "If de-installation of the CHA has been completed, press OK." shown in the right figure.



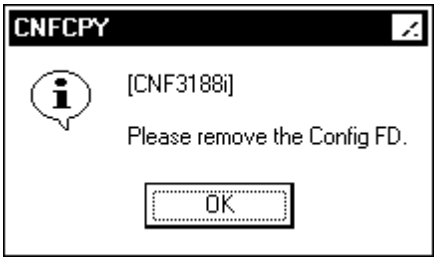
2. <Check the end of de-installation procedure>
"Renewal process has completed. Please check subsystem status." shown in the right figure displayed. Select (CL) [OK] in response to this message.

3.

"Reading subsystem configuration data..." is displayed.
"Please insert the Config FD in the FDD." is displayed.
Insert the configuration FD into FDD, select (CL) [OK].

4.

When this procedure is completed, message "Please remove the Config FD." is displayed.
Remove the FD, select (CL) [OK].



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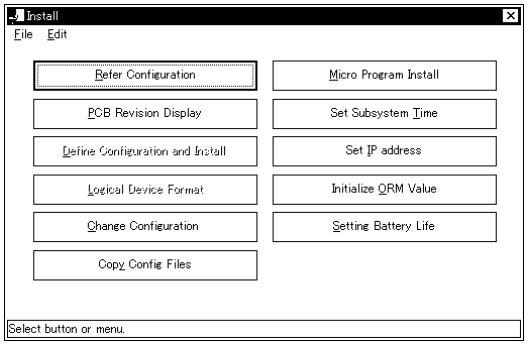
5.

After the procedure is completed, return to [Install].
Select (CL) [File]-[Exit].



6. <Mode Change>
Change the mode to View Mode.

Return to the work table (INST02-70) and perform rest of the works.

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4.4.5 De-installation of NAS 4-port Adapter for SX (DKC-F460I-4NS)

Table 4.4.5-1 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKC-F460I-4NS	NAS 2-port Adapter PCB	5519714-A	2	
		Cable Clamp	2105506-1	2	
		Nameplate (HDS)	2105902-141	1	RSD
			2105903-141		HICAM
			2105903-241		HICEF
		Nameplate (HP)	2105902-241	1	RSD
			2105903-341		HICAM
			2105903-441		HICEF

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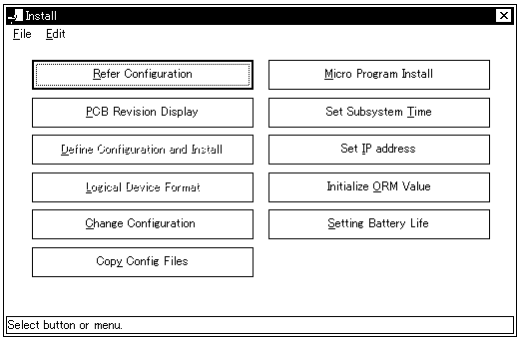
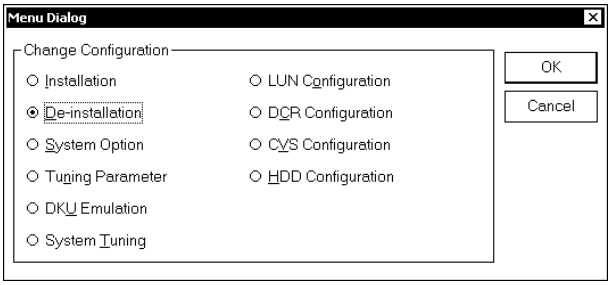
1. Setting up the New Device Structure Information

1. <Mode Change>
   Change the mode to Modify Mode.
   Select (CL) [Install].

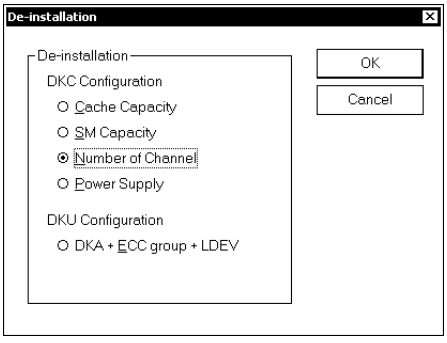
2. <Start the 'Menu Dialog' screen>
   Select (CL) [Change Configuration].



3. <Start Device Structure Setup screen>
   Select (CL) [De-Installation] in the 'Menu Dialog' dialog box and select (CL) [OK].



4. <Select a part to be changed>
   Select (CL) [Number of Channel], and select (CL) [OK].



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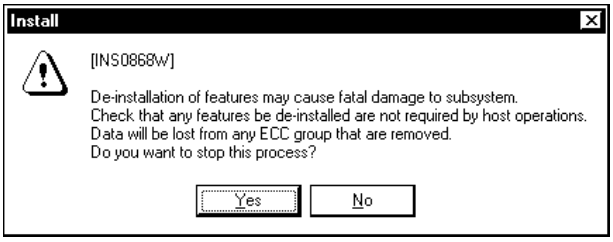
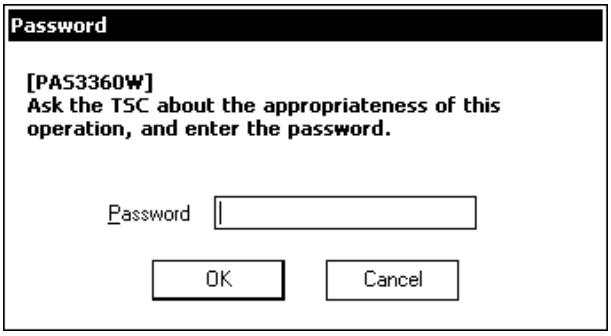
5.

Select (CL) [No] in response to “De-installation of features may cause fatal damage to subsystem. Check that any features be de-installed are not required by host operations. Data will be lost from any ECC group that are removed. Do you want to stop this process?”.

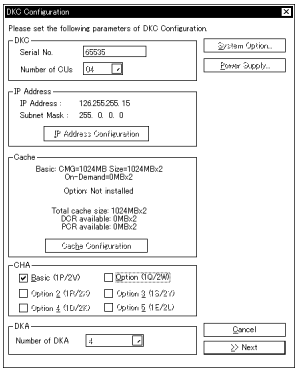


6. <Input password>
Enter the password and select (CL) [OK].



NOTICE
This is a special (exceptional) operation that can cause a serious failure such as a system down or a data loss if a wrong part to be removed is selected, and requires an input of a password. Ask the technical support center about the appropriateness of the operation, and input the password after getting an approval of executing the operation.

7. <Update Configuration Information>
Define the item to CHA in the ‘DKC Configuration’ window.



Note 1: It is not possible to install or de-install plural parts at the same time.

Note 2: For Multiplatform configuration,
1. If you want to change Multiplatform into ALL SCSI, after de-installing mainframe volumes, then CHA must be de-installed.
2. If you want to change ALL SCSI into Multiplatform, after de-installing open volumes, then CHS/CHF/CHT must be de-installed.

Make sure that the entered item is correct and select (CL) [>>Next].

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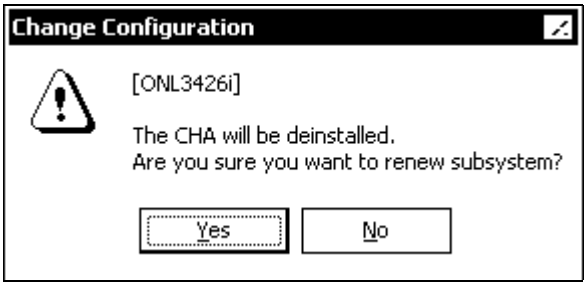
2. SVP pre procedure

1. <Start de-installation>
   Select (CL) [Yes] in response to “The CHA will be deinstalled. Are you sure you want to renew subsystem?”.

   When [No] is selected (CL), returns to INST04-4NS-20 step 3.

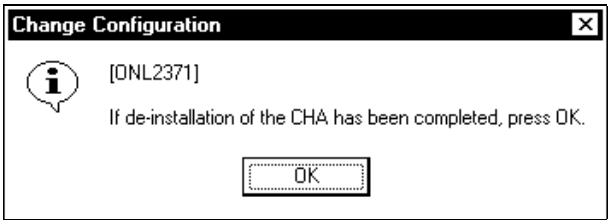


2. <Maintenance-block of PCBs other than cache or shared memory>
   At this moment, maintenance blocking is performed on PCBs other than memory systems with message “The CHA is being blocked...” is displayed.
   This processing is carried out on each component that is subject to de-installation.

3. <Update device structure information about PCBs other than cache or shared memory>
   “The CHA is being blocked...” and “Lighting LED of the PCB...” are displayed and the device structure information update processing is performed on the current component. When the update processing is completed, the device structure information on the current component is set to [EMPTY] and the shut down LED on the PCB is lit.

   When the update of device structure information on all PCBs other than those on the memory systems is completed, automatically one of the two following messages is displayed.

4.
   At this point refrain from pressing the [OK] button.
   “If de-installation of the CHA has been completed, press OK.” shown in the right figure.



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3 De-Installation Procedure of NAS 4-port Adapter

Note: Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

3-1 Confirmation of the Shut Down LED (Only Non-Disruptive Procedure)

a. Confirm that Shut Down LED is on.(Fig. 4.4.5-1). If the LED is not on, connect the Maintenance Jumper to the Shut Down Connector.

CAUTION

A system down may be caused if the Maintenance jumper is inserted in a PCB other than that to be removed. Make sure that it is the PCB to be removed.

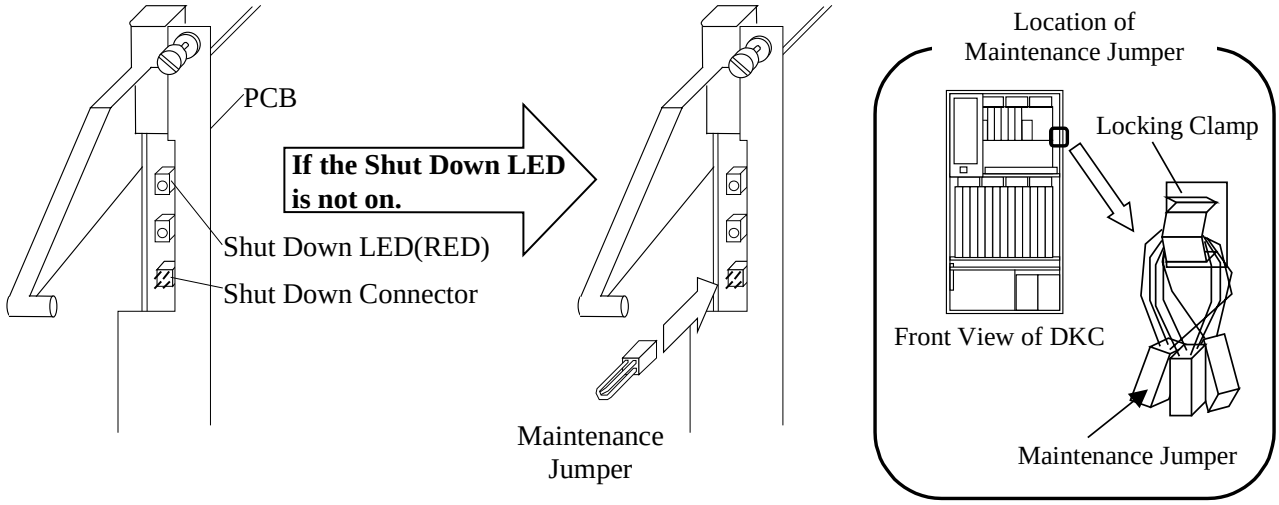

Fig. 4.4.5-1 Shut Down LED

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3-2 Disconnection of the optical fibre cables

a. Remove the brackets and cable clamp referring to Fig 4.4.5-2.
b. Disconnect the optical fibre cables referring to Fig 4.4.5-3.
c. Attach the brackets.

Table 4.4.5-2 Removal Location (Front of the unit)

Cluster	CL1							CL2				
Slot No.	N	P	Q	R	S	T	U	V	W	X	Y	Z
Function	CSW	CHA	CHA	CHA	CHA	CACHE	CACHE	CHA	CHA	CHA	CHA	CSW
Location No.	CSW -1N	CHA -1P	CHA -1Q	CHA -1R	CHA -1S	CACHE -1T	CACHE -1U	CHA -2V	CHA -2W	CHA -2X	CHA -2Y	CSW -2Z
Order of addition		Basic	Add.1	Add.2	Add.3			Basic	Add.1	Add.2	Add.3	

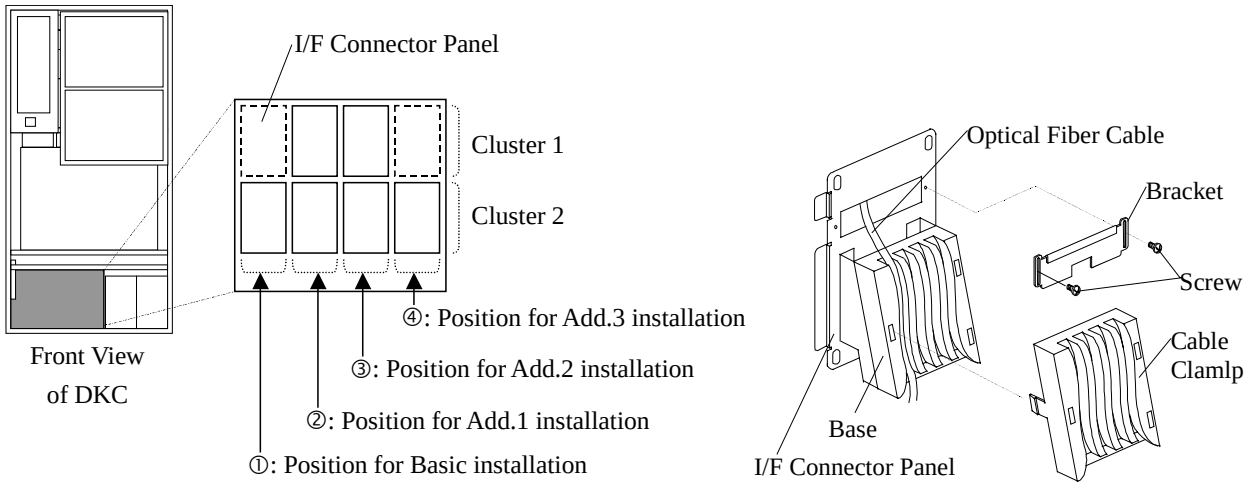

Fig 4.4.5-2 Removal of Bracket

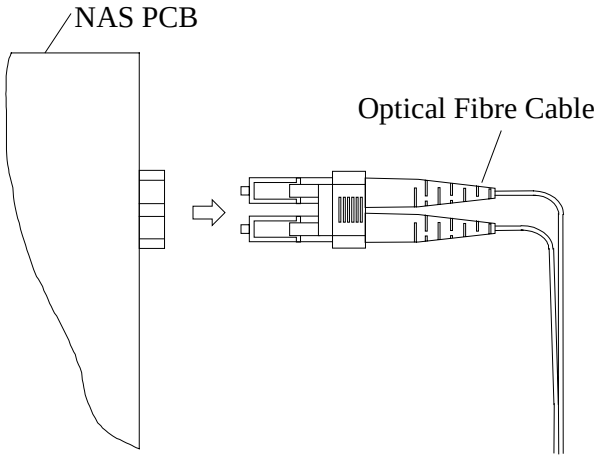

Fig. 4.4.5-3 Disconnection of Optical Fibre Cable

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3-3 Removal of the PCBs

Note: When removing the CHA PCB for the NAS, be sure to remove the cable before removing the PCB.

a. Disconnect the 12V power cables from PCBs referring to Fig. 4.4.5-4.
b. Remove the two screws and remove the PCBs from the correct locations in the Front Logic Box.
c. Attach the dummy plates referring to Fig. 4.4.5-5.

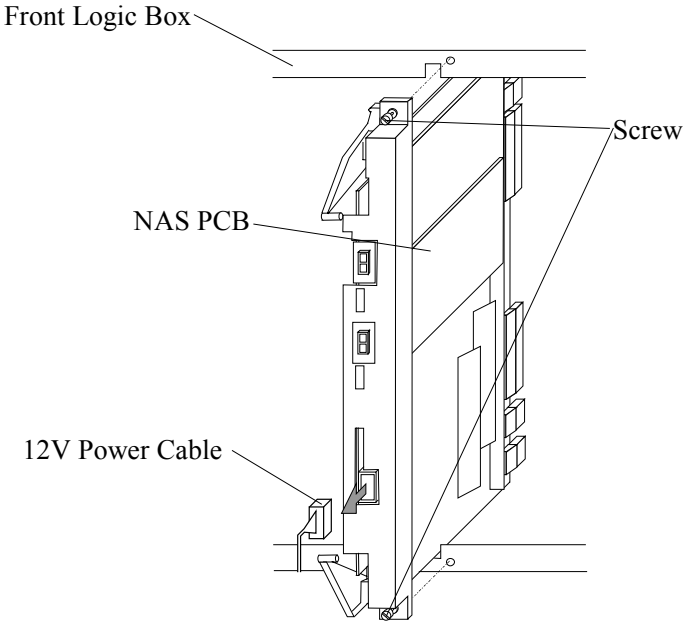

Fig. 4.4.5-4 Removal of PCB

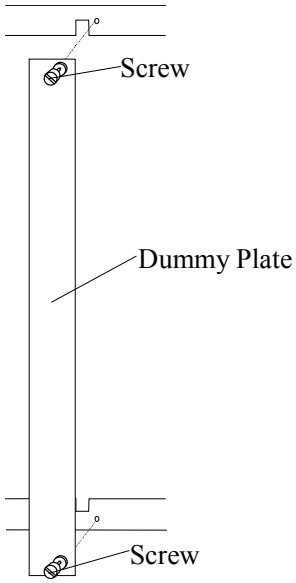

Fig. 4.4.5-5 Attachment of Dummy Plate

3-4 Removal of the Nameplate

a. Remove the nameplate referring to Fig. 4.4.5-6.

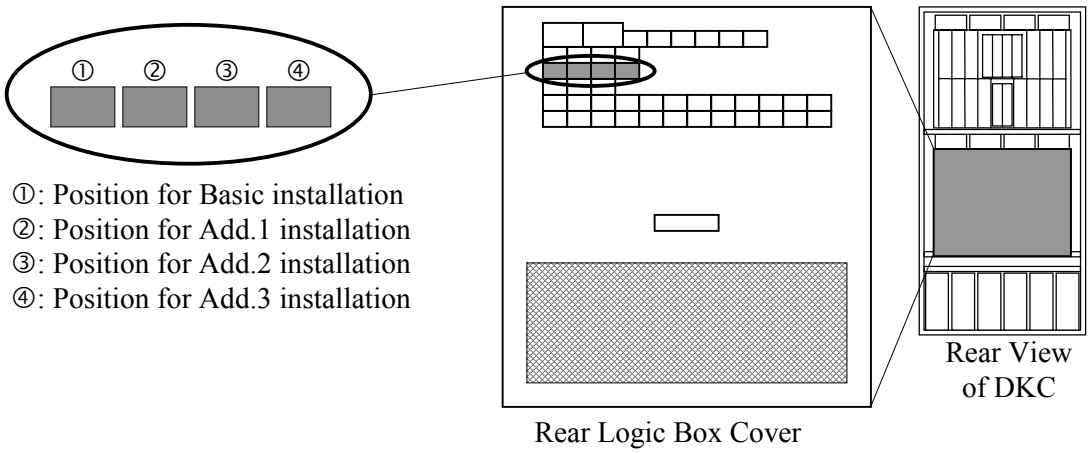

Fig. 4.4.5-6 Removal of Nameplate

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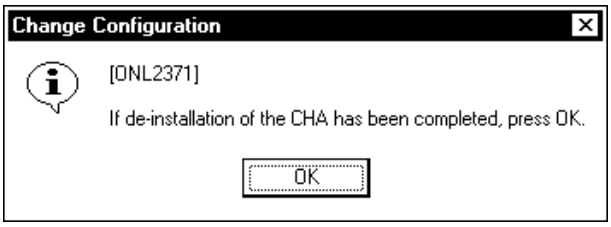
4. SVP post procedure

1.

Select (CL) [OK] in response to “If de-installation of the CHA has been completed, press OK.” shown in the right figure.



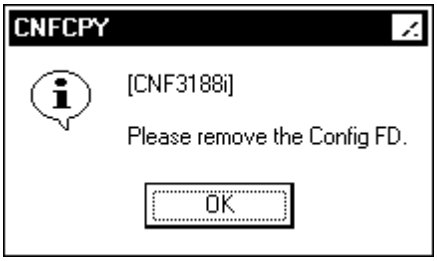
2. <Check the end of de-installation procedure>
“Renewal process has completed. Please check subsystem status.” shown in the right figure displayed. Select (CL) [OK] in response to this message.

3.

“Reading subsystem configuration data...” is displayed.
“Please insert the Config FD in the FDD.” is displayed.
Insert the configuration FD into FDD, select (CL) [OK].

4.

When this procedure is completed, message “Please remove the Config FD.” is displayed.
Remove the FD, select (CL) [OK].



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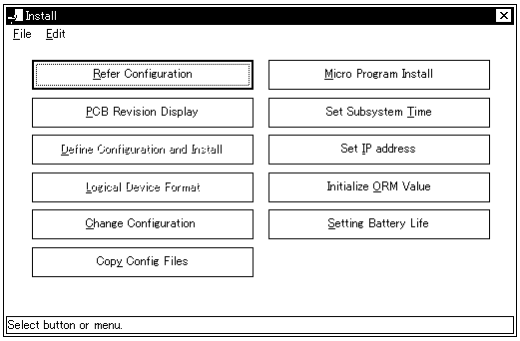
5.

After the procedure is completed, return to [Install]. Select (CL) [File]-[Exit].



6. <Mode Change>
Change the mode to View Mode.

When you have removed all the CHA PCBs for the NAS and will not use the NAS function any longer, go to Step 7.

When the CHA PCB for the NAS is still installed unlike the above, return to the working table and do the rest of the work. (INST02-60)

7. <De-installing Setup on SVP>
De-install Setup on SVP. (NAS03-200)
When the SVP reliability enhancement kit has been installed, go to Step8.

When the SVP reliability enhancement kit has not been installed, return to the working table and do the rest of the work. (INST02-60)

8. <De-installing Setup on SVP from Standby SVP>
After switching the SVP (Switch SVP (REP02-525), de-install the Setup on SVP from the Standby SVP. (NAS03-200)

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9. <Switching the SVP>
   After switching the SVP (Switch SVP (REP02-525)), go back to Master SVP.
   Return to the working table and do the rest of the work. (INST02-60)

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4.4.6 De-installation of iSCSI 8-port Adapter (DKC-F460I-8IS)

Table 4.4.6-1 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKC-F460I-8IS	iSCSI 4-port Adapter PCB	5522913-A	2	Color of PCB lever : Blue
		Cable Clamp	2105506-1	2	
		Nameplate (HDS)	2105902-147	1	RSD
			2105903-147		HICAM
			2105903-247		HICEF
		Nameplate (HP)	2105902-247	1	RSD
			2105903-347		HICAM
			2105903-447		HICEF

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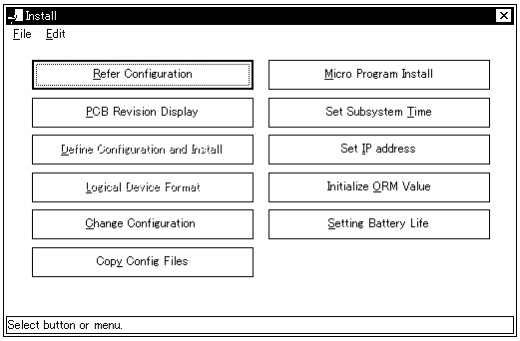
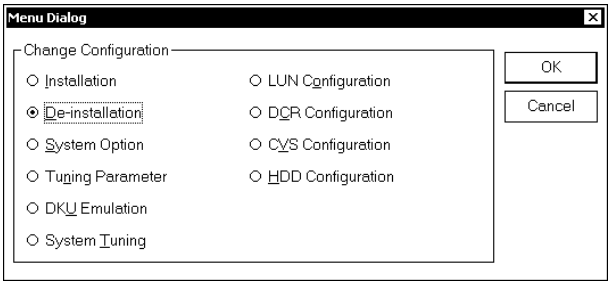
1. Setting up the New Device Structure Information

1. <Mode Change>
   Change the mode to Modify Mode.
   Select (CL) [Install].

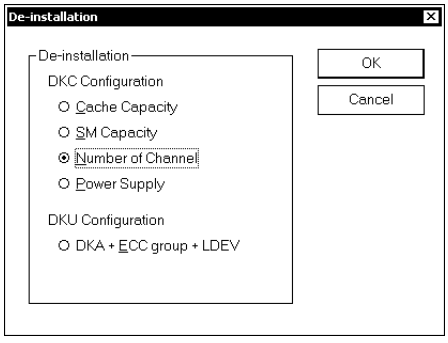
2. <Start the 'Menu Dialog' screen>
   Select (CL) [Change Configuration].



3. <Start Device Structure Setup screen>
   Select (CL) [De-Installation] in the 'Menu Dialog' dialog box and select (CL) [OK].



4. <Select a part to be changed>
   Select (CL) [Number of Channel], and select (CL) [OK].



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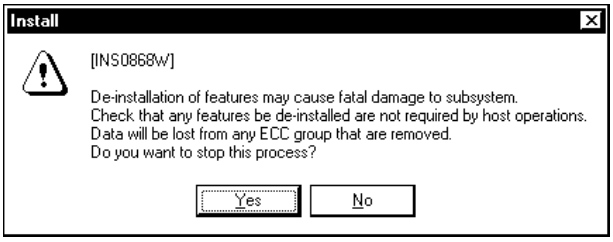
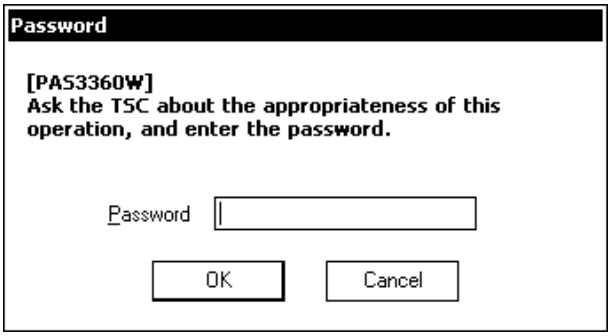
5.

Select (CL) [No] in response to “De-installation of features may cause fatal damage to subsystem. Check that any features be de-installed are not required by host operations. Data will be lost from any ECC group that are removed. Do you want to stop this process?”.

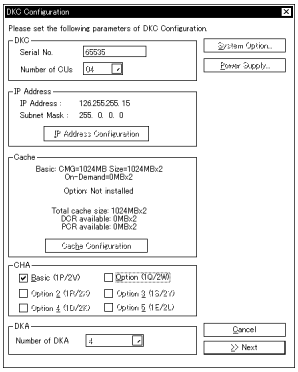


6. <Input password>
Enter the password and select (CL) [OK].



NOTICE
This is a special (exceptional) operation that can cause a serious failure such as a system down or a data loss if a wrong part to be removed is selected, and requires an input of a password. Ask the technical support center about the appropriateness of the operation, and input the password after getting an approval of executing the operation.

7. <Update Configuration Information>
Define the item to CHA in the ‘DKC Configuration’ window.
Remove the mark of the corresponding check box.



Note 1: It is not possible to install or de-install plural parts at the same time.

Note 2: For Multiplatform configuration,
1. If you want to change Multiplatform into ALL SCSI, after de-installing mainframe volumes, then CHA must be de-installed.
2. If you want to change ALL SCSI into Multiplatform, after de-installing open volumes, then CHS/CHF/CHT must be de-installed.

Make sure that the entered item is correct and select (CL) [>>Next].

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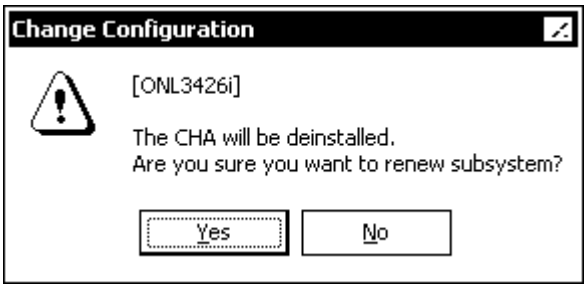
2. SVP pre procedure

1. <Start de-installation>
   Select (CL) [Yes] in response to “The CHA will be deinstalled. Are you sure you want to renew subsystem?”.

   When [No] is selected (CL), returns to INST04-8IS-20 step 3.

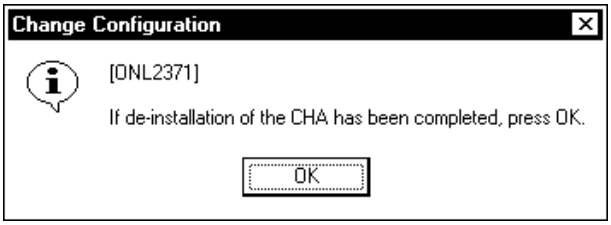


2. <Maintenance-block of PCBs other than cache or shared memory>
   At this moment, maintenance blocking is performed on PCBs other than memory systems with message “The CHA is being blocked...” is displayed.
   This processing is carried out on each component that is subject to de-installation.

3. <Update device structure information about PCBs other than cache or shared memory>
   “The CHA is being blocked...” and “Lighting LED of the PCB...” are displayed and the device structure information update processing is performed on the current component. When the update processing is completed, the device structure information on the current component is set to [EMPTY] and the shut down LED on the PCB is lit.

   When the update of device structure information on all PCBs other than those on the memory systems is completed, automatically one of the two following messages is displayed.

4.
   At this point refrain from pressing the [OK] button.
   “If de-installation of the CHA has been completed, press OK.” shown in the right figure.



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3 De-Installation Procedure of iSCSI 8-port Adapter

Note: Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

3-1 Confirmation of the Shut Down LED (Only Non-Disruptive Procedure)

a. Confirm that Shut Down LED is on.(Fig. 4.4.6-1). If the LED is not on, connect the Maintenance Jumper to the Shut Down Connector.

⚠ CAUTION

A system down may be caused if the Maintenance jumper is inserted in a PCB other than that to be removed. Make sure that it is the PCB to be removed.

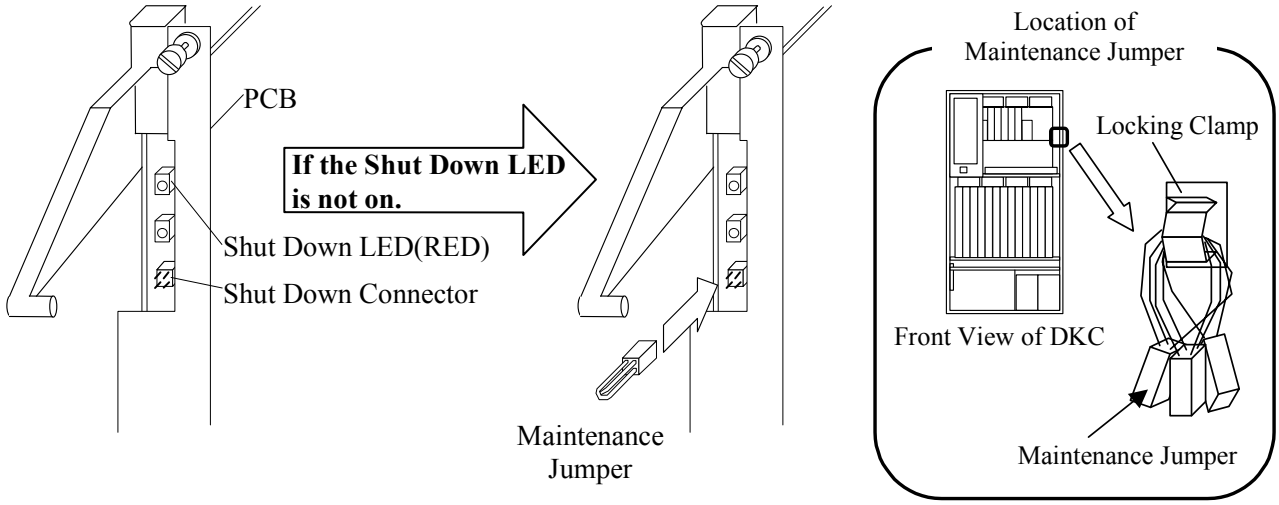

Fig. 4.4.6-1 Shut Down LED

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3-2 Disconnection of the optical fibre cables

a. Remove the brackets and cable clamp referring to Fig 4.4.6-2.
b. Disconnect the optical fibre cables referring to Fig 4.4.6-3.
c. Attach the brackets.

Table 4.4.6-2 Removal Location (Front of the unit)

Cluster	CL1							CL2				
Slot No.	N	P	Q	R	S	T	U	V	W	X	Y	Z
Function	CSW	CHA	CHA	CHA	CHA	CACHE	CACHE	CHA	CHA	CHA	CHA	CSW
Location No.	CSW -1N	CHA -1P	CHA -1Q	CHA -1R	CHA -1S	CACHE -1T	CACHE -1U	CHA -2V	CHA -2W	CHA -2X	CHA -2Y	CSW -2Z
Order of addition		Basic	Add.1	Add.2	Add.3			Basic	Add.1	Add.2	Add.3	

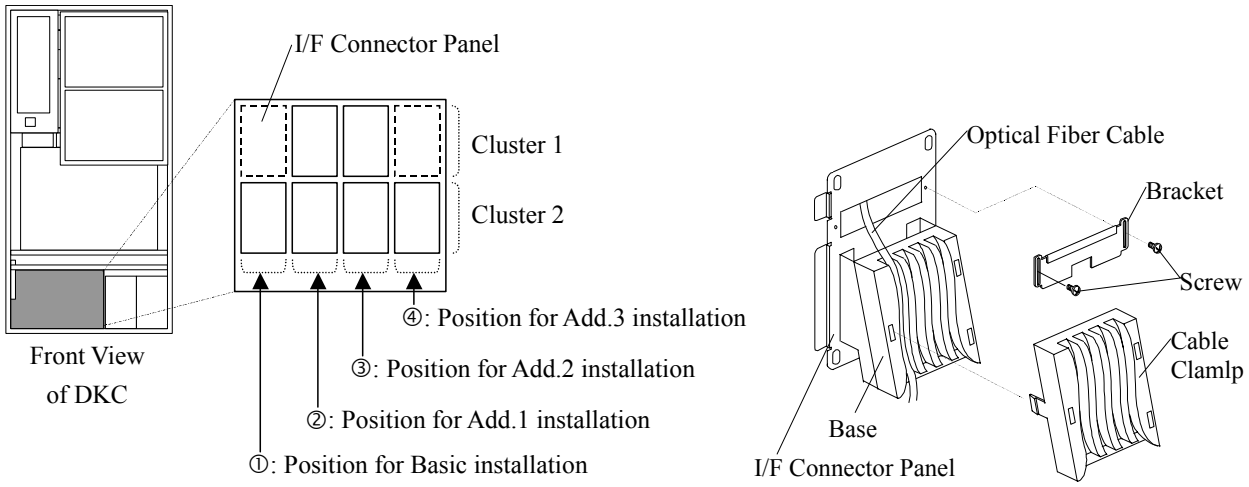

Fig 4.4.6-2 Removal of Bracket

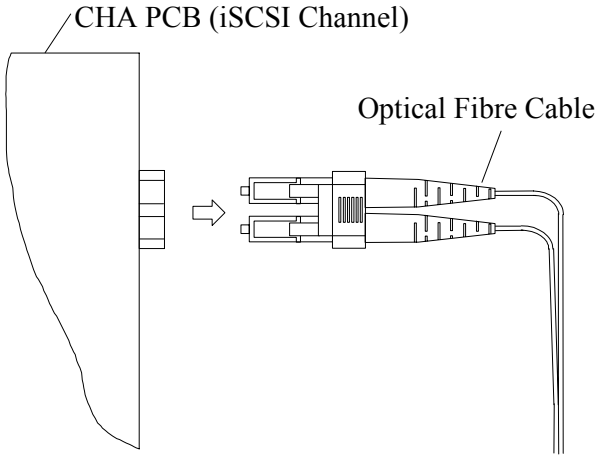

Fig. 4.4.6-3 Disconnection of Optical Fibre Cable

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3-3 Removal of the PCBs

a. Remove the two screws and remove the PCBs from the correct locations in the Front Logic Box referring to Fig. 4.4.6-4.
b. Attach the dummy plates referring to Fig. 4.4.6-5.

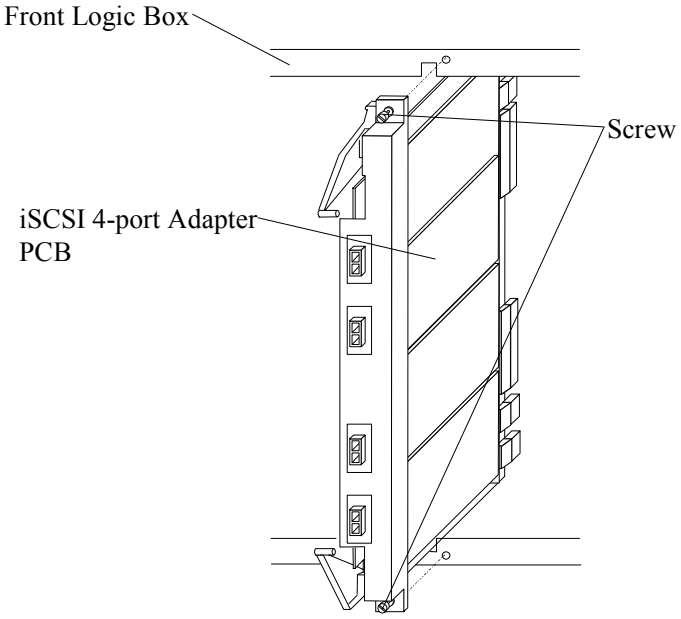

Fig. 4.4.6-4 Removal of PCB

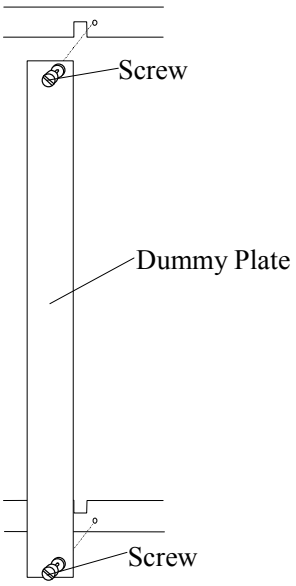

Fig. 4.4.6-5 Attachment of Dummy Plate

3-4 Removal of the Nameplate

a. Remove the nameplate referring to Fig. 4.4.6-6.

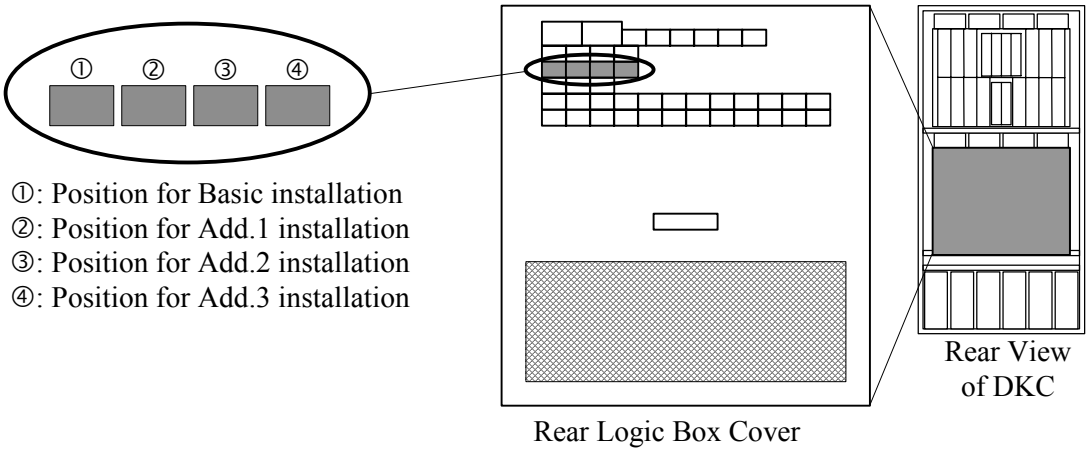

Fig. 4.4.6-6 Removal of Nameplate

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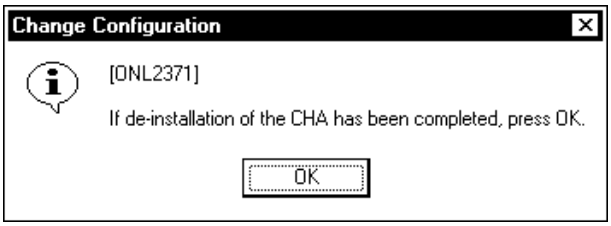
4. SVP post procedure

1.

Select (CL) [OK] in response to "If de-installation of the CHA has been completed, press OK." shown in the right figure.



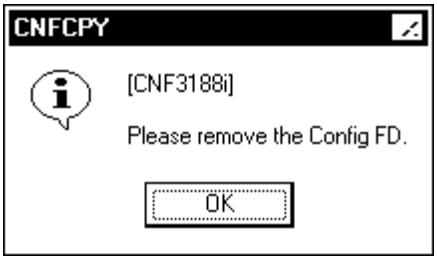
2. <Check the end of de-installation procedure>
"Renewal process has completed. Please check subsystem status." shown in the right figure displayed. Select (CL) [OK] in response to this message.

3.

"Reading subsystem configuration data..." is displayed.
"Please insert the Config FD in the FDD." is displayed.
Insert the configuration FD into FDD, select (CL) [OK].

4.

When this procedure is completed, message "Please remove the Config FD." is displayed.
Remove the FD, select (CL) [OK].



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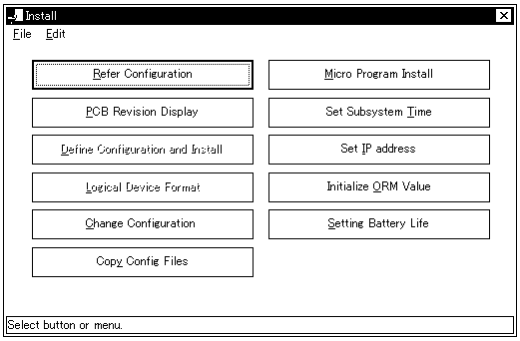
5.

After the procedure is completed, return to [Install].
Select (CL) [File]-[Exit].



6. <Mode Change>
Change the mode to View Mode.

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4.5 De-Installation of DKC Additional Power Supply (DKC-F460I-80)

Table 4.5-1 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKC-F460I-80	3VPS	5513969-A	4	PPD03130
					HS0429
		Nameplate (HDS)	2105902-123	1	RSD
			2105903-123		HICAM
			2105903-223		HICEF
		Nameplate (HP)	2105902-223	1	RSD
			2105903-323		HICAM
			2105903-423		HICEF

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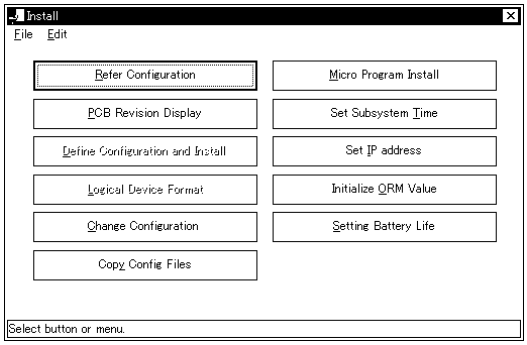
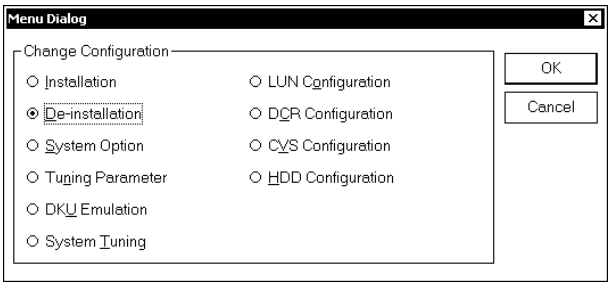
1. Setting up the New Device Structure Information

1. <Mode Change>
   Change the mode to Modify Mode.
   Select (CL) [Install].

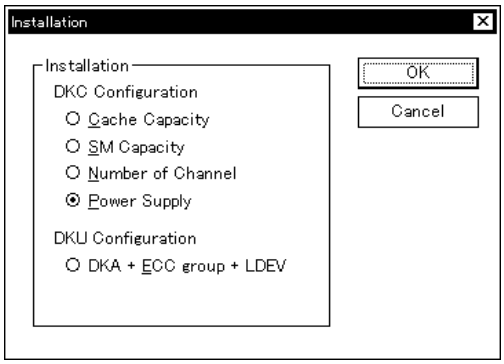
2. <Start the 'Menu Dialog' screen>
   Select (CL) [Change Configuration].



3. <Start Device Structure Setup screen>
   Select (CL) [De-Installation] in the 'Menu Dialog' dialog box and select (CL) [OK].



4. <Select a part to be changed>
   Select (CL) [Power Supply], and select (CL) [OK].



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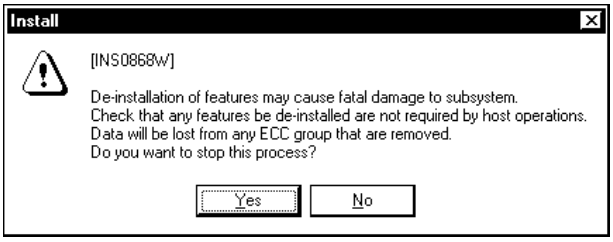
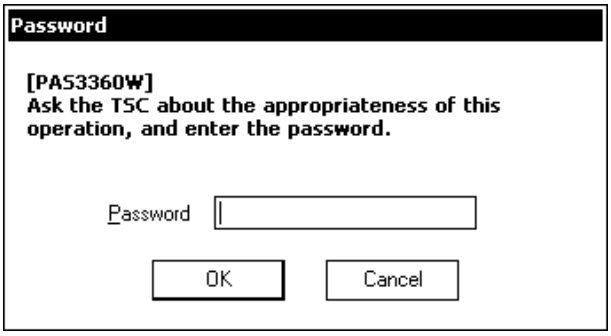
5.

Select (CL) [No] in response to “De-installation of features may cause fatal damage to subsystem. Check that any features be de-installed are not required by host operations. Data will be lost from any ECC group that are removed. Do you want to stop this process?”.



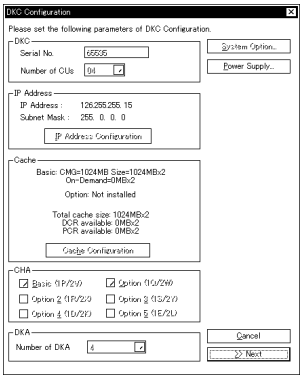
6. <Input password>
Enter the password and select (CL) [OK].



NOTICE
This is a special (exceptional) operation that can cause a serious failure such as a system down or a data loss if a wrong part to be removed is selected, and requires an input of a password. Ask the technical support center about the appropriateness of the operation, and input the password after getting an approval of executing the operation.

7. <Update Configuration Information>
Select (CL) [Power Supply] in the ‘DKC Configuration’ window.
Go to Step 7-1.

Make sure that the entered item is correct and select (CL) [>>Next].



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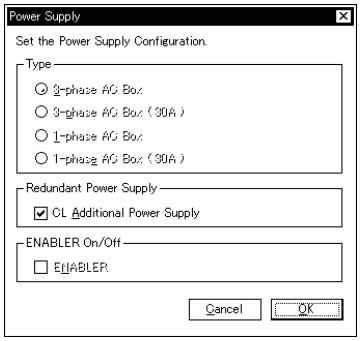
7-1. <Define Redundant Power Supply>
Select (CL) redundant power supply to be de-installed in the 'Redundant Power Supply' option box.
Select (CL) [OK]. Return to step 7.

Note: If the entered item is wrong, the part not to be installed or de-installed may be blocked.



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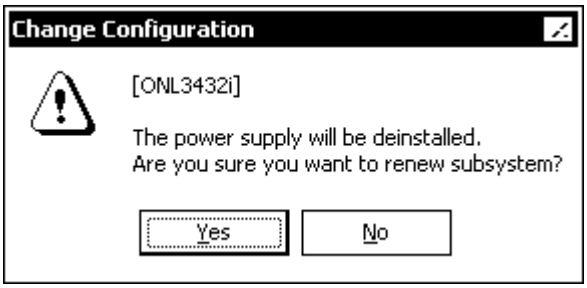
2. SVP pre procedure

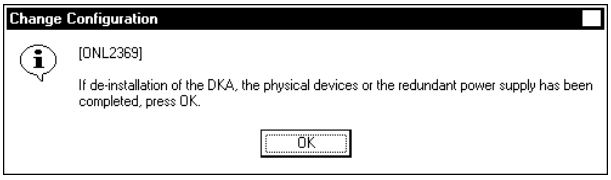
1. <Start de-installation>
   Select (CL) [Yes] in response to “The power supply will be deinstalled. Are you sure you want to renew subsystem?”.

   When [No] is selected (CL), returns to INST04-PS-20 step 3.



2.

   At this point refrain from pressing the [OK] button.
   “If de-installation of the CHA/DKA, the physical devices or the redundant power supply has been completed, press OK.”
   is displayed.



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3. De-Installation Procedure of DKC Additional Power Supply

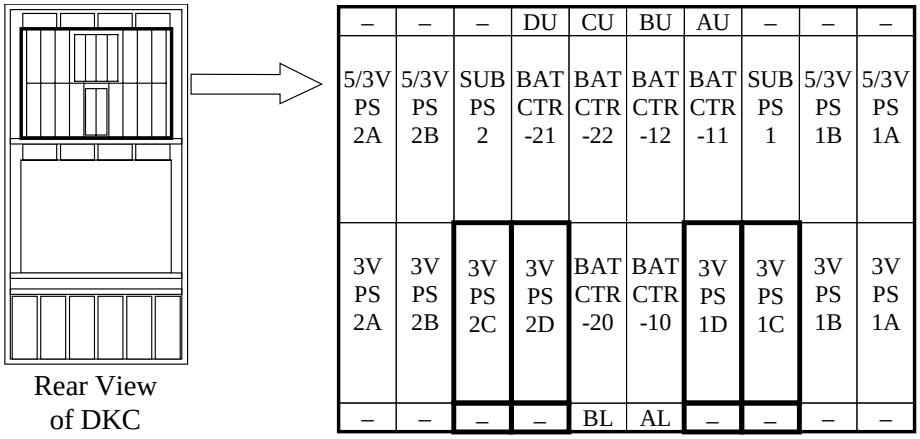
3-1 Turn off the Additional Power Supply

a. Turn the PS Enable/Disable Switch to (DOWN) **Disable**. Refer to Table 4.5-2 and Fig. 4.5-1.

> **⚠ CAUTION**
>
> A system down may be caused by setting the PS Enable/Disable switch of the switching power supply other than that to be removed to "Disable". Make sure that it is a switching power supply to be removed.

Table 4.5-2 Removal Location

No.	Part Name	PS Location		Remarks
		Cluster 1	Cluster 2	
1	3V Power Supply	3VPS1C	3VPS2C	
2	3V Power Supply	3VPS1D	3VPS2D	



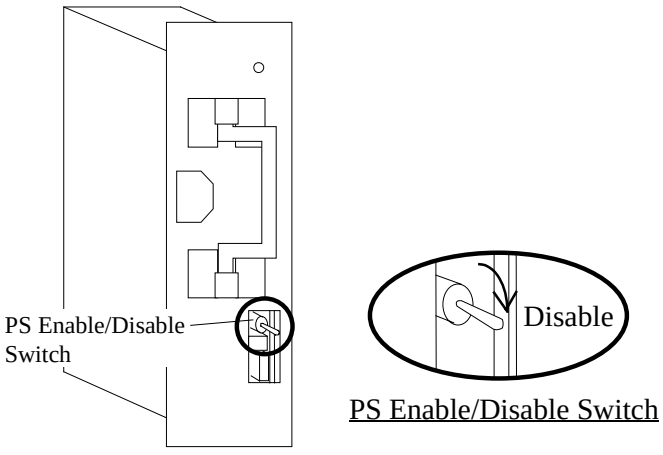


Fig. 4.5-1 Switch Location

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3-2 Disconnection of the inlet cable

a. Disconnect the inlet cables from the power supplies.

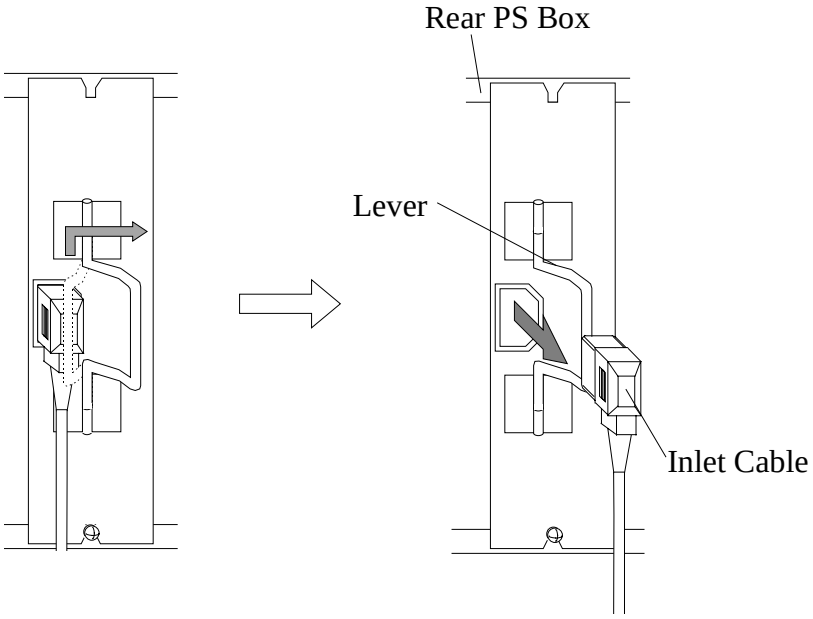

Fig. 4.5-2 Disconnection of Inlet Cable

3-3 Removal of the Additional Power Supply

a. Loosen the screws and remove the Additional Power Supplies. Refer to Fig. 4.5-3.
b. Attach the dummy plates to the removal locations and fasten the screws. Refer to Fig. 4.5-4.
c. Insert the removed inlet cables into respective dummy plates and secure them using cable clamps.

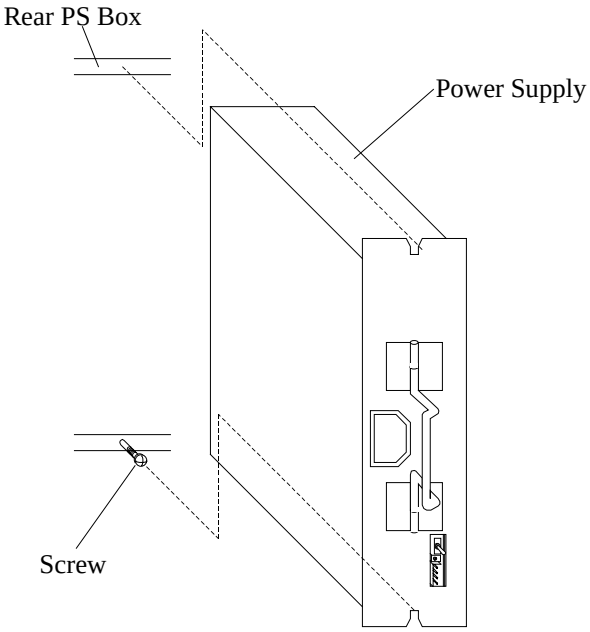

Fig. 4.5-3 Removal of Power Supply

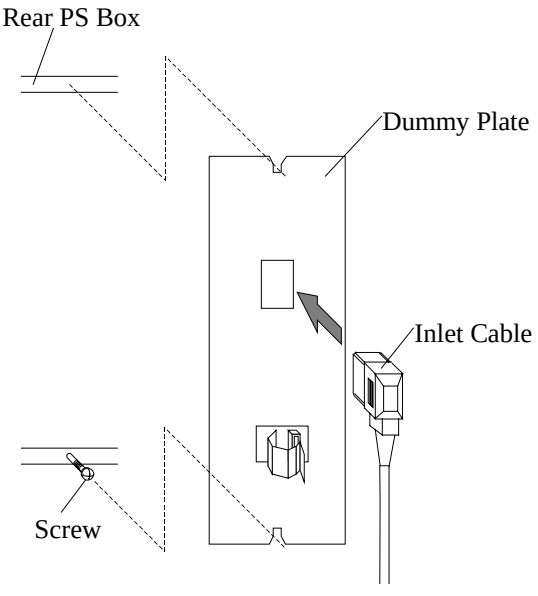

Fig. 4.5-4 Attachment of Dummy Plate.

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3-4 Removal of the nameplate

a. Remove the nameplate from the cover.

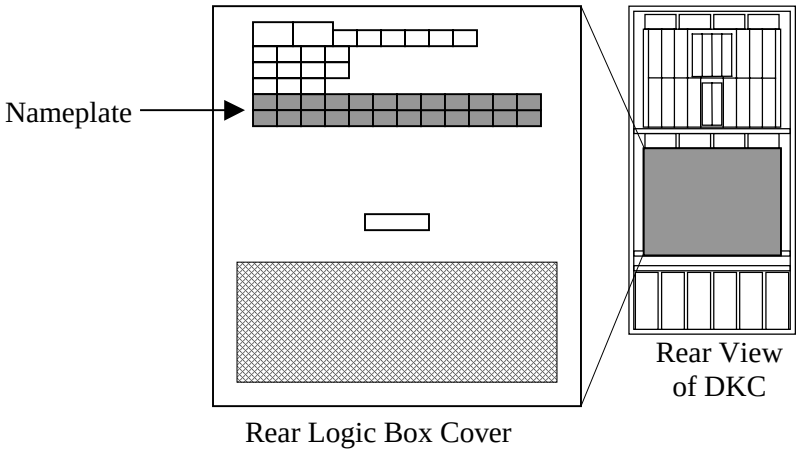

Fig. 4.5-5 Removal of Nameplate

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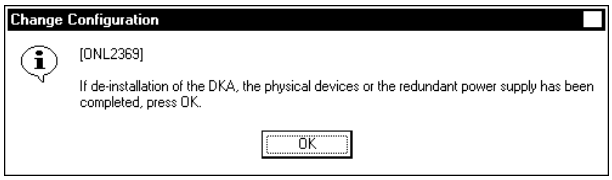
4. SVP post procedure

1.

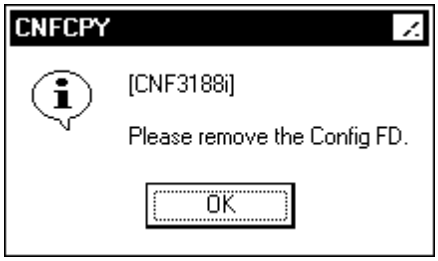
Select (CL) [OK] in response to "If de-installation of the CHA/DKA, the physical devices or the redundant power supply has been completed, press OK." shown in the right figure.



2. <Check the end of de-installation procedure>
"Renewal process has completed. Please check subsystem status." shown in the right figure displayed. Select (CL) [OK] in response to this message.

3.

"Reading subsystem configuration data..." is displayed. "Please insert the Config FD in the FDD." is displayed. Insert the configuration FD into FDD, and select (CL) [OK].



4.

When this procedure is completed, the message "Please remove the Config FD." is displayed. Remove the FD, and select (CL) [OK].

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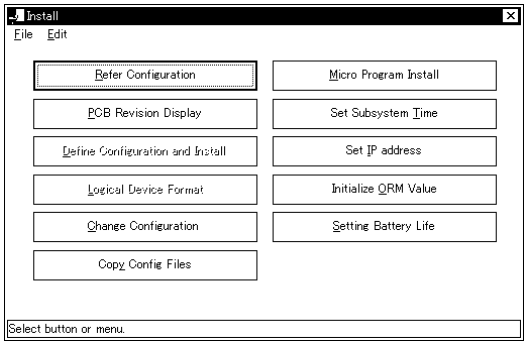
5.

After the procedure is completed, return to [Install].
Select (CL) [File]-[Exit].



6. <Mode Change>
Change the mode to View Mode.

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4.6 De-Installation of SVP High Reliability Kit (DKC-F460I-SVP)

Table 4.6-1 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKC-F460I-SVP	SVP ASSY	5513995-A	1	
		SVPPS BOX	5513997-A	1	
		Stopper (SVP-WR)	5515587-1	1	
		Rubber (SVP-WR)	5515588-1	1	
		Stopper (SVP-WF)	5515586-1	1	
		Screw	BS306N	4	
		Screw	SB408N	3	
		Screw (Stopper)	5513661-412	2	
		Hinge (SVP)	3254970-1	2	
		Nameplate (HDS)	2105902-105	1	RSD
			2105903-105		HICAM
			2105903-205		HICEF
		Nameplate (HP)	2105902-205	1	RSD
			2105903-305		HICAM
			2105903-405		HICEF

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1. Operating the Additional SVP
   When the basic SVP and Additional SVP are operating as a Master SVP and Standby SVP respectively, it is not required to operate the additional SVP. You may start from Item 2, "Operating the Basic SVP".

> **⚠ CAUTION**
> It is not a problem if a SIM (SIMRC = 7410ff, 7ff200, or 7ff201) occurs during execution of this procedure. Erase the SIM immediately.

1-1 <Procedure of SVP switching>

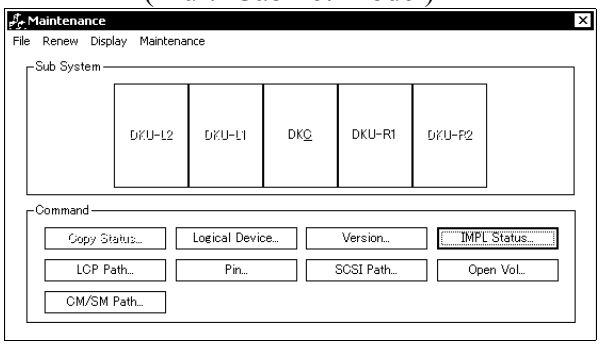
(1) <Change the mode>
Change the [Modify Mode].

(2) <Open the [Maintenance]>

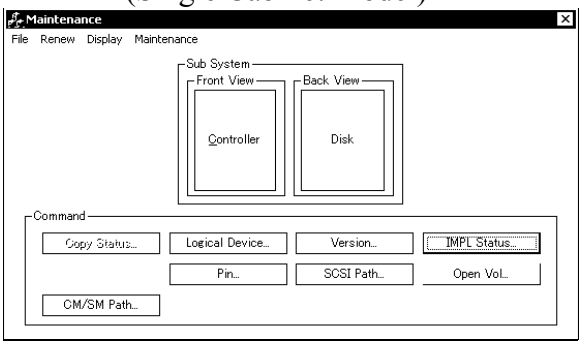
(Multi Cabinet Model)
In the 'Maintenance' window, check and select (CL) [DKC] to be replaced.

(Single Cabinet Model)
In the 'Maintenance' window, check and select (CL) [Controller] to be replaced.

(Multi Cabinet Model)



(Single Cabinet Model)



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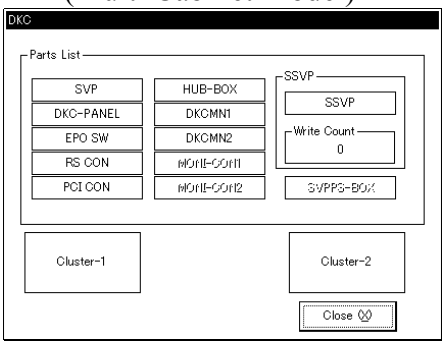
(3) <Open the [SVP] screen>

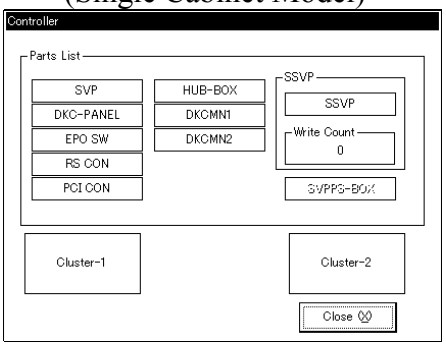
(Multi Cabinet Model)
Select (CL) the [SVP] from 'DKC' screen.

(Single Cabinet Model)
Select (CL) the [SVP] from 'Controller' screen.

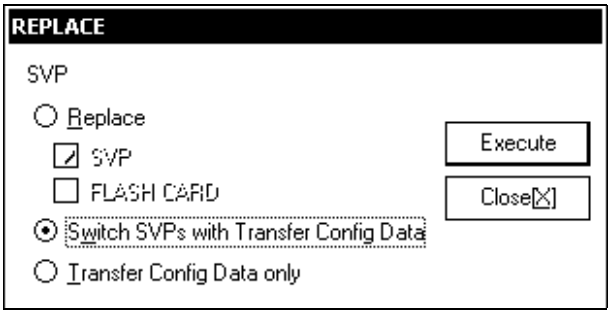
(Multi Cabinet Model)



(Single Cabinet Model)



(4) <Select the [Switch SVP]>
Select (CL) the [Switch SVP], and select (CL) the [Excute].



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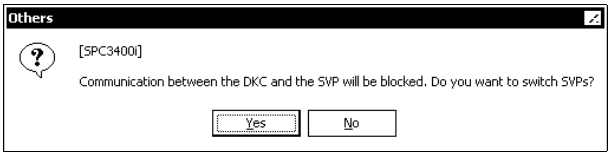
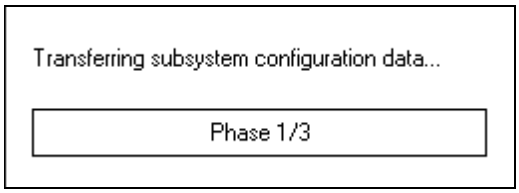
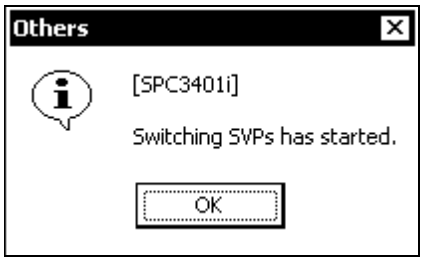
(5) <Execution>
Select (CL) [Yes].



(6) <Transfer status>
"Transferring subsystem configuration data…" in displayed.



(7) <Checking beginning of the SVP switching>
The message "Switching SVPs has started." is displayed. Make sure that the Additional SVP is powered off automatically.



(8) <Checking the SVP switching>
Make sure that the Basic SVP is powered on automatically. Also make sure that the SVP is rebooted automatically after it is powered on.

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2. De-Installation Procedure of SVP High Reliability Kit (1)

2-1 Disconnect the cables.

a. Disconnect the cable (P41) from the SVPPS BOX.
The other cables (P40, PS-BOX-1, PS-BOX-2) are not to be disconnected at this time, however.

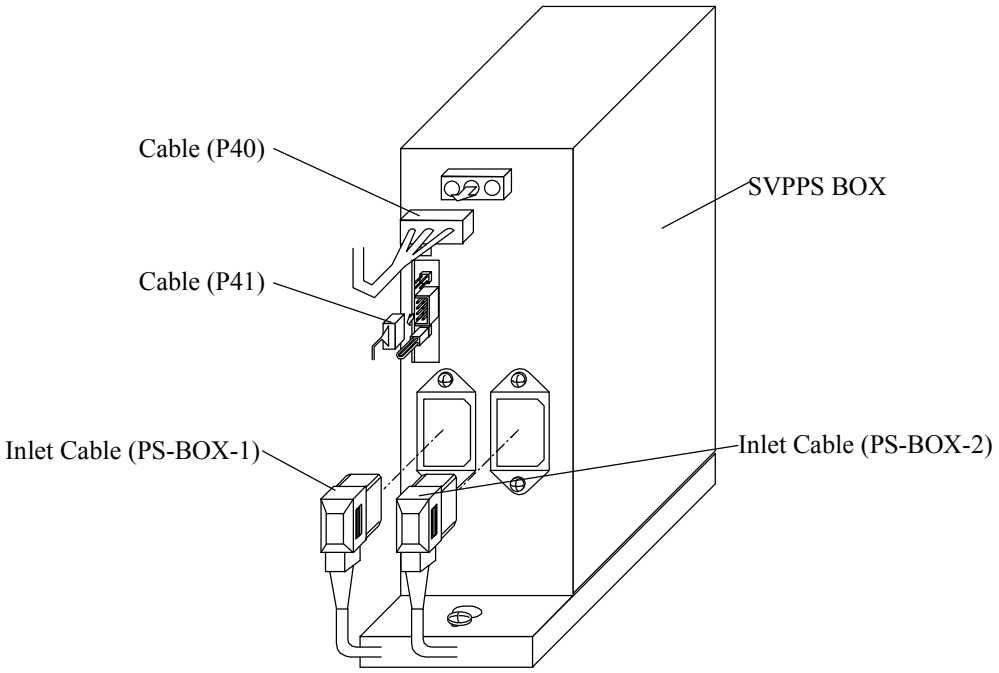

Fig. 4.6-1 Disconnection of Cables

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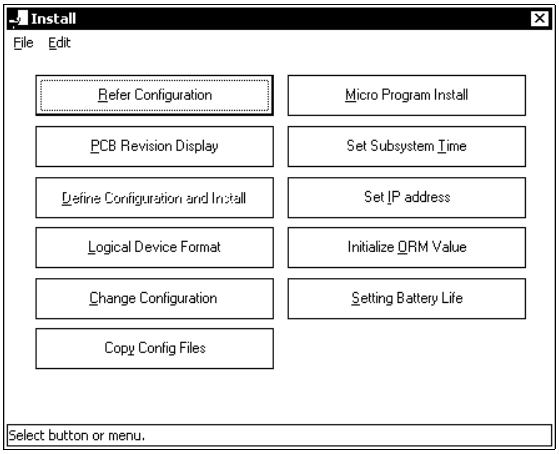
3. Operating the Basic SVP

3-1 Canceling the setting duplication of the Basic SVP

(1) <Changing the mode>
Change the mode by selecting [Modify Mode].

(2) <Opening the Install window>
Select (CL) [Install] from the [SVP] menu.

(3) <Selecting [Set SVP IP Address]>
Select (CL) [Set IP Address] in the Install window.



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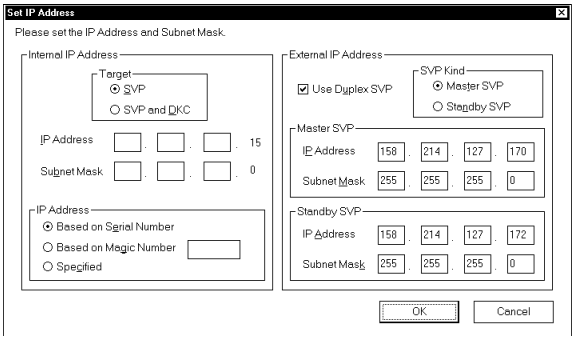
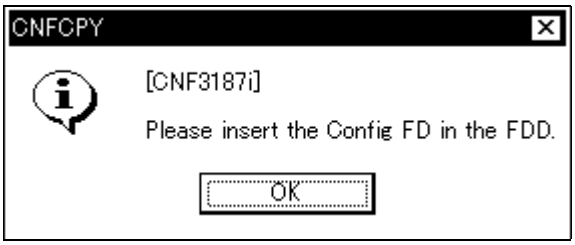
(4) <Canceling the setting of SVP duplication>

(a) Select Cancel (CL) the selection of the [Use Duplex SVP] in the External IP Address box. Select (CL) [OK].



(5) <Inserting the Config FD>

Insert the Config FD into the FDD and select (CL) [OK].

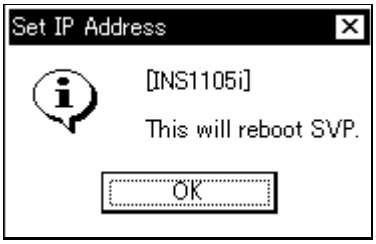


(6) <Removing the Config FD>

When the copying of the Config is completed, a message, “Please remove the Config FD.” is displayed. Remove the FD and select (CL) [OK].

(7) <Confirming rebooting of the SVP>

Select (CL) [OK].



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4. De-Installation Procedure of SVP High Reliability Kit (2)

4-1 Disconnect the cables.

a. Disconnect the cables (P40, PS-BOX-1, PS-BOX-2) from the SVPPS BOX.

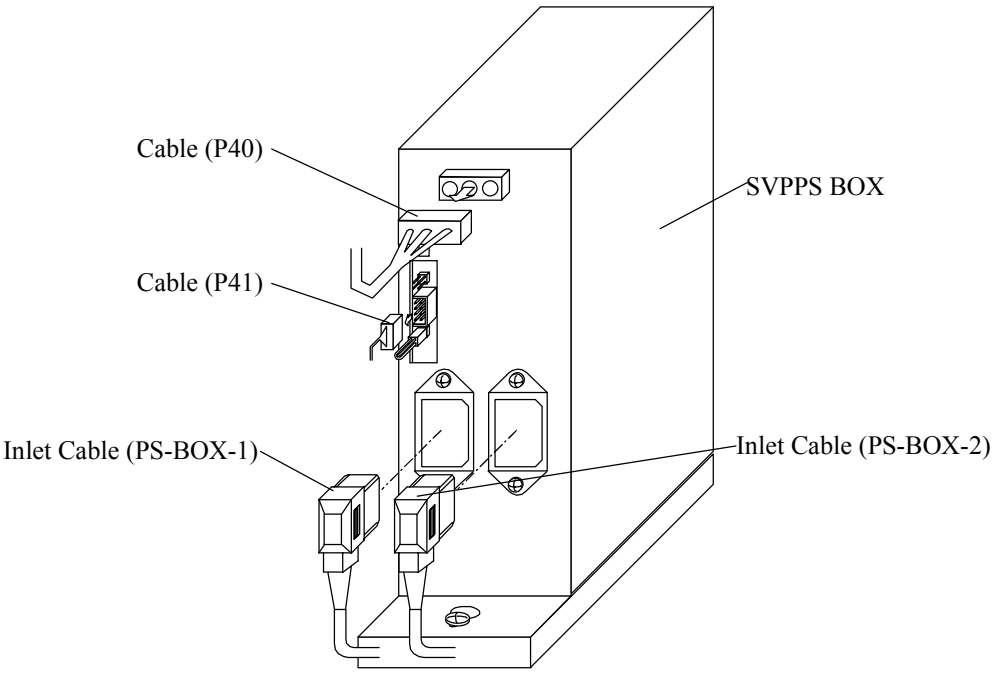

Fig. 4.6-2 Disconnection of Cables

b. Disconnect the LAN cable from the HUB BOX.

c. Disconnect the SVP PS cable from the CON plate.

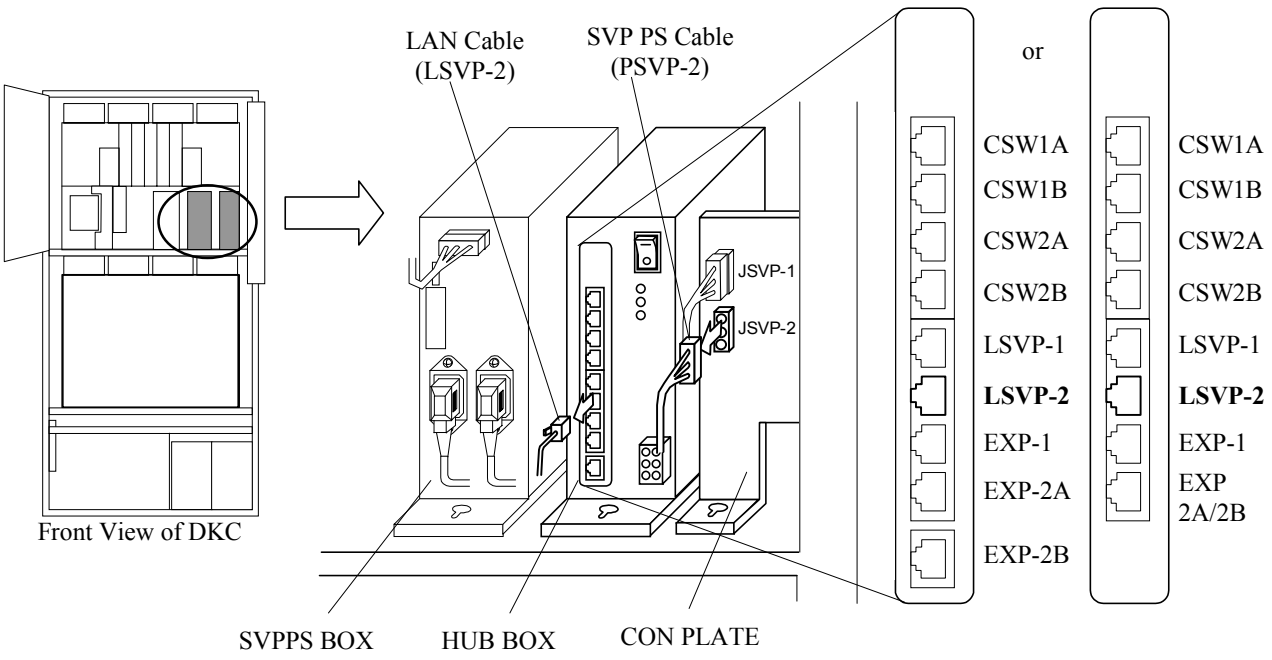

Fig. 4.6-3 Disconnection of Cables

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d. Disconnect the RS232C cable from the HUB BOX.

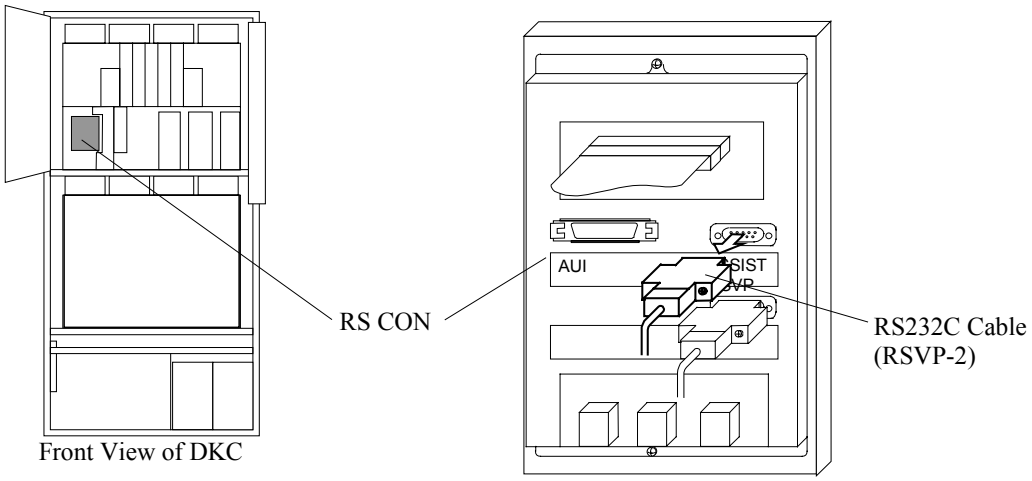

Fig. 4.6-4 Disconnection of Cables

4-2 Remove the cables.

a. Open the repeat binder and remove the cables.

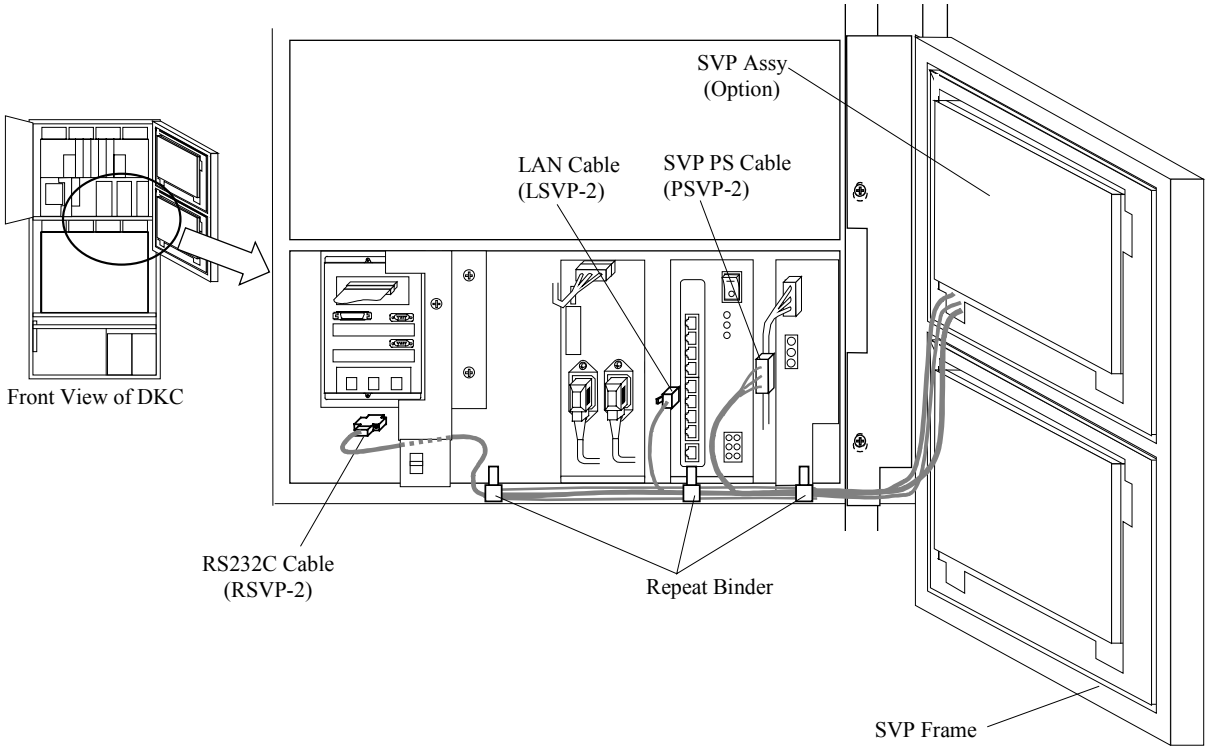

Fig. 4.6-5 Removal of Cables

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4-3 Remove the SVPPS BOX.

a. Loosen the screw and remove the SVPPS BOX.

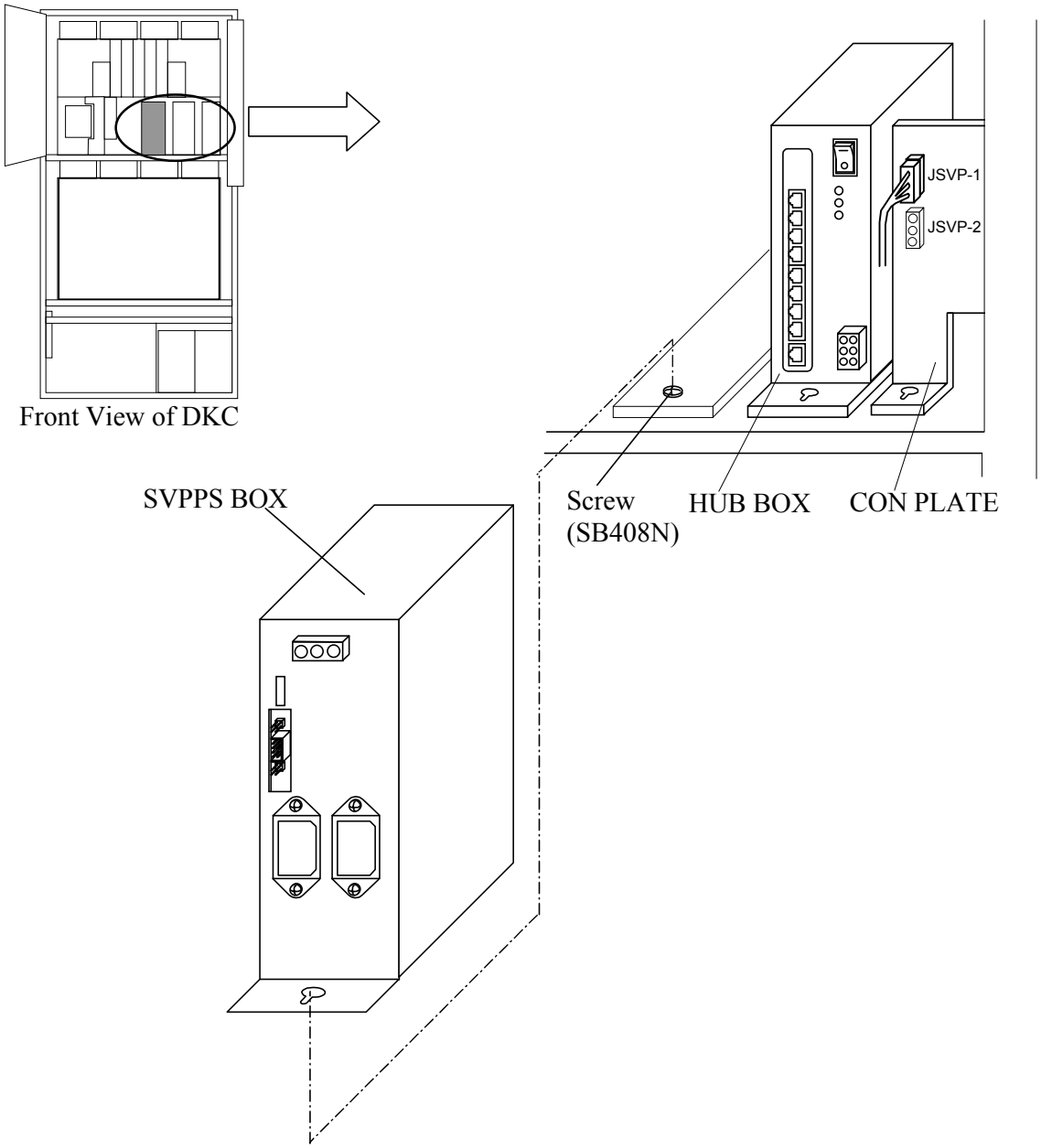

Fig. 4.6-6 Removal of SVPPS BOX

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4-4 Remove the SVP Assy.

a. Loosen the two screws and remove the SVP cover.
b. Loosen the screws and remove the stoppers
c. Pull out the SVP Assy from the cabinet.
d. Attach the SVP cover with the screws.

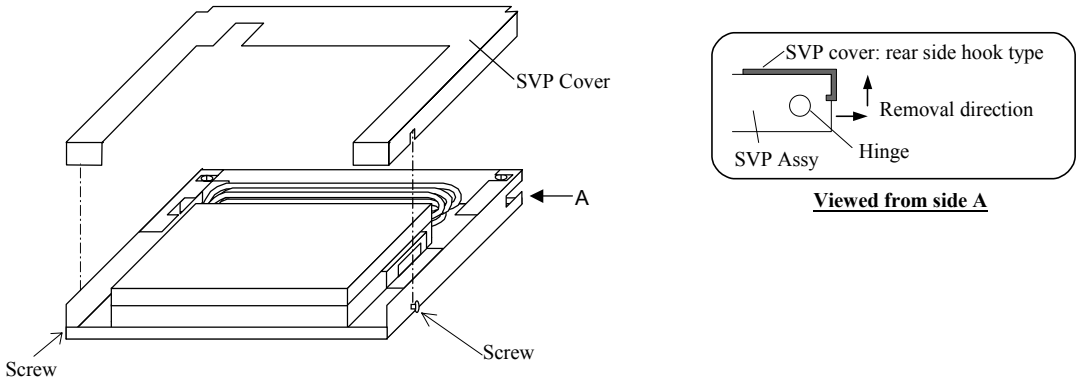

Fig. 4.6-7 Removal of SVP Cover

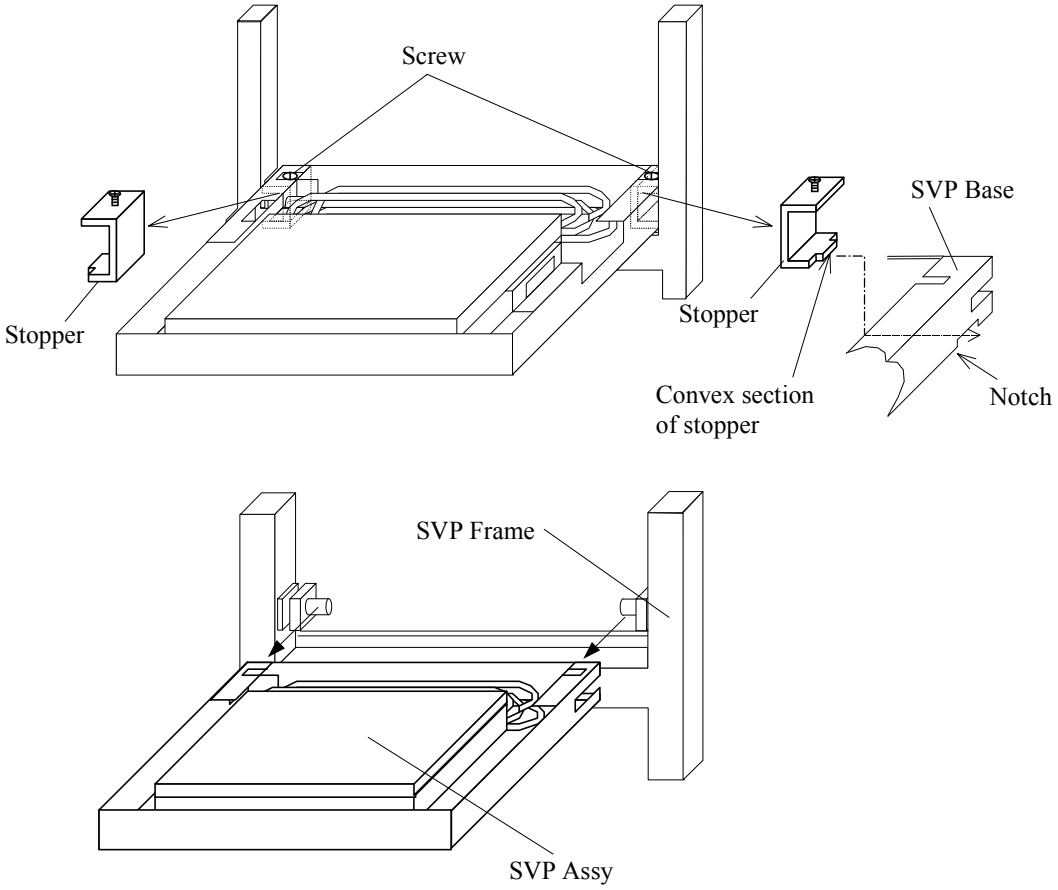

Fig. 4.6-8 Removal of SVP ASSY

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4-5 Remove the stopper.

a. Remove the two screws and remove the Stopper (SVP-WF).

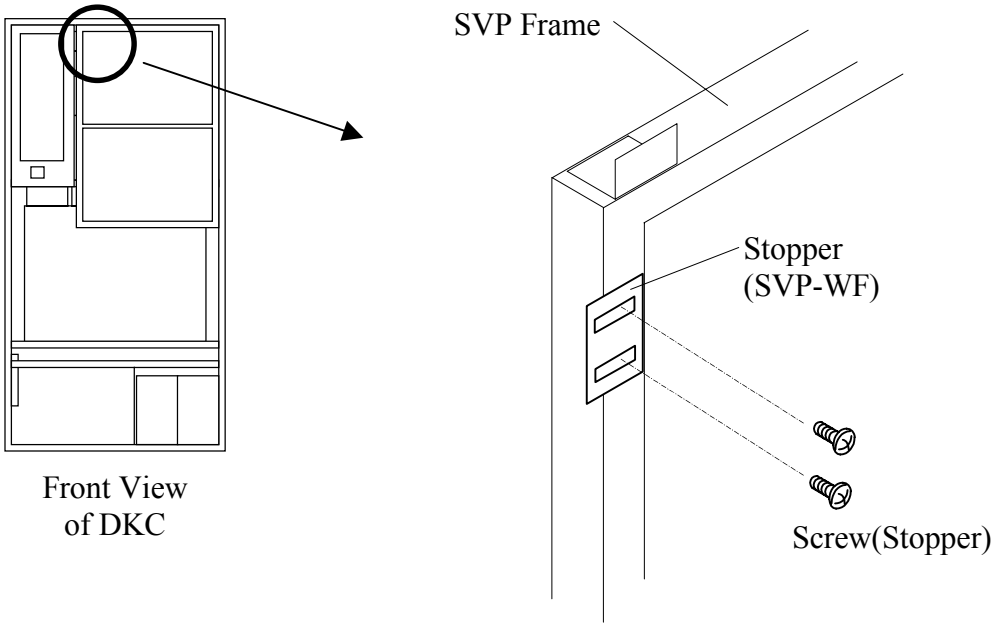

Fig. 4.6-9 Removal of Stopper

b. Remove the two screws and remove the Stopper (SVP-WR).

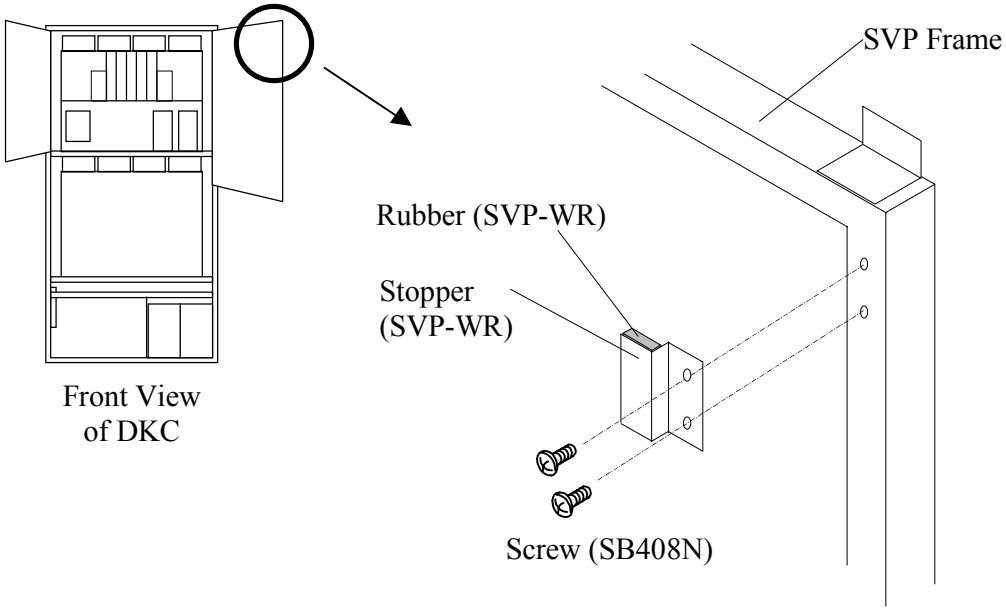

Fig. 4.6-10 Removal of Stopper

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c. Remove the four screws and remove the Hinges (SVP).

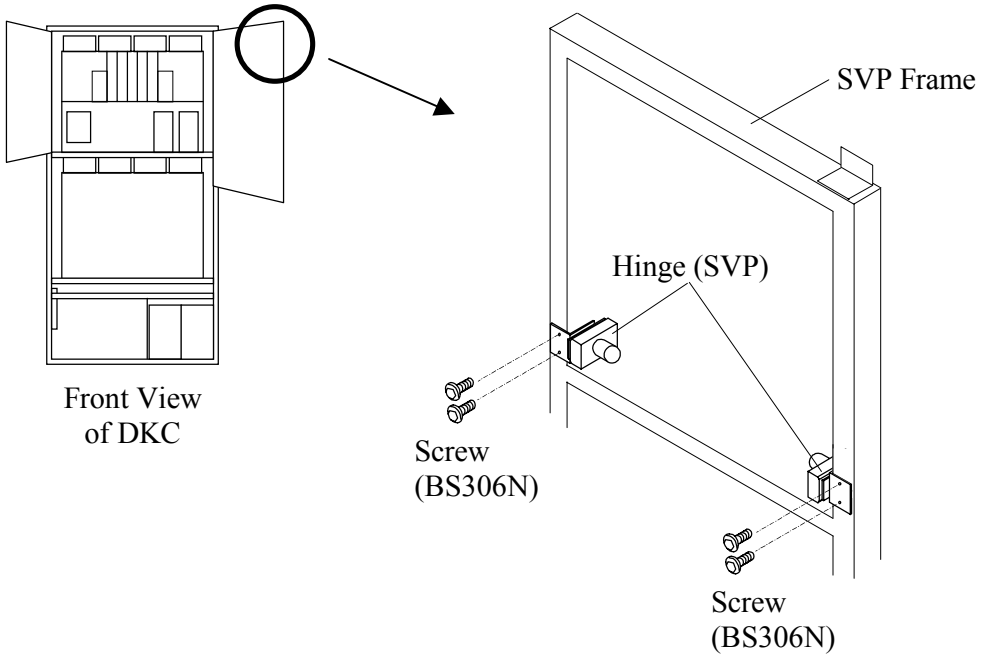

Fig. 4.6-11 Removal of Hinges

4-6 Remove the Nameplate.

a. Remove the nameplate from the Rear Logic Box cover.

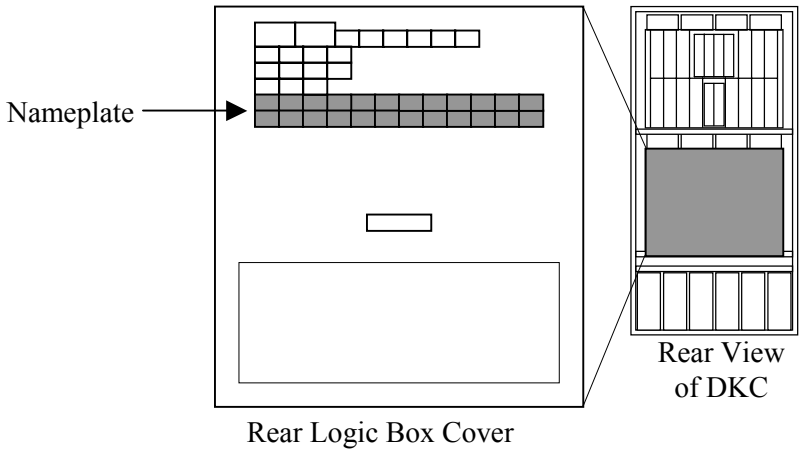

Fig. 4.6-12 Removal of Nameplate

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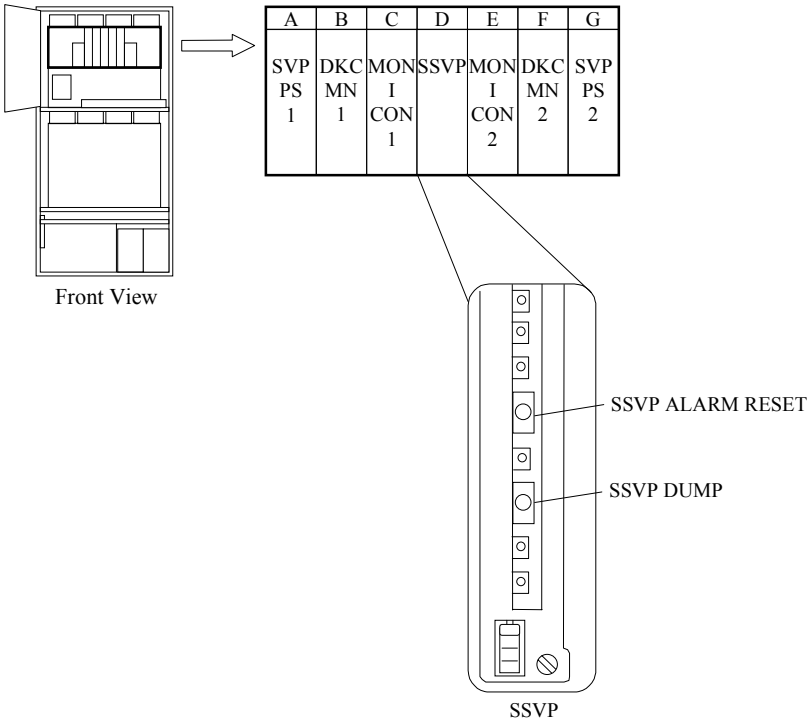
5. Executing SSVP Reset

5-1 Execute the SSVP reset by pressing the SSVP ALARM RESET switch.



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4.7 De-Installation of PCI I/F Connector (DKC-F460I-18)

Table 4.7-1 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKC-F460I-18	PCI CON	3257397-A	1	
		Bracket (460)	5517954-1	1	for DKC460I
		Bracket (465)	5513818-1	1	for DKC465I
		Nameplate (HDS)	2105902-104	1	RSD
			2105903-104		HICAM
			2105903-204		HICEF

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1. De-Installation Procedure of PCI I/F Connector

Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

1-1 Confirm that the REMOTE/LOCAL Switch of DKC Panel is set to LOCAL. If not, set the REMOTE/LOCAL Switch to LOCAL.

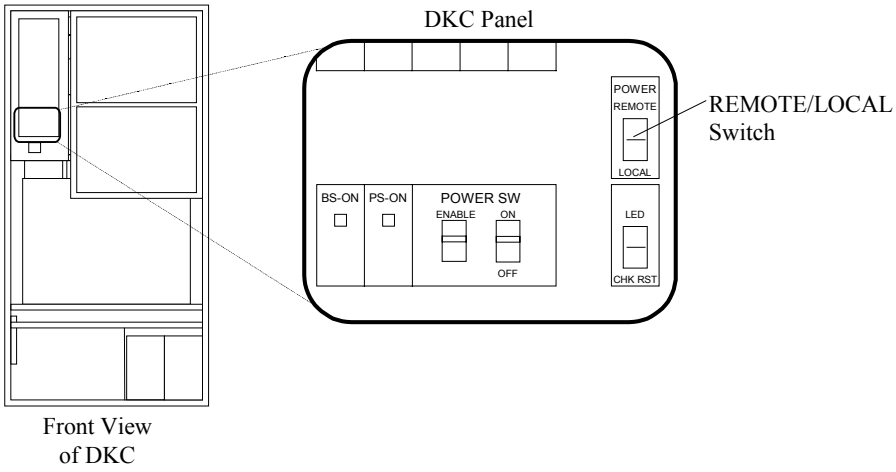

Fig. 4.7-1 Setting of REMOTE/LOCAL Switch

1-2 Connect the Maintenance jumpers to the socket on the DKCMN1 and DKCMN2.

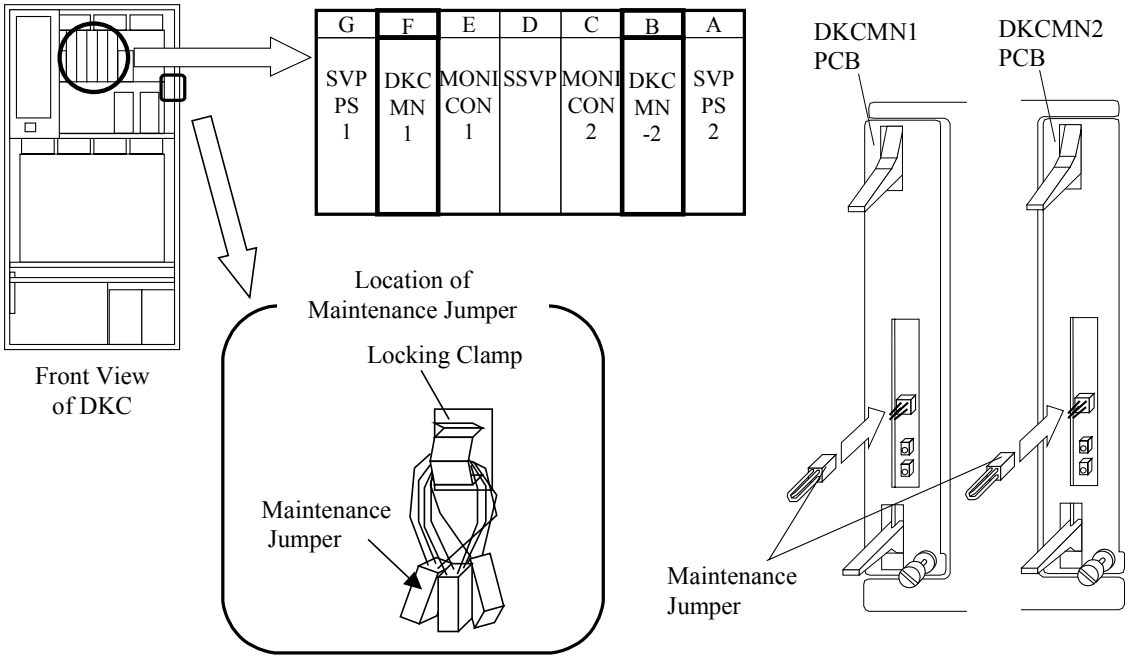

Fig. 4.7-2 Connection of Jumper Plug

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1-3 Set the jumper connectors (JP1 and JP2) of the PCI CON.

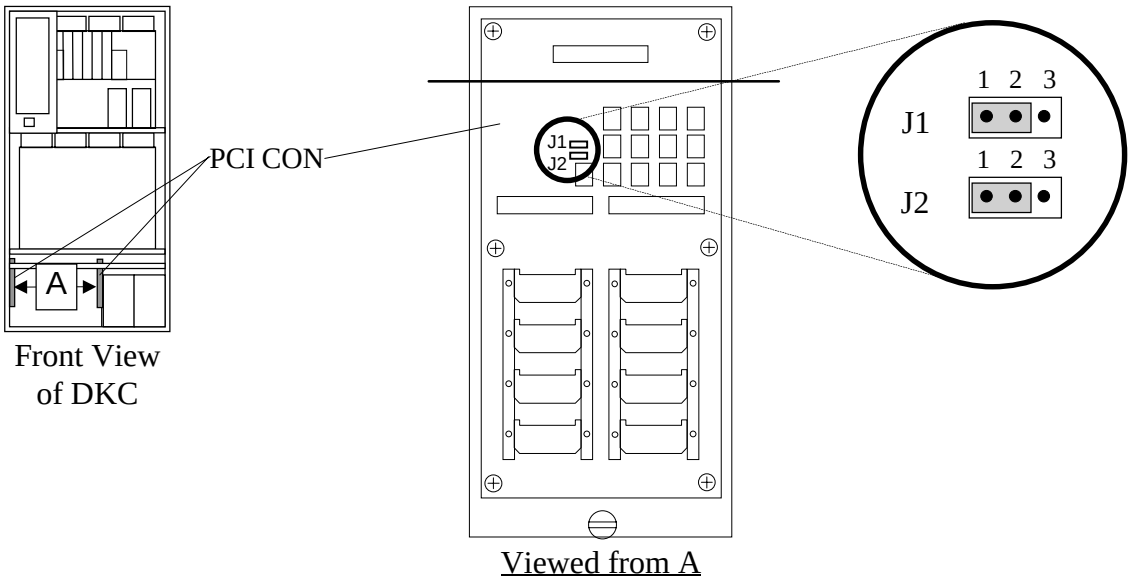

Fig. 4.7-3 Setting of Jumper Plug

1-4 Remove the PCI CON PCB.

a. Disconnect the cable.
b. Loosen the screw① and slide the plate.
c. Loosen the screw② and remove the PCI CON PCB.
d. Slide the plate and fasten the screw①.

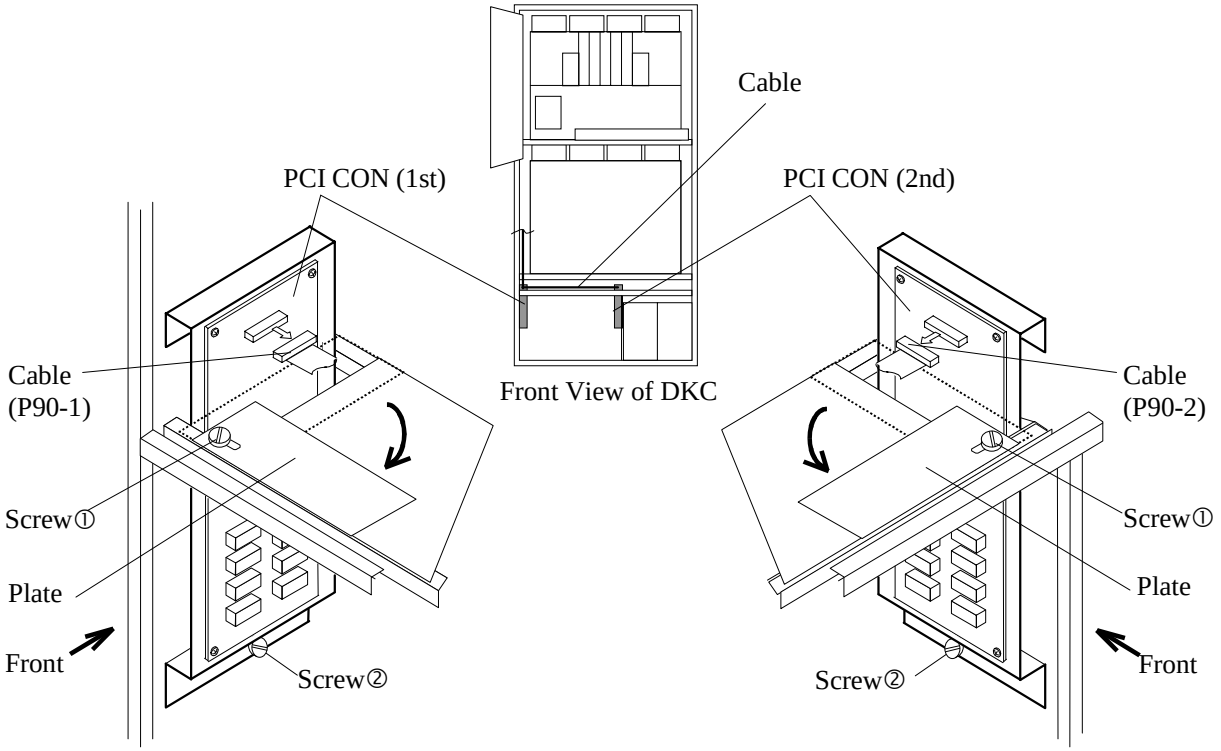

Fig. 4.7-4 Removal of PCI CON PCB

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e. Remove the screw and remove the bracket (460).
f. Attach the screw.

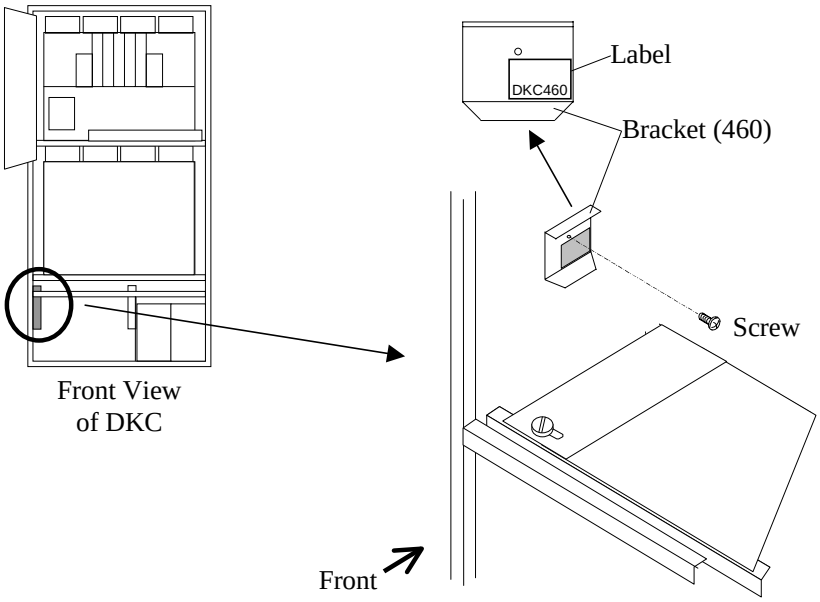

Fig. 4.7-5 Removal of Bracket

1-5 Disconnect the Maintenance jumpers from the socket on the DKCMNs.

1-6 Detach the nameplate.
a. Detach the nameplate from the cover.

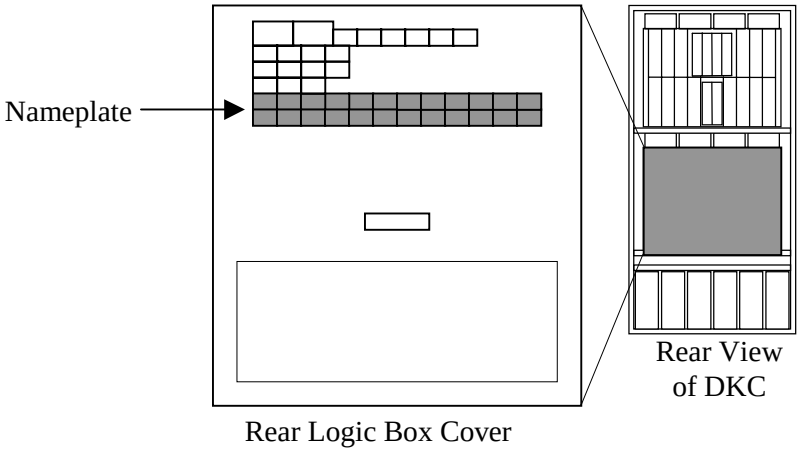

Fig. 4.7-6 Location of the Nameplate

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4.8 De-Installation of UPS Connection Kit (DKC-F460I-UPS)

Table 4.8-1 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKC-F460I-UPS	SH307-B	5513986-B	2	DKCMN
		SH298-A	5513547-A	1	UPS CON
		SH302-C	5513988-C	1	DKC Panel
		DSUB Cable	5485510-15	4	
		Cable	3261826-D	1	Label: PA-1 – P5
		Repeat Binder	5409042-2	2	Single Cabinet Model
		Bracket (460)	5517954-1	1	for DKC460I
		Bracket (465)	5513818-1	1	for DKC465I
		Nameplate (HDS)	2105902-114	1	RSD
			2105903-114		HICAM
			2105903-214		HICEF
		Nameplate (HP)	2105902-214	1	RSD
			2105903-314		HICAM
			2105903-414		HICEF

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1. De-Installation Procedure of UPS Connection Kit

Note: Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

1. Replace the DKC Panel.
   a. Loosen the screw. Pull the plate forward, then lift up and remove it.

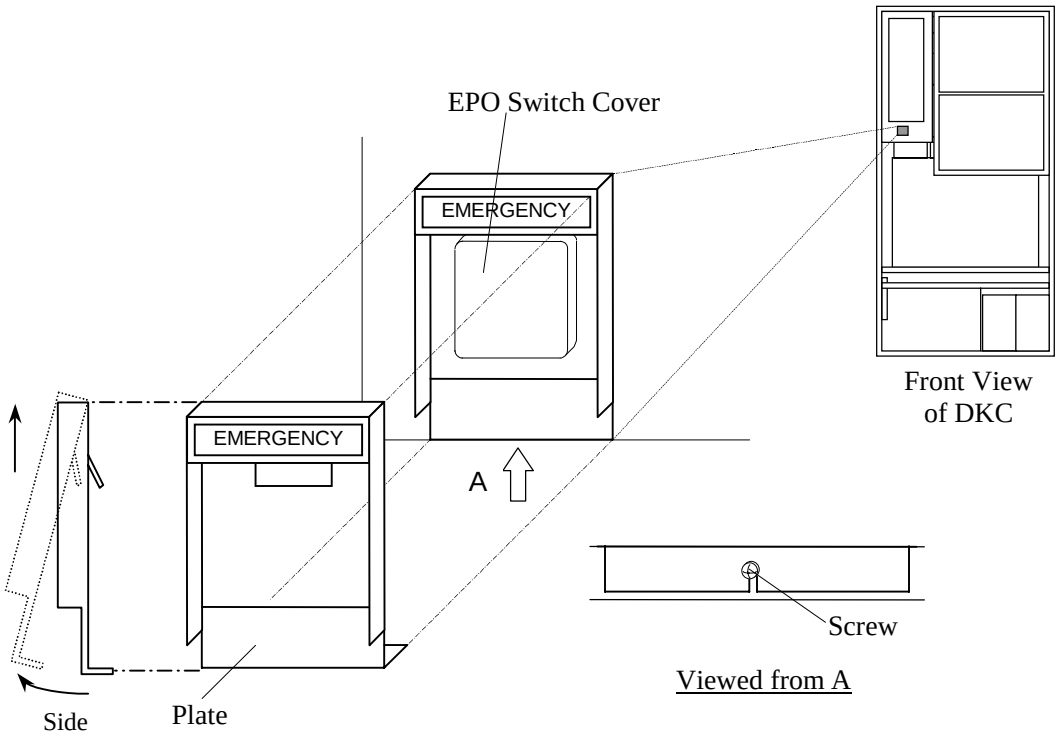

Fig. 4.8-1 Removal of Plate

   b. Remove the EPO Switch cover.

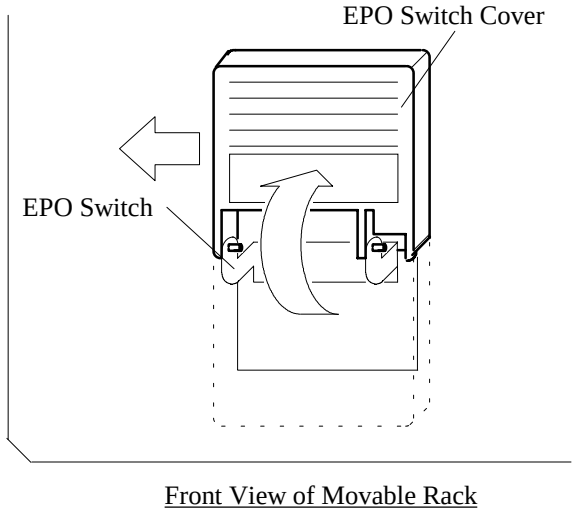

Fig. 4.8-2 Removal of EPO Switch Cover

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c. Loosen the three screws and remove the plate.

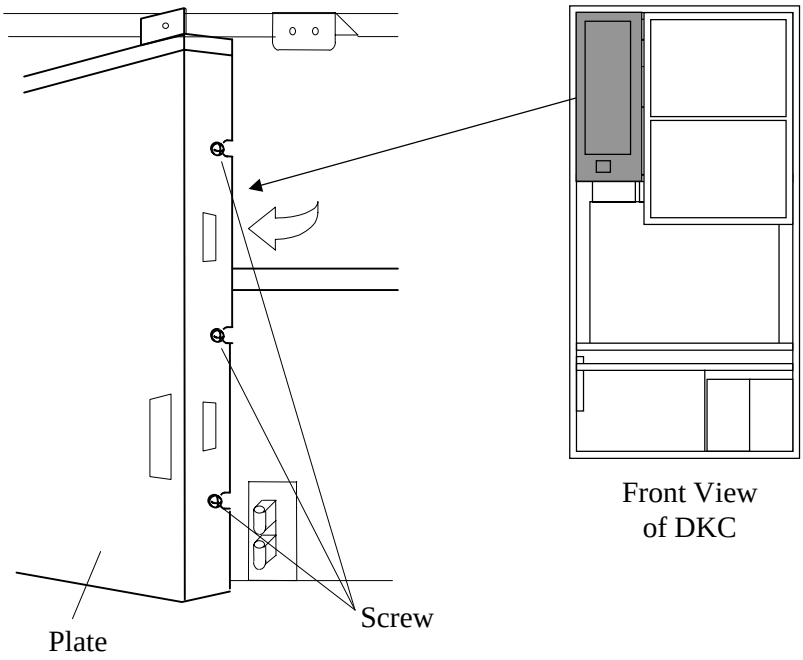

Fig. 4.8-3 Removal of Plate

d. Disconnect the cables from the DKC Panel PCB.
e. Loosen six screws and remove the DKC Panel PCB for UPS.
f. Install the DKC Panel PCB, which is a basic component, by fastening it with the screws.
g. Connect the cables to the PCB.

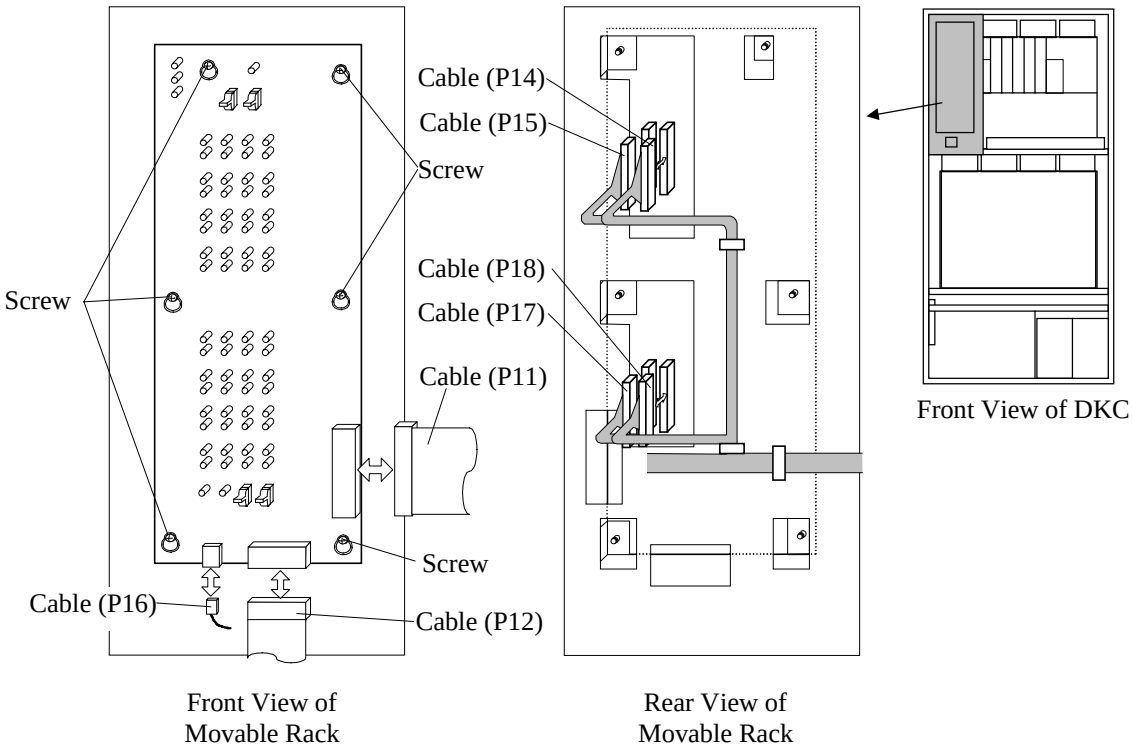

Fig. 4.8-4 Removal of PCB

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h. Attach the plate to the Movable rack and fasten the three screws. Refer to Fig. 4.8-3.
i. Attach the EPO Switch cover. Refer to Fig. 4.8-2.
j. Attach the plate and fasten the screw. Refer to Fig. 4.8-1.

2. Replace the DKCMN.
   a. Disconnect the cable from the DKCMN PCB.
   b. Loosen the screw and remove the DKCMN PCB for UPS.

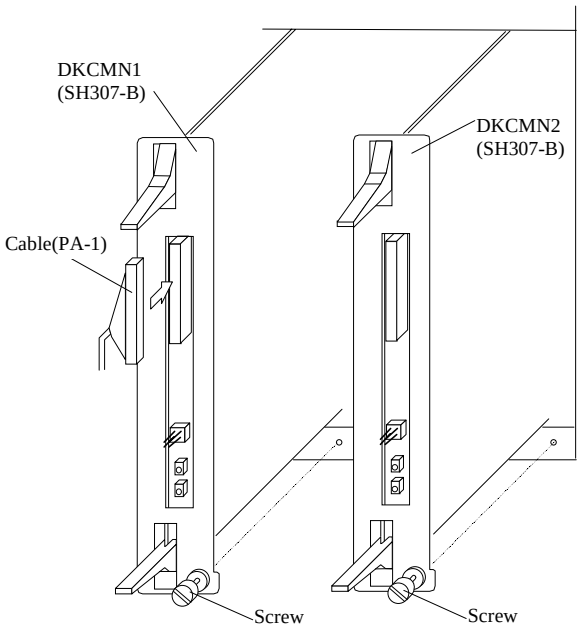

Fig. 4.8-5 Removal of DKCMN for UPS

   c. Install the DKCMN PCB, which is a basic component, by fastening it with the screw.

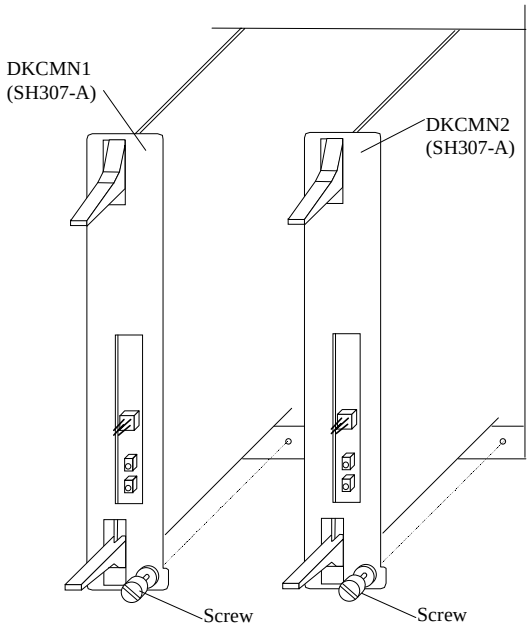

Fig. 4.8-6 Installation of DKCMN (Basic Component)

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3. Disconnect the DSUB Cables.
   a. Disconnect the DSUB cables from the UPS CON.

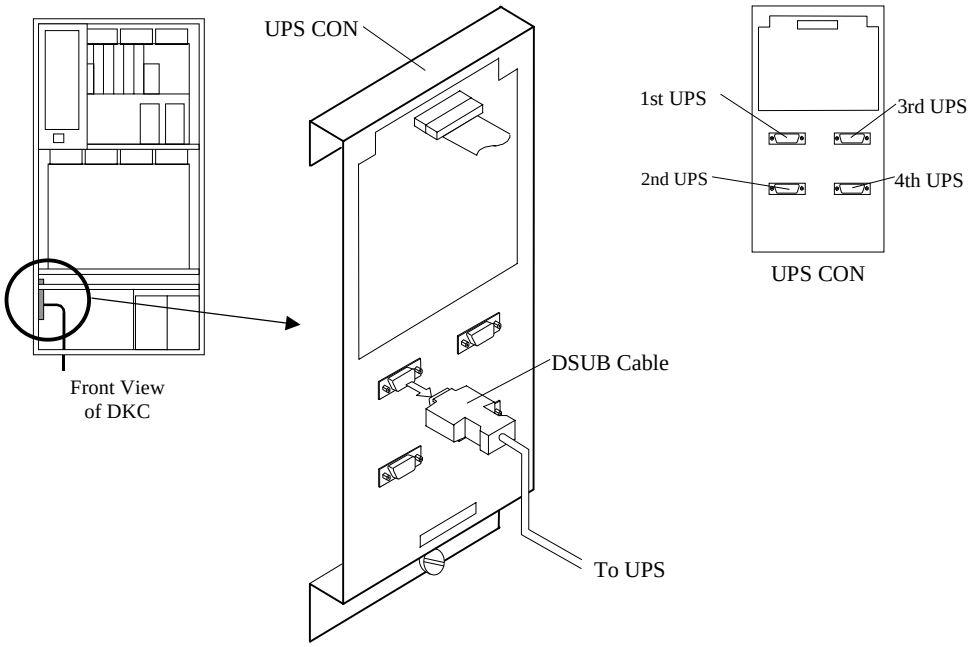

Fig. 4.8-7 Disconnection of DSUB Cables

4. Remove the UPS CON.
   a. Loosen the screw① and remove the screw② from the base plate.
   b. Slide the plate and turn it using the screw① as an axis.
   c. Remove the cable(P5) from the UPS CON.
   d. Remove the UPS CON by loosening the screw③.
   e. Return the plate as it was and tighten the screws① and ②.

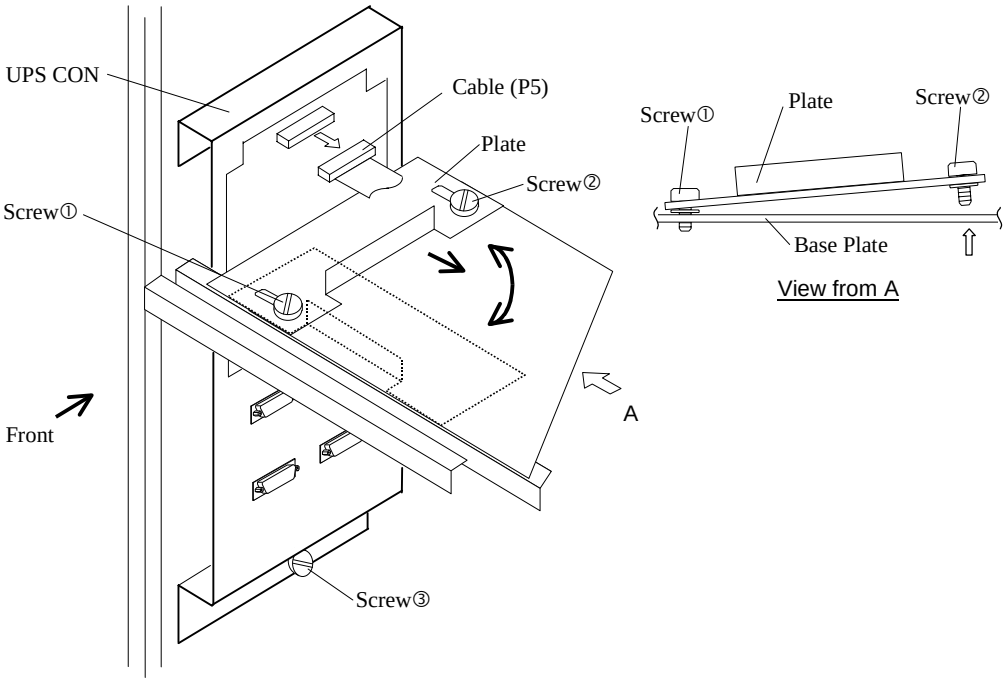

Fig. 4.8-8 Removal of UPS CON

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f. Remove the screw and remove the bracket (460).
g. Attach the screw.

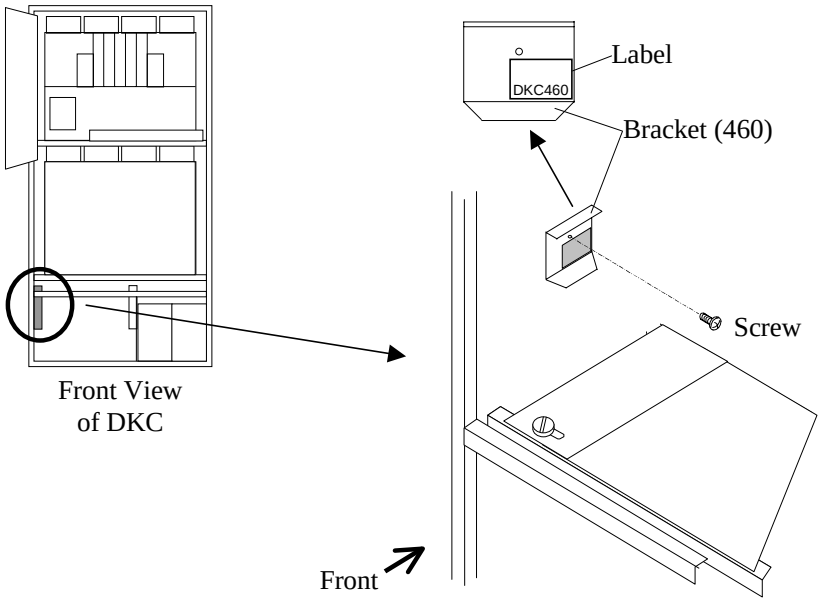

Fig. 4.8-8A Removal of Bracket

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5. Remove the Cable.
   a. Remove the Front Logic Box cover. (Refer to INST03-COM-10.)
   b. Loosen the screw① then remove the Upper SH Box cover.
   c. Loosen the two screws② then remove the SH side plate.
   d. Remove the two screws③ then remove the cable cover.
   e. Open the repeat binders and remove the cable from frame.
   f. Attach the covers in the reverse order of step d through a.

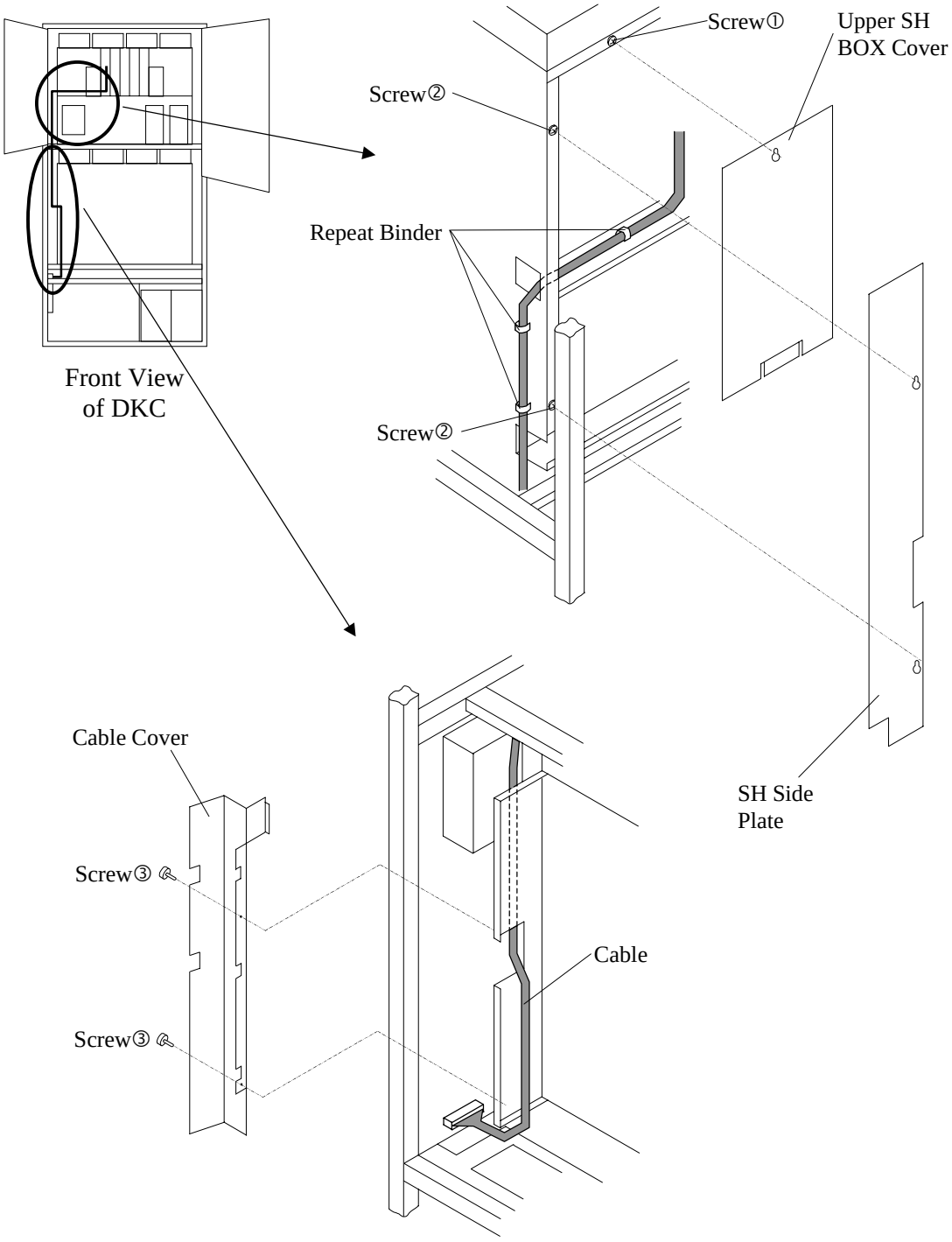

Fig. 4.8-9 Removal of Cable

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6. Connect the AC Power Cables.

3 Phase Model

> **⚠ CAUTION**
> Perform the UPS Connection Kit with care
> Perform this procedure before connecting the AC Power Cable.
> (Turn off the circuit breakers on the power distribution panel)
> Turn off the main circuit breakers (CB101) located in the AC Boxes.

a. Disconnect the AC power cables from the branch distribution box.

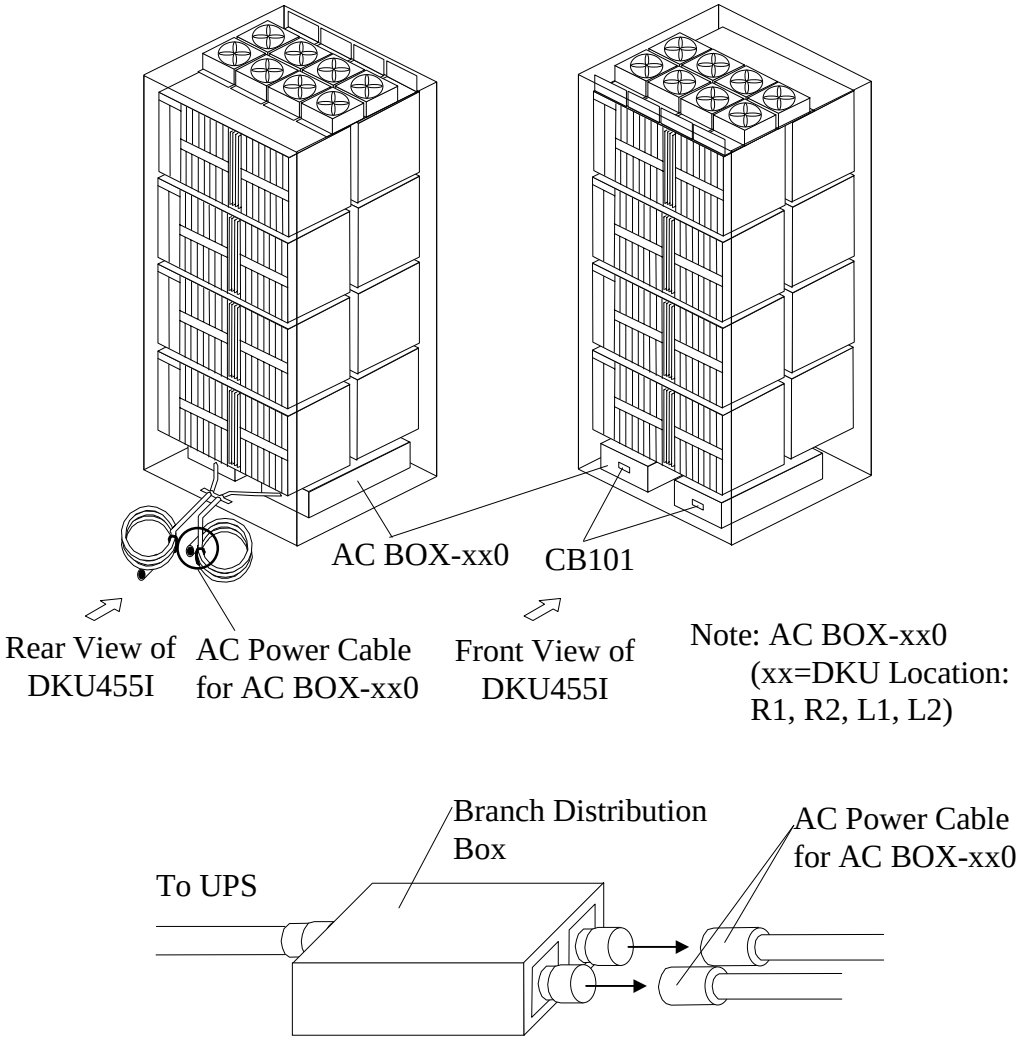

Fig. 4.8-10 Disconnection of AC Power Cables (3 Phase Model)

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Single Phase Model

CAUTION

Perform the UPS Connection Kit with care
Perform this procedure before connecting the AC Power Cable.
(Turn off the circuit breakers on the power distribution panel)
Turn off the main circuit breakers (CB200 and CB101) located in the AC Boxes.

a. Disconnect the AC power cables from the branch distribution box.

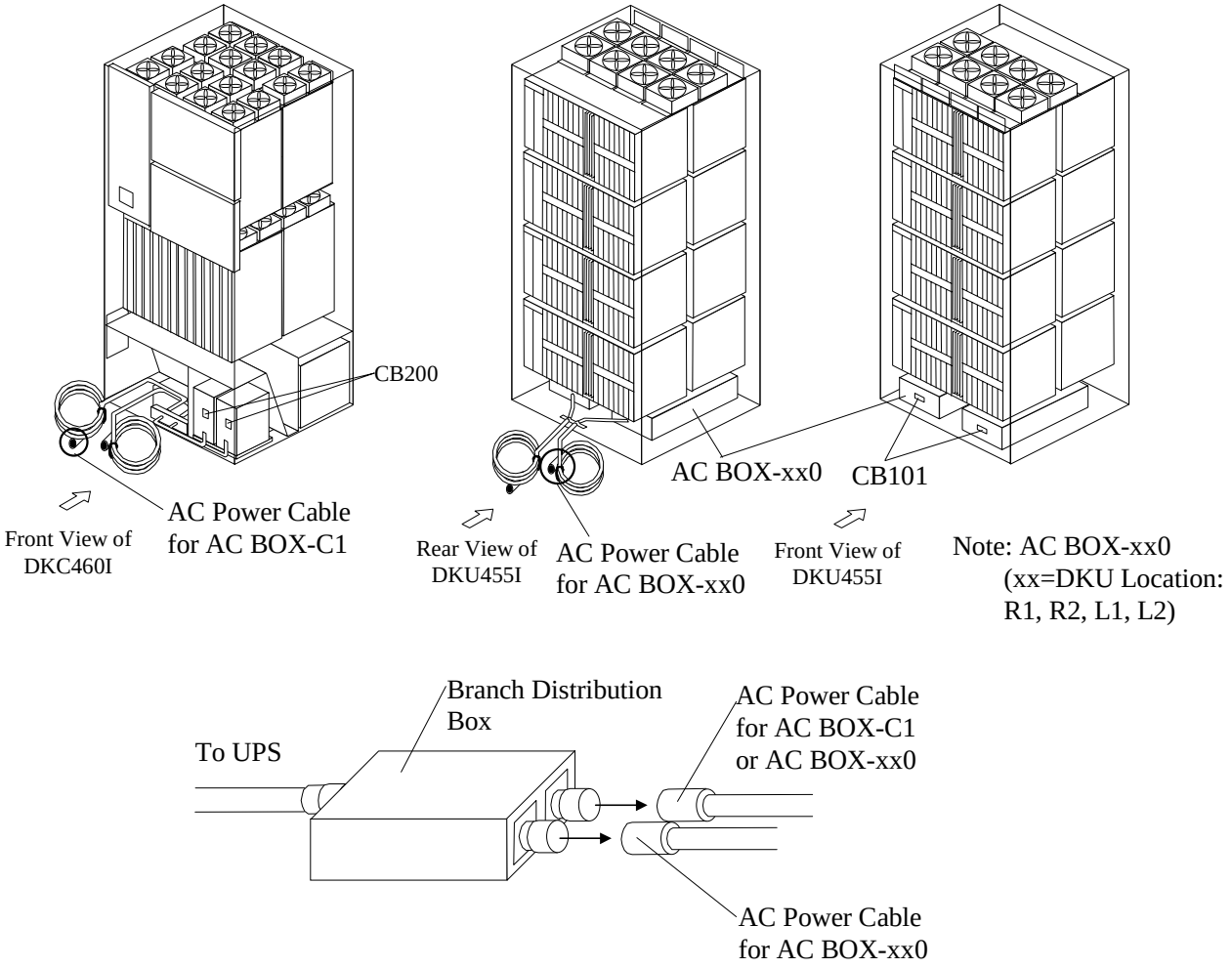

Fig. 4.8-11 Connection of AC Power Cables (Single Phase Model)

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b. Connect the AC power cables to the distribution board.

3 Phase Model

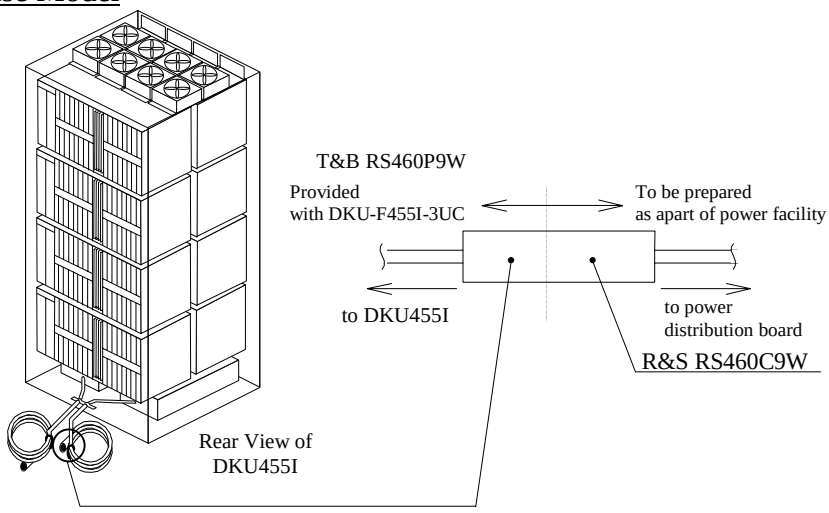
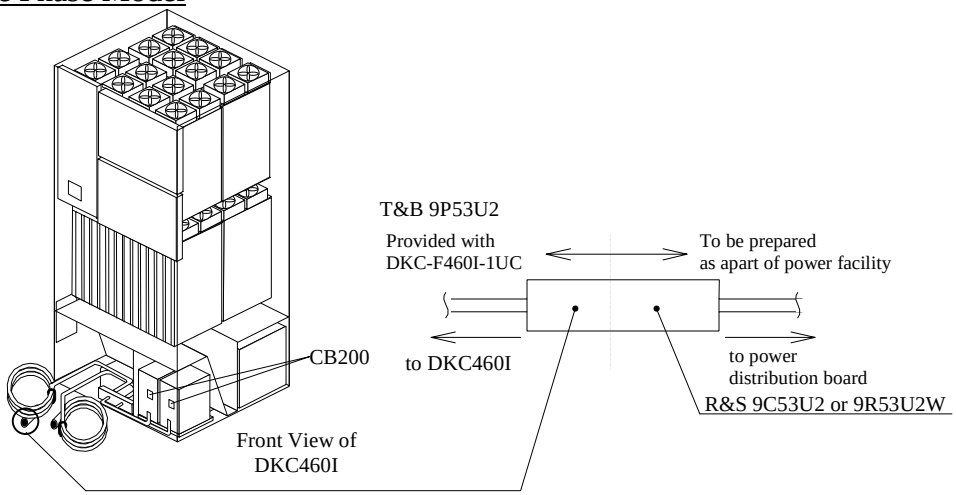


Fig. 4.8-12 Connection of AC Power Cables (3 Phase Model)

Single Phase Model



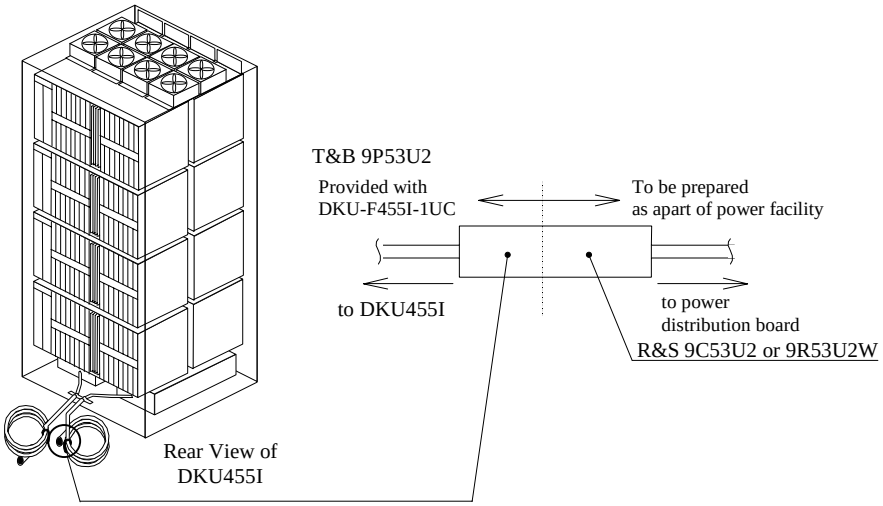


Fig. 4.8-13 Connection of AC Power Cables (Single Phase Model)

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7. Remove the Nameplate
   a. Remove the nameplate from the cover.

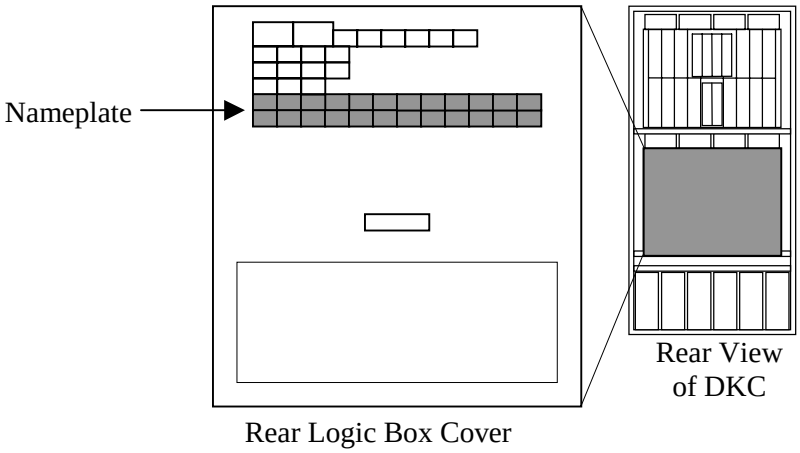

Fig. 4.8-14 Removal of Nameplate

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1-8 Overview

Change the following system option when the system operates.

<1> PS Off Timer ---------- The Destage time is effectively.

- OFF : The Destage time is effectively.
- ON : The Destage time is ineffectively, and change the Destage time.

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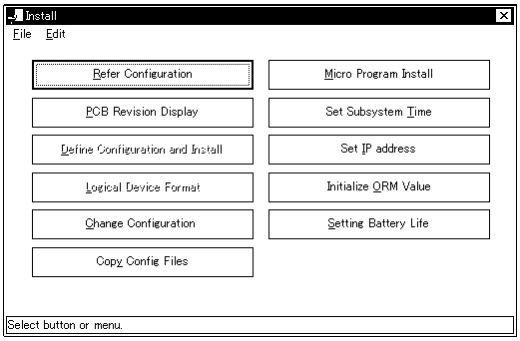
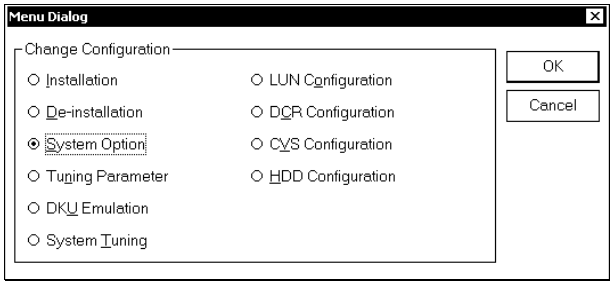
1-9 SVP procedure

(1) Select (CL) [Install].

(2) Select (CL) the [Change Configuration] menu in the 'Install' window.



(3) Select (CL) the [System Option] menu in the 'Menu Dialog' window and select (CL) [OK].



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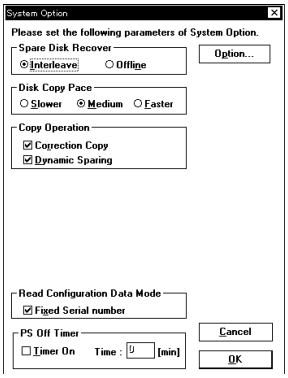
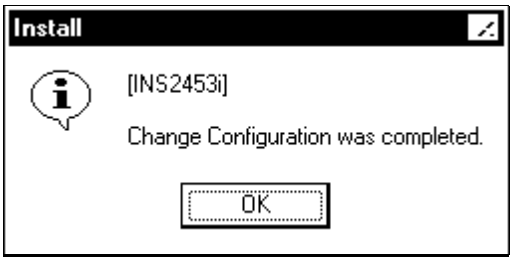
(4) Release [Timer On] check box in the column 'PS Off Timer', and then select (CL) [OK].



(5) "Loading configuration..." is displayed.

(6) "Change configuration was completed." is displayed.
Select (CL) [OK].



(7) "Reading subsystem configuration data..." is displayed.
"Please insert the Config FD in the FDD." is displayed.
Insert the configuration FD into FDD, select (CL) [OK].

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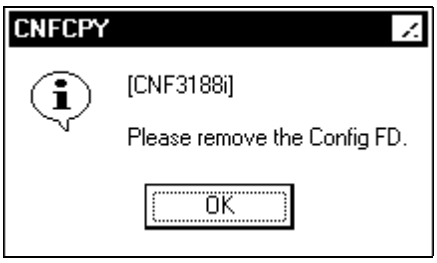
(8) When this procedure is completed, the message "Please remove the Config FD." is displayed. Remove the FD, select (CL) [OK].



(9) Close the 'Install' window.

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4.9 De-Installation of Power Cable Kit

4.9.1 De-Installation of Power Cable Kit for 3 Phase/60A or Single Phase/50A (DKU-F455I-1EC/1UC/3EC/3UC)

⚠ CAUTION

Perform The Power Cable Kit with care.
This Power Cable Kit is concerned with Primary Circuit.
Perform this procedure before connecting the Power Cable.
(Turn off the circuit breakers on the power distribution panel)
Turn off the main circuit breaker CB101 located in the AC Box.

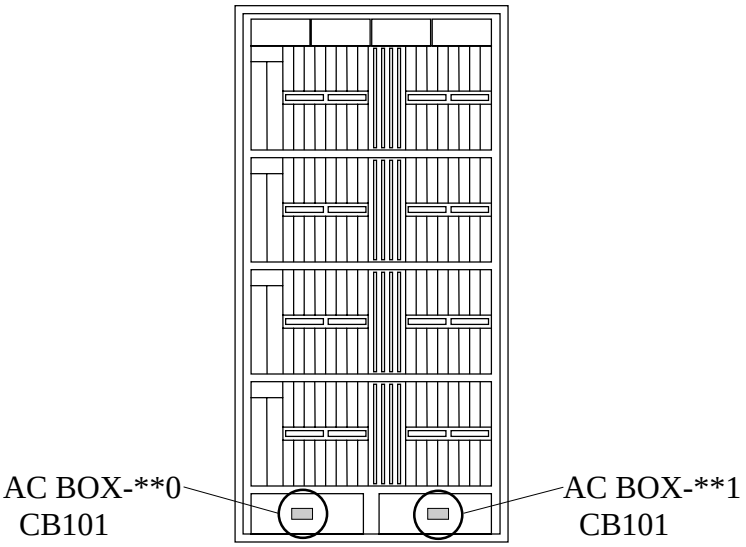

Fig. 4.9.1-1 Location of the Circuit Breakers

Table 4.9.1-1 Circuit Breakers

No.	Location No.	Breaker No.	Remarks
1	AC BOX-**0	CB101	
2	AC BOX-**1	CB101	

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Table 4.9.1-2 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKU-F455I-3UC	Power Cable Assy (IU)	3263010-A	1	
		Nameplate (HDS)	2105913-1/3	1	RSD/HICAM
		Nameplate (HP)	2105913-9/11	1	RSD/HICAM
2	DKU-F455I-3EC	Power Cable Assy (IE)	3263010-B	1	
		Nameplate (HDS)	2105913-2/4	1	RSD/HICEF
		Nameplate (HP)	2105913-10/12	1	RSD/HICEF
3	DKU-F455I-1UC	Power Cable Assy (IU)	3263485-A	1	
		Nameplate (HDS)	2105913-17/19	1	RSD/HICAM
		Nameplate (HP)	2105913-25/27	1	RSD/HICAM
4	DKU-F455I-1EC	Power Cable Assy (IE)	3263485-B	1	
		Nameplate (HDS)	2105913-18/20	1	RSD/HICEF
		Nameplate (HP)	2105913-26/28	1	RSD/HICEF

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1. Disconnect the Power Cable.
   a. Remove the terminal block covers. Remove the screws from the terminal blocks.

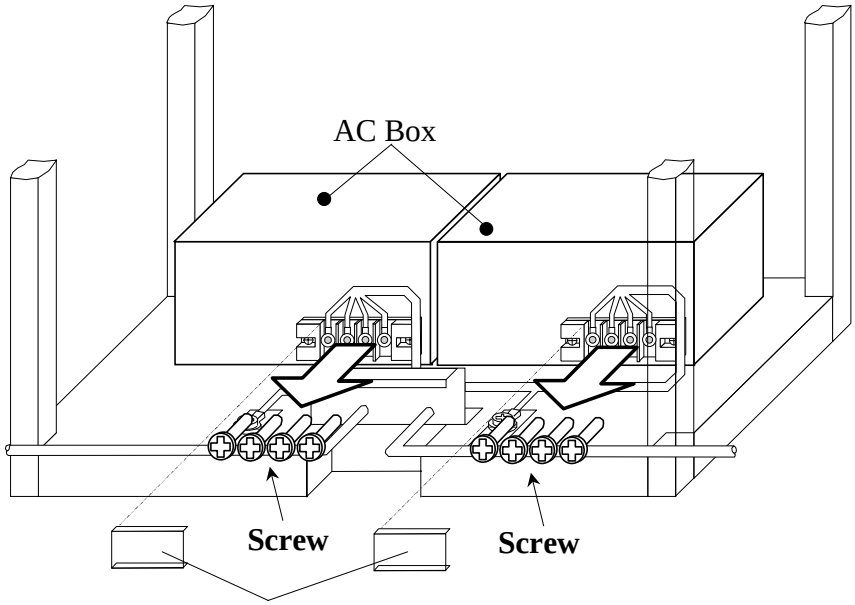

Fig. 4.9.1-1 Removal of Screws (DKU-F455I-3EC)

   b. Remove the frame ground cable for each AC power cable from the frame.

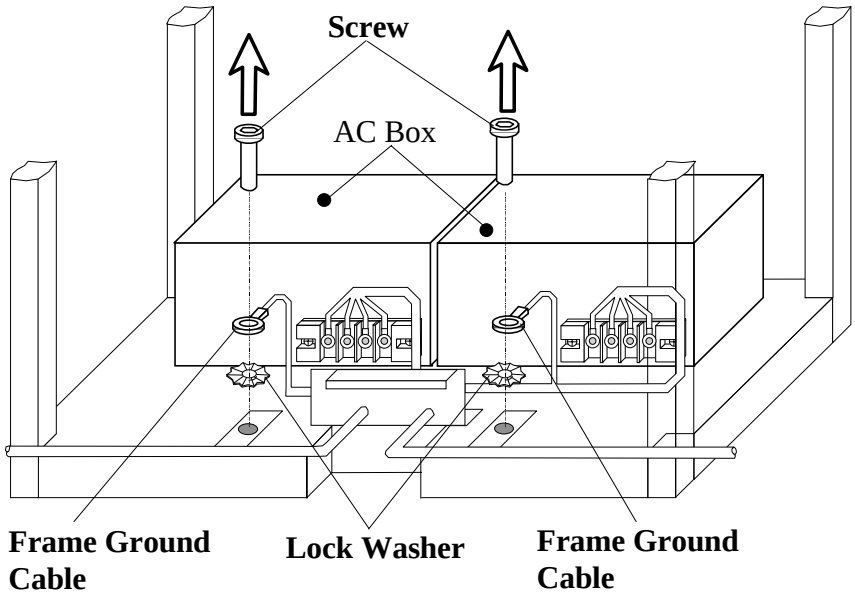

Fig. 4.9.1-2 Removal of Frame Ground Cable (DKU-F455I-3EC)

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c. Loosen the screws and remove the Power Cable.

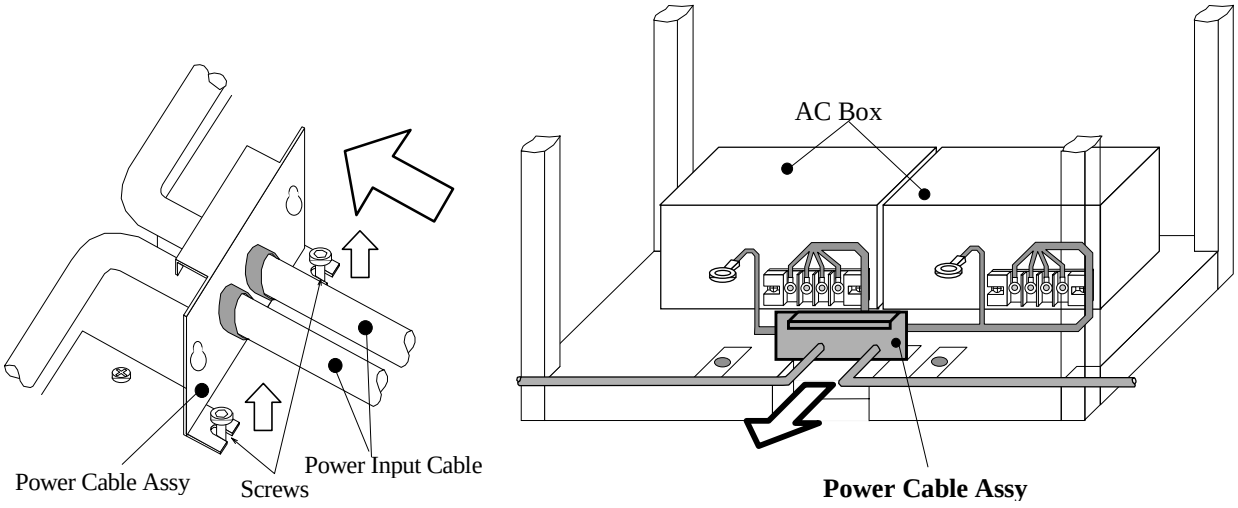

Fig. 4.9.1-3 Removal of Power Cable

2. Remove the Nameplate.
   a. Remove the nameplate from the power cable Assy.

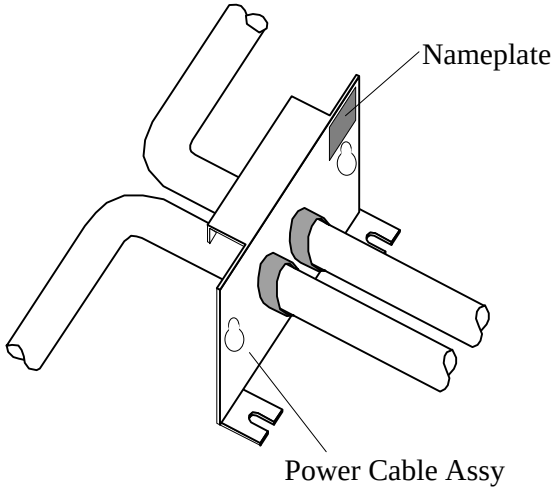

Fig. 4.9.1-4 Removal of Nameplate

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4.9.2 De-Installation of Power Cable Kit for Single Phase/50A (DKC-F460I-1EC/1UC)

Table 4.9.2-1 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKC-F460I-1UC	Power Cable ASSY	3264044-A	1	
		Screw	SB408N	4	
		Nameplate (HDS)	2105902-121	1	RSD
			2105903-121		HICAM
			2105903-221		HICEF
		Nameplate (HP)	2105902-221	1	RSD
			2105903-321		HICAM
			2105903-421		HICEF
2	DKC-F460I-1EC	Power Cable ASSY	3264044-B	1	
		Screw	SB408N	4	
		Nameplate (HDS)	2105902-120	1	RSD
			2105903-120		HICAM
			2105903-220		HICEF
		Nameplate (HP)	2105902-220	1	RSD
			2105903-320		HICAM
			2105903-420		HICEF

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1. Remove the Power Cable ASSY.
   a. Loosen the two screws and remove the cover.

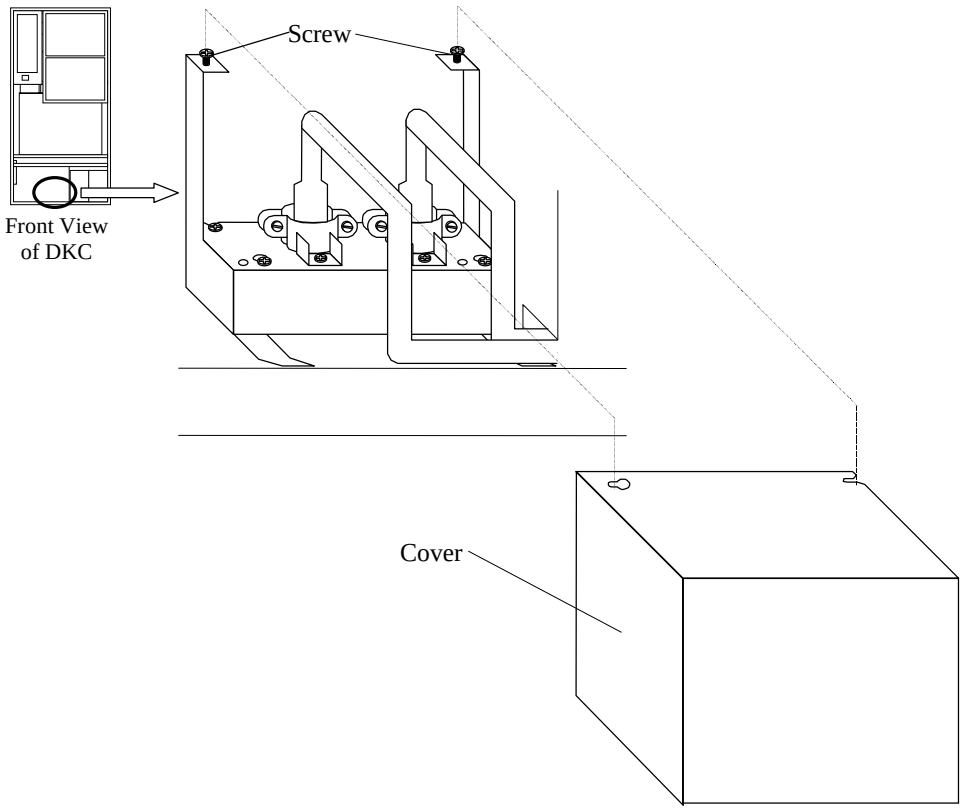

Fig. 4.9.2-1 Removal of Cover

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b. Remove the terminal block covers from the AC Boxes.
c. Loosen the six screws and remove the AC power cables from the AC Boxes.
d. Attach the terminal block covers to AC Boxes.
e. Open the two repeat binders.

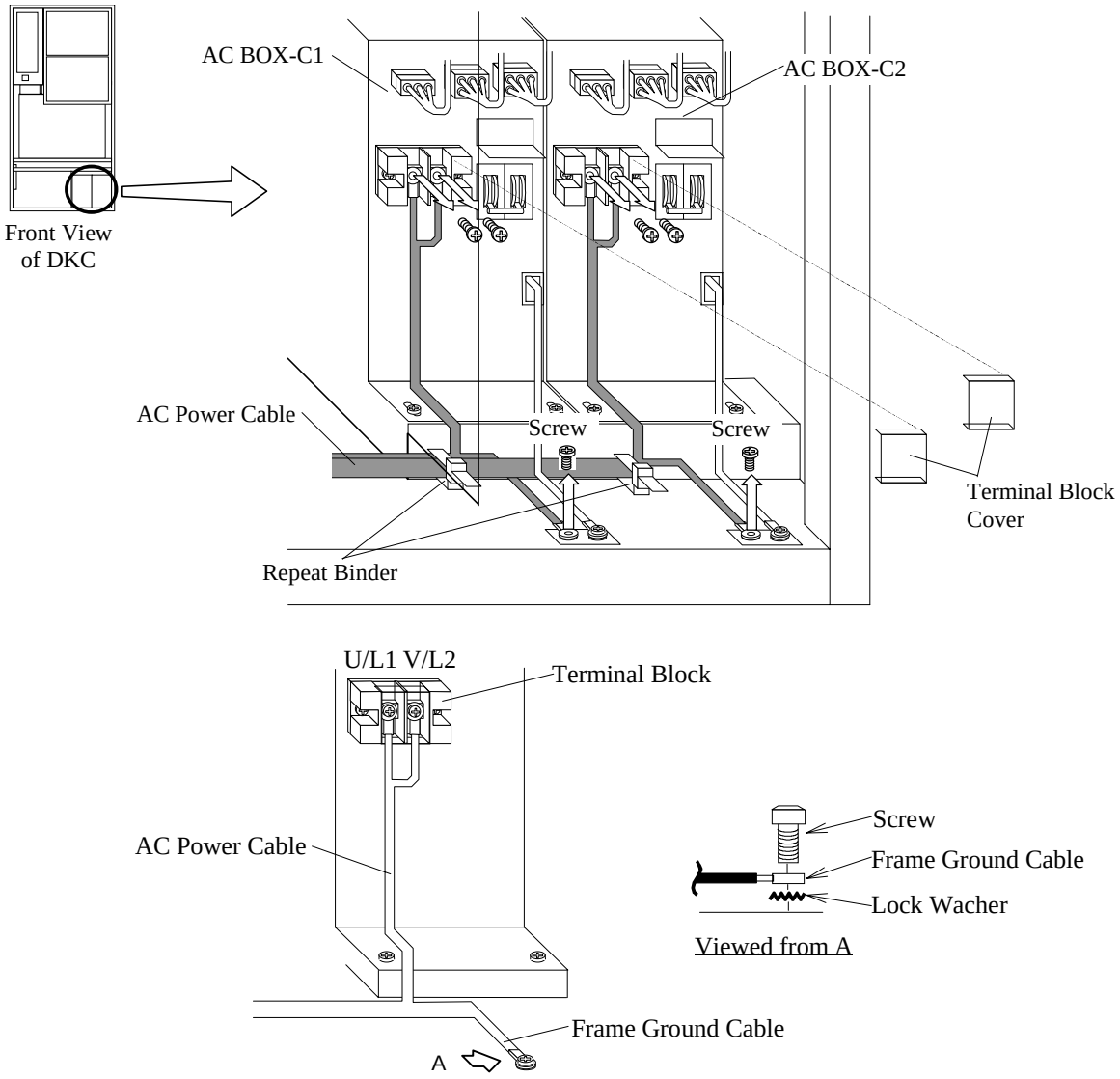

Fig. 4.9.2-2 Removal of AC Power Cables

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f. Loosen the two screws and remove the Power Cable Unit.

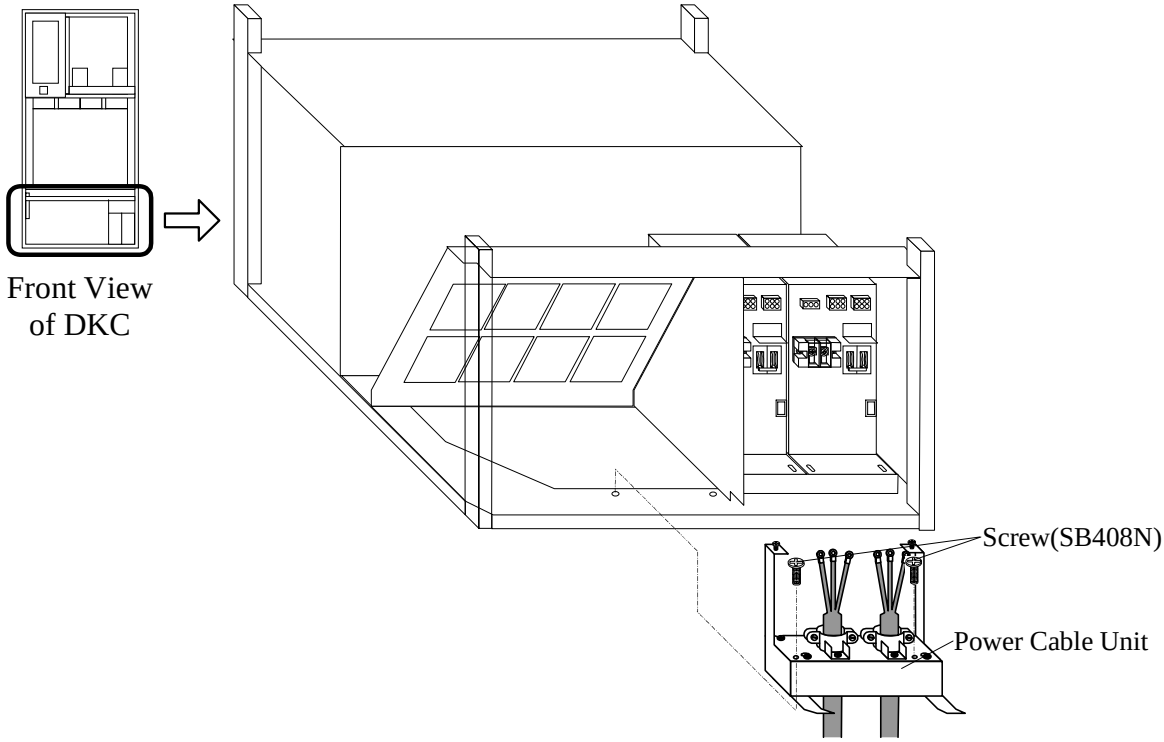

Fig. 4.9.2-3 Removal of Power Cable Unit

2. Remove the Nameplate.
   a. Remove the nameplate from the cover.

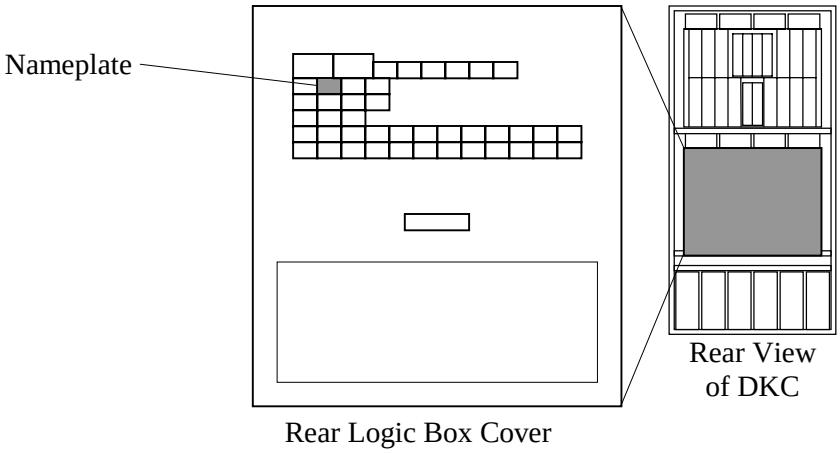

Fig. 4.9.2-4 Removal of Nameplate

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4.9.3 De-Installation of Power Cable Kit for Single Phase/30A or 3 Phase/30A (DKC-F460I-3ECD/3UCD/1ECD/1UCD)

Table 4.9.3-1 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKC-F460I-1UCD	Power Cable Unit	3265665-A	1	
		Screw	SB408N	2	
		Screw	SB510N	4	
		Toothed Washer	WT005N	4	
		Nameplate (HDS)	2105902-131	1	RSD
			2105903-131/231		HICAM/HICEF
		Nameplate (HP)	—	1	RSD
			—		HICAM/HICEF
2	DKC-F460I-1ECD	Power Cable Unit	3265664-A	1	
		Screw	SB408N	2	
		Screw	SB510N	4	
		Toothed Washer	WT005N	4	
		Nameplate (HDS)	2105902-130	1	RSD
			2105903-130/230		HICAM/HICEF
		Nameplate (HP)	—	1	RSD
			—		HICAM/HICEF
3	DKC-F460I-3UCD	Power Cable Unit	3265683-A	1	
		Screw	SB408N	2	
		Screw	SB510N	2	
		Toothed Washer	WT005N	2	
		Nameplate (HDS)	2105902-134	1	RSD
			2105903-134/234		HICAM/HICEF
		Nameplate (HP)	—	1	RSD
			—		HICAM/HICEF
4	DKC-F460I-3ECD	Power Cable Unit	3265682-A	1	
		Screw	SB408N	2	
		Screw	SB510N	2	
		Toothed Washer	WT005N	2	
		Nameplate (HDS)	2105902-133	1	RSD
			2105903-133/233		HICAM/HICEF
		Nameplate (HP)	—	1	RSD
			—		HICAM/HICEF

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4.9.3.1 When the Power Cable Kit is removed from the DKU

CAUTION

Perform the Power Cable Kit with care.
This Power Cable Kit is concerned with Primary Circuit.
Perform this procedure before connecting the Power Cable.
(Turn off the circuit breakers on the power distribution panel)
Turn off the main circuit breaker CB101 located in the AC Box.

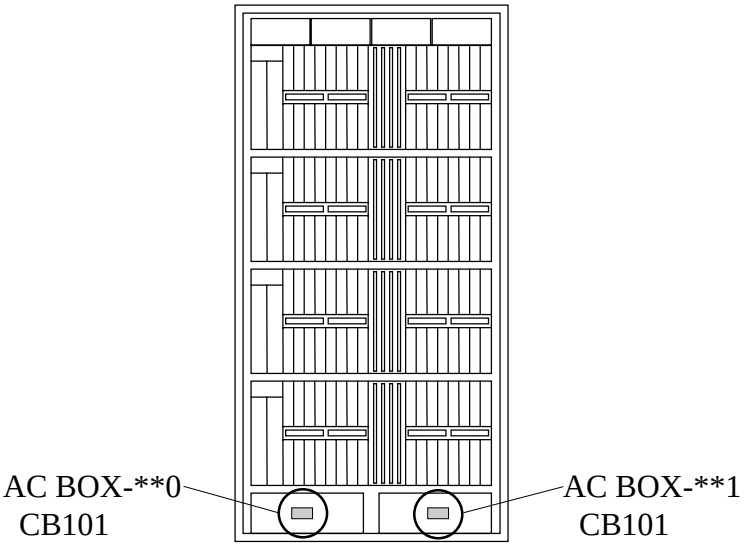

Fig. 4.9.3.1-1 Location of the Circuit Breakers

Table 4.9.3.1-1 Circuit Breakers

No.	Location No.	Breaker No.	Remarks
1	AC BOX-**0	CB101	
2	AC BOX-**1	CB101	

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1. Disconnect the Power Cable.
   a. Remove the terminal block covers. Remove the screws from the terminal blocks.

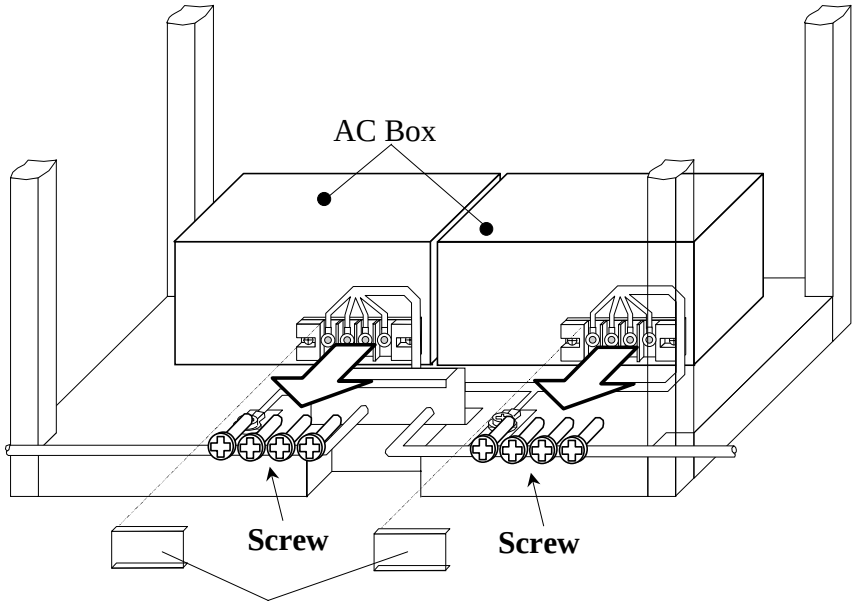

Fig. 4.9.3.1-2 Removal of Screws

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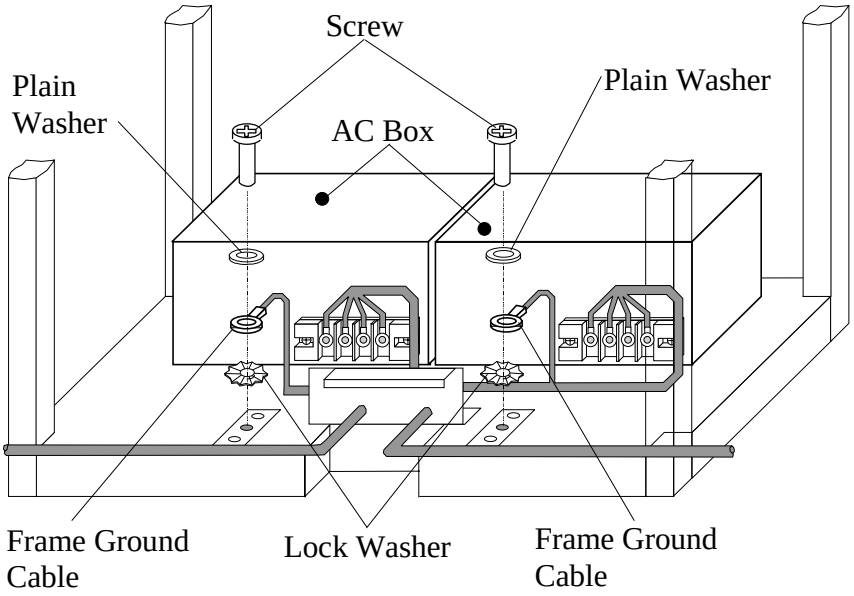
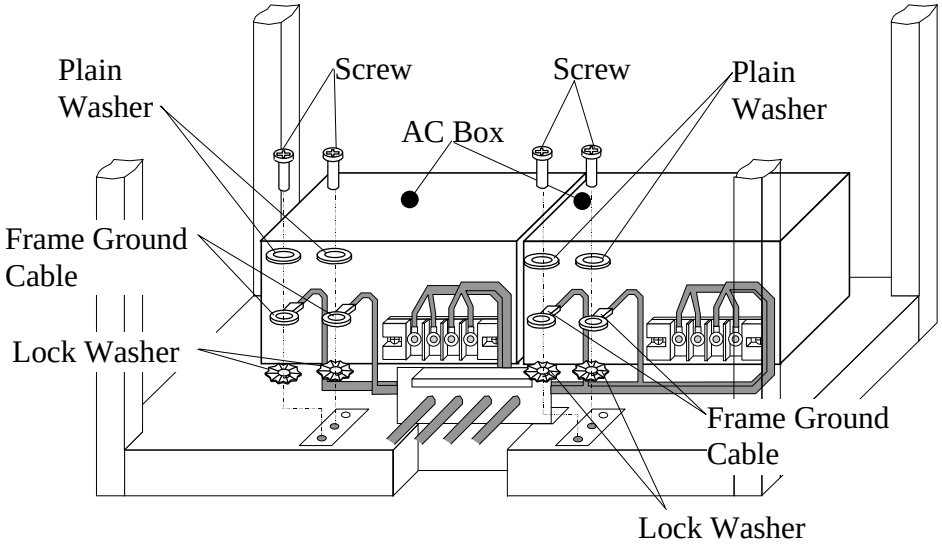
b. Remove the frame ground cable for each AC power cable from the frame.



DKC-F460I-3UCD/3ECD



DKC-F460I-1UCD/1ECD

Fig. 4.9.3.1-3 Removal of Frame Ground Cable

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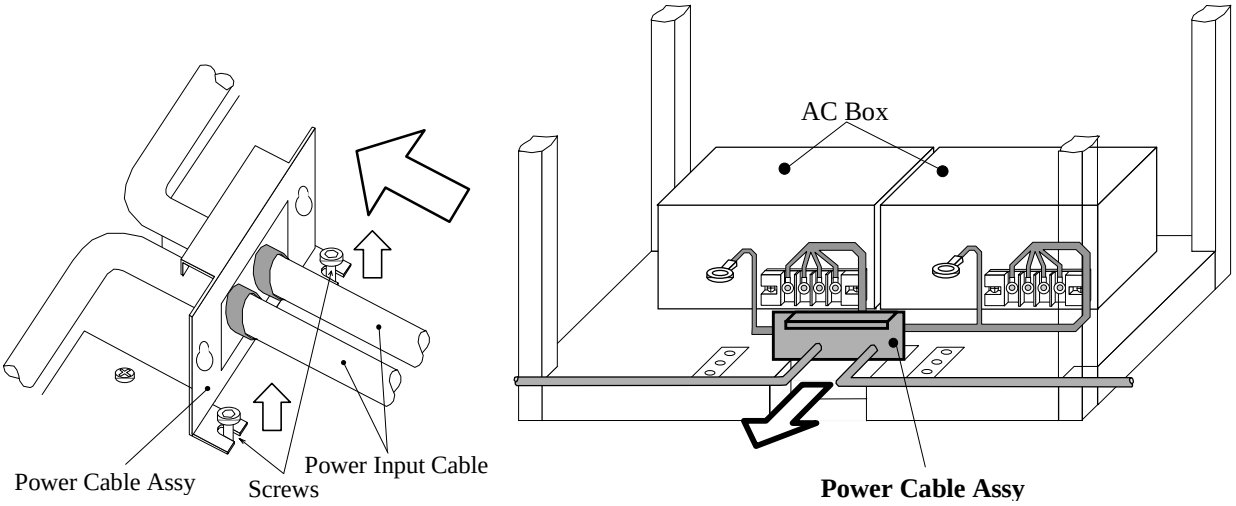
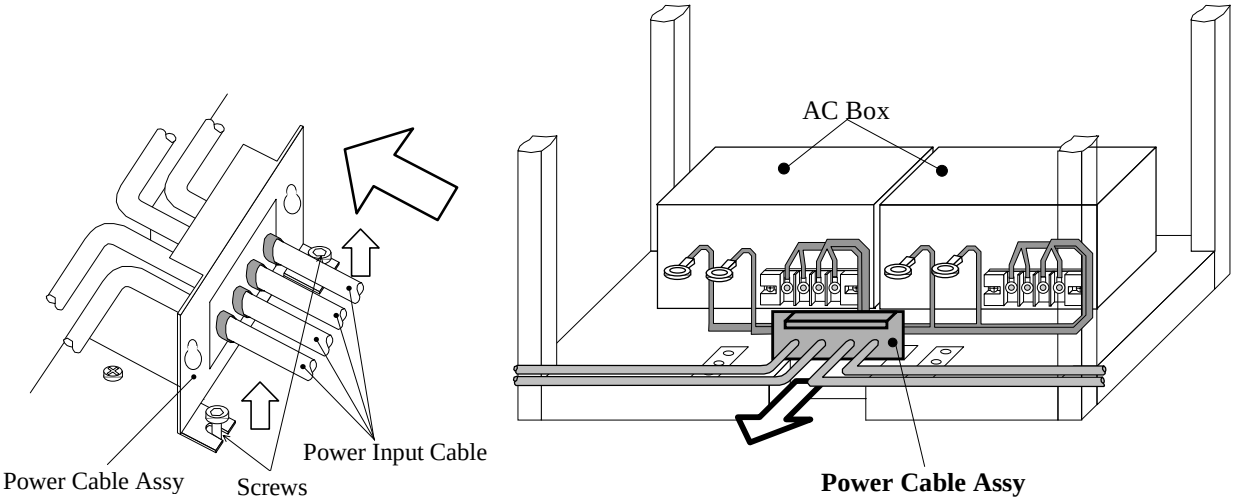
c. Loosen the screws and remove the Power Cable Assy.



DKC-F460I-3UCD/3ECD



DKC-F460I-1UCD/1ECD

Fig. 4.9.3.1-4 Removal of Power Cable Assy

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d. Remove the screws and remove the power cable unit from the bracket.

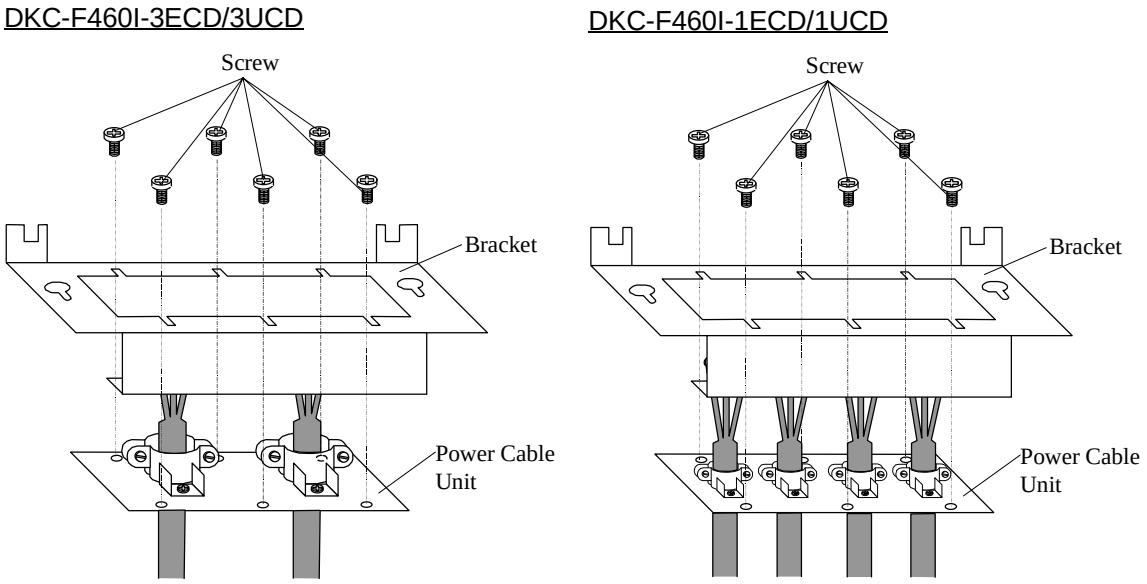

Fig. 4.9.3.1-5 Removal of Power Cable Unit

2. Remove the Nameplate.
   a. Remove the nameplate from the bracket.

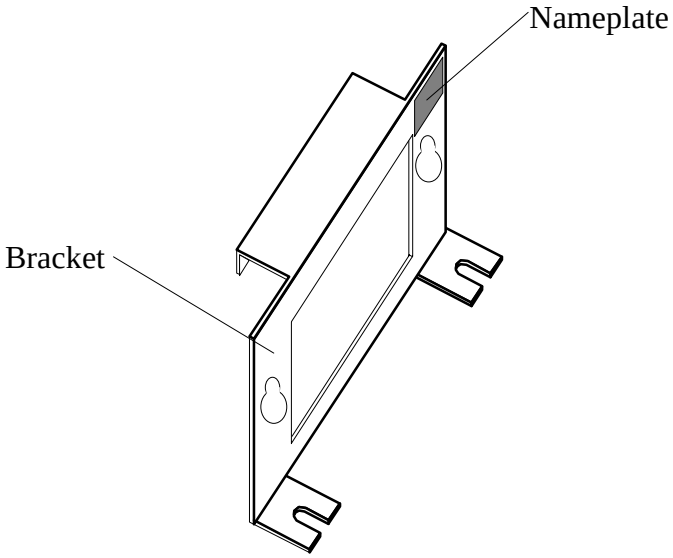

Fig. 4.9.3.1-6 Removal of Nameplate

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4.9.3.2 When the Power Cable Kit is removed from the DKC

CAUTION

Perform the Power Cable Kit with care.
This Power Cable Kit is concerned with Primary Circuit.
Perform this procedure before connecting the Power Cable.
(Turn off the circuit breakers on the power distribution panel)
Turn off the main circuit breaker CB200 located in the AC Box.

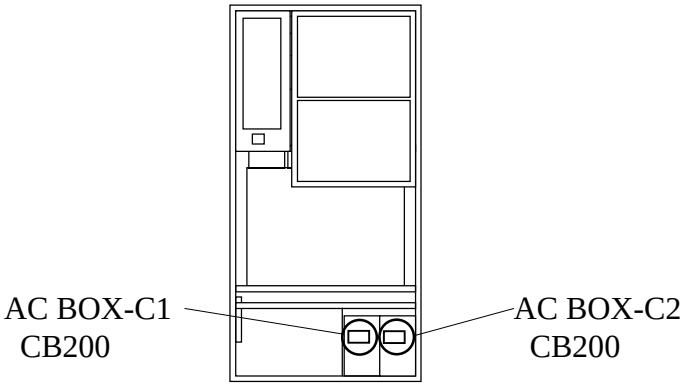

Fig. 4.9.3.2-1 Location of the Circuit Breakers

Table 4.9.3.2-1 Circuit Breakers

No.	Location No.	Breaker No.	Remarks
1	AC BOX-C1	CB200	
2	AC BOX-C2	CB200	

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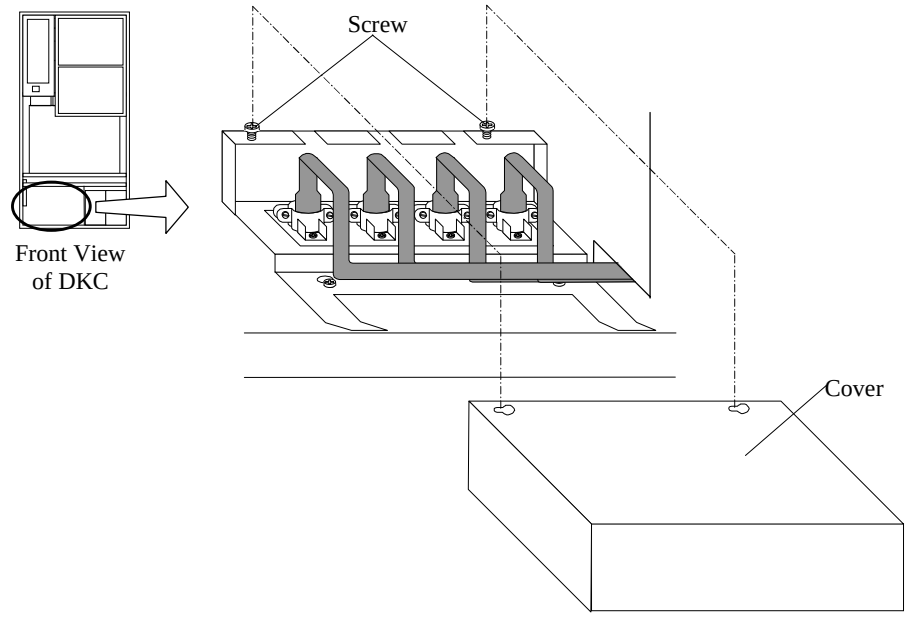
1. Remove the AC Power Cables.
   a. Loosen the two screws and remove the cover.

DKC-F460I-1ECD/1UCD



DKC-F460I-3ECD/3UCD

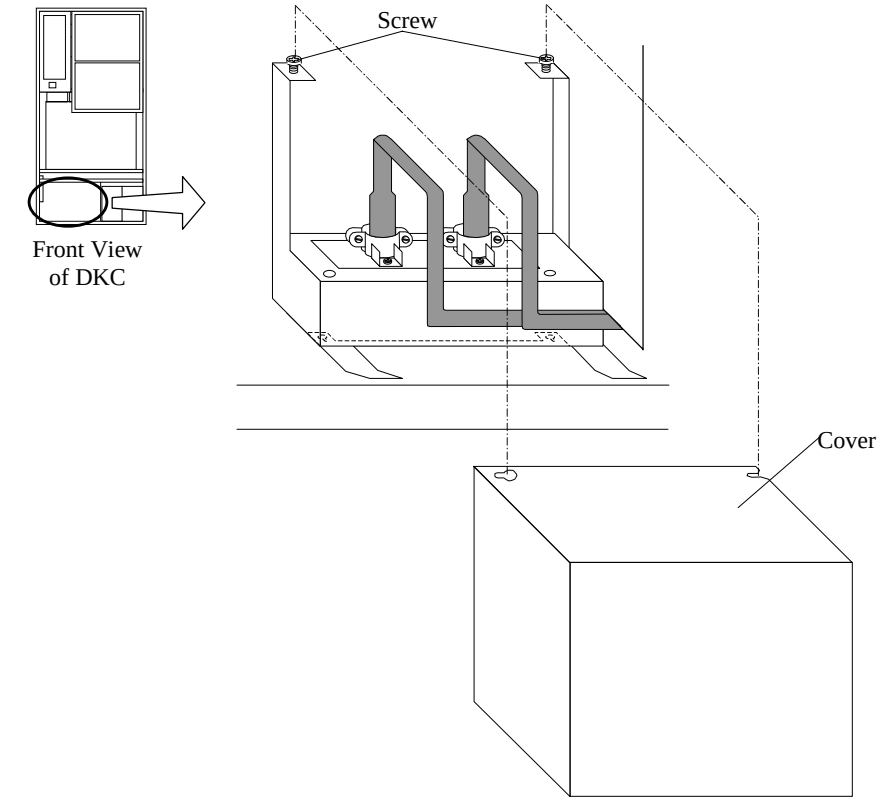


Fig. 4.9.3.2-2 Removal of Cover

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DKC-F460I-1UCD/1ECD

b. Remove the terminal block covers from the AC Boxes.
c. Loosen the twelve screws and remove the AC power cables from the AC Boxes.
d. Attach the terminal block covers to AC Boxes.
e. Open the two repeat binders.

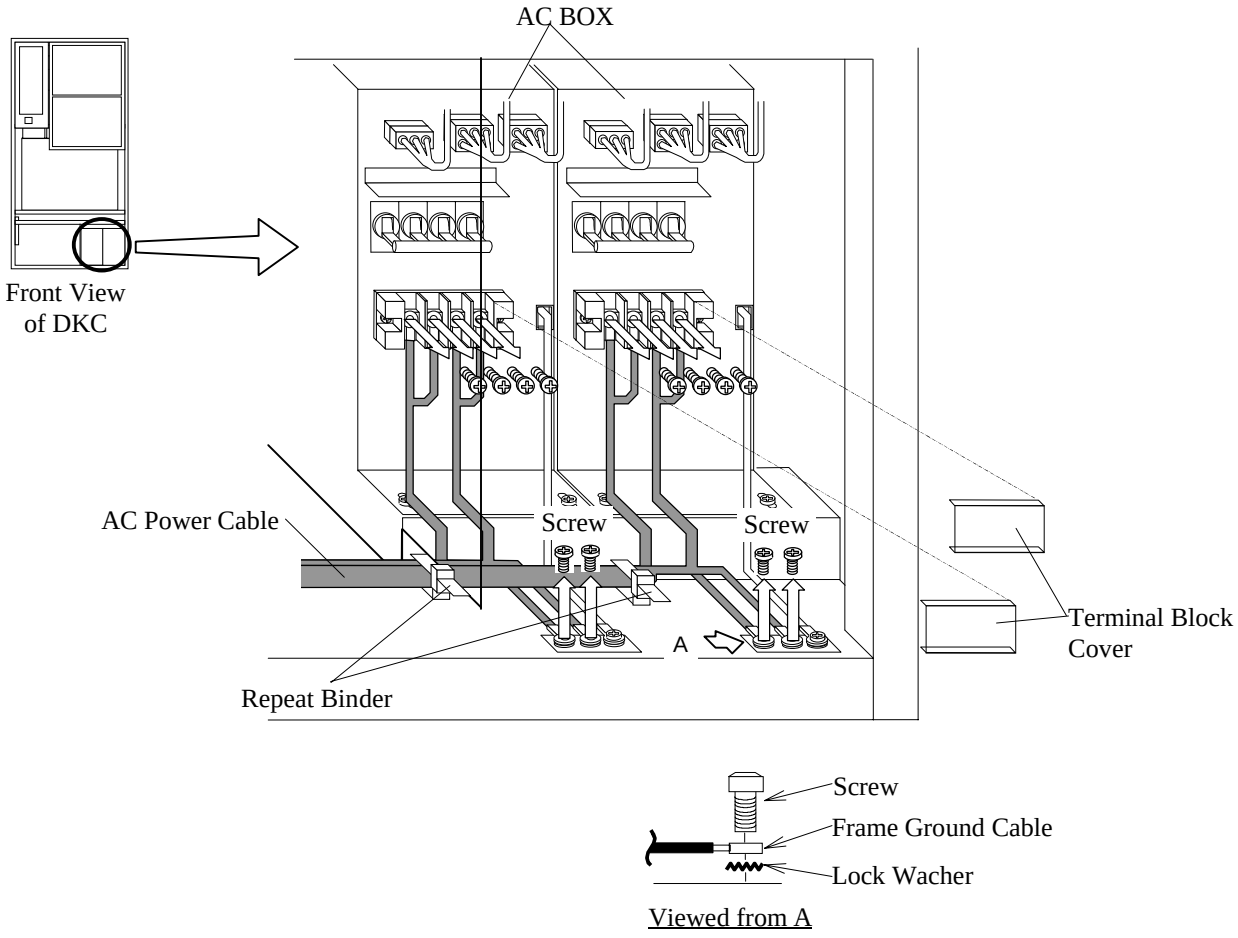

Fig. 4.9.3.2-3 Removal of AC Power Cables

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DKC-F460I-3UCD/3ECD

b. Remove the terminal block covers from the AC Boxes.
c. Loosen the ten screws and remove the AC power cables from the AC Boxes.
d. Attach the terminal block covers to AC Boxes.
e. Open the two repeat binders.

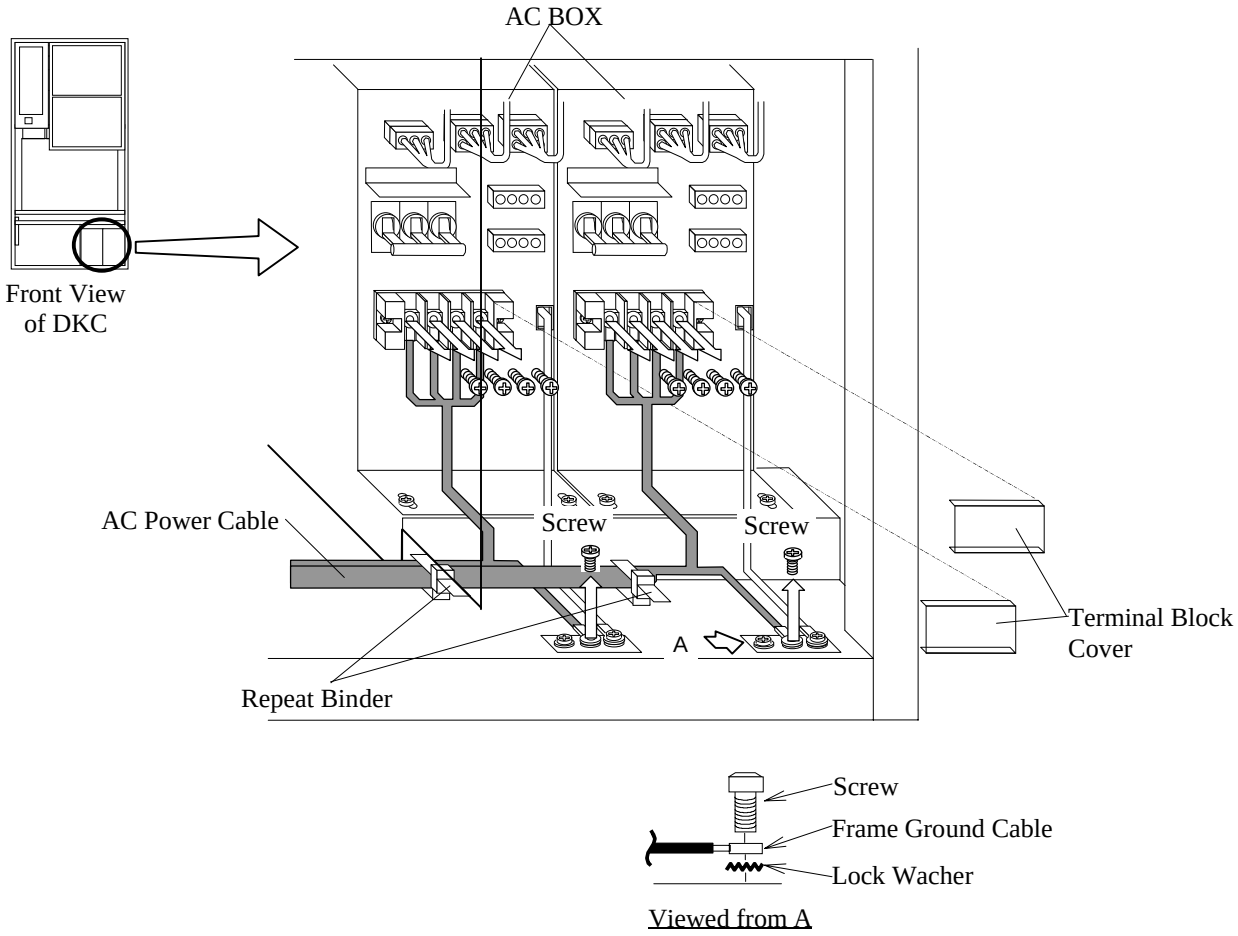

Fig. 4.9.3.2-4 Removal of AC Power Cables

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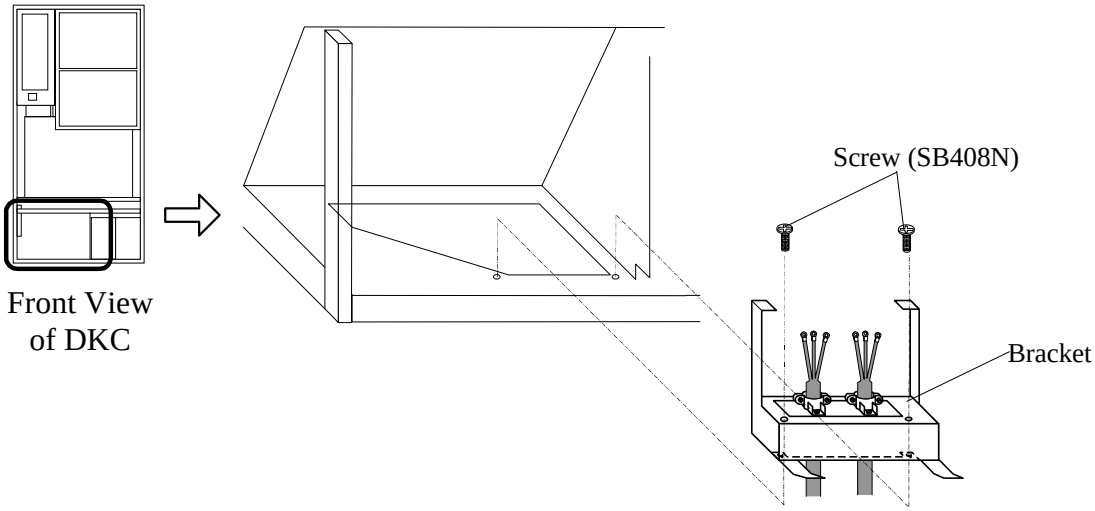
2. Remove the Power Cable Unit.
   a. Loosen the two screws and remove the bracket.

DKC-F460I-3ECD/3UCD



DKC-F460I-1ECD/1UCD

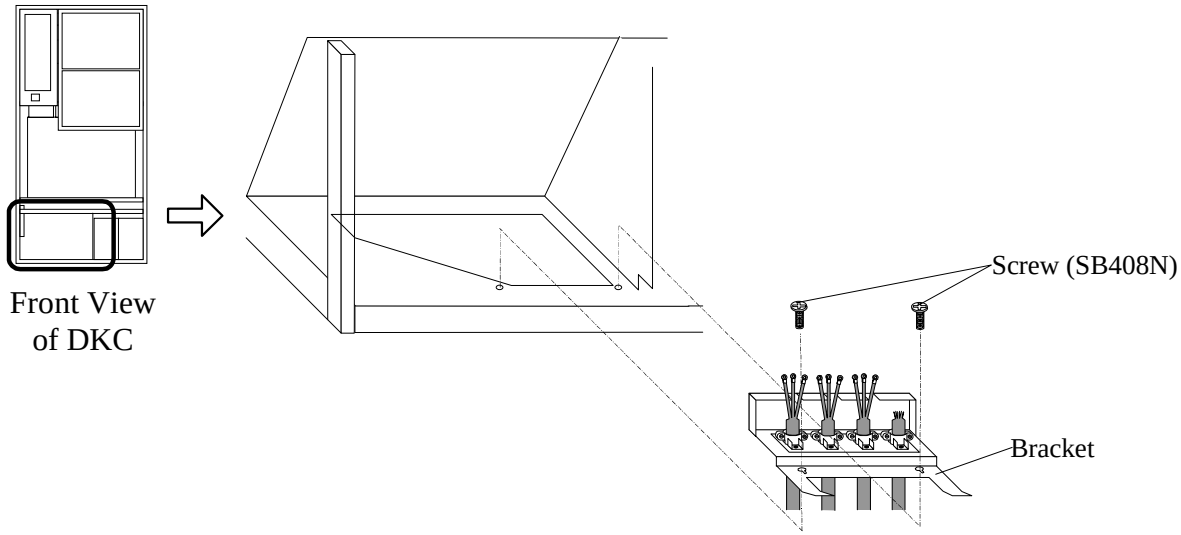


Fig. 4.9.3.2-5 Removal of Bracket

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b. Remove the six screws and remove the power cable unit from the bracket.

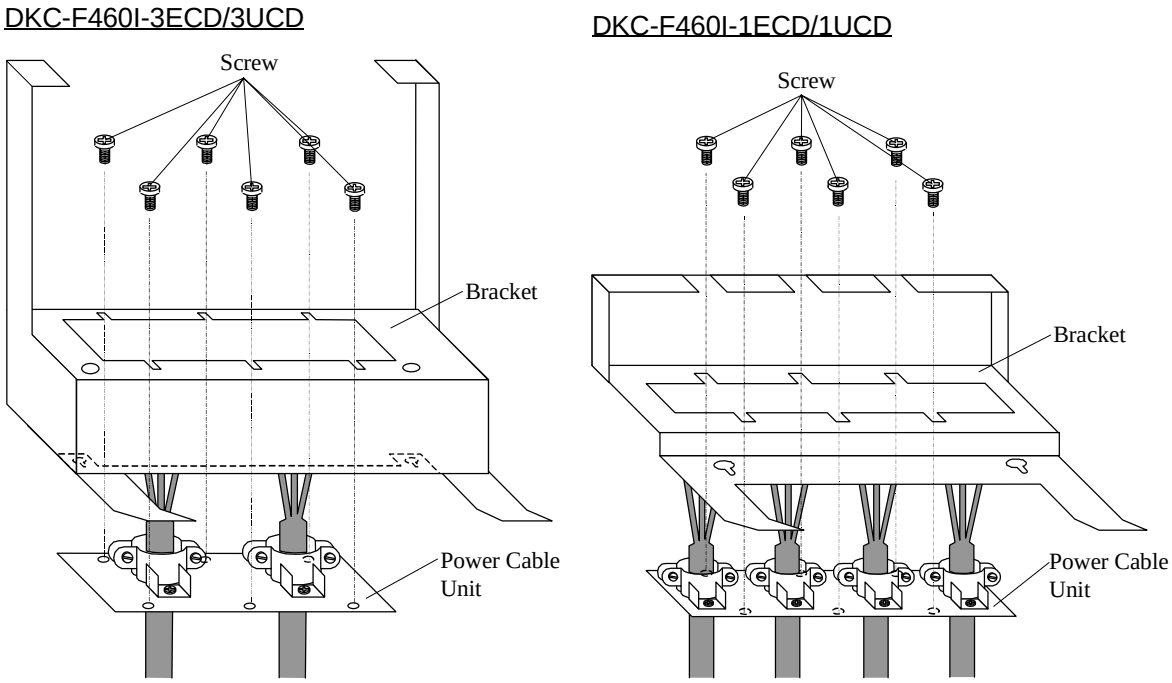

Fig. 4.9.3.2-6 Removal of Power Cable Unit

3. Remove the Nameplate.
   a. Remove the nameplate from the Rear Logic Box cover.

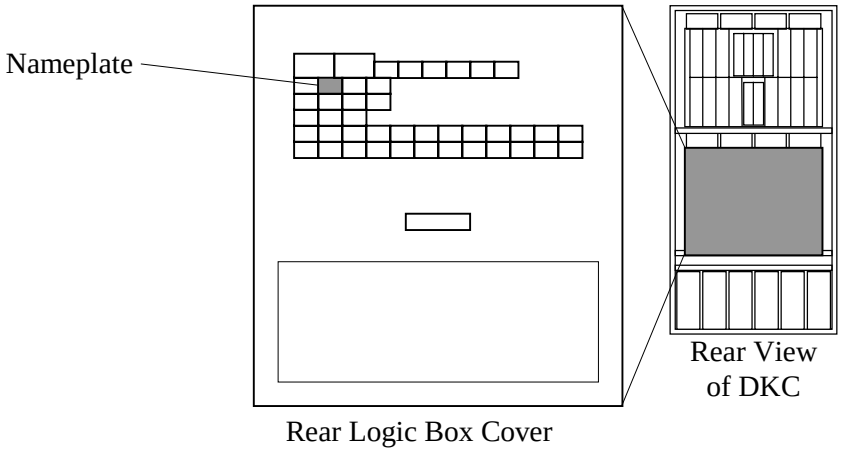

Fig. 4.9.3.2-7 Removal of Nameplate

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4.10 De-Installation of AC Box Kit

4.10.1 De-Installation of AC Box Kit for Single Phase/50A or 3 Phase/60A (DKU-F455I-1PS/3PS)

Table 4.10.1-1 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKU-F455I-3PS	DKU AC Box	5513851-A	2	
		Nameplate (HDS)	2105912-1/2/3	1	RSD/HICAM/HICEF
		Nameplate (HP)	2105912-7/8/9	1	RSD/HICAM/HICEF
2	DKU-F455I-1PS	DKU AC Box	5513852-A	2	
		Nameplate (HDS)	2105912-21/22/23	1	RSD/HICAM/HICEF
		Nameplate (HP)	2105912-27/28/29	1	RSD/HICAM/HICEF

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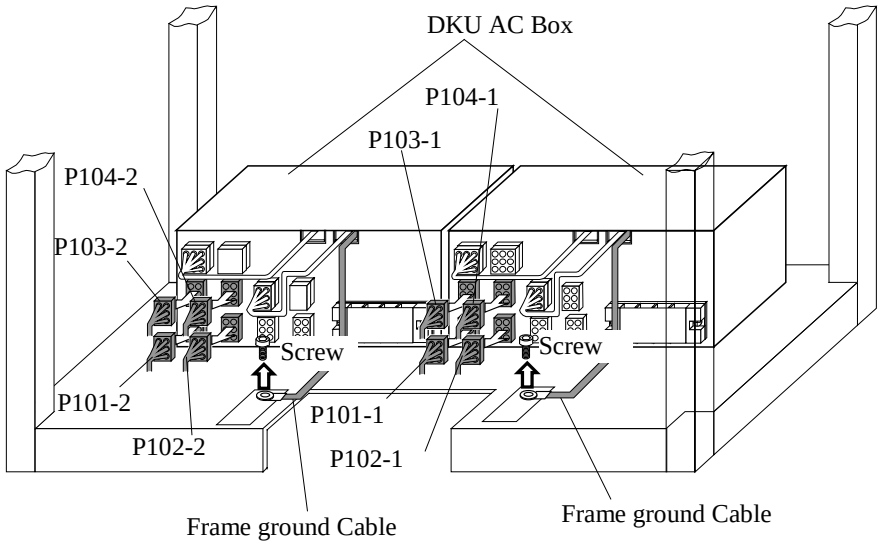
1. Disconnect the Cables.

DKU-F455I-3PS

a. Remove the screws and remove the frame ground cables.
b. Disconnect the cables (P101-1, P102-1, P103-1, P104-1, P101-2, P102-2, P103-2 and P104-2) from the DKU AC Boxes.

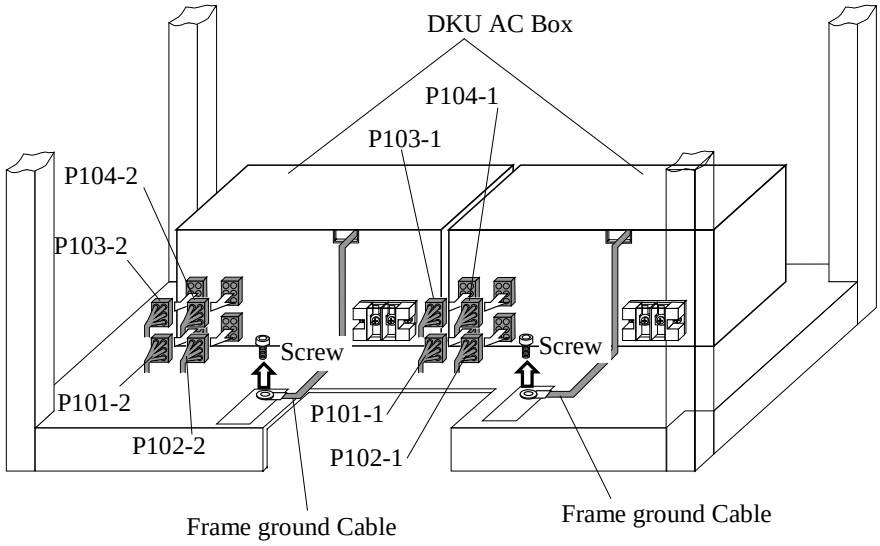


Rear View

Fig. 4.10.1-1 Disconnection of Cables

DKU-F455I-1PS

a. Remove the screws and remove the frame ground cables.
b. Disconnect the cables (P101-1, P102-1, P103-1, P104-1, P101-2, P102-2, P103-2 and P104-2) from the DKU AC Boxes.



Rear View

Fig. 4.10.1-2 Disconnection of Cables

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2. Remove the plate.

a. Remove the two screws and remove the plate.

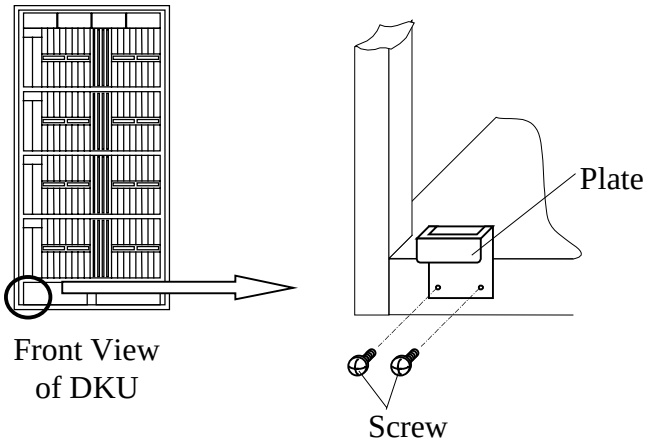

Fig. 4.10.1-3 Remove of Plate

3. Remove the DKU AC Boxes.

a. Remove the screws from the DKU AC Boxes.

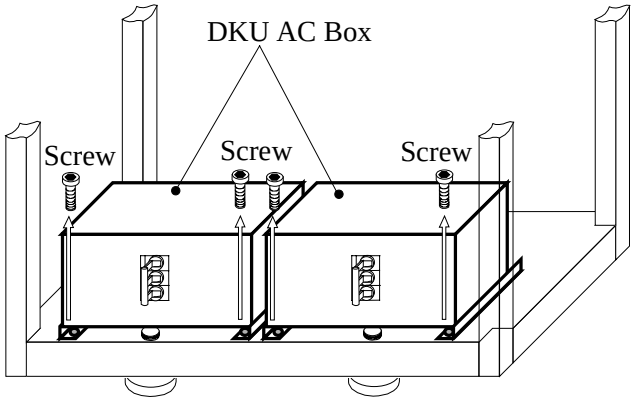

Fig. 4.10.1-4 Removal of Screws

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b. Slide the DKU AC Boxes from the rear to the front.

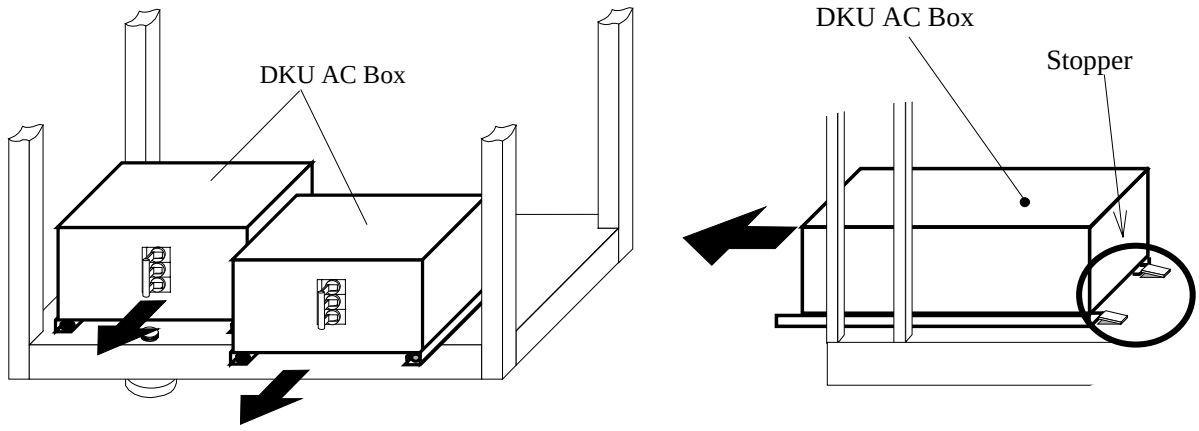

Fig. 4.10.1-5 Removal of DKU AC Boxes

4. Attach the plate.
   a. Attach the plate with the two screws. Refer to Fig. 4.10.1-3.

5. Remove the Nameplate.
   a. Remove the corresponding nameplate from the left DKU AC Box.

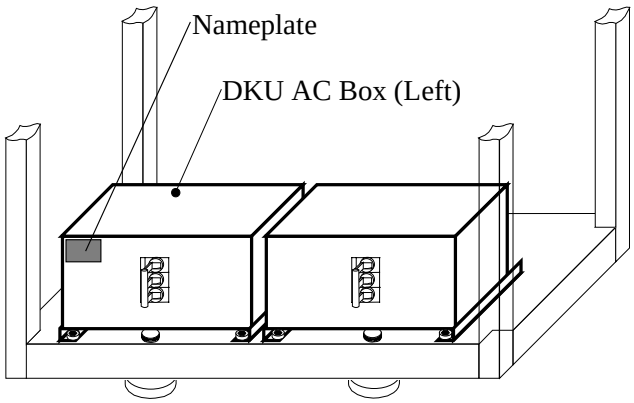

Fig. 4.10.1-6 Removal of Nameplate

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4.10.2 De-Installation of AC Box Kit for Single Phase/40A (DKC-F460I-1PS)

Table 4.10.2-1 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKC-F460I-1PS	DKC AC Box	5513519-A	2	
		Screw	SB408N	4	
		Screw	SB510N	4	
		Lock Washer	WT005N	4	Lock Washer
		Label(UL5)	5466325-1	2	
		Nameplate (HDS)	2105902-119	1	RSD
			2105903-119		HICAM
			2105903-219		HICEF
		Nameplate (HP)	2105902-219	1	RSD
			2105903-319		HICAM
			2105903-419		HICEF

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1. Remove the DKC AC Boxes.
   a. Disconnect the cables (POUT0-1, POUT1-1, POUT2-1, POUT0-2, POUT1-2 and POUT2-2) from the DKC AC Boxes.

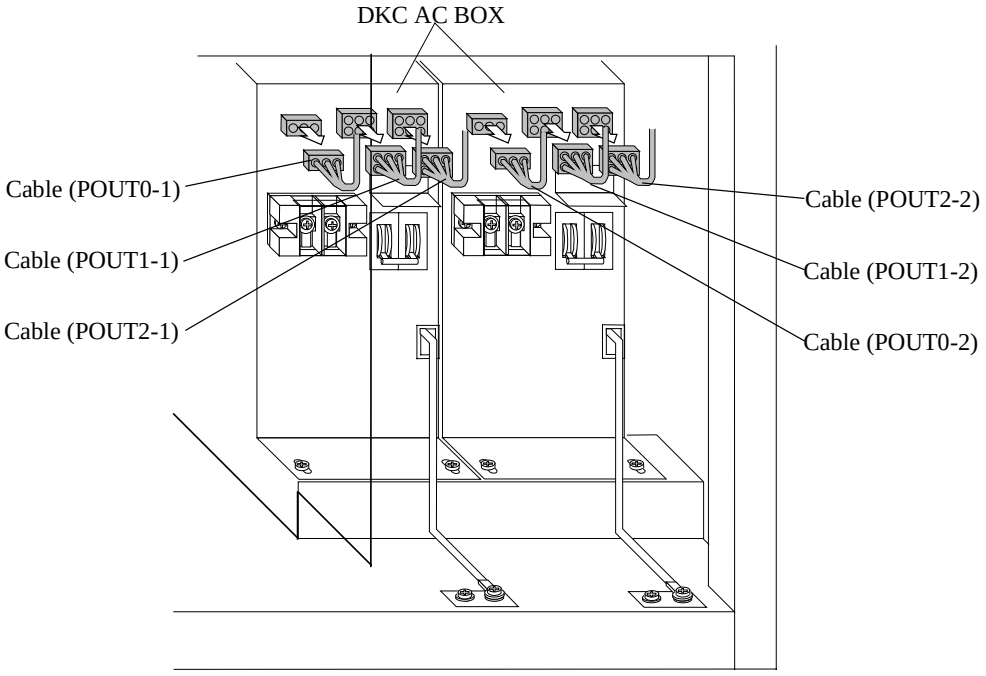

Fig. 4.10.2-1 Disconnection of Cables

   b. Remove the four screws and four lock washers from the frame.

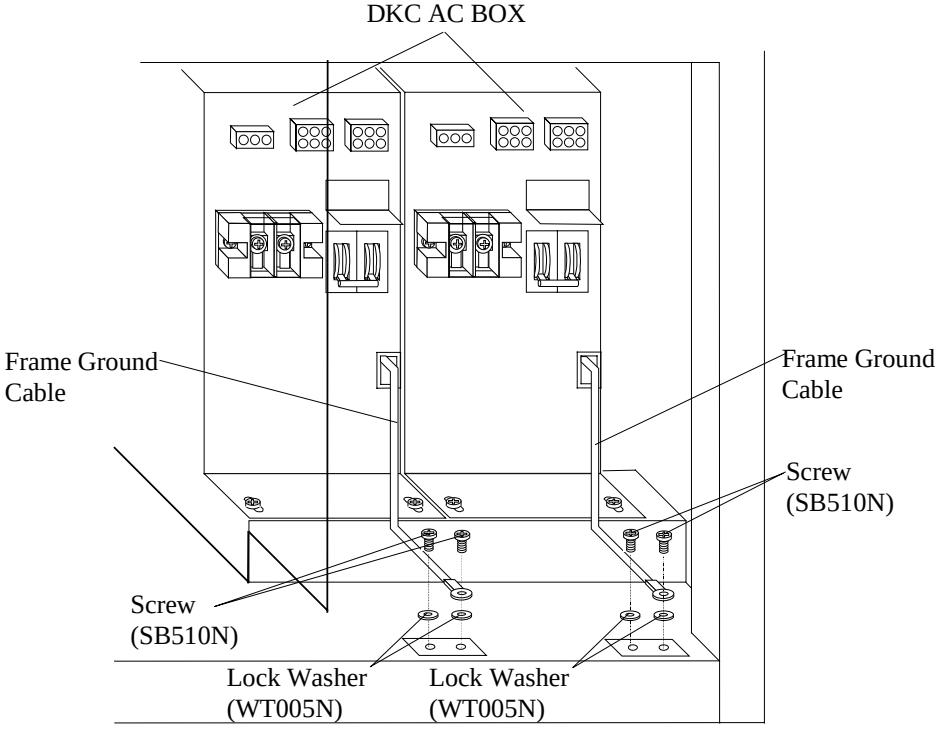

Fig. 4.10.2-2 Removal of Screws

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c. Remove the four screws and remove the two DKC AC Boxes.

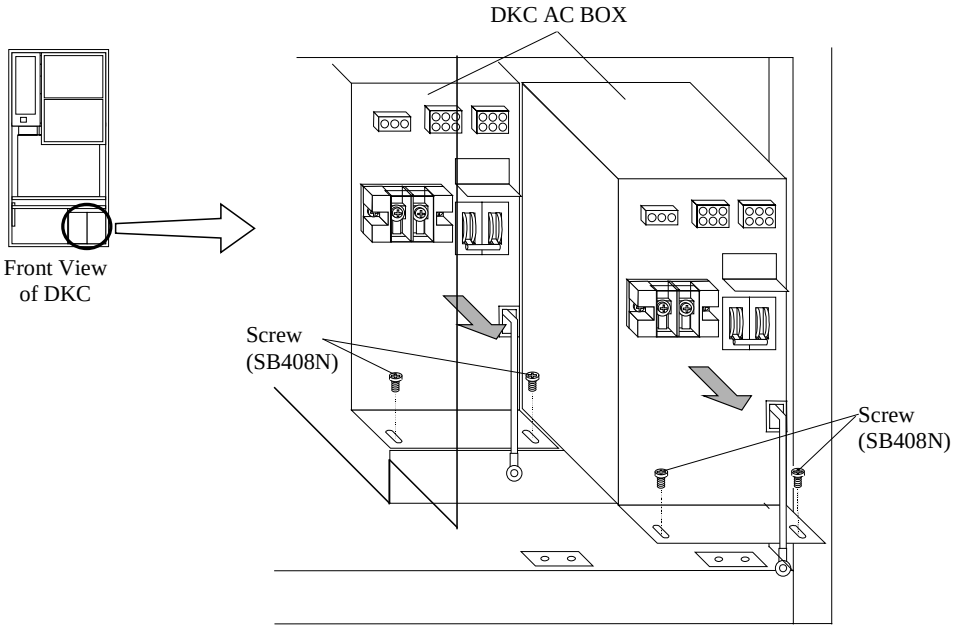

Fig. 4.10.2-3 Removal of DKC AC Boxes

2. Remove the Nameplate.
   a. Remove the nameplate from the Rear Logic Box cover.

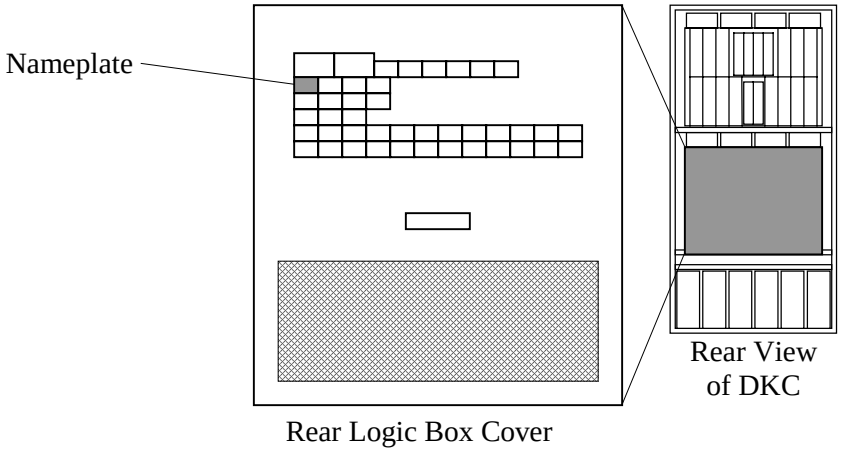

Fig. 4.10.2-4 Location of Nameplate

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4.10.3 De-Installation of AC Box Kit for 3 Phase/30A or Single Phase/30A (DKU-F455I-1PSD/3PSD)

Table 4.10.3-1 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKU-F455I-3PSD	DKU AC Box	5518051-A	2	
		Bracket	3265680-1	1	
		Label(V.Hz.PH.A.W)	2106820-2	1	
		Nameplate (HDS)	2105912-47/48/49	1	RSD/HICAM/HICEF
		Nameplate (HP)	2105912-53/54/55	1	RSD/HICAM/HICEF
2	DKU-F455I-1PSD	DKU AC Box	5518052-A	2	
		Bracket	3265680-1	1	
		Label(V.Hz.PH.A.W)	2106820-2	1	
		Nameplate (HDS)	2105912-67/68/69	1	RSD/HICAM/HICEF
		Nameplate (HP)	2105912-73/74/75	1	RSD/HICAM/HICEF

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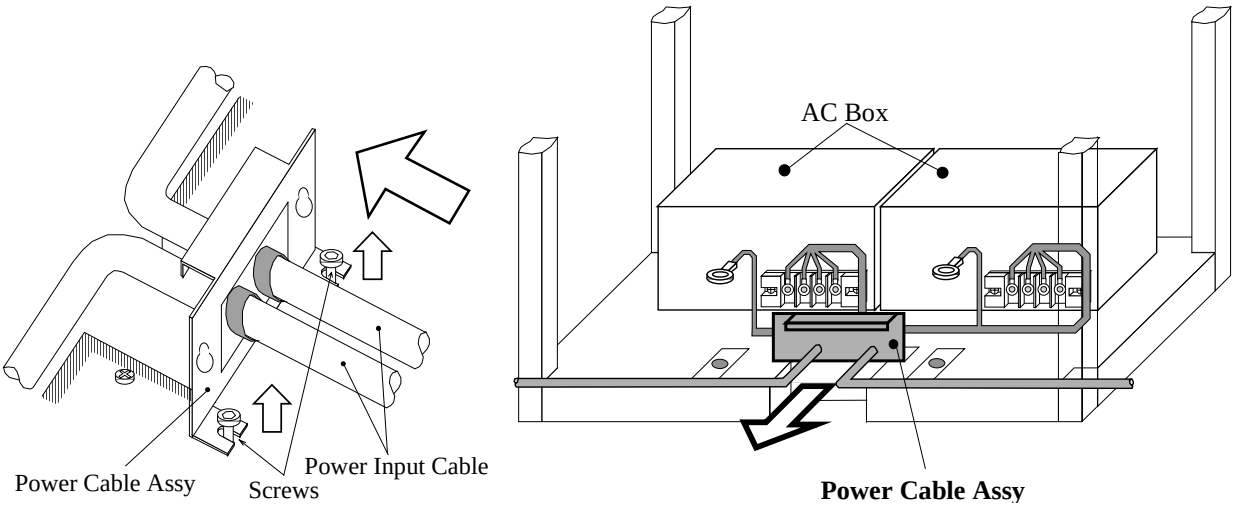
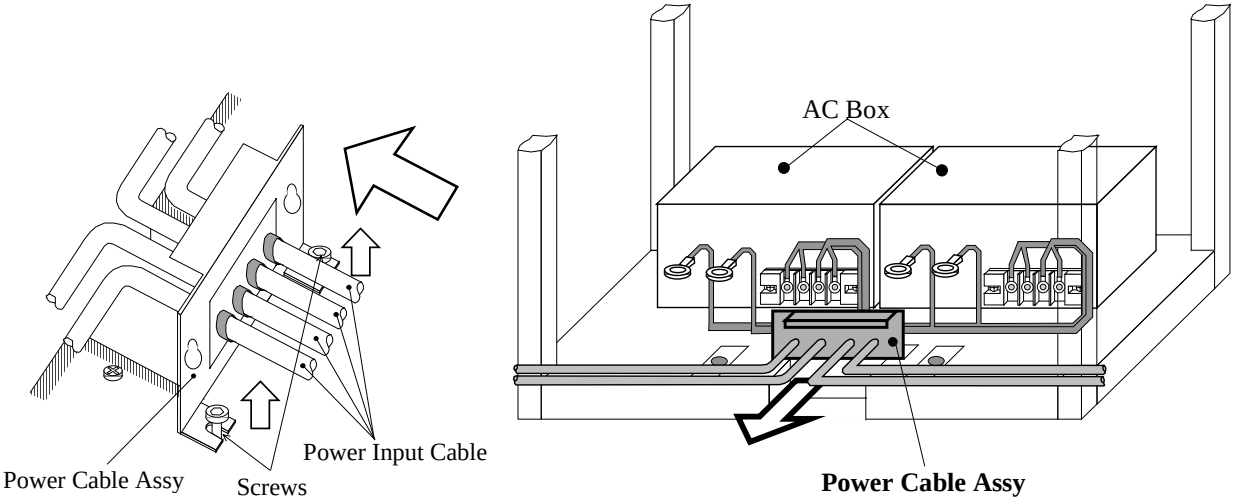
1. Remove the Bracket.

   a. Loosen the screws and remove the Power Cable Assy.



DKC-F460I-3UCD/3ECD



DKC-F460I-1UCD/1ECD

Fig. 4.10.3-1 Removal of Power Cable Assy

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b. Remove the screws and remove the S/R ASSY from the bracket.

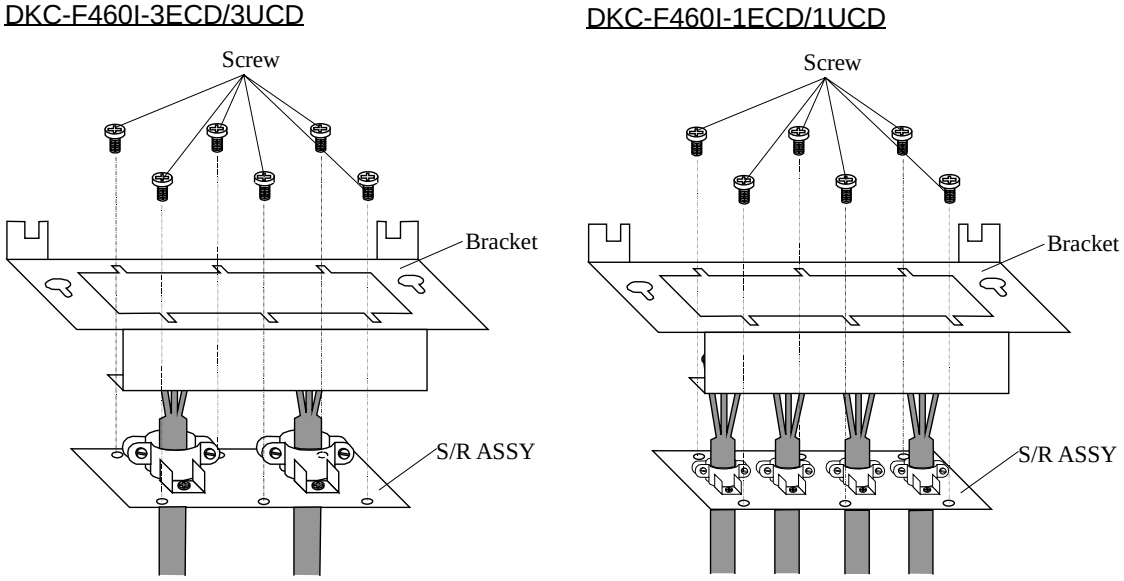

Fig. 4.10.3-2 Removal of S/R ASSY

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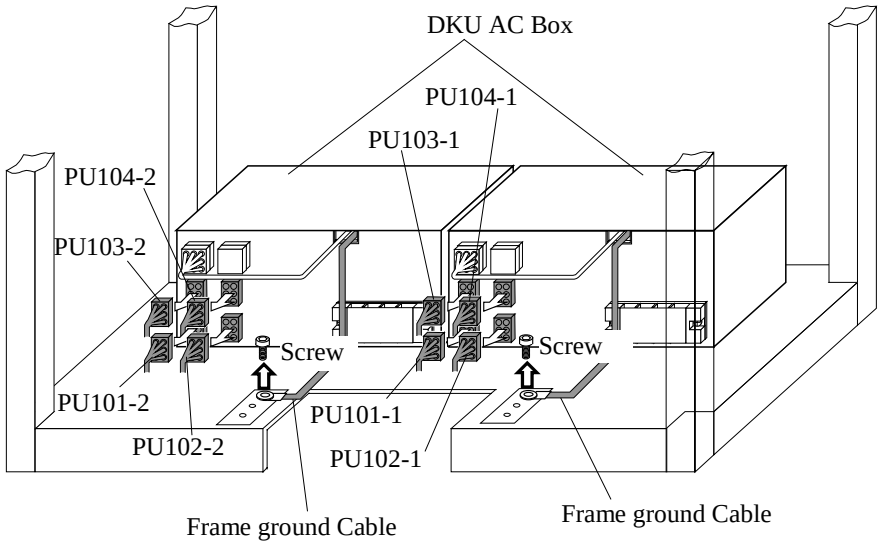
2. Disconnect the Cables.

DKU-F455I-3PSD

a. Remove the screws and remove the frame ground cables.
b. Disconnect the cables (P101-1, P102-1, P103-1, P104-1, P101-2, P102-2, P103-2 and P104-2) from the DKU AC Boxes.

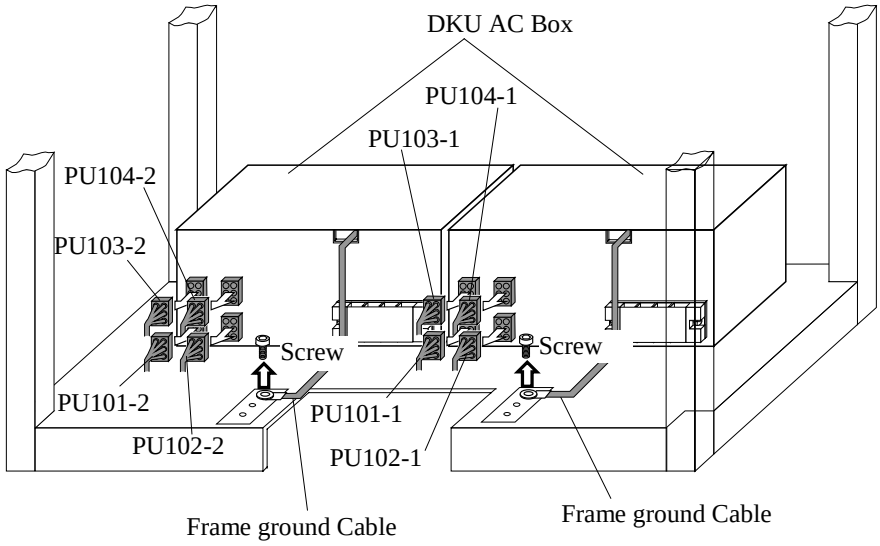


Rear View

Fig. 4.10.3-3 Disconnection of Cables

DKU-F455I-1PSD

a. Remove the screws and remove the frame ground cables.
b. Disconnect the cables (P101-1, P102-1, P103-1, P104-1, P101-2, P102-2, P103-2 and P104-2) from the DKU AC Boxes.



Rear View

Fig. 4.10.3-4 Disconnection of Cables

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3. Remove the Nameplate and labels.
   a. Remove the corresponding nameplate from the left DKU AC Box.

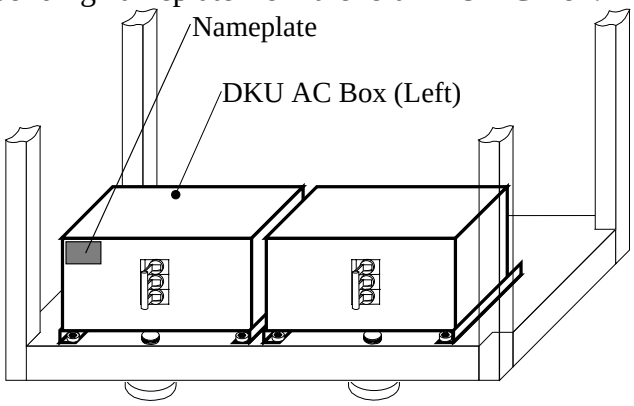

Fig. 4.10.3-5 Removal of Nameplate

   b. Remove the label (V/Hz/PH.) and label (V.Hz.PH.A.W) from the DKU bottom base of rear side.

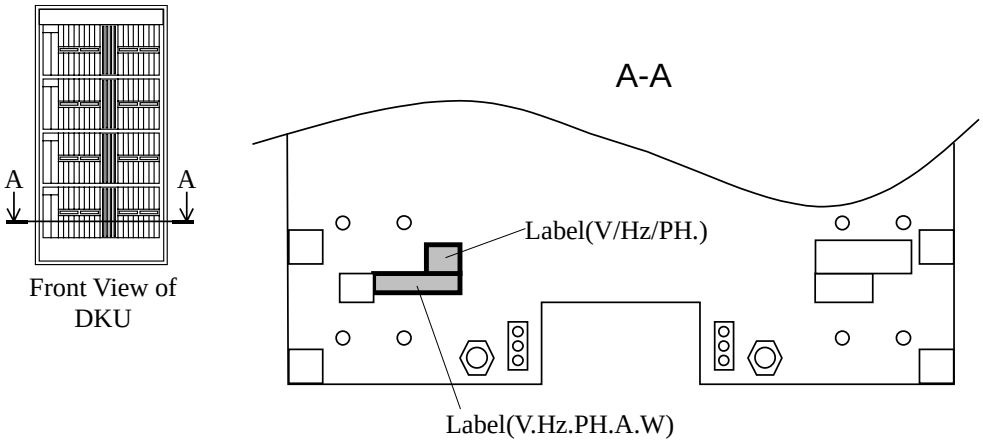

Fig. 4.10.3-6 Removal of Labels

4. Remove the plate.
   a. Remove the two screws and remove the plate.

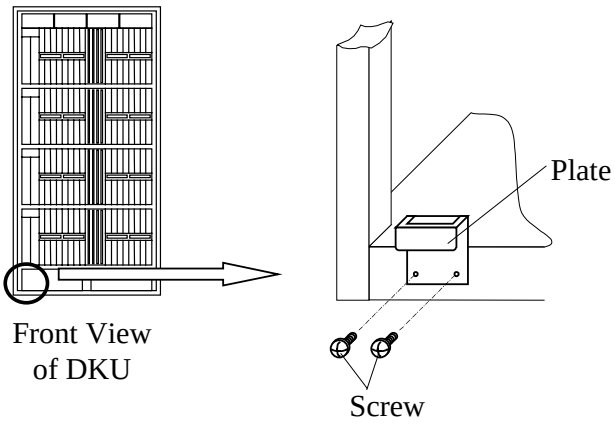

Fig. 4.10.3-7 Remove of Plate

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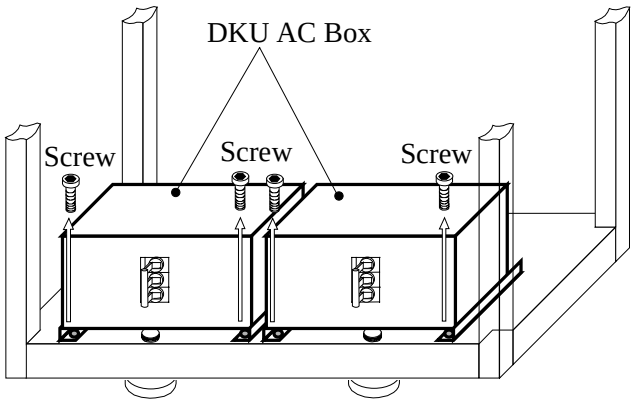
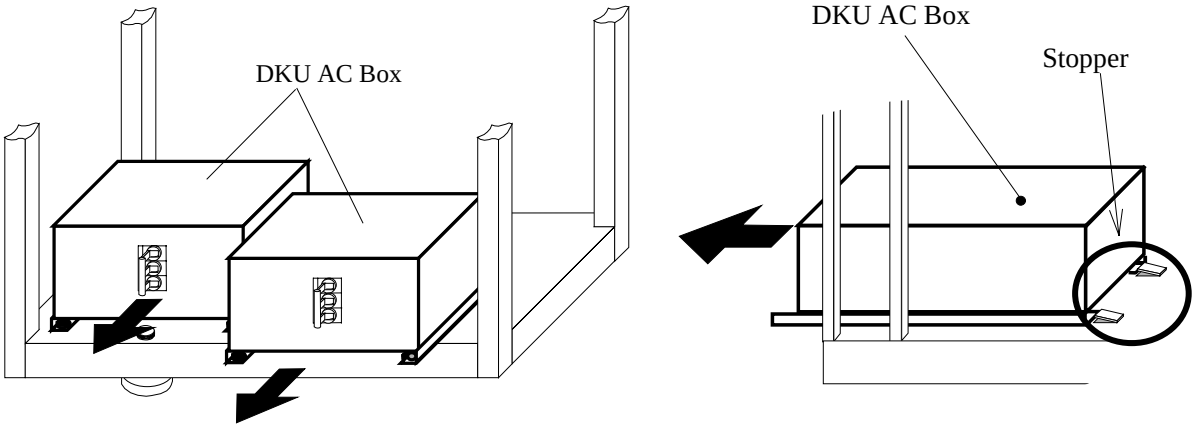
5. Remove the DKU AC Boxes.
   a. Remove the screws from the DKU AC Boxes.



Front View
of DKU

Fig. 4.10.3-8 Removal of Screws

   b. Slide the DKU AC Boxes from the rear to the front.



Front View

Side View

Fig. 4.10.3-9 Removal of DKU AC Boxes

6. Attach the plate.
   a. Attach the plate with the two screws. Refer to Fig. 4.10.3-7.

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4.10.4 De-Installation of AC Box Kit for Single Phase/30A or 3 Phase/30A (DKC-F460I-1PSD/3PSD)

Table 4.10.4-1 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKC-F460I-1PSD	DKC AC Box	5517802-C	2	
		Bracket	3265681-1	1	
		Cover	3265679-1	1	
		Screw	SB306N	2	
		Screw	SB408N	6	
		Screw	SB510N	6	
		Lock Washer	WT005N	6	
		Label(UL5)	5466325-1	2	
		Label(V.Hz.PH.A.W)	3265706-1	1	
		Nameplate (HDS)	2105902-129	1	RSD
			2105903-129		HICAM
			2105903-229		HICEF
		Nameplate (HP)	-	1	RSD
			-		HICAM
			-		HICEF
2	DKC-F460I-3PSD	DKC AC Box	5517802-A	2	
		Bracket	2106296-A	1	
		Cover	3264038-1	1	
		Screw	SB306N	2	
		Screw	SB408N	6	
		Screw	SB510N	4	
		Lock Washer	WT005N	4	
		Label(UL5)	5466325-1	2	
		Label(V.Hz.PH.A.W)	3265706-1	1	
		Nameplate (HDS)	2105902-132	1	RSD
			2105903-132		HICAM
			2105903-232		HICEF
		Nameplate (HP)	-	1	RSD
			-		HICAM
			-		HICEF

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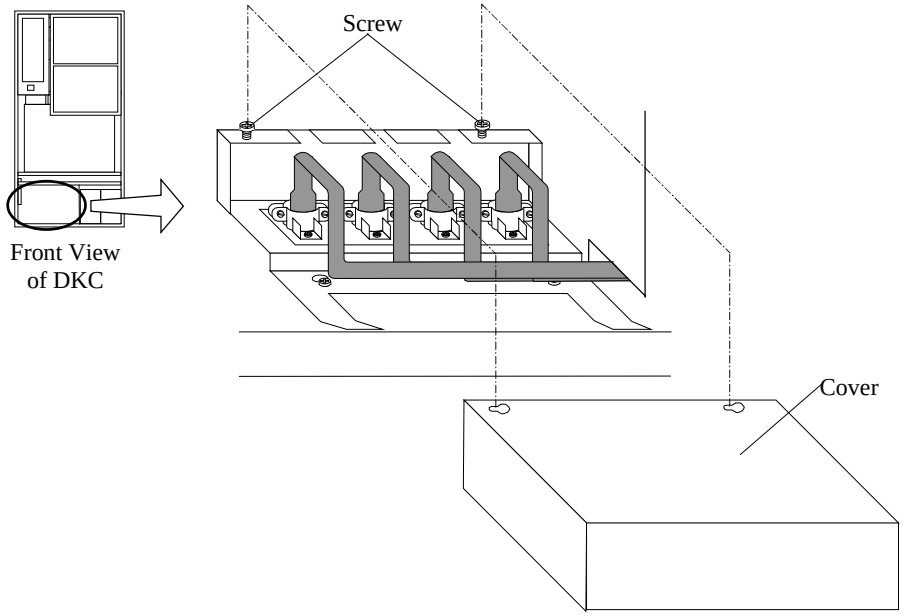
1. Remove the Bracket.
   a. Loosen the two screws and remove the cover.

DKC-F460I-1PSD



DKC-F460I-3PSD

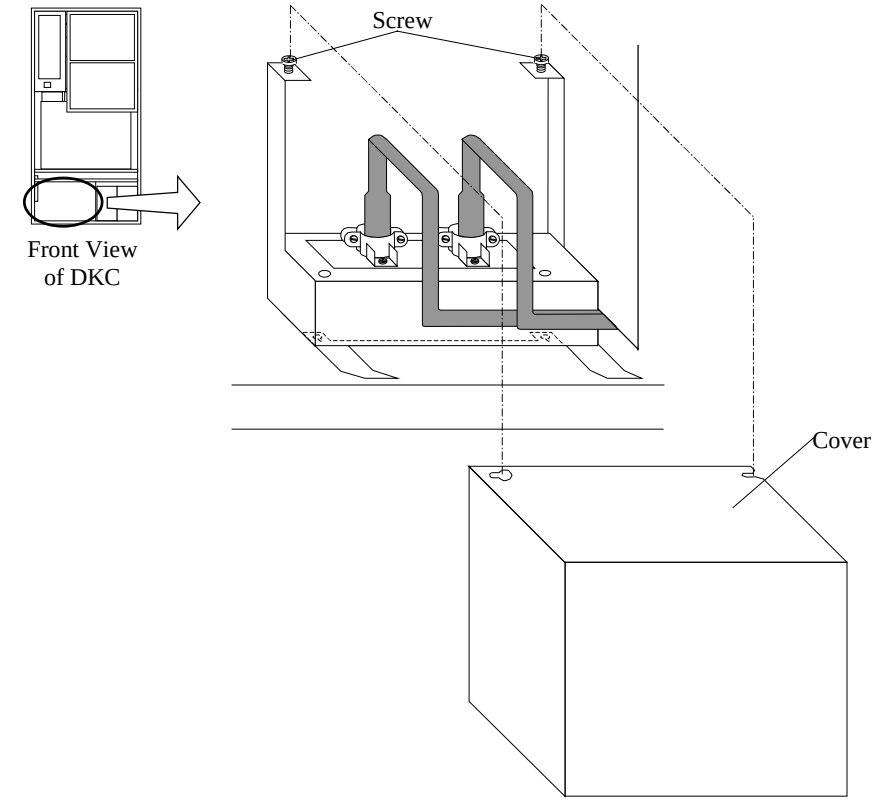


Fig. 4.10.4-1 Removal of Cover

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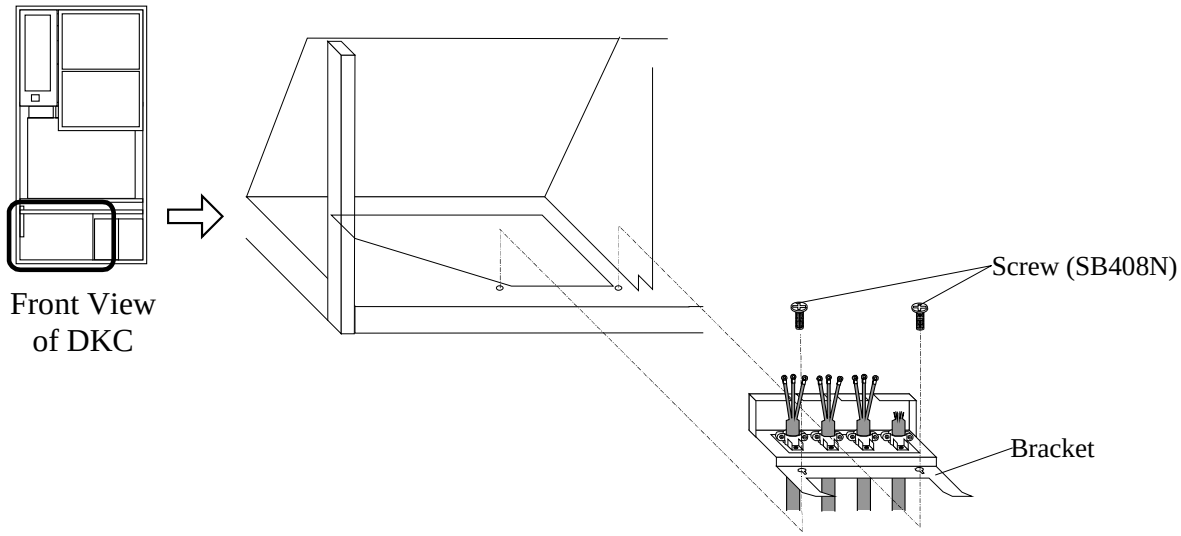
b. Loosen the two screws and remove the bracket.

DKC-F460I-1PSD



DKC-F460I-3PSD

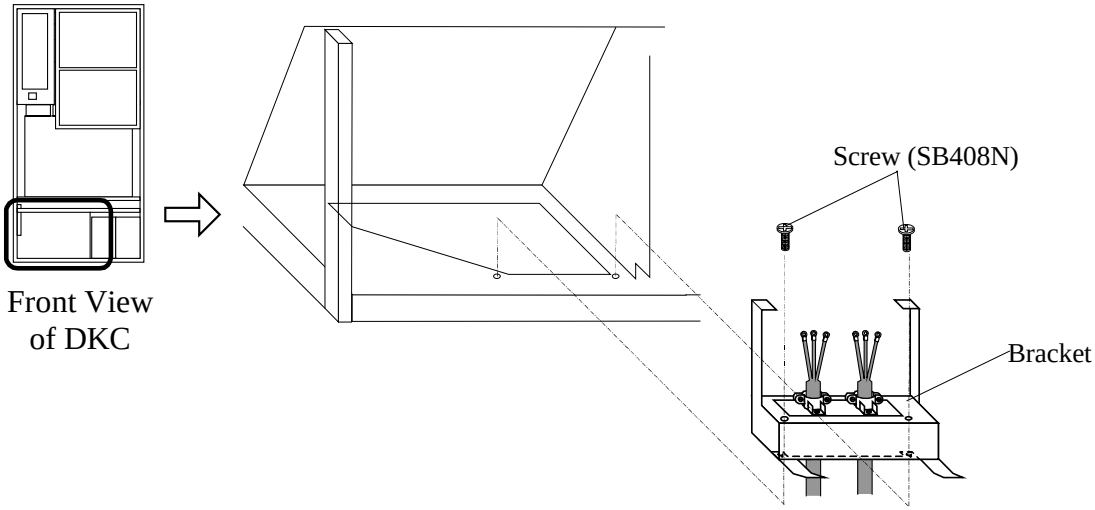


Fig. 4.10.4-2 Removal of Bracket

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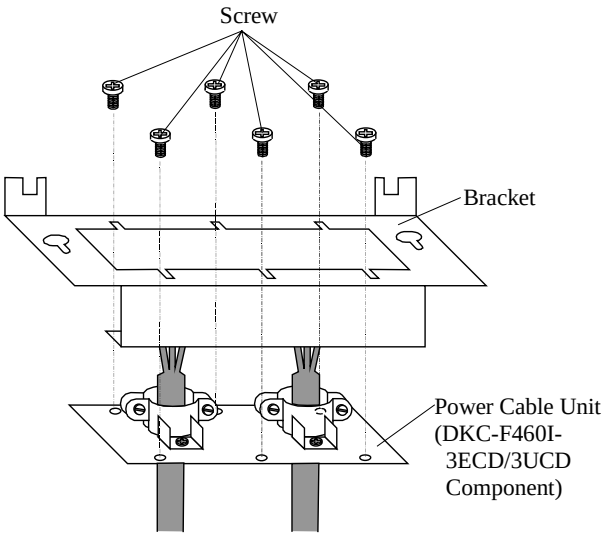
c. Remove the six screws and remove the Power Cable Unit from the bracket.

DKC-F460I-3PSD



DKC-F460I-1PSD

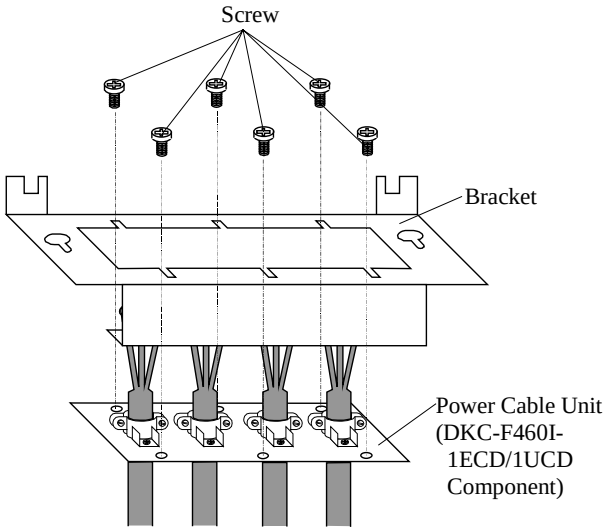


Fig. 4.10.4-3 Removal of Power Cable Unit

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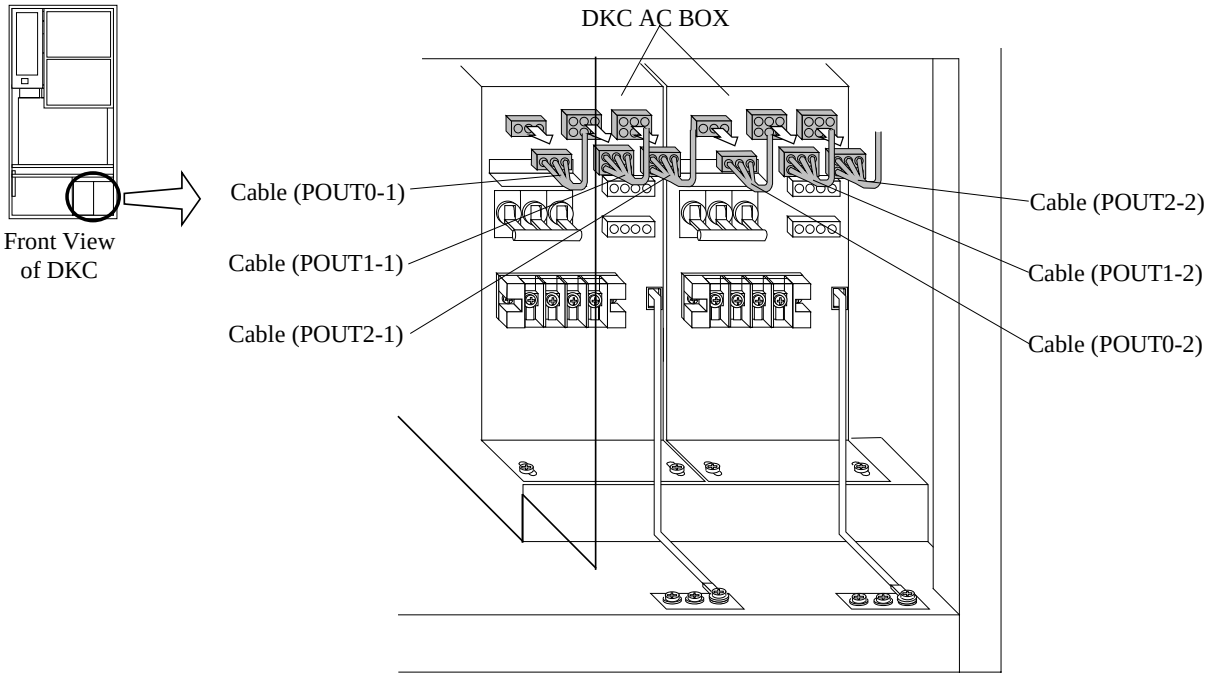
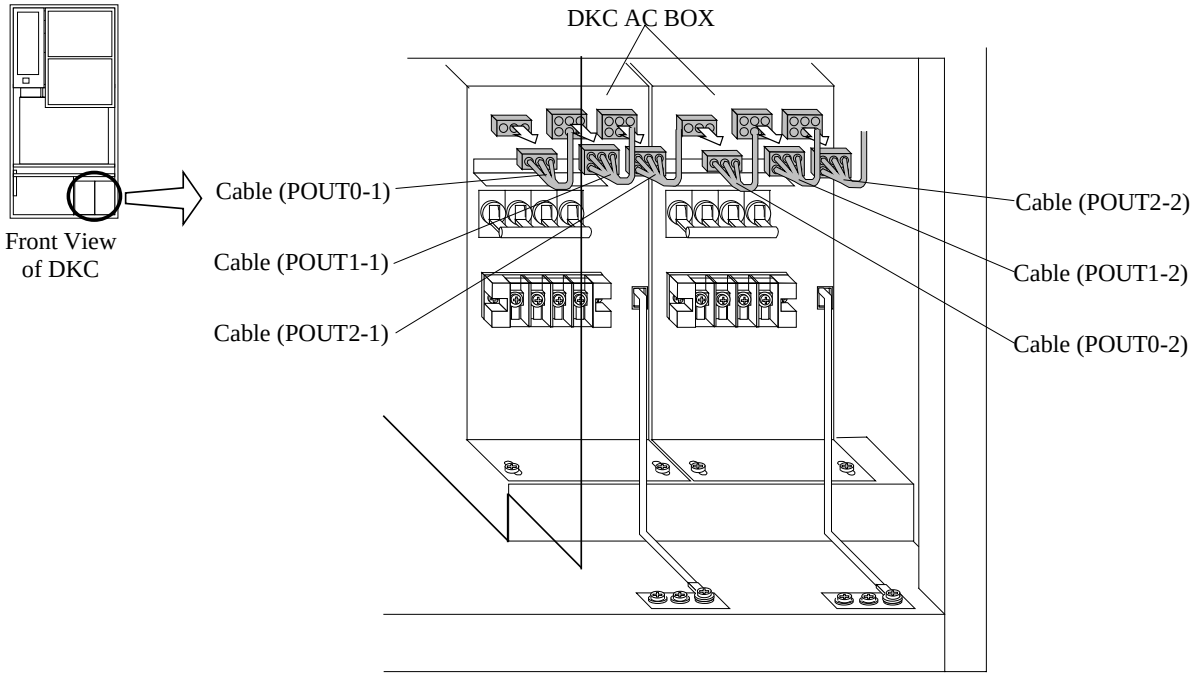
2. Remove the DKC AC Boxes.
   a. Disconnect the cables (POUT0-1, POUT1-1, POUT2-1, POUT0-2, POUT1-2 and POUT2-2) from the DKC AC Boxes.



DKC-F460I-3PSD



DKC-F460I-1PSD

Fig. 4.10.4-4 Disconnection of Cables

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b. Remove the six screws and six lock washers from the frame.

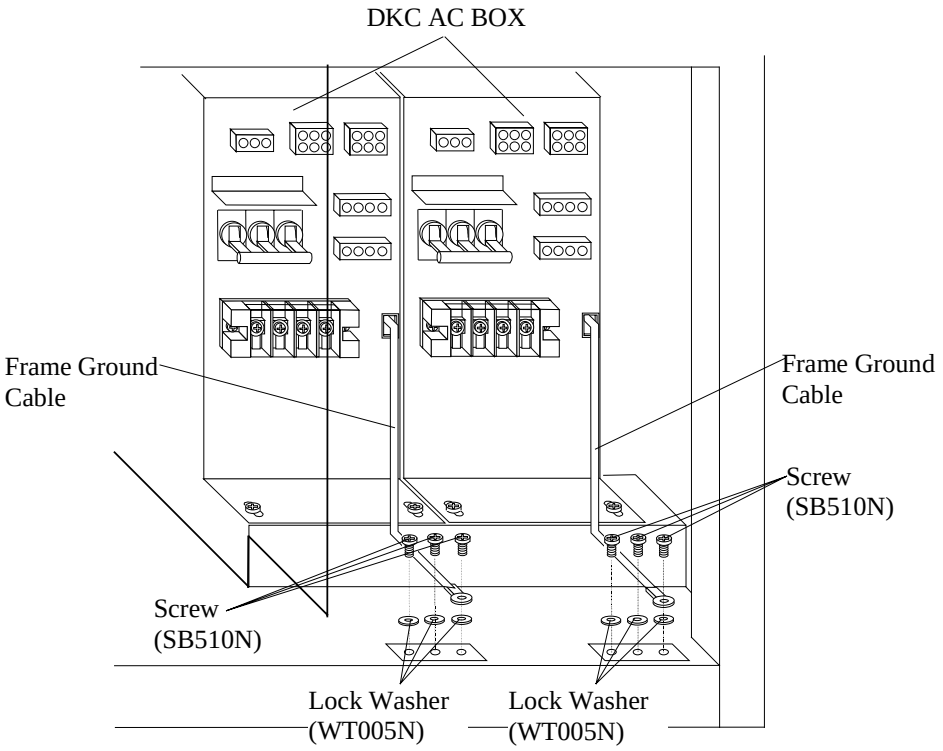

Fig. 4.10.4-5 Removal of Screws

c. Remove the four screws and remove the two DKC AC Boxes.

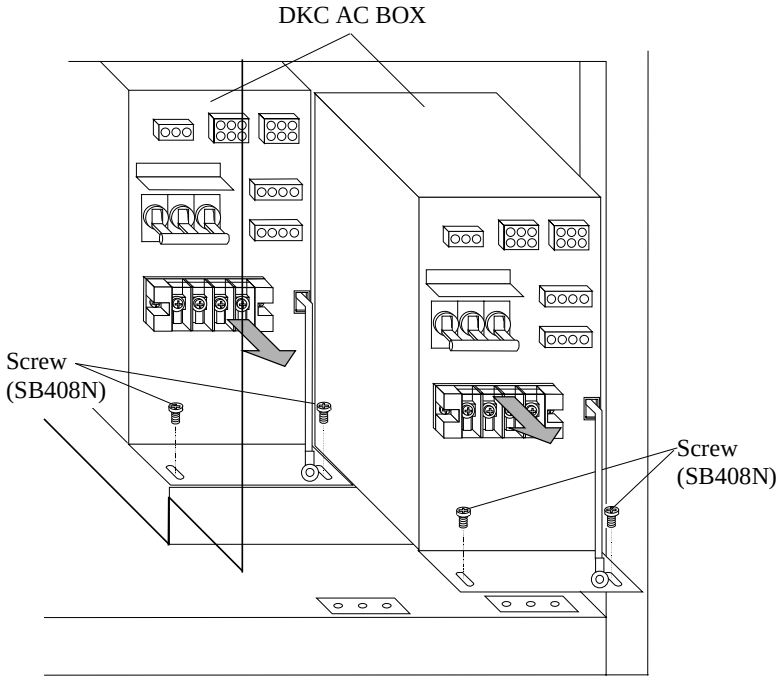

Fig. 4.10.4-6 Removal of DKC AC Boxes

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3. Remove the Nameplate.
   a. Remove the nameplate from the Rear Logic Box cover.

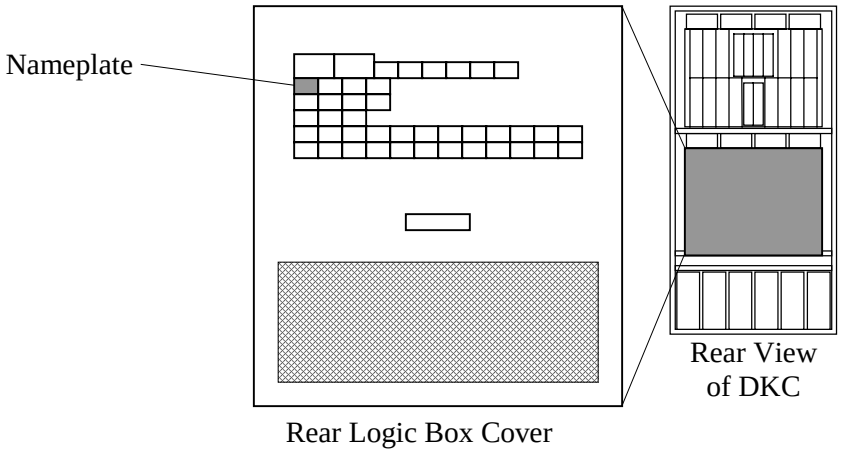

Fig. 4.10.4-7 Location of Nameplate

   b. Remove the label (V/Hz/PH.), label (UL5) and label (V.Hz.PH.A.W) from the frame.

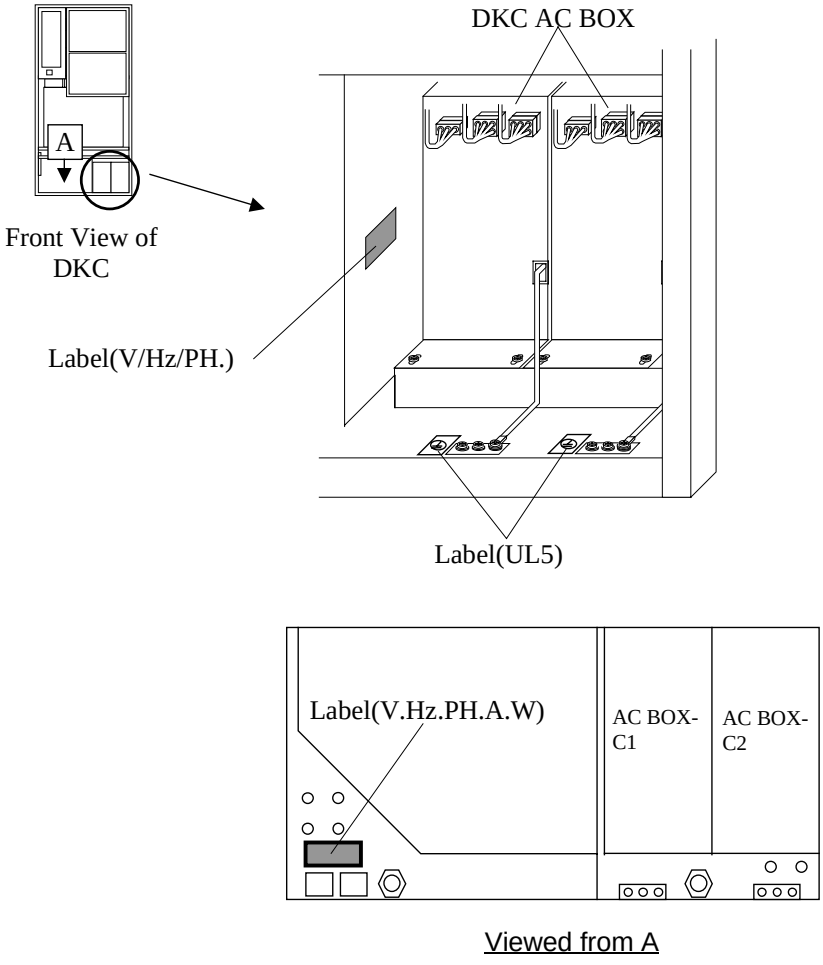

Fig. 4.10.4-8 Removal of Labels

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4.11 De-Installation of Breaker Box Kit for 3 Phase (DKC-F460I-3PS)

Table 4.11-1 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKC-F460I-3PS	Breaker Box	5513517-A	2	
		Screw	SB306N	4	
		Cable	3261822-A	1	Label: PIN1-1, PC111-1
		Cable	3261822-B	1	Label: PIN2-1, PC112-1
		Cable	3261822-C	1	Label: PIN1-2, PC111-2
		Cable	3261822-D	1	Label: PIN2-2, PC112-2
		Nameplate (HDS)	2105902-122	1	RSD
			2105903-122		HICAM
			2105903-222		HICEF
		Nameplate (HP)	2105902-222	1	RSD
			2105903-322		HICAM
			2105903-422		HICEF

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1 De-Installation Procedure of Breaker Box Kit for 3 Phase

1-1 Disconnect the cables from the AC Boxes.

a. Disconnect the cables (PC111-1, PC112-2, PC111-2 and PC112-2) from the DKU AC Boxes.

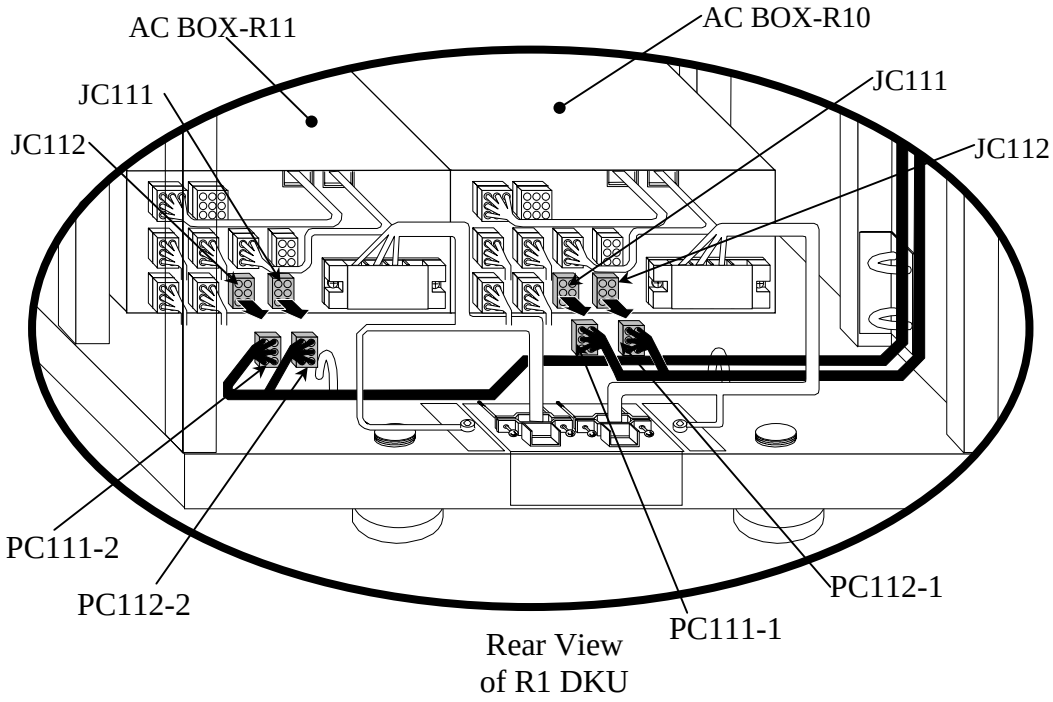

Fig. 4.11-1 Disconnection of Cables for DKC

b. Open the repeat binders and remove the cables.

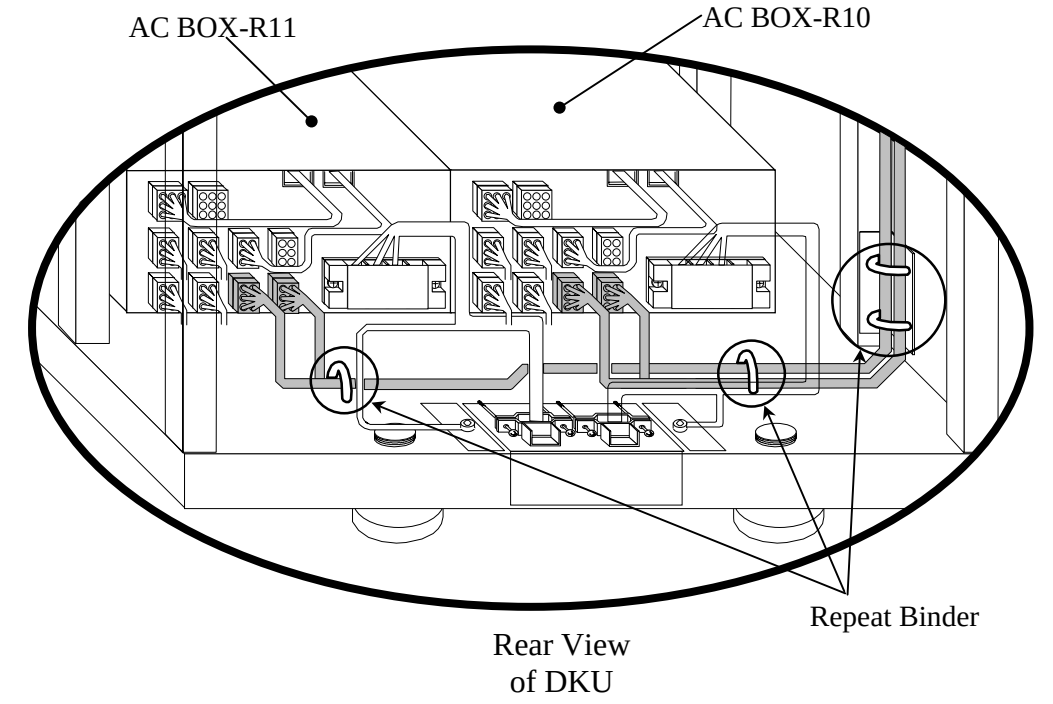

Fig. 4.11-2 Removal of Cables for DKC

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1-2 Remove the Breaker Boxes.

a. Disconnect the cables (POUT0-1, POUT1-1, POUT2-1, PIN1-1, PIN2-1, POUT0-2, POUT1-2, POUT2-2, PIN1-2 and PIN2-2) from the Breaker Boxes.

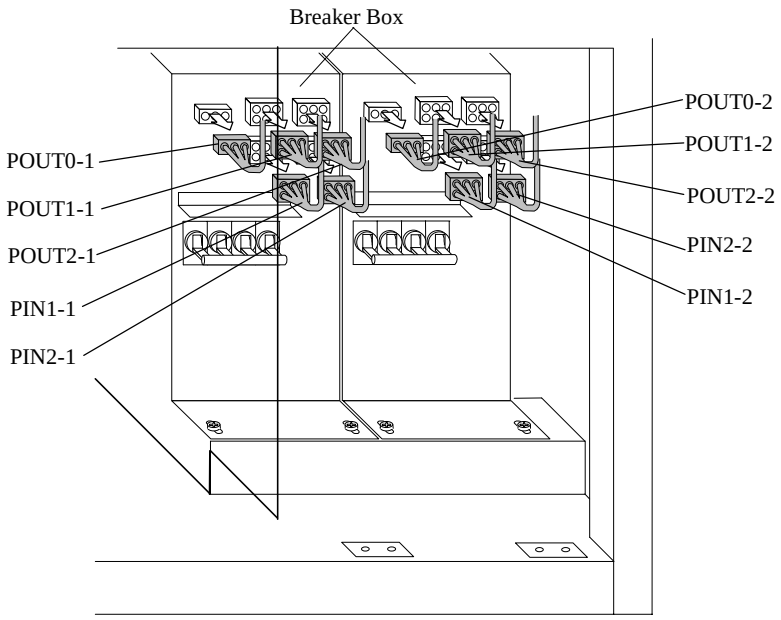

Fig. 4.11-3 Disconnection of Cables

b. Remove the four screws and remove the two Breaker Boxes.

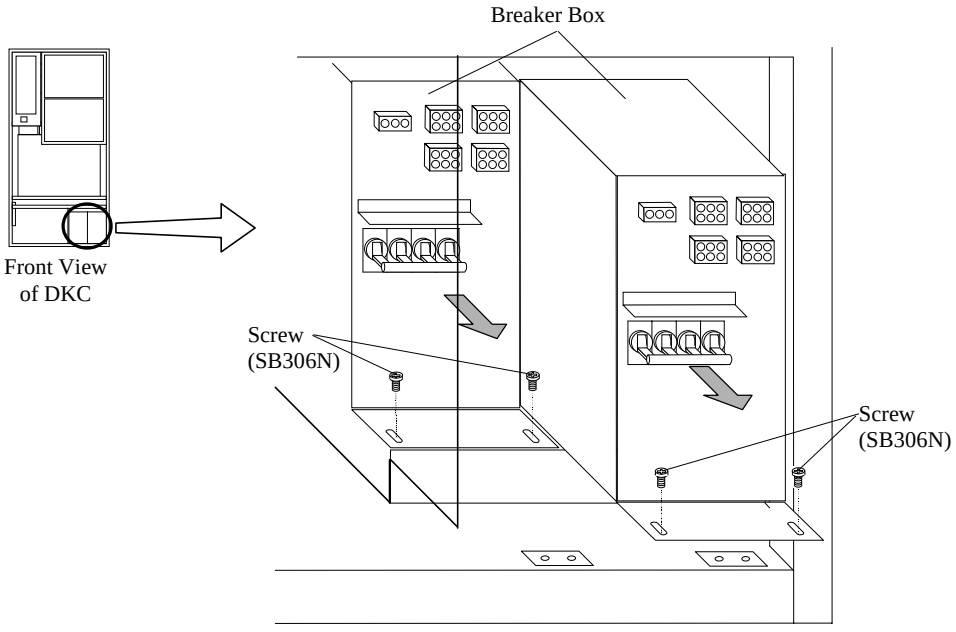

Fig. 4.11-4 Removal of DKC AC Boxes

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1-3 Remove the cables.

a. Remove the cables for the Breaker Boxes.

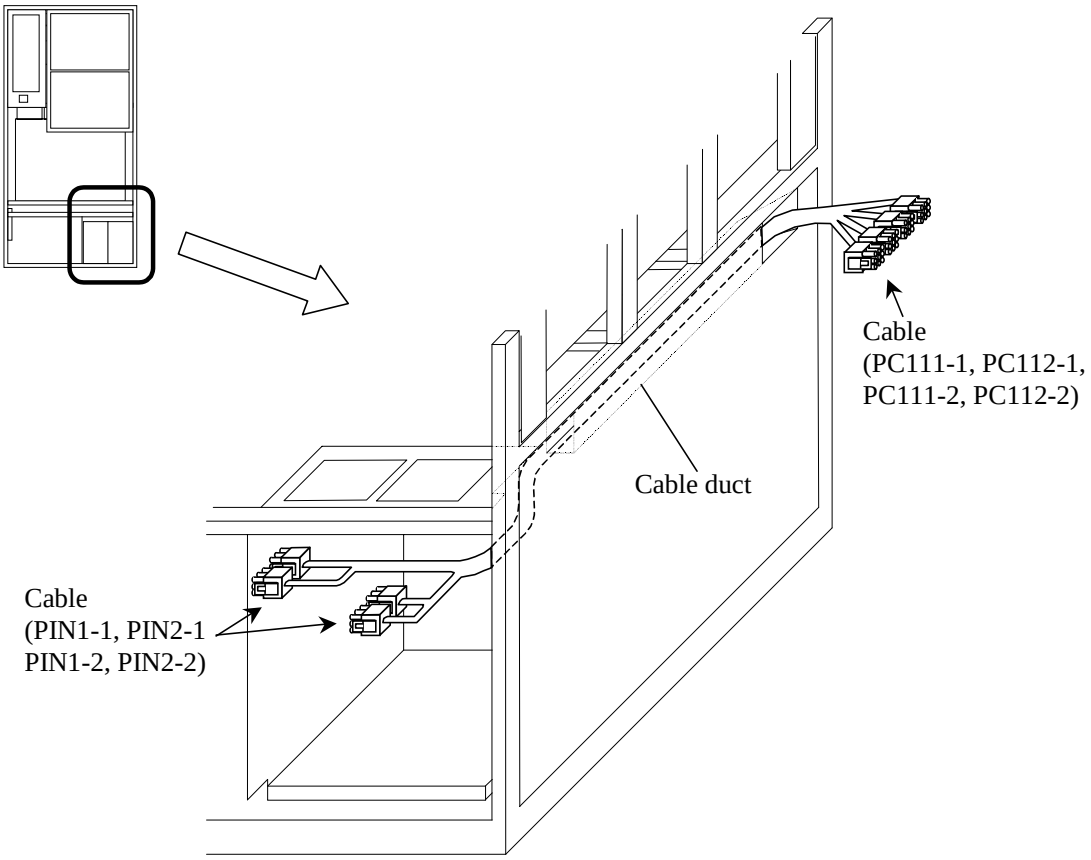

Fig. 4.11-5 Removal of Cables

1-4 Remove the Nameplate.

a. Remove the nameplate from the Rear Logic Box cover.

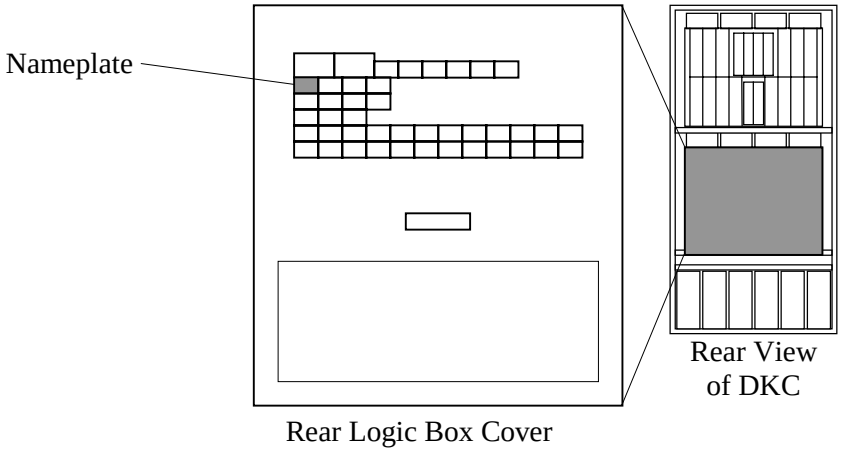

Fig. 4.11-6 Location of Nameplate

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4.12 De-Installation of 256MB Additional Memory for SVP (DKC-F460I-256M)

Table 4.12-1 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKC-F460I-256M	Additional SVP Memory	5518055-A	1	
		LABEL		1	
		Nameplate(HP)	2105902-235	1	RSD
			2105903-335	1	HICAM
			2105903-435	1	HICEF

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4.12.1 De-Installation Procedure of 256MB Additional Memory for SVP

1. Open the front door and then open the DKC panel.

2. Turn the SVP Assy and turn off the power for the SVP.

3. Loosen the screw and open the SVP frame, and remove the lower SH box cover.
   (1) Open the SVP frame.
   SVP frame type1
   a. Remove the screw① and open the SVP frame.

   SVP frame type2
   a. Loosen the screw② and the SVP stopper is slide to the left.
   b. Open the SVP ASSY (Basic).
   c. Remove the screw③ and open the SVP frame.

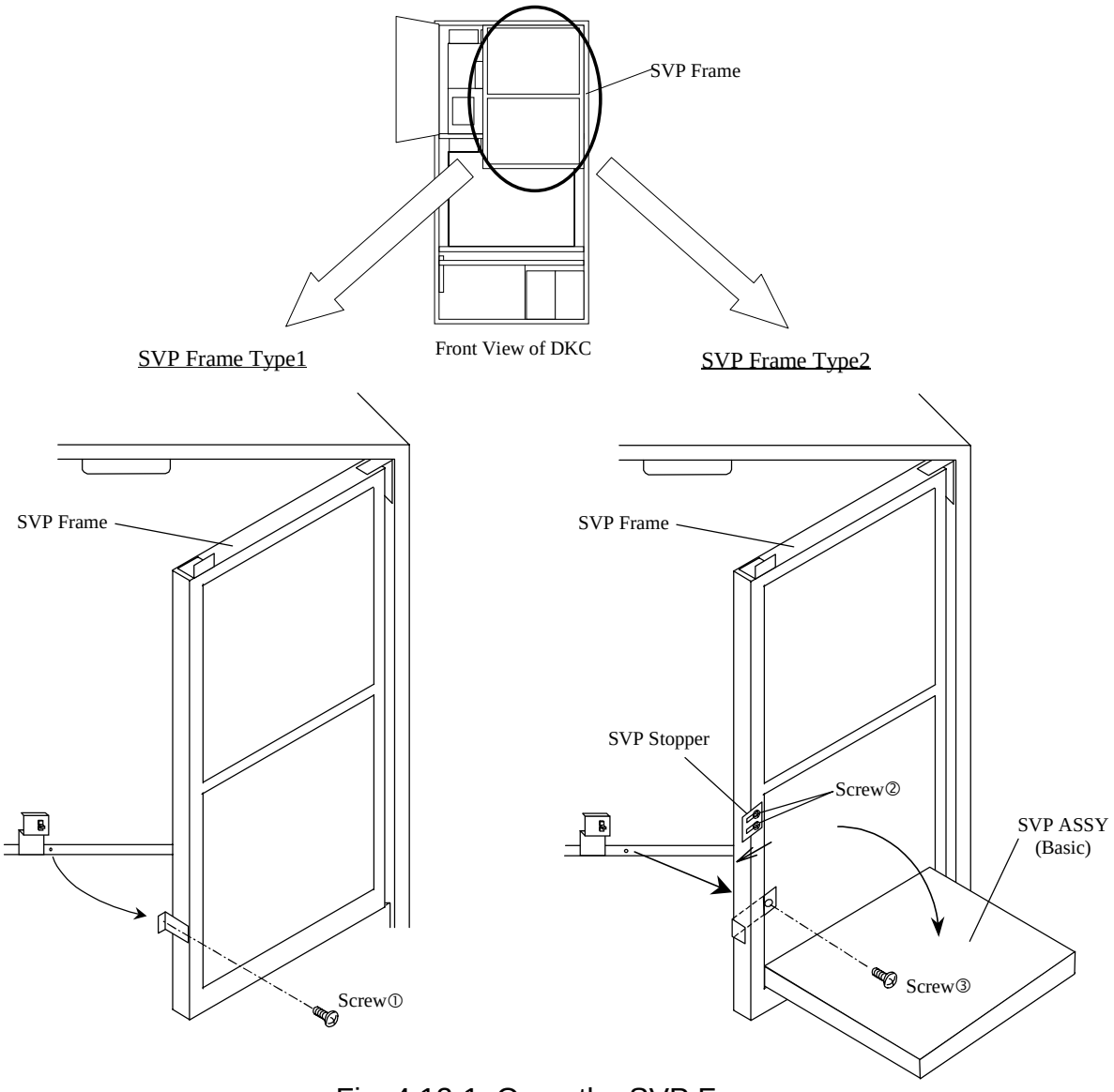

Fig. 4.12-1 Open the SVP Frame

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(2) Loosen the screws and remove the lower SH box covers.

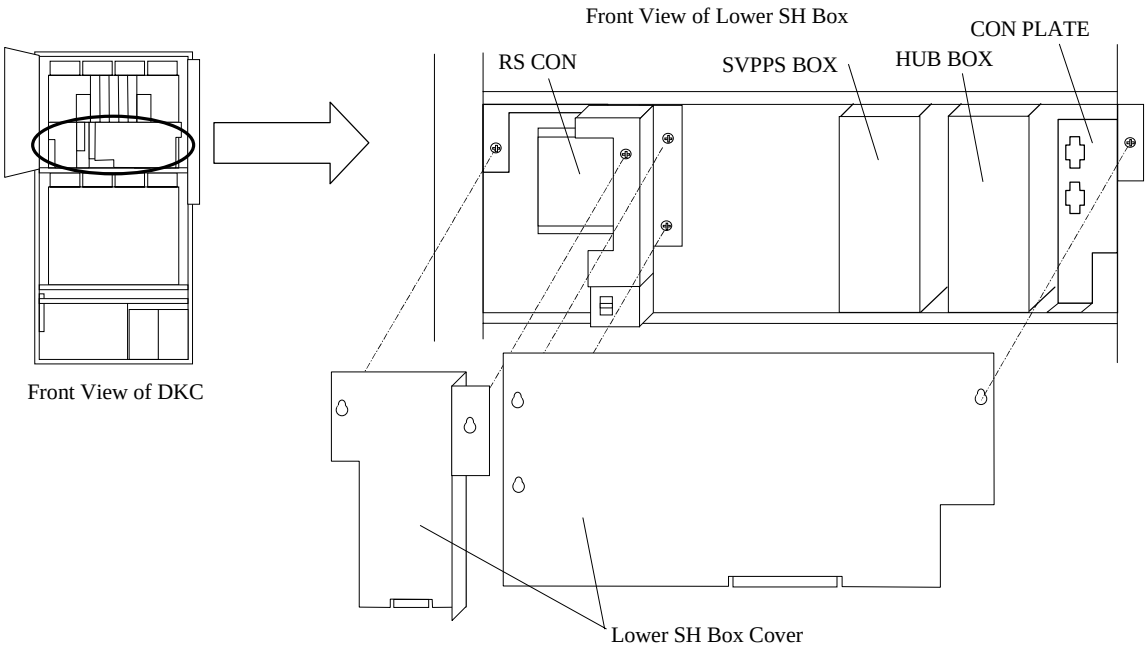

Fig. 4.12-2 Open the Lower SH Box Cover

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4. Insert the Jumper.

Replacement of Basic SVP ASSY

a. Insert the maintenance jumper into JP1 on the RS CON PCB.

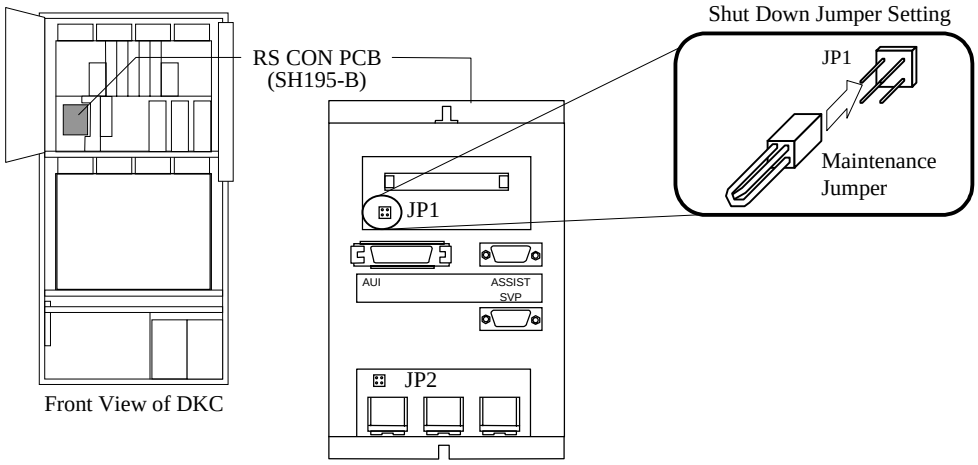

Fig. 4.12-3 Jumper settings of RS CON PCB

Replacement of Option SVP ASSY

a. Insert the maintenance jumper into PS SD on the SVPPS BOX.

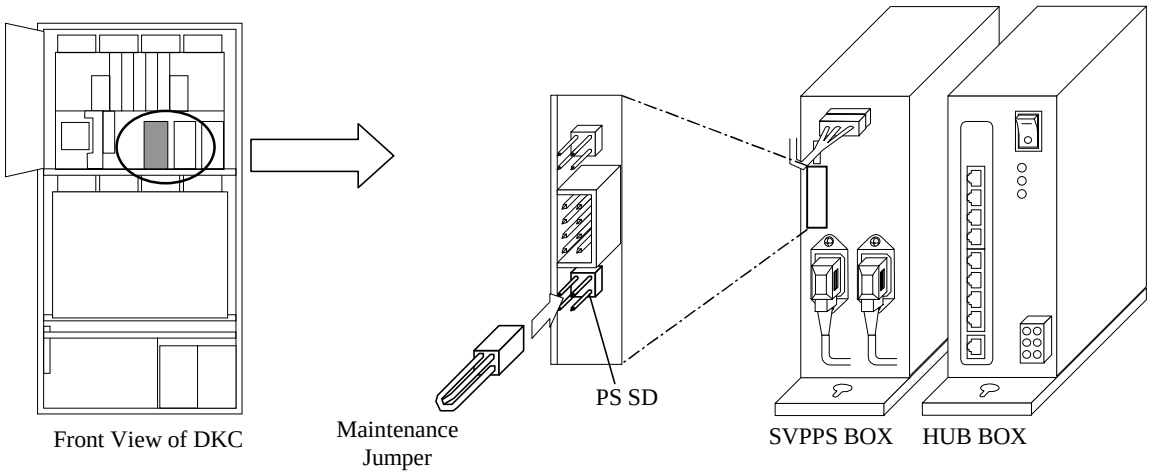

Fig. 4.12-4 Jumper settings of SVPPS BOX

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5. Remove the cables.

Additional Memory of Basic SVP

a. Disconnect the RS232C cable (RSVP-1) from the RS CON PCB.

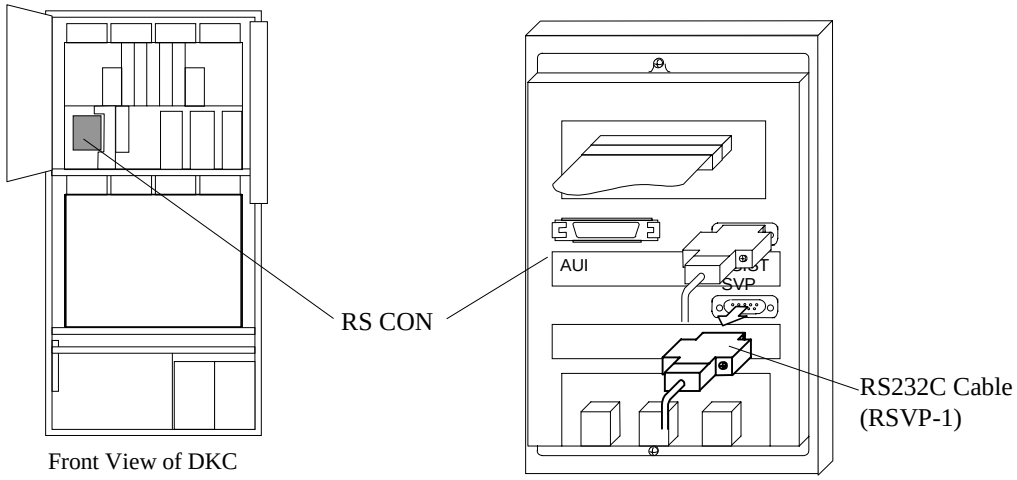

Fig. 4.12-5 Disconnection of RS232C Cable

b. Disconnect the LAN cable (LSVP-1) from the HUB BOX.
Disconnect the SVP PS cable (PSVP-1) from the CON PLATE.

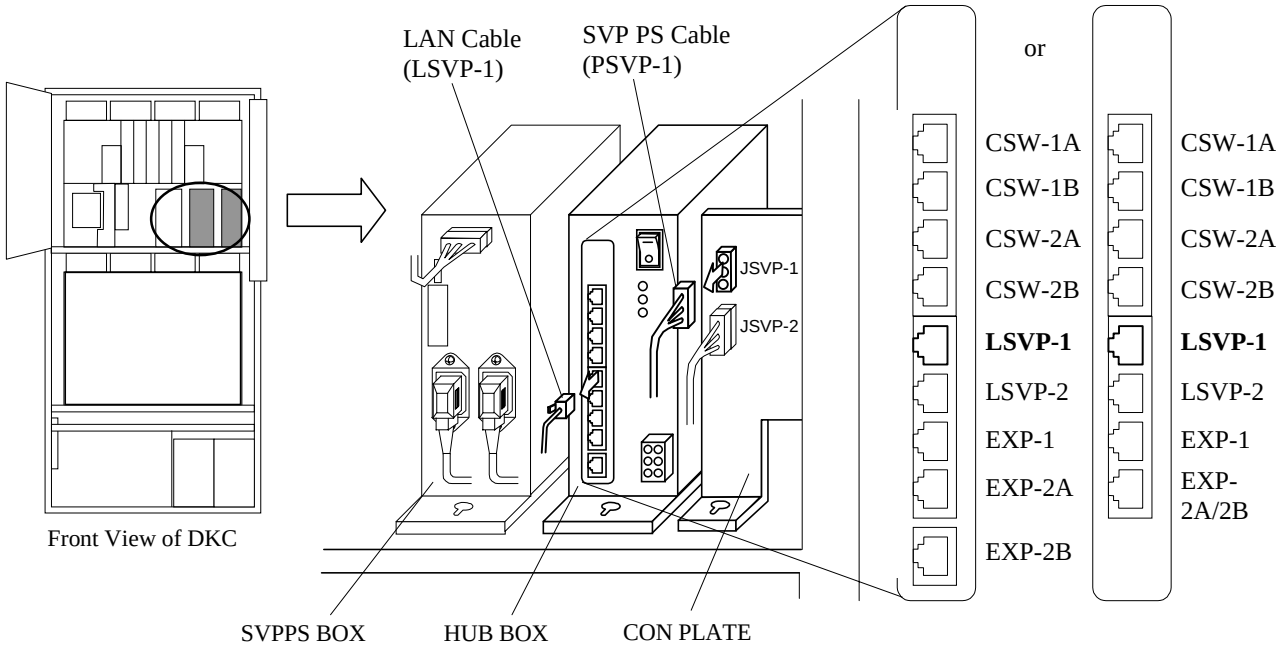

Fig. 4.12-6 Disconnection of LAN Cable and SVP PS Cable

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c. Open the repeat binder and remove the cables.

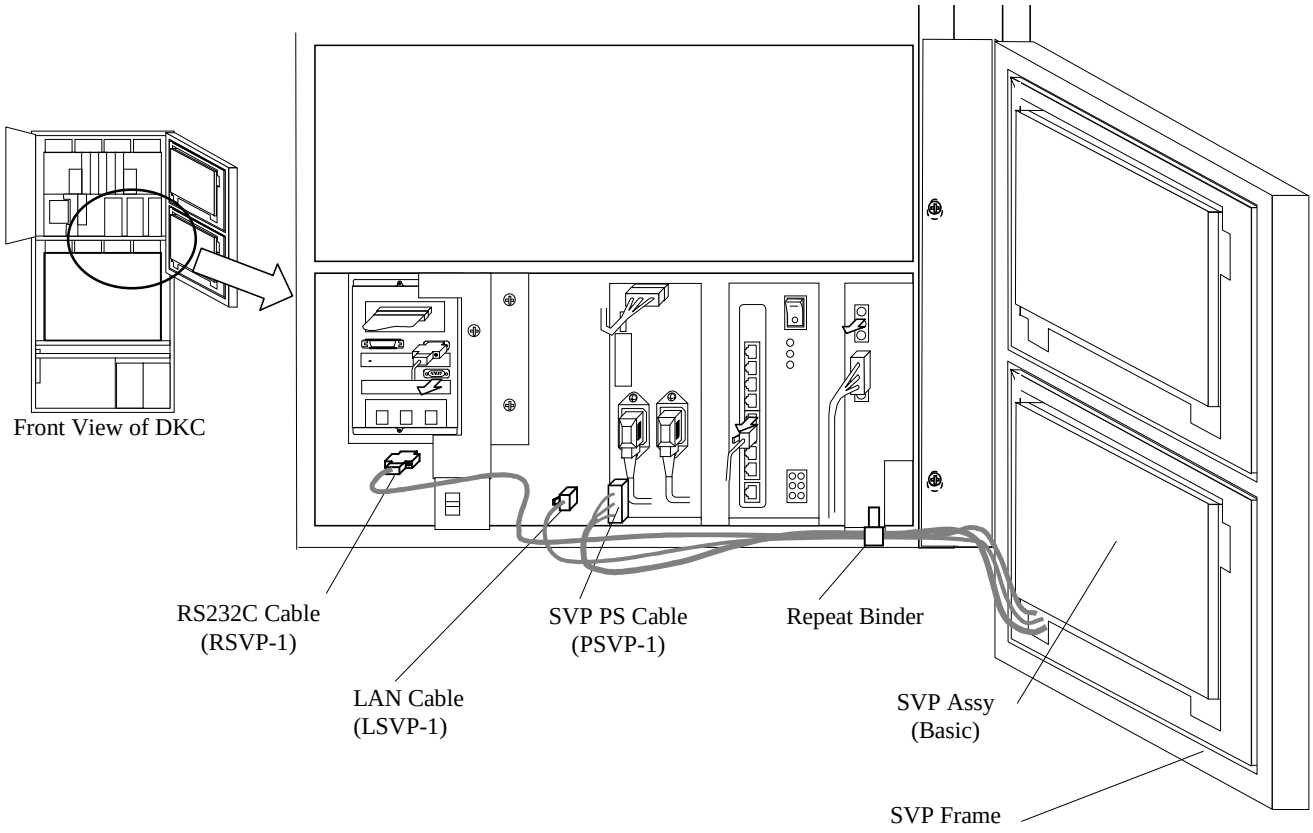

Fig. 4.12-7 Removal of Cables

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Additional Memory of Option SVP ASSY

a. Disconnect the RS232C cable (RSVP-2) from the RS CON PCB.

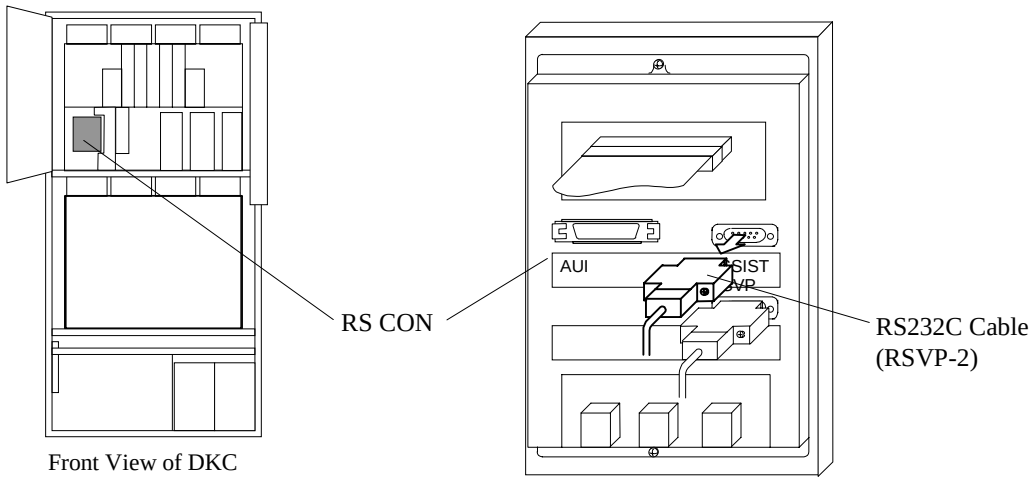

Fig. 4.12-8 Disconnection of RS232C Cable

b. Disconnect the LAN cable (LSVP-2) from the HUB BOX.
Disconnect the SVP PS cable (PSVP-2) from the CON PLATE.

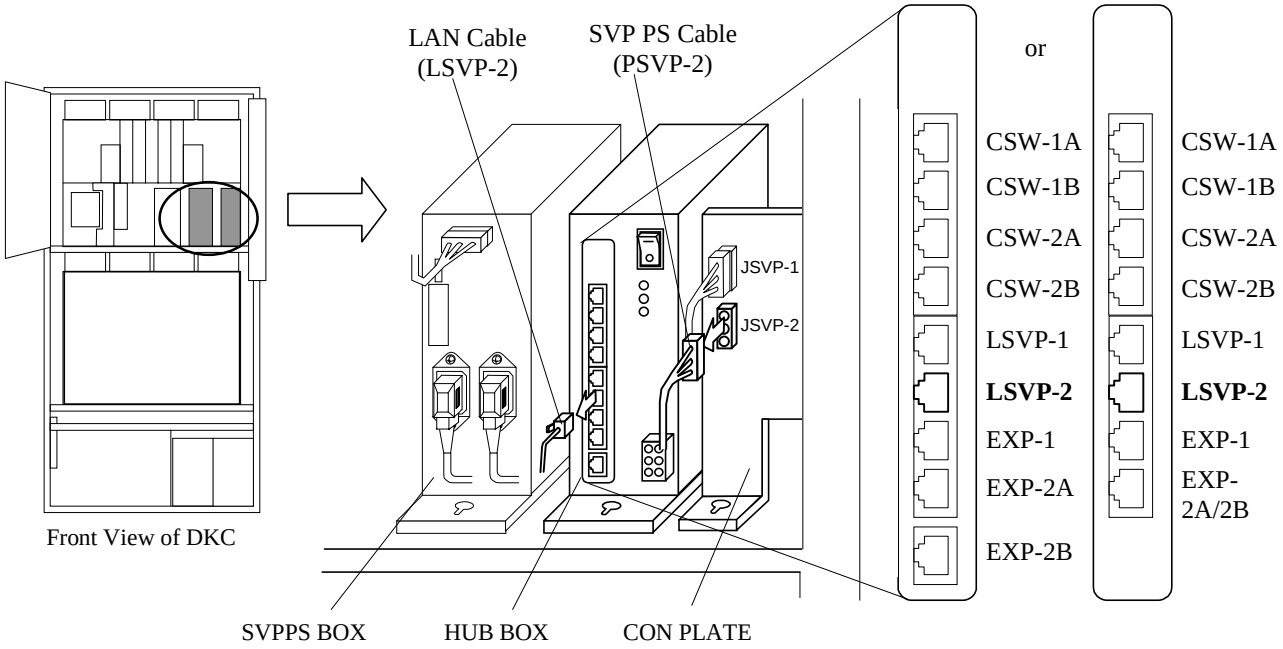

Fig. 4.12-9 Disconnection of LAN Cable and SVP PS Cable

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c. Open the repeat binder and remove the cables.

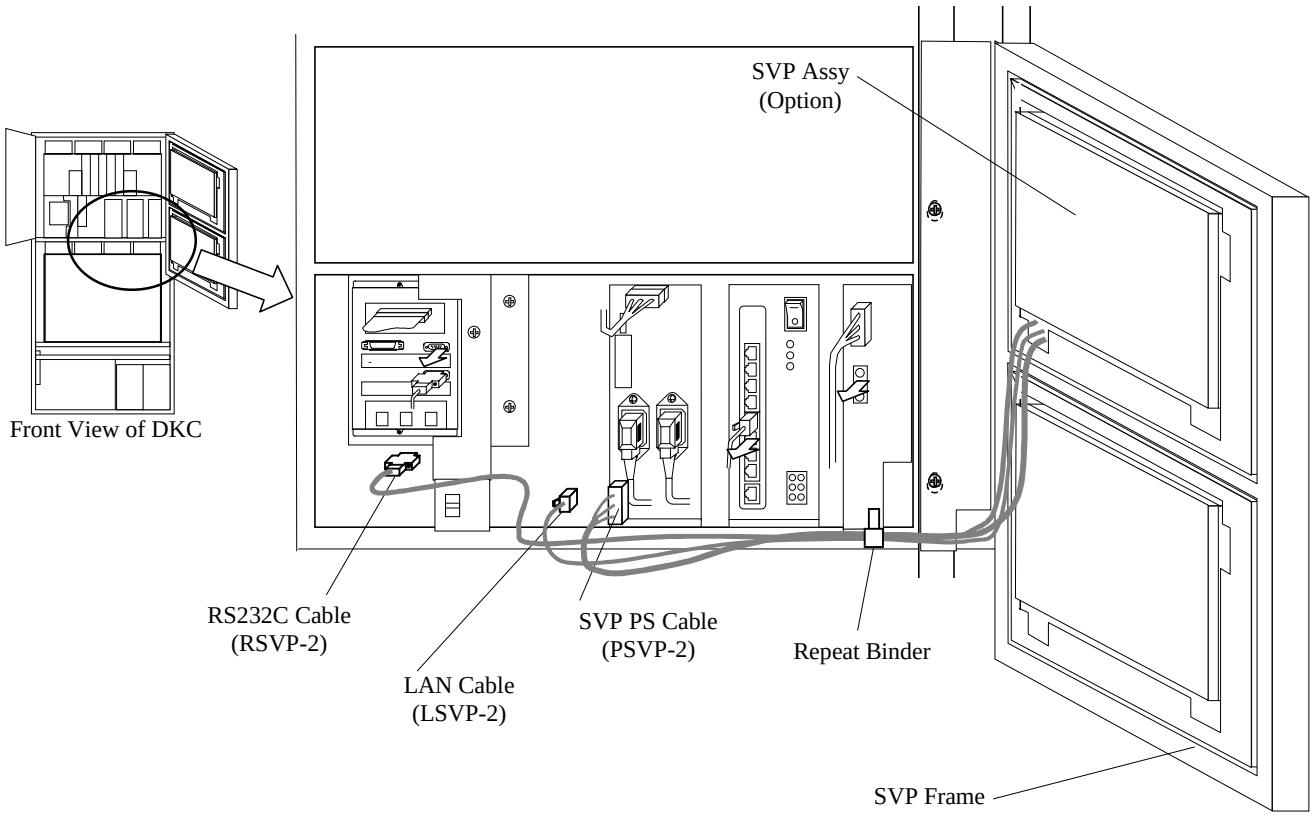

Fig. 4.12-10 Removal of Cables

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6. Remove the SVP cover.
   a. Close the SVP frame.
   b. Loosen the screws and remove the SVP cover.

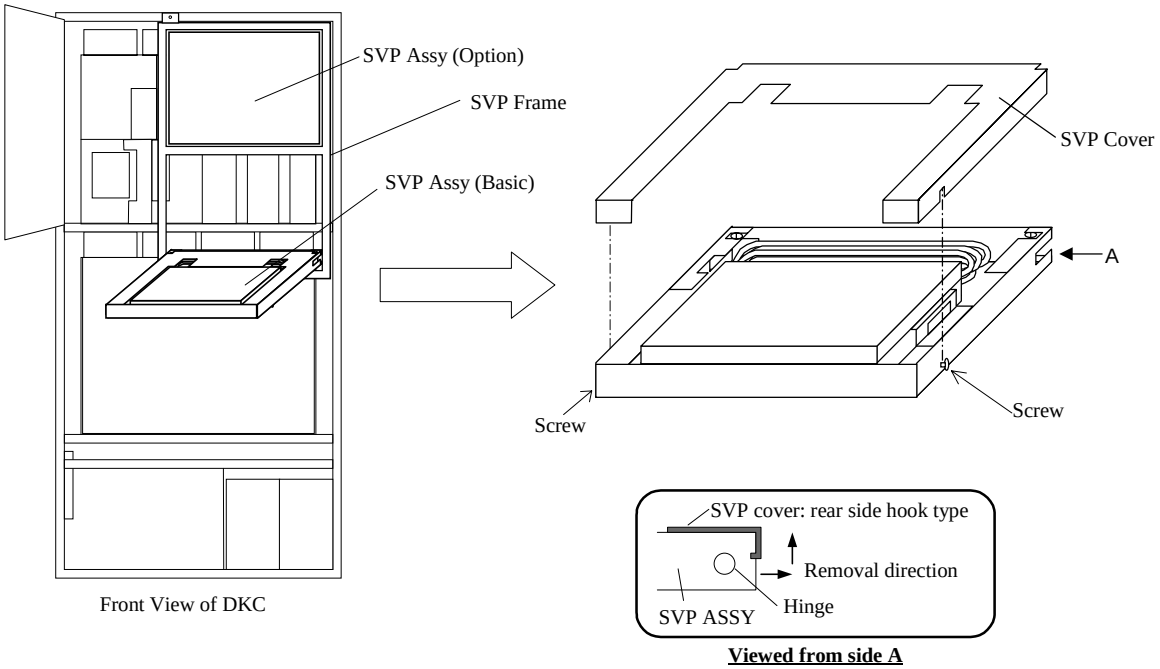

Fig. 4.12-11 Removing SVP cover

7. Loosen the screws and remove the stopper.
8. Pull out the SVP ASSY from the SVP frame.

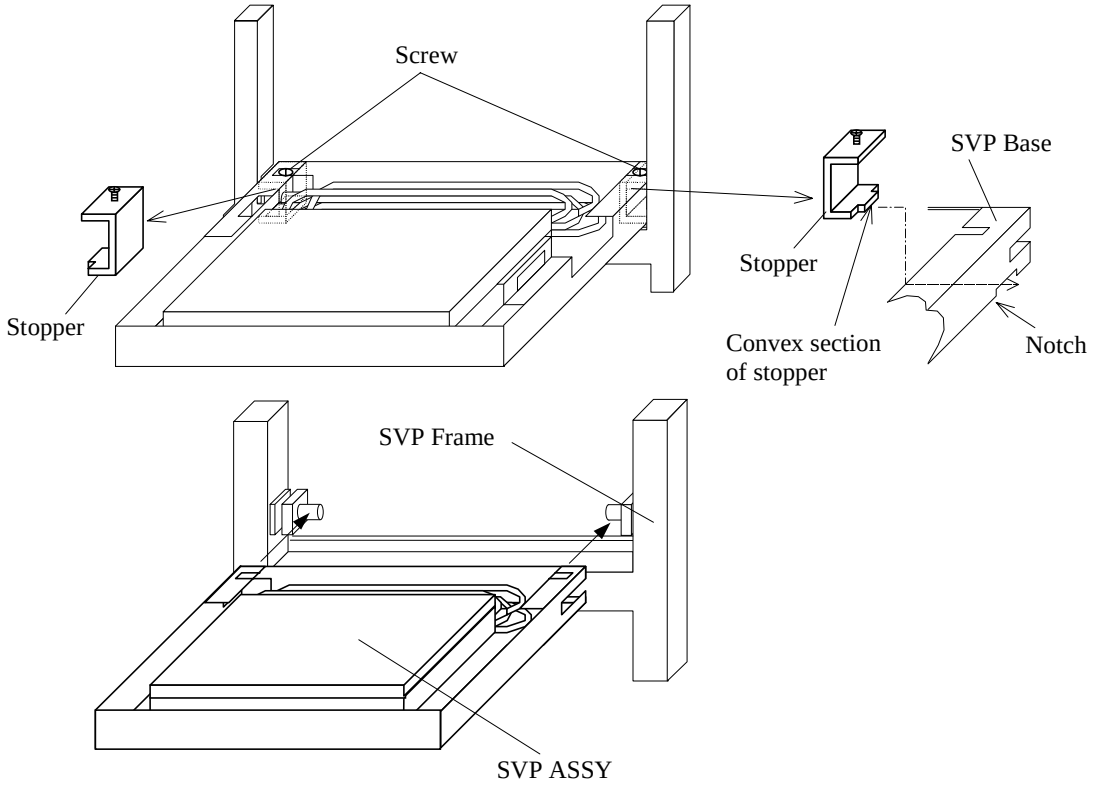

Fig. 4.12-12 Removing and installing the SVP Assy

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9. Remove the DC Cable and LAN Cable from the SVP.

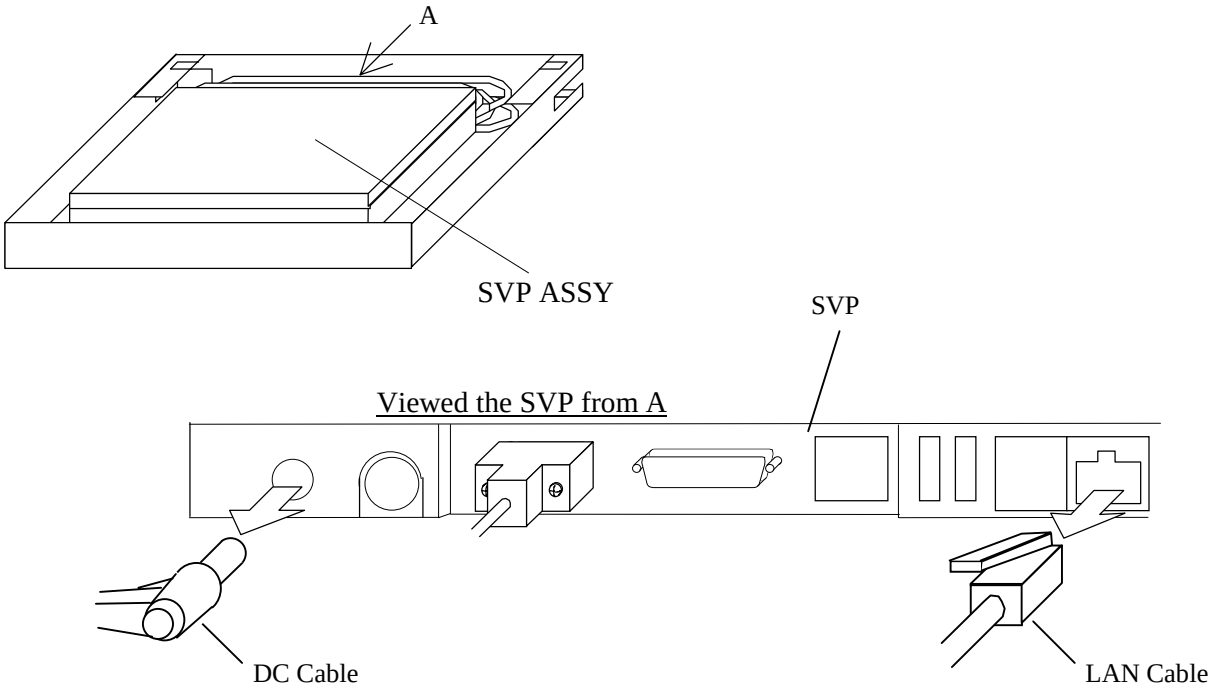

Fig. 4.12-13 Removing and installing Cables

10. Loosen the screws and remove the SVP stoppers.

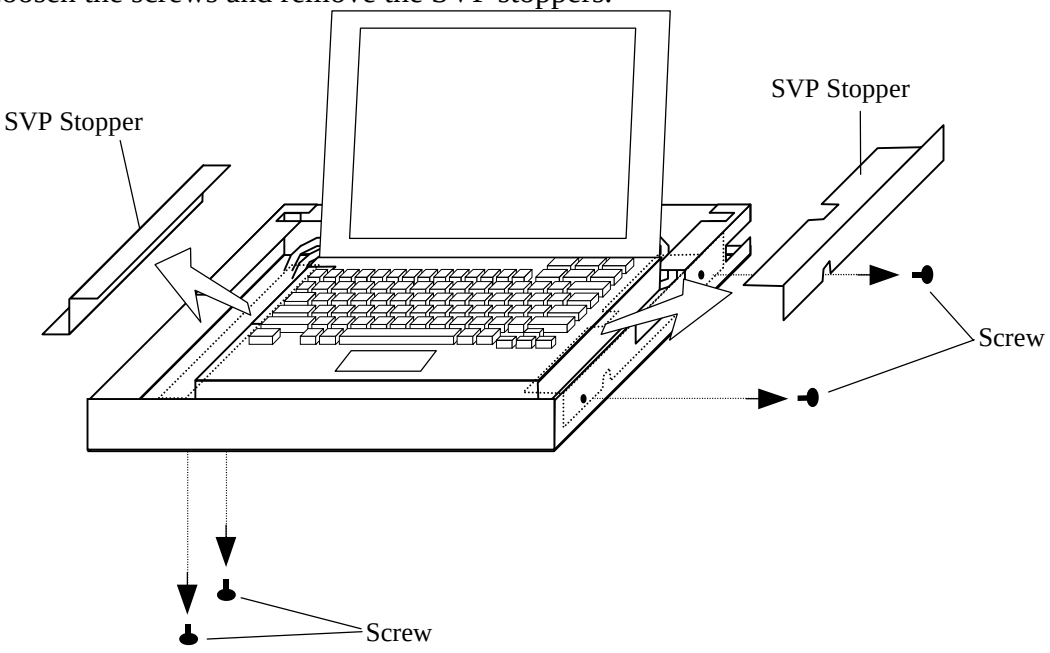

Fig. 4.12-14 Removing and installing the SVP Stoppers

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11. Remove the SVP and RS232C Cable.

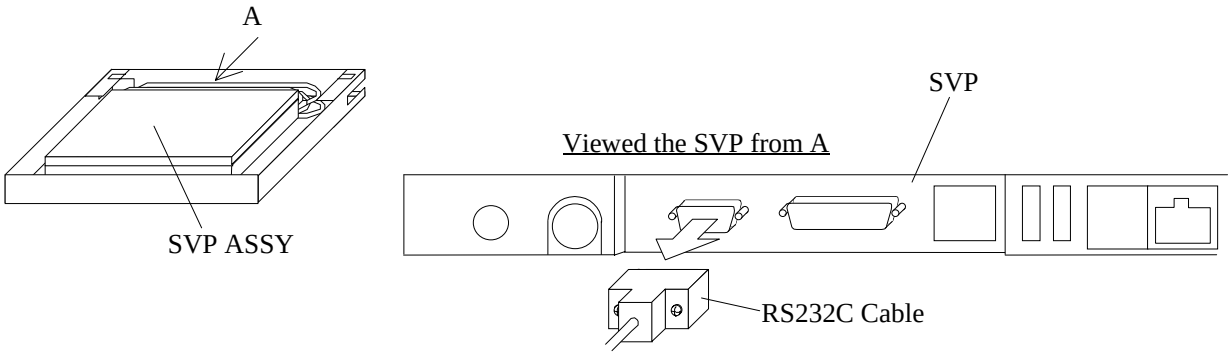

Fig. 4.12-15 Removing and installing RS232C Cable

12. Remove the Memory module.
    a. Loosen the screw and remove the Memory cover.
    b. Remove the Memory module from the slot 2.
    c. Attach the Memory cover with screw.

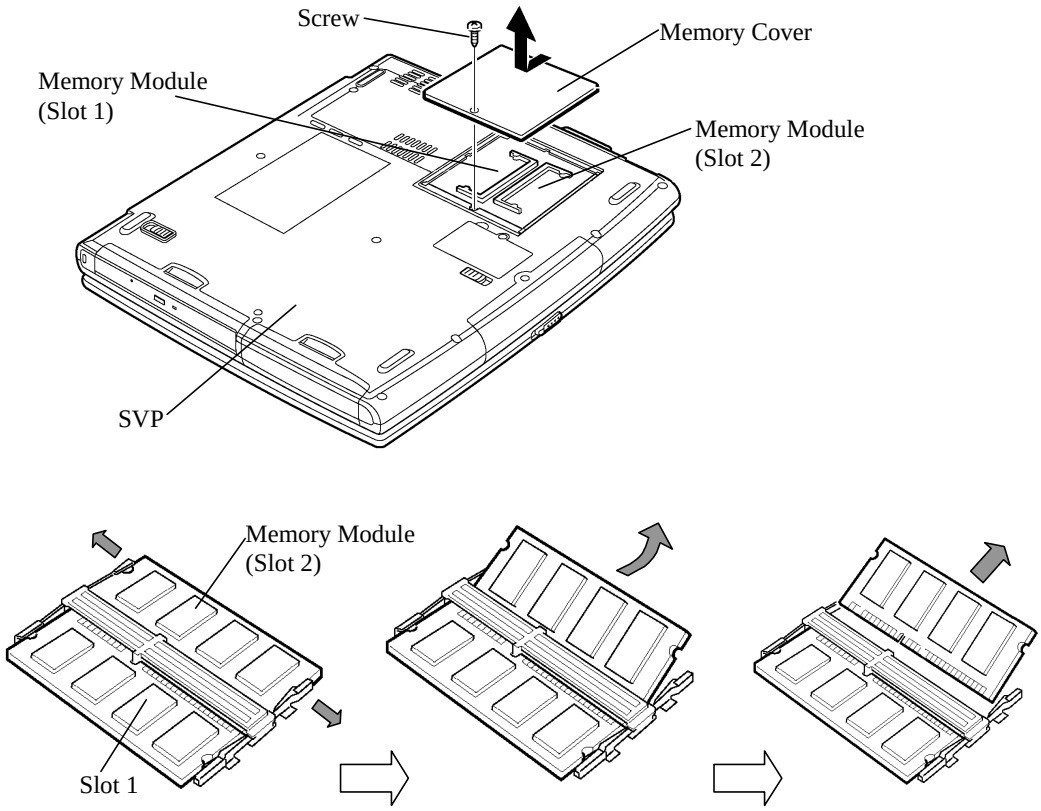

Fig. 4.12-16 Removal of Memory Module

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13. Detach the Label.
    a. Detach the Label of “256MB”.

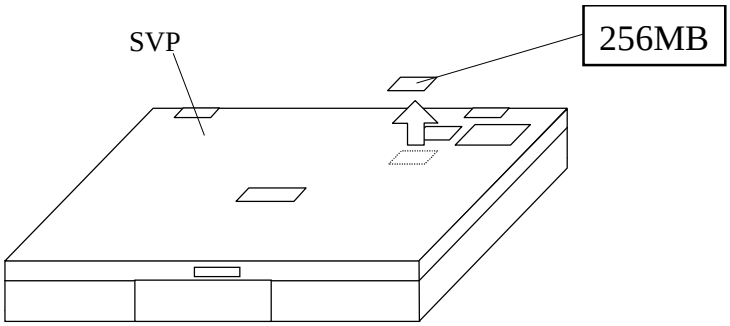

Fig. 4.12-17 Detachment of Label

14. Install a SVP.
    a. Attach the SVP and RS232C Cable. (See Fig. 4.12-15.)
    b. Install the SVP to the SVP ASSY and attach the SVP stoppers with screws. (See Fig. 4.12-14.)
    c. Connect the LAN cable and DC cable to the SVP. (See Fig. 4.12-13.)

15. Install a SVP Assy.
    a. Install the SVP to the SVP ASSY and attach the SVP stoppers with screws. (See Fig. 4.12-12.)
    b. Attach the SVP ASSY cables to the RS CON PCB, HUB BOX and CON PLATE. And then close the repeat binder. (See Fig. 4.12-7 and 4.12-10.)
    c. Attach the SVP cover. (See Fig. 4.12-11.)

16. Remove the Jumper.

Replacement of Basic SVP ASSY

    a. Remove the maintenance jumper of the JP1 on the RS CON PCB. (See Fig. 4.12-3.)

Replacement of Option SVP ASSY

    a. Remove the maintenance jumper of the PS SD on the SVPPS BOX. (See Fig. 4.12-4.)

17. Remove the nameplate.
    a. Remove the nameplate from the Rear Logic Box cover.

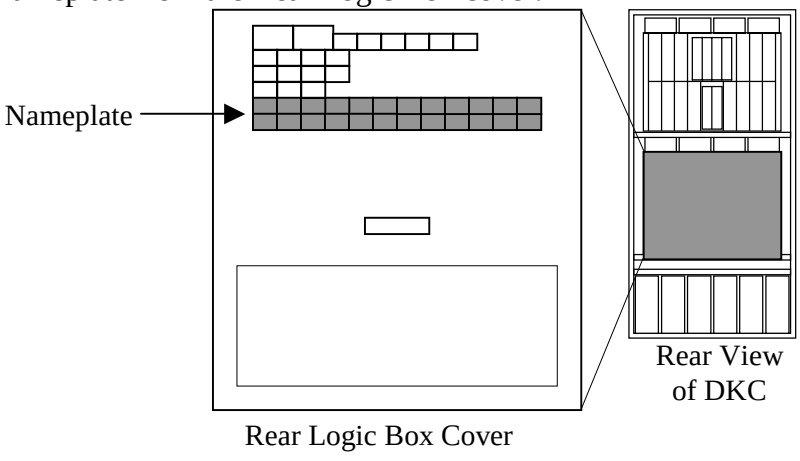

Fig. 4.12-18 Removal of Nameplate

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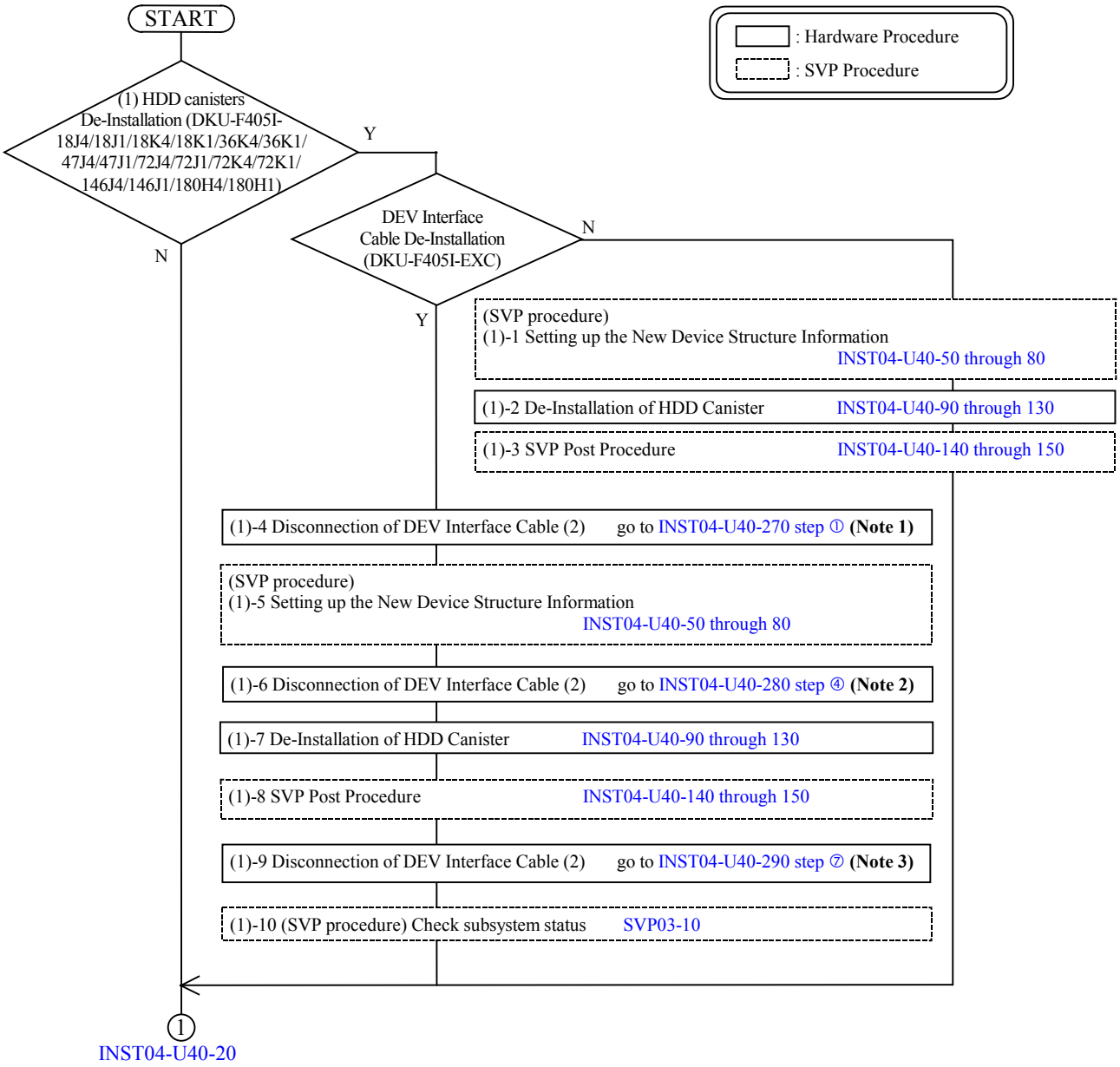
4.13 DKU405I Disconnection

4.13.1 De-Installation Procedure

Notice:
The de-installation for B4 BOX only is impossible.

Non-Disruptive De-installation Procedure General Flow



(Note 1) Remove the cable covers to disconnect the DEV interface cables.
* In this step, do not disconnect the DEV interface cable from operating DKU.
(Note 2) Disconnect the DEV interface cable from operating DKU.
(Note 3) Remove the DEV interface cable from DKU and attach the cable covers.

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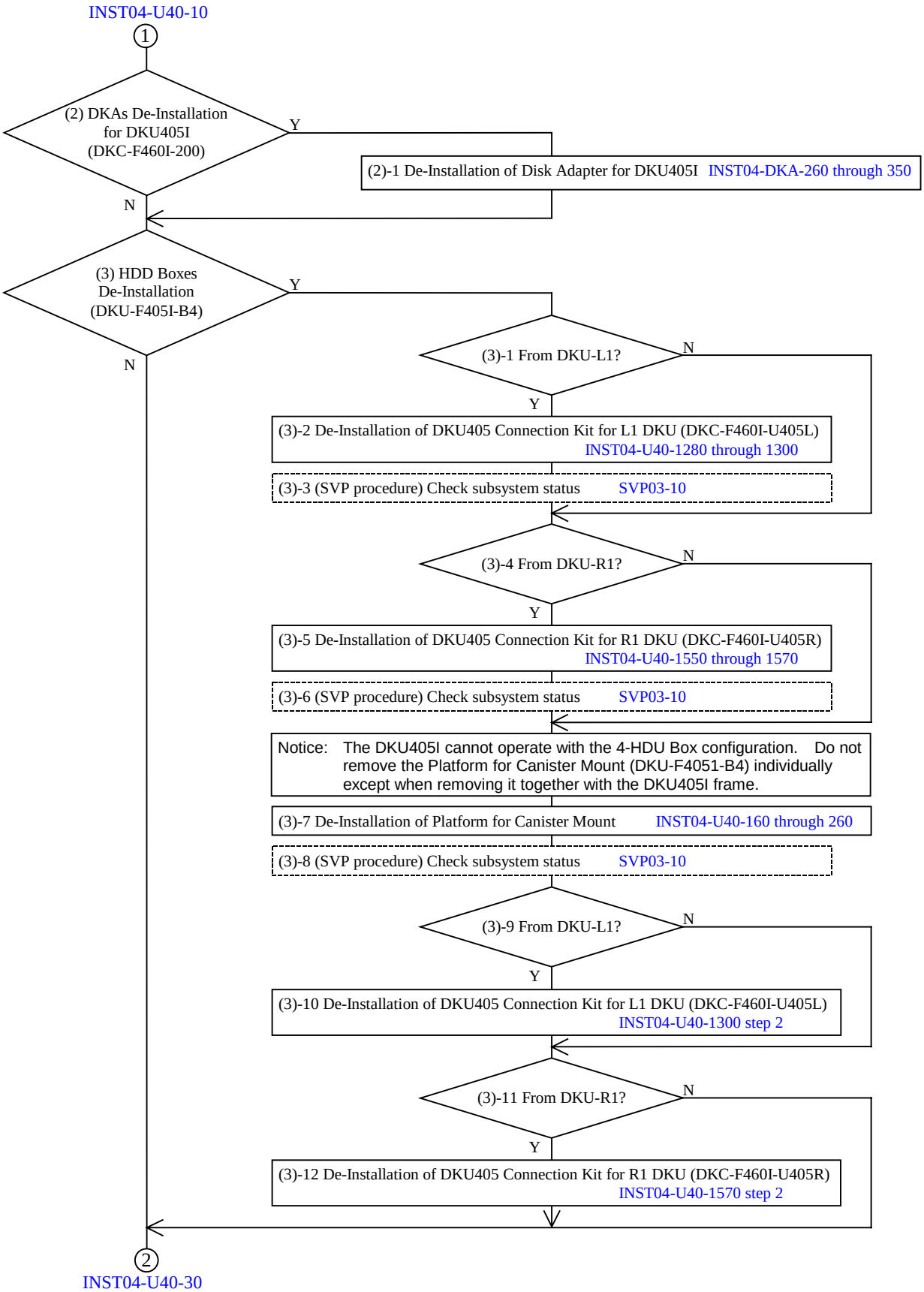
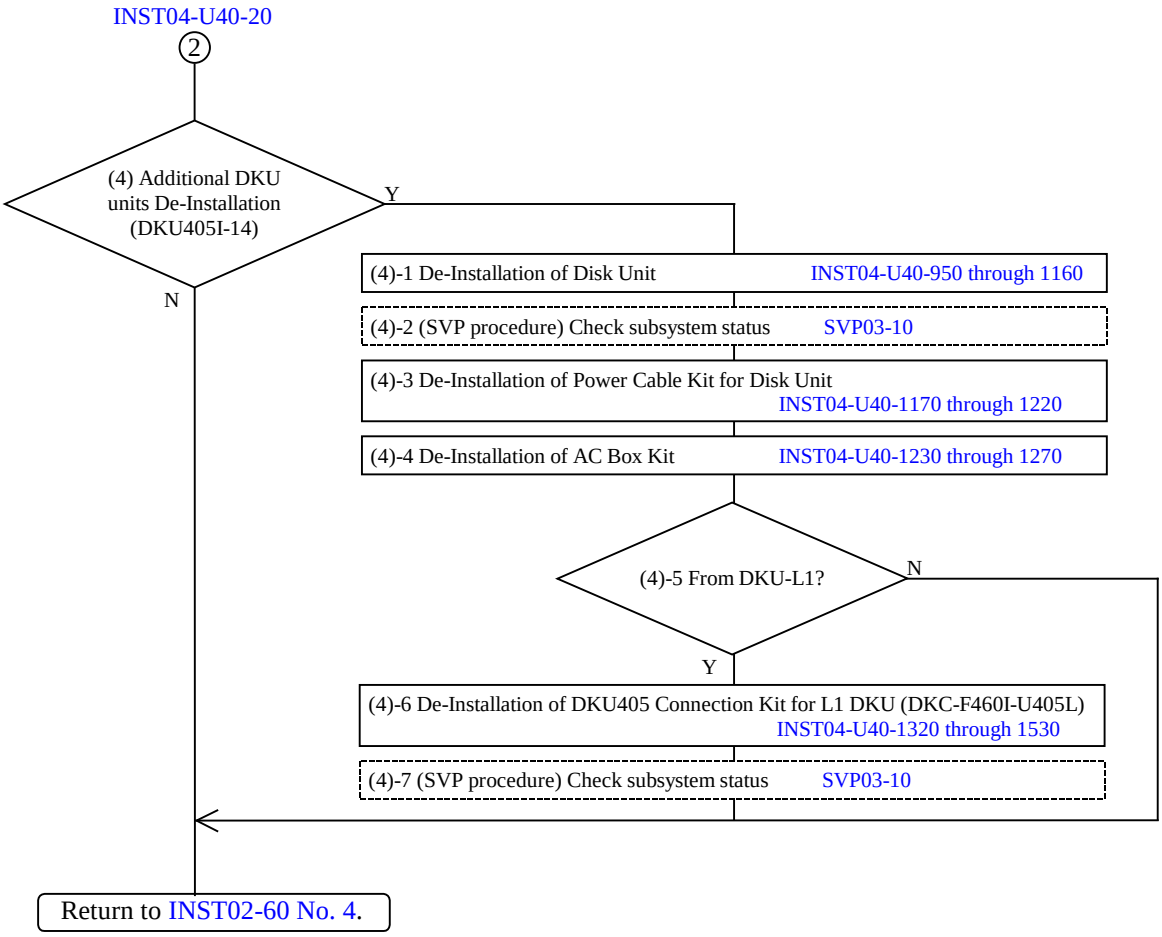


Copyright ©2002, Hitachi, Ltd.



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4.13.2 De-Installation of the HDD Canister (DKU-F405I-18J4/18J1/18K4/18K1/36K4/36K1/47J4/47J1/72J4/72J1/72K4/72K1/146J4/146J1/180H4/180H1)

Table 4.13.2-1 Parts List for HDD Canister

No.	Model Number	Parts Name	Parts No.	Quantity	Remarks
1	DKU-F405I-18J4	HDU-18J1FC	5502391-A	4	
		Nameplate	2103570-15	1	
			3259627-2	1	
2	DKU-F405I-18J1	HDU-18J1FC	5502391-A	1	
		Nameplate	2103570-14	1	
			3259627-1	1	
3	DKU-F405I-18K4	HDU-18K1FC	5510884-A	4	
		Nameplate	2103570-51	1	
			3259627-19	1	
4	DKU-F405I-18K1	HDU-18K1FC	5510884-A	1	
		Nameplate	2103570-52	1	
			3259627-20	1	
5	DKU-F405I-36K4	HDU-36K1FC	5502398-A	4	
		Nameplate	2103570-63	1	
			3259627-31	1	
6	DKU-F405I-36K1	HDU-36K1FC	5502398-A	1	
		Nameplate	2103570-64	1	
			3259627-32	1	
7	DKU-F405I-47J4	HDU-47J1FC	5502392-A	4	
		Nameplate	2103570-17	1	
			3259627-4	1	
8	DKU-F405I-47J1	HDU-47J1FC	5502392-A	1	
		Nameplate	2103570-16	1	
			3259627-3	1	
9	DKU-F405I-72J4	HDU-72J1FC	5502393-A	4	
		Nameplate	2103570-19	1	
			3259627-6	1	
10	DKU-F405I-72J1	HDU-72J1FC	5502393-A	1	
		Nameplate	2103570-18	1	
			3259627-5	1	
11	DKU-F405I-72K4	HDU-72K1FC	5519913-A	4	
		Nameplate	2103570-69	1	
			—	1	
12	DKU-F405I-72K1	HDU-72K1FC	5519913-A	1	
		Nameplate	2103570-60	1	
			—	1	

(To be continued.)

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(Continued from preceding sheet.)

No.	Model Number	Parts Name	Parts No.	Quantity	Remarks
13	DKU-F405I-146J4	HDU-146J1FC	5518495-A	4	
		Nameplate (HDS)	2103570-65	1	
		Nameplate (HP)	—	1	
14	DKU-F405I-146J1	HDU-146J1FC	5518495-A	1	
		Nameplate (HDS)	2103570-66	1	
		Nameplate (HP)	—	1	
15	DKU-F405I-180H4	HDU-180H1FC	5502397-A	4	
		Nameplate	2103570-57	1	
			3259627-26	1	
16	DKU-F405I-180H1	DKU-180H1FC	5502397-A	1	
		Nameplate	2103570-58	1	
			3259627-25	1	

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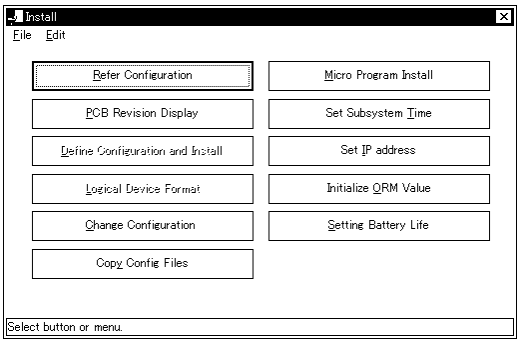
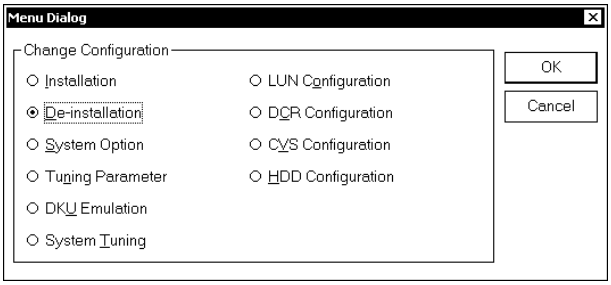
1. Setting up the New Device Structure Information

1. <Mode Change>
   Change the mode to Modify Mode.
   Select (CL) [Install].

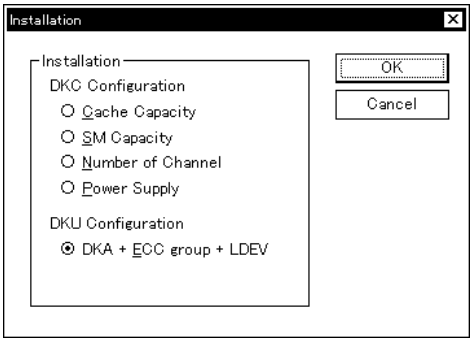
2. <Start the 'Menu Dialog' screen>
   Select (CL) [Change Configuration].



3. <Start Device Structure Setup screen>
   Select (CL) [De-Installation] in the 'Menu Dialog' dialog box and select (CL) [OK].



4. <Select a part to be changed>
   Select (CL) [DKA + ECC group + LDEV], and select (CL) [OK].



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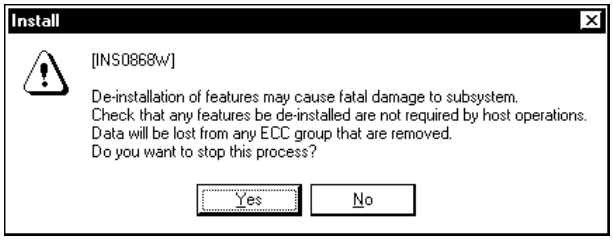
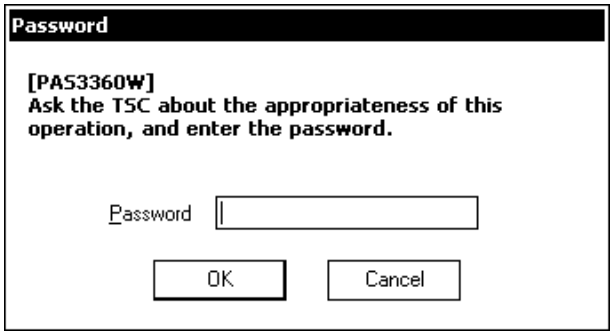
5.

Select (CL) [No] in response to “De-installation of features may cause fatal damage to subsystem. Check that any features be de-installed are not required by host operations. Data will be lost from any ECC group that are removed. Do you want to stop this process?”.



6. <Input password>
Enter the password and select (CL) [OK].



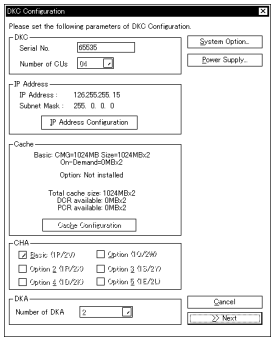
NOTICE
This is a special (exceptional) operation that can cause a serious failure such as a system down or a data loss if a wrong part to be removed is selected, and requires an input of a password. Ask the technical support center about the appropriateness of the operation, and input the password after getting an approval of executing the operation.

7. <Update Configuration Information>
Set the item to be de-installed for DKC and DKA in the ‘DKC Configuration’ window.

When decreasing the CUs, change the “Number of CUs”.

Note: A part other than the CU and DKA cannot be removed at the same time.

Make sure that the entered item is correct and select (CL) [>>Next].



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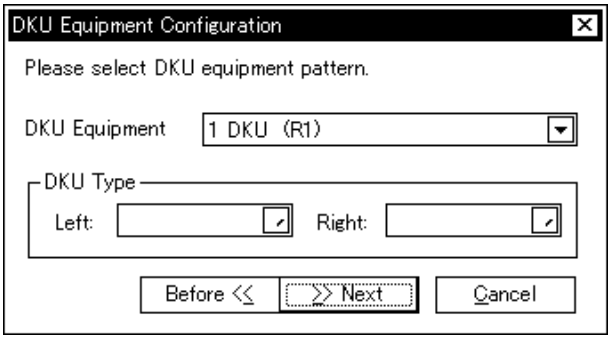
7-1. <Altering DKU frame information>
Define the DKU frame in the DKU Equipment Configuration window.

After making the setting, select the [>> Next].
The routine proceeds to Step 8.
When the [Before <<] is selected, the window returns to the preceding one.
Return to Step 7.



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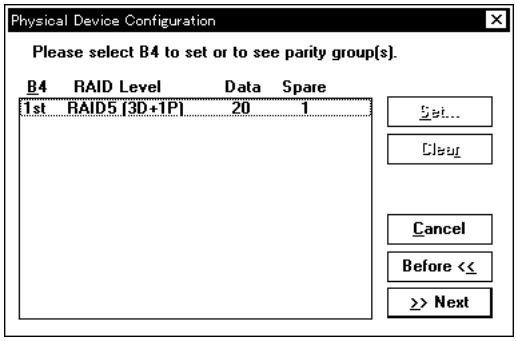
8. Change Drive Configuration Information>
Set drive configuration according to the 'Physical Device Configuration' screen displaying the mounted B4 based on the result of setting of DKU mount pattern.
Detailed procedure is shown below.
[Set...]: Defines the parity group or spare disk. The routine proceeds to Step 8-1.
[Clear...]: Cancels the setting of the B4.
After setting up all items, select (CL) [>>Next].
Selecting (CL) [Before<<] returns you to the previous screen.



[For the case of the multi cabinet model]

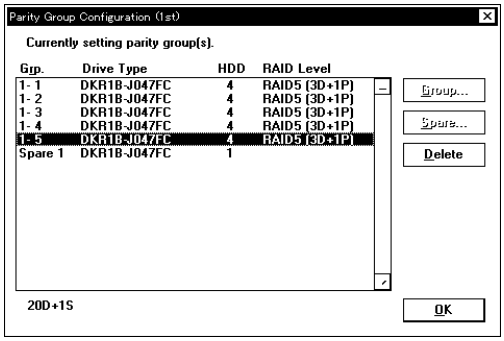
B4	Location	B4	Location
1st	HDU-R10, 11, 12, 13	7th	HDU-L20, 21, 22, 23
2nd	HDU-R14, 15, 16, 17	8th	HDU-L24, 25, 26, 27
3rd	HDU-L10, 11, 12, 13	9th	HDU-R30, 31, 32, 33
4th	HDU-L14, 15, 16, 17	10th	HDU-R34, 35, 36, 37
5th	HDU-R20, 21, 22, 23	11th	HDU-L30, 31, 32, 33
6th	HDU-R24, 25, 26, 27	12th	HDU-L34, 35, 36, 37

Note: The 9th to 12th of the B4 are valid only when the DKUs for the RAID 400 are connected.

[For the case of the single cabinet model]

B4	Location	Remarks
1st	HDU-R0, 1, 2, 3	HDD-X00 ~ X0F
2nd	HDU-R0, 1, 2, 3	HDD-X10 ~ X1F

8-1. <Define Parity Group>
Select (CL) the group to be de-installed and select (CL) [Delete] in the 'Parity Group Configuration' dialog box.
After setting, select (CL) [OK]. Return to step 8.



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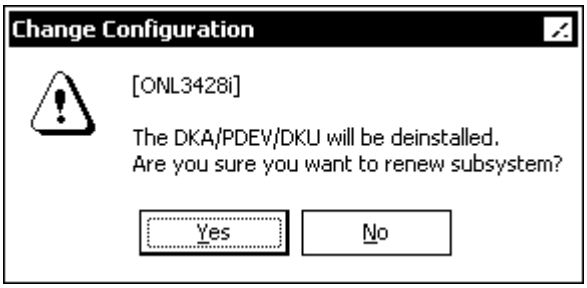
2. SVP pre procedure

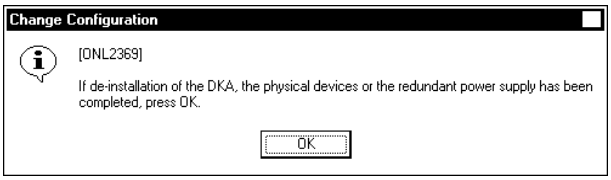
1. <Start de-installation>
   Select (CL) [Yes] in response to "The DKA/PDEV/DKU will be deinstalled. Are you sure you want to renew subsystem?".

   When [No] is selected (CL), returns to INST04-U40-50 step 2.



2.

   At this point refrain from pressing the [OK] button.
   "If de-installation of the DKA, the physical devices or the redundant power supply has been completed, press OK." shown in the right figure.



3. Return to General Flow
   Non-Disruptive De-Installation:
   - If connection of DEV interface cables (2) (DKC-F410I-EXC) de-installation, go to INST04-U40-10 step (1)-6.
   - If connection of DEV interface cables (2) (DKC-F410I-EXC) not de-installation, go to INST04-U40-10 step (1)-2.

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3. De-Installation Procedure of HDD Canister

3-1 Confirmation of position to de-install HDD canister

The order in which DKU-F405I-18J4/18K4/36K4/47J4/72J4/72K4/146J4/180H4 (4 HDD canisters) units are to be installed in a DKU-F405I-B4 is shown in Fig. 4.13.2-1 and the order in which DKU-F405I-18J1/18K1/36K1/47J1/72J1/72K1/146J1/180H1 (spare HDD) units are to be installed in Fig. 4.13.2-2.

NOTICE:

(1) The position to be installed in the DKU-R2 or DKU-L2 is different from one in the DKU-R1 or DKU-L1. Be sure to set the HDDs in the right position.

(2) Don't use the position marked as X in the DKU-R3 and DKU-L3.
Wrong setting of a HDD in the DKU-R3 or DKU-L3may cause DKU failure on the same SCSI path.

(3) Specifications for the selection of the spare HDD are shown below.
A sparing of an HDD with a smaller capacity for an HDD with a larger capacity is possible. However, there are some cases in which an HDD cannot be assigned depending on the drive type as shown in the table below.

Copy destination spare HDD / Copy source data HDD	DKR1B-Jxx DKR1C-Jxx DKR2B-Jxx DKR2C-Jxx DKR2D-Jxx DKR2E-Jxx	DKS2A-Kxx DKS2B-Kxx DKS2C-Kxx	DKS1A-Hxx
DKR1B-Jxx DKR1C-Jxx DKR2B-Jxx DKR2C-Jxx DKR2D-Jxx DKR2E-Jxx	A spare HDD can be assigned when the following condition is satisfied. Capacity of a copy source data HDD ≤ Capacity of a copy destination spare HDD.	Assignment cannot be done.	Assignment cannot be done.
DKS2A-Kxx DKS2B-Kxx DKS2C-Kxx	Assignment cannot be done.	A spare HDD can be assigned when the following condition is satisfied. Capacity of a copy source data HDD ≤ Capacity of a copy destination spare HDD	Assignment cannot be done.
DKS1A-Hxx	Assignment cannot be done.	Assignment cannot be done.	A spare HDD can be assigned when the following condition is satisfied. Capacity of a copy source data HDD ≤ Capacity of a copy destination spare HDD

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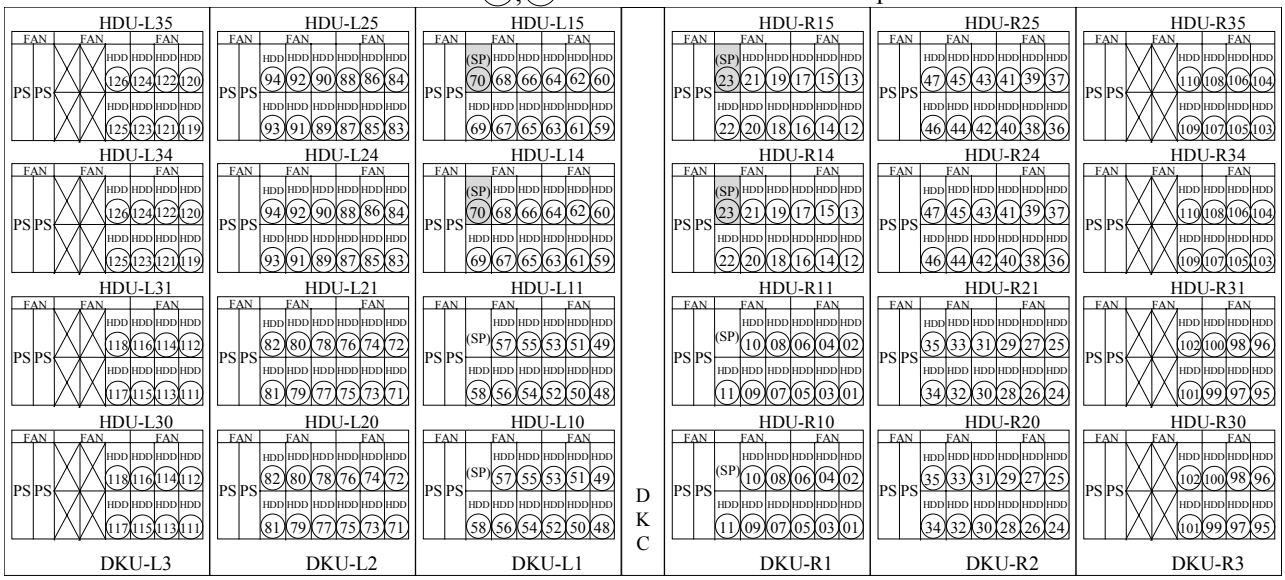
a. Make sure of the location where the HDD canister is to be removed.

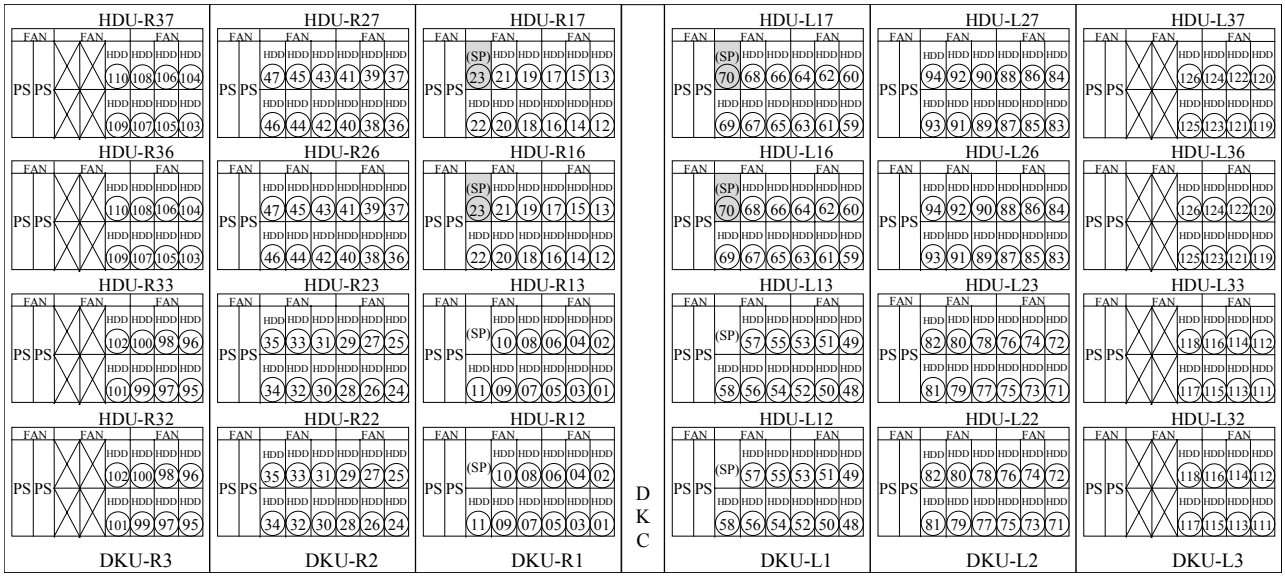
No.	Model Number	Model Name	Data and Parity
1	DKU-F405I- 18J4/18K4/36K4/47J4/72J4/72K4/146J4/180H4	4 HDD Canisters	Data and Parity Drive

(01) - (126) : 4HDD canister expansion sequence

Note: Number of (23), (70) can be used as data HDD or spare HDD



Front view



Rear view

Fig. 4.13.2-1 Data Drive/Parity Drive Expansion Sequence

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No.	Model Number	Model Name	Data and Parity
1	DKU-F405I- 18J1/18K1/36K1/47J1/72J1/72K1/146J1/180H1	1 HDD Canister	Spare Drive

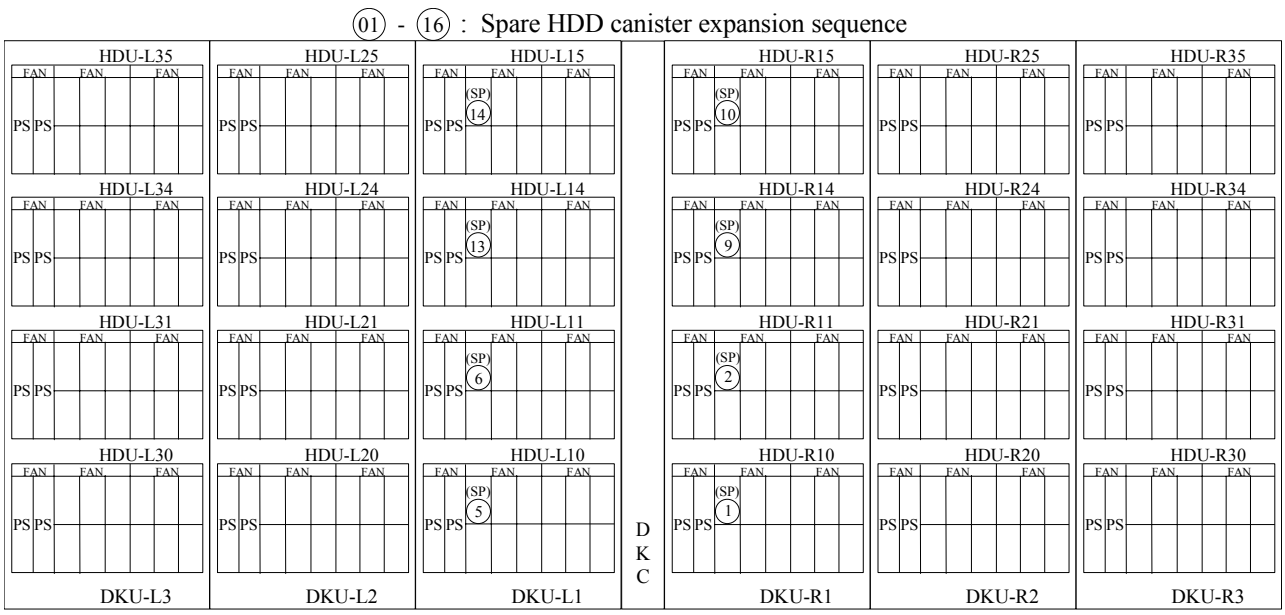

Fig. 4.13.2-2 Spare Drive Expansion Sequence

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3-2 De-installation of the HDD canister

a. Check the Shut Down LED on the HDD canister. (It should be RED.)

⚠ CAUTION

A system down may be caused by a removal of an HDD canister other than that to be removed. Make sure that it is the HDD canister to be removed.

b. Remove the HDD Box Cover (acrylic cover).
   Process 1 : Disengage two claws at the bottom of the acrylic cover.
   Process 2 : Slide the acrylic cover upward and remove it from the screws on the HDD Box.
c. After pushing up the stopper on the front side of the HDD canister, pull the lever toward you to remove the HDD canister.
d. Attach the HDD Box Cover.

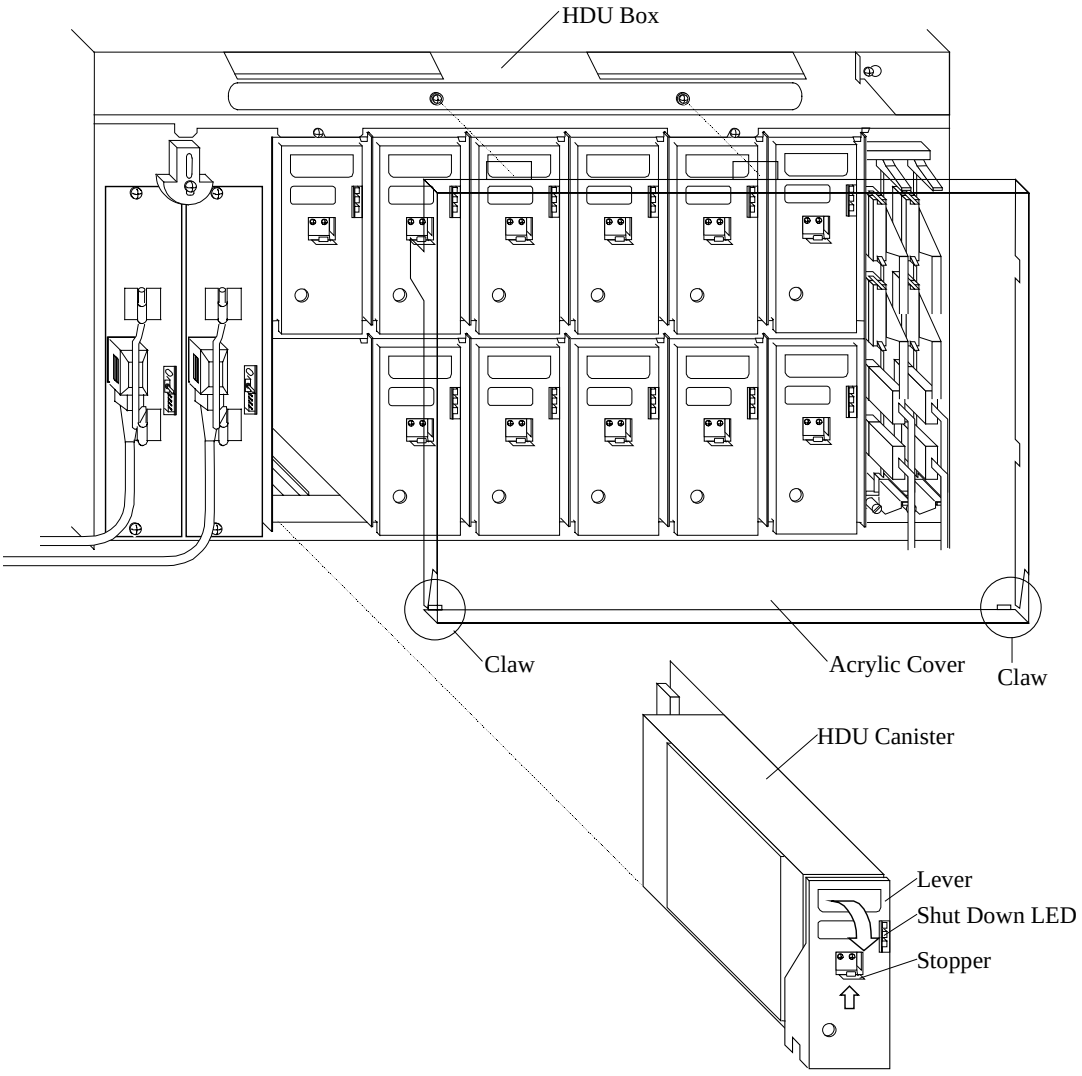

Fig. 4.13.2-3 De-Installation of HDD Canister

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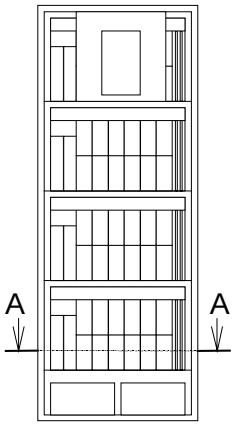
3-3 Removal of the nameplate

a. Remove the nameplate corresponding to model number and serial number of the removed HDD canister(s).



Front View
of DKU

A - A

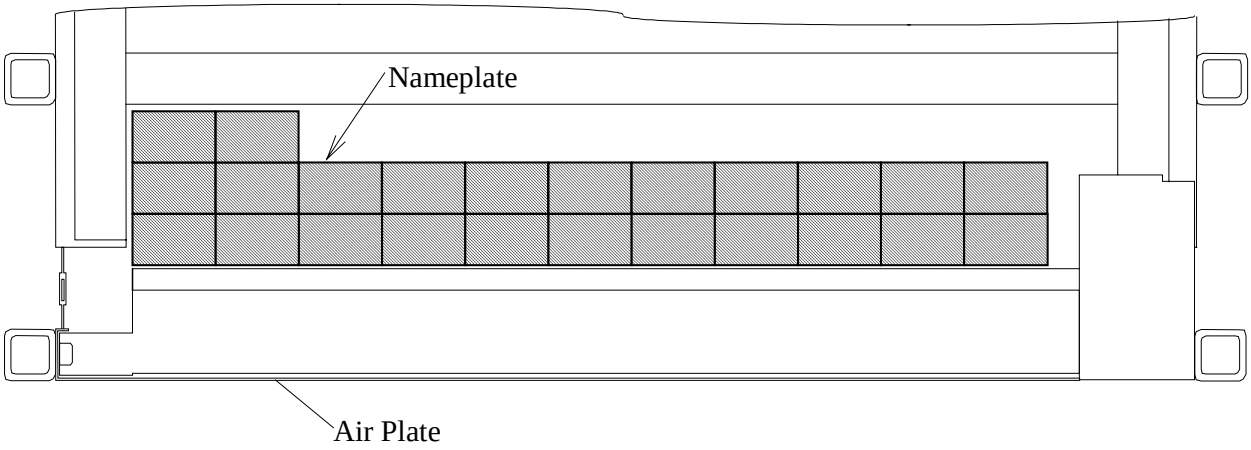


Fig. 4.13.2-4 Removal of Nameplate

b. Return to General Flow

Non-Disruptive De-Installation:

- If connection of DEV interface cables (2) (DKC-F410I-EXC) de-installation, go to INST04-U40-10 step (1)-8.
- If connection of DEV interface cables (2) (DKC-F410I-EXC) not de-installation, go to INST04-U40-10 step (1)-3.

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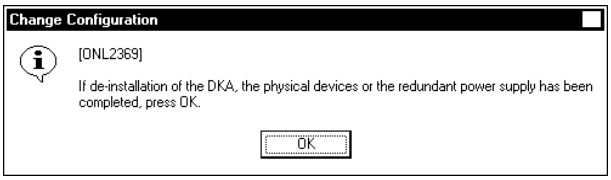
4. SVP post procedure

1.

Select (CL) [OK] in response to "If de-installation of the DKA, the physical devices or the redundant power supply has been completed, press OK." shown in the right figure.



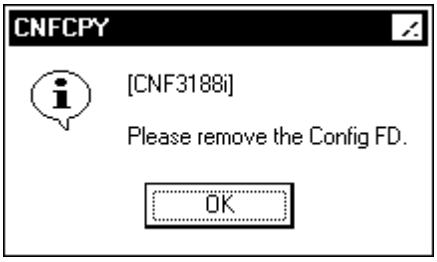
2. <Check the end of de-installation procedure>
"Renewal process has completed. Please check subsystem status." shown in the right figure displayed. Select (CL) [OK] in response to this message.

3.

"Reading subsystem configuration data..." is displayed.
"Please insert the Config FD in the FDD." is displayed.
Insert the configuration FD into FDD, select (CL) [OK].

4.

When this procedure is completed, message "Please remove the Config FD." is displayed.
Remove the FD, select (CL) [OK].



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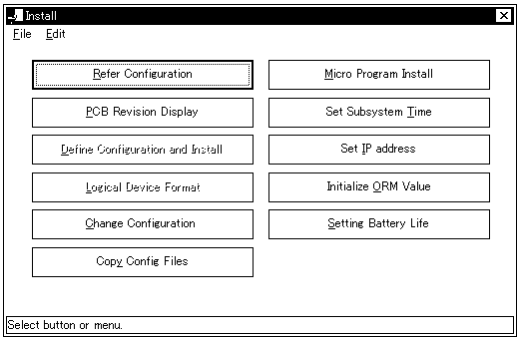
5.

After the procedure is completed, return to ‘Install’.
Select (CL) [File]-[Exit].



6. <Mode Change>
Change the mode to View Mode.

7. Return to General Flow

Non-Disruptive De-Installation:

- If connection of DEV interface cables (2) (DKC-F410I-EXC) de-installation, go to INST04-U40-10 step (1)-9.
- If connection of DEV interface cables (2) (DKC-F410I-EXC) not de-installation, go to INST04-U40-10 step (2).

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4.13.3 De-Installation of Platform for the Canister Mount (DKU-F405I-B4)

4.13.3.1 Flowchart

The procedure for de-installing the platform for the canister mount is shown below.

1. Confirmation of de-installation position of platform for the canister mount.
↓
2. Installation of the jumper plug in the DKUMN PCB.
↓
3. Setting of the PS enable switch on the multi power supply.
↓
4. Disconnection of the INLET cable.
↓
5. Removal of the acrylic cover, FSW PCB, multi power supply, rail, and HDD FAN Assembly.
↓
6. Removal of the side plate.
↓
7. Disconnection of the DKUMN cable.
↓
8. De-Installation of the HDU Box.
↓
9. Attachment of the acrylic cover, FSW PCB, multi power supply, rail, and HDD FAN Assembly.
↓
10. Attachment of the side plate.
↓
11. Removal of the nameplate and label (REV).

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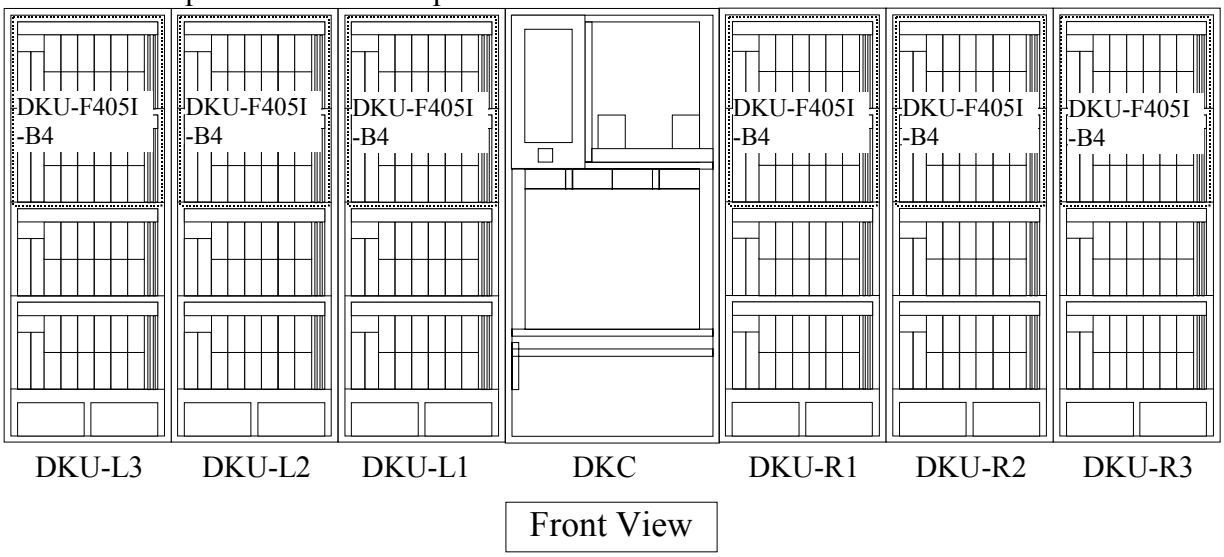
4.13.3.2 Parts List

Table 4.13.3.2-1 Parts List for Platform for Canister Mount

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKU-F405I-B4	HDU Box	1505217-A	4	
		Multi Power Supply	5502384-A	8	
		FSW PCB	5502386-A	8	
		HDD FAN Assembly	5502388-A	4	
		Nameplate E (DKU-F405I)	2103570-1	1	
			2103575-1	1	
		Label (REV)	3239458-1	1	

4.13.3.3 De-Installation Procedure of Platform for the Canister Mount

1. Confirmation of de-installation position of platform for the canister mount.
   a. Confirm a position to remove platform for the canister mount.



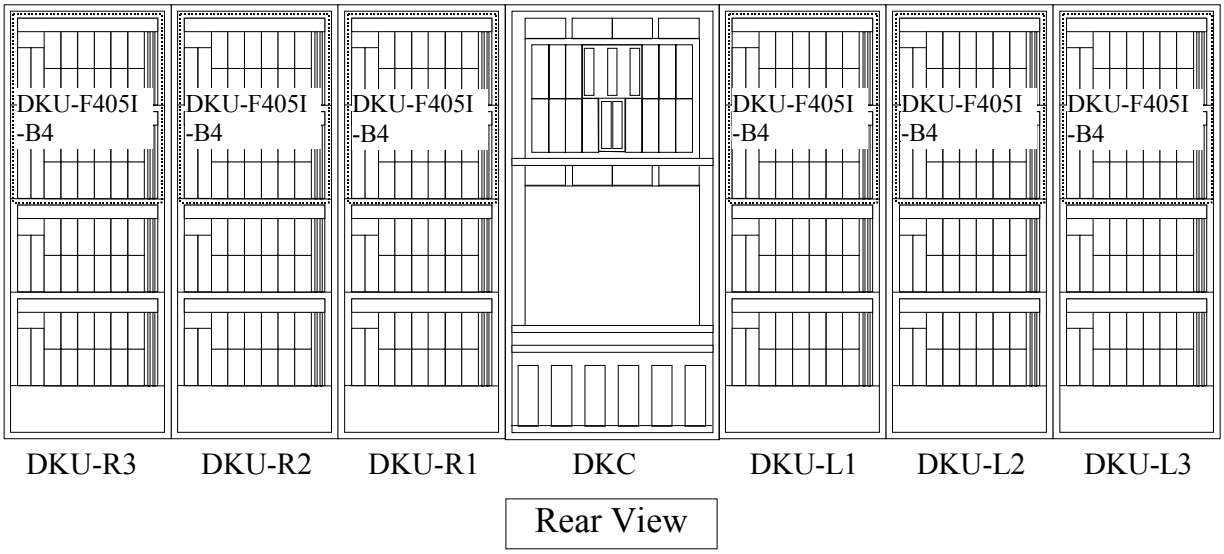


Fig 4.13.3.3-1 Check of the Blocked State of Component to be De-Installed

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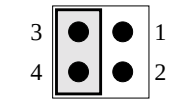
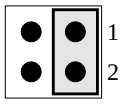
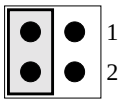
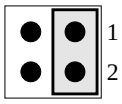
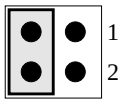
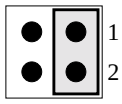
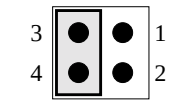
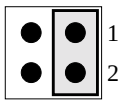
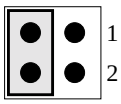
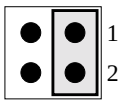
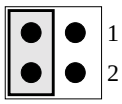
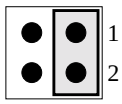
2. Installation of the jumper plug in the DKUMN PCB.
   a. Install the jumper plugs for JP2 on the DKUMN PCBs, referring to Fig. 4.13.3.3-2.

	1	2	3	4	5	6
	DKUMN-R1F	DKUMN-R1R	DKUMN-R2F	DKUMN-R2R	DKUMN-L1F	DKUMN-L1R
	Front	Rear	Front	Rear	Front	Rear
JP2						
	DKU-R1		DKU-R2		DKU-L1	

	7	8	9	10	11	12
	DKUMN-L2F	DKUMN-L2R	DKUMN-R3F	DKUMN-R3R	DKUMN-L3F	DKUMN-L3R
	Front	Rear	Front	Rear	Front	Rear
JP2						
	DKU-L2		DKU-R3		DKU-L3	

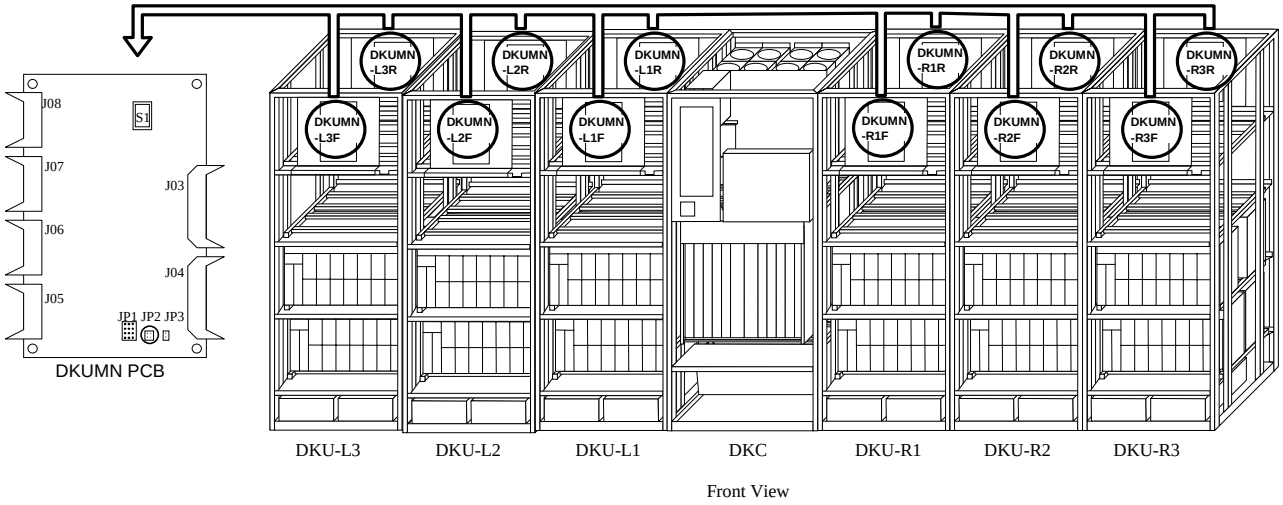


Fig. 4.13.3.3-2 DKUMN PCB Jumper Plug Positions

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3. Setting of the PS enable switch on the multi power supply.
   a. Set the PS enable switch on the multi power supply to Disable and make sure that the PS enable LED goes off.

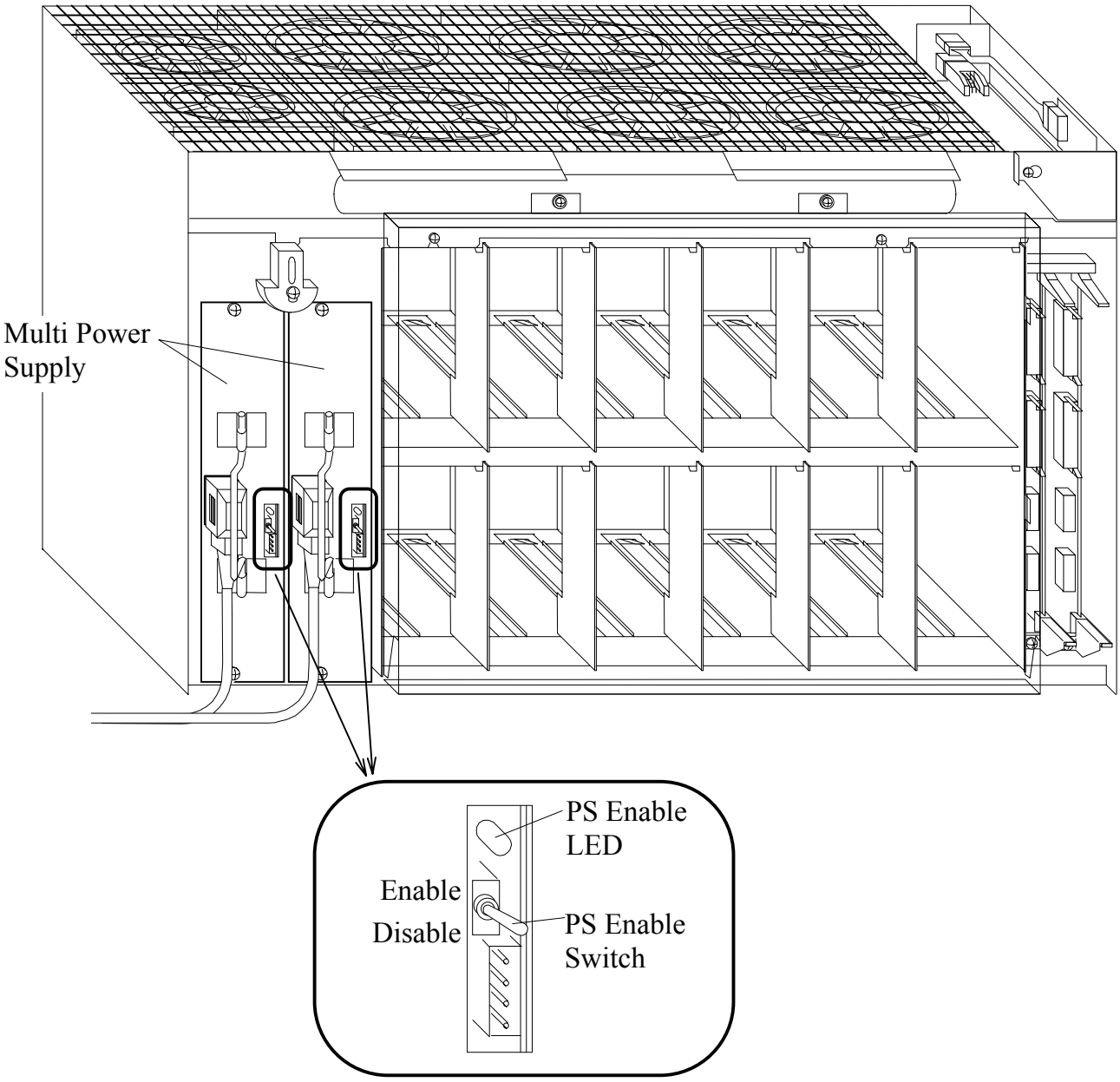

Fig. 4.13.3.3-3 Set the PS Enable Switch on the Multi Power Supply

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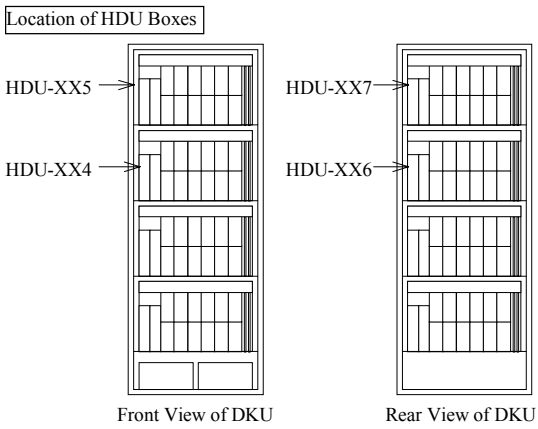
4. Disconnection of the INLET cable.
   a. Disconnect the INLET cables referring to Table 4.13.3.3-1 and Fig. 4.13.3.3-4.

Table 4.13.3.3-1 INLET Cables and Matching Connectors

Location of HDU Box	No.	INLET Cable	Connector
XX4	1	4-P601-1	4-J601-1
	2	4-P601-2	4-J601-2
XX5	1	5-P601-1	5-J601-1
	2	5-P601-2	5-J601-2
XX6	1	6-P601-1	6-J601-1
	2	6-P601-2	6-J601-2
XX7	1	7-P601-1	7-J601-1
	2	7-P601-2	7-J601-2



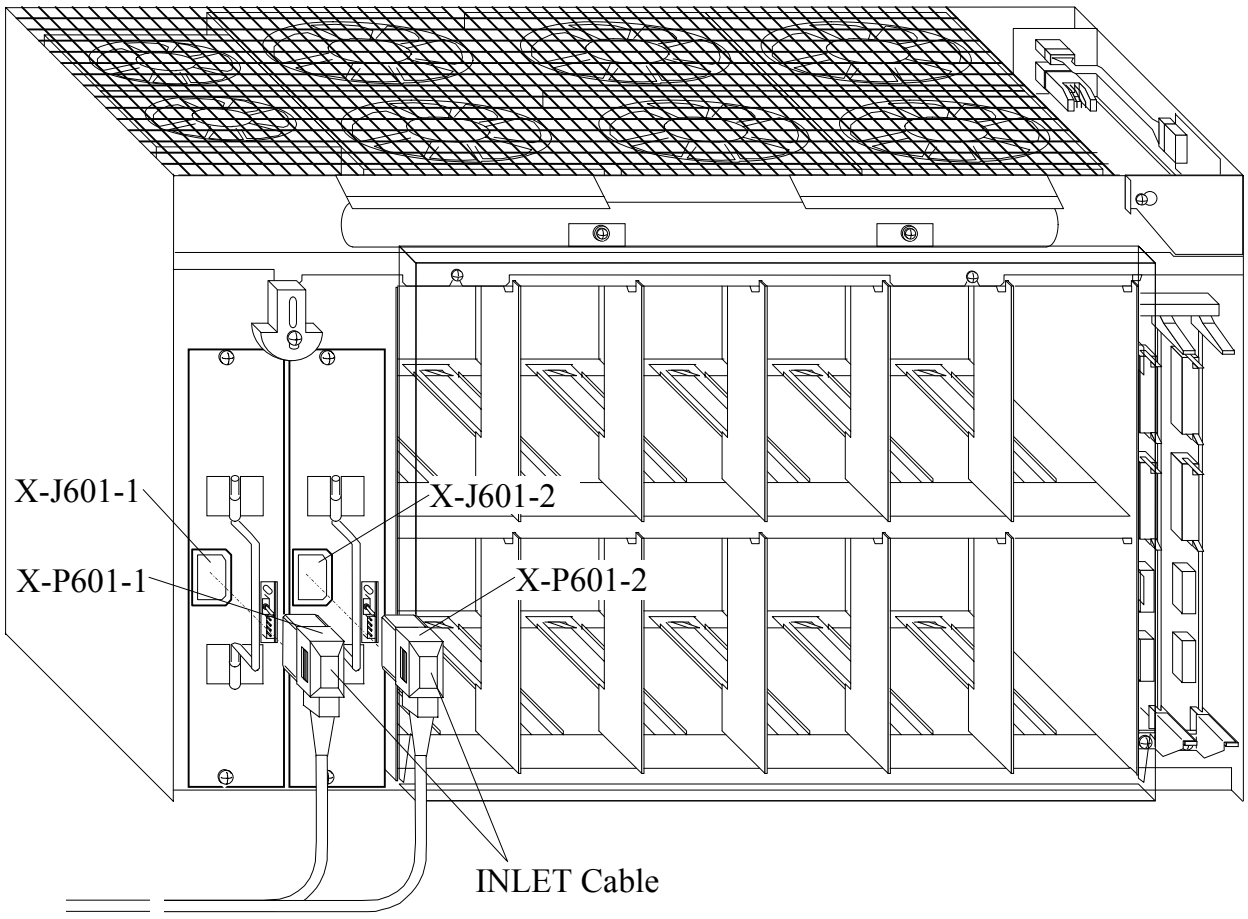


Fig. 4.13.3.3-4 Disconnection of the INLET Cable

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5. Removal of the acrylic cover, FSW PCB, multi power supply, rail, and HDD FAN Assembly.
   a. Remove the acrylic cover.

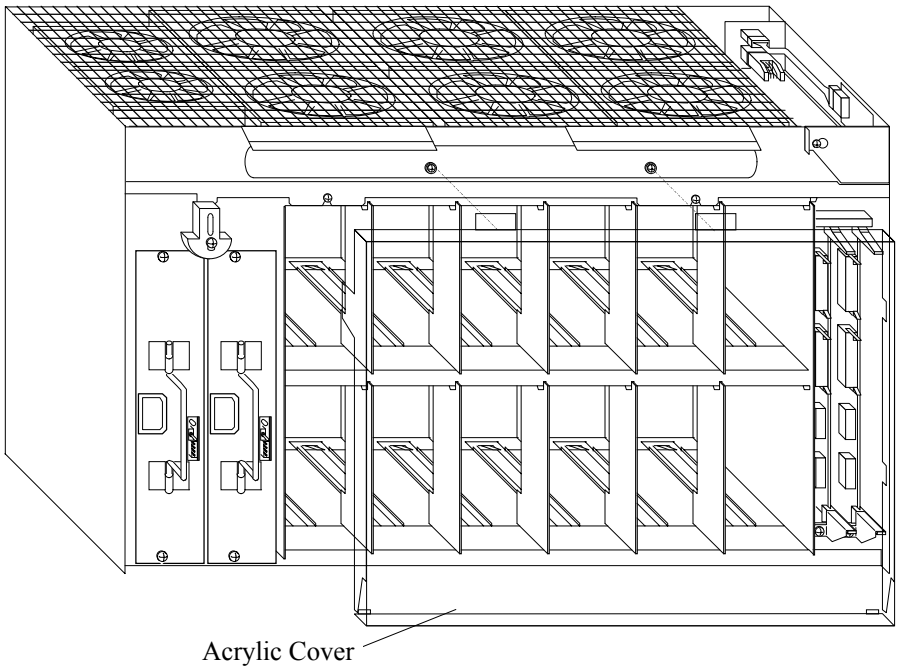

Fig. 4.13.3.3-5 Removal of the Acrylic Cover

   b. Loosen the screw and rotate the stopper. Remove the FSW PCB in the HDU box to be installed.

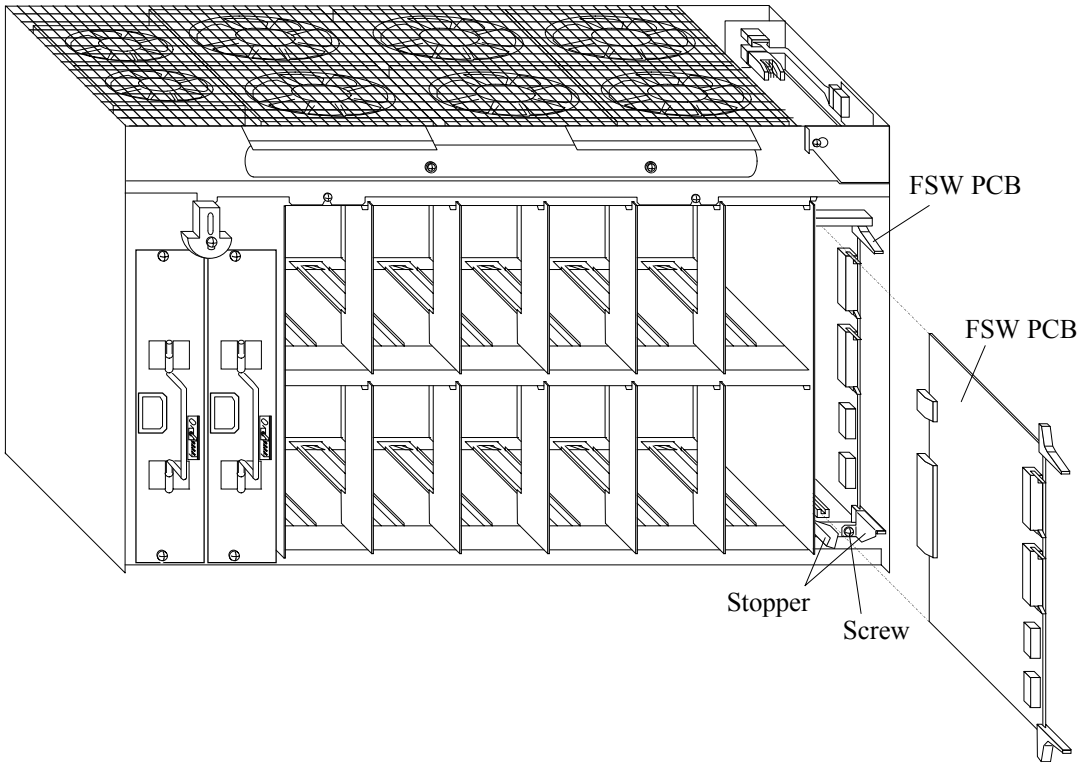

Fig. 4.13.3.3-6 Removal of the FSW PCB

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c. Remove screws securing the multi power supply in the HDU box to be installed, flip up the buffering rubbers, and pull out the multi power supply.

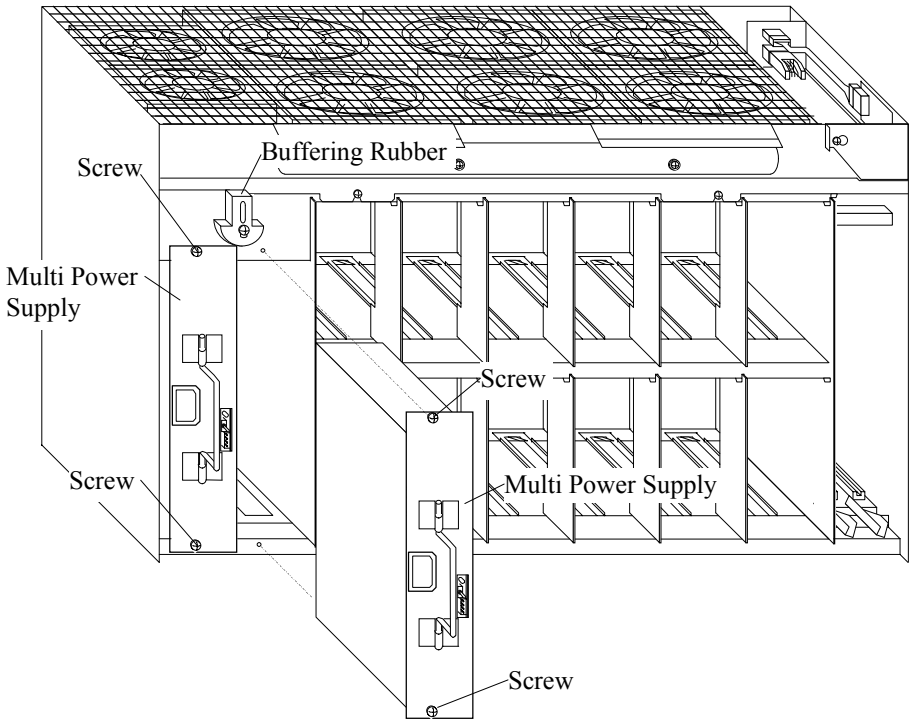

Fig. 4.13.3.3-7 Removal of the Multi Power Supply

d. Loosen the screw and remove the rail.

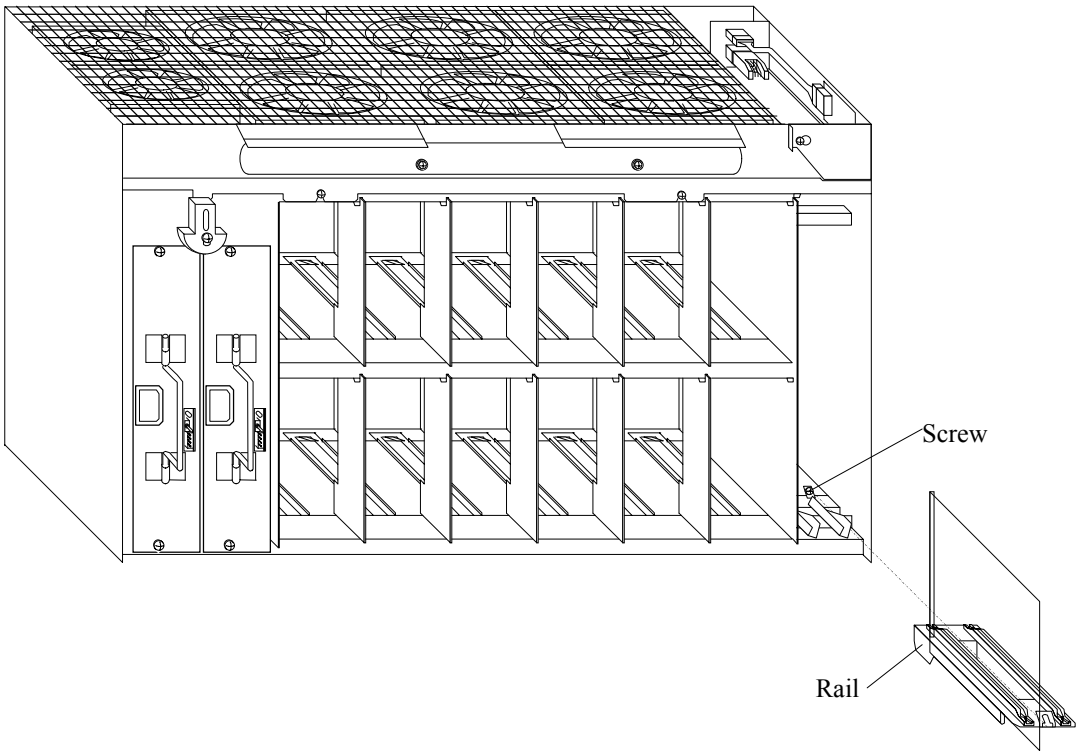

Fig. 4.13.3.3-8 Removal of the Rail

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e. Loosen the screw ① and remove the cover. Loosen the two screws ② and remove the HDD FAN Assembly.

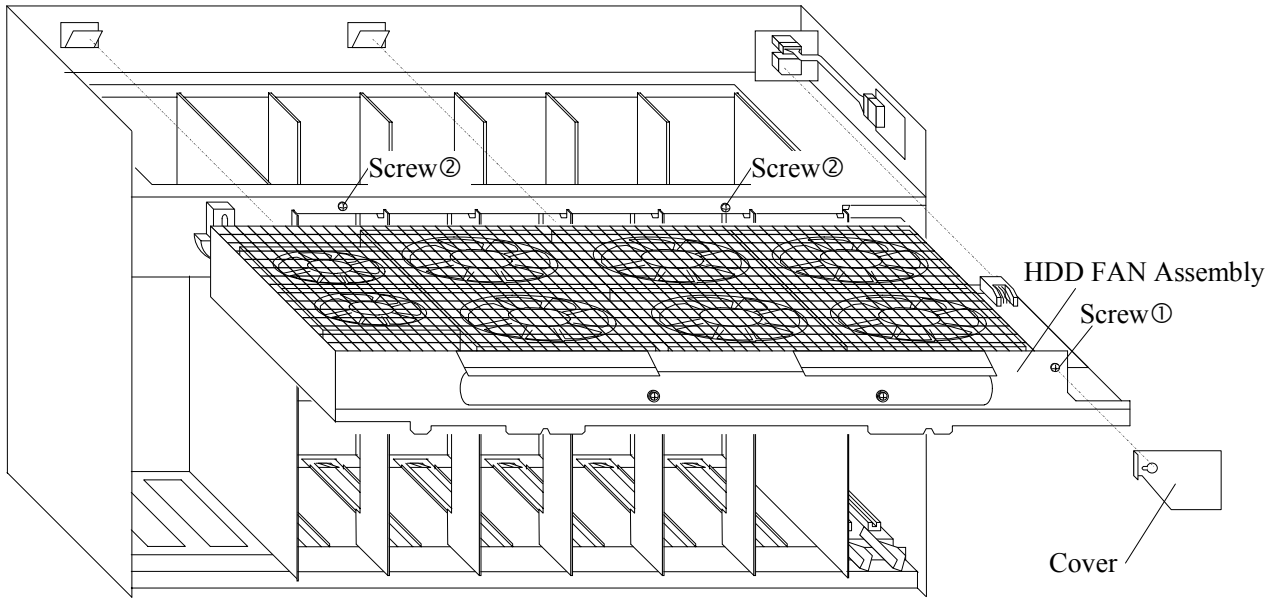

Fig. 4.13.3.3-9 Removal of the HDD FAN Assembly

6. Removal of the side plate.
   a. Loosen screws ① and raise DKUMN PCBs and slide DKUMN PCBs.
   b. Remove screws ② and side plates.
   c. Loosen screws ③ and raise cable ducts when de-installing the HDU box.

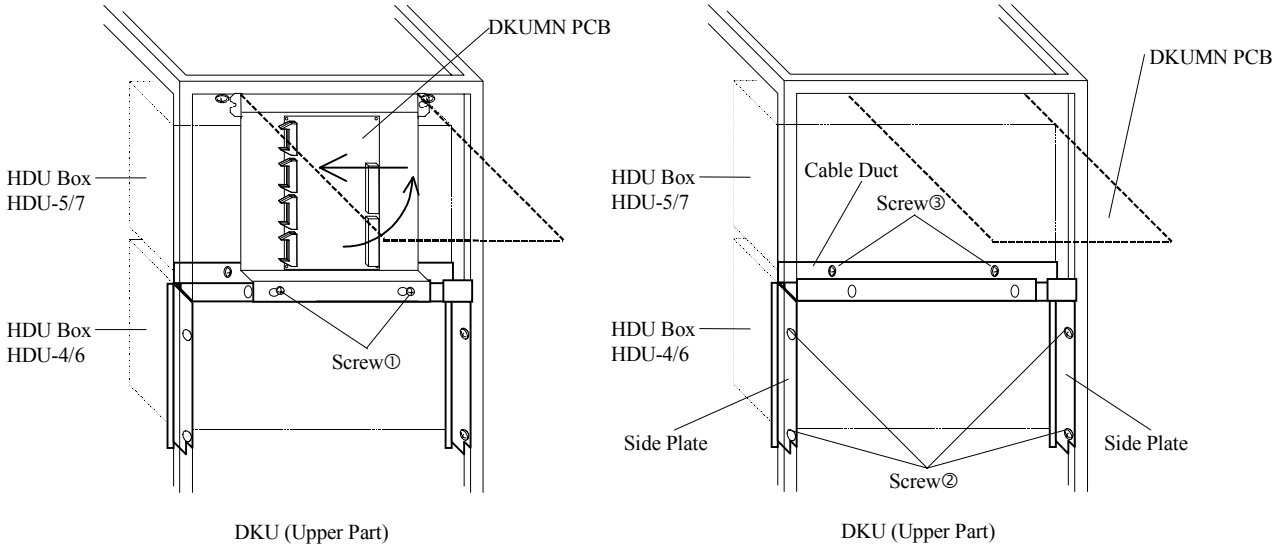

Fig. 4.13.3.3-10 Removal of the Side Plate

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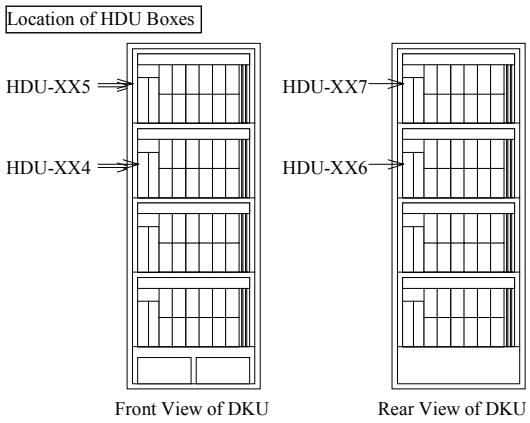
7. Disconnection of the DKUMN cable.
   a. Loosen the screw and remove the plate referring to Table 4.13.3.3-2 and Fig. 4.13.3.3-11.
   b. Disconnect the DKUMN cables.
   c. Attach the plate and fasten the screw.

Table 4.13.3.3-2 DKUMN Cables and Matching Connectors

Location of HDU Box	No.	DKU MN Cable	Connector
XX4	1	4-P301	4-J301
	2	4-P302	4-J302
XX5	1	5-P301	5-J301
	2	5-P302	5-J302
XX6	1	6-P301	6-J301
	2	6-P302	6-J302
XX7	1	7-P301	7-J301
	2	7-P302	7-J302



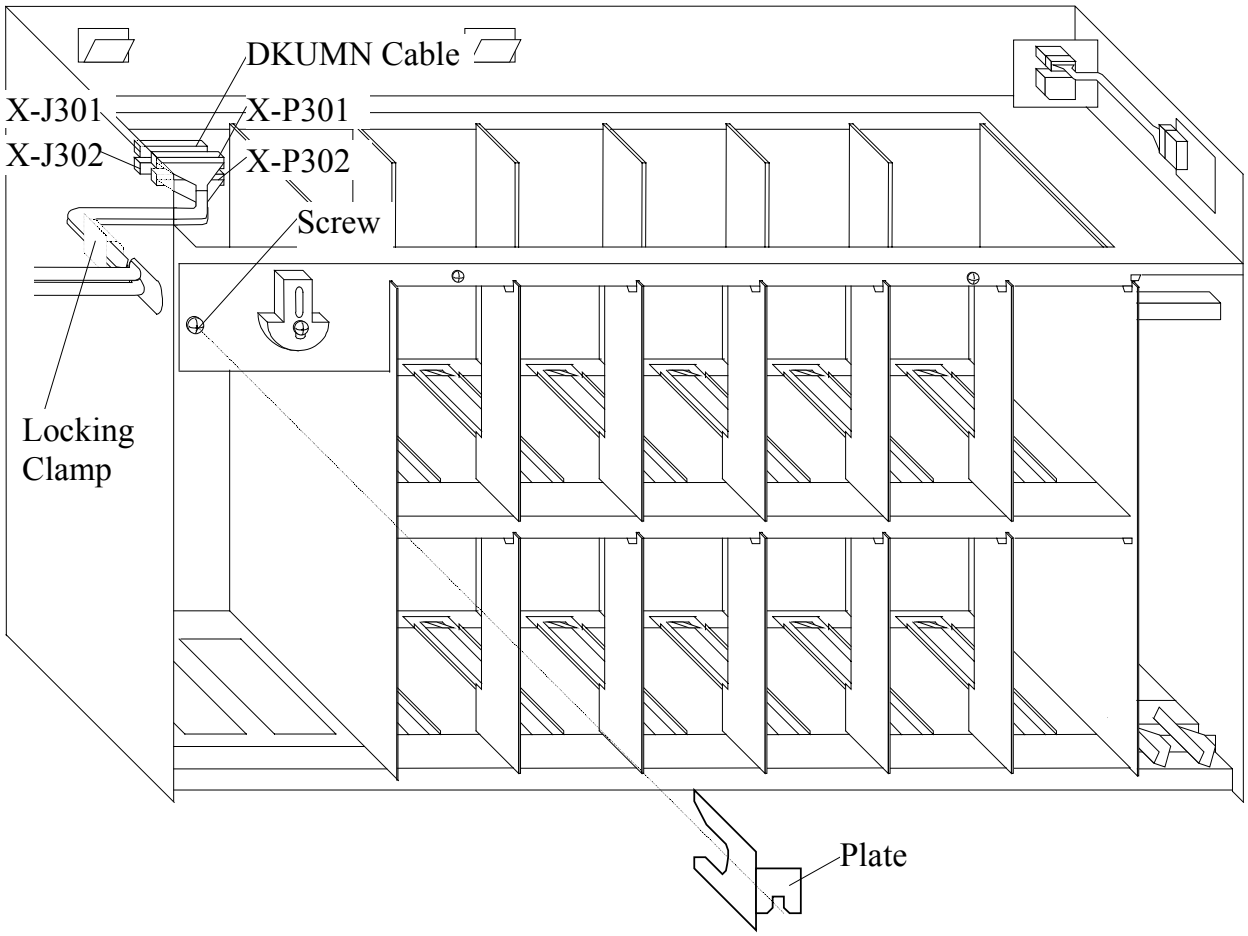


Fig. 4.13.3.3-11 Disconnection of the DKUMN Cable

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8. De-Installation of the HDU Box.
   a. Remove screws and plastic washers, and remove the HDU Box from the Disk Unit.

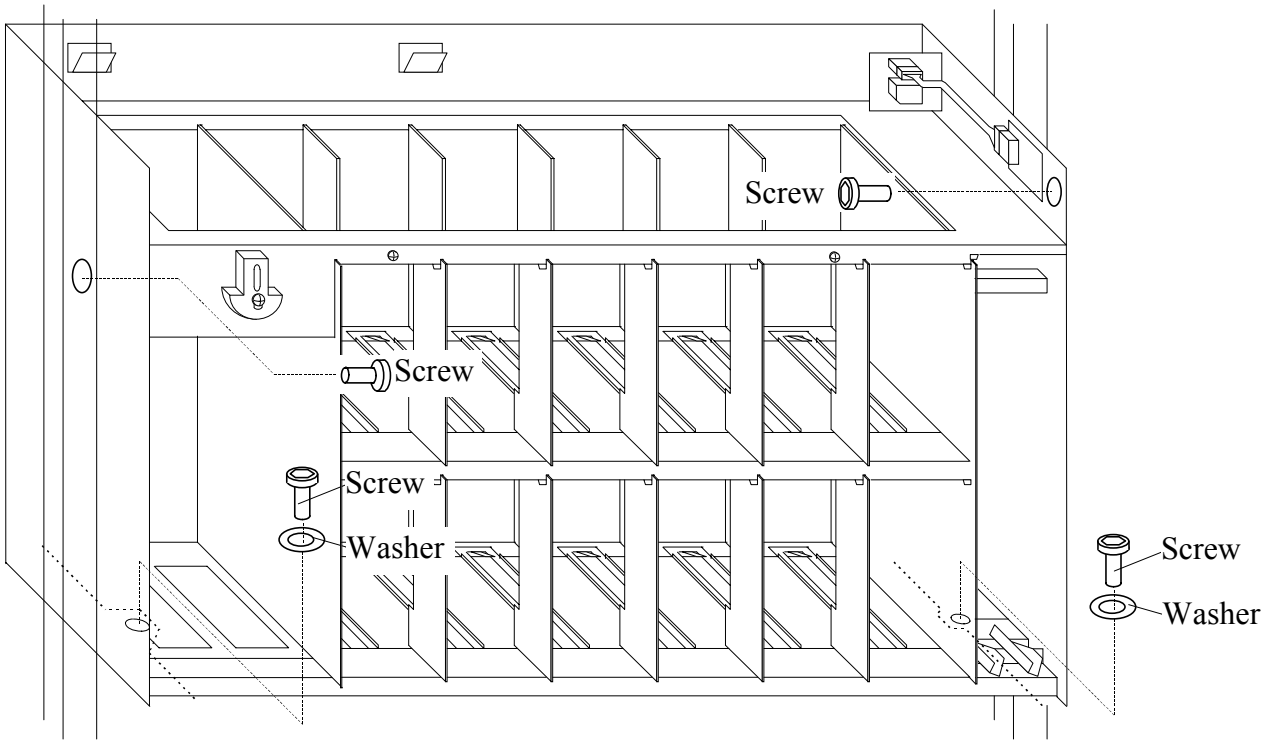

Fig. 4.13.3.3-12 De-Installation of the HDU Box

9. Attachment of the acrylic cover, FSW PCB, multi power supply, rail, and HDD FAN Assembly.
   a. Attach the acrylic cover, FSW PCB, multi power supply, rail, and HDD FAN Assembly in the HDU Box in the reverse order of Step 5.

10. Attachment of the side plate.
    a. Attach the side plates in the reverse order of Step 6.

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11. Removal of the nameplate and label (REV).
    a. Remove the nameplate ① and label (REV) ② of additional HUD box, referring to a Fig. 4.13.3.3-13.

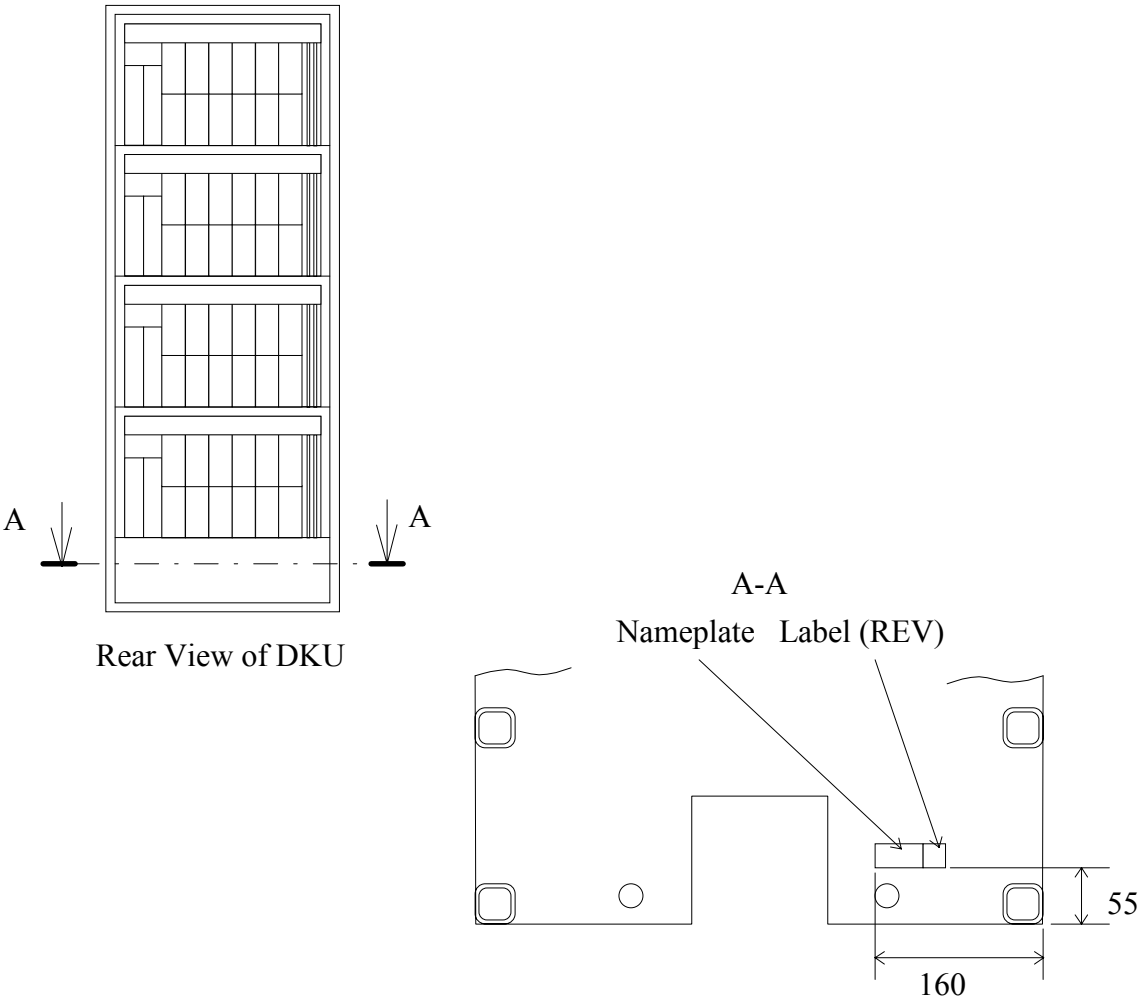

Fig. 4.13.3.3-13 Removal of the Nameplate and Label (REV)

12. Return to General Flow.
    Non-Disruptive De-installation : Go to INST04-U40-20 Step (3)-8.

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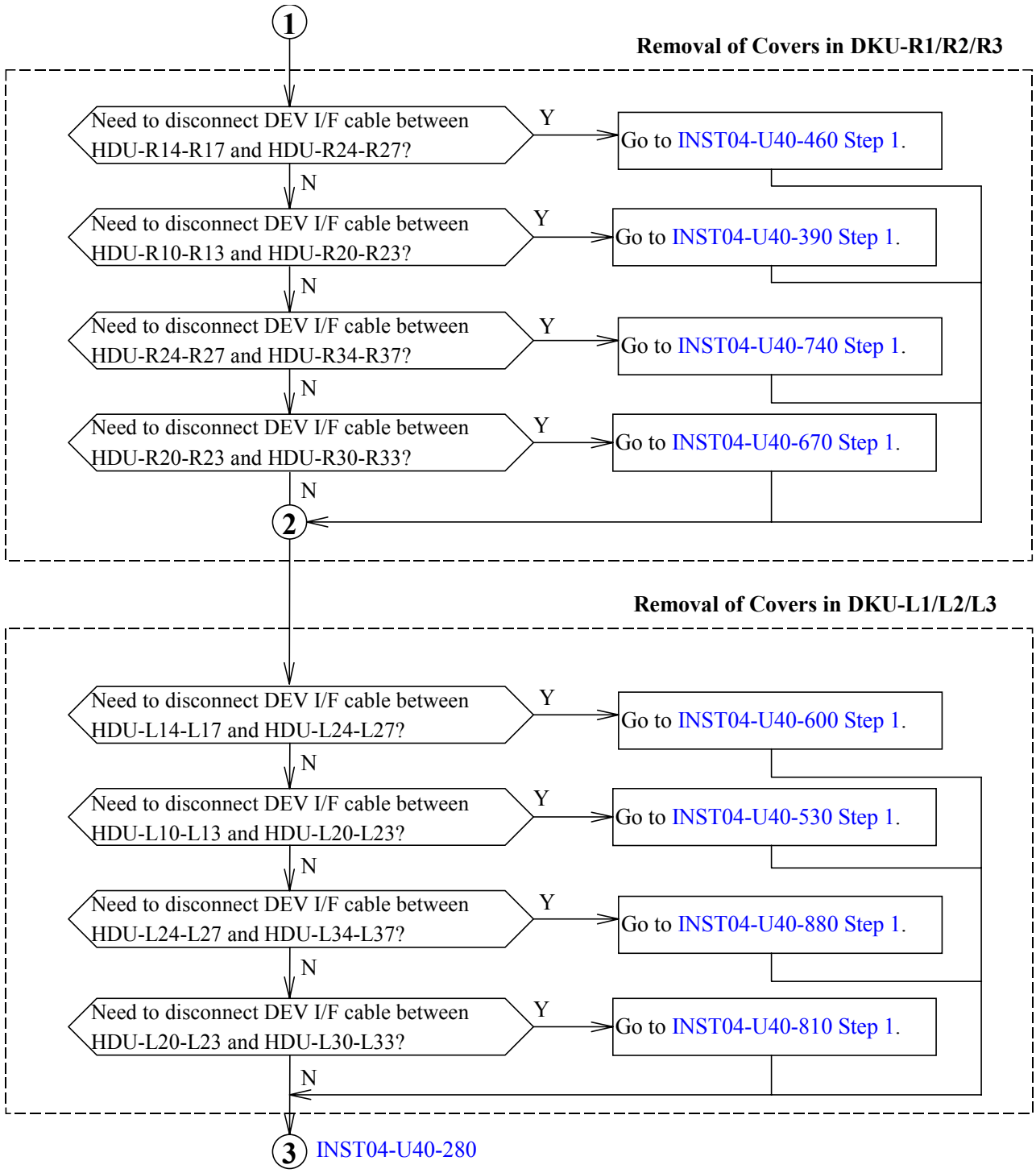
4.13.4 Disconnection of Additional DEV Interface Cables (DKU-F405I-EXC)

De-installation General Flow

NOTICE
Repeat the work until all DEV interface cables (DKU-F405I-EXC) are removed.



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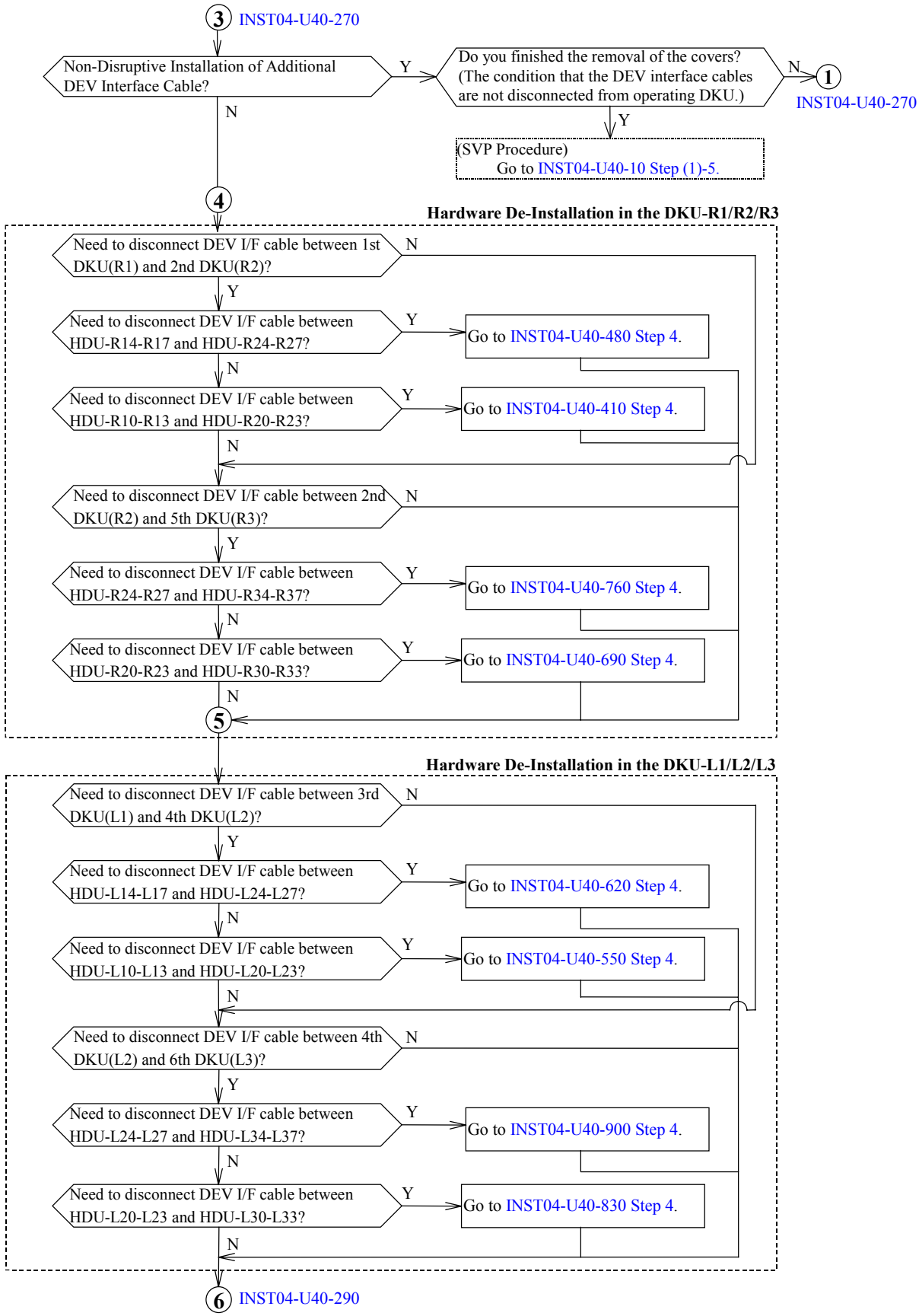

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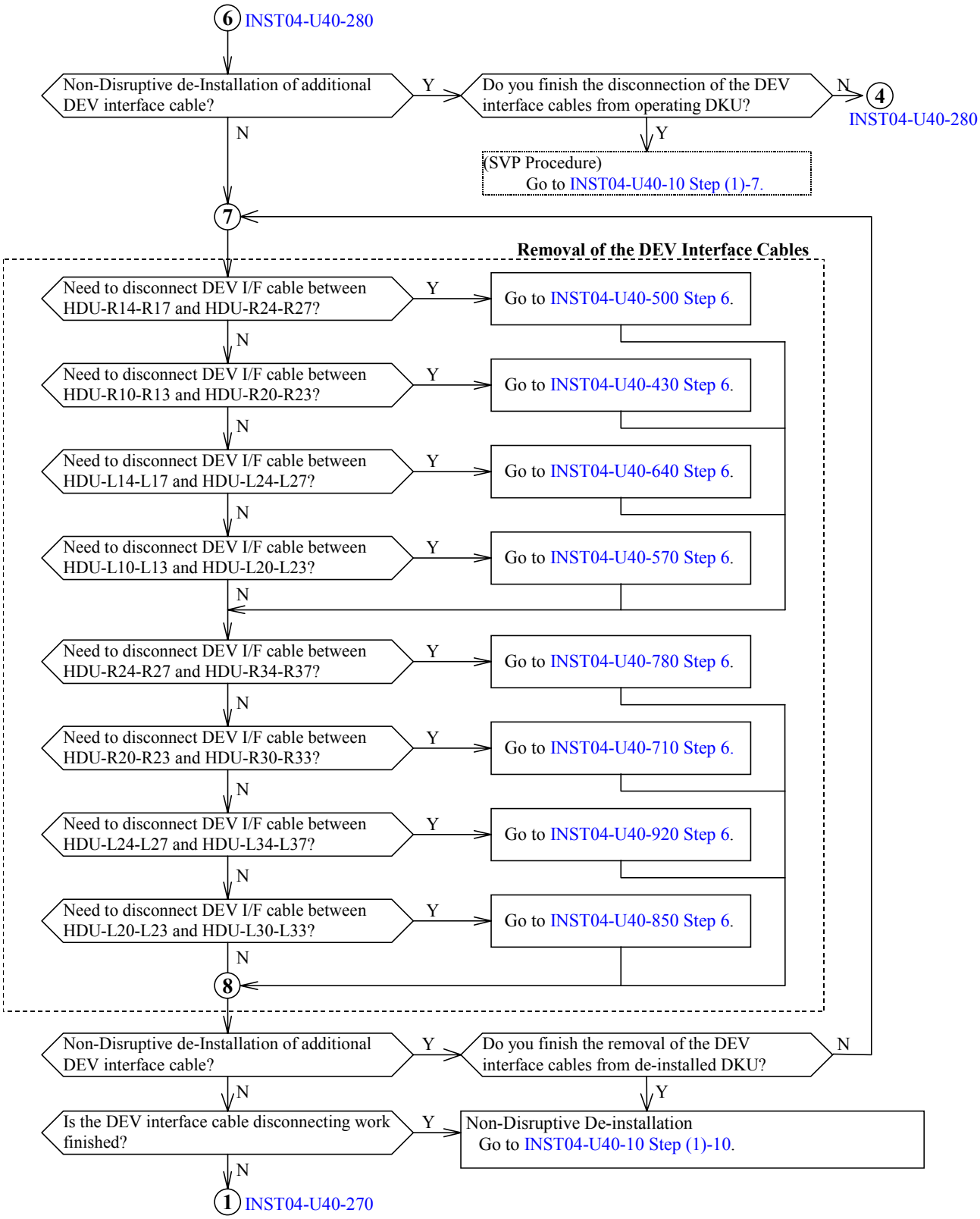

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4.13.4.1 Flowchart

1. Disconnection Procedure of DEV Interface Cables between DKU-R1 (HDU-R10-R13) and DKU-R2 (HDU-R20-R23) Frames----------[INST04-U40-390]

(1) Loosen the screws and remove the cable covers ① and ② from the DKU Frames.

↓

(2) Loosen the screws and remove the side plates from the DKU Frames.

↓

(3) Return to flow when disconnecting the additional DEV interface cable while the sub-system is in operation. Go to next step when disconnecting the additional DEV interface cable with the sub-system switched off.

↓

(4) Disconnect the DEV interface cables from the FSW PCBs in the DKU-R1 frame.

↓

(5) Return to flow when disconnecting the additional DEV interface cable while the sub-system is in operation. Go to next step when disconnecting the additional DEV interface cable with the sub-system switched off.

↓

(6) Disconnect the DEV interface cables from the FSW PCBs in the DKU-R2 frame.

↓

(7) Remove the DEV interface cables from inside the DKU frames.

↓

(8) Attach the side plates in the reverse order of Step 2.

↓

(9) Attach the cable covers in the reverse order of Step 1.

↓

(10) Remove the nameplate from the DKU-R2 frame.

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2. Disconnection Procedure of DEV Interface Cables between DKU-R1 (HDU-R14-R17) and DKU-R2 (HDU-R24-R27) Frames ---------- [INST04-U40-460]

(1) Loosen the screws and remove the cable covers ① and ② from the DKU Frames.

↓

(2) Loosen the screws and remove the side plates from the DKU Frames.

↓

(3) Return to flow when disconnecting the additional DEV interface cable while the sub-system is in operation. Go to next step when disconnecting the additional DEV interface cable with the sub-system switched off.

↓

(4) Disconnect the DEV interface cables from the FSW PCBs in the DKU-R1 frame.

↓

(5) Return to flow when disconnecting the additional DEV interface cable while the sub-system is in operation. Go to next step when disconnecting the additional DEV interface cable with the sub-system switched off.

↓

(6) Disconnect the DEV interface cables from the FSW PCBs in the DKU-R2 frame.

↓

(7) Remove the DEV interface cables from inside the DKU frames.

↓

(8) Attach the side plates in the reverse order of Step 2.

↓

(9) Attach the cable covers in the reverse order of Step 1.

↓

(10) When the DKU-R2 frame consists of 4 HDU boxes, fix the disconnected DEV interface cables in the DKU-R2 frame.

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3. Disconnection Procedure of DEV Interface Cables between DKU-L1 (HDU-L10-L13) and DKU-L2 (HDU-L20-L23) Frames---------- [INST04-U40-530]

(1) Loosen the screws and remove the cable covers ① and ② from the DKU frames.

↓

(2) Loosen the screws and remove the side plates from the DKU frames.

↓

(3) Return to flow when disconnecting the additional DEV interface cable while the sub-system is in operation. Go to next step when disconnecting the additional DEV interface cable with the sub-system switched off.

↓

(4) Disconnect the DEV interface cables from the FSW PCBs in the DKU-L1 frame.

↓

(5) Return to flow when disconnecting the additional DEV interface cable while the sub-system is in operation. Go to next step when disconnecting the additional DEV interface cable with the sub-system switched off.

↓

(6) Disconnect the DEV interface cables from the FSW PCBs in the DKU-L2 frame.

↓

(7) Remove the DEV interface cables from inside the DKU frames.

↓

(8) Attach the side plates in the reverse order of Step 2.

↓

(9) Attach the cable covers in the reverse order of Step 1.

↓

(10) Remove the nameplate from the DKU-L2 frame.

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4. Disconnection Procedure of DEV Interface Cables between DKU-L1 (HDU-L14-L17) and DKU-L2 (HDU-L24-L27) Frames---------- [INST04-U40-600]

(1) Loosen the screws and remove the cable covers ① and ② from the DKU frames.

↓

(2) Loosen the screws and remove the side plates from the DKU frames.

↓

(3) Return to flow when disconnecting the additional DEV interface cable while the sub-system is in operation. Go to next step when disconnecting the additional DEV interface cable with the sub-system switched off.

↓

(4) Disconnect the DEV interface cables from the FSW PCBs in the DKU-L1 frame.

↓

(5) Return to flow when disconnecting the additional DEV interface cable while the sub-system is in operation. Go to next step when disconnecting the additional DEV interface cable with the sub-system switched off.

↓

(6) Disconnect the DEV interface cables from the FSW PCBs in the DKU-L2 frame.

↓

(7) Remove the DEV interface cables from inside the DKU frames.

↓

(8) Attach the side plates in the reverse order of Step 2.

↓

(9) Attach the cable covers in the reverse order of Step 1.

↓

(10) When the DKU-L2 frame consists of 4 HDU boxes, fix the disconnected DEV interface cables in the DKU-L2 frame.

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5. Disconnection Procedure of DEV Interface Cables between DKU-R2 (HDU-R20-R23) and DKU-R3 (HDU-R30-R33) Frames ---------- [INST04-U40-670]

(1) Loosen the screws and remove the cable covers ① and ② from the DKU frames.

↓

(2) Loosen the screws and remove the side plates from the DKU frames.

↓

(3) Return to flow when disconnecting the additional DEV interface cable while the sub-system is in operation. Go to next step when disconnecting the additional DEV interface cable with the sub-system switched off.

↓

(4) Disconnect the DEV interface cables from the FSW PCBs in the DKU-R2 frame.

↓

(5) Return to flow when disconnecting the additional DEV interface cable while the sub-system is in operation. Go to next step when disconnecting the additional DEV interface cable with the sub-system switched off.

↓

(6) Disconnect the DEV interface cables from the FSW PCBs in the DKU-R3 frame.

↓

(7) Remove the DEV interface cables from inside the DKU frames.

↓

(8) Attach the side plates in the reverse order of Step 2.

↓

(9) Attach the cable covers in the reverse order of Step 1.

↓

(10) Remove the nameplate from the DKU-R3 frame.

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6. Disconnection Procedure of DEV Interface Cables between DKU-R2 (HDU-R24-R27) and DKU-R3 (HDU-R34-R37) Frames ---------- [INST04-U40-740]

(1) Loosen the screws and remove the cable covers ① and ② from the DKU frames.

↓

(2) Loosen the screws and remove the side plates from the DKU frames.

↓

(3) Return to flow when disconnecting the additional DEV interface cable while the sub-system is in operation. Go to next step when disconnecting the additional DEV interface cable with the sub-system switched off.

↓

(4) Disconnect the DEV interface cables from the FSW PCBs in the DKU-R2 frame.

↓

(5) Return to flow when disconnecting the additional DEV interface cable while the sub-system is in operation. Go to next step when disconnecting the additional DEV interface cable with the sub-system switched off.

↓

(6) Disconnect the DEV interface cables from the FSW PCBs in the DKU-R3 frame.

↓

(7) Remove the DEV interface cables from inside the DKU frames.

↓

(8) Attach the side plates in the reverse order of Step 2.

↓

(9) Attach the cable covers in the reverse order of Step 1.

↓

(10) When the DKU-R3 frame consists of 4 HDU boxes, fix the disconnected DEV interface cables in the DKU-R3 frame.

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7. Disconnection Procedure of DEV Interface Cables between DKU-L2 (HDU-L20-L23) and DKU-L3 (HDU-L30-L33) Frames---------- [INST04-U40-810]

(1) Loosen the screws and remove the cable covers ① and ② from the DKU frames.

↓

(2) Loosen the screws and remove the side plates from the DKU frames.

↓

(3) Return to flow when disconnecting the additional DEV interface cable while the sub-system is in operation. Go to next step when disconnecting the additional DEV interface cable with the sub-system switched off.

↓

(4) Disconnect the DEV interface cables from the FSW PCBs in the DKU-L2 frame.

↓

(5) Return to flow when disconnecting the additional DEV interface cable while the sub-system is in operation. Go to next step when disconnecting the additional DEV interface cable with the sub-system switched off.

↓

(6) Disconnect the DEV interface cables from the FSW PCBs in the DKU-L3 frame.

↓

(7) Remove the DEV interface cables from inside the DKU frames.

↓

(8) Attach the side plates in the reverse order of Step 2.

↓

(9) Attach the cable covers in the reverse order of Step 1.

↓

(10) Remove the nameplate from the DKU-L3 frame.

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8. Disconnection Procedure of DEV Interface Cables between DKU-L2 (HDU-L24-L27) and DKU-L3 (HDU-L34-L37) Frames---------- [INST04-U40-880]

(1) Loosen the screws and remove the cable covers ① and ② from the DKU frames.

↓

(2) Loosen the screws and remove the side plates from the DKU frames.

↓

(3) Return to flow when disconnecting the additional DEV interface cable while the sub-system is in operation. Go to next step when disconnecting the additional DEV interface cable with the sub-system switched off.

↓

(4) Disconnect the DEV interface cables from the FSW PCBs in the DKU-L2 frame.

↓

(5) Return to flow when disconnecting the additional DEV interface cable while the sub-system is in operation. Go to next step when disconnecting the additional DEV interface cable with the sub-system switched off.

↓

(6) Disconnect the DEV interface cables from the FSW PCBs in the DKU-L3 frame.

↓

(7) Remove the DEV interface cables from inside the DKU frames.

↓

(8) Attach the side plates in the reverse order of Step 2.

↓

(9) Attach the cable covers in the reverse order of Step 1.

↓

(10) When the DKU-L3 frame consists of 4 HDU boxes, fix the disconnected DEV interface cables in the DKU-L3 frame.

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4.13.4.2 Parts List

Table 4.13.4.2-1 Parts List of the DEV Interface Cable

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKU-F405I-EXC	DEV Interface Cable 2 (FC)	5502402-A-R	16	
		DEV Interface Cable 2 (LED)	5502403-A-R	16	
		DKUMN Cable	2098190-A,B	2	
		Nameplate	2103570-2	1	
			2103575-2	1	

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4.13.4.3 Disconnection Procedure of Additional DEV Interface Cables (In case of HDU-R23 from R20)

1. Loosen the screws and remove the cable covers ① and ② from the DKU frames.

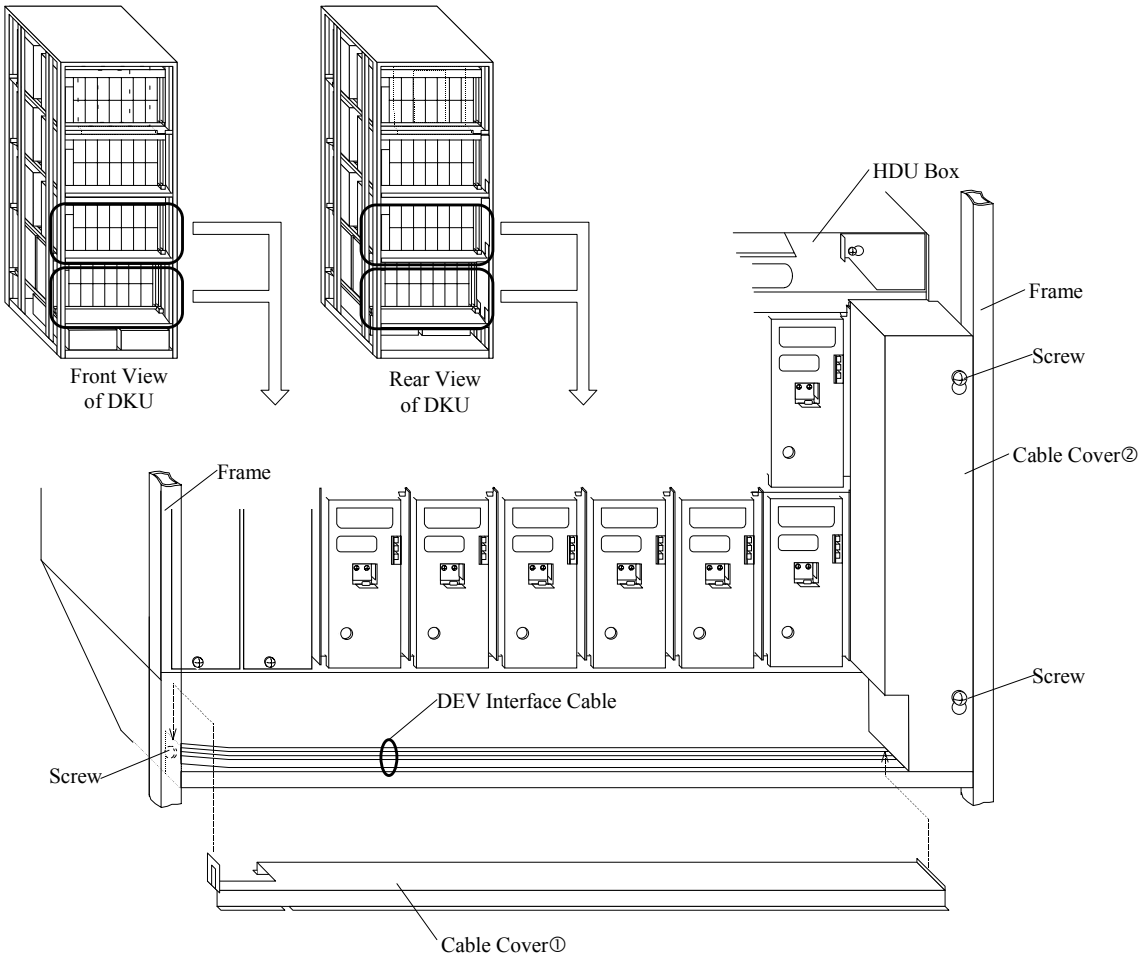

Fig. 4.13.4.3-1 Removal of Cable Covers

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2. Loosen the screws and remove the side plates from the DKU frames.

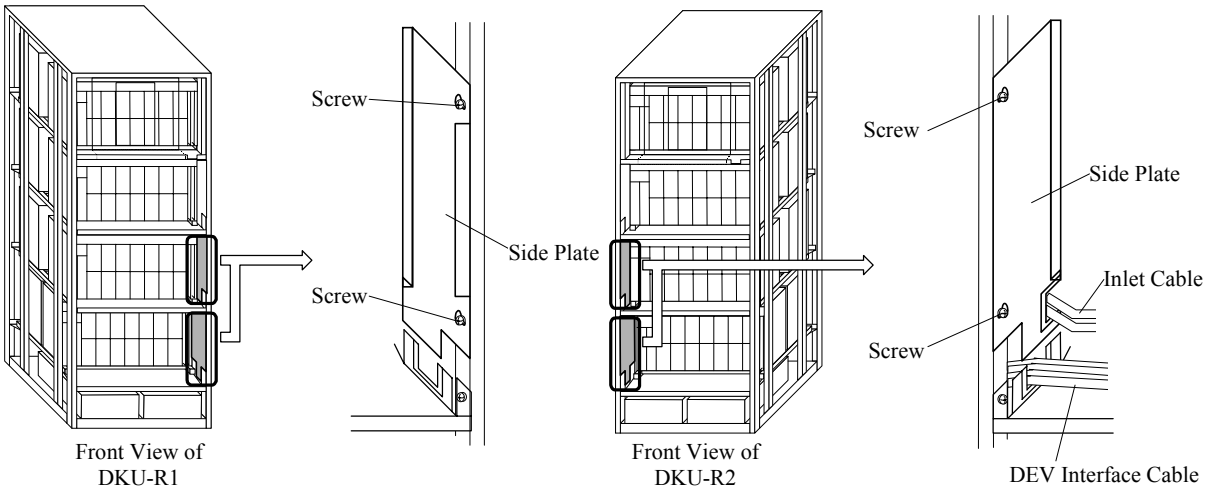

Fig. 4.13.4.3-2 Removal of Side Plates (Front View)

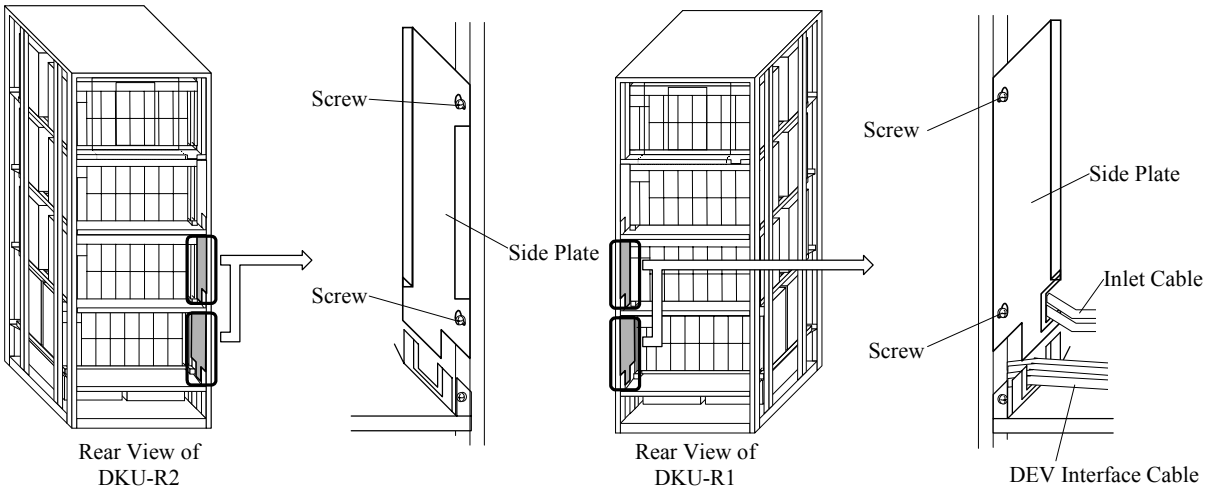

Fig. 4.13.4.3-3 Removal of Side Plates (Rear View)

3. Return to INST04-U40-270 ② when disconnecting the additional DEV interface cable while the subsystem is in operation. Go to INST04-U40-410 when the additional DEV interface cable with the sub-system switched off.

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4. Disconnect the DEV interface cables from the FSW PCBs in the DKU-R1 frame referring to figures 4.13.4.3-4 and 4.13.4.3-5.

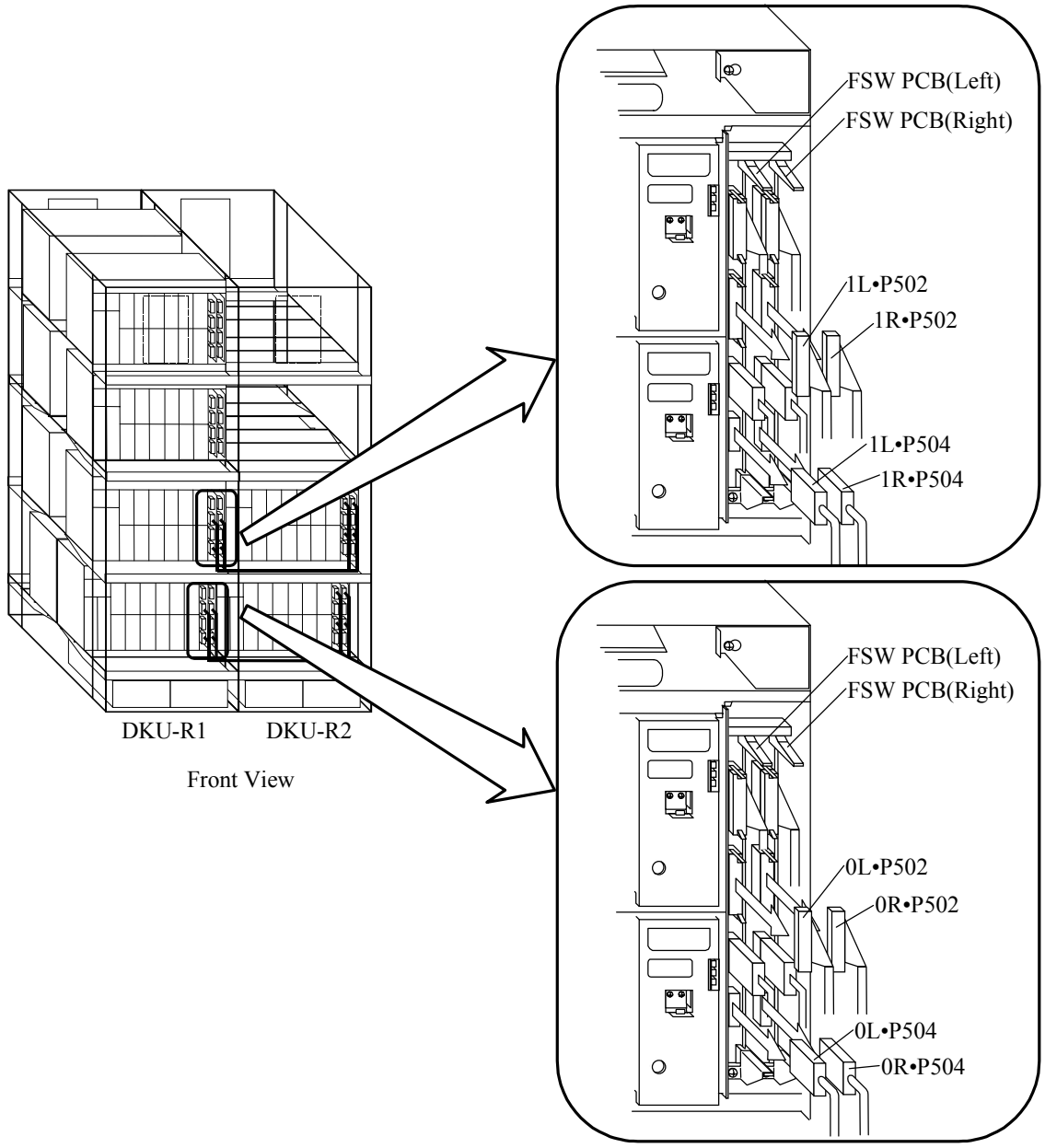

Fig. 4.13.4.3-4 Disconnection of the DEV Interface Cables

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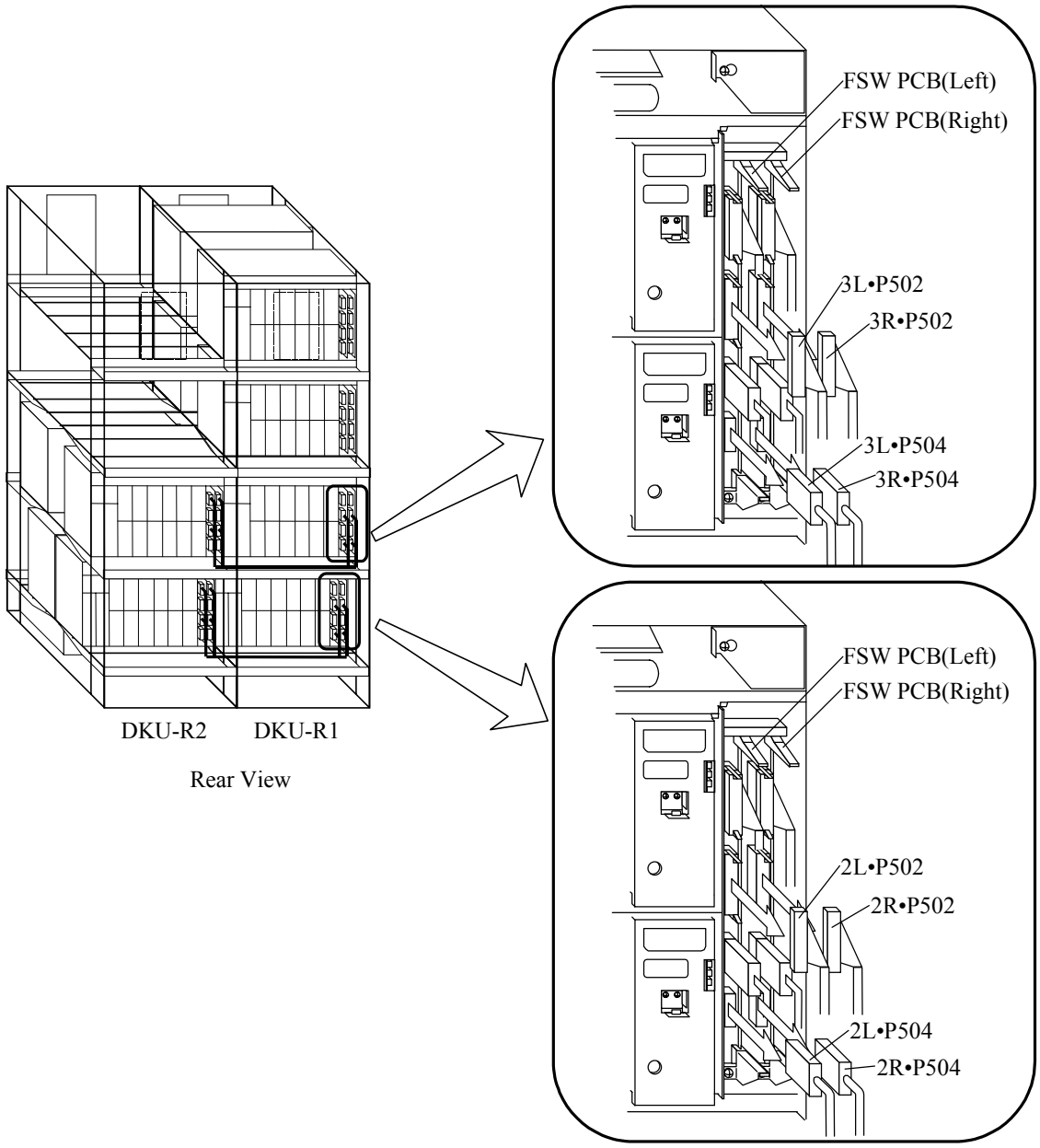

Fig. 4.13.4.3-5 Disconnection of the DEV Interface Cables

5. Return to INST04-U40-280 ⑤ when disconnecting the additional DEV interface cable while the sub-system is in operation. Go to INST04-U40-430 when disconnecting the additional DEV interface cable with the sub-system switched off.

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6. Disconnect the DEV interface cables from the FSW PCBs in the DKU-R2 frame referring to figures 4.13.4.3-6 and 4.13.4.3-7.

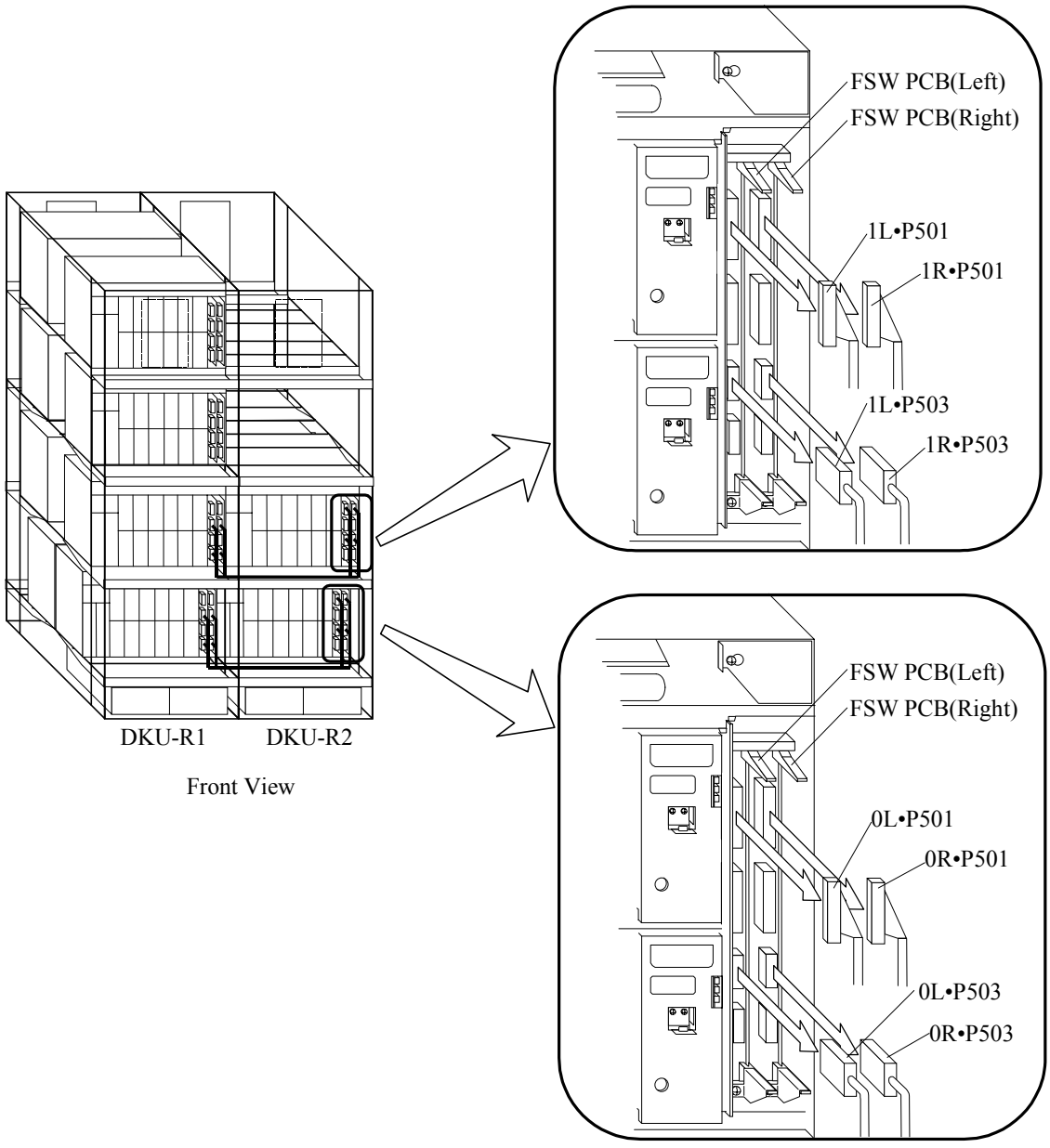

Fig. 4.13.4.3-6 Disconnection of the DEV Interface Cables

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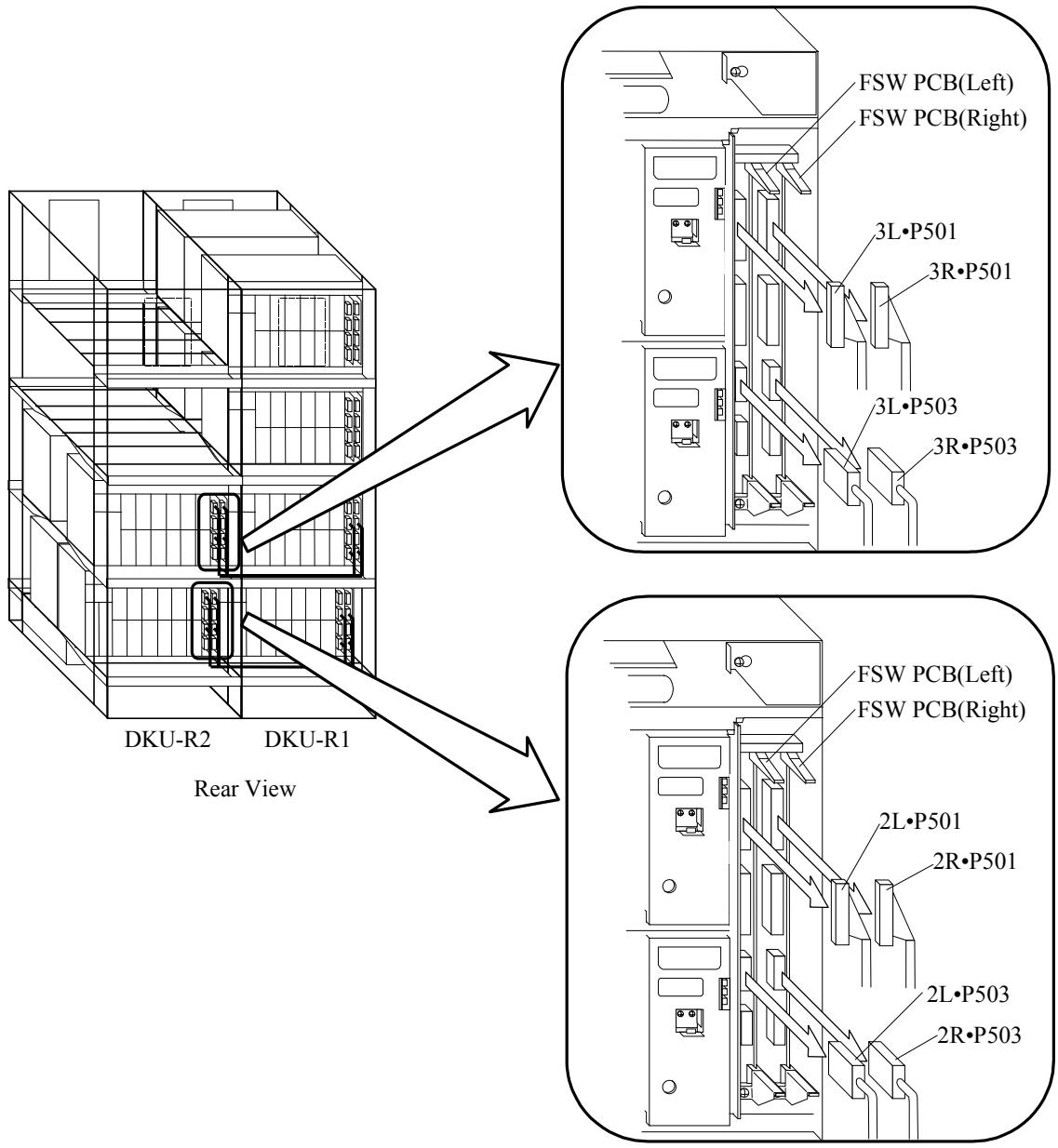

Fig. 4.13.4.3-7 Disconnection of the DEV Interface Cables

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7. Remove the DEV interface cables from inside the DKU frames.
8. Attach the side plates in the reverse order of Step 2.
9. Attach the cable covers in the reverse order of Step 1.
10. Remove the nameplate from the DKU-R2 frame.

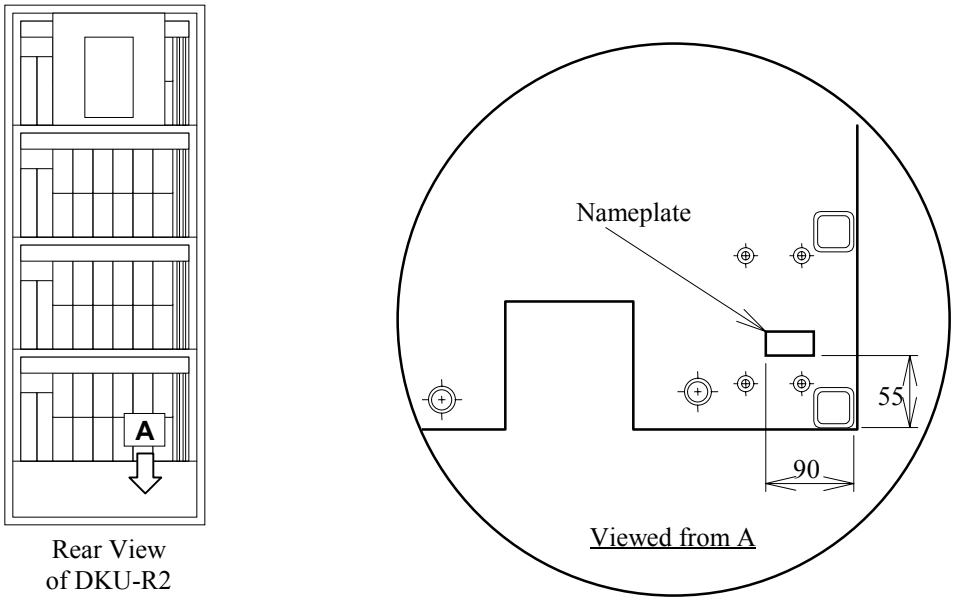

Fig. 4.13.4.3-8 Removal of the Nameplate

11. Go to INST04-U40-290 Step ⑧.

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4.13.4.4 Disconnection Procedure of Additional DEV Interface Cables (In case of HDU-R27 from R24)

1. Loosen the screws and remove the cable covers ① and ② from the DKU frames.

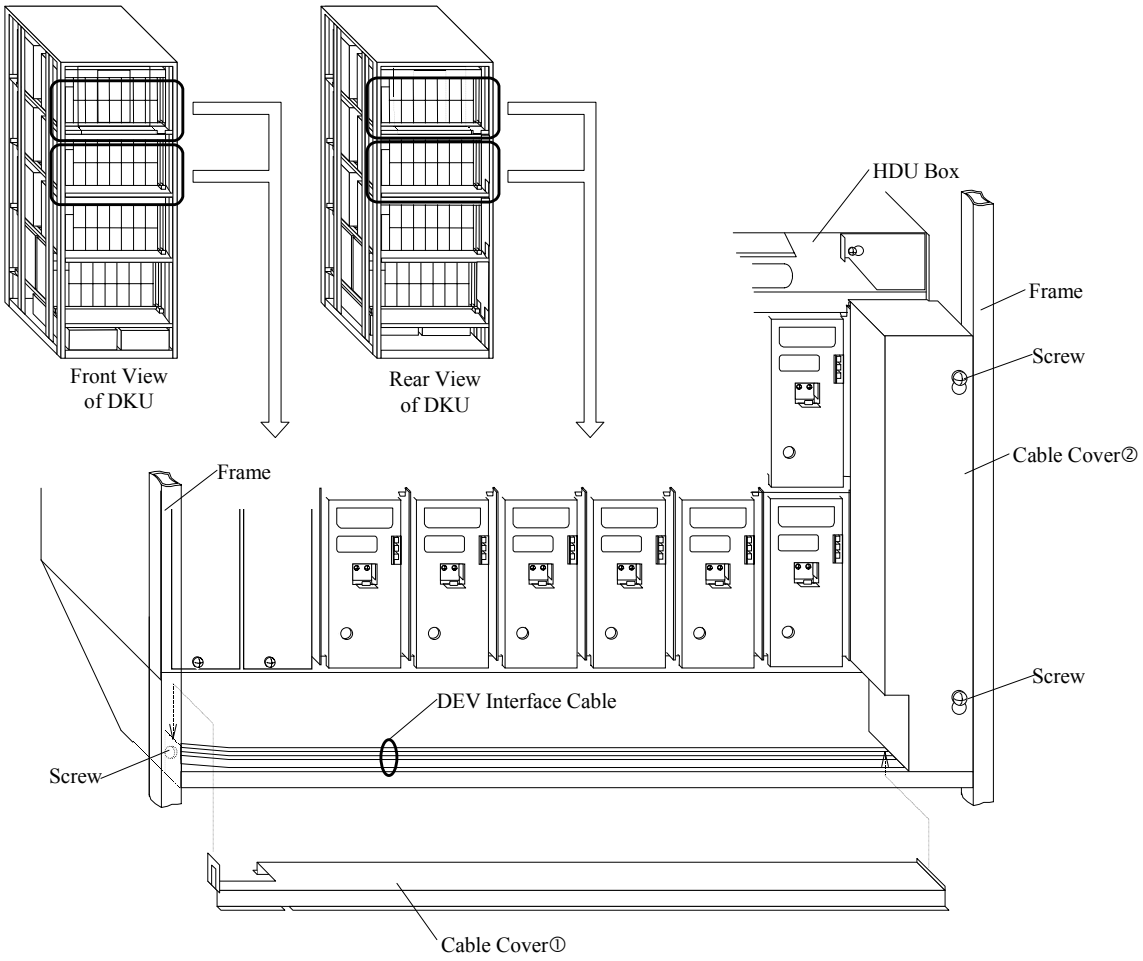

Fig. 4.13.4.4-1 Removal of Cable Covers

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2. Loosen the screws and remove the side plates from the DKU frames.

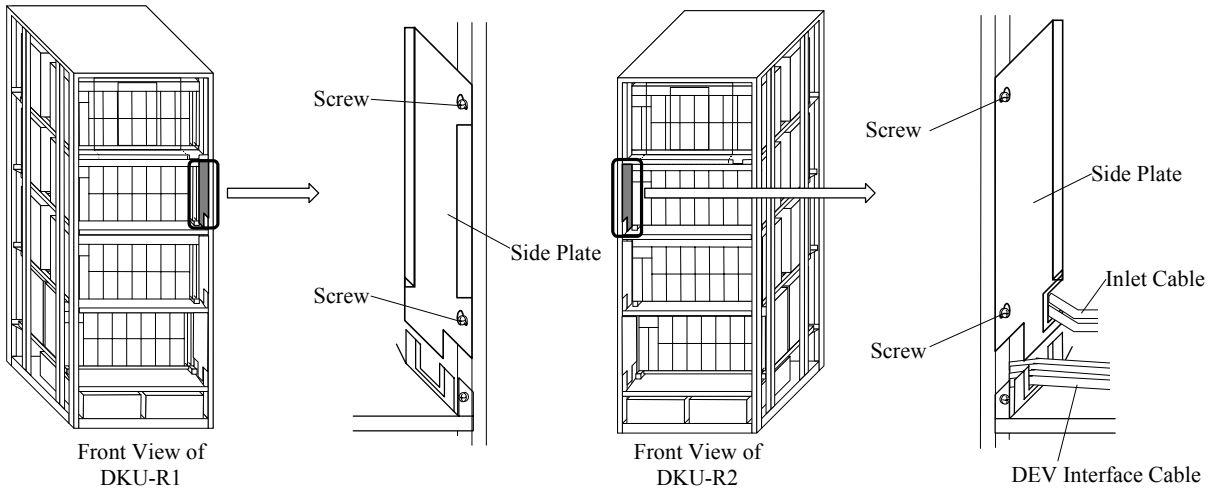

Fig. 4.13.4.4-2 Removal of Side Plates (Front View)

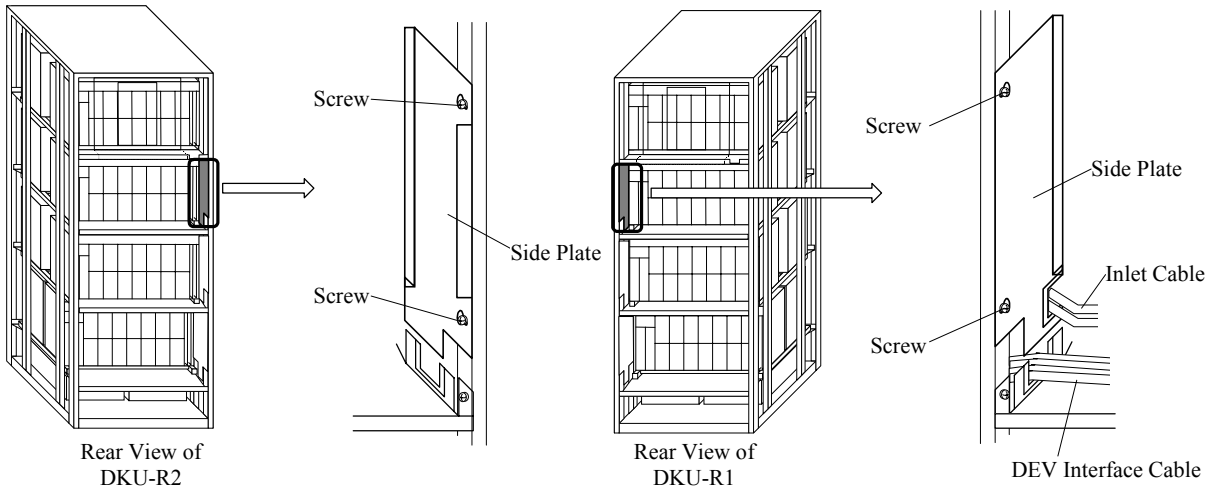

Fig. 4.13.4.4-3 Removal of Side Plates (Rear View)

3. Return to INST04-U40-270 ② when disconnecting the additional DEV interface cable while the subsystem is in operation. Go to INST04-U40-480 when the additional DEV interface cable with the sub-system switched off.

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4. Disconnect the DEV interface cables from the FSW PCBs in the DKU-R1 frame referring to figures 4.13.4.4-4 and 4.13.4.4-5.

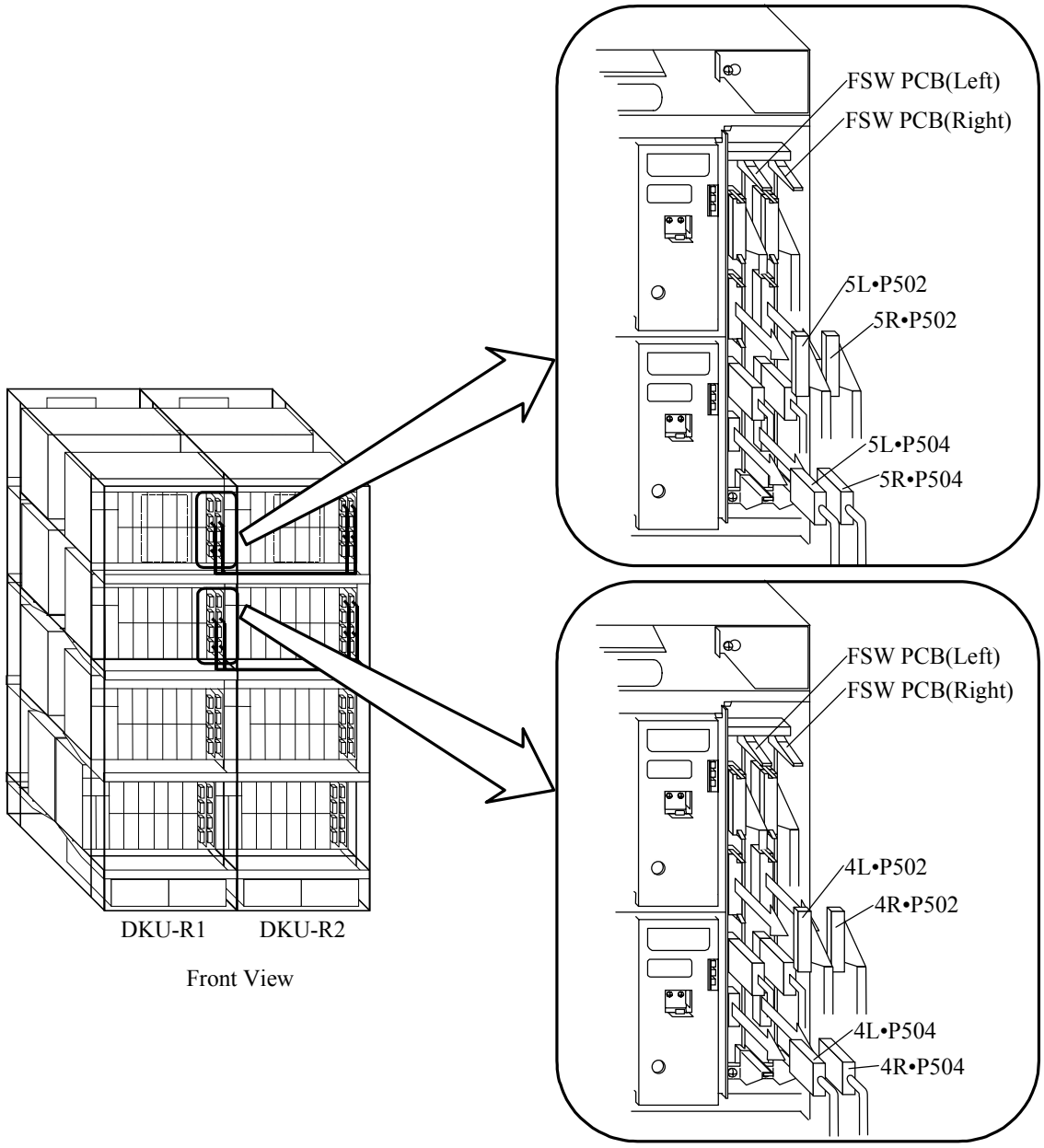

Fig. 4.13.4.4-4 Disconnection of the DEV Interface Cables

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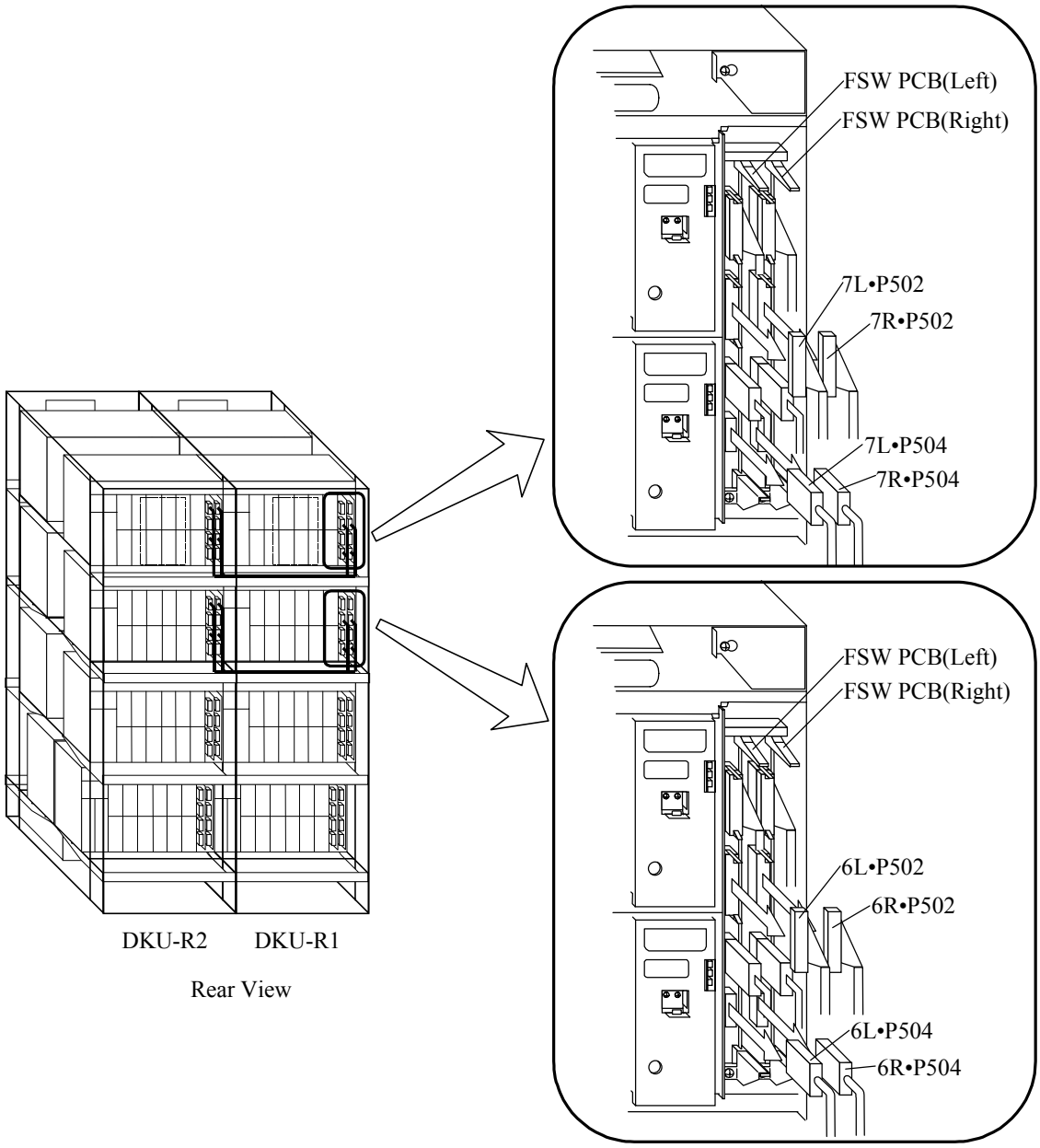

Fig. 4.13.4.4-5 Disconnection of the DEV Interface Cables

5. Return to INST04-U40-280 ⑤ when disconnecting the additional DEV interface cable while the sub-system is in operation. Go to INST04-U40-500 when disconnecting the additional DEV interface cable with the sub-system switched off.

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6. Disconnect the DEV interface cables from the FSW PCBs in the DKU-R2 frame referring to figures 4.13.4.4-6 and 4.13.4.4-7.

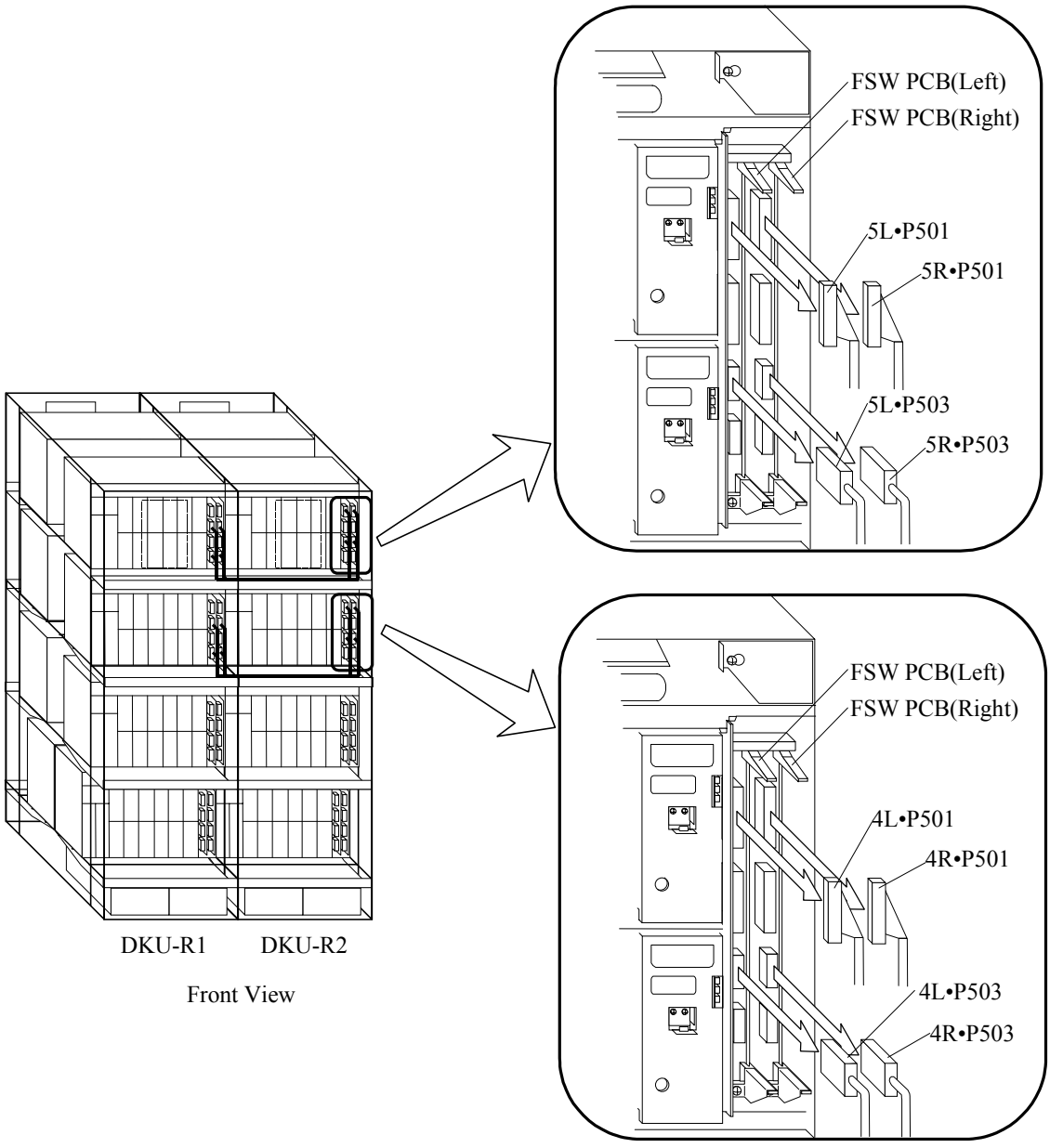

Fig. 4.13.4.4-6 Disconnection of the DEV Interface Cables

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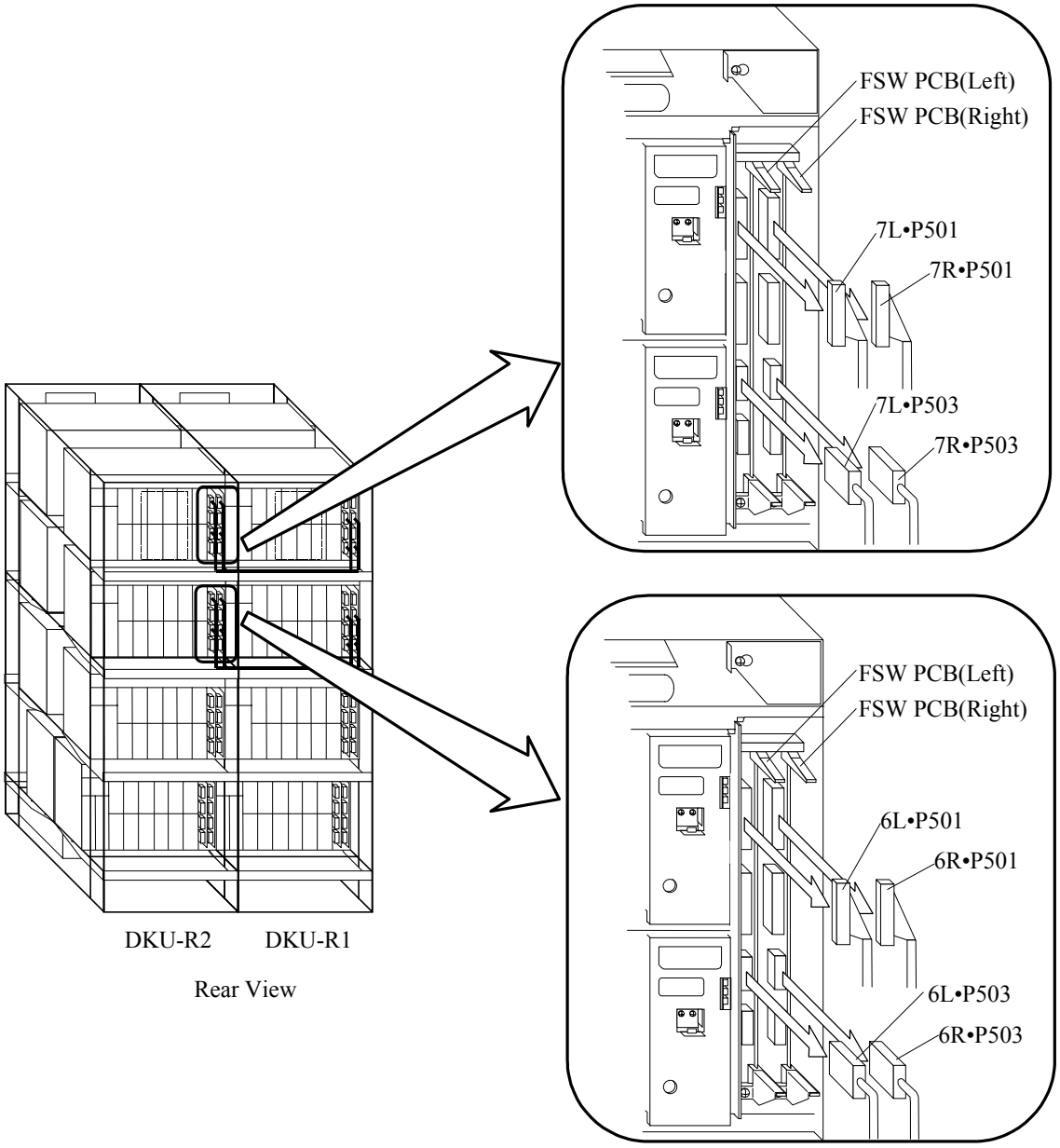

Fig. 4.13.4.4-7 Disconnection of the DEV Interface Cables

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7. Remove the DEV interface cables from inside the DKU frames.
8. Attach the side plates in the reverse order of Step 2.
9. Attach the cable covers in the reverse order of Step 1.
10. When the DKU-R2 frame consists of 4 HDU boxes, fix the disconnected DEV interface cables in the DKU-R2 frame with the binders.

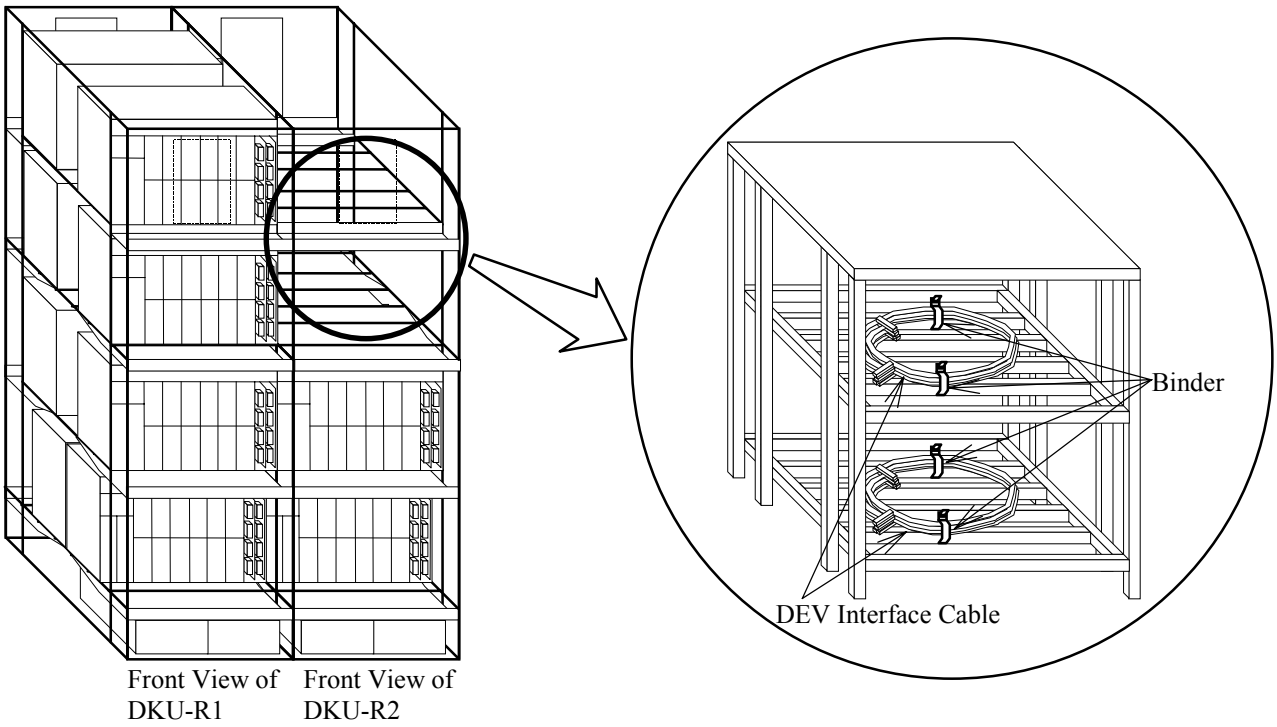

Fig. 4.13.4.4-8 Fixation of the DEV Interface Cables

11. Go to INST04-U40-290 Step ⑧.

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4.13.4.5 Disconnection Procedure of Additional DEV Interface Cables (In case of HDU-L23 from L20)

1. Loosen the screws and remove the cable covers ① and ② from the DKU frames.

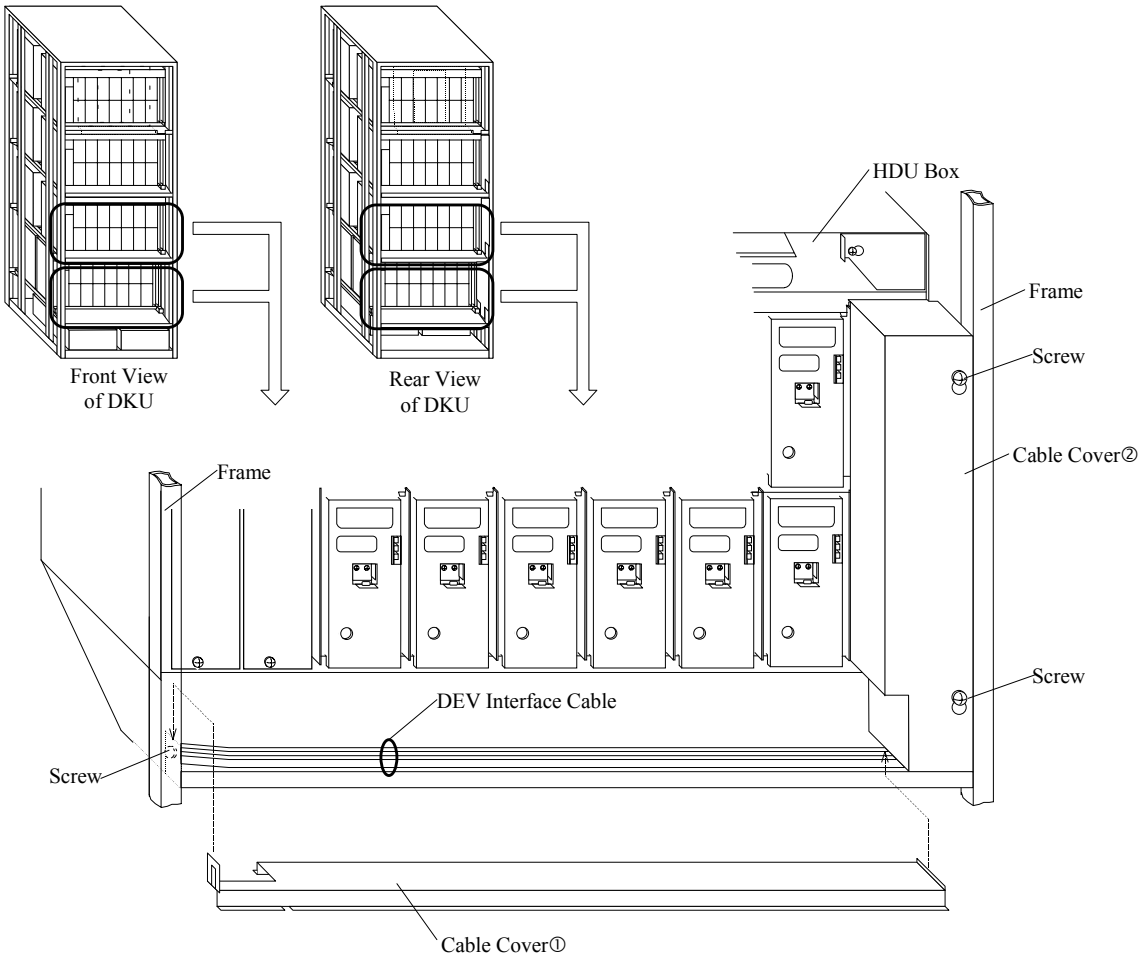

Fig. 4.13.4.5-1 Removal of Cable Covers

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2. Loosen the screws and remove the side plates from the DKU frames.

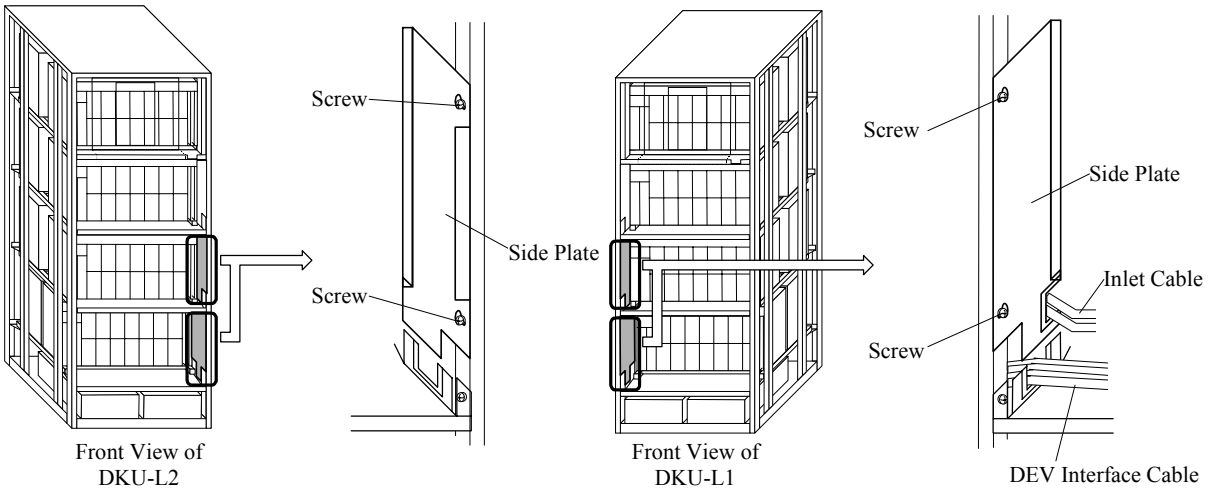

Fig. 4.13.4.5-2 Removal of Side Plates (Front View)

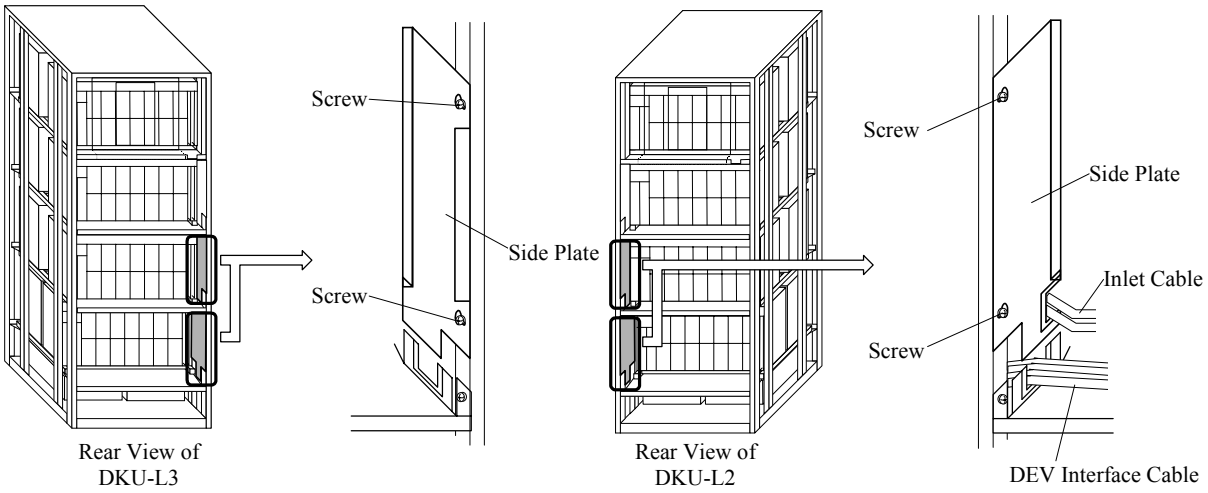

Fig. 4.13.4.5-3 Removal of Side Plates (Rear View)

3. Return to INST04-U40-270 ② when disconnecting the additional DEV interface cable while the subsystem is in operation. Go to INST04-U40-550 when the additional DEV interface cable with the sub-system switched off.

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4. Disconnect the DEV interface cables from the FSW PCBs in the DKU-L1 frame referring to figures 4.13.4.5-4 and 4.13.4.5-5.

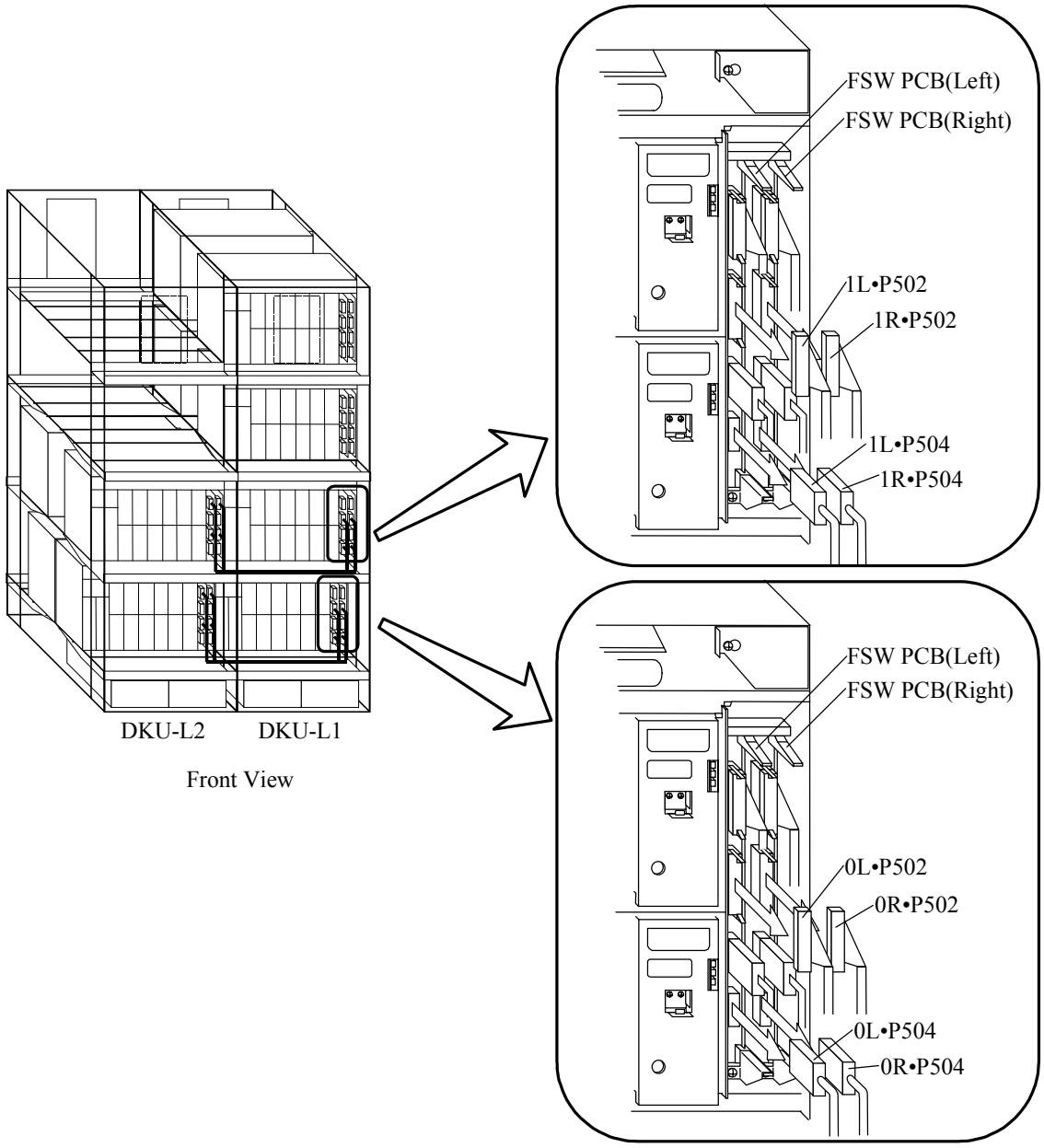

Fig. 4.13.4.5-4 Disconnection of the DEV Interface Cables

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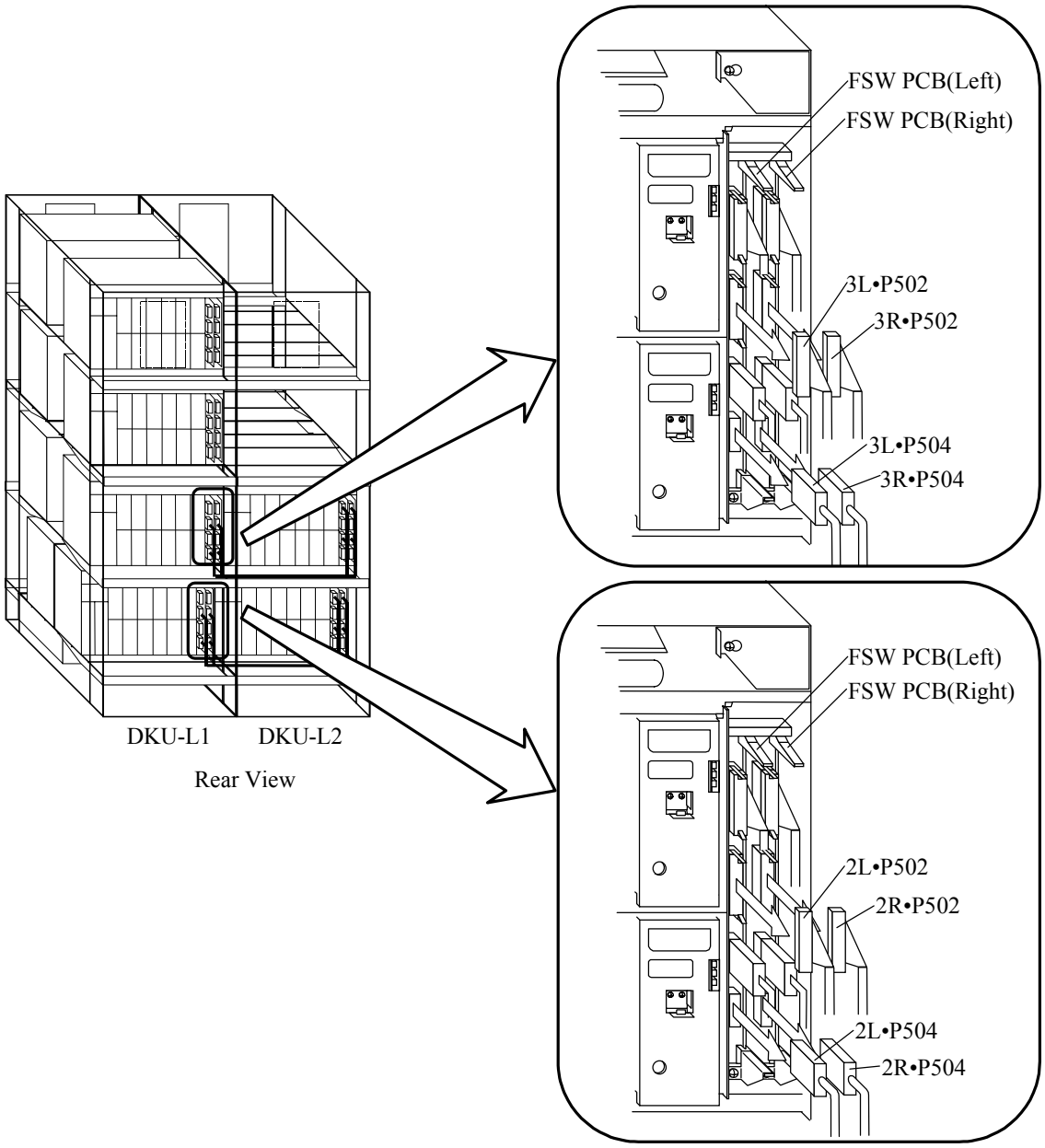

Fig. 4.13.4.5-5 Disconnection of the DEV Interface Cables

5. Return to INST4-U40-280 ⑤ when disconnecting the additional DEV interface cable while the sub-system is in operation. Go to INST04-U40-570 when disconnecting the additional DEV interface cable with the sub-system switched off.

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6. Disconnect the DEV interface cables from the FSW PCBs in the DKU-L2 frame referring to figures 4.13.4.5-6 and 4.13.4.5-7.

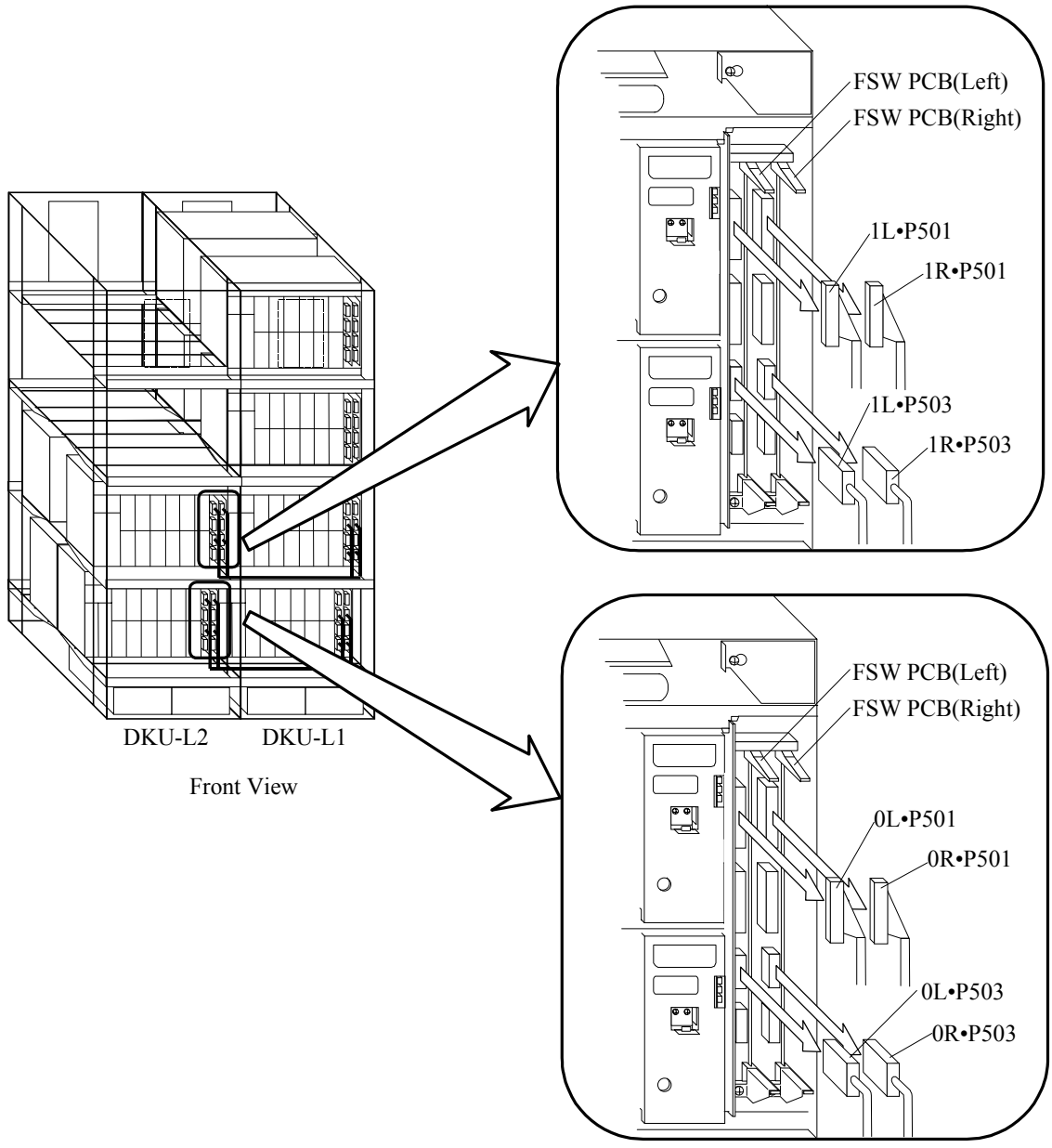

Fig. 4.13.4.5-6 Disconnection of the DEV Interface Cables

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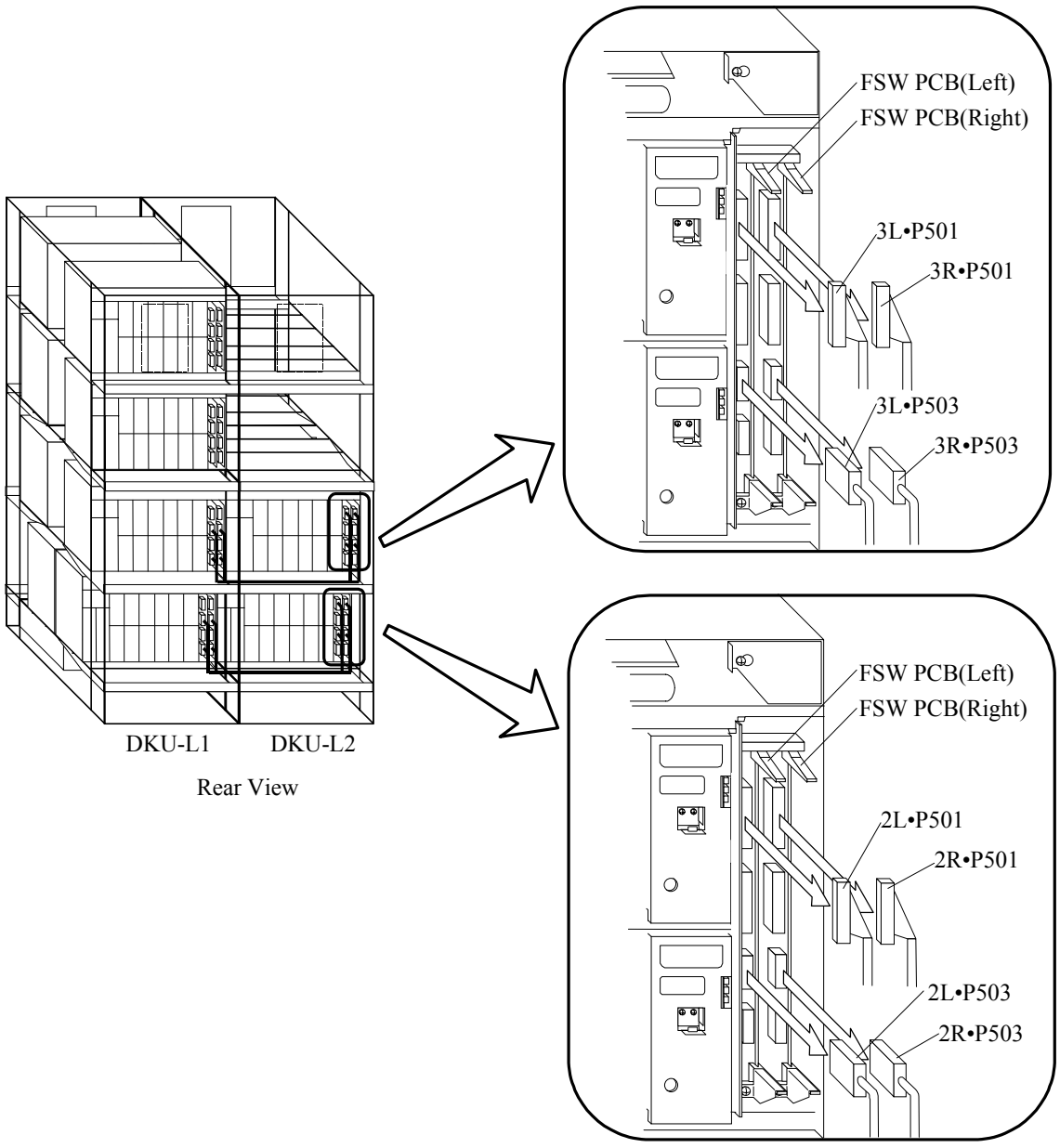

Fig. 4.13.4.5-7 Disconnection of the DEV Interface Cables

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7. Remove the DEV interface cables from inside the DKU frames.
8. Attach the side plates in the reverse order of Step 2.
9. Attach the cable covers in the reverse order of Step 1.
10. Remove the nameplate from the DKU-L2 frame.

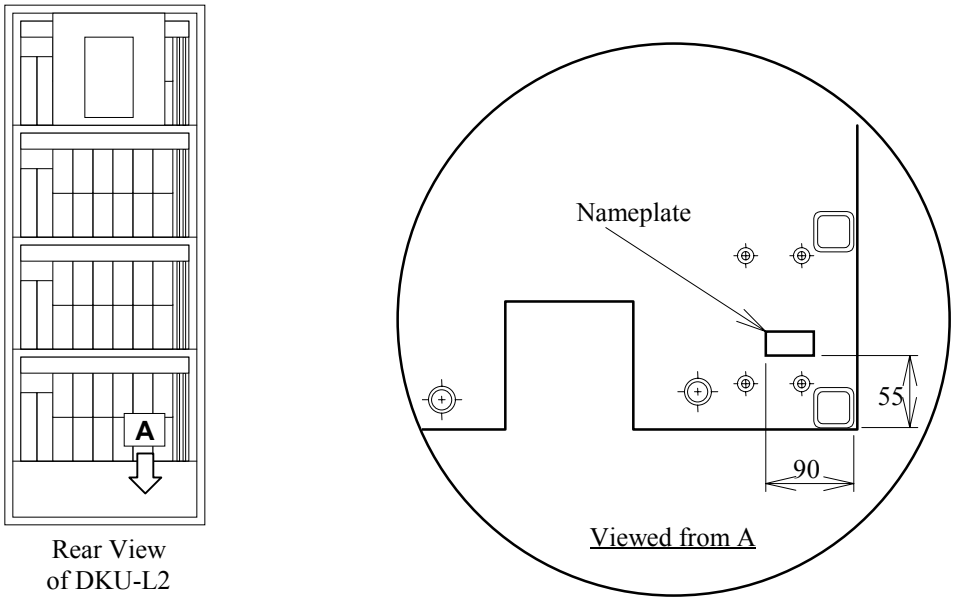

Fig. 4.13.4.5-8 Removal of the Nameplate

11. Go to INST04-U40-290 Step ⑧.

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4.13.4.6 Disconnection Procedure of Additional DEV Interface Cables (In case of HDU-L27 from L24)

1. Loosen the screws and remove the cable covers ① and ② from the DKU frames.

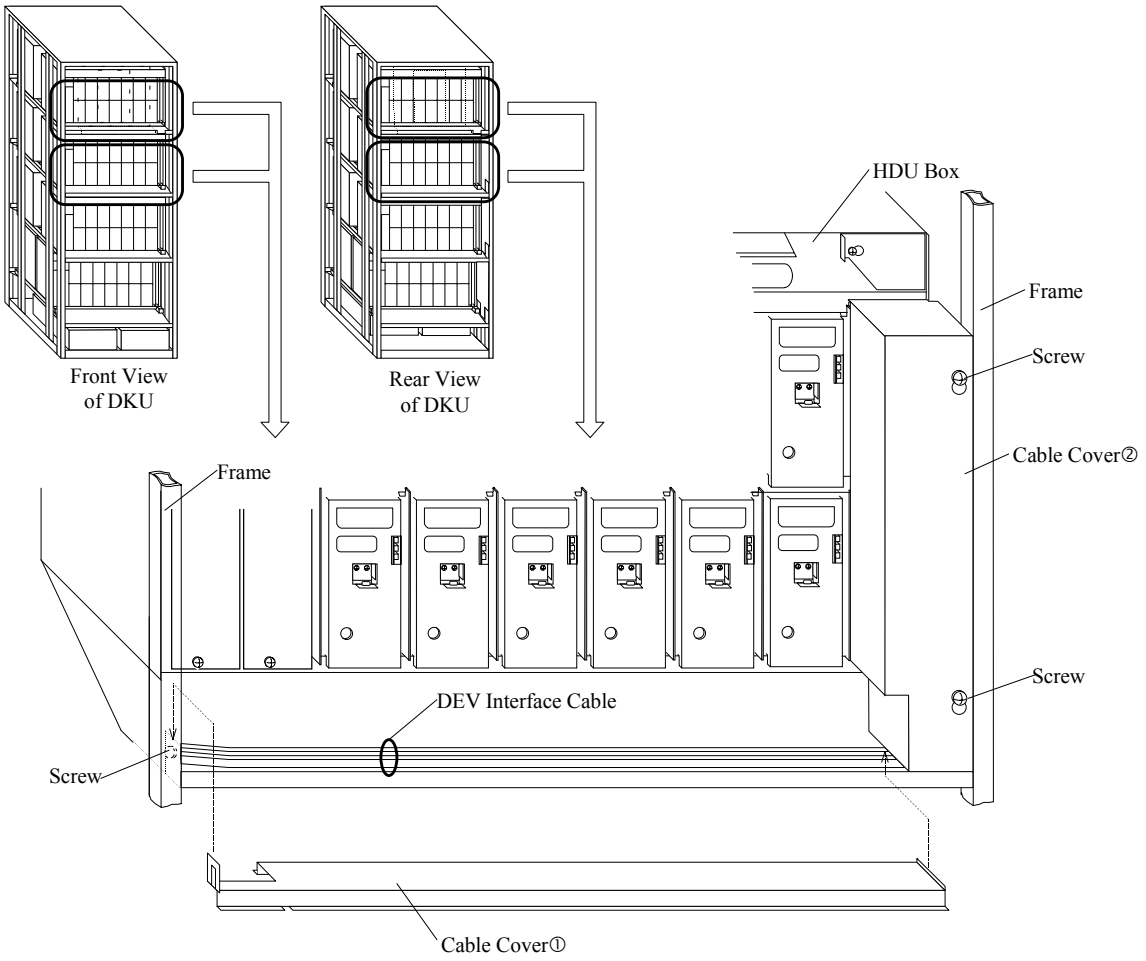

Fig. 4.13.4.6-1 Removal of Cable Covers

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2. Loosen the screws and remove the side plates from the DKU frames.

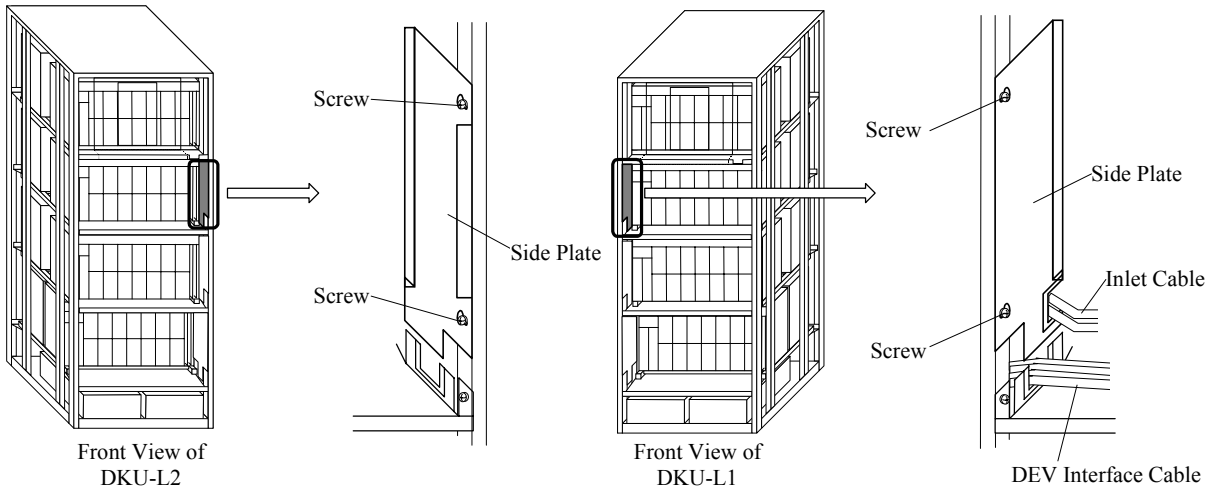

Fig. 4.13.4.6-2 Removal of Side Plates (Front View)

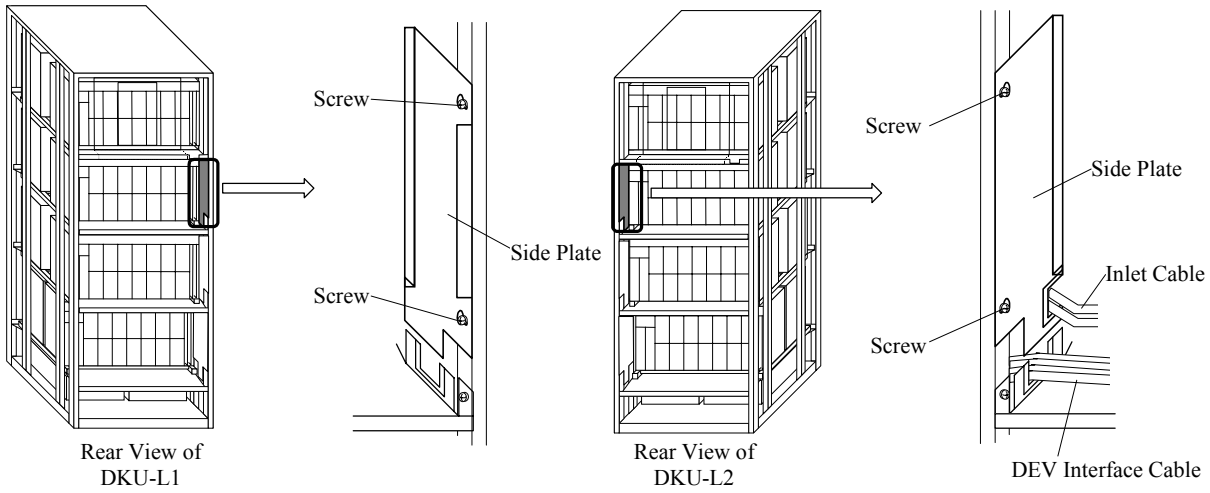

Fig. 4.13.4.6-3 Removal of Side Plates (Rear View)

3. Return to INST04-U40-270 ② when disconnecting the additional DEV interface cable while the subsystem is in operation. Go to INST04-U40-620 when the additional DEV interface cable with the sub-system switched off.

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4. Disconnect the DEV interface cables from the FSW PCBs in the DKU-L1 frame referring to figures 4.13.4.6-4 and 4.13.4.6-5.

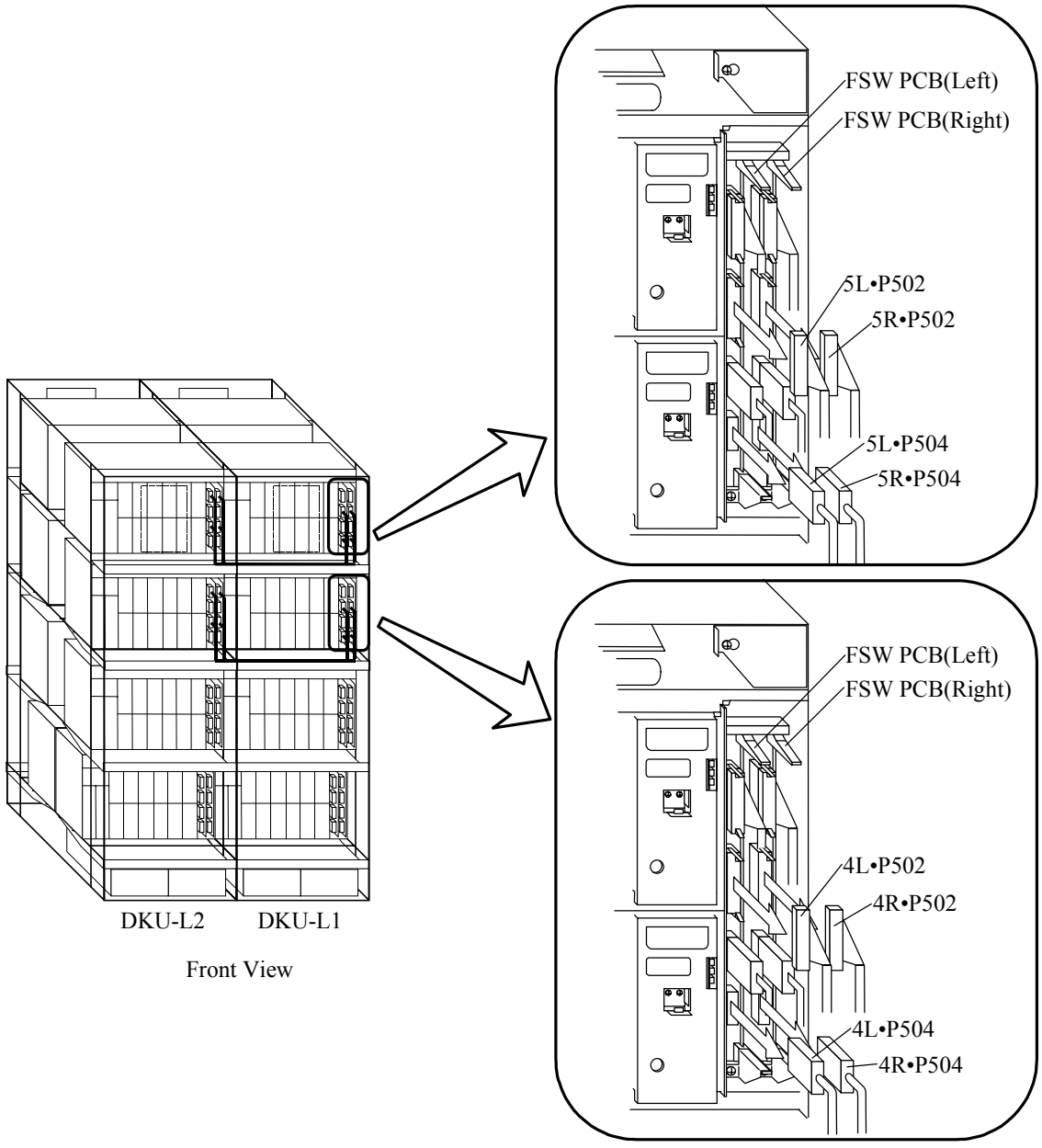

Fig. 4.13.4.6-4 Disconnection of the DEV Interface Cables

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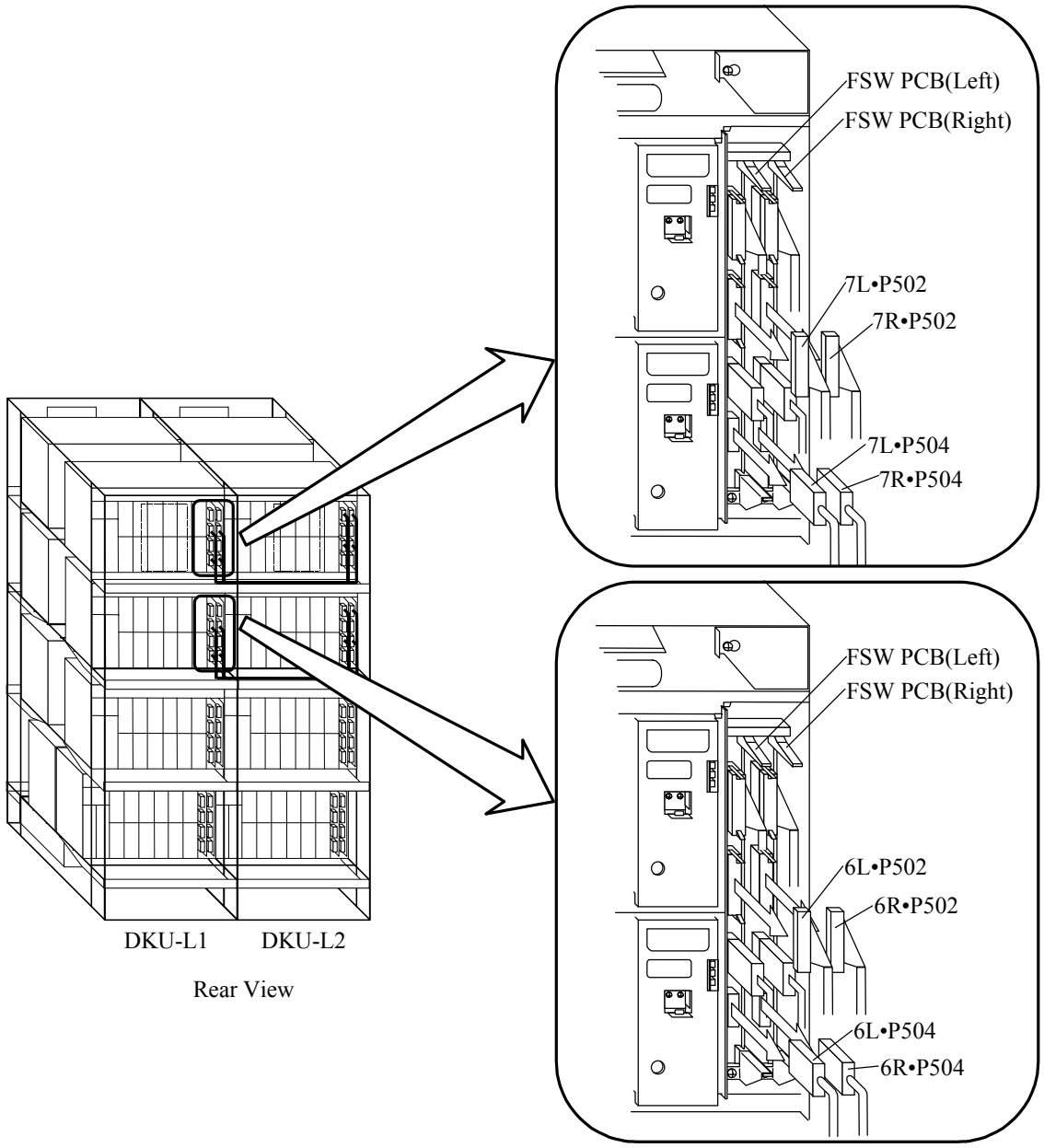

Fig. 4.13.4.6-5 Disconnection of the DEV Interface Cables

5. Return to INST04-U40-280 ⑤ when disconnecting the additional DEV interface cable while the sub-system is in operation. Go to INST04-U40-640 when disconnecting the additional DEV interface cable with the sub-system switched off.

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6. Disconnect the DEV interface cables from the FSW PCBs in the DKU-L2 frame referring to figures 4.13.4.6-6 and 4.13.4.6-7.

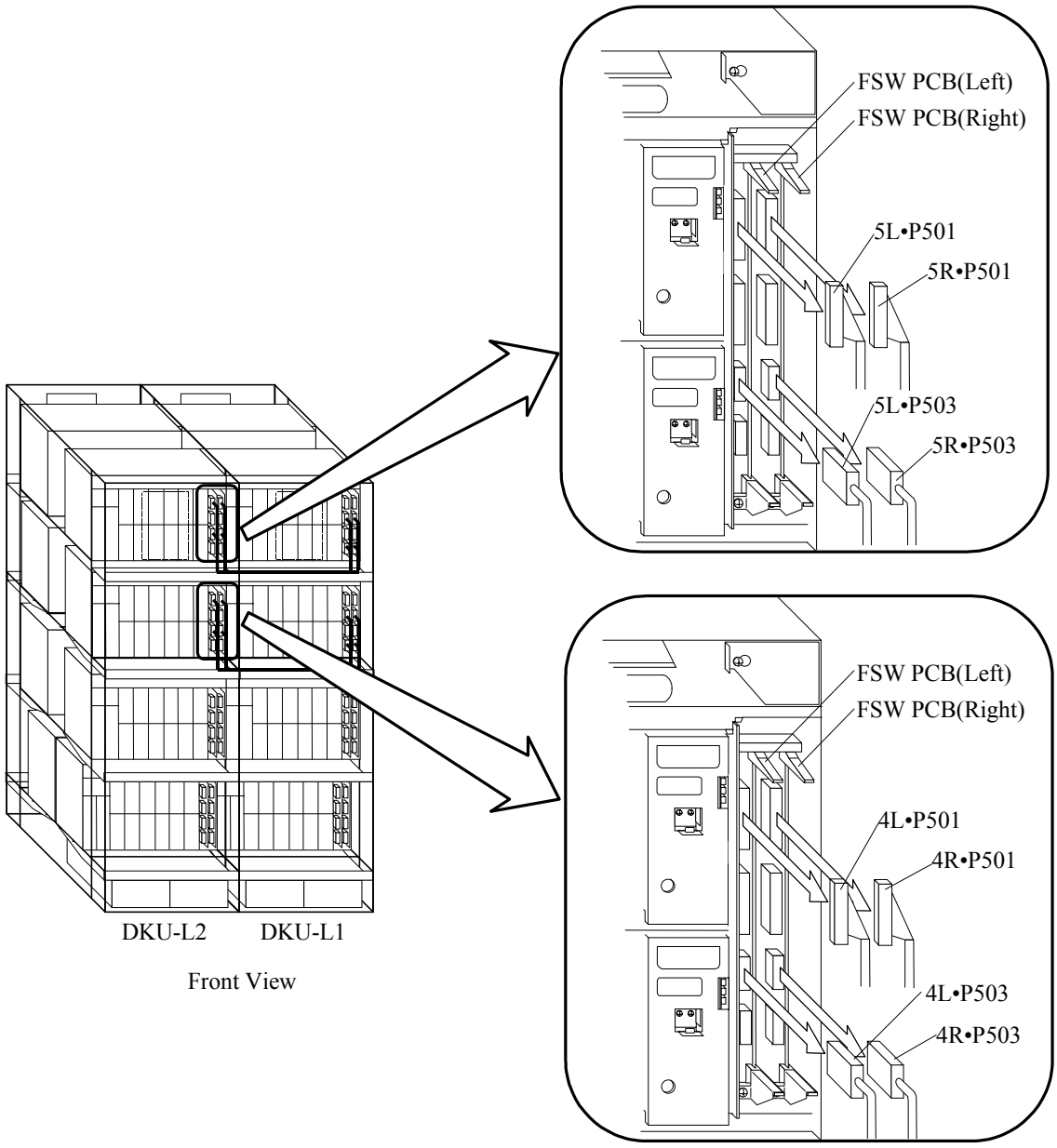

Fig. 4.13.4.6-6 Disconnection of the DEV Interface Cables

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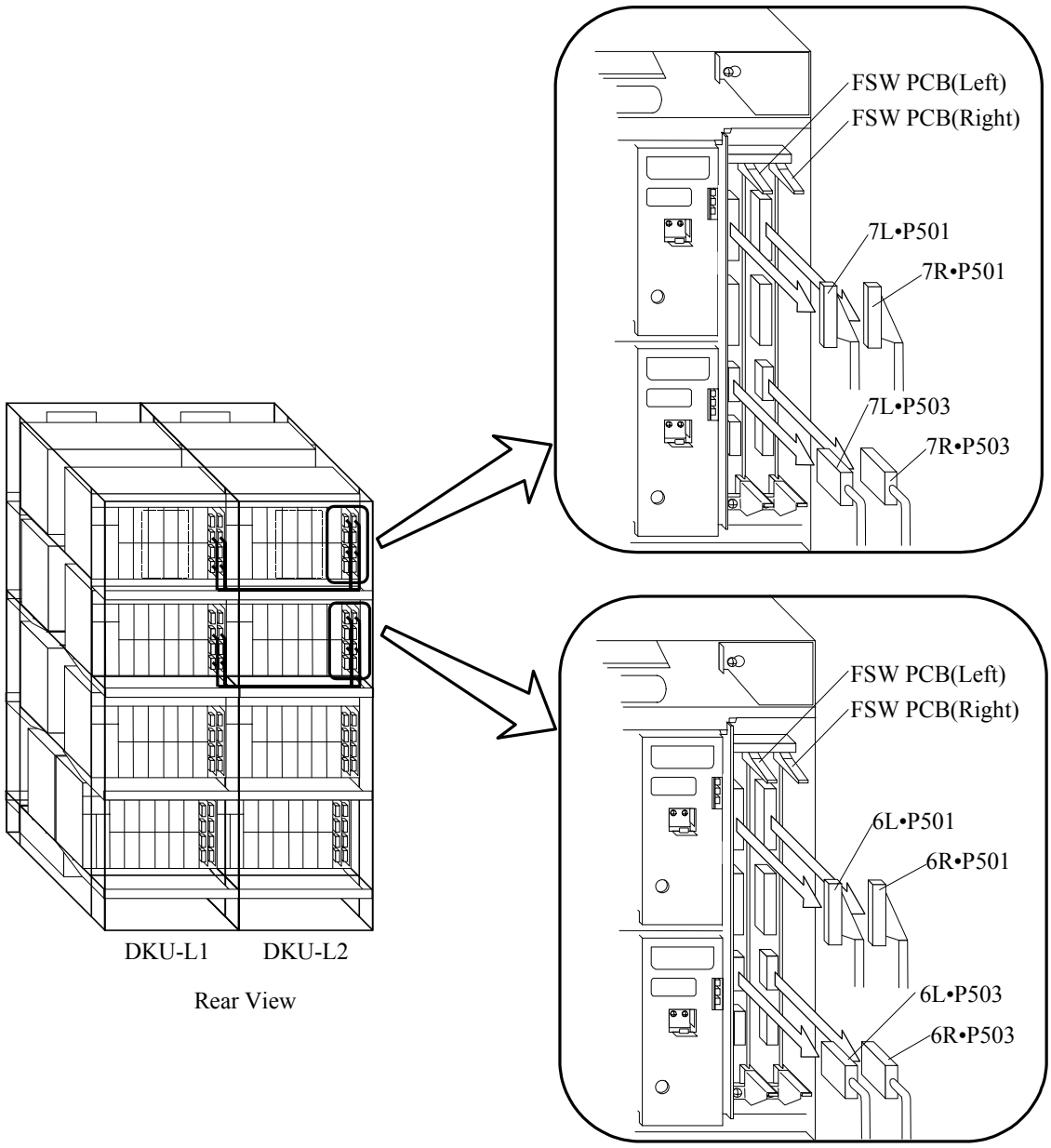

Fig. 4.13.4.6-7 Disconnection of the DEV Interface Cables

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7. Remove the DEV interface cables from inside the DKU frames.
8. Attach the side plates in the reverse order of Step 2.
9. Attach the cable covers in the reverse order of Step 1.
10. When the DKU-L2 frame consists of 4 HDU boxes, fix the disconnected DEV interface cables in the DKU-L2 frame with the binders.

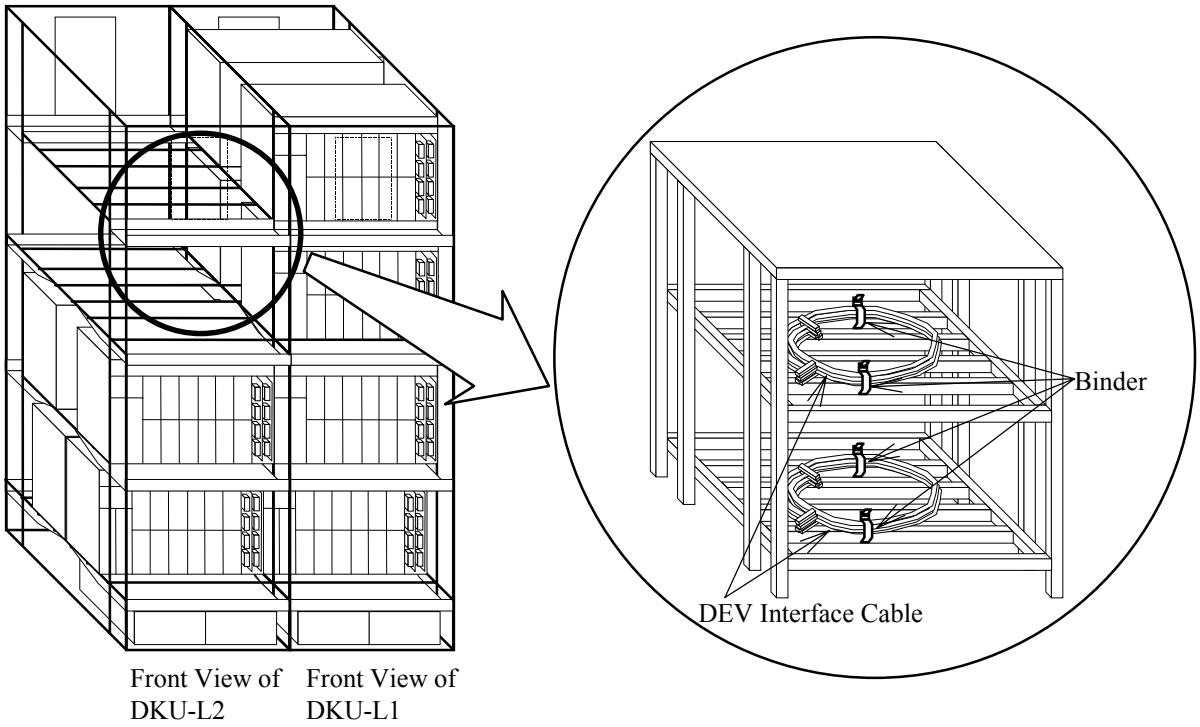

Fig. 4.13.4.6-8 Fixation of the DEV Interface Cables

11. Go to INST04-U40-290 Step ⑧.

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4.13.4.7 Disconnection Procedure of Additional DEV Interface Cables (In case of HDU-R33 from R30)

1. Loosen the screws and remove the cable covers ① and ② from the DKU frames.

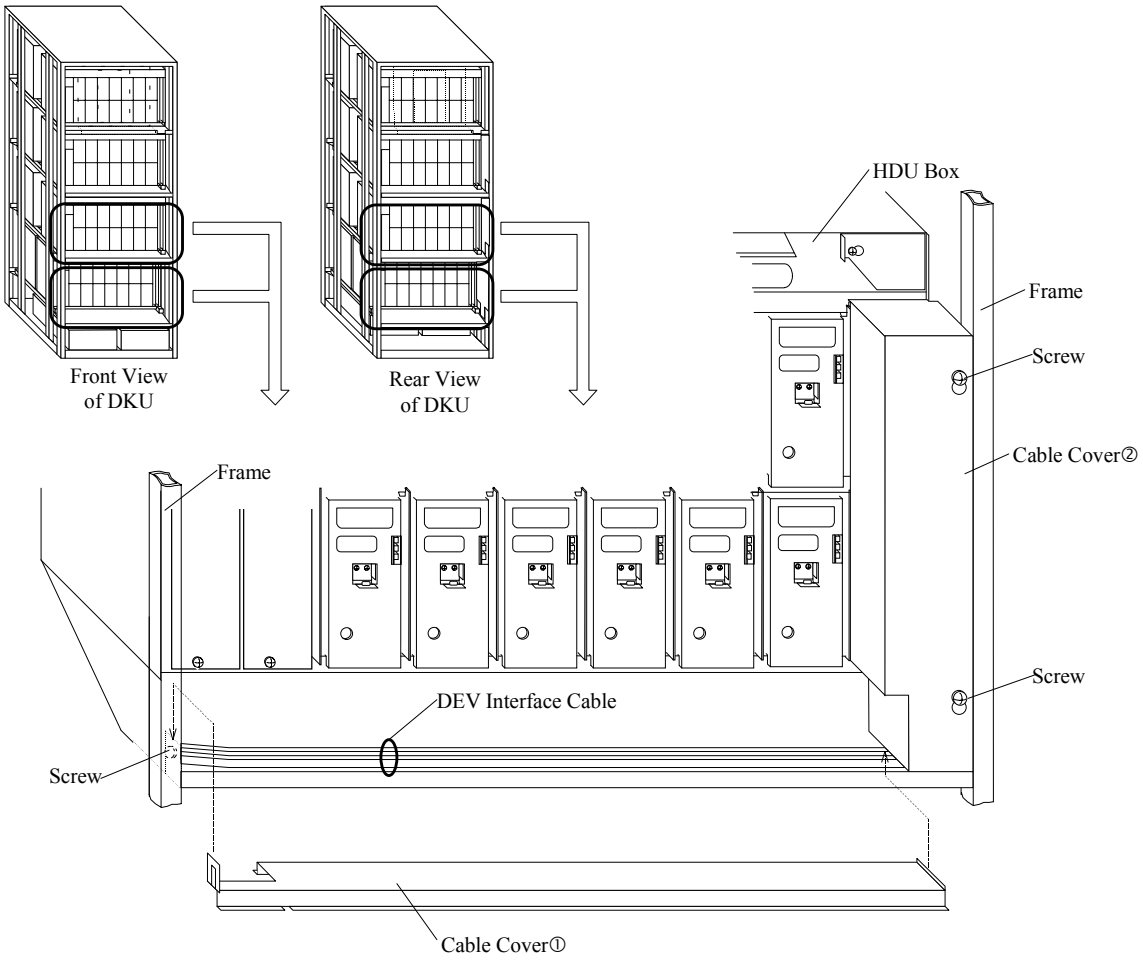

Fig. 4.13.4.7-1 Removal of Cable Covers

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2. Loosen the screws and remove the side plates from the DKU frames.

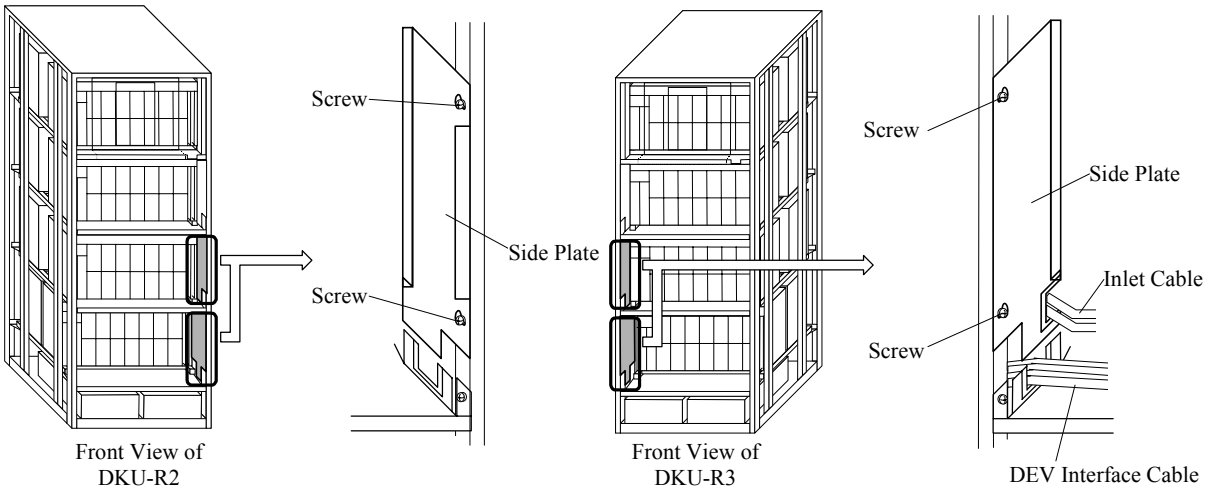

Fig. 4.13.4.7-2 Removal of Side Plates (Front View)

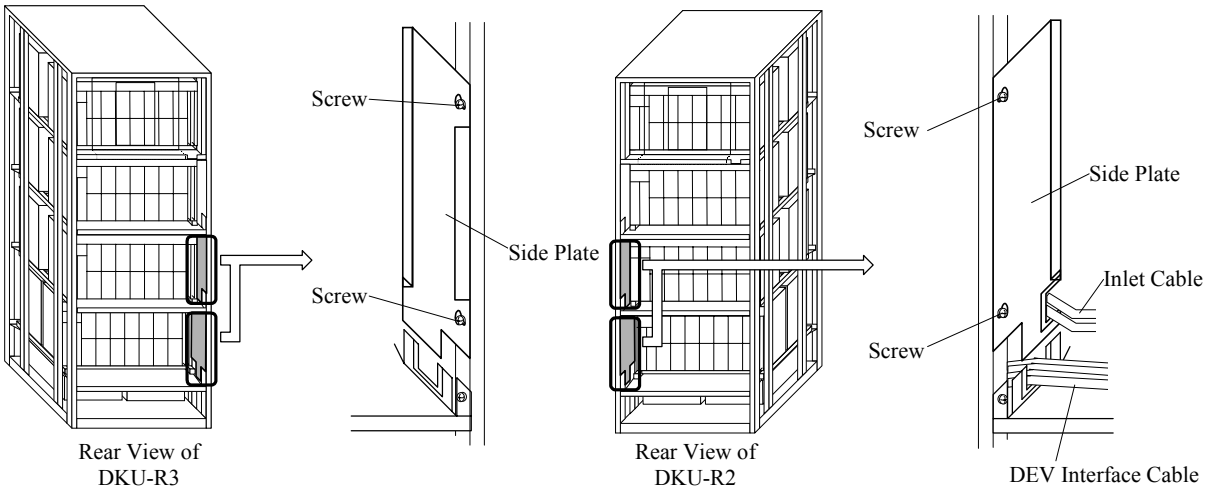

Fig. 4.13.4.7-3 Removal of Side Plates (Rear View)

3. Return to INST04-U40-270 ② when disconnecting the additional DEV interface cable while the subsystem is in operation. Go to INST04-U40-690 when the additional DEV interface cable with the sub-system switched off.

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4. Disconnect the DEV interface cables from the FSW PCBs in the DKU-R2 frame referring to figures 4.13.4.7-4 and 4.13.4.7-5.

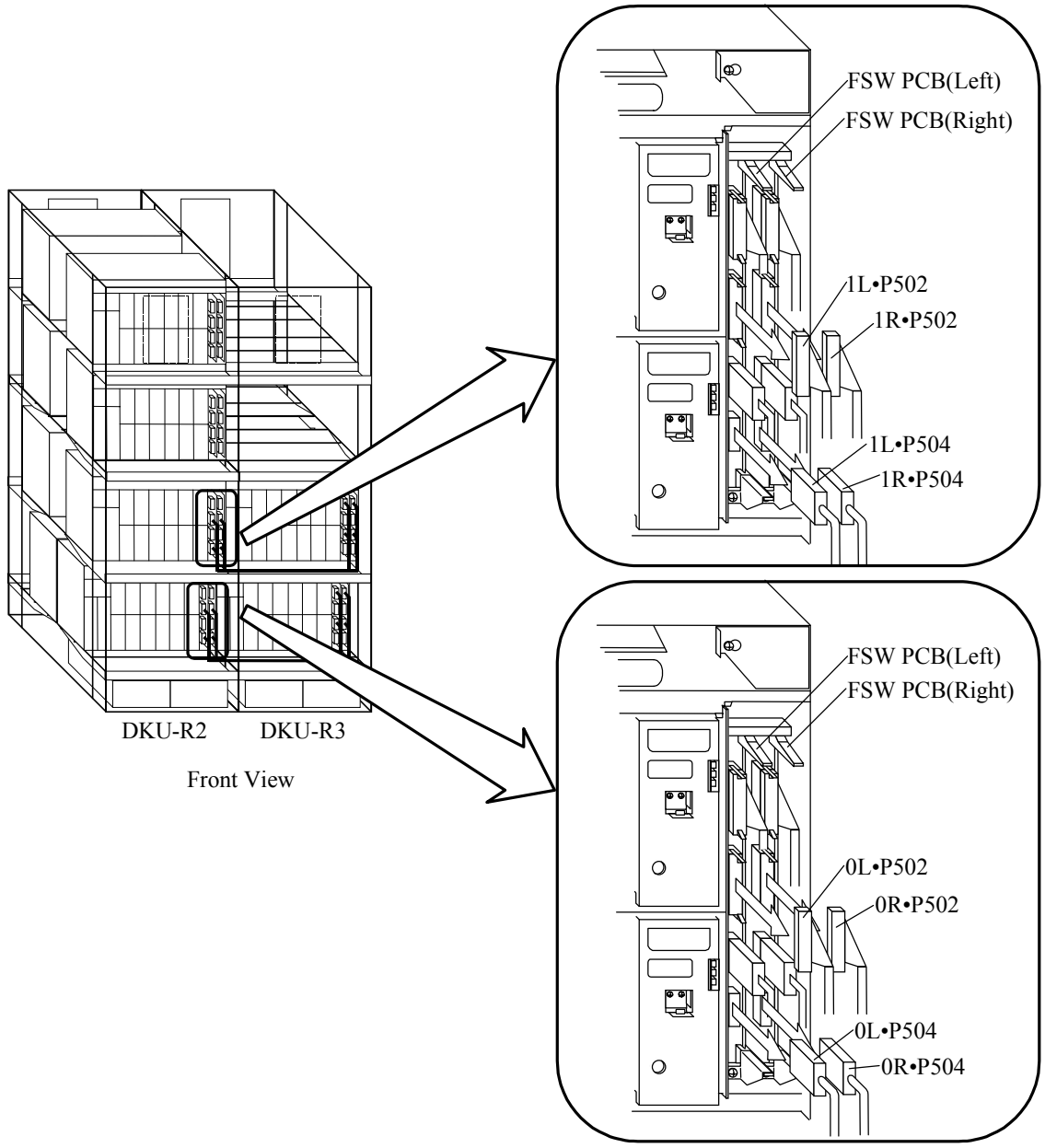

Fig. 4.13.4.7-4 Disconnection of the DEV Interface Cables

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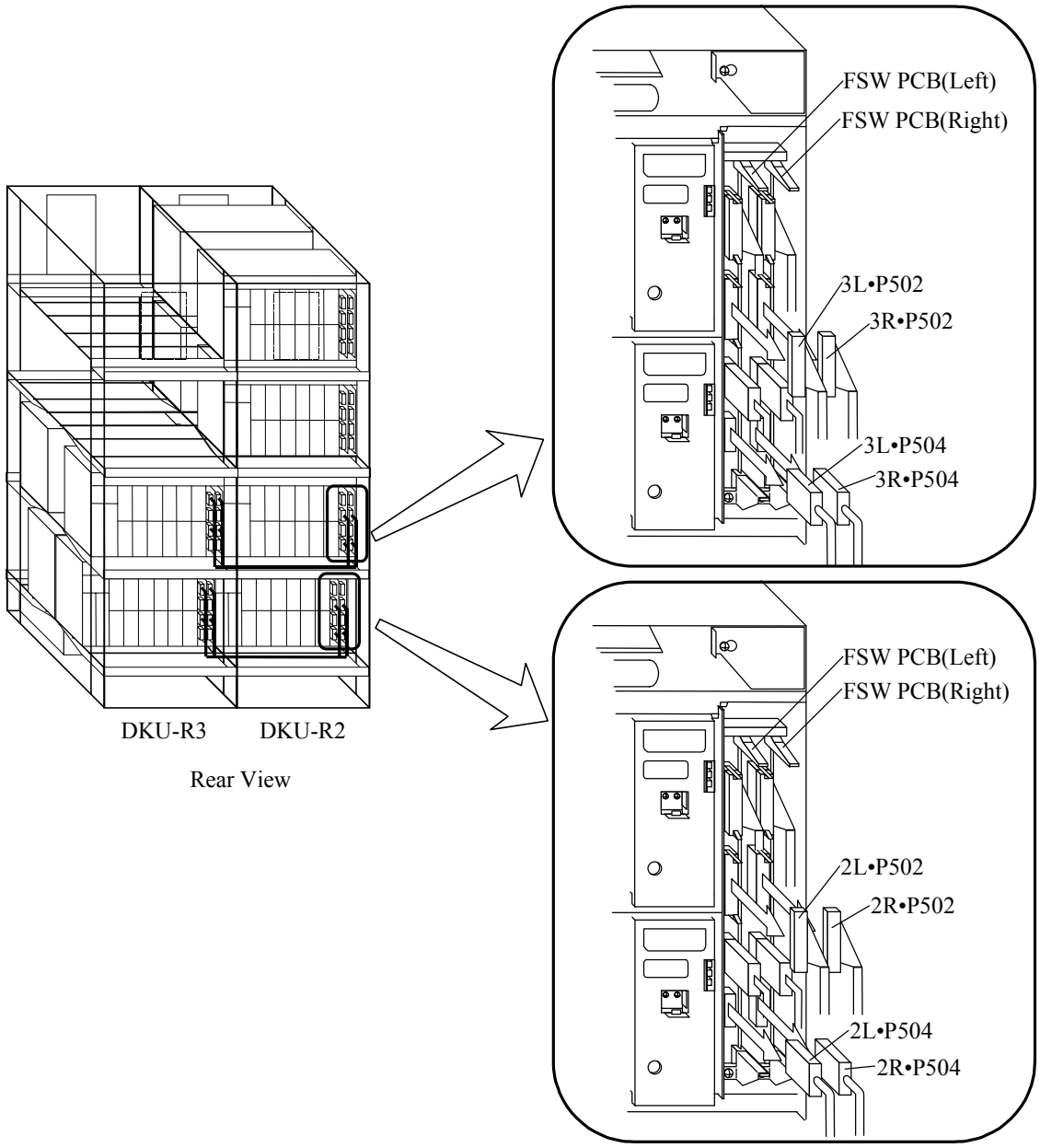

Fig. 4.13.4.7-5 Disconnection of the DEV Interface Cables

5. Return to INST04-U40-280 ⑤ when disconnecting the additional DEV interface cable while the sub-system is in operation. Go to INST04-U40-710 when disconnecting the additional DEV interface cable with the sub-system switched off.

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6. Disconnect the DEV interface cables from the FSW PCBs in the DKU-R3 frame referring to figures 4.13.4.7-6 and 4.13.4.7-7.

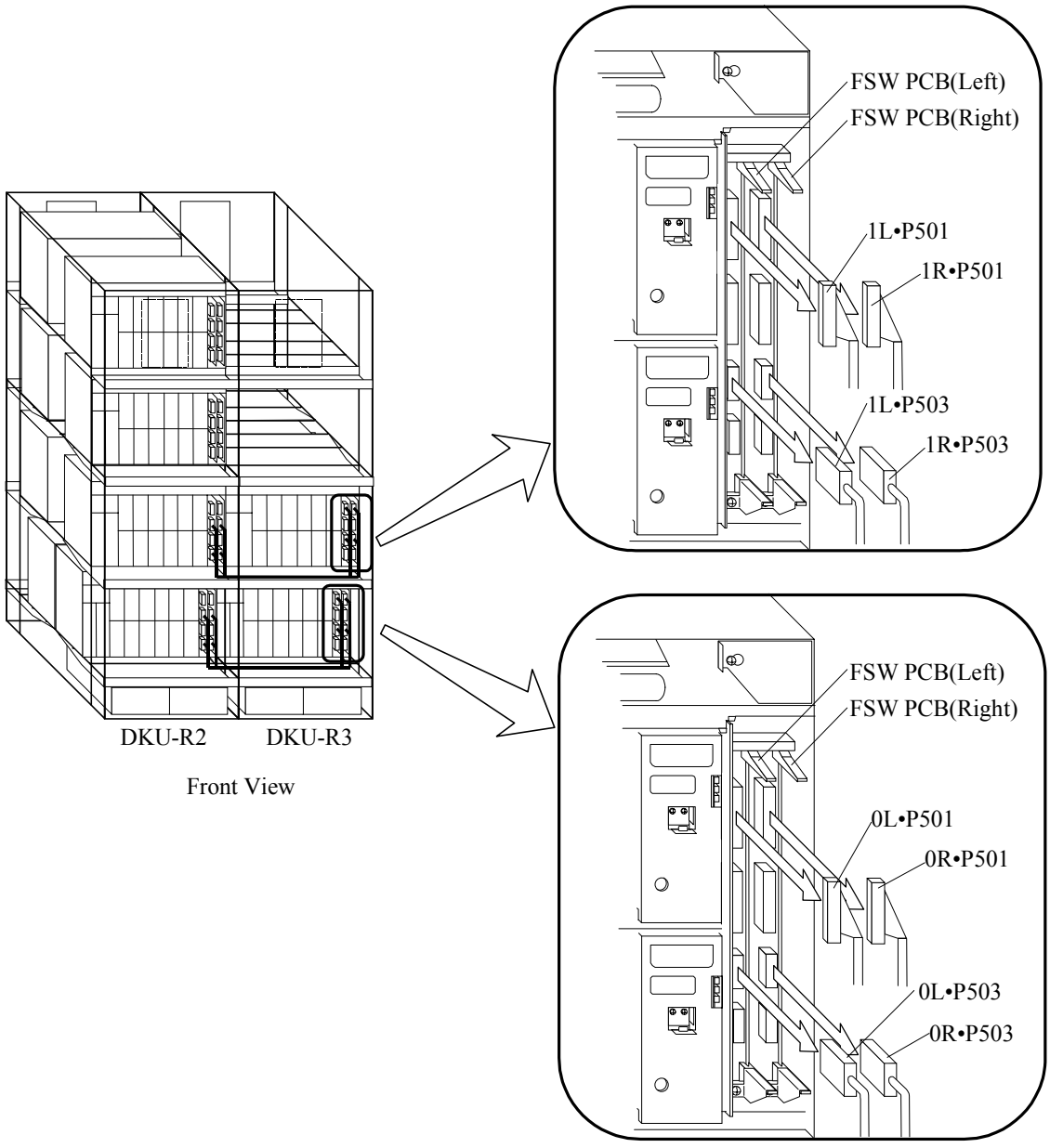

Fig. 4.13.4.7-6 Disconnection of the DEV Interface Cables

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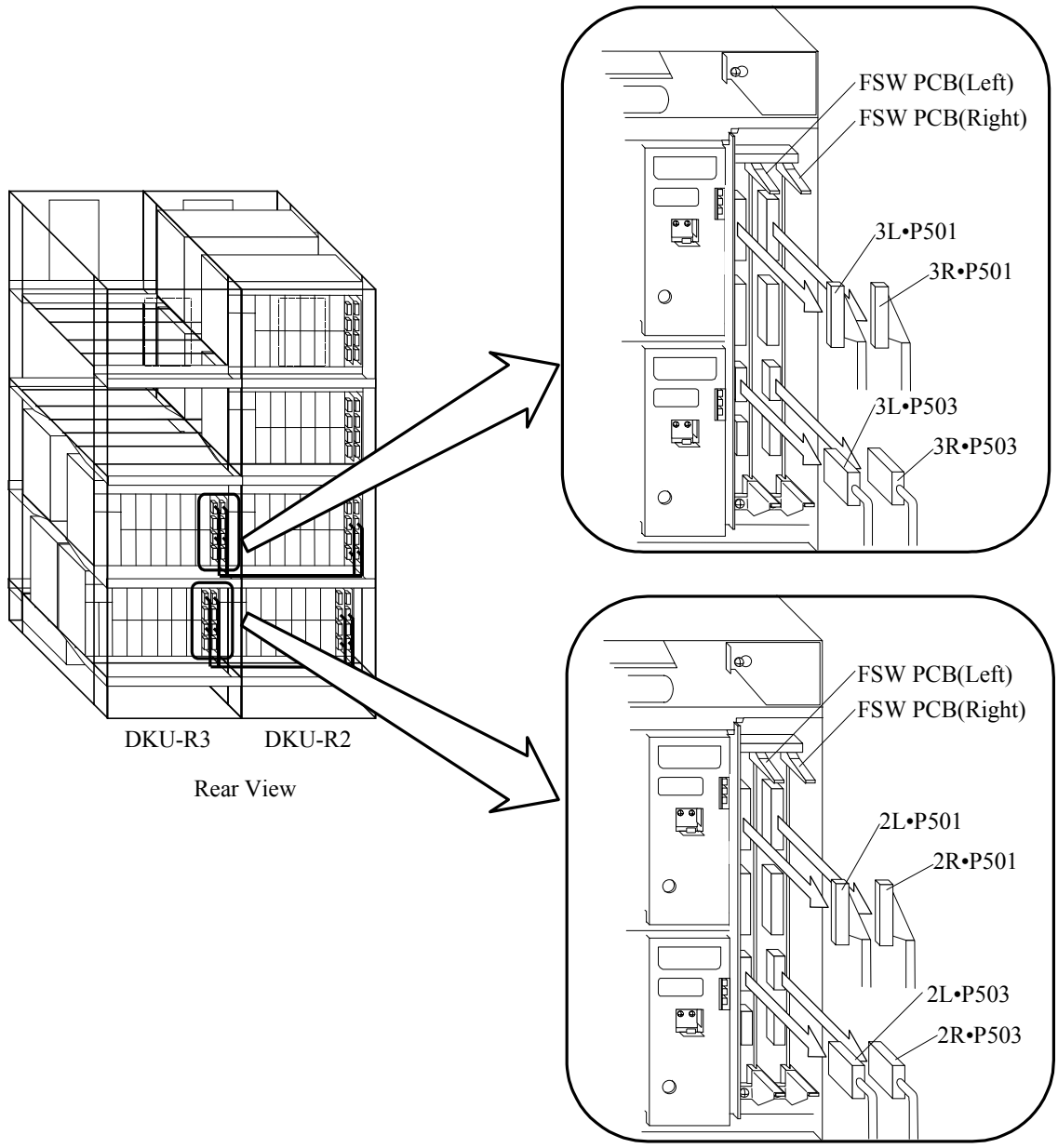

Fig. 4.13.4.7-7 Disconnection of the DEV Interface Cables

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7. Remove the DEV interface cables from inside the DKU frames.
8. Attach the side plates in the reverse order of Step 2.
9. Attach the cable covers in the reverse order of Step 1.
10. Remove the nameplate from the DKU-R3 frame.

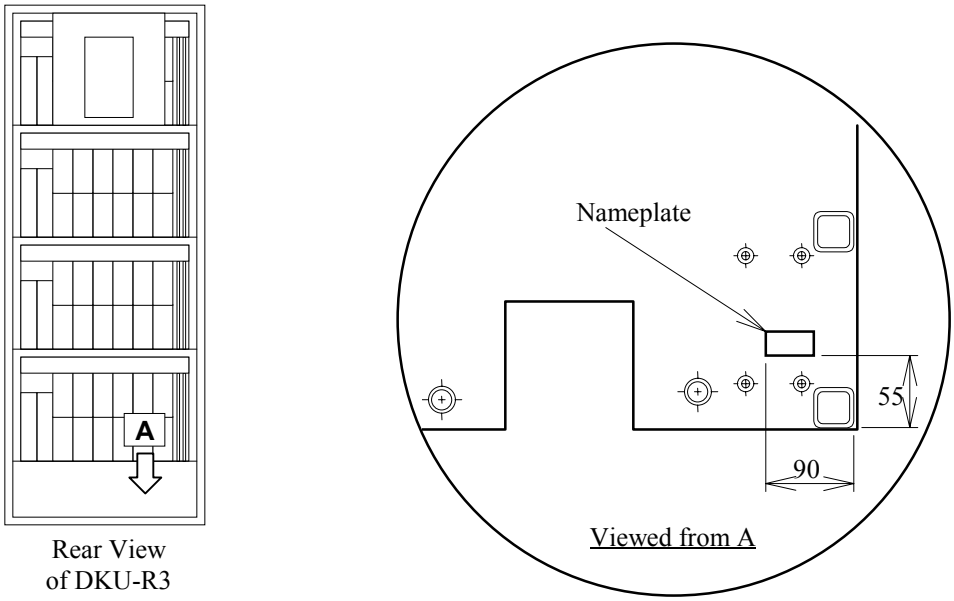

Fig. 4.13.4.7-8 Removal of the Nameplate

11. Go to INST04-U40-290 Step ⑧.

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4.13.4.8 Disconnection Procedure of Additional DEV Interface Cables (In case of HDU-R37 from R34)

1. Loosen the screws and remove the cable covers ① and ② from the DKU frame.

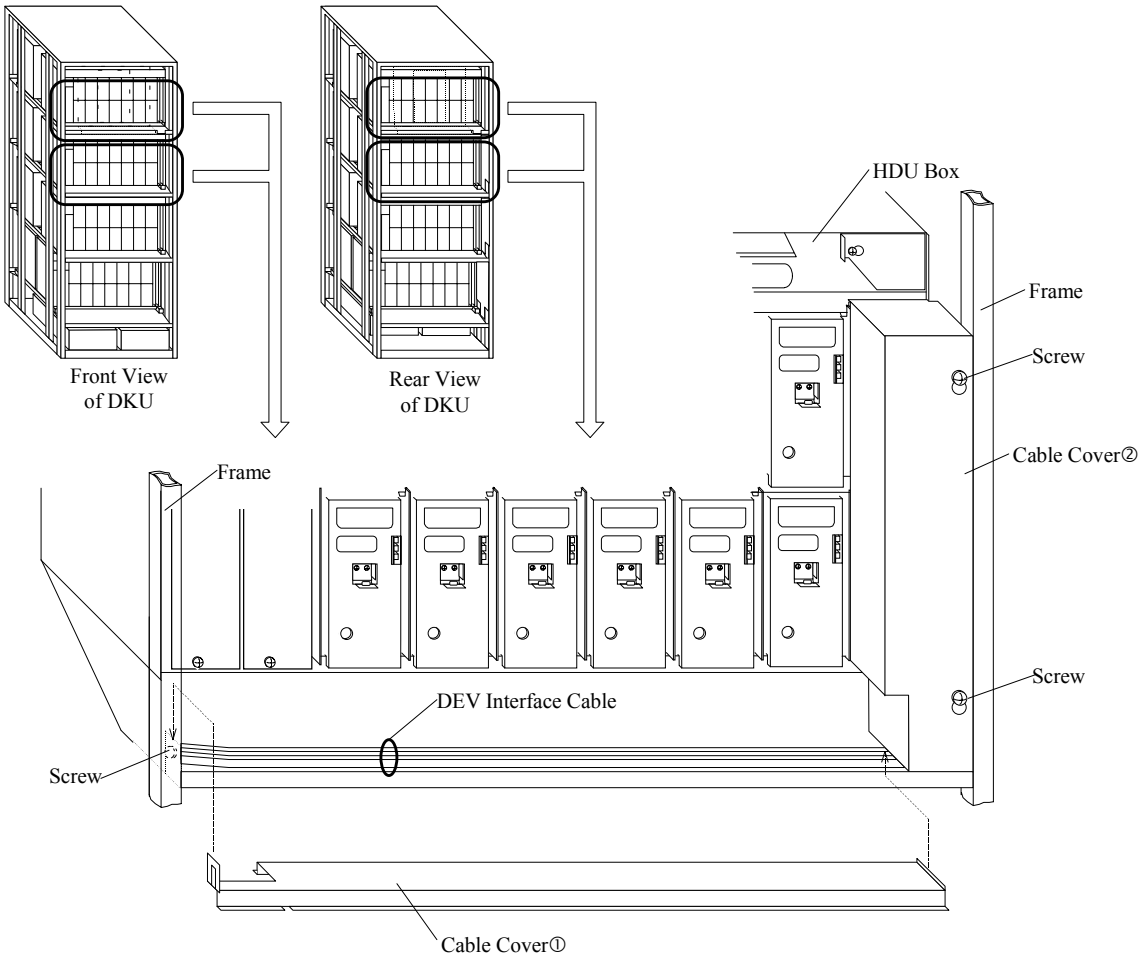

Fig. 4.13.4.8-1 Removal of Cable Covers

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2. Loosen the screws and remove the side plates from the DKU frame.

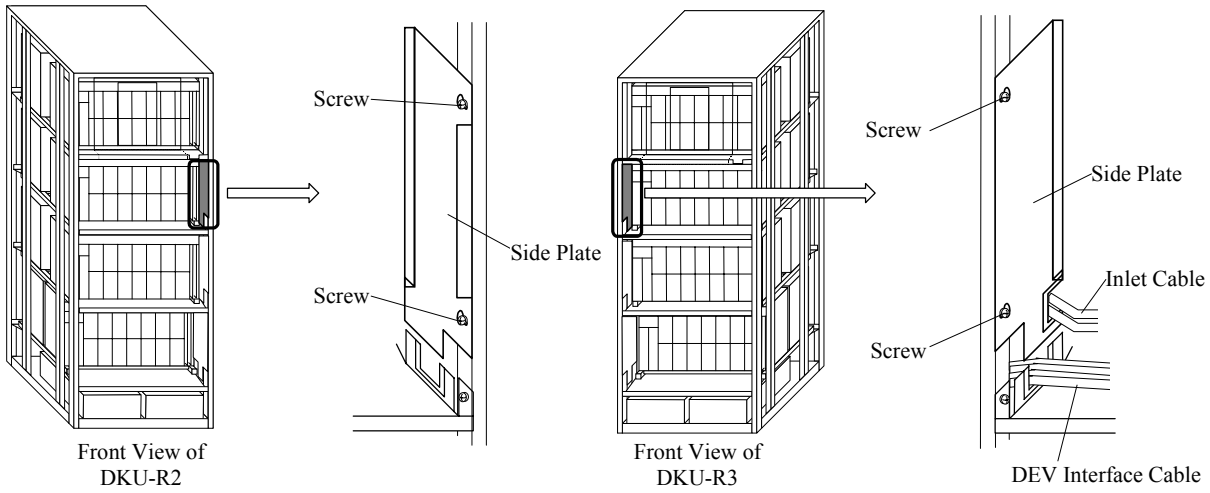

Fig. 4.13.4.8-2 Removal of Side Plates (Front View)

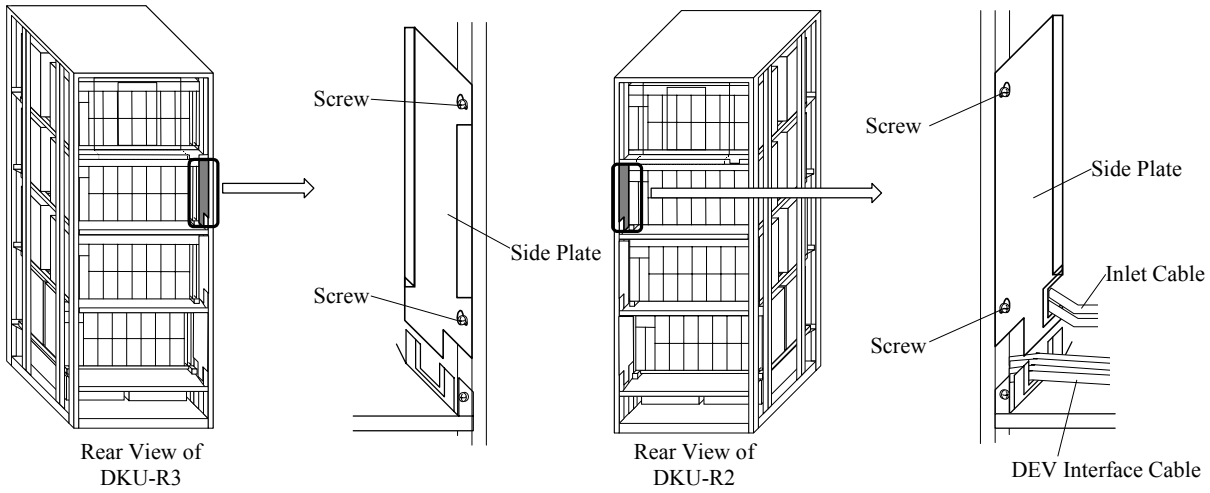

Fig. 4.13.4.8-3 Removal of Side Plates (Rear View)

3. Return to INST04-U40-270 ② when disconnecting the additional DEV interface cable while the subsystem is in operation. Go to INST04-U40-760 when the additional DEV interface cable with the sub-system switched off.

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4. Disconnect the DEV interface cables from the FSW PCBs in the DKU-R2 frame referring to figures 4.13.4.8-4 and 4.13.4.8-5.

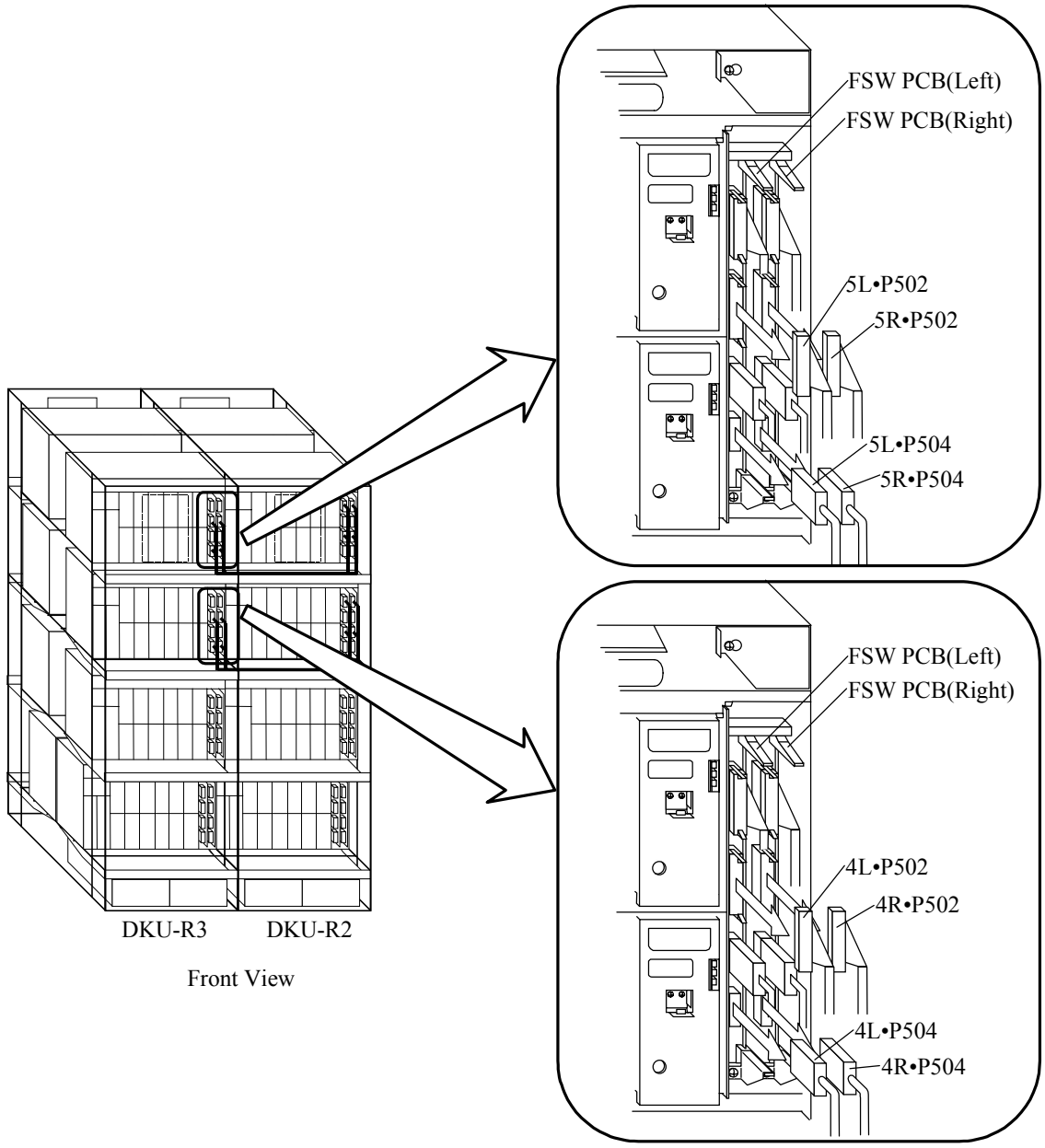

Fig. 4.13.4.8-4 Disconnection of the DEV Interface Cables

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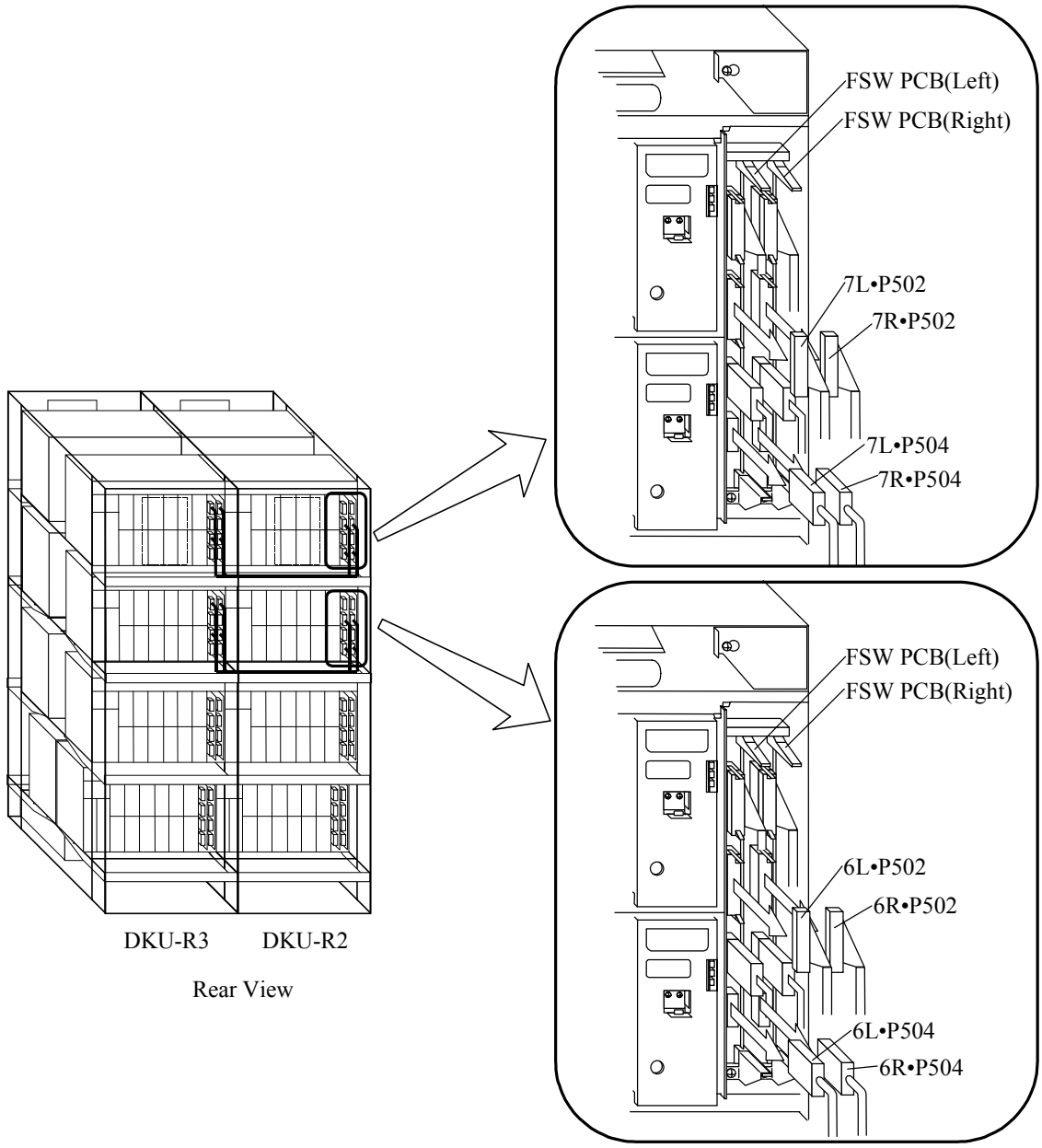

Fig. 4.13.4.8-5 Disconnection of the DEV Interface Cables

5. Return to INST04-U40-280 ⑤ when disconnecting the additional DEV interface cable while the sub-system is in operation. Go to INST04-U40-780 when disconnecting the additional DEV interface cable with the sub-system switched off.

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6. Disconnect the DEV interface cables from the FSW PCBs in the DKU-R3 frame referring to figures 4.13.4.8-6 and 4.13.4.8-7.

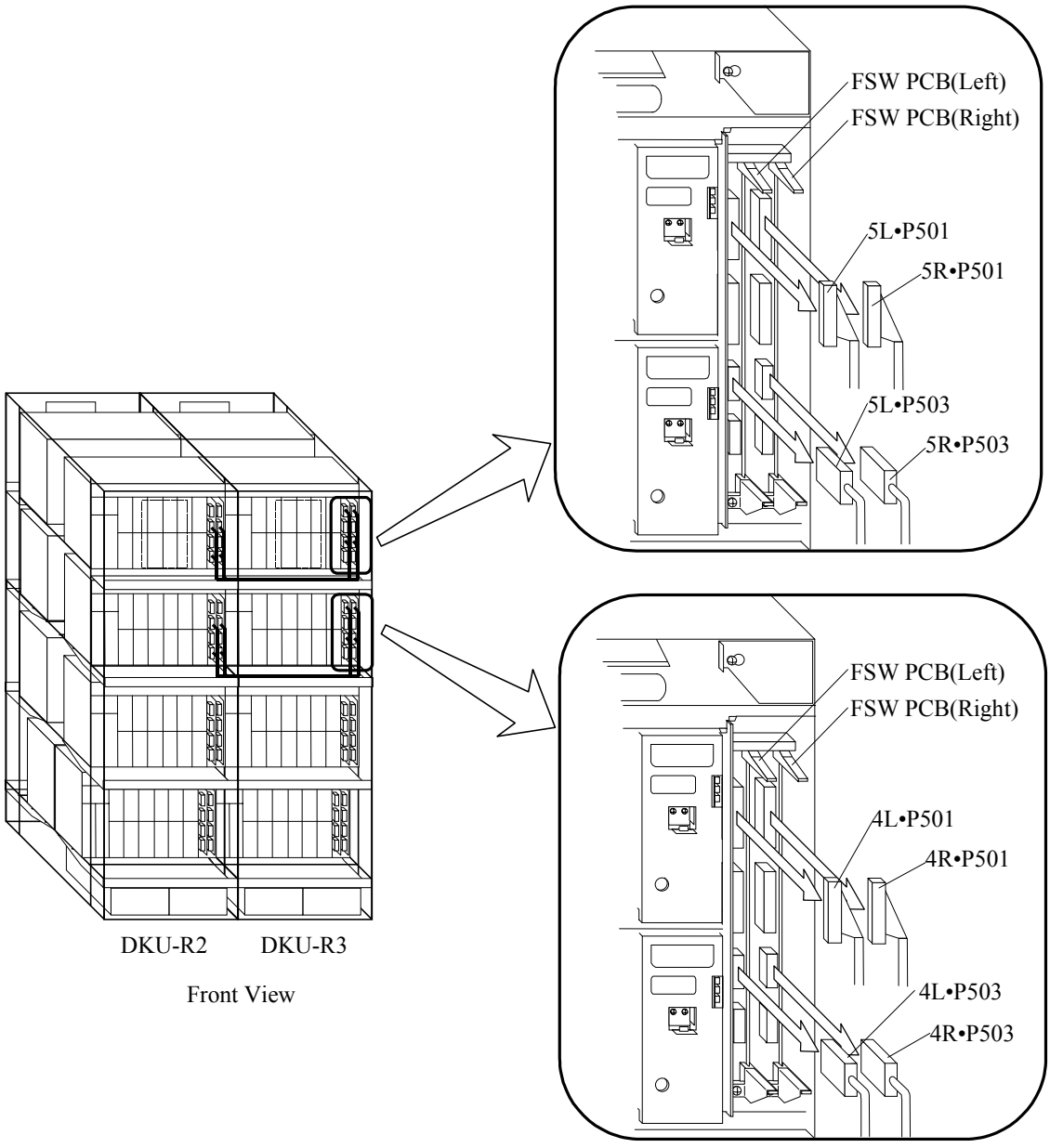

Fig. 4.13.4.8-6 Disconnection of the DEV Interface Cables

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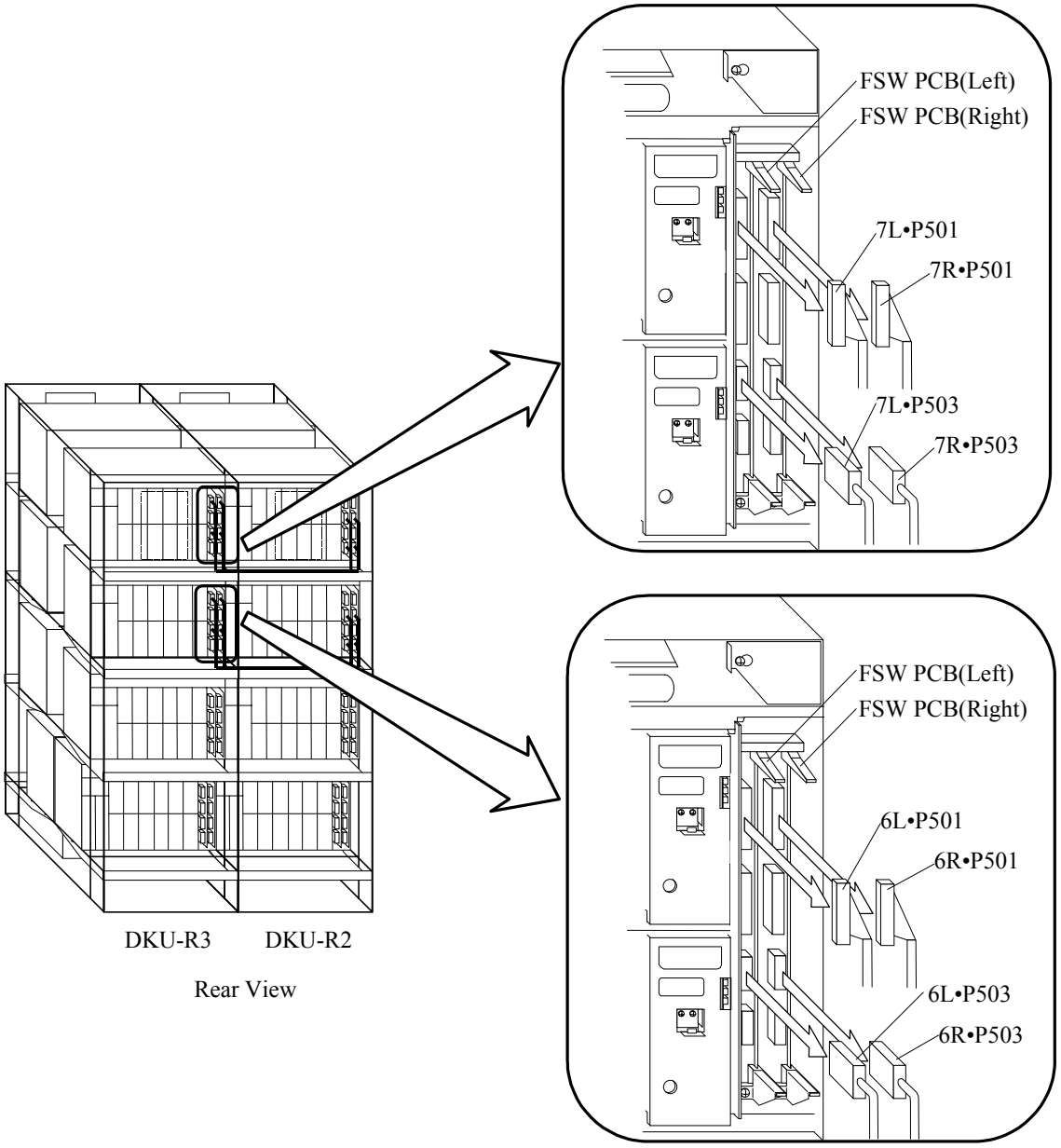

Fig. 4.13.4.8-7 Disconnection of the DEV Interface Cables

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7. Remove the DEV interface cables from inside the DKU frame.
8. Attach the side plates in the reverse order of Step 2.
9. Attach the cable covers in the reverse order of Step 1.
10. When the DKU-R3 frame consists of 4 HDU boxes, fix the disconnected DEV interface cables in the DKU-R3 frame with the binders.

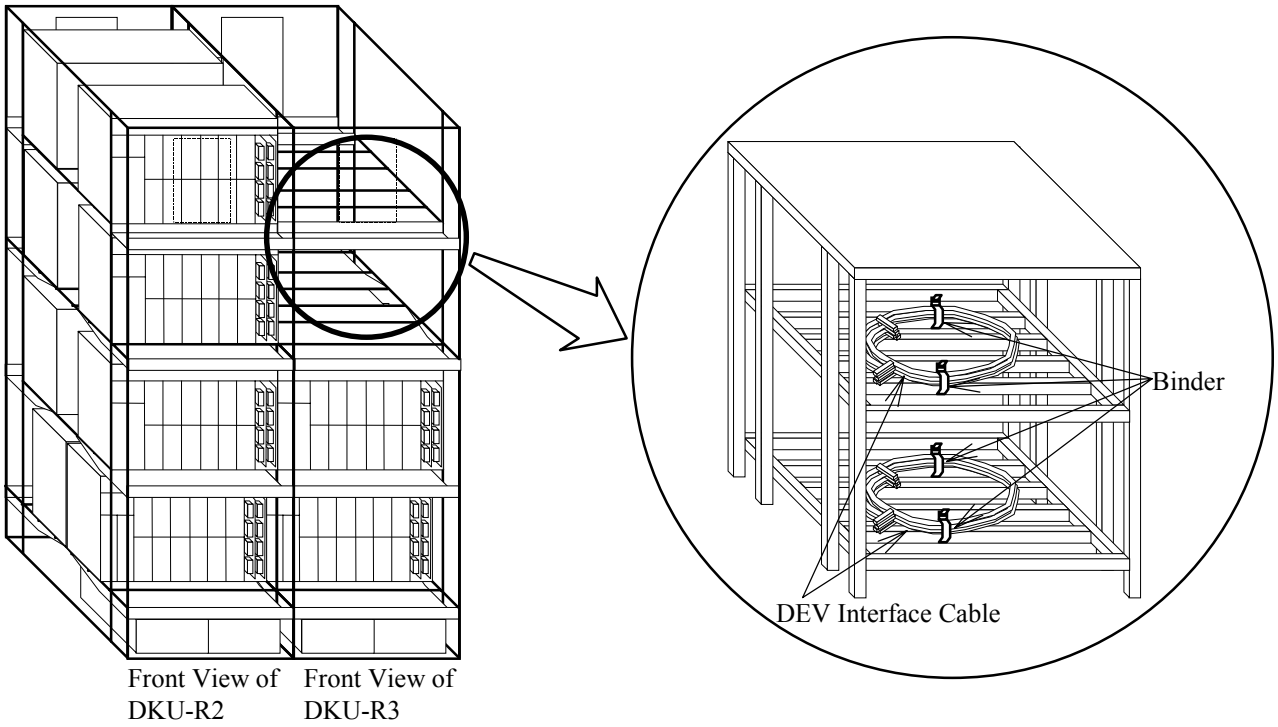

Fig. 4.13.4.8-8 Fixation of the DEV Interface Cables

11. Go to INST04-U40-290 Step ⑧.

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4.13.4.9 Disconnection Procedure of Additional DEV Interface Cables (In case of HDU-L33 from L30)

1. Loosen the screws and remove the cable covers ① and ② from the DKU frame.

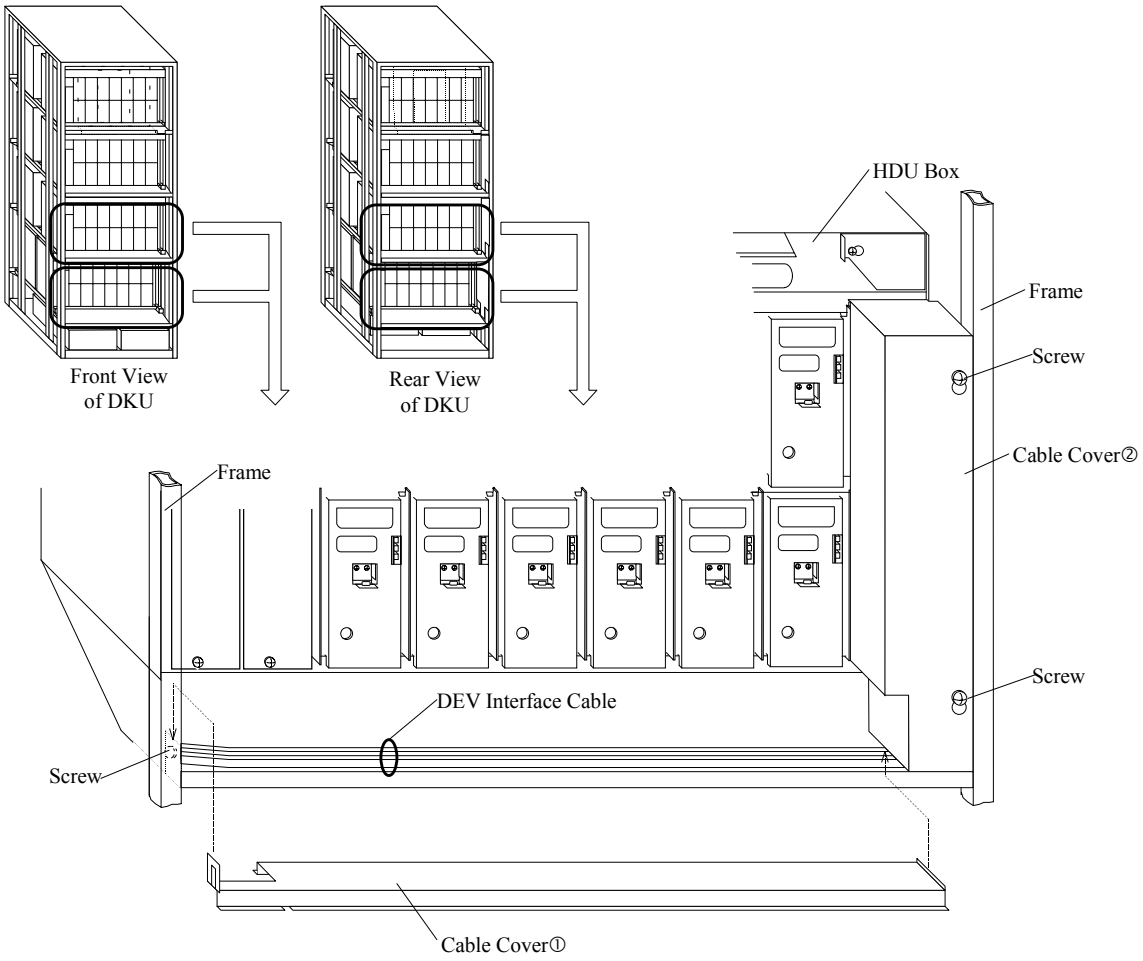

Fig. 4.13.4.9-1 Removal of Cable Covers

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2. Loosen the screws and remove the side plates from the DKU frame.

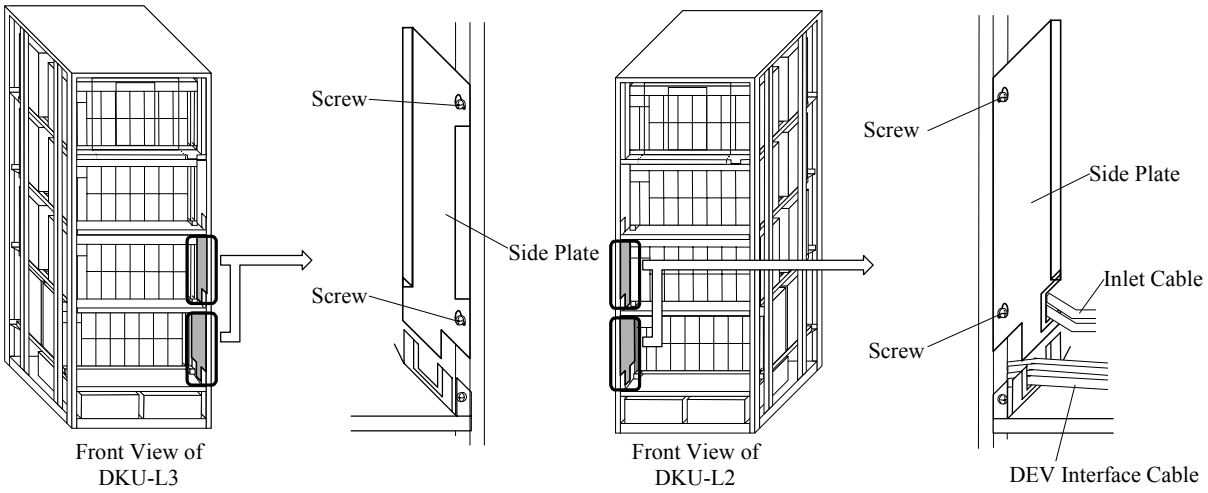

Fig. 4.13.4.9-2 Removal of Side Plates (Front View)

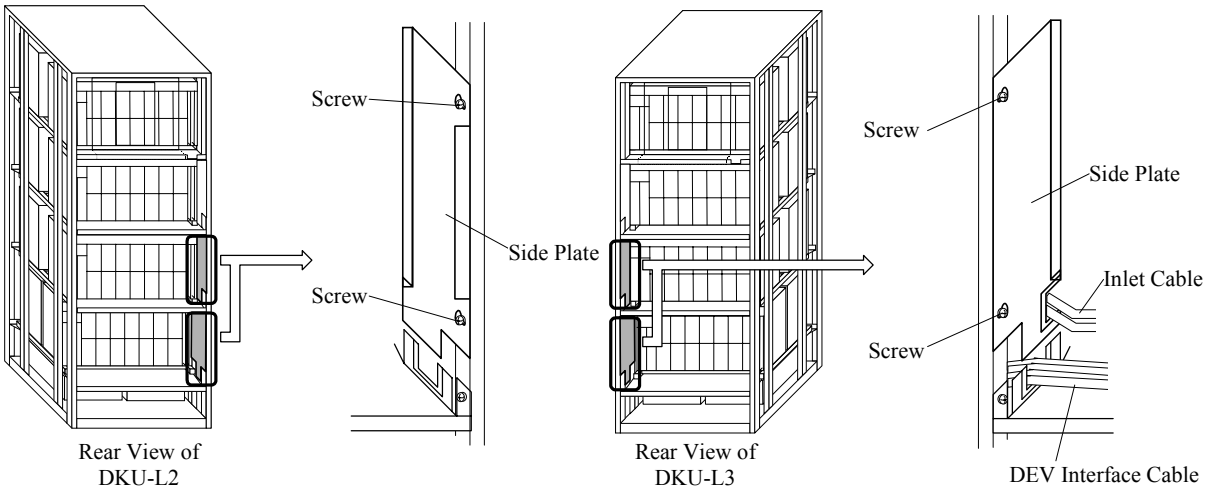

Fig. 4.13.4.9-3 Removal of Side Plates (Rear View)

3. Return to INST04-U40-270 ② when disconnecting the additional DEV interface cable while the subsystem is in operation. Go to INST04-U40-830 when the additional DEV interface cable with the sub-system switched off.

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4. Disconnect the DEV interface cables from the FSW PCBs in the DKU-L2 frame referring to figures 4.13.4.9-4 and 4.13.4.9-5.

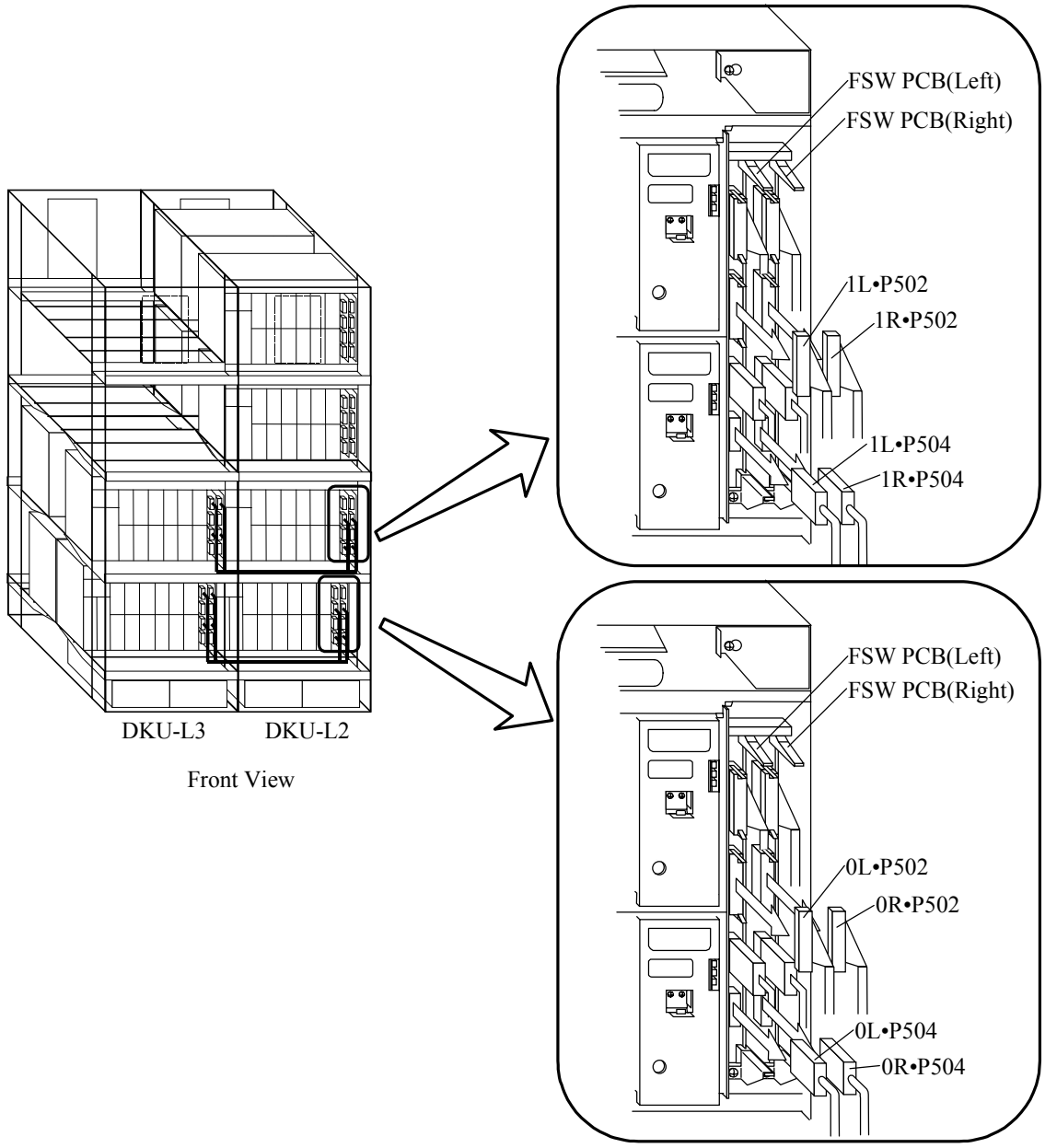

Fig. 4.13.4.9-4 Disconnection of the DEV Interface Cables

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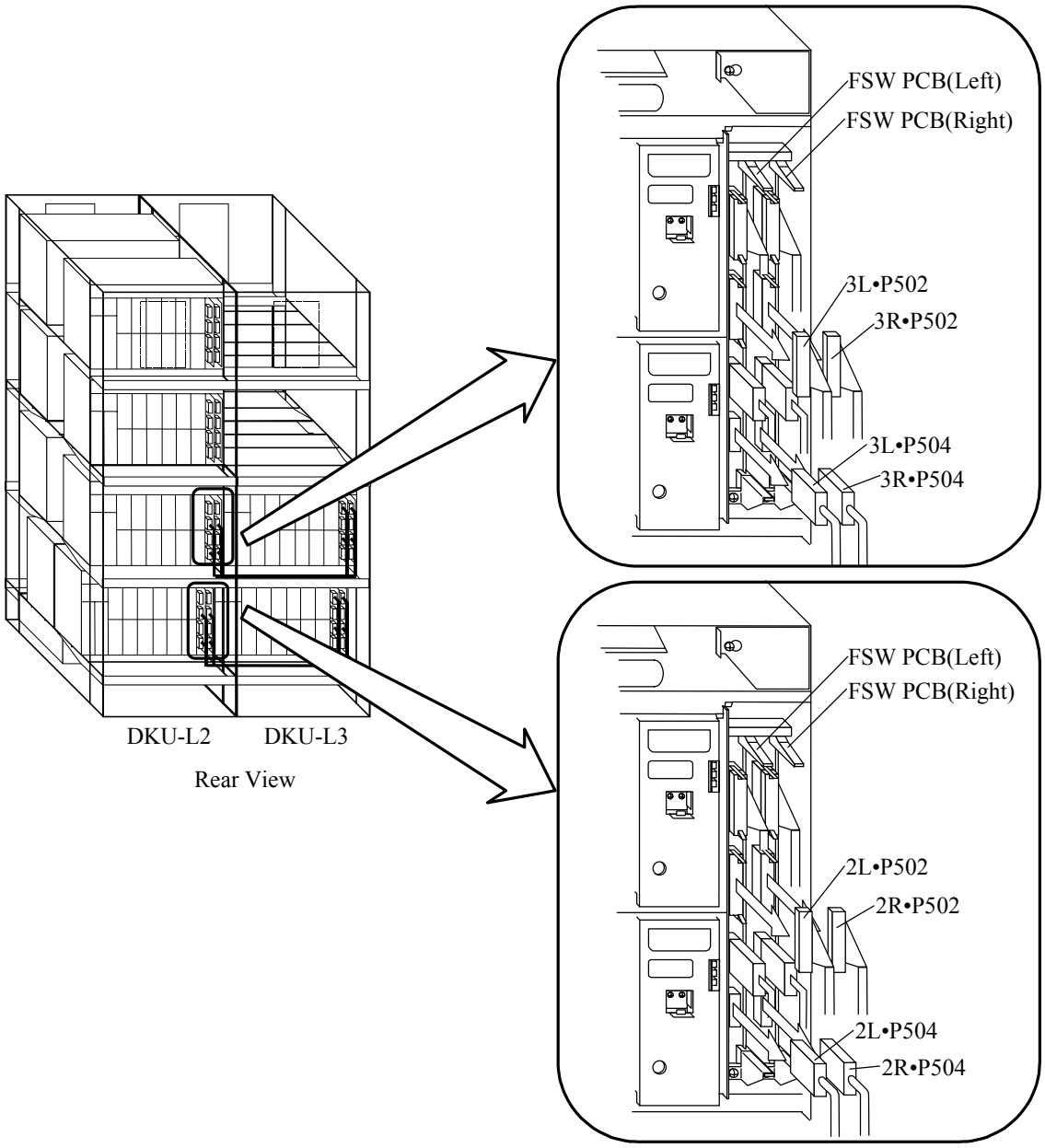

Fig. 4.13.4.9-5 Disconnection of the DEV Interface Cables

5. Return to INST04-U40-280 ⑤ when disconnecting the additional DEV interface cable while the sub-system is in operation. Go to INST04-U40-850 when disconnecting the additional DEV interface cable with the sub-system switched off.

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6. Disconnect the DEV interface cables from the FSW PCBs in the DKU-L3 frame referring to figures 4.13.4.9-6 and 4.13.4.9-7.

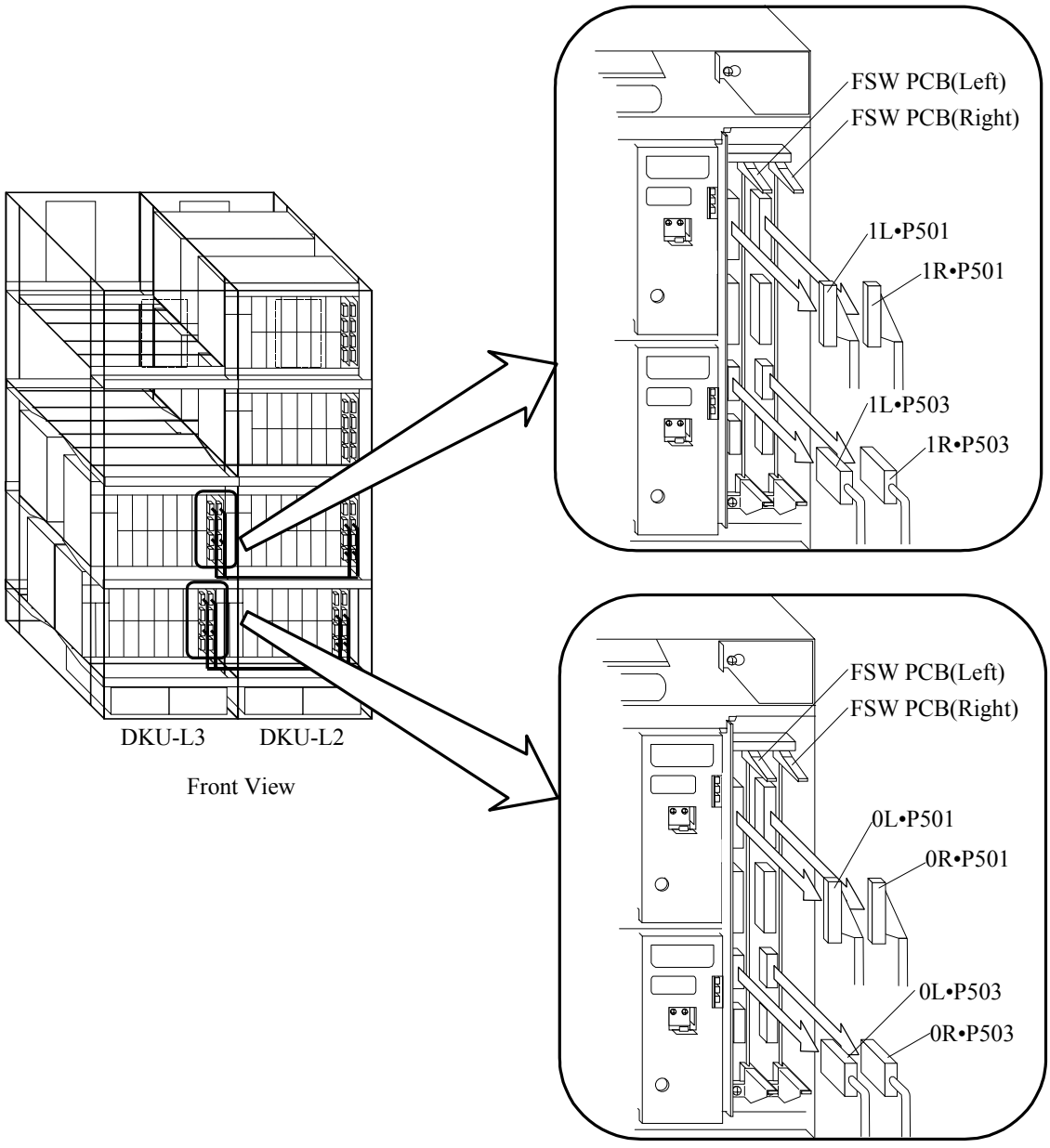

Fig. 4.13.4.9-6 Disconnection of the DEV Interface Cables

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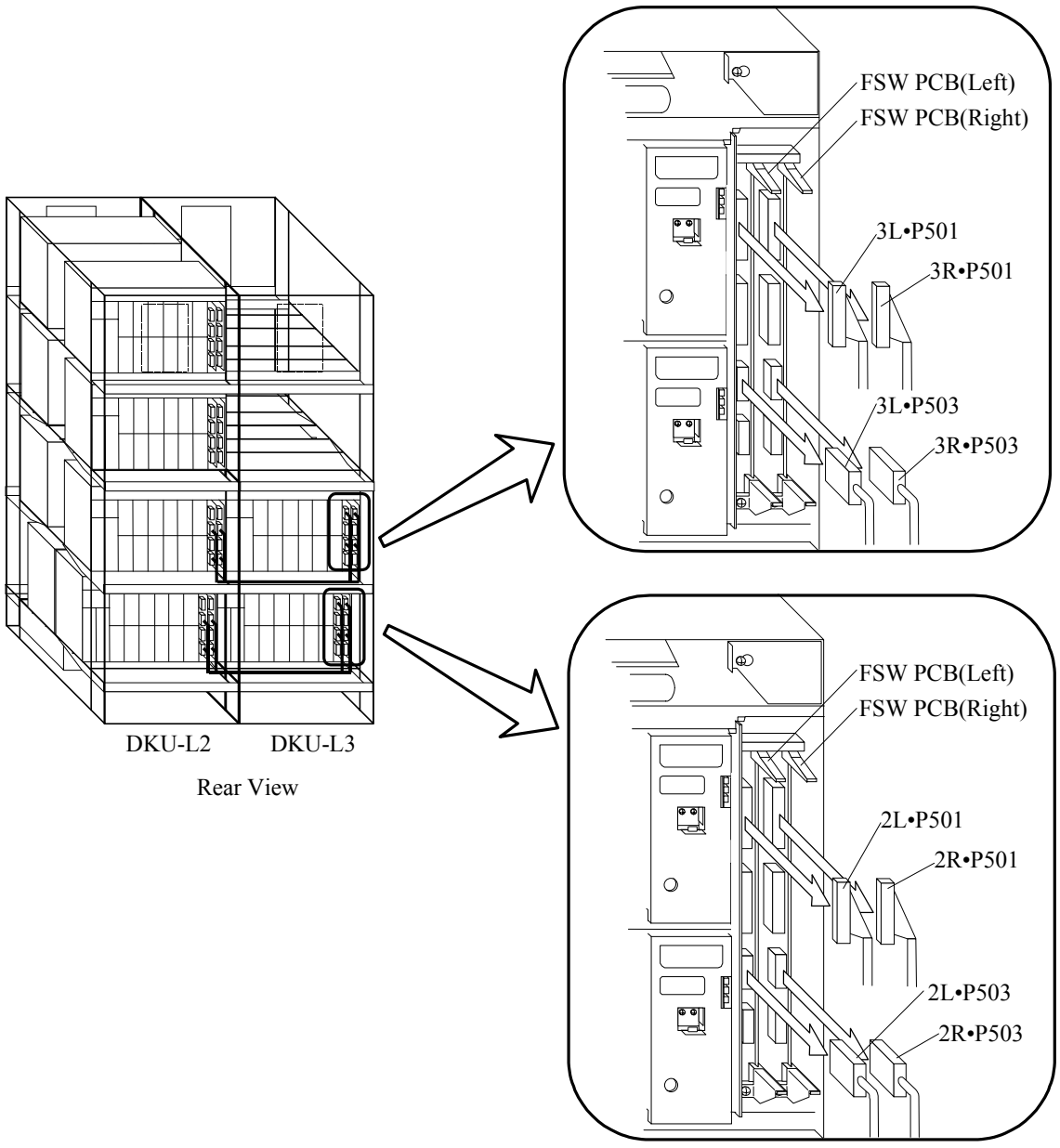

Fig. 4.13.4.9-7 Disconnection of the DEV Interface Cables

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7. Remove the DEV interface cables from inside the DKU frame.
8. Attach the side plates in the reverse order of Step 2.
9. Attach the cable covers in the reverse order of Step 1.
10. Remove the nameplate from the DKU-L3 frame.

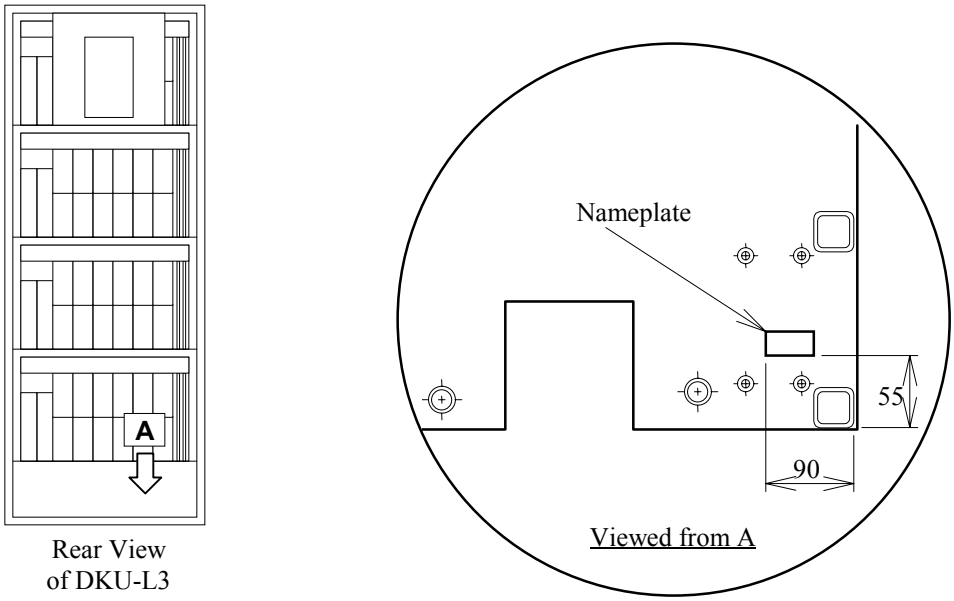

Fig. 4.13.4.9-8 Removal of the Nameplate

11. Go to INST04-U40-290 Step ⑧.

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4.13.4.10 Disconnection Procedure of Additional DEV Interface Cables (In case of HDU-L37 from L34)

1. Loosen the screws and remove the cable covers ① and ② from the DKU frame.

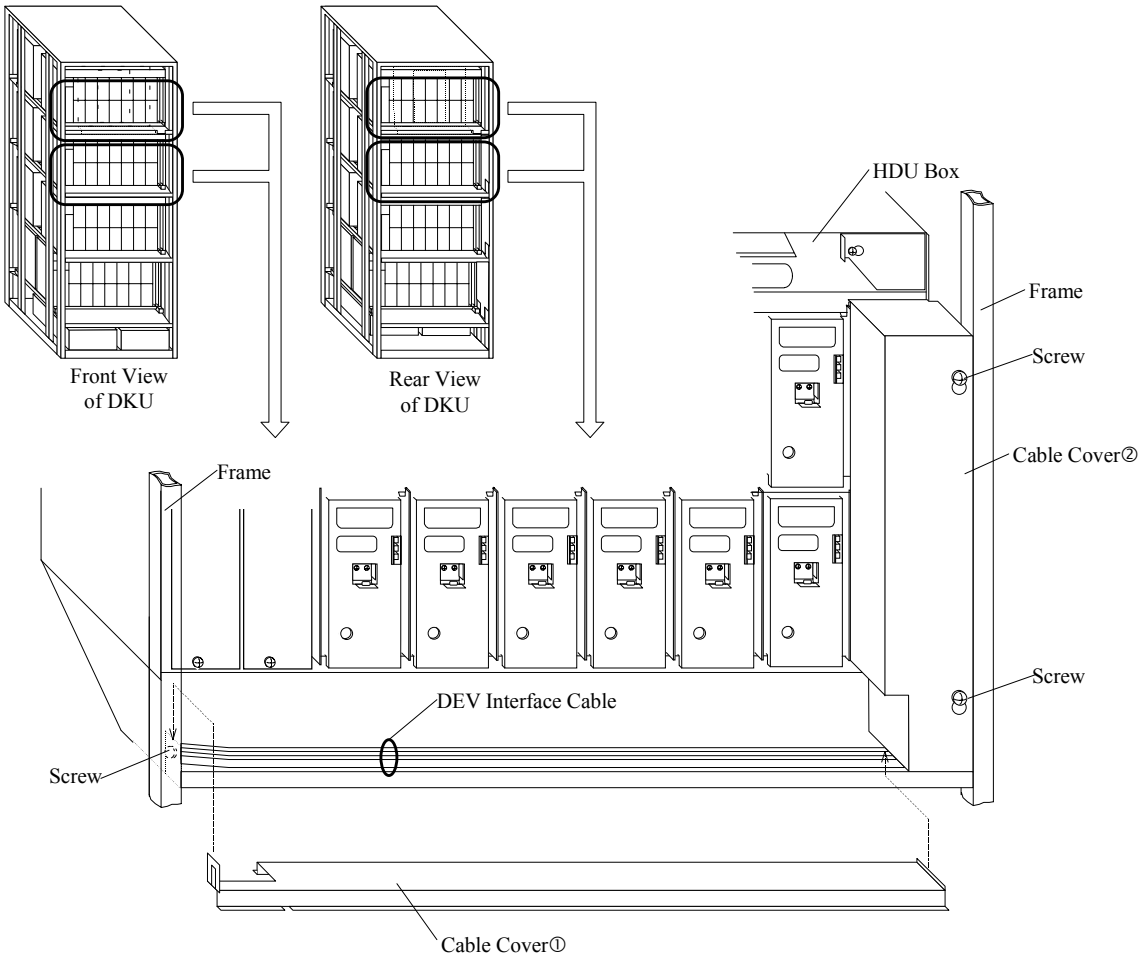

Fig. 4.13.4.10-1 Removal of Cable Covers

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2. Loosen the screws and remove the side plates from the DKU frame.

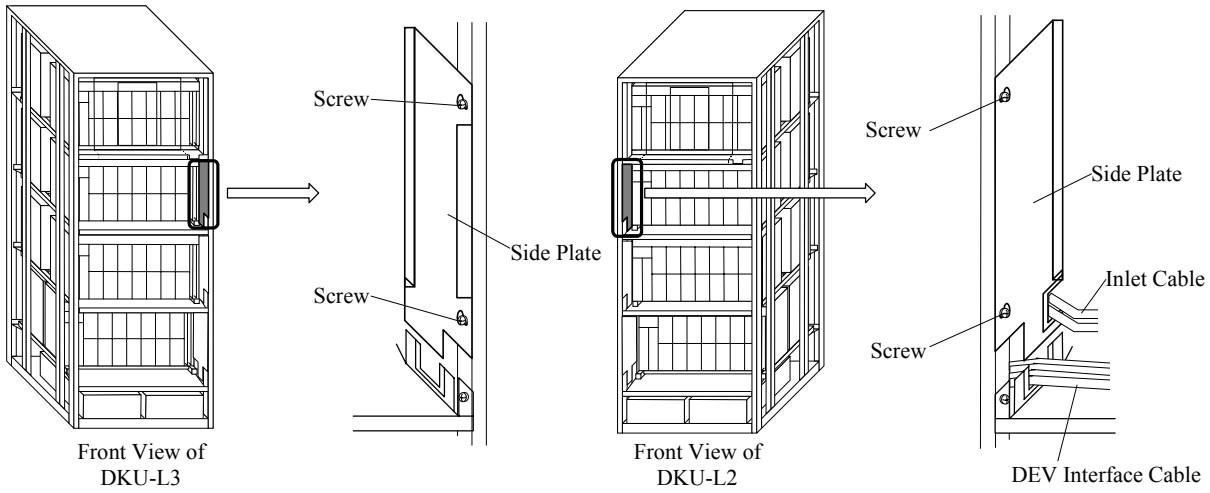

Fig. 4.13.4.10-2 Removal of Side Plates (Front View)

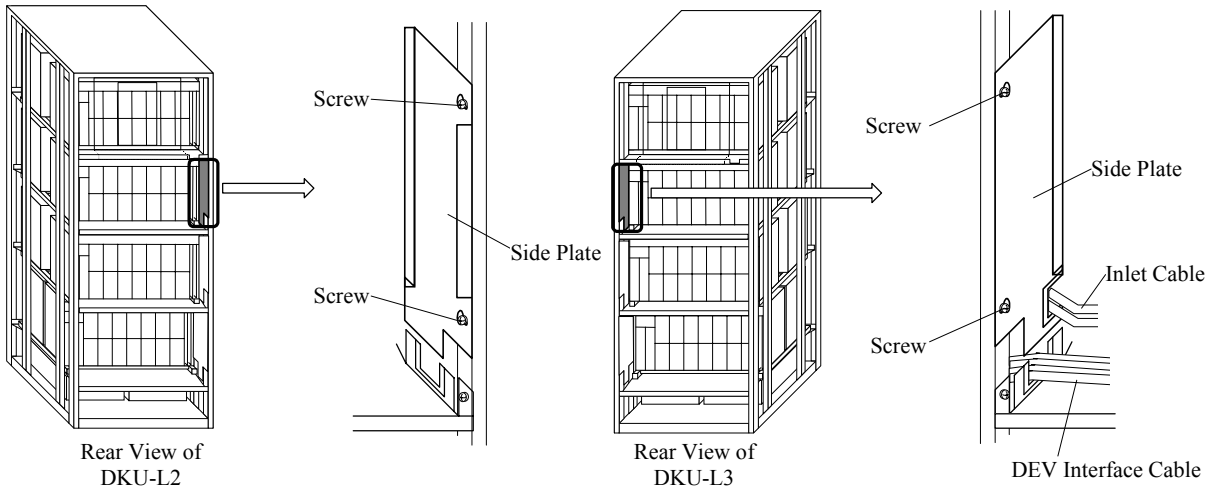

Fig. 4.13.4.10-3 Removal of Side Plates (Rear View)

3. Return to INST04-U40-270 ② when disconnecting the additional DEV interface cable while the subsystem is in operation. Go to INST04-U40-900 when the additional DEV interface cable with the sub-system switched off.

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4. Disconnect the DEV interface cables from the FSW PCBs in the DKU-L2 frame referring to figures 4.13.4.10-4 and 4.13.4.10-5.

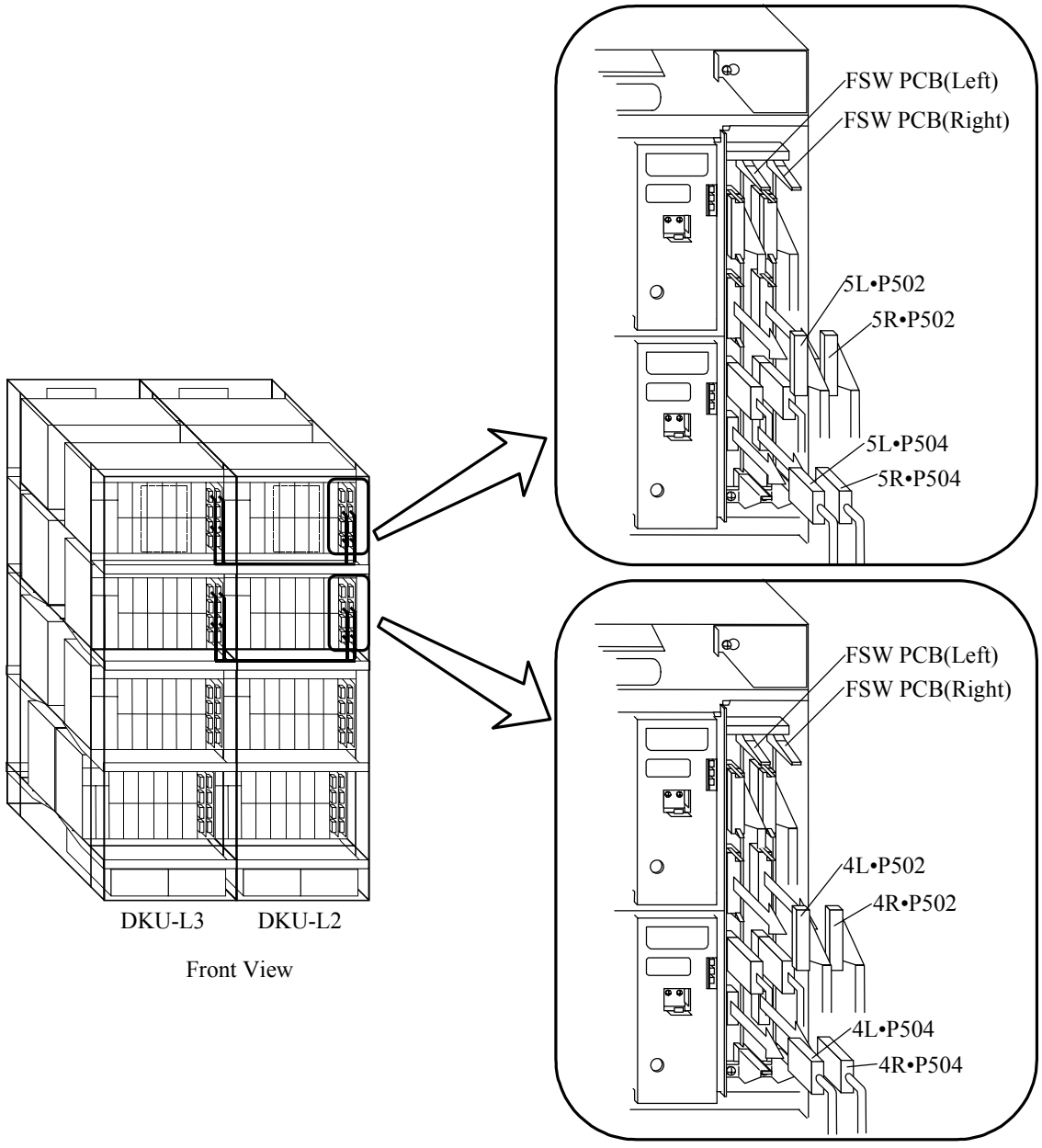

Fig. 4.13.4.10-4 Disconnection of the DEV Interface Cables

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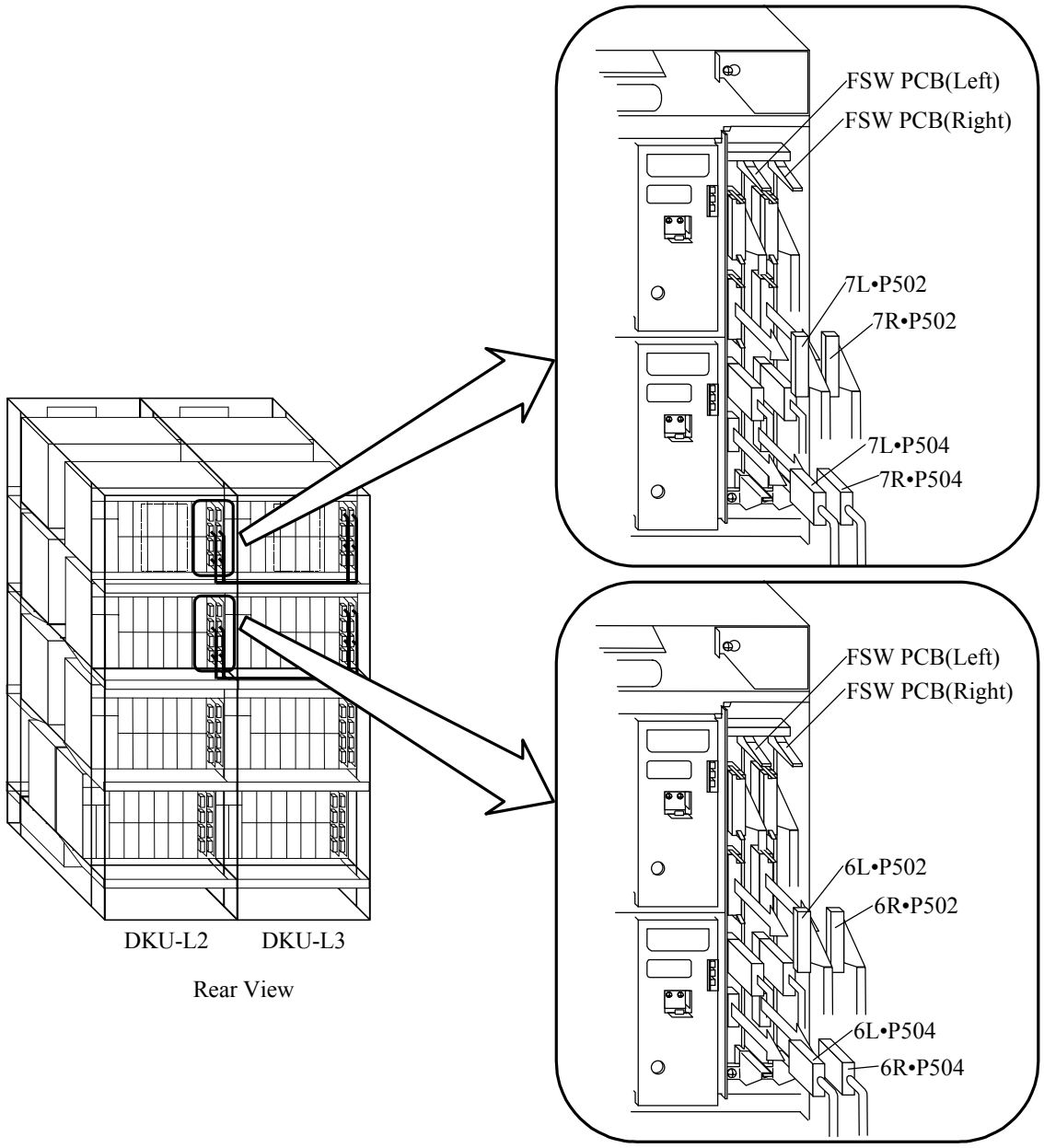

Fig. 4.13.4.10-5 Disconnection of the DEV Interface Cables

5. Return to INST04-U40-280 ⑤ when disconnecting the additional DEV interface cable while the sub-system is in operation. Go to INST04-U40-920 when disconnecting the additional DEV interface cable with the sub-system switched off.

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6. Disconnect the DEV interface cables from the FSW PCBs in the DKU-L3 frame referring to figures 4.13.4.10-6 and 4.13.4.10-7.

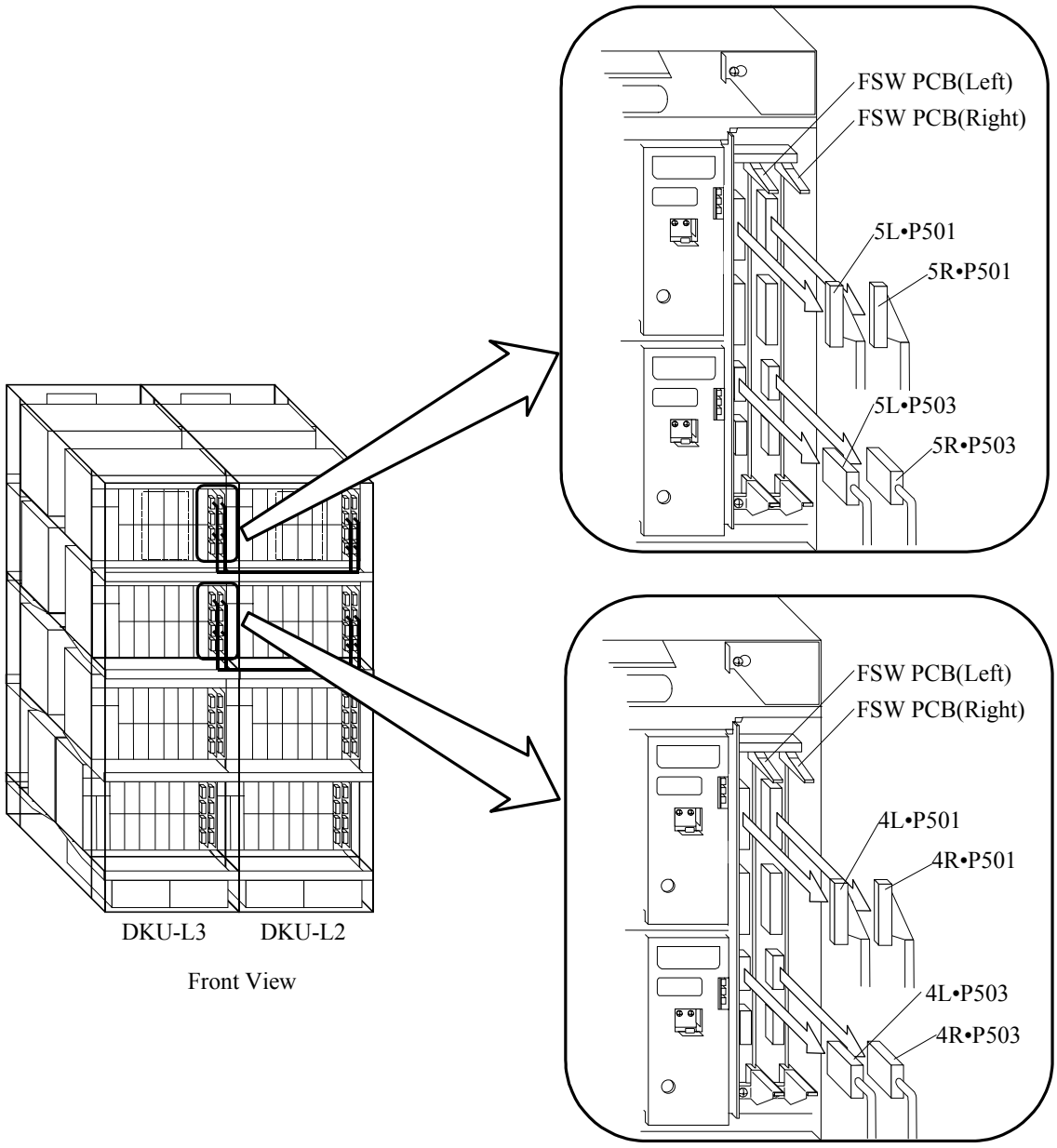

Fig. 4.13.4.10-6 Disconnection of the DEV Interface Cables

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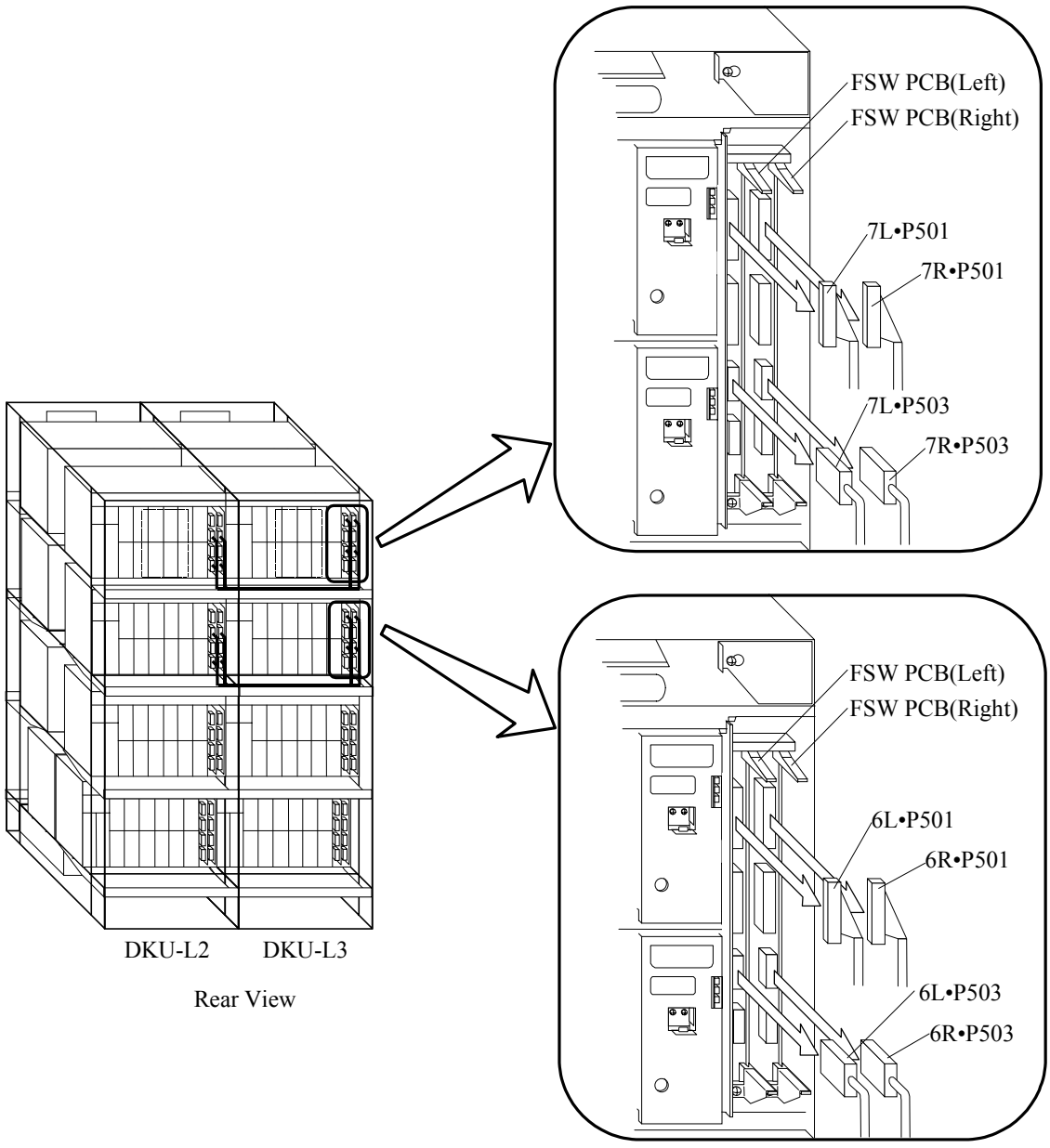

Fig. 4.13.4.10-7 Disconnection of the DEV Interface Cables

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7. Remove the DEV interface cables from inside the DKU frame.
8. Attach the side plates in the reverse order of Step 2.
9. Attach the cable covers in the reverse order of Step 1.
10. When the DKU-L3 frame consists of 4 HDU boxes, fix the disconnected DEV interface cables in the DKU-L3 frame with the binders.

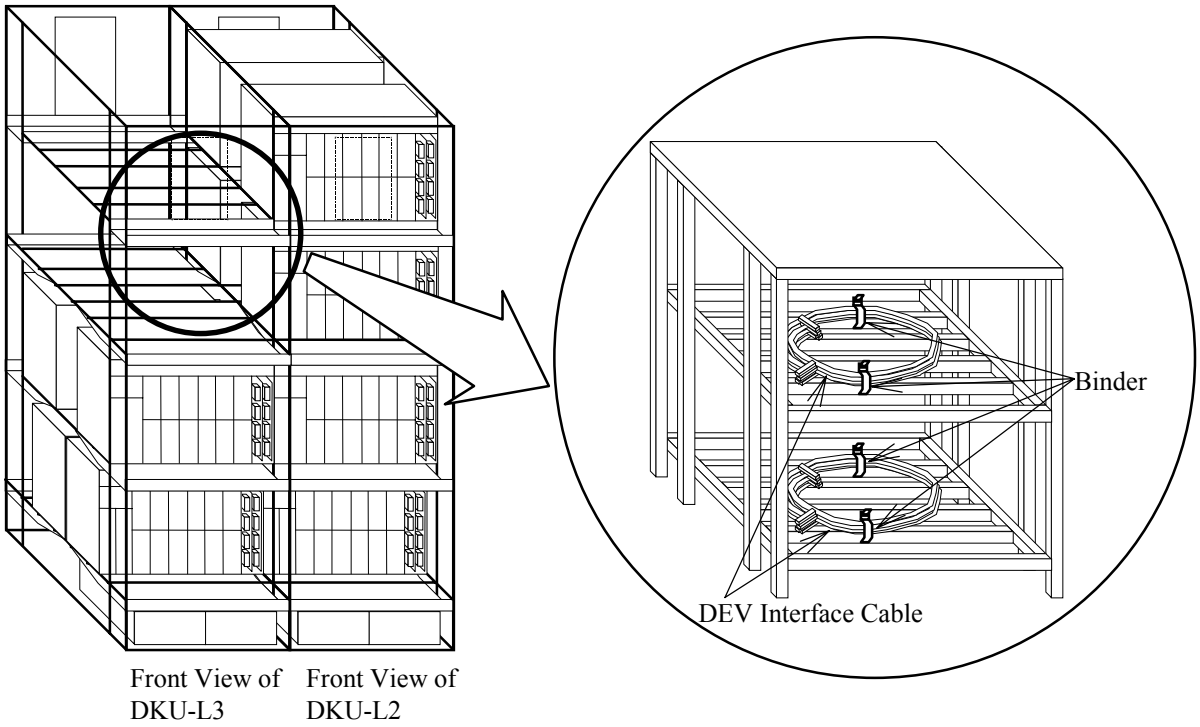

Fig. 4.13.4.10-8 Fixation of the DEV Interface Cables

11. Go to INST04-U40-290 Step ⑧.

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4.13.5 De-Installation of Disk Unit (DKU405I-14)

4.13.5.1 Flowchart

1. Power OFF of Disk Unit being De-Installed	[INST04-U40-960]
↓	
2. DKUMN Cable Removal	[INST04-U40-970]
↓	
3. Kick Plate Removal	[INST04-U40-1020]
↓	
4. Side Cover and Frame Ground Cable Removal	[INST04-U40-1030]
↓	
5. Frame Disconnection	[INST04-U40-1080]
↓	
6. Removal of DEV Interface Cables (Only DKU-L1)	[INST04-U40-1110]
↓	
7. Side Cover Re-Installation	[INST04-U40-1140]
↓	
8. Power Cable Assy Fixing	[INST04-U40-1160]

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4.13.5.2 De-Installation Procedure of Disk Unit

1. Power OFF of Disk Unit being De-Installed
   a. Turn Enable / Disable switches (S1) to "DISABLE" position on the DKUMN PCBs of the Disk Unit.
   b. Turn off the circuit breaker (CB101) on the AC Boxes of the Disk Unit.

Table 4.13.5.2-1 De-Installed Disk Unit

No.	De-Installed Disk Unit	DKUMN PCB	AC Box	Remarks
1	DKU-L3	DKUMN-L3F, -L3R	AC BOX-L30, -L31	
2	DKU-R3	DKUMN-R3F, -R3R	AC BOX-R30, -R31	
3	DKU-L2	DKUMN-L2F, -L2R	AC BOX-R20, -R21	
4	DKU-L1	DKUMN-L1F, -L1R	AC BOX-R10, -R11	
5	DKU-R2	DKUMN-R2F, -R2R	AC BOX-L20, -L21	

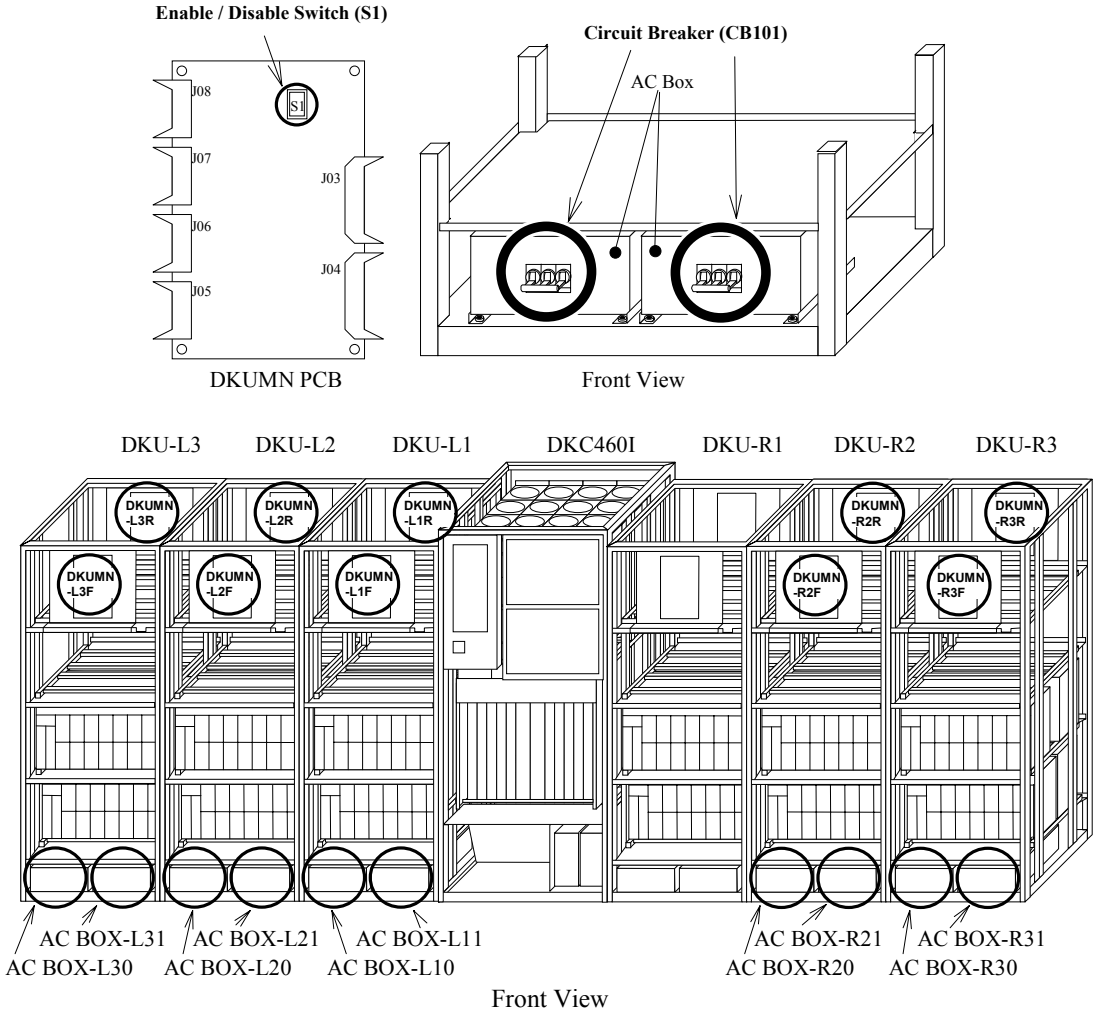

Fig. 4.13.5.2-1 AC Boxes and DKUMN PCBs

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2. DKUMN Cable Removal
   Remove the DKUMN cables in the reverse order of installation.

DKU-L3

Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.
Disconnect the DKUMN cables between the DKU-L2 and the DKU-L3 as indicated in the table below.

Table 4.13.5.2-2 Connection of DKUMN Cables

No.	DKU-L2			DKU-L3			Remarks
	Location No.	Connector No.	Cable No.	Location No.	Connector No.	Cable No.	
1	DKUMN-L2F	J03	P3-1	DKUMN-L3F	J04	P4-1	
2	DKUMN-L2R	J03	P3-2	DKUMN-L3R	J04	P4-2	

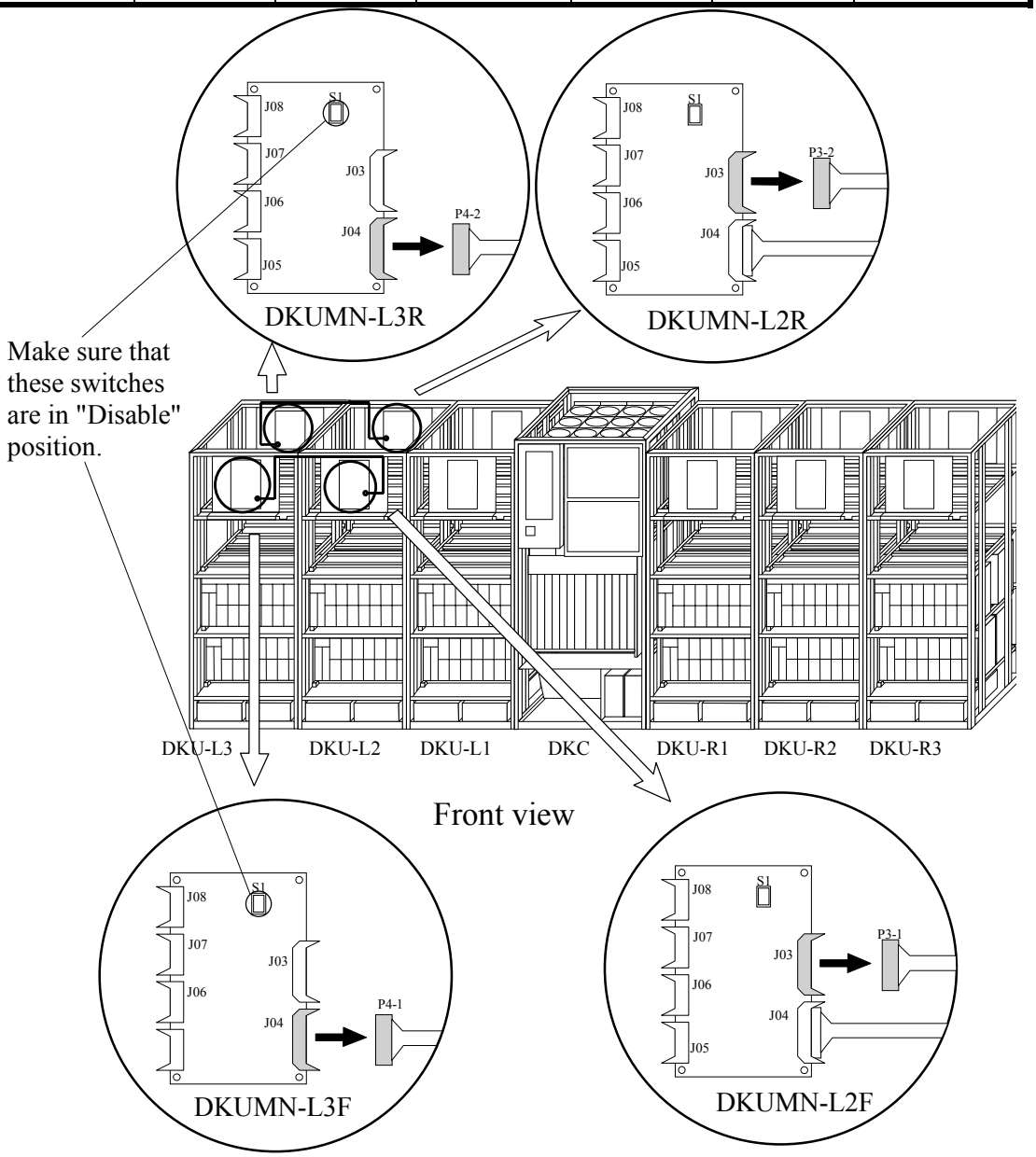

Fig. 4.13.5.2-2 Connection of DKUMN Cables

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DKU-R3

Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.
Disconnect the DKUMN cables between the DKU-R2 and the DKU-R3 as indicated in the table below.

Table 4.13.5.2-3 Connection of DKUMN Cable

No.	DKU-R2			DKU-R3			REMARKS
	Location No.	Connector No.	Cable No.	Location No.	Connector No.	Cable No.	
1	DKUMN-R2F	J03	P3-1	DKUMN-R3F	J04	P4-1	
2	DKUMN-R2R	J03	P3-2	DKUMN-R3R	J04	P4-2	

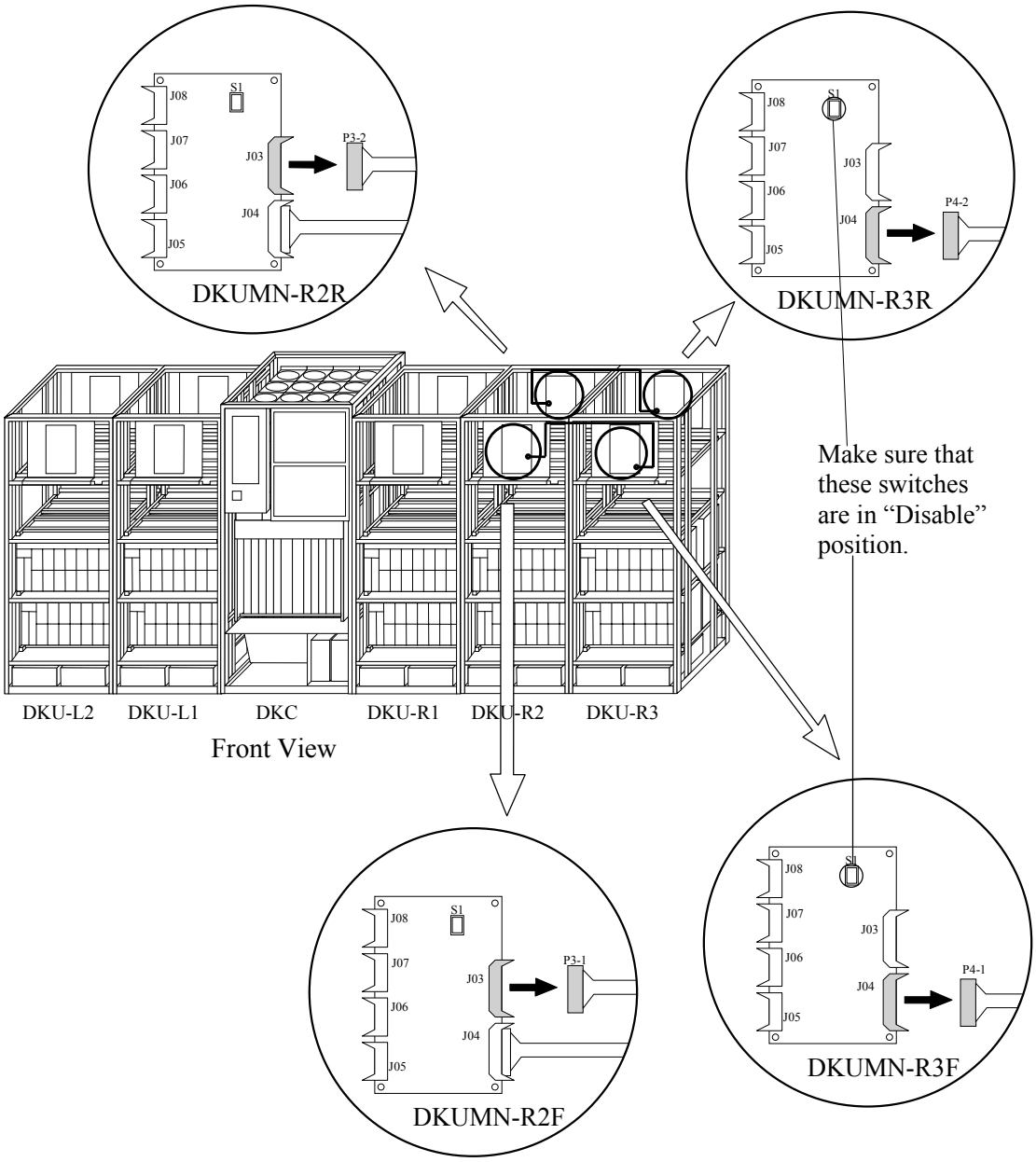

Fig. 4.13.5.2-3 Connection of DKUMN Cables

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DKU-L2

Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.
Disconnect the DKUMN cables between the DKU-L1 and the DKU-L2 as indicated in the table below.

Table 4.13.5.2-4 Connection of DKUMN Cables

No.	DKU-L1			DKU-L2			Remarks
	Location No.	Connector No.	Cable No.	Location No.	Connector No.	Cable No.	
1	DKUMN-L1F	J03	P3-1	DKUMN-L2F	J04	P4-1	
2	DKUMN-L1R	J03	P3-2	DKUMN-L2R	J04	P4-2	

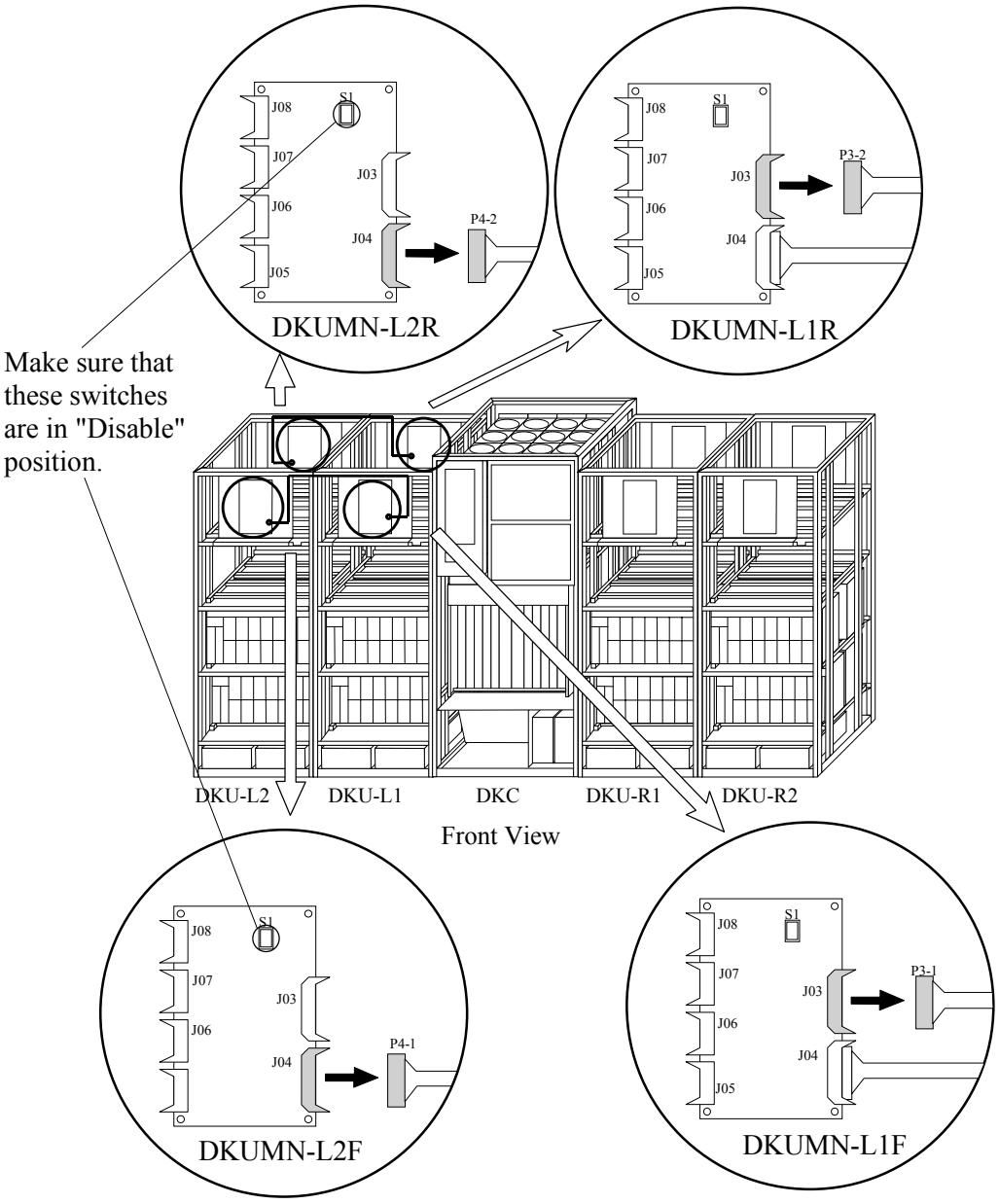

Fig. 4.13.5.2-4 Connection of DKUMN Cables

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DKU-L1

Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity. Disconnect between the MONO-CON PCBs and the DKUMN PCBs as summarized in the table below.

Table 4.13.5.2-5 Connection of DKUMN Cables

No.	DKC			DKU-L1			REMARKS
	Location No.	Connector No.	Cable No.	Location No.	Connector No.	Cable No.	
1	MONI-CON1	J22	P22-1	DKUMN-L1F	J04	P4-1L	
2	MONI-CON2	J22	P22-2	DKUMN-L1R	J04	P4-2L	

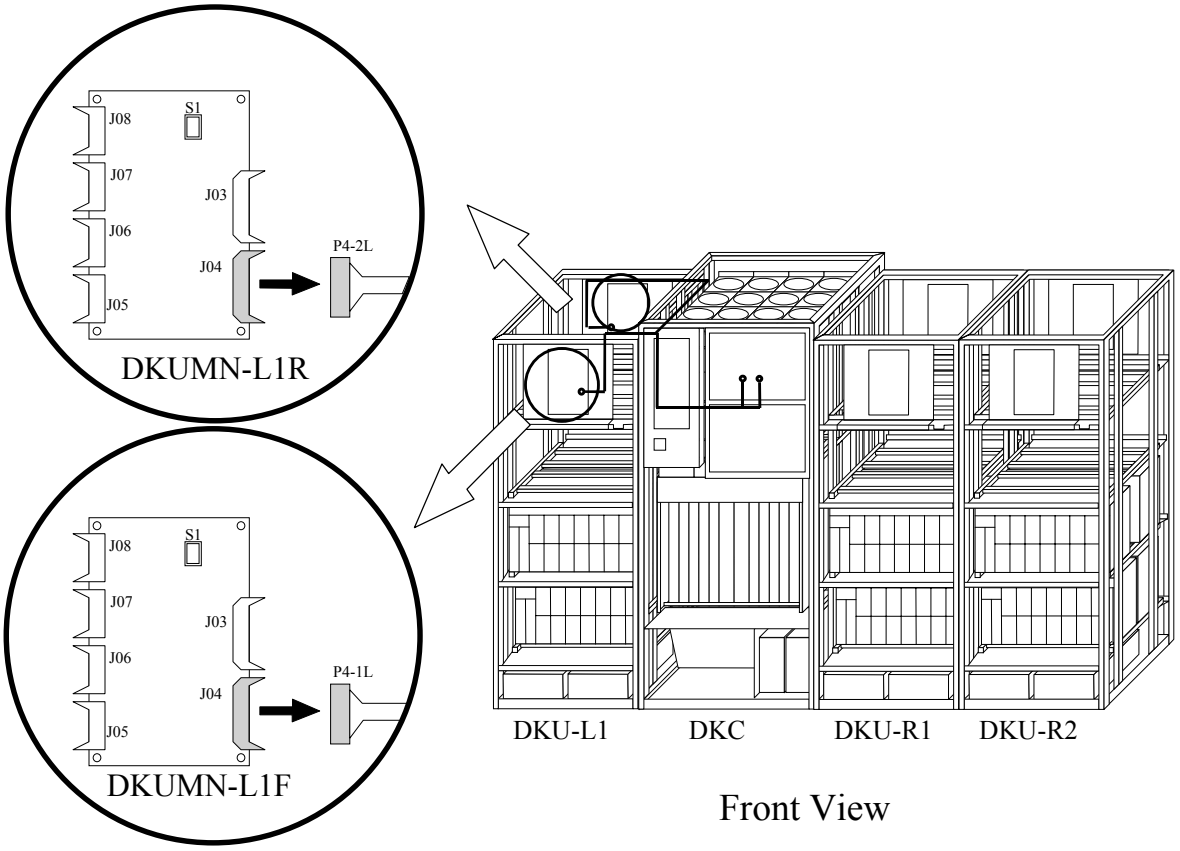

Fig. 4.13.5.2-5 Connection of DKUMN Cables

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DKU-R2

Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.
Disconnect the DKUMN cables between the DKU-R1 and the DKU-R2 as indicated in the table below.

Table 4.13.5.2-6 Connection of DKUMN Cable

No.	DKU-R1			DKU-R2			REMARKS
	Location No.	Connector No.	Cable No.	Location No.	Connector No.	Cable No.	
1	DKUMN-R1F	J03	P3-1	DKUMN-R2F	J04	P4-1	
2	DKUMN-R1R	J03	P3-2	DKUMN-R2R	J04	P4-2	

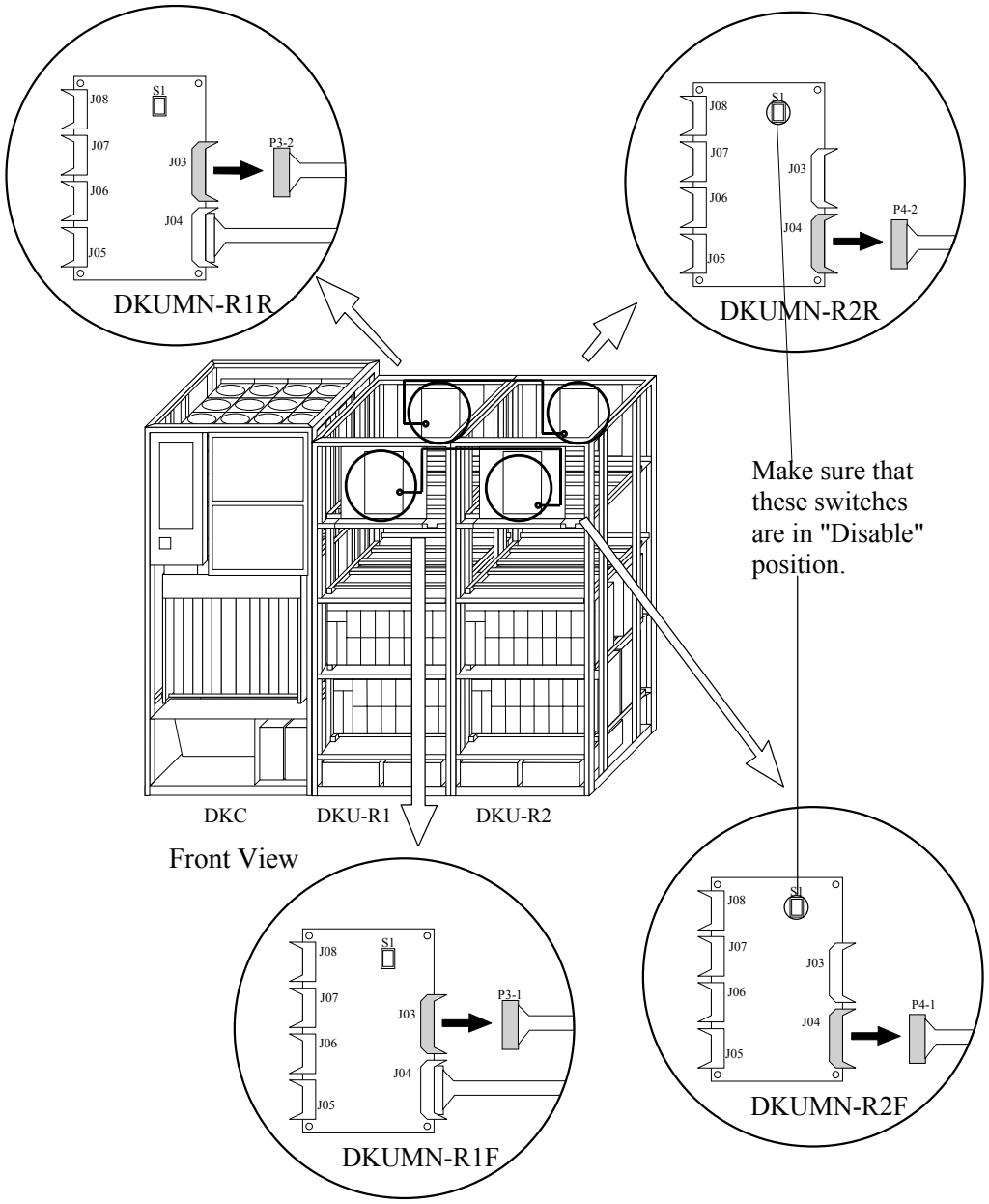

Fig. 4.13.5.2-6 Connection of DKUMN Cables

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3 Kick Plate De-Installation

a. Remove kick plate in the reverse order of installation.

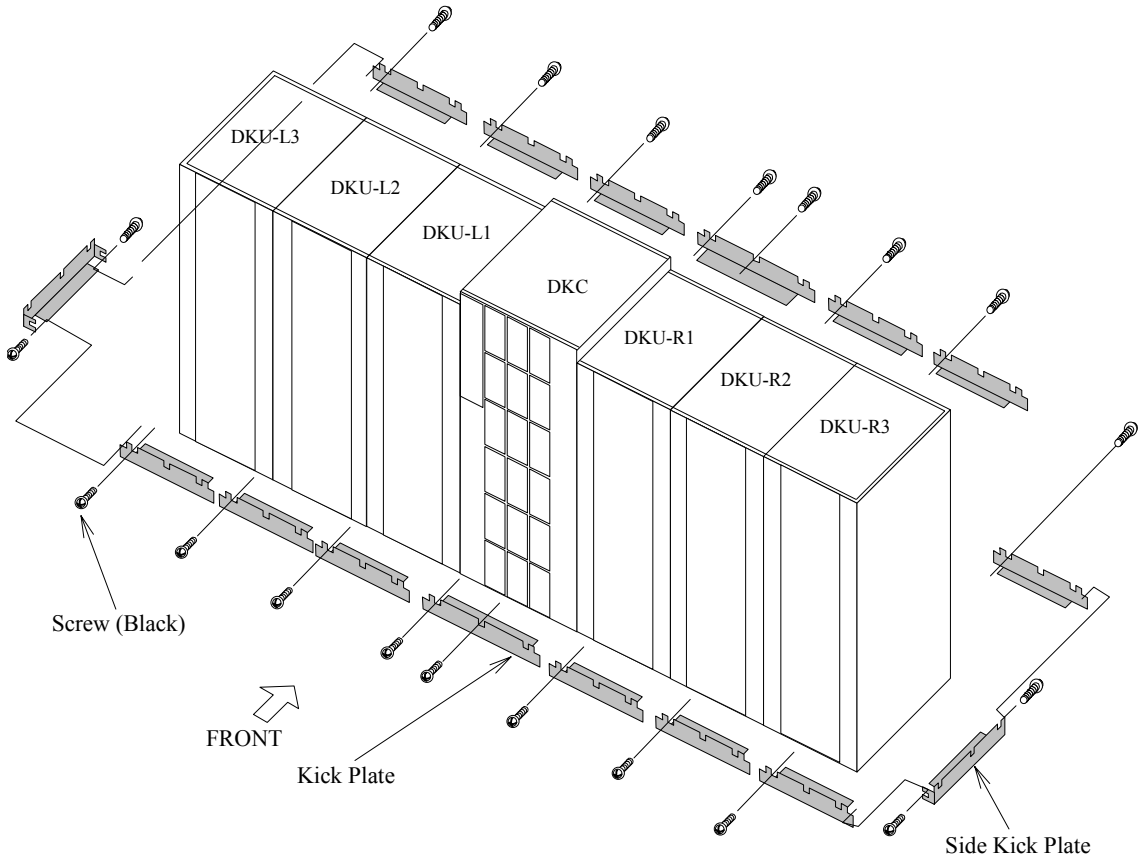

Fig. 4.13.5.2-7 Removal of Kick Plate (Six Disk Units)

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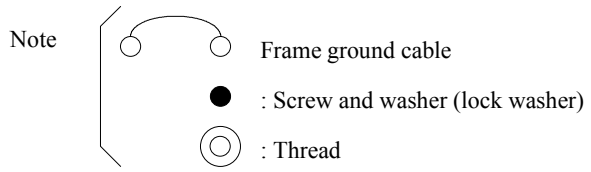
4 Side Cover and Frame Ground Cable Removal
Remove the side cover(s) and frame ground cable in the reverse order of installation.

DKU-L3

a. Remove the frame ground cable.
b. Remove the side cover from the DKU-L3.
c. Disconnect the frames.
d. Attach the left side cover to the DKU-L1 or DKU-L2 together with the frame ground cable.



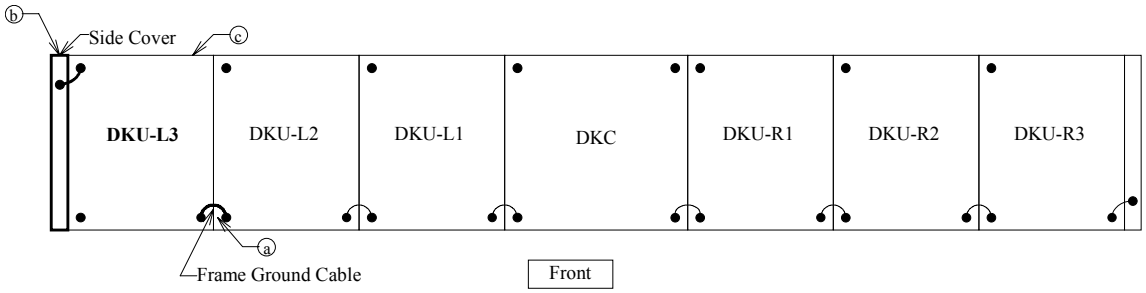


Fig. 4.13.5.2-8 Removal of Frame Ground Cable

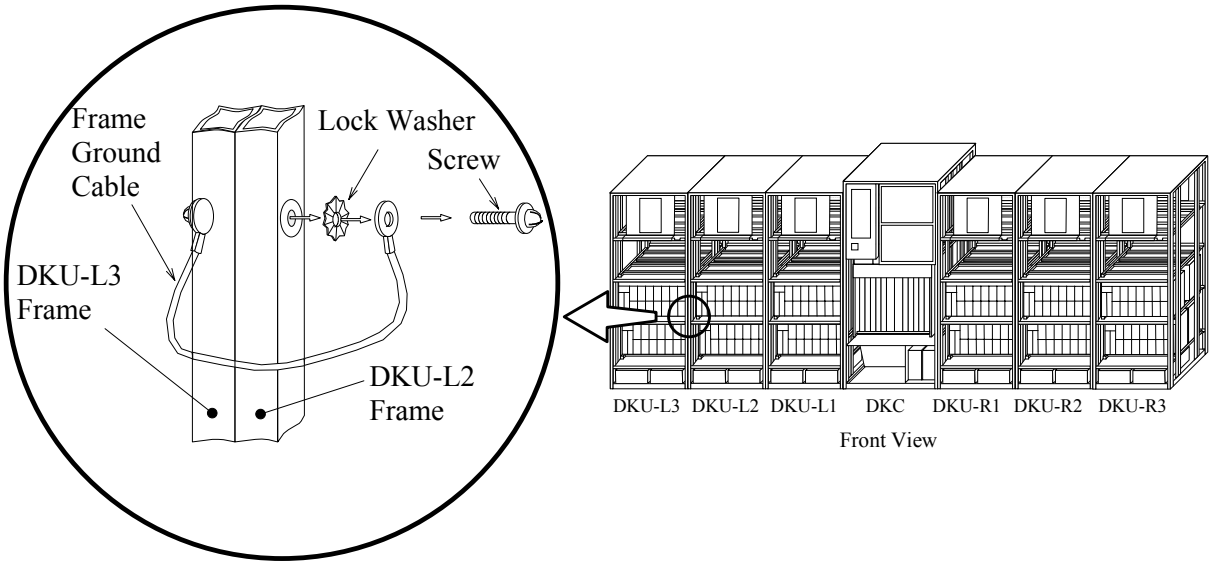


Fig. 4.13.5.2-9 Removal of Frame Ground Cable

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DKU-R3

a. Remove the frame ground cable.
b. Remove the side cover from the DKU-R3.
c. Disconnect the frames.
d. Attach the right side cover to the DKU-R1 or DKU-R2 together with the frame ground cable.

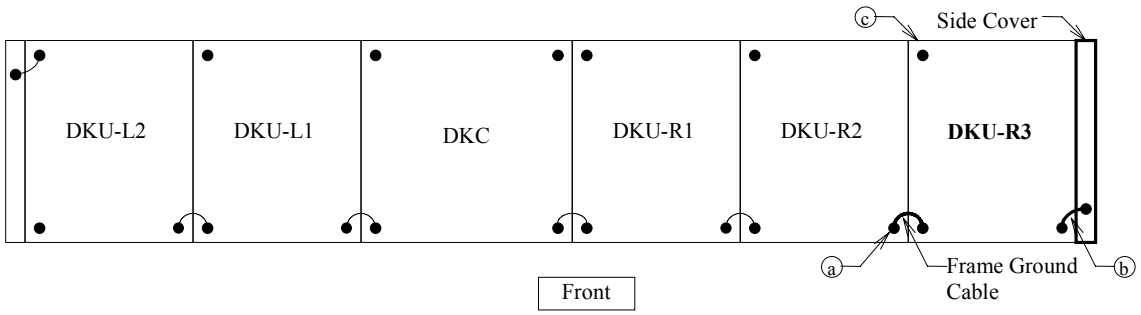

Fig. 4.13.5.2-10 Removal of Frame Ground Cable

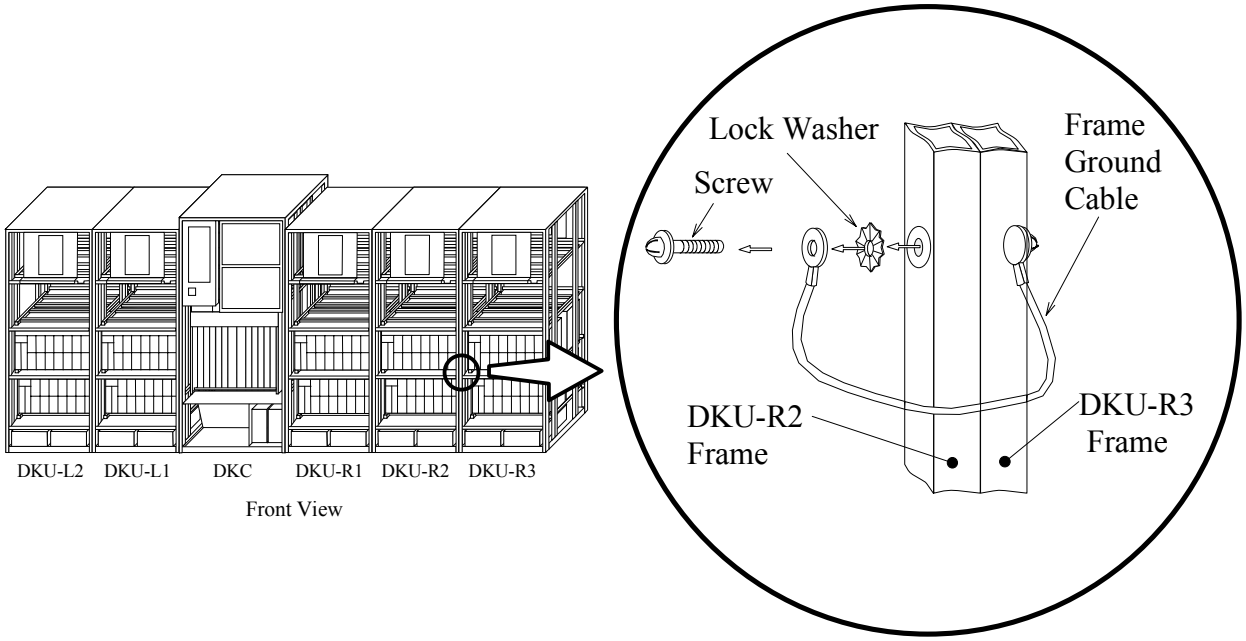

Fig. 4.13.5.2-11 Removal of Frame Ground Cable

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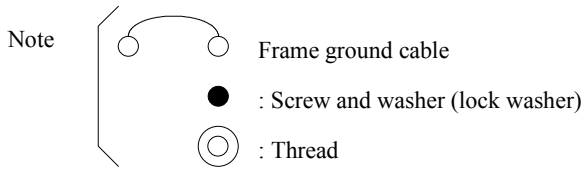
DKU-L2

a. Remove the frame ground cable.
b. Remove the side cover from the DKI-L2.
c. Disconnect the frames.
d. Attach the left side cover to the DKU-L1 together with the frame ground cable.



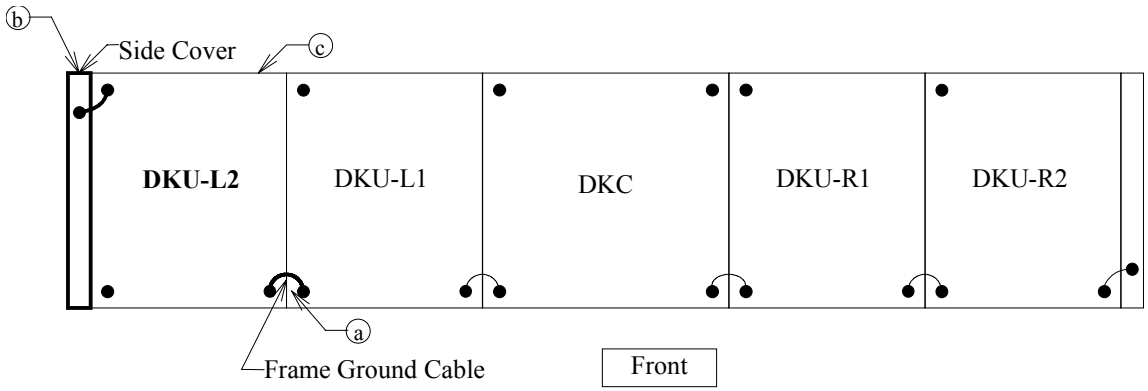


Fig. 4.13.5.2-12 Removal of Frame Ground Cable

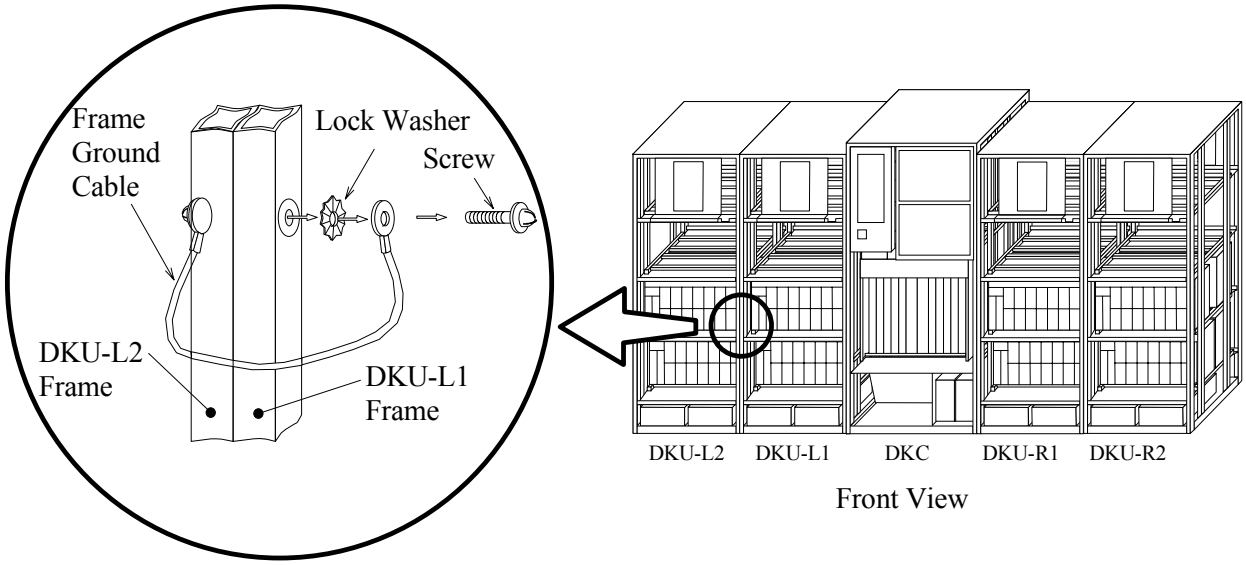


Fig. 4.13.5.2-13 Removal of Frame Ground Cable

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DKU-L1

a. Remove the frame ground cable.
b. Disconnect the frames.
c. Remove the DEV Interface Cables from the DKU-L1 [INST04-U40-1110 through 1130].
d. Attach the left side cover of the DKC with the frame ground cable.

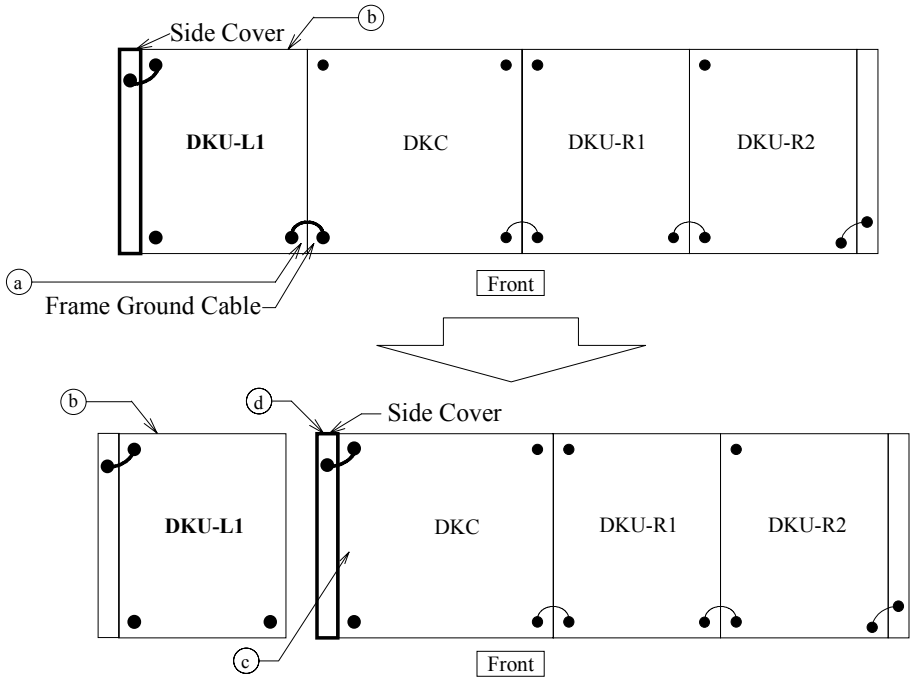

Fig. 4.13.5.2-14 Removal of Frame Ground Cable

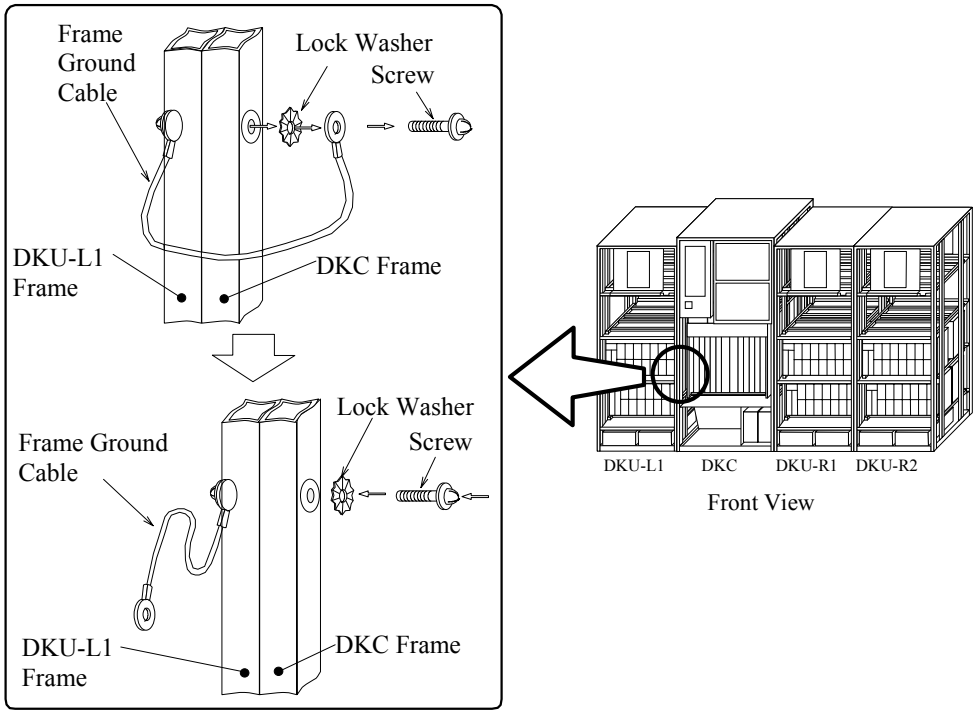

Fig. 4.13.5.2-15 Removal of Frame Ground Cable

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DKU-R2

a. Remove the frame ground cable.
b. Remove the side cover from the DKU-R2.
c. Disconnect the frames.
d. Attach the right side cover to the DKU-R1 together with the frame ground cable.

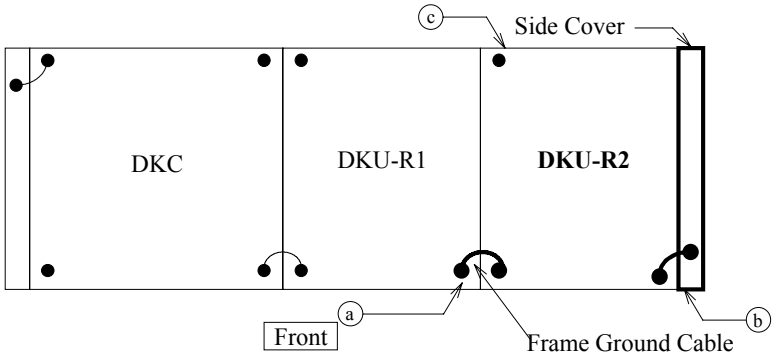

Fig. 4.13.5.2-16 Removal of Frame Ground Cable

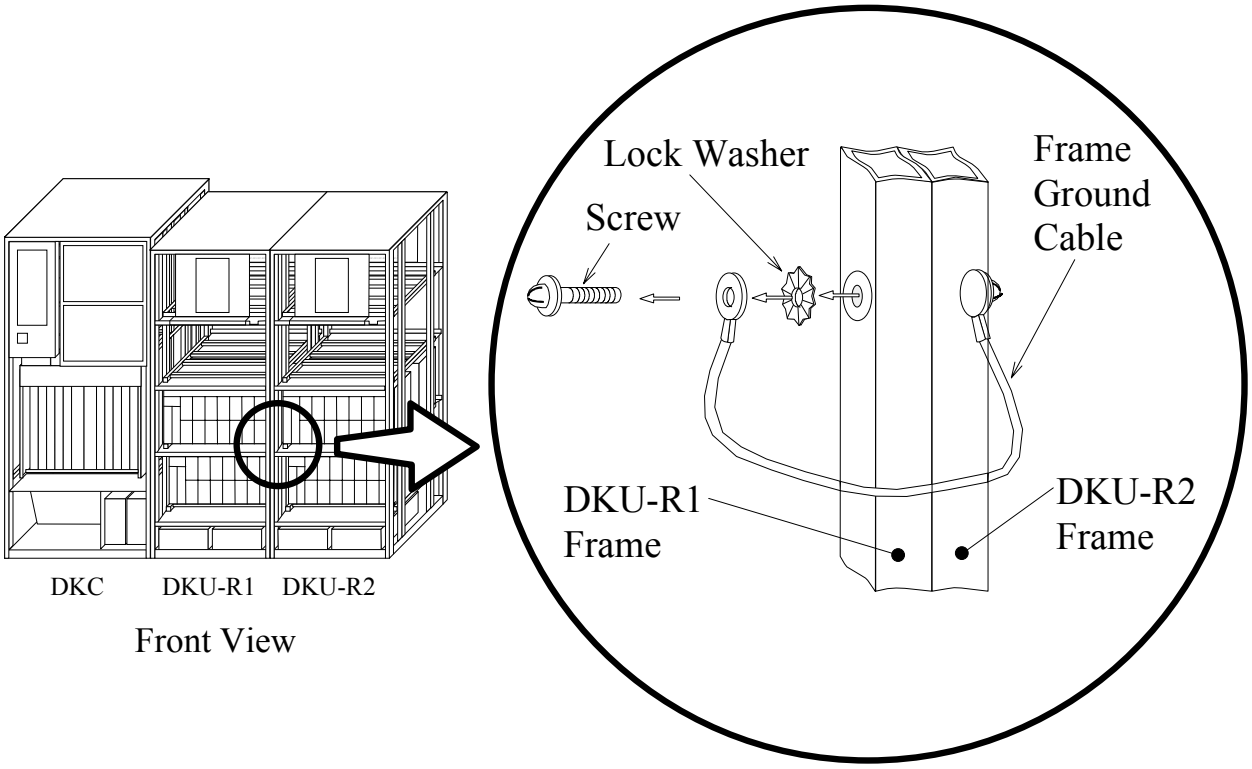

Fig. 4.13.5.2-17 Removal of Frame Ground Cable

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5. Frame Disconnection
   a. Remove the socket bolts, washers and nuts.
   b. Remove the four screws ② and remove the bracket cover ASSY.
   c. Attach the four screws ① to the top covers.

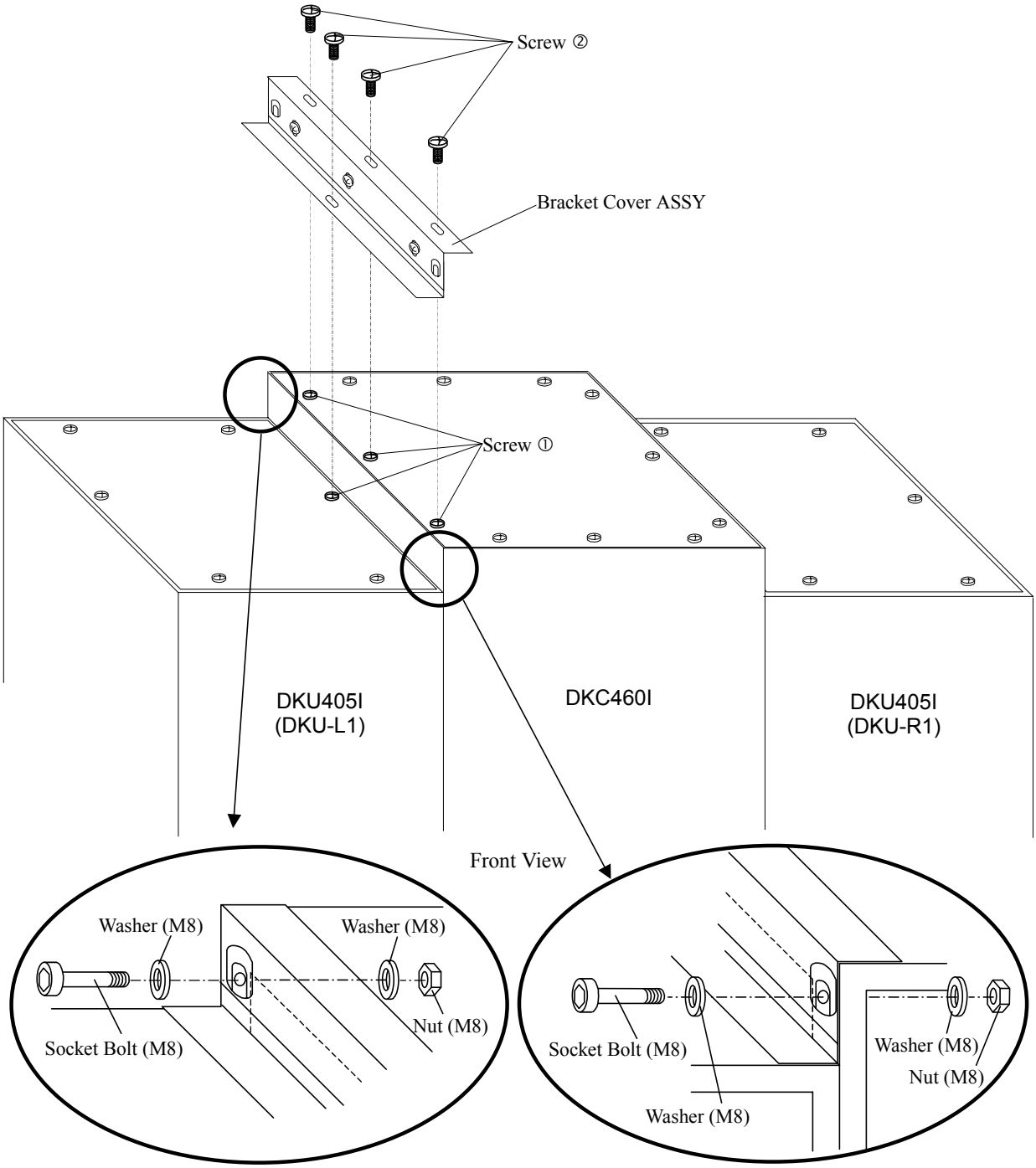

Fig. 4.13.5.2-18 Removal of Bracket Cover ASSY

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f. Disconnect the frames in the reverse order of frame connection.

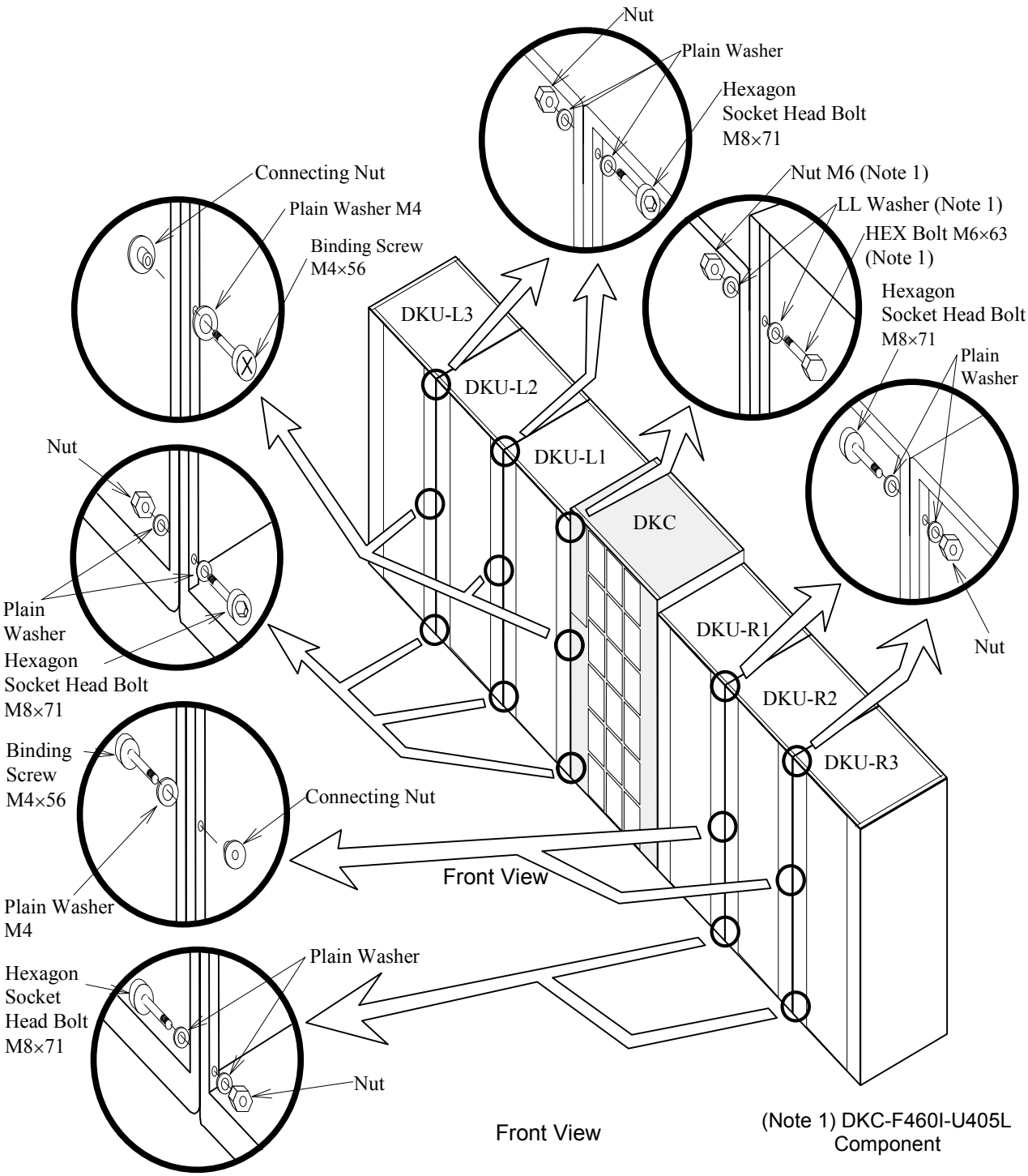

Fig. 4.13.5.2-19 Disconnection of Frame

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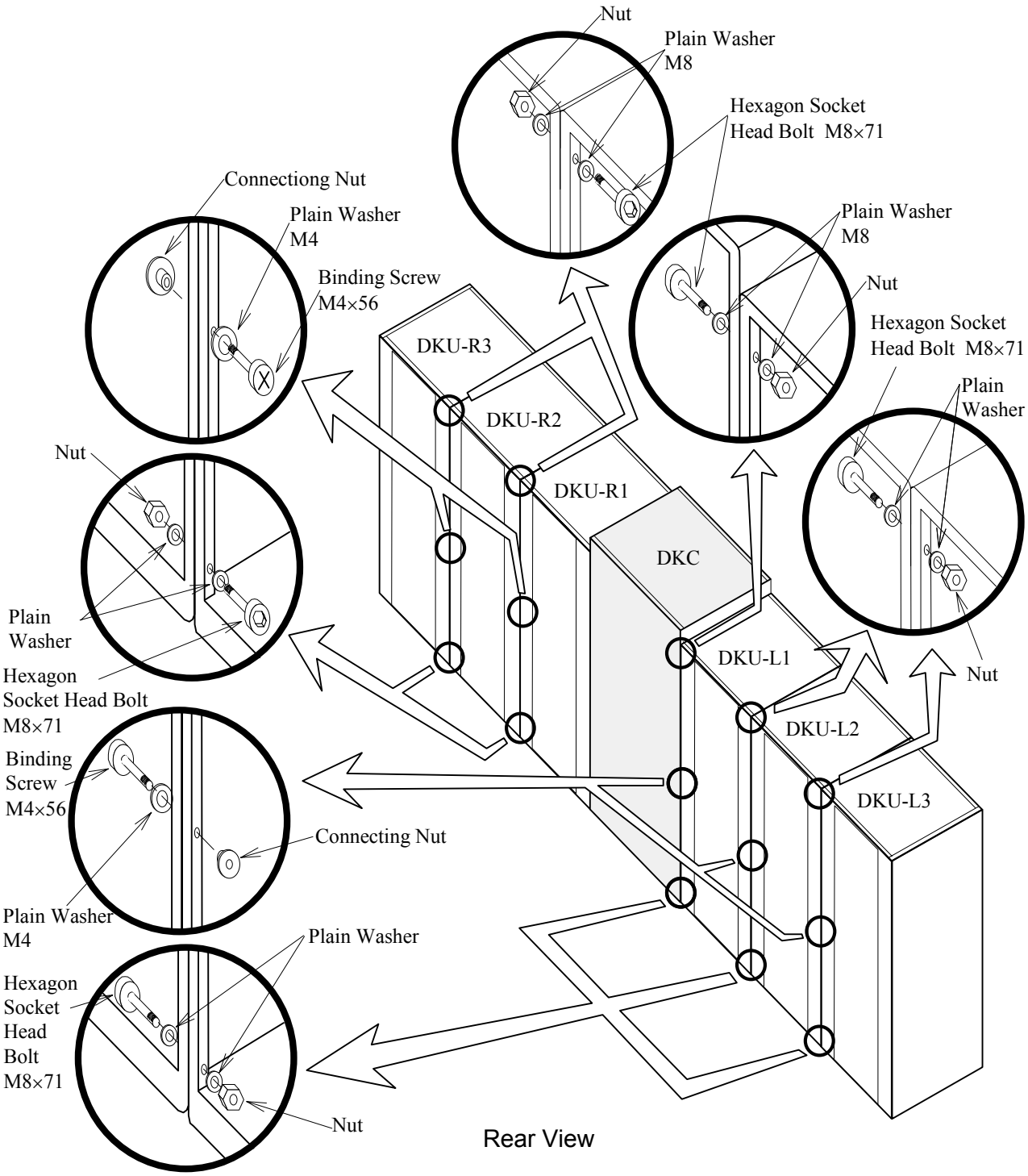

Fig. 4.13.5.2-20 Disconnection of Frame

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6. Removal of DEV Interface Cables

When the DKU-L1 is removed, remove the DEV Interface Cables from the DKU-L1.
When the DKU-L1 is not removed, go to step 7.

a. Loosen the screws and remove the cable covers ① and ②.

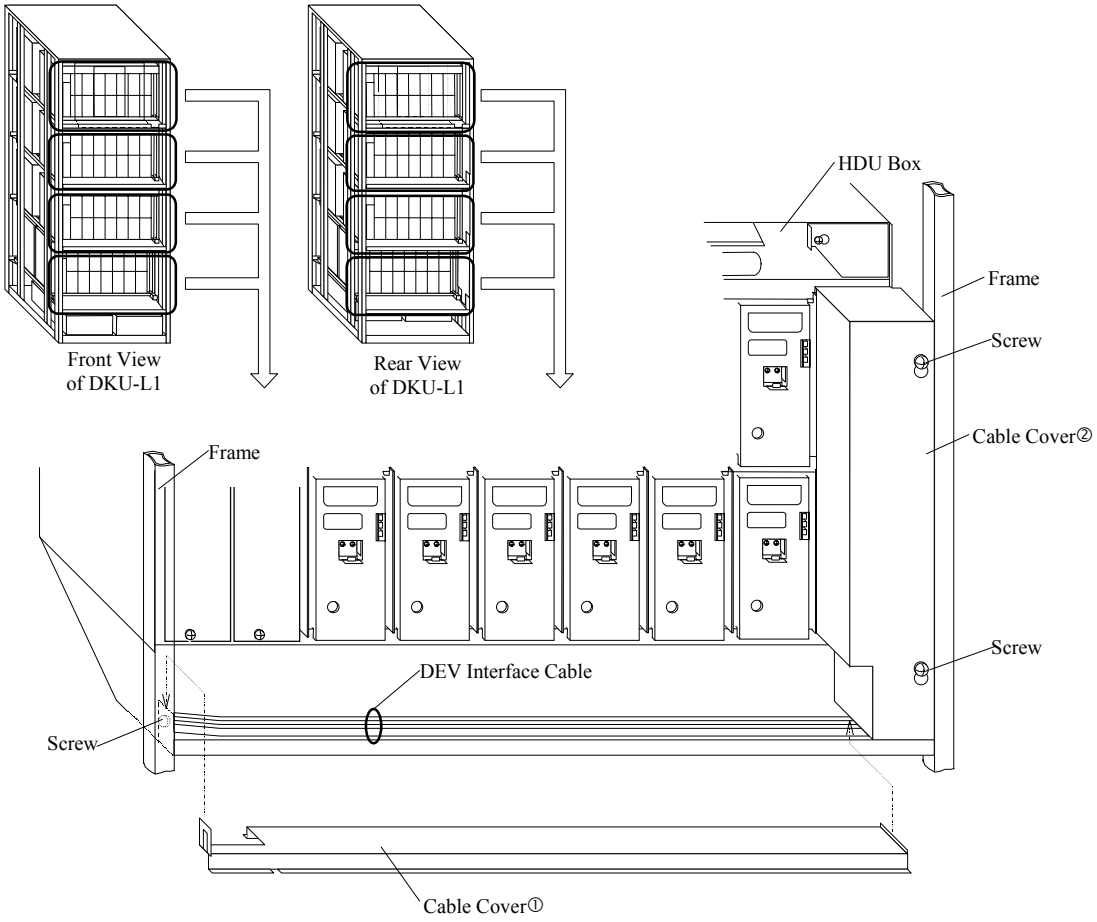

Fig. 4.13.5.2-21 Removal of Cable Covers

b. Loosen the screws and remove the side plates.

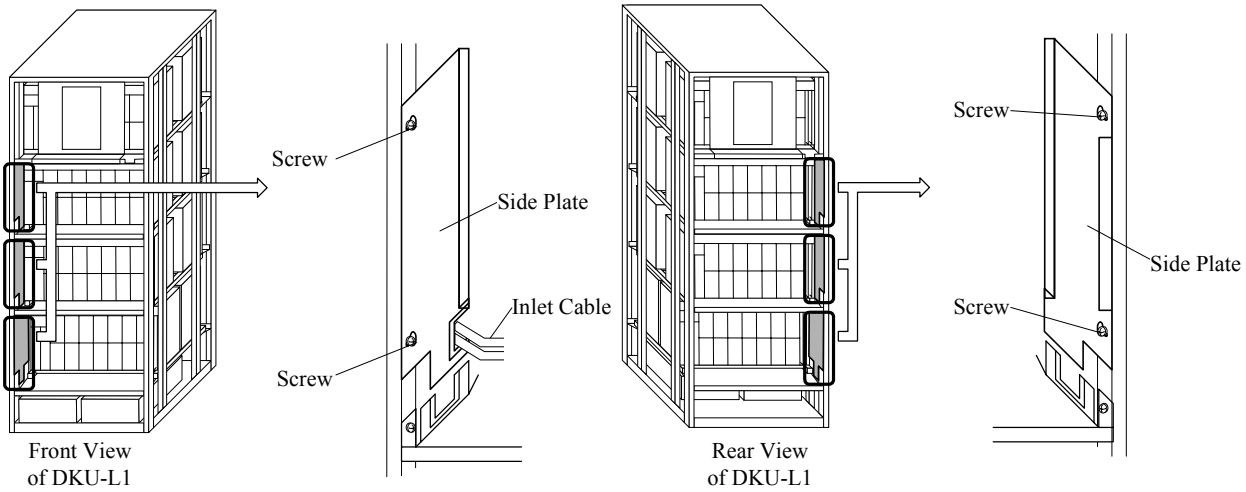

Fig. 4.13.5.2-22 Removal of Side Plates

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c. While moving the DKU-L1 frame, pull out DEV interface cables and DKUMN cables for connection between the DKC and DKU-L1 toward the DKC side.

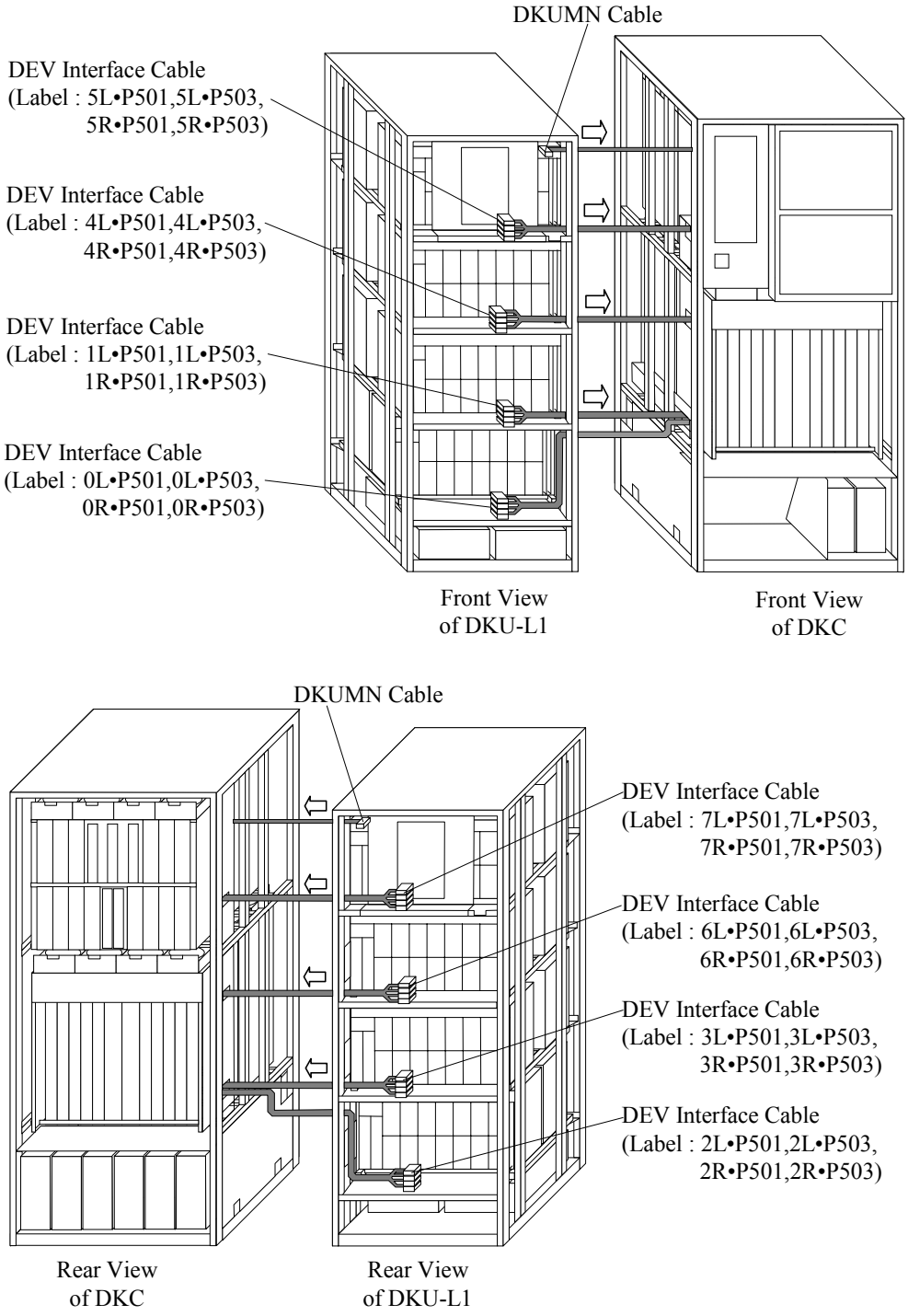

Fig. 4.13.5.2-23 Removal of Cables

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d. Attach the side plates and fasten the screws.

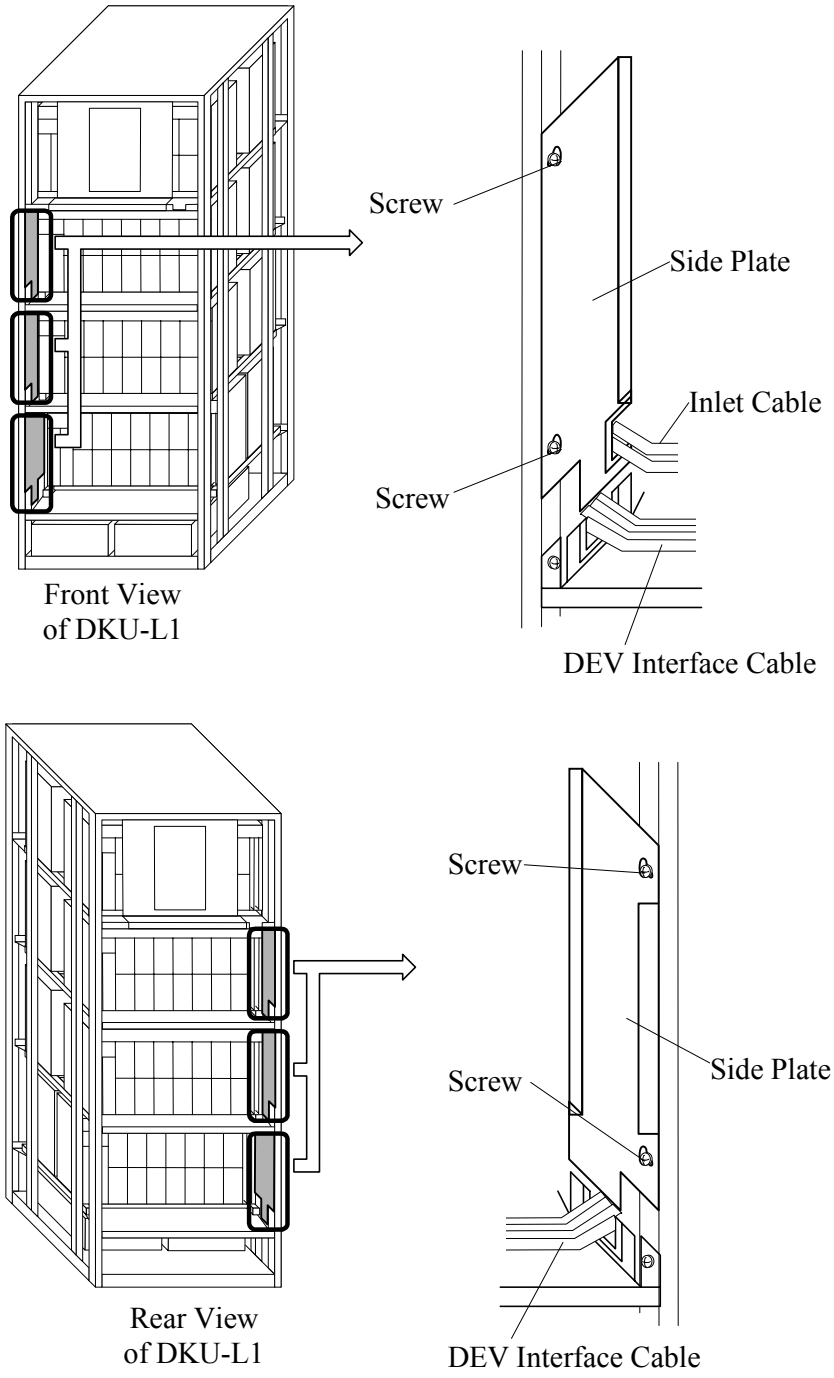

Fig. 4.13.5.2-24 Attachment of Side Plates

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7. Side Cover Re-Installation
   a. Attach the side cover to the end of the frame. See Table 4.13.5.2-7.

Table 4.13.5.2-7 Removal and Re-installation of Side Cover

Configuration	DKU-L3	DKU-L2	DKU-L1	DKC	DKU-R1	DKU-R2	DKU-R3
De-Installation of DKU-R2	—	—	—	Side Cover		Side Cover	—
De-Installation of DKU-L1	—	—		Side Cover for DKC460I			—
De-Installation of DKU-L2	—						—
De-Installation of DKU-R3	—						
De-Installation of DKU-L3							

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b. Attach the side cover to the end of the string with the four binding screws and washers.

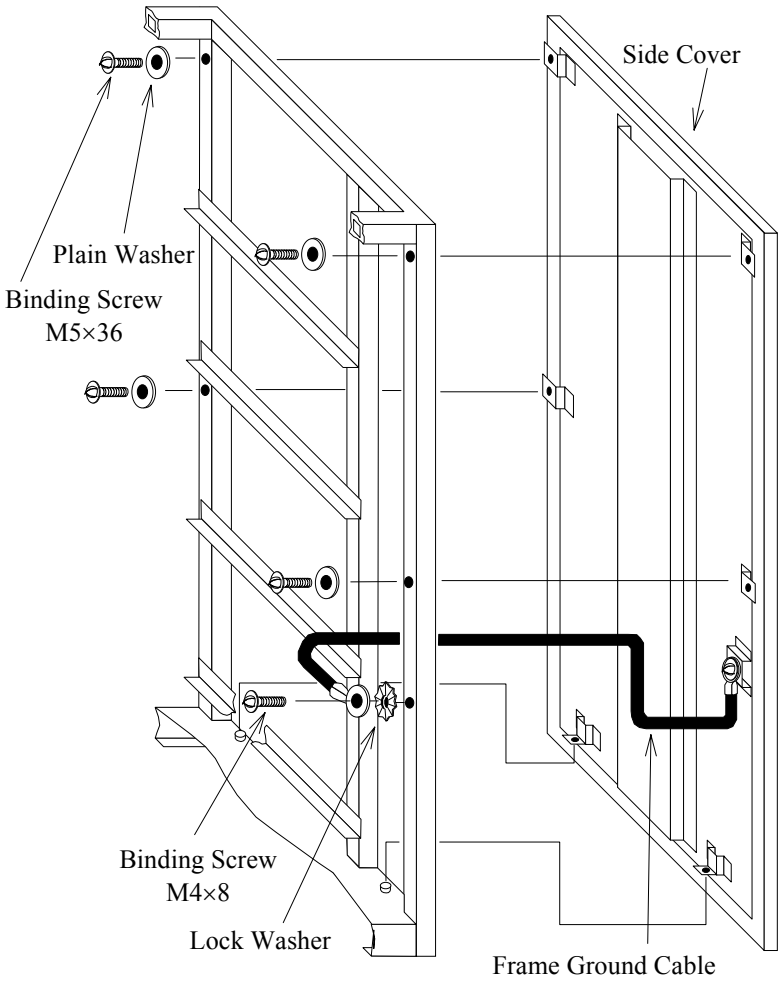

Fig. 4.13.5.2-25 Re-Installation of Side Cover

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8. Power Cable Assy Fixing
   a. Loosen the four screws.

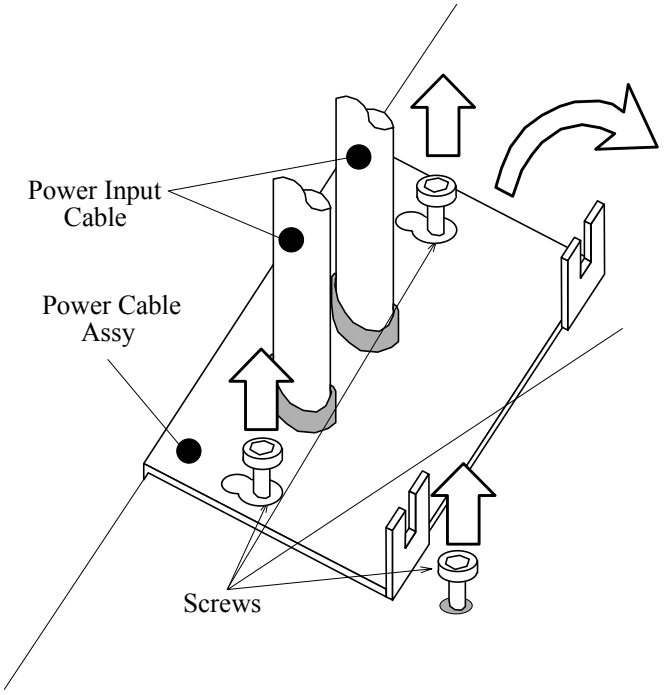

Fig. 4.13.5.2-26 Fixing of Power Cable Assy

   b. Secure the power cable Assy with the screws.

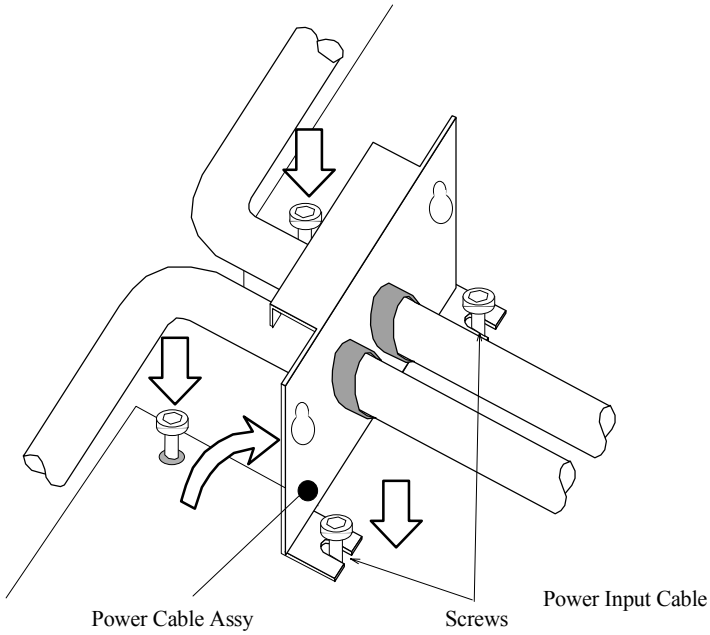

Fig. 4.13.5.2-27 Fixing of Power Cable Assy

9. Return to General Flow.
   Non-Disruptive De-installation: Go to INST04-U40-30 Step (4)-2.

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4.13.6 De-Installation of Power Cable Kit for Disk Unit (DKU-F405I-3EC/3UC/1EC/1UC)

⚠ CAUTION

Perform The Power Cable Kit with care.
This Power Cable Kit is concerned with Primary Circuit.
Perform this procedure before connecting the Power Cable Assy.
(Turn off the circuit breakers on the power distribution panel)
Turn off the main circuit breaker CB101 located in the AC Box.

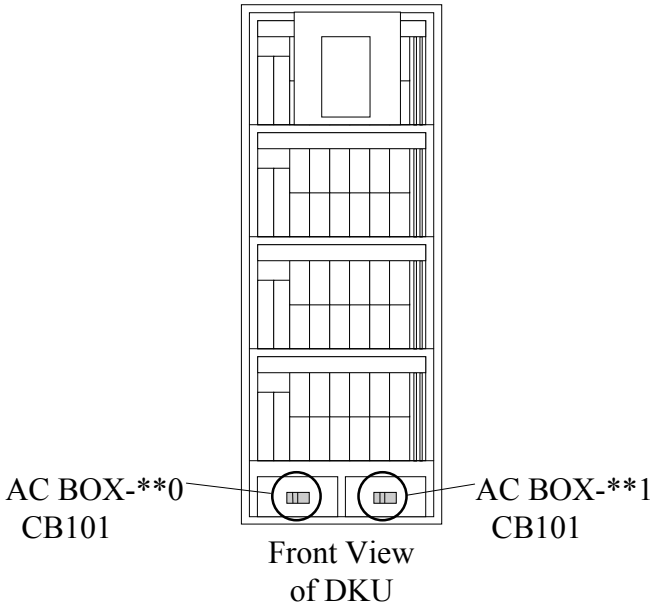

Fig. 4.13.6-1 Location of the Disk Unit Circuit Breakers

Table 4.13.6-1 Disk Unit Circuit Breakers

No.	Location No.	Breaker No.	Remarks
1	AC BOX-**0	CB101	
2	AC BOX-**1	CB101	

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4.13.6.1 Flowchart

1. Remove the Plate.
↓
2. Disconnect the Power Cable Assy.
↓
3. Attach the Plate.
↓
4. Remove the Nameplate.

4.13.6.2 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKU-F405I-3UC	Power Cable Assy (IU)	3239396-A	1	
		Nameplate	2103308-1	1	
			3259626-1	1	
2	DKU-F405I-3EC	Power Cable Assy (IE)	3239396-B	1	
		Nameplate	2103308-2	1	
			3259626-2	1	
3	DKU-F405I-1UC	Power Cable Assy (IU)	3255667-A	1	
		Nameplate	2103308-7	1	
			3259626-7	1	
4	DKU-F405I-1EC	Power Cable Assy (IE)	3255667-B	1	
		Nameplate	2103308-8	1	
			3259626-8	1	

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4.13.6.3 De-Installation Procedure of Power Cable Kit

1. Remove the Plate.
   a. Remove the two screws.
   b. Slide the plate toward the rear side to remove.

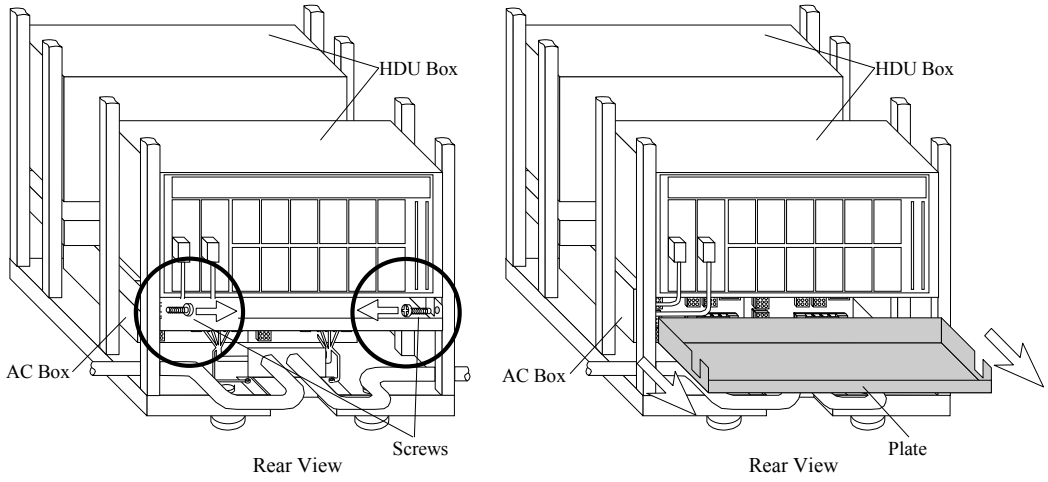

Fig. 4.13.6.3-1 Removal of Plate

   c. Remove the terminal block covers.

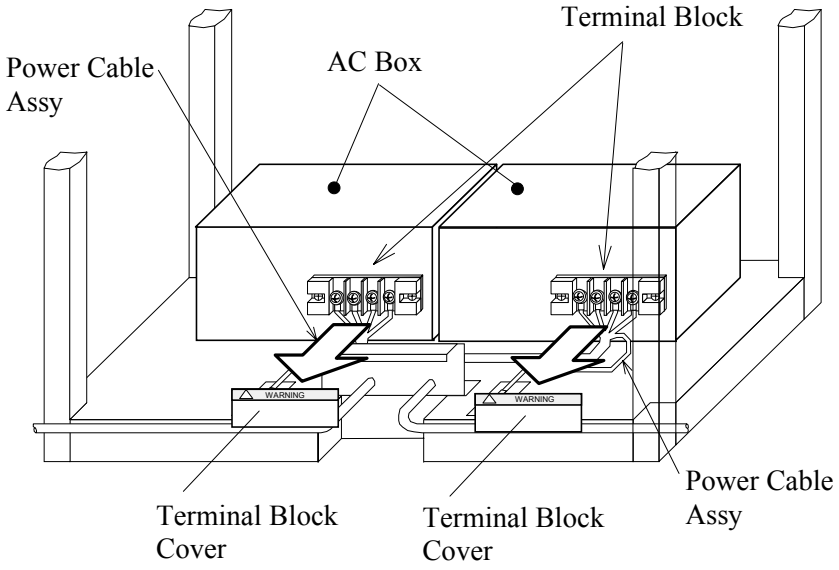

Fig. 4.13.6.3-2 Removal of Power Cable Assy (DKU-F405I-3EC)

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2. Disconnect the Power Cable Assy.
   a. Remove the screws and disconnect the power cable Assy.

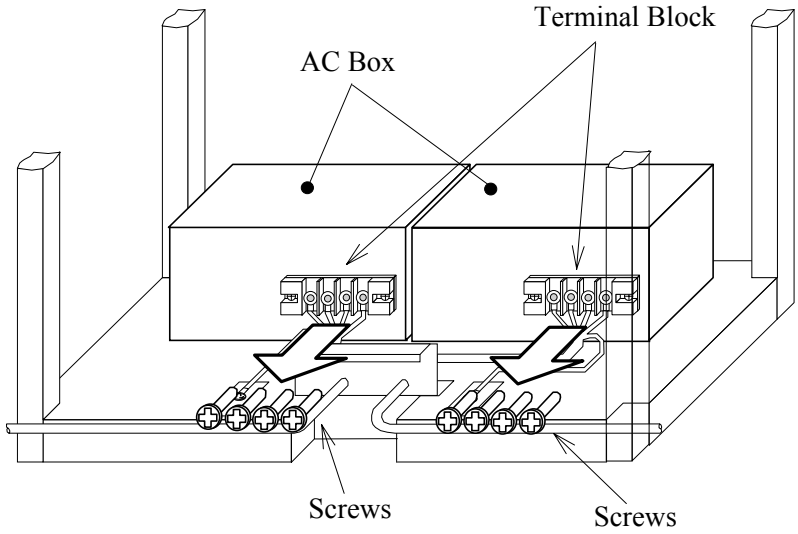

Fig. 4.13.6.3-3 Removal of Power Cable Assy (DKU-F405I-3EC)

   b. Remove the frame ground cable for each AC power cable from the frame.

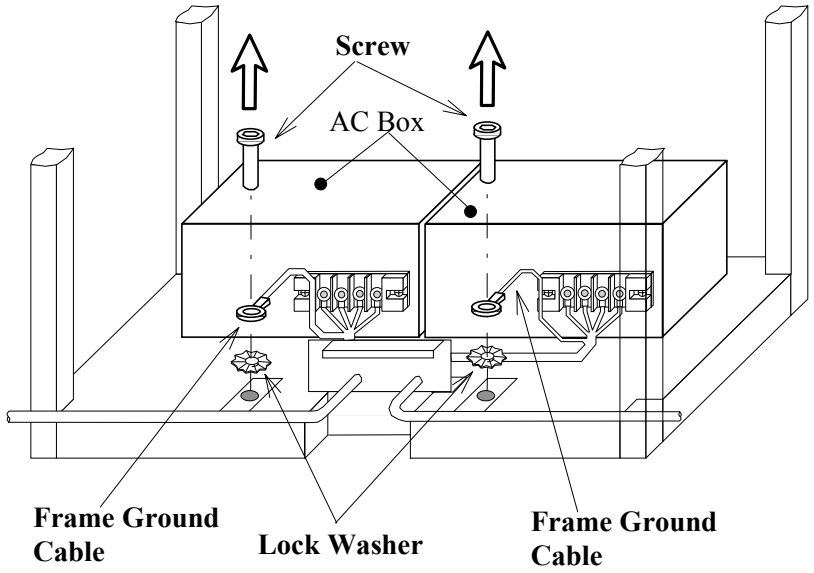

Fig. 4.13.6.3-4 Removal of Frame Ground Cable (DKU-F405I-3EC)

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c. Loosen the screws and remove the Power Cable Assy.

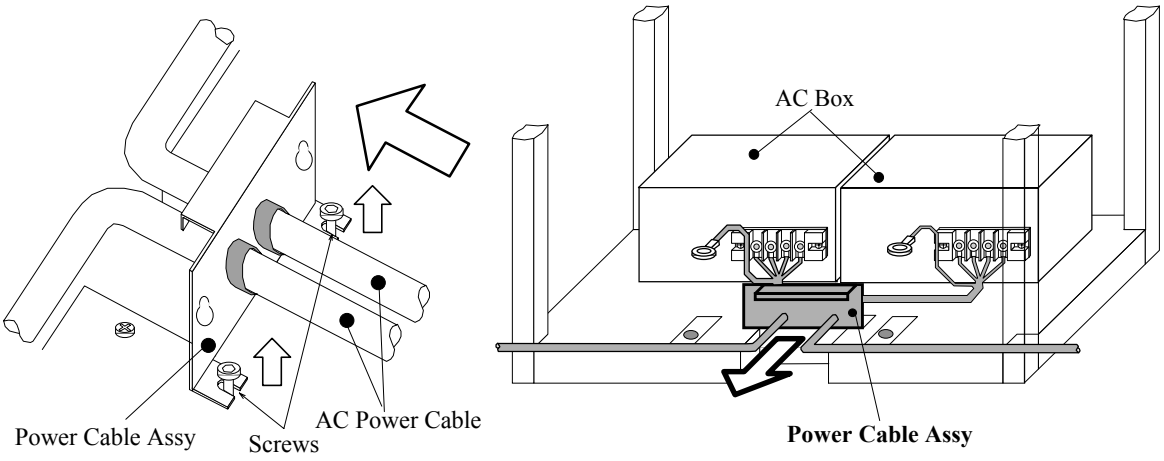

Fig. 4.13.6.3-5 Removal of Power Cable Assy (DKU-F405I-3EC)

3. Attach the Plate.
   a. Re-Install the plate.

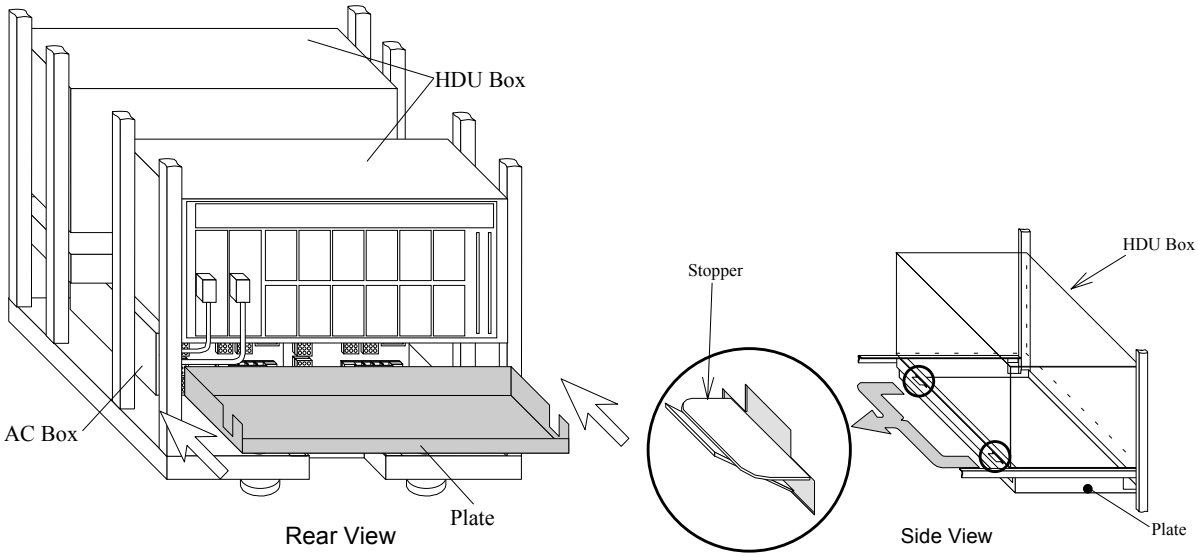

Fig. 4.13.6.3-6 Attachment of Plate

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b. Secure the plate with screws.

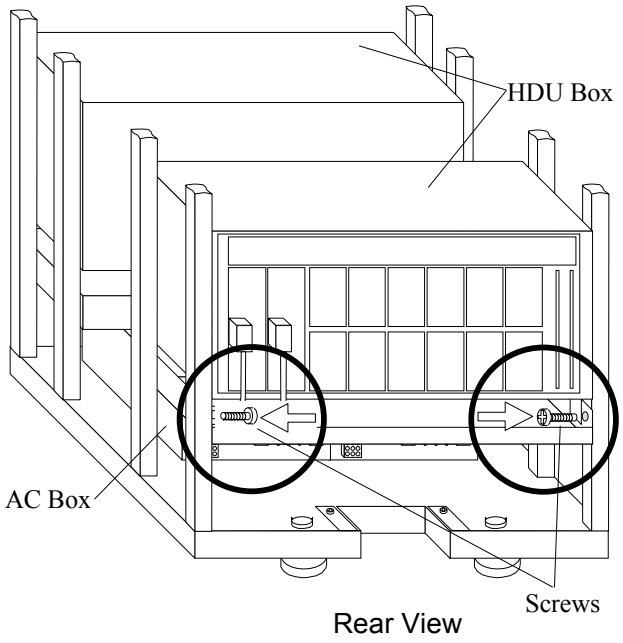

Fig. 4.13.6.3-7 Attachment of Plate

4. Remove the Nameplate.
   a. Remove the nameplate from the power cable Assy.

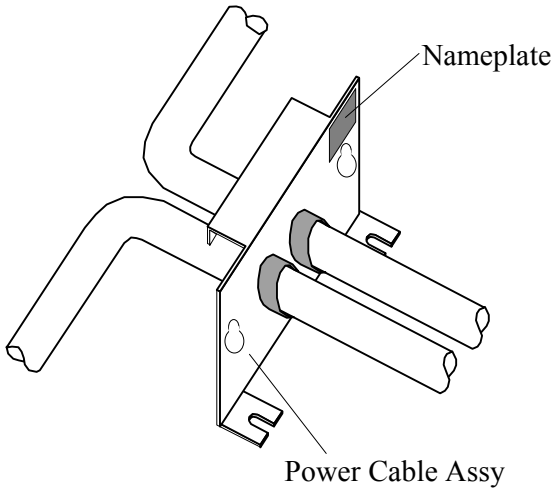

Fig. 4.13.6.3-8 Removal of Nameplate

5. Return to General Flow.
   Non-Disruptive De-Installation : Go to INST04-U40-30 step(4)-4.

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4.13.7 De-Installation of AC Box Kit for DKU (DKU-F405I-3PS/1PS)

4.13.7.1 Flowchart

1. Remove the Plate.
↓
2. Disconnect the Cables.
↓
3. Remove the Nameplate.
↓
4. Remove the DKU AC Boxes.
↓
5. Attach the Plate.

4.13.7.2 Parts List

Table 4.13.7.2-1 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKU-F405I-3PS	DKU AC Box	5502383-A	2	
		Nameplate	2103308-13	1	
			3259625-1	1	
2	DKU-F405I-1PS	DKU AC Box	5487058-C	2	
		Nameplate	2103308-18	1	
			3259625-6	1	

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4.13.7.3 De-Installation Procedure of AC Box Kit for DKU

1. Remove the Plate.
   a. Remove the two screws.
   b. Slide the plate toward the rear side to remove.

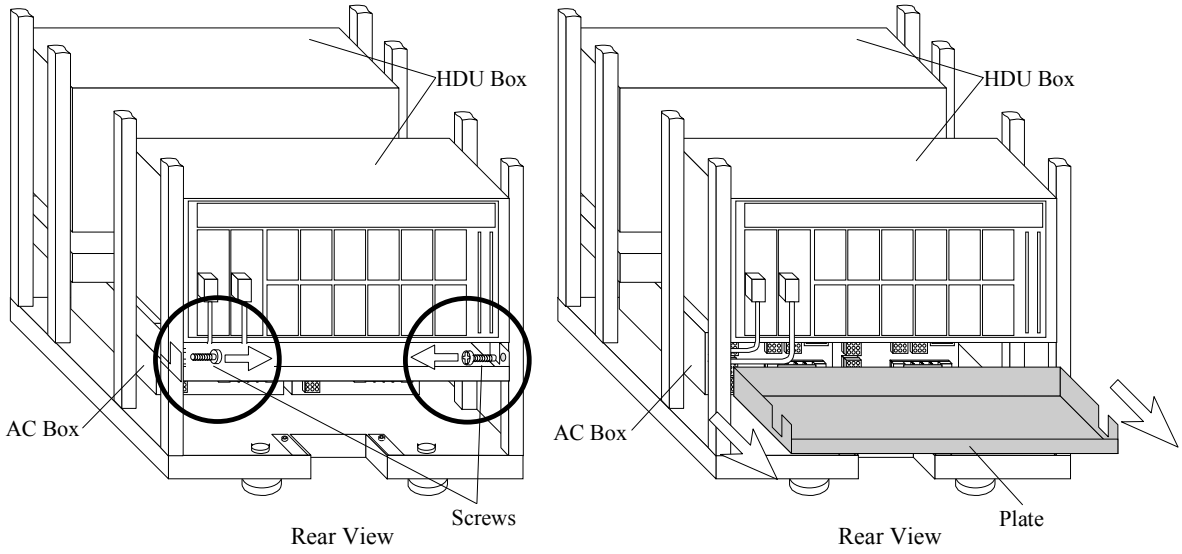

Fig. 4.13.7.3-1 Removal of Plate

2. Disconnect the Cables.

DKU-F405I-3PS

   a. Loosen the screws and remove the frame ground cables.
   b. Disconnect the cables (P101-1, P102-1, P101-2 and P102-2) from the DKU AC Boxes.

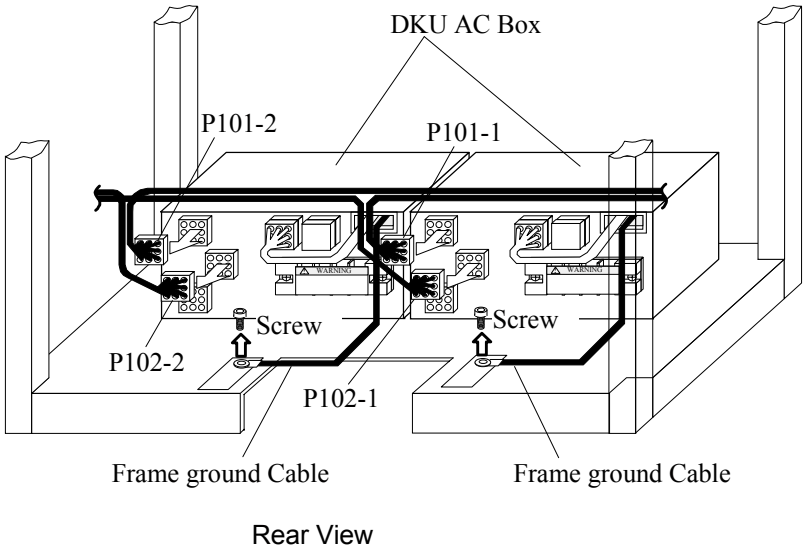

Fig. 4.13.7.3-2 Disconnection of Cables

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DKU-F405I-1PS

a. Loosen the screws and remove the frame ground cables.
b. Disconnect the cables (P101-1, P102-1, P101-2 and P102-2) from the DKU AC Boxes.

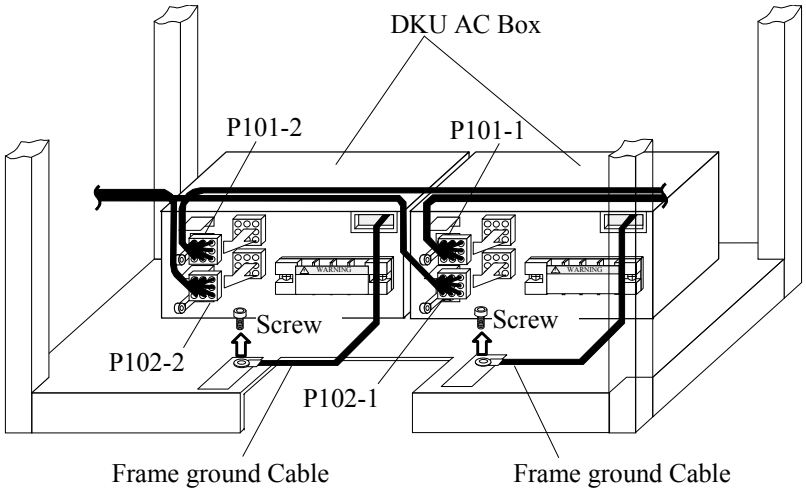

Fig. 4.13.7.3-3 Disconnection of Cables

3. Remove the Nameplate.
   a. Remove the nameplate from the left DKU AC Box.

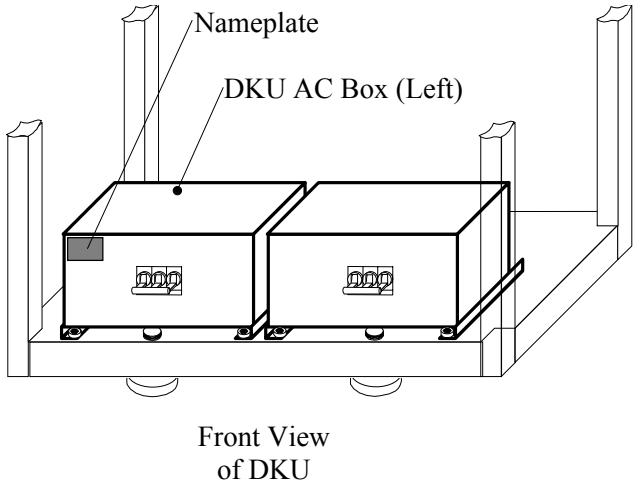

Fig. 4.13.7.3-4 Removal of Nameplate

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4. Remove the DKU AC Boxes.
   a. Remove the four screws.

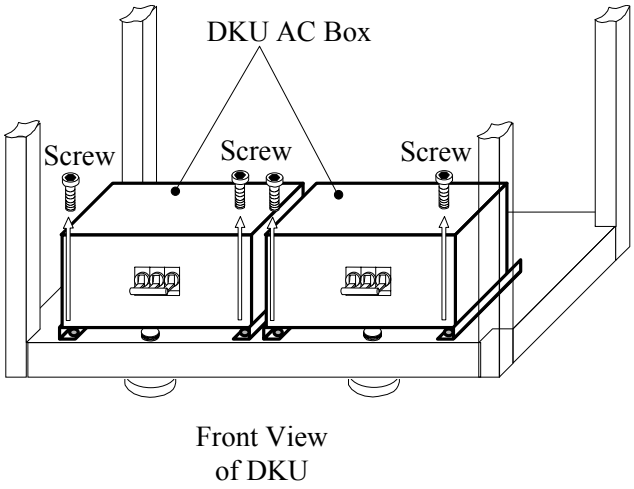

Fig. 4.13.7.3-5 Removal of Screws

   b. Remove the DKU AC Boxes from the DKU frame.

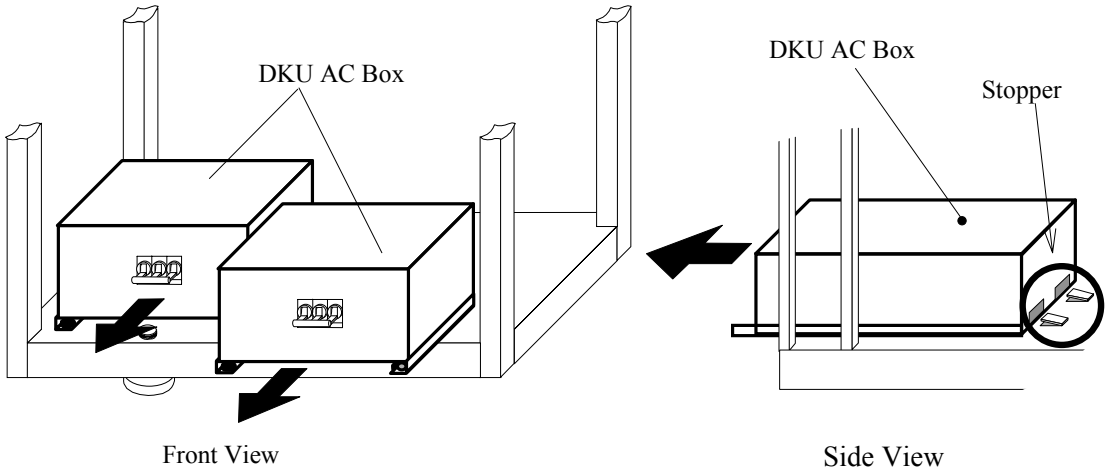

Fig. 4.13.7.3-6 Removal of DKU AC Boxes

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5. Attach the plate.
   a. Attach the plate with the two screws.

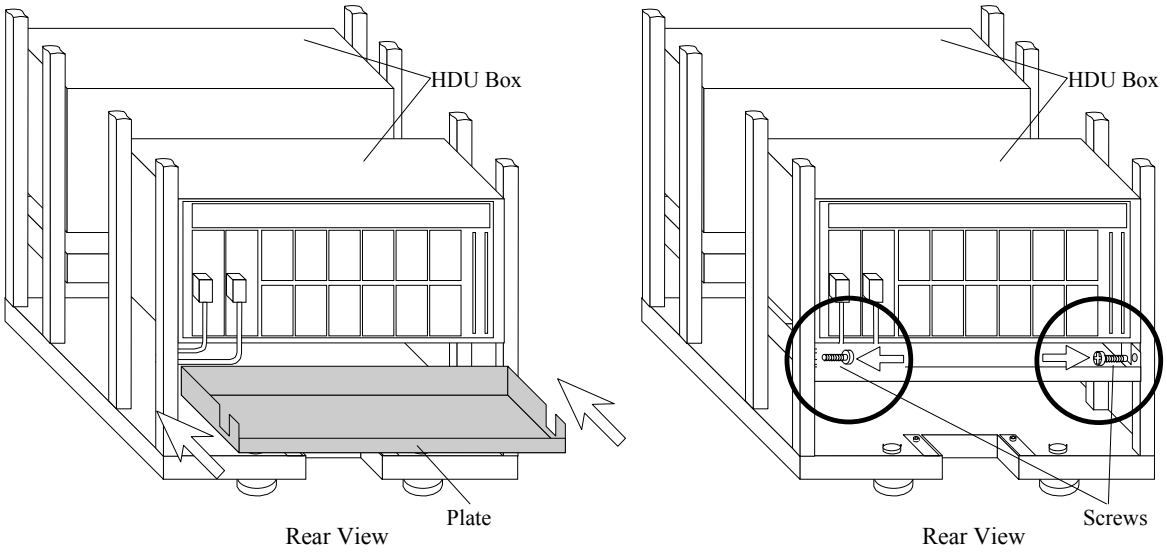

Fig. 4.13.7.3-7 Attachment of Plate

6. Return to General Flow.
   Non-Disruptive De-Installation : Go to INST04-U40-30 step (4)-5.

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4.13.8 De-Installation of DKU405 Connection Kit for L1 DKU (DKC-F460I-U405L)

Table 4.13.8-1 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKC-F460I-U405L	Socket Bolt(M8)	3261899-840	2	
		Nut(M8)	NF008N	2	
		Washer(M8)	WP008N	4	
		HEX Bolt (M6×63)	BH663	1	
		Nut (M6)	NF006	1	
		LL Washer	2051001-612	2	
		Bind Screw	3183101-1	4	
		Bracket Cover ASSY	3265694-A	1	
		SH305-A P/K ASSY	5513985-A	2	MONI-CON
		Locking Clamp	3183016-4	5	
		Repeat Binder	5409042-2	2	140mm
		Repeat Binder	5409042-3	12	250mm
		Conductive Sheet	5510573-2	1	1000mm
		Cable ASSY (DKUMN)	5485589-628	1	
		Cable ASSY (DKUMN)	5485589-630	1	
		Cable ASSY (Fibre-U405L)	3264186-A	1	1R-D1A/D1B – 0R-P501/P503
		Cable ASSY (Fibre-U405L)	3264186-B	1	1R-D2A/D2B – 1R-P501/P503
		Cable ASSY (Fibre-U405L)	3264186-C	1	1R-D3A/D3B – 2R-P501/P503
		Cable ASSY (Fibre-U405L)	3264186-D	1	1R-D4A/D4B – 3R-P501/P503
		Cable ASSY (Fibre-U405L)	3264186-E	1	1R-E1A/E1B – 4R-P501/P503
		Cable ASSY (Fibre-U405L)	3264186-F	1	1R-E2A/E2B – 5R-P501/P503
		Cable ASSY (Fibre-U405L)	3264186-G	1	1R-E3A/E3B – 6R-P501/P503
		Cable ASSY (Fibre-U405L)	3264186-H	1	1R-E4A/E4B – 7R-P501/P503
		Cable ASSY (Fibre-U405L)	3264186-J	1	2R-K1A/K1B – 0L-P501/P503
		Cable ASSY (Fibre-U405L)	3264186-K	1	2R-K2A/K2B – 1L-P501/P503
		Cable ASSY (Fibre-U405L)	3264186-L	1	2R-K3A/K3B – 2L-P501/P503
		Cable ASSY (Fibre-U405L)	3264186-M	1	2R-K4A/K4B – 3L-P501/P503
		Cable ASSY (Fibre-U405L)	3264186-N	1	2R-L1A/L1B – 4L-P501/P503
		Cable ASSY (Fibre-U405L)	3264186-P	1	2R-L2A/L2B – 5L-P501/P503

(To be continued)

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(Continued from the preceding page)

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKC-F460I-U405L	Cable ASSY (Fibre-U405L)	3264186-Q	1	2R-L3A/L3B – 6L-P501/P503
		Cable ASSY (Fibre-U405L)	3264186-R	1	2R-L4A/L4B – 7L-P501/P503
		Nameplate (HDS)	2105902-125	1	RSD

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1. Connection of DEV Interface Cables for HDU-L14 through L17

a. Loosen the screws and remove the cable covers ① and ②.

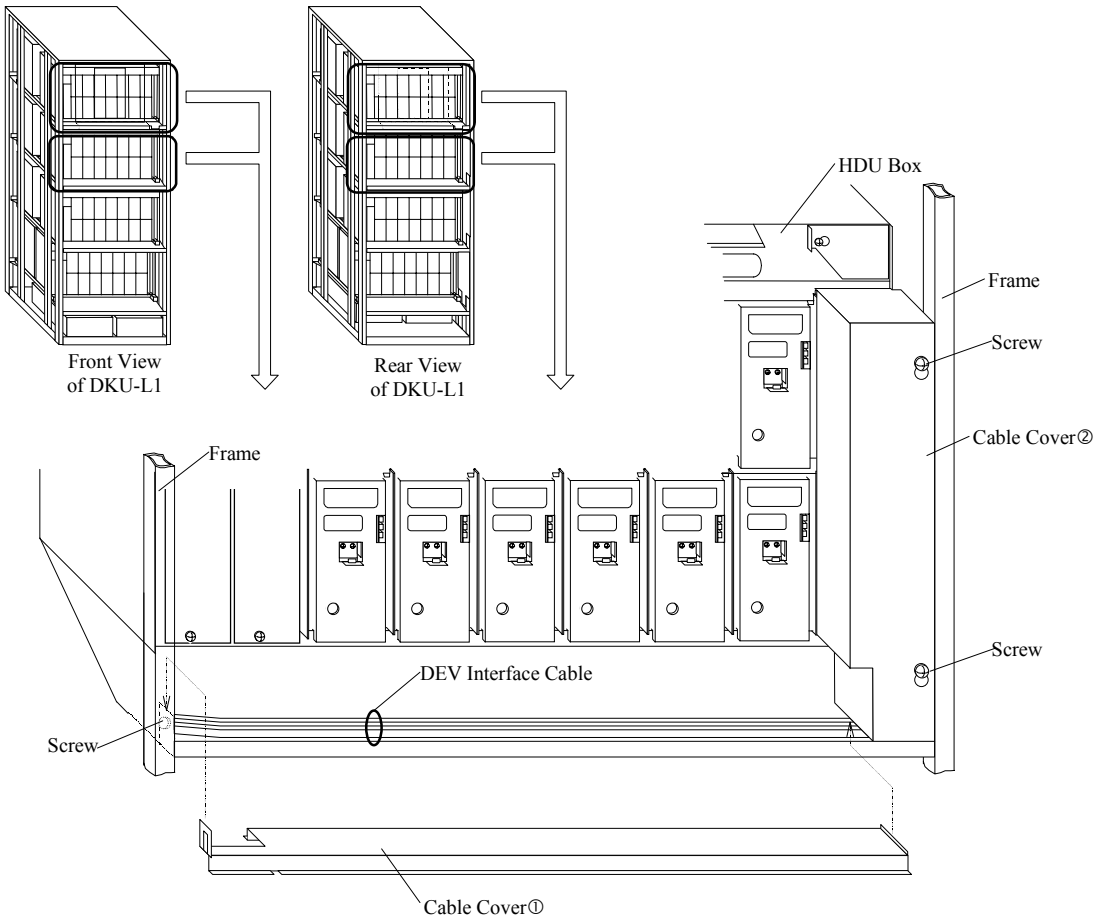

Fig. 4.13.8-1 Removal of Cable Covers

b. Loosen the screws and remove the side plates.

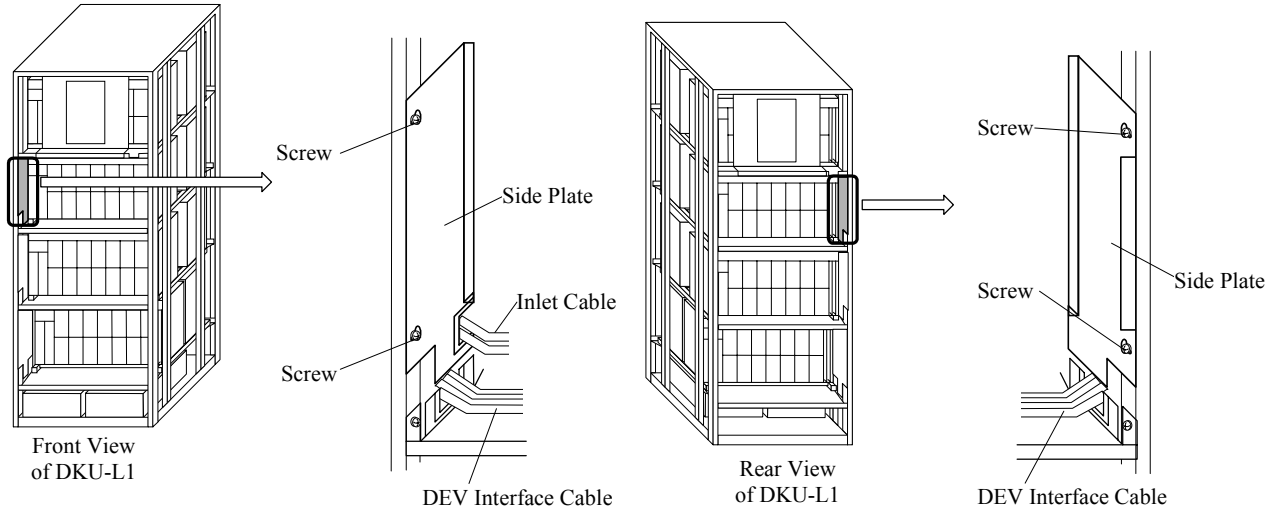

Fig. 4.13.8-2 Removal of Side Plates

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c. Disconnect the DEV interface cables from the sub-edges on the FSW PCBs located in the HDU box.

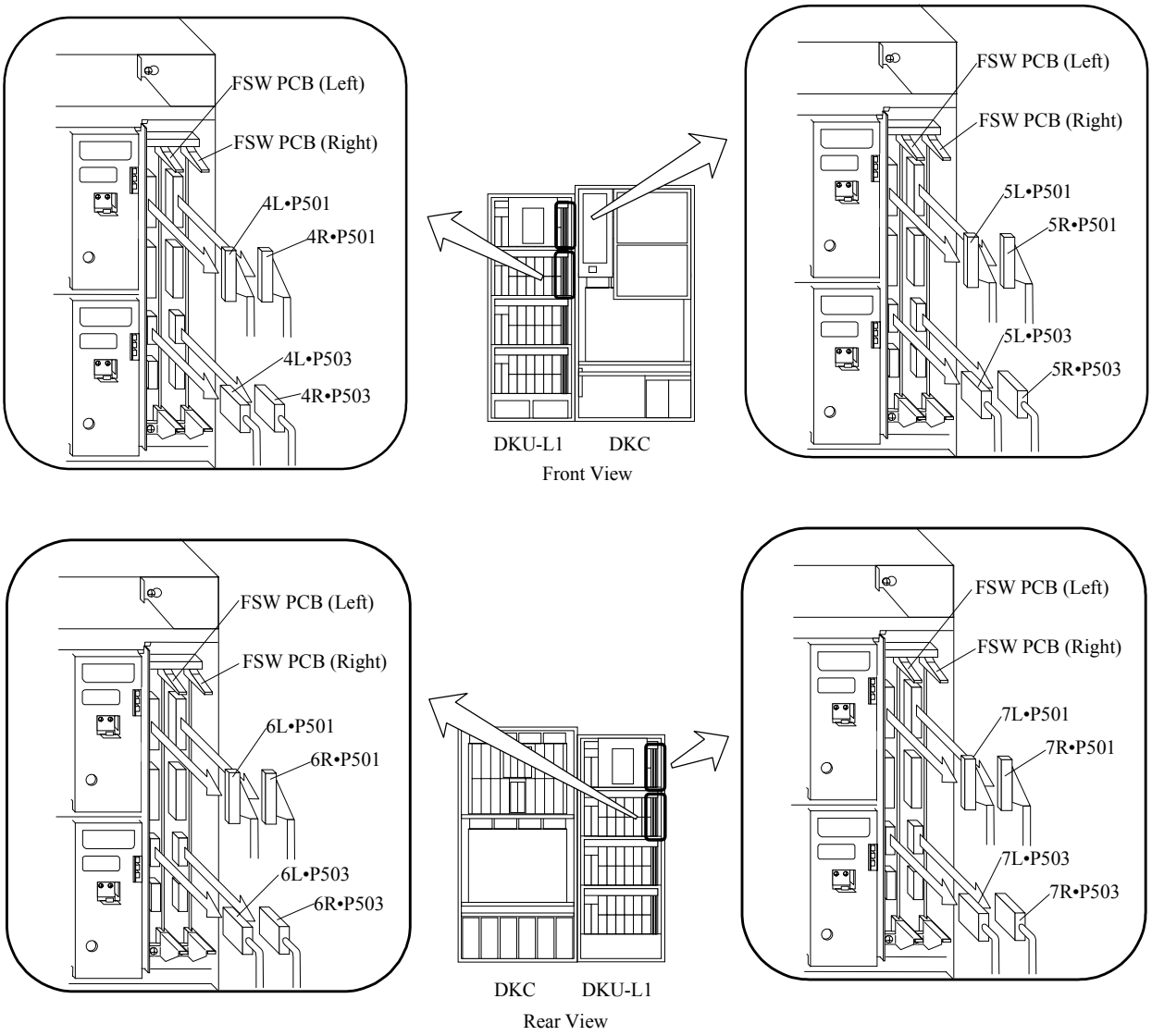

Fig. 4.13.8-3 Disconnection of DEV Interface Cables

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d. Attach the side plates and fasten the screws.

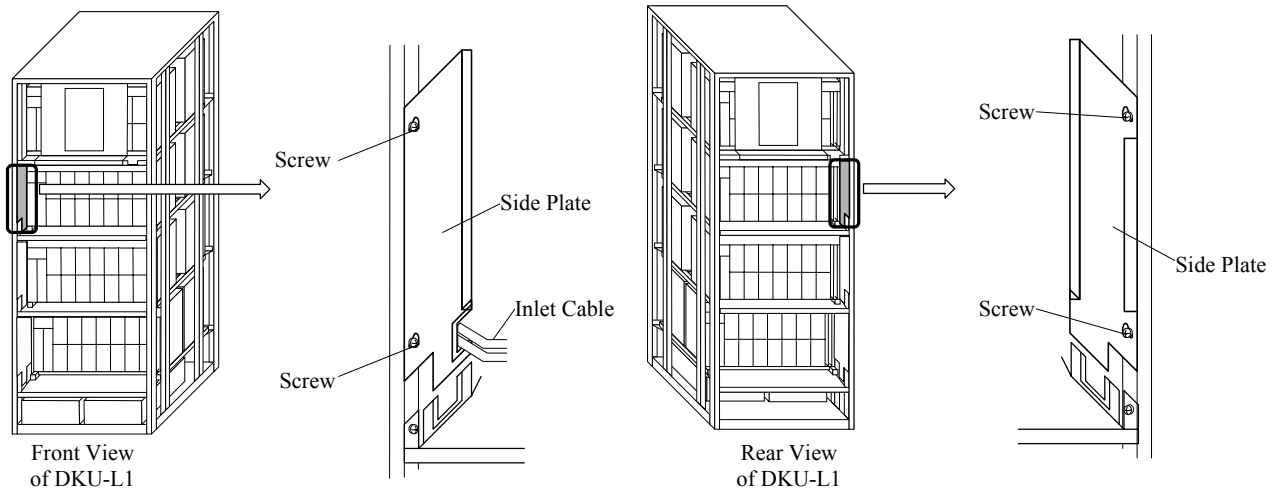

Fig. 4.13.8-4 Attachment of Side Plates

e. Attach the cable covers ① and ② with the screws. Refer to Fig. 4.13.8-1.

f. Return to General Flow.
Non-Disruptive De-Installation: Go to INST04-U40-20 step (3)-3.

2. Fixation of DEV Interfacecable

a. When the DKU-R1 frame consists of 4 HDU boxes, fix the rest of the DEV interface cables in the DKU-R1 frame with the repeat binders.

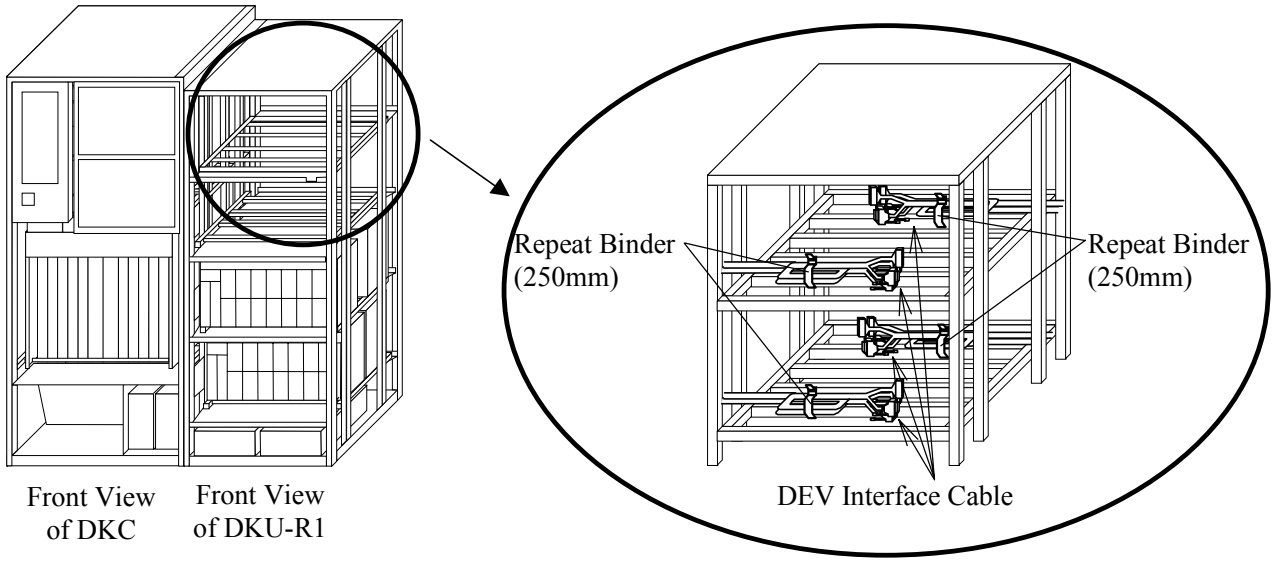

Fig. 4.13.8-5 Fixation of DEV Interface Cables

b. Return to General Flow.
Non-Disruptive De-Installation: Go to INST04-U40-20 step (3)-11.

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3. Removal of Cable Covers
   a. Remove the Front Logic Box cover from the DKC. (Refer to INST03-COM-10.)
   b. Remove the two screws and remove the cable cover.

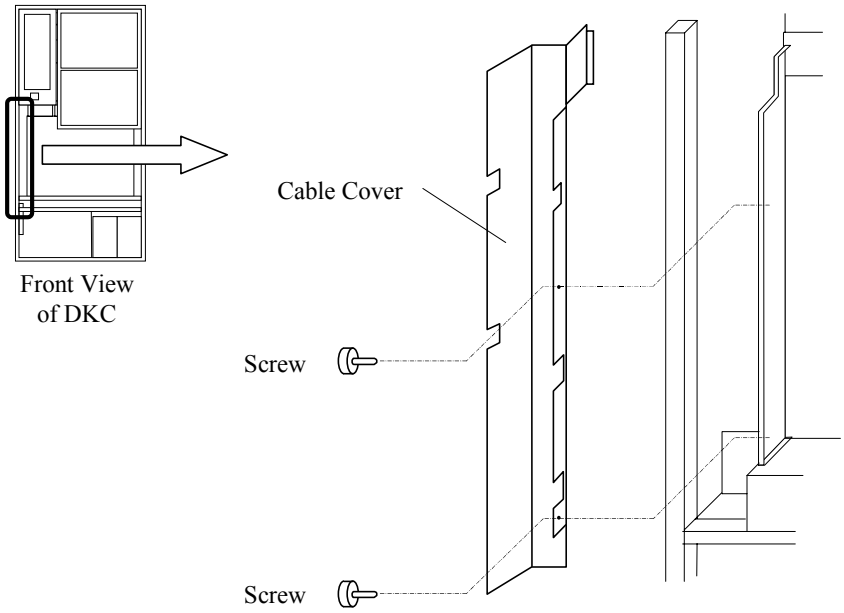

Fig. 4.13.8-6 Removal of Cover

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c. Loosen the two screws ① and remove the Upper SH Box covers.
d. Loosen the five screws ② and remove the Lower SH Box covers.
e. Loosen the four screws ③ and remove the SH side plate.

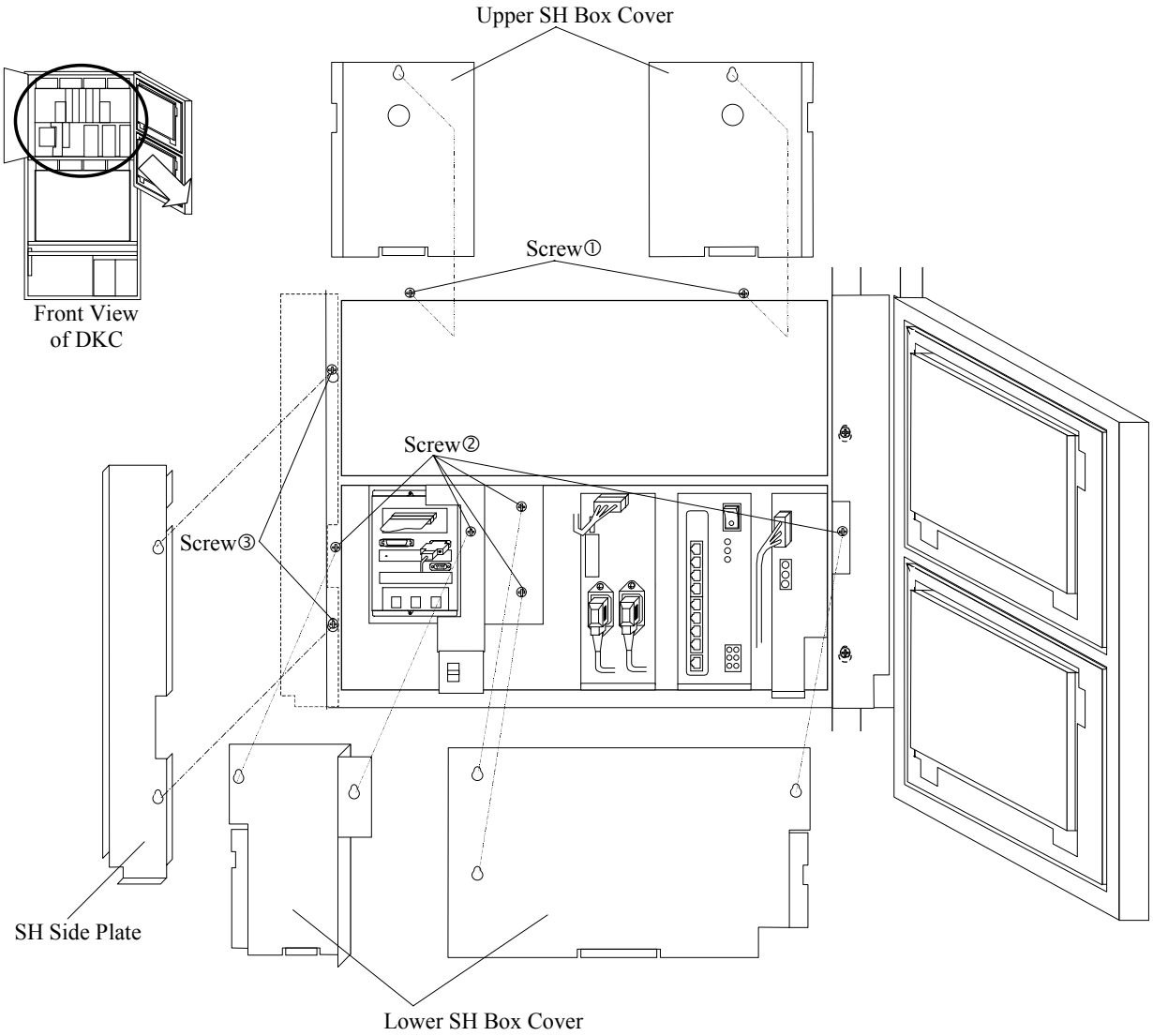

Fig. 4.13.8-7 Removal of Covers

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f. Loosen the two screws ① and remove the cable cover ①.
g. Loosen the two screws ② and remove the cable cover ②.
h. Loosen the screw ③ and remove the cable cover ③.
i. Loosen the two screws ④ and remove the cable cover ④.

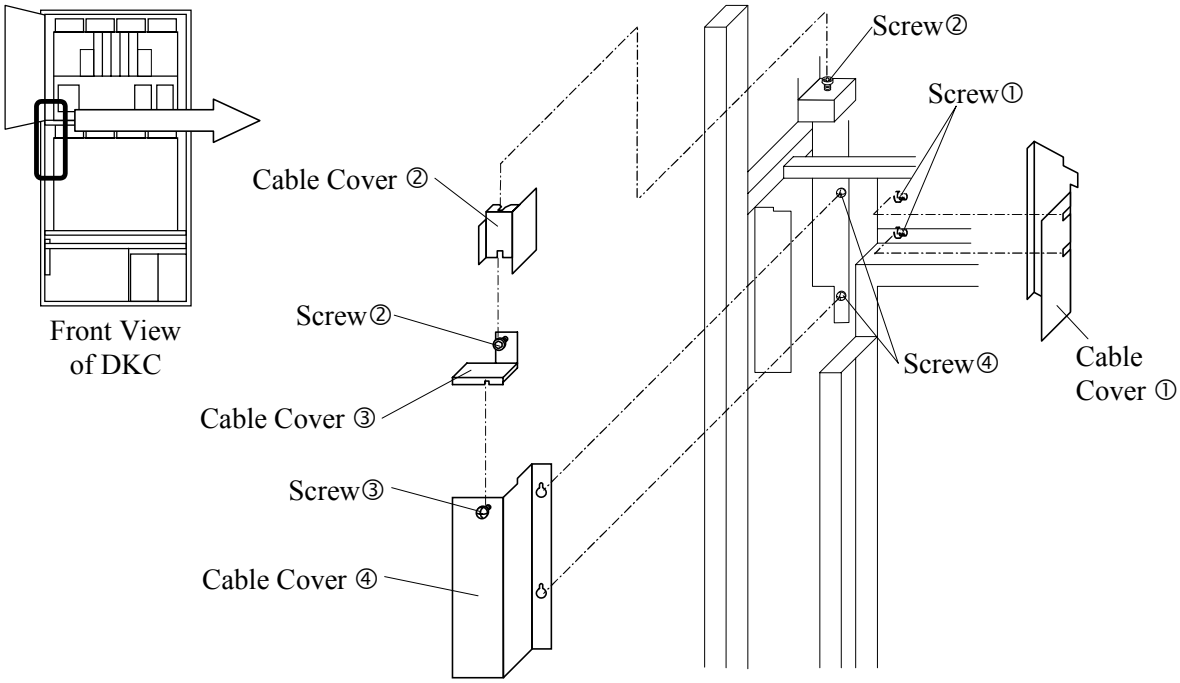

Fig. 4.13.8-8 Removal of Covers

j. Loosen the three screws and remove the cable cover.

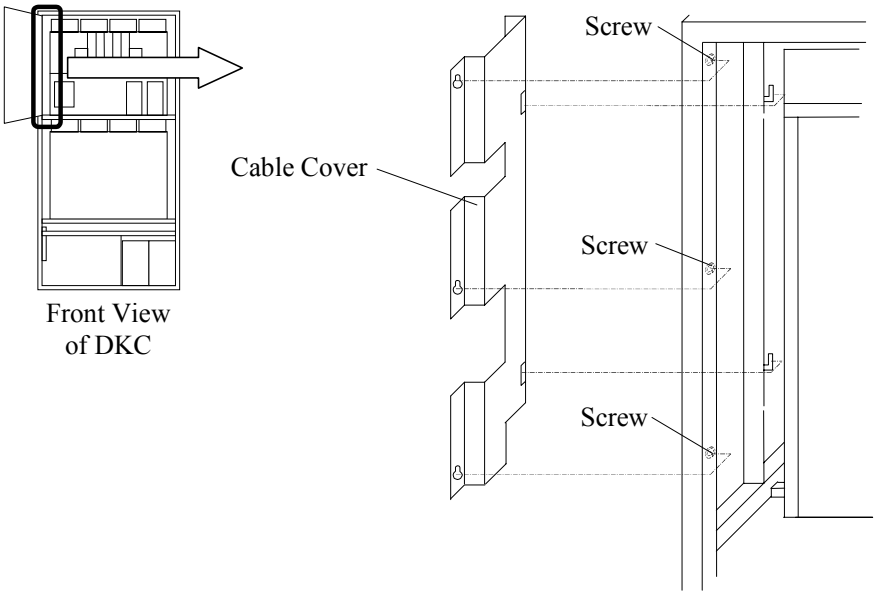

Fig. 4.13.8-9 Removal of Cover

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k. Loosen the two screws and remove the cable duct cover.

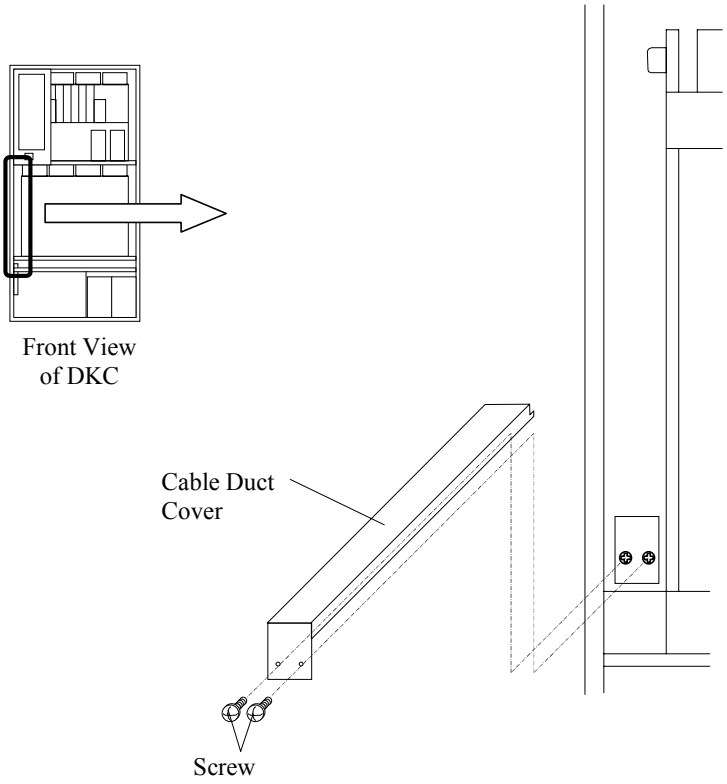

Fig. 4.13.8-10 Removal of Cable Duct Cover

m. Remove the Rear Logic Box cover and Rear PS Box cover. (Refer to INST03-COM-20 through 30.)
n. Remove the two screws and remove the cable cover.

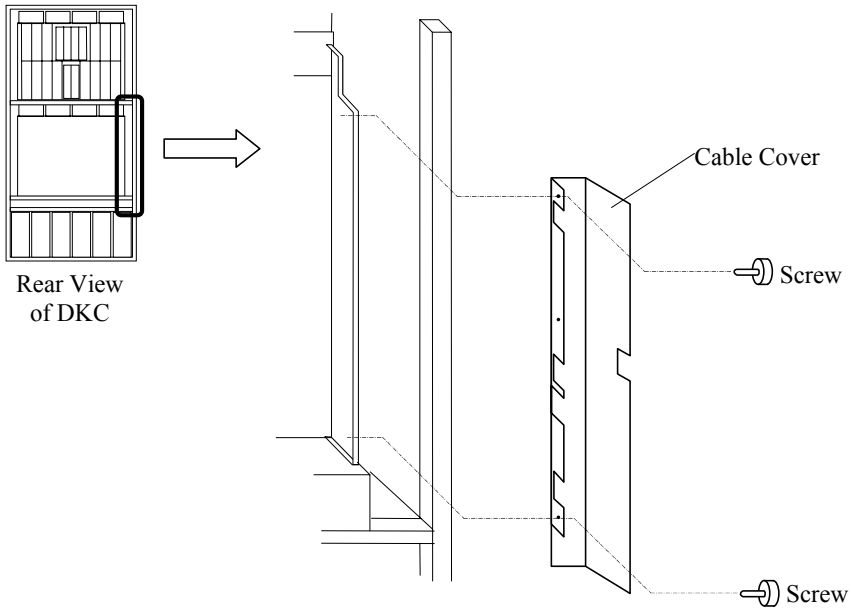

Fig. 4.13.8-11 Removal of Cover

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p. Loosen the three screws① and remove the cable cover①. Then, loosen the two screws② and remove the cable cover②.

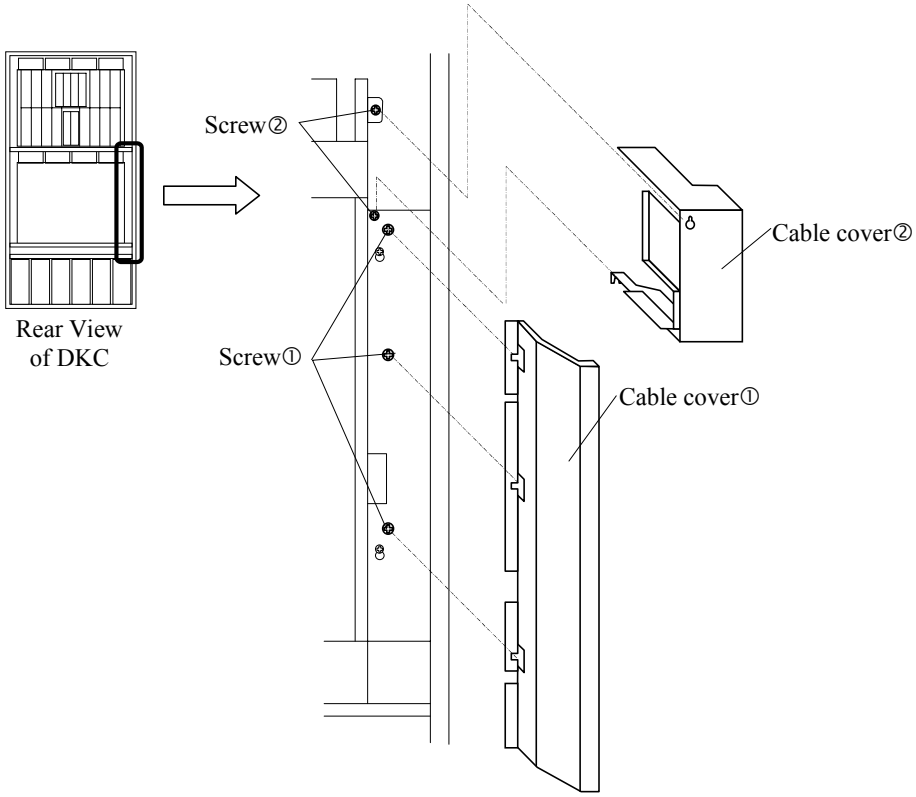

Fig. 4.13.8-12 Removal of Cover

q. Remove the two screws and remove the cable cover.

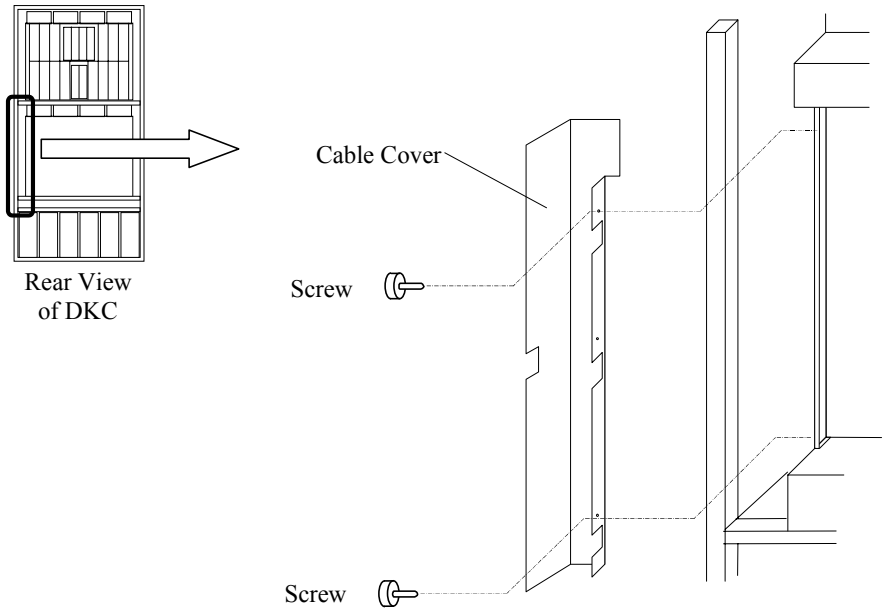

Fig. 4.13.8-13 Removal of Cable Cover

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r. Loosen the five screws and remove the bracket.

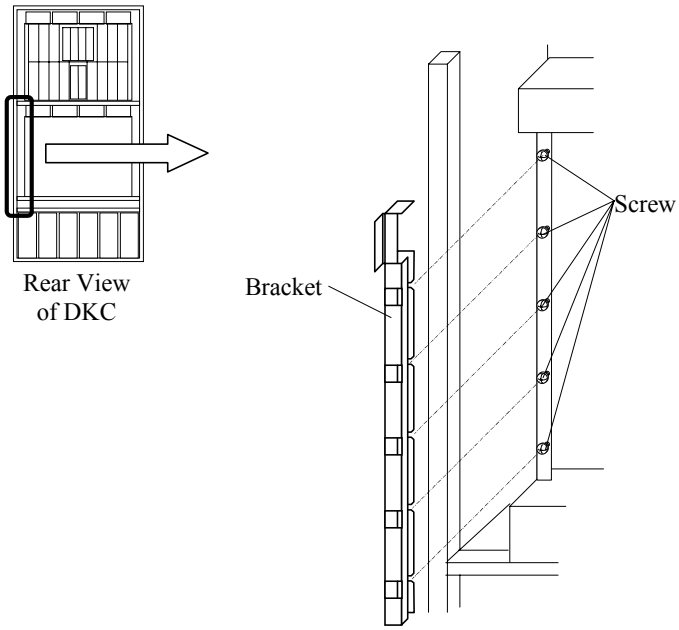

Fig. 4.13.8-14 Removal of Bracket

s. Loosen the three screws and remove the cable cover from the cable clamp located at the top of the Rear Logic Box.

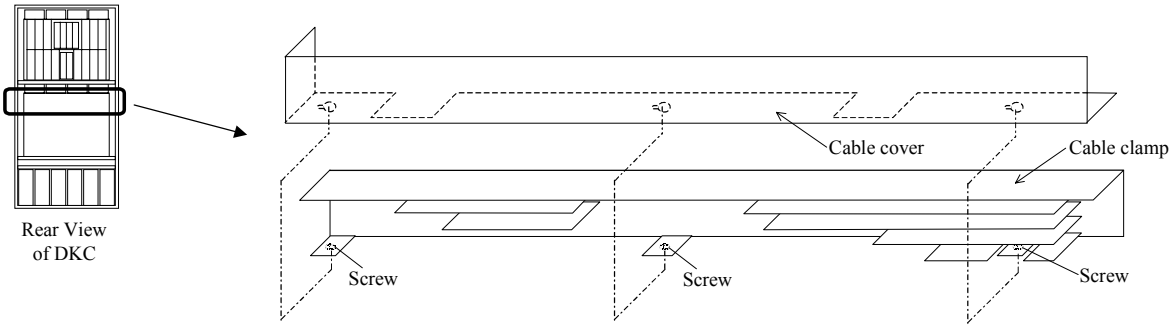

Fig. 4.13.8-15 Removal of Cable Cover

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t. Loosen the two screws and remove the cable cover.

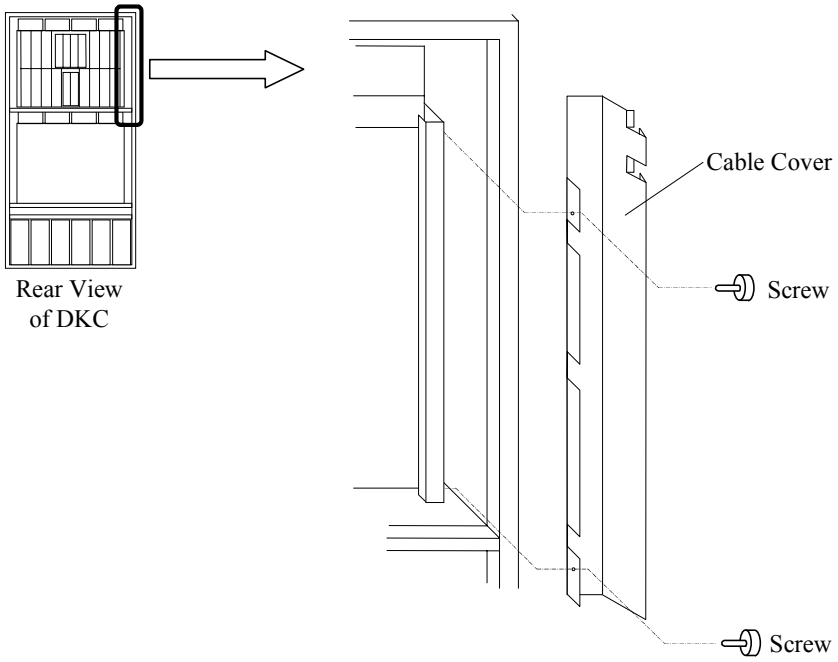

Fig. 4.13.8-16 Removal of Cable Cover

u. Loosen the four screws and remove the cable cover. Rotate the cable cover 90 degrees and pull out it forward.

⚠ CAUTION

When you rotate the cable cover, don't contact the cable cover to the bus bar.

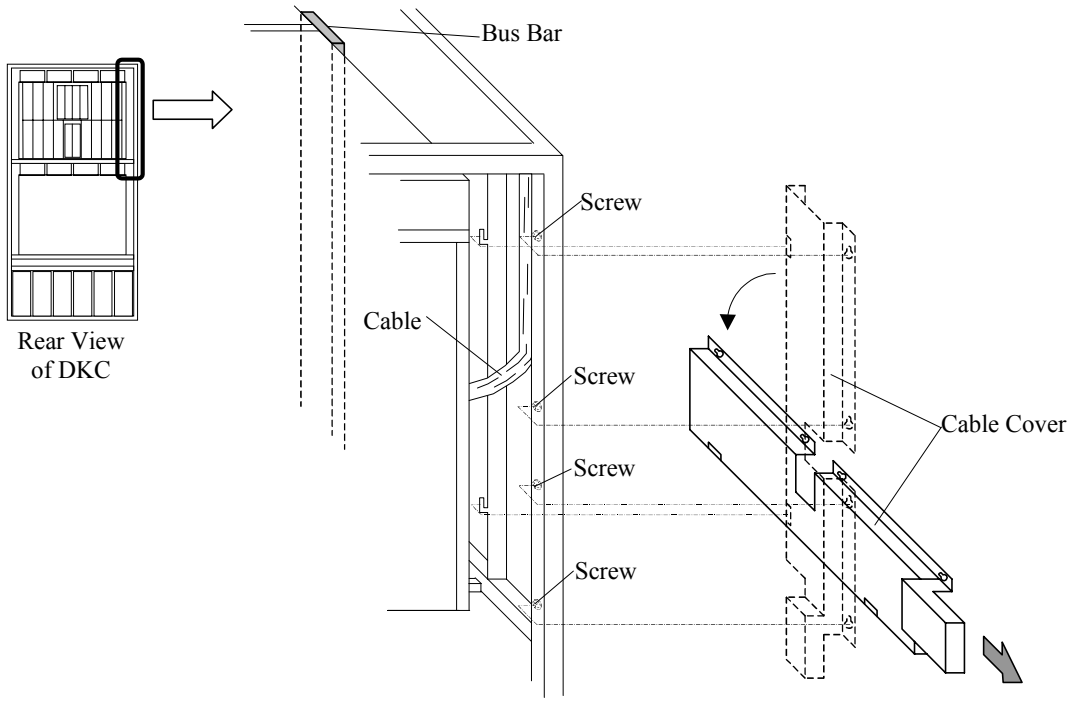

Fig. 4.13.8-17 Removal of Cable Cover

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4. Removal of MONI-CONs
   a. Disconnect the cables from the MONI-CONs.
   b. When the DKU405 Connection Kit for R1 DKU (DKC-F460I-U405R) is installed, go to step c.
      When the DKU405 Connection Kit for R1 DKU (DKC-F460I-U405R) is not installed, remove the MONI-CON1 and MONI-CON2.

Table 4.13.8-2 DKUMN Cable List

No.	Source		Destination		Remarks
	Location No.	Cable No.	Location No.	Cable No.	
1	MONI-CON1	P22-1	DKUMN-L1F	P4-1L	
2	MONI-CON2	P22-2	DKUMN-L1R	P4-2L	

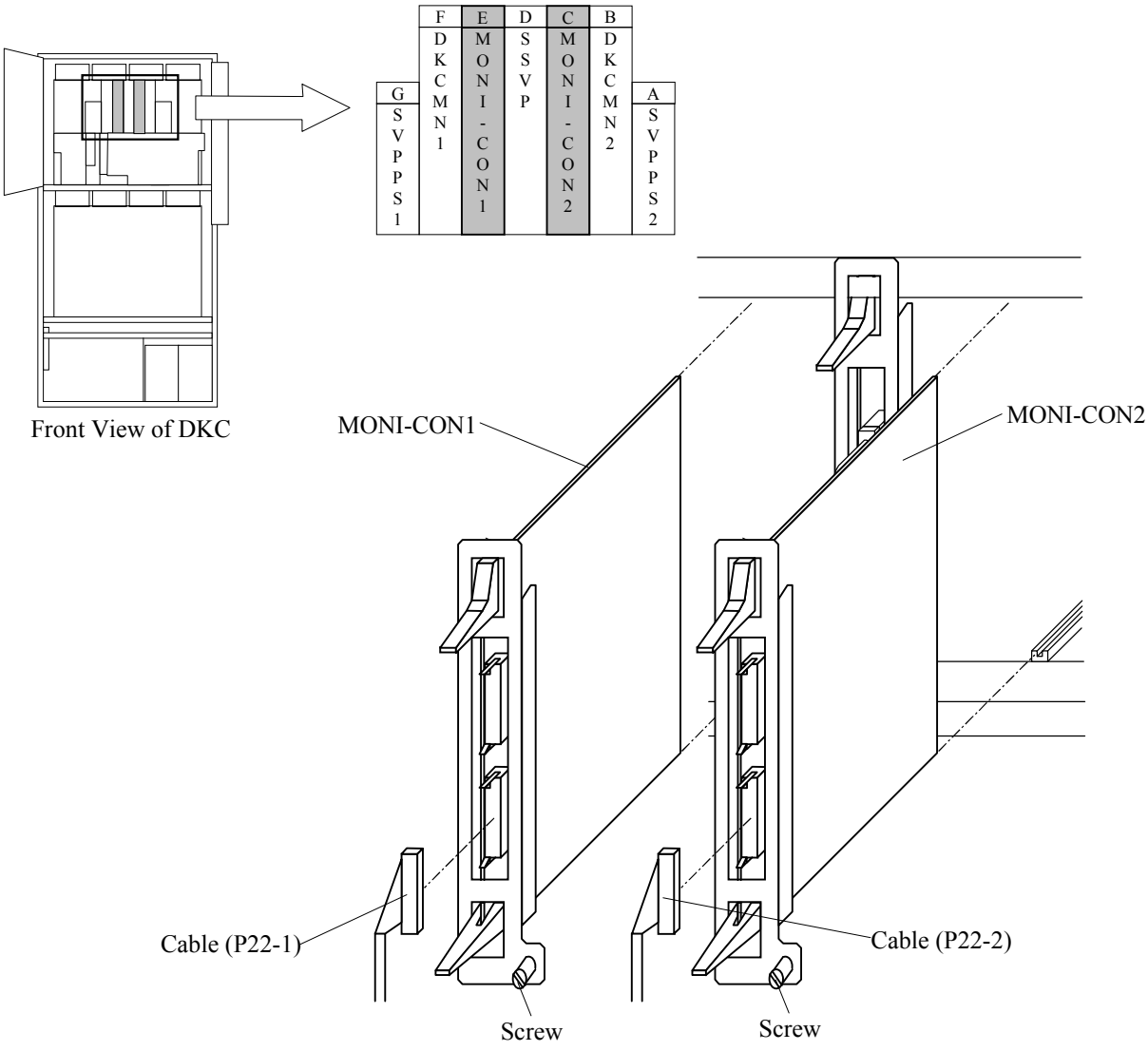

Fig. 4.13.8-18 Removal of MONI-CONs

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c. Open the repeat binders ① and locking clamps. Remove the repeat binders ②.
d. Remove the cable ASSY from the frame.
e. Remove the five locking clamps from the box.

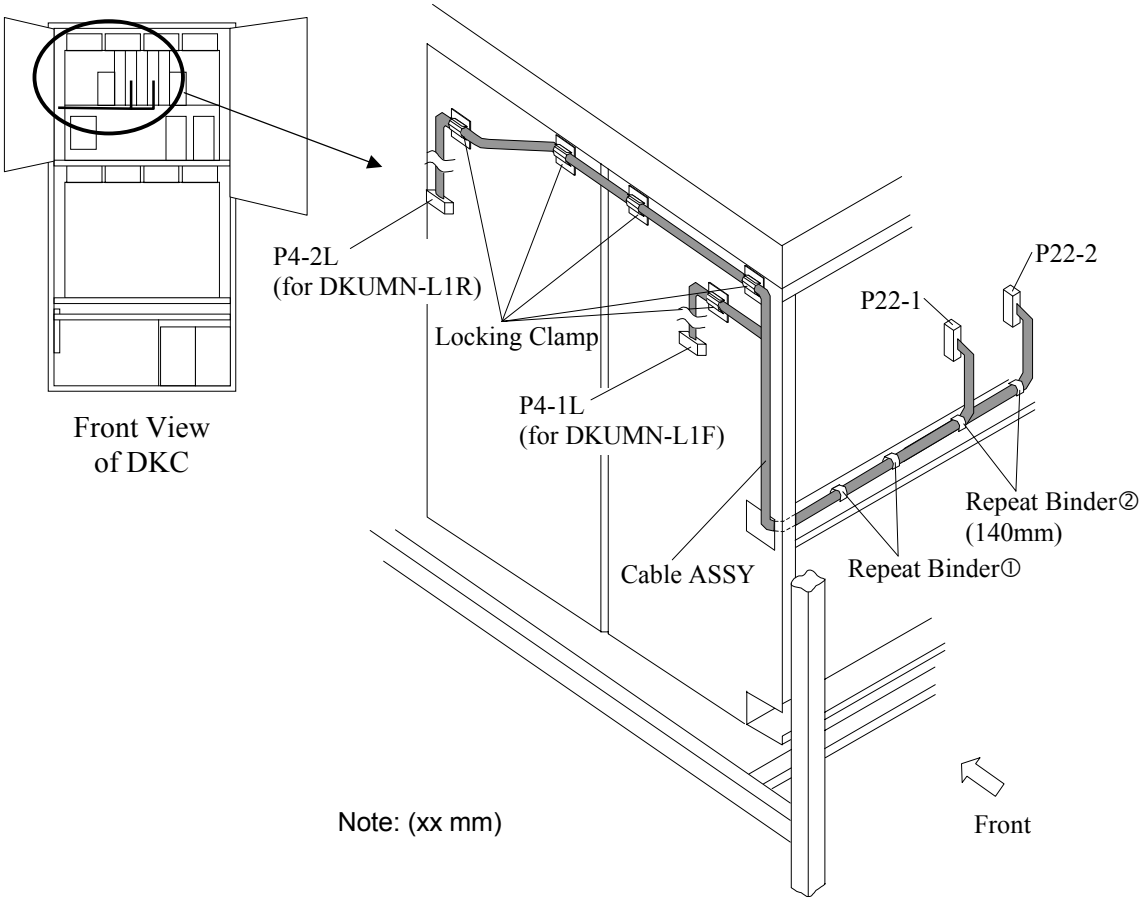

Fig. 4.13.8-19 Removal of Cable ASSY

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5. Removal of DEV Interface cables
   a. Remove the DEV interface cables for the DKU-L1 from the cable clamp located at the top of the Rear Logic Box. Remove the cable in order of ①, ②, ③ and ④.

Note: Since a label bearing a connection destination is affixed on each cable/connector, work very carefully referring to it and the wiring diagram.

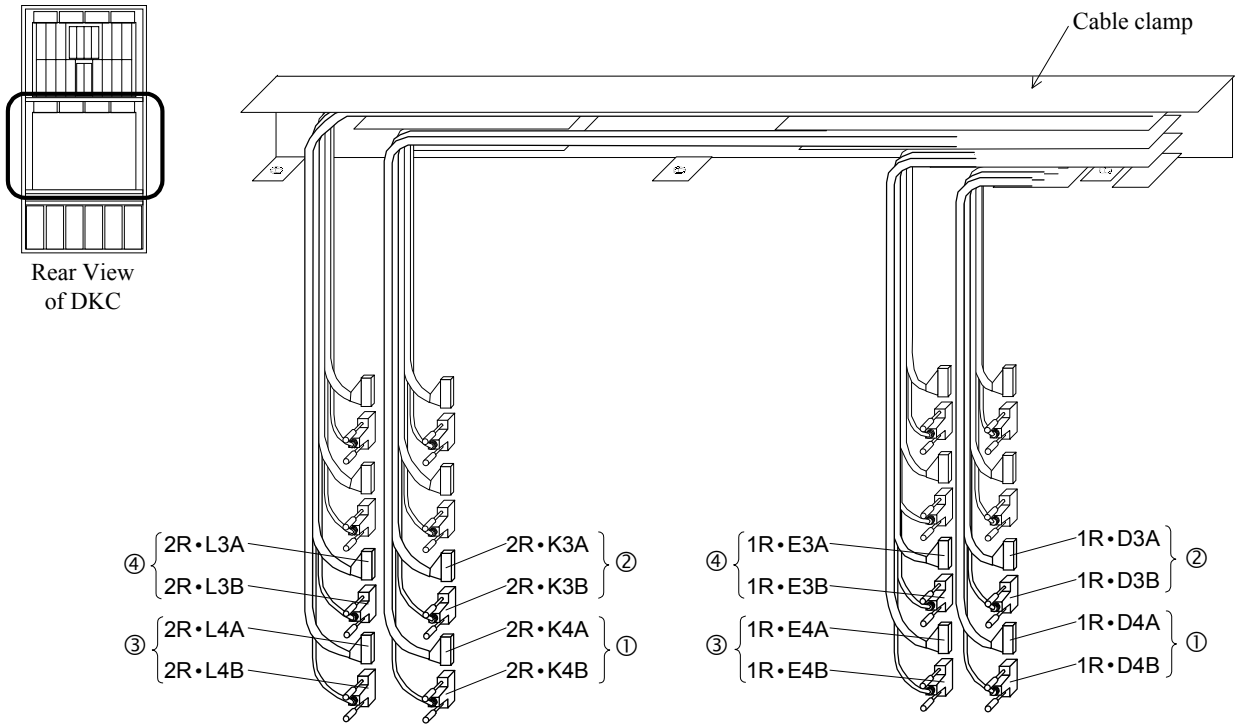

Fig. 4.13.8-20 Removal of DEV Interface Cables

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b. Remove the DEV interface cables for the DKU-L1 from the cable entrance on the sheet steel part. Remove the repeat binder from the cables.

Table 4.13.8-3 DEV Interface Cable List

No.	Cable No. (DKA Side)	Cable No. (FSW Side)	Remarks
1	1R-E4A	7R-P501	
	1R-E4B	7R-P503	
2	2R-L4A	7L-P501	
	2R-L4B	7L-P503	

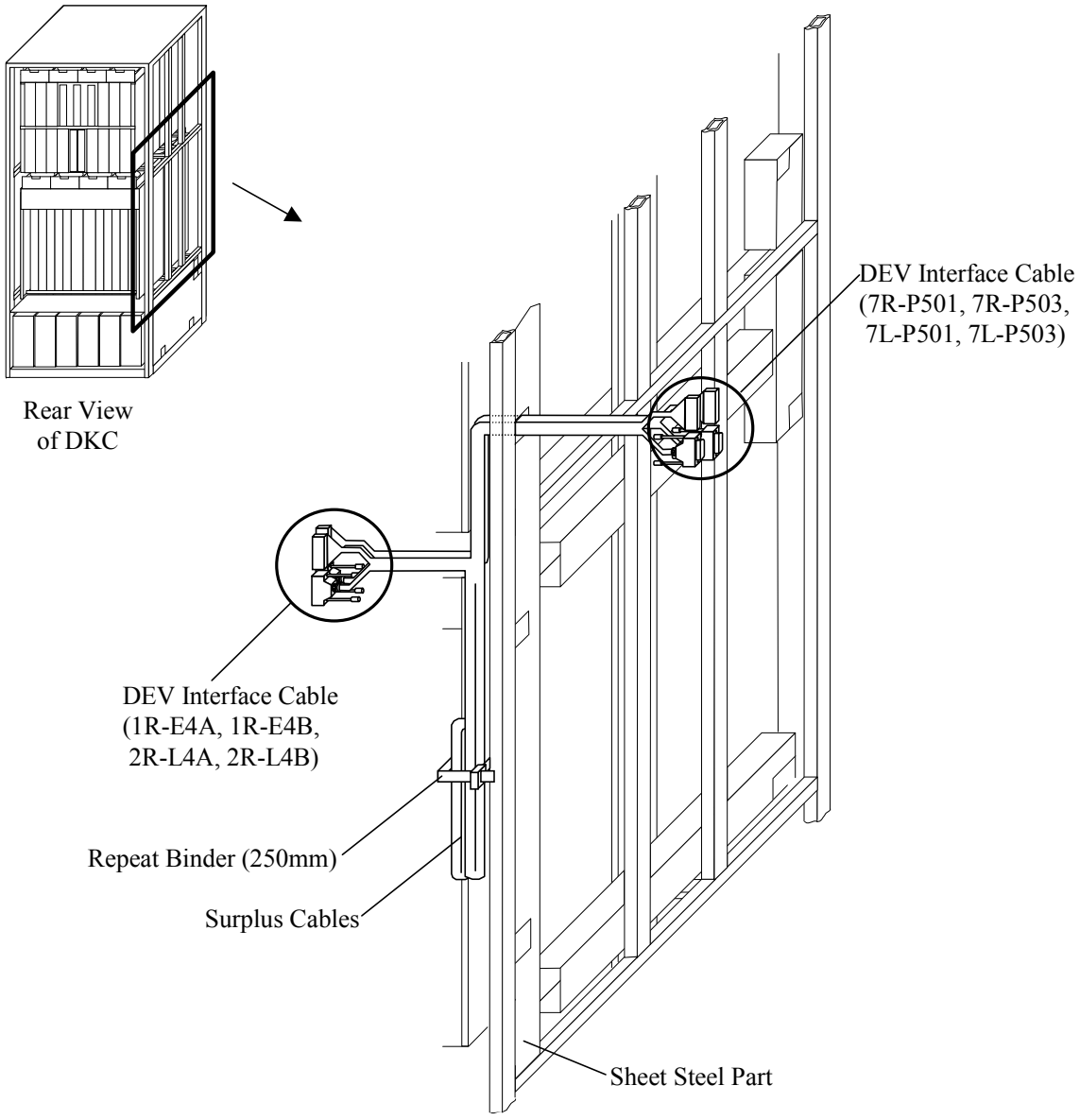

Fig. 4.13.8-21 Removal of DEV Interface Cables

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c. Remove the DEV interface cables for the DKU-L1 from the cable entrance on the sheet steel part. Remove the repeat binder from the cables.

Table 4.13.8-4 DEV Interface Cable List

No.	Cable No. (DKA Side)	Cable No. (FSW Side)	Remarks
1	1R-E3A	6R-P501	
	1R-E3B	6R-P503	
2	2R-L3A	6L-P501	
	2R-L3B	6L-P503	

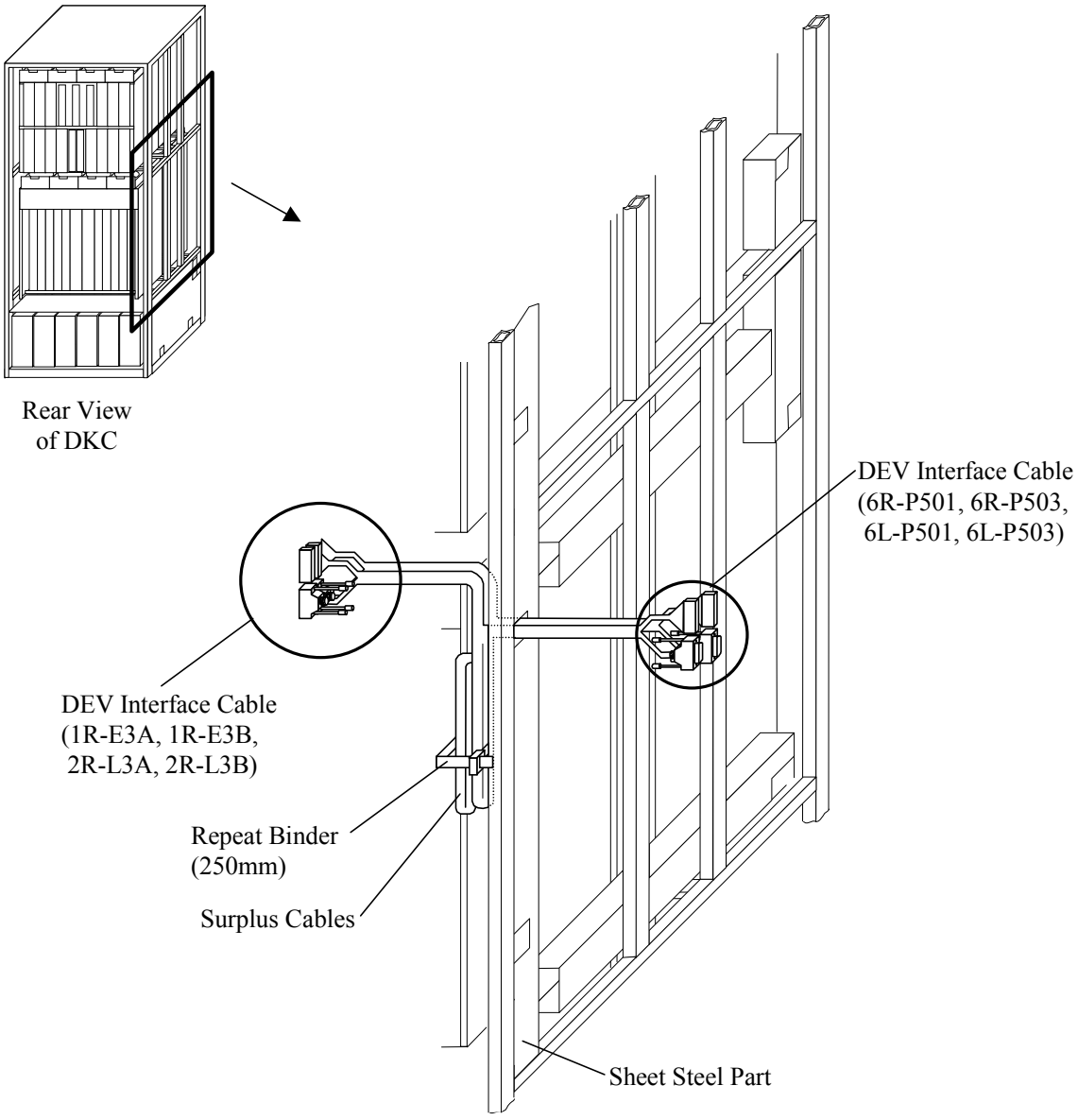

Fig. 4.13.8-22 Removal of DEV Interface Cables

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d. Remove the DEV interface cables for the DKU-L1 from the cable entrance on the sheet steel part. Remove the repeat binder from the cables.

Table 4.13.8-5 DEV Interface Cable List

No.	Cable No. (DKA Side)	Cable No. (FSW Side)	Remarks
1	1R-D4A	3R-P501	
	1R-D4B	3R-P503	
2	2R-K4A	3L-P501	
	2R-K4B	3L-P503	

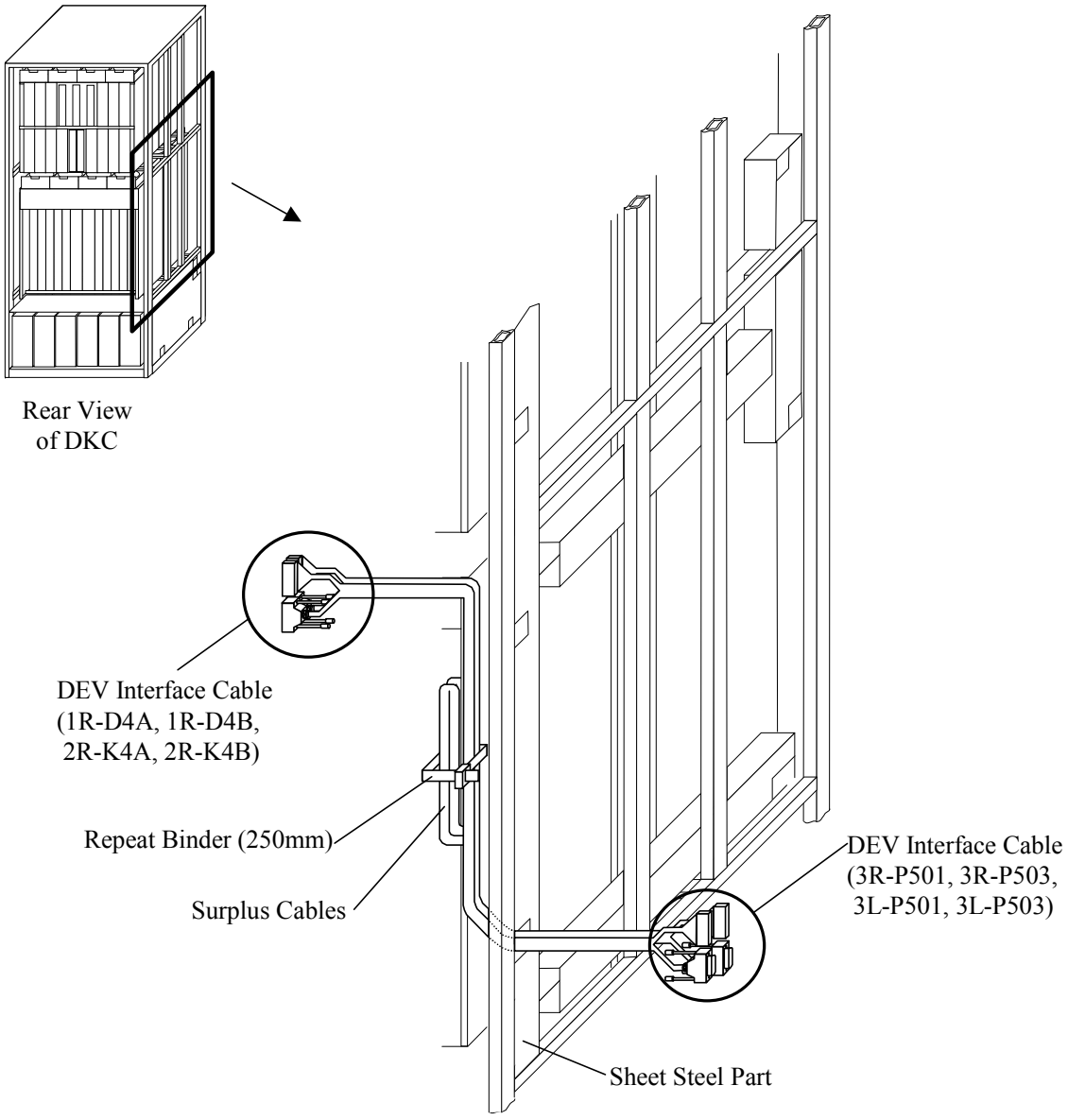

Fig. 4.13.8-23 Removal of DEV Interface Cables

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e. Remove the DEV interface cables for the DKU-L1 from the cable entrance on the sheet steel part. Remove the repeat binder from the cables.

Table 4.13.8-6 DEV Interface Cable List

No.	Cable No. (DKA Side)	Cable No. (FSW Side)	Remarks
1	1R-D3A	2R-P501	
	1R-D3B	2R-P503	
2	2R-K3A	2L-P501	
	2R-K3B	2L-P503	

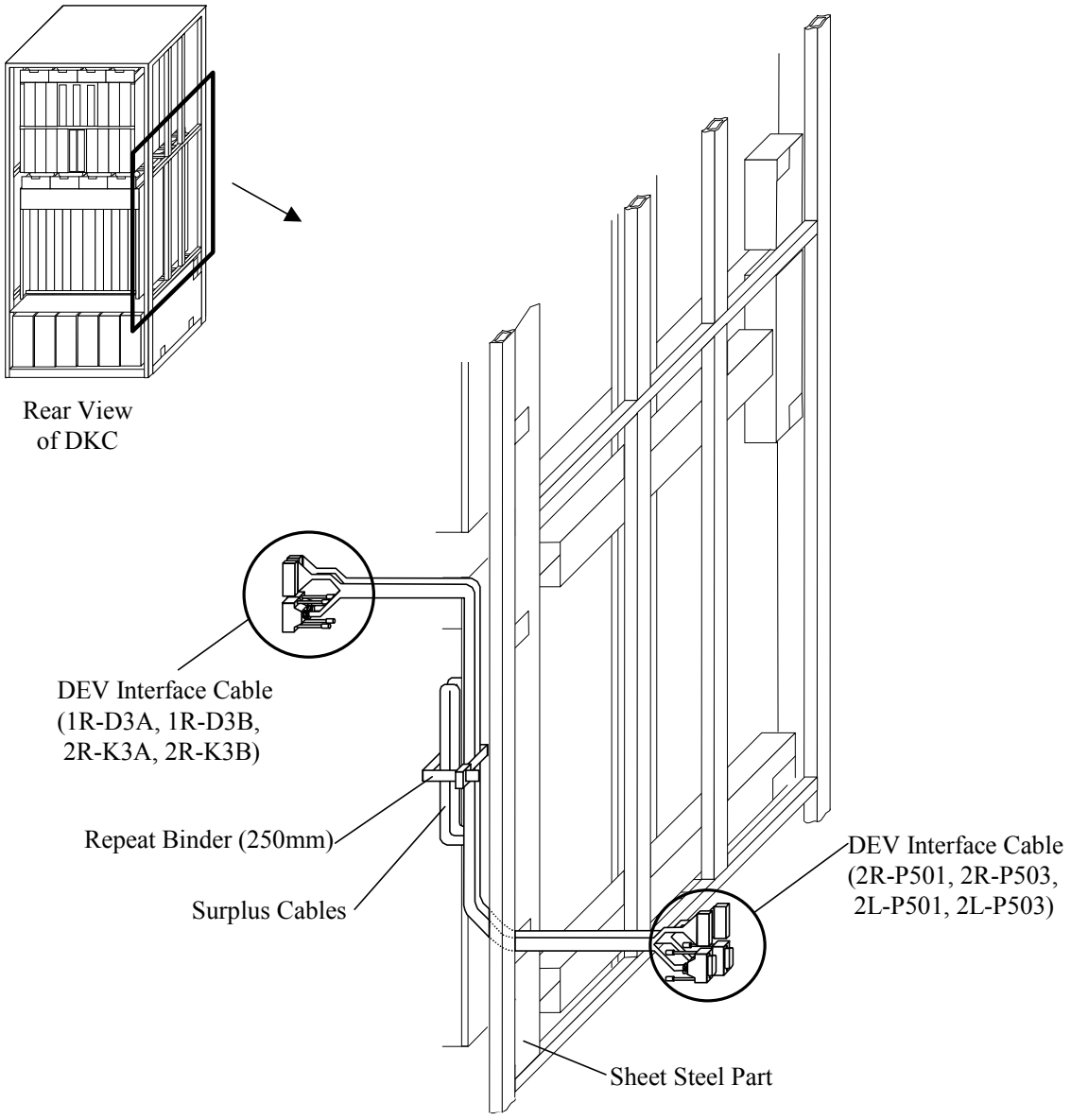

Fig. 4.13.8-24 Removal of DEV Interface Cables

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f. Remove the two screws and remove the cable duct cover.

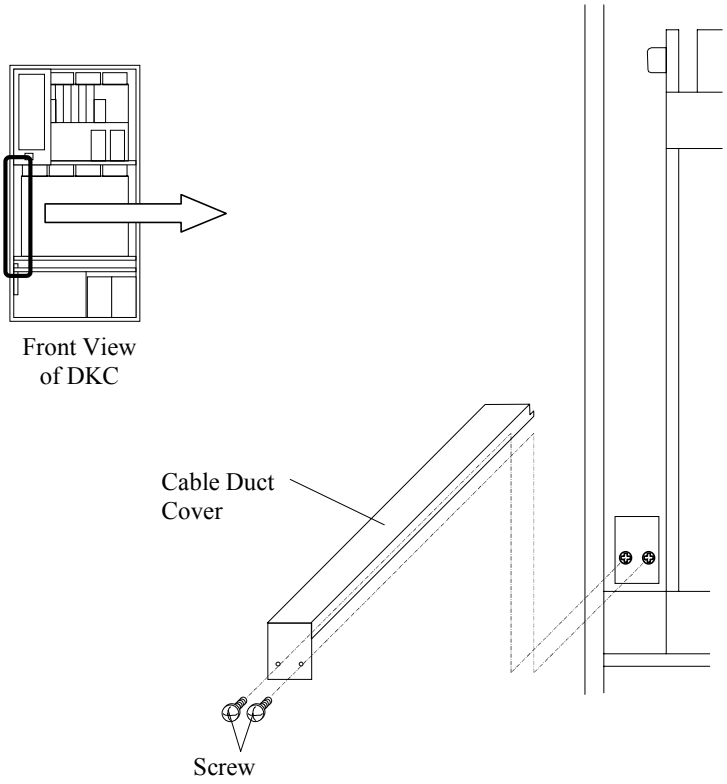

Fig. 4.13.8-25 Removal of Cable Duct Cover

g. Loosen the screw and remove the cable duct cover.

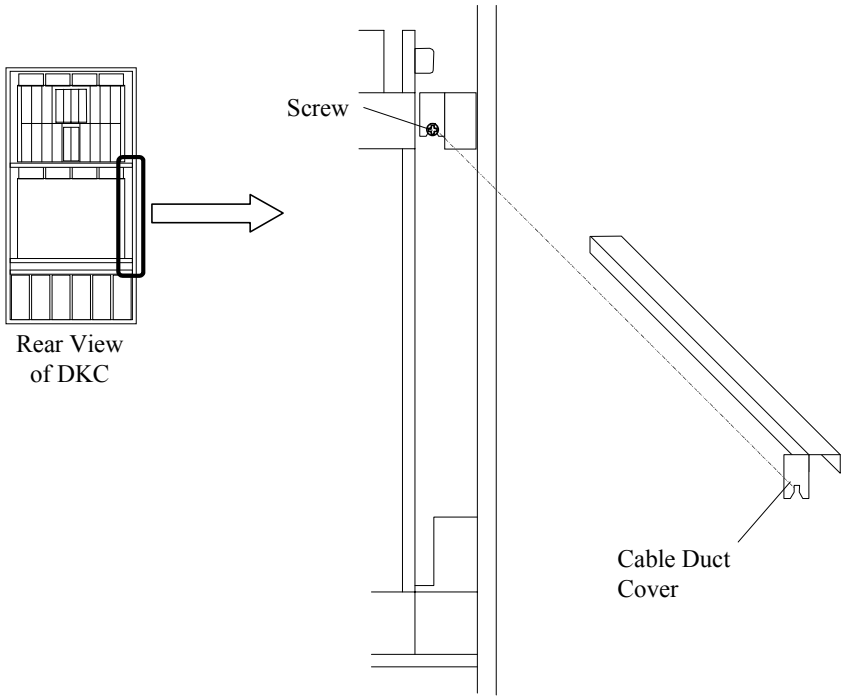

Fig. 4.13.8-26 Removal of Cable Duct Cover

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h. Loosen the two screws and remove the cable cover.

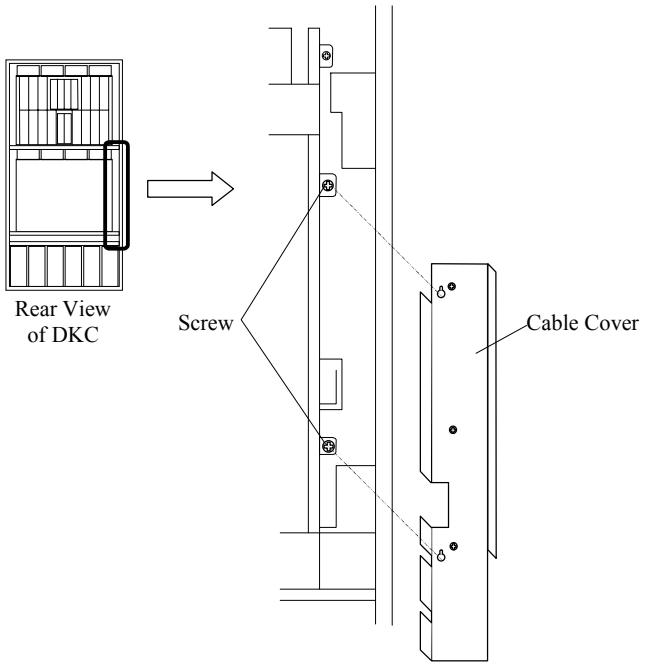

Fig. 4.13.8-27 Removal of Cable Cover

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i. Remove the DEV interface cables for the DKU-L1 from the cable clamp located at the top of the Rear Logic Box. Remove the cable in order of ①, ②, ③ and ④.

Note:
Since a label bearing a connection destination is affixed on each cable/connector, work very carefully referring to it and the wiring diagram.

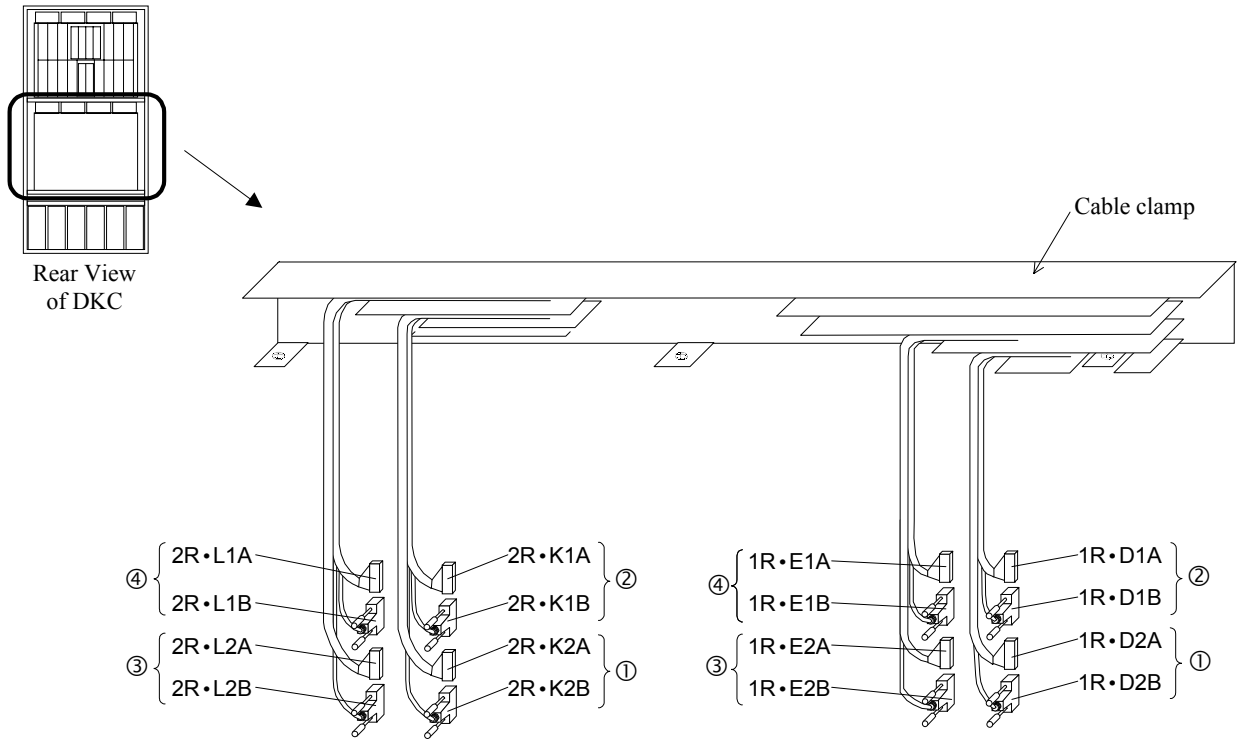

Fig. 4.13.8-28 Removal of DEV Interface Cables

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j. Remove the DEV interface cables for the DKU-L1 from the cable duct. Remove the repeat binder from the cables.

Table 4.13.8-7 DEV Interface Cable List

No.	Cable No. (DKA Side)	Cable No. (FSW Side)	Remarks
1	1R-E2A	5R-P501	
	1R-E2B	5R-P503	
2	2R-L2A	5L-P501	
	2R-L2B	5L-P503	

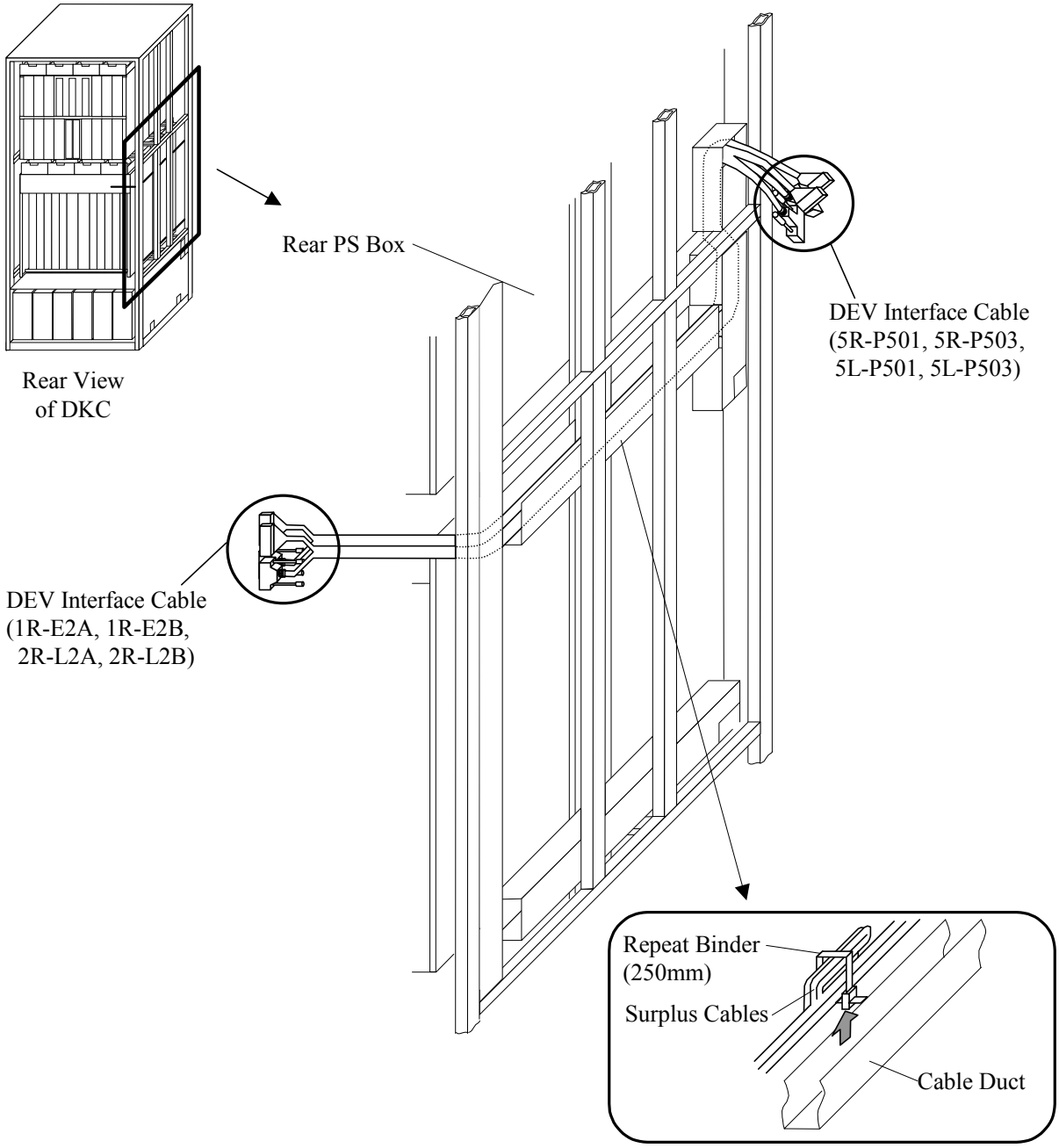

Fig. 4.13.8-29 Removal of DEV Interface Cables

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k. Remove the DEV interface cables for the DKU-L1 from the cable duct. Remove the repeat binder from the cables.

Table 4.13.8-8 DEV Interface Cable List

No.	Cable No. (DKA Side)	Cable No. (FSW Side)	Remarks
1	1R-E1A	4R-P501	
	1R-E1B	4R-P503	
2	2R-L1A	4L-P501	
	2R-L1B	4L-P503	

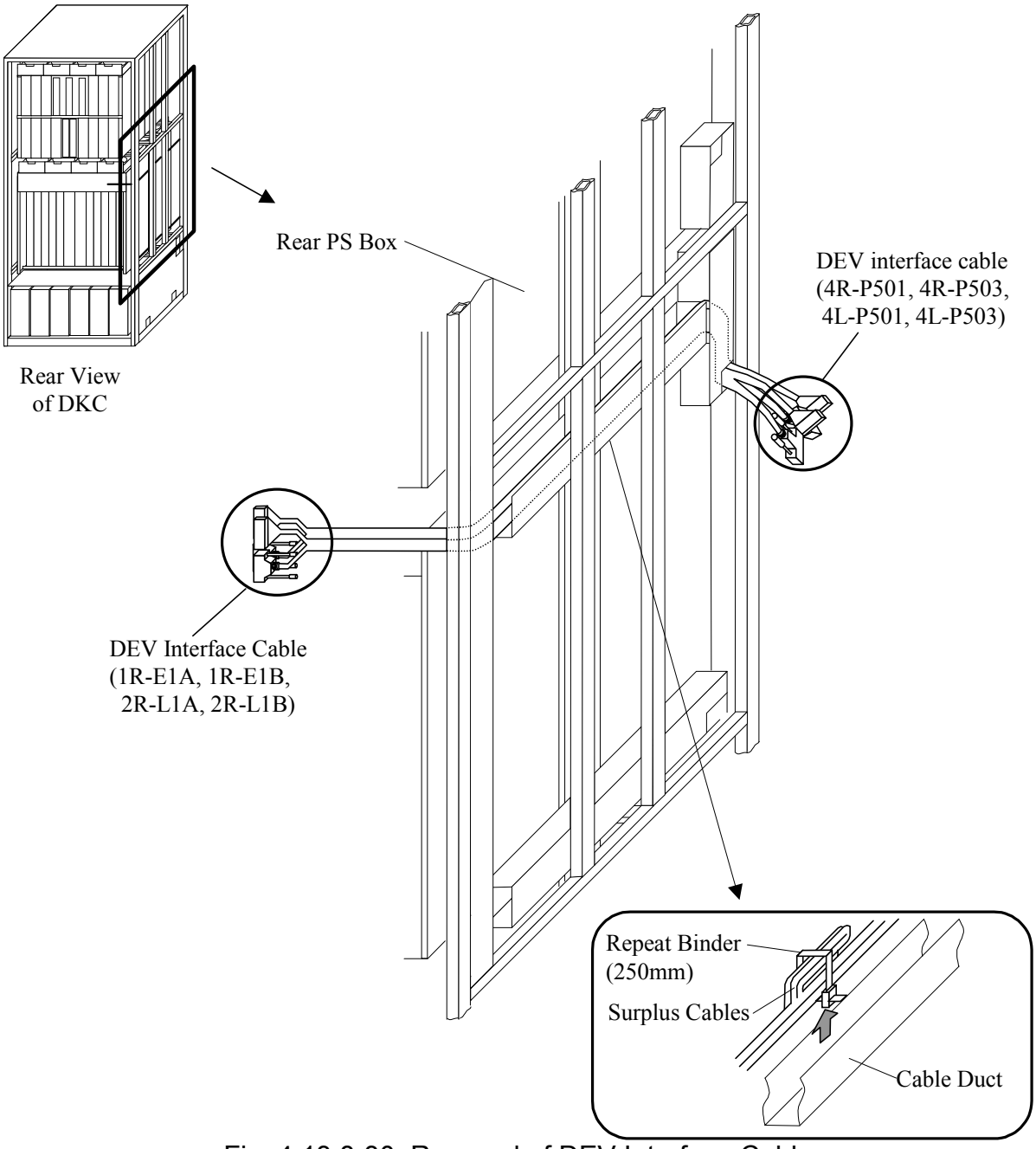

Fig. 4.13.8-30 Removal of DEV Interface Cables

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m. Remove the DEV interface cables for the DKU-L1 from the cable duct. Remove the repeat binder from the cables.

Table 4.13.8-9 DEV Interface Cable List

No.	Cable No. (DKA Side)	Cable No. (FSW Side)	Remarks
1	1R-D2A	1R-P501	
	1R-D2B	1R-P503	
2	2R-K2A	1L-P501	
	2R-K2B	1L-P503	

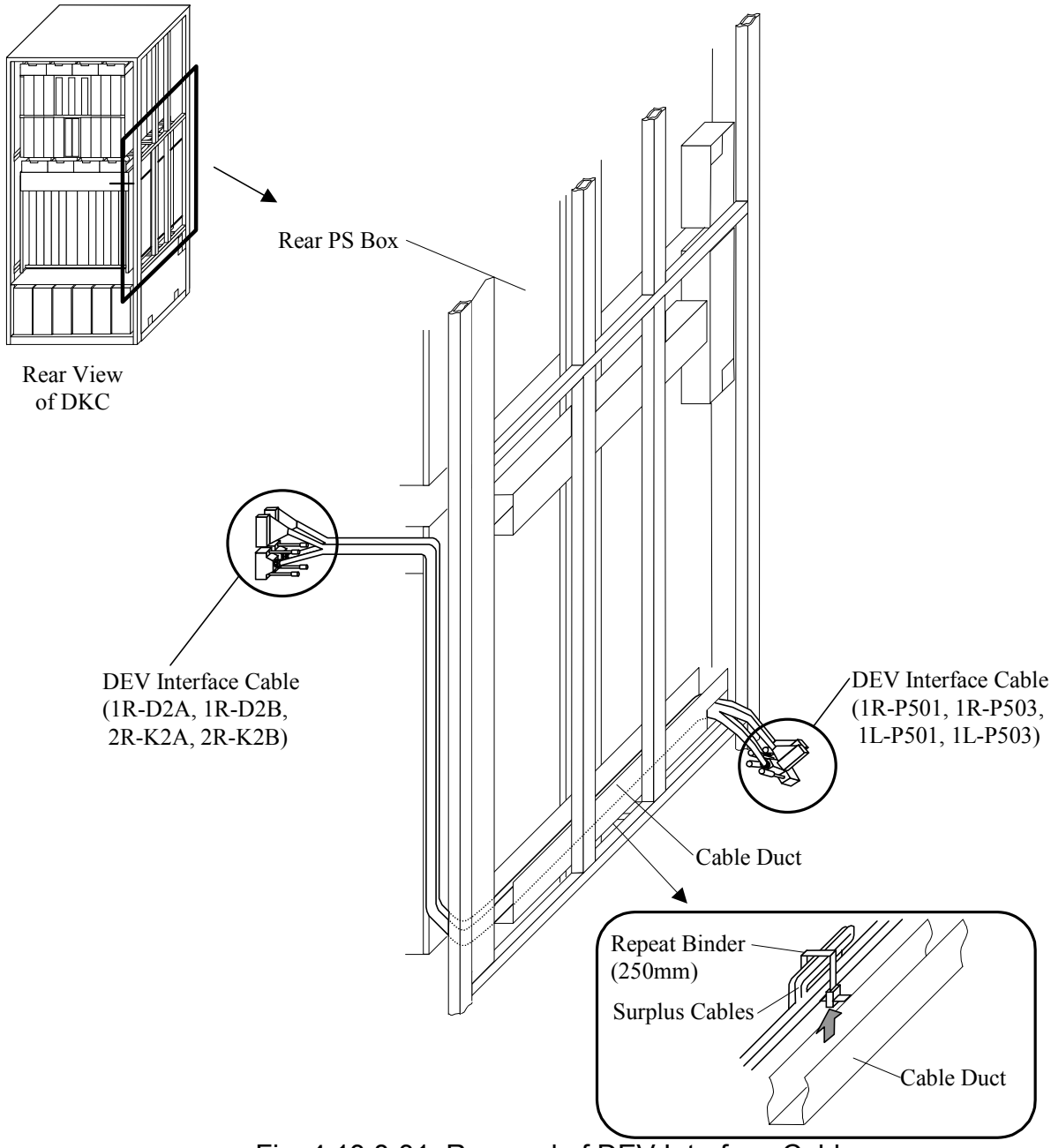

Fig. 4.13.8-31 Removal of DEV Interface Cables

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n. Remove the DEV interface cables for the DKU-L1 from the cable duct. Remove the repeat binder from the cables.

Table 4.13.8-10 DEV Interface Cable List

No.	Cable No. (DKA Side)	Cable No. (FSW Side)	Remarks
1	1R-D1A	0R-P501	
	1R-D1B	0R-P503	
2	2R-K1A	0L-P501	
	2R-K1B	0L-P503	

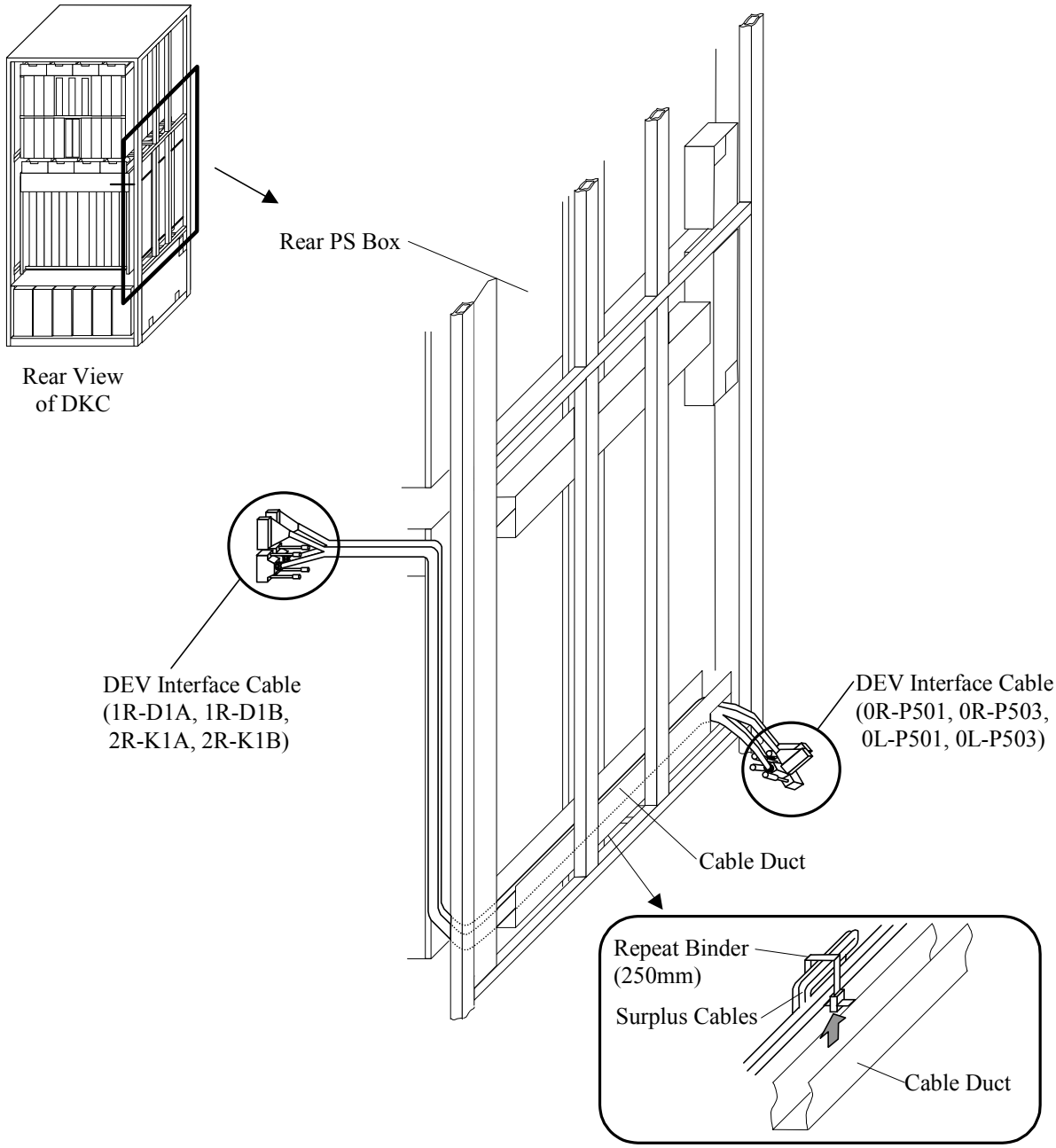

Fig. 4.13.8-32 Removal of DEV Interface Cables

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6. Attachment of Cable Covers
   a. Attach the cable covers in the reverse order of step 4-f through h.
   b. Attach the cable covers in the reverse order of step 2.

7. Removal of Nameplate
   a. Remove the nameplate from the Rear Logic Box cover.

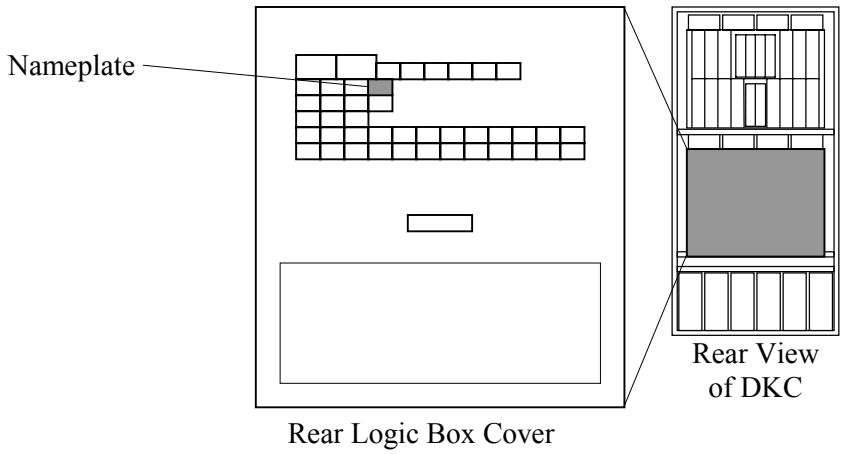

Fig. 4.13.8-33 Removal of Nameplate

   b. Return to General Flow.
      Non-Disruptive De-Installation: Go to INST04-U40-30 step (4)-7.

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4.13.9 De-Installation of DKU405 Connection Kit for R1 DKU (DKC-F460I-U405R)

Table 4.13.9-1 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKC-F460I-U405R	Socket Bolt(M8)	3261899-840	2	
		Nut(M8)	NF008N	2	
		Washer(M8)	WP008N	4	
		Socket Bolt (M6)	5518385-2	1	Hexagon Socket Head Bolt (M6×56)
		Plate (Nut)	5518384-1	1	
		LL Washer	2051001-612	1	
		Bind Screw	3183101-1	4	
		Bracket Cover ASSY	3265694-A	1	
		SH305-A P/K ASSY	5513985-A	2	MONI-CON
		Locking Clamp	3183016-4	5	
		Repeat Binder	5409042-2	2	140mm
		Repeat Binder	5409042-3	12	250mm
		Conductive Sheet	5510573-2	1	1000mm
		Cable ASSY (DKUMN)	5485589-627	1	
		Cable ASSY (DKUMN)	5485589-629	1	
		Cable ASSY (Fibre-U405R)	3264185-A	1	1R-B1A/B1B – 0R-P501/P503
		Cable ASSY (Fibre-U405R)	3264185-B	1	1R-B2A/B2B – 1R-P501/P503
		Cable ASSY (Fibre-U405R)	3264185-C	1	1R-B3A/B3B – 2R-P501/P503
		Cable ASSY (Fibre-U405R)	3264185-D	1	1R-B4A/B4B – 3R-P501/P503
		Cable ASSY (Fibre-U405R)	3264185-E	1	1R-C1A/C1B – 4R-P501/P503
		Cable ASSY (Fibre-U405R)	3264185-F	1	1R-C2A/C2B – 5R-P501/P503
		Cable ASSY (Fibre-U405R)	3264185-G	1	1R-C3A/C3B – 6R-P501/P503
		Cable ASSY (Fibre-U405R)	3264185-H	1	1R-C4A/C4B – 7R-P501/P503
		Cable ASSY (Fibre-U405R)	3264185-J	1	2R-H1A/H1B – 0L-P501/P503
		Cable ASSY (Fibre-U405R)	3264185-K	1	2R-H2A/H2B – 1L-P501/P503
		Cable ASSY (Fibre-U405R)	3264185-L	1	2R-H3A/H3B – 2L-P501/P503
		Cable ASSY (Fibre-U405R)	3264185-M	1	2R-H4A/H4B – 3L-P501/P503
		Cable ASSY (Fibre-U405R)	3264185-N	1	2R-J1A/J1B – 4L-P501/P503
		Cable ASSY (Fibre-U405R)	3264185-P	1	2R-J2A/J2B – 5L-P501/P503

(To be continued)

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(Continued from the preceding page)

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKC-F460I-U405R	Cable ASSY (Fibre-U405R)	3264185-Q	1	2R-J3A/J3B – 6L-P501/P503
		Cable ASSY (Fibre-U405R)	3264185-R	1	2R-J4A/J4B – 7L-P501/P503
		Nameplate (HDS)	2105902-124	1	RSD

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1. Disconnection of DEV Interface Cables for HDU-R14 through R17
   a. Loosen the screws and remove the cable covers ① and ②.

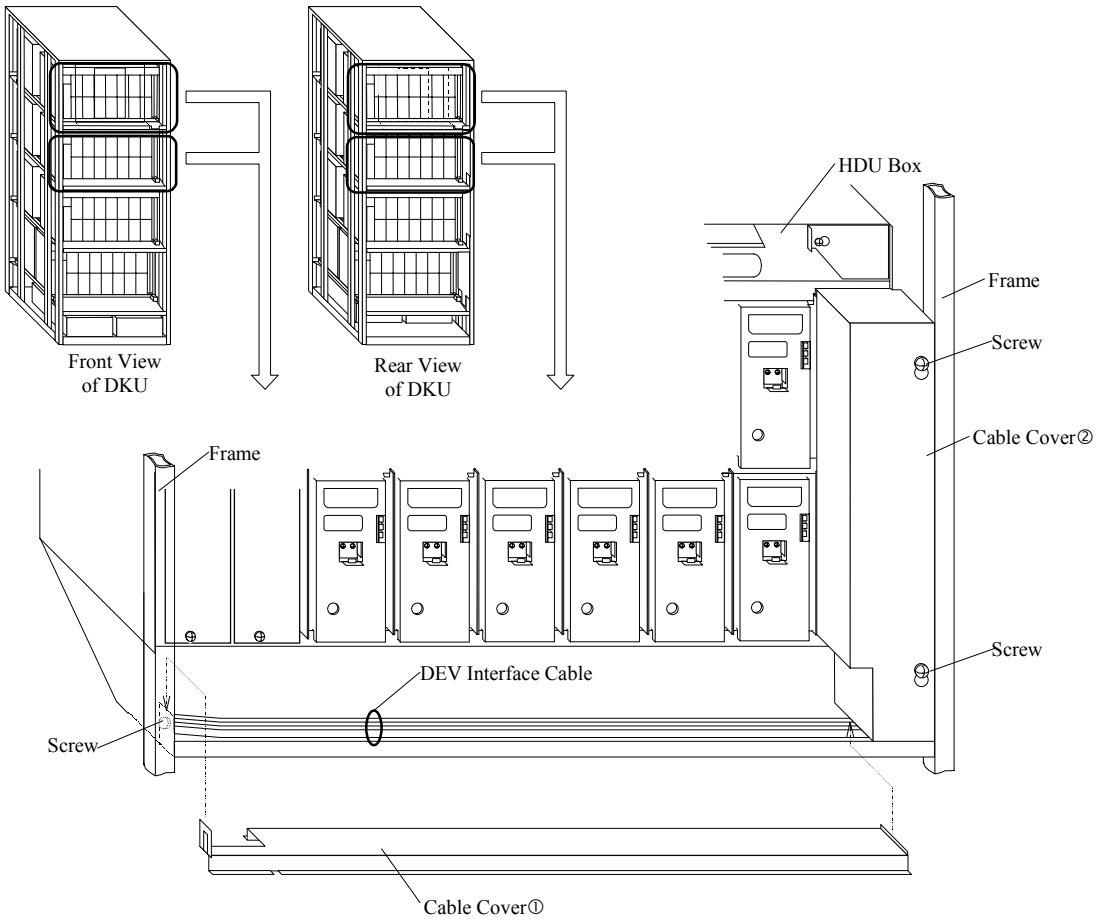

Fig. 4.13.9-1 Removal of Cable Covers

   b. Loosen the screws and remove the side plates.

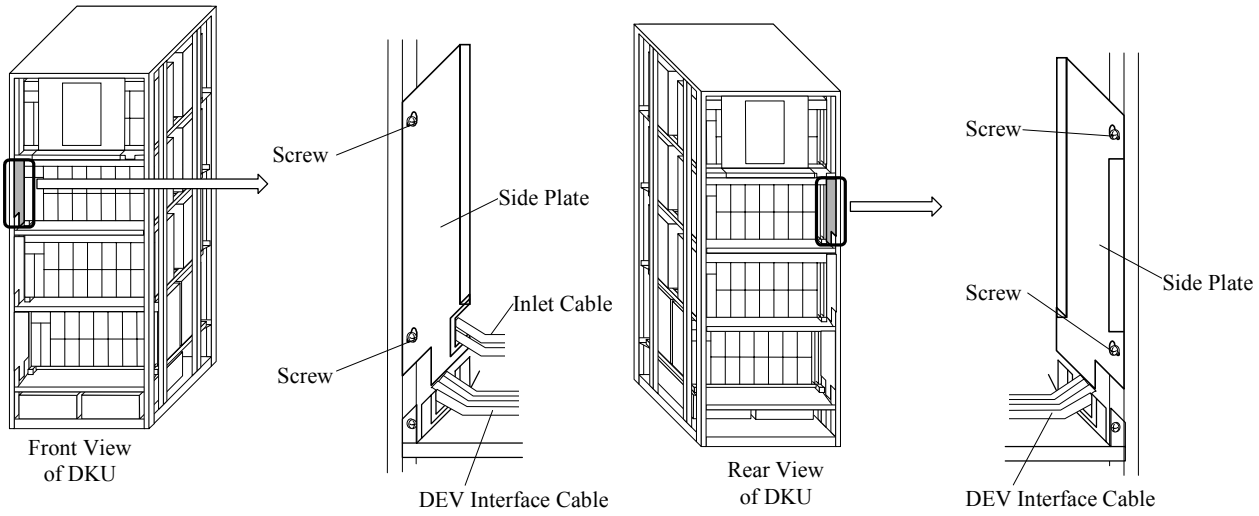

Fig. 4.13.9-2 Removal of Side Plates

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c. Disconnect the DEV interface cables from the sub-edges on the FSW PCBs located in the HDU box.

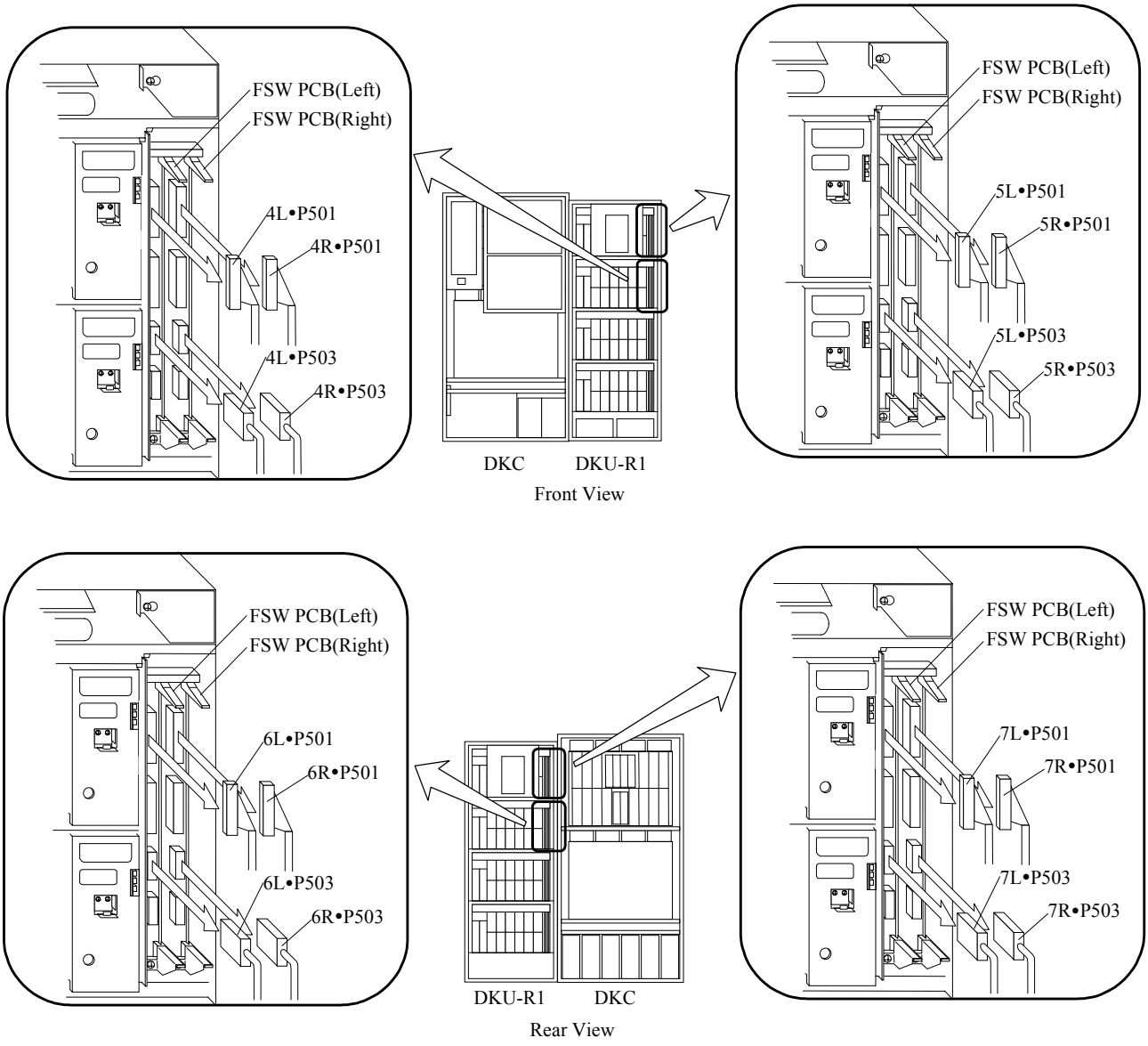

Fig. 4.13.9-3 Disconnection of DEV Interface Cables

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d. Attach the side plates and fasten the screws.

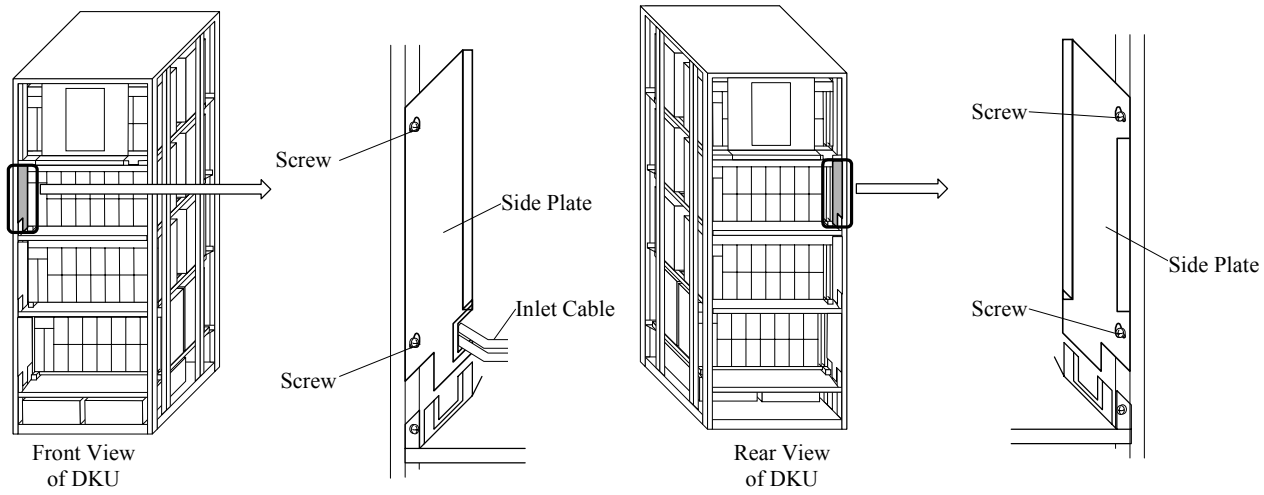

Fig. 4.13.9-4 Attachment of Side Plate

e. Attach the cable covers ① and ② with the screws. Refer to Fig. 4.13.9-1.

f. Return to General Flow.
Non-Disruptive De-Installation: Go to INST04-U40-20 step (3)-6.

2. Fixation of DEV Interface Cables

a. When the DKU-L1 frame consists of 4 HDU boxes, fix the rest of the DEV interface cables in the DKU-L1 frame with the repeat binders.

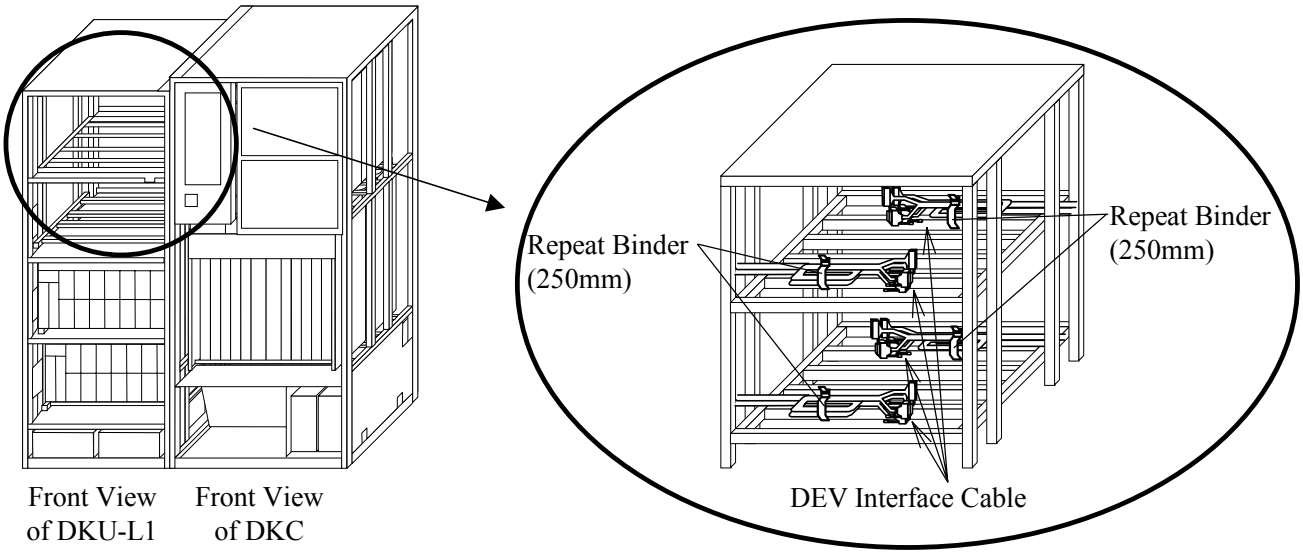

Fig. 4.13.9-5 Fixation of DEV Interface Cables

b. Return to General Flow.
Non-Disruptive De-Installation: Go to INST04-U40-30 step (4).

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3. Removal of Cable Covers
   a. Remove the Front Logic Box cover from the DKC. (Refer to INST03-COM-10.)
   b. Remove the two screws and open the cable cover.

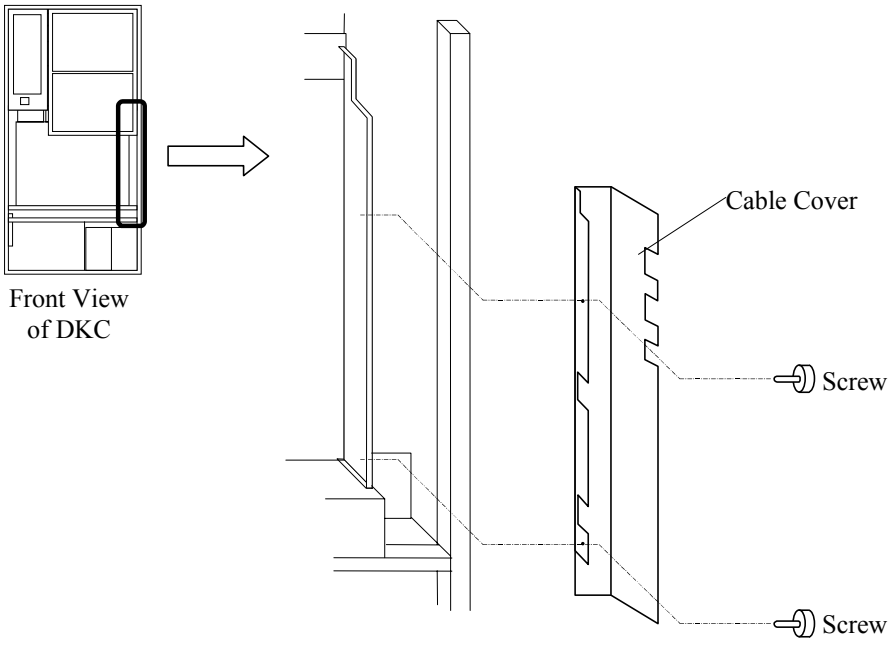

Fig. 4.13.9-6 Removal of Cable Cover

   c. Remove the Rear Logic Box cover and Rear PS Box cover. (Refer to INST03-COM-20 through 30.)
   d. Remove the three screws and remove the cable cover.

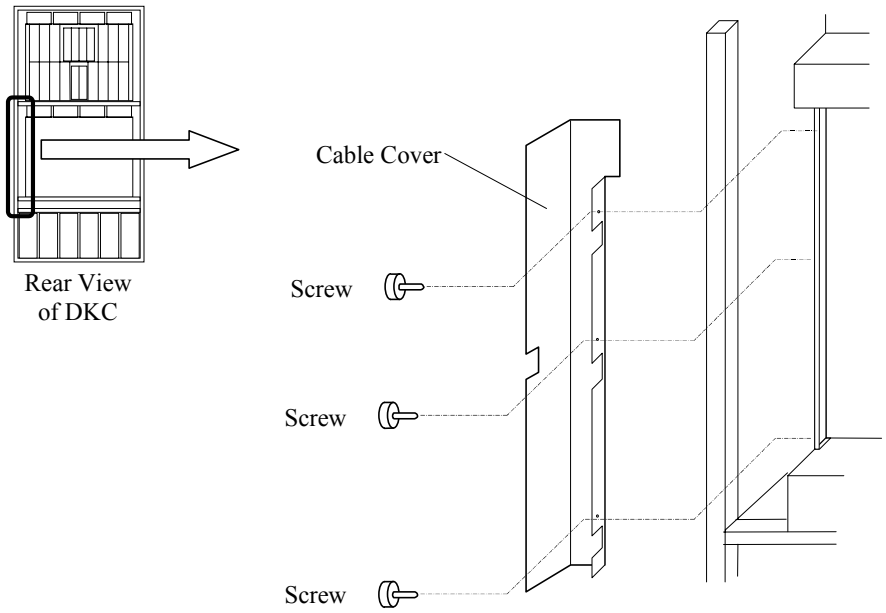

Fig. 4.13.9-7 Removal of Cable Cover

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e. Remove the two screws and remove the cable cover.

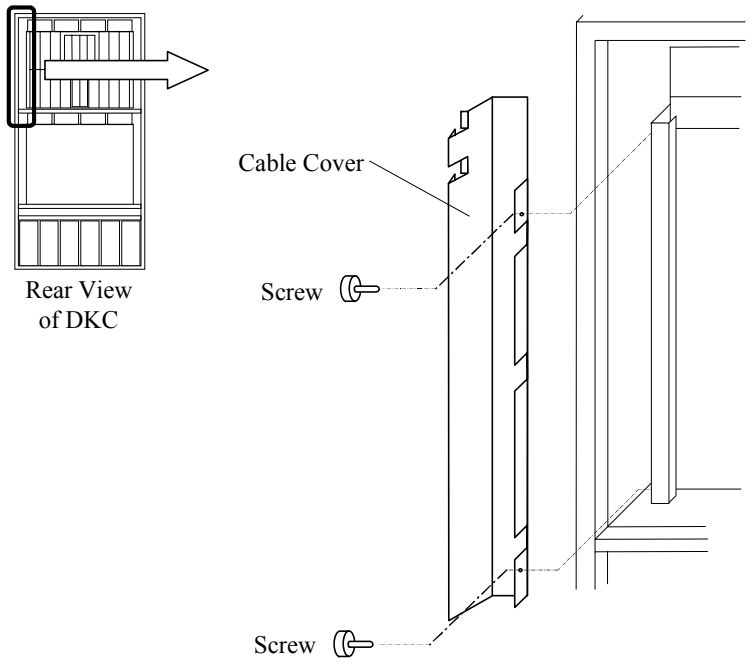

Fig. 4.13.9-8 Removal of Cable Cover

f. Remove the three screws and remove the cable cover.

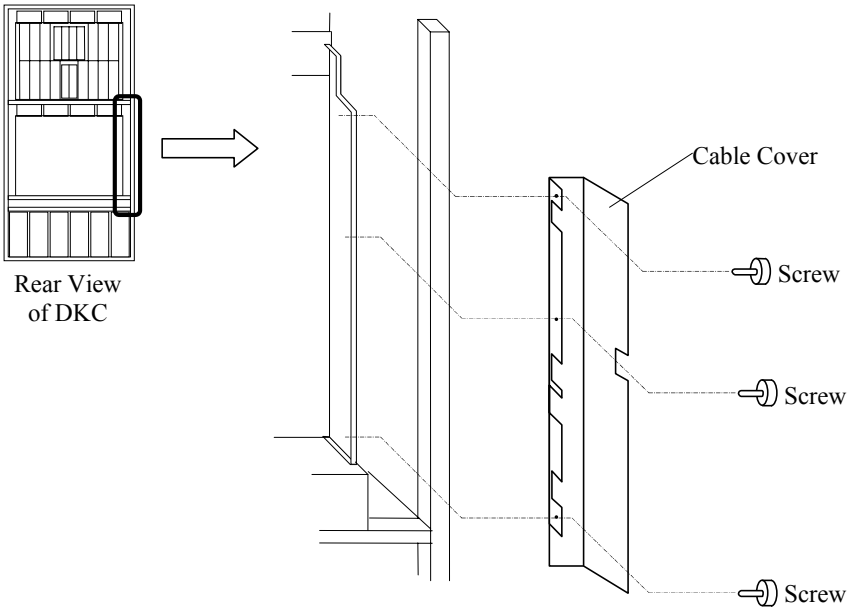

Fig. 4.13.9-9 Removal of Cable Cover

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g. Loosen the ten screws and remove the two brackets.

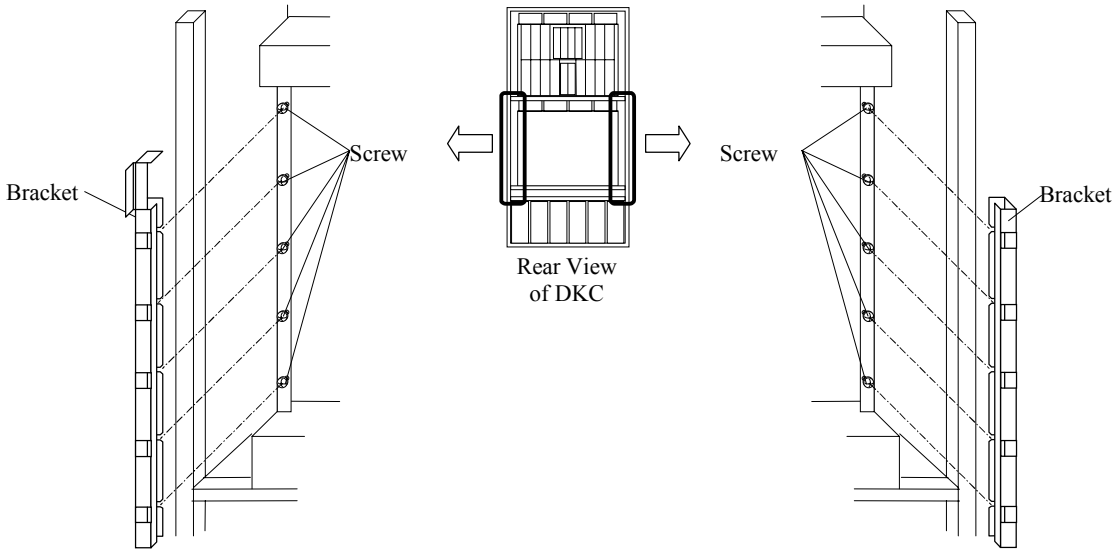

Fig. 4.13.9-10 Removal of Brackets

h. Loosen the four screws and remove the cable cover.

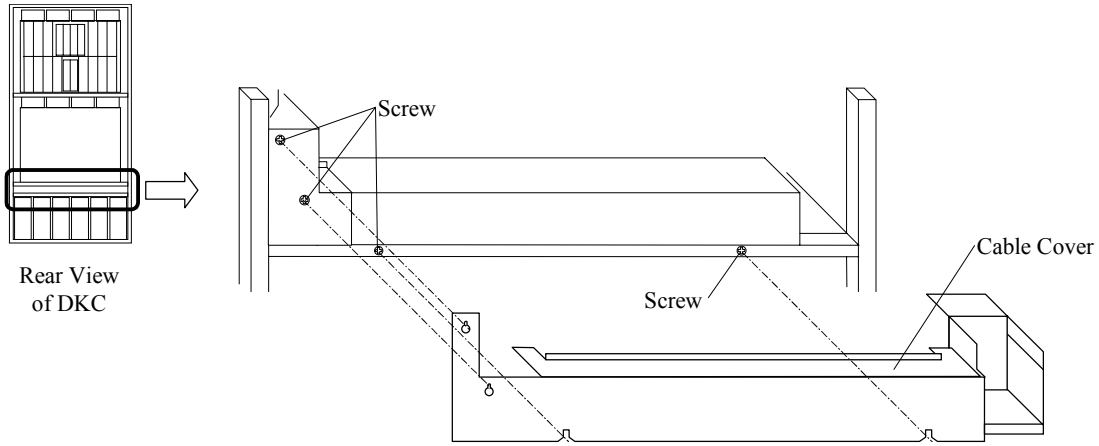

Fig. 4.13.9-11 Removal of Cable Cover

i. Loosen the screw and remove the cable cover.

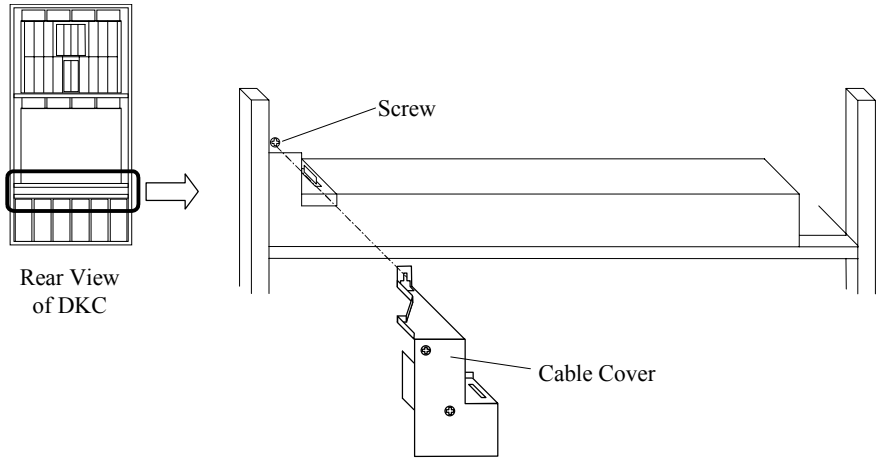

Fig. 4.13.9-12 Removal of Cable Cover

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j. Loosen the four screws and remove the cable cover.

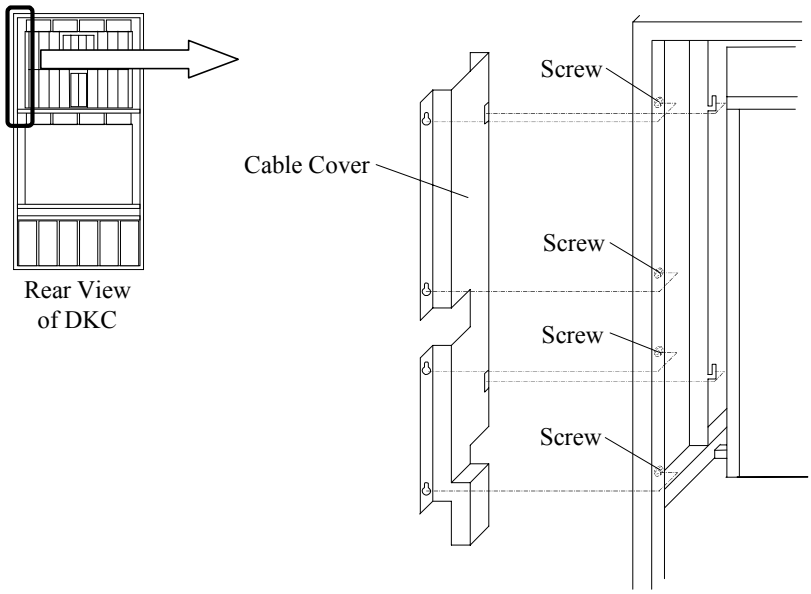

Fig. 4.13.9-13 Removal of Cable Cover

k. Loosen the three screws and remove the cable cover.

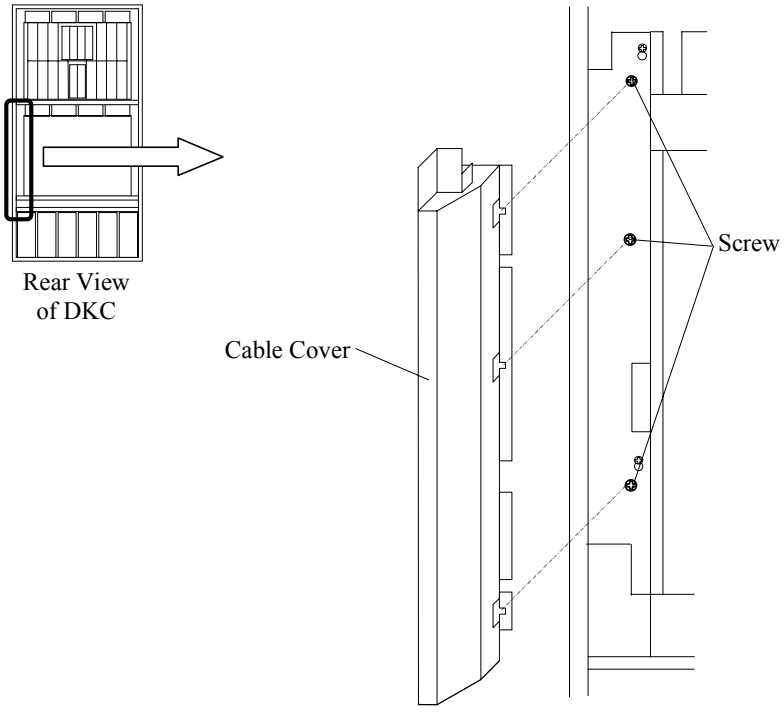

Fig. 4.13.9-14 Removal of Cable Cover

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m. Loosen the three screws and remove the cable cover.

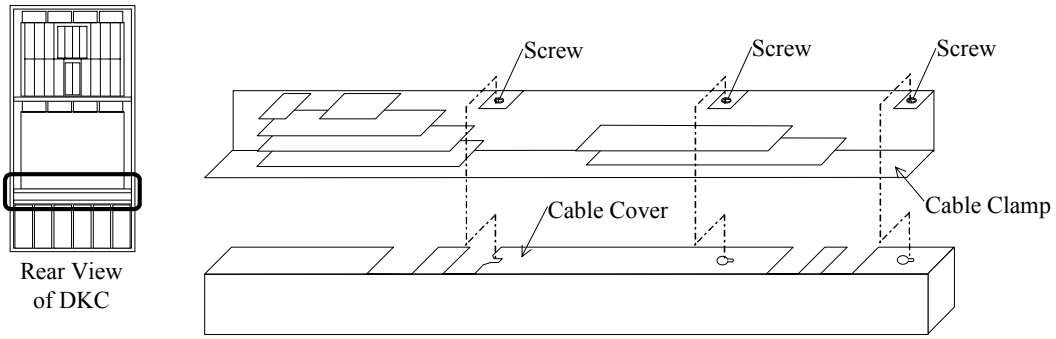

Fig. 4.13.9-15 Disconnection of Cables

n. Remove the two screws and remove the cable duct cover.

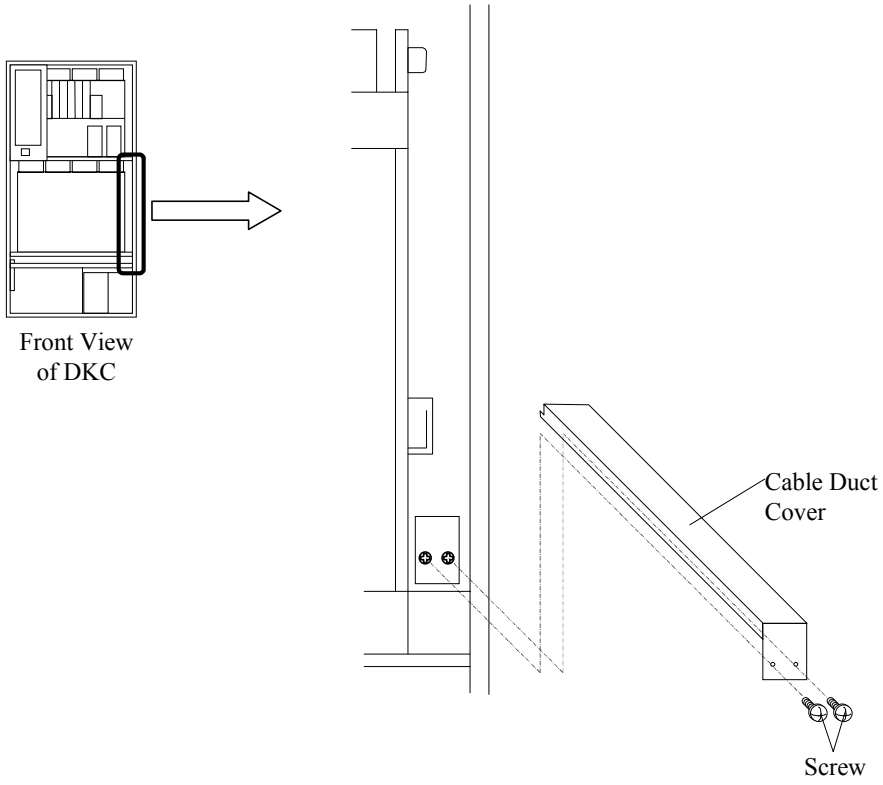

Fig. 4.13.9-16 Removal of Cable Duct Cover

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p. Loosen the two screws ① and remove the Upper SH Box covers.
q. Loosen the five screws ② and remove the Lower SH Box covers.
r. Loosen the four screws ③ and remove the SH side plates.

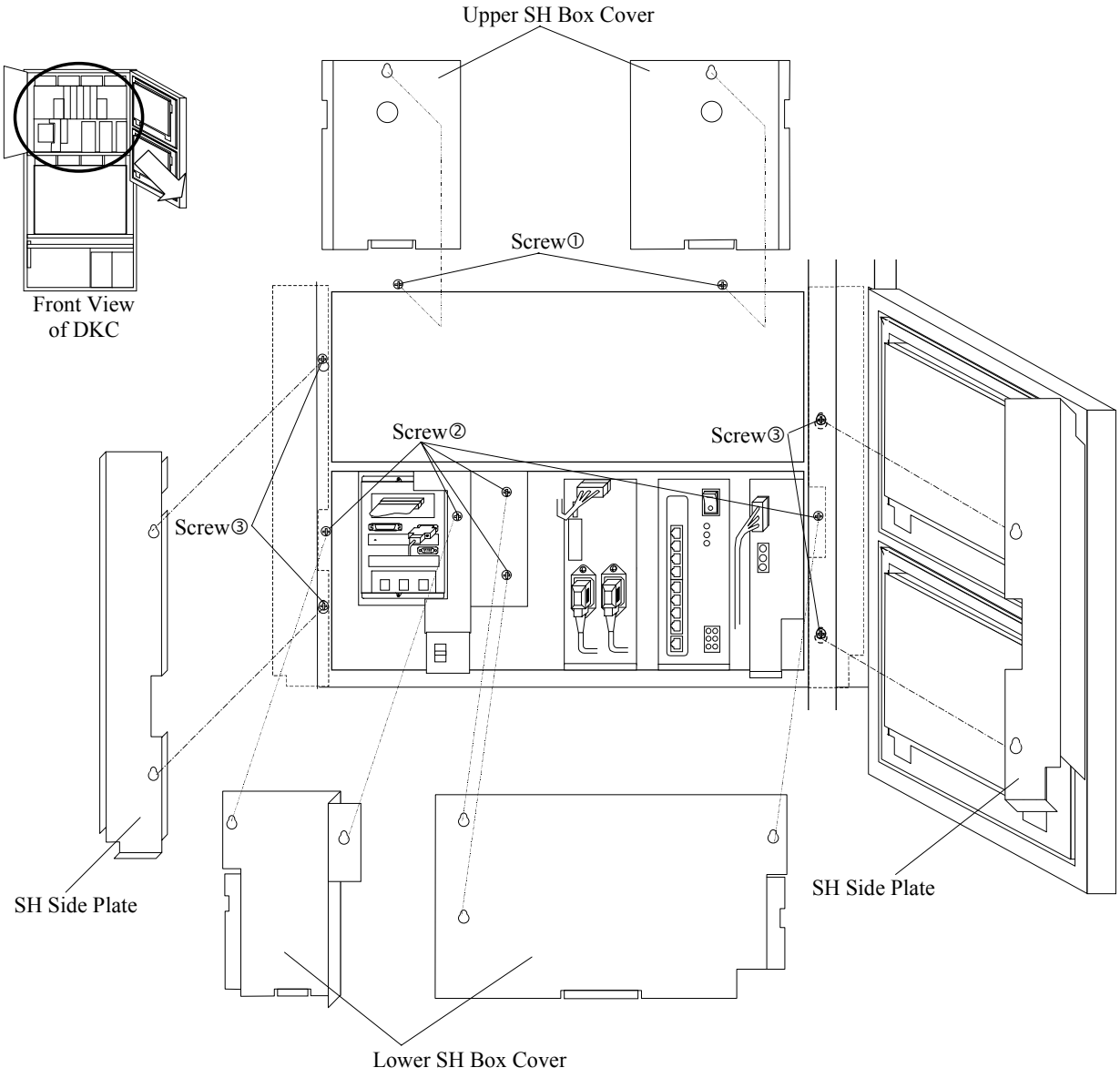

Fig. 4.13.9-17 Removal of Covers

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4. Removal of MONI-CONs
   a. Disconnect the cables from the MONI-CONs.
   b. Remove the MONI-CON1 and MONI-CON2.

Table 4.13.9-2 DKUMN Cable List

No.	Source		Destination		Remarks
	Location No.	Cable No.	Location No.	Cable No.	
1	MONI-CON1	P21-1	DKUMN-R1F	P4-1R	
2	MONI-CON2	P21-2	DKUMN-R1R	P4-2R	

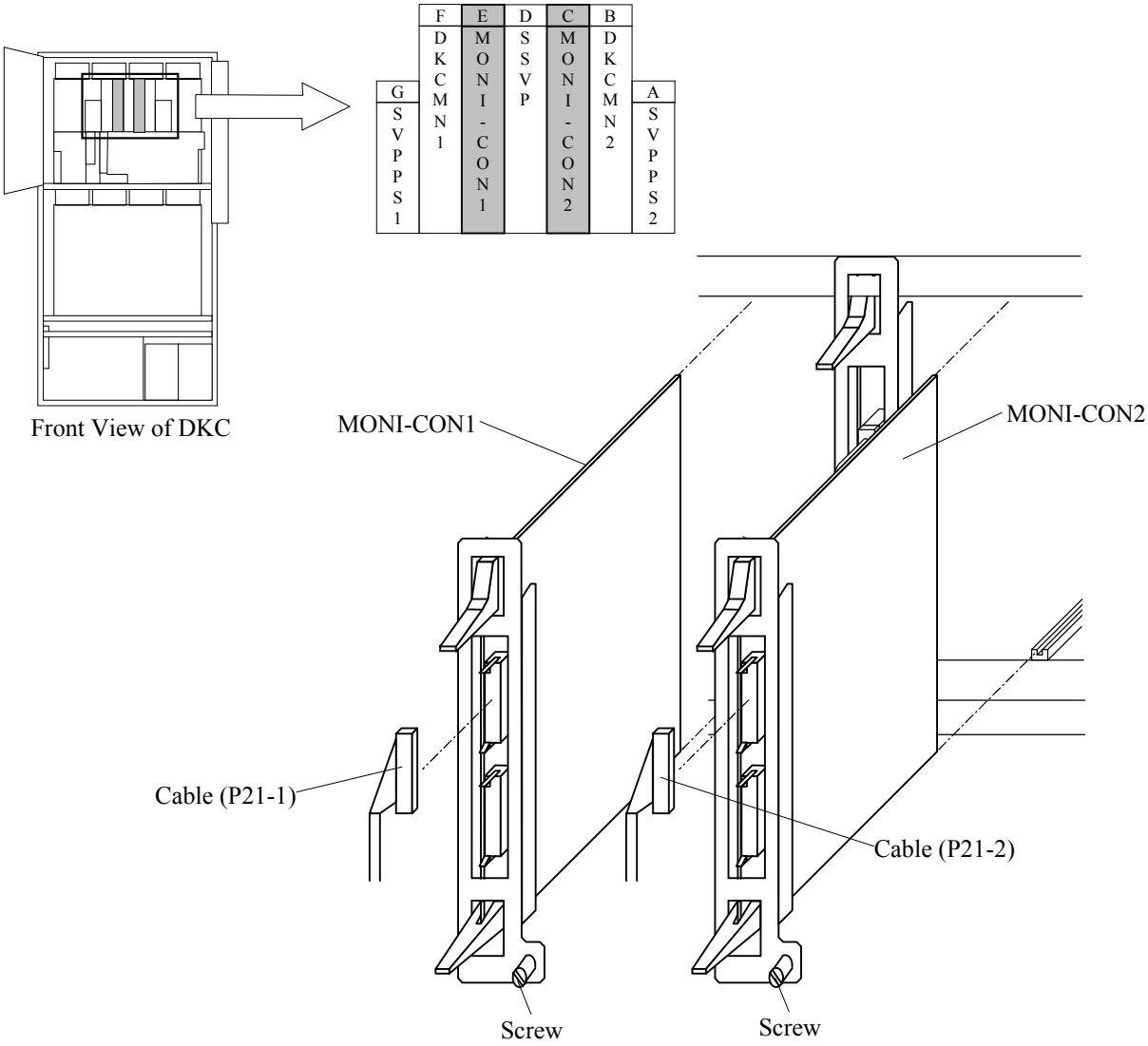

Fig. 4.13.9-18 Removal of MONI-CONs

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c. Open the repeat binders ① and locking clamps. Remove the repeat binders ②.
d. Remove the cable ASSY from the frame.
e. Remove the five locking clamps from the box.

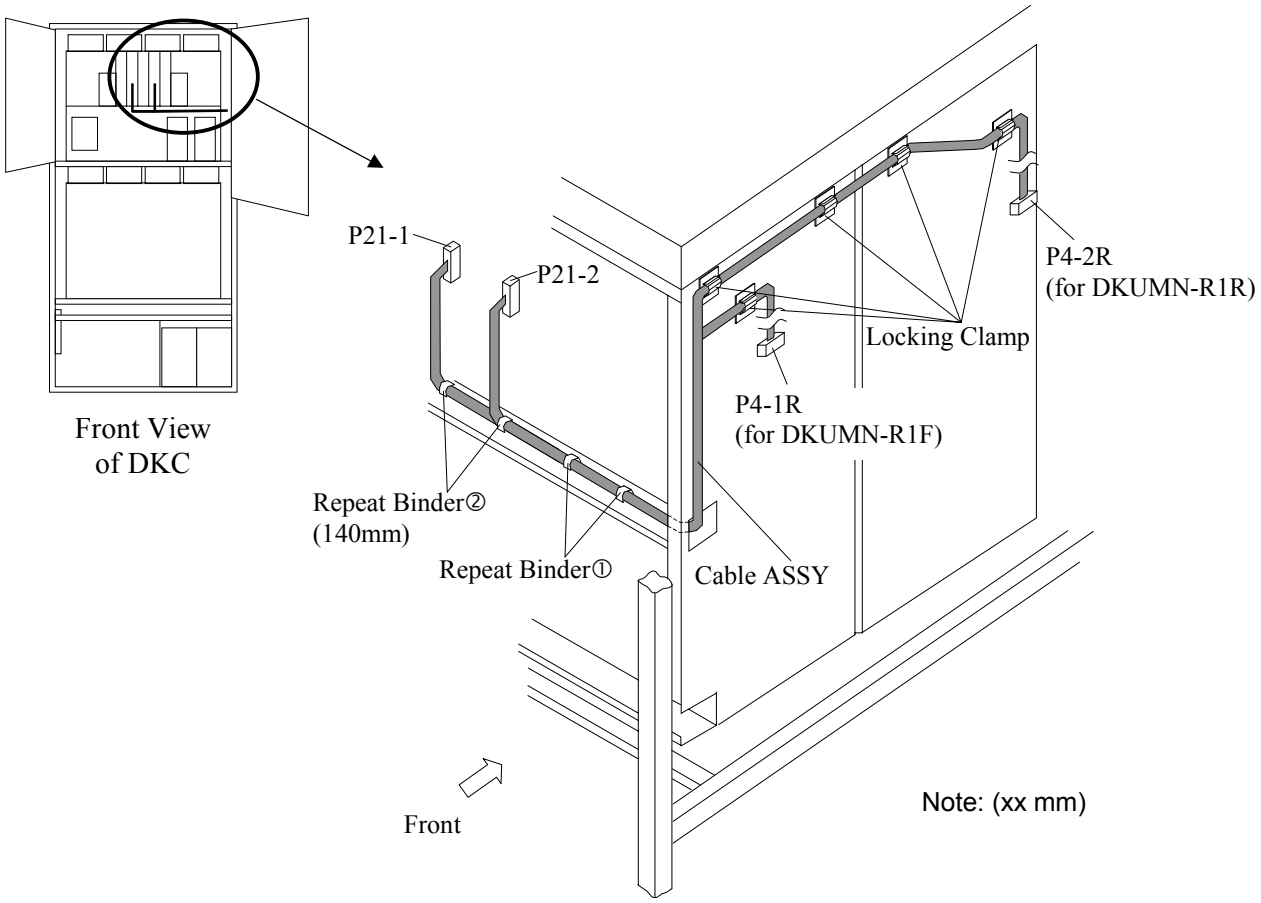

Fig. 4.13.9-19 Removal of Cable ASSY

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5. Removal of DEV Interface cables
   a. Disconnect the cables from the DKA PCBs.

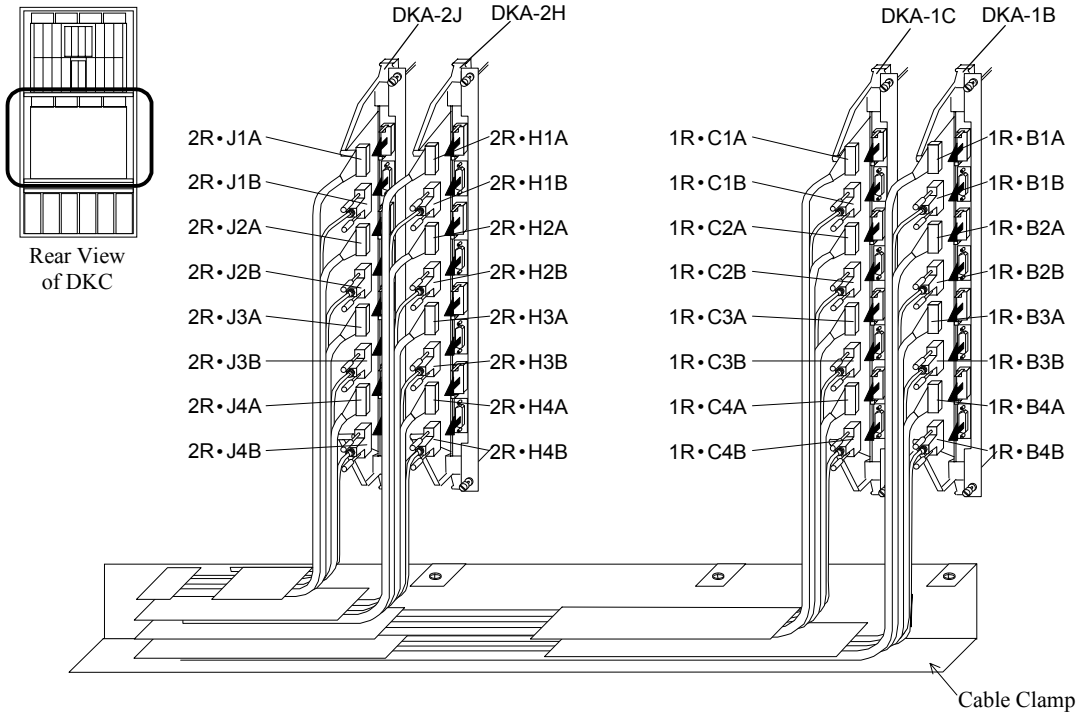

Fig. 4.13.9-20 Disconnection of Cables

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b. Remove the DEV interface cables for the DKU-R1 from the cable entrance on the sheet steel part. Remove the repeat binder from the cables.

Table 4.13.9-3 DEV Interface Cable List

No.	Cable No. (DKA Side)	Cable No. (FSW Side)	Remarks
1	1R-C4A	7R-P501	
	1R-C4B	7R-P503	
2	2R-J4A	7L-P501	
	2R-J4B	7L-P503	

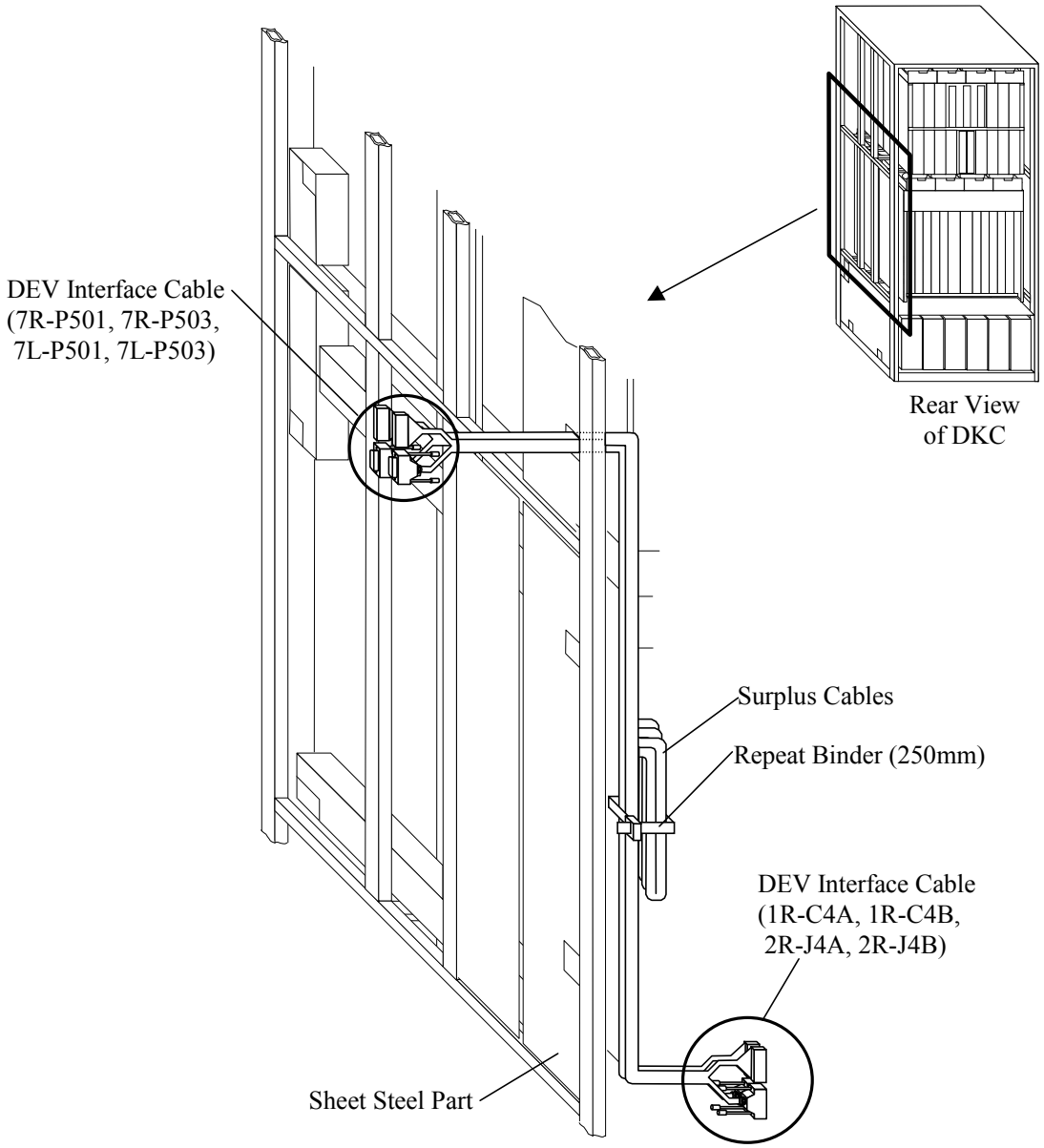

Fig. 4.13.9-21 Removal of DEV Interface Cables

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c. Remove the DEV interface cables for the DKU-R1 from the cable entrance on the sheet steel part. Remove the repeat binder from the cables.

Table 4.13.9-4 DEV Interface Cable List

No.	Cable No. (DKA Side)	Cable No. (FSW Side)	Remarks
1	1R-C3A	6R-P501	
	1R-C3B	6R-P503	
2	2R-J3A	6L-P501	
	2R-J3B	6L-P503	

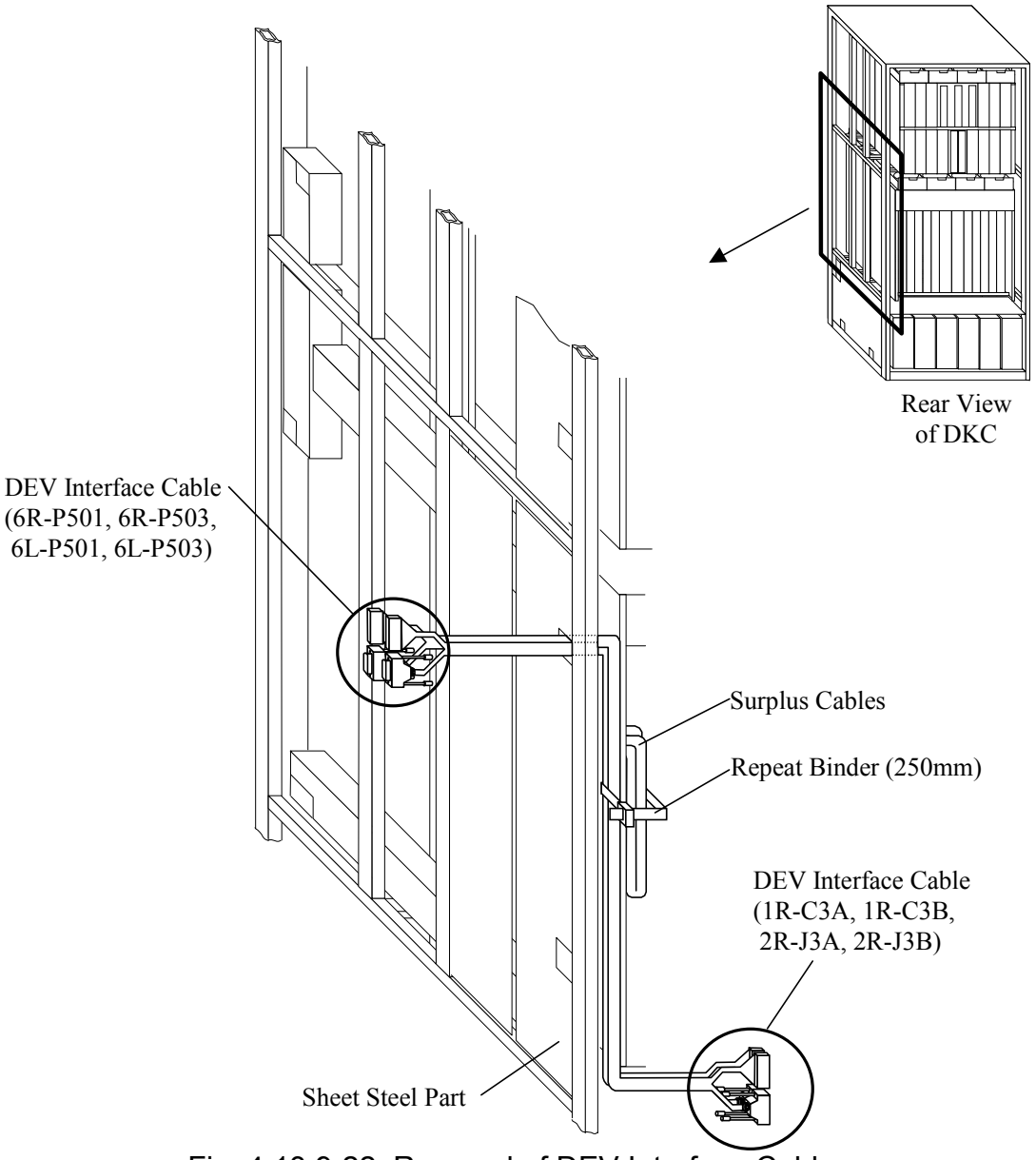

Fig. 4.13.9-22 Removal of DEV Interface Cables

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d. Remove the DEV interface cables for the DKU-R1 from the cable entrance on the sheet steel part. Remove the repeat binder from the cables.

Table 4.13.9-5 DEV Interface Cable List

No.	Cable No. (DKA Side)	Cable No. (FSW Side)	Remarks
1	1R-B4A	3R-P501	
	1R-B4B	3R-P503	
2	2R-H4A	3L-P501	
	2R-H4B	3L-P503	

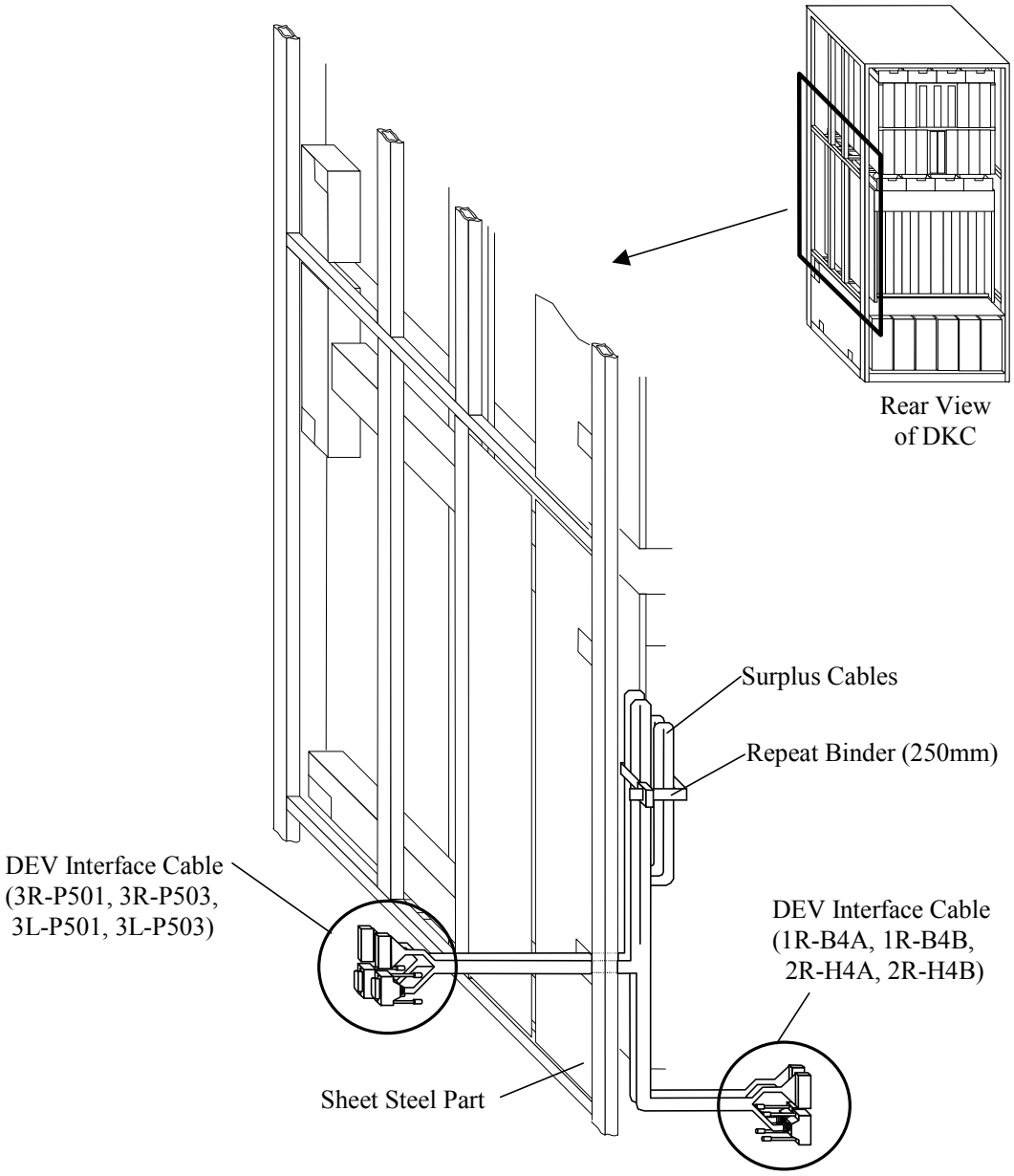

Fig. 4.13.9-23 Removal of DEV Interface Cables

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e. Remove the DEV interface cables for the DKU-R1 from the cable entrance on the sheet steel part. Remove the repeat binder from the cables.

Table 4.13.9-6 DEV Interface Cable List

No.	Cable No. (DKA Side)	Cable No. (FSW Side)	Remarks
1	1R-B3A	2R-P501	
	1R-B3B	2R-P503	
2	2R-H3A	2L-P501	
	2R-H3B	2L-P503	

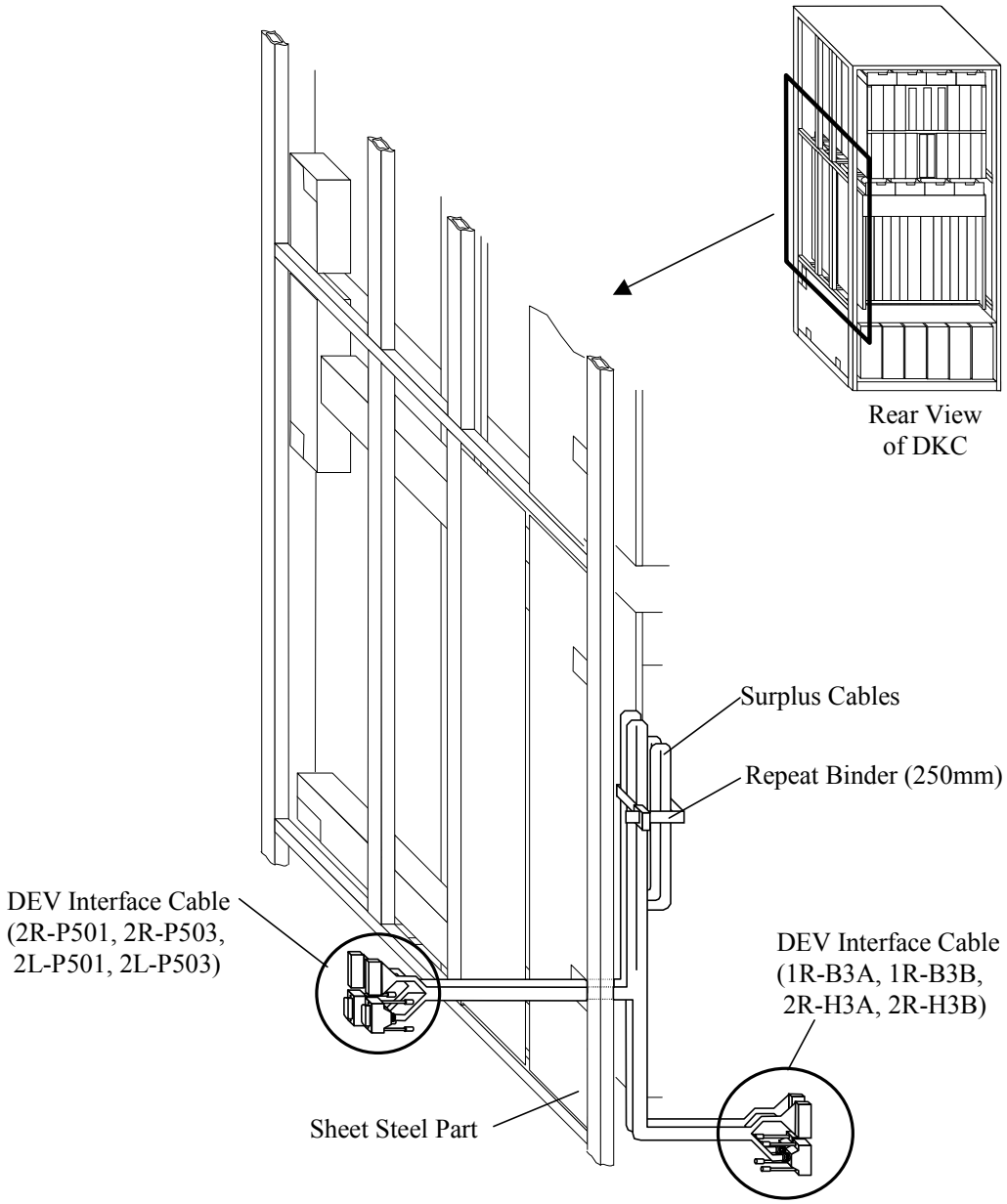

Fig. 4.13.9-24 Removal of DEV Interface Cables

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f. Loosen the two screws and remove the cable cover.

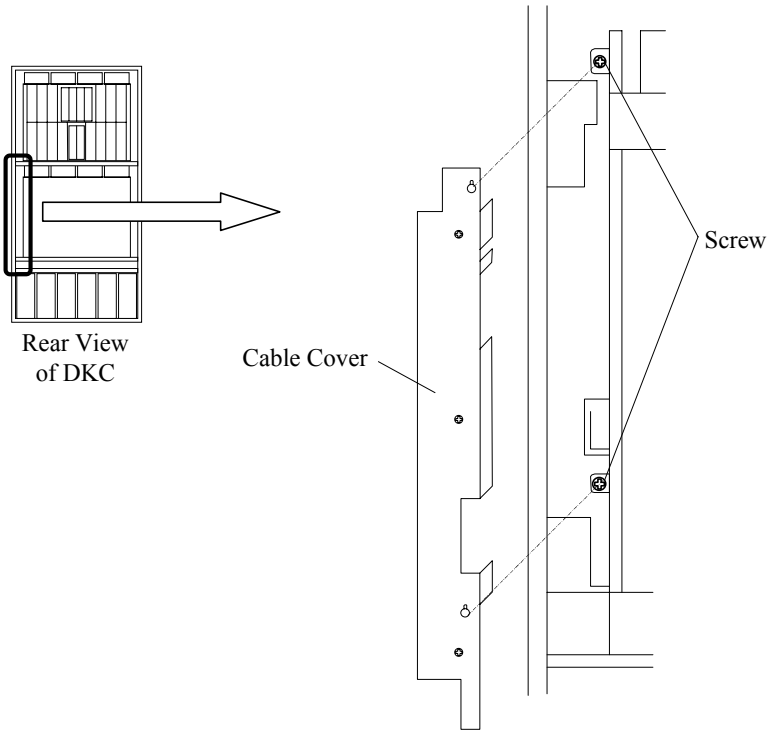

Fig. 4.13.9-25 Removal of Cable Cover

g. Loosen the screw and remove the cable duct cover.

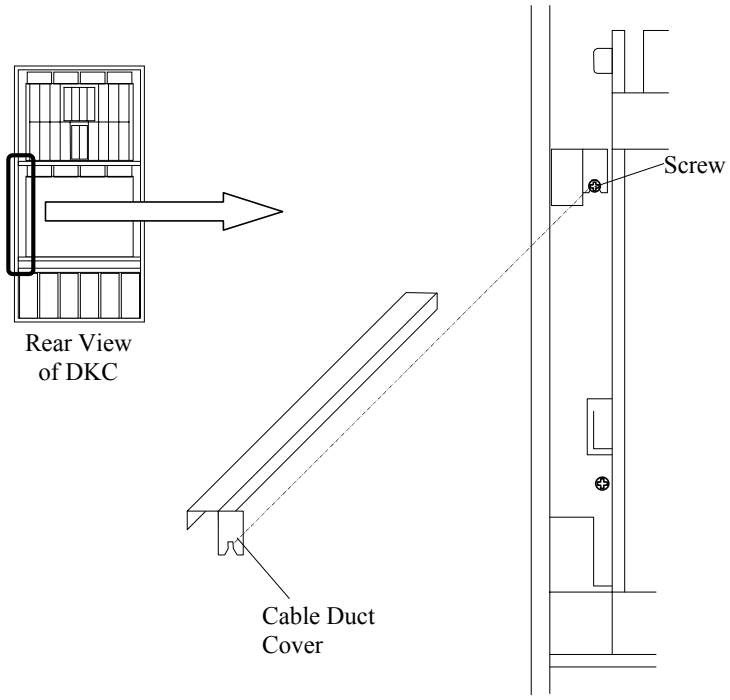

Fig. 4.13.9-26 Removal of Cable Duct Cover

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h. Remove the DEV interface cables for the DKU-R1 from the cable duct. Remove the repeat binder from the cables.

Table 4.13.9-7 DEV Interface Cable List

No.	Cable No. (DKA Side)	Cable No. (FSW Side)	Remarks
1	1R-C2A	5R-P501	
	1R-C2B	5R-P503	
2	2R-J2A	5L-P501	
	2R-J2B	5L-P503	

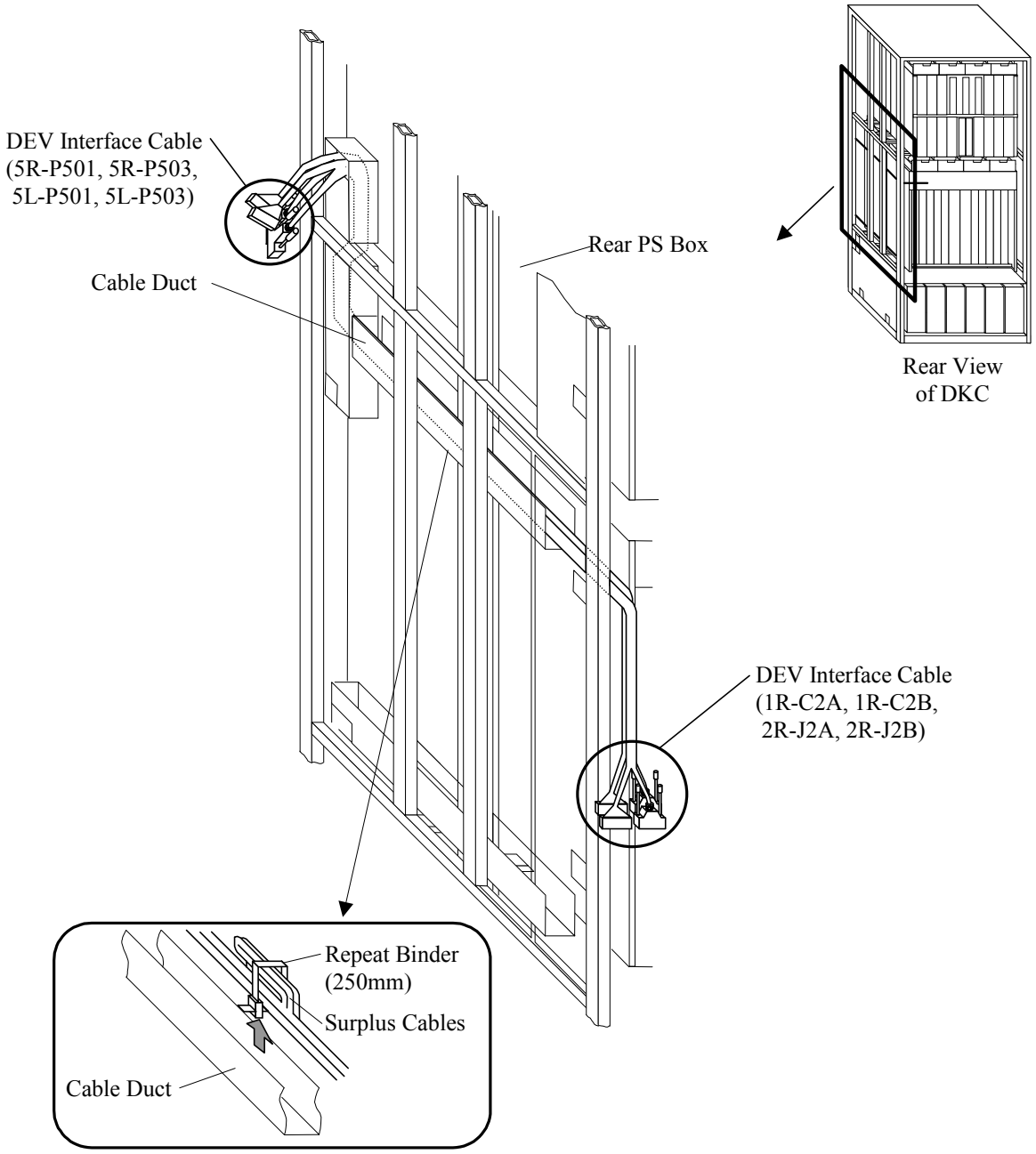

Fig. 4.13.9-27 Removal of DEV Interface Cables

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i. Remove the DEV interface cables for the DKU-R1 from the cable duct. Remove the repeat binder from the cables.

Table 4.13.9-8 DEV Interface Cable List

No.	Cable No. (DKA Side)	Cable No. (FSW Side)	Remarks
1	1R-C1A	4R-P501	
	1R-C1B	4R-P503	
2	2R-J1A	4L-P501	
	2R-J1B	4L-P503	

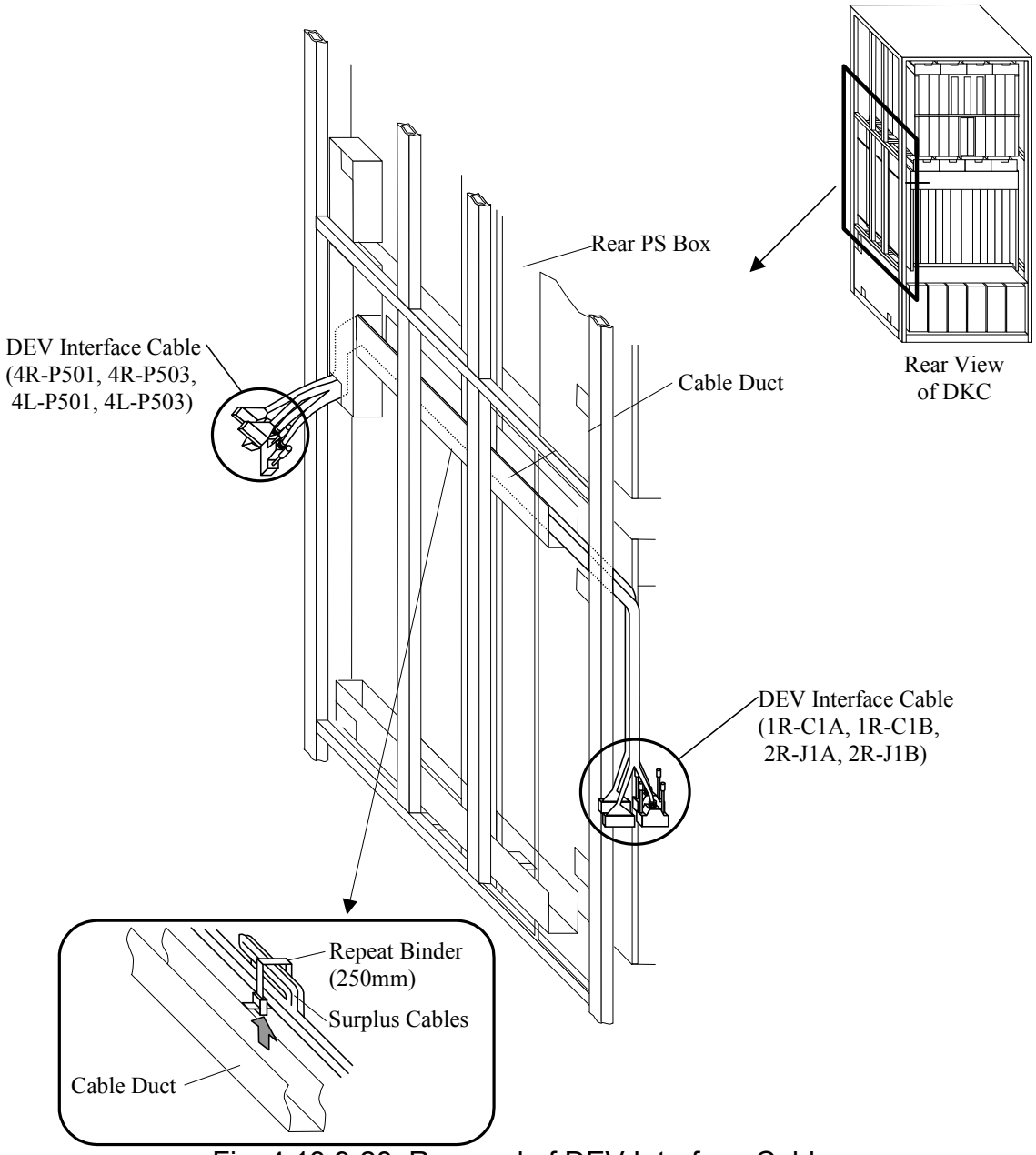

Fig. 4.13.9-28 Removal of DEV Interface Cables

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j. Remove the DEV interface cables for the DKU-R1 from the cable duct. Remove the repeat binder from the cables.

Table 4.13.9-9 DEV Interface Cable List

No.	Cable No. (DKA Side)	Cable No. (FSW Side)	Remarks
1	1R-B2A	1R-P501	
	1R-B2B	1R-P503	
2	2R-H2A	1L-P501	
	2R-H2B	1L-P503	

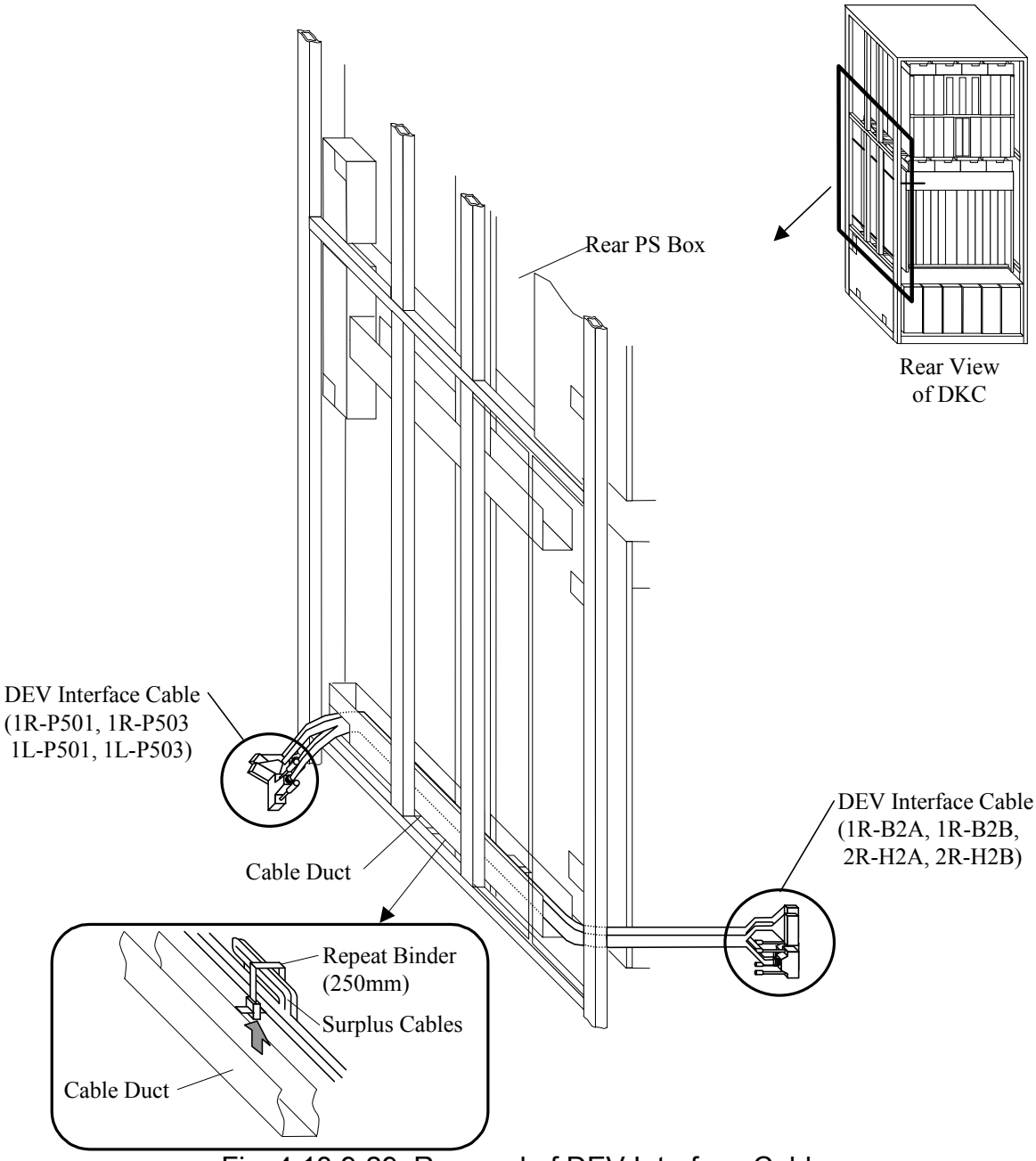

Fig. 4.13.9-29 Removal of DEV Interface Cables

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k. Remove the DEV interface cables for the DKU-R1 from the cable duct. Remove the repeat binder from the cables.

Table 4.13.9-10 DEV Interface Cable List

No.	Cable No. (DKA Side)	Cable No. (FSW Side)	Remarks
1	1R-B1A	0R-P501	
	1R-B1B	0R-P503	
2	2R-H1A	0L-P501	
	2R-H1B	0L-P503	

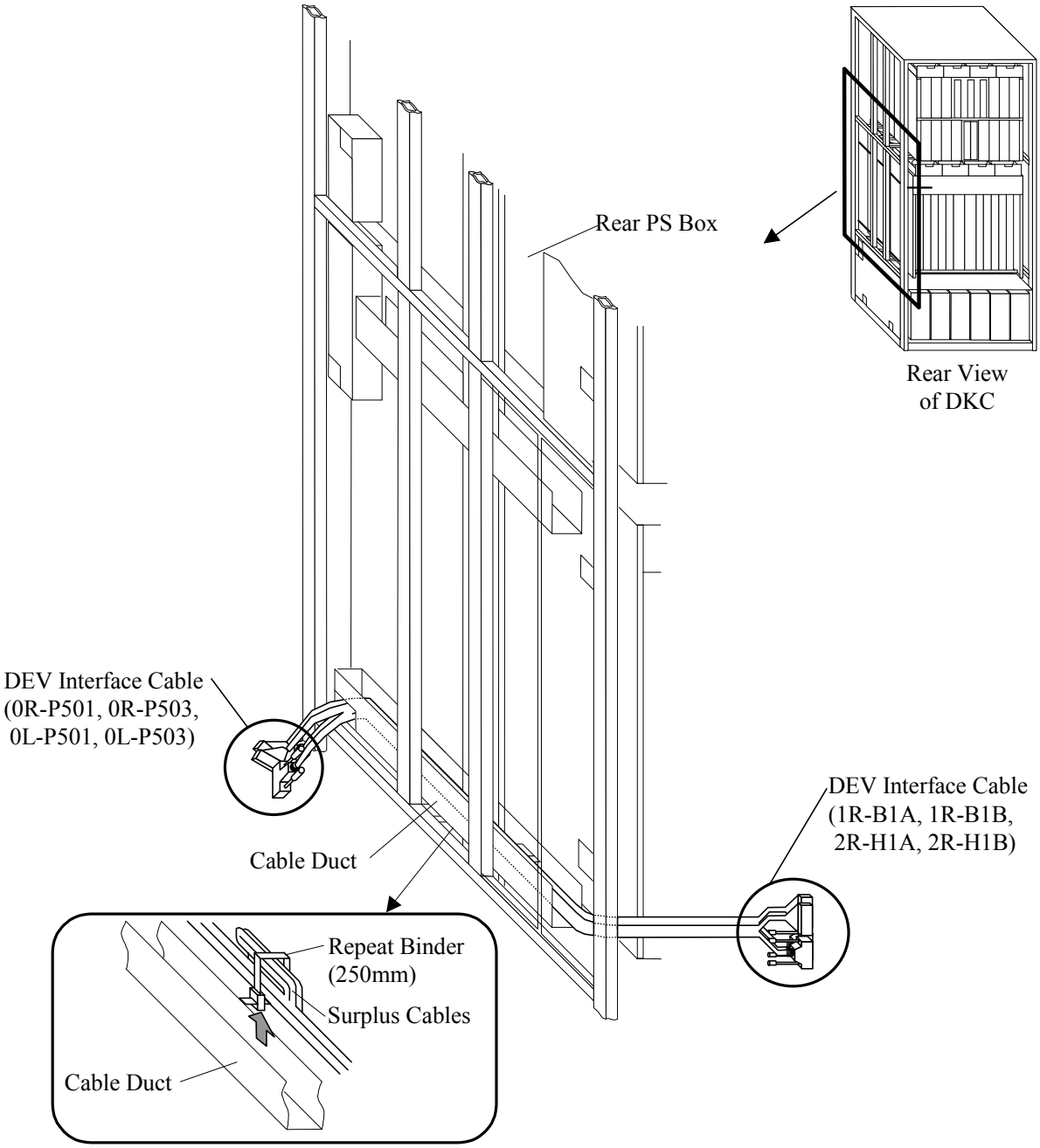

Fig. 4.13.9-30 Removal of DEV Interface Cables

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6. Attachment of DEV Interface cables
   a. Insert the DEV interface cables for the DKU-R1 into the cable clamp located at the bottom of the Rear Logic Box. Attach the DEV interface cables in order of ① through ⑧. When doing this, position the two binders that bundle the cables at the end of the cable clamp.

Note: Since a label bearing a connection destination is affixed on each cable/connector, work very carefully referring to it and the wiring diagram.

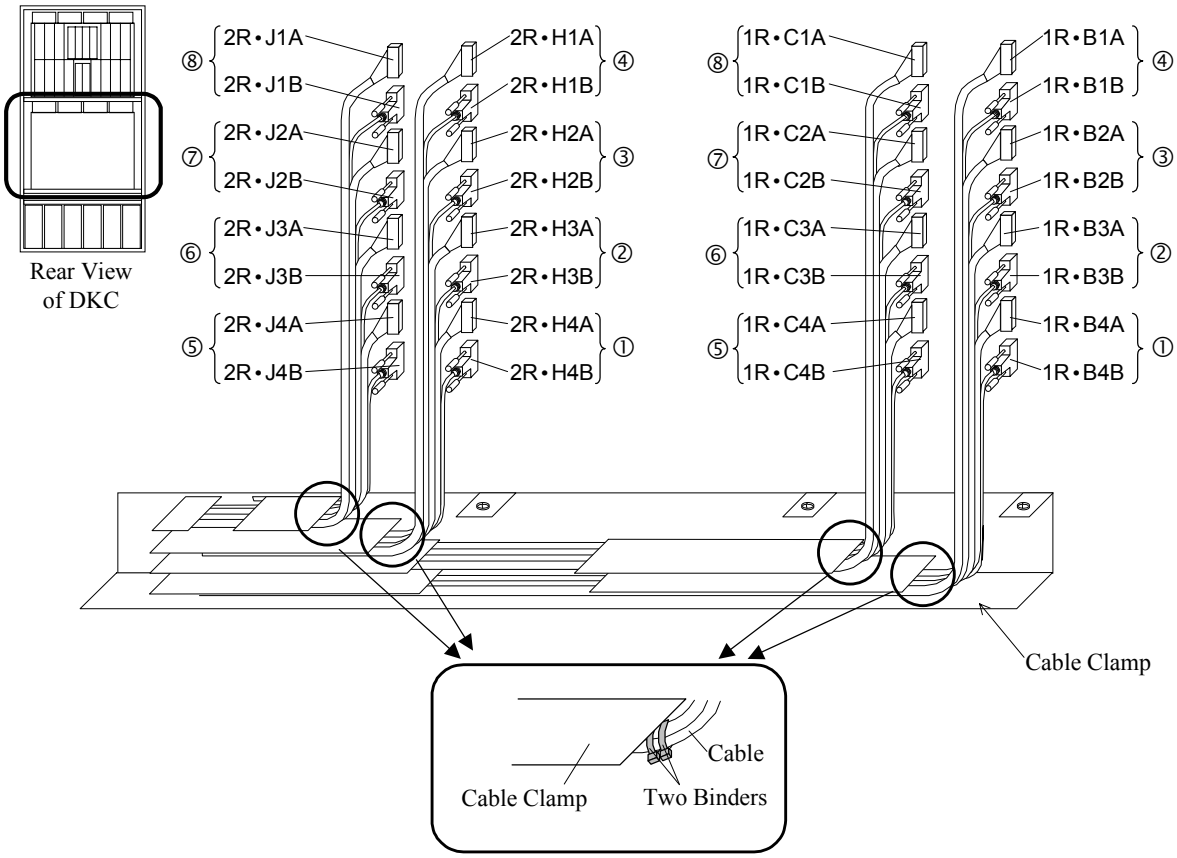

Fig. 4.13.9-31 Attachment of DEV Interface Cables

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b. Pass the DEV interface cables for the DKU-R1 through the cable entrance on the sheet steel part. When doing this, position the two binders that bundle the DEV interface cables at the cable entrance on the sheet steel part and fix the surplus cables with the repeat binder.

Table 4.13.9-11 DEV Interface Cable List

No.	Cable No. (DKA Side)	Cable No. (FSW Side)	Remarks
1	1R-C4A	7-A1	
	1R-C4B	7-A3	
2	2R-J4A	7-B1	
	2R-J4B	7-B3	

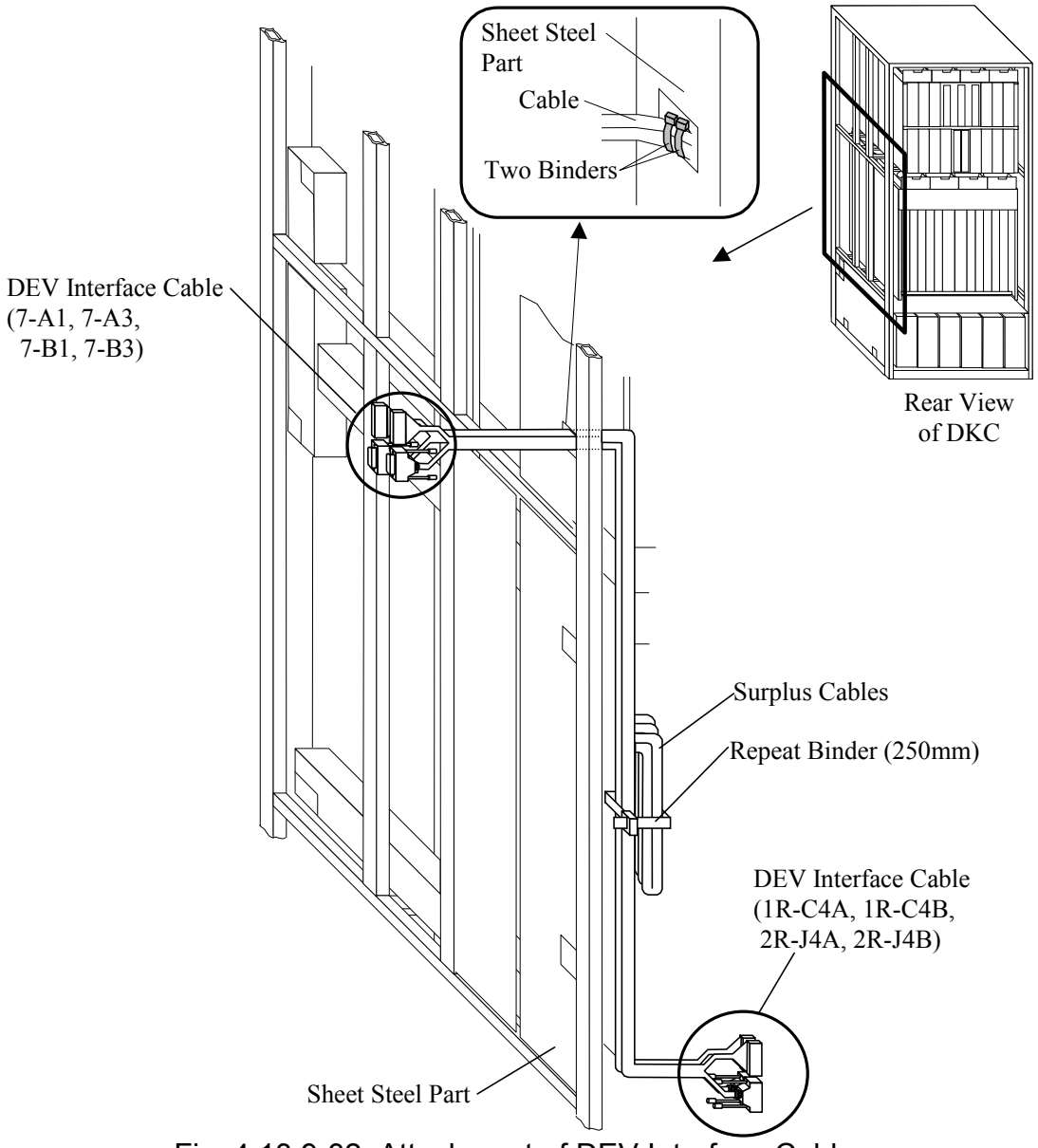

Fig. 4.13.9-32 Attachment of DEV Interface Cables

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c. Pass the DEV interface cables for the DKU-R1 through the cable entrance on the sheet steel part. When doing this, position the two binders that bundle the DEV interface cables at the cable entrance on the sheet steel part and fix the surplus cables with the repeat binder.

Table 4.13.9-12 DEV Interface Cable List

No.	Cable No. (DKA Side)	Cable No. (FSW Side)	Remarks
1	1R-C3A	6-A1	
	1R-C3B	6-A3	
2	2R-J3A	6-B1	
	2R-J3B	6-B3	

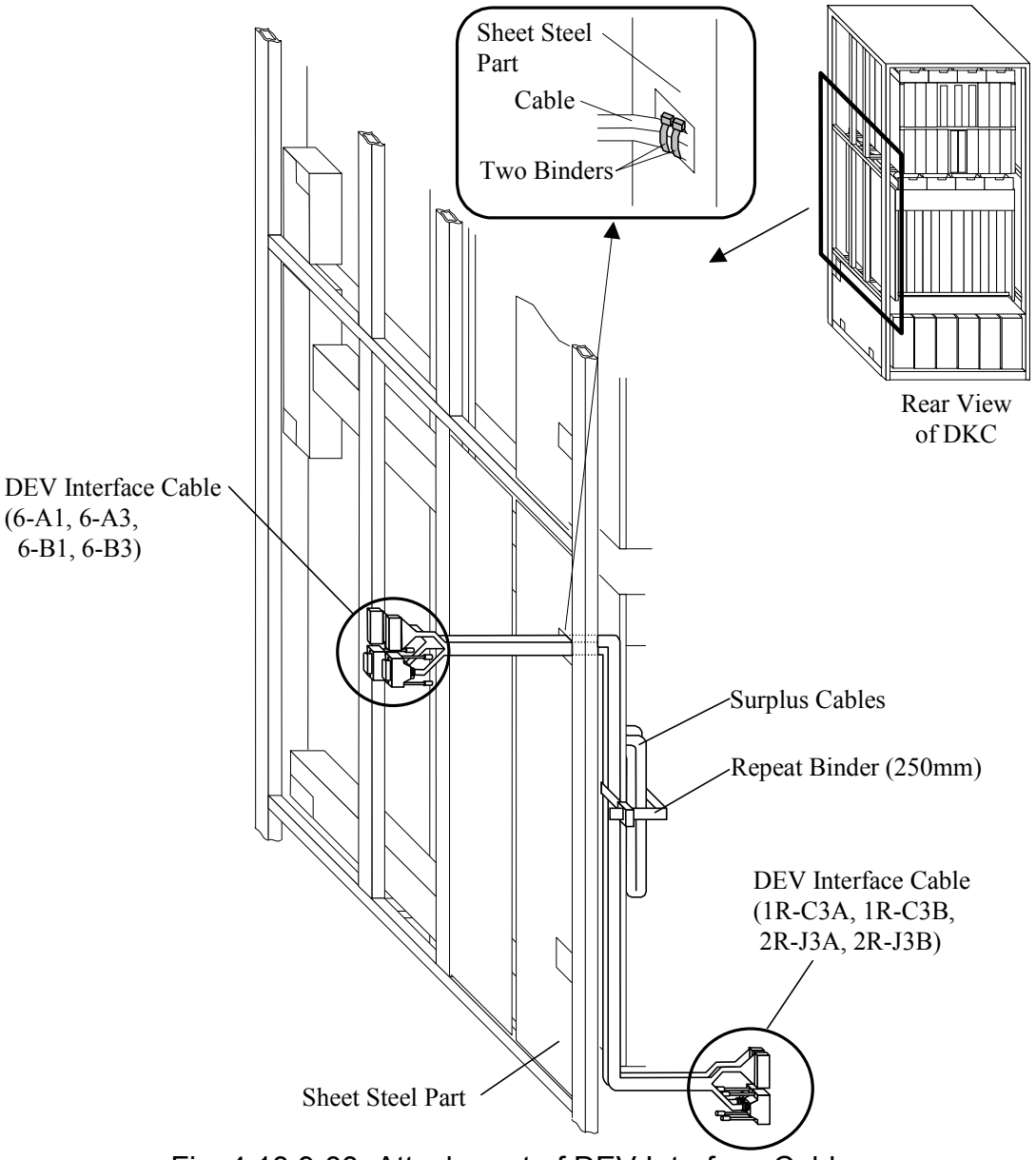

Fig. 4.13.9-33 Attachment of DEV Interface Cables

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d. Pass the DEV interface cables for the DKU-R1 through the cable entrance on the sheet steel part. When doing this, position the two binders that bundle the DEV interface cables at the cable entrance on the sheet steel part and fix the surplus cables with the repeat binder.

Table 4.13.9-13 DEV Interface Cable List

No.	Cable No. (DKA Side)	Cable No. (FSW Side)	Remarks
1	1R-B4A	3-A1	
	1R-B4B	3-A3	
2	2R-H4A	3-B1	
	2R-H4B	3-B3	

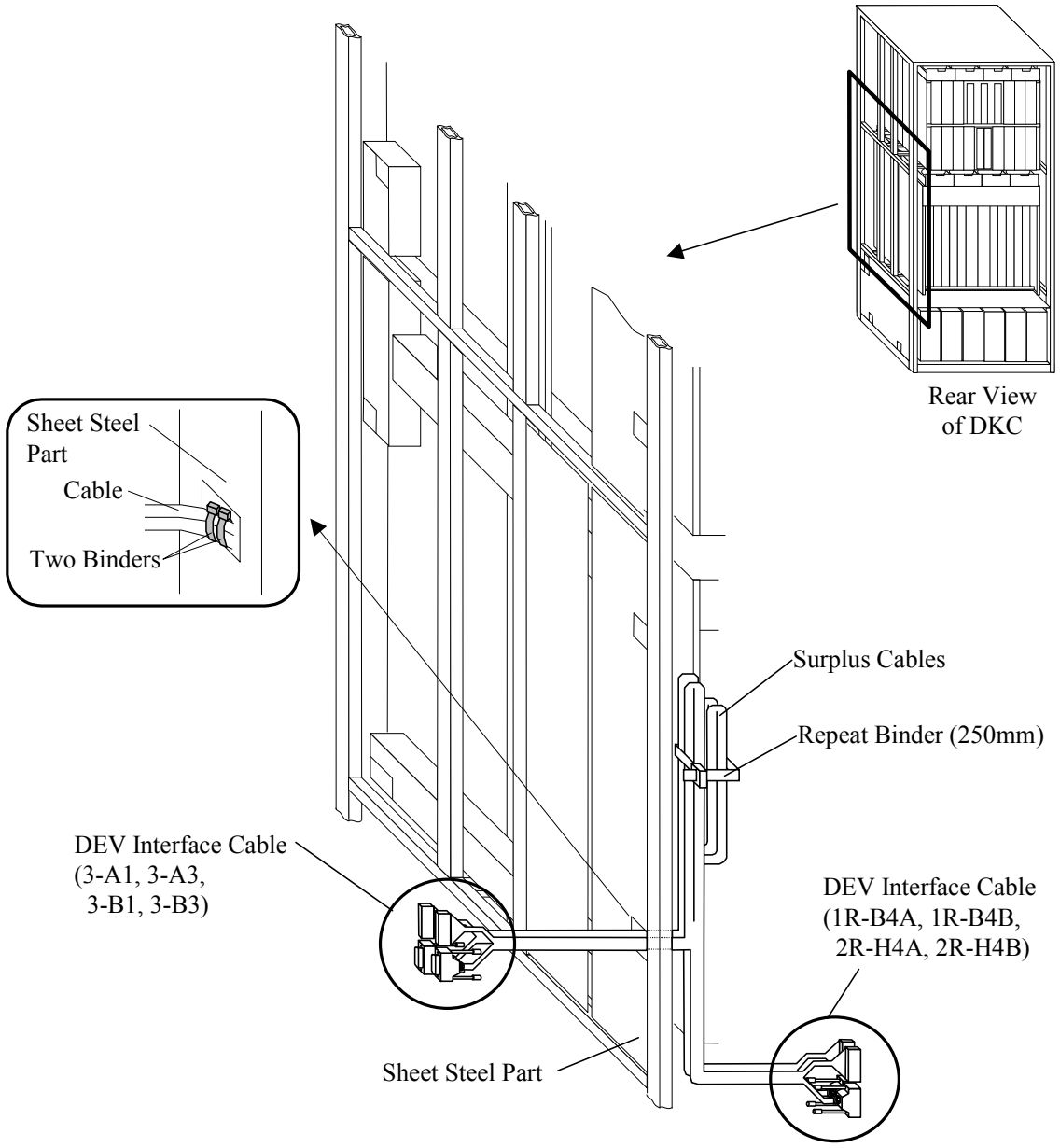

Fig. 4.13.9-34 Attachment of DEV Interface Cables

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e. Pass the DEV interface cables for the DKU-R1 through the cable entrance on the sheet steel part. When doing this, position the two binders that bundle the DEV interface cables at the cable entrance on the sheet steel part and fix the surplus cables with the repeat binder.

Table 4.13.9-14 DEV Interface Cable List

No.	Cable No. (DKA Side)	Cable No. (FSW Side)	Remarks
1	1R-B3A	2-A1	
	1R-B3B	2-A3	
2	2R-H3A	2-B1	
	2R-H3B	2-B3	

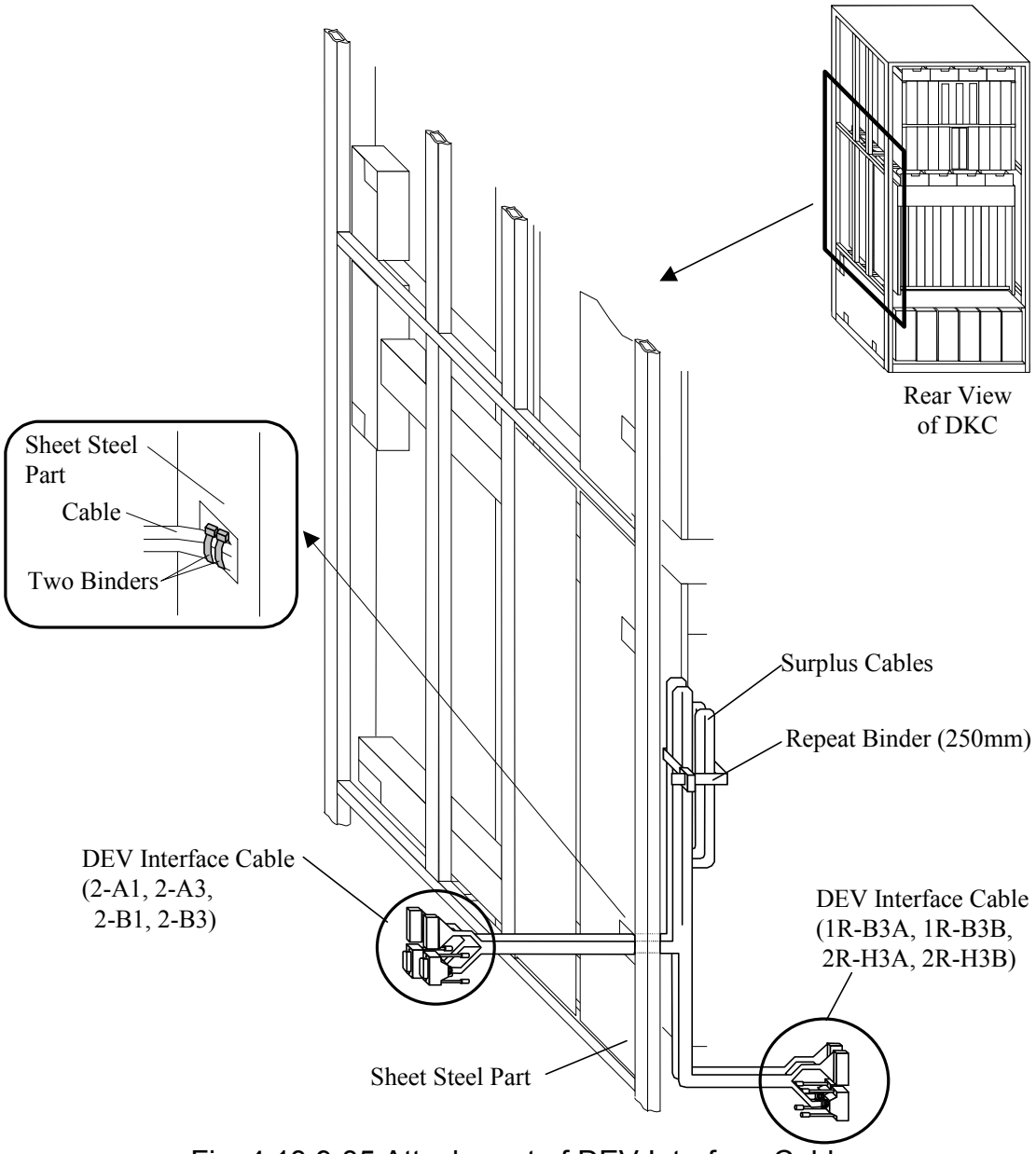

Fig. 4.13.9-35 Attachment of DEV Interface Cables

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f. Attach the cable cover with the two screws.

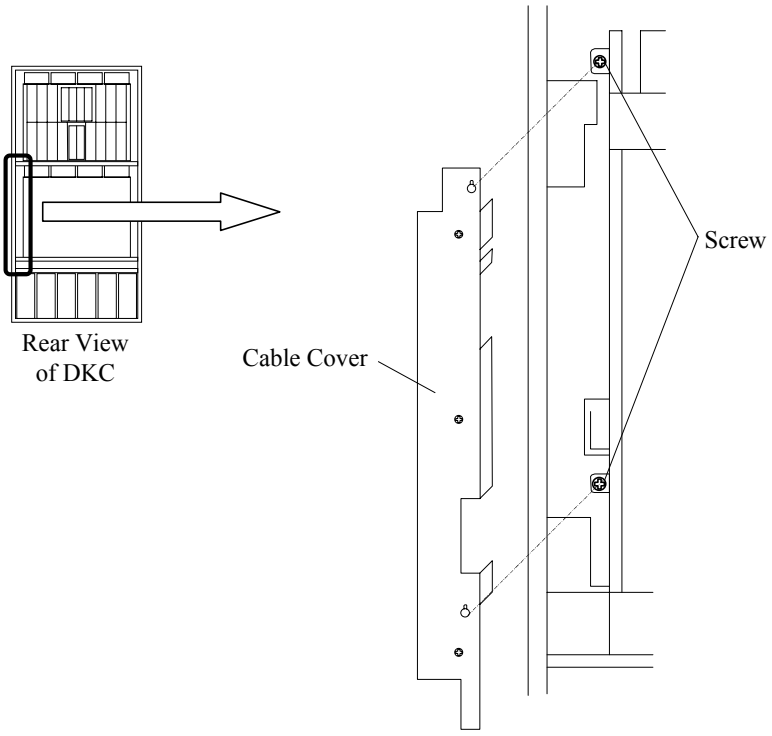

Fig. 4.13.9-36 Attachment of Cable Cover

g. Attach the cable duct cover with the screw.

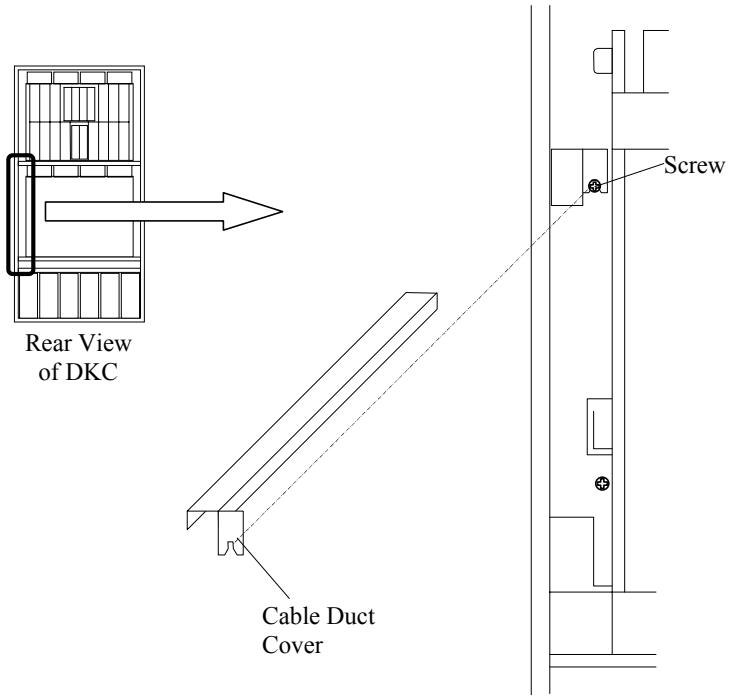

Fig. 4.13.9-37 Attachment of Cable Duct Cover

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h. Attach the cable duct cover with the two screws.

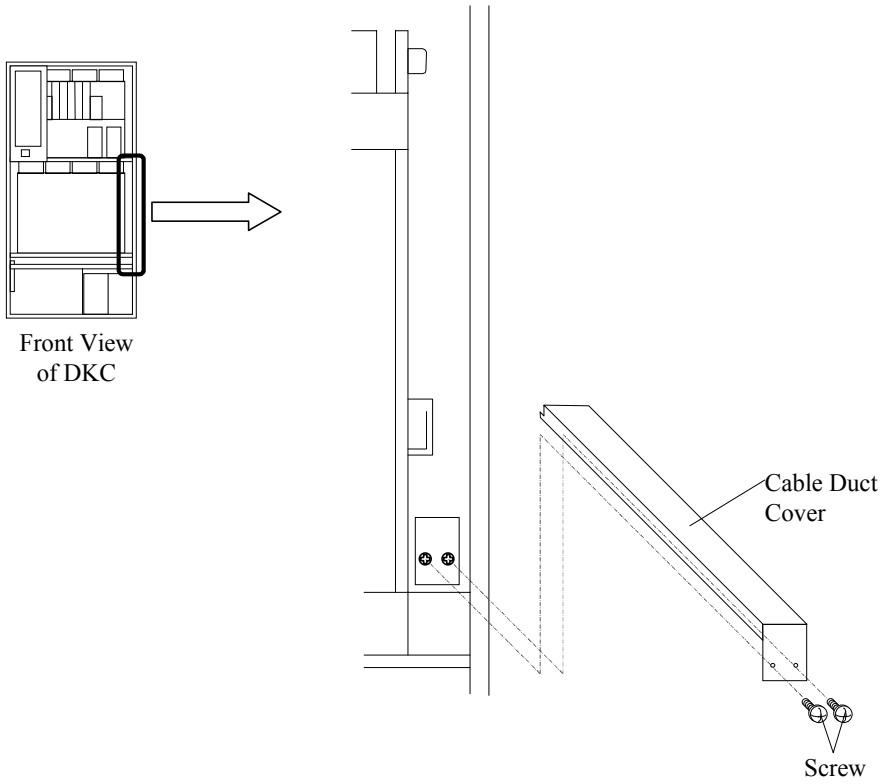

Fig. 4.13.9-38 Attachment of Cable Duct Cover

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i. Insert the DEV interface cables for the DKU-R1 into the cable duct. When doing this, position the two binders that bundle the DEV interface cables at the cable exit of the cable duct and fix the surplus cables with the repeat binder.

Table 4.13.9-15 DEV Interface Cable List

No.	Cable No. (DKA Side)	Cable No. (FSW Side)	Remarks
1	1R-C2A	5-A1	
	1R-C2B	5-A3	
2	2R-J2A	5-B1	
	2R-J2B	5-B3	

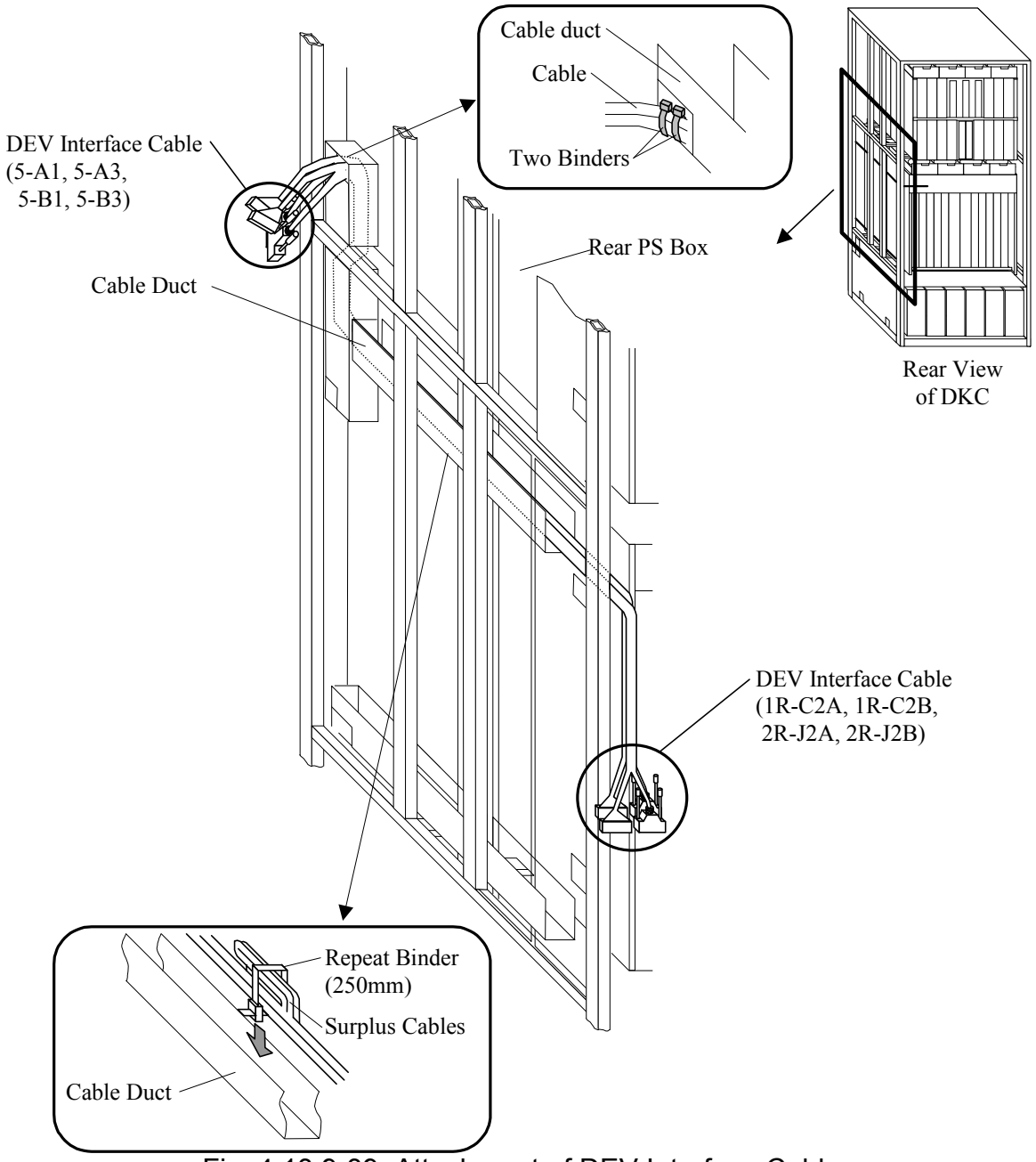

Fig. 4.13.9-39 Attachment of DEV Interface Cables

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j. Insert the DEV interface cables for the DKU-R1 into the cable duct. When doing this, position the two binders that bundle the DEV interface cables at the cable exit of the cable duct and fix the surplus cables with the repeat binder.

Table 4.13.9-16 DEV Interface Cable List

No.	Cable No. (DKA Side)	Cable No. (FSW Side)	Remarks
1	1R-C1A	4-A1	
	1R-C1B	4-A3	
2	2R-J1A	4-B1	
	2R-J1B	4-B3	

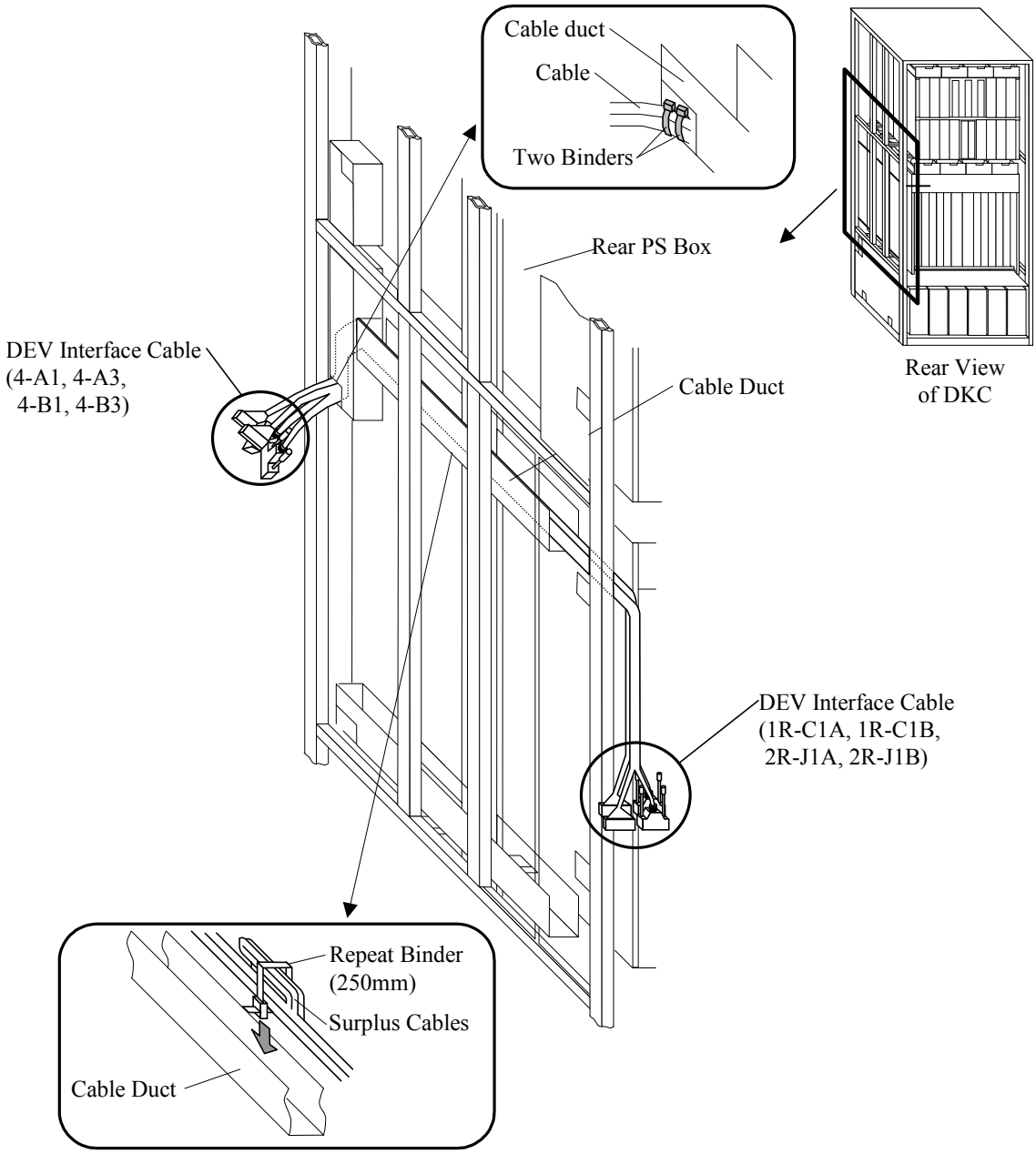

Fig. 4.13.9-40 Attachment of DEV Interface Cables

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k. Insert the DEV interface cables for the DKU-R1 into the cable duct. When doing this, position the two binders that bundle the DEV interface cables at the cable exit of the cable duct and fix the surplus cables with the repeat binder.

Table 4.13.9-17 DEV Interface Cable List

No.	Cable No. (DKA Side)	Cable No. (FSW Side)	Remarks
1	1R-B2A	1-A1	
	1R-B2B	1-A3	
2	2R-H2A	1-B1	
	2R-H2B	1-B3	

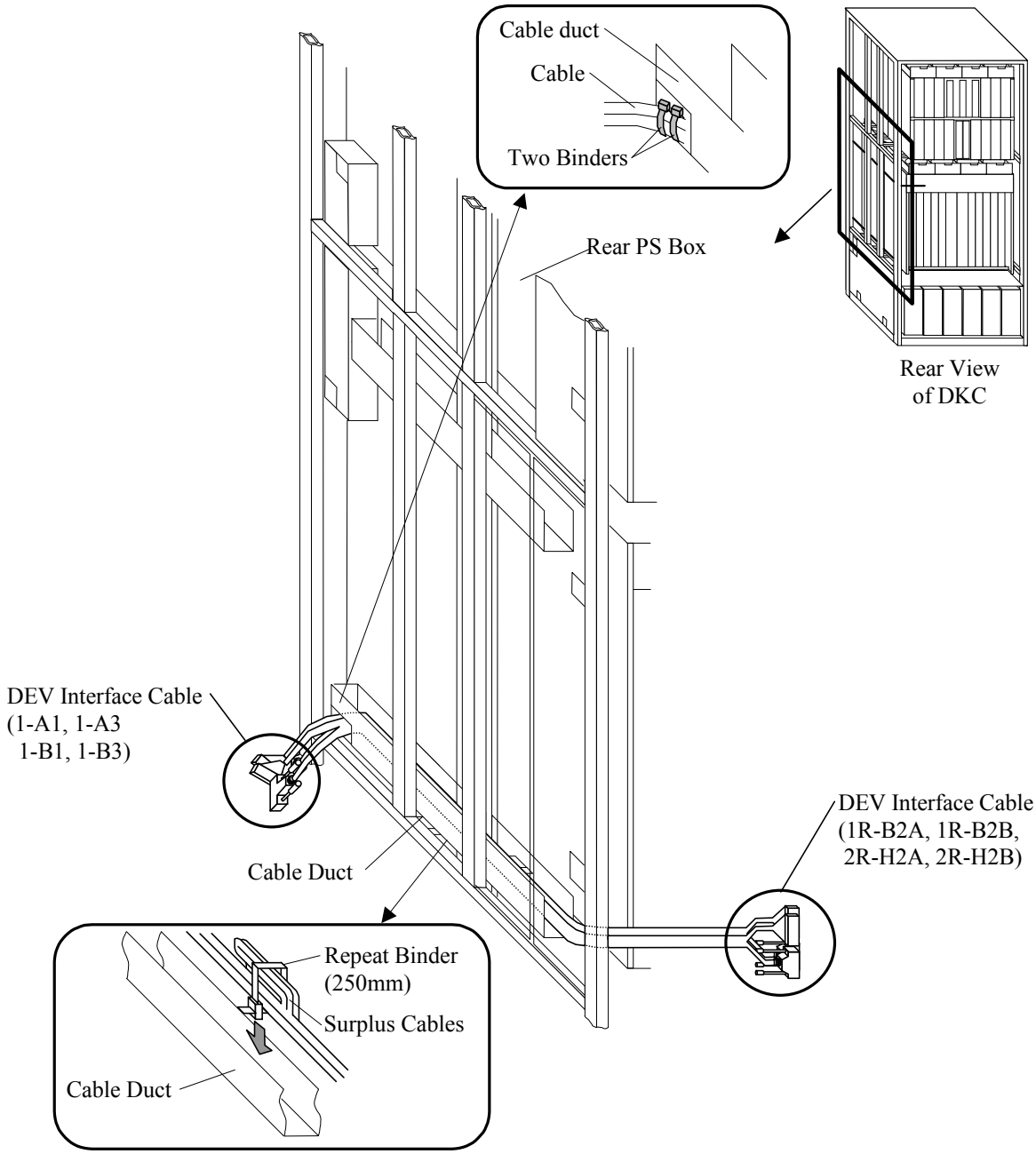

Fig. 4.13.9-41 Attachment of DEV Interface Cables

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m. Insert the DEV interface cables for the DKU-R1 into the cable duct. When doing this, position the two binders that bundle the DEV interface cables at the cable exit of the cable duct and fix the surplus cables with the repeat binder.

Table 4.13.9-18 DEV Interface Cable List

No.	Cable No. (DKA Side)	Cable No. (FSW Side)	Remarks
1	1R-B1A	0-A1	
	1R-B1B	0-A3	
2	2R-H1A	0-B1	
	2R-H1B	0-B3	

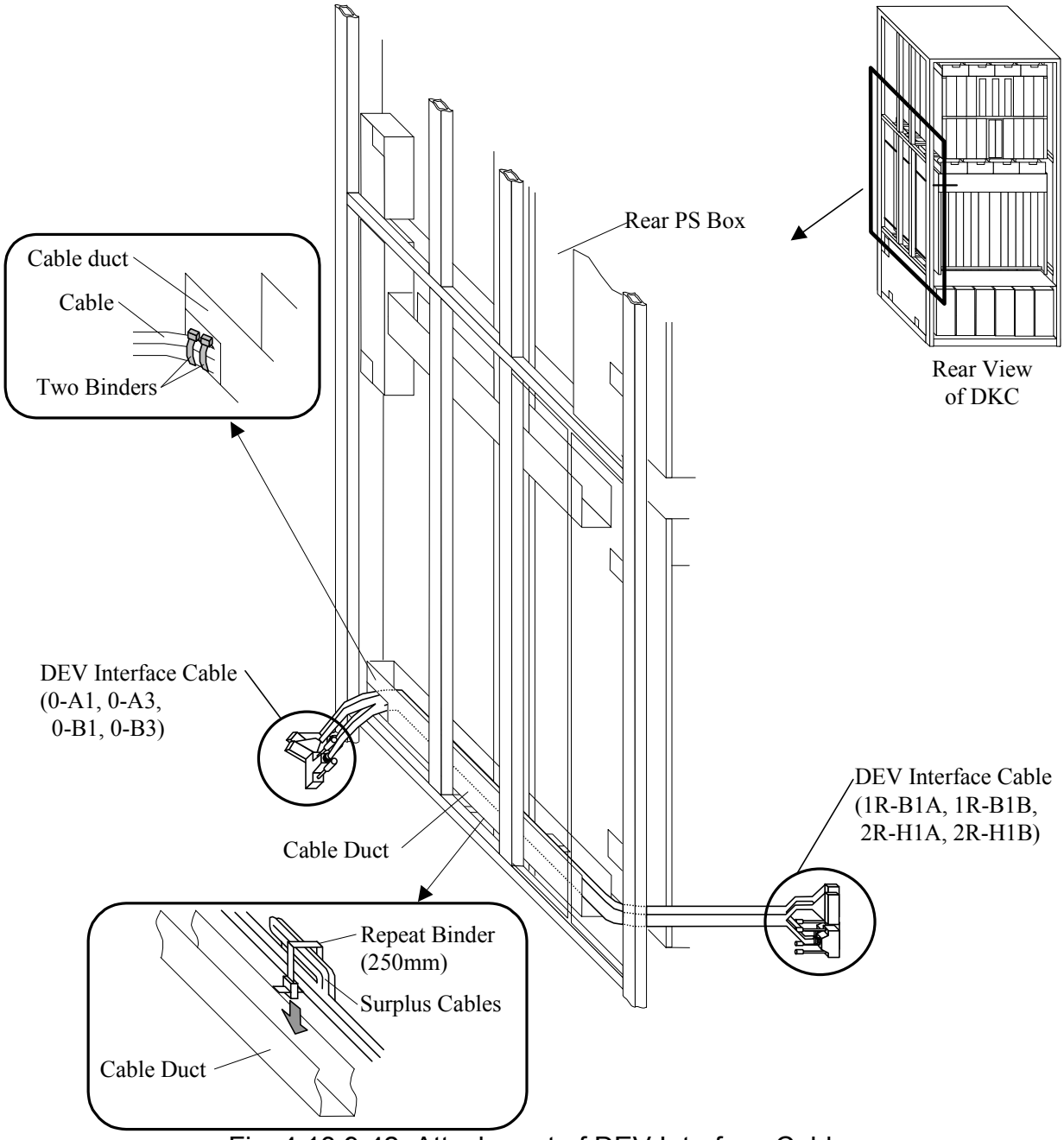

Fig. 4.13.9-42 Attachment of DEV Interface Cables

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7. Attachment of Cable Covers
   a. Attach the cable covers in the reverse order of step 5-f through h.
   b. Attach the cable covers in the reverse order of step 1.

8. Removal of Nameplate
   a. Remove the nameplate from the Rear Logic Box cover.

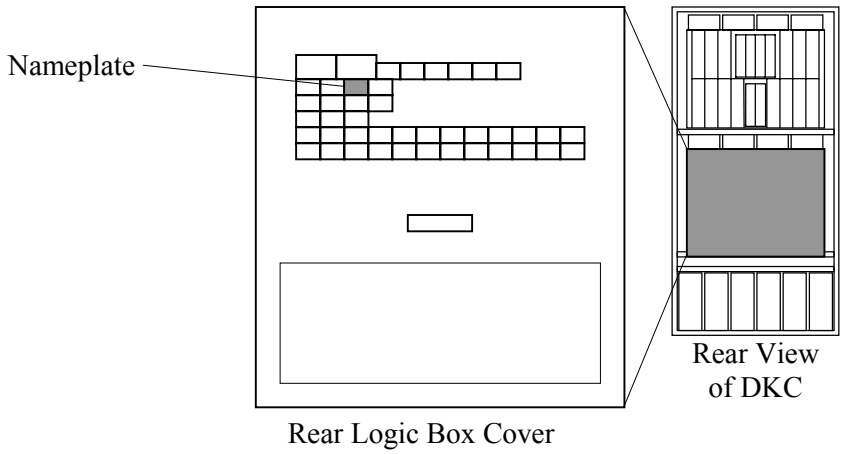

Fig. 4.13.9-43 Removal of Nameplate

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4.14 De-Installation of NAS Available Additional Power Supply (DKC-F460I-NAPS)

Table 4.14-1 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKC-F460I-NAPS	3/12VPS	5519715-A	4	
		Nameplate (HDS)	2105902-142	1	RSD
			2105903-142		HICAM
			2105903-242		HICEF
		Nameplate (HP)	2105902-242	1	RSD
			2105903-342		HICAM
			2105903-442		HICEF

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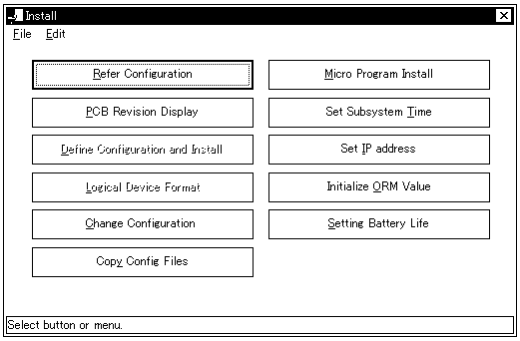
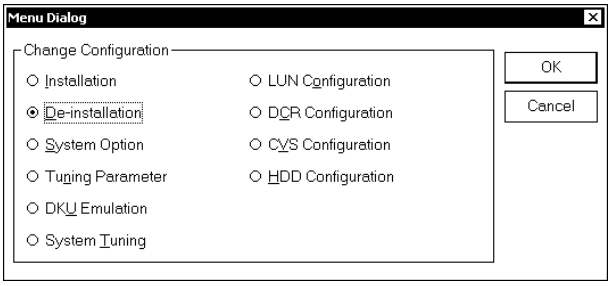
1. Setting up the New Device Structure Information

1. <Mode Change>
   Change the mode to Modify Mode.
   Select (CL) [Install].

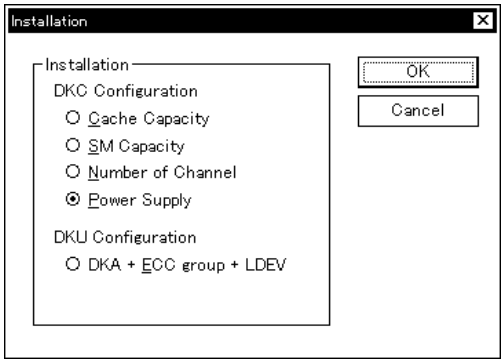
2. <Start the 'Menu Dialog' screen>
   Select (CL) [Change Configuration].



3. <Start Device Structure Setup screen>
   Select (CL) [De-Installation] in the 'Menu Dialog' dialog box and select (CL) [OK].



4. <Select a part to be changed>
   Select (CL) [Power Supply], and select (CL) [OK].



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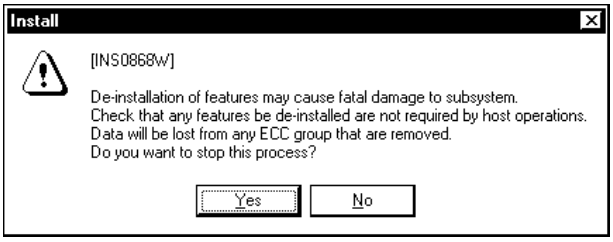
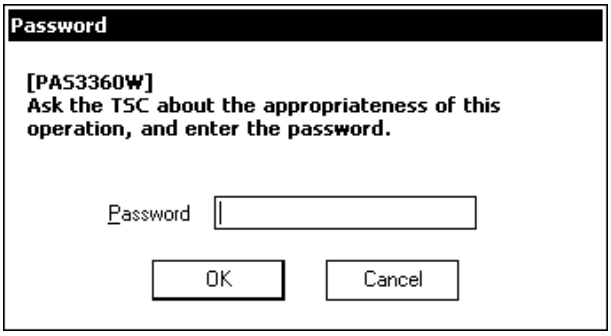
5.

Select (CL) [No] in response to “De-installation of features may cause fatal damage to subsystem. Check that any features be de-installed are not required by host operations. Data will be lost from any ECC group that are removed. Do you want to stop this process?”.



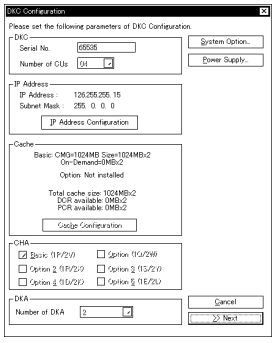
6. <Input password>
Enter the password and select (CL) [OK].



NOTICE
This is a special (exceptional) operation that can cause a serious failure such as a system down or a data loss if a wrong part to be removed is selected, and requires an input of a password. Ask the technical support center about the appropriateness of the operation, and input the password after getting an approval of executing the operation.

7. <Update Configuration Information>
Select (CL) [Power Supply] in the ‘DKC Configuration’ window.
Go to Step 7-1.

Make sure that the entered item is correct and select (CL) [>>Next].



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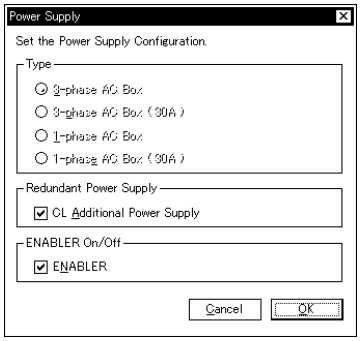
7-1. <Define Redundant Power Supply>
Select (CL) redundant power supply to be de-installed in the 'Redundant Power Supply' option box.
Select (CL) [OK]. Return to step 7.

Note: If the entered item is wrong, the part not to be installed or de-installed may be blocked.



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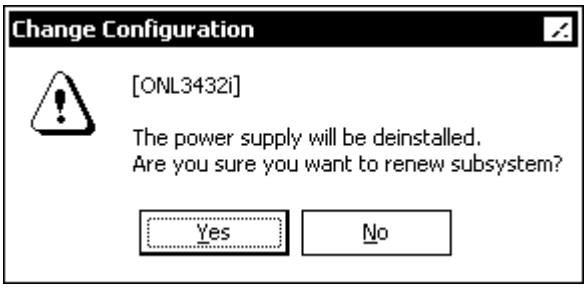
2. SVP pre procedure

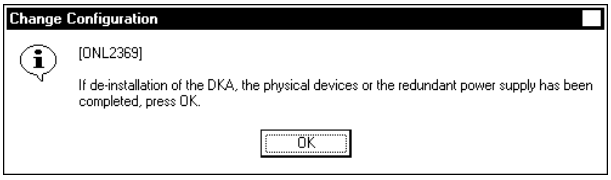
1. <Start de-installation>
   Select (CL) [Yes] in response to “The power supply will be deinstalled. Are you sure you want to renew subsystem?”.

   When [No] is selected (CL), returns to INST04-NAP-20 step 3.



2.

“If de-installation of the CHA/DKA, the physical devices or the redundant power supply has been completed, press OK.” is displayed.



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3. De-Installation Procedure of NAS Available Additional Power Supply

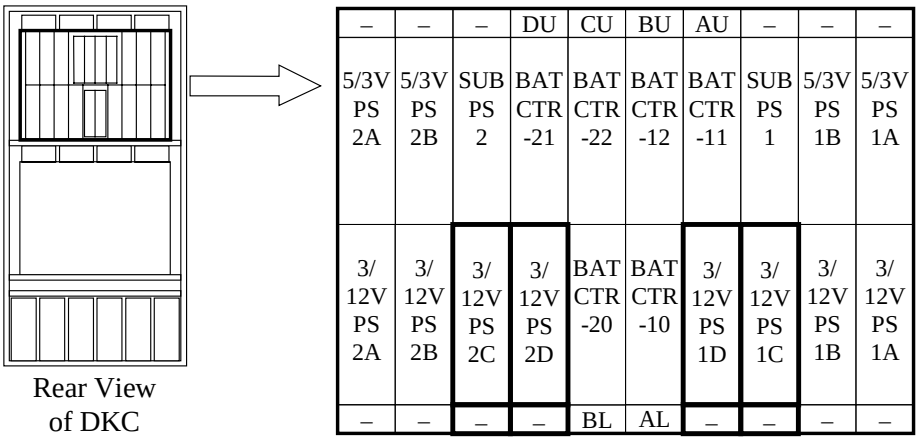
3-1 Turn off the Additional Power Supply

a. Turn the PS Enable/Disable Switch to (DOWN) **Disable**. Refer to Table 4.14-2 and Fig. 4.14-1.

> **⚠ CAUTION**
>
> A system down may be caused by setting the PS Enable/Disable switch of the switching power supply other than that to be removed to "Disable". Make sure that it is a switching power supply to be removed.

Table 4.14-2 Removal Location

No.	Part Name	PS Location		Remarks
		Cluster 1	Cluster 2	
1	3/12V Power Supply	3/12VPS1C	3/12VPS2C	
2	3V/12 Power Supply	3/12VPS1D	3/12VPS2D	



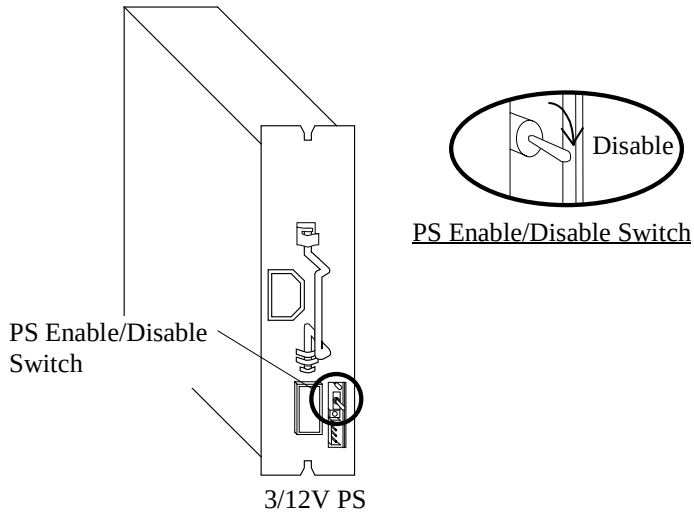


Fig. 4.14-1 Switch Location

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3-2 Disconnection of the cables

a. Disconnect the inlet cables from the power supplies.
b. Disconnect the 12V power cables from the power supplies and connect the dummy connectors to them.

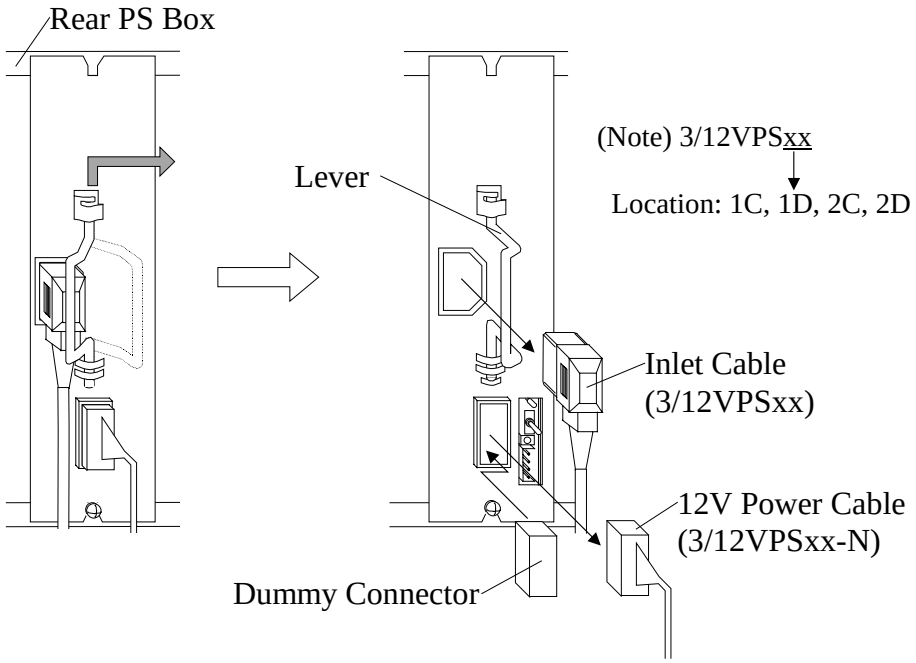

Fig. 4.14-2 Disconnection of Cables

3-3 Removal of the Additional Power Supply

a. Loosen the screws and remove the Additional Power Supplies. Refer to Fig. 4.14-3.
b. Attach the dummy plates to the removal locations and fasten the screws. Refer to Fig. 4.14-4.
c. Insert the removed inlet cables into respective dummy plates and secure them using cable clamps.

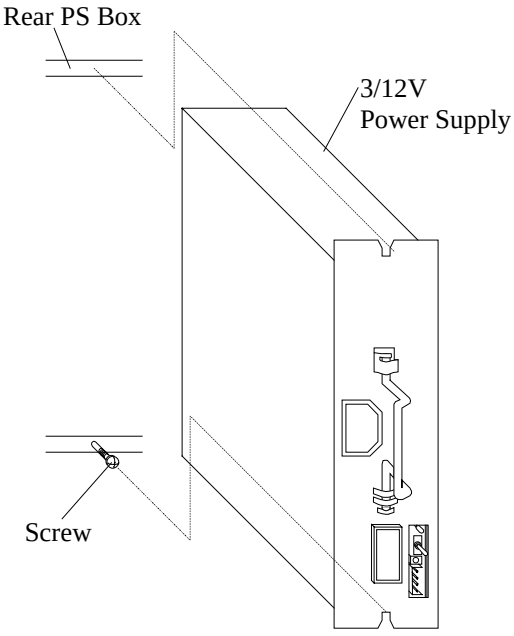

Fig. 4.14-3 Removal of Power Supply

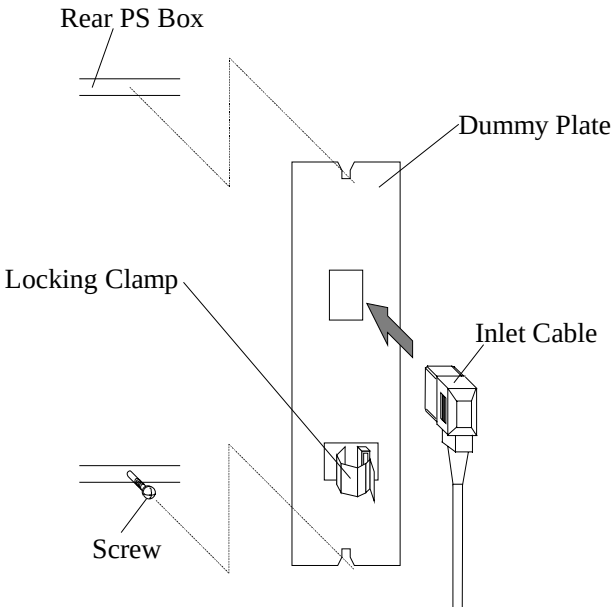

Fig. 4.14-4 Attachment of Dummy Plate

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3-4 Removal of the nameplate

a. Remove the nameplate from the cover.

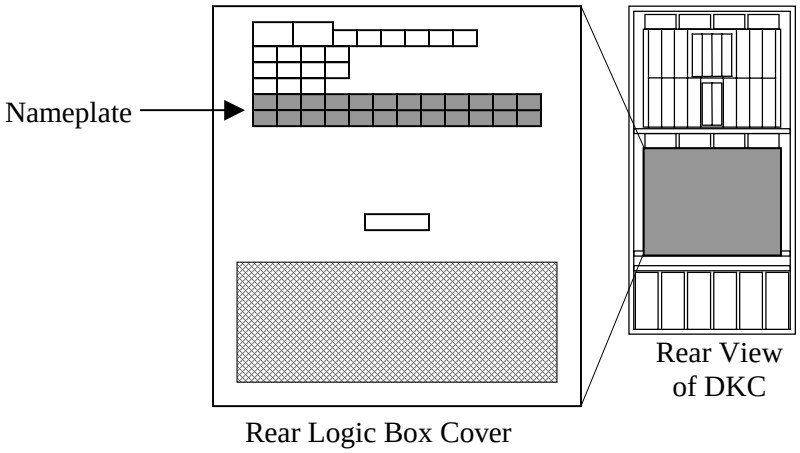

Fig. 4.14-5 Removal of Nameplate

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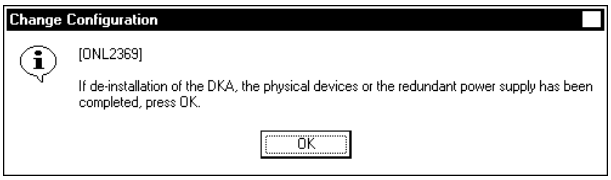
4. SVP post procedure

1.

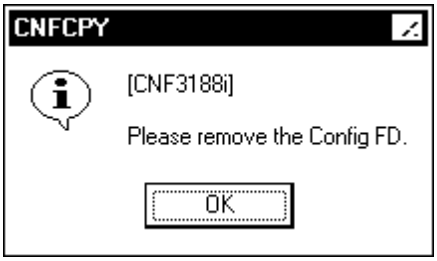
Select (CL) [OK] in response to “If de-installation of the CHA/DKA, the physical devices or the redundant power supply has been completed, press OK.” shown in the right figure.



2. <Check the end of de-installation procedure>
“Renewal process has completed. Please check subsystem status.” shown in the right figure displayed. Select (CL) [OK] in response to this message.

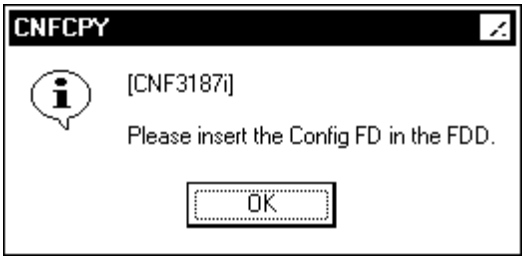
3.

“Reading subsystem configuration data...” is displayed. “Please insert the Config FD in the FDD.” is displayed. Insert the configuration FD into FDD, and select (CL) [OK].



4.

When this procedure is completed, the message “Please remove the Config FD.” is displayed. Remove the FD, and select (CL) [OK].



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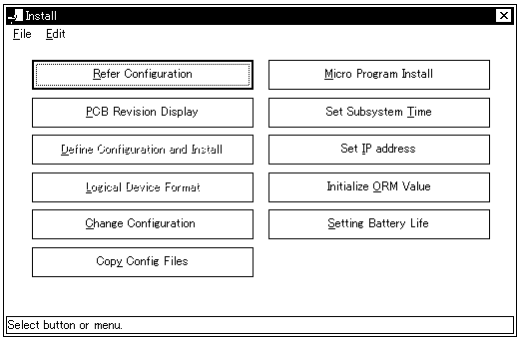
5.

After the procedure is completed, return to [Install].
Select (CL) [File]-[Exit].



6. <Mode Change>
Change the mode to View Mode.

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5 SVP procedure

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5.2 New Installation SVP Procedure INST05-20
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5.2.3 Check Procedure INST05-320
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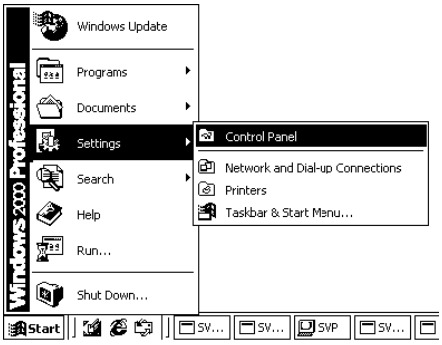
5.2 New Installation SVP Procedure

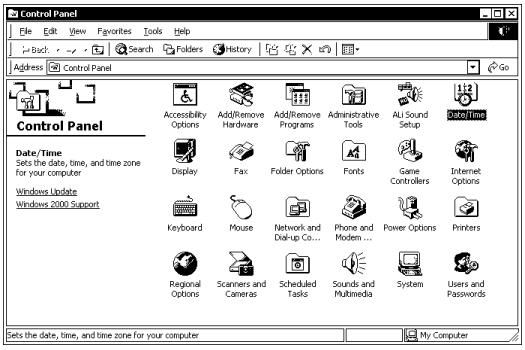
5.2.1 TOD Setting and Set IP Address

[1] TOD Setting (Turn on subsystem power before TOD Setting)

1. <Open [Control Panel]>
   Select (DR) [Settings] and then [Control Panel] from [Start].



2. <Open [Date/Time]>
   Select (DC) [Date/Time] from [Control Panel].



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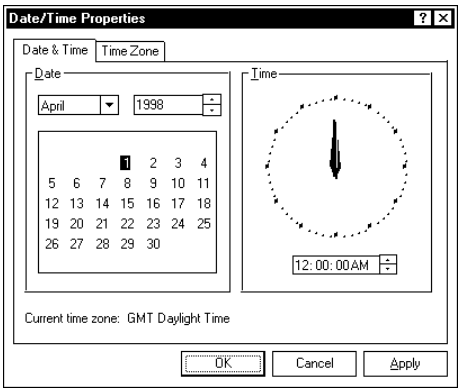
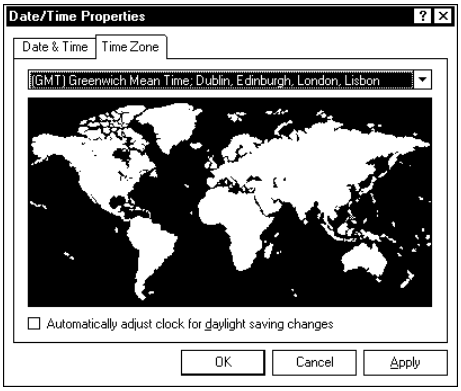
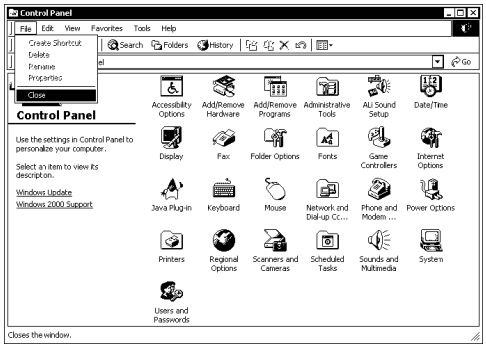
3. <Select [Time Zone]>
Select (CL) [Time Zone].



4. <Check the setting of [Time Zone]>
Make sure that the setting of [Time Zone] is "[GMT] Greenwich Mean Time; Dublin, Edinburgh, Lisbon, London". Also, make sure that a check box on the left of "Automatically adjust clock for daylight saving changes" is ☐ (without a check mark). Then, press [OK] (CL).



5. <Close [Control Panel]>
Select (DR) [File] and then [Close] from [Control Panel].



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6.

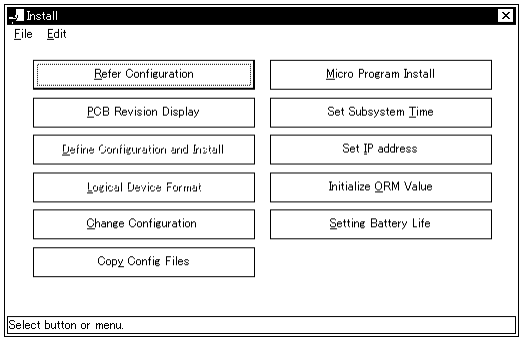
Change the mode to [Modify Mode] from [View Mode] (CL).

7.

Select (CL) [Install].

8.

Select (CL) [Set Subsystem Time] in the ‘Install’ window.



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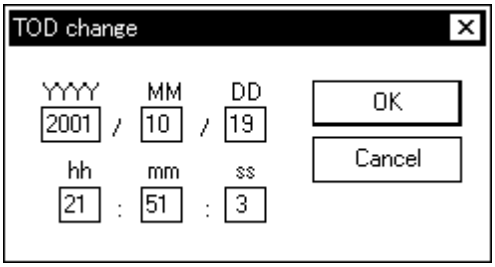
9.

Specify the date (year, month and day) and time (hour, minute and second) and select (CL) [OK].



10.

Close the ‘Install’ window.

In case of New Installation, go to INST02-530 step (5).

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[2] Set IP Address

NOTICE

- The Case where SVP High Reliability kit is installed.
  When SVP High Reliability kit is installed, Both Master SVP and Standby SVP need to be set IP Address.
  Firstly power on Standby SVP, and set IP Address of Standby SVP.
  After completing it, please set the IP Address of Master SVP.

Although “RC = 7ff200” may occur, there is no problem.
Please complete SIM before operation.

1.

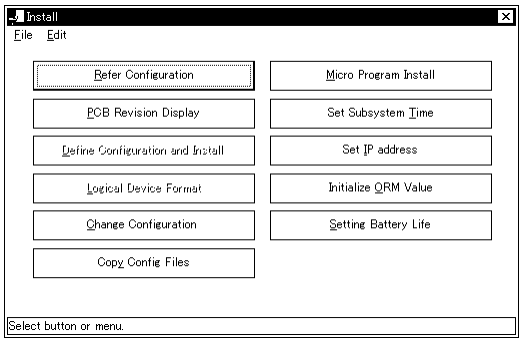
Change the mode to [Modify Mode] from [View Mode] (CL).

2.

Select (CL) [Install].

3.

Select (CL) [Set IP address] in the ‘Install’ window.



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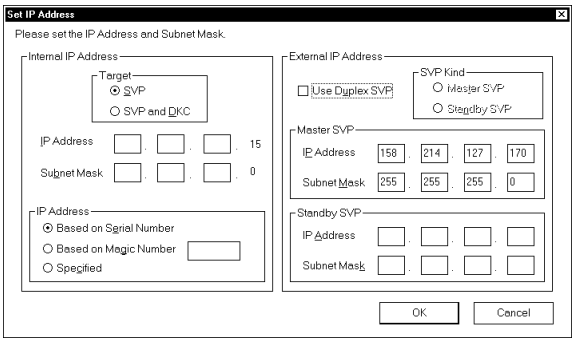
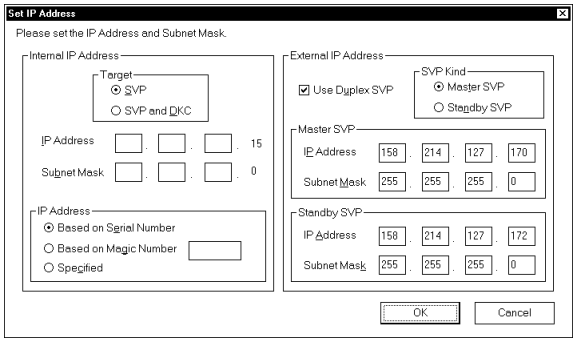
4. <Change the IP Address>

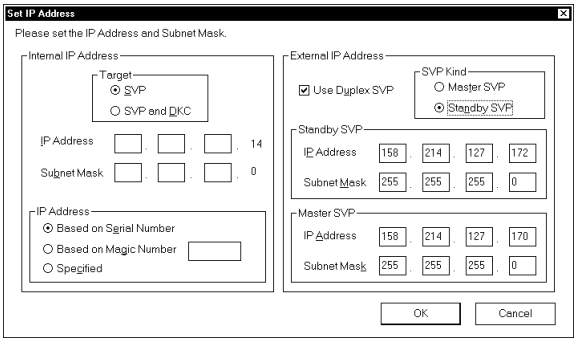
(i) Select (CL) [SVP] and then select (CL) [OK] after setting IP Address and Subnet Mask of an Internal IP Address, and an External IP Address.



The SVP High Reliability kit un-setting up

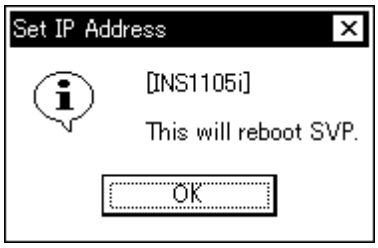


The SVP High Reliability kit setting up (Master SVP)



The SVP High Reliability kit setting up (Standby SVP)

(ii) In response to the message “This will reboot SVP.”, select (CL) [OK].



In case of New Installation, go to INST02-540 step (7).
Change the IP Address is abnormally terminated if the message “Failed to change the IP address.” is displayed. Identify the error cause according to the procedure shown in “TROUBLE SHOOTING SECTION”.

(iii) When a “Use Duplex SVP” or “SVP Kind” of External IP Address is changed, it is necessary to execute the following operation.
- Setting an external IP Address (Refer to INST03-SVP-250 5-2)
- Executing SSVP Reset (Refer to INST03-SVP-270)

[3] Setting Web Console

Make a setting of the Web Console according to [Web Console] section 1. (WEB01-10)

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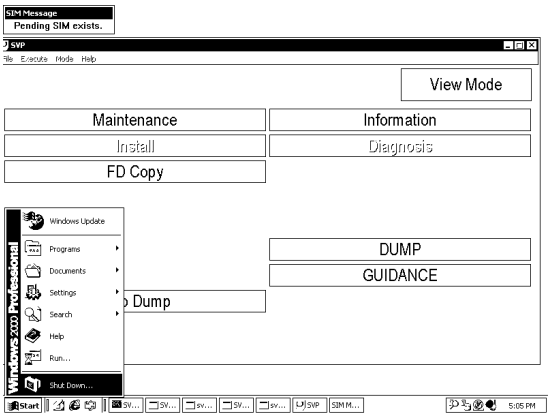
5. (This operation is executed only when setting IP Address of the SVP High Reliability kit (Standby SVP))

(i) <Quitting Windows>
Select (CL) [shut Down…] from the [Start] Menu.



(ii) <Shutting down the SVP>
Select (CL) “Shut down” in the Closing Window of Windows. When a message, “What do you want the computer to do?” is displayed, select (CL) the [OK] button.

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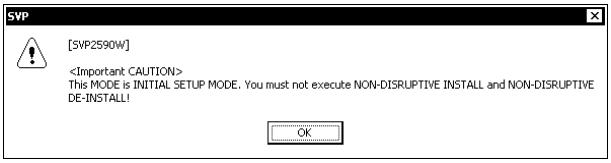
5.2.2 Configuration Information Definition

NOTICE
This operation is necessary only when a subsystem is newly installed. It is not performed afterward. If it is performed by mistake, a system down or a data loss may be caused.

1. <Mode Change>
   Change the mode to [INITIAL SETUP Mode].
   Select "Shift" + "Ctrl" + "I".

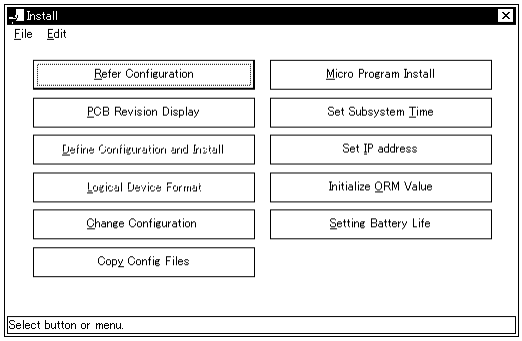
   Enter the password and select (CL) [OK].

   Select (CL) [OK] in response to the confirmation message
   "<Important CAUTION>
   This MODE is INITIAL SETUP MODE.
   You must not execute NON-DISRUPTIVE INSTALL and NON-DISRUPTIVE DE-INSTALL!"



   Please call Technical Support Center for asking the password.
   Select (CL) [Install].

2.
   Select (CL) [Define Configuration and Install...].



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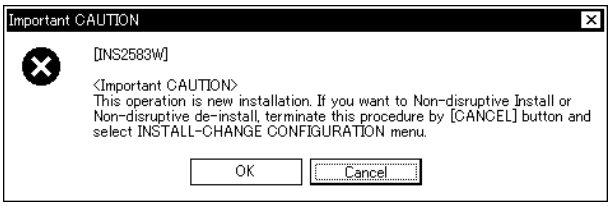
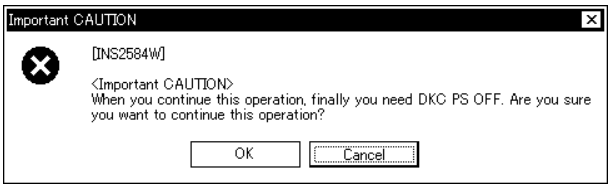
NOTICE
This is a special (exceptional) operation that can cause a serious failure such as a system down or a data loss if executed in an occasion other than the new subsystem installation, and requires an input of a password. Ask the technical support center about the appropriateness of the operation, and input the password after getting an approval of executing the operation.

3.

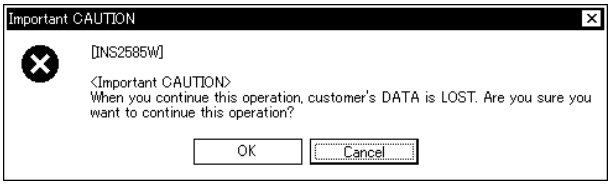
(1) Select (CL) [OK] in response to the confirmation message "<Important CAUTION>
This Operation is new installation. If you want to Non-disruptive Install or Non-disruptive de-install, terminate this procedure by [CANCEL] button and select INSTALL-CHANGE CONFIGURATION menu.".



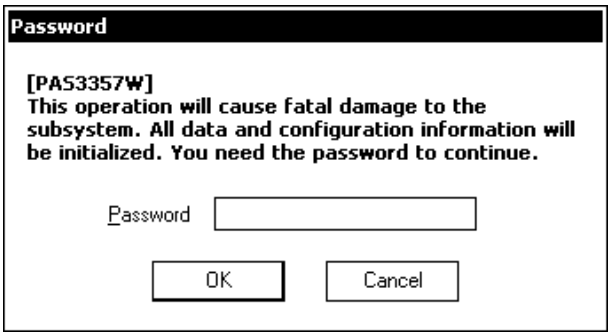
(2) Select (CL) [OK] in response to the confirmation message "<Important CAUTION>
When you continue this operation, finally you need DKC PS OFF. Are you sure you want to continue this operation?".



(3) Select (CL) [OK] in response to the confirmation message "<Important CAUTION>
When you continue this operation, customer's DATA is LOST. Are you sure you want to continue this operation?".



(4) Enter the password and select (CL) [OK].
Entering the password is required in this operation.
Please call Technical Support Center for asking it.



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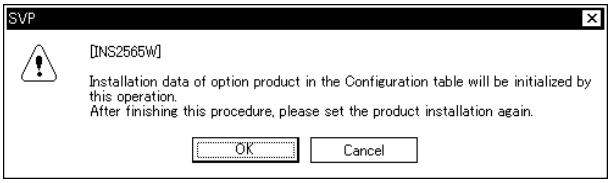
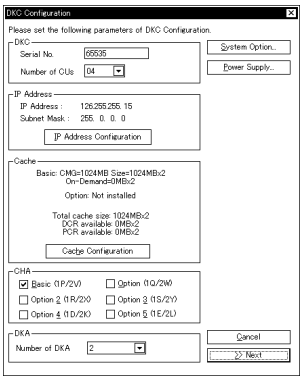
(5) Select (CL) [OK] in response to the confirmation message “Installation data of option product in the Configuration table will be initialized by this operation. After finishing this procedure, please set the product installation again.”.

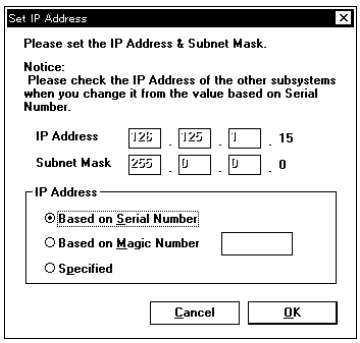


NOTICE
When SVP High Reliability kit is installed and IP Address is changed from this operation. Please power on Standby SVP, and set IP Address of Standby SVP.
(Refer to [INST05-60])
After completing it, please set IP Address of Master SVP from this operation.

4. <Define configuration information>
Define the device configuration information from ‘DKC Configuration’ according to the device configuration worksheet.
After defining all input items is completed, select (CL) [>>Next].
If [Cache Configuration] is selected, the ‘Cache Configuration’ dialog box is displayed. (See step 4-2.)
If [System Option] is selected, the ‘System Option’ dialog box is displayed. (See step 4-3.)
If [Power Supply] is selected, the ‘Redundant Power Supply’ dialog box is displayed. (See step 4-4.)
If [Cancel] is selected, this procedure is terminated.



4-1. <Setting IP Address>
Set the IP Address and Subnet Mask in the ‘Set IP Address Configuration’ dialog box.
After setting up all items, select (CL) [OK].
Go to step 4.
Selecting (CL) [Cancel] returns you to step 4.



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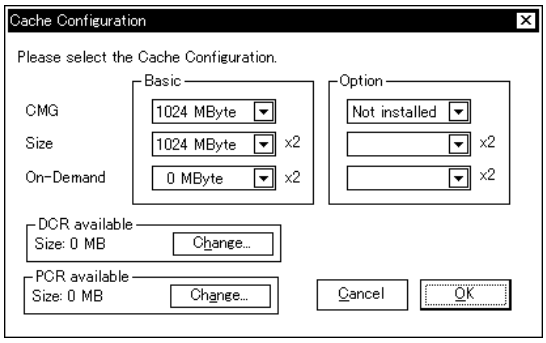
4-2. <Define Cache Capacity>

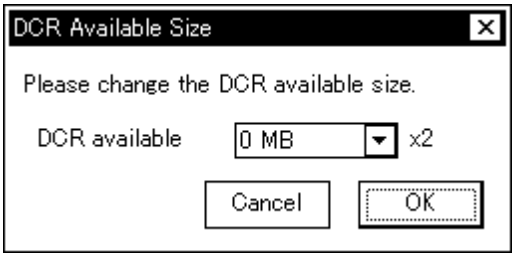
Define the cache capacity in the 'Cache Configuration' dialog box.
When the [Change...] of DCR available is selected (CL), the 'DCR Available Size' dialog box is displayed. (Go to Step 4-2-1.)
(See SSD Optional Function Section)
When the [Change...] of PCR available is selected (CL), the 'PCR Available Size' dialog box is displayed. (Go to Step 4-2-2.)



Note: For Single Cabinet Model, Option is not displayed.

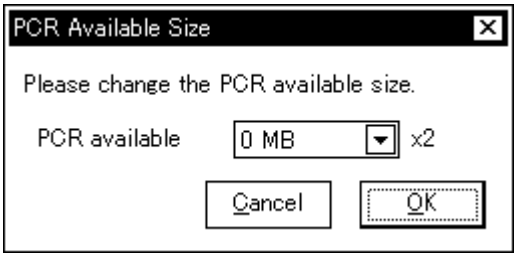
4-2-1. <Setting DCR size>

Set the DCR Available size in the 'DCR Available Size' window and select (CL) the [OK] button.
Return to Step 4-2.



4-2-2. <Setting PCR size>

Set the PCR Available size in the 'PCR Available Size' window and select (CL) the [OK] button.
Return to Step 4-2.



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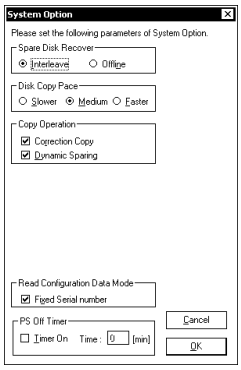
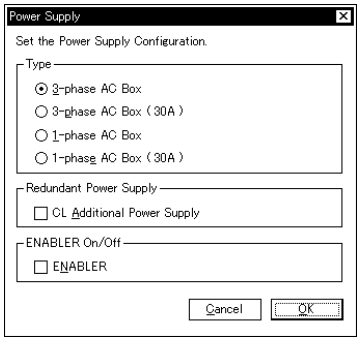
4-3. <Define System Options>

Define the device configuration information from ‘System Option Setup’ according to the device configuration worksheet.
After setting up all items, select (CL) [OK].
Go to step 4.
Selecting (CL) [Cancel] returns you to step 4.



4-4. <Set Power Supply>

Set the power supply information in the ‘Redundant Power Supply’ dialog box.
After setting up all items, select (CL) [OK].
Go to step 4.
Selecting (CL) [Cancel] returns you to step 4.



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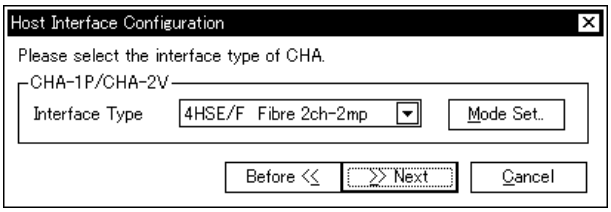
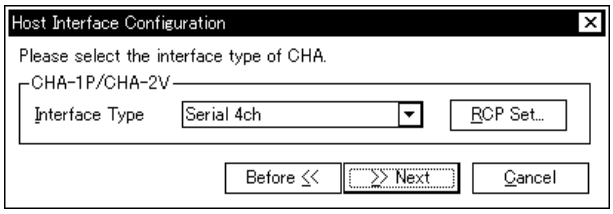
5. <Setting channel type>

Set the subsystem configuration information in the 'Host Interface Configuration' window according to the subsystem configuration information work sheet.



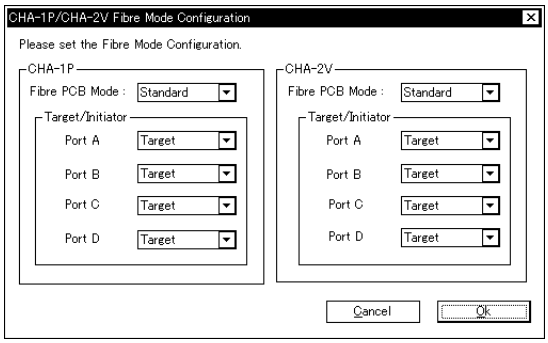
When [Fibre *] is selected to set the HRC/HORC or to change the Fibre PCB Mode, select (CL) [Mode Set...] and go to step 5-1.
Select (CL) [Next>>]. Go to step 5-6.
When [Serial 4 ch] is selected to set the HRC/HORC, select (CL) [RCP Set...] and go to step 5-2.
(Execute the operation above for all the channels installed.)



After all the items are set, select (CL) [>>Next]. Go to step 7.
When [Before<<] is selected (CL), the screen is returned to the previous one.

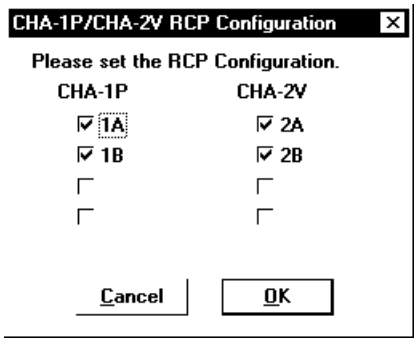
5-1. <Setting Fibre Mode>

Set the 'Target/ Initiator' in the 'Fibre Mode Configuration' dialog box only when setting the Fibre PCB Made or HRC/HORC.
After setting up all items, select (CL) [OK].
Go to step 5.
Selecting (CL) [Cancel] returns you to step 5.



5-2. <Setting RCP port>

When setting the HRC/HORC, select (CL) the port defined as the RCP port and select (CL) [OK].
Go to step 5-3.
When [Cancel] is selected (CL), the routine returns to step 5.



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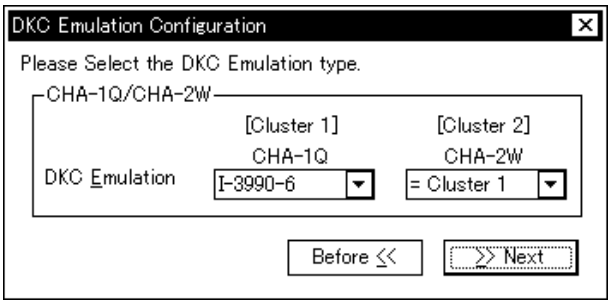
5-3. <Setting DKC emulation type>

Set the subsystem configuration information in the 'DKC Emulation Configuration' window according to the subsystem configuration information work sheet.
After the setting is completed, select (CL) [>>Next]. Go to step 5.
When [Before<<] is selected (CL), the routine returns to step 5.

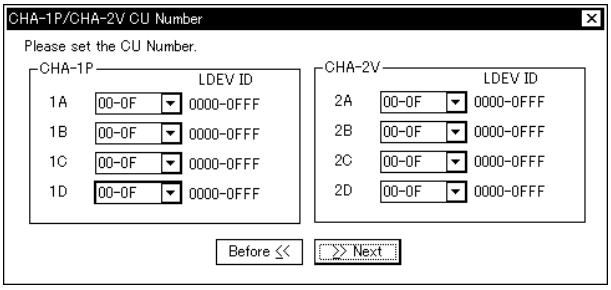


Note: This windows is displayed when Serial (8S) Channel or MFibre (8MS, 8ML) Channel is installed.

5-4. <Setting CU number>

CU number is displayed.
After the setting is completed, select (CL) [>>Next]. Go to step 5-5.
When [Before<<] is selected (CL), the routine returns to step 5-3.

Note: This windows is displayed when Serial (8S) Channel is installed.



5-5. <SVP message>

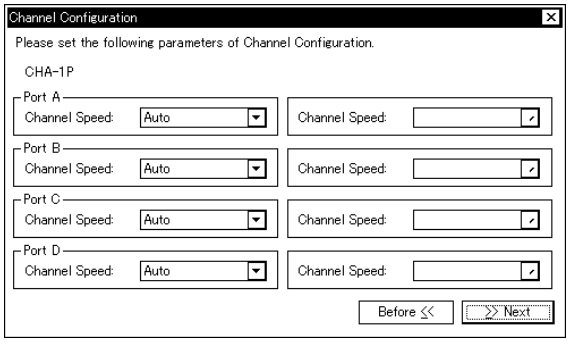
Select (CL) [OK] in response to the confirmation message "xxxxx".
Returns to step 5.

Note: This windows is displayed when Serial (8S) Channel is installed.

5-6. <Setting Channel>

Set the 'Channel Speed'.
After setting up, select (CL) [>>Next].
Go to step 6.
When [Before<<] is selected (CL), the routine returns to step 5.

Note: This windows is displayed when Fibre (8GSE/F, 4HSE/F, 8HSE/F, 8HLE/F, 16HSE/F) Channel is installed.



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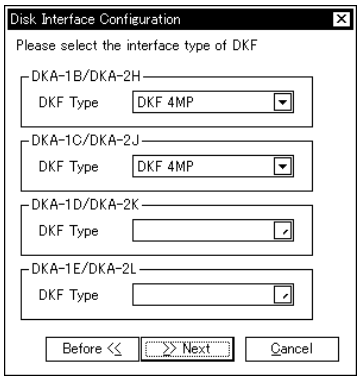
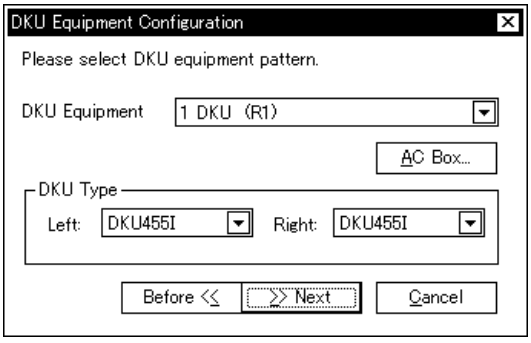
6. <Set DKF type>
Set the 'DKF Type'.
After setting up, select (CL) [>>Next].
Go to step 6-1.
When [Before<<] is selected (CL), the routine returns to step 5.

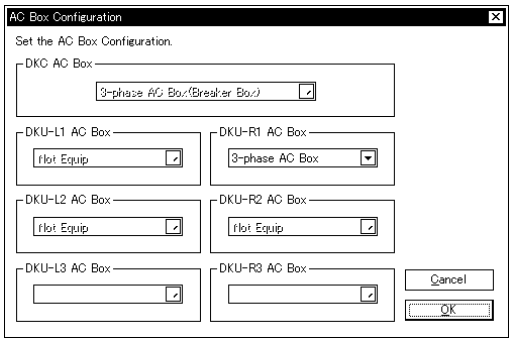


6-1. <Set DKU Equipment>
Define the DKU equipment pattern in the 'DKU Equipment' and DKU type.
[AC Box...]: Set the DKU AC Box configuration.
(Refer to step 6-2.)
After setting up, select (CL) the [>>Next].
Selecting (CL) [Before<<] returns you to the previous screen.
This procedure is terminated by selecting (CL) [Cancel].



Note: For Single Cabinet Model, the 'DKU Equipment Configuration' dialog box is not displayed.

6-2. <Setting the DKU AC Box configuration>
Set the AC Box configuration, select (CL) the [OK].
Return to step 6-1.



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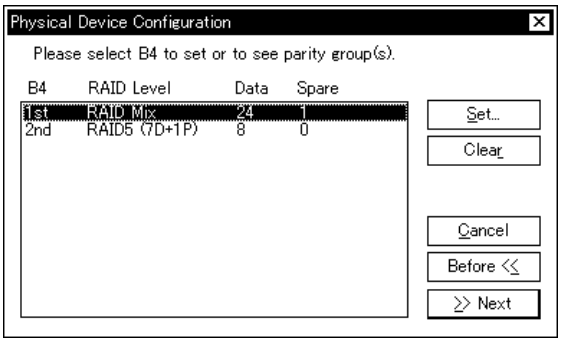
7. <Install Drive Configuration Information>
Define drive configuration according to the 'Physical Device Configuration' screen.
Detailed procedure is shown below.
[Set...]: Defines the parity group or spare disk.
The routine proceeds to Step 7-1.
[Clear...]: Cancels the setting of the B4.
After setting up all items, select (CL) [>>Next].



Selecting (CL) [Before<<] returns you to the previous screen.
This procedure is terminated by selecting (CL) [Cancel].

[Multi Cabinet Model]

B4	Location	B4	Location
1st	HDU-R10, 11, 12, 13	7th	HDU-L20, 21, 22, 23
2nd	HDU-R14, 15, 16, 17	8th	HDU-L24, 25, 26, 27
3rd	HDU-L10, 11, 12, 13	9th	HDU-R30, 31, 32, 33
4th	HDU-L14, 15, 16, 17	10th	HDU-R34, 35, 36, 37
5th	HDU-R20, 21, 22, 23	11th	HDU-L30, 31, 32, 33
6th	HDU-R24, 25, 26, 27	12th	HDU-L34, 35, 36, 37

Note: The 9th to 12th of the B4 are valid only when the DKUs for the RAID 400 are connected.

[Single Cabinet Model]

B4	Location	Comment
1st	HDU-0, 1, 2, 3	HDD-X00 ~ X0F
2nd	HDU-0, 1, 2, 3	HDD-X10 ~ X1F

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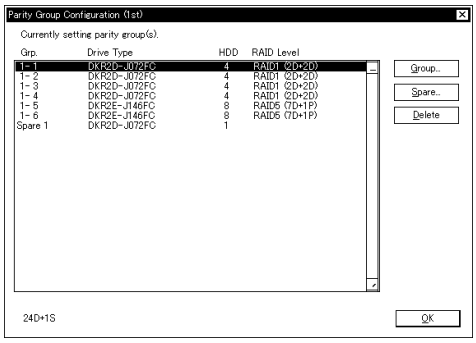
7-1.

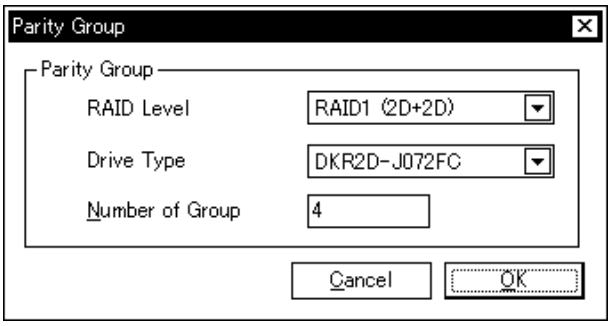


- To define Parity Group, select the drive to be defined and select (CL) [Group...] in the 'Parity Group Configuration' dialog box. See step 7-1-1.
- To define Spare, select the drive to be defined and select (CL) [Spare...] in the 'Parity Group Configuration' dialog box. See step 7-1-2.
- To delete an item, select an item to be deleted and select (CL) [Delete] in the 'Parity Group Configuration' dialog box.

Grp*: A parity group where RAID Concatenation is installed.
Note: If you want to set any Spare Drive in B4, please define the Spare Drive first.
After setting up all items, select (CL) [OK]. Return to step 7.

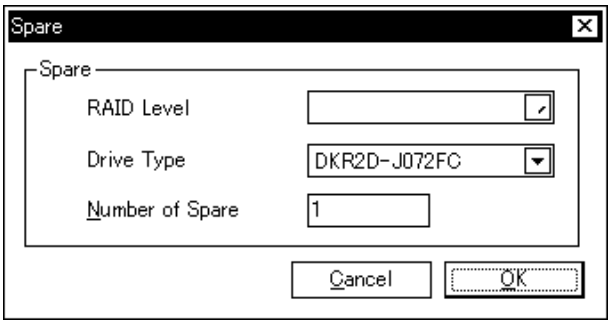
7-1-1.

Define the RAID Level and the drive capacity and the number of parity groups in the 'Parity Group' dialog box. Then select (CL) [OK]. Return to step 7-1.



7-1-2.

Define the RAID Level and the drive capacity and the number of spare drives in the 'Spare' dialog box. Then select (CL) [OK]. Return to step 7-1.



8. <Define Device Emulation>

After setting up all items for definition of Device Emulation, select (CL) [>>Next]. Selecting (CL) [Before<<] returns you to the previous screen.

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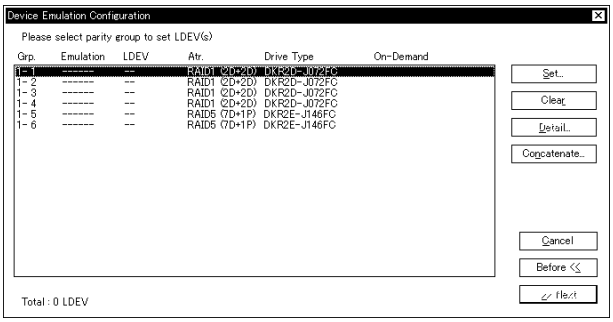
8-1.

In the case of defining Device Emulation:
Select (CL) a device and select (CL) [Set...].
This procedure is terminated by selecting (CL) [Cancel].

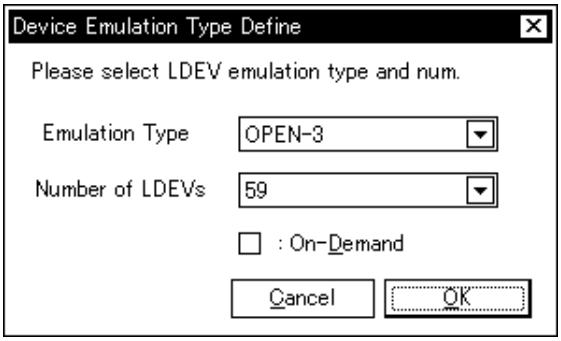
(CVS): A parity group where CVS is installed.

Grp*: A parity group where RAID Concatenation is installed.



8-1-1.

After setting up all items in the 'Logical Device Emulation Type' dialog box, select (CL) [OK].
Go to step 8-1.
Selecting (CL) [Cancel] returns you to step 8-1.

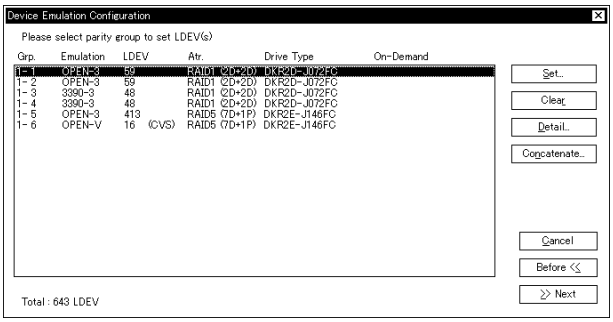


8-1-2. <Setting RAID concatenation>

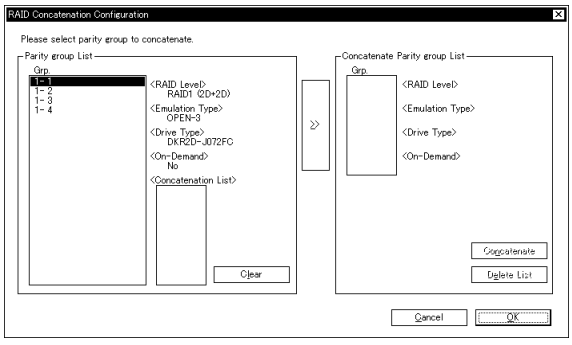
(1) After setting the LDEV emulation type and a number of LDEVs, select (CL) the [Concatenate...].
This operation is terminated when the [Cancel] is selected (CL).

(CVS): A parity group where CVS is installed.

Grp*: A parity group where RAID Concatenation is installed.



(2) Parity groups to which the RAID concatenation can be applied are displayed in the Parity group List.
Select (CL) parity groups to which you want to apply the RAID concatenation and press (CL) the [>>] button.



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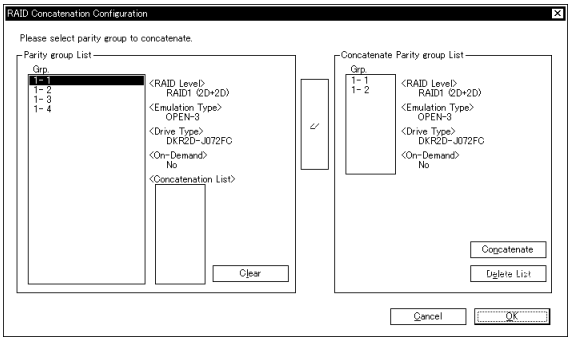
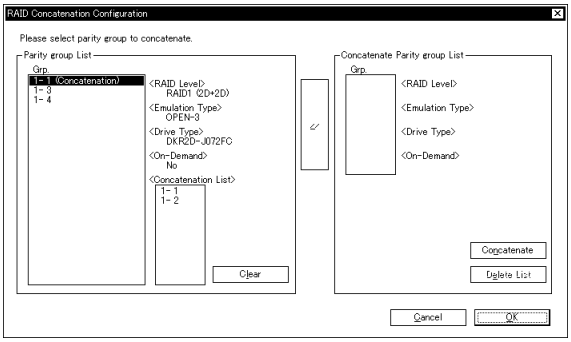
(3) The selected parity groups are registered in the Concatenate Parity group List. Then press (CL) the [Concatenate] button.

Note: The [Concatenate] button cannot be pressed if the concatenation does not meet a condition of the RAID concatenation. Adjust the number of the parity groups in the Concatenate Parity group List.



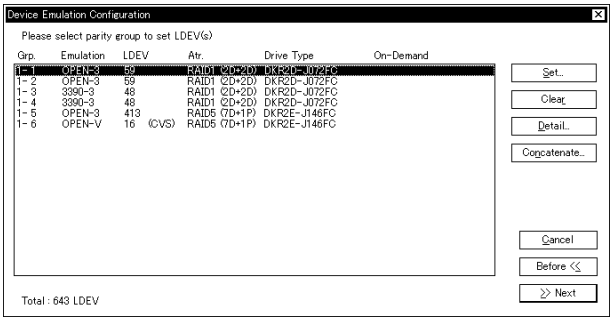
(4) When the RAID concatenation is completed, "(Concatenation)" is displayed in the Parity group List. Selecting the "(Concatenation)" displays the concatenated parity groups in the Concatenation List. Pressing the [Clear] button cancels the RAID concatenation.



(5) When all the settings of the RAID concatenation are completed, press (CL) the [OK] button. Pressing (CL) the [Cancel] button returns the routine to Step 8-1-2 (1).

8-2. <Defining of Customized Volume Size (CVS)>

(1) Select (CL) a parity group for which the LDEV emulation type and the number of LDEVs have been set on the "Device Emulation Configuration" screen and select (CL) [Detail...].
This procedure is terminated by selecting (CL) [Cancel].
(CVS): A parity group where CVS is installed.
Grp*: A parity group where RAID Concatenation is installed.



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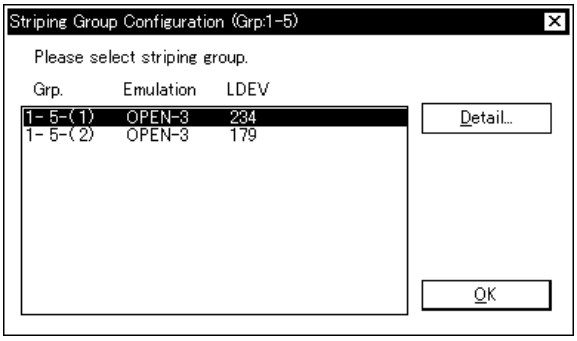
(1-1) When there are two or more striping groups, the Striping Group Configuration window is displayed. Select (CL) a striping group, and then select (CL) the [Detail…].

- When you select a striping group other than OPEN-V, the routine goes to Step (2).
- When you select OPEN-V, the routine goes to Step (4).

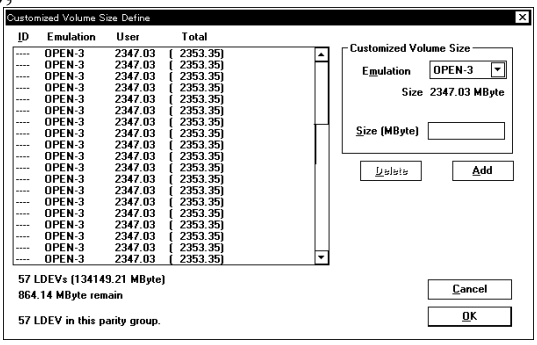


When you select (CL) the [OK], the preceding window returns. The routine returns to Step (1).

Note: When there is only one striping group, the Striping Group Configuration window is not displayed.

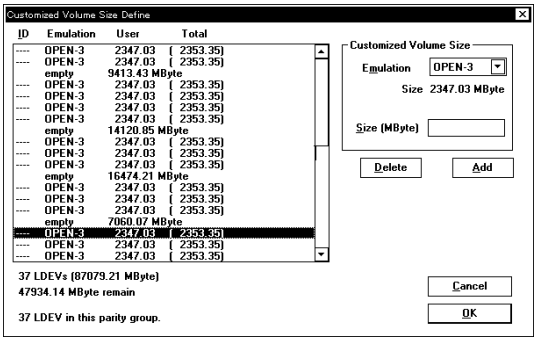
- When you select a striping group other than OPEN-V, the routine goes to Step (2).
- When you select OPEN-V, the routine goes to Step (4).

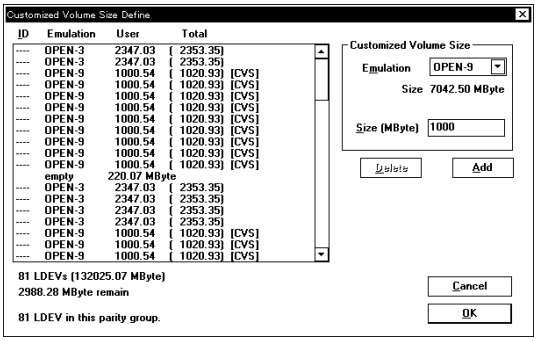
(2) Press (CL) the [Delete] button to delete the Volume(s), enter the LDEV emulation type of a customized volume(CV) to be registered and the number of user cylinders (in the case of Mainframe system. Refer to the upper screen) or the size (Mbyte) (in the case of open system. Refer to the lower screen) on the "Customized Volume Size Define" screen, then press (CL) the [Add] button to add them.
Selecting (CL) [Cancel] returns you to the previous screen.



Note : Meaning of "+" character

1) Volume with SCSI path.
2) LU expanded volume.
3) Volume with LDEV Security.





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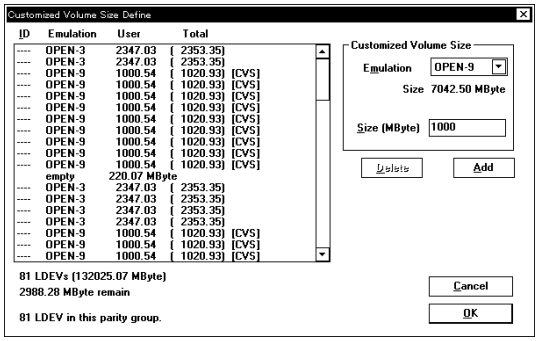
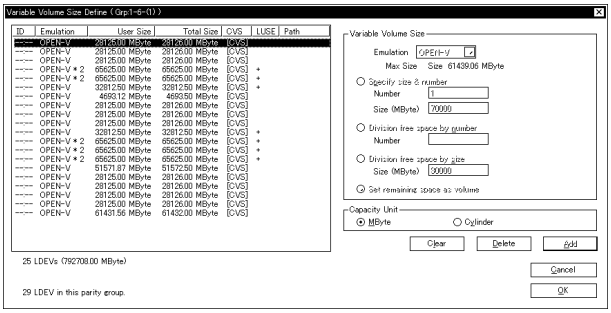
(3) The CV registered by mistake can be deleted by selecting it from the list box and pressing (CL) the [Delete] button.
Note: One or more CVs can be selected.



(4) Definition of OPEN-V
Delete all the volumes by selecting (CL) the [Clear] or delete specified volumes by selecting (CL) the [Delete] in the "Variable Volume Size Define" window. After that, select (CL) a variable volume size, and then select (CL) the [Add].



- Variable Volume Size
  "Specify Size & number" : Defines specified number of specified user sizes.
  "Division free space by number : Defines a volume divided into specified number of portions. However, this can be selected only when all the volumes have been deleted.
  "Division free space by size : Defines volumes whose user sizes are all specified ones. However, this can be selected only when all the volumes have been deleted.
  "Set remaining space as volume" : Defines an empty space as a volume.
- Capacity Unit
  "MByte" : Makes data displayed or entered by the Mbyte.
  "Cylinder" : Makes data displayed or entered by the cylinder.
- LUSE : When the LUSE connection is made, a symbol "+" is displayed.
- Path : When a path is defined, a symbol "+" is displayed.

[Clear] : Deletes all the volumes.
[Delete] : Deletes a selected volume.
[Add] : Adds a volume.
[Cancel] : Invalidates the setting and makes the preceding window return. The routine is returned to Step (1) or (1-1).
[OK] : Fixes the setting and makes the preceding window return. The routine is returned to Step (1) or (1-1).

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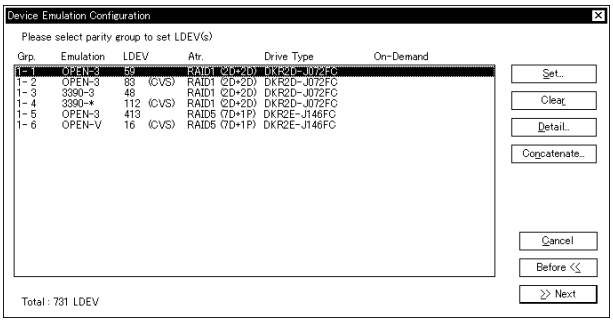
8-3.

In the case of deletion:
Select (CL) a device and select (CL) [Clear].
This procedure is terminated by selecting (CL) [Cancel].

(CVS): A parity group where CVS is installed.

Grp*: A parity group where RAID Concatenation is installed.



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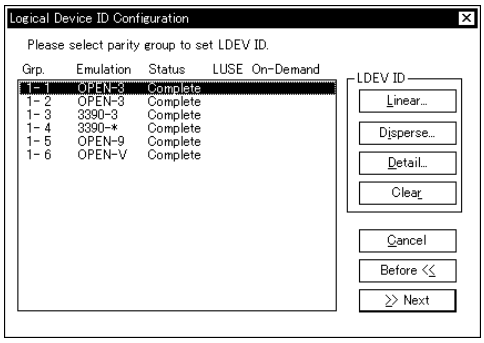
9. <Define LDEV ID>

After setting up all items, select (CL) [>>Next]. Selecting (CL) [Before<<] returns you to the previous screen.

9-1. <Definition Screen for LDEV ID>

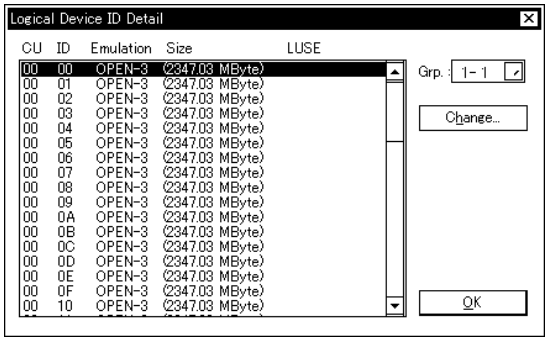


Select (CL) the parity group to be defined and select (CL) a function from the [LDEV ID] list box.
[Linear...]: LDEV ID is assigned to LDEV in the order of parity group. See step 9-3.
[Disperse...]: LDEV is assigned discretely in the order of parity group. See step 9-3.
[Detail...]: A screen to define LDEV in detail is displayed. See step 9-2.

- '-----' is displayed in CU area and ID area for the parity group to which LDEV ID is not assigned.
- 'xxxxx' is displayed in ID area for the parity group to which any LDEV ID is not assigned.

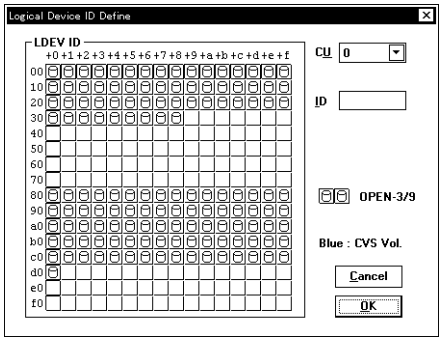
This procedure is terminated by selecting (CL) [Cancel].

9-2. <Detailed Definition Screen for LDEV ID>



LDEV ID is defined in detail for each LDEV in the parity group.
Select (CL) [LEDV] from the list box and select (CL) [Change...].
The screen for LDEV ID input is displayed.
Note: In the case of a RAID Concatenation Group, LDEV of the parity group selected by the "Grp List" is displayed.

9-3. <Input LDEV ID>



Select CU ID in the CU combo box.
The status of usage of ID in the CU is displayed in the LDEV ID panel.
White disk of panel: not used
Black disk of panel: using
Input LDEV ID you want to set or head LDEV ID in the ID Edit box.
After setting, select (CL) [OK]. Return to step 9.

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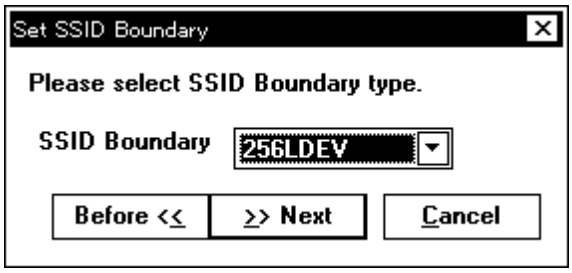
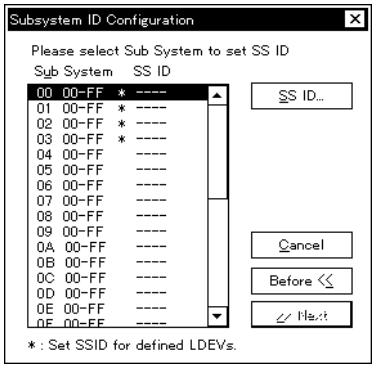
10. <Define Subsystem ID Boundary>

Set the Subsystem ID Boundary in the 'Set SSID Boundary' dialog box.
After setting up all items, select (CL) [OK].
Go to step 5.
This procedure is terminated by selecting (CL) [Cancel].



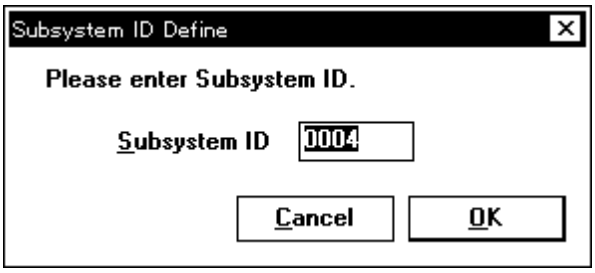
10-1. <Define Subsystem ID>

To define Subsystem ID, select (CL) [SSID].
After setting, select (CL) [>>Next].
This procedure is terminated by selecting (CL) [Cancel].



10-2.

Define Subsystem ID and select (CL) [OK].
Return to step 10-1.



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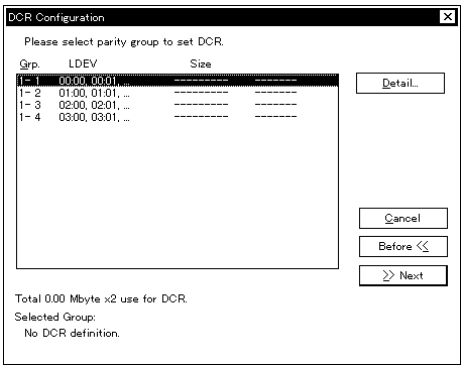
11. <Defining DCR>

(1) Select (CL) a parity group having LDEV(s) for which the DCR is to be set on the “DCR Configuration” screen and press (CL) the [Detail...] button.

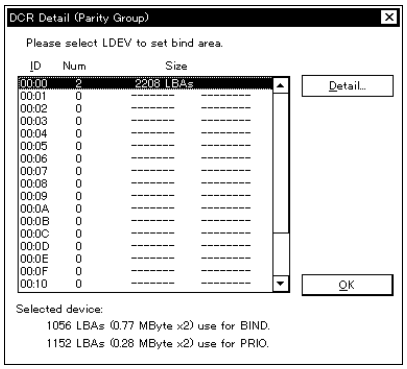


Total cache memory size which DCR area use is displayed.

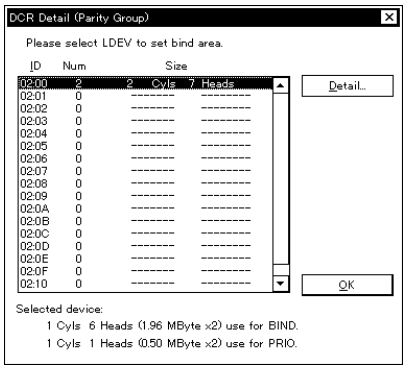
If the selected parity group has a DCR area, the BIND size and to PRIO size are displayed under the “DCR Configuration” screen.

After setting above, select (CL) [>>Next].

This procedure is terminated by selecting (CL) [Cancel].



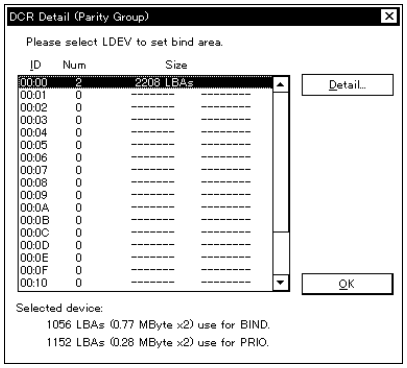
(For open system)



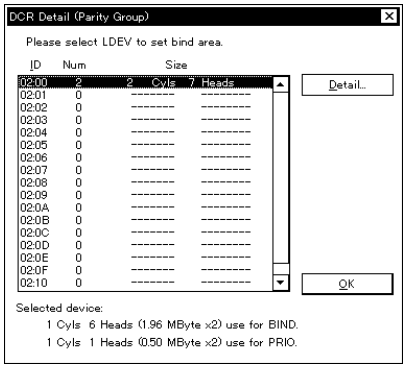
(For Mainframe system)

(2) Select (CL) an LDEV where the DCR is to be set on the “DCR Detail (Parity Group)” screen and press (CL) the [Detail...] button.

If the selected LDEV has a DCR area, the BIND size and the PRIO size are displayed under the “DCR Detail (Parity Group)” screen.



(For open system)



(For Mainframe system)

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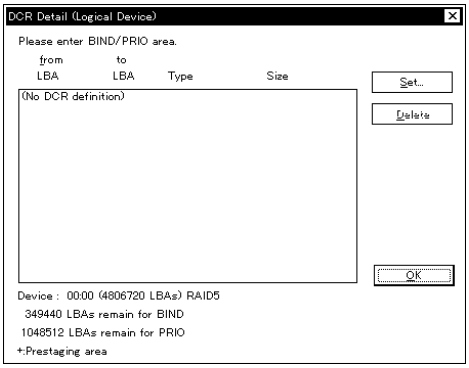
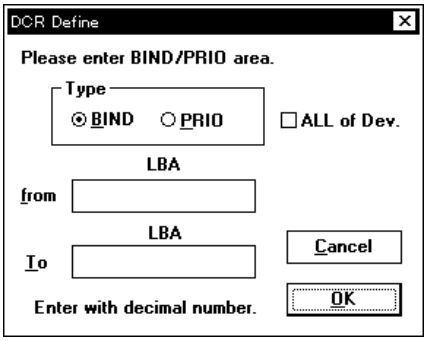
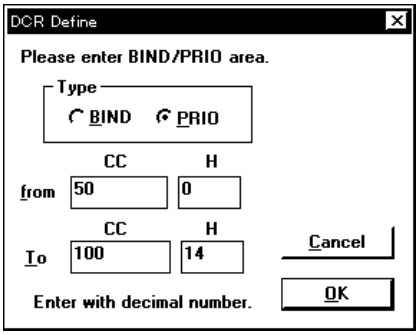
(3) Confirm the LDEV size and the number of slots allowed to be set for each type on the “DCR Detail (Logical Device)” screen. Press (CL) the [Set...] button to set the DCR area.



(4) Enter the type, starting cylinder number, starting head number, ending cylinder number, and ending head number (for Mainframe system. Refer to the screen on the right.) or the type, starting LBA, and ending LBA (for open system. Refer to the screen on the left.) on the “DCR Define” screen and select (CL) [OK].
For open system, all items are allowed to be set.





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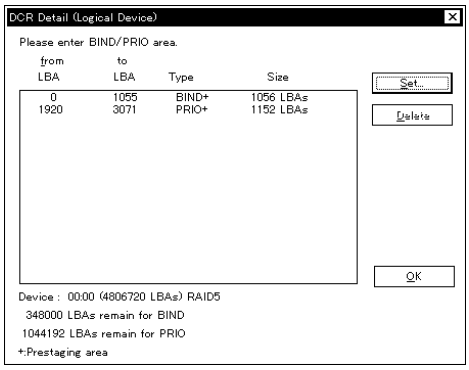
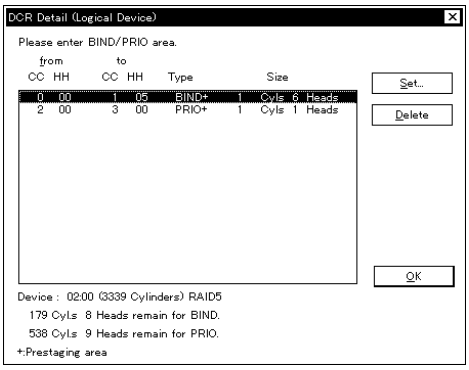
(5) When the screen is returned to the “DCR Detail (Logical Device)” screen, the entrance result is displayed.

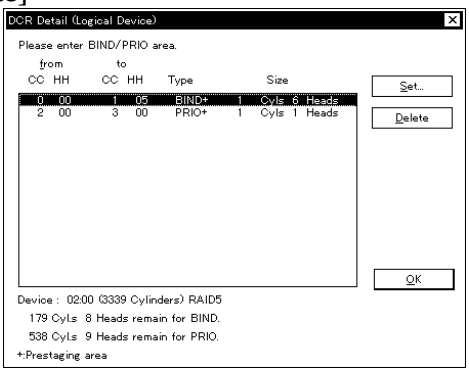


(Foe open system)



(For Mainframe system)

(6) When an item in the list box is selected (CL) and the [Delete] button is pressed (CL) on the “DCR Detail (Logical Device)” screen, the DCR setting is deleted. When the setting is completed, press (CL) [OK].



(7) If you want to set other LDEV(s) in the parity group which you selected, repeat steps (2) to (6) for the LDEV(s).

(8) If you want to set other LDEV(s) in other parity group, repeat steps (1) to (6) for the LDEV(s).

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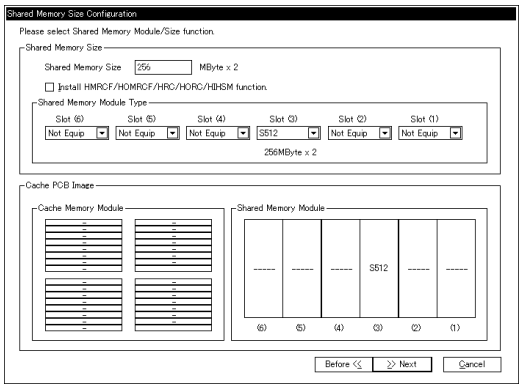
12. <Define Shared Memory Size>

Define the shared memory module size in the 'Shared Memory Size Configuration' dialog box.
Select (CL) [>>Next].
This procedure is terminated by selecting (CL) [Cancel].

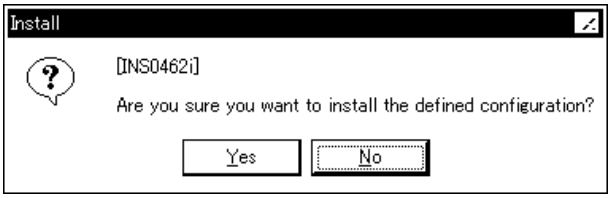


Note: Select 'Shared Memory Module Type' in order of "Slot(1) → Slot(2) → Slot(3) → Slot(4) → Slot(5) → Slot(6)".

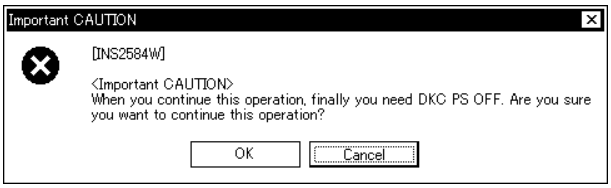
Go to INST05-610.

13. <Include configuration information>

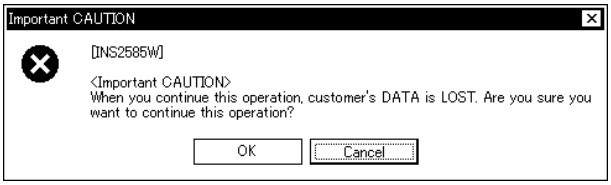
(1) Select (CL) [Yes] in response to the confirmation message "Are you sure you want to install the defined configuration?".
"Wait..." is displayed, then "Turn off DKC subsystem" is displayed.
Selecting (CL) [No] suppresses the configuration inclusion processing and terminates the installation procedure.



(2) Select (CL) [OK] in response to the confirmation message "<Important CAUTION>
When you continue this operation, finally you need DKC PS OFF. Are you sure you want to continue this operation?".



(3) Select (CL) [OK] in response to the confirmation message "<Important CAUTION>
When you continue this operation, customer's DATA is LOST. Are you sure you want to continue this operation?".



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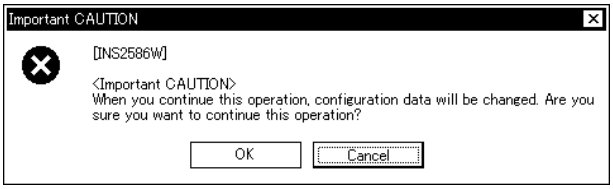
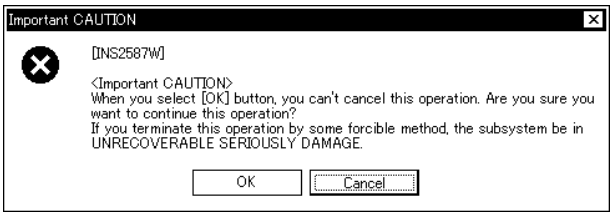
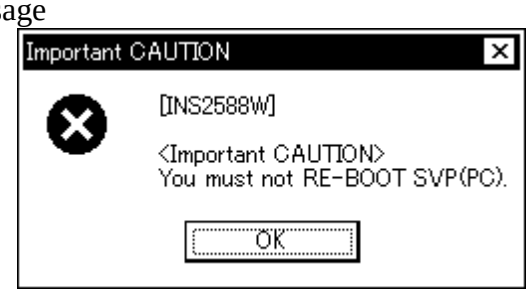
(4) Select (CL) [OK] in response to the confirmation message "<Important CAUTION>
When you continue this operation, configuration data will be changed. Are you sure you want to continue this operation?".



(5) Select (CL) [OK] in response to the confirmation message "<Important CAUTION>
When you select [OK] button, you can't cancel this operation. Are you sure you want to continue this operation?
If you terminate this operation by some forcible method, the subsystem be in UNRECOVERABLE SERIOUSLY DAMAGE.".

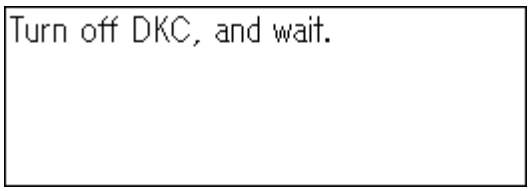


(6) Select (CL) [OK] in response to the confirmation message "<Important CAUTION>
You must not RE-BOOT SVP(PC).".



14. <Power off DKC P/S>
Make sure that "Turn off DKC, and wait." is displayed and perform the power-off procedure from the DKC maintenance panel.

After a while, "Wait..." will be displayed.



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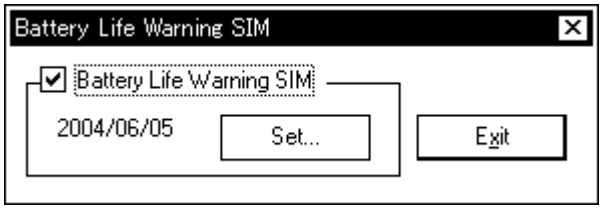
15.

This step allows the contents of the SVP HD to be loaded into SM and FM.
When this procedure is completed, “Battery Life Warning SIM” is displayed.

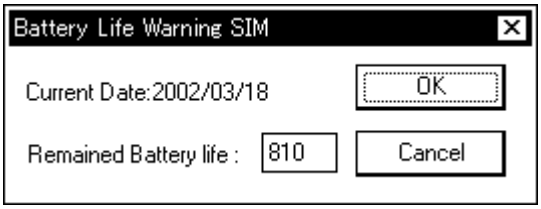
16.

Select [Set...] applying the check to ‘Battery Life Warning SIM’.



17.

Select (CL) [OK] after inputting the remainder days by reporting on warning SIM.



18.

Insert the configuration FD into FDD, and select (CL) [OK].

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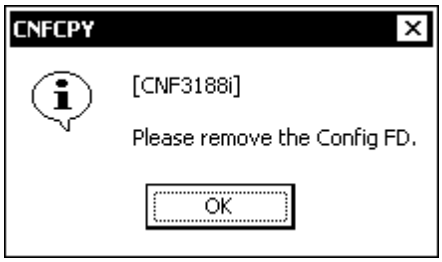
19.

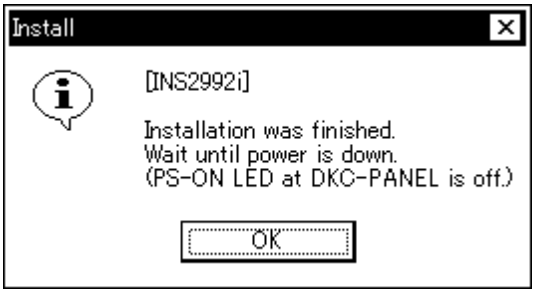
When this procedure is completed, the message “Please remove the Config FD.” is displayed. Remove the FD, and then select (CL) [OK].

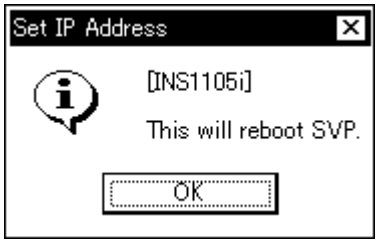


20.

After making sure that the DKC power is turned off, select (CL) [OK] in response to “Installation was finished.”.
Select (CL) [OK] in response to “This will reboot SVP.”.
Go to INST02-550 step (31).

Note: SVP power will not turn off or reboot even when DKC is powered off.





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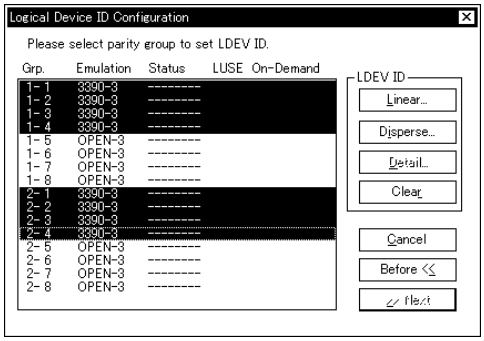
5.2.2.1 LDEV ID setting procedure when the emulation types of different systems coexist

5.2.2.1.1 Coexistence in units of parity group

The LDEV ID setting procedure is explained using an example of a case in which both the 3390 system LDEV and OPEN system LDEV are set in the same subsystem. This example shows the ID setting procedure when the B4-1/B4-2 is fully equipped with RAID5 (3D+1P), and the B4-1 and the B4-2 are defined as the 3390-3/OPEN-3 and the 3390-9/OPEN-3 respectively. Since systems other than the 3390 system and the 3390-3R cannot coexist in the parity group, the ID can be defined in this procedure.

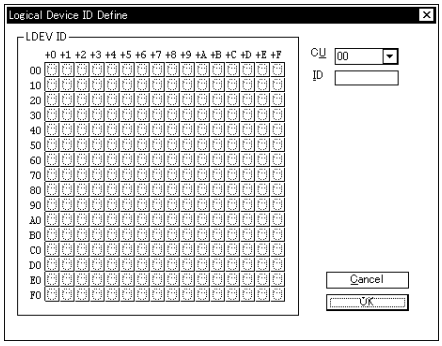
1.

Select only the parity group for which the 3390 system emulation type has been defined.



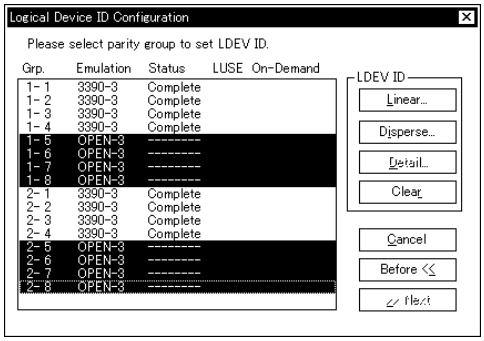
2.

Press the Linear or Disperse button to open the LDEV ID input screen and input the LDEV ID. (In the example, the Disperse button is pressed.)



3.

Next, select only the parity group for which the OPEN system emulation type has been set.



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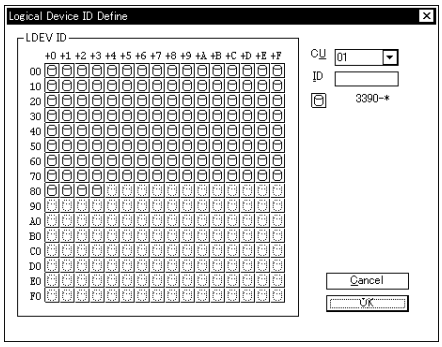
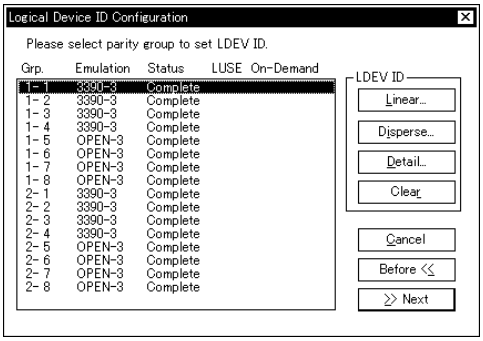
4.

Press the Linear or Disperse button to open the LDEV ID input screen and input the LDEV ID. In this case, take care not to make a coexistence occur in the block. In the example, 0:a0 and the subsequent are unused blocks. Therefore, input a0.



5.

Setting is completed.



Needless to say, the setting sequence of steps (1) and (3) may reversed.
If emulation types of different systems are selected at the same time, the guarding function works to prevent the setting by making the Linear and Dispense buttons unselect able.

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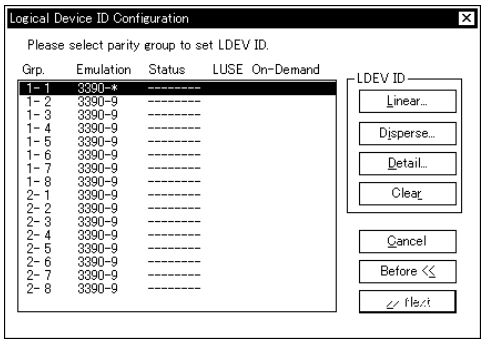
5.2.2.1.2 Coexistence in a parity group

The 3390-3R can be set as a CV in the 3390 system parity group. The 3390 system LDEV can also be set as a CV in the 3390-3R parity group. If the ID is set in the procedure explained in Section 3.1 when this emulation setting has been performed, an intra-block coexistence setting violation occurs. To prevent the coexistence violation, set the ID following the procedure below.

1.

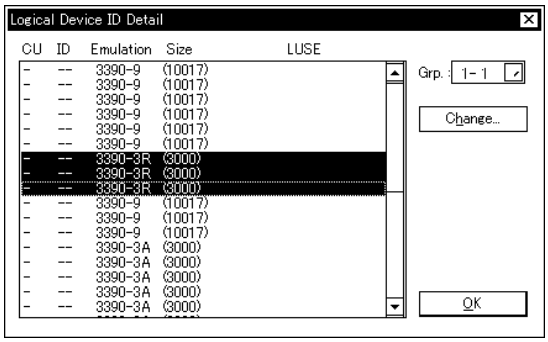
For the parity group for which definitions of the 3390 system and 3390-3R coexist, the emulation type is displayed as "3390-*". Select one parity group defining the 3390-3R as the CV and press the Detail button to open the screen displaying the LDEV definition detail in the parity group.



2.

Select the 3390-3R on the detail screen and define the LDEV ID.

Note: In the case of a RAID Concatenation Group, LDEV of the parity group selected by the "Grp List" is displayed.

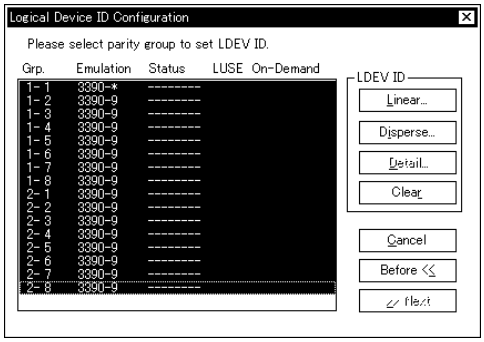


3.

Repeat (1) and (2) until the definition of the 3390-3R LDEV ID is finished. In the example, the 3390-3R is assigned to IDs starting from ID 0:80.

4.

When the definition of the 3390-3R is completed, select the parity group defining emulation type of the same system and define the LDEV ID in the same way as that Section 3.1.



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5.2.3 Check Procedure

NOTICE
This operation is necessary only when a subsystem is newly installed. It is not performed afterward. If it is performed by mistake, a system down or a data loss may be caused.

1. <Execute Power-on CUDG>
   Perform the power-on procedure from the DKC-PANEL.
   (See INST03-PWR-10)
   Power-on CUDG is automatically executed on the DKC logic circuitry.
   If an error occurs, SIM Log, SSB Log has logging.
   (See SVP02-30)

2. <Execute DKU Path inline test>
   Perform DKU Path inline tests on all DKAs installed during the new installation procedure to check the validity of the drives.
   See DIAGNOSIS SECTION for the test procedure. (DIAG04-150)

   Note: Before carrying out the DKU Path inline test, switch the current application to the program manager and have the SVP initial screen (which is shown in the right figure) displayed.

3. <Check subsystem status and all MPs micro-version>
   Check the subsystem Status and all MPs micro-version.
   (See SVP03-10 and SVP03-180)

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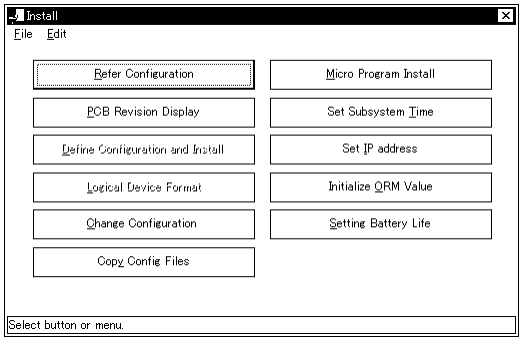
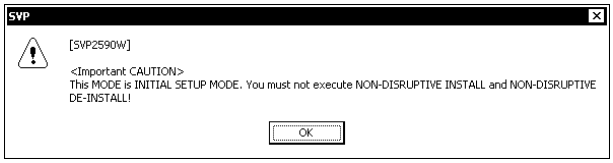
NOTICE
This is a special (exceptional) operation that can cause a serious failure such as a system down or a data loss if executed in an occasion other the new subsystem installation, and requires an input of a password. Ask the technical support center about the appropriateness of the operation, and input the password after getting an approval of executing the operation.

4. <Format L-DEV>

(1) Change the mode to[INITIAL SETUP Mode].
Select "Shift" + "Ctrl" + "I".
Enter the password and select (CL) [OK].
Please call Technical Support Center for asking the password.



Select (CL) [OK] in response to the confirmation message "<Important CAUTION>
This MODE is INITIAL SETUP MODE.
You must not execute NON-DISRUPTIVE INSTALL and NON-DISRUPTIVE DE-INSTALL!"



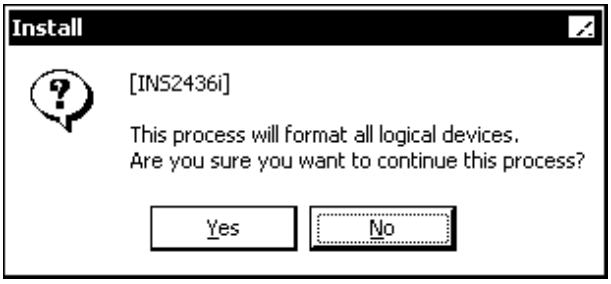
Select (CL) [Install].

(2) Select (CL) [Logical Device Format].

Note: Execute Format Logical Device after confirming all Logical Device is blocked.

4.1.

Select (CL) [Yes] in response to "This process will format all logical devices. Are you sure you want to continue this process?".



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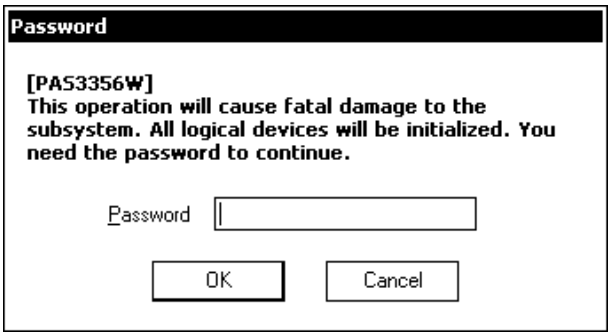
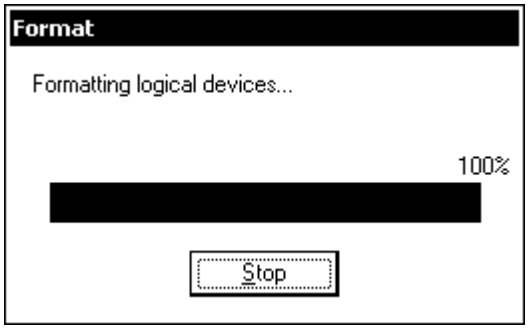
4.2.

Enter the password and select [OK] (CL).
Password is needed for this operation.
Please call Technical Support Center to obtain a password and authorization.



4.3.

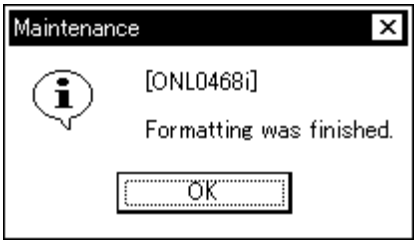
When L-DEV Formatting is complete, 'Formatting logical devices...' shown in the right figure disappears and "Formatting was finished." is displayed.



4.4.

Select (CL) [OK] in response to "Formatting was finished.".

L-DEV formatting is abnormally terminated if the message "Formatting logical devices rejected by DKC." or "Formatting the logical device is failed." is displayed.
Identify the error cause according to the procedure shown in "TROUBLE SHOOTING SECTION".



4.5. <Check logical device status>

Check if Logical Devices are normal by with referring to the 'Logical Device Status' display.

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5. <Check subsystem status>
   Check if all parts are normal by referring to ‘Maintenance’.

6. <Check system interlock operation>
   Start the test program from the host to check for normal subsystem’s interlocked operation with the host.

7. <Delete error log>
   Power ON/OFF the subsystem to make sure that the subsystem starts normally (neither ALARM nor MESSAGE indicators should light).

   Delete all error log information from the SVP and transfer the subsystem to the user. See SVP02-170.

   Go to INST02-560.

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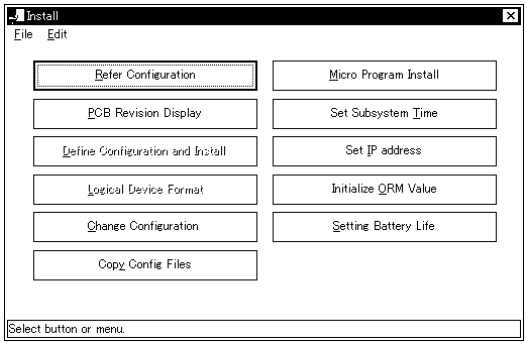
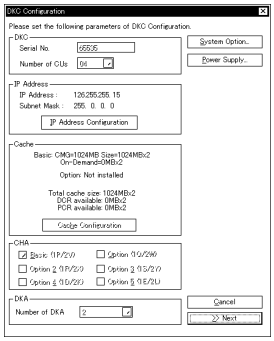
5.2.4 Refer Configuration

1. <Start [Install]>
   Select (CL) [Install] from 'SVP'.

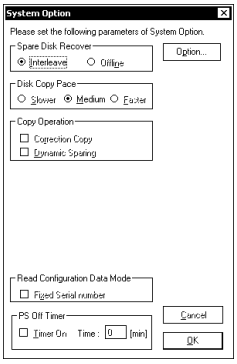
2.
   Select (CL) [Refer Configuration].



3. <DKC configuration information>
   If [System Options...] is selected (CL), 'System Option' is automatically displayed.
   If [Power Supply...] is selected (CL), 'Redundant Power Supply' is automatically displayed.
   When you select (CL) [>>Next], 'Host Interface Configuration' is automatically displayed.
   This procedure finishes when you select (CL) [Cancel].



4. <System Option information>
   When the [Option...] is selected (CL), the 'Option Product' dialog box is displayed. (Refer to Step 4-1.)
   Selecting (CL) [OK] returns the screen to step 3.



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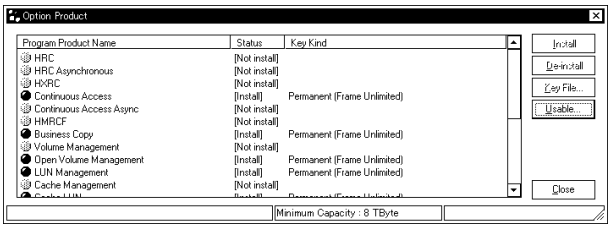
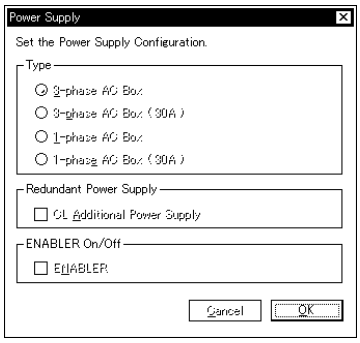
4-1. <Setting Program Product>

Select (CL) the [Close] button.
Return to Step 4.



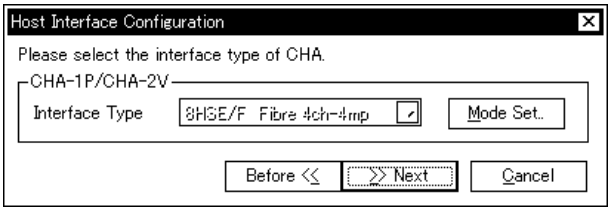
5. <Setting Power Supply>

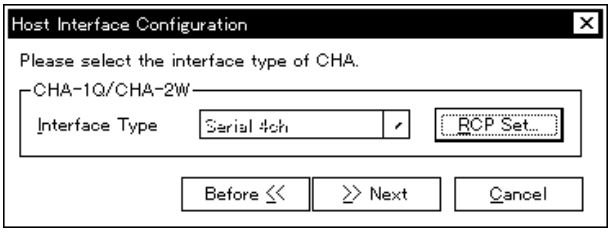
Selecting (CL) [OK] returns the screen to step 3.



6. <Setting Channel type>

When you select (CL) [Fibre *], [Mode set] is enabled, selecting (CL) [Mode set] processing skip to step 8.
Select (CL) [>>Next] processing skip to step 9-2.
When you select (CL) [Serial 4ch] or [Serial 2ch].
The [RCP Set...] button is enabled. Selecting (CL) [RCP Set...] skip the screen to step 9.
Processing skip to step 10 if you selecting (CL) [>>Next].
Selecting (CL) [Before <<] returns the screen to step 6.





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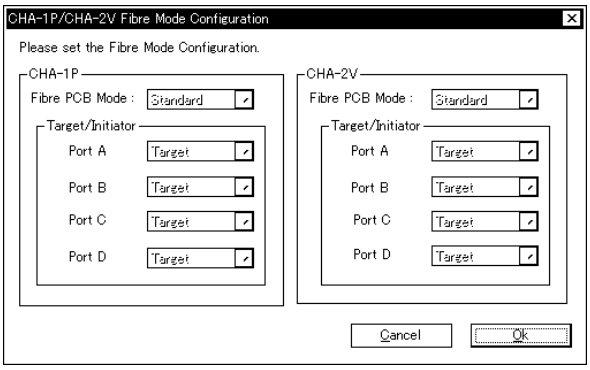
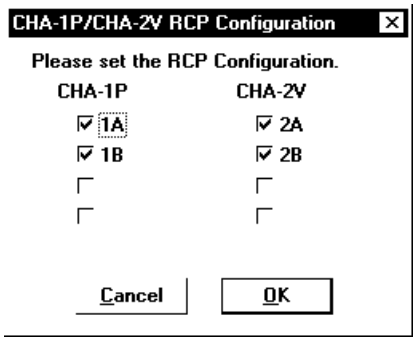
7. <Set Fibre Mode>
'Fibre Mode Configuration' is displayed.
Selecting (CL) [OK] returns the screen to step 7.

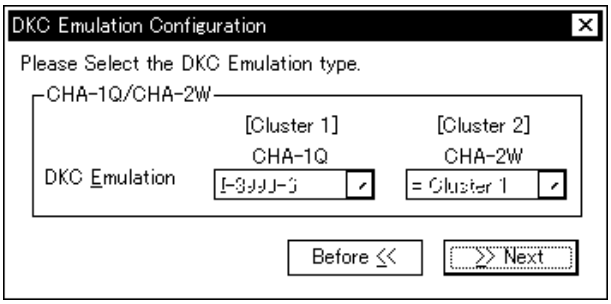


8. <Set RCP port>
RCP Configuration is displayed.
Then, by selecting (CL) [OK] returns the screen to step 7.



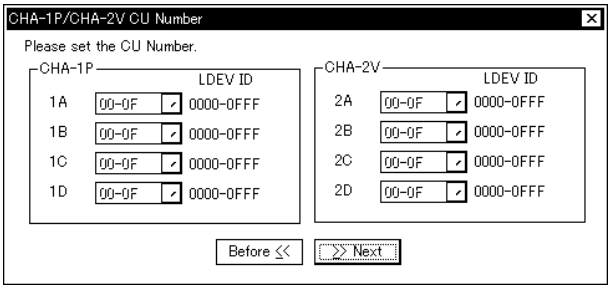
9. <Set DKC Emulation>
DKC Emulation type is displayed.
Select (CL) [>>Next]. Go to step 9-1.
When [Before<<] is selected (CL), the routine return to step 9.

Note: This windows is displayed when Serial (8S) Channel or MFibre (8MS, 8ML) Channel is installed.



9-1. <Setting CU number>
CU number is displayed.
After the setting is completed, select (CL) [>>Next]. Go to step 6.
When [Before<<] is selected (CL), the routine returns to step 9.

Note: This windows is displayed when Serial (8S) Channel is installed.



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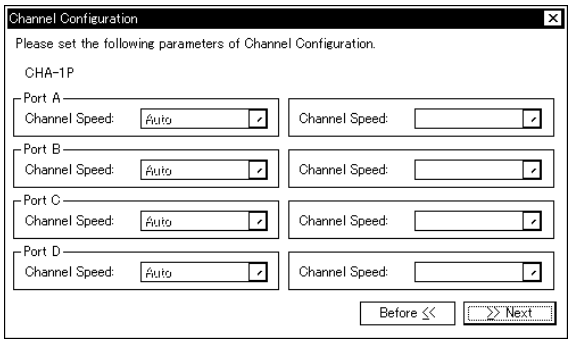
9-2. <Setting Channel>

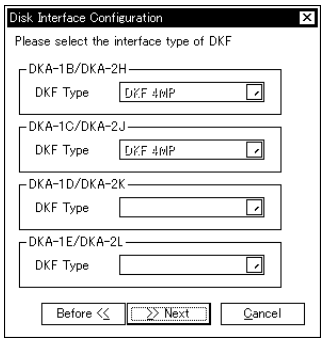
Set the 'Channel Speed'.
After setting up, select (CL) [>>Next].
Go to step 6.
When [Before<<] is selected (CL), the routine returns to step 5.

Note: This windows is displayed when Fibre (8GSE/F, 4HSE/F, 8HSE/F, 8HLE/F, 16HSE/F) Channel is installed.



10. <Set DKF type >

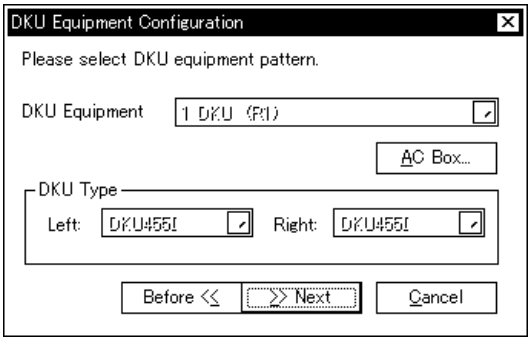
DKF type is displayed.
Select (CL) [>> Next]. Go the screen to step 10-1.
Select (CL) [Before<<]. Go the screen to step 6.



10-1. <Set DKU Equipment>

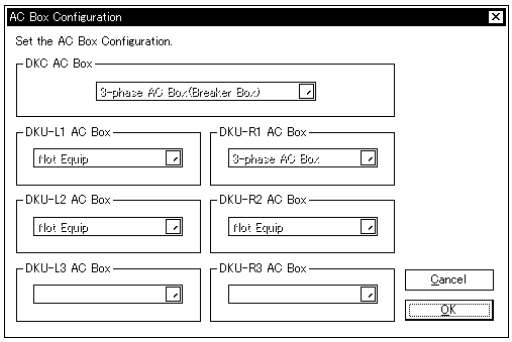
DKU Equipment pattern and DKU type is displayed.
[AC Box...]: Set the DKU AC Box configuration.
(Refer to step 10-2.)
Select (CL) the [>> Next].
This procedure is terminated by selecting (CL) [Cancel].

Note: For Single Cabinet Model, the 'DKU Equipment Configuration' dialog box is not displayed.



10-2. <Setting the DKU AC Box configuration>

DKU AC Box configuration is displayed.
Select (CL) the [OK]. Return to step 10-1.



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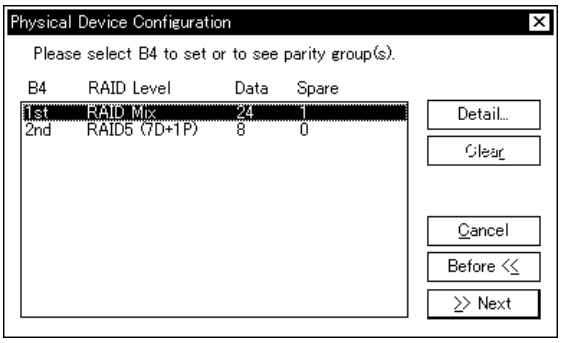
11. <Set Physical Device>

Physical device configuration is displayed.
[Detail...]: Refers to the details of the parity group or spare drive in the B4. The routine proceeds to Step 11-1.
Select (CL) [>> Next].
This procedure is terminated by selecting (CL) [Cancel].



[Multi Cabinet Model]

B4	Location	B4	Location
1st	HDU-R10, 11, 12, 13	7th	HDU-L20, 21, 22, 23
2nd	HDU-R14, 15, 16, 17	8th	HDU-L24, 25, 26, 27
3rd	HDU-L10, 11, 12, 13	9th	HDU-R30, 31, 32, 33
4th	HDU-L14, 15, 16, 17	10th	HDU-R34, 35, 36, 37
5th	HDU-R20, 21, 22, 23	11th	HDU-L30, 31, 32, 33
6th	HDU-R24, 25, 26, 27	12th	HDU-L34, 35, 36, 37

Note: The 9th to 12th of the B4 are valid only when the DKUs for the RAID 400 are connected.

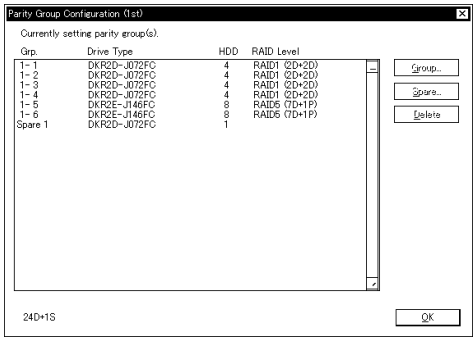
[Single Cabinet Model]

B4	Location	Comment
1st	HDU-0, 1, 2, 3	HDD-X00 ~ X0F
2nd	HDU-0, 1, 2, 3	HDD-X10 ~ X1F

11-1.

Parity Group Configuration is displayed.
Select (CL) [OK]. Return to step 11

Grp*: A parity group where RAID Concatenation is Installed.



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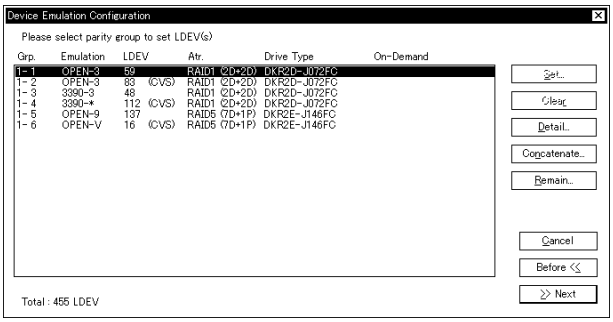
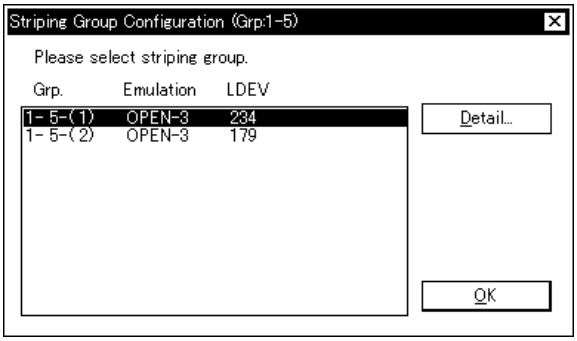
12. <Set Device Emulation>

Device Emulation Configuration is displayed.
Select (CL) parity group and select (CL) [Detail...].
Select (CL) [>> Next]. Go to 12-1.
This procedure is terminated by selecting (CL) [Cancel].
(CVS): A parity group where CVS is installed.
Grp*: A parity group where RAID Concatenation is installed.



12-1. When there are two or more striping groups, the Striping Group Configuration window is displayed. Select (CL) a striping group, and then select (CL) the [Detail…].

- When you select a striping group other than OPEN-V, the routine goes to Step 12-2.
- When you select OPEN-V, the routine goes to Step 12-3.



When you select (CL) the [OK], the preceding window returns. The routine returns to Step 12.

Note: When there is only one striping group, the Striping Group Configuration window is not displayed.

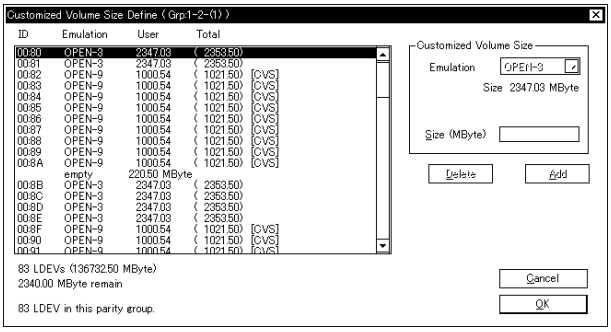
- When you select a striping group other than OPEN-V, the routine goes to Step 12-2.
- When you select OPEN-V, the routine goes to Step 12-3.

12-2.

Customized Volume Size Define is displayed.
Select (CL) [OK]. Return to step 12 or 12-1.

Note : Meaning of "+" character

1) Volume with SCSI path.
2) LU expanded volume.
3) Volume with LDEV Security.



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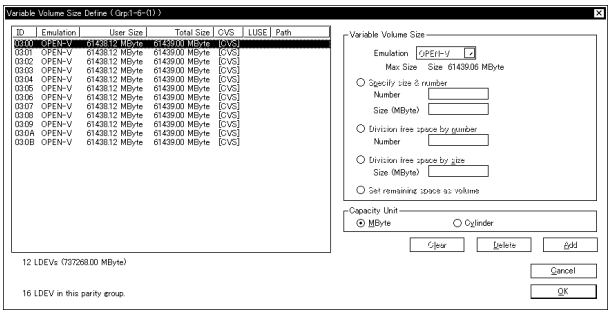
12-3. Definition of OPEN-V

The “Variable Volume Size Define” window is displayed.



- Capacity Unit
  - “MByte” : Makes data displayed by the Mbyte.
  - “Cylinder” : Makes data displayed by the cylinder.
- LUSE : When the LUSE connection is made, a symbol “+” and a number of the volume at the top are displayed.
- Path : When a path is defined, a symbol “+” is displayed.

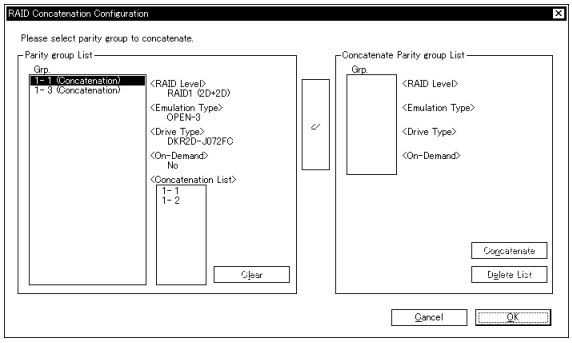
[Cancel] : Invalidates the setting and makes the preceding window return. The routine is returned to Step 12 or 12-1.

[OK] : Fixes the setting and makes the preceding window return. The routine is returned to Step 12 or 12-1.

12-4. <Setting RAID concatenation>

The RAID Concatenation Configuration window is displayed.
When the “(Concatenation)” displayed in the Parity group List is selected (CL), parity groups that have been concatenated are displayed in the Concatenation List.

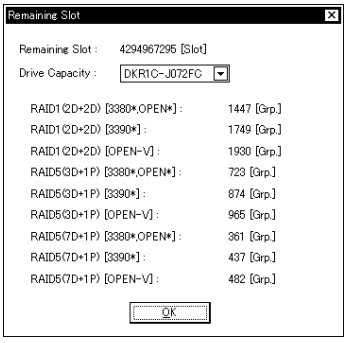
Select (CL) the [OK]. The routine returns to Step 12.



12-5. <Displaying remaining slot (s)>

The Remaining Slot window is displayed.
An allowable number of times of PDEV addition corresponding to the specified drive type is displayed.

Select (CL) the [OK]. The routine returns to Step 12.



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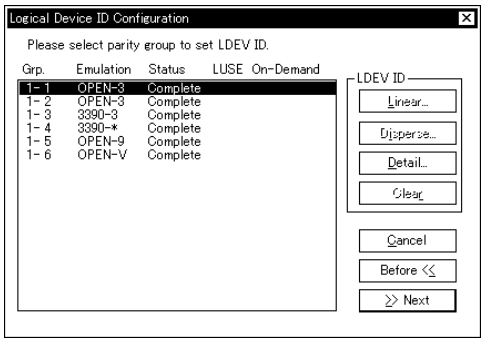
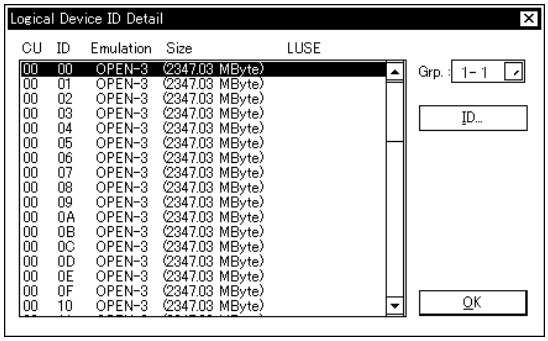
13. <Set Logical Device ID>

Logical Device ID Configuration is displayed.
Select (CL) a parity group and select (CL) [Detail...].
Select (CL) [>> Next]. Go to 13-1.
This procedure is terminated by selecting (CL) [Cancel].
Grp*: The top parity group where RAID Concatenation is installed.



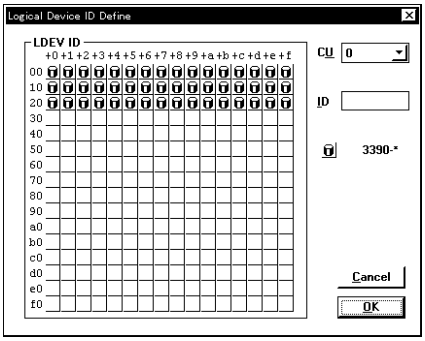
13-1.

Logical Device ID Detail is displayed.
Select (CL) [ID...].
Select (CL) [OK]. Return to step 13.
Note: In the case of a RAID Concatenation Group, LDEV of the parity group selected by the "Grp List" is displayed.



13-2.

Logical Device ID allocation is displayed.
Select (CL) [OK] or [Cancel]. Return to step 13-1.



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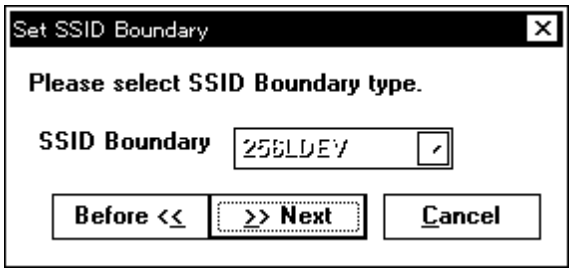
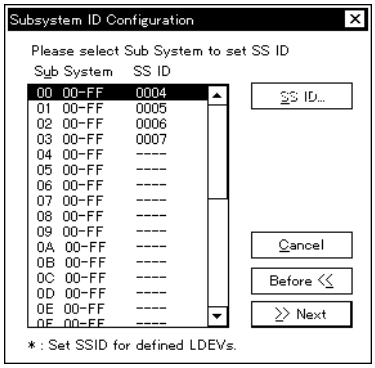
14. <Define Subsystem ID Boundary>

Set the Subsystem ID Boundary in the 'Set SSID Boundary' dialog box.
After setting up all items, select (CL) [>>NEXT].
Go to step 5.
This procedure is terminated by selecting (CL) [Cancel].



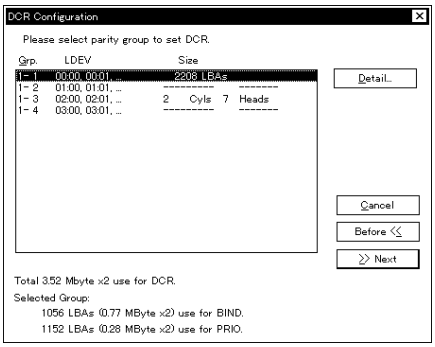
14-1. <Set Subsystem ID>

Subsystem ID Configuration is displayed.
Select (CL) [>> Next].
This procedure is terminated by selecting (CL) [Cancel].



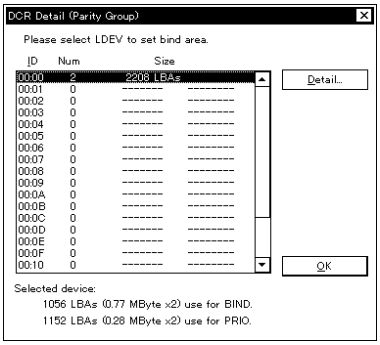
15. <Set DCR>

DCR Configuration is displayed.
Select (CL) a parity group and select (CL) [Detail...]. Go to step 15-1.
Select (CL) [>> Next].
This procedure is terminated by selecting (CL) [Cancel].



15-1.

DCR detail (Parity group) is displayed.
Select (CL) an LDEV and select [Detail...]. Go to step 15-2
Select (CL) [OK] . Return to step 15.



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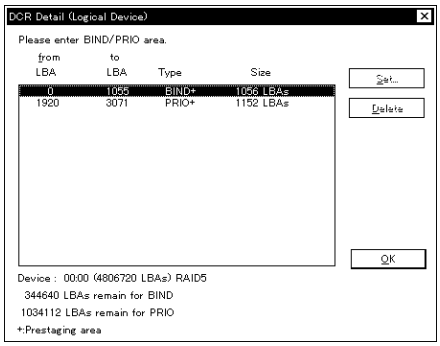
15-2.

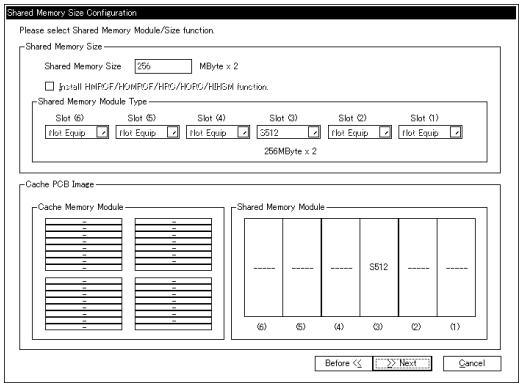
DCR detail (Logical device) is displayed.
Select (CL) [OK]. Return to step 15-1.



16. <Set Shared Memory Size >

Shared Memory Size Configuration is displayed.
Select (CL) [>> Next].
This procedure is terminated by selecting (CL) [Cancel].

Go to INST05-610.



17.

Select (CL) [OK].
Close the 'Install' window.

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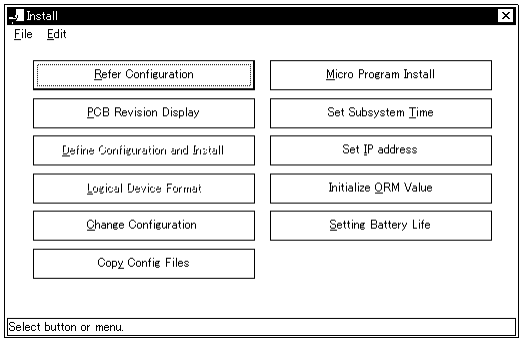
5.3 Change Configuration SVP Procedure

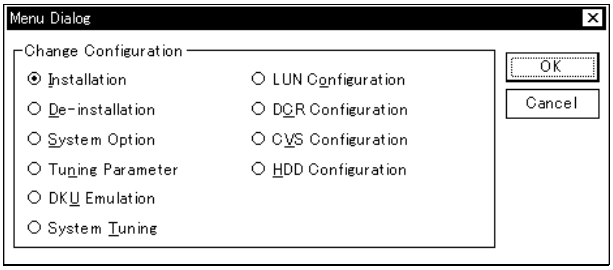
5.3.2 Setting up the New Device Structure Information

1. <Mode Change>
   Change the mode to Modify Mode.
   Select (CL) [Install].

2. <Start the 'Menu Dialog' screen>
   Select (CL) [Change Configuration].



3. <Start Device Structure Setup screen>
   Select (CL) the item in the 'Menu Dialog' dialog box and select (CL) [OK].



Function	Menu Item	
• System Option ----------	System Option	(INST05-460)
• DCR Configuration ----------	DCR Configuration	(INST05-470)
• CVS Configuration----------	CVS Configuration	(INST05-510)
• LUN Management ----------	LUN Configuration	(INST05-610)

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Blank Sheet

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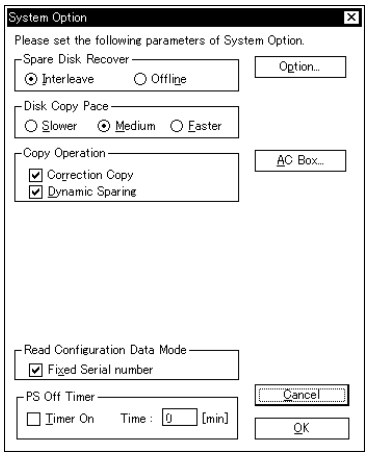
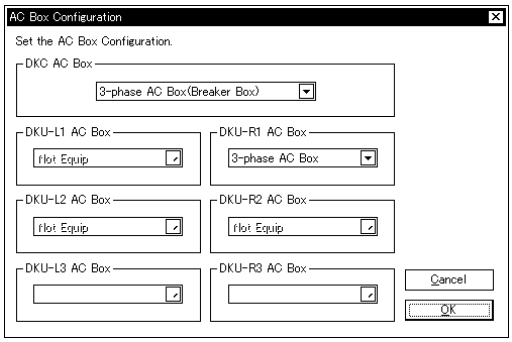
5.3.2.1 System Option

1. <System Option Definition>
   Define system option information in the 'System Option'.
   [AC Box...]: Set the DKC and DKU AC Box configuration.
   (Refer to step 2.)
   After setting up all items, select (CL) the [OK].



2. <Setting the AC Box configuration>
   Set the DKC and DKU AC Box configuration, select (CL) the [OK]. Return to step 1.



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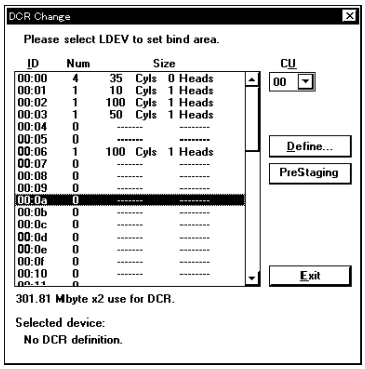
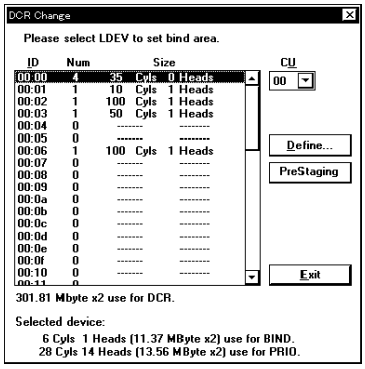
5.3.2.2 DCR Configuration

(1) The “DCR Change” screen appears and the contents of the entered setting are displayed. When the CU is selected (DR) in the combo box, installed LDEV(s) and contents of the DCR definition are updated. Select (CL) LDEV to change the setting, then press (CL) the [Define...] button.

Total cache memory size occupied by the DCR area is displayed.

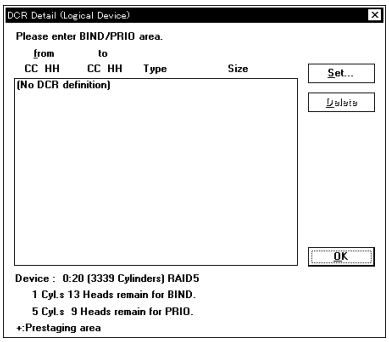
If the selected LDEV has a DCR area, the BIND size and the PRIO size are displayed under the “DCR Change” screen.





NOTICE
To use DCR function, you should install DCR program product (P-242R-J6641) for mainframe volumes or Open DCR program product (P-242R-J6642) for open volumes into the DKC.

(2) The “DCR Detail (Logical Device)” screen appears and the setting of the DCR in the LDEV is displayed.
To add a new setting, press (CL) the [Set...] button.



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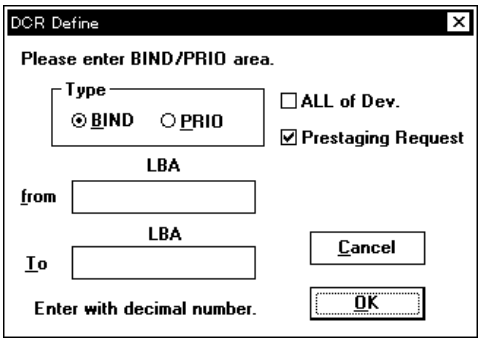
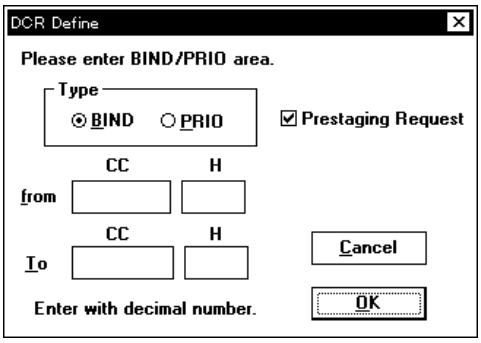
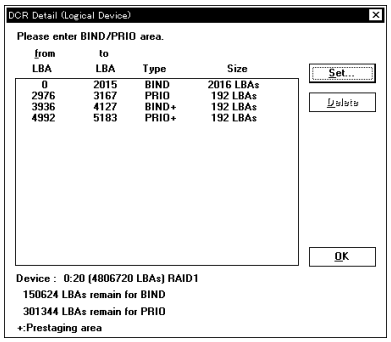
(3) When the [Set...] button is pressed (CL) on the "DCR Detail (Logical Device)" screen, the "DCR Define" screen appears. To register new data in the DCR area, enter the type, starting cylinder number, starting head number, ending cylinder number, and ending head number (In the case of Mainframe, refer to the screen on the right) or the type, starting LBA, and ending LBA (In the case of the open system, refer to the screen on the left).
If you want to stage the data on the cache, check the Prestaging Request box.
When the entry is completed, return the screen to the "DCR Detail (Logical Device)" screen by pressing (CL) the [OK] button.

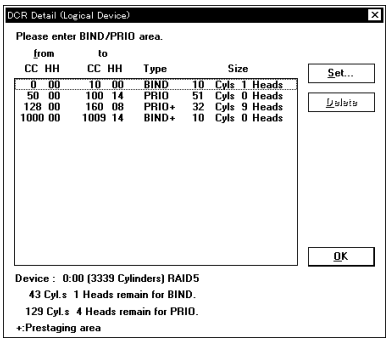




(4) Contents of the entered setting are displayed in the list box on the "DCR Detail (Logical Device)" screen.

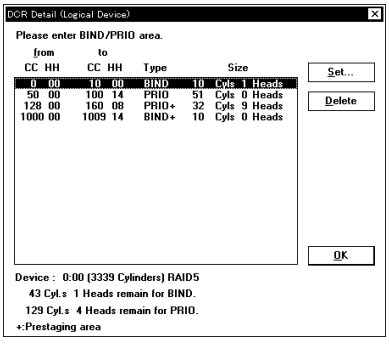


(In the case of open system)



(In the case of Mainframe system)

(5) To delete a set item, select (CL) the DCR setting to be deleted and press (CL) the [Delete] button on the "DCR Detail (Logical Device)" screen.



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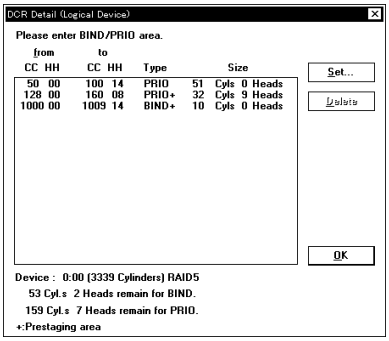
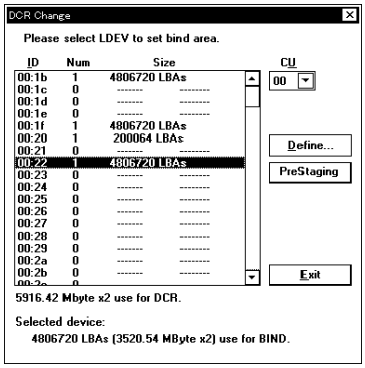
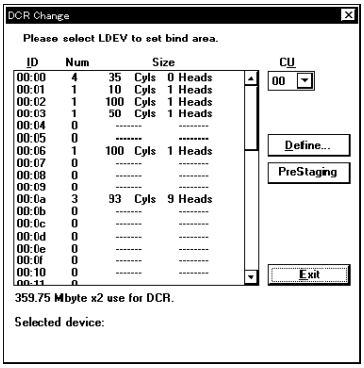
(6) By pressing (CL) the [OK] button on the "DCR Detail (Logical Device)" screen after the new setting is entered, a process to change the setting for the LDEV is executed. When no change is required, press (CL) the [Cancel] button.



(7) The screen returns to the "DCR Change" screen after the processing is completed. The changed setting is displayed in the list box.



(In the case of open system)



(In the case of Mainframe system)

(8) Repeat steps (1) through (7) for the LDEV(s) of which you want to change the setting.

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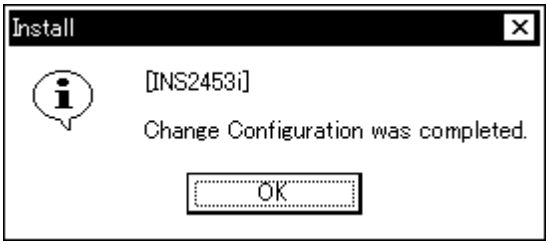
(9) The [PreStaging] button begins the Pre-staging processing.

(10) When the changing operation is completed, quit the “DCR Change” screen by pressing (CL) the [Exit] button.

(11) “Change Configuration was completed.” is displayed.
Selection (CL) [OK].



(12) “Reading subsystem configuration data...” is displayed.
“Please insert the Config FD in the FDD.” is displayed.
Insert the Config FD into FDD, and select (CL) [OK].

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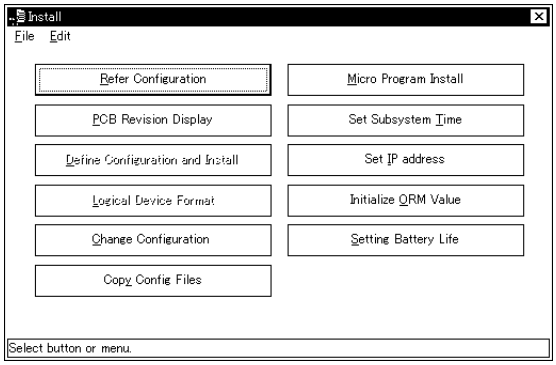
(13) When this procedure is completed, the message "Please remove the Config FD." is displayed. Remove the FD, select (CL) [OK].

(14) After the procedure is completed, return to "Install". Select (CL) [File]-[Exit].



(15) Change the Mode from [Modify Mode] to [View Mode].

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5.3.2.3 CVS Configuration

- Volume to Space ----------Go to step 1.
- LDEV (CVS) Installation ----------Go to step 2.
- Volume Initialize----------Go to step 3.

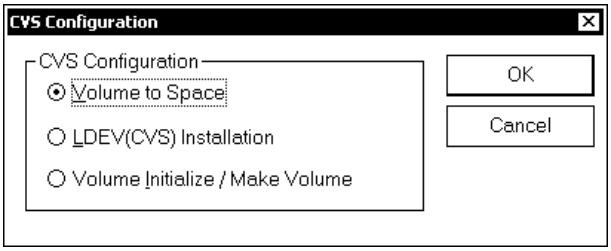
1. <Volume to Space>

NOTICE
When you set HMDE volumes to customized volumes and reset them to the normal volume again, these volumes could not be set as HMDE volumes. Please refer to the following table.

Emulation Types for HMDE volumes	Emulation types after changing from Customized volume to normal volume
3390-3A	3390-3
3390-3B	
3390-3C	

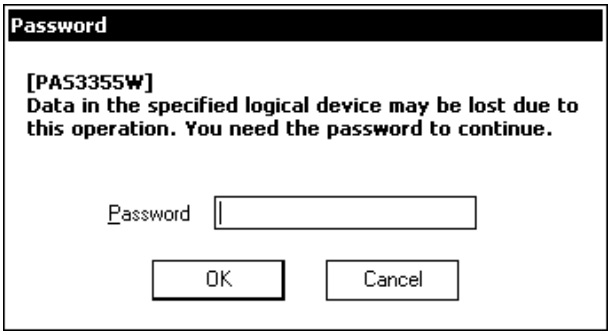
If you want to reset these volumes as HMDE, please call technical support center to set them to HMDE volumes by SVP.

(1) Select (CL) [Volume to Space] and press (CL) [OK].



NOTICE
To use CVS function, you should install CVS program product (P-242R-J6541) for mainframe volumes or Open CVS program product (P-242R-J6542) for open volumes into the DKC.

Enter the password and select (CL) [OK].



NOTICE
This is a special (exceptional) operation that can cause a serious failure such as a system down or a data loss and requires an input of a password. Ask the technical support center about the appropriateness of the operation, and input the password after getting an approval of executing the operation.

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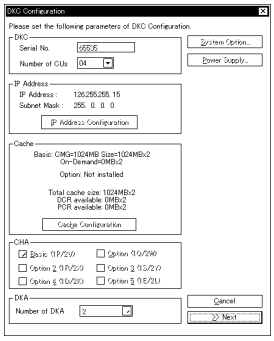
(1-1) Define the number of CU in DKC in the 'DKC Configuration' window.

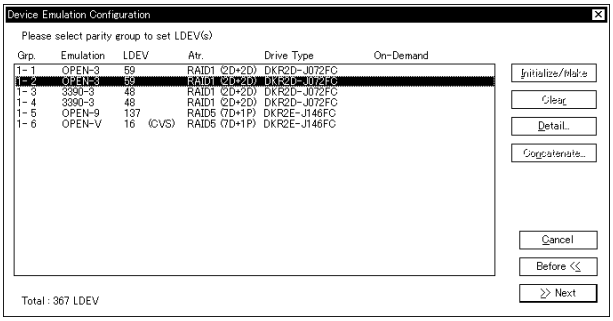
Make sure that the entered item is correct and select (CL) [>>Next].



(2) Select (CL) a parity group with Volume(s) to be changed on the "Device Emulation Configuration" screen and press (CL) the [Detail...] button.

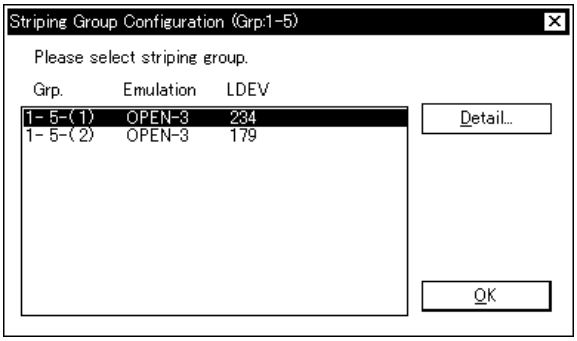
(CVS): A parity group where CVS is installed.

Grp*: A parity group where RAID Concatenation is installed.



(2-1) When there are two or more striping groups, the Striping Group Configuration window is displayed. Select (CL) a striping group, and then select (CL) the [Detail…].

- When you select a striping group other than OPEN-V, the routine goes to Step (3).
- When you select OPEN-V, the routine goes to Step (3-1).



When you select (CL) the [OK], the preceding window returns. The routine returns to Step (2).

Note: When there is only one striping group, the Striping Group Configuration window is not displayed.

- When you select a striping group other than OPEN-V, the routine goes to Step (3).
- When you select OPEN-V, the routine goes to Step (3-1).

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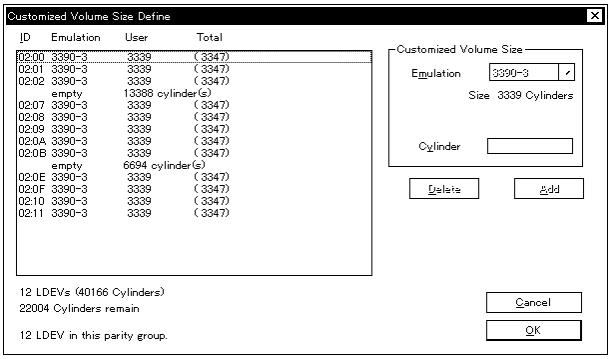
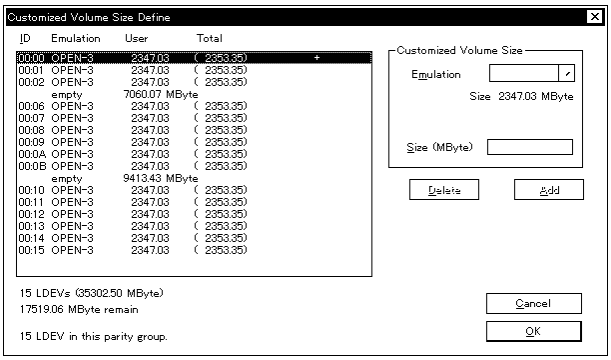
(3) When the Volume(s) to be deleted is selected (CL) on the “Customized Volume Size Define” screen and the [Delete] button is pressed (CL), the Volume(s) is deleted. When the operation fails, the screen can be returned to the preceding one by pressing (CL) the [Cancel] button.



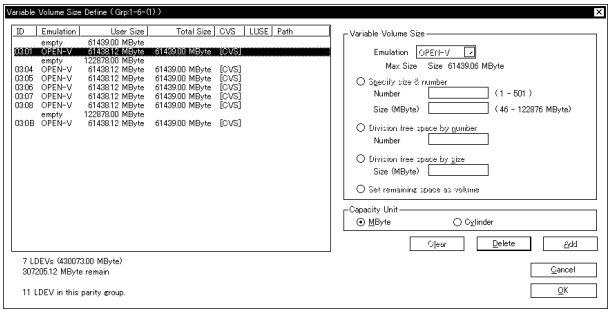
Note: In the following case, the [Delete] button is not available.

1) The last CV is selected.
2) Volume with SCSI path(s) (“+” indicated) is selected.
3) Volume with LUN (“+” indicated) is selected.
4) Volume with LDEV Security (“+” indicated) is selected.



(3-1) Definition of OPEN-V

When you select a volume you want to delete in the “Variable Volume Size Define” window and select (CL) the [Delete], the volume is deleted.
The two or more volumes can be selected and deleted. However, the last one volume cannot be de deleted.



- Capacity Unit
  - “MByte” : Makes data displayed or entered by the Mbyte.
  - “Cylinder” : Makes data displayed or entered by the cylinder.
- LUSE : When the LUSE connection is made, a symbol “+” and a number of the volume at the top are displayed.
- Path : When a path is defined, a symbol “+” is displayed.

[Delete] : Deletes a selected volume.
[Cancel] : Invalidates the setting and makes the preceding window return. The routine is returned to Step (2) or (2-1).
[OK] : Fixes the setting and makes the preceding window return. The routine is returned to Step (2) or (2-1).

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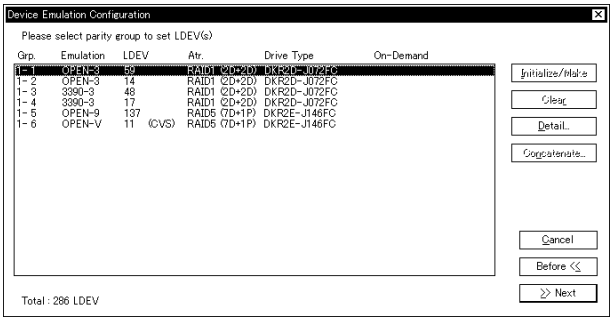
(4) When the screen is returned to the "Device Emulation Configuration" screen by pressing (CL) the [OK] button and the[>>Next] button is pressed (CL), the definition of reduction is decided.

(CVS): A parity group where CVS is installed.

Grp*: A parity group where RAID Concatenation is installed.

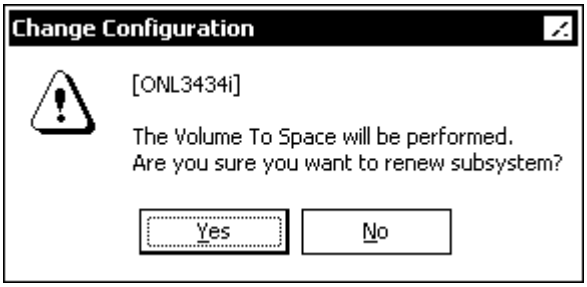


---

(5)

Select (CL) [Yes] in response to "The Volume To Space will be performed. Are you sure you want to renew subsystem?".

When [No] is selected (CL), returns to INST05-440 step 2.



---

(6)

"Renewal process has completed. Please check the subsystem status." is displayed when recovery processing on all installed components is completed. Select (CL) [OK] in response to this message.

---

(7)

"Reading subsystem configuration data..." is displayed.
"Please insert the Config FD in the FDD." is displayed.
Insert the configuration FD into FDD, and select (CL) [OK].

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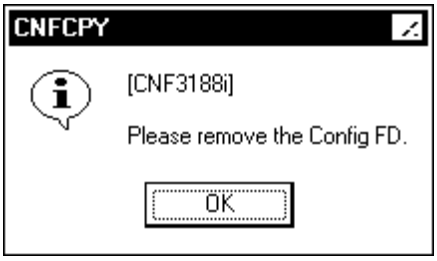
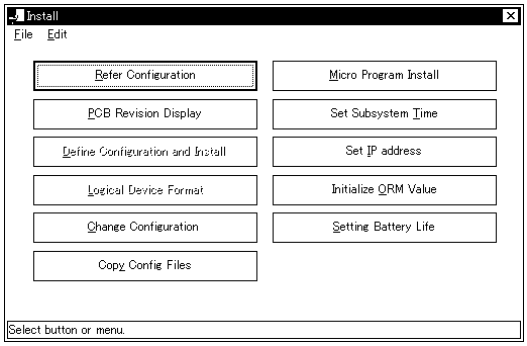
(8)

When this procedure is completed, the message “Please remove the Config FD.” is displayed.
Remove the FD, select (CL) [OK].



(9)

After the procedure is completed, return to ‘Install’.
Select (CL) [File]-[Exit].



(10)

Change the mode to View Mode.

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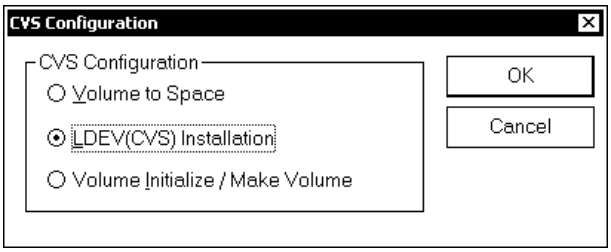
2. <LDEV(CVS) Installation>

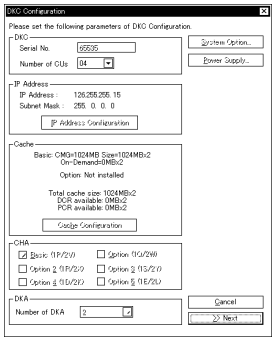
(1) Select (CL) [LDEV(CVS) Installation] and press (CL) [OK].



(1-1) Define the number of CUs in DKC in the 'DKC Configuration' window.

When no alteration was made on the number of CUs owing to the addition of the LDEV (CVS), select (CL) [>>Next].

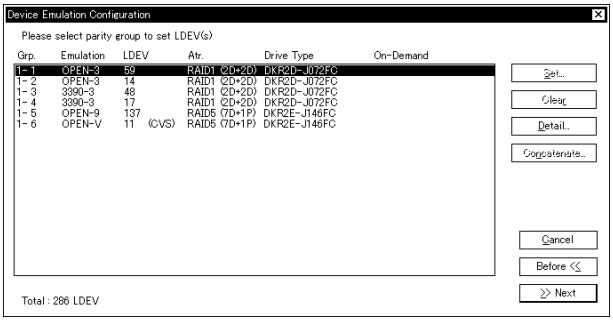
Make sure that the entered item is correct and select (CL) [>>Next].



(2) Select (CL) a parity group to which the CV(s) is to be added on the "Device Emulation Configuration" screen and press (CL) the [Detail] button.

(CVS): A parity group where CVS is installed.

Grp*: A parity group where RAID Concatenation is installed.



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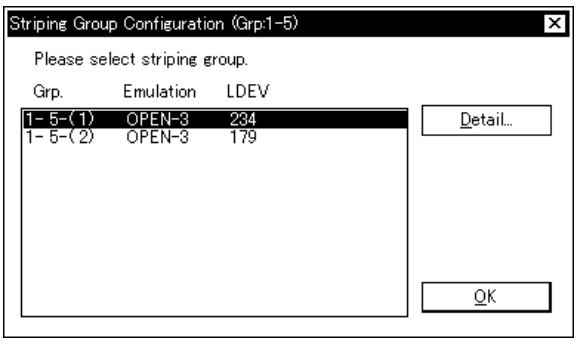
(2-1) When there are two or more striping groups, the Striping Group Configuration window is displayed. Select (CL) a striping group, and then select (CL) the [Detail…].

- When you select a striping group other than OPEN-V, the routine goes to Step (3).
- When you select OPEN-V, the routine goes to Step (4-1).



When you select (CL) the [OK], the preceding window returns. The routine returns to Step (2).

Note: When there is only one striping group, the Striping Group Configuration window is not displayed.

- When you select a striping group other than OPEN-V, the routine goes to Step (3).
- When you select OPEN-V, the routine goes to Step (4-1).

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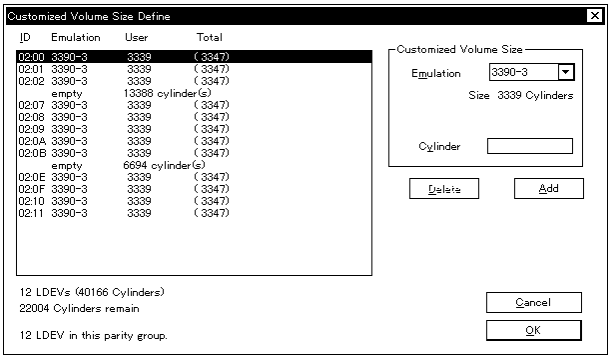
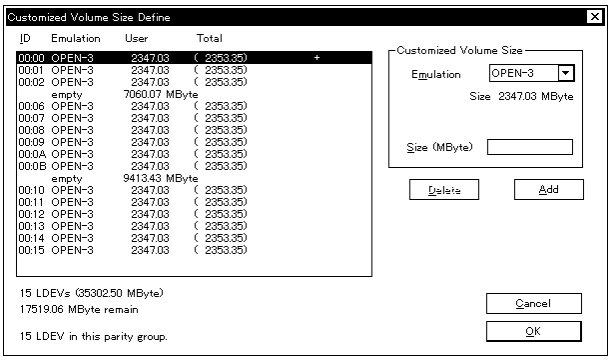
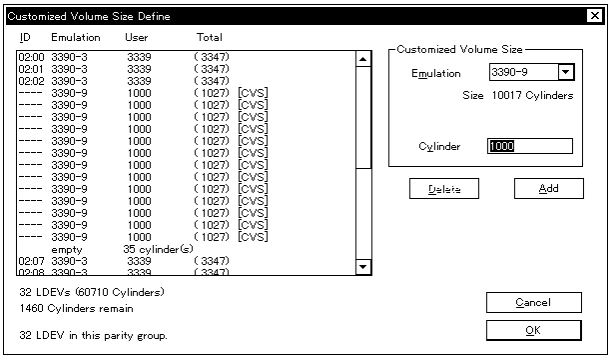
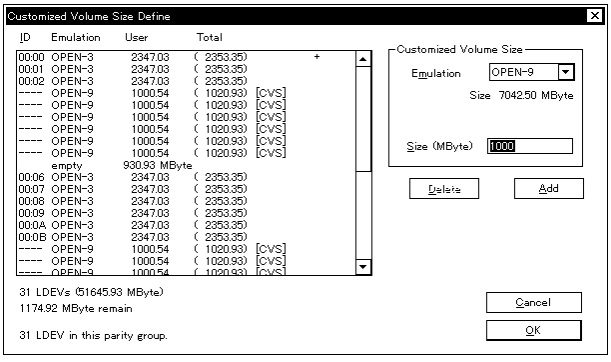
(3) Register the CV to be added by selecting (CL) the CV's emulation type of it, entering the number of cylinders, and selecting (CL) [Add] on the "Customized Volume Size Define" screen. The two or more CVs can be registered when the operation above is performed repeatedly.
When an emulation type for open host is selected, the size per cylinder is displayed in Mbytes.





(4) The contents registered are displayed in the list box.
The deletion can be made only for the added CV(s). When the addition is made incorrectly, select (CL) [Cancel] to make the setting invalid and perform the setting again.
When CV for open host is selected, the size is displayed ([M byte]).





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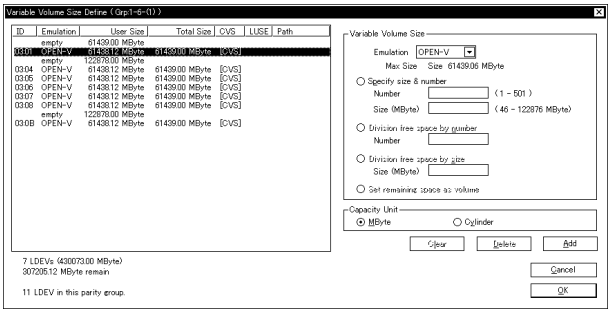
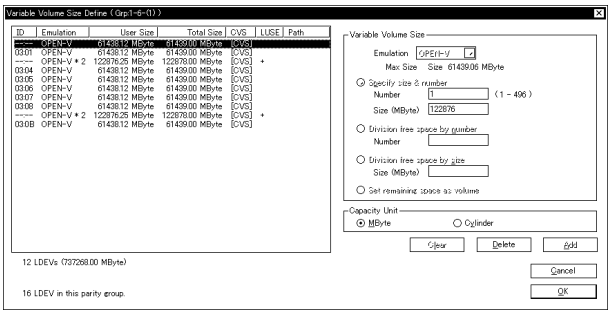
(4-1) Definition of OPEN-V

After selecting the “Specify Size & number” in the “Variable Volume Size Define” window and entering user size and number of volumes to be added, register a volume by selecting (CL) the [Add].



The volume that have been registered are displayed in the list box. Only the added volume can be deleted.



- Capacity Unit
  “MByte” : Makes data displayed or entered by the Mbyte.
  “Cylinder” : Makes data displayed or entered by the cylinder.
- LUSE : When the LUSE connection is made, a symbol “+” and a number of the volume at the top are displayed.
- Path : When a path is defined, a symbol “+” is displayed.

[Delete] : Deletes a selected volume.
[Add] : Adds a volume.
[Cancel] : Invalidates the setting and makes the preceding window return. The routine is returned to Step (2) or (2-1).
[OK] : Fixes the setting and makes the preceding window return. The routine is returned to Step (2) or (2-1).

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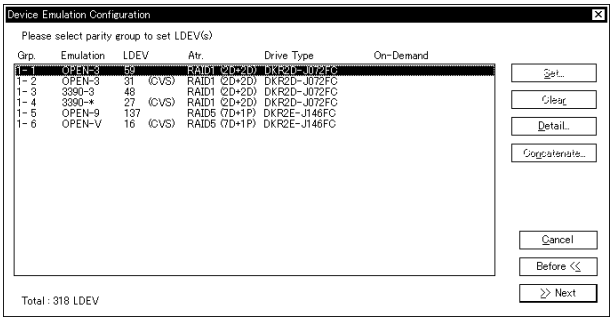
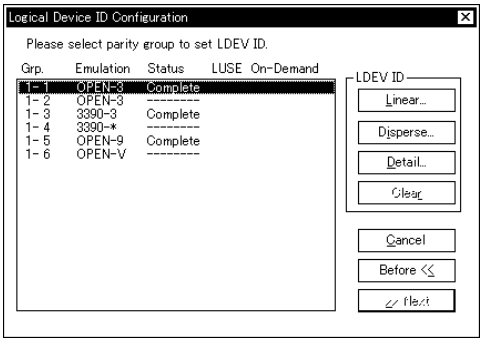
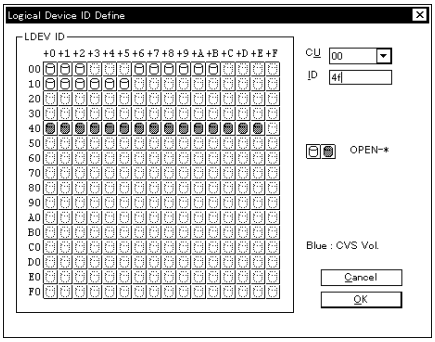
(5) When the screen is returned to the "Device Emulation Configuration" screen by a pressing (CL) of the [OK] button, the setting result is displayed.
The LDEV status is displayed as [CVS] for the parity group for which the CV was set.
(CVS): A parity group where CVS is installed.
Grp*: A parity group where RAID Concatenation is installed.



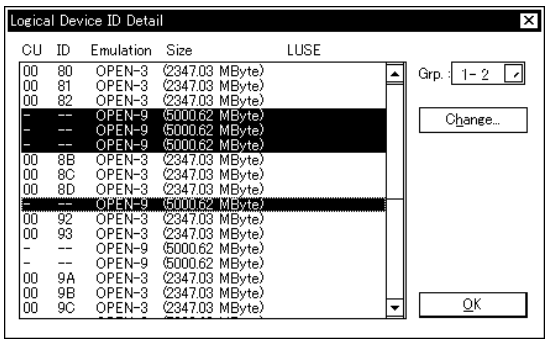
(6) When the [>>Next] button is pressed (CL), the LDEV ID setting screen appears.
Set LDEV ID(s) for the added CV(s). For the parity group having the added CV(s), the status which shows the ID allocation is indicated as "---------". Therefore, select (CL) such a parity group.
When [Linear...] or [Disperse...] was selected (CL), the routine proceeds to Step (7).
When [Detail...] is selected (CL), the routine proceeds to Step (7)-1.
Grp*: The top parity group where RAID Concatenation is installed.



(7) Press (CL) the [Linear...] button and enter an LDEV ID you want to allocate on the "Logical Device ID Define" screen.



(7)-1 When the [Detail...] is pressed (CL), the [Logical Device ID Detail] screen is displayed. Select an emulation type for which the CU and ID status are displayed as "- --" and select (CL) [Change...].
When you want to register successive IDs, you can select the two or more emulation types.
Note: In the case of a RAID Concatenation Group, LDEV of the parity group selected by the "Grp List" is displayed.



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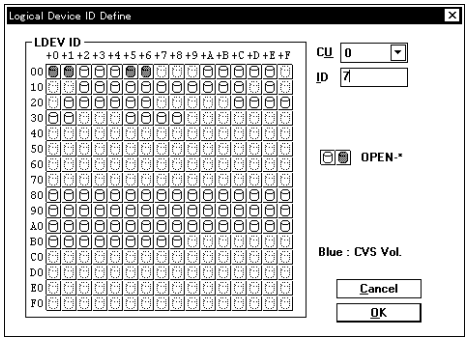
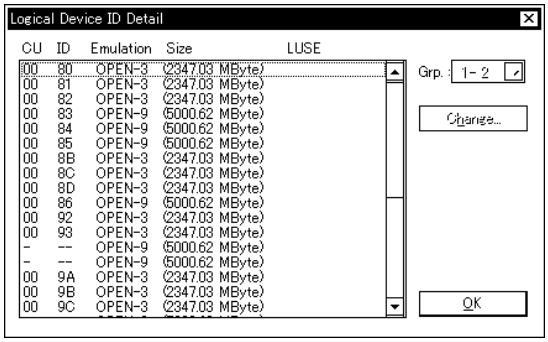
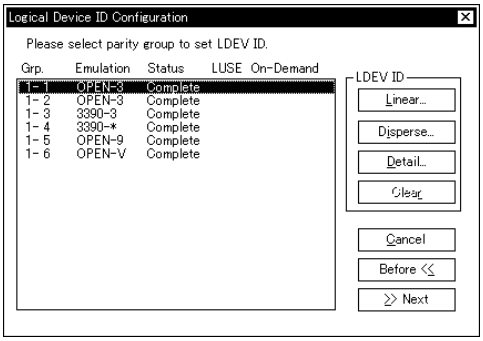
(7)-2 Enter a CU and LDEV ID you want to allocate on the "Logical Device ID Define" screen. Then, select (CL) [OK].
Go to Step (7)-3.



(7)-3 Make sure that the CU(s) and ID(s) have been registered.
If there is any emulation type for which the CU and ID status are displayed as "- --", return to Step (7)-1.
If all the settings have been made, select (CL) [OK].
Go to Step (8).



(8) When the screen is returned to the "Logical Device ID Configuration" screen by pressing (CL) the [OK] button, the
setting result is displayed.
Grp*: The top parity group where RAID Concatenation is installed.



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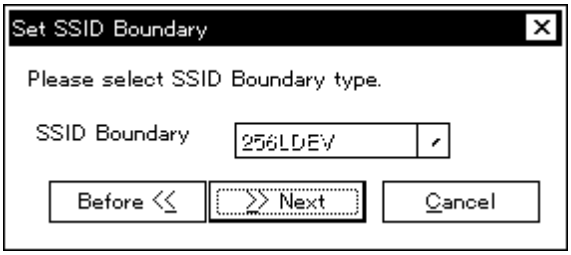
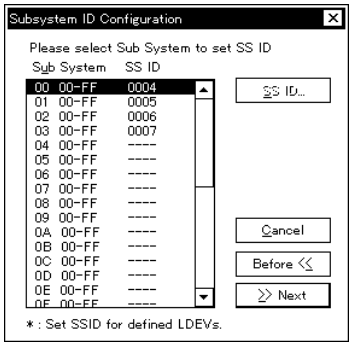
(9)

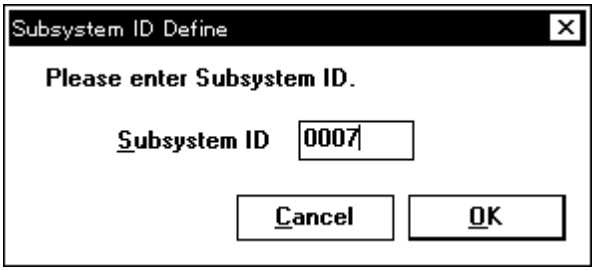
Press (CL) the [>>Next] button to change the screen to the “Set SSID Boundary” screen.



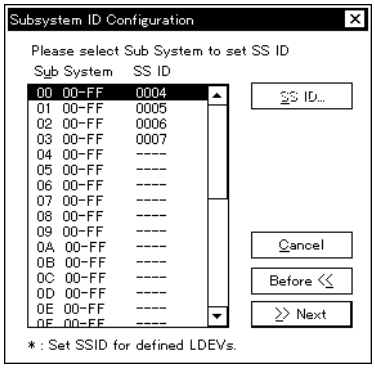
(10) When the [>>Next] button is pressed (CL), the “Subsystem ID Configuration” screen is opened. If a new SS ID is required as a result of defining an LDEV ID, define the new SS ID. Select (CL) a subsystem where the SS ID is to be newly defined and press (CL) the [SS ID...] button.
When no subsystem ID is to be defined, go to Step (13) by selecting [>>Next].



(11) Enter the SS ID on the “Subsystem ID Define” screen and select (CL) [OK].



(12) When the screen is returned to the “Subsystem ID Configuration” screen by pressing (CL) the [OK] button, the set contents are displayed.



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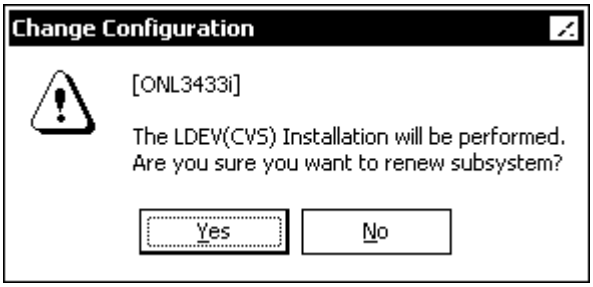
(13) When [>>Next] is selected (CL), the definition of the addition ends. (Additional process starts.)

---

(14)

Select (CL) [Yes] in response to "The LDEV(CVS) Installation will be performed. Are you sure you want to renew subsystem?".

When [No] is selected (CL), returns to INST05-440 step 2.



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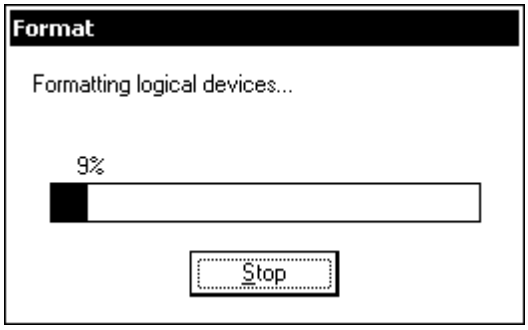
(15)

"Formatting the logical device..." is displayed.



---

(16)

"Renewal process has completed. Please check the subsystem status." is displayed when recovery processing on all installed components is completed. Select (CL) [OK] in response to this message.

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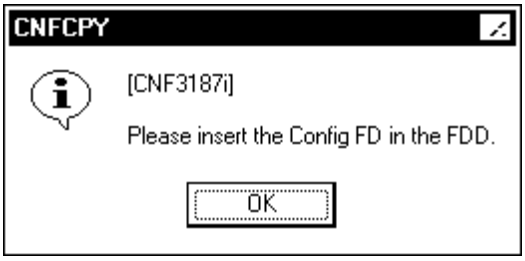
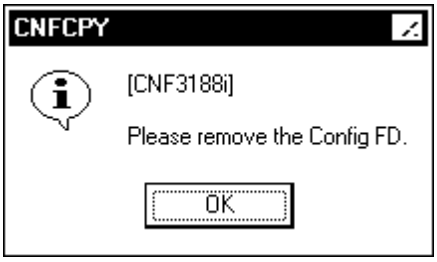
(17)

"Reading subsystem configuration data..." is displayed.
"Please insert the Config FD in the FDD." is displayed.
Insert the configuration FD into FDD, and select (CL) [OK].



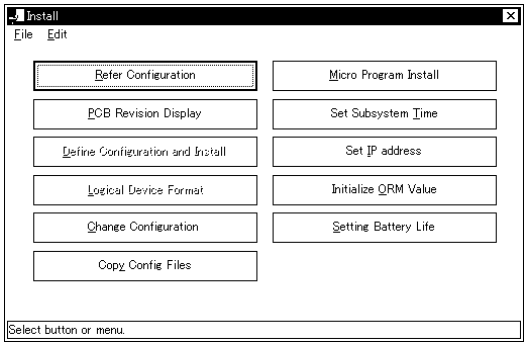
(18)

When this procedure is completed, the message "Please remove the Config FD." is displayed.
Remove the FD, select (CL) [OK].



(19)

After the procedure is completed, return to 'Install'.
Select (CL) [File]-[Exit].



(20)

Change the mode to View Mode.

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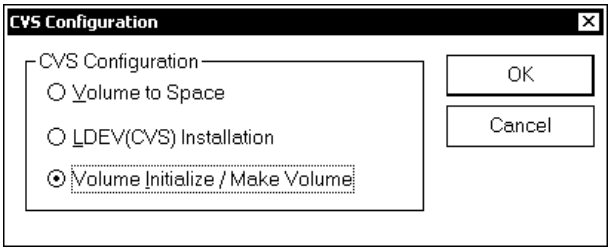
3. <Volume Initialize>

NOTICE
When you set HMDE volumes to customized volumes and reset them to the normal volume again, these volumes could not be set as HMDE volumes. Please refer to the following table.

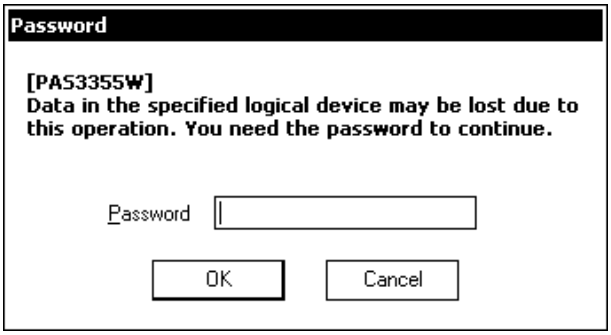
Emulation Types for HMDE volumes	Emulation types after changing from Customized volume to normal volume
3390-3A	3390-3
3390-3B	
3390-3C	

If you want to reset these volumes as HMDE, please call technical support center to set them to HMDE volumes by SVP.

(1) Select (CL) [Volume Initialize/Make Volume], then select (CL) [OK].



Enter the password and select (CL) [OK].



NOTICE
This is a special (exceptional) operation that can cause a serious failure such as a system down or a data loss and requires an input of a password. Ask the technical support center about the appropriateness of the operation, and input the password after getting an approval of executing the operation.

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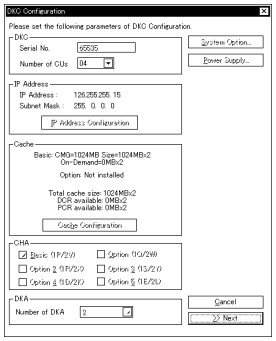
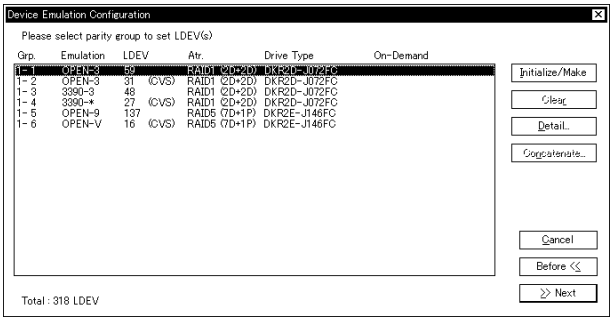
(1-1) Define the number of CU in DKC in the 'DKC Configuration' window.

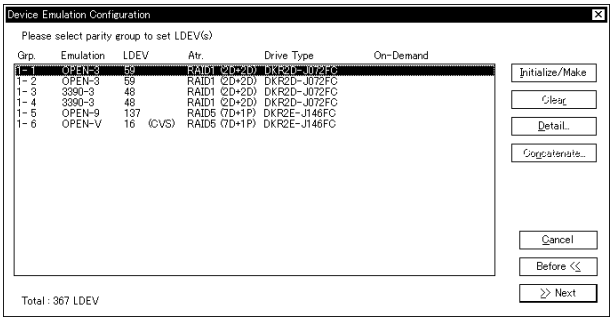
Make sure that the entered item is correct and select (CL) [>>Next].



(2) Select (CL) a parity group having volume(s) to be changed on the "Device Emulation Configuration" screen.
(CVS): A parity group where CVS is installed.
Grp*: A parity group where RAID Concatenation is installed.



(3) Select (CL) a CV from the list box on the "Customized Volume Size Define" screen, press (CL) the [Initialize] button to delete the CV, and return it to a normal volume. When the operation fails, the screen can be returned to the preceding one by pressing (CL) the [Cancel] button.
(CVS): A parity group where CVS is installed.
Grp*: A parity group where RAID Concatenation is installed.



Note: In the following case, the [Initialize] button is not available.
1) Volume with SCSI path(s) is selected.
2) Volume with LUN is selected.
3) Volume with LDEV Security is selected.

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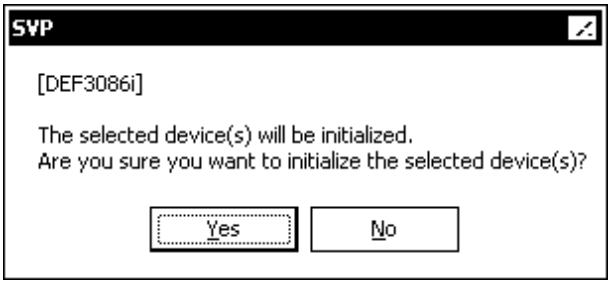
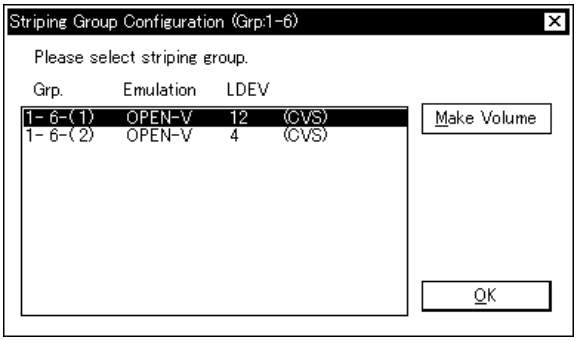
(3-1) A message, “This operation initializes the logical device (CVS) that has been selected in the list box. Do you want to continue the operation?” is displayed. Select (CL) [Yes].
- When you select a striping group other than OPEN-V, the routine goes to Step (4).
- When you select OPEN-V, the routine goes to Step (3-2).



(3-2) When there are two or more striping groups, the Striping Group Configuration window is displayed. Select (CL) a striping group, and then select (CL) the [Make Volume]. The routine goes to Step (3-3).

When you select (CL) the [OK], the preceding window returns. The routine returns to Step (3).



Note: When there is only one striping group, the Striping Group Configuration window is not displayed. The routine goes to Step (3-3).

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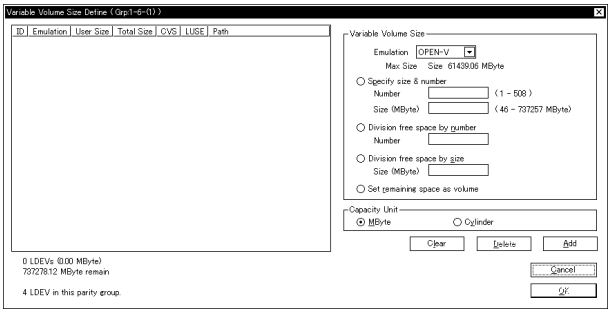
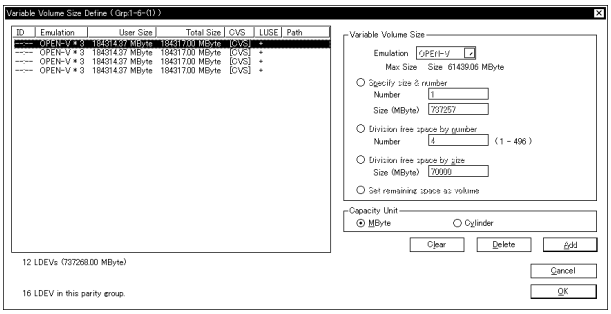
(3-3) Definition of OPEN-V

Select (CL) Variable Volume Size and then select (CL) the [Add] in the "Variable Volume Size Define" window.



The volume that has been registered is displayed in the list box. Only the added volume can be deleted.



- Variable Volume Size
  "Specify Size & number" : Defines specified number of specified user sizes.
  "Division free space by number : Defines a volume divided into specified number of portions. However, this can be selected only when all the volumes have been deleted.
  "Division free space by size : Defines volumes whose sizes are all specified ones. However, this can be selected only when all the volumes have been deleted.
  "Set remaining space as volume" : Defines an empty space as a volume.
- Capacity Unit
  "MByte" : Makes data displayed or entered by the Mbyte.
  "Cylinder" : Makes data displayed or entered by the cylinder.
- LUSE : When the LUSE connection is made, a symbol "+" and a number of the volume at the top are displayed.
- Path : When a path is defined, a symbol "+" is displayed.

[Clear] : Deletes all the volumes.
[Delete] : Deletes a selected volume.
[Add] : Adds a volume.
[Cancel] : Invalidates the setting and makes the preceding window return. The routine is returned to Step (3) or (3-1).
[OK] : Fixes the setting and makes the preceding window return. The routine is returned to Step (3) or (3-1).

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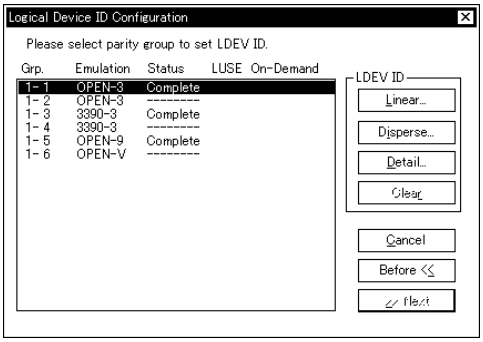
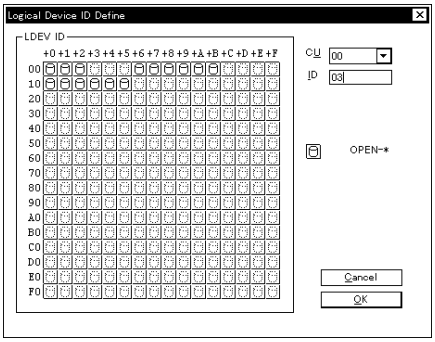
(4) To return the volume(s) in other parity group(s) to the normal LDEV(s), repeat steps (3).

(5) Press (CL) the [>>Next] button to change the screen to the "Logical Device ID Configuration" screen. Since the normal LDEV returned from the base volume is a newly defined LDEV, define the ID. Select (CL) the parity group having the LDEV(s) for which the ID(s) has not been set, then select (CL) [Linear...]. Two or more parity groups can be selected.

Grp*: The top parity group where RAID Concatenation is installed.

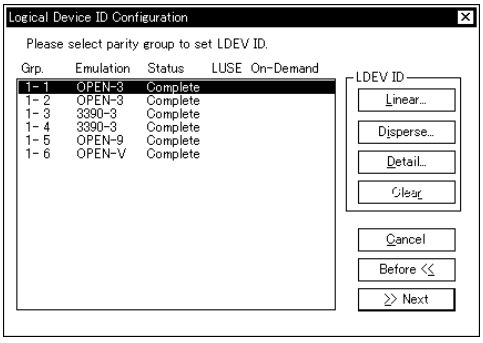


(6) Select CU ID in the CU combo box.
Input LDEV ID you want to set in the ID edit box.
After setting, select (CL) [OK].



(7) Status of the parity group whose setting is completed changes to "Complete".
Press (CL) the [>>Next] button.

Grp*: The top parity group where RAID Concatenation is installed.



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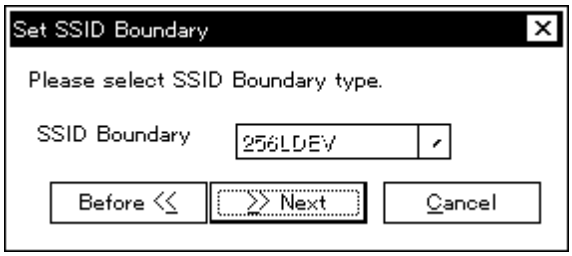
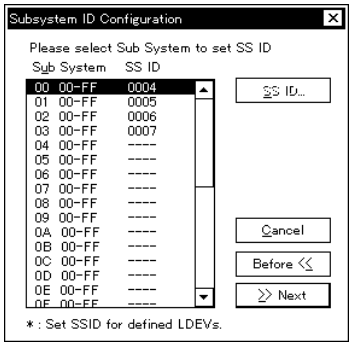
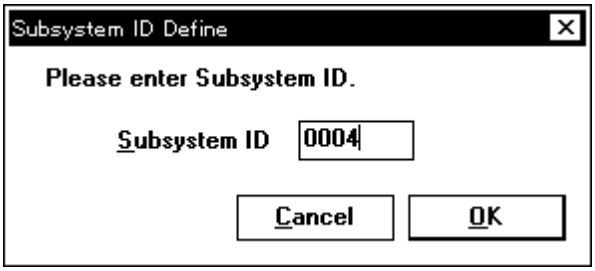
(8) Press (CL) the [>>Next] button to change the screen to the “Subsystem ID Configuration] screen.



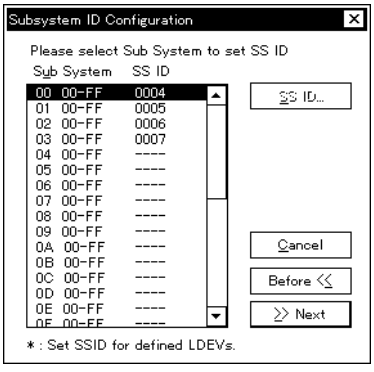
(9) When it is necessary to set a new SS ID, define the SS ID.
Select (CL) a subsystem whose SS ID is not defined, then select (CL) [SS ID...].



(10) Enter an SS ID on the “Subsystem ID Define” screen and select (CL) [OK].



(11) When the screen is returned to the “Subsystem ID Configuration” screen, the registered SS ID is displayed.
Press (CL) the [>>Next] button to quit the definition screen.



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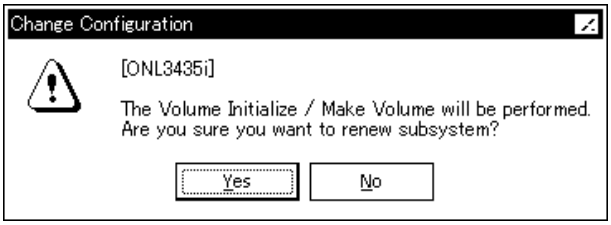
(12)

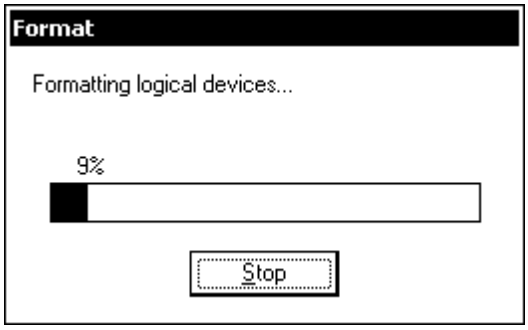
Select (CL) [Yes] in response to “The Volume Initialize/Make Volume will be performed. Are you sure you want to renew subsystem?”.



When [No] is selected (CL), returns to INST05-440 step 2.

(13)

“Formatting the logical device...” is displayed when LDEV Format is necessary.



(14)

“Renewal process has completed. Please check the subsystem status.” is displayed when recovery processing on all installed components is completed. Select (CL) [OK] in response to this message.

(15)

“Reading subsystem configuration data...” is displayed.
“Please insert the Config FD in the FDD.” is displayed.
Insert the configuration FD into FDD, and select (CL) [OK].

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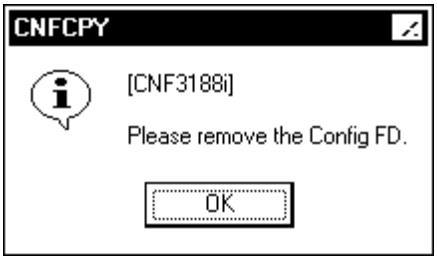
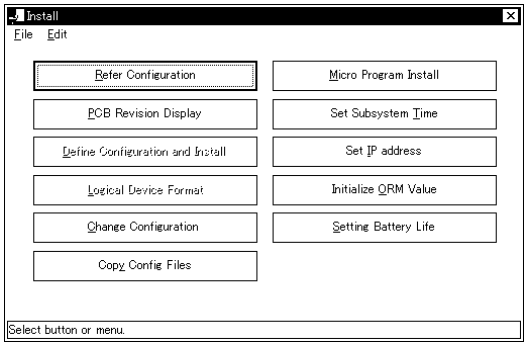
(16)

When this procedure is completed, the message “Please remove the Config FD.” is displayed.
Remove the FD, select (CL) [OK].



(17)

After the procedure is completed, return to ‘Install’.
Select (CL) [File]-[Exit].



(18)

Change the mode to View Mode.

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5.3.2.4 LUN Management

(1) Outline

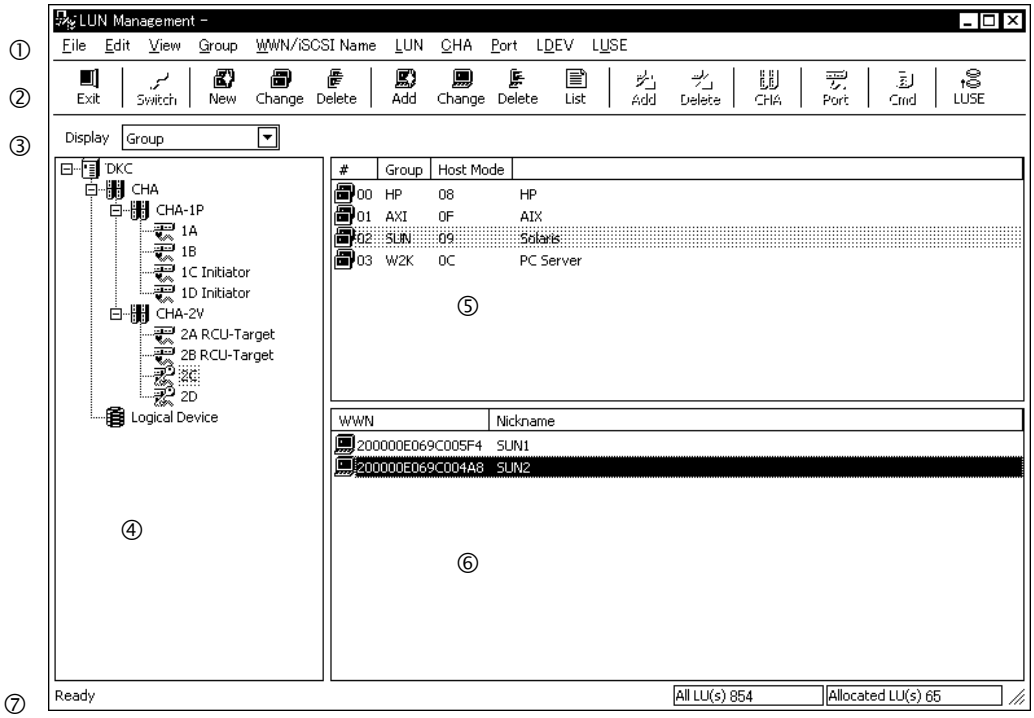

Figure 1.1 Main Window

The Main window consists of the following elements.

Table 1.1 Outline of Main Window Elements

No.	Item	Description
①	Menu	Menu of items operable by this function.
②	Tool bar	Part of the menu enabled to be operable by buttons.
③	Switch	When “Switch” displayed in the tree view is selected(Port), the status of the switch is selectable. The setting of the groups or LUN is selectable.
④	Tree	The structure that it is conscious of the hardware construction. (A port type is attached to a port.)
⑤	Upper right list	Displays the details of an item selected from the tree.
⑥	Lower right list	Displays the details of an item selected from the upper list, if any.
⑦	Status bar	Displays outlined function of each item on the menu and tool bar when the mouse is positioned on it. Also it displays the all of the LU figures and the LU figures with the pass definition.

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Menu items and their details are shown below.

Table 1.2 List of Menu Items

Menu	Submenu		Description	Tool bar
File	Exit		• Closes the window.	"Exit"
	Backup		Creates a backup of the LUN configuration.	None
	Restore	Refer	Displays the stored backup of the LUN configuration in the window.	None
		Execute	Reflects the configuration displayed when the menu items [Restore] and [Refer] are selected.	None
		Cancel	Cancels the state induced by the selection of the menu items [Restore] and [Refer].	None
Edit	Copy		• Copies group / WWN / LUN to the clip board.	None
	Paste		• Pastes the information of the clip board.	None
View	Toolbar		• Makes the tool bar displayed or not.	None
	Status Bar		• Makes the status bar displayed or not.	None
Group	New		• Creates a new group.	"New"
	Change		• Changes a group name or adds a member.	"Change"
	Delete		• Deletes a group.	"Delete"
WWN/ iSCSI Name	Add		• Adds a WWN/iSCSI Name and its nickname.	"Add"
	Change…		• Changes a WWN/iSCSI Name and its nickname.	"Change"
	Delete		• Deletes a WWN/iSCSI Name.	"Delete"
	Login List		The hosts identified by the following WWNs/iSCSI Names login to the DKC.	"List"
LUN	Add		• Adds a LUN.	"Add"
	Delete		• Deletes a LUN.	"Delete"
	Command Device		• Changes command device and command device security information.	"Cmd"
CHA	Change…		• Changes a CHA option.	"CHA"
Port	Parameter		• Changes a port parameter.	"Port"
	Security Switch		• Sets whether to use the security function or not.	"Switch"
LDEV	Command Device		• Changes command device and command device security information.	"Cmd"
	`Property		• Refers to LUN information from LDEV.	None
LUSE	LU Size Expansion		• Activates the LU Size Expansion window.	"LUSE"

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Restriction item

1. LUN and Group Configuration executable check item

Table 1.3 System operating condition, and change of configuration

#	Item	Operation	Host I/O	E-Copy*1 I/O	E-Copy*1 Group	Pair Status
1	Group	Add	—	—	—	—
2		Delete	A	A	B	—
3	Group Name	Modify	—	—	—	—
4	Host Mode	Modify	C	C	—	—
5	WWN/iSCSI -name	Add	—	—	—	—
6		Delete	—	—	—	—
7		Modify	—	—	—	—
8	LUN	Add	—	—	—	—
9		Delete	D	D	—	E

A: When the specified group has LUN and the LUN is reserved by the host or executing the I/O, the specified group cannot be deleted.
B: When the specified group is registered to the Port Group, the specified group cannot be deleted.
C: When the specified group has LUN and the LUN is reserved by the host or executing the I/O, the specified Host Mode of the group cannot be modified.
D: When the specified group has LUN and the LUN is reserved by the host or executing the I/O, the specified LUN cannot be deleted.
E: When the pair volume of HORC/HOMRCF(including the reserve volume of HOMRCF) has no LUN by deleting LUN, the specified LUN cannot be deleted.
*1: E-COPY: Extended Copy Command

2. Fibre Channel High Performance Mode executable check item

Table 1.4 System operating condition, and change of configuration

#	Item	Operation	Host I/O	E-Copy*1 I/O	Remaining pass MCU-RCU	Remaining Copy Volume	AL-PA	Topology	Channel Speed	I/T
1	High Performance Mode	To Standard	A	A	B	C	—	—	—	—
2		To High Speed	A	A	B	C	D	E	F	G

A: When the LUN in the specified CHA is reserved by the host or executing the I/O, the mode cannot be modified.
B: When the path between MCU and RCU of the HORC is formed with the port of the CHT, the mode cannot be modified.
C: When the copy volume of RCU of the HORC exists in the CHT, the mode cannot be modified.
D: When the AL-PA overlaps at the High Speed mode unit, the mode cannot be modified to the High Speed mode.
E: When the topology is mixed at the High Speed mode unit or is set as 'Point to Point', the mode cannot be modified to the High Speed mode.
F: When the channel speed is mixed at the High Speed mode unit, the mode cannot be modified to the High Speed mode.
G: When the Initiator/RCU-Target/Target is mixed at the High Speed mode unit, the mode cannot be modified to the High Speed mode.
*1: E-COPY: Extended Copy Command

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3. Port parameter check item

Table 1.5 System operating condition, and change of configuration

#	Item	Operation	Host I/O	E-Copy*1 I/O	E-Copy*1 Group	Remaining pass MCU-RCU	Remaining Copy Volume	Channel Speed
1	AL-PA	Modify	A	A	—	B	C	—
2	Topology	Modify	A	A	—	B	C	D
3	Channel Speed	Modify	A	A	—	—	—	—
4	Security Switch	Modify	—	—	E	—	—	—

A: When the LUN in the specified port is reserved by the host or is executing the I/O, the parameter cannot be modified.
B: When the path between MCU and RCU of the HORC is formed with the port of the CHT, the parameter cannot be modified.
C: When the copy volume of RCU of the HORC exists in the port, the parameter cannot be modified.
D: When the CHT which has the specified port is in High Speed mode, topology cannot be set to the 'Point to Point'*2.
E: When the group which is in the specified port is in the Port Group, the security switch cannot be set to 'Off'.
*1: E-COPY: Extended Copy Command
*2: The host command through one port is distributed to the plural ports in High Speed mode. If 'Point to Point' is set, this distribution process cannot be executed.

4. Command device check item

Table 1.6 System operating condition, and change of configuration

#	Item	Operation	Host I/O	E-Copy*1 I/O	Pair Status	Guard status	iSCSI
1	Cmd. Dev.	Set	A	A	B	D	E
2		Clear	C	—	—	—	—
3	Cmd. Dev. Sec.	Set	C	—	—	—	—
4		Clear	C	—	—	—	—

A: When the LUN to the specified volume is reserved by the host or is executing the I/O, the Command Device cannot be set.
B: When the specified volume is HORC/HOMRCF volume, the Command Device cannot be set.
C: R/M has to be stopped when this parameter is modified.
*1: E-COPY: Extended Copy Command
D: Volumes that do not have "R/W" attribute cannot be defined as command devices.
E: A setting of a command device is not allowed for a LUN using the iSCSI-Port.

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(2) Setting Security Switch

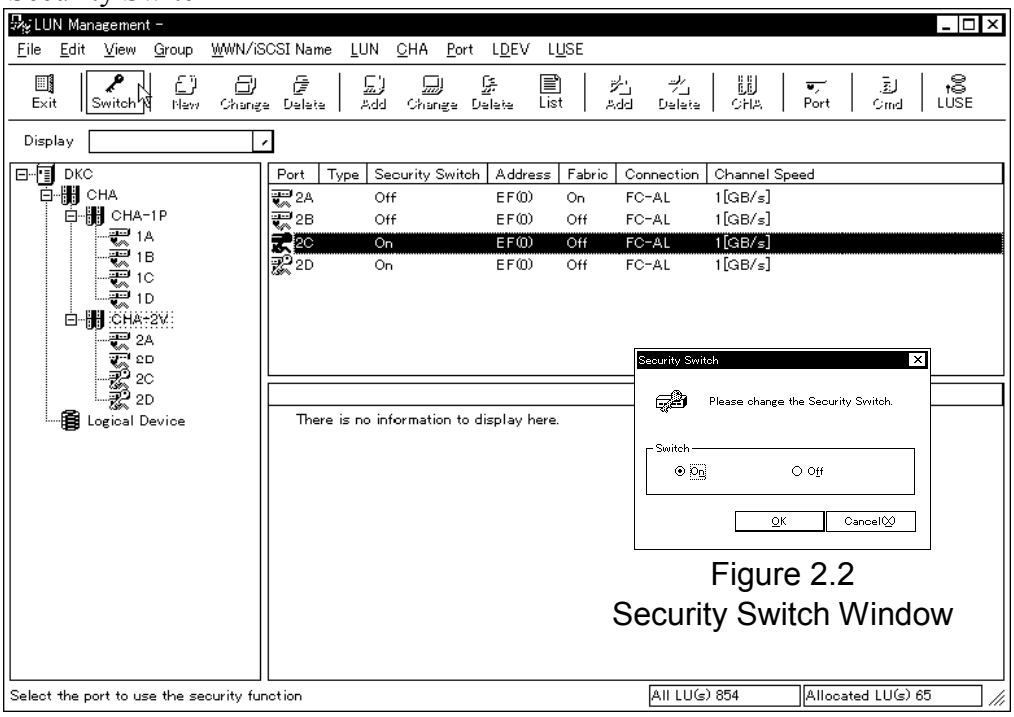

Figure 2.2
Security Switch Window

Figure 2.1 Main Window

When each CHA location in the tree view is selected (CL), installed ports information supported by this function are displayed in the upper right list.

Setting of a Security Switch is made in the following procedure.

① Select (CL) a port for which you want to set the security switch from the upper right list.
② Select (DR) [Security Switch...] from the [Port] menu.
③ Since the Security Switch window (Figure 2.2) is displayed, check On or Off box and select (CL) the [OK] button.
④ The status of the security switch that has been set is reflected in the Main window (Figure 2.1).

Details of the Main window (Figure 2.1) and the Security Switch window (Figure 2.2) are shown below.

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Table 2.1 Details and Operation of Main Window (Switch)

Item	Description
Upper list	Displays statuses of the security switches that have been set. In the case of the iSCSI-Port, items, that is, Address, Fabric, Connection, and Channel Speed are not displayed.
	Provided with a sorting function.
Lower list	Displays nothing.
"Port – Security Switch..." menu	Selectable when an item has been selected from the upper list. Displays the Security Switch window.
Pop-up menu	Enables a clicking of the right mouse button to select "Security Switch" provided that an item has been selected from the upper list.

Table 2.2 Details and Operation of Security Switch Window

Item	Description
On/Off radio button	Displays a status setting of the Security Switch that has been selected in the Main window. (If On and Off of the switch have been selected in the Main window, the radio buttons of ON and OFF are not selected in this window, and [OK] button cannot be selected.)
OK button	Closes the window after reflecting the setting that has been made.
	Not selectable when neither of the statuses has been selected.
Cancel button	Closes the window without reflecting the setting that has been made.

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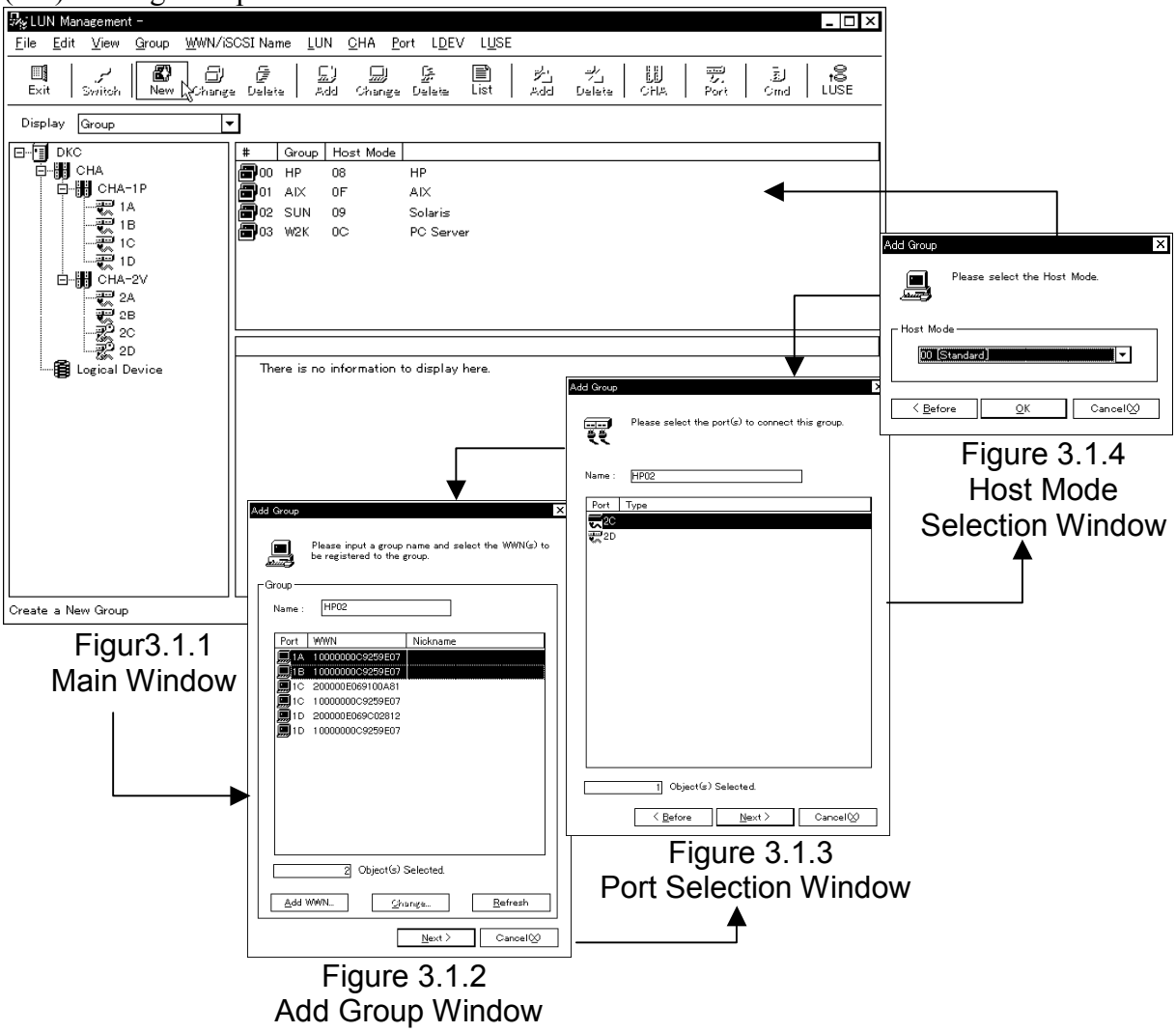
(3) Setting Group

(3-1) Adding Group



Figur3.1.1
Main Window

Figure 3.1.2
Add Group Window

Figure 3.1.3
Port Selection Window

Figure 3.1.4
Host Mode
Selection Window

When “Port” in the tree view is selected, “Group” is set on the Display. Displays the group setting in the port that has been selected in the upper right list.

Addition of a group is done in the following procedure.

① Select (DR) [New...] from the [Group] menu in the Main window (Figure 3.1.1).

② Since the Add Group window (Figure 3.1.2) is displayed, enter a group name, register a WWN (In the case of iSCSI is iSCSI Name), and select (CL) the [Next] button.

③ Since the Port Selection window (Figure 3.1.3) is displayed, select (CL) a port for connecting a new group and select (CL) the [Next] button.

④ Set a host mode for the new group in the Host Mode Selection window (Figure 3.1.4) and select (CL) the [OK] button.

⑤ Information on the group that has been newly registered is reflected in the Main window (Figure 3.1.1).

Details of the Main window (Figure 3.1.1) and the other windows are shown on the following page.

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Table 3.1.1 Details and Operation of Main Window (Group)

Item	Description
Upper list	Displays groups connected with the port that has been selected from the tree.
	Provided with a sorting function.
"Group - New..." menu	Selectable when "Port" has been selected from the tree.
	Displays the Add Group window.
Pop-up menu	Makes the "New" menu selectable when the right mouse button is clicked in the upper list.

Table 3.1.2 Details and Operation of Add Group Window (for Fibre gruop)

Item	Description
Name	To be used for entering a name (up to eight characters) of a group to be added.
List	Displays a WWN list. Selects WWN that wants to be set.
Add WWN button	Activates a window for manually registering a WWN when no applicable WWN exists in the list.
Change button	Changes a selected WWN and its nickname. (Only one WWN is selectable.)
Refresh button	Redraws the list
Next button	Closes the window and activates a window for selecting a port for connecting the group concerned.
Cancel button	Returns you to the Main window without doing anything.

Table 3.1.3 Details and Operation of Add Group Window (for iSCSI gruop)

Item	Description
Name	To be used for entering a name (up to eight characters) of a group to be added.
List	Displays a iSCSI Name list. Selects iSCSI Name that wants to be set.
Add button	Activates a window for manually registering a iSCSI Name when no applicable iSCSI Name exists in the list.
Change button	Changes a selected iSCSI Name and its nickname. (Only one iSCSI Name is selectable.)
Refresh button	Redraws the list
Next button	Closes the window and activates a window for selecting a port for connecting the group concerned.
Cancel button	Returns you to the Main window without doing anything.

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Table 3.1.4 Details and Operation of Port Selection Window

Item	Description
Name	Displays the group name that has been entered in the preceding window.
List	To be used for selecting a port to be connected.
Before button	Returns you to the preceding window.
Next button	Closes the window and activates a window for selecting a host mode for the group concerned.
Cancel button	Returns you to the Main window without doing anything.

Table 3.1.5 Details and Operation of Host Mode Window

Item	Description
Host Mode	Displays host modes that can be set.
Before button	Returns you to the preceding window.
OK button	Closes the window after registering the group and returns you to the Main window.
Cancel button	Returns you to the Main window without doing anything.

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(3-2) Changing Group

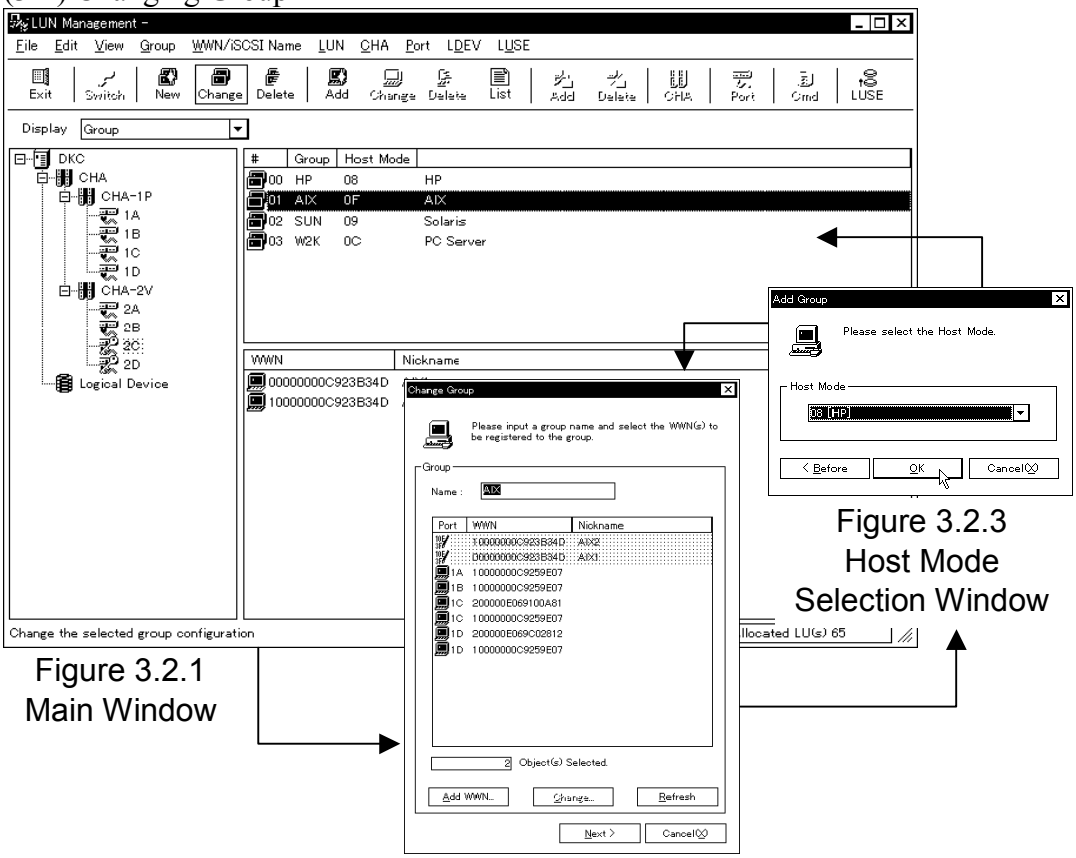

Figure 3.2.1
Main Window

Figure 3.2.3
Host Mode
Selection Window

Figure 3.2.2
Change Group Window

When “Port” in the tree view is selected, “Group” is set on the Display. Displays the group setting in the port that has been selected in the upper right list. In the lower right list, details of a group that has been selected from the upper right list are displayed.

A change of a group is made in the following procedure.

① Select (CL) one group you want to change from the upper right list.
② Select (DR) [Change...] from the [Group] menu in the Main window (Figure 3.2.1).
③ Since the Change Group window (Figure 3.2.2) is displayed, change the group name (In the case of iSCSI is iSCSI Name) and select (CL) the [Next] button.
④ Set a host mode for the group to be changed in the Host Mode Selection window (Figure 3.2.3) and select (CL) the [OK] button.
⑤ Information on the group that has been changed is reflected in the Main window (Figure 3.2.1).

In case of changing the group against the port of the Security Switch off, the Change Group window (Figure 3.2.2) is not displayed.

Details of the Main window (Figure 3.2.1) and the other windows are shown on the following page.

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Table 3.2.1 Details and Operation of Main Window (Group)

Item	Description
Upper list	Displays groups connected with the port that has been selected from the tree.
	Provided with a sorting function.
Lower list	Displays details of a group that has been selected from the upper list. (Displays nothing when no item to be selected exists in the upper list or more than one item has been selected.)
	Provided with a sorting function.
"Group-Change..." menu	Selectable when a single group has been selected from the upper list.
	Displays the Change Group window.
Pop-up menu	Makes the "Change" menu selectable when a single group is selected from the upper list and the right mouse button is clicked there.

Table 3.2.2 Details and Operation of Change Group Window (for Fibre group)

Item	Description
Name	To be used for entering a name (up to eight characters) of a group to be changed.
List	Displays a WWN list. Selects WWN that wants to be set.
Add WWN button	Activates a window for manually registering a WWN when no applicable WWN exists in the list.
Change button	Changes a selected WWN and its nickname. (Only one WWN is selectable.)
Refresh button	Redraws the list.
Next button	Closes the window and activates a window for selecting a host mode to be registered for the group concerned.
Cancel button	Returns you to the Main window without doing anything.

Table 3.2.3 Details and Operation of Change Group Window (for iSCSI group)

Item	Description
Name	To be used for entering a name (up to eight characters) of a group to be changed.
List	Displays a iSCSI Name list. Selects iSCSI Name that wants to be set.
Add button	Activates a window for manually registering a iSCSI Name when no applicable iSCSI Name exists in the list.
Change button	Changes a selected iSCSI Name and its nickname. (Only one iSCSI Name is selectable.)
Refresh button	Redraws the list.
Next button	Closes the window and activates a window for selecting a host mode to be registered for the group concerned.
Cancel button	Returns you to the Main window without doing anything.

Table 3.2.4 Details and Operation of Host Mode Selection Window

Item	Description
Host Mode	Displays host modes that can be set.
Before button	Returns you to the preceding window.
OK button	Closes the window after changing the group and returns you to the Main window.
Cancel button	Returns you to the Main window without doing anything.

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(3-3) Deleting Group

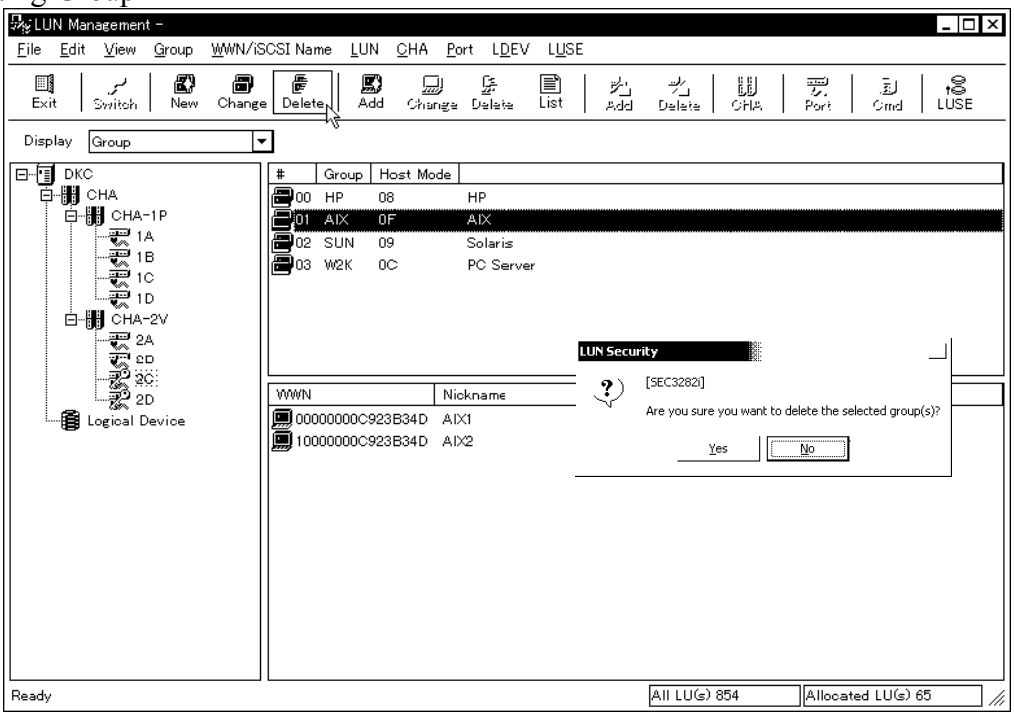

Figure 3.3.1 Main Window

When “Port” in the tree view is selected, “Group” is set on the Display. Displays the group setting in the port that has been selected in the upper right list. In the lower right list, details of a group that has been selected from the upper right list are displayed.

Deletion of a group is done in the following procedure.

① Select (CL) a group you want to delete from the upper right list.
② Select (DR) [Delete] from the [Group] menu in the Main window (Figure 3.3.1).
③ Since a message asking for a confirmation is displayed, select (CL) the [OK] button.
④ Information on the group that has been selected from the upper right list is deleted. Moreover, the details of the group information (WWN or iSCSI Name, and LUN) is also deleted.

Table 3.3.1 Details and Operation of Main Window (Group)

Item	Description
Upper list	Displays groups connected with the port that has been selected from the tree.
	Provided with a sorting function.
Lower list	Displays details of a group that has been selected from the upper list. (Displays nothing when no item to be selected exists in the upper list or more than one item has been selected.)
	Provided with a sorting function.
"Group-Delete" tool bar	Selectable when a group has been selected from the upper list.
	Displays a message asking for a confirmation.
Pop-up menu	Displays "Delete" menu when the right mouse button is clicked on the item in the upper list.

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(4) Setting WWN/iSCSI Name

(4-1) Adding WWN

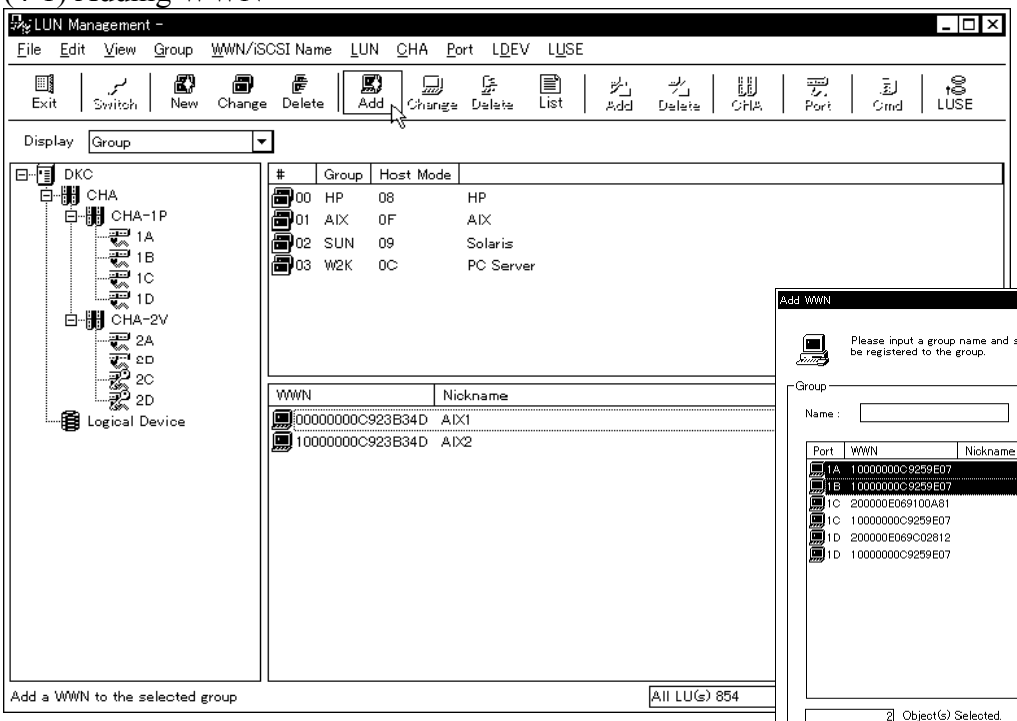

Figure 4.1.1 Main window

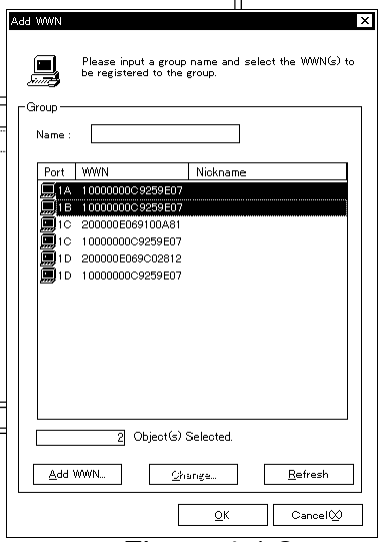

Figure 4.1.2
Add WWN Window

When “Port” in the tree view is selected, “Group” is set on the Display. Displays the group setting in the port that has been selected in the upper right list. In the lower right list, details of a group that has been selected from the upper right list are displayed.

Addition of a WWN is made in the following procedure.

① Select (CL) a group to which you want to add a WWN from the upper right list.
② Select (DR) [Add] from the [WWN/iSCSI Name] menu in the Main window (Figure 4.1.1).
③ Since the Add WWN window (Figure 4.1.2) is displayed, select(CL) “WWN” registering from the list, and select (CL) the [OK] button.
④ The WWN that has been newly added is reflected in the lower right list.

Details of the Main Window(Figure 4.1.1) and the other windows are shown on the following page.

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Table 4.1.1 Details and Operation of Main Window (WWN)

Item	Description
Upper list	Displays groups connected with the port that has been selected from the tree.
	Provided with a sorting function.
Lower list	Displays details of a group that has been selected from the upper list. (Displays nothing when no item to be selected exists in the upper list or more than one item has been selected.)
	Provided with a sorting function.
"WWN - Add" menu	Selectable when a single group has been selected from the upper list.
	Displays the Add WWN window.
Pop-up menu	Displays the "Add" menu when the right mouse button is clicked in the lower list.

Table 4.1.2 Details and Operation of Add WWN Window

Item	Description
Name	Displays the group name. (Unchangeable)
List	Displays a WWN list. Select the registration WWN.
Add WWN button	Activates a window for manually registering a WWN when no applicable WWN exists in the list.
Change button	Changes a selected WWN and its nickname. (Only one WWN is selectable.)
Refresh button	Redraws the list.
OK button	Closes the window after registering the WWN, and returns you to the Main window.
Cancel button	Returns you to the Main window without doing anything.

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(4-2) Changing WWN

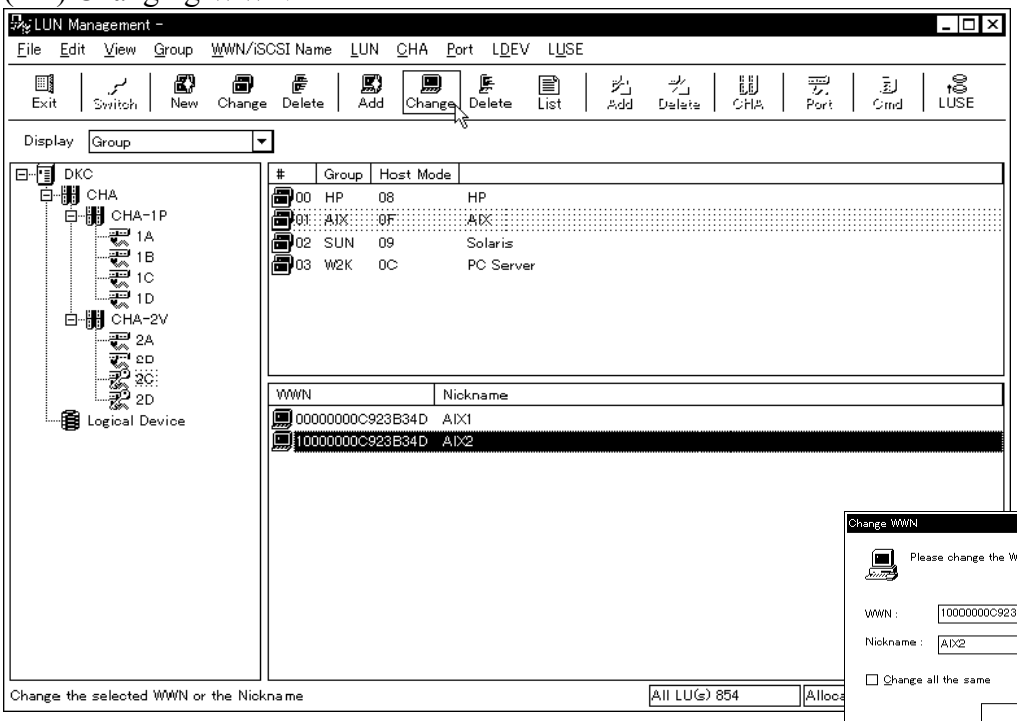

Figure 4.2.1 Main Window

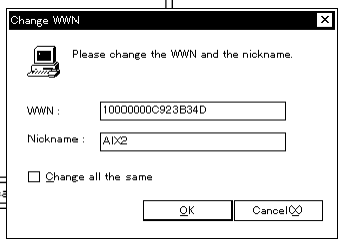

Figure 4.2.2
Change WWN Window

When “Port” in the tree view is selected, “Group” is set on the Display. Displays the group setting in the port that has been selected in the upper right list. In the lower right list, details of a group that has been selected from the upper right list are displayed.

A change of a WWN is made in the following procedure.

① Select (CL) one WWN you want to change from the lower right list.
② Select (DR) [Change...] from the [WWN/iSCSI Name] menu in the Main window (Figure 4.2.1).
③ Since the Change WWN window (Figure 4.2.2) is displayed, change the “WWN” and its “Nickname”, and select (CL) the [OK] button.
④ The WWN that has been changed is reflected in the lower right list.

Details of the Main Window(Figure 4.2.1) and the other windows are shown on the following page.

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Table 4.2.1 Details and Operation of Main Window (WWN)

Item	Description
Upper list	Displays groups connected with the port that has been selected from the tree.
	Provided with a sorting function.
Lower list	Displays details of a group that has been selected from the upper list. (Displays nothing when no item to be selected exists in the upper list or more than one item has been selected.)
	Provided with a sorting function.
"WWN - Change" menu	Selectable when a single group has been selected from the lower list.
	Displays the Change WWN window.
Pop-up menu	Displays the "Change" menu when the right mouse button is clicked on the item in the lower list.

Table 4.2.2 Details and Operation of Change WWN Window

Item	Description
WWN	To be used for entering a WWN (16 hexadecimal digits).
Nick name	Used for entering a nickname (up to eight characters).
Change all the same button	In case of checking it, the change should be executed for the same WWN including in the group of the other ports.
OK button	Selectable only when the WWN has been entered correctly.
	Closes the window after registering the WWN and nickname, and returns you to the Main window.
Cancel button	Returns you to the Main window without doing anything.

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(4-3) Deleting WWN

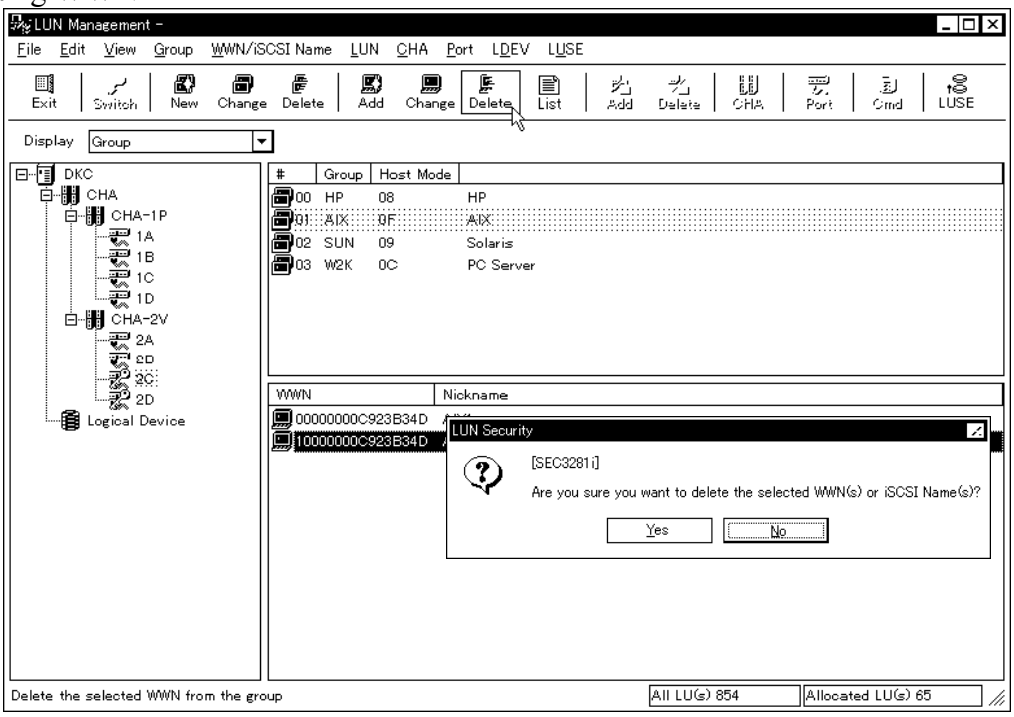

Figure 4.3.1 Main Window

When “Port” in the tree view is selected, “Group” is set on the Display. Displays the group setting in the port that has been selected in the upper right list. In the lower right list, details of a group that has been selected from the upper right list are displayed.

Deletion of a WWN is done in the following procedure.
① Select (CL) a WWN you want to delete from the lower right list.
② Select (DR) [Delete] from the [WWN/iSCSI Name] menu in the Main window (Figure 4.3.1).
③ Since a message asking for a confirmation is displayed, select (CL) the [OK] button.
④ The WWN that has been selected from the lower right list is deleted.

Table 4.3.1 Details and Operation of Main Window (Group)

Item	Description
Upper list	Displays groups connected with the port that has been selected from the tree.
	Provided with a sorting function.
Lower list	Displays details of a group that has been selected from the upper list. (Displays nothing when no item to be selected exists in the upper list or more than one item has been selected.)
	Provided with a sorting function.
"WWN/iSCSI Name – Delete" menu	Selectable when a WWN has been selected from the lower list.
	Displays a message asking for a confirmation.
Pop-up menu	Displays "Delete" menu when the right mouse button is clicked on the item in the upper list.

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(4-4) Deleting WWN of the host linked DKC

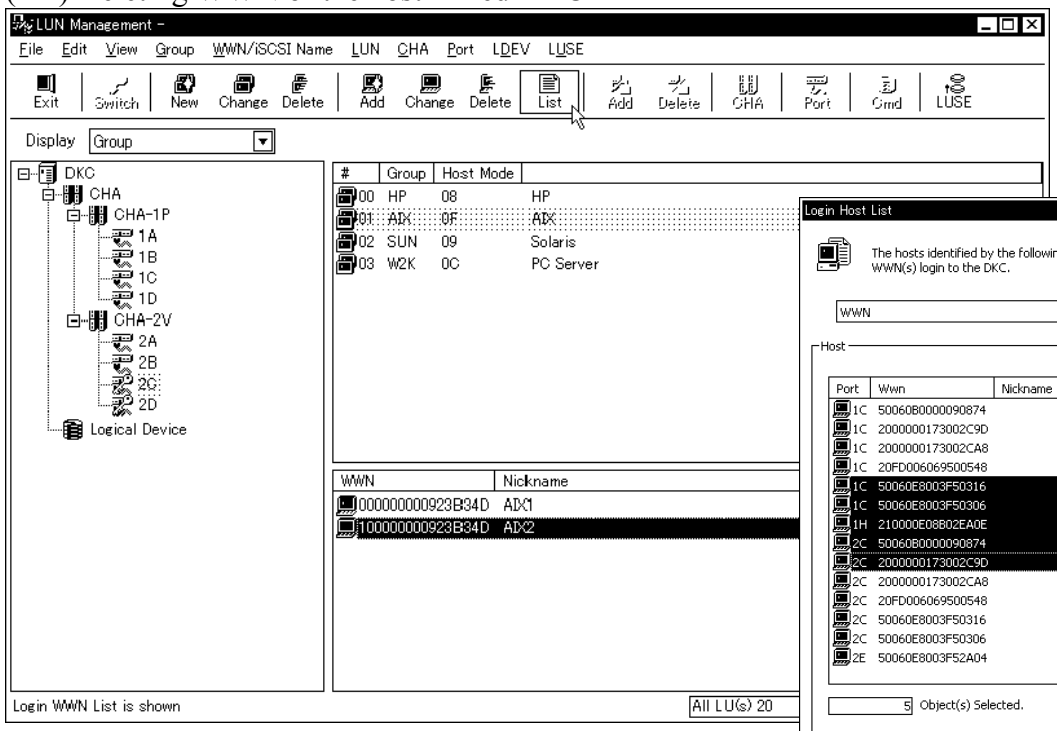

Figure 4.4.1 Main Window

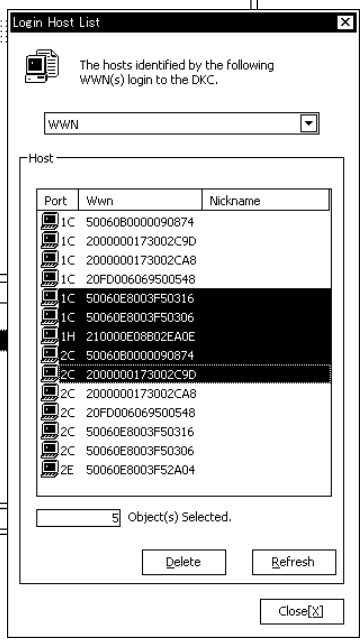

Figure 4.4.2 Login Host List Window

Deletion of a WWN of the host linked to DKC is done in the following procedure.

① Select (DR) [Login List] form the [WWN/iSCSI Name] menu in the Main Window (Figure 4.4.1).

② Select (CL) the [Refresh] button is redraws the WWN list.

③ Since the Login Host List window (Figure 4.4.2) is displayed, selected (CL) the WWNs and select (CL) the [Delete] button.

④ Select (CL) the [Close] button is close window returns you to the Main Window.

Table 4.4.1 Details and Operation Login Host List window

Item	Description
WWN	The hosts identified by the following WWNs login to the DKC.
List	Displays a WWN list.
Delete button	Deletes a selected WWN.
Refresh button	Redraws the list.
Close button	Returns you the Main window.

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(4-5) Adding iSCSI Name

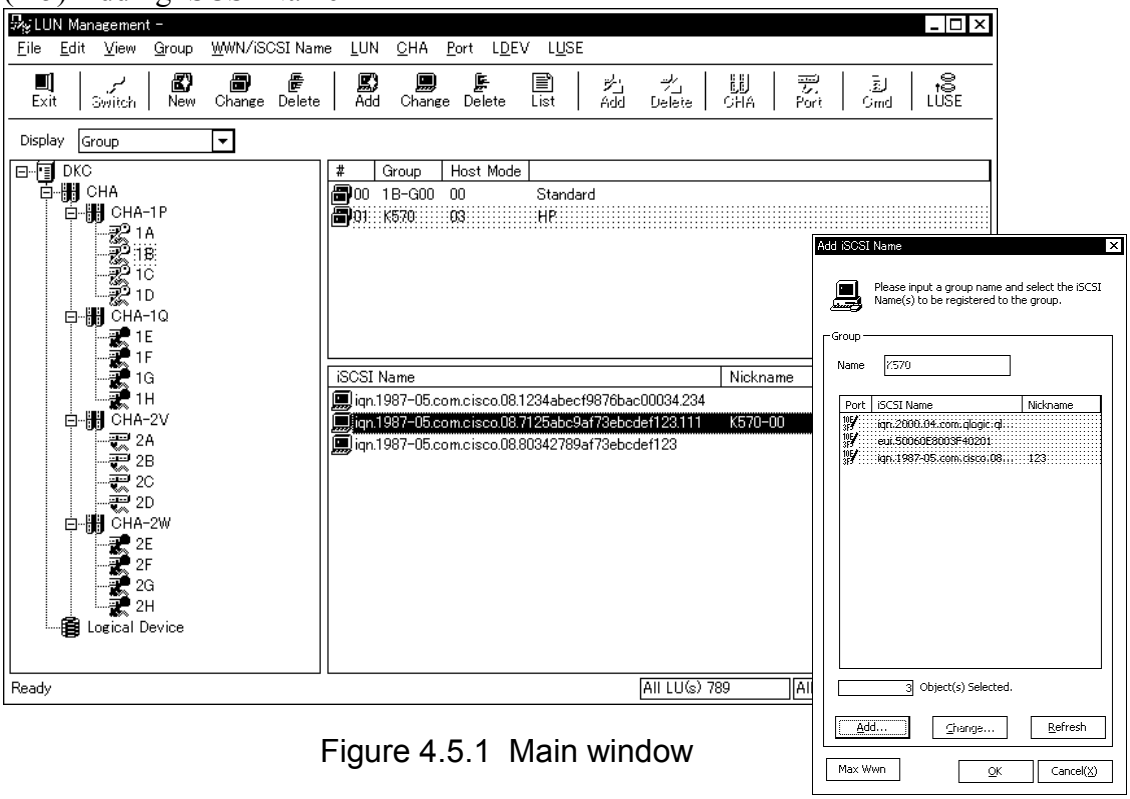

Figure 4.5.1 Main window

Figure 4.5.2
Add iSCSI Name Window

When “iSCSI-Port” in the tree view is selected, “Group” is set on the Display. Displays the group setting in the iSCSI-Port that has been selected in the upper right list. In the lower right list, details of a group that has been selected from the upper right list are displayed.

Addition of a iSCSI Name is made in the following procedure.

① Select (CL) a group to which you want to add a iSCSI Name from the upper right list.
② Select (DR) [Add] from the [WWN/iSCSI Name] menu in the Main window (Figure 4.5.1).
③ Since the Add iSCSI Name window (Figure 4.5.2) is displayed, select (CL) “iSCSI Name” registering from the list, and select (CL) the [OK] button.
④ The iSCSI Name that has been newly added is reflected in the lower right list.

Details of the Main Window (Figure 4.5.1) and the other windows are shown on the following page.

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Table 4.5.1 Details and Operation of Main Window (iSCSI Name)

Item	Description
Upper list	Displays groups connected with the port that has been selected from the tree.
	Provided with a sorting function.
Lower list	Displays details of a group that has been selected from the upper list. (Displays nothing when no item to be selected exists in the upper list or more than one item has been selected.)
	Provided with a sorting function.
"WWN/iSCSI Name - Add" menu	Selectable when a single group has been selected from the upper list.
	Displays the Add iSCSI Name window.
Pop-up menu	Displays the "Add" menu when the right mouse button is clicked in the lower list.

Table 4.5.2 Details and Operation of Add iSCSI Name Window

Item	Description
Name	Displays the group name. (Unchangeable)
List	Displays a iSCSI Name list. Select the registration iSCSI Name.
Add button	Activates a window for manually registering a iSCSI Name when no applicable iSCSI Name exists in the list.
Change button	Changes a selected iSCSI Name and its nickname. (Only one iSCSI Name is selectable.)
Refresh button	Redraws the list.
OK button	Closes the window after registering the iSCSI Name, and returns you to the Main window.
Cancel button	Returns you to the Main window without doing anything.

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(4-6) Changing iSCSI Name

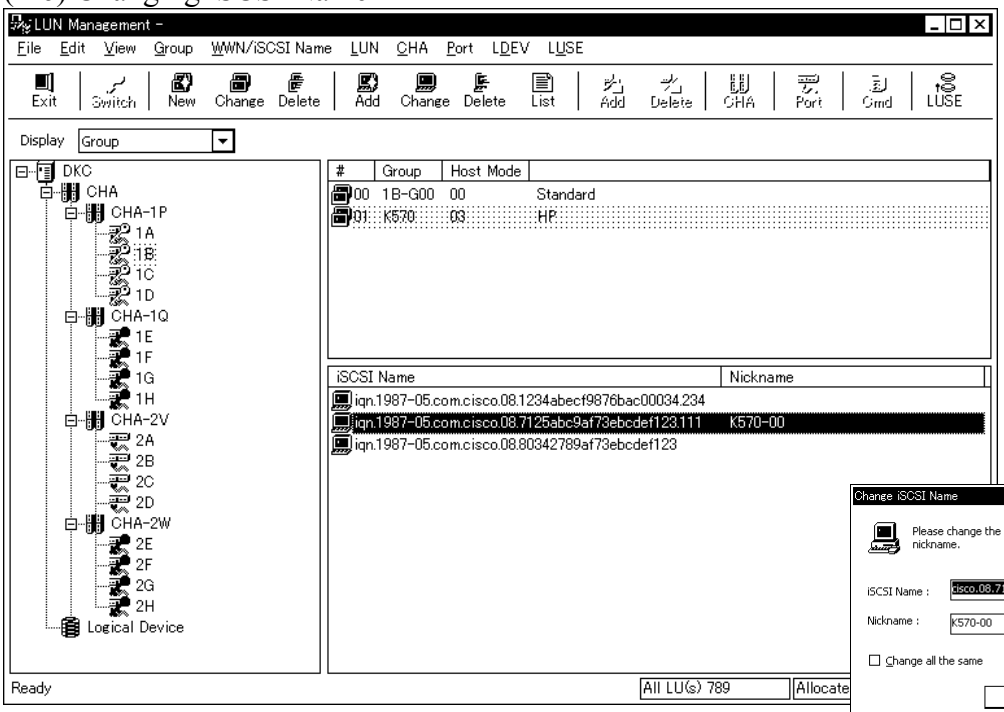

Figure 4.6.1 Main Window

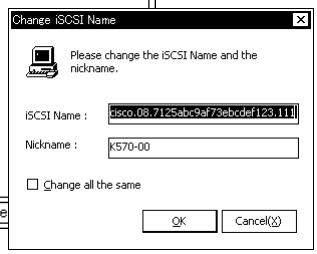

Figure 4.6.2
Change iSCSI Name Window

When “iSCSI-Port” in the tree view is selected, “Group” is set on the Display. Displays the group setting in the iSCSI-Port that has been selected in the upper right list. In the lower right list, details of a group that has been selected from the upper right list are displayed.

A change of a iSCSI Name is made in the following procedure.

① Select (CL) one iSCSI Name you want to change from the lower right list.
② Select (DR) [Change...] from the [WWN/iSCSI Name] menu in the Main window (Figure 4.6.1).
③ Since the Change iSCSI Name window (Figure 4.6.2) is displayed, change the “iSCSI Name” and its “Nickname”, and select (CL) the [OK] button.
④ The iSCSI Name that has been changed is reflected in the lower right list.

Details of the Main Window (Figure 4.6.1) and the other windows are shown on the following page.

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Table 4.6.1 Details and Operation of Main Window (iSCSI Name)

Item	Description
Upper list	Displays groups connected with the port that has been selected from the tree.
	Provided with a sorting function.
Lower list	Displays details of a group that has been selected from the upper list. (Displays nothing when no item to be selected exists in the upper list or more than one item has been selected.)
	Provided with a sorting function.
"WWN/iSCSI Name - Change" menu	Selectable when a single group has been selected from the lower list.
	Displays the Change iSCSI Name window.
Pop-up menu	Displays the "Change" menu when the right mouse button is clicked on the item in the lower list.

Table 4.6.2 Details and Operation of Change iSCSI Name Window

Item	Description
iSCSI Name	To be used for entering a iSCSI Name.
Nick name	Used for entering a nickname (up to eight characters).
Change all the same button	In case of checking it, the change should be executed for the same iSCSI Name including in the group of the other ports.
OK button	Selectable only when the iSCSI Name has been entered correctly.
	Closes the window after registering the iSCSI Name and nickname, and returns you to the Main window.
Cancel button	Returns you to the Main window without doing anything.

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(4-7) Deleting iSCSI Name

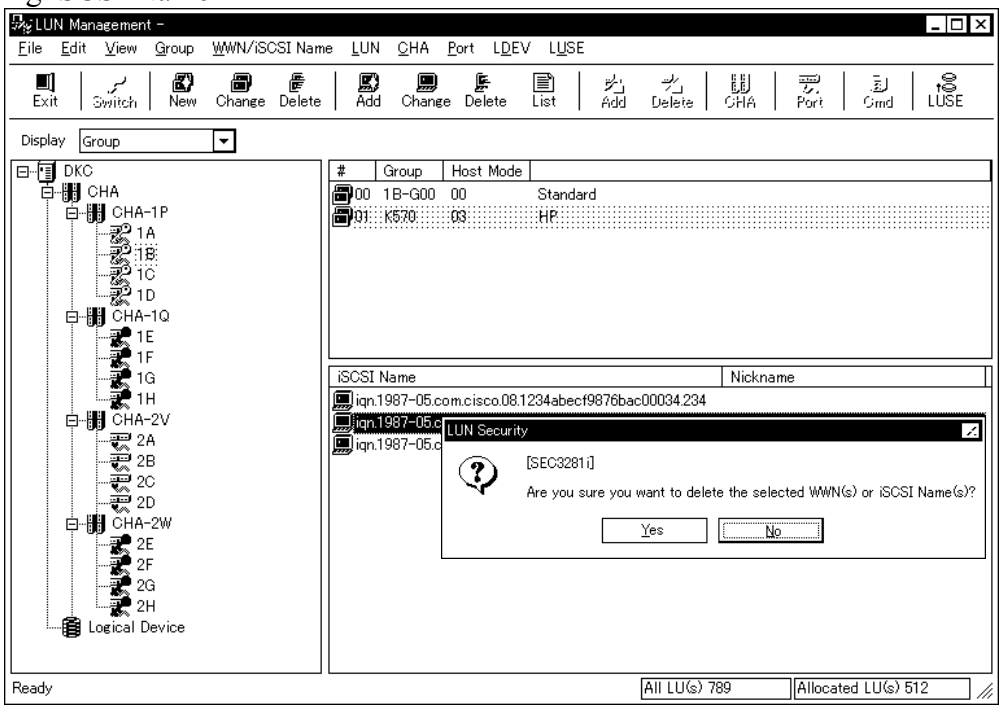

Figure 4.7.1 Main Window

When “iSCSI-Port” in the tree view is selected, “Group” is set on the Display. Displays the group setting in the iSCSI-Port that has been selected in the upper right list. In the lower right list, details of a group that has been selected from the upper right list are displayed.

Deletion of a iSCSI Name is done in the following procedure.

① Select (CL) a iSCSI Name you want to delete from the lower right list.
② Select (DR) [Delete] from the [WWN/iSCSI Name] menu in the Main window (Figure 4.7.1).
③ Since a message asking for a confirmation is displayed, select (CL) the [OK] button.
④ The iSCSI Name that has been selected from the lower right list is deleted.

Table 4.7.1 Details and Operation of Main Window (iSCSI Name)

Item	Description
Upper list	Displays groups connected with the port that has been selected from the tree.
	Provided with a sorting function.
Lower list	Displays details of a group that has been selected from the upper list. (Displays nothing when no item to be selected exists in the upper list or more than one item has been selected.)
	Provided with a sorting function.
"WWN/iSCSI Name – Delete" menu	Selectable when a WWN has been selected from the lower list.
	Displays a message asking for a confirmation.
Pop-up menu	Displays "Delete" menu when the right mouse button is clicked on the item in the upper list.

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(4-8) The host's iSCSI Name linked to DKC

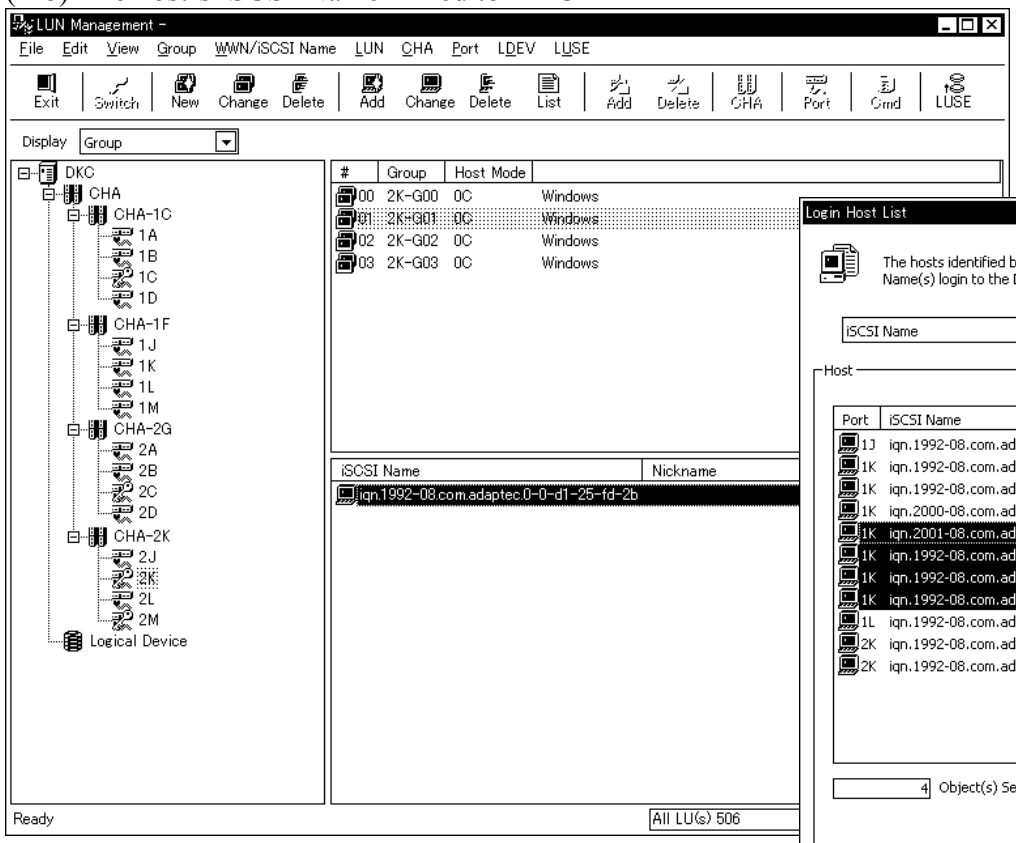

Figure 4.8.1 Main Window

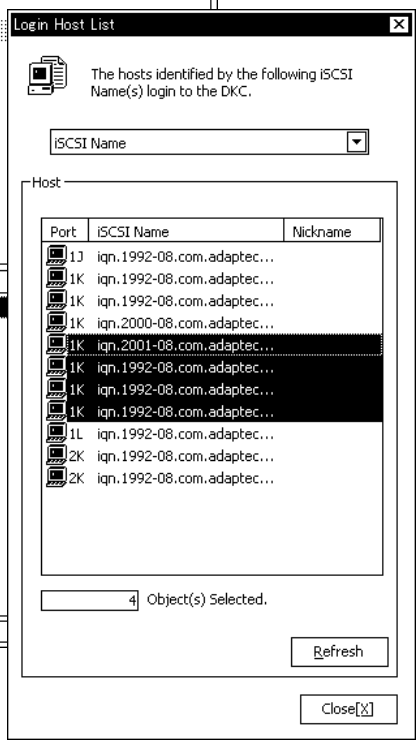

Figure 4.8.2 Login Host List Window

Select (DR) [Login List] from the [WWN/iSCSI Name] menu in the Main Window (Figure 4.8.1), Login Host List Window (Figure 4.8.2) is displayed. When you select the 'WWN' or the 'iSCSI Name', the login WWNs or iSCSI Names are displayed respectively.

Table 4.8.1 Details and Operation Login Host List Window

Item	Description
Switch	WWN or iSCSI Name.
List	Displays a iSCSI Name list.
Refresh button	Redraws the list.
Close button	Returns you the Main Windows.

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(5) Setting LUN

(5-1) Adding LUN

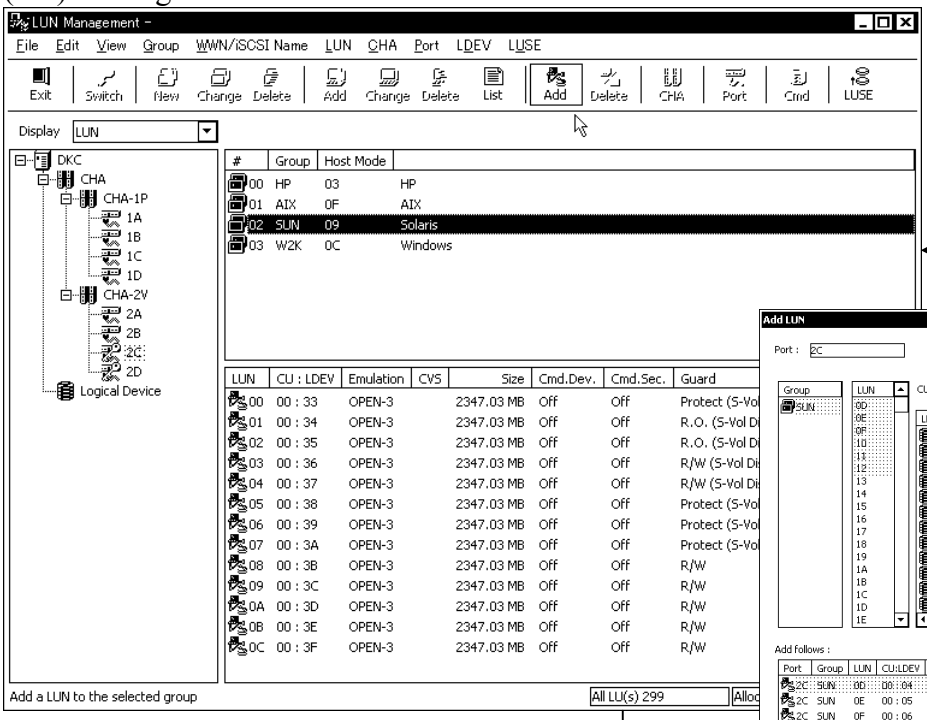

Figure 5.1.1 Main Window

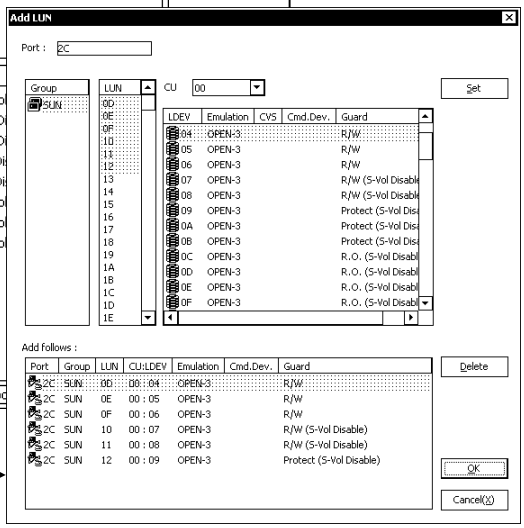

Figure 5.1.2 Add LUN Window

When “Port” in the tree view is selected, “LUN” is set on the Display. Displays the group setting in the port that has been selected in the upper right list. In the lower right list, details of a group that has been selected from the upper right list are displayed.

Addition of a LUN is done in the following procedure.

① Change the Display to “LUN.”
② Select (CL) a group to which a LUN is to be added from the upper right list.
③ Select (DR) [Add] from the [LUN] menu in the Main window (Figure 5.1.1).
④ Since the LUN Registration window (Figure 5.1.2) is displayed, select (CL) the LUN and CU:LDEV and select (CL) the [SET] button. The LUN that has been set is displayed in the “Add follows list.”
⑤ When the [OK] button is selected (CL), items displayed in the “Add follows” list is newly registered and the window is changed to the Main window (Figure 5.1.1).

Details of the Main Window(Figure 5.1.1) and the other windows are shown on the following page.

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Table 5.1.1 Details and Operation of Main Window (LUN)

Item	Description
Upper list	Displays groups connected with the port that has been selected from the tree.
	Provided with a sorting function.
Lower list	Displays LUN's defined as being contained in the group that has been selected from the upper list. The symbol '+' added to CU:LDEV# denotes the existence of path setting as follow: '+' A LUN is set. '++'Multiple LUNs are set. (Displays nothing when no item to be selected exists in the upper list or more than one item has been selected.)
	Provided with a sorting function.
"LUN - Add..." menu	Selectable when a port subordinate to the LUN has been selected from the tree.
	Displays the Add LUN window.
Pop-up menu	Displays the "Add" menu when the right mouse button is clicked on the item in the upper list.

Table 5.1.2 Details and Operation of Add LUN Window

Item	Description
Port	Displays a name of a port that has been selected from the tree in the Main window.
Group list	Displays all groups registered as being connected with the port concerned.
LUN list	Displays unused LUN's in the group concerned according to the group selection that has been made.
CU list	Displays CU numbers of all mounted LDEV's supported by this function.
LDEV list	Displays unused LDEV's in the group concerned according to the group selection that has been made. The symbol '+' added to LDEV ID denotes the existence of path setting as follow: '+' A LUN is set. '++'Multiple LUNs are set.
Add follows list	Displays a LUN (path) to be added.
Set button	Selectable only when the group, LUN, and CU:LDEV have been selected.
	The LUN that has been added is displayed in the "Add follows" list.
Delete button	Excepts a LUN from LUNs to be added.
OK button	Selectable only when the LUN'(s) is/are in the "Add follows" list.
	Closes the window after adding the LUN and returns you to the Main window.
Cancel button	Closes the window without doing anything and returns you to the Main window.

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(5-2) Deleting LUN

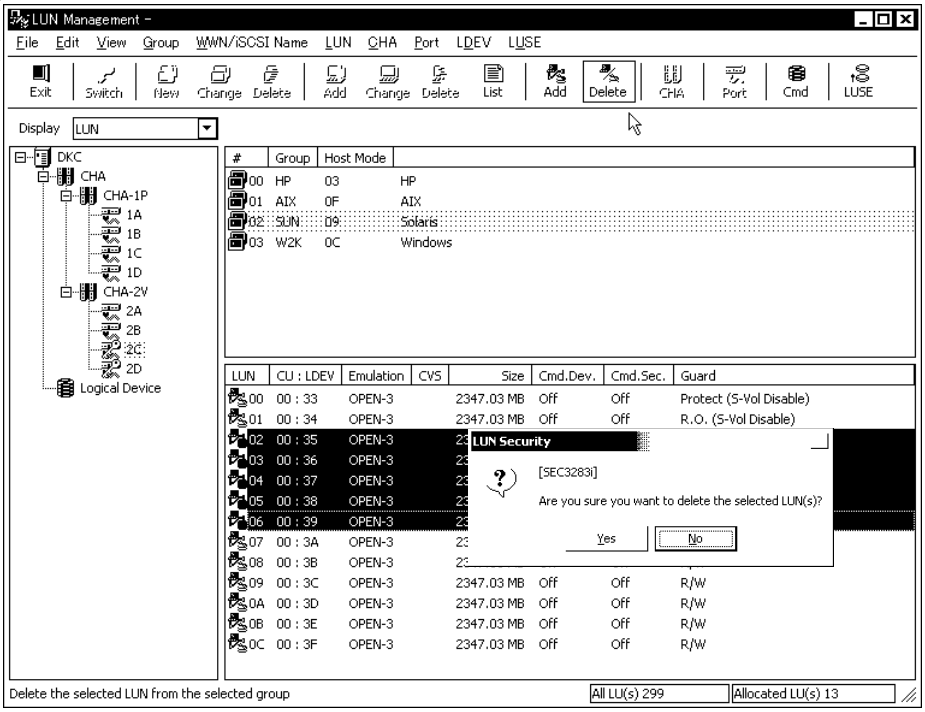

Figure 5.2.1 Main Window

When “Port” in the tree view is selected, groups connected with the port that has been selected from the tree are displayed in the upper right list. In the lower right list, details of a group that has been selected from the upper right list are displayed.

Deletion of a LUN is done in the following procedure.

① Select (CL) a LUN from the upper right list.
② Select (DR) [Delete] from the [LUN] menu in the Main window (Figure 5.2.1).
③ Since a message asking for a confirmation is displayed, select (CL) the [Yes] button.
④ Information on the LUN that has been selected from the lower right list is deleted.

Table 5.2.1 Details and Operation of Main Window (LUN)

Item	Description
Upper list	Displays groups connected with the port that has been selected from the tree.
	Provided with a sorting function.
Lower list	Displays LUNs defined for a group selected from the upper list. The symbol ‘+’ added to CU:LDEV# denotes the existence of path setting as follow: ‘+’ A LUN is set. ‘++’Multiple LUNs are set. (Displays nothing when no item to be selected exists in the upper list or more than one item has been selected.)
	Provided with a sorting function.
"LUN – Delete..." menu	Selectable when a LUN has been selected from the lower list.
	Displays a message asking for a confirmation.
Pop-up menu	Displays "Delete" menu when the right mouse button is clicked on the item in the lower list.

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(5-3) Changing Command Device from the LUN list

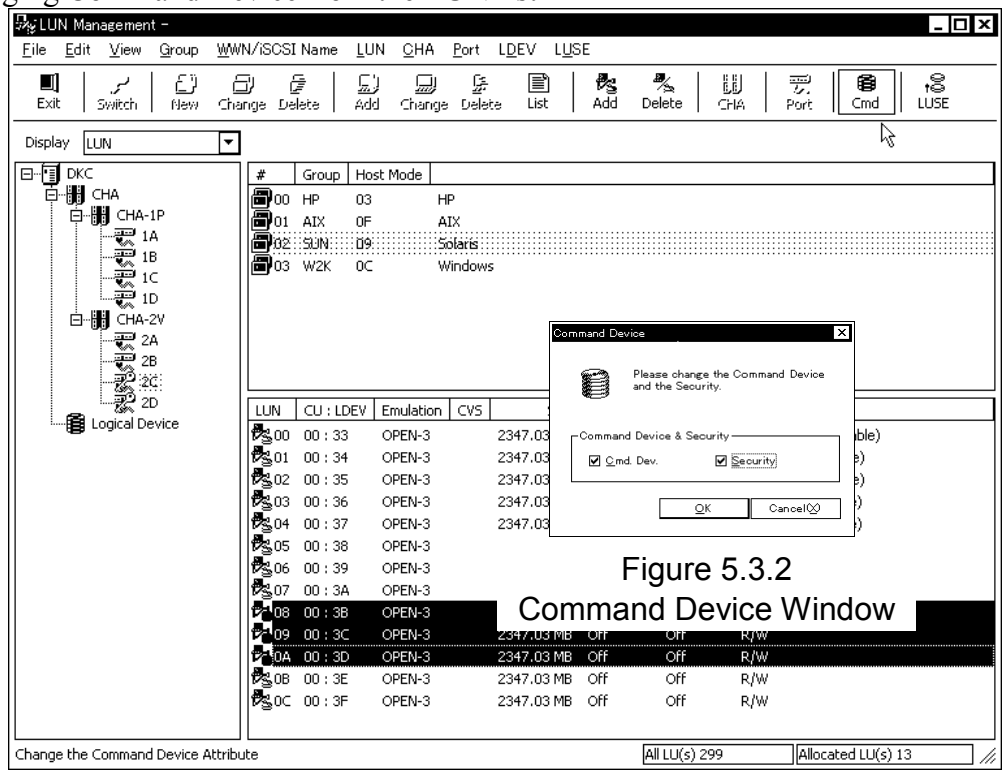

Figure 5.3.2
Command Device Window

Figure 5.3.1 Main Window

When “Port” in the tree view is selected, groups connected with the port that has been selected from the tree are displayed in the upper right list. In the lower right list, details of a group that has been selected from the upper right list are displayed.

Setting of a Command Device form the LUN list is made in the following procedure.

① Select (CL) LUN from the lower right list.
② Select (DR) [Command Device] from the [LUN] menu in the Main window (Figure 5.3.1).
③ Change “Command Device” in the Command Device Window(Figure 5.3.2), and select (CL) the [OK] button.
④ Information on the LUN that has been selected from the lower right list is reflected.

When changing the command device from the LDEV list, refer to page INST05-850.

Notice: The command device cannot be set for a LUN connected to the iSCSI-Port.

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Table 5.3.1 Details and Operation of Main Window (LUN)

Item	Description
Upper list	Displays groups connected with the port that has been selected from the tree.
	Provided with a sorting function.
Lower list	Displays LUN's defined as being contained in the group that has been selected from the upper list. The symbol '+' added to CU:LDEV# denotes the existence of path setting as follow: '+' A LUN is set. '++'Multiple LUNs are set. (Displays nothing when no item to be selected exists in the upper list or more than one item has been selected.)
	Provided with a sorting function.
"LUN – Command Device..." menu	Selectable when a LUN has been selected from the lower list.
	Displays the Command Device window.
Pop-up menu	Displays the "Command Device" menu when the right mouse button is clicked on the item in the lower list.

Table 5.3.2 Details and Operation of Add LUN Window

Item	Description
Cmd.Dev.	Displays the command device of LUN selection.
	When it is checked, the command device is on.
Security	Displays a status of command device security of the LUN that has been selected.
	Enables a command device to be checked provided that the Cmd. Dev. has been set for it.
	When it is checked, the security of the command device is on.
OK button	Closes the window after changing the parameter and returns you to the Main window.
Cancel button	Closes the window without doing anything and returns you to the Main window.

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(6) Changing CHA

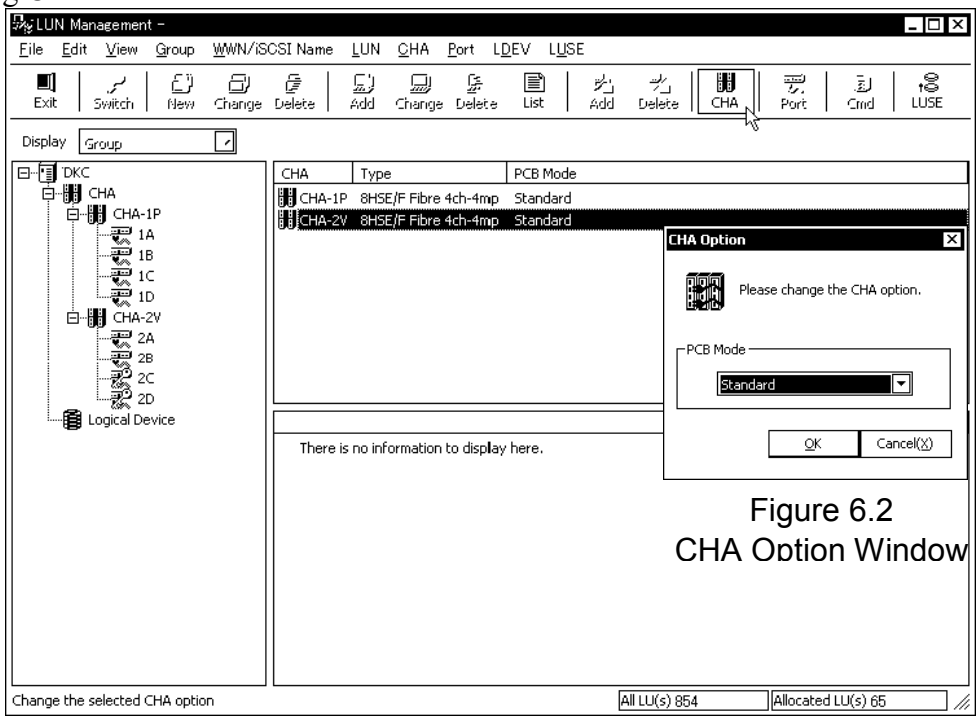

Figure 6.2
CHA Option Window

Figure 6.1 Main Window

When “CHA” in the tree view is selected (CL), installed CHA PCB's supported by this function are displayed in the upper right list.

A change of a CHA PCB Mode is made in the following procedure.

① Select (CL) a CHA from the upper right list.
② Select (DR) [Change...] from the [CHA] menu in the Main window (Figure 6.1).
③ Since the CHA Option window (Figure 6.2) is displayed, select (CL) a "PCB Mode" and select (CL) the [OK] button.
④ An operational mode of a PCB of the CHA that has been set in the upper right list is changed.

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Table 6.1 Details and Operation of Main Window (CHA)

Item	Description
Upper list	Displays installed CHA PCB's supported by this function.
	Provided with a sorting function.
Lower list	Displays no item.
"CHA - Change" menu	Selectable when a CHA has been selected from the upper list.
	Displays the CHA Option window.
Pop-up menu	Displays the "Change" menu when the right mouse button is clicked on the item in the upper list.

Table 6.2 Details and Operation of CHA Option Window

Item	Description
PCB Mode	Displays a set operational mode of a CHA PCB in a form that it has been selected.
OK button	Selectable only when the PCB Mode has been selected.
	Closes the window after changing the parameter, and returns you to the Main window.
Cancel button	Returns you to the Main window without doing anything.

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(7) Changing Port

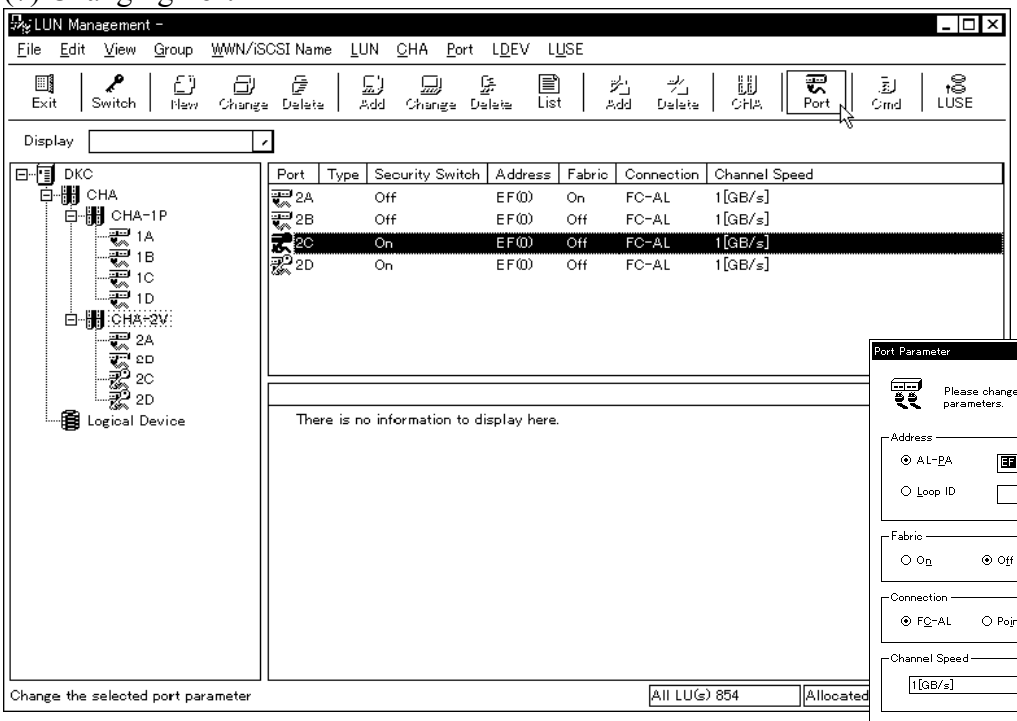

Figure 7.1 Main Window

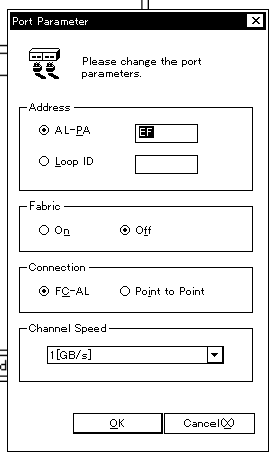

Figure 7.2
Port Parameter Window

When “Port” in the tree view is selected (CL), installed ports supported by this function are displayed in the upper right list.

A change of a Port Parameter is made in the following procedure.

① Select (CL) a port from the upper right list.
② Select (DR) [Parameter...] from the [Port] menu in the Main window (Figure 7.1).
③ Since the Port Parameter window (Figure 7.2) is displayed, set each item and select (CL) the [OK] button.
④ You can change information on the port that has been selected from the upper right list.

Notice: iSCSI-Port can not change port Parameter.
When you change the configure of Port Parameters and User Authentication for iSCSI Port, please operate from the Web Console. For the detail of operation, refer to WEB02-40, and ‘3.9 Configuring iSCSI Ports’ of LUN Management User's Guide.

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Table 7.1 Details and Operation of Main Window (Port)

Item	Description
Upper list	Displays installed ports supported by this function. In the case of the iSCSI-Port, items, that is, Address, Fabric, Connection, and Channel Speed are not displayed.
	Provided with a sorting function.
Lower list	Displays no item.
"Port - Change" menu	Selectable when a port has been selected from the upper list.
	Displays the Port Parameter window.
Pop-up menu	Displays the "Change" menu when the right mouse button is clicked on the item in the upper list.

Table 7.2 Details and Operation of Port Parameter Window

Item	Description
AL-PA	Displays an AL-PA value of a fibre port address.
Loop ID	Displays a loop ID value of a fibre port address.
Fabric	Displays whether to use (On) or not to use (Off) the fabric
Connection	Displays which is to be used: FC-AL or Point to Point.
Channel Speed	Displays 1 GB/s, 2 GB/s, or Auto.
OK button	Closes the window after changing the parameter(s), and returns you to the Main window.
Cancel button	Returns you to the Main window without doing anything.

Note:
If 2Gbps HBA and Switch are used, please set the transfer speed of the CHF port as 2Gbps.
If 1Gbps HBA and Switch are used, please set the transfer speed of the CHF port as 1Gbps.
Linkup may become improper at Server reboot when Auto Negotiation setting is a must, please check a channel lamp. If it is blinking, please remove and re-insert the cable. The signal synchronization and Link UP will be performed.

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Fibre port addresses (AL-PA's and loop ID's) are shown below.

Table 7.3 Fibre Port Addresses (AL-PA's and Loop ID's)

AL AP	Loop ID	AL AP	Loop ID	AL AP	Loop ID	AL AP	Loop ID	AL AP	Loop ID	AL AP	Loop ID	AL AP	Loop ID	AL AP	Loop ID
EF	0	CD	16	B2	32	98	48	72	64	55	80	3A	96	25	112
E8	1	CC	17	B1	33	97	49	71	65	54	81	39	97	23	113
E4	2	CB	18	AE	34	90	50	6E	66	53	82	36	98	1F	114
E2	3	CA	19	AD	35	8F	51	6D	67	52	83	35	99	1E	115
E1	4	C9	20	AC	36	88	52	6C	68	51	84	34	100	1D	116
E0	5	C7	21	AB	37	84	53	6B	69	4E	85	33	101	1B	117
DC	6	C6	22	AA	38	82	54	6A	70	4D	86	32	102	18	118
DA	7	C5	23	A9	39	81	55	69	71	4C	87	31	103	17	119
D9	8	C3	24	A7	40	80	56	67	72	4B	88	2E	104	10	120
D6	9	BC	25	A6	41	7C	57	66	73	4A	89	2D	105	0F	121
D5	10	BA	26	A5	42	7A	58	65	74	49	90	2C	106	08	122
D4	11	B9	27	A3	43	79	59	63	75	47	91	2B	107	04	123
D3	12	B6	28	9F	44	76	60	5C	76	46	92	2A	108	02	124
D2	13	B5	29	9E	45	75	61	5A	77	45	93	29	109	01	125
D1	14	B4	30	9D	46	74	62	59	78	43	94	27	110		
CE	15	B3	31	9B	47	73	63	56	79	3C	95	26	111		

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(8) Changing Command Device from LDEV list

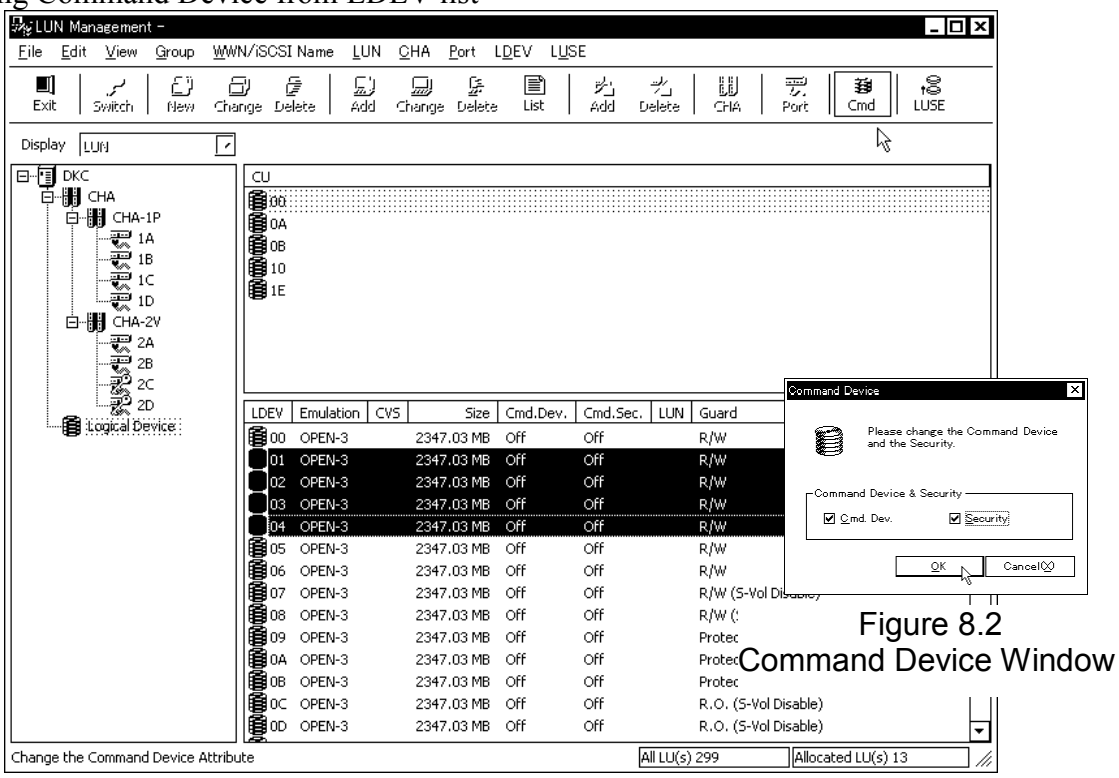

Figure 8.1 Main Window

Figure 8.2
Command Device Window

When “Command Device” in the tree view is selected (CL), CU numbers of installed LDEV's supported by this function are displayed in the upper right list. In the lower right list, details of a CU selected from the upper right list are displayed.

A change of a command device is made in the following procedure.

① Select (CL) an LDEV you want to change from the lower right list.
② Select (DR) [Change...] from the [Device] menu in the Main window (Figure 8.1).
③ Since the Command Device window (Figure 8.2) is displayed, change the “Command Device” and select (CL) the [OK] button.
④ Information that has been set is reflected in the LDEV that has been selected from the lower right list.

Notice: The command device cannot be set for a LUN connected to the iSCSI-Port.

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Table 8.1 Details and Operation of Main Window (Command Device)

Item	Description
Upper list	Displays CU numbers of installed LDEV's supported by this function.
	Provided with a sorting function.
Lower list	Displays details of a CU selected from the upper list. Displayed items: CVS (Defined: “*”, Not defined: No indication), LUN (Defined: “*”, Not defined: No indication) (Displays nothing when no item to be selected exists in the upper list or more than one item has been selected.)
	Provided with a sorting function.
"Device - Change" menu	Selectable only when an LDEV that is given a definition of LUN has been selected from the lower list.
	Displays the Command Device window.
Pop-up menu	Displays the "Change" menu when the right mouse button is clicked on the item in the lower list.

Table 8.2 Details and Operation of Command Device Window

Item	Description
Cmd.Dev.	Displays a status of a command device of the LUN that has been elected.
	When it is checked, the command device is on.
Security	Displays a status of command device security of the LUN that has been selected.
	Enables a command device to be checked provided that the Cmd. Dev. has been set for it.
	When it is checked, the command device security is on.
OK Button	Closes the window after changing the parameters, and returns you to the Main window.
Cancel Button	Returns you to the Main window without doing anything.

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(9) Setting LUSE

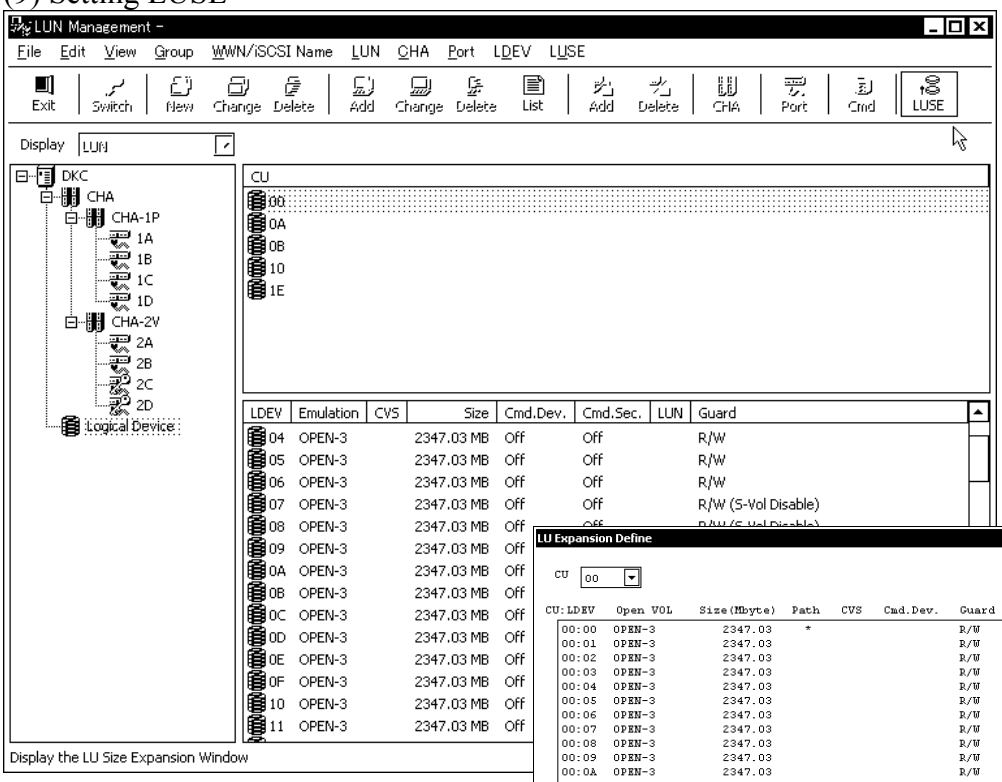

Figure 9.1 Main Window

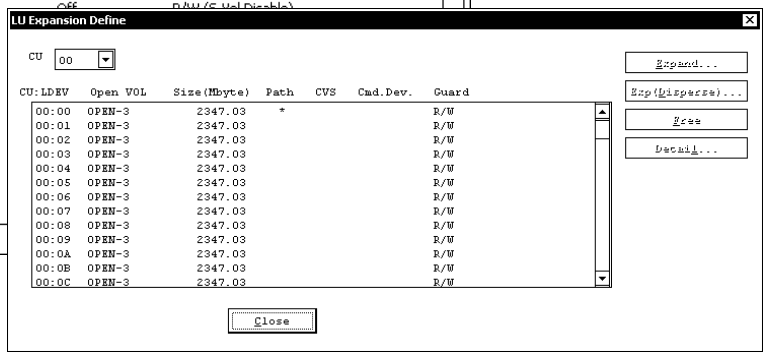

Figure 9.2 LU Expansion Define Window

A change of a LUSE is made in the following procedure. For details, go to INST05-880.

① Select (DR) [LU Size Expansion…]from the [LUSE] menu in the Main window (Figure9.1).

② Since the LU Expansion Define window (Figure 9.2) is displayed, set each items and select (CL) the [OK] button (When 'Change Configuration', select (CL) the [Close] button, because the [Close] button is displayed instead of the [OK]/[Cancel] button).

③ Selected information is defined to the Main Window (Figure9.1).

⚠ CAUTION

The conditions of the LU to connect are follows.

(1) Unconnected LU
(2) LU without SCSI path definition
(3) LU without Command Device definition
(4) LU with same emulation type
(5) LU with same capacity
(6) LU without CVS definition, if you select LU without CVS definition
(7) LU with CVS definition, if you select LU with CVS definition
(8) LU with R/W attribute (when 'Change Configuration')

If you set the LUSE by dispersive LUs, the condition (1) is excluded.

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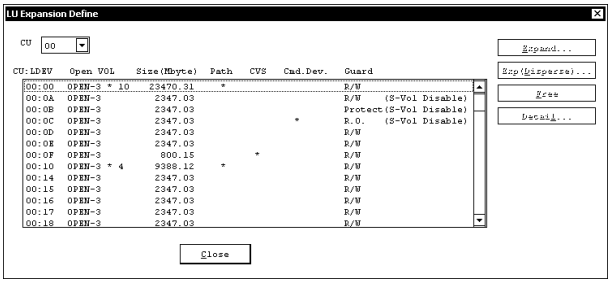
LU Expansion Define window

Detail of the list



- The list is displayed line by line in CU (The selection can be done on CU list).
- The number of LDEVs connected sequentially together which formalize LU Expansion (Open VOL)
  ex.) The first line on the right figure indicates that 10 LDEVs whose emulation type is OPEN-3 are connected together sequentially.
- The existence of LUN definition to the Open VOL.
  ex.) In the first line, '*' shows that CU:LDEV=00:00 and 00:10 have a LUN definition.
- The existence of CVS definition to the Open VOL.
  ex.) In the seventh line '*' shows that CU:LDEV=00:0F has a CVS definition.
- The existence of Command Device (Cmd. Dev.) definition of the Open VOL.
  ex.) In the fourth line '*' shows that CU:LDEV=00:0C has a Command Device definition.
- The attribute of Open LDEV Guard to the Open VOL.

Function	String	Description
Define Configuration & Install Refer Configuration	-----	(Not Displayed)
Change Configuration Maintenance	R/W	Read/Write
	R/W (S-Vol Disable)	Read/Write with S-Vol Disable
	Protect (S-Vol Disable)	Protected
	R.O. (S-Vol Disable)	Read Only
	?????	Invalid state

Detail of the buttons

- [OK] button: To register the setting information (Only when 'Define Configuration & Install')
- [Cancel] button: Not to register the setting information (Only when 'Define Configuration & Install')
- [Expand...] button: To display 'LU Expansion' window (go to (9-1))
- [Exp(Disperse)...] button: To display 'LU Expansion (Disperse)' window (go to (9-2))
- [Free] button: To dissolve LU Expansion consisted of two or more LDEVs (go to (9-3))
- [Detail...] button: To display 'Open VOL Detail' window (go to (9-4))
- [Close] button: To close 'LU Expansion Define' window (Only when 'Change Configuration')

LUSE is set by the continuous LUs or by the dispersive LUs.

- To set the LUSE by the continuous LUs: Go to (9-1)
- To set the LUSE by the dispersive LUs: Go to (9-2)
- To delete the LUSE: Go to (9-3)

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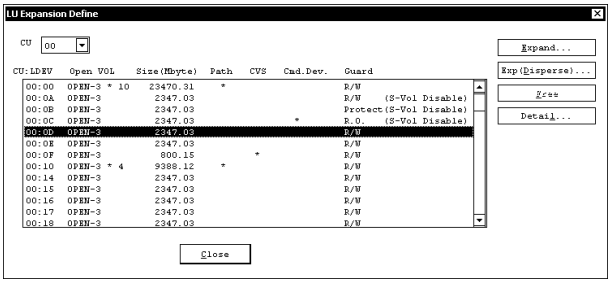
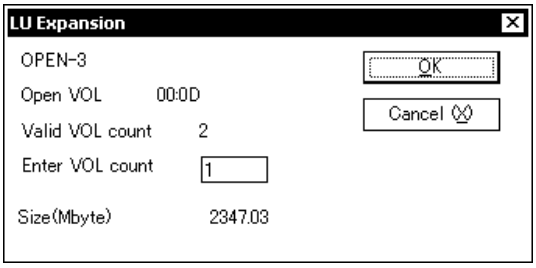
(9-1) The setting of LU Expansion (‘LU Expansion’ window)

Select an LU to define the LUSE and select (CL) [Expand...] button in ‘LU Expansion Define’ window. [Expand...] button comes to be available at the time of selecting connectable LU from the list.



The selected CU:LDEV comes to be the head of Open VOL and also CU:LDEV# comes to be Open VOL#.

‘LU Expansion’ window is displayed.



Detail of displayed information
OPEN-XXX: Emulation type
OPEN VOL: Open VOL# (Selected CU:LDEV#)
Valid VOL count: Total number of LDEVs connectable together (maximum: 36)
Enter VOL count: The input field of connection number
Size [Mbyte]: The capacity of Open VOL

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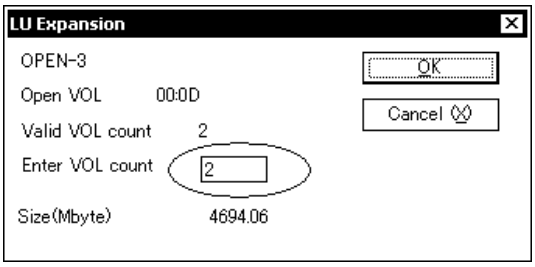
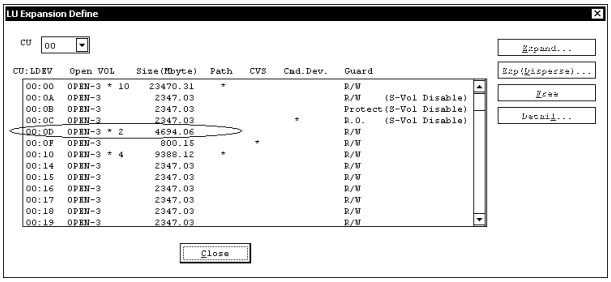
After the input of connection number, select (CL) [OK] button.



The LUSE is displayed in the list of 'LU Expansion Define' window. (The right figure shows the case that 2 LDEVs starting at CU:LDEV=00:0D are connected together.)



When the all LUSEs have been set completely, select (CL) [OK] button.
(When Change Configuration, select (CL) [Close] button.)
Go back to 'LUN Management' window and check the LUSE definition.

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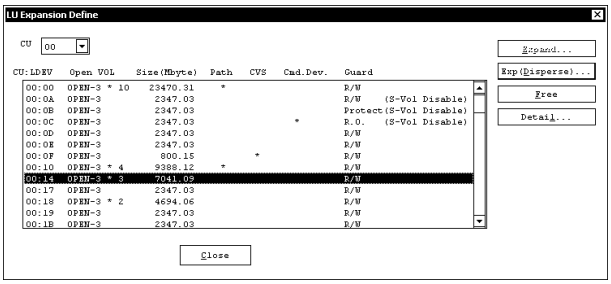
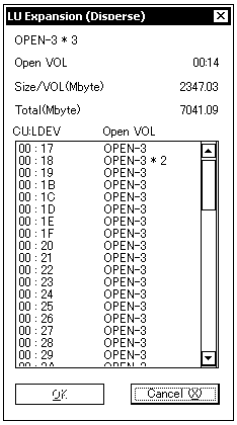
(9-2) The setting of LU Expansion by dispersive LDEV (‘LU Expansion (Disperse)’ window)

Select an LU to define the LUSE and select (CL) [Exp(Disperse)…] button in ‘LU Expansion Define’ window. [Exp(Disperse)…] button comes to be available at the time of selecting connectable LU from the list.



The selected LU comes to be the head of Open VOL and also CU:LDEV# comes to be Open VOL#.

“LU Expansion (Disperse)” window is displayed.



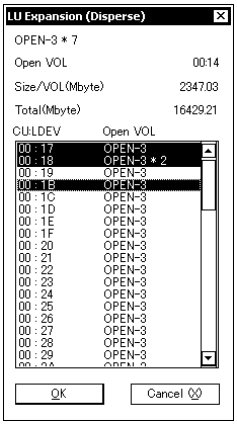
Detail of displayed information:

OPEN-XXX:	Emulation type
Open VOL:	Open VOL#(CU:LDEV# of the top the selected LU)
Size/VOL(Mbyte):	The capacity per one CU:LDEV#
Total(Mbyte):	The capacity of Open VOL
CU:LDEV list:	Connectable CU:LDEV#

After selecting (CL) the LU from the CU:LDEV list, select (CL) [OK] button. (You can connect up to 36 CU:LDEVs or up to 2[TB].)

* In the right figure, CU:LDEV=00:18 is an LUSE including CU:LDEV=00:1A. CU:LDEV=00:19 cannot select at the same time, because the CU:LDEV cannot insert the LUSE.

* When ‘Change Configuration’, only the LU with R/W attribute is listed up.



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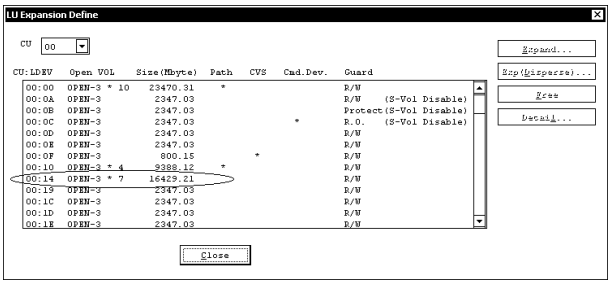
The LUSE is displayed in the list of ‘LU Expansion Define’ window. (The right figure shows the case that CU:LDEV=00:14, 00:15, 00:16, 00:17, 00:18, 00:1A, 00:1B are connected together.)



When the all LUSEs have been set completely, select (CL) [OK] button.
(When Change Configuration, select (CL) [Close] button.)
Go back to ‘LUN Management’ window and check the LUSE definition.

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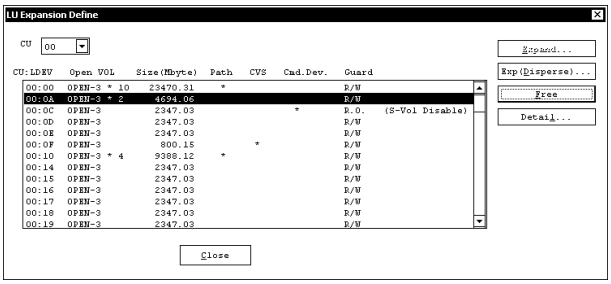
(9-3) Dissolution of Open VOL (‘LU Expansion Define’ window)

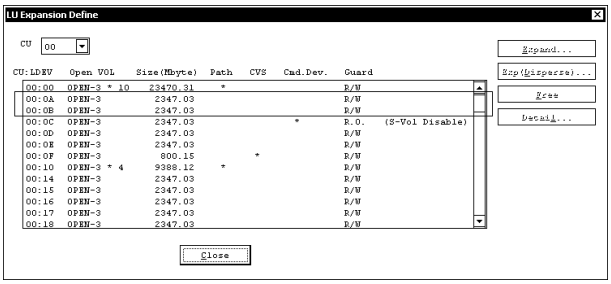
Select an LUSE to dissolve and select (CL) [Free] button on ‘LU Expansion Define’ window.
[Free] button comes to be available at the time that the “Dissolvable” Open VOL is selected in the list.



“Dissolvable” Open VOL denotes the Open VOL which satisfies the following conditions:

- Open VOL which has two or more LDEVs connected
- Open VOL which has no SCSI path definition
- Open VOL which has no Command Device definition
- Open VOL which has R/W attribute (when ‘Change Configuration’)

The dissolved LU is displayed in the list of ‘LU Expansion Define’ window. (The right figure shows the case that Open VOL#=00:0A which consisted of 2 LDEVs has been dissolved.)



Selecting (CL) [OK] button brings you back to ‘LUN Management’ window, and the contents of the window automatically updated.

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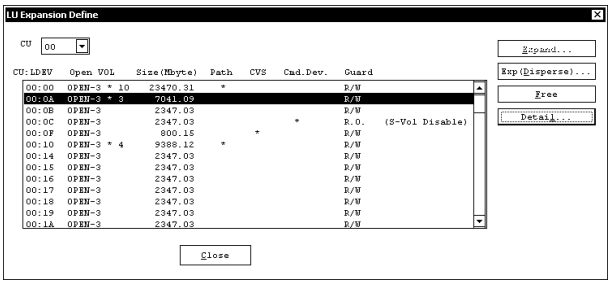
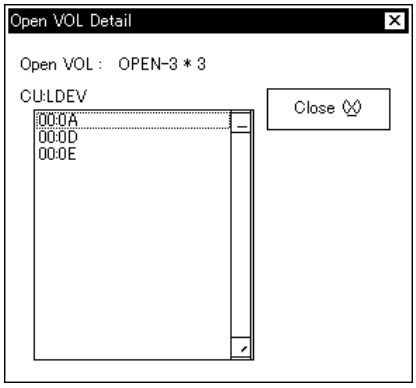
(9-4) Display detail information of Open VOL (‘Open VOL Detail’ window)

After the selection (CL) of LDEV at ‘LU Expansion Define’ window, select (CL) [Detail...] button.



‘Open VOL Detail’ window is displayed.

Detail of displayed information
CU:LDEV: CU:LDEV# of LDEV compose Open VOL



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(10) Backup/Restore

(10-1) Backup

A backup can be created only when the configuration allows the system operation.
The backup cannot be created in the following cases where the configuration information is contradictory.

- When the PCB is in the high-speed mode and addresses are duplicate (This is a state that can be temporarily induced while the configuration is changed.).
- When the PCB is in the high-speed mode and the topology is different (This is a state that cannot be induced actually.).
- When the PCB is in the high-speed mode and the channel speed is different (This is a state that cannot be induced actually.).

The backup of the configuration information is executed when [Backup] is selected from the [File] menu.

(10-2) Restore

Restoration can be done only for a CHA whose all ports have no LUN defined.
Items to be restored are the following.

- LUN information
- Group information (including information on the WWN, security switch, and host mode)
- Address/topology information
- Channel speed information
- CHA PCB operation mode information

How to operate each menu of the [Restore] is explained below.

- Refer
  Selecting [Restore] and [Refer] from the [File] menu in this order reflects the configuration information, which is stored as a backup, in the window. While the [Refer] is selected, any configuration change cannot be made.

- Execute
  Selecting [Restore] and [Execute] from the [File] menu in this order while the [Refer] is selected applies the configuration information displayed in the window.
  These menu items cannot be selected unless the [Refer] has been selected.

- Cancel
  Selecting [Restore] and [Cancel] from the [File] menu in this order while the [Refer] is selected cancels the state induced by the selection of the [Refer] is selected.
  These menu items cannot be selected unless the [Refer] has been selected.

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(11) Definition of NAS LUN

(11-1) NAS System LUN

(11-1-1) Definition of NAS System LUN

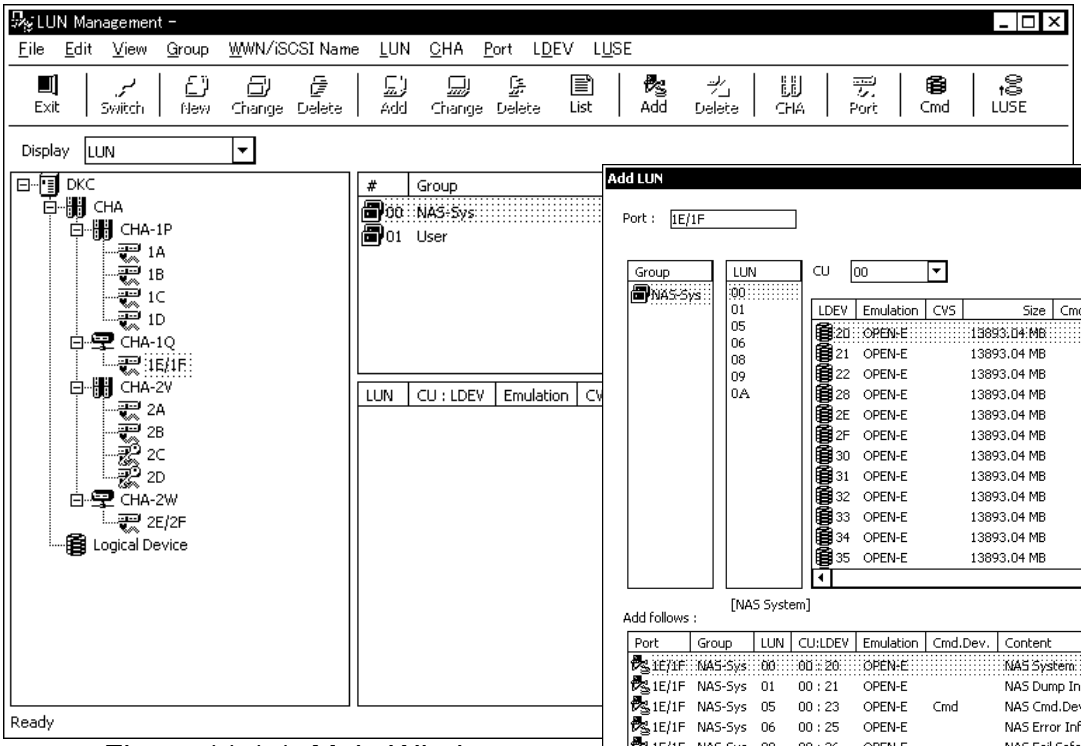

Figure 11.1.1 Main Window

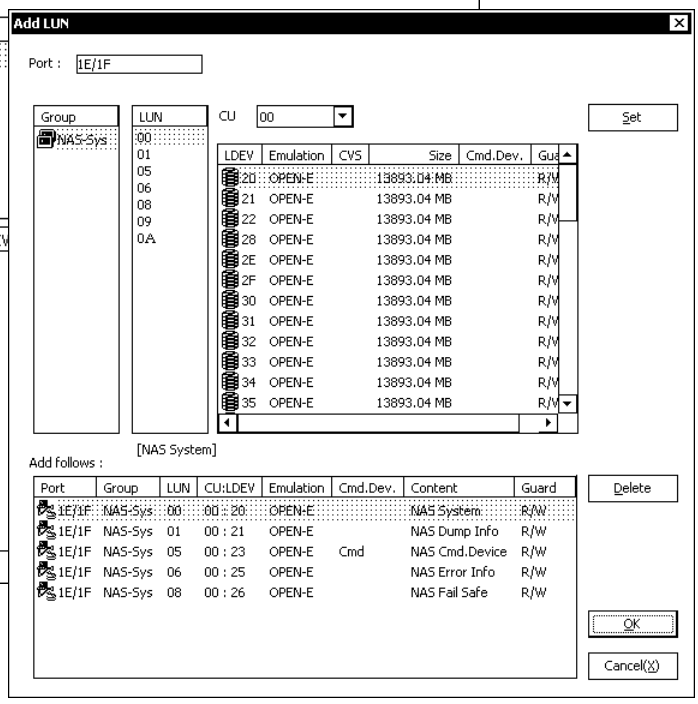

Figure 11.1.2 LUN Registration Window

When the port of "NAS" in the tree view is selected (CL) and the Display is set as "LUN", "NAS-Sys" of the Group#00 and "User" of the Group#01 are set with default in the upper right list. Select "NAS-Sys" of the Group#00. (In an example shown in Figure 11.1.1, select the NAS port, 1E/1F from the tree diagram.)

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Addition of a System LUN is done in the following procedure.

① Select (CL) “NAS-Sys” of the Group#00 from the upper right list.

② Select (DR) [Add…] from the [LUN] menu in the Main window (Figure 11.1.1).

③ Since the LUN Registration window (Figure 11.1.2) is displayed, select the LUN and CU: LDEV, and then select (CL) the [Set] button. The LUN information that has been set is displayed in the “Add follows” list.
Prior to this if any other System LUN settings for other CHNs are already done, the NAS System LU and NAS Dump Info LU of the other CHN are displayed. They are set automatically in order to allow the other CHN to collect information on a self CHN failure when the failure occurs.

④ When the [OK] button is selected, items displayed in the “Add follows” list are newly registered and the window is returned to the Main window (Figure 11.1.1).

(Since a message [SEC3454i] is displayed when a command device is not set for the LDEV of the LUN#05, select (CL) [Yes].)

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Definition of the system LU numbers (LUN#), 00, 01, 05, 06, 08, 09, and 0A is indispensable for each CHN. When the system LU numbers (LUN#), 05, 06, 08, 09, and 0A have already been defined for another CHN, system LU numbers (LUN#), 05, 06, 08, 09, and 0A of the CHN concerned can be selected by the same LDEV only. Besides, system LU numbers (LUN#) following 0B are to be defined for the other CHNs. They are set automatically in order to allow the other CHN to collect information on a self CHN failure when the failure occurs. They cannot be defined through the window shown in Figure 11.1.2 because they are set automatically when system LUNs of the other CHNs are defined. (For the system LUN, refer to Tables 11.1.3 and 11.1.4.)

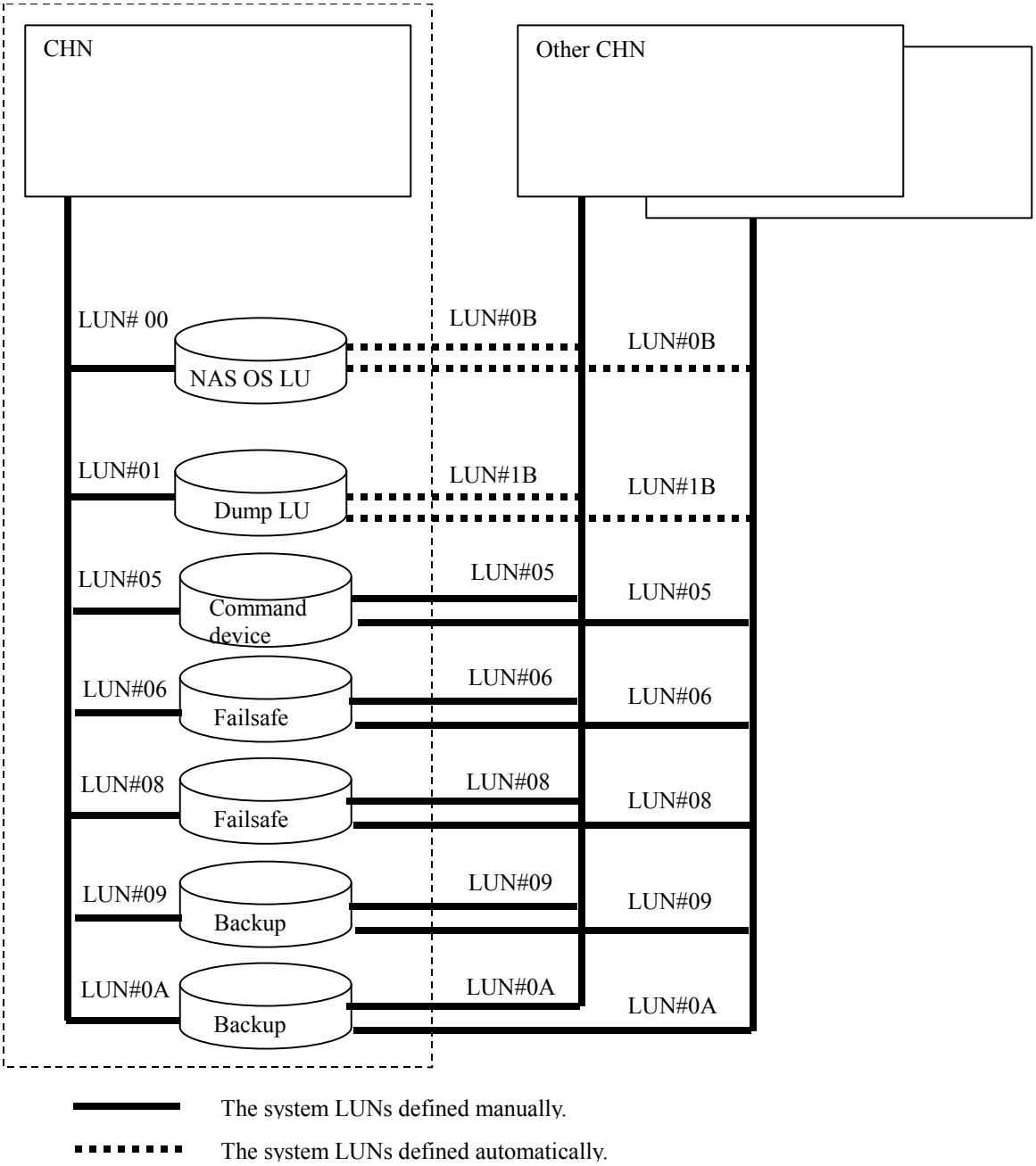

Figure 11.1.3 System LUN concept figure

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Details of each window are shown below.

Notice:
Among the System LUNs for the other CHNs, those that show the own PCB are not defined. (In the example shown in Figure 11.1.1, the LUN#0C and LUN#1C are not defined for the NAS-Sys group of the NAS (1E/1F) port.)

Table 11.1.1 Details and Operation of Main Window (LUN)

Item	Description
Upper list	Displays groups connected with the E-NAS port that has been selected from the tree. (Select “NAS-Sys.”)
	Provided with a sorting function.
Lower list	Displays LUNs defined as being included in the NAS-Sys of the Group#00.
	Provided with a sorting function.
“LUN-Add” menu	Selectable when the NAS-Sys of the Group#00 has been selected.
	Displays the Add LUN window.
“Add” tool bar	Selectable when the NAS-Sys of the Group#00 has been selected.
	Displays the Add LUN window.
Pop-up menu	Displays the “Add” menu when the NAS-Sys of the Group#00 is selected and the right mouse button is clicked.

Table 11.1.2 Details and Operation of LUN Registration Window

Item	Description
Port	Displays a name of the port that has been selected from the tree in the Main window.
Group list	Displays the NAS-Sys.
LUN list	Displays settable LUNs in the NAS-Sys of the group concerned.
	Only one LUN can be selected.
CU list	Displays CU numbers of all the installed LDEVs supported by this function.
LDEV list	Displays settable LUNs only.
Add follows list	Displays the LUNs (paths) to be added.
Set button	Selectable only when all of the Group, LUN, CU: LDEV have been selected.
	The LUNs that have been added are displayed in the “Add follows” list.
Delete button	Excepts LUNs from those to be added.
OK button	Selectable only when at least one LUN is in the “Add follows” list.
	Closes the window after adding the LUN and returns you to the Main window.
Cancel button	Closes the window without doing anything and returns the window to the Main window.

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Table 11.1.3 System LUNs of Own CHN

LUN#	System LUN	Content	Minimum capacity
00	LU for OS	NAS System	6667 MB
01	Dump LU	NAS Dump Info	4926 MB
05	Command device	NAS Cmd.Device	35 MB
06	Failure information storage	NAS Error Info	4195 MB
08	Fail-safe + Operation management	NAS Fail Safe	2537 MB
09	Backup data	NAS Backup	2537 MB
0A	Backup data	NAS Backup	2537 MB

Table 11.1.4 System LUNs of the Other CHNs

For Multi Cabinet Model

LUN#	System LUN	Content	Minimum capacity
0B	NAS OS LU for CHA-1P	NAS System	6667 MB
0C	NAS OS LU for CHA-1Q	NAS System	6667 MB
0D	NAS OS LU for CHA-1R	NAS System	6667 MB
0E	NAS OS LU for CHA-1S	NAS System	6667 MB
0F	NAS OS LU for CHA-2V	NAS System	6667 MB
10	NAS OS LU for CHA-2W	NAS System	6667 MB
11	NAS OS LU for CHA-2X	NAS System	6667 MB
12	NAS OS LU for CHA-2Y	NAS System	6667 MB
1B	Dump LU for CHA-1P	NAS Dump Info	4926 MB
1C	Dump LU for CHA-1Q	NAS Dump Info	4926 MB
1D	Dump LU for CHA-1R	NAS Dump Info	4926 MB
1E	Dump LU for CHA-1S	NAS Dump Info	4926 MB
1F	Dump LU for CHA-2V	NAS Dump Info	4926 MB
20	Dump LU for CHA-2W	NAS Dump Info	4926 MB
21	Dump LU for CHA-2X	NAS Dump Info	4926 MB
22	Dump LU for CHA-2Y	NAS Dump Info	4926 MB

For Single Cabinet Model

LUN#	System LUN	Content	Minimum capacity
0B	NAS OS LU for CHA-1C	NAS System	6667 MB
0C	NAS OS LU for CHA-1D	NAS System	6667 MB
0D	NAS OS LU for CHA-1F	NAS System	6667 MB
0F	NAS OS LU for CHA-2G	NAS System	6667 MB
10	NAS OS LU for CHA-2J	NAS System	6667 MB
11	NAS OS LU for CHA-2K	NAS System	6667 MB
1B	Dump LU for CHA-1C	NAS Dump Info	4926 MB
1C	Dump LU for CHA-1D	NAS Dump Info	4926 MB
1D	Dump LU for CHA-1F	NAS Dump Info	4926 MB
1F	Dump LU for CHA-2G	NAS Dump Info	4926 MB
20	Dump LU for CHA-2J	NAS Dump Info	4926 MB
21	Dump LU for CHA-2K	NAS Dump Info	4926 MB

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In addition, numbers of system LUNs required for the settings are shown in Table 11.1.5.

Notice:
One each of the LUs for the command device, for failure information storage, and for failsafe are required for a subsystem.

Table 11.1.5 Numbers of System LUNs That Must Be Defined

For Multi Cabinet Model

CHA Location		NAS OS LU	Dump LU	Command Device	Failure information storage	Fail-safe + Operation management	Backup data ①	Backup data ②
Basic	CHA-1P	1	1	1	1	1	1	1
	CHA-2V	1	1					
Option	CHA-1Q	1	1					
	CHA-2W	1	1					
Option2	CHA-1R	1	1					
	CHA-2X	1	1					
Option3	CHA-1S	1	1					
	CHA-2Y	1	1					

For Single Cabinet Model

CHA Location		NAS OS LU	Dump LU	Command Device	Failure information storage	Fail-safe	Backup data ①	Backup data ②
Basic	CHA-1C	1	1	1	1	1	1	1
	CHA-2G	1	1					
Option	CHA-1D	1	1					
	CHA-2J	1	1					
Option2	CHA-1F	1	1					
	CHA-2K	1	1					

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(11-1-2) Deleting NAS System LUN

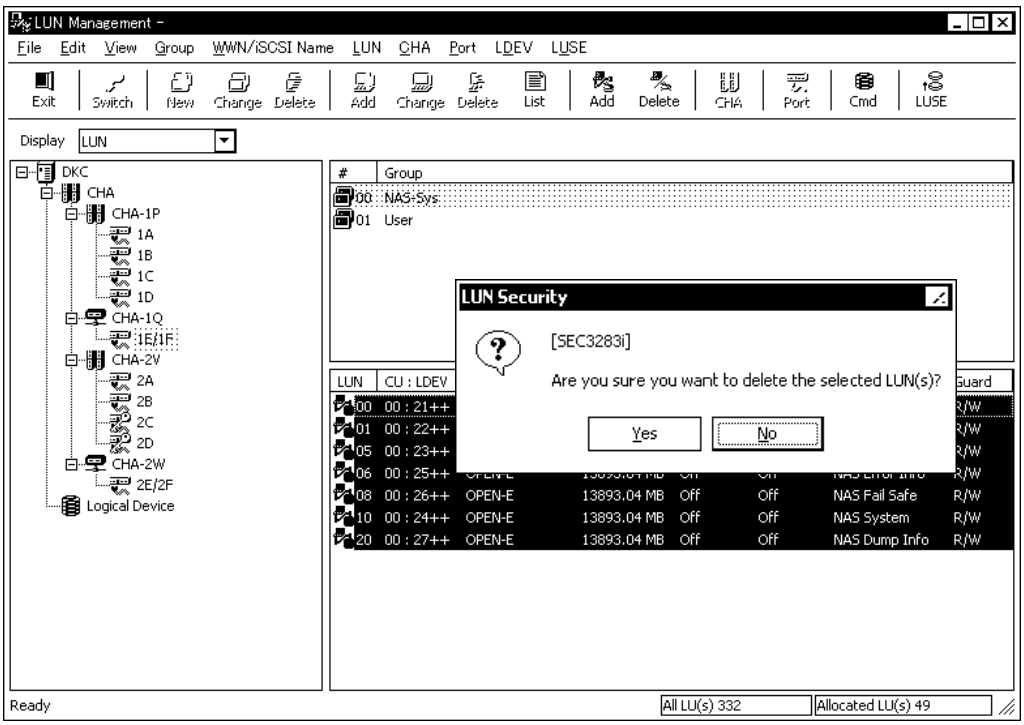

Figure 11.1.4 Main Window

When the port of “NAS” in the tree view is selected (CL) and the Display is set as “LUN”, “NAS-Sys” of the Group#00 and “User” of the Group#01 are displayed in the upper right list. Select “NAS-Sys” of the Group#00. (In an example shown in Figure 11.1.4, select the NAS port, 1E/1F from the tree diagram.)

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Deletion of a System LUN is done in the following procedure.

Notices:
- When eliminating a LUN from the “NAS-Sys”, it is a pre-condition that no LUN of the “User” exists.
- When the LUNs 00, 01, 05, 06, and 08 were eliminated from LUNs, paths (LUNs) lead from the other CHN using the LUNs are eliminated automatically.
- When a LUN other than the LUNs 00, 01, 05, 06, and 08 is eliminated from LUNs, the path (LUN) that leads to the LDEV concerned from the other CHN is left assigned because the LUN is a path leading to the system LU and/or the dump LU of the other CHN. That is because there may be a case where the LDEV concerned is operating as a system LU or dump LU of the other CHN.
  When eliminating a path (LUN) to the LDEV concerned as a system LU for the reason that the LDEV concerned is no longer used as a system LU, a path (LUN) leads from the other CHN to the LDEV concerned must be eliminated also manually. In this case, LUNs defined as leading from all the CHNs to the LDEV concerned are eliminated automatically when the LUN concerned that leads from the CHN, which defines the LDEV concerned as the LUN 00 or LUN 01, is eliminated.

① Select (CL) “NAS-Sys” of the Group#00 from the upper right list.
② Select (CL) a LUN from the lower right list.
③ Select (DR) [Delete] from the [LUN] menu in the Main window (Figure 11.1.4).
④ Since a message asking for a confirmation is displayed, select (CL) the [Yes] button.
⑤ Information on the LUN that has been selected from the lower right list is deleted.

Besides, NAS OS must be shut down before deleting the NAS system LUN. (NAS03-790)

Table 11.1.6 Details and Operation of Main Window (LUN)

Item	Description
Upper list	Displays groups connected with the E-NAS port that has been selected from the tree. (Select “NAS-Sys.”)
	Provided with a sorting function.
Lower list	Displays LUNs defined as being included in the NAS-Sys of the Group#00.
	Provided with a sorting function.
“LUN-Delete” menu	Selectable when “LUN” has been selected.
	Displays a message asking for a confirmation.
“Delete” tool bar	Selectable when “LUN” has been selected.
	Displays a message asking for a confirmation.
Pop-up menu	Displays the “Delete” menu when “LUN” is selected and the right mouse button is clicked on the item.

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(11-2) NAS User LUN

(11-2-1) Definition of NAS User LUN

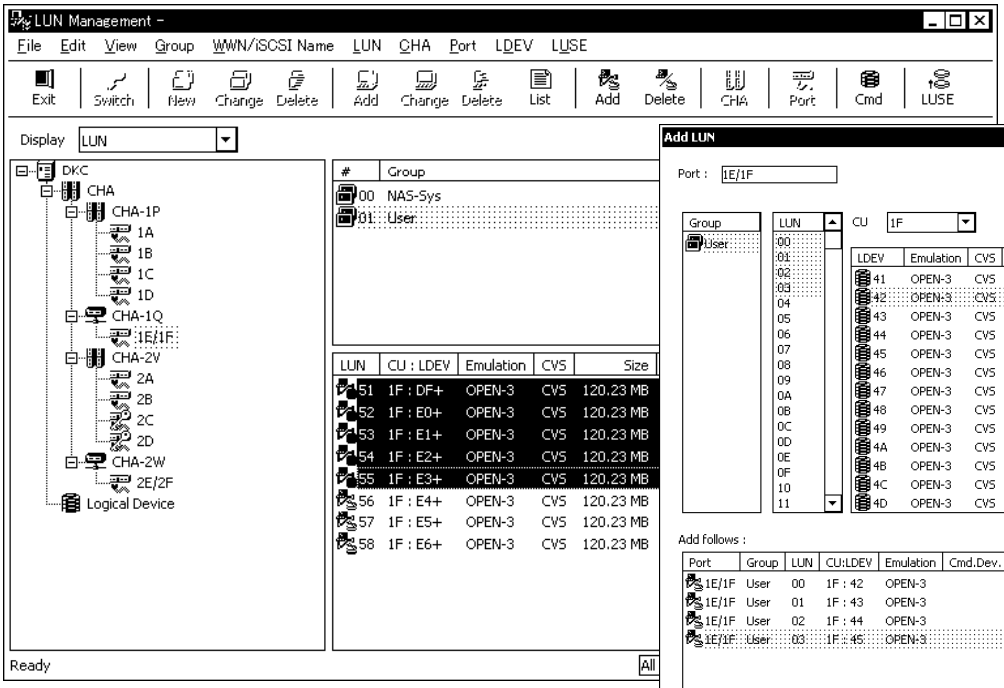

Figure 11.2.1 Main Window

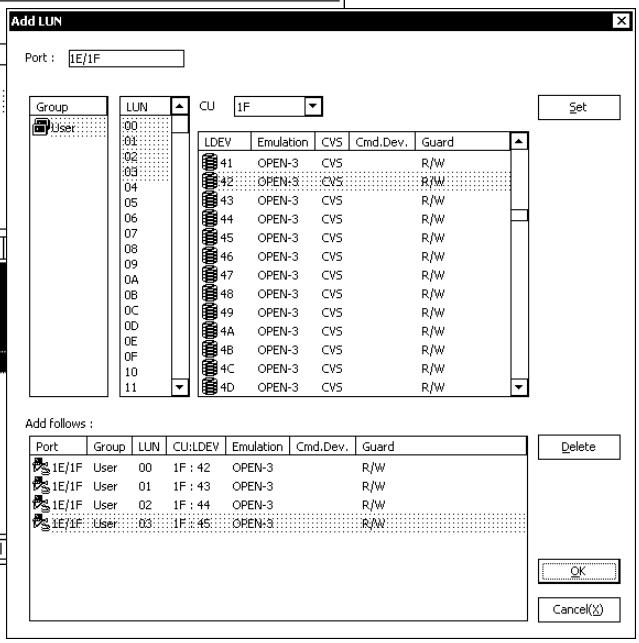

Figure 11.2.2 LUN Registration Window

When the port of "NAS" in the tree view is selected (CL) and the Display is set as "LUN", "NAS-Sys" of the Group#00 and "User" of the Group#01 are displayed in the upper right list. Select "User" of the Group#01. (In an example shown in Figure 11.2.1, select the NAS port, 1E/1F from the tree diagram.)

Addition of a User LUN is done in the following procedure.

Notices:
When defining the User LUN, LUNs of the NAS-Sys with numbers 00, 01, 05, 06, and 08 must have been set.

① Select (CL) "User" of the Group#01 from the upper right list.
② Select (DR) [Add…] from the [LUN] menu in the Main window (Figure 11.2.1).
③ Since the LUN Registration window (Figure 11.2.2) is displayed, select the LUN and CU: LDEV, and then select (CL) the [Set] button. The LUN information that has been set is displayed in the "Add follows" list.
④ When the [OK] button is selected, items displayed in the "Add follows" list are newly registered and the window is returned to the Main window (Figure 11.2.1).

Moreover, each User LUN should be shared in two NAS packages where the cluster is composed and path should be defined with the same LUN in both NAS packages.

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Details of each window are shown below.

Table 11.2.1 Details and Operation of Main Window (LUN)

Item	Description
Upper list	Displays groups connected with the E-NAS port that has been selected from the tree. (Select User.)
	Provided with a sorting function.
Lower list	Displays LUNs defined as being included in the User of the Group#01.
	Provided with a sorting function.
“LUN-Add” menu	Selectable when the User of the Group#01 has been selected.
	Displays the Add LUN window.
“Add” tool bar	Selectable when the User of the Group#01 has been selected.
	Displays the Add LUN window.
Pop-up menu	Displays the “Add” menu when the User of the Group#01is selected and the right mouse button is clicked.

Table 11.2.2 Details and Operation of LUN Registration Window

Item	Description
Port	Displays a name of the port that has been selected from the tree in the Main window.
Group list	Displays the NAS-Sys.
LUN list	Displays settable LUNs in the User of the group concerned.
CU list	Displays CU numbers of all the installed LDEVs supported by this function.
LDEV list	Displays LUNs unused in the group concerned. No LDEV of the System LUN is displayed.
Add follows list	Displays the LUNs (paths) to be added.
Set button	Selectable only when all of the Group, LUN, CU: LDEV have been selected.
	The LUNs that have been added are displayed in the “Add follows” list.
Delete button	Excepts LUNs from those to be added.
OK button	Selectable only when at least one LUN is in the “Add follows” list.
	Closes the window after adding the LUN and returns you to the Main window.
Cancel button	Closes the window without doing anything and returns the window to the Main window.

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(11-2-2) Deleting NAS User LUN

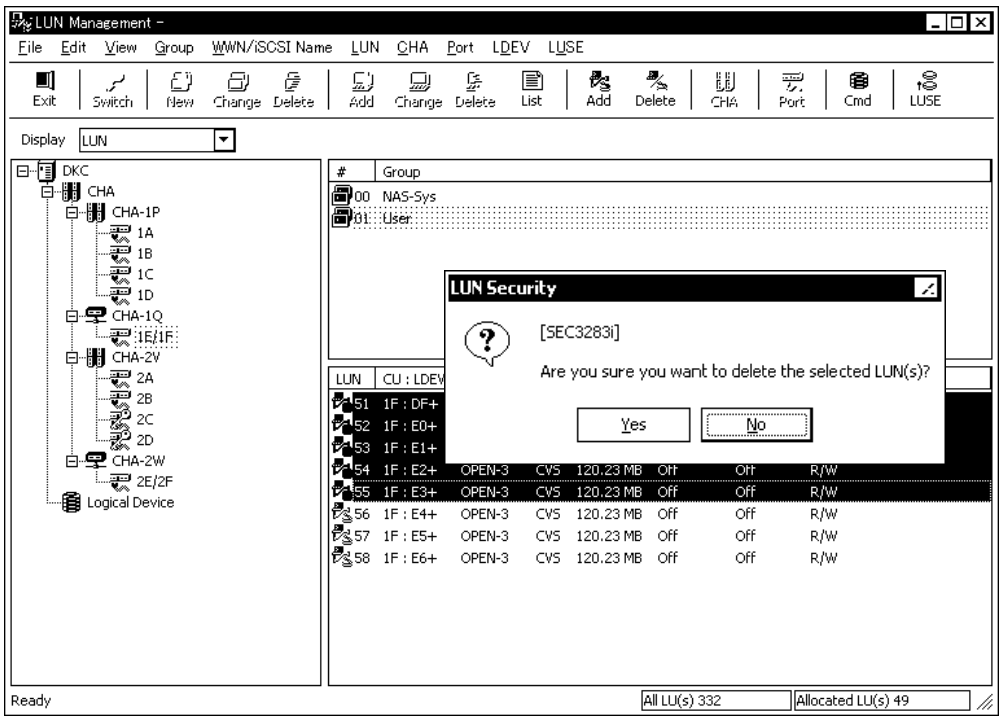

Figure 11.2.3 Main Window

When the port of "NAS" in the tree view is selected (CL) and the Display is set as "LUN", "NAS-Sys" of the Group#00 and "User" of the Group#01 are displayed in the upper right list. Select "User" of the Group#01. (In an example shown in Figure 11.2.3, select the NAS port, 1E/1F from the tree diagram.)

Deletion of a User LUN is done in the following procedure.

Notices:
When User LUN is being deleted, it is necessary to do the following operation to the User LUN.
- Deletion of sharing of file
- Anmount of file system
- Deletion of file system

After the operation of the above-mentioned is requested to the system administrator, and the operation end is confirmed, User LUN can be deleted.

① Select (CL) "User" of the Group#01 from the upper right list.
② Select (CL) a LUN from the lower right list.
③ Select (DR) [Delete] from the [LUN] menu in the Main window (Figure 11.2.3).
④ Since a message asking for a confirmation is displayed, select (CL) the [Yes] button.
⑤ Information on the LUN that has been selected from the lower right list is deleted.

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Table 11.2.3 Details and Operation of Main Window (LUN)

Item	Description
Upper list	Displays groups connected with the E-NAS port that has been selected from the tree. (Select “User.”)
	Provided with a sorting function.
Lower list	Displays LUNs defined as being included in the User of the Group#01.
	Provided with a sorting function.
“LUN-Delete” menu	Selectable when “LUN” has been selected.
	Displays a message asking for a confirmation.
“Delete” tool bar	Selectable when “LUN” has been selected.
	Displays a message asking for a confirmation.
Pop-up menu	Displays the “Delete” menu when “LUN” has been selected and the right mouse button is clicked on the item.

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(11-3) Other Windows

(11-3-1) CHA List window

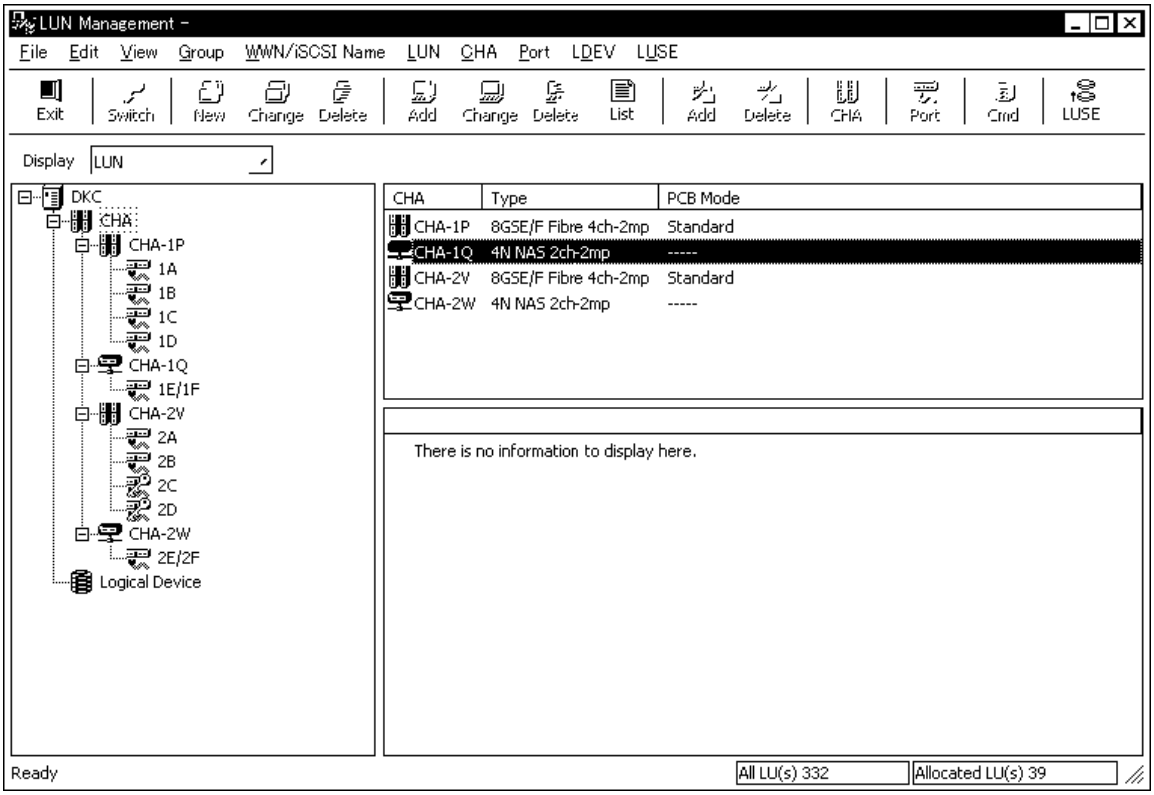

Figure 11.3.1 CHA List Window

When “CHA” in the tree view is selected (CL), the CHAs installed is displayed in the upper right list. When the E-NAS (CHN) is installed then, “4N NAS 2ch-2mp” is displayed in the Type column. There is no setting of the CHA PCB mode for the E-NAS (CHN).

Table 11.3.1 Details and Operation of CHA List Window

Item	Description
Upper list	Displays installed CHA PCB(s) supported by this function.
	Provided with a sorting function.
Lower list	Displays nothing.
“CHA-Change” menu	When the E-NAS (CHN) has been selected, this menu cannot be selected.
“Change” tool bar	
Pop-up menu	

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(11-3-2) Port List window

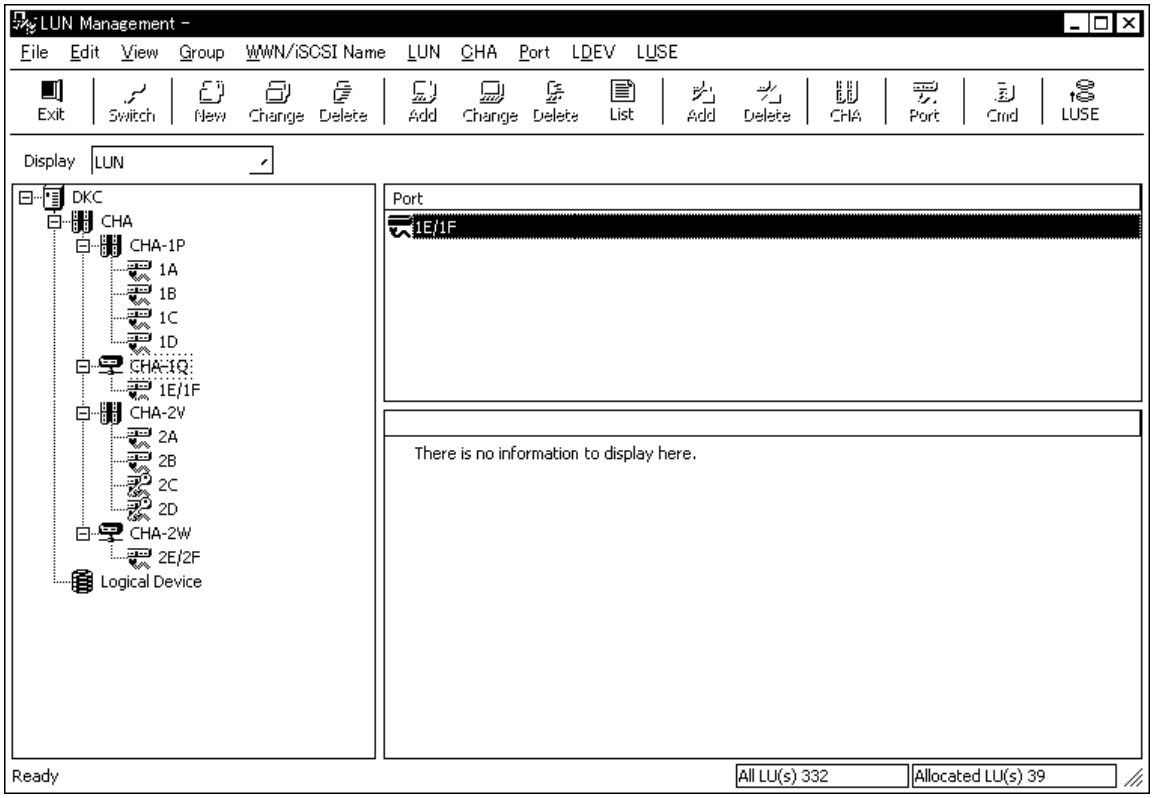

Figure 11.3.2 Port List Window

When a CHA location of "NAS" in the tree view is selected (CL), names of the ports installed are displayed in the upper right list. There is no setting of information on the port of the NAS.

Table 11.3.2 Details and Operation of Port List Window

Item	Description
Upper list	Displays port(s) of the NAS.
Lower list	Displays nothing.
Other	The port parameter and the security switch cannot be changed.

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(11-3-3) Group List window

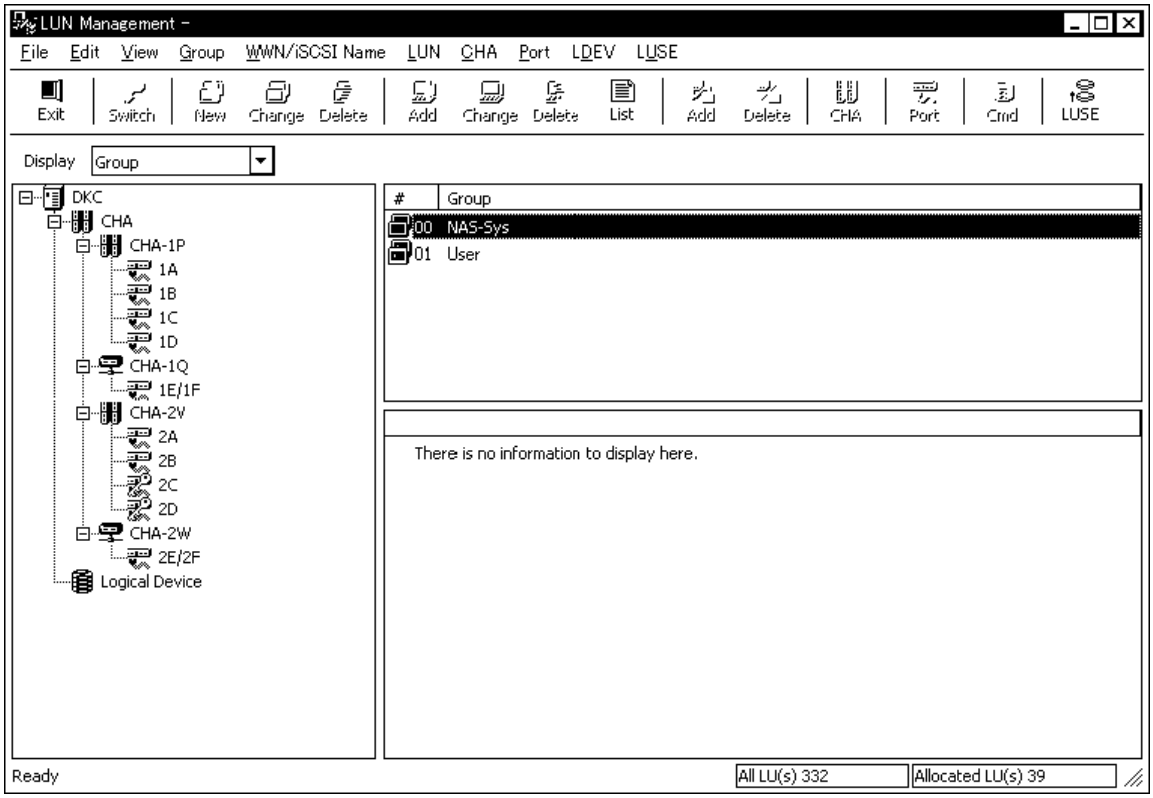

Figure 11.3.3 Group List Window

When the port of "NAS" in the tree view is selected (CL) and the Display is set as "Group," "NAS-Sys" of the Group#00 and "User" of the Group#01 are displayed in the upper right list. This group information cannot be changed. (In an example shown in Figure 11.3.3, select the NAS port, 1E/1F from the tree diagram.)

Table 11.3.3 Details and Operation of Group List Window

Item	Description
Upper list	Displays "NAS-Sys" of the Group#00 and "User" of the Group#01.
Lower list	Displays nothing.
Group setting	No group can be added, changed, or deleted.
WWN setting	No WWN can be added, changed, or deleted.

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(11-3-4) LDEV List window

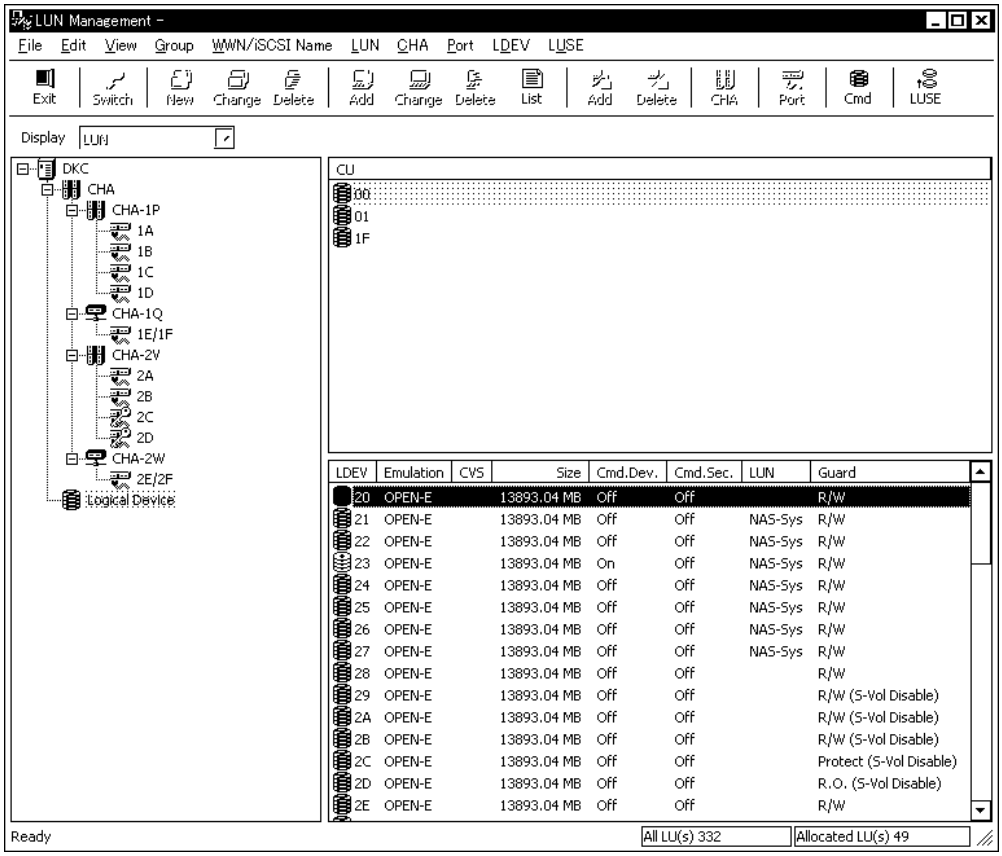

Figure 11.3.4 LDEV List Window

When “Logical Device” in the tree view is selected (CL), the CU numbers of installed LDEVs supported by this function are displayed. At this time, “NAS-Sys” is displayed in the LUN column for the LDEV assigned to the NAS-Sys. For the LDEV assigned to the NAS-Sys, no command device can be set.
(However, the command device can be set for the LUN#05 of the NAS-Sys only.)

Table 11.3.4 Details and Operation of LDEV List Window

Item	Description
Upper list	Displays numbers of the CUs installed.
Lower list	Displays detailed information of CUs selected.
“LDEV-Command Device”	Selectable only when an LDEV has been selected. However, when an LDEV of the NAS-Sys is selected and a command device is set, a message [SEC3457E] is displayed and this item becomes selectable. (A command device can be set for the LUN#05 of the NAS-Sys only.)

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(11-3-5) System LUN List window

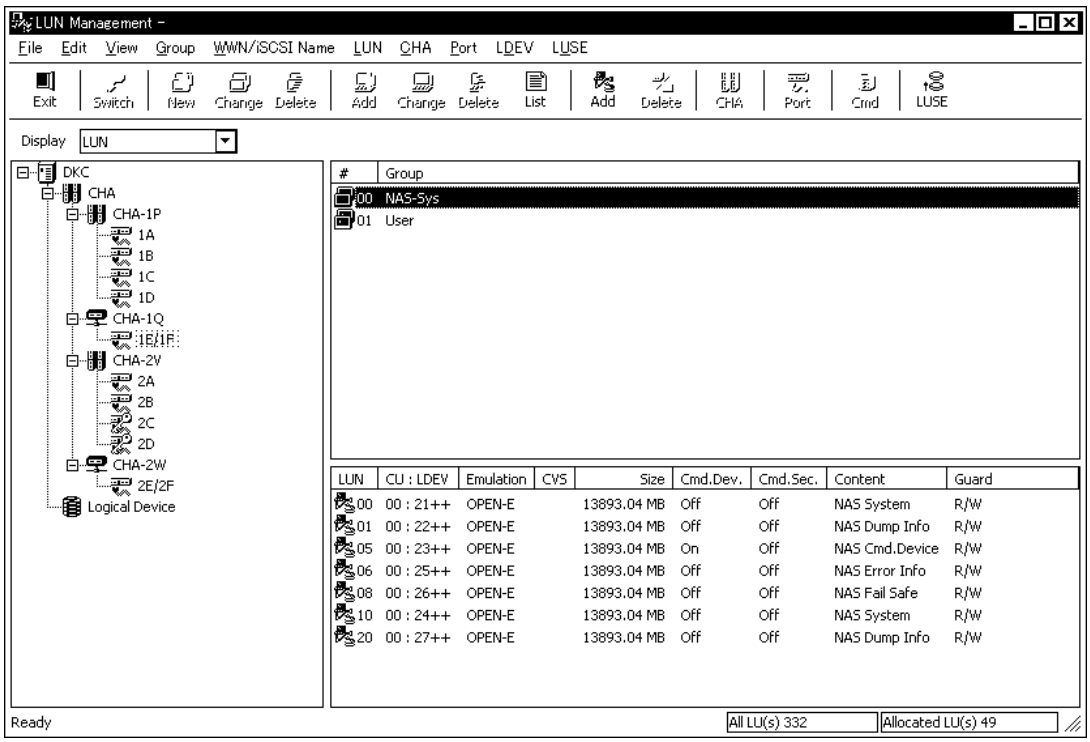

Figure 11.3.5 System LUN List Window

When the port of "NAS" in the tree view is selected (CL) and the Display is set as "LUN", "NAS-Sys" of the Group#00 and "User" of the Group#01 are displayed in the upper right list. Select "NAS-Sys" of the Group#00.

Table 11.3.5 System LUN List Window

Item	Description
Upper list	Displays "NAS-Sys" of the Group#00 and "User" of the Group#01.
Lower list	Displays "System LUN" of the Group#00 is selected.

Table 11.3.6 Meaning of Content

Item	Description
NAS System	LU for OS
NAS Dump Info	Dump LU
NAS Cmd.Device	NAS command device
NAS Error Info	Failure information storage LU
NAS Fail Safe	Fail-safe + Operation management
NAS Backup	Backup data

Note: Among the System LUNs for the other CHNs, those that show the own PCB are not defined. (In the example shown in Figure 11.3.5, the LUN#0C and LUN#1C are not defined for the NAS-Sys group of the NAS (1E/1F) port.)

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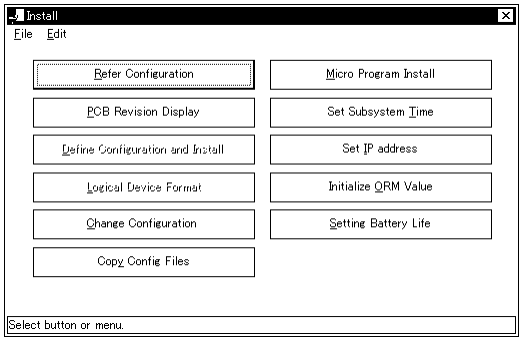
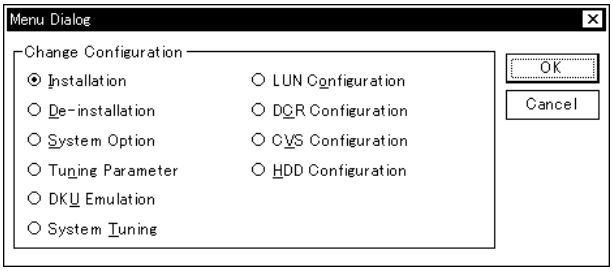
5.3.4 Emulation Type Change

1. <Mode Change>
   Change the mode to Modify Mode.
   Select (CL) [Install].

2. <Start the 'Menu Dialog' screen>
   Select (CL) [Change Configuration].



3. <Start Device Structure Setup screen>
   Select (CL) [DKU Emulation] in the 'Menu Dialog' dialog box and select (CL) [OK].



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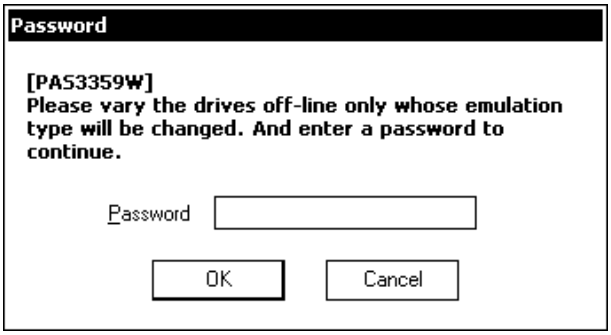
4. <Input password>

NOTICE
This is a special (exceptional) operation that can cause a serious failure such as a system down or a data loss if a wrong drive for which the emulation type is to be changed is selected, and requires an input of a password. Ask the technical support center about the appropriateness of the operation, and input the password after getting an approval of executing the operation.

Enter the password and select (CL) [OK].



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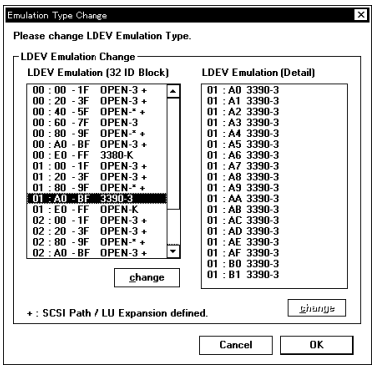
5. Emulation Change Procedure

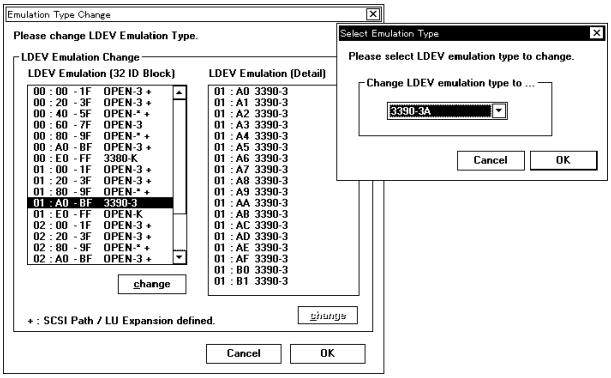
- Emulation Type Change for Single Block ----------Go to step 5.1.
- Emulation Type Change for Single LDEV ----------Go to step 5.2.
- Emulation Type Change for Multiple Blocks ----------Go to step 5.3.
- Individual Emulation Type Change for Multiple LDEVs --------Go to step 5.4.

5.1 Emulation Type Change for Single Block

(1) Select (CL) a block including an LDEV of which you want to change the emulation type in the LDEV Emulation (32 ID Block) list box.



(2) Select (CL) [Change] beneath the LDEV Emulation (32 ID Block) list box to open the dialog box for (choosing) the emulation type to be changed, and select (CL) the changed emulation type.

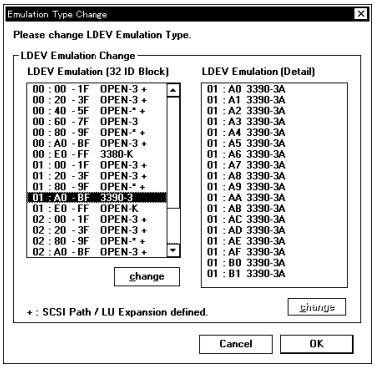


In the following case, the[Change] button is not available. (It's concerned with a "+" indicated LDEV.)

a) A block including volumes with SCSI path is selected.

b) A block including LU Expanded volumes is selected.

(3) Select (CL) [OK] to set the changed emulation type. Then, the LDEV (selected in step (1)) having the emulation type to be changed varies to the one specified in step (2). When selecting the same LDEV block after setting the change, you can check details of the changes in the LDEV Emulation (Detail) list box. Go to step 6.



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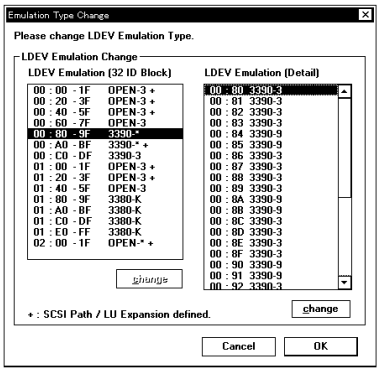
5.2 Emulation Type Change for Single LDEV

(1) Select (CL) a block including an LDEV of which you want to change the emulation type in the LDEV Emulation (32 ID Block) list box.



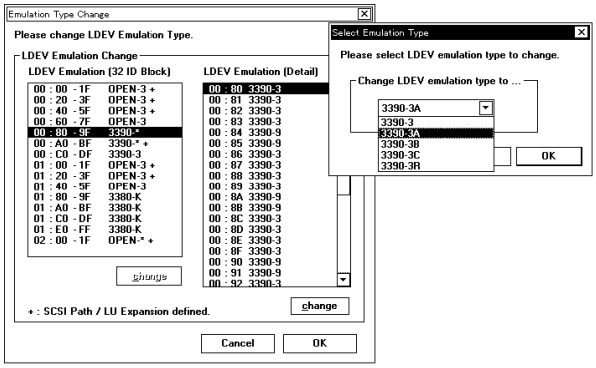
(2) In the LDEV Emulation (Detail) list box, select (CL) an LDEV whose emulation type to be changed.

(3) Select (CL) [Change] beneath the LDEV Emulation (Detail) list box to open the dialog box for (choosing) the emulation type to be changed, and select (CL) the changed emulation type.

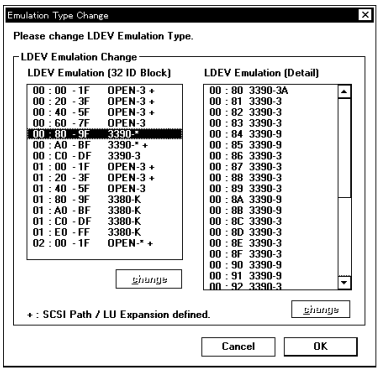
In the following case, the [Change] button is not available. (It's concerned with a "+" indicated LDEV.)

a) A volume with SCSI path is selected.

b) An LU expanded volume is selected.



(4) Select (CL) [OK] to set the changed emulation type.
Then, the LDEV (selected in step (2)) varies to the one specified in step (3). Go to step 6.



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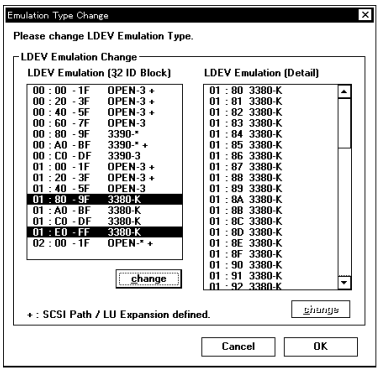
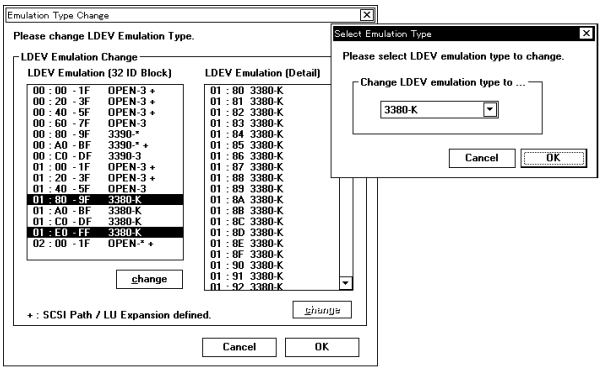
5.3 Emulation Type Change for Multiple Blocks

(1) Select (CL) blocks including an LDEV of which you want to change the emulation type in the LDEV Emulation (32 ID Block) list box.



---

(2) Select (CL) [Change] beneath the LDEV Emulation (32 ID Block) list box to open the dialog box for (choosing) the emulation type to be changed, and select (CL) the changed emulation type.



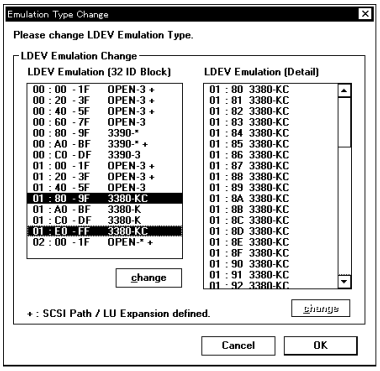
In the following case, the [Change] button is not available. (It's concerned with a "+" indicated LDEV.)

a) Blocks including volumes with SCSI path are selected.

b) Blocks including LU expanded volumes are selected.

---

(3) Select (CL) [OK] to set the changed emulation type. Then, the LDEV (selected in step (1)) having the emulation type to be changed varies to the one specified in step (2). When selecting the same LDEV block after setting the change, you can check details of the changes in the emulation LDEV Emulation (Detail) list box. Go to step 6.



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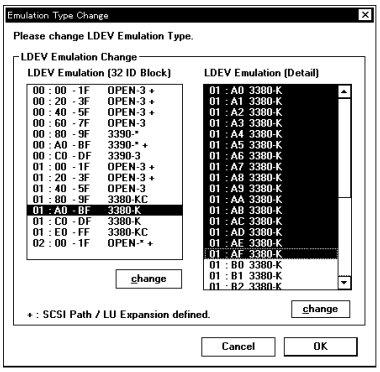
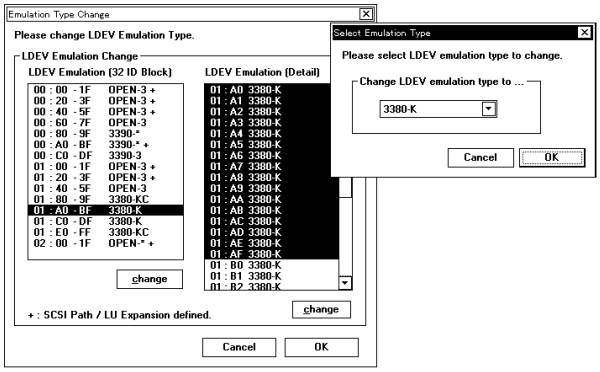
5.4 Individual Emulation Type Change for Multiple LDEVs

(1) Select (CL) a block including LDEVs of which you want to change the emulation type in the LDEV Emulation (32 ID Block) list box.



(2) In the LDEV Emulation (Detail) list box, select (CL) LDEVs whose emulation types are to be changed.

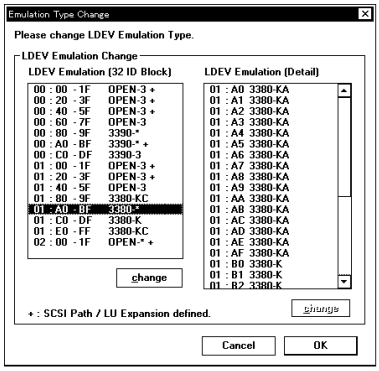
(3) Select (CL) [Change] beneath the LDEV Emulation (Detail) list box to open the dialog box for (choosing) the emulation type to be changed, and select (CL) the changed emulation type.



In the following case, the [Change] button is not available. (It's concerned with a "+" indicated LDEV.)

a) Volumes with SCSI path are selected.
b) LU expanded volumes are selected.

(4) Select (CL) [OK] to set the changed emulation type. Then, the LDEV (selected in step (2)) varies to the one specified in step (3). Go to step 6.



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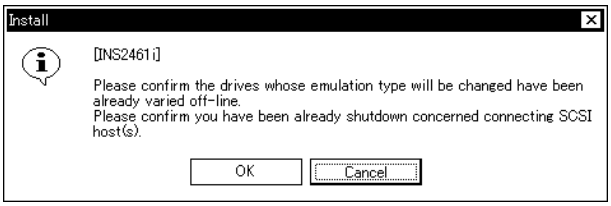
6.

Select (CL) [OK] to fix the emulation type change.
Select (CL) [Cancel] to cancel the operation.

7.

Before changing the emulation type, make sure that the drive has already been set to Vary Off-line and that the SCSI host concerned has been shut down, and then select (CL) [OK].



When [Cancel] is selected (CL), the processing is aborted.

8.

"Changing DKU Emulation" is displayed.

9. <Drive Vary On-line>

When the emulation type change processing terminates normally, the message "Changing emulation type is normal end. Please vary the drives on-line." is displayed.
Vary the drive on-line and select (CL) [OK].

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10.

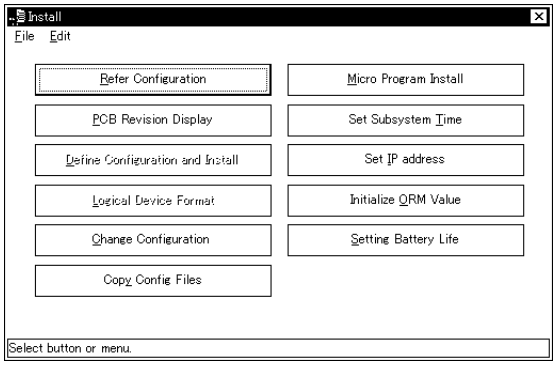
"Reading subsystem configuration data..." is displayed.
"Please insert the Config FD in the FDD" is displayed.
Insert the Config FD into FDD, and select (CL) [OK].

11.

When this procedure is completed, the message "Please remove the Config FD" is displayed.
Remove the FD, select (CL) [OK].

12.

After the procedure is completed, return to "Install".
Select (CL) [File]-[Exit].



13. <Mode Change>
Change the Mode from [Modify Mode] to [View Mode].

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5.4 System Tuning SVP Procedure

5.4.1 System Tuning

NOTICE
Powering off/on is required owing to the performance of this operation.

NOTICE
- The Case where IP Address is changed from System Tuning, when SVP High Reliability kit is installed.
  When SVP High Reliability kit is installed, Both Master SVP and Standby SVP need to be set IP Address.
  Firstly power on Standby SVP, and set IP Address of Standby SVP. (Refer to [INST05-60])
  After completing it, please set the IP Address of Master SVP.
  Although “RC=7ff200” may occur, there is no problem. Please complete SIM before operation.

Overview
This function modifies the part of established subsystem configuration data.
The data to be modified is control data closely related to a host device, so the data can not be modified on on-line.
After modification of the data, power DKC off and on.
The data to be modified is listed below.

‘DKC Configuration’ ---------- DKC Serial Number
‘IP Address Configuration’ ---------- IP address
‘Power Supply’ ---------- Power Supply Type
‘DKC Emulation Configuration’ ---------- DKC Emulation Type
‘CU Number’ ---------- CU number of each channel port
‘Set SSID Boundary’ ---------- Sub System ID Boundary
‘Subsystem ID Configuration’ ---------- Sub System ID

1. <Start [Install]>
   Change the Mode from [View Mode] to [Modify Mode].
   Select [Install] from ‘SVP’ (CL).

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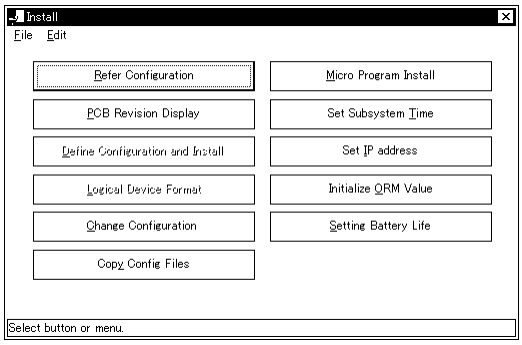
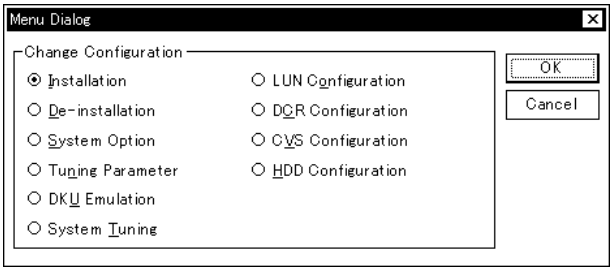
2.

Select [Change Configuration] (CL) from 'Install'.



3. <Specify the beginning of installation>
Select [System Tuning] from 'Menu Dialog' (CL), and select [OK] (CL).

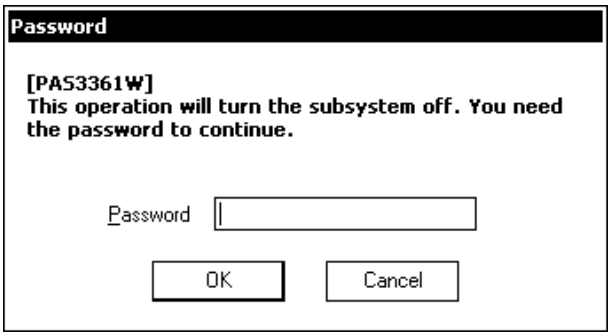


4.

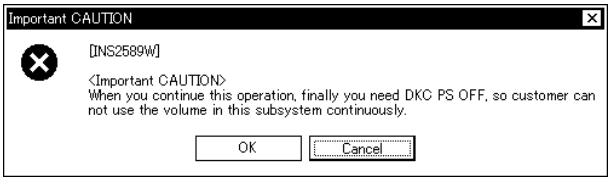
NOTICE
Powering off/on is required owing to the performance of this operation.
Ask the technical support center about the appropriateness of the operation, and input a password after getting an approval of executing the operation.

(1) Enter the password and select [OK] (CL).
Password is needed for this operation.
Please call Technical Support Center to obtain a password and authorization.

If [Cancel] is selected (CL), terminate the installation procedure.
'DKC Configuration' is automatically displayed next.



(2) Select (CL) [OK] in response to the confirmation message "<Important CAUTION>
When you continue this operation, finally you need DKC PS OFF, so customer can not use the volume in this subsystem continuously.".



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5. <Define configuration information>

Define the device configuration information from 'DKC Configuration' according to the device configuration worksheet.
Set Power Supply Type:

[Power Supply…] is selected (CL). Go to step 7.

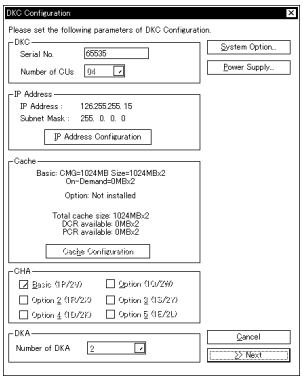
Set IP address:

[IP Address Configuration] is selected (CL). Go to step 8.

Other setting:

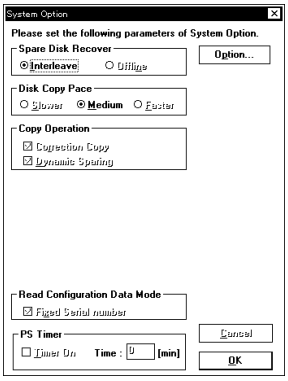
[>>Next] is selected (CL). Go to step 9.

This procedure finishes when select [Cancel].



6. <System option setup>

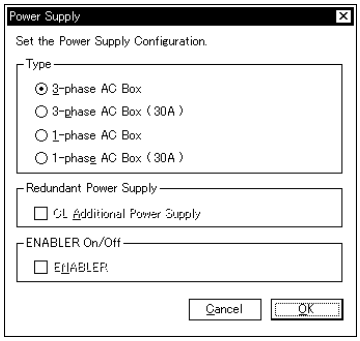
Define the device configuration information from 'System Option' according to the device configuration worksheet.
After setting up all items, select [OK] (CL).
The next message screen is displayed.
When you select [Cancel] (CL), 'System Option' is closed and 'DKC Configuration' appears again.
Return to step 5.



7. <Set Power Supply>

Set the power supply information in the 'Power Supply' dialog box, and select (CL) [OK].

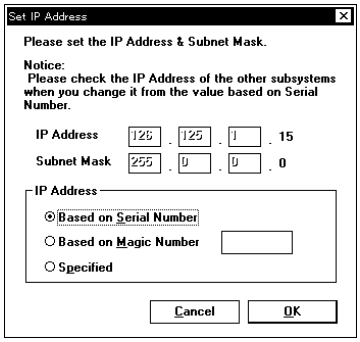
Return to step 5.



8. <Set IP Address>

Set the IP Address and Subnet Mask in the 'Set IP Address' dialog box, and select (CL) [OK].

Return to step 5.



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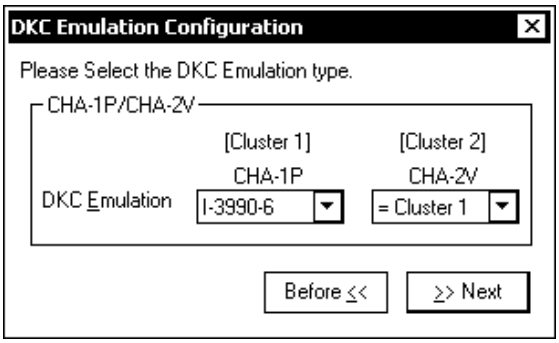
9. <Setting DKC Emulation type>

Set the subsystem configuration information in the 'DKC Emulation Configuration' window according to the subsystem configuration information work sheet.
After the setting is completed, select (CL) [>>Next]. Go to step 9-1.
When [Before<<] is selected (CL), the routine returns to step 5.

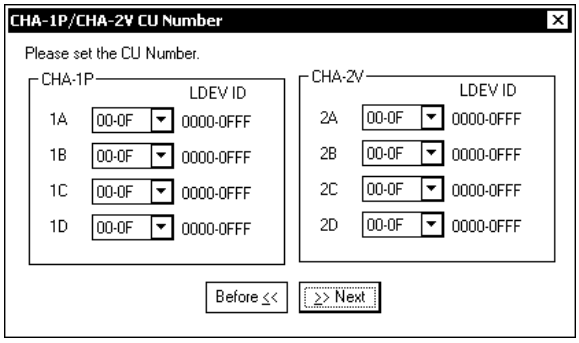


Note: This windows is displayed when Serial (8S) Channel or MFibre (8MS, 8ML) Channel is installed.

9-1. <Setting CU number>

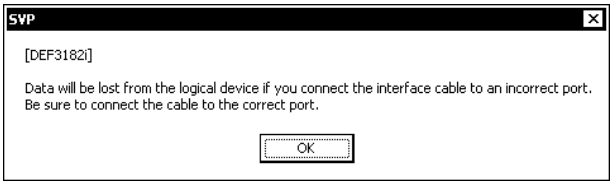
CU number is displayed.
After the setting is completed, select (CL) [>>Next]. Go to step 9-2.
When [Before<<] is selected (CL), the routine returns to step 9.

Note: This windows is displayed when Serial (8S) Channel is installed.



9-2. <SVP message>

Select (CL) [OK] in response to the confirmation message "Data will be lost from the logical device if you connect the interface cable to an incorrect port. Be sure to connect the cable to the correct port.".
Returns to step 9.



Note: This windows is displayed when Serial (8S) Channel is installed.

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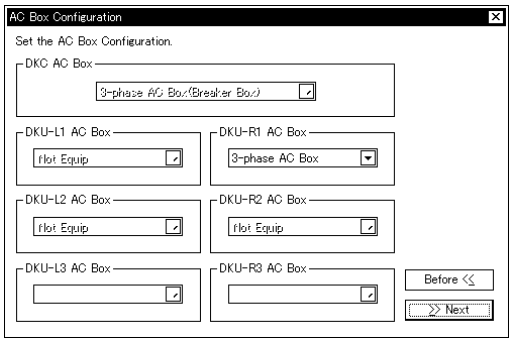
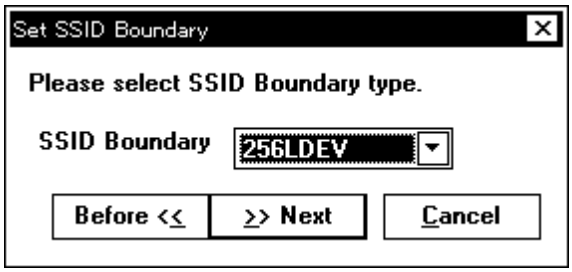
9-2-1. <Setting the DKU AC Box configuration>

Set the AC Box configuration, select (CL) the [>>Next]. Go to step 10.



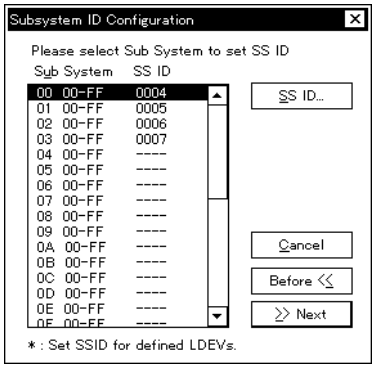
10. <Define Subsystem ID Boundary>

Set the Subsystem ID Boundary in the "Set SSID Boundary" dialog box.
Select (CL) [>>Next].



10-1. <Define Subsystem ID>

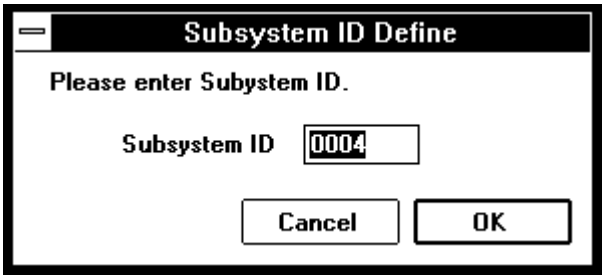
To define Subsystem ID, select (CL) [SSID]. Go to step 11.
After setting, select (CL) [>>Next]. Go to step 12.
This procedure is terminated by selecting (CL) [Cancel].



11.

Define Subsystem ID and select (CL) [OK].
Return to step 10.

"Checking subsystem configuration..." is displayed.



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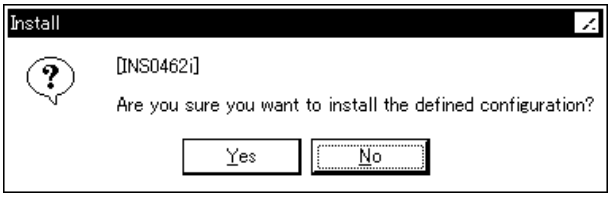
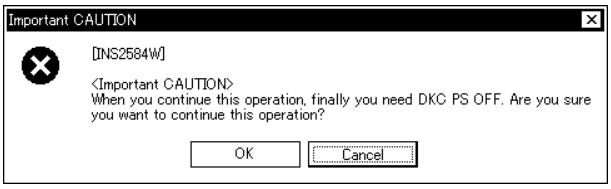
12. <Include configuration information>

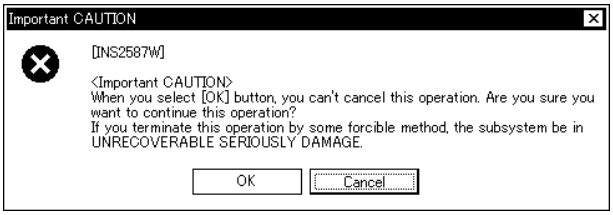
(1) Select (CL) [Yes] in response to the confirmation message “Are you sure you want to install the defined configuration?”.
“Wait...” is displayed, then “Turn off the subsystem” is displayed.
Selecting (CL) [No] suppresses the configuration inclusion processing and terminates the installation procedure.



(2) Select (CL) [OK] in response to the confirmation message
“<Important CAUTION>
When you continue this operation, finally you need DKC PS OFF. Are you sure you want to continue this operation?”.



(3) Select (CL) [OK] in response to the confirmation message
“<Important CAUTION>
When you select [OK] button, you can’t cancel this operation. Are you sure you want to continue this operation?
If you terminate this operation by some forcible method, the subsystem be in UNRECOVERABLE SERIOUSLY DAMAGE.”.



(4) Select (CL) [OK] in response to the confirmation message
“<Important CAUTION>
You must not RE-BOOT SVP(PC).”.

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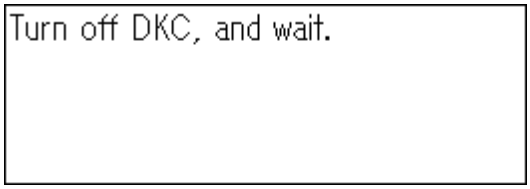
13.

Make sure that “Turn off DKC, and wait.” is displayed and perform the power-off procedure from the DKC maintenance panel.
After a while, “Wait...” will be displayed.



14.

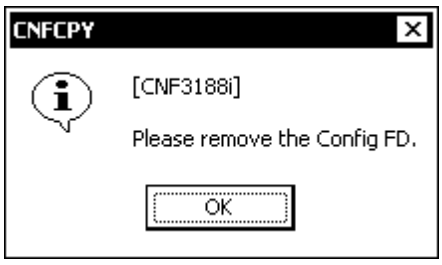
This step allows the contents of the SVP HD to be loaded into SM and FM.
When this procedure is completed, the message “Please insert config FD in FDD.” is displayed.

15.

Insert the configuration FD into FDD, and select [OK].

16.

When this procedure is completed, the message “Please remove the Config FD.” is displayed.
Remove the FD, and then select [OK].



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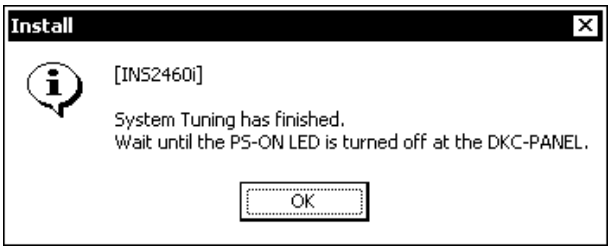
17.

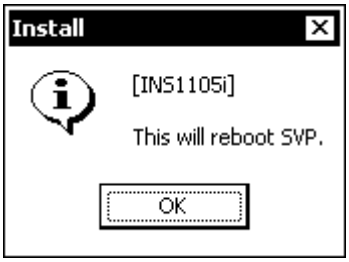
After making sure that the DKC power is turned off, select [OK] (CL) in response to "System Tuning has finished.".

Note : The SVP power will not turn off even when DKC is powered off.



18.

"This will reboot SVP." is displayed.
Select [OK] (CL).



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7 TPF installation procedures

7.1 Preparations

(a) Get additional SM parts (SH184-B (Only type of 128MB)) by the number you need according to INST01-70.
(b) Get the “Configuration” floppy disk which supports the MPLF/RC (or TPF) function from T.S.C.

7.2 Operations

(a) Exchanging Micro-programs of the latest version.
- Exchange all Micro-programs which are different from currently installed version. (Refer to MICRO-FC SECTION.)

(b) Executing Config Version Up.
- Set the “Configuration” floppy disk.
- Execute Config Version Up. (Refer to MICRO-FC08-10 (Config Exchange Procedure ((3-1) ‘Config Version UP’)).)

(c) Switching “TPF-mode” on.
- Execute “Define Configuration and install”. (Refer to INST05-80 (Configuration information Definition).)

(d) Attaching additional SM parts.
- Turn off the DKC power switch.
- With reference to INST01-70, install the required number of additional SM parts.
- Remove Jumper connectors (BTJP) from BAT CTR. And wait for 5 minutes. (volatile CACHE, SM)
- Reconnect Jumper connectors.

(e) Starting TPF Micro-program.
- Turn on the DKC power switch.

(f) Confirming the TPF MODE.
- Select (CL) [DUMP] in the “SVP” window.
- Confirm that “TPF” is shown in the “DUMP” dialog box.

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8 Storage Capacity and Cache Capacity Upgrade Table

8.1 Standard Configuration for RAID5 (3D+1P)

Appendix A Standard Configuration for RAID5 (3D+1P)

(1) 36GB 15K rpm HDD, RAID5(3D+1P) INST08-20

(2) 73GB 10K rpm HDD, RAID5(3D+1P) INST08-60

(3) 146GB 10K rpm HDD, RAID5(3D+1P) INST08-100

(4) 72GB 15K rpm HDD, RAID5(3D+1P) INST08-140

8.2 Standard Configuration for RAID5 (7D+1P)

Appendix B Standard Configuration for RAID5 (7D+1P)

(1) 36GB 15K rpm HDD, RAID5(7D+1P) INST08-260

(2) 73GB 10K rpm HDD, RAID5(7D+1P) INST08-280

(3) 146GB 10K rpm HDD, RAID5(7D+1P) INST08-300

(4) 72GB 15K rpm HDD, RAID5(7D+1P) INST08-320

8.3 Standard Configuration for RAID1 (2D+2D)

Appendix C Standard Configuration for RAID1 (2D+2D)

(1) 36GB 15K rpm HDD, RAID1(2D+2D) INST08-380

(2) 73GB 10K rpm HDD, RAID1(2D+2D) INST08-420

(3) 146GB 10K rpm HDD, RAID1(2D+2D) INST08-460

(4) 72GB 15K rpm HDD, RAID1(2D+2D) INST08-495A

8.4 Standard Configuration for OPEN-V

Appendix D Standard Configuration for OPEN-V

(1) 36GB 15K rpm HDD, OPEN-V INST08-500

(2) 73GB 10K rpm HDD, OPEN-V INST08-540

(3) 146GB 10K rpm HDD, OPEN-V INST08-580

(4) 72GB 15K rpm HDD, OPEN-V INST08-630

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8.1 Standard Configuration for RAID5 (3D+1P)

(1) 36GB 15K rpm HDD, RAID5 (3D+1P)

RAID group	Cache (GB)	Storage Capacity (GB)										Number of necessary options						
		Open System						Mainframe System				DKC options				DKU options		
		OPEN-3 (2.461GB)		OPEN-9 (7.384GB)		OPEN-E (14.568GB)		3390-3/3R (2.838GB)		3390-9 (8.510GB)		F460I -2048	F460I -S512	F460I -200	F460I -L1C	455I -18	F455I -36K4	F455I -EXC
		VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap							
1	2	43	106	14	103	7	102	35	99	11	94	1	*1			1	1	
2	4	86	212	28	207	14	204	70	199	22	187	2				1	2	
3	4	129	317	42	310	21	306	105	298	33	281	2				1	3	
4	4	172	423	56	414	28	408	140	397	44	374	2				1	4	
5	4	215	529	70	517	35	510	175	497	55	468	2				1	5	
6	4	258	635	84	620	42	612	210	596	66	562	2				1	6	
7	6	301	741	98	724	49	714	245	695	77	655	3				1	7	
8	6	344	847	112	827	56	816	280	795	88	749	3				1	8	
9	6	387	952	126	930	63	918	315	894	99	842	3				1	9	
10	6	430	1,058	140	1,034	70	1,020	350	993	110	936	3				1	10	
11	6	473	1,164	154	1,137	77	1,122	385	1,093	121	1,030	3				1	11	
12	6	516	1,270	168	1,241	84	1,224	420	1,192	132	1,123	3				1	12	
13	6	559	1,376	182	1,344	91	1,326	455	1,291	143	1,217	3				1	13	
14	8	602	1,482	196	1,447	98	1,428	490	1,391	154	1,311	4				1	14	
15	8	645	1,587	210	1,551	105	1,530	525	1,490	165	1,404	4				1	15	
16	8	688	1,693	224	1,654	112	1,632	560	1,589	176	1,498	4				1	16	
17	8	731	1,799	238	1,757	119	1,734	595	1,689	187	1,591	4				1	17	
18	8	774	1,905	252	1,861	126	1,836	630	1,788	198	1,685	4				1	18	
19	8	817	2,011	266	1,964	133	1,938	665	1,887	209	1,779	4				1	19	
20	8	860	2,116	280	2,068	140	2,040	700	1,987	220	1,872	4				1	20	
21	8	903	2,222	294	2,171	147	2,141	735	2,086	231	1,966	4				1	21	
22	8	946	2,328	308	2,274	154	2,243	770	2,185	242	2,059	4				1	22	
23	8	989	2,434	322	2,378	161	2,345	805	2,285	253	2,153	4				1	23	
24	8	1,032	2,540	336	2,481	168	2,447	840	2,384	264	2,247	4				1	24	
25	8	1,075	2,646	350	2,584	175	2,549	875	2,483	275	2,340	4				1	25	
26	8	1,118	2,751	364	2,688	182	2,651	910	2,583	286	2,434	4				1	26	
27	10	1,161	2,857	378	2,791	189	2,753	945	2,682	297	2,527	5				1	27	
28	10	1,204	2,963	392	2,895	196	2,855	980	2,781	308	2,621	5				1	28	
29	10	1,247	3,069	406	2,998	203	2,957	1,015	2,881	319	2,715	5				1	29	
30	10	1,290	3,175	420	3,101	210	3,059	1,050	2,980	330	2,808	5				1	30	
31	10	1,333	3,281	434	3,205	217	3,161	1,085	3,079	341	2,902	5				1	31	
32	10	1,376	3,386	448	3,308	224	3,263	1,120	3,179	352	2,996	5		1		1	32	
33	10	1,419	3,492	462	3,411	231	3,365	1,155	3,278	363	3,089	5		1		1	33	
34	10	1,462	3,598	476	3,515	238	3,467	1,190	3,377	374	3,183	5		1		1	34	
35	10	1,505	3,704	490	3,618	245	3,569	1,225	3,477	385	3,276	5		1		1	35	
36	10	1,548	3,810	504	3,722	252	3,671	1,260	3,576	396	3,370	5		1		1	36	
37	10	1,591	3,915	518	3,825	259	3,773	1,295	3,675	407	3,464	5		1		1	37	
38	10	1,634	4,021	532	3,928	266	3,875	1,330	3,775	418	3,557	5		1		1	38	
39	10	1,677	4,127	546	4,032	273	3,977	1,365	3,874	429	3,651	5		1		1	39	
40	10	1,720	4,233	560	4,135	280	4,079	1,400	3,973	440	3,744	5		1		1	40	
41	10	1,763	4,339	574	4,238	287	4,181	1,435	4,073	451	3,838	5		1		1	41	
42	10	1,806	4,445	588	4,342	294	4,283	1,470	4,172	462	3,932	5		1		1	42	
43	10	1,849	4,550	602	4,445	301	4,385	1,505	4,271	473	4,025	5		1		1	43	
44	10	1,892	4,656	616	4,549	308	4,487	1,540	4,371	484	4,119	5		1		1	44	
45	10	1,935	4,762	630	4,652	315	4,589	1,575	4,470	495	4,212	5		1		1	45	
46	10	1,978	4,868	644	4,755	322	4,691	1,610	4,569	506	4,306	5		1		1	46	
47	10	2,021	4,974	658	4,859	329	4,793	1,645	4,669	517	4,400	5		1		1	47	
48	10	2,064	5,080	672	4,962	336	4,895	1,680	4,768	528	4,493	5		1		1	48	
49	10	2,107	5,185	686	5,065	343	4,997	1,715	4,867	539	4,587	5		1		1	49	
50	10	2,150	5,291	700	5,169	350	5,099	1,750	4,967	550	4,681	5		1		1	50	
51	10	2,193	5,397	714	5,272	357	5,201	1,785	5,066	561	4,774	5		1		1	51	
52	10	2,236	5,503	728	5,376	364	5,303	1,820	5,165	572	4,868	5		1		1	52	
53	10	2,279	5,609	742	5,479	371	5,405	1,855	5,264	583	4,961	5		1		1	53	
54	12	2,322	5,714	756	5,582	378	5,507	1,890	5,364	594	5,055	6		1		1	54	
55	12	2,365	5,820	770	5,686	385	5,609	1,925	5,463	605	5,149	6		1		1	55	
56	12	2,408	5,926	784	5,789	392	5,711	1,960	5,562	616	5,242	6		1		1	56	
57	12	2,451	6,032	798	5,892	399	5,813	1,995	5,662	627	5,336	6		1		1	57	
58	12	2,494	6,138	812	5,996	406	5,915	2,030	5,761	638	5,429	6		1		1	58	
59	12	2,537	6,244	826	6,099	413	6,017	2,065	5,860	649	5,523	6		1		1	59	
60	12	2,580	6,349	840	6,203	420	6,119	2,100	5,960	660	5,617	6		1		1	60	
61	12	2,623	6,455	854	6,306	427	6,221	2,135	6,059	671	5,710	6		1		1	61	
62	12	2,666	6,561	868	6,409	434	6,323	2,170	6,158	682	5,804	6		1		1	62	
63	12	2,709	6,667	882	6,513	441	6,424	2,205	6,258	693	5,897	6		1		1	63	

(To be continued)

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(Continued from preceding sheet)

RAID group	Cache (GB)	Storage Capacity (GB)										Number of necessary options						
		Open System						Mainframe System				DKC options				DKU options		
		OPEN-3 (2.461GB)		OPEN-9 (7.384GB)		OPEN-E (14.568GB)		3390-3/3R (2.838GB)		3390-9 (8.510GB)		F460I -2048	F460I -S512	F460I -200	F460I -L1C	455I -18	F455I -36K4	F455I -EXC
		VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap							
64	12	2,752	6,773	896	6,616	448	6,526	2,240	6,357	704	5,991	6		1		2	64	1
65	12	2,795	6,878	910	6,719	455	6,628	2,275	6,456	715	6,085	6		1		2	65	1
66	12	2,838	6,984	924	6,823	462	6,730	2,310	6,556	726	6,178	6		1		2	66	1
67	12	2,881	7,090	938	6,926	469	6,832	2,345	6,655	737	6,272	6		1		2	67	1
68	12	2,924	7,196	952	7,030	476	6,934	2,380	6,754	748	6,365	6		1		2	68	1
69	12	2,967	7,302	966	7,133	483	7,036	2,415	6,854	759	6,459	6		1		2	69	1
70	12	3,010	7,408	980	7,236	490	7,138	2,450	6,953	770	6,553	6		1		2	70	1
71	12	3,053	7,513	994	7,340	497	7,240	2,485	7,052	781	6,646	6		1		2	71	1
72	12	3,096	7,619	1,008	7,443	504	7,342	2,520	7,152	792	6,740	6		1		2	72	1
73	12	3,139	7,725	1,022	7,546	511	7,444	2,555	7,251	803	6,834	6		1		2	73	1
74	12	3,182	7,831	1,036	7,650	518	7,546	2,590	7,350	814	6,927	6		1		2	74	1
75	12	3,225	7,937	1,050	7,753	525	7,648	2,625	7,450	825	7,021	6		1		2	75	1
76	12	3,268	8,043	1,064	7,857	532	7,750	2,660	7,549	836	7,114	6		1		2	76	1
77	12	3,311	8,148	1,078	7,960	539	7,852	2,695	7,648	847	7,208	6		1		2	77	1
78	12	3,354	8,254	1,092	8,063	546	7,954	2,730	7,748	858	7,302	6		1		2	78	1
79	12	3,397	8,360	1,106	8,167	553	8,056	2,765	7,847	869	7,395	6		1		2	79	1
80	14	3,440	8,466	1,120	8,270	560	8,158	2,800	7,946	880	7,489	7		1		2	80	1
81	14	3,483	8,572	1,134	8,373	567	8,260	2,835	8,046	891	7,582	7		1		2	81	1
82	14	3,526	8,677	1,148	8,477	574	8,362	2,870	8,145	902	7,676	7		1		2	82	1
83	14	3,569	8,783	1,162	8,580	581	8,464	2,905	8,244	913	7,770	7		1		2	83	1
84	14	3,612	8,889	1,176	8,684	588	8,566	2,940	8,344	924	7,863	7		1		2	84	1
85	14	3,655	8,995	1,190	8,787	595	8,668	2,975	8,443	935	7,957	7		1		2	85	1
86	14	3,698	9,101	1,204	8,890	602	8,770	3,010	8,542	946	8,050	7		1		2	86	1
87	14	3,741	9,207	1,218	8,994	609	8,872	3,045	8,642	957	8,144	7		1		2	87	1
88	14	3,784	9,312	1,232	9,097	616	8,974	3,080	8,741	968	8,238	7		1		2	88	1
89	14	3,827	9,418	1,246	9,200	623	9,076	3,115	8,840	979	8,331	7		1		2	89	1
90	14	3,870	9,524	1,260	9,304	630	9,178	3,150	8,940	990	8,425	7		1		2	90	1
91	14	3,913	9,630	1,274	9,407	637	9,280	3,185	9,039	1,001	8,519	7		1		2	91	1
92	14	3,956	9,736	1,288	9,511	644	9,382	3,220	9,138	1,012	8,612	7		1		2	92	1
93	14	3,999	9,842	1,302	9,614	651	9,484	3,255	9,238	1,023	8,706	7		1		2	93	1
94	14	4,042	9,947	1,316	9,717	658	9,586	3,290	9,337	1,034	8,799	7		1		2	94	1
95	14	4,085	10,053	1,330	9,821	665	9,688	3,325	9,436	1,045	8,893	7		1		2	95	1
96	14	4,128	10,159	1,344	9,924	672	9,790	3,360	9,536	1,056	8,987	7		1		2	96	1
97	14	4,171	10,265	1,358	10,027	679	9,892	3,395	9,635	1,067	9,080	7		1		2	97	1
98	14	4,214	10,371	1,372	10,131	686	9,994	3,430	9,734	1,078	9,174	7		1		2	98	1
99	14	4,257	10,476	1,386	10,234	693	10,096	3,465	9,834	1,089	9,267	7		1		2	99	1
100	14	4,300	10,582	1,400	10,338	700	10,198	3,500	9,933	1,100	9,361	7		1		2	100	1
101	14	4,343	10,688	1,414	10,441	707	10,300	3,535	10,032	1,111	9,455	7		1		2	101	1
102	14	4,386	10,794	1,428	10,544	714	10,402	3,570	10,132	1,122	9,548	7		1		2	102	1
103	14	4,429	10,900	1,442	10,648	721	10,504	3,605	10,231	1,133	9,642	7		1		2	103	1
104	14	4,472	11,006	1,456	10,751	728	10,606	3,640	10,330	1,144	9,735	7		1		2	104	1
105	14	4,515	11,111	1,470	10,854	735	10,707	3,675	10,430	1,155	9,829	7		1		2	105	1
106	14	4,558	11,217	1,484	10,958	742	10,809	3,710	10,529	1,166	9,923	7		1		2	106	1
107	16	4,601	11,323	1,498	11,061	749	10,911	3,745	10,628	1,177	10,016	8		1		2	107	1
108	16	4,644	11,429	1,512	11,165	756	11,013	3,780	10,728	1,188	10,110	8		1		2	108	1
109	16	4,687	11,535	1,526	11,268	763	11,115	3,815	10,827	1,199	10,203	8		1		2	109	1
110	16	4,730	11,641	1,540	11,371	770	11,217	3,850	10,926	1,210	10,297	8		1		2	110	1
111	16	4,773	11,746	1,554	11,475	777	11,319	3,885	11,026	1,221	10,391	8		1		2	111	1
112	16	4,816	11,852	1,568	11,578	784	11,421	3,920	11,125	1,232	10,484	8		1		2	112	1
113	16	4,859	11,958	1,582	11,681	791	11,523	3,955	11,224	1,243	10,578	8		1		2	113	1
114	16	4,902	12,064	1,596	11,785	798	11,625	3,990	11,324	1,254	10,672	8		1		2	114	1
115	16	4,945	12,170	1,610	11,888	805	11,727	4,025	11,423	1,265	10,765	8		1		2	115	1
116	16	4,988	12,275	1,624	11,992	812	11,829	4,060	11,522	1,276	10,859	8		1		2	116	1
117	16	5,031	12,381	1,638	12,095	819	11,931	4,095	11,622	1,287	10,952	8		1		2	117	1
118	16	5,074	12,487	1,652	12,198	826	12,033	4,130	11,721	1,298	11,046	8		1		2	118	1
119	16	5,117	12,593	1,666	12,302	833	12,135	4,165	11,820	1,309	11,140	8		1		2	119	1
120	16	5,160	12,699	1,680	12,405	840	12,237	4,200	11,920	1,320	11,233	8		1		2	120	1
121	16	5,203	12,805	1,694	12,508	847	12,339	4,235	12,019	1,331	11,327	8		1		2	121	1
122	16	5,246	12,910	1,708	12,612	854	12,441	4,270	12,118	1,342	11,420	8		1		2	122	1
123	16	5,289	13,016	1,722	12,715	861	12,543	4,305	12,218	1,353	11,514	8		1		2	123	1
124	16	5,332	13,122	1,736	12,819	868	12,645	4,340	12,317	1,364	11,608	8		1		2	124	1
125	16	5,375	13,228	1,750	12,922	875	12,747	4,375	12,416	1,375	11,701	8		1		2	125	1
126	16	5,418	13,334	1,764	13,025	882	12,849	4,410	12,516	1,386	11,795	8		1		2	126	1
127	16	5,461	13,440	1,778	13,129	889	12,951	4,445	12,615	1,397	11,888	8		1		2	127	1
128	16	5,504	13,545	1,792	13,232	896	13,053	4,480	12,714	1,408	11,982	8		2	1	3	128	1
129	16	5,547	13,651	1,806	13,336	903	13,155	4,515	12,814	1,419	12,076	8		2	1	3	129	1

(To be continued)

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(Continued from preceding sheet)

RAID group	Cache (GB)	Storage Capacity (GB)										Number of necessary options						
		Open System						Mainframe System				DKC options				DKU options		
		OPEN-3 (2.461GB)		OPEN-9 (7.384GB)		OPEN-E (14.568GB)		3390-3/3R (2.838GB)		3390-9 (8.510GB)		F460I -2048	F460I -S512	F460I -200	F460I -L1C	455I -18	F455I -36K4	F455I -EXC
		VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap							
130	16	5,590	13,757	1,820	13,439	910	13,257	4,550	12,913	1,430	12,169	8		2	1	3	130	1
131	16	5,633	13,863	1,834	13,542	917	13,359	4,585	13,012	1,441	12,263	8		2	1	3	131	1
132	16	5,676	13,969	1,848	13,646	924	13,461	4,620	13,112	1,452	12,357	8		2	1	3	132	1
133	18	5,719	14,074	1,862	13,749	931	13,563	4,655	13,211	1,463	12,450	9		2	1	3	133	1
134	18	5,762	14,180	1,876	13,852	938	13,665	4,690	13,310	1,474	12,544	9		2	1	3	134	1
135	18	5,805	14,286	1,890	13,956	945	13,767	4,725	13,410	1,485	12,637	9		2	1	3	135	1
136	18	5,848	14,392	1,904	14,059	952	13,869	4,760	13,509	1,496	12,731	9		2	1	3	136	1
137	18	5,891	14,498	1,918	14,163	959	13,971	4,795	13,608	1,507	12,825	9		2	1	3	137	1
138	18	5,934	14,604	1,932	14,266	966	14,073	4,830	13,708	1,518	12,918	9		2	1	3	138	1
139	18	5,977	14,709	1,946	14,369	973	14,175	4,865	13,807	1,529	13,012	9		2	1	3	139	1
140	18	6,020	14,815	1,960	14,473	980	14,277	4,900	13,906	1,540	13,105	9		2	1	3	140	1
141	18	6,063	14,921	1,974	14,576	987	14,379	4,935	14,006	1,551	13,199	9		2	1	3	141	1
142	18	6,106	15,027	1,988	14,679	994	14,481	4,970	14,105	1,562	13,293	9		2	1	3	142	1
143	18	6,149	15,133	2,002	14,783	1,001	14,583	5,005	14,204	1,573	13,386	9		2	1	3	143	1
144	18	6,192	15,239	2,016	14,886	1,008	14,685	5,040	14,304	1,584	13,480	9		2	1	3	144	1
145	18	6,235	15,344	2,030	14,990	1,015	14,787	5,075	14,403	1,595	13,573	9		2	1	3	145	1
146	18	6,278	15,450	2,044	15,093	1,022	14,888	5,110	14,502	1,606	13,667	9		2	1	3	146	1
147	18	6,321	15,556	2,058	15,196	1,029	14,990	5,145	14,602	1,617	13,761	9		2	1	3	147	1
148	18	6,364	15,662	2,072	15,300	1,036	15,092	5,180	14,701	1,628	13,854	9		2	1	3	148	1
149	18	6,407	15,768	2,086	15,403	1,043	15,194	5,215	14,800	1,639	13,948	9		2	1	3	149	1
150	18	6,450	15,873	2,100	15,506	1,050	15,296	5,250	14,900	1,650	14,042	9		2	1	3	150	1
151	18	6,493	15,979	2,114	15,610	1,057	15,398	5,285	14,999	1,661	14,135	9		2	1	3	151	1
152	18	6,536	16,085	2,128	15,713	1,064	15,500	5,320	15,098	1,672	14,229	9		2	1	3	152	1
153	18	6,579	16,191	2,142	15,817	1,071	15,602	5,355	15,197	1,683	14,322	9		2	1	3	153	1
154	18	6,622	16,297	2,156	15,920	1,078	15,704	5,390	15,297	1,694	14,416	9		2	1	3	154	1
155	18	6,665	16,403	2,170	16,023	1,085	15,806	5,425	15,396	1,705	14,510	9		2	1	3	155	1
156	18	6,708	16,508	2,184	16,127	1,092	15,908	5,460	15,495	1,716	14,603	9		2	1	3	156	1
157	18	6,751	16,614	2,198	16,230	1,099	16,010	5,495	15,595	1,727	14,697	9		2	1	3	157	1
158	18	6,794	16,720	2,212	16,333	1,106	16,112	5,530	15,694	1,738	14,790	9		2	1	3	158	1
159	18	6,837	16,826	2,226	16,437	1,113	16,214	5,565	15,793	1,749	14,884	9		3	1	3	159	1
160	20	6,880	16,932	2,240	16,540	1,120	16,316	5,600	15,893	1,760	14,978	10		3	1	3	160	1
161	20	6,923	17,038	2,254	16,644	1,127	16,418	5,635	15,992	1,771	15,071	10		3	1	3	161	1
162	20	6,966	17,143	2,268	16,747	1,134	16,520	5,670	16,091	1,782	15,165	10		3	1	3	162	1
163	20	7,009	17,249	2,282	16,850	1,141	16,622	5,705	16,191	1,793	15,258	10		3	1	3	163	1
164	20	7,052	17,355	2,296	16,954	1,148	16,724	5,740	16,290	1,804	15,352	10		3	1	3	164	1
165	20	7,095	17,461	2,310	17,057	1,155	16,826	5,775	16,389	1,815	15,446	10		3	1	3	165	1
166	20	7,138	17,567	2,324	17,160	1,162	16,928	5,810	16,489	1,826	15,539	10		3	1	3	166	1
167	20	7,181	17,672	2,338	17,264	1,169	17,030	5,845	16,588	1,837	15,633	10		3	1	3	167	1
168	20	7,224	17,778	2,352	17,367	1,176	17,132	5,880	16,687	1,848	15,726	10		3	1	3	168	1
169	20	7,267	17,884	2,366	17,471	1,183	17,234	5,915	16,787	1,859	15,820	10		3	1	3	169	1
170	20	7,310	17,990	2,380	17,574	1,190	17,336	5,950	16,886	1,870	15,914	10		3	1	3	170	1
171	20	7,353	18,096	2,394	17,677	1,197	17,438	5,985	16,985	1,881	16,007	10		3	1	3	171	1
172	20	7,396	18,202	2,408	17,781	1,204	17,540	6,020	17,085	1,892	16,101	10		3	1	3	172	1
173	20	7,439	18,307	2,422	17,884	1,211	17,642	6,055	17,184	1,903	16,195	10		3	1	3	173	1
174	20	7,482	18,413	2,436	17,987	1,218	17,744	6,090	17,283	1,914	16,288	10		3	1	3	174	1
175	20	7,525	18,519	2,450	18,091	1,225	17,846	6,125	17,383	1,925	16,382	10		3	1	3	175	1
176	20	7,568	18,625	2,464	18,194	1,232	17,948	6,160	17,482	1,936	16,475	10		3	1	3	176	1
177	20	7,611	18,731	2,478	18,298	1,239	18,050	6,195	17,581	1,947	16,569	10		3	1	3	177	1
178	20	7,654	18,836	2,492	18,401	1,246	18,152	6,230	17,681	1,958	16,663	10		3	1	3	178	1
179	20	7,697	18,942	2,506	18,504	1,253	18,254	6,265	17,780	1,969	16,756	10		3	1	3	179	1
180	20	7,740	19,048	2,520	18,608	1,260	18,356	6,300	17,879	1,980	16,850	10		3	1	3	180	1
181	20	7,783	19,154	2,534	18,711	1,267	18,458	6,335	17,979	1,991	16,943	10		3	1	3	181	1
182	20	7,826	19,260	2,548	18,814	1,274	18,560	6,370	18,078	2,002	17,037	10		3	1	3	182	1
183	20	7,869	19,366	2,562	18,918	1,281	18,662	6,405	18,177	2,013	17,131	10		3	1	3	183	1
184	20	7,912	19,471	2,576	19,021	1,288	18,764	6,440	18,277	2,024	17,224	10		3	1	3	184	1
185	20	7,955	19,577	2,590	19,125	1,295	18,866	6,475	18,376	2,035	17,318	10		3	1	3	185	1
186	20	7,998	19,683	2,604	19,228	1,302	18,968	6,510	18,475	2,046	17,411	10		3	1	3	186	1
187	20	8,041	19,789	2,618	19,331	1,309	19,070	6,545	18,575	2,057	17,505	10		3	1	3	187	1
188	20	8,084	19,895	2,632	19,435	1,316	19,171	6,580	18,674	2,068	17,599	10		3	1	3	188	1
189	20	8,127	20,001	2,646	19,538	1,323	19,273	6,615	18,773	2,079	17,692	10		3	1	3	189	1
190	20	8,170	20,106	2,660	19,641	1,330	19,375	6,650	18,873	2,090	17,786	10		3	1	3	190	1
191	20			2,674	19,745	1,337	19,477	6,685	18,972	2,101	17,880	10		3	1	4	191	2
192	20			2,688	19,848	1,344	19,579	6,720	19,071	2,112	17,973	10		3	1	4	192	2
193	20			2,702	19,952	1,351	19,681	6,755	19,171	2,123	18,067	10		3	1	4	193	2
194	20			2,716	20,055	1,358	19,783	6,790	19,270	2,134	18,160	10		3	1	4	194	2

(To be continued)

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(Continued from preceding sheet)

RAID group	Cache (GB)	Storage Capacity (GB)										Number of necessary options						
		Open System						Mainframe System				DKC options				DKU options		
		OPEN-3 (2.461GB)		OPEN-9 (7.384GB)		OPEN-E (14.568GB)		3390-3/3R (2.838GB)		3390-9 (8.510GB)		F460I -2048	F460I -S512	F460I -200	F460I -L1C	455I -18	F455I -36K4	F455I -EXC
		VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap							
195	20			2,730	20,158	1,365	19,885	6,825	19,369	2,145	18,254	10		3	1	4	195	2
196	20			2,744	20,262	1,372	19,987	6,860	19,469	2,156	18,348	10		3	1	4	196	2
197	22			2,758	20,365	1,379	20,089	6,895	19,568	2,167	18,441	11		3	1	4	197	2
198	22			2,772	20,468	1,386	20,191	6,930	19,667	2,178	18,535	11		3	1	4	198	2
199	22			2,786	20,572	1,393	20,293	6,965	19,767	2,189	18,628	11		3	1	4	199	2
200	22			2,800	20,675	1,400	20,395	7,000	19,866	2,200	18,722	11		3	1	4	200	2
201	22			2,814	20,779	1,407	20,497	7,035	19,965	2,211	18,816	11		3	1	4	201	2
202	22			2,828	20,882	1,414	20,599	7,070	20,065	2,222	18,909	11		3	1	4	202	2
203	22			2,842	20,985	1,421	20,701	7,105	20,164	2,233	19,003	11		3	1	4	203	2
204	22			2,856	21,089	1,428	20,803	7,140	20,263	2,244	19,096	11		3	1	4	204	2
205	22			2,870	21,192	1,435	20,905	7,175	20,363	2,255	19,190	11		3	1	4	205	2
206	22			2,884	21,295	1,442	21,007	7,210	20,462	2,266	19,284	11		3	1	4	206	2
207	22			2,898	21,399	1,449	21,109	7,245	20,561	2,277	19,377	11		3	1	4	207	2
208	22			2,912	21,502	1,456	21,211	7,280	20,661	2,288	19,471	11		3	1	4	208	2
209	22			2,926	21,606	1,463	21,313	7,315	20,760	2,299	19,564	11		3	1	4	209	2
210	22			2,940	21,709	1,470	21,415	7,350	20,859	2,310	19,658	11		3	1	4	210	2
211	22			2,954	21,812	1,477	21,517	7,385	20,959	2,321	19,752	11		3	1	4	211	2
212	22			2,968	21,916	1,484	21,619	7,420	21,058	2,332	19,845	11		3	1	4	212	2
213	22			2,982	22,019	1,491	21,721	7,455	21,157	2,343	19,939	11		3	1	4	213	2
214	22			2,996	22,122	1,498	21,823	7,490	21,257	2,354	20,033	11		3	1	4	214	2
215	22			3,010	22,226	1,505	21,925	7,525	21,356	2,365	20,126	11		3	1	4	215	2
216	22			3,024	22,329	1,512	22,027	7,560	21,455	2,376	20,220	11		3	1	4	216	2
217	22			3,038	22,433	1,519	22,129	7,595	21,555	2,387	20,313	11		3	1	4	217	2
218	22			3,052	22,536	1,526	22,231	7,630	21,654	2,398	20,407	11		3	1	4	218	2
219	22			3,066	22,639	1,533	22,333	7,665	21,753	2,409	20,501	11		3	1	4	219	2
220	22			3,080	22,743	1,540	22,435	7,700	21,853	2,420	20,594	11		3	1	4	220	2
221	22			3,094	22,846	1,547	22,537	7,735	21,952	2,431	20,688	11		3	1	4	221	2
222	22			3,108	22,949	1,554	22,639	7,770	22,051	2,442	20,781	11		3	1	4	222	2
223	22			3,122	23,053	1,561	22,741	7,805	22,151	2,453	20,875	11		3	1	4	223	2
224	22			3,136	23,156	1,568	22,843	7,840	22,250	2,464	20,969	11		3	1	4	224	2
225	22			3,150	23,260	1,575	22,945	7,875	22,349	2,475	21,062	11		3	1	4	225	2
226	22			3,164	23,363	1,582	23,047	7,910	22,449	2,486	21,156	11		3	1	4	226	2
227	22			3,178	23,466	1,589	23,149	7,945	22,548	2,497	21,249	11		3	1	4	227	2
228	22			3,192	23,570	1,596	23,251	7,980	22,647	2,508	21,343	11		3	1	4	228	2
229	22			3,206	23,673	1,603	23,353	8,015	22,747	2,519	21,437	11		3	1	4	229	2
230	22			3,220	23,776	1,610	23,454	8,050	22,846	2,530	21,530	11		3	1	4	230	2
231	22			3,234	23,880	1,617	23,556	8,085	22,945	2,541	21,624	11		3	1	4	231	2
232	22			3,248	23,983	1,624	23,658	8,120	23,045	2,552	21,718	11		3	1	4	232	2
233	22			3,262	24,087	1,631	23,760	8,155	23,144	2,563	21,811	11		3	1	4	233	2
234	22			3,276	24,190	1,638	23,862	8,190	23,243	2,574	21,905	11		3	1	4	234	2
235	22			3,290	24,293	1,645	23,964			2,585	21,998	11		3	1	4	235	2
236	22			3,304	24,397	1,652	24,066			2,596	22,092	11		3	1	4	236	2
237	22			3,318	24,500	1,659	24,168			2,607	22,186	11		3	1	4	237	2
238	22			3,332	24,603	1,666	24,270			2,618	22,279	11		3	1	4	238	2
239	22			3,346	24,707	1,673	24,372			2,629	22,373	11		3	1	4	239	2
240	22			3,360	24,810	1,680	24,474			2,640	22,466	11		3	1	4	240	2
241	22			3,374	24,914	1,687	24,576			2,651	22,560	11		3	1	4	241	2
242	22			3,388	25,017	1,694	24,678			2,662	22,654	11		3	1	4	242	2
243	22			3,402	25,120	1,701	24,780			2,673	22,747	11		3	1	4	243	2
244	22			3,416	25,224	1,708	24,882			2,684	22,841	11		3	1	4	244	2
245	22			3,430	25,327	1,715	24,984			2,695	22,934	11		3	1	4	245	2
246	22			3,444	25,430	1,722	25,086			2,706	23,028	11		3	1	4	246	2
247	22			3,458	25,534	1,729	25,188			2,717	23,122	11		3	1	4	247	2
248	22			3,472	25,637	1,736	25,290			2,728	23,215	11		3	1	4	248	2
249	22			3,486	25,741	1,743	25,392			2,739	23,309	11		3	1	4	249	2
250	22			3,500	25,844	1,750	25,494			2,750	23,403	11		3	1	4	250	2
251	22			3,514	25,947	1,757	25,596			2,761	23,496	11		3	1	4	251	2
252	22			3,528	26,051	1,764	25,698			2,772	23,590	11		3	1	4	252	2
253	22			3,542	26,154	1,771	25,800			2,783	23,683	11		3	1	4	253	2
254	22			3,556	26,258	1,778	25,902			2,794	23,777	11		3	1	4	254	2

*1: The number of the Shard Memory option(DKC-F460I-S512) necessary is refer to table 1.1.2-3A and 1.1.2-3B. Please note that location of shared memory varies according to the purpose such as additional cache installation or additional LDEV installation.

Note: In addition to the Options listed in above table as necessary parts, the Power Cable Kit option, the AC Box Kit option and the Channel options are required.

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(2) 73GB 10K rpm HDD, RAID5 (3D+1P)

RAID group	Cache (GB)	Storage Capacity (GB)												Number of necessary options						
		Open System								Mainframe System				DKC options				DKU options		
		OPEN-3 (2.461GB)		OPEN-9 (7.384GB)		OPEN-E (14.568GB)		OPEN-L (36.450GB)		3390-3/3R (2.838GB)		3390-9 (8.510GB)		F460I -2048	F460I -S512	F460I -200	F460I -L1C	455I -18	F455I -72J4	F455I -EXC
		VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap							
1	4	88	217	29	214	15	219	6	219	73	207	24	204	2	*1			1	1	
2	4	176	433	58	428	30	437	12	437	146	414	48	408	2				1	2	
3	4	264	650	87	642	45	656	18	656	219	622	72	613	2				1	3	
4	6	352	866	116	857	60	874	24	875	292	829	96	817	3				1	4	
5	6	440	1,083	145	1,071	75	1,093	30	1,094	365	1,036	120	1,021	3				1	5	
6	6	528	1,299	174	1,285	90	1,311	36	1,312	438	1,243	144	1,225	3				1	6	
7	8	616	1,516	203	1,499	105	1,530	42	1,531	511	1,450	168	1,430	4				1	7	
8	8	704	1,733	232	1,713	120	1,748	48	1,750	584	1,657	192	1,634	4				1	8	
9	8	792	1,949	261	1,927	135	1,967	54	1,968	657	1,865	216	1,838	4				1	9	
10	8	880	2,166	290	2,141	150	2,185	60	2,187	730	2,072	240	2,042	4				1	10	
11	8	968	2,382	319	2,355	165	2,404	66	2,406	803	2,279	264	2,247	4				1	11	
12	8	1,056	2,599	348	2,570	180	2,622	72	2,624	876	2,486	288	2,451	4				1	12	
13	8	1,144	2,815	377	2,784	195	2,841	78	2,843	949	2,693	312	2,655	4				1	13	
14	10	1,232	3,032	406	2,998	210	3,059	84	3,062	1,022	2,900	336	2,859	5				1	14	
15	10	1,320	3,249	435	3,212	225	3,278	90	3,281	1,095	3,108	360	3,064	5				1	15	
16	10	1,408	3,465	464	3,426	240	3,496	96	3,499	1,168	3,315	384	3,268	5				1	16	
17	10	1,496	3,682	493	3,640	255	3,715	102	3,718	1,241	3,522	408	3,472	5				1	17	
18	10	1,584	3,898	522	3,854	270	3,933	108	3,937	1,314	3,729	432	3,676	5				1	18	
19	10	1,672	4,115	551	4,069	285	4,152	114	4,155	1,387	3,936	456	3,881	5				1	19	
20	10	1,760	4,331	580	4,283	300	4,370	120	4,374	1,460	4,143	480	4,085	5				1	20	
21	10	1,848	4,548	609	4,497	315	4,589	126	4,593	1,533	4,351	504	4,289	5				1	21	
22	10	1,936	4,764	638	4,711	330	4,807	132	4,811	1,606	4,558	528	4,493	5				1	22	
23	10	2,024	4,981	667	4,925	345	5,026	138	5,030	1,679	4,765	552	4,698	5				1	23	
24	10	2,112	5,198	696	5,139	360	5,244	144	5,249	1,752	4,972	576	4,902	5				1	24	
25	10	2,200	5,414	725	5,353	375	5,463	150	5,468	1,825	5,179	600	5,106	5				1	25	
26	10	2,288	5,631	754	5,568	390	5,682	156	5,686	1,898	5,387	624	5,310	5				1	26	
27	10	2,376	5,847	783	5,782	405	5,900	162	5,905	1,971	5,594	648	5,514	5				1	27	
28	12	2,464	6,064	812	5,996	420	6,119	168	6,124	2,044	5,801	672	5,719	6				1	28	
29	12	2,552	6,280	841	6,210	435	6,337	174	6,342	2,117	6,008	696	5,923	6				1	29	
30	12	2,640	6,497	870	6,424	450	6,556	180	6,561	2,190	6,215	720	6,127	6				1	30	
31	12	2,728	6,714	899	6,638	465	6,774	186	6,780	2,263	6,422	744	6,331	6				1	31	
32	12	2,816	6,930	928	6,852	480	6,993	192	6,998	2,336	6,630	768	6,536	6			1	1	32	
33	12	2,904	7,147	957	7,066	495	7,211	198	7,217	2,409	6,837	792	6,740	6			1	1	33	
34	12	2,992	7,363	986	7,281	510	7,430	204	7,436	2,482	7,044	816	6,944	6			1	1	34	
35	12	3,080	7,580	1,015	7,495	525	7,648	210	7,655	2,555	7,251	840	7,148	6			1	1	35	
36	12	3,168	7,796	1,044	7,709	540	7,867	216	7,873	2,628	7,458	864	7,353	6			1	1	36	
37	12	3,256	8,013	1,073	7,923	555	8,085	222	8,092	2,701	7,665	888	7,557	6			1	1	37	
38	12	3,344	8,230	1,102	8,137	570	8,304	228	8,311	2,774	7,873	912	7,761	6			1	1	38	
39	12	3,432	8,446	1,131	8,351	585	8,522	234	8,529	2,847	8,080	936	7,965	6			1	1	39	
40	12	3,520	8,663	1,160	8,565	600	8,741	240	8,748	2,920	8,287	960	8,170	6			1	1	40	
41	14	3,608	8,879	1,189	8,780	615	8,959	246	8,967	2,993	8,494	984	8,374	7			1	1	41	
42	14	3,696	9,096	1,218	8,994	630	9,178	252	9,185	3,066	8,701	1,008	8,578	7			1	1	42	
43	14	3,784	9,312	1,247	9,208	645	9,396	258	9,404	3,139	8,908	1,032	8,782	7			1	1	43	
44	14	3,872	9,529	1,276	9,422	660	9,615	264	9,623	3,212	9,116	1,056	8,987	7			1	1	44	
45	14	3,960	9,746	1,305	9,636	675	9,833	270	9,842	3,285	9,323	1,080	9,191	7			1	1	45	
46	14	4,048	9,962	1,334	9,850	690	10,052	276	10,060	3,358	9,530	1,104	9,395	7			1	1	46	
47	14	4,136	10,179	1,363	10,064	705	10,270	282	10,279	3,431	9,737	1,128	9,599	7			1	1	47	
48	14	4,224	10,395	1,392	10,279	720	10,489	288	10,498	3,504	9,944	1,152	9,804	7			1	1	48	
49	14	4,312	10,612	1,421	10,493	735	10,707	294	10,716	3,577	10,152	1,176	10,008	7			1	1	49	
50	14	4,400	10,828	1,450	10,707	750	10,926	300	10,935	3,650	10,359	1,200	10,212	7			1	1	50	
51	14	4,488	11,045	1,479	10,921	765	11,145	306	11,154	3,723	10,566	1,224	10,416	7			1	1	51	
52	14	4,576	11,262	1,508	11,135	780	11,363	312	11,372	3,796	10,773	1,248	10,620	7			1	1	52	
53	14	4,664	11,478	1,537	11,349	795	11,582	318	11,591	3,869	10,980	1,272	10,825	7			1	1	53	
54	16	4,752	11,695	1,566	11,563	810	11,800	324	11,810	3,942	11,187	1,296	11,029	8			1	1	54	
55	16	4,840	11,911	1,595	11,777	825	12,019	330	12,029	4,015	11,395	1,320	11,233	8			1	1	55	
56	16	4,928	12,128	1,624	11,992	840	12,237	336	12,247	4,088	11,602	1,344	11,437	8			1	1	56	
57	16	5,016	12,344	1,653	12,206	855	12,456	342	12,466	4,161	11,809	1,368	11,642	8			1	1	57	
58	16	5,104	12,561	1,682	12,420	870	12,674	348	12,685	4,234	12,016	1,392	11,846	8			1	1	58	
59	16	5,192	12,778	1,711	12,634	885	12,893	354	12,903	4,307	12,223	1,416	12,050	8			1	1	59	
60	16	5,280	12,994	1,740	12,848	900	13,111	360	13,122	4,380	12,430	1,440	12,254	8			1	1	60	
61	16	5,368	13,211	1,769	13,062	915	13,330	366	13,341	4,453	12,638	1,464	12,459	8			1	1	61	
62	16	5,456	13,427	1,798	13,276	930	13,548	372	13,559	4,526	12,845	1,488	12,663	8			1	1	62	
63	16	5,544	13,644	1,827	13,491	945	13,767	378	13,778	4,599	13,052	1,512	12,867	8			1	1	63	
64	16	5,632	13,860	1,856	13,705	960	13,985	384	13,997	4,672	13,259	1,536	13,071	8			1	2	64	1

(To be continued)

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(Continued from preceding sheet)

RAID group	Cache (GB)	Storage Capacity (GB)												Number of necessary options						
		Open System								Mainframe System				DKC options				DKU options		
		OPEN-3 (2.461GB)		OPEN-9 (7.384GB)		OPEN-E (14.568GB)		OPEN-L (36.450GB)		3390-3/3R (2.838GB)		3390-9 (8.510GB)		F460I -2048	F460I -S512	F460I -200	F460I -L1C	455I -18	F455I -72J4	F455I -EXC
		VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap							
65	16	5,720	14,077	1,885	13,919	975	14,204	390	14,216	4,745	13,466	1,560	13,276	8		1		2	65	1
66	16	5,808	14,293	1,914	14,133	990	14,422	396	14,434	4,818	13,673	1,584	13,480	8		1		2	66	1
67	18	5,896	14,510	1,943	14,347	1,005	14,641	402	14,653	4,891	13,881	1,608	13,684	9		1		2	67	1
68	18	5,984	14,727	1,972	14,561	1,020	14,859	408	14,872	4,964	14,088	1,632	13,888	9		1		2	68	1
69	18	6,072	14,943	2,001	14,775	1,035	15,078	414	15,090	5,037	14,295	1,656	14,093	9		1		2	69	1
70	18	6,160	15,160	2,030	14,990	1,050	15,296	420	15,309	5,110	14,502	1,680	14,297	9		1		2	70	1
71	18	6,248	15,376	2,059	15,204	1,065	15,515	426	15,528	5,183	14,709	1,704	14,501	9		1		2	71	1
72	18	6,336	15,593	2,088	15,418	1,080	15,733	432	15,746	5,256	14,917	1,728	14,705	9		1		2	72	1
73	18	6,424	15,809	2,117	15,632	1,095	15,952	438	15,965	5,329	15,124	1,752	14,910	9		1		2	73	1
74	18	6,512	16,026	2,146	15,846	1,110	16,170	444	16,184	5,402	15,331	1,776	15,114	9		1		2	74	1
75	18	6,600	16,243	2,175	16,060	1,125	16,389	450	16,403	5,475	15,538	1,800	15,318	9		1		2	75	1
76	18	6,688	16,459	2,204	16,274	1,140	16,608	456	16,621	5,548	15,745	1,824	15,522	9		1		2	76	1
77	18	6,776	16,676	2,233	16,488	1,155	16,826	462	16,840	5,621	15,952	1,848	15,726	9		1		2	77	1
78	18	6,864	16,892	2,262	16,703	1,170	17,045	468	17,059	5,694	16,160	1,872	15,931	9		1		2	78	1
79	18	6,952	17,109	2,291	16,917	1,185	17,263	474	17,277	5,767	16,367	1,896	16,135	9		1		2	79	1
80	20	7,040	17,325	2,320	17,131	1,200	17,482	480	17,496	5,840	16,574	1,920	16,339	10		1		2	80	1
81	20	7,128	17,542	2,349	17,345	1,215	17,700	486	17,715	5,913	16,781	1,944	16,543	10		1		2	81	1
82	20	7,216	17,759	2,378	17,559	1,230	17,919	492	17,933	5,986	16,988	1,968	16,748	10		1		2	82	1
83	20	7,304	17,975	2,407	17,773	1,245	18,137	498	18,152	6,059	17,195	1,992	16,952	10		1		2	83	1
84	20	7,392	18,192	2,436	17,987	1,260	18,356	504	18,371	6,132	17,403	2,016	17,156	10		1		2	84	1
85	20	7,480	18,408	2,465	18,202	1,275	18,574	510	18,590	6,205	17,610	2,040	17,360	10		1		2	85	1
86	20	7,568	18,625	2,494	18,416	1,290	18,793	516	18,808	6,278	17,817	2,064	17,565	10		1		2	86	1
87	20	7,656	18,841	2,523	18,630	1,305	19,011	522	19,027	6,351	18,024	2,088	17,769	10		1		2	87	1
88	20	7,744	19,058	2,552	18,844	1,320	19,230	528	19,246	6,424	18,231	2,112	17,973	10		1		2	88	1
89	20	7,832	19,275	2,581	19,058	1,335	19,448	534	19,464	6,497	18,438	2,136	18,177	10		1		2	89	1
90	20	7,920	19,491	2,610	19,272	1,350	19,667	540	19,683	6,570	18,646	2,160	18,382	10		1		2	90	1
91	20	8,008	19,708	2,639	19,486	1,365	19,885	546	19,902	6,643	18,853	2,184	18,586	10		1		2	91	1
92	20	8,096	19,924	2,668	19,701	1,380	20,104	552	20,120	6,716	19,060	2,208	18,790	10		1		2	92	1
93	20	8,184	20,141	2,697	19,915	1,395	20,322	558	20,339	6,789	19,267	2,232	18,994	10		1		2	93	1
94	20			2,726	20,129	1,410	20,541	564	20,558	6,862	19,474	2,256	19,199	10		1		2	94	1
95	22			2,755	20,343	1,425	20,759	570	20,777	6,935	19,682	2,280	19,403	11		1		2	95	1
96	22			2,784	20,557	1,440	20,978	576	20,995	7,008	19,889	2,304	19,607	11		1		2	96	1
97	22			2,813	20,771	1,455	21,196	582	21,214	7,081	20,096	2,328	19,811	11		1		2	97	1
98	22			2,842	20,985	1,470	21,415	588	21,433	7,154	20,303	2,352	20,016	11		1		2	98	1
99	22			2,871	21,199	1,485	21,633	594	21,651	7,227	20,510	2,376	20,220	11		1		2	99	1
100	22			2,900	21,414	1,500	21,852	600	21,870	7,300	20,717	2,400	20,424	11		1		2	100	1
101	22			2,929	21,628	1,515	22,071	606	22,089	7,373	20,925	2,424	20,628	11		1		2	101	1
102	22			2,958	21,842	1,530	22,289	612	22,307	7,446	21,132	2,448	20,832	11		1		2	102	1
103	22			2,987	22,056	1,545	22,508	618	22,526	7,519	21,339	2,472	21,037	11		1		2	103	1
104	22			3,016	22,270	1,560	22,726	624	22,745	7,592	21,546	2,496	21,241	11		1		2	104	1
105	22			3,045	22,484	1,575	22,945	630	22,964	7,665	21,753	2,520	21,445	11		1		2	105	1
106	22			3,074	22,698	1,590	23,163	636	23,182	7,738	21,960	2,544	21,649	11		1		2	106	1
107	22			3,103	22,913	1,605	23,382	642	23,401	7,811	22,168	2,568	21,854	11		1		2	107	1
108	22			3,132	23,127	1,620	23,600	648	23,620	7,884	22,375	2,592	22,058	11		1		2	108	1
109	22			3,161	23,341	1,635	23,819	654	23,838	7,957	22,582	2,616	22,262	11		1		2	109	1
110	22			3,190	23,555	1,650	24,037	660	24,057	8,030	22,789	2,640	22,466	11		1		2	110	1
111	22			3,219	23,769	1,665	24,256	666	24,276	8,103	22,996	2,664	22,671	11		1		2	111	1
112	22			3,248	23,983	1,680	24,474	672	24,494	8,176	23,203	2,688	22,875	11		1		2	112	1
113	22			3,277	24,197	1,695	24,693	678	24,713			2,712	23,079	11		1		2	113	1
114	22			3,306	24,412	1,710	24,911	684	24,932			2,736	23,283	11		1		2	114	1
115	22			3,335	24,626	1,725	25,130	690	25,151			2,760	23,488	11		1		2	115	1
116	22			3,364	24,840	1,740	25,348	696	25,369			2,784	23,692	11		1		2	116	1
117	22			3,393	25,054	1,755	25,567	702	25,588			2,808	23,896	11		1		2	117	1
118	22			3,422	25,268	1,770	25,785	708	25,807			2,832	24,100	11		1		2	118	1
119	22			3,451	25,482	1,785	26,004	714	26,025			2,856	24,305	11		1		2	119	1
120	22			3,480	25,696	1,800	26,222	720	26,244			2,880	24,509	11		1		2	120	1
121	22			3,509	25,910	1,815	26,441	726	26,463			2,904	24,713	11		1		2	121	1
122	22			3,538	26,125	1,830	26,659	732	26,681			2,928	24,917	11		1		2	122	1
123	22			3,567	26,339	1,845	26,878	738	26,900			2,952	25,122	11		1		2	123	1
124	22			3,596	26,553	1,860	27,096	744	27,119			2,976	25,326	11		1		2	124	1
125	22			3,625	26,767	1,875	27,315	750	27,338			3,000	25,530	11		1		2	125	1
126	22			3,654	26,981	1,890	27,534	756	27,556			3,024	25,734	11		1		2	126	1
127	22			3,683	27,195	1,905	27,752	762	27,775			3,048	25,938	11		1		2	127	1
128	22			3,712	27,409	1,920	27,971	768	27,994			3,072	26,143	11		2	1	3	128	1
129	22			3,741	27,624	1,935	28,189	774	28,212			3,096	26,347	11		2	1	3	129	1

(To be continued)

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(Continued from preceding sheet)

RAID group	Cache (GB)	Storage Capacity (GB)												Number of necessary options						
		Open System								Mainframe System				DKC options				DKU options		
		OPEN-3 (2.461GB)		OPEN-9 (7.384GB)		OPEN-E (14.568GB)		OPEN-L (36.450GB)		3390-3/3R (2.838GB)		3390-9 (8.510GB)		F460I -2048	F460I -S512	F460I -200	F460I -L1C	455I -18	F455I -72J4	F455I -EXC
		VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap							
130	22			3,770	27,838	1,950	28,408	780	28,431			3,120	26,551	11		2	1	3	130	1
131	22			3,799	28,052	1,965	28,626	786	28,650			3,144	26,755	11		2	1	3	131	1
132	22			3,828	28,266	1,980	28,845	792	28,868			3,168	26,960	11		2	1	3	132	1
133	22			3,857	28,480	1,995	29,063	798	29,087			3,192	27,164	11		2	1	3	133	1
134	22			3,886	28,694	2,010	29,282	804	29,306			3,216	27,368	11		2	1	3	134	1
135	22			3,915	28,908	2,025	29,500	810	29,525			3,240	27,572	11		2	1	3	135	1
136	22			3,944	29,122	2,040	29,719	816	29,743			3,264	27,777	11		2	1	3	136	1
137	22			3,973	29,337	2,055	29,937	822	29,962			3,288	27,981	11		2	1	3	137	1
138	22			4,002	29,551	2,070	30,156	828	30,181			3,312	28,185	11		2	1	3	138	1
139	22			4,031	29,765	2,085	30,374	834	30,399			3,336	28,389	11		2	1	3	139	1
140	22			4,060	29,979	2,100	30,593	840	30,618			3,360	28,594	11		2	1	3	140	1
141	22			4,089	30,193	2,115	30,811	846	30,837			3,384	28,798	11		2	1	3	141	1
142	22			4,118	30,407	2,130	31,030	852	31,055			3,408	29,002	11		2	1	3	142	1
143	22			4,147	30,621	2,145	31,248	858	31,274			3,432	29,206	11		2	1	3	143	1
144	22			4,176	30,836	2,160	31,467	864	31,493			3,456	29,411	11		2	1	3	144	1
145	22			4,205	31,050	2,175	31,685	870	31,712			3,480	29,615	11		2	1	3	145	1
146	22			4,234	31,264	2,190	31,904	876	31,930			3,504	29,819	11		2	1	3	146	1
147	22			4,263	31,478	2,205	32,122	882	32,149			3,528	30,023	11		2	1	3	147	1
148	22			4,292	31,692	2,220	32,341	888	32,368			3,552	30,228	11		2	1	3	148	1
149	22			4,321	31,906	2,235	32,559	894	32,586			3,576	30,432	11		2	1	3	149	1
150	22			4,350	32,120	2,250	32,778	900	32,805			3,600	30,636	11		2	1	3	150	1
151	22			4,379	32,335	2,265	32,997	906	33,024			3,624	30,840	11		2	1	3	151	1
152	22			4,408	32,549	2,280	33,215	912	33,242			3,648	31,044	11		2	1	3	152	1
153	22			4,437	32,763	2,295	33,434	918	33,461			3,672	31,249	11		2	1	3	153	1
154	22			4,466	32,977	2,310	33,652	924	33,680			3,696	31,453	11		2	1	3	154	1
155	22			4,495	33,191	2,325	33,871	930	33,899			3,720	31,657	11		2	1	3	155	1
156	22			4,524	33,405	2,340	34,089	936	34,117			3,744	31,861	11		2	1	3	156	1
157	22			4,553	33,619	2,355	34,308	942	34,336			3,768	32,066	11		2	1	3	157	1
158	22			4,582	33,833	2,370	34,526	948	34,555			3,792	32,270	11		2	1	3	158	1
159	22			4,611	34,048	2,385	34,745	954	34,773			3,816	32,474	11		3	1	3	159	1
160	22			4,640	34,262	2,400	34,963	960	34,992			3,840	32,678	11		3	1	3	160	1
161	22			4,669	34,476	2,415	35,182	966	35,211			3,864	32,883	11		3	1	3	161	1
162	22			4,698	34,690	2,430	35,400	972	35,429			3,888	33,087	11		3	1	3	162	1
163	22			4,727	34,904	2,445	35,619	978	35,648			3,912	33,291	11		3	1	3	163	1
164	22			4,756	35,118	2,460	35,837	984	35,867			3,936	33,495	11		3	1	3	164	1
165	22			4,785	35,332	2,475	36,056	990	36,086			3,960	33,700	11		3	1	3	165	1
166	22			4,814	35,547	2,490	36,274	996	36,304			3,984	33,904	11		3	1	3	166	1
167	22			4,843	35,761	2,505	36,493	1,002	36,523			4,008	34,108	11		3	1	3	167	1
168	22			4,872	35,975	2,520	36,711	1,008	36,742			4,032	34,312	11		3	1	3	168	1
169	22			4,901	36,189	2,535	36,930	1,014	36,960			4,056	34,517	11		3	1	3	169	1
170	22			4,930	36,403	2,550	37,148	1,020	37,179			4,080	34,721	11		3	1	3	170	1
171	22			4,959	36,617	2,565	37,367	1,026	37,398			4,104	34,925	11		3	1	3	171	1
172	22			4,988	36,831	2,580	37,585	1,032	37,616			4,128	35,129	11		3	1	3	172	1
173	22			5,017	37,046	2,595	37,804	1,038	37,835			4,152	35,334	11		3	1	3	173	1
174	22			5,046	37,260	2,610	38,022	1,044	38,054			4,176	35,538	11		3	1	3	174	1
175	22			5,075	37,474	2,625	38,241	1,050	38,273			4,200	35,742	11		3	1	3	175	1
176	22			5,104	37,688	2,640	38,460	1,056	38,491			4,224	35,946	11		3	1	3	176	1
177	22			5,133	37,902	2,655	38,678	1,062	38,710			4,248	36,150	11		3	1	3	177	1
178	22			5,162	38,116	2,670	38,897	1,068	38,929			4,272	36,355	11		3	1	3	178	1
179	22			5,191	38,330	2,685	39,115	1,074	39,147			4,296	36,559	11		3	1	3	179	1
180	22			5,220	38,544	2,700	39,334	1,080	39,366			4,320	36,763	11		3	1	3	180	1
181	22			5,249	38,759	2,715	39,552	1,086	39,585			4,344	36,967	11		3	1	3	181	1
182	22			5,278	38,973	2,730	39,771	1,092	39,803			4,368	37,172	11		3	1	3	182	1
183	22			5,307	39,187	2,745	39,989	1,098	40,022			4,392	37,376	11		3	1	3	183	1
184	22			5,336	39,401	2,760	40,208	1,104	40,241			4,416	37,580	11		3	1	3	184	1
185	22			5,365	39,615	2,775	40,426	1,110	40,460			4,440	37,784	11		3	1	3	185	1
186	22			5,394	39,829	2,790	40,645	1,116	40,678			4,464	37,989	11		3	1	3	186	1
187	22			5,423	40,043	2,805	40,863	1,122	40,897			4,488	38,193	11		3	1	3	187	1
188	22			5,452	40,258	2,820	41,082	1,128	41,116			4,512	38,397	11		3	1	3	188	1
189	22			5,481	40,472	2,835	41,300	1,134	41,334			4,536	38,601	11		3	1	3	189	1
190	22			5,510	40,686	2,850	41,519	1,140	41,553			4,560	38,806	11		3	1	3	190	1
191	22			5,539	40,900	2,865	41,737	1,146	41,772			4,584	39,010	11		3	1	4	191	2
192	22			5,568	41,114	2,880	41,956	1,152	41,990			4,608	39,214	11		3	1	4	192	2
193	22			5,597	41,328	2,895	42,174	1,158	42,209			4,632	39,418	11		3	1	4	193	2
194	22			5,626	41,542	2,910	42,393	1,164	42,428			4,656	39,623	11		3	1	4	194	2

(To be continued)

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(Continued from preceding sheet)

RAID group	Cache (GB)	Storage Capacity (GB)												Number of necessary options						
		Open System								Mainframe System				DKC options				DKU options		
		OPEN-3 (2.461GB)		OPEN-9 (7.384GB)		OPEN-E (14.568GB)		OPEN-L (36.450GB)		3390-3/3R (2.838GB)		3390-9 (8.510GB)		F460I -2048	F460I -S512	F460I -200	F460I -L1C	455I -18	F455I -72J4	F455I -EXC
		VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap							
195	22			5,655	41,757	2,925	42,611	1,170	42,647			4,680	39,827	11		3	1	4	195	2
196	22			5,684	41,971	2,940	42,830	1,176	42,865			4,704	40,031	11		3	1	4	196	2
197	22			5,713	42,185	2,955	43,048	1,182	43,084			4,728	40,235	11		3	1	4	197	2
198	22			5,742	42,399	2,970	43,267	1,188	43,303			4,752	40,440	11		3	1	4	198	2
199	22			5,771	42,613	2,985	43,485	1,194	43,521			4,776	40,644	11		3	1	4	199	2
200	22			5,800	42,827	3,000	43,704	1,200	43,740			4,800	40,848	11		3	1	4	200	2
201	22			5,829	43,041	3,015	43,923	1,206	43,959			4,824	41,052	11		3	1	4	201	2
202	22			5,858	43,255	3,030	44,141	1,212	44,177			4,848	41,256	11		3	1	4	202	2
203	22			5,887	43,470	3,045	44,360	1,218	44,396			4,872	41,461	11		3	1	4	203	2
204	22			5,916	43,684	3,060	44,578	1,224	44,615			4,896	41,665	11		3	1	4	204	2
205	22			5,945	43,898	3,075	44,797	1,230	44,834			4,920	41,869	11		3	1	4	205	2
206	22			5,974	44,112	3,090	45,015	1,236	45,052			4,944	42,073	11		3	1	4	206	2
207	22			6,003	44,326	3,105	45,234	1,242	45,271			4,968	42,278	11		3	1	4	207	2
208	22			6,032	44,540	3,120	45,452	1,248	45,490			4,992	42,482	11		3	1	4	208	2
209	22			6,061	44,754	3,135	45,671	1,254	45,708			5,016	42,686	11		3	1	4	209	2
210	22			6,090	44,969	3,150	45,889	1,260	45,927			5,040	42,890	11		3	1	4	210	2
211	22			6,119	45,183	3,165	46,108	1,266	46,146			5,064	43,095	11		3	1	4	211	2
212	22			6,148	45,397	3,180	46,326	1,272	46,364			5,088	43,299	11		3	1	4	212	2
213	22			6,177	45,611	3,195	46,545	1,278	46,583			5,112	43,503	11		3	1	4	213	2
214	22			6,206	45,825	3,210	46,763	1,284	46,802			5,136	43,707	11		3	1	4	214	2
215	22			6,235	46,039	3,225	46,982	1,290	47,021			5,160	43,912	11		3	1	4	215	2
216	22			6,264	46,253	3,240	47,200	1,296	47,239			5,184	44,116	11		3	1	4	216	2
217	22			6,293	46,468	3,255	47,419	1,302	47,458			5,208	44,320	11		3	1	4	217	2
218	22			6,322	46,682	3,270	47,637	1,308	47,677			5,232	44,524	11		3	1	4	218	2
219	22			6,351	46,896	3,285	47,856	1,314	47,895			5,256	44,729	11		3	1	4	219	2
220	22			6,380	47,110	3,300	48,074	1,320	48,114			5,280	44,933	11		3	1	4	220	2
221	22			6,409	47,324	3,315	48,293	1,326	48,333			5,304	45,137	11		3	1	4	221	2
222	22			6,438	47,538	3,330	48,511	1,332	48,551			5,328	45,341	11		3	1	4	222	2
223	22			6,467	47,752	3,345	48,730	1,338	48,770			5,352	45,546	11		3	1	4	223	2
224	22			6,496	47,966	3,360	48,948	1,344	48,989			5,376	45,750	11		3	1	4	224	2
225	22			6,525	48,181	3,375	49,167	1,350	49,208			5,400	45,954	11		3	1	4	225	2
226	22			6,554	48,395	3,390	49,386	1,356	49,426			5,424	46,158	11		3	1	4	226	2
227	22			6,583	48,609	3,405	49,604	1,362	49,645			5,448	46,362	11		3	1	4	227	2
228	22			6,612	48,823	3,420	49,823	1,368	49,864			5,472	46,567	11		3	1	4	228	2
229	22			6,641	49,037	3,435	50,041	1,374	50,082			5,496	46,771	11		3	1	4	229	2
230	22			6,670	49,251	3,450	50,260	1,380	50,301			5,520	46,975	11		3	1	4	230	2
231	22			6,699	49,465	3,465	50,478	1,386	50,520			5,544	47,179	11		3	1	4	231	2
232	22			6,728	49,680	3,480	50,697	1,392	50,738			5,568	47,384	11		3	1	4	232	2
233	22			6,757	49,894	3,495	50,915	1,398	50,957			5,592	47,588	11		3	1	4	233	2
234	22			6,786	50,108	3,510	51,134	1,404	51,176			5,616	47,792	11		3	1	4	234	2
235	22			6,815	50,322	3,525	51,352	1,410	51,395			5,640	47,996	11		3	1	4	235	2
236	22			6,844	50,536	3,540	51,571	1,416	51,613			5,664	48,201	11		3	1	4	236	2
237	22			6,873	50,750	3,555	51,789	1,422	51,832			5,688	48,405	11		3	1	4	237	2
238	22			6,902	50,964	3,570	52,008	1,428	52,051			5,712	48,609	11		3	1	4	238	2
239	22			6,931	51,179	3,585	52,226	1,434	52,269			5,736	48,813	11		3	1	4	239	2
240	22			6,960	51,393	3,600	52,445	1,440	52,488			5,760	49,018	11		3	1	4	240	2
241	22			6,989	51,607	3,615	52,663	1,446	52,707			5,784	49,222	11		3	1	4	241	2
242	22			7,018	51,821	3,630	52,882	1,452	52,925			5,808	49,426	11		3	1	4	242	2
243	22			7,047	52,035	3,645	53,100	1,458	53,144			5,832	49,630	11		3	1	4	243	2
244	22			7,076	52,249	3,660	53,319	1,464	53,363			5,856	49,835	11		3	1	4	244	2
245	22			7,105	52,463	3,675	53,537	1,470	53,582			5,880	50,039	11		3	1	4	245	2
246	22			7,134	52,677	3,690	53,756	1,476	53,800			5,904	50,243	11		3	1	4	246	2
247	22			7,163	52,892	3,705	53,974	1,482	54,019			5,928	50,447	11		3	1	4	247	2
248	22			7,192	53,106	3,720	54,193	1,488	54,238			5,952	50,652	11		3	1	4	248	2
249	22			7,221	53,320	3,735	54,411	1,494	54,456			5,976	50,856	11		3	1	4	249	2
250	22			7,250	53,534	3,750	54,630	1,500	54,675			6,000	51,060	11		3	1	4	250	2
251	22			7,279	53,748	3,765	54,849	1,506	54,894			6,024	51,264	11		3	1	4	251	2
252	22			7,308	53,962	3,780	55,067	1,512	55,112			6,048	51,468	11		3	1	4	252	2
253	22			7,337	54,176	3,795	55,286	1,518	55,331			6,072	51,673	11		3	1	4	253	2
254	22			7,366	54,391	3,810	55,504	1,524	55,550			6,096	51,877	11		3	1	4	254	2

*1: The number of the Shard Memory option(DKC-F460I-S512) necessary is refer to table 1.1.2-3A and 1.1.2-3B. Please note that location of shared memory varies according to the purpose such as additional cache installation or additional LDEV installation.

Note: In addition to the Options listed in above table as necessary parts, the Power Cable Kit option, the AC Box Kit option and the Channel options are required.

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(3) 146GB 10K rpm HDD, RAID5 (3D+1P)

RAID Group	Storage Capacity (GB)																	Number of necessary options								
	Open System									Mainframe System								DKC options					DKU options			
	Cache (GB)	OPEN-3 (2.461GB)		OPEN-9 (7.384GB)		OPEN-E (14.568GB)		OPEN-L (36.450GB)		Cache (GB)	3390-3/3R (2.838GB)		3390-9 (8.510GB)		3390-L (27.80GB)			F460I-2048		F460I -S512	F460I -200	F460I -L1C	455I -18	455I -146J4	455I -EXC	
		VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap		VOL	Cap	VOL	Cap	VOL	Cap		OPEN	MF							
1	4	174	428	58	428	29	422	11	401	4	144	409	48	408	14	389		2	2	*1			1	1		
2	6	348	856	116	857	58	845	22	802	6	288	817	96	817	28	778		3	3				1	2		
3	6	522	1,285	174	1,285	87	1,267	33	1,203	6	432	1,226	144	1,225	42	1,168		3	3				1	3		
4	8	696	1,713	232	1,713	116	1,690	44	1,604	8	576	1,635	192	1,634	56	1,557		4	4				1	4		
5	8	870	2,141	290	2,141	145	2,112	55	2,005	8	720	2,043	240	2,042	70	1,946		4	4				1	5		
6	8	1,044	2,569	348	2,570	174	2,535	66	2,406	8	864	2,452	288	2,451	84	2,335		4	4				1	6		
7	10	1,218	2,997	406	2,998	203	2,957	77	2,807	10	1,008	2,861	336	2,859	98	2,724		5	5				1	7		
8	10	1,392	3,426	464	3,426	232	3,380	88	3,208	10	1,152	3,269	384	3,268	112	3,114		5	5				1	8		
9	10	1,566	3,854	522	3,854	261	3,802	99	3,609	10	1,296	3,678	432	3,676	126	3,503		5	5				1	9		
10	10	1,740	4,282	580	4,283	290	4,225	110	4,010	10	1,440	4,087	480	4,085	140	3,892		5	5				1	10		
11	10	1,914	4,710	638	4,711	319	4,647	121	4,410	10	1,584	4,495	528	4,493	154	4,281		5	5				1	11		
12	10	2,088	5,139	696	5,139	348	5,070	132	4,811	10	1,728	4,904	576	4,902	168	4,670		5	5				1	12		
13	10	2,262	5,567	754	5,568	377	5,492	143	5,212	10	1,872	5,313	624	5,310	182	5,060		5	5				1	13		
14	12	2,436	5,995	812	5,996	406	5,915	154	5,613	12	2,016	5,721	672	5,719	196	5,449		6	6				1	14		
15	12	2,610	6,423	870	6,424	435	6,337	165	6,014	12	2,160	6,130	720	6,127	210	5,838		6	6				1	15		
16	12	2,784	6,851	928	6,852	464	6,760	176	6,415	12	2,304	6,539	768	6,536	224	6,227		6	6				1	16		
17	12	2,958	7,280	986	7,281	493	7,182	187	6,816	12	2,448	6,947	816	6,944	238	6,616		6	6				1	17		
18	12	3,132	7,708	1,044	7,709	522	7,604	198	7,217	12	2,592	7,356	864	7,353	252	7,006		6	6				1	18		
19	12	3,306	8,136	1,102	8,137	551	8,027	209	7,618	12	2,736	7,765	912	7,761	266	7,395		6	6				1	19		
20	14	3,480	8,564	1,160	8,565	580	8,449	220	8,019	12	2,880	8,173	960	8,170	280	7,784		7	6				1	20		
21	14	3,654	8,992	1,218	8,994	609	8,872	231	8,420	14	3,024	8,582	1,008	8,578	294	8,173		7	7				1	21		
22	14	3,828	9,421	1,276	9,422	638	9,294	242	8,821	14	3,168	8,991	1,056	8,987	308	8,562		7	7				1	22		
23	14	4,002	9,849	1,334	9,850	667	9,717	253	9,222	14	3,312	9,399	1,104	9,395	322	8,952		7	7				1	23		
24	14	4,176	10,277	1,392	10,279	696	10,139	264	9,623	14	3,456	9,808	1,152	9,804	336	9,341		7	7				1	24		
25	14	4,350	10,705	1,450	10,707	725	10,562	275	10,024	14	3,600	10,217	1,200	10,212	350	9,730		7	7				1	25		
26	14	4,524	11,134	1,508	11,135	754	10,984	286	10,425	14	3,744	10,625	1,248	10,620	364	10,119		7	7				1	26		
27	16	4,698	11,562	1,566	11,563	783	11,407	297	10,826	14	3,888	11,034	1,296	11,029	378	10,508		8	7				1	27		
28	16	4,872	11,990	1,624	11,992	812	11,829	308	11,227	16	4,032	11,443	1,344	11,437	392	10,898		8	8				1	28		
29	16	5,046	12,418	1,682	12,420	841	12,252	319	11,628	16	4,176	11,851	1,392	11,846	406	11,287		8	8				1	29		
30	16	5,220	12,846	1,740	12,848	870	12,674	330	12,029	16	4,320	12,260	1,440	12,254	420	11,676		8	8				1	30		
31	16	5,394	13,275	1,798	13,276	899	13,097	341	12,429	16	4,464	12,669	1,488	12,663	434	12,065		8	8				1	31		
32	16	5,568	13,703	1,856	13,705	928	13,519	352	12,830	16	4,608	13,078	1,536	13,071	448	12,454		8	8		1		1	32		
33	18	5,742	14,131	1,914	14,133	957	13,942	363	13,231	16	4,752	13,486	1,584	13,480	462	12,844		9	8		1		1	33		
34	18	5,916	14,559	1,972	14,561	986	14,364	374	13,632	16	4,896	13,895	1,632	13,888	476	13,233		9	8		1		1	34		
35	18	6,090	14,987	2,030	14,990	1,015	14,787	385	14,033	18	5,040	14,304	1,680	14,297	490	13,622		9	9		1		1	35		
36	18	6,264	15,416	2,088	15,418	1,044	15,209	396	14,434	18	5,184	14,712	1,728	14,705	504	14,011		9	9		1		1	36		
37	18	6,438	15,844	2,146	15,846	1,073	15,631	407	14,835	18	5,328	15,121	1,776	15,114	518	14,400		9	9		1		1	37		
38	18	6,612	16,272	2,204	16,274	1,102	16,054	418	15,236	18	5,472	15,530	1,824	15,522	532	14,790		9	9		1		1	38		
39	18	6,786	16,700	2,262	16,703	1,131	16,476	429	15,637	18	5,616	15,938	1,872	15,931	546	15,179		9	9		1		1	39		
40	20	6,960	17,129	2,320	17,131	1,160	16,899	440	16,038	18	5,760	16,347	1,920	16,339	560	15,568		10	9		1		1	40		
41	20	7,134	17,557	2,378	17,559	1,189	17,321	451	16,439	18	5,904	16,756	1,968	16,748	574	15,957		10	9		1		1	41		
42	20	7,308	17,985	2,436	17,987	1,218	17,744	462	16,840	20	6,048	17,164	2,016	17,156	588	16,346		10	10		1		1	42		
43	20	7,482	18,413	2,494	18,416	1,247	18,166	473	17,241	20	6,192	17,573	2,064	17,565	602	16,736		10	10		1		1	43		
44	20	7,656	18,841	2,552	18,844	1,276	18,589	484	17,642	20	6,336	17,982	2,112	17,973	616	17,125		10	10		1		1	44		
45	20	7,830	19,270	2,610	19,272	1,305	19,011	495	18,043	20	6,480	18,390	2,160	18,382	630	17,514		10	10		1		1	45		
46	20	8,004	19,698	2,668	19,701	1,334	19,434	506	18,444	20	6,624	18,799	2,208	18,790	644	17,903		10	10		1		1	46		
47	22	8,178	20,126	2,726	20,129	1,363	19,856	517	18,845	20	6,768	19,208	2,256	19,199	658	18,292		11	10		1		1	47		
48	22			2,784	20,557	1,392	20,279	528	19,246	20	6,912	19,616	2,304	19,607	672	18,682		11	10		1		1	48		
49	22			2,842	20,985	1,421	20,701	539	19,647	22	7,056	20,025	2,352	20,016	686	19,071		11	11		1		1	49		
50	22			2,900	21,414	1,450	21,124	550	20,048	22	7,200	20,434	2,400	20,424	700	19,460		11	11		1		1	50		
51	22			2,958	21,842	1,479	21,546	561	20,448	22	7,344	20,842	2,448	20,832	714	19,849		11	11		1		1	51		
52	22			3,016	22,270	1,508	21,969	572	20,849	22	7,488	21,251	2,496	21,241	728	20,238		11	11		1		1	52		
53	22			3,074	22,698	1,537	22,391	583	21,250	22	7,632	21,660	2,544	21,649	742	20,628		11	11		1		1	53		
54	22			3,132	23,127	1,566	22,813	594	21,651	22	7,776	22,068	2,592	22,058	756	21,017		11	11		1		1	54		
55	22			3,190	23,555	1,595	23,236	605	22,052	22	7,920	22,477	2,640	22,466	770	21,406		11	11		1		1	55		
56	22			3,248	23,983	1,624	23,658	616	22,453	22	8,064	22,886	2,688	22,875	784	21,795		11	11		1		1	56		
57	22			3,306	24,412	1,653	24,081	627	22,854	22			2,736	23,283	798	22,184		11	11		1		1	57		
58	22			3,364	24,840	1,682	24,503	638	23,255	22			2,784	23,692	812	22,574		11	11		1		1	58		
59	22			3,422	25,268	1,711	24,926	649	23,656	22			2,832	24,100	826	22,963		11	11		1		1	59		
60	22			3,480	25,696	1,740	25,348	660	24,057	22			2,880	24,509	840	23,352		11	11		1		1	60		
61	22			3,538	26,125	1,769	25,771	671	24,458	22			2,928	24,917	854	23,741		11	11		1		1	61		
62	22			3,596	26,553	1,798	26,193	682	24,859	22			2,976	25,326	868	24,130		11	11		1		1	62		
63	22			3,654	26,981	1,827	26,616	693	25,260	22			3,024	25,734	882	24,520		11	11		1		1	63		
64	22			3,712	27,409	1,856	27,038	704	25,661	22			3,072	26,143	896	24,909		11	11		1		2	64	1	

(To be continued)

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(Continued from preceding sheet)

RAID Group	Storage Capacity (GB)																	Number of necessary options								
	Open System									Mainframe System								DKC options						DKU options		
	Cache (GB)	OPEN-3 (2.461GB)		OPEN-9 (7.384GB)		OPEN-E (14.568GB)		OPEN-L (36.450GB)		Cache (GB)	3390-3/3R (2.838GB)		3390-9 (8.510GB)		3390-L (27.80GB)			F460I-2048		F460I -S512	F460I -200	F460I -L1C	455I -18	455I -146J4	455I -EXC	
		VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap		VOL	Cap	VOL	Cap	VOL	Cap		OPEN	MF							
65	22			3,770	27,838	1,885	27,461	715	26,062	22			3,120	26,551	910	25,298		11	11		1		2	65	1	
66	22			3,828	28,266	1,914	27,883	726	26,463	22			3,168	26,960	924	25,687		11	11		1		2	66	1	
67	22			3,886	28,694	1,943	28,306	737	26,864	22			3,216	27,368	938	26,076		11	11		1		2	67	1	
68	22			3,944	29,122	1,972	28,728	748	27,265	22			3,264	27,777	952	26,466		11	11		1		2	68	1	
69	22			4,002	29,551	2,001	29,151	759	27,666	22			3,312	28,185	966	26,855		11	11		1		2	69	1	
70	22			4,060	29,979	2,030	29,573	770	28,067	22			3,360	28,594	980	27,244		11	11		1		2	70	1	
71	22			4,118	30,407	2,059	29,996	781	28,467	22			3,408	29,002	994	27,633		11	11		1		2	71	1	
72	22			4,176	30,836	2,088	30,418	792	28,868	22			3,456	29,411	1,008	28,022		11	11		1		2	72	1	
73	22			4,234	31,264	2,117	30,840	803	29,269	22			3,504	29,819	1,022	28,412		11	11		1		2	73	1	
74	22			4,292	31,692	2,146	31,263	814	29,670	22			3,552	30,228	1,036	28,801		11	11		1		2	74	1	
75	22			4,350	32,120	2,175	31,685	825	30,071	22			3,600	30,636	1,050	29,190		11	11		1		2	75	1	
76	22			4,408	32,549	2,204	32,108	836	30,472	22			3,648	31,044	1,064	29,579		11	11		1		2	76	1	
77	22			4,466	32,977	2,233	32,530	847	30,873	22			3,696	31,453	1,078	29,968		11	11		1		2	77	1	
78	22			4,524	33,405	2,262	32,953	858	31,274	22			3,744	31,861	1,092	30,358		11	11		1		2	78	1	
79	22			4,582	33,833	2,291	33,375	869	31,675	22			3,792	32,270	1,106	30,747		11	11		1		2	79	1	
80	22			4,640	34,262	2,320	33,798	880	32,076	22			3,840	32,678	1,120	31,136		11	11		1		2	80	1	
81	22			4,698	34,690	2,349	34,220	891	32,477	22			3,888	33,087	1,134	31,525		11	11		1		2	81	1	
82	22			4,756	35,118	2,378	34,643	902	32,878	22			3,936	33,495	1,148	31,914		11	11		1		2	82	1	
83	22			4,814	35,547	2,407	35,065	913	33,279	22			3,984	33,904	1,162	32,304		11	11		1		2	83	1	
84	22			4,872	35,975	2,436	35,488	924	33,680	22			4,032	34,312	1,176	32,693		11	11		1		2	84	1	
85	22			4,930	36,403	2,465	35,910	935	34,081	22			4,080	34,721	1,190	33,082		11	11		1		2	85	1	
86	22			4,988	36,831	2,494	36,333	946	34,482	22			4,128	35,129	1,204	33,471		11	11		1		2	86	1	
87	22			5,046	37,260	2,523	36,755	957	34,883	22			4,176	35,538	1,218	33,860		11	11		1		2	87	1	
88	22			5,104	37,688	2,552	37,178	968	35,284	22			4,224	35,946	1,232	34,250		11	11		1		2	88	1	
89	22			5,162	38,116	2,581	37,600	979	35,685	22			4,272	36,355	1,246	34,639		11	11		1		2	89	1	
90	22			5,220	38,544	2,610	38,022	990	36,086	22			4,320	36,763	1,260	35,028		11	11		1		2	90	1	
91	22			5,278	38,973	2,639	38,445	1,001	36,486	22			4,368	37,172	1,274	35,417		11	11		1		2	91	1	
92	22			5,336	39,401	2,668	38,867	1,012	36,887	22			4,416	37,580	1,288	35,806		11	11		1		2	92	1	
93	22			5,394	39,829	2,697	39,290	1,023	37,288	22			4,464	37,989	1,302	36,196		11	11		1		2	93	1	
94	22			5,452	40,258	2,726	39,712	1,034	37,689	22			4,512	38,397	1,316	36,585		11	11		1		2	94	1	
95	22			5,510	40,686	2,755	40,135	1,045	38,090	22			4,560	38,806	1,330	36,974		11	11		1		2	95	1	
96	22			5,568	41,114	2,784	40,557	1,056	38,491	22			4,608	39,214	1,344	37,363		11	11		1		2	96	1	
97	22			5,626	41,542	2,813	40,980	1,067	38,892	22			4,656	39,623	1,358	37,752		11	11		1		2	97	1	
98	22			5,684	41,971	2,842	41,402	1,078	39,293	22			4,704	40,031	1,372	38,142		11	11		1		2	98	1	
99	22			5,742	42,399	2,871	41,825	1,089	39,694	22			4,752	40,440	1,386	38,531		11	11		1		2	99	1	
100	22			5,800	42,827	2,900	42,247	1,100	40,095	22			4,800	40,848	1,400	38,920		11	11		1		2	100	1	
101	22			5,858	43,255	2,929	42,670	1,111	40,496	22			4,848	41,256	1,414	39,309		11	11		1		2	101	1	
102	22			5,916	43,684	2,958	43,092	1,122	40,897	22			4,896	41,665	1,428	39,698		11	11		1		2	102	1	
103	22			5,974	44,112	2,987	43,515	1,133	41,298	22			4,944	42,073	1,442	40,088		11	11		1		2	103	1	
104	22			6,032	44,540	3,016	43,937	1,144	41,699	22			4,992	42,482	1,456	40,477		11	11		1		2	104	1	
105	22			6,090	44,969	3,045	44,360	1,155	42,100	22			5,040	42,890	1,470	40,866		11	11		1		2	105	1	
106	22			6,148	45,397	3,074	44,782	1,166	42,501	22			5,088	43,299	1,484	41,255		11	11		1		2	106	1	
107	22			6,206	45,825	3,103	45,205	1,177	42,902	22			5,136	43,707	1,498	41,644		11	11		1		2	107	1	
108	22			6,264	46,253	3,132	45,627	1,188	43,303	22			5,184	44,116	1,512	42,034		11	11		1		2	108	1	
109	22			6,322	46,682	3,161	46,049	1,199	43,704	22			5,232	44,524	1,526	42,423		11	11		1		2	109	1	
110	22			6,380	47,110	3,190	46,472	1,210	44,105	22			5,280	44,933	1,540	42,812		11	11		1		2	110	1	
111	22			6,438	47,538	3,219	46,894	1,221	44,505	22			5,328	45,341	1,554	43,201		11	11		1		2	111	1	
112	22			6,496	47,966	3,248	47,317	1,232	44,906	22			5,376	45,750	1,568	43,590		11	11		1		2	112	1	
113	22			6,554	48,395	3,277	47,739	1,243	45,307	22			5,424	46,158	1,582	43,980		11	11		1		2	113	1	
114	22			6,612	48,823	3,306	48,162	1,254	45,708	22			5,472	46,567	1,596	44,369		11	11		1		2	114	1	
115	22			6,670	49,251	3,335	48,584	1,265	46,109	22			5,520	46,975	1,610	44,758		11	11		1		2	115	1	
116	22			6,728	49,680	3,364	49,007	1,276	46,510	22			5,568	47,384	1,624	45,147		11	11		1		2	116	1	
117	22			6,786	50,108	3,393	49,429	1,287	46,911	22			5,616	47,792	1,638	45,536		11	11		1		2	117	1	
118	22			6,844	50,536	3,422	49,852	1,298	47,312	22			5,664	48,201	1,652	45,926		11	11		1		2	118	1	
119	22			6,902	50,964	3,451	50,274	1,309	47,713	22			5,712	48,609	1,666	46,315		11	11		1		2	119	1	
120	22			6,960	51,393	3,480	50,697	1,320	48,114	22			5,760	49,018	1,680	46,704		11	11		1		2	120	1	
121	22			7,018	51,821	3,509	51,119	1,331	48,515	22			5,808	49,426	1,694	47,093		11	11		1		2	121	1	
122	22			7,076	52,249	3,538	51,542	1,342	48,916	22			5,856	49,835	1,708	47,482		11	11		1		2	122	1	
123	22			7,134	52,677	3,567	51,964	1,353	49,317	22			5,904	50,243	1,722	47,872		11	11		1		2	123	1	
124	22			7,192	53,106	3,596	52,387	1,364	49,718	22			5,952	50,652	1,736	48,261		11	11		1		2	124	1	
125	22			7,250	53,534	3,625	52,809	1,375	50,119	22			6,000	51,060	1,750	48,650		11	11		1		2	125	1	
126	22			7,308	53,962	3,654	53,231	1,386	50,520	22			6,048	51,468	1,764	49,039		11	11		1		2	126	1	
127	22			7,366	54,391	3,683	53,654	1,397	50,921	22			6,096	51,877	1,778	49,428		11	11		1		2	127	1	
128	22			7,424	54,819	3,712	54,076	1,408	51,322	22			6,144	52,285	1,792	49,818		11	11		2	1	3	128	1	
129	22			7,482	55,247	3,741	54,499	1,419	51,723	22			6,192	52,694	1,806	50,207		11	11		2	1	3	129	1	
130	22			7,540	55,675	3,770	54,921	1,430	52,124	22			6,240	53,102	1,820	50,596		11	11		2	1	3	130	1	

(To be continued)

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(Continued from preceding sheet)

RAID Group	Storage Capacity (GB)																	Number of necessary options								
	Open System									Mainframe System								DKC options						DKU options		
	Cache (GB)	OPEN-3 (2.461GB)		OPEN-9 (7.384GB)		OPEN-E (14.568GB)		OPEN-L (36.450GB)		Cache (GB)	3390-3/3R (2.838GB)		3390-9 (8.510GB)		3390-L (27.80GB)			F460I-2048		F460I -S512	F460I -200	F460I -L1C	455I -18	455I -146J4	455I -EXC
		VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap		VOL	Cap	VOL	Cap	VOL	Cap		OPEN	MF						
131	22			7,598	56,104	3,799	55,344	1,441	52,524	22			6,288	53,511	1,834	50,985		11	11		2	1	3	131	1
132	22			7,656	56,532	3,828	55,766	1,452	52,925	22			6,336	53,919	1,848	51,374		11	11		2	1	3	132	1
133	22			7,714	56,960	3,857	56,189	1,463	53,326	22			6,384	54,328	1,862	51,764		11	11		2	1	3	133	1
134	22			7,772	57,388	3,886	56,611	1,474	53,727	22			6,432	54,736	1,876	52,153		11	11		2	1	3	134	1
135	22			7,830	57,817	3,915	57,034	1,485	54,128	22			6,480	55,145	1,890	52,542		11	11		2	1	3	135	1
136	22			7,888	58,245	3,944	57,456	1,496	54,529	22			6,528	55,553	1,904	52,931		11	11		2	1	3	136	1
137	22			7,946	58,673	3,973	57,879	1,507	54,930	22			6,576	55,962	1,918	53,320		11	11		2	1	3	137	1
138	22			8,004	59,102	4,002	58,301	1,518	55,331	22			6,624	56,370	1,932	53,710		11	11		2	1	3	138	1
139	22			8,062	59,530	4,031	58,724	1,529	55,732	22			6,672	56,779	1,946	54,099		11	11		2	1	3	139	1
140	22			8,120	59,958	4,060	59,146	1,540	56,133	22			6,720	57,187	1,960	54,488		11	11		2	1	3	140	1
141	22			8,178	60,386	4,089	59,569	1,551	56,534	22			6,768	57,596	1,974	54,877		11	11		2	1	3	141	1
142	22					4,118	59,991	1,562	56,935	22			6,816	58,004	1,988	55,266		11	11		2	1	3	142	1
143	22					4,147	60,413	1,573	57,336	22			6,864	58,413	2,002	55,656		11	11		2	1	3	143	1
144	22					4,176	60,836	1,584	57,737	22			6,912	58,821	2,016	56,045		11	11		2	1	3	144	1
145	22					4,205	61,258	1,595	58,138	22			6,960	59,230	2,030	56,434		11	11		2	1	3	145	1
146	22					4,234	61,681	1,606	58,539	22			7,008	59,638	2,044	56,823		11	11		2	1	3	146	1
147	22					4,263	62,103	1,617	58,940	22			7,056	60,047	2,058	57,212		11	11		2	1	3	147	1
148	22					4,292	62,526	1,628	59,341	22			7,104	60,455	2,072	57,602		11	11		2	1	3	148	1
149	22					4,321	62,948	1,639	59,742	22			7,152	60,864	2,086	57,991		11	11		2	1	3	149	1
150	22					4,350	63,371	1,650	60,143	22			7,200	61,272	2,100	58,380		11	11		2	1	3	150	1
151	22					4,379	63,793	1,661	60,543	22			7,248	61,680	2,114	58,769		11	11		2	1	3	151	1
152	22					4,408	64,216	1,672	60,944	22			7,296	62,089	2,128	59,158		11	11		2	1	3	152	1
153	22					4,437	64,638	1,683	61,345	22			7,344	62,497	2,142	59,548		11	11		2	1	3	153	1
154	22					4,466	65,061	1,694	61,746	22			7,392	62,906	2,156	59,937		11	11		2	1	3	154	1
155	22					4,495	65,483	1,705	62,147	22			7,440	63,314	2,170	60,326		11	11		2	1	3	155	1
156	22					4,524	65,906	1,716	62,548	22			7,488	63,723	2,184	60,715		11	11		2	1	3	156	1
157	22					4,553	66,328	1,727	62,949	22			7,536	64,131	2,198	61,104		11	11		2	1	3	157	1
158	22					4,582	66,751	1,738	63,350	22			7,584	64,540	2,212	61,494		11	11		2	1	3	158	1
159	22					4,611	67,173	1,749	63,751	22			7,632	64,948	2,226	61,883		11	11		3	1	3	159	1
160	22					4,640	67,596	1,760	64,152	22			7,680	65,357	2,240	62,272		11	11		3	1	3	160	1
161	22					4,669	68,018	1,771	64,553	22			7,728	65,765	2,254	62,661		11	11		3	1	3	161	1
162	22					4,698	68,440	1,782	64,954	22			7,776	66,174	2,268	63,050		11	11		3	1	3	162	1
163	22					4,727	68,863	1,793	65,355	22			7,824	66,582	2,282	63,440		11	11		3	1	3	163	1
164	22					4,756	69,285	1,804	65,756	22			7,872	66,991	2,296	63,829		11	11		3	1	3	164	1
165	22					4,785	69,708	1,815	66,157	22			7,920	67,399	2,310	64,218		11	11		3	1	3	165	1
166	22					4,814	70,130	1,826	66,558	22			7,968	67,808	2,324	64,607		11	11		3	1	3	166	1
167	22					4,843	70,553	1,837	66,959	22			8,016	68,216	2,338	64,996		11	11		3	1	3	167	1
168	22					4,872	70,975	1,848	67,360	22			8,064	68,625	2,352	65,386		11	11		3	1	3	168	1
169	22					4,901	71,398	1,859	67,761	22			8,112	69,033	2,366	65,775		11	11		3	1	3	169	1
170	22					4,930	71,820	1,870	68,162	22			8,160	69,442	2,380	66,164		11	11		3	1	3	170	1
171	22					4,959	72,243	1,881	68,562	22					2,394	66,553		11	11		3	1	3	171	1
172	22					4,988	72,665	1,892	68,963	22					2,408	66,942		11	11		3	1	3	172	1
173	22					5,017	73,088	1,903	69,364	22					2,422	67,332		11	11		3	1	3	173	1
174	22					5,046	73,510	1,914	69,765	22					2,436	67,721		11	11		3	1	3	174	1
175	22					5,075	73,933	1,925	70,166	22					2,450	68,110		11	11		3	1	3	175	1
176	22					5,104	74,355	1,936	70,567	22					2,464	68,499		11	11		3	1	3	176	1
177	22					5,133	74,778	1,947	70,968	22					2,478	68,888		11	11		3	1	3	177	1
178	22					5,162	75,200	1,958	71,369	22					2,492	69,278		11	11		3	1	3	178	1
179	22					5,191	75,622	1,969	71,770	22					2,506	69,667		11	11		3	1	3	179	1
180	22					5,220	76,045	1,980	72,171	22					2,520	70,056		11	11		3	1	3	180	1
181	22					5,249	76,467	1,991	72,572	22					2,534	70,445		11	11		3	1	3	181	1
182	22					5,278	76,890	2,002	72,973	22					2,548	70,834		11	11		3	1	3	182	1
183	22					5,307	77,312	2,013	73,374	22					2,562	71,224		11	11		3	1	3	183	1
184	22					5,336	77,735	2,024	73,775	22					2,576	71,613		11	11		3	1	3	184	1
185	22					5,365	78,157	2,035	74,176	22					2,590	72,002		11	11		3	1	3	185	1
186	22					5,394	78,580	2,046	74,577	22					2,604	72,391		11	11		3	1	3	186	1
187	22					5,423	79,002	2,057	74,978	22					2,618	72,780		11	11		3	1	3	187	1
188	22					5,452	79,425	2,068	75,379	22					2,632	73,170		11	11		3	1	3	188	1
189	22					5,481	79,847	2,079	75,780	22					2,646	73,559		11	11		3	1	3	189	1
190	22					5,510	80,270	2,090	76,181	22					2,660	73,948		11	11		3	1	3	190	1
191	22					5,539	80,692	2,101	76,581	22					2,674	74,337		11	11		3	1	4	191	2
192	22					5,568	81,115	2,112	76,982	22					2,688	74,726		11	11		3	1	4	192	2
193	22					5,597	81,537	2,123	77,383	22					2,702	75,116		11	11		3	1	4	193	2
194	22					5,626	81,960	2,134	77,784	22					2,716	75,505		11	11		3	1	4	194	2
195	22					5,655	82,382	2,145	78,185	22					2,730	75,894		11	11		3	1	4	195	2
196	22					5,684	82,805	2,156	78,586	22					2,744	76,283		11	11		3	1	4	196	2

(To be continued)

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(Continued from preceding sheet)

RAID group	Storage Capacity (GB)																Number of necessary options								
	Open System									Mainframe System															
	Cache (GB)	OPEN-3 (2.461GB)		OPEN-9 (7.384GB)		OPEN-E (14.568GB)		OPEN-L (36.450GB)		Cache (GB)	3390-3/3R (2.838GB)		3390-9 (8.510GB)		3390-L (27.80GB)		DKC options					DKU options		
		VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap		VOL	Cap	VOL	Cap	VOL	Cap	F460I-2048		F460I -S512	F460I -200	F460I -L1C	455I -18	455I -146J4	455I -EXC
197	22					5,713	83,227	2,167	78,987	22					2,758	76,672	11	11		3	1	4	197	2
198	22					5,742	83,649	2,178	79,388	22					2,772	77,062	11	11		3	1	4	198	2
199	22					5,771	84,072	2,189	79,789	22					2,786	77,451	11	11		3	1	4	199	2
200	22					5,800	84,494	2,200	80,190	22					2,800	77,840	11	11		3	1	4	200	2
201	22					5,829	84,917	2,211	80,591	22					2,814	78,229	11	11		3	1	4	201	2
202	22					5,858	85,339	2,222	80,992	22					2,828	78,618	11	11		3	1	4	202	2
203	22					5,887	85,762	2,233	81,393	22					2,842	79,008	11	11		3	1	4	203	2
204	22					5,916	86,184	2,244	81,794	22					2,856	79,397	11	11		3	1	4	204	2
205	22					5,945	86,607	2,255	82,195	22					2,870	79,786	11	11		3	1	4	205	2
206	22					5,974	87,029	2,266	82,596	22					2,884	80,175	11	11		3	1	4	206	2
207	22					6,003	87,452	2,277	82,997	22					2,898	80,564	11	11		3	1	4	207	2
208	22					6,032	87,874	2,288	83,398	22					2,912	80,954	11	11		3	1	4	208	2
209	22					6,061	88,297	2,299	83,799	22					2,926	81,343	11	11		3	1	4	209	2
210	22					6,090	88,719	2,310	84,200	22					2,940	81,732	11	11		3	1	4	210	2
211	22					6,119	89,142	2,321	84,600	22					2,954	82,121	11	11		3	1	4	211	2
212	22					6,148	89,564	2,332	85,001	22					2,968	82,510	11	11		3	1	4	212	2
213	22					6,177	89,987	2,343	85,402	22					2,982	82,900	11	11		3	1	4	213	2
214	22					6,206	90,409	2,354	85,803	22					2,996	83,289	11	11		3	1	4	214	2
215	22					6,235	90,831	2,365	86,204	22					3,010	83,678	11	11		3	1	4	215	2
216	22					6,264	91,254	2,376	86,605	22					3,024	84,067	11	11		3	1	4	216	2
217	22					6,293	91,676	2,387	87,006	22					3,038	84,456	11	11		3	1	4	217	2
218	22					6,322	92,099	2,398	87,407	22					3,052	84,846	11	11		3	1	4	218	2
219	22					6,351	92,521	2,409	87,808	22					3,066	85,235	11	11		3	1	4	219	2
220	22					6,380	92,944	2,420	88,209	22					3,080	85,624	11	11		3	1	4	220	2
221	22					6,409	93,366	2,431	88,610	22					3,094	86,013	11	11		3	1	4	221	2
222	22					6,438	93,789	2,442	89,011	22					3,108	86,402	11	11		3	1	4	222	2
223	22					6,467	94,211	2,453	89,412	22					3,122	86,792	11	11		3	1	4	223	2
224	22					6,496	94,634	2,464	89,813	22					3,136	87,181	11	11		3	1	4	224	2
225	22					6,525	95,056	2,475	90,214	22					3,150	87,570	11	11		3	1	4	225	2
226	22					6,554	95,479	2,486	90,615	22					3,164	87,959	11	11		3	1	4	226	2
227	22					6,583	95,901	2,497	91,016	22					3,178	88,348	11	11		3	1	4	227	2
228	22					6,612	96,324	2,508	91,417	22					3,192	88,738	11	11		3	1	4	228	2
229	22					6,641	96,746	2,519	91,818	22					3,206	89,127	11	11		3	1	4	229	2
230	22					6,670	97,169	2,530	92,219	22					3,220	89,516	11	11		3	1	4	230	2
231	22					6,699	97,591	2,541	92,619	22					3,234	89,905	11	11		3	1	4	231	2
232	22					6,728	98,014	2,552	93,020	22					3,248	90,294	11	11		3	1	4	232	2
233	22					6,757	98,436	2,563	93,421	22					3,262	90,684	11	11		3	1	4	233	2
234	22					6,786	98,858	2,574	93,822	22					3,276	91,073	11	11		3	1	4	234	2
235	22					6,815	99,281	2,585	94,223	22					3,290	91,462	11	11		3	1	4	235	2
236	22					6,844	99,703	2,596	94,624	22					3,304	91,851	11	11		3	1	4	236	2
237	22					6,873	100,126	2,607	95,025	22					3,318	92,240	11	11		3	1	4	237	2
238	22					6,902	100,548	2,618	95,426	22					3,332	92,630	11	11		3	1	4	238	2
239	22					6,931	100,971	2,629	95,827	22					3,346	93,019	11	11		3	1	4	239	2
240	22					6,960	101,393	2,640	96,228	22					3,360	93,408	11	11		3	1	4	240	2
241	22					6,989	101,816	2,651	96,629	22					3,374	93,797	11	11		3	1	4	241	2
242	22					7,018	102,238	2,662	97,030	22					3,388	94,186	11	11		3	1	4	242	2
243	22					7,047	102,661	2,673	97,431	22					3,402	94,576	11	11		3	1	4	243	2
244	22					7,076	103,083	2,684	97,832	22					3,416	94,965	11	11		3	1	4	244	2
245	22					7,105	103,506	2,695	98,233	22					3,430	95,354	11	11		3	1	4	245	2
246	22					7,134	103,928	2,706	98,634	22					3,444	95,743	11	11		3	1	4	246	2
247	22					7,163	104,351	2,717	99,035	22					3,458	96,132	11	11		3	1	4	247	2
248	22					7,192	104,773	2,728	99,436	22					3,472	96,522	11	11		3	1	4	248	2
249	22					7,221	105,196	2,739	99,837	22					3,486	96,911	11	11		3	1	4	249	2
250	22					7,250	105,618	2,750	100,238	22					3,500	97,300	11	11		3	1	4	250	2
251	22					7,279	106,040	2,761	100,638	22					3,514	97,689	11	11		3	1	4	251	2
252	22					7,308	106,463	2,772	101,039	22					3,528	98,078	11	11		3	1	4	252	2
253	22					7,337	106,885	2,783	101,440	22					3,542	98,468	11	11		3	1	4	253	2
254	22					7,366	107,308	2,794	101,841	22					3,556	98,857	11	11		3	1	4	254	2

*1: The number of the Shard Memory option(DKC-F460I-S512) necessary is refer to table 1.1.2-3A and 1.1.2-3B.
Please note that location of shared memory varies according to the purpose such as additional cache installation or additional LDEV installation.

Note: In addition to the Options listed in above table as necessary parts, the Power Cable Kit option, the AC Box Kit option and the Channel options are required.

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(4) 72GB 15K rpm HDD, RAID5 (3D+1P)

RAID Group	Storage Capacity (GB)																	Number of necessary options								
	Open System									Mainframe System								DKC options						DKU options		
	Cache (GB)	OPEN-3 (2.461GB)		OPEN-9 (7.384GB)		OPEN-E (14.568GB)		OPEN-L (36.450GB)		Cache (GB)	3390-3/3R (2.838GB)		3390-9 (8.510GB)		3390-L (27.80GB)			F460I-2048		F460I -S512	F460I -200	F460I -L1C	455I -18	455I -72K4	455I -EXC
		VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap		VOL	Cap	VOL	Cap	VOL	Cap		OPEN	MF						
1	4	86	212	28	207	14	204	5	182	4	71	201	23	196	7	195		2	2	*1			1	1	
2	4	172	423	56	414	28	408	10	365	4	142	403	46	391	14	389		2	2				1	2	
3	4	258	635	84	620	42	612	15	547	4	213	604	69	587	21	584		2	2				1	3	
4	6	344	847	112	827	56	816	20	729	6	284	806	92	783	28	778		3	3				1	4	
5	6	430	1,058	140	1,034	70	1,020	25	911	6	355	1,007	115	979	35	973		3	3				1	5	
6	6	516	1,270	168	1,241	84	1,224	30	1,094	6	426	1,209	138	1,174	42	1,168		3	3				1	6	
7	8	602	1,482	196	1,447	98	1,428	35	1,276	8	497	1,410	161	1,370	49	1,362		4	4				1	7	
8	8	688	1,693	224	1,654	112	1,632	40	1,458	8	568	1,612	184	1,566	56	1,557		4	4				1	8	
9	8	774	1,905	252	1,861	126	1,836	45	1,640	8	639	1,813	207	1,762	63	1,751		4	4				1	9	
10	8	860	2,116	280	2,068	140	2,040	50	1,823	8	710	2,015	230	1,957	70	1,946		4	4				1	10	
11	8	946	2,328	308	2,274	154	2,243	55	2,005	8	781	2,216	253	2,153	77	2,141		4	4				1	11	
12	8	1,032	2,540	336	2,481	168	2,447	60	2,187	8	852	2,418	276	2,349	84	2,335		4	4				1	12	
13	8	1,118	2,751	364	2,688	182	2,651	65	2,369	8	923	2,619	299	2,544	91	2,530		4	4				1	13	
14	10	1,204	2,963	392	2,895	196	2,855	70	2,552	10	994	2,821	322	2,740	98	2,724		5	5				1	14	
15	10	1,290	3,175	420	3,101	210	3,059	75	2,734	10	1,065	3,022	345	2,936	105	2,919		5	5				1	15	
16	10	1,376	3,386	448	3,308	224	3,263	80	2,916	10	1,136	3,224	368	3,132	112	3,114		5	5				1	16	
17	10	1,462	3,598	476	3,515	238	3,467	85	3,098	10	1,207	3,425	391	3,327	119	3,308		5	5				1	17	
18	10	1,548	3,810	504	3,722	252	3,671	90	3,281	10	1,278	3,627	414	3,523	126	3,503		5	5				1	18	
19	10	1,634	4,021	532	3,928	266	3,875	95	3,463	10	1,349	3,828	437	3,719	133	3,697		5	5				1	19	
20	10	1,720	4,233	560	4,135	280	4,079	100	3,645	10	1,420	4,030	460	3,915	140	3,892		5	5				1	20	
21	10	1,806	4,445	588	4,342	294	4,283	105	3,827	10	1,491	4,231	483	4,110	147	4,087		5	5				1	21	
22	10	1,892	4,656	616	4,549	308	4,487	110	4,010	10	1,562	4,433	506	4,306	154	4,281		5	5				1	22	
23	10	1,978	4,868	644	4,755	322	4,691	115	4,192	10	1,633	4,634	529	4,502	161	4,476		5	5				1	23	
24	10	2,064	5,080	672	4,962	336	4,895	120	4,374	10	1,704	4,836	552	4,698	168	4,670		5	5				1	24	
25	10	2,150	5,291	700	5,169	350	5,099	125	4,556	10	1,775	5,037	575	4,893	175	4,865		5	5				1	25	
26	10	2,236	5,503	728	5,376	364	5,303	130	4,739	10	1,846	5,239	598	5,089	182	5,060		5	5				1	26	
27	10	2,322	5,714	756	5,582	378	5,507	135	4,921	10	1,917	5,440	621	5,285	189	5,254		5	5				1	27	
28	12	2,408	5,926	784	5,789	392	5,711	140	5,103	12	1,988	5,642	644	5,480	196	5,449		6	6				1	28	
29	12	2,494	6,138	812	5,996	406	5,915	145	5,285	12	2,059	5,843	667	5,676	203	5,643		6	6				1	29	
30	12	2,580	6,349	840	6,203	420	6,119	150	5,468	12	2,130	6,045	690	5,872	210	5,838		6	6				1	30	
31	12	2,666	6,561	868	6,409	434	6,323	155	5,650	12	2,201	6,246	713	6,068	217	6,033		6	6				1	31	
32	12	2,752	6,773	896	6,616	448	6,526	160	5,832	12	2,272	6,448	736	6,263	224	6,227		6	6		1		1	32	
33	12	2,838	6,984	924	6,823	462	6,730	165	6,014	12	2,343	6,649	759	6,459	231	6,422		6	6		1		1	33	
34	12	2,924	7,196	952	7,030	476	6,934	170	6,197	12	2,414	6,851	782	6,655	238	6,616		6	6		1		1	34	
35	12	3,010	7,408	980	7,236	490	7,138	175	6,379	12	2,485	7,052	805	6,851	245	6,811		6	6		1		1	35	
36	12	3,096	7,619	1,008	7,443	504	7,342	180	6,561	12	2,556	7,254	828	7,046	252	7,006		6	6		1		1	36	
37	12	3,182	7,831	1,036	7,650	518	7,546	185	6,743	12	2,627	7,455	851	7,242	259	7,200		6	6		1		1	37	
38	12	3,268	8,043	1,064	7,857	532	7,750	190	6,926	12	2,698	7,657	874	7,438	266	7,395		6	6		1		1	38	
39	12	3,354	8,254	1,092	8,063	546	7,954	195	7,108	12	2,769	7,858	897	7,633	273	7,589		6	6		1		1	39	
40	12	3,440	8,466	1,120	8,270	560	8,158	200	7,290	12	2,840	8,060	920	7,829	280	7,784		6	6		1		1	40	
41	14	3,526	8,677	1,148	8,477	574	8,362	205	7,472	12	2,911	8,261	943	8,025	287	7,979		7	6		1		1	41	
42	14	3,612	8,889	1,176	8,684	588	8,566	210	7,655	14	2,982	8,463	966	8,221	294	8,173		7	7		1		1	42	
43	14	3,698	9,101	1,204	8,890	602	8,770	215	7,837	14	3,053	8,664	989	8,416	301	8,368		7	7		1		1	43	
44	14	3,784	9,312	1,232	9,097	616	8,974	220	8,019	14	3,124	8,866	1,012	8,612	308	8,562		7	7		1		1	44	
45	14	3,870	9,524	1,260	9,304	630	9,178	225	8,201	14	3,195	9,067	1,035	8,808	315	8,757		7	7		1		1	45	
46	14	3,956	9,736	1,288	9,511	644	9,382	230	8,384	14	3,266	9,269	1,058	9,004	322	8,952		7	7		1		1	46	
47	14	4,042	9,947	1,316	9,717	658	9,586	235	8,566	14	3,337	9,470	1,081	9,199	329	9,146		7	7		1		1	47	
48	14	4,128	10,159	1,344	9,924	672	9,790	240	8,748	14	3,408	9,672	1,104	9,395	336	9,341		7	7		1		1	48	
49	14	4,214	10,371	1,372	10,131	686	9,994	245	8,930	14	3,479	9,873	1,127	9,591	343	9,535		7	7		1		1	49	
50	14	4,300	10,582	1,400	10,338	700	10,198	250	9,113	14	3,550	10,075	1,150	9,787	350	9,730		7	7		1		1	50	
51	14	4,386	10,794	1,428	10,544	714	10,402	255	9,295	14	3,621	10,276	1,173	9,982	357	9,925		7	7		1		1	51	
52	14	4,472	11,006	1,456	10,751	728	10,606	260	9,477	14	3,692	10,478	1,196	10,178	364	10,119		7	7		1		1	52	
53	14	4,558	11,217	1,484	10,958	742	10,809	265	9,659	14	3,763	10,679	1,219	10,374	371	10,314		7	7		1		1	53	
54	16	4,644	11,429	1,512	11,165	756	11,013	270	9,842	14	3,834	10,881	1,242	10,569	378	10,508		8	7		1		1	54	
55	16	4,730	11,641	1,540	11,371	770	11,217	275	10,024	14	3,905	11,082	1,265	10,765	385	10,703		8	7		1		1	55	
56	16	4,816	11,852	1,568	11,578	784	11,421	280	10,206	16	3,976	11,284	1,288	10,961	392	10,898		8	8		1		1	56	
57	16	4,902	12,064	1,596	11,785	798	11,625	285	10,388	16	4,047	11,485	1,311	11,157	399	11,092		8	8		1		1	57	
58	16	4,988	12,275	1,624	11,992	812	11,829	290	10,571	16	4,118	11,687	1,334	11,352	406	11,287		8	8		1		1	58	
59	16	5,074	12,487	1,652	12,198	826	12,033	295	10,753	16	4,189	11,888	1,357	11,548	413	11,481		8	8		1		1	59	
60	16	5,160	12,699	1,680	12,405	840	12,237	300	10,935	16	4,260	12,090	1,380	11,744	420	11,676		8	8		1		1	60	
61	16	5,246	12,910	1,708	12,612	854	12,441	305	11,117	16	4,331	12,291	1,403	11,940	427	11,871		8	8		1		1	61	
62	16	5,332	13,122	1,736	12,819	868	12,645	310	11,300	16	4,402	12,493	1,426	12,135	434	12,065		8	8		1		1	62	
63	16	5,418	13,334	1,764	13,025	882	12,849	315	11,482	16	4,473	12,694	1,449	12,331	441	12,260		8	8		1		1	63	
64	16	5,504	13,545	1,792	13,232	896	13,053	320	11,664	16	4,544	12,896	1,472	12,527	448	12,454		8	8		1		2	64	1

(To be continued)

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(Continued from preceding sheet)

RAID Group	Storage Capacity (GB)																	Number of necessary options							
	Open System									Mainframe System								DKC options					DKU options		
	Cache (GB)	OPEN-3 (2.461GB)		OPEN-9 (7.384GB)		OPEN-E (14.568GB)		OPEN-L (36.450GB)		Cache (GB)	3390-3/3R (2.838GB)		3390-9 (8.510GB)		3390-L (27.80GB)			F460I-2048		F460I -S512	F460I -200	F460I -L1C	455I -18	455I -72K4	455I -EXC
		VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap		VOL	Cap	VOL	Cap	VOL	Cap		OPEN	MF						
65	16	5,590	13,757	1,820	13,439	910	13,257	325	11,846	16	4,615	13,097	1,495	12,722	455	12,649		8	8		1		2	65	1
66	16	5,676	13,969	1,848	13,646	924	13,461	330	12,029	16	4,686	13,299	1,518	12,918	462	12,844		8	8		1		2	66	1
67	18	5,762	14,180	1,876	13,852	938	13,665	335	12,211	16	4,757	13,500	1,541	13,114	469	13,038		9	8		1		2	67	1
68	18	5,848	14,392	1,904	14,059	952	13,869	340	12,393	16	4,828	13,702	1,564	13,310	476	13,233		9	8		1		2	68	1
69	18	5,934	14,604	1,932	14,266	966	14,073	345	12,575	16	4,899	13,903	1,587	13,505	483	13,427		9	8		1		2	69	1
70	18	6,020	14,815	1,960	14,473	980	14,277	350	12,758	18	4,970	14,105	1,610	13,701	490	13,622		9	9		1		2	70	1
71	18	6,106	15,027	1,988	14,679	994	14,481	355	12,940	18	5,041	14,306	1,633	13,897	497	13,817		9	9		1		2	71	1
72	18	6,192	15,239	2,016	14,886	1,008	14,685	360	13,122	18	5,112	14,508	1,656	14,093	504	14,011		9	9		1		2	72	1
73	18	6,278	15,450	2,044	15,093	1,022	14,888	365	13,304	18	5,183	14,709	1,679	14,288	511	14,206		9	9		1		2	73	1
74	18	6,364	15,662	2,072	15,300	1,036	15,092	370	13,487	18	5,254	14,911	1,702	14,484	518	14,400		9	9		1		2	74	1
75	18	6,450	15,873	2,100	15,506	1,050	15,296	375	13,669	18	5,325	15,112	1,725	14,680	525	14,595		9	9		1		2	75	1
76	18	6,536	16,085	2,128	15,713	1,064	15,500	380	13,851	18	5,396	15,314	1,748	14,875	532	14,790		9	9		1		2	76	1
77	18	6,622	16,297	2,156	15,920	1,078	15,704	385	14,033	18	5,467	15,515	1,771	15,071	539	14,984		9	9		1		2	77	1
78	18	6,708	16,508	2,184	16,127	1,092	15,908	390	14,216	18	5,538	15,717	1,794	15,267	546	15,179		9	9		1		2	78	1
79	18	6,794	16,720	2,212	16,333	1,106	16,112	395	14,398	18	5,609	15,918	1,817	15,463	553	15,373		9	9		1		2	79	1
80	20	6,880	16,932	2,240	16,540	1,120	16,316	400	14,580	18	5,680	16,120	1,840	15,658	560	15,568		10	9		1		2	80	1
81	20	6,966	17,143	2,268	16,747	1,134	16,520	405	14,762	18	5,751	16,321	1,863	15,854	567	15,763		10	9		1		2	81	1
82	20	7,052	17,355	2,296	16,954	1,148	16,724	410	14,945	18	5,822	16,523	1,886	16,050	574	15,957		10	9		1		2	82	1
83	20	7,138	17,567	2,324	17,160	1,162	16,928	415	15,127	18	5,893	16,724	1,909	16,246	581	16,152		10	9		1		2	83	1
84	20	7,224	17,778	2,352	17,367	1,176	17,132	420	15,309	20	5,964	16,926	1,932	16,441	588	16,346		10	10		1		2	84	1
85	20	7,310	17,990	2,380	17,574	1,190	17,336	425	15,491	20	6,035	17,127	1,955	16,637	595	16,541		10	10		1		2	85	1
86	20	7,396	18,202	2,408	17,781	1,204	17,540	430	15,674	20	6,106	17,329	1,978	16,833	602	16,736		10	10		1		2	86	1
87	20	7,482	18,413	2,436	17,987	1,218	17,744	435	15,856	20	6,177	17,530	2,001	17,029	609	16,930		10	10		1		2	87	1
88	20	7,568	18,625	2,464	18,194	1,232	17,948	440	16,038	20	6,248	17,732	2,024	17,224	616	17,125		10	10		1		2	88	1
89	20	7,654	18,836	2,492	18,401	1,246	18,152	445	16,220	20	6,319	17,933	2,047	17,420	623	17,319		10	10		1		2	89	1
90	20	7,740	19,048	2,520	18,608	1,260	18,356	450	16,403	20	6,390	18,135	2,070	17,616	630	17,514		10	10		1		2	90	1
91	20	7,826	19,260	2,548	18,814	1,274	18,560	455	16,585	20	6,461	18,336	2,093	17,811	637	17,709		10	10		1		2	91	1
92	20	7,912	19,471	2,576	19,021	1,288	18,764	460	16,767	20	6,532	18,538	2,116	18,007	644	17,903		10	10		1		2	92	1
93	20	7,998	19,683	2,604	19,228	1,302	18,968	465	16,949	20	6,603	18,739	2,139	18,203	651	18,098		10	10		1		2	93	1
94	20	8,084	19,895	2,632	19,435	1,316	19,171	470	17,132	20	6,674	18,941	2,162	18,399	658	18,292		10	10		1		2	94	1
95	22	8,170	20,106	2,660	19,641	1,330	19,375	475	17,314	20	6,745	19,142	2,185	18,594	665	18,487		11	10		1		2	95	1
96	22			2,688	19,848	1,344	19,579	480	17,496	20	6,816	19,344	2,208	18,790	672	18,682		11	10		1		2	96	1
97	22			2,716	20,055	1,358	19,783	485	17,678	20	6,887	19,545	2,231	18,986	679	18,876		11	10		1		2	97	1
98	22			2,744	20,262	1,372	19,987	490	17,861	22	6,958	19,747	2,254	19,182	686	19,071		11	11		1		2	98	1
99	22			2,772	20,468	1,386	20,191	495	18,043	22	7,029	19,948	2,277	19,377	693	19,265		11	11		1		2	99	1
100	22			2,800	20,675	1,400	20,395	500	18,225	22	7,100	20,150	2,300	19,573	700	19,460		11	11		1		2	100	1
101	22			2,828	20,882	1,414	20,599	505	18,407	22	7,171	20,351	2,323	19,769	707	19,655		11	11		1		2	101	1
102	22			2,856	21,089	1,428	20,803	510	18,590	22	7,242	20,553	2,346	19,964	714	19,849		11	11		1		2	102	1
103	22			2,884	21,295	1,442	21,007	515	18,772	22	7,313	20,754	2,369	20,160	721	20,044		11	11		1		2	103	1
104	22			2,912	21,502	1,456	21,211	520	18,954	22	7,384	20,956	2,392	20,356	728	20,238		11	11		1		2	104	1
105	22			2,940	21,709	1,470	21,415	525	19,136	22	7,455	21,157	2,415	20,552	735	20,433		11	11		1		2	105	1
106	22			2,968	21,916	1,484	21,619	530	19,319	22	7,526	21,359	2,438	20,747	742	20,628		11	11		1		2	106	1
107	22			2,996	22,122	1,498	21,823	535	19,501	22	7,597	21,560	2,461	20,943	749	20,822		11	11		1		2	107	1
108	22			3,024	22,329	1,512	22,027	540	19,683	22	7,668	21,762	2,484	21,139	756	21,017		11	11		1		2	108	1
109	22			3,052	22,536	1,526	22,231	545	19,865	22	7,739	21,963	2,507	21,335	763	21,211		11	11		1		2	109	1
110	22			3,080	22,743	1,540	22,435	550	20,048	22	7,810	22,165	2,530	21,530	770	21,406		11	11		1		2	110	1
111	22			3,108	22,949	1,554	22,639	555	20,230	22	7,881	22,366	2,553	21,726	777	21,601		11	11		1		2	111	1
112	22			3,136	23,156	1,568	22,843	560	20,412	22	7,952	22,568	2,576	21,922	784	21,795		11	11		1		2	112	1
113	22			3,164	23,363	1,582	23,047	565	20,594	22	8,023	22,769	2,599	22,117	791	21,990		11	11		1		2	113	1
114	22			3,192	23,570	1,596	23,251	570	20,777	22	8,094	22,971	2,622	22,313	798	22,184		11	11		1		2	114	1
115	22			3,220	23,776	1,610	23,454	575	20,959	22	8,165	23,172	2,645	22,509	805	22,379		11	11		1		2	115	1
116	22			3,248	23,983	1,624	23,658	580	21,141	22			2,668	22,705	812	22,574		11	11		1		2	116	1
117	22			3,276	24,190	1,638	23,862	585	21,323	22			2,691	22,900	819	22,768		11	11		1		2	117	1
118	22			3,304	24,397	1,652	24,066	590	21,506	22			2,714	23,096	826	22,963		11	11		1		2	118	1
119	22			3,332	24,603	1,666	24,270	595	21,688	22			2,737	23,292	833	23,157		11	11		1		2	119	1
120	22			3,360	24,810	1,680	24,474	600	21,870	22			2,760	23,488	840	23,352		11	11		1		2	120	1
121	22			3,388	25,017	1,694	24,678	605	22,052	22			2,783	23,683	847	23,547		11	11		1		2	121	1
122	22			3,416	25,224	1,708	24,882	610	22,235	22			2,806	23,879	854	23,741		11	11		1		2	122	1
123	22			3,444	25,430	1,722	25,086	615	22,417	22			2,829	24,075	861	23,936		11	11		1		2	123	1
124	22			3,472	25,637	1,736	25,290	620	22,599	22			2,852	24,271	868	24,130		11	11		1		2	124	1
125	22			3,500	25,844	1,750	25,494	625	22,781	22			2,875	24,466	875	24,325		11	11		1		2	125	1
126	22			3,528	26,051	1,764	25,698	630	22,964	22			2,898	24,662	882	24,520		11	11		1		2	126	1
127	22			3,556	26,258	1,778	25,902	635	23,146	22			2,921	24,858	889	24,714		11	11		1		2	127	1
128	22			3,584	26,464	1,792	26,106	640	23,328	22			2,944	25,053	896	24,909		11	11		2	1	3	128	1
129	22			3,612	26,671	1,806	26,310	645	23,510	22			2,967	25,249	903	25,103		11	11		2	1	3	129	1
130	22			3,640	26,878	1,820	26,514	650	23,693	22			2,990	25,445	910	25,298		11	11		2	1	3	130	1

(To be continued)

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(Continued from preceding sheet)

RAID Group	Storage Capacity (GB)																Number of necessary options							
	Open System									Mainframe System							DKC options					DKU options		
	Cache (GB)	OPEN-3 (2.461GB)		OPEN-9 (7.384GB)		OPEN-E (14.568GB)		OPEN-L (36.450GB)		Cache (GB)	3390-3/3R (2.838GB)		3390-9 (8.510GB)		3390-L (27.80GB)		F460I-2048		F460I -S512	F460I -200	F460I -L1C	455I -18	455I -72K4	455I -EXC
		VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap		VOL	Cap	VOL	Cap	VOL	Cap	OPEN	MF						
131	22			3,668	27,085	1,834	26,718	655	23,875	22			3,013	25,641	917	25,493	11	11		2	1	3	131	1
132	22			3,696	27,291	1,848	26,922	660	24,057	22			3,036	25,836	924	25,687	11	11		2	1	3	132	1
133	22			3,724	27,498	1,862	27,126	665	24,239	22			3,059	26,032	931	25,882	11	11		2	1	3	133	1
134	22			3,752	27,705	1,876	27,330	670	24,422	22			3,082	26,228	938	26,076	11	11		2	1	3	134	1
135	22			3,780	27,912	1,890	27,534	675	24,604	22			3,105	26,424	945	26,271	11	11		2	1	3	135	1
136	22			3,808	28,118	1,904	27,737	680	24,786	22			3,128	26,619	952	26,466	11	11		2	1	3	136	1
137	22			3,836	28,325	1,918	27,941	685	24,968	22			3,151	26,815	959	26,660	11	11		2	1	3	137	1
138	22			3,864	28,532	1,932	28,145	690	25,151	22			3,174	27,011	966	26,855	11	11		2	1	3	138	1
139	22			3,892	28,739	1,946	28,349	695	25,333	22			3,197	27,206	973	27,049	11	11		2	1	3	139	1
140	22			3,920	28,945	1,960	28,553	700	25,515	22			3,220	27,402	980	27,244	11	11		2	1	3	140	1
141	22			3,948	29,152	1,974	28,757	705	25,697	22			3,243	27,598	987	27,439	11	11		2	1	3	141	1
142	22			3,976	29,359	1,988	28,961	710	25,880	22			3,266	27,794	994	27,633	11	11		2	1	3	142	1
143	22			4,004	29,566	2,002	29,165	715	26,062	22			3,289	27,989	1,001	27,828	11	11		2	1	3	143	1
144	22			4,032	29,772	2,016	29,369	720	26,244	22			3,312	28,185	1,008	28,022	11	11		2	1	3	144	1
145	22			4,060	29,979	2,030	29,573	725	26,426	22			3,335	28,381	1,015	28,217	11	11		2	1	3	145	1
146	22			4,088	30,186	2,044	29,777	730	26,609	22			3,358	28,577	1,022	28,412	11	11		2	1	3	146	1
147	22			4,116	30,393	2,058	29,981	735	26,791	22			3,381	28,772	1,029	28,606	11	11		2	1	3	147	1
148	22			4,144	30,599	2,072	30,185	740	26,973	22			3,404	28,968	1,036	28,801	11	11		2	1	3	148	1
149	22			4,172	30,806	2,086	30,389	745	27,155	22			3,427	29,164	1,043	28,995	11	11		2	1	3	149	1
150	22			4,200	31,013	2,100	30,593	750	27,338	22			3,450	29,360	1,050	29,190	11	11		2	1	3	150	1
151	22			4,228	31,220	2,114	30,797	755	27,520	22			3,473	29,555	1,057	29,385	11	11		2	1	3	151	1
152	22			4,256	31,426	2,128	31,001	760	27,702	22			3,496	29,751	1,064	29,579	11	11		2	1	3	152	1
153	22			4,284	31,633	2,142	31,205	765	27,884	22			3,519	29,947	1,071	29,774	11	11		2	1	3	153	1
154	22			4,312	31,840	2,156	31,409	770	28,067	22			3,542	30,142	1,078	29,968	11	11		2	1	3	154	1
155	22			4,340	32,047	2,170	31,613	775	28,249	22			3,565	30,338	1,085	30,163	11	11		2	1	3	155	1
156	22			4,368	32,253	2,184	31,817	780	28,431	22			3,588	30,534	1,092	30,358	11	11		2	1	3	156	1
157	22			4,396	32,460	2,198	32,020	785	28,613	22			3,611	30,730	1,099	30,552	11	11		2	1	3	157	1
158	22			4,424	32,667	2,212	32,224	790	28,796	22			3,634	30,925	1,106	30,747	11	11		2	1	3	158	1
159	22			4,452	32,874	2,226	32,428	795	28,978	22			3,657	31,121	1,113	30,941	11	11		3	1	3	159	1
160	22			4,480	33,080	2,240	32,632	800	29,160	22			3,680	31,317	1,120	31,136	11	11		3	1	3	160	1
161	22			4,508	33,287	2,254	32,836	805	29,342	22			3,703	31,513	1,127	31,331	11	11		3	1	3	161	1
162	22			4,536	33,494	2,268	33,040	810	29,525	22			3,726	31,708	1,134	31,525	11	11		3	1	3	162	1
163	22			4,564	33,701	2,282	33,244	815	29,707	22			3,749	31,904	1,141	31,720	11	11		3	1	3	163	1
164	22			4,592	33,907	2,296	33,448	820	29,889	22			3,772	32,100	1,148	31,914	11	11		3	1	3	164	1
165	22			4,620	34,114	2,310	33,652	825	30,071	22			3,795	32,295	1,155	32,109	11	11		3	1	3	165	1
166	22			4,648	34,321	2,324	33,856	830	30,254	22			3,818	32,491	1,162	32,304	11	11		3	1	3	166	1
167	22			4,676	34,528	2,338	34,060	835	30,436	22			3,841	32,687	1,169	32,498	11	11		3	1	3	167	1
168	22			4,704	34,734	2,352	34,264	840	30,618	22			3,864	32,883	1,176	32,693	11	11		3	1	3	168	1
169	22			4,732	34,941	2,366	34,468	845	30,800	22			3,887	33,078	1,183	32,887	11	11		3	1	3	169	1
170	22			4,760	35,148	2,380	34,672	850	30,983	22			3,910	33,274	1,190	33,082	11	11		3	1	3	170	1
171	22			4,788	35,355	2,394	34,876	855	31,165	22			3,933	33,470	1,197	33,277	11	11		3	1	3	171	1
172	22			4,816	35,561	2,408	35,080	860	31,347	22			3,956	33,666	1,204	33,471	11	11		3	1	3	172	1
173	22			4,844	35,768	2,422	35,284	865	31,529	22			3,979	33,861	1,211	33,666	11	11		3	1	3	173	1
174	22			4,872	35,975	2,436	35,488	870	31,712	22			4,002	34,057	1,218	33,860	11	11		3	1	3	174	1
175	22			4,900	36,182	2,450	35,692	875	31,894	22			4,025	34,253	1,225	34,055	11	11		3	1	3	175	1
176	22			4,928	36,388	2,464	35,896	880	32,076	22			4,048	34,448	1,232	34,250	11	11		3	1	3	176	1
177	22			4,956	36,595	2,478	36,100	885	32,258	22			4,071	34,644	1,239	34,444	11	11		3	1	3	177	1
178	22			4,984	36,802	2,492	36,303	890	32,441	22			4,094	34,840	1,246	34,639	11	11		3	1	3	178	1
179	22			5,012	37,009	2,506	36,507	895	32,623	22			4,117	35,036	1,253	34,833	11	11		3	1	3	179	1
180	22			5,040	37,215	2,520	36,711	900	32,805	22			4,140	35,231	1,260	35,028	11	11		3	1	3	180	1
181	22			5,068	37,422	2,534	36,915	905	32,987	22			4,163	35,427	1,267	35,223	11	11		3	1	3	181	1
182	22			5,096	37,629	2,548	37,119	910	33,170	22			4,186	35,623	1,274	35,417	11	11		3	1	3	182	1
183	22			5,124	37,836	2,562	37,323	915	33,352	22			4,209	35,819	1,281	35,612	11	11		3	1	3	183	1
184	22			5,152	38,042	2,576	37,527	920	33,534	22			4,232	36,014	1,288	35,806	11	11		3	1	3	184	1
185	22			5,180	38,249	2,590	37,731	925	33,716	22			4,255	36,210	1,295	36,001	11	11		3	1	3	185	1
186	22			5,208	38,456	2,604	37,935	930	33,899	22			4,278	36,406	1,302	36,196	11	11		3	1	3	186	1
187	22			5,236	38,663	2,618	38,139	935	34,081	22			4,301	36,602	1,309	36,390	11	11		3	1	3	187	1
188	22			5,264	38,869	2,632	38,343	940	34,263	22			4,324	36,797	1,316	36,585	11	11		3	1	3	188	1
189	22			5,292	39,076	2,646	38,547	945	34,445	22			4,347	36,993	1,323	36,779	11	11		3	1	3	189	1
190	22			5,320	39,283	2,660	38,751	950	34,628	22			4,370	37,189	1,330	36,974	11	11		3	1	3	190	1
191	22			5,348	39,490	2,674	38,955	955	34,810	22			4,393	37,384	1,337	37,169	11	11		3	1	4	191	2
192	22			5,376	39,696	2,688	39,159	960	34,992	22			4,416	37,580	1,344	37,363	11	11		3	1	4	192	2
193	22			5,404	39,903	2,702	39,363	965	35,174	22			4,439	37,776	1,351	37,558	11	11		3	1	4	193	2
194	22			5,432	40,110	2,716	39,567	970	35,357	22			4,462	37,972	1,358	37,752	11	11		3	1	4	194	2
195	22			5,460	40,317	2,730	39,771	975	35,539	22			4,485	38,167	1,365	37,947	11	11		3	1	4	195	2
196	22			5,488	40,523	2,744	39,975	980	35,721	22			4,508	38,363	1,372	38,142	11	11		3	1	4	196	2

(To be continued)

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(Continued from preceding sheet)

RAID group	Storage Capacity (GB)																	Number of necessary options							
	Open System									Mainframe System								DKC options					DKU options		
	Cache (GB)	OPEN-3 (2.461GB)		OPEN-9 (7.384GB)		OPEN-E (14.568GB)		OPEN-L (36.450GB)		Cache (GB)	3390-3/3R (2.838GB)		3390-9 (8.510GB)		3390-L (27.80GB)			F460I-2048		F460I	F460I	F460I	455I	455I	455I
		VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap		VOL	Cap	VOL	Cap	VOL	Cap		OPEN	MF	-S512	-200	-L1C	-18	-72K4	-EXC
197	22			5,516	40,730	2,758	40,179	985	35,903	22			4,531	38,559	1,379	38,336		11	11		3	1	4	197	2
198	22			5,544	40,937	2,772	40,382	990	36,086	22			4,554	38,755	1,386	38,531		11	11		3	1	4	198	2
199	22			5,572	41,144	2,786	40,586	995	36,268	22			4,577	38,950	1,393	38,725		11	11		3	1	4	199	2
200	22			5,600	41,350	2,800	40,790	1,000	36,450	22			4,600	39,146	1,400	38,920		11	11		3	1	4	200	2
201	22			5,628	41,557	2,814	40,994	1,005	36,632	22			4,623	39,342	1,407	39,115		11	11		3	1	4	201	2
202	22			5,656	41,764	2,828	41,198	1,010	36,815	22			4,646	39,537	1,414	39,309		11	11		3	1	4	202	2
203	22			5,684	41,971	2,842	41,402	1,015	36,997	22			4,669	39,733	1,421	39,504		11	11		3	1	4	203	2
204	22			5,712	42,177	2,856	41,606	1,020	37,179	22			4,692	39,929	1,428	39,698		11	11		3	1	4	204	2
205	22			5,740	42,384	2,870	41,810	1,025	37,361	22			4,715	40,125	1,435	39,893		11	11		3	1	4	205	2
206	22			5,768	42,591	2,884	42,014	1,030	37,544	22			4,738	40,320	1,442	40,088		11	11		3	1	4	206	2
207	22			5,796	42,798	2,898	42,218	1,035	37,726	22			4,761	40,516	1,449	40,282		11	11		3	1	4	207	2
208	22			5,824	43,004	2,912	42,422	1,040	37,908	22			4,784	40,712	1,456	40,477		11	11		3	1	4	208	2
209	22			5,852	43,211	2,926	42,626	1,045	38,090	22			4,807	40,908	1,463	40,671		11	11		3	1	4	209	2
210	22			5,880	43,418	2,940	42,830	1,050	38,273	22			4,830	41,103	1,470	40,866		11	11		3	1	4	210	2
211	22			5,908	43,625	2,954	43,034	1,055	38,455	22			4,853	41,299	1,477	41,061		11	11		3	1	4	211	2
212	22			5,936	43,831	2,968	43,238	1,060	38,637	22			4,876	41,495	1,484	41,255		11	11		3	1	4	212	2
213	22			5,964	44,038	2,982	43,442	1,065	38,819	22			4,899	41,690	1,491	41,450		11	11		3	1	4	213	2
214	22			5,992	44,245	2,996	43,646	1,070	39,002	22			4,922	41,886	1,498	41,644		11	11		3	1	4	214	2
215	22			6,020	44,452	3,010	43,850	1,075	39,184	22			4,945	42,082	1,505	41,839		11	11		3	1	4	215	2
216	22			6,048	44,658	3,024	44,054	1,080	39,366	22			4,968	42,278	1,512	42,034		11	11		3	1	4	216	2
217	22			6,076	44,865	3,038	44,258	1,085	39,548	22			4,991	42,473	1,519	42,228		11	11		3	1	4	217	2
218	22			6,104	45,072	3,052	44,462	1,090	39,731	22			5,014	42,669	1,526	42,423		11	11		3	1	4	218	2
219	22			6,132	45,279	3,066	44,665	1,095	39,913	22			5,037	42,865	1,533	42,617		11	11		3	1	4	219	2
220	22			6,160	45,485	3,080	44,869	1,100	40,095	22			5,060	43,061	1,540	42,812		11	11		3	1	4	220	2
221	22			6,188	45,692	3,094	45,073	1,105	40,277	22			5,083	43,256	1,547	43,007		11	11		3	1	4	221	2
222	22			6,216	45,899	3,108	45,277	1,110	40,460	22			5,106	43,452	1,554	43,201		11	11		3	1	4	222	2
223	22			6,244	46,106	3,122	45,481	1,115	40,642	22			5,129	43,648	1,561	43,396		11	11		3	1	4	223	2
224	22			6,272	46,312	3,136	45,685	1,120	40,824	22			5,152	43,844	1,568	43,590		11	11		3	1	4	224	2
225	22			6,300	46,519	3,150	45,889	1,125	41,006	22			5,175	44,039	1,575	43,785		11	11		3	1	4	225	2
226	22			6,328	46,726	3,164	46,093	1,130	41,189	22			5,198	44,235	1,582	43,980		11	11		3	1	4	226	2
227	22			6,356	46,933	3,178	46,297	1,135	41,371	22			5,221	44,431	1,589	44,174		11	11		3	1	4	227	2
228	22			6,384	47,139	3,192	46,501	1,140	41,553	22			5,244	44,626	1,596	44,369		11	11		3	1	4	228	2
229	22			6,412	47,346	3,206	46,705	1,145	41,735	22			5,267	44,822	1,603	44,563		11	11		3	1	4	229	2
230	22			6,440	47,553	3,220	46,909	1,150	41,918	22			5,290	45,018	1,610	44,758		11	11		3	1	4	230	2
231	22			6,468	47,760	3,234	47,113	1,155	42,100	22			5,313	45,214	1,617	44,953		11	11		3	1	4	231	2
232	22			6,496	47,966	3,248	47,317	1,160	42,282	22			5,336	45,409	1,624	45,147		11	11		3	1	4	232	2
233	22			6,524	48,173	3,262	47,521	1,165	42,464	22			5,359	45,605	1,631	45,342		11	11		3	1	4	233	2
234	22			6,552	48,380	3,276	47,725	1,170	42,647	22			5,382	45,801	1,638	45,536		11	11		3	1	4	234	2
235	22			6,580	48,587	3,290	47,929	1,175	42,829	22			5,405	45,997	1,645	45,731		11	11		3	1	4	235	2
236	22			6,608	48,793	3,304	48,133	1,180	43,011	22			5,428	46,192	1,652	45,926		11	11		3	1	4	236	2
237	22			6,636	49,000	3,318	48,337	1,185	43,193	22			5,451	46,388	1,659	46,120		11	11		3	1	4	237	2
238	22			6,664	49,207	3,332	48,541	1,190	43,376	22			5,474	46,584	1,666	46,315		11	11		3	1	4	238	2
239	22			6,692	49,414	3,346	48,745	1,195	43,558	22			5,497	46,779	1,673	46,509		11	11		3	1	4	239	2
240	22			6,720	49,620	3,360	48,948	1,200	43,740	22			5,520	46,975	1,680	46,704		11	11		3	1	4	240	2
241	22			6,748	49,827	3,374	49,152	1,205	43,922	22			5,543	47,171	1,687	46,899		11	11		3	1	4	241	2
242	22			6,776	50,034	3,388	49,356	1,210	44,105	22			5,566	47,367	1,694	47,093		11	11		3	1	4	242	2
243	22			6,804	50,241	3,402	49,560	1,215	44,287	22			5,589	47,562	1,701	47,288		11	11		3	1	4	243	2
244	22			6,832	50,447	3,416	49,764	1,220	44,469	22			5,612	47,758	1,708	47,482		11	11		3	1	4	244	2
245	22			6,860	50,654	3,430	49,968	1,225	44,651	22			5,635	47,954	1,715	47,677		11	11		3	1	4	245	2
246	22			6,888	50,861	3,444	50,172	1,230	44,834	22			5,658	48,150	1,722	47,872		11	11		3	1	4	246	2
247	22			6,916	51,068	3,458	50,376	1,235	45,016	22			5,681	48,345	1,729	48,066		11	11		3	1	4	247	2
248	22			6,944	51,274	3,472	50,580	1,240	45,198	22			5,704	48,541	1,736	48,261		11	11		3	1	4	248	2
249	22			6,972	51,481	3,486	50,784	1,245	45,380	22			5,727	48,737	1,743	48,455		11	11		3	1	4	249	2
250	22			7,000	51,688	3,500	50,988	1,250	45,563	22			5,750	48,933	1,750	48,650		11	11		3	1	4	250	2
251	22			7,028	51,895	3,514	51,192	1,255	45,745	22			5,773	49,128	1,757	48,845		11	11		3	1	4	251	2
252	22			7,056	52,102	3,528	51,396	1,260	45,927	22			5,796	49,324	1,764	49,039		11	11		3	1	4	252	2
253	22			7,084	52,308	3,542	51,600	1,265	46,109	22			5,819	49,520	1,771	49,234		11	11		3	1	4	253	2
254	22			7,112	52,515	3,556	51,804	1,270	46,292	22			5,842	49,715	1,778	49,428		11	11		3	1	4	254	2

*1: The number of the Shard Memory option(DKC-F460I-S512) necessary is refer to table 1.1.2-3A and 1.1.2-3B.
Please note that location of shared memory varies according to the purpose such as additional cache installation or additional LDEV installation.

Note: In addition to the Options listed in above table as necessary parts, the Power Cable Kit option, the AC Box Kit option and the Channel options are required.

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8.2 Standard Configuration for RAID5 (7D+1P)

(1) 36GB 15K rpm HDD, RAID5 (7D+1P)

RAID group	Cache (GB)	Storage Capacity (GB)										Number of necessary options						
		Open System						Mainframe System				DKC options				DKU options		
		OPEN-3 (2.461GB)		OPEN-9 (7.384GB)		OPEN-E (14.568GB)		3390-3/3R (2.838GB)		3390-9 (8.510GB)		F460I -2048	F460I -S512	F460I -200	F460I -L1C	455I -18	F455I -36K4	F455I -EXC
		VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap							
1	4	101	249	33	244	17	248	83	236	27	230	2	*1	1		1	2	
2	4	202	497	66	487	34	495	166	471	54	460	2		1		1	4	
3	6	303	746	99	731	51	743	249	707	81	689	3		1		1	6	
4	6	404	994	132	975	68	991	332	942	108	919	3		1		1	8	
5	6	505	1,243	165	1,218	85	1,238	415	1,178	135	1,149	3		1		1	10	
6	8	606	1,491	198	1,462	102	1,486	498	1,413	162	1,379	4		1		1	12	
7	8	707	1,740	231	1,706	119	1,734	581	1,649	189	1,608	4		1		1	14	
8	8	808	1,988	264	1,949	136	1,981	664	1,884	216	1,838	4		1		1	16	
9	8	909	2,237	297	2,193	153	2,229	747	2,120	243	2,068	4		1		1	18	
10	8	1,010	2,486	330	2,437	170	2,477	830	2,356	270	2,298	4		1		1	20	
11	8	1,111	2,734	363	2,680	187	2,724	913	2,591	297	2,527	4		1		1	22	
12	10	1,212	2,983	396	2,924	204	2,972	996	2,827	324	2,757	5		1		1	24	
13	10	1,313	3,231	429	3,168	221	3,220	1,079	3,062	351	2,987	5		1		1	26	
14	10	1,414	3,480	462	3,411	238	3,467	1,162	3,298	378	3,217	5		1		1	28	
15	10	1,515	3,728	495	3,655	255	3,715	1,245	3,533	405	3,447	5		1		1	30	
16	10	1,616	3,977	528	3,899	272	3,962	1,328	3,769	432	3,676	5		1		1	32	
17	10	1,717	4,226	561	4,142	289	4,210	1,411	4,004	459	3,906	5		1		1	34	
18	10	1,818	4,474	594	4,386	306	4,458	1,494	4,240	486	4,136	5		1		1	36	
19	10	1,919	4,723	627	4,630	323	4,705	1,577	4,476	513	4,366	5		1		1	38	
20	10	2,020	4,971	660	4,873	340	4,953	1,660	4,711	540	4,595	5		1		1	40	
21	10	2,121	5,220	693	5,117	357	5,201	1,743	4,947	567	4,825	5		1		1	42	
22	10	2,222	5,468	726	5,361	374	5,448	1,826	5,182	594	5,055	5		1		1	44	
23	12	2,323	5,717	759	5,604	391	5,696	1,909	5,418	621	5,285	6		1		1	46	
24	12	2,424	5,965	792	5,848	408	5,944	1,992	5,653	648	5,514	6		1		1	48	
25	12	2,525	6,214	825	6,092	425	6,191	2,075	5,889	675	5,744	6		1		1	50	
26	12	2,626	6,463	858	6,335	442	6,439	2,158	6,124	702	5,974	6		1		1	52	
27	12	2,727	6,711	891	6,579	459	6,687	2,241	6,360	729	6,204	6		1		1	54	
28	12	2,828	6,960	924	6,823	476	6,934	2,324	6,596	756	6,434	6		1		1	56	
29	12	2,929	7,208	957	7,066	493	7,182	2,407	6,831	783	6,663	6		1		1	58	
30	12	3,030	7,457	990	7,310	510	7,430	2,490	7,067	810	6,893	6		1		1	60	
31	12	3,131	7,705	1,023	7,554	527	7,677	2,573	7,302	837	7,123	6		1		1	62	
32	12	3,232	7,954	1,056	7,798	544	7,925	2,656	7,538	864	7,353	6		1		2	64	1
33	12	3,333	8,203	1,089	8,041	561	8,173	2,739	7,773	891	7,582	6		1		2	66	1
34	14	3,434	8,451	1,122	8,285	578	8,420	2,822	8,009	918	7,812	7		1		2	68	1
35	14	3,535	8,700	1,155	8,529	595	8,668	2,905	8,244	945	8,042	7		1		2	70	1
36	14	3,636	8,948	1,188	8,772	612	8,916	2,988	8,480	972	8,272	7		1		2	72	1
37	14	3,737	9,197	1,221	9,016	629	9,163	3,071	8,715	999	8,501	7		1		2	74	1
38	14	3,838	9,445	1,254	9,260	646	9,411	3,154	8,951	1,026	8,731	7		1		2	76	1
39	14	3,939	9,694	1,287	9,503	663	9,659	3,237	9,187	1,053	8,961	7		1		2	78	1
40	14	4,040	9,942	1,320	9,747	680	9,906	3,320	9,422	1,080	9,191	7		1		2	80	1
41	14	4,141	10,191	1,353	9,991	697	10,154	3,403	9,658	1,107	9,421	7		1		2	82	1
42	14	4,242	10,440	1,386	10,234	714	10,402	3,486	9,893	1,134	9,650	7		1		2	84	1
43	14	4,343	10,688	1,419	10,478	731	10,649	3,569	10,129	1,161	9,880	7		1		2	86	1
44	14	4,444	10,937	1,452	10,722	748	10,897	3,652	10,364	1,188	10,110	7		1		2	88	1
45	14	4,545	11,185	1,485	10,965	765	11,145	3,735	10,600	1,215	10,340	7		1		2	90	1
46	16	4,646	11,434	1,518	11,209	782	11,392	3,818	10,835	1,242	10,569	8		1		2	92	1
47	16	4,747	11,682	1,551	11,453	799	11,640	3,901	11,071	1,269	10,799	8		1		2	94	1
48	16	4,848	11,931	1,584	11,696	816	11,887	3,984	11,307	1,296	11,029	8		1		2	96	1
49	16	4,949	12,179	1,617	11,940	833	12,135	4,067	11,542	1,323	11,259	8		1		2	98	1
50	16	5,050	12,428	1,650	12,184	850	12,383	4,150	11,778	1,350	11,489	8		1		2	100	1
51	16	5,151	12,677	1,683	12,427	867	12,630	4,233	12,013	1,377	11,718	8		1		2	102	1
52	16	5,252	12,925	1,716	12,671	884	12,878	4,316	12,249	1,404	11,948	8		1		2	104	1
53	16	5,353	13,174	1,749	12,915	901	13,126	4,399	12,484	1,431	12,178	8		1		2	106	1
54	16	5,454	13,422	1,782	13,158	918	13,373	4,482	12,720	1,458	12,408	8		1		2	108	1
55	16	5,555	13,671	1,815	13,402	935	13,621	4,565	12,955	1,485	12,637	8		1		2	110	1
56	16	5,656	13,919	1,848	13,646	952	13,869	4,648	13,191	1,512	12,867	8		1		2	112	1
57	18	5,757	14,168	1,881	13,889	969	14,116	4,731	13,427	1,539	13,097	9		1		2	114	1
58	18	5,858	14,417	1,914	14,133	986	14,364	4,814	13,662	1,566	13,327	9		1		2	116	1
59	18	5,959	14,665	1,947	14,377	1,003	14,612	4,897	13,898	1,593	13,556	9		1		2	118	1
60	18	6,060	14,914	1,980	14,620	1,020	14,859	4,980	14,133	1,620	13,786	9		1		2	120	1
61	18	6,161	15,162	2,013	14,864	1,037	15,107	5,063	14,369	1,647	14,016	9		1		2	122	1
62	18	6,262	15,411	2,046	15,108	1,054	15,355	5,146	14,604	1,674	14,246	9		1		2	124	1
63	18	6,363	15,659	2,079	15,351	1,071	15,602	5,229	14,840	1,701	14,476	9		1		2	126	1
64	18	6,464	15,908	2,112	15,595	1,088	15,850	5,312	15,075	1,728	14,705	9		3	1	3	128	1

(To be continued)

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(Continued from preceding sheet)

RAID group	Cache (GB)	Storage Capacity (GB)										Number of necessary options						
		Open System						Mainframe System				DKC options				DKU options		
		OPEN-3 (2.461GB)		OPEN-9 (7.384GB)		OPEN-E (14.568GB)		3390-3/3R (2.838GB)		3390-9 (8.510GB)		F460I -2048	F460I -S512	F460I -200	F460I -L1C	455I -18	F455I -36K4	F455I -EXC
		VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap							
65	18	6,565	16,156	2,145	15,839	1,105	16,098	5,395	15,311	1,755	14,935	9		3	1	3	130	1
66	18	6,666	16,405	2,178	16,082	1,122	16,345	5,478	15,547	1,782	15,165	9		3	1	3	132	1
67	18	6,767	16,654	2,211	16,326	1,139	16,593	5,561	15,782	1,809	15,395	9		3	1	3	134	1
68	20	6,868	16,902	2,244	16,570	1,156	16,841	5,644	16,018	1,836	15,624	10		3	1	3	136	1
69	20	6,969	17,151	2,277	16,813	1,173	17,088	5,727	16,253	1,863	15,854	10		3	1	3	138	1
70	20	7,070	17,399	2,310	17,057	1,190	17,336	5,810	16,489	1,890	16,084	10		3	1	3	140	1
71	20	7,171	17,648	2,343	17,301	1,207	17,584	5,893	16,724	1,917	16,314	10		3	1	3	142	1
72	20	7,272	17,896	2,376	17,544	1,224	17,831	5,976	16,960	1,944	16,543	10		3	1	3	144	1
73	20	7,373	18,145	2,409	17,788	1,241	18,079	6,059	17,195	1,971	16,773	10		3	1	3	146	1
74	20	7,474	18,394	2,442	18,032	1,258	18,327	6,142	17,431	1,998	17,003	10		3	1	3	148	1
75	20	7,575	18,642	2,475	18,275	1,275	18,574	6,225	17,667	2,025	17,233	10		3	1	3	150	1
76	20	7,676	18,891	2,508	18,519	1,292	18,822	6,308	17,902	2,052	17,463	10		3	1	3	152	1
77	20	7,777	19,139	2,541	18,763	1,309	19,070	6,391	18,138	2,079	17,692	10		3	1	3	154	1
78	20	7,878	19,388	2,574	19,006	1,326	19,317	6,474	18,373	2,106	17,922	10		3	1	3	156	1
79	20	7,979	19,636	2,607	19,250	1,343	19,565	6,557	18,609	2,133	18,152	10		3	1	3	158	1
80	20	8,080	19,885	2,640	19,494	1,360	19,812	6,640	18,844	2,160	18,382	10		3	1	3	160	1
81	22	8,181	20,133	2,673	19,737	1,377	20,060	6,723	19,080	2,187	18,611	11		3	1	3	162	1
82	22			2,706	19,981	1,394	20,308	6,806	19,315	2,214	18,841	11		3	1	3	164	1
83	22			2,739	20,225	1,411	20,555	6,889	19,551	2,241	19,071	11		3	1	3	166	1
84	22			2,772	20,468	1,428	20,803	6,972	19,787	2,268	19,301	11		3	1	3	168	1
85	22			2,805	20,712	1,445	21,051	7,055	20,022	2,295	19,530	11		3	1	3	170	1
86	22			2,838	20,956	1,462	21,298	7,138	20,258	2,322	19,760	11		3	1	3	172	1
87	22			2,871	21,199	1,479	21,546	7,221	20,493	2,349	19,990	11		3	1	3	174	1
88	22			2,904	21,443	1,496	21,794	7,304	20,729	2,376	20,220	11		3	1	3	176	1
89	22			2,937	21,687	1,513	22,041	7,387	20,964	2,403	20,450	11		3	1	3	178	1
90	22			2,970	21,930	1,530	22,289	7,470	21,200	2,430	20,679	11		3	1	3	180	1
91	22			3,003	22,174	1,547	22,537	7,553	21,435	2,457	20,909	11		3	1	3	182	1
92	22			3,036	22,418	1,564	22,784	7,636	21,671	2,484	21,139	11		3	1	3	184	1
93	22			3,069	22,661	1,581	23,032	7,719	21,907	2,511	21,369	11		3	1	3	186	1
94	22			3,102	22,905	1,598	23,280	7,802	22,142	2,538	21,598	11		3	1	3	188	1
95	22			3,135	23,149	1,615	23,527	7,885	22,378	2,565	21,828	11		3	1	4	190	2
96	22			3,168	23,393	1,632	23,775	7,968	22,613	2,592	22,058	11		3	1	4	192	2
97	22			3,201	23,636	1,649	24,023	8,051	22,849	2,619	22,288	11		3	1	4	194	2
98	22			3,234	23,880	1,666	24,270	8,134	23,084	2,646	22,517	11		3	1	4	196	2
99	22			3,267	24,124	1,683	24,518			2,673	22,747	11		3	1	4	198	2
100	22			3,300	24,367	1,700	24,766			2,700	22,977	11		3	1	4	200	2
101	22			3,333	24,611	1,717	25,013			2,727	23,207	11		3	1	4	202	2
102	22			3,366	24,855	1,734	25,261			2,754	23,437	11		3	1	4	204	2
103	22			3,399	25,098	1,751	25,509			2,781	23,666	11		3	1	4	206	2
104	22			3,432	25,342	1,768	25,756			2,808	23,896	11		3	1	4	208	2
105	22			3,465	25,586	1,785	26,004			2,835	24,126	11		3	1	4	210	2
106	22			3,498	25,829	1,802	26,252			2,862	24,356	11		3	1	4	212	2
107	22			3,531	26,073	1,819	26,499			2,889	24,585	11		3	1	4	214	2
108	22			3,564	26,317	1,836	26,747			2,916	24,815	11		3	1	4	216	2
109	22			3,597	26,560	1,853	26,995			2,943	25,045	11		3	1	4	218	2
110	22			3,630	26,804	1,870	27,242			2,970	25,275	11		3	1	4	220	2
111	22			3,663	27,048	1,887	27,490			2,997	25,504	11		3	1	4	222	2
112	22			3,696	27,291	1,904	27,737			3,024	25,734	11		3	1	4	224	2
113	22			3,729	27,535	1,921	27,985			3,051	25,964	11		3	1	4	226	2
114	22			3,762	27,779	1,938	28,233			3,078	26,194	11		3	1	4	228	2
115	22			3,795	28,022	1,955	28,480			3,105	26,424	11		3	1	4	230	2
116	22			3,828	28,266	1,972	28,728			3,132	26,653	11		3	1	4	232	2
117	22			3,861	28,510	1,989	28,976			3,159	26,883	11		3	1	4	234	2
118	22			3,894	28,753	2,006	29,223			3,186	27,113	11		3	1	4	236	2
119	22			3,927	28,997	2,023	29,471			3,213	27,343	11		3	1	4	238	2
120	22			3,960	29,241	2,040	29,719			3,240	27,572	11		3	1	4	240	2
121	22			3,993	29,484	2,057	29,966			3,267	27,802	11		3	1	4	242	2
122	22			4,026	29,728	2,074	30,214			3,294	28,032	11		3	1	4	244	2
123	22			4,059	29,972	2,091	30,462			3,321	28,262	11		3	1	4	246	2
124	22			4,092	30,215	2,108	30,709			3,348	28,491	11		3	1	4	248	2
125	22			4,125	30,459	2,125	30,957			3,375	28,721	11		3	1	4	250	2
126	22			4,158	30,703	2,142	31,205			3,402	28,951	11		3	1	4	252	2

*1: The number of the Shard Memory option(DKC-F460I-S512) necessary is refer to table 1.1.2-3A and 1.1.2-3B. Please note that location of shared memory varies according to the purpose such as additional cache installation or additional LDEV installation.

Note: In addition to the Options listed in above table as necessary parts, the Power Cable Kit option, the AC Box Kit option and the Channel options are required.

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(2) 73GB 10K rpm HDD, RAID5 (7D+1P)

RAID group	Cache (GB)	Storage Capacity (GB)												Number of necessary options						
		Open System								Mainframe System				DKC options				DKU options		
		OPEN-3 (2.461GB)		OPEN-9 (7.384GB)		OPEN-E (14.568GB)		OPEN-L (36.450GB)		3390-3/3R (2.838GB)		3390-9 (8.510GB)		F460I -2048	F460I -S512	F460I -200	F460I -L1C	455I -18	F455I -72J4	F455I -EXC
		VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap							
1	4	206	507	68	502	35	510	14	510	171	485	57	485	2	*1	1		1	2	
2	6	412	1,014	136	1,004	70	1,020	28	1,021	342	971	114	970	3		1		1	4	
3	8	618	1,521	204	1,506	105	1,530	42	1,531	513	1,456	171	1,455	4		1		1	6	
4	8	824	2,028	272	2,008	140	2,040	56	2,041	684	1,941	228	1,940	4		1		1	8	
5	8	1,030	2,535	340	2,511	175	2,549	70	2,552	855	2,426	285	2,425	4		1		1	10	
6	10	1,236	3,042	408	3,013	210	3,059	84	3,062	1,026	2,912	342	2,910	5		1		1	12	
7	10	1,442	3,549	476	3,515	245	3,569	98	3,572	1,197	3,397	399	3,395	5		1		1	14	
8	10	1,648	4,056	544	4,017	280	4,079	112	4,082	1,368	3,882	456	3,881	5		1		1	16	
9	10	1,854	4,563	612	4,519	315	4,589	126	4,593	1,539	4,368	513	4,366	5		1		1	18	
10	10	2,060	5,070	680	5,021	350	5,099	140	5,103	1,710	4,853	570	4,851	5		1		1	20	
11	10	2,266	5,577	748	5,523	385	5,609	154	5,613	1,881	5,338	627	5,336	5		1		1	22	
12	12	2,472	6,084	816	6,025	420	6,119	168	6,124	2,052	5,824	684	5,821	6		1		1	24	
13	12	2,678	6,591	884	6,527	455	6,628	182	6,634	2,223	6,309	741	6,306	6		1		1	26	
14	12	2,884	7,098	952	7,030	490	7,138	196	7,144	2,394	6,794	798	6,791	6		1		1	28	
15	12	3,090	7,604	1,020	7,532	525	7,648	210	7,655	2,565	7,279	855	7,276	6		1		1	30	
16	12	3,296	8,111	1,088	8,034	560	8,158	224	8,165	2,736	7,765	912	7,761	6		1		1	32	
17	12	3,502	8,618	1,156	8,536	595	8,668	238	8,675	2,907	8,250	969	8,246	6		1		1	34	
18	14	3,708	9,125	1,224	9,038	630	9,178	252	9,185	3,078	8,735	1,026	8,731	7		1		1	36	
19	14	3,914	9,632	1,292	9,540	665	9,688	266	9,696	3,249	9,221	1,083	9,216	7		1		1	38	
20	14	4,120	10,139	1,360	10,042	700	10,198	280	10,206	3,420	9,706	1,140	9,701	7		1		1	40	
21	14	4,326	10,646	1,428	10,544	735	10,707	294	10,716	3,591	10,191	1,197	10,186	7		1		1	42	
22	14	4,532	11,153	1,496	11,046	770	11,217	308	11,227	3,762	10,677	1,254	10,672	7		1		1	44	
23	16	4,738	11,660	1,564	11,549	805	11,727	322	11,737	3,933	11,162	1,311	11,157	8		1		1	46	
24	16	4,944	12,167	1,632	12,051	840	12,237	336	12,247	4,104	11,647	1,368	11,642	8		1		1	48	
25	16	5,150	12,674	1,700	12,553	875	12,747	350	12,758	4,275	12,132	1,425	12,127	8		1		1	50	
26	16	5,356	13,181	1,768	13,055	910	13,257	364	13,268	4,446	12,618	1,482	12,612	8		1		1	52	
27	16	5,562	13,688	1,836	13,557	945	13,767	378	13,778	4,617	13,103	1,539	13,097	8		1		1	54	
28	16	5,768	14,195	1,904	14,059	980	14,277	392	14,288	4,788	13,588	1,596	13,582	8		1		1	56	
29	18	5,974	14,702	1,972	14,561	1,015	14,787	406	14,799	4,959	14,074	1,653	14,067	9		1		1	58	
30	18	6,180	15,209	2,040	15,063	1,050	15,296	420	15,309	5,130	14,559	1,710	14,552	9		1		1	60	
31	18	6,386	15,716	2,108	15,565	1,085	15,806	434	15,819	5,301	15,044	1,767	15,037	9		1		1	62	
32	18	6,592	16,223	2,176	16,068	1,120	16,316	448	16,330	5,472	15,530	1,824	15,522	9		1		2	64	1
33	18	6,798	16,730	2,244	16,570	1,155	16,826	462	16,840	5,643	16,015	1,881	16,007	9		1		2	66	1
34	18	7,004	17,237	2,312	17,072	1,190	17,336	476	17,350	5,814	16,500	1,938	16,492	9		1		2	68	1
35	20	7,210	17,744	2,380	17,574	1,225	17,846	490	17,861	5,985	16,985	1,995	16,977	10		1		2	70	1
36	20	7,416	18,251	2,448	18,076	1,260	18,356	504	18,371	6,156	17,471	2,052	17,463	10		1		2	72	1
37	20	7,622	18,758	2,516	18,578	1,295	18,866	518	18,881	6,327	17,956	2,109	17,948	10		1		2	74	1
38	20	7,828	19,265	2,584	19,080	1,330	19,375	532	19,391	6,498	18,441	2,166	18,433	10		1		2	76	1
39	20	8,034	19,772	2,652	19,582	1,365	19,885	546	19,902	6,669	18,927	2,223	18,918	10		1		2	78	1
40	22			2,720	20,084	1,400	20,395	560	20,412	6,840	19,412	2,280	19,403	11		1		2	80	1
41	22			2,788	20,587	1,435	20,905	574	20,922	7,011	19,897	2,337	19,888	11		1		2	82	1
42	22			2,856	21,089	1,470	21,415	588	21,433	7,182	20,383	2,394	20,373	11		1		2	84	1
43	22			2,924	21,591	1,505	21,925	602	21,943	7,353	20,868	2,451	20,858	11		1		2	86	1
44	22			2,992	22,093	1,540	22,435	616	22,453	7,524	21,353	2,508	21,343	11		1		2	88	1
45	22			3,060	22,595	1,575	22,945	630	22,964	7,695	21,838	2,565	21,828	11		1		2	90	1
46	22			3,128	23,097	1,610	23,454	644	23,474	7,866	22,324	2,622	22,313	11		1		2	92	1
47	22			3,196	23,599	1,645	23,964	658	23,984	8,037	22,809	2,679	22,798	11		1		2	94	1
48	22			3,264	24,101	1,680	24,474	672	24,494			2,736	23,283	11		1		2	96	1
49	22			3,332	24,603	1,715	24,984	686	25,005			2,793	23,768	11		1		2	98	1
50	22			3,400	25,106	1,750	25,494	700	25,515			2,850	24,254	11		1		2	100	1
51	22			3,468	25,608	1,785	26,004	714	26,025			2,907	24,739	11		1		2	102	1
52	22			3,536	26,110	1,820	26,514	728	26,536			2,964	25,224	11		1		2	104	1
53	22			3,604	26,612	1,855	27,024	742	27,046			3,021	25,709	11		1		2	106	1
54	22			3,672	27,114	1,890	27,534	756	27,556			3,078	26,194	11		1		2	108	1
55	22			3,740	27,616	1,925	28,043	770	28,067			3,135	26,679	11		1		2	110	1
56	22			3,808	28,118	1,960	28,553	784	28,577			3,192	27,164	11		1		2	112	1
57	22			3,876	28,620	1,995	29,063	798	29,087			3,249	27,649	11		1		2	114	1
58	22			3,944	29,122	2,030	29,573	812	29,597			3,306	28,134	11		1		2	116	1
59	22			4,012	29,625	2,065	30,083	826	30,108			3,363	28,619	11		1		2	118	1
60	22			4,080	30,127	2,100	30,593	840	30,618			3,420	29,104	11		1		2	120	1
61	22			4,148	30,629	2,135	31,103	854	31,128			3,477	29,589	11		1		2	122	1
62	22			4,216	31,131	2,170	31,613	868	31,639			3,534	30,074	11		1		2	124	1
63	22			4,284	31,633	2,205	32,122	882	32,149			3,591	30,559	11		1		2	126	1
64	22			4,352	32,135	2,240	32,632	896	32,659			3,648	31,044	11		3	1	3	128	1

(To be continued)

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(Continued from preceding sheet)

RAID group	Cache (GB)	Storage Capacity (GB)												Number of necessary options						
		Open System								Mainframe System				DKC options				DKU options		
		OPEN-3 (2.461GB)		OPEN-9 (7.384GB)		OPEN-E (14.568GB)		OPEN-L (36.450GB)		3390-3/3R (2.838GB)		3390-9 (8.510GB)		F460I -2048	F460I -S512	F460I -200	F460I -L1C	455I -18	F455I -72J4	F455I -EXC
		VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap							
65	22			4,420	32,637	2,275	33,142	910	33,170			3,705	31,530	11		3	1	3	130	1
66	22			4,488	33,139	2,310	33,652	924	33,680			3,762	32,015	11		3	1	3	132	1
67	22			4,556	33,642	2,345	34,162	938	34,190			3,819	32,500	11		3	1	3	134	1
68	22			4,624	34,144	2,380	34,672	952	34,700			3,876	32,985	11		3	1	3	136	1
69	22			4,692	34,646	2,415	35,182	966	35,211			3,933	33,470	11		3	1	3	138	1
70	22			4,760	35,148	2,450	35,692	980	35,721			3,990	33,955	11		3	1	3	140	1
71	22			4,828	35,650	2,485	36,201	994	36,231			4,047	34,440	11		3	1	3	142	1
72	22			4,896	36,152	2,520	36,711	1,008	36,742			4,104	34,925	11		3	1	3	144	1
73	22			4,964	36,654	2,555	37,221	1,022	37,252			4,161	35,410	11		3	1	3	146	1
74	22			5,032	37,156	2,590	37,731	1,036	37,762			4,218	35,895	11		3	1	3	148	1
75	22			5,100	37,658	2,625	38,241	1,050	38,273			4,275	36,380	11		3	1	3	150	1
76	22			5,168	38,161	2,660	38,751	1,064	38,783			4,332	36,865	11		3	1	3	152	1
77	22			5,236	38,663	2,695	39,261	1,078	39,293			4,389	37,350	11		3	1	3	154	1
78	22			5,304	39,165	2,730	39,771	1,092	39,803			4,446	37,835	11		3	1	3	156	1
79	22			5,372	39,667	2,765	40,281	1,106	40,314			4,503	38,321	11		3	1	3	158	1
80	22			5,440	40,169	2,800	40,790	1,120	40,824			4,560	38,806	11		3	1	3	160	1
81	22			5,508	40,671	2,835	41,300	1,134	41,334			4,617	39,291	11		3	1	3	162	1
82	22			5,576	41,173	2,870	41,810	1,148	41,845			4,674	39,776	11		3	1	3	164	1
83	22			5,644	41,675	2,905	42,320	1,162	42,355			4,731	40,261	11		3	1	3	166	1
84	22			5,712	42,177	2,940	42,830	1,176	42,865			4,788	40,746	11		3	1	3	168	1
85	22			5,780	42,680	2,975	43,340	1,190	43,376			4,845	41,231	11		3	1	3	170	1
86	22			5,848	43,182	3,010	43,850	1,204	43,886			4,902	41,716	11		3	1	3	172	1
87	22			5,916	43,684	3,045	44,360	1,218	44,396			4,959	42,201	11		3	1	3	174	1
88	22			5,984	44,186	3,080	44,869	1,232	44,906			5,016	42,686	11		3	1	3	176	1
89	22			6,052	44,688	3,115	45,379	1,246	45,417			5,073	43,171	11		3	1	3	178	1
90	22			6,120	45,190	3,150	45,889	1,260	45,927			5,130	43,656	11		3	1	3	180	1
91	22			6,188	45,692	3,185	46,399	1,274	46,437			5,187	44,141	11		3	1	3	182	1
92	22			6,256	46,194	3,220	46,909	1,288	46,948			5,244	44,626	11		3	1	3	184	1
93	22			6,324	46,696	3,255	47,419	1,302	47,458			5,301	45,112	11		3	1	3	186	1
94	22			6,392	47,199	3,290	47,929	1,316	47,968			5,358	45,597	11		3	1	3	188	1
95	22			6,460	47,701	3,325	48,439	1,330	48,479			5,415	46,082	11		3	1	4	190	2
96	22			6,528	48,203	3,360	48,948	1,344	48,989			5,472	46,567	11		3	1	4	192	2
97	22			6,596	48,705	3,395	49,458	1,358	49,499			5,529	47,052	11		3	1	4	194	2
98	22			6,664	49,207	3,430	49,968	1,372	50,009			5,586	47,537	11		3	1	4	196	2
99	22			6,732	49,709	3,465	50,478	1,386	50,520			5,643	48,022	11		3	1	4	198	2
100	22			6,800	50,211	3,500	50,988	1,400	51,030			5,700	48,507	11		3	1	4	200	2
101	22			6,868	50,713	3,535	51,498	1,414	51,540			5,757	48,992	11		3	1	4	202	2
102	22			6,936	51,215	3,570	52,008	1,428	52,051			5,814	49,477	11		3	1	4	204	2
103	22			7,004	51,718	3,605	52,518	1,442	52,561			5,871	49,962	11		3	1	4	206	2
104	22			7,072	52,220	3,640	53,028	1,456	53,071			5,928	50,447	11		3	1	4	208	2
105	22			7,140	52,722	3,675	53,537	1,470	53,582			5,985	50,932	11		3	1	4	210	2
106	22			7,208	53,224	3,710	54,047	1,484	54,092			6,042	51,417	11		3	1	4	212	2
107	22			7,276	53,726	3,745	54,557	1,498	54,602			6,099	51,902	11		3	1	4	214	2
108	22			7,344	54,228	3,780	55,067	1,512	55,112			6,156	52,388	11		3	1	4	216	2
109	22			7,412	54,730	3,815	55,577	1,526	55,623			6,213	52,873	11		3	1	4	218	2
110	22			7,480	55,232	3,850	56,087	1,540	56,133			6,270	53,358	11		3	1	4	220	2
111	22			7,548	55,734	3,885	56,597	1,554	56,643			6,327	53,843	11		3	1	4	222	2
112	22			7,616	56,237	3,920	57,107	1,568	57,154			6,384	54,328	11		3	1	4	224	2
113	22			7,684	56,739	3,955	57,616	1,582	57,664			6,441	54,813	11		3	1	4	226	2
114	22			7,752	57,241	3,990	58,126	1,596	58,174			6,498	55,298	11		3	1	4	228	2
115	22			7,820	57,743	4,025	58,636	1,610	58,685			6,555	55,783	11		3	1	4	230	2
116	22			7,888	58,245	4,060	59,146	1,624	59,195			6,612	56,268	11		3	1	4	232	2
117	22			7,956	58,747	4,095	59,656	1,638	59,705			6,669	56,753	11		3	1	4	234	2
118	22			8,024	59,249	4,130	60,166	1,652	60,215			6,726	57,238	11		3	1	4	236	2
119	22			8,092	59,751	4,165	60,676	1,666	60,726			6,783	57,723	11		3	1	4	238	2
120	22			8,160	60,253	4,200	61,186	1,680	61,236			6,840	58,208	11		3	1	4	240	2
121	22					4,235	61,695	1,694	61,746			6,897	58,693	11		3	1	4	242	2
122	22					4,270	62,205	1,708	62,257			6,954	59,179	11		3	1	4	244	2
123	22					4,305	62,715	1,722	62,767			7,011	59,664	11		3	1	4	246	2
124	22					4,340	63,225	1,736	63,277			7,068	60,149	11		3	1	4	248	2
125	22					4,375	63,735	1,750	63,788			7,125	60,634	11		3	1	4	250	2
126	22					4,410	64,245	1,764	64,298			7,182	61,119	11		3	1	4	252	2

*1: The number of the Shard Memory option(DKC-F460I-S512) necessary is refer to table 1.1.2-3A and 1.1.2-3B. Please note that location of shared memory varies according to the purpose such as additional cache installation or additional LDEV installation.

Note: In addition to the Options listed in above table as necessary parts, the Power Cable Kit option, the AC Box Kit option and the Channel options are required.

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(3) 146GB 10K rpm HDD, RAID5 (7D+1P)

RAID Group	Storage Capacity (GB)																	Number of necessary options								
	Open System									Mainframe System								DKC options					DKU options			
	Cache (GB)	OPEN-3 (2.461GB)		OPEN-9 (7.384GB)		OPEN-E (14.568GB)		OPEN-L (36.450GB)		Cache (GB)	3390-3/3R (2.838GB)		3390-9 (8.510GB)		3390-L (27.80GB)			F460I-2048		F460I -S512	F460I -200	F460I -L1C	455I -18	455I -146J4	455I -EXC	
		VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap		VOL	Cap	VOL	Cap	VOL	Cap		OPEN	MF							
1	6	407	1,002	135	997	69	1,005	27	984	6	337	956	112	953	34	945		3	3	*1	1		1	2		
2	8	814	2,003	270	1,994	138	2,010	54	1,968	8	674	1,913	224	1,906	68	1,890		4	4		1		1	4		
3	10	1,221	3,005	405	2,991	207	3,016	81	2,952	10	1,011	2,869	336	2,859	102	2,836		5	5		1		1	6		
4	10	1,628	4,007	540	3,987	276	4,021	108	3,937	10	1,348	3,826	448	3,812	136	3,781		5	5		1		1	8		
5	10	2,035	5,008	675	4,984	345	5,026	135	4,921	10	1,685	4,782	560	4,766	170	4,726		5	5		1		1	10		
6	12	2,442	6,010	810	5,981	414	6,031	162	5,905	12	2,022	5,738	672	5,719	204	5,671		6	6		1		1	12		
7	12	2,849	7,011	945	6,978	483	7,036	189	6,889	12	2,359	6,695	784	6,672	238	6,616		6	6		1		1	14		
8	12	3,256	8,013	1,080	7,975	552	8,042	216	7,873	12	2,696	7,651	896	7,625	272	7,562		6	6		1		1	16		
9	14	3,663	9,015	1,215	8,972	621	9,047	243	8,857	14	3,033	8,608	1,008	8,578	306	8,507		7	7		1		1	18		
10	14	4,070	10,016	1,350	9,968	690	10,052	270	9,842	14	3,370	9,564	1,120	9,531	340	9,452		7	7		1		1	20		
11	16	4,477	11,018	1,485	10,965	759	11,057	297	10,826	14	3,707	10,520	1,232	10,484	374	10,397		8	7		1		1	22		
12	16	4,884	12,020	1,620	11,962	828	12,062	324	11,810	16	4,044	11,477	1,344	11,437	408	11,342		8	8		1		1	24		
13	16	5,291	13,021	1,755	12,959	897	13,067	351	12,794	16	4,381	12,433	1,456	12,391	442	12,288		8	8		1		1	26		
14	18	5,698	14,023	1,890	13,956	966	14,073	378	13,778	16	4,718	13,390	1,568	13,344	476	13,233		9	8		1		1	28		
15	18	6,105	15,024	2,025	14,953	1,035	15,078	405	14,762	18	5,055	14,346	1,680	14,297	510	14,178		9	9		1		1	30		
16	18	6,512	16,026	2,160	15,949	1,104	16,083	432	15,746	18	5,392	15,302	1,792	15,250	544	15,123		9	9		1		1	32		
17	20	6,919	17,028	2,295	16,946	1,173	17,088	459	16,731	18	5,729	16,259	1,904	16,203	578	16,068		10	9		1		1	34		
18	20	7,326	18,029	2,430	17,943	1,242	18,093	486	17,715	20	6,066	17,215	2,016	17,156	612	17,014		10	10		1		1	36		
19	20	7,733	19,031	2,565	18,940	1,311	19,099	513	18,699	20	6,403	18,172	2,128	18,109	646	17,959		10	10		1		1	38		
20	22	8,140	20,033	2,700	19,937	1,380	20,104	540	19,683	20	6,740	19,128	2,240	19,062	680	18,904		11	10		1		1	40		
21	22			2,835	20,934	1,449	21,109	567	20,667	22	7,077	20,085	2,352	20,016	714	19,849		11	11		1		1	42		
22	22			2,970	21,930	1,518	22,114	594	21,651	22	7,414	21,041	2,464	20,969	748	20,794		11	11		1		1	44		
23	22			3,105	22,927	1,587	23,119	621	22,635	22	7,751	21,997	2,576	21,922	782	21,740		11	11		1		1	46		
24	22			3,240	23,924	1,656	24,125	648	23,620	22	8,088	22,954	2,688	22,875	816	22,685		11	11		1		1	48		
25	22			3,375	24,921	1,725	25,130	675	24,604	22			2,800	23,828	850	23,630		11	11		1		1	50		
26	22			3,510	25,918	1,794	26,135	702	25,588	22			2,912	24,781	884	24,575		11	11		1		1	52		
27	22			3,645	26,915	1,863	27,140	729	26,572	22			3,024	25,734	918	25,520		11	11		1		1	54		
28	22			3,780	27,912	1,932	28,145	756	27,556	22			3,136	26,687	952	26,466		11	11		1		1	56		
29	22			3,915	28,908	2,001	29,151	783	28,540	22			3,248	27,640	986	27,411		11	11		1		1	58		
30	22			4,050	29,905	2,070	30,156	810	29,525	22			3,360	28,594	1,020	28,356		11	11		1		1	60		
31	22			4,185	30,902	2,139	31,161	837	30,509	22			3,472	29,547	1,054	29,301		11	11		1		1	62		
32	22			4,320	31,899	2,208	32,166	864	31,493	22			3,584	30,500	1,088	30,246		11	11		1		2	64	1	
33	22			4,455	32,896	2,277	33,171	891	32,477	22			3,696	31,453	1,122	31,192		11	11		1		2	66	1	
34	22			4,590	33,893	2,346	34,177	918	33,461	22			3,808	32,406	1,156	32,137		11	11		1		2	68	1	
35	22			4,725	34,889	2,415	35,182	945	34,445	22			3,920	33,359	1,190	33,082		11	11		1		2	70	1	
36	22			4,860	35,886	2,484	36,187	972	35,429	22			4,032	34,312	1,224	34,027		11	11		1		2	72	1	
37	22			4,995	36,883	2,553	37,192	999	36,414	22			4,144	35,265	1,258	34,972		11	11		1		2	74	1	
38	22			5,130	37,880	2,622	38,197	1,026	37,398	22			4,256	36,219	1,292	35,918		11	11		1		2	76	1	
39	22			5,265	38,877	2,691	39,202	1,053	38,382	22			4,368	37,172	1,326	36,863		11	11		1		2	78	1	
40	22			5,400	39,874	2,760	40,208	1,080	39,366	22			4,480	38,125	1,360	37,808		11	11		1		2	80	1	
41	22			5,535	40,870	2,829	41,213	1,107	40,350	22			4,592	39,078	1,394	38,753		11	11		1		2	82	1	
42	22			5,670	41,867	2,898	42,218	1,134	41,334	22			4,704	40,031	1,428	39,698		11	11		1		2	84	1	
43	22			5,805	42,864	2,967	43,223	1,161	42,318	22			4,816	40,984	1,462	40,644		11	11		1		2	86	1	
44	22			5,940	43,861	3,036	44,228	1,188	43,303	22			4,928	41,937	1,496	41,589		11	11		1		2	88	1	
45	22			6,075	44,858	3,105	45,234	1,215	44,287	22			5,040	42,890	1,530	42,534		11	11		1		2	90	1	
46	22			6,210	45,855	3,174	46,239	1,242	45,271	22			5,152	43,844	1,564	43,479		11	11		1		2	92	1	
47	22			6,345	46,851	3,243	47,244	1,269	46,255	22			5,264	44,797	1,598	44,424		11	11		1		2	94	1	
48	22			6,480	47,848	3,312	48,249	1,296	47,239	22			5,376	45,750	1,632	45,370		11	11		1		2	96	1	
49	22			6,615	48,845	3,381	49,254	1,323	48,223	22			5,488	46,703	1,666	46,315		11	11		1		2	98	1	
50	22			6,750	49,842	3,450	50,260	1,350	49,208	22			5,600	47,656	1,700	47,260		11	11		1		2	100	1	
51	22			6,885	50,839	3,519	51,265	1,377	50,192	22			5,712	48,609	1,734	48,205		11	11		1		2	102	1	
52	22			7,020	51,836	3,588	52,270	1,404	51,176	22			5,824	49,562	1,768	49,150		11	11		1		2	104	1	
53	22			7,155	52,833	3,657	53,275	1,431	52,160	22			5,936	50,515	1,802	50,096		11	11		1		2	106	1	
54	22			7,290	53,829	3,726	54,280	1,458	53,144	22			6,048	51,468	1,836	51,041		11	11		1		2	108	1	
55	22			7,425	54,826	3,795	55,286	1,485	54,128	22			6,160	52,422	1,870	51,986		11	11		1		2	110	1	
56	22			7,560	55,823	3,864	56,291	1,512	55,112	22			6,272	53,375	1,904	52,931		11	11		1		2	112	1	
57	22			7,695	56,820	3,933	57,296	1,539	56,097	22			6,384	54,328	1,938	53,876		11	11		1		2	114	1	
58	22			7,830	57,817	4,002	58,301	1,566	57,081	22			6,496	55,281	1,972	54,822		11	11		1		2	116	1	
59	22			7,965	58,814	4,071	59,306	1,593	58,065	22			6,608	56,234	2,006	55,767		11	11		1		2	118	1	
60	22			8,100	59,810	4,140	60,312	1,620	59,049	22			6,720	57,187	2,040	56,712		11	11		1		2	120	1	
61	22					4,209	61,317	1,647	60,033	22			6,832	58,140	2,074	57,657		11	11		1		2	122	1	
62	22					4,278	62,322	1,674	61,017	22			6,944	59,093	2,108	58,602		11	11		1		2	124	1	
63	22					4,347	63,327	1,701	62,001	22			7,056	60,047	2,142	59,548		11	11		1		2	126	1	
64	22					4,416	64,332	1,728	62,986	22			7,168	61,000	2,176	60,493		11	11		3	1	3	128	1	

(To be continued)

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(Continued from preceding sheet)

RAID group	Storage Capacity (GB)																Number of necessary options							
	Open System									Mainframe System							DKC options					DKU options		
	Cache (GB)	OPEN-3 (2.461GB)		OPEN-9 (7.384GB)		OPEN-E (14.568GB)		OPEN-L (36.450GB)		Cache (GB)	3390-3/3R (2.838GB)		3390-9 (8.510GB)		3390-L (27.80GB)		F460I-2048		F460I	F460I	F460I	455I	455I	455I
		VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap		VOL	Cap	VOL	Cap	VOL	Cap	OPEN	MF	-S512	-200	-L1C	-18	-146J4	-EXC
65	22					4,485	65,337	1,755	63,970	22			7,280	61,953	2,210	61,438	11	11		3	1	3	130	1
66	22					4,554	66,343	1,782	64,954	22			7,392	62,906	2,244	62,383	11	11		3	1	3	132	1
67	22					4,623	67,348	1,809	65,938	22			7,504	63,859	2,278	63,328	11	11		3	1	3	134	1
68	22					4,692	68,353	1,836	66,922	22			7,616	64,812	2,312	64,274	11	11		3	1	3	136	1
69	22					4,761	69,358	1,863	67,906	22			7,728	65,765	2,346	65,219	11	11		3	1	3	138	1
70	22					4,830	70,363	1,890	68,891	22			7,840	66,718	2,380	66,164	11	11		3	1	3	140	1
71	22					4,899	71,369	1,917	69,875	22			7,952	67,672	2,414	67,109	11	11		3	1	3	142	1
72	22					4,968	72,374	1,944	70,859	22			8,064	68,625	2,448	68,054	11	11		3	1	3	144	1
73	22					5,037	73,379	1,971	71,843	22			8,176	69,578	2,482	69,000	11	11		3	1	3	146	1
74	22					5,106	74,384	1,998	72,827	22					2,516	69,945	11	11		3	1	3	148	1
75	22					5,175	75,389	2,025	73,811	22					2,550	70,890	11	11		3	1	3	150	1
76	22					5,244	76,395	2,052	74,795	22					2,584	71,835	11	11		3	1	3	152	1
77	22					5,313	77,400	2,079	75,780	22					2,618	72,780	11	11		3	1	3	154	1
78	22					5,382	78,405	2,106	76,764	22					2,652	73,726	11	11		3	1	3	156	1
79	22					5,451	79,410	2,133	77,748	22					2,686	74,671	11	11		3	1	3	158	1
80	22					5,520	80,415	2,160	78,732	22					2,720	75,616	11	11		3	1	3	160	1
81	22					5,589	81,421	2,187	79,716	22					2,754	76,561	11	11		3	1	3	162	1
82	22					5,658	82,426	2,214	80,700	22					2,788	77,506	11	11		3	1	3	164	1
83	22					5,727	83,431	2,241	81,684	22					2,822	78,452	11	11		3	1	3	166	1
84	22					5,796	84,436	2,268	82,669	22					2,856	79,397	11	11		3	1	3	168	1
85	22					5,865	85,441	2,295	83,653	22					2,890	80,342	11	11		3	1	3	170	1
86	22					5,934	86,447	2,322	84,637	22					2,924	81,287	11	11		3	1	3	172	1
87	22					6,003	87,452	2,349	85,621	22					2,958	82,232	11	11		3	1	3	174	1
88	22					6,072	88,457	2,376	86,605	22					2,992	83,178	11	11		3	1	3	176	1
89	22					6,141	89,462	2,403	87,589	22					3,026	84,123	11	11		3	1	3	178	1
90	22					6,210	90,467	2,430	88,574	22					3,060	85,068	11	11		3	1	3	180	1
91	22					6,279	91,472	2,457	89,558	22					3,094	86,013	11	11		3	1	3	182	1
92	22					6,348	92,478	2,484	90,542	22					3,128	86,958	11	11		3	1	3	184	1
93	22					6,417	93,483	2,511	91,526	22					3,162	87,904	11	11		3	1	3	186	1
94	22					6,486	94,488	2,538	92,510	22					3,196	88,849	11	11		3	1	3	188	1
95	22					6,555	95,493	2,565	93,494	22					3,230	89,794	11	11		3	1	4	190	2
96	22					6,624	96,498	2,592	94,478	22					3,264	90,739	11	11		3	1	4	192	2
97	22					6,693	97,504	2,619	95,463	22					3,298	91,684	11	11		3	1	4	194	2
98	22					6,762	98,509	2,646	96,447	22					3,332	92,630	11	11		3	1	4	196	2
99	22					6,831	99,514	2,673	97,431	22					3,366	93,575	11	11		3	1	4	198	2
100	22					6,900	100,519	2,700	98,415	22					3,400	94,520	11	11		3	1	4	200	2
101	22					6,969	101,524	2,727	99,399	22					3,434	95,465	11	11		3	1	4	202	2
102	22					7,038	102,530	2,754	100,383	22					3,468	96,410	11	11		3	1	4	204	2
103	22					7,107	103,535	2,781	101,367	22					3,502	97,356	11	11		3	1	4	206	2
104	22					7,176	104,540	2,808	102,352	22					3,536	98,301	11	11		3	1	4	208	2
105	22					7,245	105,545	2,835	103,336	22					3,570	99,246	11	11		3	1	4	210	2
106	22					7,314	106,550	2,862	104,320	22					3,604	100,191	11	11		3	1	4	212	2
107	22					7,383	107,556	2,889	105,304	22					3,638	101,136	11	11		3	1	4	214	2
108	22					7,452	108,561	2,916	106,288	22					3,672	102,082	11	11		3	1	4	216	2
109	22					7,521	109,566	2,943	107,272	22					3,706	103,027	11	11		3	1	4	218	2
110	22					7,590	110,571	2,970	108,257	22					3,740	103,972	11	11		3	1	4	220	2
111	22					7,659	111,576	2,997	109,241	22					3,774	104,917	11	11		3	1	4	222	2
112	22					7,728	112,582	3,024	110,225	22					3,808	105,862	11	11		3	1	4	224	2
113	22					7,797	113,587	3,051	111,209	22					3,842	106,808	11	11		3	1	4	226	2
114	22					7,866	114,592	3,078	112,193	22					3,876	107,753	11	11		3	1	4	228	2
115	22					7,935	115,597	3,105	113,177	22					3,910	108,698	11	11		3	1	4	230	2
116	22					8,004	116,602	3,132	114,161	22					3,944	109,643	11	11		3	1	4	232	2
117	22					8,073	117,607	3,159	115,146	22					3,978	110,588	11	11		3	1	4	234	2
118	22					8,142	118,613	3,186	116,130	22					4,012	111,534	11	11		3	1	4	236	2
119	22							3,213	117,114	22					4,046	112,479	11	11		3	1	4	238	2
120	22							3,240	118,098	22					4,080	113,424	11	11		3	1	4	240	2
121	22							3,267	119,082	22					4,114	114,369	11	11		3	1	4	242	2
122	22							3,294	120,066	22					4,148	115,314	11	11		3	1	4	244	2
123	22							3,321	121,050	22					4,182	116,260	11	11		3	1	4	246	2
124	22							3,348	122,035	22					4,216	117,205	11	11		3	1	4	248	2
125	22							3,375	123,019	22					4,250	118,150	11	11		3	1	4	250	2
126	22							3,402	124,003	22					4,284	119,095	11	11		3	1	4	252	2

*1: The number of the Shard Memory option(DKC-F460I-S512) necessary is refer to table 1.1.2-3A and 1.1.2-3B.
Please note that location of shared memory varies according to the purpose such as additional cache installation or additional LDEV installation.

Note: In addition to the Options listed in above table as necessary parts, the Power Cable Kit option, the AC Box Kit option and the Channel options are required.

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(4) 72GB 15K rpm HDD, RAID5 (7D+1P)

RAID Group	Storage Capacity (GB)																	Number of necessary options								
	Open System									Mainframe System								DKC options					DKU options			
	Cache (GB)	OPEN-3 (2.461GB)		OPEN-9 (7.384GB)		OPEN-E (14.568GB)		OPEN-L (36.450GB)		Cache (GB)	3390-3/3R (2.838GB)		3390-9 (8.510GB)		3390-L (27.80GB)			F460I-2048		F460I -S512	F460I -200	F460I -L1C	455I -18	455I -72K4	455I -EXC
		VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap		VOL	Cap	VOL	Cap	VOL	Cap		OPEN	MF						
1	4	202	497	67	495	34	495	13	474	4	167	474	55	468	17	473		2	2	*1	1		1	2	
2	6	404	994	134	989	68	991	26	948	6	334	948	110	936	34	945		3	3		1		1	4	
3	8	606	1,491	201	1,484	102	1,486	39	1,422	8	501	1,422	165	1,404	51	1,418		4	4		1		1	6	
4	8	808	1,988	268	1,979	136	1,981	52	1,895	8	668	1,896	220	1,872	68	1,890		4	4		1		1	8	
5	8	1,010	2,486	335	2,474	170	2,477	65	2,369	8	835	2,370	275	2,340	85	2,363		4	4		1		1	10	
6	10	1,212	2,983	402	2,968	204	2,972	78	2,843	10	1,002	2,844	330	2,808	102	2,836		5	5		1		1	12	
7	10	1,414	3,480	469	3,463	238	3,467	91	3,317	10	1,169	3,318	385	3,276	119	3,308		5	5		1		1	14	
8	10	1,616	3,977	536	3,958	272	3,962	104	3,791	10	1,336	3,792	440	3,744	136	3,781		5	5		1		1	16	
9	10	1,818	4,474	603	4,453	306	4,458	117	4,265	10	1,503	4,266	495	4,212	153	4,253		5	5		1		1	18	
10	10	2,020	4,971	670	4,947	340	4,953	130	4,739	10	1,670	4,739	550	4,681	170	4,726		5	5		1		1	20	
11	10	2,222	5,468	737	5,442	374	5,448	143	5,212	10	1,837	5,213	605	5,149	187	5,199		5	5		1		1	22	
12	12	2,424	5,965	804	5,937	408	5,944	156	5,686	12	2,004	5,687	660	5,617	204	5,671		6	6		1		1	24	
13	12	2,626	6,463	871	6,431	442	6,439	169	6,160	12	2,171	6,161	715	6,085	221	6,144		6	6		1		1	26	
14	12	2,828	6,960	938	6,926	476	6,934	182	6,634	12	2,338	6,635	770	6,553	238	6,616		6	6		1		1	28	
15	12	3,030	7,457	1,005	7,421	510	7,430	195	7,108	12	2,505	7,109	825	7,021	255	7,089		6	6		1		1	30	
16	12	3,232	7,954	1,072	7,916	544	7,925	208	7,582	12	2,672	7,583	880	7,489	272	7,562		6	6		1		1	32	
17	12	3,434	8,451	1,139	8,410	578	8,420	221	8,055	12	2,839	8,057	935	7,957	289	8,034		6	6		1		1	34	
18	14	3,636	8,948	1,206	8,905	612	8,916	234	8,529	14	3,006	8,531	990	8,425	306	8,507		7	7		1		1	36	
19	14	3,838	9,445	1,273	9,400	646	9,411	247	9,003	14	3,173	9,005	1,045	8,893	323	8,979		7	7		1		1	38	
20	14	4,040	9,942	1,340	9,895	680	9,906	260	9,477	14	3,340	9,479	1,100	9,361	340	9,452		7	7		1		1	40	
21	14	4,242	10,440	1,407	10,389	714	10,402	273	9,951	14	3,507	9,953	1,155	9,829	357	9,925		7	7		1		1	42	
22	14	4,444	10,937	1,474	10,884	748	10,897	286	10,425	14	3,674	10,427	1,210	10,297	374	10,397		7	7		1		1	44	
23	16	4,646	11,434	1,541	11,379	782	11,392	299	10,899	14	3,841	10,901	1,265	10,765	391	10,870		8	7		1		1	46	
24	16	4,848	11,931	1,608	11,873	816	11,887	312	11,372	16	4,008	11,375	1,320	11,233	408	11,342		8	8		1		1	48	
25	16	5,050	12,428	1,675	12,368	850	12,383	325	11,846	16	4,175	11,849	1,375	11,701	425	11,815		8	8		1		1	50	
26	16	5,252	12,925	1,742	12,863	884	12,878	338	12,320	16	4,342	12,323	1,430	12,169	442	12,288		8	8		1		1	52	
27	16	5,454	13,422	1,809	13,358	918	13,373	351	12,794	16	4,509	12,797	1,485	12,637	459	12,760		8	8		1		1	54	
28	16	5,656	13,919	1,876	13,852	952	13,869	364	13,268	16	4,676	13,270	1,540	13,105	476	13,233		8	8		1		1	56	
29	18	5,858	14,417	1,943	14,347	986	14,364	377	13,742	16	4,843	13,744	1,595	13,573	493	13,705		9	8		1		1	58	
30	18	6,060	14,914	2,010	14,842	1,020	14,859	390	14,216	18	5,010	14,218	1,650	14,042	510	14,178		9	9		1		1	60	
31	18	6,262	15,411	2,077	15,337	1,054	15,355	403	14,689	18	5,177	14,692	1,705	14,510	527	14,651		9	9		1		1	62	
32	18	6,464	15,908	2,144	15,831	1,088	15,850	416	15,163	18	5,344	15,166	1,760	14,978	544	15,123		9	9		1		2	64	1
33	18	6,666	16,405	2,211	16,326	1,122	16,345	429	15,637	18	5,511	15,640	1,815	15,446	561	15,596		9	9		1		2	66	1
34	18	6,868	16,902	2,278	16,821	1,156	16,841	442	16,111	18	5,678	16,114	1,870	15,914	578	16,068		9	9		1		2	68	1
35	20	7,070	17,399	2,345	17,315	1,190	17,336	455	16,585	18	5,845	16,588	1,925	16,382	595	16,541		10	9		1		2	70	1
36	20	7,272	17,896	2,412	17,810	1,224	17,831	468	17,059	20	6,012	17,062	1,980	16,850	612	17,014		10	10		1		2	72	1
37	20	7,474	18,394	2,479	18,305	1,258	18,327	481	17,532	20	6,179	17,536	2,035	17,318	629	17,486		10	10		1		2	74	1
38	20	7,676	18,891	2,546	18,800	1,292	18,822	494	18,006	20	6,346	18,010	2,090	17,786	646	17,959		10	10		1		2	76	1
39	20	7,878	19,388	2,613	19,294	1,326	19,317	507	18,480	20	6,513	18,484	2,145	18,254	663	18,431		10	10		1		2	78	1
40	22	8,080	19,885	2,680	19,789	1,360	19,812	520	18,954	20	6,680	18,958	2,200	18,722	680	18,904		11	10		1		2	80	1
41	22			2,747	20,284	1,394	20,308	533	19,428	20	6,847	19,432	2,255	19,190	697	19,377		11	10		1		2	82	1
42	22			2,814	20,779	1,428	20,803	546	19,902	22	7,014	19,906	2,310	19,658	714	19,849		11	11		1		2	84	1
43	22			2,881	21,273	1,462	21,298	559	20,376	22	7,181	20,380	2,365	20,126	731	20,322		11	11		1		2	86	1
44	22			2,948	21,768	1,496	21,794	572	20,849	22	7,348	20,854	2,420	20,594	748	20,794		11	11		1		2	88	1
45	22			3,015	22,263	1,530	22,289	585	21,323	22	7,515	21,328	2,475	21,062	765	21,267		11	11		1		2	90	1
46	22			3,082	22,757	1,564	22,784	598	21,797	22	7,682	21,802	2,530	21,530	782	21,740		11	11		1		2	92	1
47	22			3,149	23,252	1,598	23,280	611	22,271	22	7,849	22,275	2,585	21,998	799	22,212		11	11		1		2	94	1
48	22			3,216	23,747	1,632	23,775	624	22,745	22	8,016	22,749	2,640	22,466	816	22,685		11	11		1		2	96	1
49	22			3,283	24,242	1,666	24,270	637	23,219	22	8,183	23,223	2,695	22,934	833	23,157		11	11		1		2	98	1
50	22			3,350	24,736	1,700	24,766	650	23,693	22			2,750	23,403	850	23,630		11	11		1		2	100	1
51	22			3,417	25,231	1,734	25,261	663	24,166	22			2,805	23,871	867	24,103		11	11		1		2	102	1
52	22			3,484	25,726	1,768	25,756	676	24,640	22			2,860	24,339	884	24,575		11	11		1		2	104	1
53	22			3,551	26,221	1,802	26,252	689	25,114	22			2,915	24,807	901	25,048		11	11		1		2	106	1
54	22			3,618	26,715	1,836	26,747	702	25,588	22			2,970	25,275	918	25,520		11	11		1		2	108	1
55	22			3,685	27,210	1,870	27,242	715	26,062	22			3,025	25,743	935	25,993		11	11		1		2	110	1
56	22			3,752	27,705	1,904	27,737	728	26,536	22			3,080	26,211	952	26,466		11	11		1		2	112	1
57	22			3,819	28,199	1,938	28,233	741	27,009	22			3,135	26,679	969	26,938		11	11		1		2	114	1
58	22			3,886	28,694	1,972	28,728	754	27,483	22			3,190	27,147	986	27,411		11	11		1		2	116	1
59	22			3,953	29,189	2,006	29,223	767	27,957	22			3,245	27,615	1,003	27,883		11	11		1		2	118	1
60	22			4,020	29,684	2,040	29,719	780	28,431	22			3,300	28,083	1,020	28,356		11	11		1		2	120	1
61	22			4,087	30,178	2,074	30,214	793	28,905	22			3,355	28,551	1,037	28,829		11	11		1		2	122	1
62	22			4,154	30,673	2,108	30,709	806	29,379	22			3,410	29,019	1,054	29,301		11	11		1		2	124	1
63	22			4,221	31,168	2,142	31,205	819	29,853	22			3,465	29,487	1,071	29,774		11	11		1		2	126	1
64	22			4,288	31,663	2,176	31,700	832	30,326	22			3,520	29,955	1,088	30,246		11	11		3	1	3	128	1

(To be continued)

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(Continued from preceding sheet)

RAID group	Storage Capacity (GB)										Number of necessary options													
	Open System										Mainframe System							DKC options						DKU options		
	Cache (GB)	OPEN-3 (2.461GB)		OPEN-9 (7.384GB)		OPEN-E (14.568GB)		OPEN-L (36.450GB)		Cache (GB)	3390-3/3R (2.838GB)		3390-9 (8.510GB)		3390-L (27.80GB)		F460I-2048		F460I	F460I	F460I	455I	F455I	F455I
		VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap		VOL	Cap	VOL	Cap	VOL	Cap	OPEN	MF	-S512	-200	-L1C	-18	-72K4	-EXC
65	22			4,355	32,157	2,210	32,195	845	30,800	22			3,575	30,423	1,105	30,719	11	11		3	1	3	130	1
66	22			4,422	32,652	2,244	32,691	858	31,274	22			3,630	30,891	1,122	31,192	11	11		3	1	3	132	1
67	22			4,489	33,147	2,278	33,186	871	31,748	22			3,685	31,359	1,139	31,664	11	11		3	1	3	134	1
68	22			4,556	33,642	2,312	33,681	884	32,222	22			3,740	31,827	1,156	32,137	11	11		3	1	3	136	1
69	22			4,623	34,136	2,346	34,177	897	32,696	22			3,795	32,295	1,173	32,609	11	11		3	1	3	138	1
70	22			4,690	34,631	2,380	34,672	910	33,170	22			3,850	32,764	1,190	33,082	11	11		3	1	3	140	1
71	22			4,757	35,126	2,414	35,167	923	33,643	22			3,905	33,232	1,207	33,555	11	11		3	1	3	142	1
72	22			4,824	35,620	2,448	35,662	936	34,117	22			3,960	33,700	1,224	34,027	11	11		3	1	3	144	1
73	22			4,891	36,115	2,482	36,158	949	34,591	22			4,015	34,168	1,241	34,500	11	11		3	1	3	146	1
74	22			4,958	36,610	2,516	36,653	962	35,065	22			4,070	34,636	1,258	34,972	11	11		3	1	3	148	1
75	22			5,025	37,105	2,550	37,148	975	35,539	22			4,125	35,104	1,275	35,445	11	11		3	1	3	150	1
76	22			5,092	37,599	2,584	37,644	988	36,013	22			4,180	35,572	1,292	35,918	11	11		3	1	3	152	1
77	22			5,159	38,094	2,618	38,139	1,001	36,486	22			4,235	36,040	1,309	36,390	11	11		3	1	3	154	1
78	22			5,226	38,589	2,652	38,634	1,014	36,960	22			4,290	36,508	1,326	36,863	11	11		3	1	3	156	1
79	22			5,293	39,084	2,686	39,130	1,027	37,434	22			4,345	36,976	1,343	37,335	11	11		3	1	3	158	1
80	22			5,360	39,578	2,720	39,625	1,040	37,908	22			4,400	37,444	1,360	37,808	11	11		3	1	3	160	1
81	22			5,427	40,073	2,754	40,120	1,053	38,382	22			4,455	37,912	1,377	38,281	11	11		3	1	3	162	1
82	22			5,494	40,568	2,788	40,616	1,066	38,856	22			4,510	38,380	1,394	38,753	11	11		3	1	3	164	1
83	22			5,561	41,062	2,822	41,111	1,079	39,330	22			4,565	38,848	1,411	39,226	11	11		3	1	3	166	1
84	22			5,628	41,557	2,856	41,606	1,092	39,803	22			4,620	39,316	1,428	39,698	11	11		3	1	3	168	1
85	22			5,695	42,052	2,890	42,102	1,105	40,277	22			4,675	39,784	1,445	40,171	11	11		3	1	3	170	1
86	22			5,762	42,547	2,924	42,597	1,118	40,751	22			4,730	40,252	1,462	40,644	11	11		3	1	3	172	1
87	22			5,829	43,041	2,958	43,092	1,131	41,225	22			4,785	40,720	1,479	41,116	11	11		3	1	3	174	1
88	22			5,896	43,536	2,992	43,587	1,144	41,699	22			4,840	41,188	1,496	41,589	11	11		3	1	3	176	1
89	22			5,963	44,031	3,026	44,083	1,157	42,173	22			4,895	41,656	1,513	42,061	11	11		3	1	3	178	1
90	22			6,030	44,526	3,060	44,578	1,170	42,647	22			4,950	42,125	1,530	42,534	11	11		3	1	3	180	1
91	22			6,097	45,020	3,094	45,073	1,183	43,120	22			5,005	42,593	1,547	43,007	11	11		3	1	3	182	1
92	22			6,164	45,515	3,128	45,569	1,196	43,594	22			5,060	43,061	1,564	43,479	11	11		3	1	3	184	1
93	22			6,231	46,010	3,162	46,064	1,209	44,068	22			5,115	43,529	1,581	43,952	11	11		3	1	3	186	1
94	22			6,298	46,504	3,196	46,559	1,222	44,542	22			5,170	43,997	1,598	44,424	11	11		3	1	3	188	1
95	22			6,365	46,999	3,230	47,055	1,235	45,016	22			5,225	44,465	1,615	44,897	11	11		3	1	4	190	2
96	22			6,432	47,494	3,264	47,550	1,248	45,490	22			5,280	44,933	1,632	45,370	11	11		3	1	4	192	2
97	22			6,499	47,989	3,298	48,045	1,261	45,963	22			5,335	45,401	1,649	45,842	11	11		3	1	4	194	2
98	22			6,566	48,483	3,332	48,541	1,274	46,437	22			5,390	45,869	1,666	46,315	11	11		3	1	4	196	2
99	22			6,633	48,978	3,366	49,036	1,287	46,911	22			5,445	46,337	1,683	46,787	11	11		3	1	4	198	2
100	22			6,700	49,473	3,400	49,531	1,300	47,385	22			5,500	46,805	1,700	47,260	11	11		3	1	4	200	2
101	22			6,767	49,968	3,434	50,027	1,313	47,859	22			5,555	47,273	1,717	47,733	11	11		3	1	4	202	2
102	22			6,834	50,462	3,468	50,522	1,326	48,333	22			5,610	47,741	1,734	48,205	11	11		3	1	4	204	2
103	22			6,901	50,957	3,502	51,017	1,339	48,807	22			5,665	48,209	1,751	48,678	11	11		3	1	4	206	2
104	22			6,968	51,452	3,536	51,512	1,352	49,280	22			5,720	48,677	1,768	49,150	11	11		3	1	4	208	2
105	22			7,035	51,946	3,570	52,008	1,365	49,754	22			5,775	49,145	1,785	49,623	11	11		3	1	4	210	2
106	22			7,102	52,441	3,604	52,503	1,378	50,228	22			5,830	49,613	1,802	50,096	11	11		3	1	4	212	2
107	22			7,169	52,936	3,638	52,998	1,391	50,702	22			5,885	50,081	1,819	50,568	11	11		3	1	4	214	2
108	22			7,236	53,431	3,672	53,494	1,404	51,176	22			5,940	50,549	1,836	51,041	11	11		3	1	4	216	2
109	22			7,303	53,925	3,706	53,989	1,417	51,650	22			5,995	51,017	1,853	51,513	11	11		3	1	4	218	2
110	22			7,370	54,420	3,740	54,484	1,430	52,124	22			6,050	51,486	1,870	51,986	11	11		3	1	4	220	2
111	22			7,437	54,915	3,774	54,980	1,443	52,597	22			6,105	51,954	1,887	52,459	11	11		3	1	4	222	2
112	22			7,504	55,410	3,808	55,475	1,456	53,071	22			6,160	52,422	1,904	52,931	11	11		3	1	4	224	2
113	22			7,571	55,904	3,842	55,970	1,469	53,545	22			6,215	52,890	1,921	53,404	11	11		3	1	4	226	2
114	22			7,638	56,399	3,876	56,466	1,482	54,019	22			6,270	53,358	1,938	53,876	11	11		3	1	4	228	2
115	22			7,705	56,894	3,910	56,961	1,495	54,493	22			6,325	53,826	1,955	54,349	11	11		3	1	4	230	2
116	22			7,772	57,388	3,944	57,456	1,508	54,967	22			6,380	54,294	1,972	54,822	11	11		3	1	4	232	2
117	22			7,839	57,883	3,978	57,952	1,521	55,440	22			6,435	54,762	1,989	55,294	11	11		3	1	4	234	2
118	22			7,906	58,378	4,012	58,447	1,534	55,914	22			6,490	55,230	2,006	55,767	11	11		3	1	4	236	2
119	22			7,973	58,873	4,046	58,942	1,547	56,388	22			6,545	55,698	2,023	56,239	11	11		3	1	4	238	2
120	22			8,040	59,367	4,080	59,437	1,560	56,862	22			6,600	56,166	2,040	56,712	11	11		3	1	4	240	2
121	22			8,107	59,862	4,114	59,933	1,573	57,336	22			6,655	56,634	2,057	57,185	11	11		3	1	4	242	2
122	22			8,174	60,357	4,148	60,428	1,586	57,810	22			6,710	57,102	2,074	57,657	11	11		3	1	4	244	2
123	22					4,182	60,923	1,599	58,284	22			6,765	57,570	2,091	58,130	11	11		3	1	4	246	2
124	22					4,216	61,419	1,612	58,757	22			6,820	58,038	2,108	58,602	11	11		3	1	4	248	2
125	22					4,250	61,914	1,625	59,231	22			6,875	58,506	2,125	59,075	11	11		3	1	4	250	2
126	22					4,284	62,409	1,638	59,705	22			6,930	58,974	2,142	59,548	11	11		3	1	4	252	2

*1: The number of the Shard Memory option(DKC-F460I-S512) necessary is refer to table 1.1.2-3A and 1.1.2.3B.
Please note that location of shared memory varies according to the purpose such as additional cache installation or additional LDEV installation.

Note: In addition to the Options listed in above table as necessary parts, the Power Cable Kit option, the AC Box Kit option and the Channel options are required.

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8.3 Standard Configuration for RAID1 (2D+2D)

(1) 36GB 15K rpm HDD, RAID1 (2D+2D)

RAID group	Cache (GB)	Storage Capacity (GB)										Number of necessary options						
		Open System						Mainframe System				DKC options				DKU options		
		OPEN-3 (2.461GB)		OPEN-9 (7.384GB)		OPEN-E (14.568GB)		3390-3/3R (2.838GB)		3390-9 (8.510GB)		F460I -2048	F460I -S512	F460I -200	F460I -L1C	455I -18	F455I -36K4	F455I -EXC
		VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap							
1	2	28	69	9	66	4	58	23	65	7	60	1	*1			1	1	
2	2	56	138	18	133	8	117	46	131	14	119	1				1	2	
3	4	84	207	27	199	12	175	69	196	21	179	2				1	3	
4	4	112	276	36	266	16	233	92	261	28	238	2				1	4	
5	4	140	345	45	332	20	291	115	326	35	298	2				1	5	
6	4	168	413	54	399	24	350	138	392	42	357	2				1	6	
7	4	196	482	63	465	28	408	161	457	49	417	2				1	7	
8	4	224	551	72	532	32	466	184	522	56	477	2				1	8	
9	4	252	620	81	598	36	524	207	587	63	536	2				1	9	
10	4	280	689	90	665	40	583	230	653	70	596	2				1	10	
11	6	308	758	99	731	44	641	253	718	77	655	3				1	11	
12	6	336	827	108	797	48	699	276	783	84	715	3				1	12	
13	6	364	896	117	864	52	758	299	849	91	774	3				1	13	
14	6	392	965	126	930	56	816	322	914	98	834	3				1	14	
15	6	420	1,034	135	997	60	874	345	979	105	894	3				1	15	
16	6	448	1,103	144	1,063	64	932	368	1,044	112	953	3				1	16	
17	6	476	1,171	153	1,130	68	991	391	1,110	119	1,013	3				1	17	
18	6	504	1,240	162	1,196	72	1,049	414	1,175	126	1,072	3				1	18	
19	6	532	1,309	171	1,263	76	1,107	437	1,240	133	1,132	3				1	19	
20	6	560	1,378	180	1,329	80	1,165	460	1,305	140	1,191	3				1	20	
21	8	588	1,447	189	1,396	84	1,224	483	1,371	147	1,251	4				1	21	
22	8	616	1,516	198	1,462	88	1,282	506	1,436	154	1,311	4				1	22	
23	8	644	1,585	207	1,528	92	1,340	529	1,501	161	1,370	4				1	23	
24	8	672	1,654	216	1,595	96	1,399	552	1,567	168	1,430	4				1	24	
25	8	700	1,723	225	1,661	100	1,457	575	1,632	175	1,489	4				1	25	
26	8	728	1,792	234	1,728	104	1,515	598	1,697	182	1,549	4				1	26	
27	8	756	1,861	243	1,794	108	1,573	621	1,762	189	1,608	4				1	27	
28	8	784	1,929	252	1,861	112	1,632	644	1,828	196	1,668	4				1	28	
29	8	812	1,998	261	1,927	116	1,690	667	1,893	203	1,728	4				1	29	
30	8	840	2,067	270	1,994	120	1,748	690	1,958	210	1,787	4				1	30	
31	8	868	2,136	279	2,060	124	1,806	713	2,023	217	1,847	4				1	31	
32	8	896	2,205	288	2,127	128	1,865	736	2,089	224	1,906	4		1		1	32	
33	8	924	2,274	297	2,193	132	1,923	759	2,154	231	1,966	4		1		1	33	
34	8	952	2,343	306	2,260	136	1,981	782	2,219	238	2,025	4		1		1	34	
35	8	980	2,412	315	2,326	140	2,040	805	2,285	245	2,085	4		1		1	35	
36	8	1,008	2,481	324	2,392	144	2,098	828	2,350	252	2,145	4		1		1	36	
37	8	1,036	2,550	333	2,459	148	2,156	851	2,415	259	2,204	4		1		1	37	
38	8	1,064	2,619	342	2,525	152	2,214	874	2,480	266	2,264	4		1		1	38	
39	8	1,092	2,687	351	2,592	156	2,273	897	2,546	273	2,323	4		1		1	39	
40	8	1,120	2,756	360	2,658	160	2,331	920	2,611	280	2,383	4		1		1	40	
41	8	1,148	2,825	369	2,725	164	2,389	943	2,676	287	2,442	4		1		1	41	
42	10	1,176	2,894	378	2,791	168	2,447	966	2,742	294	2,502	5		1		1	42	
43	10	1,204	2,963	387	2,858	172	2,506	989	2,807	301	2,562	5		1		1	43	
44	10	1,232	3,032	396	2,924	176	2,564	1,012	2,872	308	2,621	5		1		1	44	
45	10	1,260	3,101	405	2,991	180	2,622	1,035	2,937	315	2,681	5		1		1	45	
46	10	1,288	3,170	414	3,057	184	2,681	1,058	3,003	322	2,740	5		1		1	46	
47	10	1,316	3,239	423	3,123	188	2,739	1,081	3,068	329	2,800	5		1		1	47	
48	10	1,344	3,308	432	3,190	192	2,797	1,104	3,133	336	2,859	5		1		1	48	
49	10	1,372	3,376	441	3,256	196	2,855	1,127	3,198	343	2,919	5		1		1	49	
50	10	1,400	3,445	450	3,323	200	2,914	1,150	3,264	350	2,979	5		1		1	50	
51	10	1,428	3,514	459	3,389	204	2,972	1,173	3,329	357	3,038	5		1		1	51	
52	10	1,456	3,583	468	3,456	208	3,030	1,196	3,394	364	3,098	5		1		1	52	
53	10	1,484	3,652	477	3,522	212	3,088	1,219	3,460	371	3,157	5		1		1	53	
54	10	1,512	3,721	486	3,589	216	3,147	1,242	3,525	378	3,217	5		1		1	54	
55	10	1,540	3,790	495	3,655	220	3,205	1,265	3,590	385	3,276	5		1		1	55	
56	10	1,568	3,859	504	3,722	224	3,263	1,288	3,655	392	3,336	5		1		1	56	
57	10	1,596	3,928	513	3,788	228	3,322	1,311	3,721	399	3,395	5		1		1	57	
58	10	1,624	3,997	522	3,854	232	3,380	1,334	3,786	406	3,455	5		1		1	58	
59	10	1,652	4,066	531	3,921	236	3,438	1,357	3,851	413	3,515	5		1		1	59	
60	10	1,680	4,134	540	3,987	240	3,496	1,380	3,916	420	3,574	5		1		1	60	
61	10	1,708	4,203	549	4,054	244	3,555	1,403	3,982	427	3,634	5		1		1	61	
62	10	1,736	4,272	558	4,120	248	3,613	1,426	4,047	434	3,693	5		1		1	62	
63	10	1,764	4,341	567	4,187	252	3,671	1,449	4,112	441	3,753	5		1		1	63	

(To be continued)

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(Continued from preceding sheet)

RAID group	Cache (GB)	Storage Capacity (GB)										Number of necessary options						
		Open System						Mainframe System				DKC options				DKU options		
		OPEN-3 (2.461GB)		OPEN-9 (7.384GB)		OPEN-E (14.568GB)		3390-3/3R (2.838GB)		3390-9 (8.510GB)		F460I -2048	F460I -S512	F460I -200	F460I -L1C	455I -18	F455I -36K4	F455I -EXC
		VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap							
64	10	1,792	4,410	576	4,253	256	3,729	1,472	4,178	448	3,812	5		1		2	64	1
65	10	1,820	4,479	585	4,320	260	3,788	1,495	4,243	455	3,872	5		1		2	65	1
66	10	1,848	4,548	594	4,386	264	3,846	1,518	4,308	462	3,932	5		1		2	66	1
67	10	1,876	4,617	603	4,453	268	3,904	1,541	4,373	469	3,991	5		1		2	67	1
68	10	1,904	4,686	612	4,519	272	3,962	1,564	4,439	476	4,051	5		1		2	68	1
69	10	1,932	4,755	621	4,585	276	4,021	1,587	4,504	483	4,110	5		1		2	69	1
70	10	1,960	4,824	630	4,652	280	4,079	1,610	4,569	490	4,170	5		1		2	70	1
71	10	1,988	4,892	639	4,718	284	4,137	1,633	4,634	497	4,229	5		1		2	71	1
72	10	2,016	4,961	648	4,785	288	4,196	1,656	4,700	504	4,289	5		1		2	72	1
73	10	2,044	5,030	657	4,851	292	4,254	1,679	4,765	511	4,349	5		1		2	73	1
74	10	2,072	5,099	666	4,918	296	4,312	1,702	4,830	518	4,408	5		1		2	74	1
75	10	2,100	5,168	675	4,984	300	4,370	1,725	4,896	525	4,468	5		1		2	75	1
76	10	2,128	5,237	684	5,051	304	4,429	1,748	4,961	532	4,527	5		1		2	76	1
77	10	2,156	5,306	693	5,117	308	4,487	1,771	5,026	539	4,587	5		1		2	77	1
78	10	2,184	5,375	702	5,184	312	4,545	1,794	5,091	546	4,646	5		1		2	78	1
79	10	2,212	5,444	711	5,250	316	4,603	1,817	5,157	553	4,706	5		1		2	79	1
80	10	2,240	5,513	720	5,316	320	4,662	1,840	5,222	560	4,766	5		1		2	80	1
81	10	2,268	5,582	729	5,383	324	4,720	1,863	5,287	567	4,825	5		1		2	81	1
82	10	2,296	5,650	738	5,449	328	4,778	1,886	5,352	574	4,885	5		1		2	82	1
83	10	2,324	5,719	747	5,516	332	4,837	1,909	5,418	581	4,944	5		1		2	83	1
84	12	2,352	5,788	756	5,582	336	4,895	1,932	5,483	588	5,004	6		1		2	84	1
85	12	2,380	5,857	765	5,649	340	4,953	1,955	5,548	595	5,063	6		1		2	85	1
86	12	2,408	5,926	774	5,715	344	5,011	1,978	5,614	602	5,123	6		1		2	86	1
87	12	2,436	5,995	783	5,782	348	5,070	2,001	5,679	609	5,183	6		1		2	87	1
88	12	2,464	6,064	792	5,848	352	5,128	2,024	5,744	616	5,242	6		1		2	88	1
89	12	2,492	6,133	801	5,915	356	5,186	2,047	5,809	623	5,302	6		1		2	89	1
90	12	2,520	6,202	810	5,981	360	5,244	2,070	5,875	630	5,361	6		1		2	90	1
91	12	2,548	6,271	819	6,047	364	5,303	2,093	5,940	637	5,421	6		1		2	91	1
92	12	2,576	6,340	828	6,114	368	5,361	2,116	6,005	644	5,480	6		1		2	92	1
93	12	2,604	6,408	837	6,180	372	5,419	2,139	6,070	651	5,540	6		1		2	93	1
94	12	2,632	6,477	846	6,247	376	5,478	2,162	6,136	658	5,600	6		1		2	94	1
95	12	2,660	6,546	855	6,313	380	5,536	2,185	6,201	665	5,659	6		1		2	95	1
96	12	2,688	6,615	864	6,380	384	5,594	2,208	6,266	672	5,719	6		1		2	96	1
97	12	2,716	6,684	873	6,446	388	5,652	2,231	6,332	679	5,778	6		1		2	97	1
98	12	2,744	6,753	882	6,513	392	5,711	2,254	6,397	686	5,838	6		1		2	98	1
99	12	2,772	6,822	891	6,579	396	5,769	2,277	6,462	693	5,897	6		1		2	99	1
100	12	2,800	6,891	900	6,646	400	5,827	2,300	6,527	700	5,957	6		1		2	100	1
101	12	2,828	6,960	909	6,712	404	5,885	2,323	6,593	707	6,017	6		1		2	101	1
102	12	2,856	7,029	918	6,779	408	5,944	2,346	6,658	714	6,076	6		1		2	102	1
103	12	2,884	7,098	927	6,845	412	6,002	2,369	6,723	721	6,136	6		1		2	103	1
104	12	2,912	7,166	936	6,911	416	6,060	2,392	6,788	728	6,195	6		1		2	104	1
105	12	2,940	7,235	945	6,978	420	6,119	2,415	6,854	735	6,255	6		1		2	105	1
106	12	2,968	7,304	954	7,044	424	6,177	2,438	6,919	742	6,314	6		1		2	106	1
107	12	2,996	7,373	963	7,111	428	6,235	2,461	6,984	749	6,374	6		1		2	107	1
108	12	3,024	7,442	972	7,177	432	6,293	2,484	7,050	756	6,434	6		1		2	108	1
109	12	3,052	7,511	981	7,244	436	6,352	2,507	7,115	763	6,493	6		1		2	109	1
110	12	3,080	7,580	990	7,310	440	6,410	2,530	7,180	770	6,553	6		1		2	110	1
111	12	3,108	7,649	999	7,377	444	6,468	2,553	7,245	777	6,612	6		1		2	111	1
112	12	3,136	7,718	1,008	7,443	448	6,526	2,576	7,311	784	6,672	6		1		2	112	1
113	12	3,164	7,787	1,017	7,510	452	6,585	2,599	7,376	791	6,731	6		1		2	113	1
114	12	3,192	7,856	1,026	7,576	456	6,643	2,622	7,441	798	6,791	6		1		2	114	1
115	12	3,220	7,924	1,035	7,642	460	6,701	2,645	7,507	805	6,851	6		1		2	115	1
116	12	3,248	7,993	1,044	7,709	464	6,760	2,668	7,572	812	6,910	6		1		2	116	1
117	12	3,276	8,062	1,053	7,775	468	6,818	2,691	7,637	819	6,970	6		1		2	117	1
118	12	3,304	8,131	1,062	7,842	472	6,876	2,714	7,702	826	7,029	6		1		2	118	1
119	12	3,332	8,200	1,071	7,908	476	6,934	2,737	7,768	833	7,089	6		1		2	119	1
120	12	3,360	8,269	1,080	7,975	480	6,993	2,760	7,833	840	7,148	6		1		2	120	1
121	12	3,388	8,338	1,089	8,041	484	7,051	2,783	7,898	847	7,208	6		1		2	121	1
122	12	3,416	8,407	1,098	8,108	488	7,109	2,806	7,963	854	7,268	6		1		2	122	1
123	12	3,444	8,476	1,107	8,174	492	7,167	2,829	8,029	861	7,327	6		1		2	123	1
124	12	3,472	8,545	1,116	8,241	496	7,226	2,852	8,094	868	7,387	6		1		2	124	1
125	12	3,500	8,614	1,125	8,307	500	7,284	2,875	8,159	875	7,446	6		1		2	125	1
126	14	3,528	8,682	1,134	8,373	504	7,342	2,898	8,225	882	7,506	7		1		2	126	1
127	14	3,556	8,751	1,143	8,440	508	7,401	2,921	8,290	889	7,565	7		1		2	127	1
128	14	3,584	8,820	1,152	8,506	512	7,459	2,944	8,355	896	7,625	7		2	1	3	128	1
129	14	3,612	8,889	1,161	8,573	516	7,517	2,967	8,420	903	7,685	7		2	1	3	129	1

(To be continued)

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(Continued from preceding sheet)

RAID group	Cache (GB)	Storage Capacity (GB)										Number of necessary options						
		Open System						Mainframe System				DKC options				DKU options		
		OPEN-3 (2.461GB)		OPEN-9 (7.384GB)		OPEN-E (14.568GB)		3390-3/3R (2.838GB)		3390-9 (8.510GB)		F460I -2048	F460I -S512	F460I -200	F460I -L1C	455I -18	F455I -36K4	F455I -EXC
		VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap							
130	14	3,640	8,958	1,170	8,639	520	7,575	2,990	8,486	910	7,744	7		2	1	3	130	1
131	14	3,668	9,027	1,179	8,706	524	7,634	3,013	8,551	917	7,804	7		2	1	3	131	1
132	14	3,696	9,096	1,188	8,772	528	7,692	3,036	8,616	924	7,863	7		2	1	3	132	1
133	14	3,724	9,165	1,197	8,839	532	7,750	3,059	8,681	931	7,923	7		2	1	3	133	1
134	14	3,752	9,234	1,206	8,905	536	7,808	3,082	8,747	938	7,982	7		2	1	3	134	1
135	14	3,780	9,303	1,215	8,972	540	7,867	3,105	8,812	945	8,042	7		2	1	3	135	1
136	14	3,808	9,371	1,224	9,038	544	7,925	3,128	8,877	952	8,102	7		2	1	3	136	1
137	14	3,836	9,440	1,233	9,104	548	7,983	3,151	8,943	959	8,161	7		2	1	3	137	1
138	14	3,864	9,509	1,242	9,171	552	8,042	3,174	9,008	966	8,221	7		2	1	3	138	1
139	14	3,892	9,578	1,251	9,237	556	8,100	3,197	9,073	973	8,280	7		2	1	3	139	1
140	14	3,920	9,647	1,260	9,304	560	8,158	3,220	9,138	980	8,340	7		2	1	3	140	1
141	14	3,948	9,716	1,269	9,370	564	8,216	3,243	9,204	987	8,399	7		2	1	3	141	1
142	14	3,976	9,785	1,278	9,437	568	8,275	3,266	9,269	994	8,459	7		2	1	3	142	1
143	14	4,004	9,854	1,287	9,503	572	8,333	3,289	9,334	1,001	8,519	7		2	1	3	143	1
144	14	4,032	9,923	1,296	9,570	576	8,391	3,312	9,399	1,008	8,578	7		2	1	3	144	1
145	14	4,060	9,992	1,305	9,636	580	8,449	3,335	9,465	1,015	8,638	7		2	1	3	145	1
146	14	4,088	10,061	1,314	9,703	584	8,508	3,358	9,530	1,022	8,697	7		2	1	3	146	1
147	14	4,116	10,129	1,323	9,769	588	8,566	3,381	9,595	1,029	8,757	7		2	1	3	147	1
148	14	4,144	10,198	1,332	9,835	592	8,624	3,404	9,661	1,036	8,816	7		2	1	3	148	1
149	14	4,172	10,267	1,341	9,902	596	8,683	3,427	9,726	1,043	8,876	7		2	1	3	149	1
150	14	4,200	10,336	1,350	9,968	600	8,741	3,450	9,791	1,050	8,936	7		2	1	3	150	1
151	14	4,228	10,405	1,359	10,035	604	8,799	3,473	9,856	1,057	8,995	7		2	1	3	151	1
152	14	4,256	10,474	1,368	10,101	608	8,857	3,496	9,922	1,064	9,055	7		2	1	3	152	1
153	14	4,284	10,543	1,377	10,168	612	8,916	3,519	9,987	1,071	9,114	7		2	1	3	153	1
154	14	4,312	10,612	1,386	10,234	616	8,974	3,542	10,052	1,078	9,174	7		2	1	3	154	1
155	14	4,340	10,681	1,395	10,301	620	9,032	3,565	10,117	1,085	9,233	7		2	1	3	155	1
156	14	4,368	10,750	1,404	10,367	624	9,090	3,588	10,183	1,092	9,293	7		2	1	3	156	1
157	14	4,396	10,819	1,413	10,434	628	9,149	3,611	10,248	1,099	9,352	7		2	1	3	157	1
158	14	4,424	10,887	1,422	10,500	632	9,207	3,634	10,313	1,106	9,412	7		2	1	3	158	1
159	14	4,452	10,956	1,431	10,567	636	9,265	3,657	10,379	1,113	9,472	7		3	1	3	159	1
160	14	4,480	11,025	1,440	10,633	640	9,324	3,680	10,444	1,120	9,531	7		3	1	3	160	1
161	14	4,508	11,094	1,449	10,699	644	9,382	3,703	10,509	1,127	9,591	7		3	1	3	161	1
162	14	4,536	11,163	1,458	10,766	648	9,440	3,726	10,574	1,134	9,650	7		3	1	3	162	1
163	14	4,564	11,232	1,467	10,832	652	9,498	3,749	10,640	1,141	9,710	7		3	1	3	163	1
164	14	4,592	11,301	1,476	10,899	656	9,557	3,772	10,705	1,148	9,769	7		3	1	3	164	1
165	14	4,620	11,370	1,485	10,965	660	9,615	3,795	10,770	1,155	9,829	7		3	1	3	165	1
166	14	4,648	11,439	1,494	11,032	664	9,673	3,818	10,835	1,162	9,889	7		3	1	3	166	1
167	14	4,676	11,508	1,503	11,098	668	9,731	3,841	10,901	1,169	9,948	7		3	1	3	167	1
168	16	4,704	11,577	1,512	11,165	672	9,790	3,864	10,966	1,176	10,008	8		3	1	3	168	1
169	16	4,732	11,645	1,521	11,231	676	9,848	3,887	11,031	1,183	10,067	8		3	1	3	169	1
170	16	4,760	11,714	1,530	11,298	680	9,906	3,910	11,097	1,190	10,127	8		3	1	3	170	1
171	16	4,788	11,783	1,539	11,364	684	9,965	3,933	11,162	1,197	10,186	8		3	1	3	171	1
172	16	4,816	11,852	1,548	11,430	688	10,023	3,956	11,227	1,204	10,246	8		3	1	3	172	1
173	16	4,844	11,921	1,557	11,497	692	10,081	3,979	11,292	1,211	10,306	8		3	1	3	173	1
174	16	4,872	11,990	1,566	11,563	696	10,139	4,002	11,358	1,218	10,365	8		3	1	3	174	1
175	16	4,900	12,059	1,575	11,630	700	10,198	4,025	11,423	1,225	10,425	8		3	1	3	175	1
176	16	4,928	12,128	1,584	11,696	704	10,256	4,048	11,488	1,232	10,484	8		3	1	3	176	1
177	16	4,956	12,197	1,593	11,763	708	10,314	4,071	11,553	1,239	10,544	8		3	1	3	177	1
178	16	4,984	12,266	1,602	11,829	712	10,372	4,094	11,619	1,246	10,603	8		3	1	3	178	1
179	16	5,012	12,335	1,611	11,896	716	10,431	4,117	11,684	1,253	10,663	8		3	1	3	179	1
180	16	5,040	12,403	1,620	11,962	720	10,489	4,140	11,749	1,260	10,723	8		3	1	3	180	1
181	16	5,068	12,472	1,629	12,029	724	10,547	4,163	11,815	1,267	10,782	8		3	1	3	181	1
182	16	5,096	12,541	1,638	12,095	728	10,606	4,186	11,880	1,274	10,842	8		3	1	3	182	1
183	16	5,124	12,610	1,647	12,161	732	10,664	4,209	11,945	1,281	10,901	8		3	1	3	183	1
184	16	5,152	12,679	1,656	12,228	736	10,722	4,232	12,010	1,288	10,961	8		3	1	3	184	1
185	16	5,180	12,748	1,665	12,294	740	10,780	4,255	12,076	1,295	11,020	8		3	1	3	185	1
186	16	5,208	12,817	1,674	12,361	744	10,839	4,278	12,141	1,302	11,080	8		3	1	3	186	1
187	16	5,236	12,886	1,683	12,427	748	10,897	4,301	12,206	1,309	11,140	8		3	1	3	187	1
188	16	5,264	12,955	1,692	12,494	752	10,955	4,324	12,272	1,316	11,199	8		3	1	3	188	1
189	16	5,292	13,024	1,701	12,560	756	11,013	4,347	12,337	1,323	11,259	8		3	1	3	189	1
190	16	5,320	13,093	1,710	12,627	760	11,072	4,370	12,402	1,330	11,318	8		3	1	3	190	1
191	16	5,348	13,161	1,719	12,693	764	11,130	4,393	12,467	1,337	11,378	8		3	1	4	191	2
192	16	5,376	13,230	1,728	12,760	768	11,188	4,416	12,533	1,344	11,437	8		3	1	4	192	2
193	16	5,404	13,299	1,737	12,826	772	11,246	4,439	12,598	1,351	11,497	8		3	1	4	193	2
194	16	5,432	13,368	1,746	12,892	776	11,305	4,462	12,663	1,358	11,557	8		3	1	4	194	2

(To be continued)

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(Continued from preceding sheet)

RAID group	Cache (GB)	Storage Capacity (GB)										Number of necessary options						
		Open System						Mainframe System				DKC options				DKU options		
		OPEN-3 (2.461GB)		OPEN-9 (7.384GB)		OPEN-E (14.568GB)		3390-3/3R (2.838GB)		3390-9 (8.510GB)		F460I -2048	F460I -S512	F460I -200	F460I -L1C	455I -18	F455I -36K4	F455I -EXC
		VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap							
195	16	5,460	13,437	1,755	12,959	780	11,363	4,485	12,728	1,365	11,616	8		3	1	4	195	2
196	16	5,488	13,506	1,764	13,025	784	11,421	4,508	12,794	1,372	11,676	8		3	1	4	196	2
197	16	5,516	13,575	1,773	13,092	788	11,480	4,531	12,859	1,379	11,735	8		3	1	4	197	2
198	16	5,544	13,644	1,782	13,158	792	11,538	4,554	12,924	1,386	11,795	8		3	1	4	198	2
199	16	5,572	13,713	1,791	13,225	796	11,596	4,577	12,990	1,393	11,854	8		3	1	4	199	2
200	16	5,600	13,782	1,800	13,291	800	11,654	4,600	13,055	1,400	11,914	8		3	1	4	200	2
201	16	5,628	13,851	1,809	13,358	804	11,713	4,623	13,120	1,407	11,974	8		3	1	4	201	2
202	16	5,656	13,919	1,818	13,424	808	11,771	4,646	13,185	1,414	12,033	8		3	1	4	202	2
203	16	5,684	13,988	1,827	13,491	812	11,829	4,669	13,251	1,421	12,093	8		3	1	4	203	2
204	16	5,712	14,057	1,836	13,557	816	11,887	4,692	13,316	1,428	12,152	8		3	1	4	204	2
205	16	5,740	14,126	1,845	13,623	820	11,946	4,715	13,381	1,435	12,212	8		3	1	4	205	2
206	16	5,768	14,195	1,854	13,690	824	12,004	4,738	13,446	1,442	12,271	8		3	1	4	206	2
207	16	5,796	14,264	1,863	13,756	828	12,062	4,761	13,512	1,449	12,331	8		3	1	4	207	2
208	16	5,824	14,333	1,872	13,823	832	12,121	4,784	13,577	1,456	12,391	8		3	1	4	208	2
209	18	5,852	14,402	1,881	13,889	836	12,179	4,807	13,642	1,463	12,450	9		3	1	4	209	2
210	18	5,880	14,471	1,890	13,956	840	12,237	4,830	13,708	1,470	12,510	9		3	1	4	210	2
211	18	5,908	14,540	1,899	14,022	844	12,295	4,853	13,773	1,477	12,569	9		3	1	4	211	2
212	18	5,936	14,608	1,908	14,089	848	12,354	4,876	13,838	1,484	12,629	9		3	1	4	212	2
213	18	5,964	14,677	1,917	14,155	852	12,412	4,899	13,903	1,491	12,688	9		3	1	4	213	2
214	18	5,992	14,746	1,926	14,222	856	12,470	4,922	13,969	1,498	12,748	9		3	1	4	214	2
215	18	6,020	14,815	1,935	14,288	860	12,528	4,945	14,034	1,505	12,808	9		3	1	4	215	2
216	18	6,048	14,884	1,944	14,354	864	12,587	4,968	14,099	1,512	12,867	9		3	1	4	216	2
217	18	6,076	14,953	1,953	14,421	868	12,645	4,991	14,164	1,519	12,927	9		3	1	4	217	2
218	18	6,104	15,022	1,962	14,487	872	12,703	5,014	14,230	1,526	12,986	9		3	1	4	218	2
219	18	6,132	15,091	1,971	14,554	876	12,762	5,037	14,295	1,533	13,046	9		3	1	4	219	2
220	18	6,160	15,160	1,980	14,620	880	12,820	5,060	14,360	1,540	13,105	9		3	1	4	220	2
221	18	6,188	15,229	1,989	14,687	884	12,878	5,083	14,426	1,547	13,165	9		3	1	4	221	2
222	18	6,216	15,298	1,998	14,753	888	12,936	5,106	14,491	1,554	13,225	9		3	1	4	222	2
223	18	6,244	15,366	2,007	14,820	892	12,995	5,129	14,556	1,561	13,284	9		3	1	4	223	2
224	18	6,272	15,435	2,016	14,886	896	13,053	5,152	14,621	1,568	13,344	9		3	1	4	224	2
225	18	6,300	15,504	2,025	14,953	900	13,111	5,175	14,687	1,575	13,403	9		3	1	4	225	2
226	18	6,328	15,573	2,034	15,019	904	13,169	5,198	14,752	1,582	13,463	9		3	1	4	226	2
227	18	6,356	15,642	2,043	15,086	908	13,228	5,221	14,817	1,589	13,522	9		3	1	4	227	2
228	18	6,384	15,711	2,052	15,152	912	13,286	5,244	14,882	1,596	13,582	9		3	1	4	228	2
229	18	6,412	15,780	2,061	15,218	916	13,344	5,267	14,948	1,603	13,642	9		3	1	4	229	2
230	18	6,440	15,849	2,070	15,285	920	13,403	5,290	15,013	1,610	13,701	9		3	1	4	230	2
231	18	6,468	15,918	2,079	15,351	924	13,461	5,313	15,078	1,617	13,761	9		3	1	4	231	2
232	18	6,496	15,987	2,088	15,418	928	13,519	5,336	15,144	1,624	13,820	9		3	1	4	232	2
233	18	6,524	16,056	2,097	15,484	932	13,577	5,359	15,209	1,631	13,880	9		3	1	4	233	2
234	18	6,552	16,124	2,106	15,551	936	13,636	5,382	15,274	1,638	13,939	9		3	1	4	234	2
235	18	6,580	16,193	2,115	15,617	940	13,694	5,405	15,339	1,645	13,999	9		3	1	4	235	2
236	18	6,608	16,262	2,124	15,684	944	13,752	5,428	15,405	1,652	14,059	9		3	1	4	236	2
237	18	6,636	16,331	2,133	15,750	948	13,810	5,451	15,470	1,659	14,118	9		3	1	4	237	2
238	18	6,664	16,400	2,142	15,817	952	13,869	5,474	15,535	1,666	14,178	9		3	1	4	238	2
239	18	6,692	16,469	2,151	15,883	956	13,927	5,497	15,600	1,673	14,237	9		3	1	4	239	2
240	18	6,720	16,538	2,160	15,949	960	13,985	5,520	15,666	1,680	14,297	9		3	1	4	240	2
241	18	6,748	16,607	2,169	16,016	964	14,044	5,543	15,731	1,687	14,356	9		3	1	4	241	2
242	18	6,776	16,676	2,178	16,082	968	14,102	5,566	15,796	1,694	14,416	9		3	1	4	242	2
243	18	6,804	16,745	2,187	16,149	972	14,160	5,589	15,862	1,701	14,476	9		3	1	4	243	2
244	18	6,832	16,814	2,196	16,215	976	14,218	5,612	15,927	1,708	14,535	9		3	1	4	244	2
245	18	6,860	16,882	2,205	16,282	980	14,277	5,635	15,992	1,715	14,595	9		3	1	4	245	2
246	18	6,888	16,951	2,214	16,348	984	14,335	5,658	16,057	1,722	14,654	9		3	1	4	246	2
247	18	6,916	17,020	2,223	16,415	988	14,393	5,681	16,123	1,729	14,714	9		3	1	4	247	2
248	18	6,944	17,089	2,232	16,481	992	14,451	5,704	16,188	1,736	14,773	9		3	1	4	248	2
249	18	6,972	17,158	2,241	16,548	996	14,510	5,727	16,253	1,743	14,833	9		3	1	4	249	2
250	18	7,000	17,227	2,250	16,614	1,000	14,568	5,750	16,319	1,750	14,893	9		3	1	4	250	2
251	20	7,028	17,296	2,259	16,680	1,004	14,626	5,773	16,384	1,757	14,952	10		3	1	4	251	2
252	20	7,056	17,365	2,268	16,747	1,008	14,685	5,796	16,449	1,764	15,012	10		3	1	4	252	2
253	20	7,084	17,434	2,277	16,813	1,012	14,743	5,819	16,514	1,771	15,071	10		3	1	4	253	2
254	20	7,112	17,503	2,286	16,880	1,016	14,801	5,842	16,580	1,778	15,131	10		3	1	4	254	2

*1: The number of the Shard Memory option(DKC-F460I-S512) necessary is refer to table 1.1.2-3A and 1.1.2-3B. Please note that location of shared memory varies according to the purpose such as additional cache installation or additional LDEV installation.

Note: In addition to the Options listed in above table as necessary parts, the Power Cable Kit option, the AC Box Kit option and the Channel options are required.

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(2) 73GB 10K rpm HDD, RAID1 (2D+2D)

RAID group	Cache (GB)	Storage Capacity (GB)												Number of necessary options						
		Open System								Mainframe System				DKC options				DKU options		
		OPEN-3 (2.461GB)		OPEN-9 (7.384GB)		OPEN-E (14.568GB)		OPEN-L (36.450GB)		3390-3/3R (2.838GB)		3390-9 (8.510GB)		F460I -2048	F460I -S512	F460I -200	F460I -L1C	455I -18	F455I -72J4	F455I -EXC
		VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap							
1	2	59	145	19	140	10	146	4	146	48	136	16	136	1	*1			1	1	
2	4	118	290	38	281	20	291	8	292	96	272	32	272	2				1	2	
3	4	177	436	57	421	30	437	12	437	144	409	48	408	2				1	3	
4	4	236	581	76	561	40	583	16	583	192	545	64	545	2				1	4	
5	6	295	726	95	701	50	728	20	729	240	681	80	681	3				1	5	
6	6	354	871	114	842	60	874	24	875	288	817	96	817	3				1	6	
7	6	413	1,016	133	982	70	1,020	28	1,021	336	954	112	953	3				1	7	
8	6	472	1,162	152	1,122	80	1,165	32	1,166	384	1,090	128	1,089	3				1	8	
9	6	531	1,307	171	1,263	90	1,311	36	1,312	432	1,226	144	1,225	3				1	9	
10	8	590	1,452	190	1,403	100	1,457	40	1,458	480	1,362	160	1,362	4				1	10	
11	8	649	1,597	209	1,543	110	1,602	44	1,604	528	1,498	176	1,498	4				1	11	
12	8	708	1,742	228	1,684	120	1,748	48	1,750	576	1,635	192	1,634	4				1	12	
13	8	767	1,888	247	1,824	130	1,894	52	1,895	624	1,771	208	1,770	4				1	13	
14	8	826	2,033	266	1,964	140	2,040	56	2,041	672	1,907	224	1,906	4				1	14	
15	8	885	2,178	285	2,104	150	2,185	60	2,187	720	2,043	240	2,042	4				1	15	
16	8	944	2,323	304	2,245	160	2,331	64	2,333	768	2,180	256	2,179	4				1	16	
17	8	1,003	2,468	323	2,385	170	2,477	68	2,479	816	2,316	272	2,315	4				1	17	
18	8	1,062	2,614	342	2,525	180	2,622	72	2,624	864	2,452	288	2,451	4				1	18	
19	10	1,121	2,759	361	2,666	190	2,768	76	2,770	912	2,588	304	2,587	5				1	19	
20	10	1,180	2,904	380	2,806	200	2,914	80	2,916	960	2,724	320	2,723	5				1	20	
21	10	1,239	3,049	399	2,946	210	3,059	84	3,062	1,008	2,861	336	2,859	5				1	21	
22	10	1,298	3,194	418	3,087	220	3,205	88	3,208	1,056	2,997	352	2,996	5				1	22	
23	10	1,357	3,340	437	3,227	230	3,351	92	3,353	1,104	3,133	368	3,132	5				1	23	
24	10	1,416	3,485	456	3,367	240	3,496	96	3,499	1,152	3,269	384	3,268	5				1	24	
25	10	1,475	3,630	475	3,507	250	3,642	100	3,645	1,200	3,406	400	3,404	5				1	25	
26	10	1,534	3,775	494	3,648	260	3,788	104	3,791	1,248	3,542	416	3,540	5				1	26	
27	10	1,593	3,920	513	3,788	270	3,933	108	3,937	1,296	3,678	432	3,676	5				1	27	
28	10	1,652	4,066	532	3,928	280	4,079	112	4,082	1,344	3,814	448	3,812	5				1	28	
29	10	1,711	4,211	551	4,069	290	4,225	116	4,228	1,392	3,950	464	3,949	5				1	29	
30	10	1,770	4,356	570	4,209	300	4,370	120	4,374	1,440	4,087	480	4,085	5				1	30	
31	10	1,829	4,501	589	4,349	310	4,516	124	4,520	1,488	4,223	496	4,221	5				1	31	
32	10	1,888	4,646	608	4,489	320	4,662	128	4,666	1,536	4,359	512	4,357	5		1		1	32	
33	10	1,947	4,792	627	4,630	330	4,807	132	4,811	1,584	4,495	528	4,493	5		1		1	33	
34	10	2,006	4,937	646	4,770	340	4,953	136	4,957	1,632	4,632	544	4,629	5		1		1	34	
35	10	2,065	5,082	665	4,910	350	5,099	140	5,103	1,680	4,768	560	4,766	5		1		1	35	
36	10	2,124	5,227	684	5,051	360	5,244	144	5,249	1,728	4,904	576	4,902	5		1		1	36	
37	10	2,183	5,372	703	5,191	370	5,390	148	5,395	1,776	5,040	592	5,038	5		1		1	37	
38	10	2,242	5,518	722	5,331	380	5,536	152	5,540	1,824	5,177	608	5,174	5		1		1	38	
39	10	2,301	5,663	741	5,472	390	5,682	156	5,686	1,872	5,313	624	5,310	5		1		1	39	
40	12	2,360	5,808	760	5,612	400	5,827	160	5,832	1,920	5,449	640	5,446	6		1		1	40	
41	12	2,419	5,953	779	5,752	410	5,973	164	5,978	1,968	5,585	656	5,583	6		1		1	41	
42	12	2,478	6,098	798	5,892	420	6,119	168	6,124	2,016	5,721	672	5,719	6		1		1	42	
43	12	2,537	6,244	817	6,033	430	6,264	172	6,269	2,064	5,858	688	5,855	6		1		1	43	
44	12	2,596	6,389	836	6,173	440	6,410	176	6,415	2,112	5,994	704	5,991	6		1		1	44	
45	12	2,655	6,534	855	6,313	450	6,556	180	6,561	2,160	6,130	720	6,127	6		1		1	45	
46	12	2,714	6,679	874	6,454	460	6,701	184	6,707	2,208	6,266	736	6,263	6		1		1	46	
47	12	2,773	6,824	893	6,594	470	6,847	188	6,853	2,256	6,403	752	6,400	6		1		1	47	
48	12	2,832	6,970	912	6,734	480	6,993	192	6,998	2,304	6,539	768	6,536	6		1		1	48	
49	12	2,891	7,115	931	6,875	490	7,138	196	7,144	2,352	6,675	784	6,672	6		1		1	49	
50	12	2,950	7,260	950	7,015	500	7,284	200	7,290	2,400	6,811	800	6,808	6		1		1	50	
51	12	3,009	7,405	969	7,155	510	7,430	204	7,436	2,448	6,947	816	6,944	6		1		1	51	
52	12	3,068	7,550	988	7,295	520	7,575	208	7,582	2,496	7,084	832	7,080	6		1		1	52	
53	12	3,127	7,696	1,007	7,436	530	7,721	212	7,727	2,544	7,220	848	7,216	6		1		1	53	
54	12	3,186	7,841	1,026	7,576	540	7,867	216	7,873	2,592	7,356	864	7,353	6		1		1	54	
55	12	3,245	7,986	1,045	7,716	550	8,012	220	8,019	2,640	7,492	880	7,489	6		1		1	55	
56	12	3,304	8,131	1,064	7,857	560	8,158	224	8,165	2,688	7,629	896	7,625	6		1		1	56	
57	12	3,363	8,276	1,083	7,997	570	8,304	228	8,311	2,736	7,765	912	7,761	6		1		1	57	
58	12	3,422	8,422	1,102	8,137	580	8,449	232	8,456	2,784	7,901	928	7,897	6		1		1	58	
59	12	3,481	8,567	1,121	8,277	590	8,595	236	8,602	2,832	8,037	944	8,033	6		1		1	59	
60	14	3,540	8,712	1,140	8,418	600	8,741	240	8,748	2,880	8,173	960	8,170	7		1		1	60	
61	14	3,599	8,857	1,159	8,558	610	8,886	244	8,894	2,928	8,310	976	8,306	7		1		1	61	
62	14	3,658	9,002	1,178	8,698	620	9,032	248	9,040	2,976	8,446	992	8,442	7		1		1	62	
63	14	3,717	9,148	1,197	8,839	630	9,178	252	9,185	3,024	8,582	1,008	8,578	7		1		1	63	
64	14	3,776	9,293	1,216	8,979	640	9,324	256	9,331	3,072	8,718	1,024	8,714	7		1		2	64	1

(To be continued)

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(Continued from preceding sheet)

RAID group	Cache (GB)	Storage Capacity (GB)												Number of necessary options						
		Open System								Mainframe System				DKC options				DKU options		
		OPEN-3 (2.461GB)		OPEN-9 (7.384GB)		OPEN-E (14.568GB)		OPEN-L (36.450GB)		3390-3/3R (2.838GB)		3390-9 (8.510GB)		F460I -2048	F460I -S512	F460I -200	F460I -L1C	455I -18	F455I -72J4	F455I -EXC
		VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap							
65	14	3,835	9,438	1,235	9,119	650	9,469	260	9,477	3,120	8,855	1,040	8,850	7		1		2	65	1
66	14	3,894	9,583	1,254	9,260	660	9,615	264	9,623	3,168	8,991	1,056	8,987	7		1		2	66	1
67	14	3,953	9,728	1,273	9,400	670	9,761	268	9,769	3,216	9,127	1,072	9,123	7		1		2	67	1
68	14	4,012	9,874	1,292	9,540	680	9,906	272	9,914	3,264	9,263	1,088	9,259	7		1		2	68	1
69	14	4,071	10,019	1,311	9,680	690	10,052	276	10,060	3,312	9,399	1,104	9,395	7		1		2	69	1
70	14	4,130	10,164	1,330	9,821	700	10,198	280	10,206	3,360	9,536	1,120	9,531	7		1		2	70	1
71	14	4,189	10,309	1,349	9,961	710	10,343	284	10,352	3,408	9,672	1,136	9,667	7		1		2	71	1
72	14	4,248	10,454	1,368	10,101	720	10,489	288	10,498	3,456	9,808	1,152	9,804	7		1		2	72	1
73	14	4,307	10,600	1,387	10,242	730	10,635	292	10,643	3,504	9,944	1,168	9,940	7		1		2	73	1
74	14	4,366	10,745	1,406	10,382	740	10,780	296	10,789	3,552	10,081	1,184	10,076	7		1		2	74	1
75	14	4,425	10,890	1,425	10,522	750	10,926	300	10,935	3,600	10,217	1,200	10,212	7		1		2	75	1
76	14	4,484	11,035	1,444	10,662	760	11,072	304	11,081	3,648	10,353	1,216	10,348	7		1		2	76	1
77	14	4,543	11,180	1,463	10,803	770	11,217	308	11,227	3,696	10,489	1,232	10,484	7		1		2	77	1
78	14	4,602	11,326	1,482	10,943	780	11,363	312	11,372	3,744	10,625	1,248	10,620	7		1		2	78	1
79	14	4,661	11,471	1,501	11,083	790	11,509	316	11,518	3,792	10,762	1,264	10,757	7		1		2	79	1
80	16	4,720	11,616	1,520	11,224	800	11,654	320	11,664	3,840	10,898	1,280	10,893	8		1		2	80	1
81	16	4,779	11,761	1,539	11,364	810	11,800	324	11,810	3,888	11,034	1,296	11,029	8		1		2	81	1
82	16	4,838	11,906	1,558	11,504	820	11,946	328	11,956	3,936	11,170	1,312	11,165	8		1		2	82	1
83	16	4,897	12,052	1,577	11,645	830	12,091	332	12,101	3,984	11,307	1,328	11,301	8		1		2	83	1
84	16	4,956	12,197	1,596	11,785	840	12,237	336	12,247	4,032	11,443	1,344	11,437	8		1		2	84	1
85	16	5,015	12,342	1,615	11,925	850	12,383	340	12,393	4,080	11,579	1,360	11,574	8		1		2	85	1
86	16	5,074	12,487	1,634	12,065	860	12,528	344	12,539	4,128	11,715	1,376	11,710	8		1		2	86	1
87	16	5,133	12,632	1,653	12,206	870	12,674	348	12,685	4,176	11,851	1,392	11,846	8		1		2	87	1
88	16	5,192	12,778	1,672	12,346	880	12,820	352	12,830	4,224	11,988	1,408	11,982	8		1		2	88	1
89	16	5,251	12,923	1,691	12,486	890	12,966	356	12,976	4,272	12,124	1,424	12,118	8		1		2	89	1
90	16	5,310	13,068	1,710	12,627	900	13,111	360	13,122	4,320	12,260	1,440	12,254	8		1		2	90	1
91	16	5,369	13,213	1,729	12,767	910	13,257	364	13,268	4,368	12,396	1,456	12,391	8		1		2	91	1
92	16	5,428	13,358	1,748	12,907	920	13,403	368	13,414	4,416	12,533	1,472	12,527	8		1		2	92	1
93	16	5,487	13,504	1,767	13,048	930	13,548	372	13,559	4,464	12,669	1,488	12,663	8		1		2	93	1
94	16	5,546	13,649	1,786	13,188	940	13,694	376	13,705	4,512	12,805	1,504	12,799	8		1		2	94	1
95	16	5,605	13,794	1,805	13,328	950	13,840	380	13,851	4,560	12,941	1,520	12,935	8		1		2	95	1
96	16	5,664	13,939	1,824	13,468	960	13,985	384	13,997	4,608	13,078	1,536	13,071	8		1		2	96	1
97	16	5,723	14,084	1,843	13,609	970	14,131	388	14,143	4,656	13,214	1,552	13,208	8		1		2	97	1
98	16	5,782	14,230	1,862	13,749	980	14,277	392	14,288	4,704	13,350	1,568	13,344	8		1		2	98	1
99	16	5,841	14,375	1,881	13,889	990	14,422	396	14,434	4,752	13,486	1,584	13,480	8		1		2	99	1
100	18	5,900	14,520	1,900	14,030	1,000	14,568	400	14,580	4,800	13,622	1,600	13,616	9		1		2	100	1
101	18	5,959	14,665	1,919	14,170	1,010	14,714	404	14,726	4,848	13,759	1,616	13,752	9		1		2	101	1
102	18	6,018	14,810	1,938	14,310	1,020	14,859	408	14,872	4,896	13,895	1,632	13,888	9		1		2	102	1
103	18	6,077	14,955	1,957	14,450	1,030	15,005	412	15,017	4,944	14,031	1,648	14,024	9		1		2	103	1
104	18	6,136	15,101	1,976	14,591	1,040	15,151	416	15,163	4,992	14,167	1,664	14,161	9		1		2	104	1
105	18	6,195	15,246	1,995	14,731	1,050	15,296	420	15,309	5,040	14,304	1,680	14,297	9		1		2	105	1
106	18	6,254	15,391	2,014	14,871	1,060	15,442	424	15,455	5,088	14,440	1,696	14,433	9		1		2	106	1
107	18	6,313	15,536	2,033	15,012	1,070	15,588	428	15,601	5,136	14,576	1,712	14,569	9		1		2	107	1
108	18	6,372	15,681	2,052	15,152	1,080	15,733	432	15,746	5,184	14,712	1,728	14,705	9		1		2	108	1
109	18	6,431	15,827	2,071	15,292	1,090	15,879	436	15,892	5,232	14,848	1,744	14,841	9		1		2	109	1
110	18	6,490	15,972	2,090	15,433	1,100	16,025	440	16,038	5,280	14,985	1,760	14,978	9		1		2	110	1
111	18	6,549	16,117	2,109	15,573	1,110	16,170	444	16,184	5,328	15,121	1,776	15,114	9		1		2	111	1
112	18	6,608	16,262	2,128	15,713	1,120	16,316	448	16,330	5,376	15,257	1,792	15,250	9		1		2	112	1
113	18	6,667	16,407	2,147	15,853	1,130	16,462	452	16,475	5,424	15,393	1,808	15,386	9		1		2	113	1
114	18	6,726	16,553	2,166	15,994	1,140	16,608	456	16,621	5,472	15,530	1,824	15,522	9		1		2	114	1
115	18	6,785	16,698	2,185	16,134	1,150	16,753	460	16,767	5,520	15,666	1,840	15,658	9		1		2	115	1
116	18	6,844	16,843	2,204	16,274	1,160	16,899	464	16,913	5,568	15,802	1,856	15,795	9		1		2	116	1
117	18	6,903	16,988	2,223	16,415	1,170	17,045	468	17,059	5,616	15,938	1,872	15,931	9		1		2	117	1
118	18	6,962	17,133	2,242	16,555	1,180	17,190	472	17,204	5,664	16,074	1,888	16,067	9		1		2	118	1
119	18	7,021	17,279	2,261	16,695	1,190	17,336	476	17,350	5,712	16,211	1,904	16,203	9		1		2	119	1
120	20	7,080	17,424	2,280	16,836	1,200	17,482	480	17,496	5,760	16,347	1,920	16,339	10		1		2	120	1
121	20	7,139	17,569	2,299	16,976	1,210	17,627	484	17,642	5,808	16,483	1,936	16,475	10		1		2	121	1
122	20	7,198	17,714	2,318	17,116	1,220	17,773	488	17,788	5,856	16,619	1,952	16,612	10		1		2	122	1
123	20	7,257	17,859	2,337	17,256	1,230	17,919	492	17,933	5,904	16,756	1,968	16,748	10		1		2	123	1
124	20	7,316	18,005	2,356	17,397	1,240	18,064	496	18,079	5,952	16,892	1,984	16,884	10		1		2	124	1
125	20	7,375	18,150	2,375	17,537	1,250	18,210	500	18,225	6,000	17,028	2,000	17,020	10		1		2	125	1
126	20	7,434	18,295	2,394	17,677	1,260	18,356	504	18,371	6,048	17,164	2,016	17,156	10		1		2	126	1
127	20	7,493	18,440	2,413	17,818	1,270	18,501	508	18,517	6,096	17,300	2,032	17,292	10		1		2	127	1
128	20	7,552	18,585	2,432	17,958	1,280	18,647	512	18,662	6,144	17,437	2,048	17,428	10		2	1	3	128	1
129	20	7,611	18,731	2,451	18,098	1,290	18,793	516	18,808	6,192	17,573	2,064	17,565	10		2	1	3	129	1

(To be continued)

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(Continued from preceding sheet)

RAID group	Cache (GB)	Storage Capacity (GB)												Number of necessary options						
		Open System								Mainframe System				DKC options				DKU options		
		OPEN-3 (2.461GB)		OPEN-9 (7.384GB)		OPEN-E (14.568GB)		OPEN-L (36.450GB)		3390-3/3R (2.838GB)		3390-9 (8.510GB)		F460I -2048	F460I -S512	F460I -200	F460I -L1C	455I -18	F455I -72J4	F455I -EXC
		VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap							
130	20	7,670	18,876	2,470	18,238	1,300	18,938	520	18,954	6,240	17,709	2,080	17,701	10		2	1	3	130	1
131	20	7,729	19,021	2,489	18,379	1,310	19,084	524	19,100	6,288	17,845	2,096	17,837	10		2	1	3	131	1
132	20	7,788	19,166	2,508	18,519	1,320	19,230	528	19,246	6,336	17,982	2,112	17,973	10		2	1	3	132	1
133	20	7,847	19,311	2,527	18,659	1,330	19,375	532	19,391	6,384	18,118	2,128	18,109	10		2	1	3	133	1
134	20	7,906	19,457	2,546	18,800	1,340	19,521	536	19,537	6,432	18,254	2,144	18,245	10		2	1	3	134	1
135	20	7,965	19,602	2,565	18,940	1,350	19,667	540	19,683	6,480	18,390	2,160	18,382	10		2	1	3	135	1
136	20	8,024	19,747	2,584	19,080	1,360	19,812	544	19,829	6,528	18,526	2,176	18,518	10		2	1	3	136	1
137	20	8,083	19,892	2,603	19,221	1,370	19,958	548	19,975	6,576	18,663	2,192	18,654	10		2	1	3	137	1
138	20	8,142	20,037	2,622	19,361	1,380	20,104	552	20,120	6,624	18,799	2,208	18,790	10		2	1	3	138	1
139	20			2,641	19,501	1,390	20,250	556	20,266	6,672	18,935	2,224	18,926	10		2	1	3	139	1
140	20			2,660	19,641	1,400	20,395	560	20,412	6,720	19,071	2,240	19,062	10		2	1	3	140	1
141	20			2,679	19,782	1,410	20,541	564	20,558	6,768	19,208	2,256	19,199	10		2	1	3	141	1
142	20			2,698	19,922	1,420	20,687	568	20,704	6,816	19,344	2,272	19,335	10		2	1	3	142	1
143	20			2,717	20,062	1,430	20,832	572	20,849	6,864	19,480	2,288	19,471	10		2	1	3	143	1
144	20			2,736	20,203	1,440	20,978	576	20,995	6,912	19,616	2,304	19,607	10		2	1	3	144	1
145	22			2,755	20,343	1,450	21,124	580	21,141	6,960	19,752	2,320	19,743	11		2	1	3	145	1
146	22			2,774	20,483	1,460	21,269	584	21,287	7,008	19,889	2,336	19,879	11		2	1	3	146	1
147	22			2,793	20,624	1,470	21,415	588	21,433	7,056	20,025	2,352	20,016	11		2	1	3	147	1
148	22			2,812	20,764	1,480	21,561	592	21,578	7,104	20,161	2,368	20,152	11		2	1	3	148	1
149	22			2,831	20,904	1,490	21,706	596	21,724	7,152	20,297	2,384	20,288	11		2	1	3	149	1
150	22			2,850	21,044	1,500	21,852	600	21,870	7,200	20,434	2,400	20,424	11		2	1	3	150	1
151	22			2,869	21,185	1,510	21,998	604	22,016	7,248	20,570	2,416	20,560	11		2	1	3	151	1
152	22			2,888	21,325	1,520	22,143	608	22,162	7,296	20,706	2,432	20,696	11		2	1	3	152	1
153	22			2,907	21,465	1,530	22,289	612	22,307	7,344	20,842	2,448	20,832	11		2	1	3	153	1
154	22			2,926	21,606	1,540	22,435	616	22,453	7,392	20,978	2,464	20,969	11		2	1	3	154	1
155	22			2,945	21,746	1,550	22,580	620	22,599	7,440	21,115	2,480	21,105	11		2	1	3	155	1
156	22			2,964	21,886	1,560	22,726	624	22,745	7,488	21,251	2,496	21,241	11		2	1	3	156	1
157	22			2,983	22,026	1,570	22,872	628	22,891	7,536	21,387	2,512	21,377	11		2	1	3	157	1
158	22			3,002	22,167	1,580	23,017	632	23,036	7,584	21,523	2,528	21,513	11		2	1	3	158	1
159	22			3,021	22,307	1,590	23,163	636	23,182	7,632	21,660	2,544	21,649	11		3	1	3	159	1
160	22			3,040	22,447	1,600	23,309	640	23,328	7,680	21,796	2,560	21,786	11		3	1	3	160	1
161	22			3,059	22,588	1,610	23,454	644	23,474	7,728	21,932	2,576	21,922	11		3	1	3	161	1
162	22			3,078	22,728	1,620	23,600	648	23,620	7,776	22,068	2,592	22,058	11		3	1	3	162	1
163	22			3,097	22,868	1,630	23,746	652	23,765	7,824	22,205	2,608	22,194	11		3	1	3	163	1
164	22			3,116	23,009	1,640	23,892	656	23,911	7,872	22,341	2,624	22,330	11		3	1	3	164	1
165	22			3,135	23,149	1,650	24,037	660	24,057	7,920	22,477	2,640	22,466	11		3	1	3	165	1
166	22			3,154	23,289	1,660	24,183	664	24,203	7,968	22,613	2,656	22,603	11		3	1	3	166	1
167	22			3,173	23,429	1,670	24,329	668	24,349	8,016	22,749	2,672	22,739	11		3	1	3	167	1
168	22			3,192	23,570	1,680	24,474	672	24,494	8,064	22,886	2,688	22,875	11		3	1	3	168	1
169	22			3,211	23,710	1,690	24,620	676	24,640	8,112	23,022	2,704	23,011	11		3	1	3	169	1
170	22			3,230	23,850	1,700	24,766	680	24,786	8,160	23,158	2,720	23,147	11		3	1	3	170	1
171	22			3,249	23,991	1,710	24,911	684	24,932			2,736	23,283	11		3	1	3	171	1
172	22			3,268	24,131	1,720	25,057	688	25,078			2,752	23,420	11		3	1	3	172	1
173	22			3,287	24,271	1,730	25,203	692	25,223			2,768	23,556	11		3	1	3	173	1
174	22			3,306	24,412	1,740	25,348	696	25,369			2,784	23,692	11		3	1	3	174	1
175	22			3,325	24,552	1,750	25,494	700	25,515			2,800	23,828	11		3	1	3	175	1
176	22			3,344	24,692	1,760	25,640	704	25,661			2,816	23,964	11		3	1	3	176	1
177	22			3,363	24,832	1,770	25,785	708	25,807			2,832	24,100	11		3	1	3	177	1
178	22			3,382	24,973	1,780	25,931	712	25,952			2,848	24,236	11		3	1	3	178	1
179	22			3,401	25,113	1,790	26,077	716	26,098			2,864	24,373	11		3	1	3	179	1
180	22			3,420	25,253	1,800	26,222	720	26,244			2,880	24,509	11		3	1	3	180	1
181	22			3,439	25,394	1,810	26,368	724	26,390			2,896	24,645	11		3	1	3	181	1
182	22			3,458	25,534	1,820	26,514	728	26,536			2,912	24,781	11		3	1	3	182	1
183	22			3,477	25,674	1,830	26,659	732	26,681			2,928	24,917	11		3	1	3	183	1
184	22			3,496	25,814	1,840	26,805	736	26,827			2,944	25,053	11		3	1	3	184	1
185	22			3,515	25,955	1,850	26,951	740	26,973			2,960	25,190	11		3	1	3	185	1
186	22			3,534	26,095	1,860	27,096	744	27,119			2,976	25,326	11		3	1	3	186	1
187	22			3,553	26,235	1,870	27,242	748	27,265			2,992	25,462	11		3	1	3	187	1
188	22			3,572	26,376	1,880	27,388	752	27,410			3,008	25,598	11		3	1	3	188	1
189	22			3,591	26,516	1,890	27,534	756	27,556			3,024	25,734	11		3	1	3	189	1
190	22			3,610	26,656	1,900	27,679	760	27,702			3,040	25,870	11		3	1	3	190	1
191	22			3,629	26,797	1,910	27,825	764	27,848			3,056	26,007	11		3	1	4	191	2
192	22			3,648	26,937	1,920	27,971	768	27,994			3,072	26,143	11		3	1	4	192	2
193	22			3,667	27,077	1,930	28,116	772	28,139			3,088	26,279	11		3	1	4	193	2
194	22			3,686	27,217	1,940	28,262	776	28,285			3,104	26,415	11		3	1	4	194	2

(To be continued)

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(Continued from preceding sheet)

RAID group	Cache (GB)	Storage Capacity (GB)												Number of necessary options						
		Open System								Mainframe System				DKC options				DKU options		
		OPEN-3 (2.461GB)		OPEN-9 (7.384GB)		OPEN-E (14.568GB)		OPEN-L (36.450GB)		3390-3/3R (2.838GB)		3390-9 (8.510GB)		F460I -2048	F460I -S512	F460I -200	F460I -L1C	455I -18	F455I -72J4	F455I -EXC
		VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap							
195	22			3,705	27,358	1,950	28,408	780	28,431			3,120	26,551	11		3	1	4	195	2
196	22			3,724	27,498	1,960	28,553	784	28,577			3,136	26,687	11		3	1	4	196	2
197	22			3,743	27,638	1,970	28,699	788	28,723			3,152	26,824	11		3	1	4	197	2
198	22			3,762	27,779	1,980	28,845	792	28,868			3,168	26,960	11		3	1	4	198	2
199	22			3,781	27,919	1,990	28,990	796	29,014			3,184	27,096	11		3	1	4	199	2
200	22			3,800	28,059	2,000	29,136	800	29,160			3,200	27,232	11		3	1	4	200	2
201	22			3,819	28,199	2,010	29,282	804	29,306			3,216	27,368	11		3	1	4	201	2
202	22			3,838	28,340	2,020	29,427	808	29,452			3,232	27,504	11		3	1	4	202	2
203	22			3,857	28,480	2,030	29,573	812	29,597			3,248	27,640	11		3	1	4	203	2
204	22			3,876	28,620	2,040	29,719	816	29,743			3,264	27,777	11		3	1	4	204	2
205	22			3,895	28,761	2,050	29,864	820	29,889			3,280	27,913	11		3	1	4	205	2
206	22			3,914	28,901	2,060	30,010	824	30,035			3,296	28,049	11		3	1	4	206	2
207	22			3,933	29,041	2,070	30,156	828	30,181			3,312	28,185	11		3	1	4	207	2
208	22			3,952	29,182	2,080	30,301	832	30,326			3,328	28,321	11		3	1	4	208	2
209	22			3,971	29,322	2,090	30,447	836	30,472			3,344	28,457	11		3	1	4	209	2
210	22			3,990	29,462	2,100	30,593	840	30,618			3,360	28,594	11		3	1	4	210	2
211	22			4,009	29,602	2,110	30,738	844	30,764			3,376	28,730	11		3	1	4	211	2
212	22			4,028	29,743	2,120	30,884	848	30,910			3,392	28,866	11		3	1	4	212	2
213	22			4,047	29,883	2,130	31,030	852	31,055			3,408	29,002	11		3	1	4	213	2
214	22			4,066	30,023	2,140	31,176	856	31,201			3,424	29,138	11		3	1	4	214	2
215	22			4,085	30,164	2,150	31,321	860	31,347			3,440	29,274	11		3	1	4	215	2
216	22			4,104	30,304	2,160	31,467	864	31,493			3,456	29,411	11		3	1	4	216	2
217	22			4,123	30,444	2,170	31,613	868	31,639			3,472	29,547	11		3	1	4	217	2
218	22			4,142	30,585	2,180	31,758	872	31,784			3,488	29,683	11		3	1	4	218	2
219	22			4,161	30,725	2,190	31,904	876	31,930			3,504	29,819	11		3	1	4	219	2
220	22			4,180	30,865	2,200	32,050	880	32,076			3,520	29,955	11		3	1	4	220	2
221	22			4,199	31,005	2,210	32,195	884	32,222			3,536	30,091	11		3	1	4	221	2
222	22			4,218	31,146	2,220	32,341	888	32,368			3,552	30,228	11		3	1	4	222	2
223	22			4,237	31,286	2,230	32,487	892	32,513			3,568	30,364	11		3	1	4	223	2
224	22			4,256	31,426	2,240	32,632	896	32,659			3,584	30,500	11		3	1	4	224	2
225	22			4,275	31,567	2,250	32,778	900	32,805			3,600	30,636	11		3	1	4	225	2
226	22			4,294	31,707	2,260	32,924	904	32,951			3,616	30,772	11		3	1	4	226	2
227	22			4,313	31,847	2,270	33,069	908	33,097			3,632	30,908	11		3	1	4	227	2
228	22			4,332	31,987	2,280	33,215	912	33,242			3,648	31,044	11		3	1	4	228	2
229	22			4,351	32,128	2,290	33,361	916	33,388			3,664	31,181	11		3	1	4	229	2
230	22			4,370	32,268	2,300	33,506	920	33,534			3,680	31,317	11		3	1	4	230	2
231	22			4,389	32,408	2,310	33,652	924	33,680			3,696	31,453	11		3	1	4	231	2
232	22			4,408	32,549	2,320	33,798	928	33,826			3,712	31,589	11		3	1	4	232	2
233	22			4,427	32,689	2,330	33,943	932	33,971			3,728	31,725	11		3	1	4	233	2
234	22			4,446	32,829	2,340	34,089	936	34,117			3,744	31,861	11		3	1	4	234	2
235	22			4,465	32,970	2,350	34,235	940	34,263			3,760	31,998	11		3	1	4	235	2
236	22			4,484	33,110	2,360	34,380	944	34,409			3,776	32,134	11		3	1	4	236	2
237	22			4,503	33,250	2,370	34,526	948	34,555			3,792	32,270	11		3	1	4	237	2
238	22			4,522	33,390	2,380	34,672	952	34,700			3,808	32,406	11		3	1	4	238	2
239	22			4,541	33,531	2,390	34,818	956	34,846			3,824	32,542	11		3	1	4	239	2
240	22			4,560	33,671	2,400	34,963	960	34,992			3,840	32,678	11		3	1	4	240	2
241	22			4,579	33,811	2,410	35,109	964	35,138			3,856	32,815	11		3	1	4	241	2
242	22			4,598	33,952	2,420	35,255	968	35,284			3,872	32,951	11		3	1	4	242	2
243	22			4,617	34,092	2,430	35,400	972	35,429			3,888	33,087	11		3	1	4	243	2
244	22			4,636	34,232	2,440	35,546	976	35,575			3,904	33,223	11		3	1	4	244	2
245	22			4,655	34,373	2,450	35,692	980	35,721			3,920	33,359	11		3	1	4	245	2
246	22			4,674	34,513	2,460	35,837	984	35,867			3,936	33,495	11		3	1	4	246	2
247	22			4,693	34,653	2,470	35,983	988	36,013			3,952	33,632	11		3	1	4	247	2
248	22			4,712	34,793	2,480	36,129	992	36,158			3,968	33,768	11		3	1	4	248	2
249	22			4,731	34,934	2,490	36,274	996	36,304			3,984	33,904	11		3	1	4	249	2
250	22			4,750	35,074	2,500	36,420	1,000	36,450			4,000	34,040	11		3	1	4	250	2
251	22			4,769	35,214	2,510	36,566	1,004	36,596			4,016	34,176	11		3	1	4	251	2
252	22			4,788	35,355	2,520	36,711	1,008	36,742			4,032	34,312	11		3	1	4	252	2
253	22			4,807	35,495	2,530	36,857	1,012	36,887			4,048	34,448	11		3	1	4	253	2
254	22			4,826	35,635	2,540	37,003	1,016	37,033			4,064	34,585	11		3	1	4	254	2

*1: The number of the Shard Memory option(DKC-F460I-S512) necessary is refer to table 1.1.2-3A and 1.1.2-3B. Please note that location of shared memory varies according to the purpose such as additional cache installation or additional LDEV installation.

Note: In addition to the Options listed in above table as necessary parts, the Power Cable Kit option, the AC Box Kit option and the Channel options are required.

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(3) 146GB 10K rpm HDD, RAID1 (2D+2D)

RAID Group	Storage Capacity (GB)																	Number of necessary options								
	Open System									Mainframe System								DKC options					DKU options		
	Cache (GB)	OPEN-3 (2.461GB)		OPEN-9 (7.384GB)		OPEN-E (14.568GB)		OPEN-L (36.450GB)		Cache (GB)	3390-3/3R (2.838GB)		3390-9 (8.510GB)		3390-L (27.80GB)			F460I-2048		F460I	F460I	F460I	455I	455I	455I
		VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap		VOL	Cap	VOL	Cap	VOL	Cap		OPEN	MF	-S512	-200	-L1C	-18	-146J4	-EXC
1	4	116	285	38	281	19	277	7	255	4	96	272	32	272	9	250		2	2	*1			1	1	
2	4	232	571	76	561	38	554	14	510	4	192	545	64	545	18	500		2	2				1	2	
3	6	348	856	114	842	57	830	21	765	6	288	817	96	817	27	751		3	3				1	3	
4	6	464	1,142	152	1,122	76	1,107	28	1,021	6	384	1,090	128	1,089	36	1,001		3	3				1	4	
5	8	580	1,427	190	1,403	95	1,384	35	1,276	8	480	1,362	160	1,362	45	1,251		4	4				1	5	
6	8	696	1,713	228	1,684	114	1,661	42	1,531	8	576	1,635	192	1,634	54	1,501		4	4				1	6	
7	8	812	1,998	266	1,964	133	1,938	49	1,786	8	672	1,907	224	1,906	63	1,751		4	4				1	7	
8	8	928	2,284	304	2,245	152	2,214	56	2,041	8	768	2,180	256	2,179	72	2,002		4	4				1	8	
9	10	1,044	2,569	342	2,525	171	2,491	63	2,296	8	864	2,452	288	2,451	81	2,252		5	4				1	9	
10	10	1,160	2,855	380	2,806	190	2,768	70	2,552	8	960	2,724	320	2,723	90	2,502		5	4				1	10	
11	10	1,276	3,140	418	3,087	209	3,045	77	2,807	10	1,056	2,997	352	2,996	99	2,752		5	5				1	11	
12	10	1,392	3,426	456	3,367	228	3,322	84	3,062	10	1,152	3,269	384	3,268	108	3,002		5	5				1	12	
13	10	1,508	3,711	494	3,648	247	3,598	91	3,317	10	1,248	3,542	416	3,540	117	3,253		5	5				1	13	
14	10	1,624	3,997	532	3,928	266	3,875	98	3,572	10	1,344	3,814	448	3,812	126	3,503		5	5				1	14	
15	10	1,740	4,282	570	4,209	285	4,152	105	3,827	10	1,440	4,087	480	4,085	135	3,753		5	5				1	15	
16	10	1,856	4,568	608	4,489	304	4,429	112	4,082	10	1,536	4,359	512	4,357	144	4,003		5	5				1	16	
17	10	1,972	4,853	646	4,770	323	4,705	119	4,338	10	1,632	4,632	544	4,629	153	4,253		5	5				1	17	
18	10	2,088	5,139	684	5,051	342	4,982	126	4,593	10	1,728	4,904	576	4,902	162	4,504		5	5				1	18	
19	10	2,204	5,424	722	5,331	361	5,259	133	4,848	10	1,824	5,177	608	5,174	171	4,754		5	5				1	19	
20	12	2,320	5,710	760	5,612	380	5,536	140	5,103	10	1,920	5,449	640	5,446	180	5,004		6	5				1	20	
21	12	2,436	5,995	798	5,892	399	5,813	147	5,358	12	2,016	5,721	672	5,719	189	5,254		6	6				1	21	
22	12	2,552	6,280	836	6,173	418	6,089	154	5,613	12	2,112	5,994	704	5,991	198	5,504		6	6				1	22	
23	12	2,668	6,566	874	6,454	437	6,366	161	5,868	12	2,208	6,266	736	6,263	207	5,755		6	6				1	23	
24	12	2,784	6,851	912	6,734	456	6,643	168	6,124	12	2,304	6,539	768	6,536	216	6,005		6	6				1	24	
25	12	2,900	7,137	950	7,015	475	6,920	175	6,379	12	2,400	6,811	800	6,808	225	6,255		6	6				1	25	
26	12	3,016	7,422	988	7,295	494	7,197	182	6,634	12	2,496	7,084	832	7,080	234	6,505		6	6				1	26	
27	12	3,132	7,708	1,026	7,576	513	7,473	189	6,889	12	2,592	7,356	864	7,353	243	6,755		6	6				1	27	
28	12	3,248	7,993	1,064	7,857	532	7,750	196	7,144	12	2,688	7,629	896	7,625	252	7,006		6	6				1	28	
29	12	3,364	8,279	1,102	8,137	551	8,027	203	7,399	12	2,784	7,901	928	7,897	261	7,256		6	6				1	29	
30	14	3,480	8,564	1,140	8,418	570	8,304	210	7,655	12	2,880	8,173	960	8,170	270	7,506		7	6				1	30	
31	14	3,596	8,850	1,178	8,698	589	8,581	217	7,910	12	2,976	8,446	992	8,442	279	7,756		7	6				1	31	
32	14	3,712	9,135	1,216	8,979	608	8,857	224	8,165	14	3,072	8,718	1,024	8,714	288	8,006		7	7		1		1	32	
33	14	3,828	9,421	1,254	9,260	627	9,134	231	8,420	14	3,168	8,991	1,056	8,987	297	8,257		7	7		1		1	33	
34	14	3,944	9,706	1,292	9,540	646	9,411	238	8,675	14	3,264	9,263	1,088	9,259	306	8,507		7	7		1		1	34	
35	14	4,060	9,992	1,330	9,821	665	9,688	245	8,930	14	3,360	9,536	1,120	9,531	315	8,757		7	7		1		1	35	
36	14	4,176	10,277	1,368	10,101	684	9,965	252	9,185	14	3,456	9,808	1,152	9,804	324	9,007		7	7		1		1	36	
37	14	4,292	10,563	1,406	10,382	703	10,241	259	9,441	14	3,552	10,081	1,184	10,076	333	9,257		7	7		1		1	37	
38	14	4,408	10,848	1,444	10,662	722	10,518	266	9,696	14	3,648	10,353	1,216	10,348	342	9,508		7	7		1		1	38	
39	14	4,524	11,134	1,482	10,943	741	10,795	273	9,951	14	3,744	10,625	1,248	10,620	351	9,758		7	7		1		1	39	
40	16	4,640	11,419	1,520	11,224	760	11,072	280	10,206	14	3,840	10,898	1,280	10,893	360	10,008		8	7		1		1	40	
41	16	4,756	11,705	1,558	11,504	779	11,348	287	10,461	14	3,936	11,170	1,312	11,165	369	10,258		8	7		1		1	41	
42	16	4,872	11,990	1,596	11,785	798	11,625	294	10,716	16	4,032	11,443	1,344	11,437	378	10,508		8	8		1		1	42	
43	16	4,988	12,275	1,634	12,065	817	11,902	301	10,971	16	4,128	11,715	1,376	11,710	387	10,759		8	8		1		1	43	
44	16	5,104	12,561	1,672	12,346	836	12,179	308	11,227	16	4,224	11,988	1,408	11,982	396	11,009		8	8		1		1	44	
45	16	5,220	12,846	1,710	12,627	855	12,456	315	11,482	16	4,320	12,260	1,440	12,254	405	11,259		8	8		1		1	45	
46	16	5,336	13,132	1,748	12,907	874	12,732	322	11,737	16	4,416	12,533	1,472	12,527	414	11,509		8	8		1		1	46	
47	16	5,452	13,417	1,786	13,188	893	13,009	329	11,992	16	4,512	12,805	1,504	12,799	423	11,759		8	8		1		1	47	
48	16	5,568	13,703	1,824	13,468	912	13,286	336	12,247	16	4,608	13,078	1,536	13,071	432	12,010		8	8		1		1	48	
49	16	5,684	13,988	1,862	13,749	931	13,563	343	12,502	16	4,704	13,350	1,568	13,344	441	12,260		8	8		1		1	49	
50	18	5,800	14,274	1,900	14,030	950	13,840	350	12,758	16	4,800	13,622	1,600	13,616	450	12,510		9	8		1		1	50	
51	18	5,916	14,559	1,938	14,310	969	14,116	357	13,013	16	4,896	13,895	1,632	13,888	459	12,760		9	8		1		1	51	
52	18	6,032	14,845	1,976	14,591	988	14,393	364	13,268	16	4,992	14,167	1,664	14,161	468	13,010		9	8		1		1	52	
53	18	6,148	15,130	2,014	14,871	1,007	14,670	371	13,523	18	5,088	14,440	1,696	14,433	477	13,261		9	9		1		1	53	
54	18	6,264	15,416	2,052	15,152	1,026	14,947	378	13,778	18	5,184	14,712	1,728	14,705	486	13,511		9	9		1		1	54	
55	18	6,380	15,701	2,090	15,433	1,045	15,224	385	14,033	18	5,280	14,985	1,760	14,978	495	13,761		9	9		1		1	55	
56	18	6,496	15,987	2,128	15,713	1,064	15,500	392	14,288	18	5,376	15,257	1,792	15,250	504	14,011		9	9		1		1	56	
57	18	6,612	16,272	2,166	15,994	1,083	15,777	399	14,544	18	5,472	15,530	1,824	15,522	513	14,261		9	9		1		1	57	
58	18	6,728	16,558	2,204	16,274	1,102	16,054	406	14,799	18	5,568	15,802	1,856	15,795	522	14,512		9	9		1		1	58	
59	18	6,844	16,843	2,242	16,555	1,121	16,331	413	15,054	18	5,664	16,074	1,888	16,067	531	14,762		9	9		1		1	59	
60	20	6,960	17,129	2,280	16,836	1,140	16,608	420	15,309	18	5,760	16,347	1,920	16,339	540	15,012		10	9		1		1	60	
61	20	7,076	17,414	2,318	17,116	1,159	16,884	427	15,564	18	5,856	16,619	1,952	16,612	549	15,262		10	9		1		1	61	
62	20	7,192	17,700	2,356	17,397	1,178	17,161	434	15,819	18	5,952	16,892	1,984	16,884	558	15,512		10	9		1		1	62	
63	20	7,308	17,985	2,394	17,677	1,197	17,438	441	16,074	20	6,048	17,164	2,016	17,156	567	15,763		10	10		1		1	63	
64	20	7,424	18,270	2,432	17,958	1,216	17,715	448	16,330	20	6,144	17,437	2,048	17,428	576	16,013		10	10		1		2	64	1

(To be continued)

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(Continued from preceding sheet)

	Storage Capacity (GB)																	Number of necessary options							
	Open System									Mainframe System								DKC options					DKU options		
RAID	Cache	OPEN-3		OPEN-9		OPEN-E		OPEN-L		Cache	3390-3/3R		3390-9		3390-L			F460I-2048		F460I	F460I	F460I	455I	F455I	F455I
Group	(GB)	(2.461GB)		(7.384GB)		(14.568GB)		(36.450GB)		(GB)	(2.838GB)		(8.510GB)		(27.80GB)			OPEN	MF	-S512	-200	-L1C	-18	-146J4	-EXC
		VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap		VOL	Cap	VOL	Cap	VOL	Cap									
65	20	7,540	18,556	2,470	18,238	1,235	17,991	455	16,585	20	6,240	17,709	2,080	17,701	585	16,263		10	10		1		2	65	1
66	20	7,656	18,841	2,508	18,519	1,254	18,268	462	16,840	20	6,336	17,982	2,112	17,973	594	16,513		10	10		1		2	66	1
67	20	7,772	19,127	2,546	18,800	1,273	18,545	469	17,095	20	6,432	18,254	2,144	18,245	603	16,763		10	10		1		2	67	1
68	20	7,888	19,412	2,584	19,080	1,292	18,822	476	17,350	20	6,528	18,526	2,176	18,518	612	17,014		10	10		1		2	68	1
69	20	8,004	19,698	2,622	19,361	1,311	19,099	483	17,605	20	6,624	18,799	2,208	18,790	621	17,264		10	10		1		2	69	1
70	20	8,120	19,983	2,660	19,641	1,330	19,375	490	17,861	20	6,720	19,071	2,240	19,062	630	17,514		10	10		1		2	70	1
71	20			2,698	19,922	1,349	19,652	497	18,116	20	6,816	19,344	2,272	19,335	639	17,764		10	10		1		2	71	1
72	22			2,736	20,203	1,368	19,929	504	18,371	20	6,912	19,616	2,304	19,607	648	18,014		11	10		1		2	72	1
73	22			2,774	20,483	1,387	20,206	511	18,626	20	7,008	19,889	2,336	19,879	657	18,265		11	10		1		2	73	1
74	22			2,812	20,764	1,406	20,483	518	18,881	22	7,104	20,161	2,368	20,152	666	18,515		11	11		1		2	74	1
75	22			2,850	21,044	1,425	20,759	525	19,136	22	7,200	20,434	2,400	20,424	675	18,765		11	11		1		2	75	1
76	22			2,888	21,325	1,444	21,036	532	19,391	22	7,296	20,706	2,432	20,696	684	19,015		11	11		1		2	76	1
77	22			2,926	21,606	1,463	21,313	539	19,647	22	7,392	20,978	2,464	20,969	693	19,265		11	11		1		2	77	1
78	22			2,964	21,886	1,482	21,590	546	19,902	22	7,488	21,251	2,496	21,241	702	19,516		11	11		1		2	78	1
79	22			3,002	22,167	1,501	21,867	553	20,157	22	7,584	21,523	2,528	21,513	711	19,766		11	11		1		2	79	1
80	22			3,040	22,447	1,520	22,143	560	20,412	22	7,680	21,796	2,560	21,786	720	20,016		11	11		1		2	80	1
81	22			3,078	22,728	1,539	22,420	567	20,667	22	7,776	22,068	2,592	22,058	729	20,266		11	11		1		2	81	1
82	22			3,116	23,009	1,558	22,697	574	20,922	22	7,872	22,341	2,624	22,330	738	20,516		11	11		1		2	82	1
83	22			3,154	23,289	1,577	22,974	581	21,177	22	7,968	22,613	2,656	22,603	747	20,767		11	11		1		2	83	1
84	22			3,192	23,570	1,596	23,251	588	21,433	22	8,064	22,886	2,688	22,875	756	21,017		11	11		1		2	84	1
85	22			3,230	23,850	1,615	23,527	595	21,688	22	8,160	23,158	2,720	23,147	765	21,267		11	11		1		2	85	1
86	22			3,268	24,131	1,634	23,804	602	21,943	22			2,752	23,420	774	21,517		11	11		1		2	86	1
87	22			3,306	24,412	1,653	24,081	609	22,198	22			2,784	23,692	783	21,767		11	11		1		2	87	1
88	22			3,344	24,692	1,672	24,358	616	22,453	22			2,816	23,964	792	22,018		11	11		1		2	88	1
89	22			3,382	24,973	1,691	24,634	623	22,708	22			2,848	24,236	801	22,268		11	11		1		2	89	1
90	22			3,420	25,253	1,710	24,911	630	22,964	22			2,880	24,509	810	22,518		11	11		1		2	90	1
91	22			3,458	25,534	1,729	25,188	637	23,219	22			2,912	24,781	819	22,768		11	11		1		2	91	1
92	22			3,496	25,814	1,748	25,465	644	23,474	22			2,944	25,053	828	23,018		11	11		1		2	92	1
93	22			3,534	26,095	1,767	25,742	651	23,729	22			2,976	25,326	837	23,269		11	11		1		2	93	1
94	22			3,572	26,376	1,786	26,018	658	23,984	22			3,008	25,598	846	23,519		11	11		1		2	94	1
95	22			3,610	26,656	1,805	26,295	665	24,239	22			3,040	25,870	855	23,769		11	11		1		2	95	1
96	22			3,648	26,937	1,824	26,572	672	24,494	22			3,072	26,143	864	24,019		11	11		1		2	96	1
97	22			3,686	27,217	1,843	26,849	679	24,750	22			3,104	26,415	873	24,269		11	11		1		2	97	1
98	22			3,724	27,498	1,862	27,126	686	25,005	22			3,136	26,687	882	24,520		11	11		1		2	98	1
99	22			3,762	27,779	1,881	27,402	693	25,260	22			3,168	26,960	891	24,770		11	11		1		2	99	1
100	22			3,800	28,059	1,900	27,679	700	25,515	22			3,200	27,232	900	25,020		11	11		1		2	100	1
101	22			3,838	28,340	1,919	27,956	707	25,770	22			3,232	27,504	909	25,270		11	11		1		2	101	1
102	22			3,876	28,620	1,938	28,233	714	26,025	22			3,264	27,777	918	25,520		11	11		1		2	102	1
103	22			3,914	28,901	1,957	28,510	721	26,280	22			3,296	28,049	927	25,771		11	11		1		2	103	1
104	22			3,952	29,182	1,976	28,786	728	26,536	22			3,328	28,321	936	26,021		11	11		1		2	104	1
105	22			3,990	29,462	1,995	29,063	735	26,791	22			3,360	28,594	945	26,271		11	11		1		2	105	1
106	22			4,028	29,743	2,014	29,340	742	27,046	22			3,392	28,866	954	26,521		11	11		1		2	106	1
107	22			4,066	30,023	2,033	29,617	749	27,301	22			3,424	29,138	963	26,771		11	11		1		2	107	1
108	22			4,104	30,304	2,052	29,894	756	27,556	22			3,456	29,411	972	27,022		11	11		1		2	108	1
109	22			4,142	30,585	2,071	30,170	763	27,811	22			3,488	29,683	981	27,272		11	11		1		2	109	1
110	22			4,180	30,865	2,090	30,447	770	28,067	22			3,520	29,955	990	27,522		11	11		1		2	110	1
111	22			4,218	31,146	2,109	30,724	777	28,322	22			3,552	30,228	999	27,772		11	11		1		2	111	1
112	22			4,256	31,426	2,128	31,001	784	28,577	22			3,584	30,500	1,008	28,022		11	11		1		2	112	1
113	22			4,294	31,707	2,147	31,277	791	28,832	22			3,616	30,772	1,017	28,273		11	11		1		2	113	1
114	22			4,332	31,987	2,166	31,554	798	29,087	22			3,648	31,044	1,026	28,523		11	11		1		2	114	1
115	22			4,370	32,268	2,185	31,831	805	29,342	22			3,680	31,317	1,035	28,773		11	11		1		2	115	1
116	22			4,408	32,549	2,204	32,108	812	29,597	22			3,712	31,589	1,044	29,023		11	11		1		2	116	1
117	22			4,446	32,829	2,223	32,385	819	29,853	22			3,744	31,861	1,053	29,273		11	11		1		2	117	1
118	22			4,484	33,110	2,242	32,661	826	30,108	22			3,776	32,134	1,062	29,524		11	11		1		2	118	1
119	22			4,522	33,390	2,261	32,938	833	30,363	22			3,808	32,406	1,071	29,774		11	11		1		2	119	1
120	22			4,560	33,671	2,280	33,215	840	30,618	22			3,840	32,678	1,080	30,024		11	11		1		2	120	1
121	22			4,598	33,952	2,299	33,492	847	30,873	22			3,872	32,951	1,089	30,274		11	11		1		2	121	1
122	22			4,636	34,232	2,318	33,769	854	31,128	22			3,904	33,223	1,098	30,524		11	11		1		2	122	1
123	22			4,674	34,513	2,337	34,045	861	31,383	22			3,936	33,495	1,107	30,775		11	11		1		2	123	1
124	22			4,712	34,793	2,356	34,322	868	31,639	22			3,968	33,768	1,116	31,025		11	11		1		2	124	1
125	22			4,750	35,074	2,375	34,599	875	31,894	22			4,000	34,040	1,125	31,275		11	11		1		2	125	1
126	22			4,788	35,355	2,394	34,876	882	32,149	22			4,032	34,312	1,134	31,525		11	11		1		2	126	1
127	22			4,826	35,635	2,413	35,153	889	32,404	22			4,064	34,585	1,143	31,775		11	11		1		2	127	1
128	22			4,864	35,916	2,432	35,429	896	32,659	22			4,096	34,857	1,152	32,026		11	11		2	1	3	128	1
129	22			4,902	36,196	2,451	35,706	903	32,914	22			4,128	35,129	1,161	32,276		11	11		2	1	3	129	1
130	22			4,940	36,477	2,470	35,983	910	33,170	22			4,160	35,402	1,170	32,526		11	11		2	1	3	130	1

(To be continued)

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(Continued from preceding sheet)

RAID Group	Storage Capacity (GB)																	Number of necessary options							
	Open System									Mainframe System								DKC options					DKU options		
	Cache (GB)	OPEN-3 (2.461GB)		OPEN-9 (7.384GB)		OPEN-E (14.568GB)		OPEN-L (36.450GB)		Cache (GB)	3390-3/3R (2.838GB)		3390-9 (8.510GB)		3390-L (27.80GB)			F460I-2048		F460I	F460I	F460I	455I	455I	455I
		VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap		VOL	Cap	VOL	Cap	VOL	Cap		OPEN	MF	-S512	-200	-L1C	-18	-146J4	-EXC
131	22			4,978	36,758	2,489	36,260	917	33,425	22			4,192	35,674	1,179	32,776		11	11		2	1	3	131	1
132	22			5,016	37,038	2,508	36,537	924	33,680	22			4,224	35,946	1,188	33,026		11	11		2	1	3	132	1
133	22			5,054	37,319	2,527	36,813	931	33,935	22			4,256	36,219	1,197	33,277		11	11		2	1	3	133	1
134	22			5,092	37,599	2,546	37,090	938	34,190	22			4,288	36,491	1,206	33,527		11	11		2	1	3	134	1
135	22			5,130	37,880	2,565	37,367	945	34,445	22			4,320	36,763	1,215	33,777		11	11		2	1	3	135	1
136	22			5,168	38,161	2,584	37,644	952	34,700	22			4,352	37,036	1,224	34,027		11	11		2	1	3	136	1
137	22			5,206	38,441	2,603	37,921	959	34,956	22			4,384	37,308	1,233	34,277		11	11		2	1	3	137	1
138	22			5,244	38,722	2,622	38,197	966	35,211	22			4,416	37,580	1,242	34,528		11	11		2	1	3	138	1
139	22			5,282	39,002	2,641	38,474	973	35,466	22			4,448	37,852	1,251	34,778		11	11		2	1	3	139	1
140	22			5,320	39,283	2,660	38,751	980	35,721	22			4,480	38,125	1,260	35,028		11	11		2	1	3	140	1
141	22			5,358	39,563	2,679	39,028	987	35,976	22			4,512	38,397	1,269	35,278		11	11		2	1	3	141	1
142	22			5,396	39,844	2,698	39,304	994	36,231	22			4,544	38,669	1,278	35,528		11	11		2	1	3	142	1
143	22			5,434	40,125	2,717	39,581	1,001	36,486	22			4,576	38,942	1,287	35,779		11	11		2	1	3	143	1
144	22			5,472	40,405	2,736	39,858	1,008	36,742	22			4,608	39,214	1,296	36,029		11	11		2	1	3	144	1
145	22			5,510	40,686	2,755	40,135	1,015	36,997	22			4,640	39,486	1,305	36,279		11	11		2	1	3	145	1
146	22			5,548	40,966	2,774	40,412	1,022	37,252	22			4,672	39,759	1,314	36,529		11	11		2	1	3	146	1
147	22			5,586	41,247	2,793	40,688	1,029	37,507	22			4,704	40,031	1,323	36,779		11	11		2	1	3	147	1
148	22			5,624	41,528	2,812	40,965	1,036	37,762	22			4,736	40,303	1,332	37,030		11	11		2	1	3	148	1
149	22			5,662	41,808	2,831	41,242	1,043	38,017	22			4,768	40,576	1,341	37,280		11	11		2	1	3	149	1
150	22			5,700	42,089	2,850	41,519	1,050	38,273	22			4,800	40,848	1,350	37,530		11	11		2	1	3	150	1
151	22			5,738	42,369	2,869	41,796	1,057	38,528	22			4,832	41,120	1,359	37,780		11	11		2	1	3	151	1
152	22			5,776	42,650	2,888	42,072	1,064	38,783	22			4,864	41,393	1,368	38,030		11	11		2	1	3	152	1
153	22			5,814	42,931	2,907	42,349	1,071	39,038	22			4,896	41,665	1,377	38,281		11	11		2	1	3	153	1
154	22			5,852	43,211	2,926	42,626	1,078	39,293	22			4,928	41,937	1,386	38,531		11	11		2	1	3	154	1
155	22			5,890	43,492	2,945	42,903	1,085	39,548	22			4,960	42,210	1,395	38,781		11	11		2	1	3	155	1
156	22			5,928	43,772	2,964	43,180	1,092	39,803	22			4,992	42,482	1,404	39,031		11	11		2	1	3	156	1
157	22			5,966	44,053	2,983	43,456	1,099	40,059	22			5,024	42,754	1,413	39,281		11	11		2	1	3	157	1
158	22			6,004	44,334	3,002	43,733	1,106	40,314	22			5,056	43,027	1,422	39,532		11	11		2	1	3	158	1
159	22			6,042	44,614	3,021	44,010	1,113	40,569	22			5,088	43,299	1,431	39,782		11	11		3	1	3	159	1
160	22			6,080	44,895	3,040	44,287	1,120	40,824	22			5,120	43,571	1,440	40,032		11	11		3	1	3	160	1
161	22			6,118	45,175	3,059	44,564	1,127	41,079	22			5,152	43,844	1,449	40,282		11	11		3	1	3	161	1
162	22			6,156	45,456	3,078	44,840	1,134	41,334	22			5,184	44,116	1,458	40,532		11	11		3	1	3	162	1
163	22			6,194	45,736	3,097	45,117	1,141	41,589	22			5,216	44,388	1,467	40,783		11	11		3	1	3	163	1
164	22			6,232	46,017	3,116	45,394	1,148	41,845	22			5,248	44,660	1,476	41,033		11	11		3	1	3	164	1
165	22			6,270	46,298	3,135	45,671	1,155	42,100	22			5,280	44,933	1,485	41,283		11	11		3	1	3	165	1
166	22			6,308	46,578	3,154	45,947	1,162	42,355	22			5,312	45,205	1,494	41,533		11	11		3	1	3	166	1
167	22			6,346	46,859	3,173	46,224	1,169	42,610	22			5,344	45,477	1,503	41,783		11	11		3	1	3	167	1
168	22			6,384	47,139	3,192	46,501	1,176	42,865	22			5,376	45,750	1,512	42,034		11	11		3	1	3	168	1
169	22			6,422	47,420	3,211	46,778	1,183	43,120	22			5,408	46,022	1,521	42,284		11	11		3	1	3	169	1
170	22			6,460	47,701	3,230	47,055	1,190	43,376	22			5,440	46,294	1,530	42,534		11	11		3	1	3	170	1
171	22			6,498	47,981	3,249	47,331	1,197	43,631	22			5,472	46,567	1,539	42,784		11	11		3	1	3	171	1
172	22			6,536	48,262	3,268	47,608	1,204	43,886	22			5,504	46,839	1,548	43,034		11	11		3	1	3	172	1
173	22			6,574	48,542	3,287	47,885	1,211	44,141	22			5,536	47,111	1,557	43,285		11	11		3	1	3	173	1
174	22			6,612	48,823	3,306	48,162	1,218	44,396	22			5,568	47,384	1,566	43,535		11	11		3	1	3	174	1
175	22			6,650	49,104	3,325	48,439	1,225	44,651	22			5,600	47,656	1,575	43,785		11	11		3	1	3	175	1
176	22			6,688	49,384	3,344	48,715	1,232	44,906	22			5,632	47,928	1,584	44,035		11	11		3	1	3	176	1
177	22			6,726	49,665	3,363	48,992	1,239	45,162	22			5,664	48,201	1,593	44,285		11	11		3	1	3	177	1
178	22			6,764	49,945	3,382	49,269	1,246	45,417	22			5,696	48,473	1,602	44,536		11	11		3	1	3	178	1
179	22			6,802	50,226	3,401	49,546	1,253	45,672	22			5,728	48,745	1,611	44,786		11	11		3	1	3	179	1
180	22			6,840	50,507	3,420	49,823	1,260	45,927	22			5,760	49,018	1,620	45,036		11	11		3	1	3	180	1
181	22			6,878	50,787	3,439	50,099	1,267	46,182	22			5,792	49,290	1,629	45,286		11	11		3	1	3	181	1
182	22			6,916	51,068	3,458	50,376	1,274	46,437	22			5,824	49,562	1,638	45,536		11	11		3	1	3	182	1
183	22			6,954	51,348	3,477	50,653	1,281	46,692	22			5,856	49,835	1,647	45,787		11	11		3	1	3	183	1
184	22			6,992	51,629	3,496	50,930	1,288	46,948	22			5,888	50,107	1,656	46,037		11	11		3	1	3	184	1
185	22			7,030	51,910	3,515	51,207	1,295	47,203	22			5,920	50,379	1,665	46,287		11	11		3	1	3	185	1
186	22			7,068	52,190	3,534	51,483	1,302	47,458	22			5,952	50,652	1,674	46,537		11	11		3	1	3	186	1
187	22			7,106	52,471	3,553	51,760	1,309	47,713	22			5,984	50,924	1,683	46,787		11	11		3	1	3	187	1
188	22			7,144	52,751	3,572	52,037	1,316	47,968	22			6,016	51,196	1,692	47,038		11	11		3	1	3	188	1
189	22			7,182	53,032	3,591	52,314	1,323	48,223	22			6,048	51,468	1,701	47,288		11	11		3	1	3	189	1
190	22			7,220	53,312	3,610	52,590	1,330	48,479	22			6,080	51,741	1,710	47,538		11	11		3	1	3	190	1
191	22			7,258	53,593	3,629	52,867	1,337	48,734	22			6,112	52,013	1,719	47,788		11	11		3	1	4	191	2
192	22			7,296	53,874	3,648	53,144	1,344	48,989	22			6,144	52,285	1,728	48,038		11	11		3	1	4	192	2
193	22			7,334	54,154	3,667	53,421	1,351	49,244	22			6,176	52,558	1,737	48,289		11	11		3	1	4	193	2
194	22			7,372	54,435	3,686	53,698	1,358	49,499	22			6,208	52,830	1,746	48,539		11	11		3	1	4	194	2
195	22			7,410	54,715	3,705	53,974	1,365	49,754	22			6,240	53,102	1,755	48,789		11	11		3	1	4	195	2
196	22			7,448	54,996	3,724	54,251	1,372	50,009	22			6,272	53,375	1,764	49,039		11	11		3	1	4	196	2

(To be continued)

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(Continued from preceding sheet)

RAID Group	Storage Capacity (GB)																	Number of necessary options							
	Open System									Mainframe System								DKC options					DKU options		
	Cache (GB)	OPEN-3 (2.461GB)		OPEN-9 (7.384GB)		OPEN-E (14.568GB)		OPEN-L (36.450GB)		Cache (GB)	3390-3/3R (2.838GB)		3390-9 (8.510GB)		3390-L (27.80GB)			F460I-2048		F460I -S512	F460I -200	F460I -L1C	455I -18	455I -146J4	455I -EXC
		VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap		VOL	Cap	VOL	Cap	VOL	Cap		OPEN	MF						
197	22			7,486	55,277	3,743	54,528	1,379	50,265	22			6,304	53,647	1,773	49,289		11	11		3	1	4	197	2
198	22			7,524	55,557	3,762	54,805	1,386	50,520	22			6,336	53,919	1,782	49,540		11	11		3	1	4	198	2
199	22			7,562	55,838	3,781	55,082	1,393	50,775	22			6,368	54,192	1,791	49,790		11	11		3	1	4	199	2
200	22			7,600	56,118	3,800	55,358	1,400	51,030	22			6,400	54,464	1,800	50,040		11	11		3	1	4	200	2
201	22			7,638	56,399	3,819	55,635	1,407	51,285	22			6,432	54,736	1,809	50,290		11	11		3	1	4	201	2
202	22			7,676	56,680	3,838	55,912	1,414	51,540	22			6,464	55,009	1,818	50,540		11	11		3	1	4	202	2
203	22			7,714	56,960	3,857	56,189	1,421	51,795	22			6,496	55,281	1,827	50,791		11	11		3	1	4	203	2
204	22			7,752	57,241	3,876	56,466	1,428	52,051	22			6,528	55,553	1,836	51,041		11	11		3	1	4	204	2
205	22			7,790	57,521	3,895	56,742	1,435	52,306	22			6,560	55,826	1,845	51,291		11	11		3	1	4	205	2
206	22			7,828	57,802	3,914	57,019	1,442	52,561	22			6,592	56,098	1,854	51,541		11	11		3	1	4	206	2
207	22			7,866	58,083	3,933	57,296	1,449	52,816	22			6,624	56,370	1,863	51,791		11	11		3	1	4	207	2
208	22			7,904	58,363	3,952	57,573	1,456	53,071	22			6,656	56,643	1,872	52,042		11	11		3	1	4	208	2
209	22			7,942	58,644	3,971	57,850	1,463	53,326	22			6,688	56,915	1,881	52,292		11	11		3	1	4	209	2
210	22			7,980	58,924	3,990	58,126	1,470	53,582	22			6,720	57,187	1,890	52,542		11	11		3	1	4	210	2
211	22			8,018	59,205	4,009	58,403	1,477	53,837	22			6,752	57,460	1,899	52,792		11	11		3	1	4	211	2
212	22			8,056	59,486	4,028	58,680	1,484	54,092	22			6,784	57,732	1,908	53,042		11	11		3	1	4	212	2
213	22			8,094	59,766	4,047	58,957	1,491	54,347	22			6,816	58,004	1,917	53,293		11	11		3	1	4	213	2
214	22			8,132	60,047	4,066	59,233	1,498	54,602	22			6,848	58,276	1,926	53,543		11	11		3	1	4	214	2
215	22			8,170	60,327	4,085	59,510	1,505	54,857	22			6,880	58,549	1,935	53,793		11	11		3	1	4	215	2
216	22					4,104	59,787	1,512	55,112	22			6,912	58,821	1,944	54,043		11	11		3	1	4	216	2
217	22					4,123	60,064	1,519	55,368	22			6,944	59,093	1,953	54,293		11	11		3	1	4	217	2
218	22					4,142	60,341	1,526	55,623	22			6,976	59,366	1,962	54,544		11	11		3	1	4	218	2
219	22					4,161	60,617	1,533	55,878	22			7,008	59,638	1,971	54,794		11	11		3	1	4	219	2
220	22					4,180	60,894	1,540	56,133	22			7,040	59,910	1,980	55,044		11	11		3	1	4	220	2
221	22					4,199	61,171	1,547	56,388	22			7,072	60,183	1,989	55,294		11	11		3	1	4	221	2
222	22					4,218	61,448	1,554	56,643	22			7,104	60,455	1,998	55,544		11	11		3	1	4	222	2
223	22					4,237	61,725	1,561	56,898	22			7,136	60,727	2,007	55,795		11	11		3	1	4	223	2
224	22					4,256	62,001	1,568	57,154	22			7,168	61,000	2,016	56,045		11	11		3	1	4	224	2
225	22					4,275	62,278	1,575	57,409	22			7,200	61,272	2,025	56,295		11	11		3	1	4	225	2
226	22					4,294	62,555	1,582	57,664	22			7,232	61,544	2,034	56,545		11	11		3	1	4	226	2
227	22					4,313	62,832	1,589	57,919	22			7,264	61,817	2,043	56,795		11	11		3	1	4	227	2
228	22					4,332	63,109	1,596	58,174	22			7,296	62,089	2,052	57,046		11	11		3	1	4	228	2
229	22					4,351	63,385	1,603	58,429	22			7,328	62,361	2,061	57,296		11	11		3	1	4	229	2
230	22					4,370	63,662	1,610	58,685	22			7,360	62,634	2,070	57,546		11	11		3	1	4	230	2
231	22					4,389	63,939	1,617	58,940	22			7,392	62,906	2,079	57,796		11	11		3	1	4	231	2
232	22					4,408	64,216	1,624	59,195	22			7,424	63,178	2,088	58,046		11	11		3	1	4	232	2
233	22					4,427	64,493	1,631	59,450	22			7,456	63,451	2,097	58,297		11	11		3	1	4	233	2
234	22					4,446	64,769	1,638	59,705	22			7,488	63,723	2,106	58,547		11	11		3	1	4	234	2
235	22					4,465	65,046	1,645	59,960	22			7,520	63,995	2,115	58,797		11	11		3	1	4	235	2
236	22					4,484	65,323	1,652	60,215	22			7,552	64,268	2,124	59,047		11	11		3	1	4	236	2
237	22					4,503	65,600	1,659	60,471	22			7,584	64,540	2,133	59,297		11	11		3	1	4	237	2
238	22					4,522	65,876	1,666	60,726	22			7,616	64,812	2,142	59,548		11	11		3	1	4	238	2
239	22					4,541	66,153	1,673	60,981	22			7,648	65,084	2,151	59,798		11	11		3	1	4	239	2
240	22					4,560	66,430	1,680	61,236	22			7,680	65,357	2,160	60,048		11	11		3	1	4	240	2
241	22					4,579	66,707	1,687	61,491	22			7,712	65,629	2,169	60,298		11	11		3	1	4	241	2
242	22					4,598	66,984	1,694	61,746	22			7,744	65,901	2,178	60,548		11	11		3	1	4	242	2
243	22					4,617	67,260	1,701	62,001	22			7,776	66,174	2,187	60,799		11	11		3	1	4	243	2
244	22					4,636	67,537	1,708	62,257	22			7,808	66,446	2,196	61,049		11	11		3	1	4	244	2
245	22					4,655	67,814	1,715	62,512	22			7,840	66,718	2,205	61,299		11	11		3	1	4	245	2
246	22					4,674	68,091	1,722	62,767	22			7,872	66,991	2,214	61,549		11	11		3	1	4	246	2
247	22					4,693	68,368	1,729	63,022	22			7,904	67,263	2,223	61,799		11	11		3	1	4	247	2
248	22					4,712	68,644	1,736	63,277	22			7,936	67,535	2,232	62,050		11	11		3	1	4	248	2
249	22					4,731	68,921	1,743	63,532	22			7,968	67,808	2,241	62,300		11	11		3	1	4	249	2
250	22					4,750	69,198	1,750	63,788	22			8,000	68,080	2,250	62,550		11	11		3	1	4	250	2
251	22					4,769	69,475	1,757	64,043	22			8,032	68,352	2,259	62,800		11	11		3	1	4	251	2
252	22					4,788	69,752	1,764	64,298	22			8,064	68,625	2,268	63,050		11	11		3	1	4	252	2
253	22					4,807	70,028	1,771	64,553	22			8,096	68,897	2,277	63,301		11	11		3	1	4	253	2
254	22					4,826	70,305	1,778	64,808	22			8,128	69,169	2,286	63,551		11	11		3	1	4	254	2

*1: The number of the Shard Memory option(DKC-F460I-S512) necessary is refer to table 1.1.2-3A and 1.1.2-3B.
Please note that location of shared memory varies according to the purpose such as additional cache installation or additional LDEV installation.

Note1: In addition to the Options listed in above table as necessary parts, the Power Cable Kit option, the AC Box Kit option and the Channel options are required.

Note2: Even lines of RAID group are the storage capacity of RAID1 (4D+4D), and required cache capacity.

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(4) 72GB 15K rpm HDD, RAID1 (2D+2D)

RAID Group	Storage Capacity (GB)																	Number of necessary options								
	Open System									Mainframe System								DKC options						DKU options		
	Cache (GB)	OPEN-3 (2.461GB)		OPEN-9 (7.384GB)		OPEN-E (14.568GB)		OPEN-L (36.450GB)		Cache (GB)	3390-3/3R (2.838GB)		3390-9 (8.510GB)		3390-L (27.80GB)			F460I-2048		F460I -S512	F460I -200	F460I -L1C	455I -18	455I -72K4	455I -EXC
		VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap		VOL	Cap	VOL	Cap	VOL	Cap		OPEN	MF						
1	2	57	140	19	140	9	131	3	109	2	47	133	15	128	4	111		1	1	*1			1	1	
2	4	114	281	38	281	18	262	6	219	4	94	267	30	255	8	222		2	2				1	2	
3	4	171	421	57	421	27	393	9	328	4	141	400	45	383	12	334		2	2				1	3	
4	4	228	561	76	561	36	524	12	437	4	188	534	60	511	16	445		2	2				1	4	
5	6	285	701	95	701	45	656	15	547	4	235	667	75	638	20	556		3	2				1	5	
6	6	342	842	114	842	54	787	18	656	6	282	800	90	766	24	667		3	3				1	6	
7	6	399	982	133	982	63	918	21	765	6	329	934	105	894	28	778		3	3				1	7	
8	6	456	1,122	152	1,122	72	1,049	24	875	6	376	1,067	120	1,021	32	890		3	3				1	8	
9	6	513	1,262	171	1,263	81	1,180	27	984	6	423	1,200	135	1,149	36	1,001		3	3				1	9	
10	8	570	1,403	190	1,403	90	1,311	30	1,094	6	470	1,334	150	1,277	40	1,112		4	3				1	10	
11	8	627	1,543	209	1,543	99	1,442	33	1,203	8	517	1,467	165	1,404	44	1,223		4	4				1	11	
12	8	684	1,683	228	1,684	108	1,573	36	1,312	8	564	1,601	180	1,532	48	1,334		4	4				1	12	
13	8	741	1,824	247	1,824	117	1,704	39	1,422	8	611	1,734	195	1,659	52	1,446		4	4				1	13	
14	8	798	1,964	266	1,964	126	1,836	42	1,531	8	658	1,867	210	1,787	56	1,557		4	4				1	14	
15	8	855	2,104	285	2,104	135	1,967	45	1,640	8	705	2,001	225	1,915	60	1,668		4	4				1	15	
16	8	912	2,244	304	2,245	144	2,098	48	1,750	8	752	2,134	240	2,042	64	1,779		4	4				1	16	
17	8	969	2,385	323	2,385	153	2,229	51	1,859	8	799	2,268	255	2,170	68	1,890		4	4				1	17	
18	8	1,026	2,525	342	2,525	162	2,360	54	1,968	8	846	2,401	270	2,298	72	2,002		4	4				1	18	
19	10	1,083	2,665	361	2,666	171	2,491	57	2,078	8	893	2,534	285	2,425	76	2,113		5	4				1	19	
20	10	1,140	2,806	380	2,806	180	2,622	60	2,187	8	940	2,668	300	2,553	80	2,224		5	4				1	20	
21	10	1,197	2,946	399	2,946	189	2,753	63	2,296	8	987	2,801	315	2,681	84	2,335		5	4				1	21	
22	10	1,254	3,086	418	3,087	198	2,884	66	2,406	10	1,034	2,934	330	2,808	88	2,446		5	5				1	22	
23	10	1,311	3,226	437	3,227	207	3,016	69	2,515	10	1,081	3,068	345	2,936	92	2,558		5	5				1	23	
24	10	1,368	3,367	456	3,367	216	3,147	72	2,624	10	1,128	3,201	360	3,064	96	2,669		5	5				1	24	
25	10	1,425	3,507	475	3,507	225	3,278	75	2,734	10	1,175	3,335	375	3,191	100	2,780		5	5				1	25	
26	10	1,482	3,647	494	3,648	234	3,409	78	2,843	10	1,222	3,468	390	3,319	104	2,891		5	5				1	26	
27	10	1,539	3,787	513	3,788	243	3,540	81	2,952	10	1,269	3,601	405	3,447	108	3,002		5	5				1	27	
28	10	1,596	3,928	532	3,928	252	3,671	84	3,062	10	1,316	3,735	420	3,574	112	3,114		5	5				1	28	
29	10	1,653	4,068	551	4,069	261	3,802	87	3,171	10	1,363	3,868	435	3,702	116	3,225		5	5				1	29	
30	10	1,710	4,208	570	4,209	270	3,933	90	3,281	10	1,410	4,002	450	3,830	120	3,336		5	5				1	30	
31	10	1,767	4,349	589	4,349	279	4,064	93	3,390	10	1,457	4,135	465	3,957	124	3,447		5	5				1	31	
32	10	1,824	4,489	608	4,489	288	4,196	96	3,499	10	1,504	4,268	480	4,085	128	3,558		5	5		1		1	32	
33	10	1,881	4,629	627	4,630	297	4,327	99	3,609	10	1,551	4,402	495	4,212	132	3,670		5	5		1		1	33	
34	10	1,938	4,769	646	4,770	306	4,458	102	3,718	10	1,598	4,535	510	4,340	136	3,781		5	5		1		1	34	
35	10	1,995	4,910	665	4,910	315	4,589	105	3,827	10	1,645	4,669	525	4,468	140	3,892		5	5		1		1	35	
36	10	2,052	5,050	684	5,051	324	4,720	108	3,937	10	1,692	4,802	540	4,595	144	4,003		5	5		1		1	36	
37	10	2,109	5,190	703	5,191	333	4,851	111	4,046	10	1,739	4,935	555	4,723	148	4,114		5	5		1		1	37	
38	10	2,166	5,331	722	5,331	342	4,982	114	4,155	10	1,786	5,069	570	4,851	152	4,226		5	5		1		1	38	
39	10	2,223	5,471	741	5,472	351	5,113	117	4,265	10	1,833	5,202	585	4,978	156	4,337		5	5		1		1	39	
40	12	2,280	5,611	760	5,612	360	5,244	120	4,374	10	1,880	5,335	600	5,106	160	4,448		6	5		1		1	40	
41	12	2,337	5,751	779	5,752	369	5,376	123	4,483	10	1,927	5,469	615	5,234	164	4,559		6	5		1		1	41	
42	12	2,394	5,892	798	5,892	378	5,507	126	4,593	10	1,974	5,602	630	5,361	168	4,670		6	5		1		1	42	
43	12	2,451	6,032	817	6,033	387	5,638	129	4,702	12	2,021	5,736	645	5,489	172	4,782		6	6		1		1	43	
44	12	2,508	6,172	836	6,173	396	5,769	132	4,811	12	2,068	5,869	660	5,617	176	4,893		6	6		1		1	44	
45	12	2,565	6,312	855	6,313	405	5,900	135	4,921	12	2,115	6,002	675	5,744	180	5,004		6	6		1		1	45	
46	12	2,622	6,453	874	6,454	414	6,031	138	5,030	12	2,162	6,136	690	5,872	184	5,115		6	6		1		1	46	
47	12	2,679	6,593	893	6,594	423	6,162	141	5,139	12	2,209	6,269	705	6,000	188	5,226		6	6		1		1	47	
48	12	2,736	6,733	912	6,734	432	6,293	144	5,249	12	2,256	6,403	720	6,127	192	5,338		6	6		1		1	48	
49	12	2,793	6,874	931	6,875	441	6,424	147	5,358	12	2,303	6,536	735	6,255	196	5,449		6	6		1		1	49	
50	12	2,850	7,014	950	7,015	450	6,556	150	5,468	12	2,350	6,669	750	6,383	200	5,560		6	6		1		1	50	
51	12	2,907	7,154	969	7,155	459	6,687	153	5,577	12	2,397	6,803	765	6,510	204	5,671		6	6		1		1	51	
52	12	2,964	7,294	988	7,295	468	6,818	156	5,686	12	2,444	6,936	780	6,638	208	5,782		6	6		1		1	52	
53	12	3,021	7,435	1,007	7,436	477	6,949	159	5,796	12	2,491	7,069	795	6,765	212	5,894		6	6		1		1	53	
54	12	3,078	7,575	1,026	7,576	486	7,080	162	5,905	12	2,538	7,203	810	6,893	216	6,005		6	6		1		1	54	
55	12	3,135	7,715	1,045	7,716	495	7,211	165	6,014	12	2,585	7,336	825	7,021	220	6,116		6	6		1		1	55	
56	12	3,192	7,856	1,064	7,857	504	7,342	168	6,124	12	2,632	7,470	840	7,148	224	6,227		6	6		1		1	56	
57	12	3,249	7,996	1,083	7,997	513	7,473	171	6,233	12	2,679	7,603	855	7,276	228	6,338		6	6		1		1	57	
58	12	3,306	8,136	1,102	8,137	522	7,604	174	6,342	12	2,726	7,736	870	7,404	232	6,450		6	6		1		1	58	
59	12	3,363	8,276	1,121	8,277	531	7,736	177	6,452	12	2,773	7,870	885	7,531	236	6,561		6	6		1		1	59	
60	14	3,420	8,417	1,140	8,418	540	7,867	180	6,561	12	2,820	8,003	900	7,659	240	6,672		7	6		1		1	60	
61	14	3,477	8,557	1,159	8,558	549	7,998	183	6,670	12	2,867	8,137	915	7,787	244	6,783		7	6		1		1	61	
62	14	3,534	8,697	1,178	8,698	558	8,129	186	6,780	12	2,914	8,270	930	7,914	248	6,894		7	6		1		1	62	
63	14	3,591	8,837	1,197	8,839	567	8,260	189	6,889	12	2,961	8,403	945	8,042	252	7,006		7	6		1		1	63	
64	14	3,648	8,978	1,216	8,979	576	8,391	192	6,998	14	3,008	8,537	960	8,170	256	7,117		7	7		1		2	64	1

(To be continued)

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(Continued from preceding sheet)

RAID Group	Storage Capacity (GB)																	Number of necessary options								
	Open System									Mainframe System								DKC options					DKU options			
	Cache (GB)	OPEN-3 (2.461GB)		OPEN-9 (7.384GB)		OPEN-E (14.568GB)		OPEN-L (36.450GB)		Cache (GB)	3390-3/3R (2.838GB)		3390-9 (8.510GB)		3390-L (27.80GB)			F460I-2048		F460I -S512	F460I -200	F460I -L1C	455I -18	455I -72K4	455I -EXC	
		VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap		VOL	Cap	VOL	Cap	VOL	Cap		OPEN	MF							
65	14	3,705	9,118	1,235	9,119	585	8,522	195	7,108	14	3,055	8,670	975	8,297	260	7,228		7	7		1		2	65	1	
66	14	3,762	9,258	1,254	9,260	594	8,653	198	7,217	14	3,102	8,803	990	8,425	264	7,339		7	7		1		2	66	1	
67	14	3,819	9,399	1,273	9,400	603	8,785	201	7,326	14	3,149	8,937	1,005	8,553	268	7,450		7	7		1		2	67	1	
68	14	3,876	9,539	1,292	9,540	612	8,916	204	7,436	14	3,196	9,070	1,020	8,680	272	7,562		7	7		1		2	68	1	
69	14	3,933	9,679	1,311	9,680	621	9,047	207	7,545	14	3,243	9,204	1,035	8,808	276	7,673		7	7		1		2	69	1	
70	14	3,990	9,819	1,330	9,821	630	9,178	210	7,655	14	3,290	9,337	1,050	8,936	280	7,784		7	7		1		2	70	1	
71	14	4,047	9,960	1,349	9,961	639	9,309	213	7,764	14	3,337	9,470	1,065	9,063	284	7,895		7	7		1		2	71	1	
72	14	4,104	10,100	1,368	10,101	648	9,440	216	7,873	14	3,384	9,604	1,080	9,191	288	8,006		7	7		1		2	72	1	
73	14	4,161	10,240	1,387	10,242	657	9,571	219	7,983	14	3,431	9,737	1,095	9,318	292	8,118		7	7		1		2	73	1	
74	14	4,218	10,380	1,406	10,382	666	9,702	222	8,092	14	3,478	9,871	1,110	9,446	296	8,229		7	7		1		2	74	1	
75	14	4,275	10,521	1,425	10,522	675	9,833	225	8,201	14	3,525	10,004	1,125	9,574	300	8,340		7	7		1		2	75	1	
76	14	4,332	10,661	1,444	10,662	684	9,965	228	8,311	14	3,572	10,137	1,140	9,701	304	8,451		7	7		1		2	76	1	
77	14	4,389	10,801	1,463	10,803	693	10,096	231	8,420	14	3,619	10,271	1,155	9,829	308	8,562		7	7		1		2	77	1	
78	14	4,446	10,942	1,482	10,943	702	10,227	234	8,529	14	3,666	10,404	1,170	9,957	312	8,674		7	7		1		2	78	1	
79	14	4,503	11,082	1,501	11,083	711	10,358	237	8,639	14	3,713	10,537	1,185	10,084	316	8,785		7	7		1		2	79	1	
80	16	4,560	11,222	1,520	11,224	720	10,489	240	8,748	14	3,760	10,671	1,200	10,212	320	8,896		8	7		1		2	80	1	
81	16	4,617	11,362	1,539	11,364	729	10,620	243	8,857	14	3,807	10,804	1,215	10,340	324	9,007		8	7		1		2	81	1	
82	16	4,674	11,503	1,558	11,504	738	10,751	246	8,967	14	3,854	10,938	1,230	10,467	328	9,118		8	7		1		2	82	1	
83	16	4,731	11,643	1,577	11,645	747	10,882	249	9,076	14	3,901	11,071	1,245	10,595	332	9,230		8	7		1		2	83	1	
84	16	4,788	11,783	1,596	11,785	756	11,013	252	9,185	14	3,948	11,204	1,260	10,723	336	9,341		8	7		1		2	84	1	
85	16	4,845	11,924	1,615	11,925	765	11,145	255	9,295	16	3,995	11,338	1,275	10,850	340	9,452		8	8		1		2	85	1	
86	16	4,902	12,064	1,634	12,065	774	11,276	258	9,404	16	4,042	11,471	1,290	10,978	344	9,563		8	8		1		2	86	1	
87	16	4,959	12,204	1,653	12,206	783	11,407	261	9,513	16	4,089	11,605	1,305	11,106	348	9,674		8	8		1		2	87	1	
88	16	5,016	12,344	1,672	12,346	792	11,538	264	9,623	16	4,136	11,738	1,320	11,233	352	9,786		8	8		1		2	88	1	
89	16	5,073	12,485	1,691	12,486	801	11,669	267	9,732	16	4,183	11,871	1,335	11,361	356	9,897		8	8		1		2	89	1	
90	16	5,130	12,625	1,710	12,627	810	11,800	270	9,842	16	4,230	12,005	1,350	11,489	360	10,008		8	8		1		2	90	1	
91	16	5,187	12,765	1,729	12,767	819	11,931	273	9,951	16	4,277	12,138	1,365	11,616	364	10,119		8	8		1		2	91	1	
92	16	5,244	12,905	1,748	12,907	828	12,062	276	10,060	16	4,324	12,272	1,380	11,744	368	10,230		8	8		1		2	92	1	
93	16	5,301	13,046	1,767	13,048	837	12,193	279	10,170	16	4,371	12,405	1,395	11,871	372	10,342		8	8		1		2	93	1	
94	16	5,358	13,186	1,786	13,188	846	12,325	282	10,279	16	4,418	12,538	1,410	11,999	376	10,453		8	8		1		2	94	1	
95	16	5,415	13,326	1,805	13,328	855	12,456	285	10,388	16	4,465	12,672	1,425	12,127	380	10,564		8	8		1		2	95	1	
96	16	5,472	13,467	1,824	13,468	864	12,587	288	10,498	16	4,512	12,805	1,440	12,254	384	10,675		8	8		1		2	96	1	
97	16	5,529	13,607	1,843	13,609	873	12,718	291	10,607	16	4,559	12,938	1,455	12,382	388	10,786		8	8		1		2	97	1	
98	16	5,586	13,747	1,862	13,749	882	12,849	294	10,716	16	4,606	13,072	1,470	12,510	392	10,898		8	8		1		2	98	1	
99	16	5,643	13,887	1,881	13,889	891	12,980	297	10,826	16	4,653	13,205	1,485	12,637	396	11,009		8	8		1		2	99	1	
100	18	5,700	14,028	1,900	14,030	900	13,111	300	10,935	16	4,700	13,339	1,500	12,765	400	11,120		9	8		1		2	100	1	
101	18	5,757	14,168	1,919	14,170	909	13,242	303	11,044	16	4,747	13,472	1,515	12,893	404	11,231		9	8		1		2	101	1	
102	18	5,814	14,308	1,938	14,310	918	13,373	306	11,154	16	4,794	13,605	1,530	13,020	408	11,342		9	8		1		2	102	1	
103	18	5,871	14,449	1,957	14,450	927	13,505	309	11,263	16	4,841	13,739	1,545	13,148	412	11,454		9	8		1		2	103	1	
104	18	5,928	14,589	1,976	14,591	936	13,636	312	11,372	16	4,888	13,872	1,560	13,276	416	11,565		9	8		1		2	104	1	
105	18	5,985	14,729	1,995	14,731	945	13,767	315	11,482	16	4,935	14,006	1,575	13,403	420	11,676		9	8		1		2	105	1	
106	18	6,042	14,869	2,014	14,871	954	13,898	318	11,591	18	4,982	14,139	1,590	13,531	424	11,787		9	9		1		2	106	1	
107	18	6,099	15,010	2,033	15,012	963	14,029	321	11,700	18	5,029	14,272	1,605	13,659	428	11,898		9	9		1		2	107	1	
108	18	6,156	15,150	2,052	15,152	972	14,160	324	11,810	18	5,076	14,406	1,620	13,786	432	12,010		9	9		1		2	108	1	
109	18	6,213	15,290	2,071	15,292	981	14,291	327	11,919	18	5,123	14,539	1,635	13,914	436	12,121		9	9		1		2	109	1	
110	18	6,270	15,430	2,090	15,433	990	14,422	330	12,029	18	5,170	14,672	1,650	14,042	440	12,232		9	9		1		2	110	1	
111	18	6,327	15,571	2,109	15,573	999	14,553	333	12,138	18	5,217	14,806	1,665	14,169	444	12,343		9	9		1		2	111	1	
112	18	6,384	15,711	2,128	15,713	1,008	14,685	336	12,247	18	5,264	14,939	1,680	14,297	448	12,454		9	9		1		2	112	1	
113	18	6,441	15,851	2,147	15,853	1,017	14,816	339	12,357	18	5,311	15,073	1,695	14,424	452	12,566		9	9		1		2	113	1	
114	18	6,498	15,992	2,166	15,994	1,026	14,947	342	12,466	18	5,358	15,206	1,710	14,552	456	12,677		9	9		1		2	114	1	
115	18	6,555	16,132	2,185	16,134	1,035	15,078	345	12,575	18	5,405	15,339	1,725	14,680	460	12,788		9	9		1		2	115	1	
116	18	6,612	16,272	2,204	16,274	1,044	15,209	348	12,685	18	5,452	15,473	1,740	14,807	464	12,899		9	9		1		2	116	1	
117	18	6,669	16,412	2,223	16,415	1,053	15,340	351	12,794	18	5,499	15,606	1,755	14,935	468	13,010		9	9		1		2	117	1	
118	18	6,726	16,553	2,242	16,555	1,062	15,471	354	12,903	18	5,546	15,740	1,770	15,063	472	13,122		9	9		1		2	118	1	
119	18	6,783	16,693	2,261	16,695	1,071	15,602	357	13,013	18	5,593	15,873	1,785	15,190	476	13,233		9	9		1		2	119	1	
120	20	6,840	16,833	2,280	16,836	1,080	15,733	360	13,122	18	5,640	16,006	1,800	15,318	480	13,344		10	9		1		2	120	1	
121	20	6,897	16,974	2,299	16,976	1,089	15,865	363	13,231	18	5,687	16,140	1,815	15,446	484	13,455		10	9		1		2	121	1	
122	20	6,954	17,114	2,318	17,116	1,098	15,996	366	13,341	18	5,734	16,273	1,830	15,573	488	13,566		10	9		1		2	122	1	
123	20	7,011	17,254	2,337	17,256	1,107	16,127	369	13,450	18	5,781	16,406	1,845	15,701	492	13,678		10	9		1		2	123	1	
124	20	7,068	17,394	2,356	17,397	1,116	16,258	372	13,559	18	5,828	16,540	1,860	15,829	496	13,789		10	9		1		2	124	1	
125	20	7,125	17,535	2,375	17,537	1,125	16,389	375	13,669	18	5,875	16,673	1,875	15,956	500	13,900		10	9		1		2	125	1	
126	20	7,182	17,675	2,394	17,677	1,134	16,520	378	13,778	18	5,922	16,807	1,890	16,084	504	14,011		10	9		1		2	126	1	
127	20	7,239	17,815	2,413	17,818	1,143	16,651	381	13,887	20	5,969	16,940	1,905	16,212	508	14,122		10	10		1		2	127	1	
128	20	7,296	17,955	2,432	17,958	1,152	16,782	384	13,997	20	6,016	17,073	1,920	16,339	512	14,234		10	10		2	1	3	128	1	
129	20	7,353	18,096	2,451	18,098	1,161	16,913	387	14,106	20	6,063	17,207	1,935	16,467	516	14,345		10	10		2	1	3	129	1	
130	20	7,410	18,236	2,470	18,238	1,170	17,045	390	14,216	20	6,110	17,340	1,950	16,595	520	14,456		10	10		2	1	3	130	1	

(To be continued)

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(Continued from preceding sheet)

RAID Group	Storage Capacity (GB)																	Number of necessary options							
	Open System									Mainframe System								DKC options					DKU options		
	Cache (GB)	OPEN-3 (2.461GB)		OPEN-9 (7.384GB)		OPEN-E (14.568GB)		OPEN-L (36.450GB)		Cache (GB)	3390-3/3R (2.838GB)		3390-9 (8.510GB)		3390-L (27.80GB)			F460I-2048		F460I -S512	F460I -200	F460I -L1C	455I -18	F455I -72K4	F455I -EXC
		VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap		VOL	Cap	VOL	Cap	VOL	Cap		OPEN	MF						
131	20	7,467	18,376	2,489	18,379	1,179	17,176	393	14,325	20	6,157	17,474	1,965	16,722	524	14,567		10	10		2	1	3	131	1
132	20	7,524	18,517	2,508	18,519	1,188	17,307	396	14,434	20	6,204	17,607	1,980	16,850	528	14,678		10	10		2	1	3	132	1
133	20	7,581	18,657	2,527	18,659	1,197	17,438	399	14,544	20	6,251	17,740	1,995	16,977	532	14,790		10	10		2	1	3	133	1
134	20	7,638	18,797	2,546	18,800	1,206	17,569	402	14,653	20	6,298	17,874	2,010	17,105	536	14,901		10	10		2	1	3	134	1
135	20	7,695	18,937	2,565	18,940	1,215	17,700	405	14,762	20	6,345	18,007	2,025	17,233	540	15,012		10	10		2	1	3	135	1
136	20	7,752	19,078	2,584	19,080	1,224	17,831	408	14,872	20	6,392	18,140	2,040	17,360	544	15,123		10	10		2	1	3	136	1
137	20	7,809	19,218	2,603	19,221	1,233	17,962	411	14,981	20	6,439	18,274	2,055	17,488	548	15,234		10	10		2	1	3	137	1
138	20	7,866	19,358	2,622	19,361	1,242	18,093	414	15,090	20	6,486	18,407	2,070	17,616	552	15,346		10	10		2	1	3	138	1
139	20	7,923	19,499	2,641	19,501	1,251	18,225	417	15,200	20	6,533	18,541	2,085	17,743	556	15,457		10	10		2	1	3	139	1
140	20	7,980	19,639	2,660	19,641	1,260	18,356	420	15,309	20	6,580	18,674	2,100	17,871	560	15,568		10	10		2	1	3	140	1
141	20	8,037	19,779	2,679	19,782	1,269	18,487	423	15,418	20	6,627	18,807	2,115	17,999	564	15,679		10	10		2	1	3	141	1
142	20	8,094	19,919	2,698	19,922	1,278	18,618	426	15,528	20	6,674	18,941	2,130	18,126	568	15,790		10	10		2	1	3	142	1
143	20	8,151	20,060	2,717	20,062	1,287	18,749	429	15,637	20	6,721	19,074	2,145	18,254	572	15,902		10	10		2	1	3	143	1
144	20			2,736	20,203	1,296	18,880	432	15,746	20	6,768	19,208	2,160	18,382	576	16,013		10	10		2	1	3	144	1
145	22			2,755	20,343	1,305	19,011	435	15,856	20	6,815	19,341	2,175	18,509	580	16,124		11	10		2	1	3	145	1
146	22			2,774	20,483	1,314	19,142	438	15,965	20	6,862	19,474	2,190	18,637	584	16,235		11	10		2	1	3	146	1
147	22			2,793	20,624	1,323	19,273	441	16,074	20	6,909	19,608	2,205	18,765	588	16,346		11	10		2	1	3	147	1
148	22			2,812	20,764	1,332	19,405	444	16,184	22	6,956	19,741	2,220	18,892	592	16,458		11	11		2	1	3	148	1
149	22			2,831	20,904	1,341	19,536	447	16,293	22	7,003	19,875	2,235	19,020	596	16,569		11	11		2	1	3	149	1
150	22			2,850	21,044	1,350	19,667	450	16,403	22	7,050	20,008	2,250	19,148	600	16,680		11	11		2	1	3	150	1
151	22			2,869	21,185	1,359	19,798	453	16,512	22	7,097	20,141	2,265	19,275	604	16,791		11	11		2	1	3	151	1
152	22			2,888	21,325	1,368	19,929	456	16,621	22	7,144	20,275	2,280	19,403	608	16,902		11	11		2	1	3	152	1
153	22			2,907	21,465	1,377	20,060	459	16,731	22	7,191	20,408	2,295	19,530	612	17,014		11	11		2	1	3	153	1
154	22			2,926	21,606	1,386	20,191	462	16,840	22	7,238	20,541	2,310	19,658	616	17,125		11	11		2	1	3	154	1
155	22			2,945	21,746	1,395	20,322	465	16,949	22	7,285	20,675	2,325	19,786	620	17,236		11	11		2	1	3	155	1
156	22			2,964	21,886	1,404	20,453	468	17,059	22	7,332	20,808	2,340	19,913	624	17,347		11	11		2	1	3	156	1
157	22			2,983	22,026	1,413	20,585	471	17,168	22	7,379	20,942	2,355	20,041	628	17,458		11	11		2	1	3	157	1
158	22			3,002	22,167	1,422	20,716	474	17,277	22	7,426	21,075	2,370	20,169	632	17,570		11	11		2	1	3	158	1
159	22			3,021	22,307	1,431	20,847	477	17,387	22	7,473	21,208	2,385	20,296	636	17,681		11	11		3	1	3	159	1
160	22			3,040	22,447	1,440	20,978	480	17,496	22	7,520	21,342	2,400	20,424	640	17,792		11	11		3	1	3	160	1
161	22			3,059	22,588	1,449	21,109	483	17,605	22	7,567	21,475	2,415	20,552	644	17,903		11	11		3	1	3	161	1
162	22			3,078	22,728	1,458	21,240	486	17,715	22	7,614	21,609	2,430	20,679	648	18,014		11	11		3	1	3	162	1
163	22			3,097	22,868	1,467	21,371	489	17,824	22	7,661	21,742	2,445	20,807	652	18,126		11	11		3	1	3	163	1
164	22			3,116	23,009	1,476	21,502	492	17,933	22	7,708	21,875	2,460	20,935	656	18,237		11	11		3	1	3	164	1
165	22			3,135	23,149	1,485	21,633	495	18,043	22	7,755	22,009	2,475	21,062	660	18,348		11	11		3	1	3	165	1
166	22			3,154	23,289	1,494	21,765	498	18,152	22	7,802	22,142	2,490	21,190	664	18,459		11	11		3	1	3	166	1
167	22			3,173	23,429	1,503	21,896	501	18,261	22	7,849	22,275	2,505	21,318	668	18,570		11	11		3	1	3	167	1
168	22			3,192	23,570	1,512	22,027	504	18,371	22	7,896	22,409	2,520	21,445	672	18,682		11	11		3	1	3	168	1
169	22			3,211	23,710	1,521	22,158	507	18,480	22	7,943	22,542	2,535	21,573	676	18,793		11	11		3	1	3	169	1
170	22			3,230	23,850	1,530	22,289	510	18,590	22	7,990	22,676	2,550	21,701	680	18,904		11	11		3	1	3	170	1
171	22			3,249	23,991	1,539	22,420	513	18,699	22	8,037	22,809	2,565	21,828	684	19,015		11	11		3	1	3	171	1
172	22			3,268	24,131	1,548	22,551	516	18,808	22	8,084	22,942	2,580	21,956	688	19,126		11	11		3	1	3	172	1
173	22			3,287	24,271	1,557	22,682	519	18,918	22	8,131	23,076	2,595	22,083	692	19,238		11	11		3	1	3	173	1
174	22			3,306	24,412	1,566	22,813	522	19,027	22	8,178	23,209	2,610	22,211	696	19,349		11	11		3	1	3	174	1
175	22			3,325	24,552	1,575	22,945	525	19,136	22			2,625	22,339	700	19,460		11	11		3	1	3	175	1
176	22			3,344	24,692	1,584	23,076	528	19,246	22			2,640	22,466	704	19,571		11	11		3	1	3	176	1
177	22			3,363	24,832	1,593	23,207	531	19,355	22			2,655	22,594	708	19,682		11	11		3	1	3	177	1
178	22			3,382	24,973	1,602	23,338	534	19,464	22			2,670	22,722	712	19,794		11	11		3	1	3	178	1
179	22			3,401	25,113	1,611	23,469	537	19,574	22			2,685	22,849	716	19,905		11	11		3	1	3	179	1
180	22			3,420	25,253	1,620	23,600	540	19,683	22			2,700	22,977	720	20,016		11	11		3	1	3	180	1
181	22			3,439	25,394	1,629	23,731	543	19,792	22			2,715	23,105	724	20,127		11	11		3	1	3	181	1
182	22			3,458	25,534	1,638	23,862	546	19,902	22			2,730	23,232	728	20,238		11	11		3	1	3	182	1
183	22			3,477	25,674	1,647	23,993	549	20,011	22			2,745	23,360	732	20,350		11	11		3	1	3	183	1
184	22			3,496	25,814	1,656	24,125	552	20,120	22			2,760	23,488	736	20,461		11	11		3	1	3	184	1
185	22			3,515	25,955	1,665	24,256	555	20,230	22			2,775	23,615	740	20,572		11	11		3	1	3	185	1
186	22			3,534	26,095	1,674	24,387	558	20,339	22			2,790	23,743	744	20,683		11	11		3	1	3	186	1
187	22			3,553	26,235	1,683	24,518	561	20,448	22			2,805	23,871	748	20,794		11	11		3	1	3	187	1
188	22			3,572	26,376	1,692	24,649	564	20,558	22			2,820	23,998	752	20,906		11	11		3	1	3	188	1
189	22			3,591	26,516	1,701	24,780	567	20,667	22			2,835	24,126	756	21,017		11	11		3	1	3	189	1
190	22			3,610	26,656	1,710	24,911	570	20,777	22			2,850	24,254	760	21,128		11	11		3	1	3	190	1
191	22			3,629	26,797	1,719	25,042	573	20,886	22			2,865	24,381	764	21,239		11	11		3	1	4	191	2
192	22			3,648	26,937	1,728	25,174	576	20,995	22			2,880	24,509	768	21,350		11	11		3	1	4	192	2
193	22			3,667	27,077	1,737	25,305	579	21,105	22			2,895	24,636	772	21,462		11	11		3	1	4	193	2
194	22			3,686	27,217	1,746	25,436	582	21,214	22			2,910	24,764	776	21,573		11	11		3	1	4	194	2
195	22			3,705	27,358	1,755	25,567	585	21,323	22			2,925	24,892	780	21,684		11	11		3	1	4	195	2
196	22			3,724	27,498	1,764	25,698	588	21,433	22			2,940	25,019	784	21,795		11	11		3	1	4	196	2

(To be continued)

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(Continued from preceding sheet)

RAID Group	Storage Capacity (GB)																	Number of necessary options							
	Open System									Mainframe System								DKC options					DKU options		
	Cache (GB)	OPEN-3 (2.461GB)		OPEN-9 (7.384GB)		OPEN-E (14.568GB)		OPEN-L (36.450GB)		Cache (GB)	3390-3/3R (2.838GB)		3390-9 (8.510GB)		3390-L (27.80GB)			F460I-2048		F460I -S512	F460I -200	F460I -L1C	455I -18	F455I -72K4	F455I -EXC
		VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap		VOL	Cap	VOL	Cap	VOL	Cap		OPEN	MF						
197	22			3,743	27,638	1,773	25,829	591	21,542	22			2,955	25,147	788	21,906		11	11		3	1	4	197	2
198	22			3,762	27,779	1,782	25,960	594	21,651	22			2,970	25,275	792	22,018		11	11		3	1	4	198	2
199	22			3,781	27,919	1,791	26,091	597	21,761	22			2,985	25,402	796	22,129		11	11		3	1	4	199	2
200	22			3,800	28,059	1,800	26,222	600	21,870	22			3,000	25,530	800	22,240		11	11		3	1	4	200	2
201	22			3,819	28,199	1,809	26,354	603	21,979	22			3,015	25,658	804	22,351		11	11		3	1	4	201	2
202	22			3,838	28,340	1,818	26,485	606	22,089	22			3,030	25,785	808	22,462		11	11		3	1	4	202	2
203	22			3,857	28,480	1,827	26,616	609	22,198	22			3,045	25,913	812	22,574		11	11		3	1	4	203	2
204	22			3,876	28,620	1,836	26,747	612	22,307	22			3,060	26,041	816	22,685		11	11		3	1	4	204	2
205	22			3,895	28,761	1,845	26,878	615	22,417	22			3,075	26,168	820	22,796		11	11		3	1	4	205	2
206	22			3,914	28,901	1,854	27,009	618	22,526	22			3,090	26,296	824	22,907		11	11		3	1	4	206	2
207	22			3,933	29,041	1,863	27,140	621	22,635	22			3,105	26,424	828	23,018		11	11		3	1	4	207	2
208	22			3,952	29,182	1,872	27,271	624	22,745	22			3,120	26,551	832	23,130		11	11		3	1	4	208	2
209	22			3,971	29,322	1,881	27,402	627	22,854	22			3,135	26,679	836	23,241		11	11		3	1	4	209	2
210	22			3,990	29,462	1,890	27,534	630	22,964	22			3,150	26,807	840	23,352		11	11		3	1	4	210	2
211	22			4,009	29,602	1,899	27,665	633	23,073	22			3,165	26,934	844	23,463		11	11		3	1	4	211	2
212	22			4,028	29,743	1,908	27,796	636	23,182	22			3,180	27,062	848	23,574		11	11		3	1	4	212	2
213	22			4,047	29,883	1,917	27,927	639	23,292	22			3,195	27,189	852	23,686		11	11		3	1	4	213	2
214	22			4,066	30,023	1,926	28,058	642	23,401	22			3,210	27,317	856	23,797		11	11		3	1	4	214	2
215	22			4,085	30,164	1,935	28,189	645	23,510	22			3,225	27,445	860	23,908		11	11		3	1	4	215	2
216	22			4,104	30,304	1,944	28,320	648	23,620	22			3,240	27,572	864	24,019		11	11		3	1	4	216	2
217	22			4,123	30,444	1,953	28,451	651	23,729	22			3,255	27,700	868	24,130		11	11		3	1	4	217	2
218	22			4,142	30,585	1,962	28,582	654	23,838	22			3,270	27,828	872	24,242		11	11		3	1	4	218	2
219	22			4,161	30,725	1,971	28,714	657	23,948	22			3,285	27,955	876	24,353		11	11		3	1	4	219	2
220	22			4,180	30,865	1,980	28,845	660	24,057	22			3,300	28,083	880	24,464		11	11		3	1	4	220	2
221	22			4,199	31,005	1,989	28,976	663	24,166	22			3,315	28,211	884	24,575		11	11		3	1	4	221	2
222	22			4,218	31,146	1,998	29,107	666	24,276	22			3,330	28,338	888	24,686		11	11		3	1	4	222	2
223	22			4,237	31,286	2,007	29,238	669	24,385	22			3,345	28,466	892	24,798		11	11		3	1	4	223	2
224	22			4,256	31,426	2,016	29,369	672	24,494	22			3,360	28,594	896	24,909		11	11		3	1	4	224	2
225	22			4,275	31,567	2,025	29,500	675	24,604	22			3,375	28,721	900	25,020		11	11		3	1	4	225	2
226	22			4,294	31,707	2,034	29,631	678	24,713	22			3,390	28,849	904	25,131		11	11		3	1	4	226	2
227	22			4,313	31,847	2,043	29,762	681	24,822	22			3,405	28,977	908	25,242		11	11		3	1	4	227	2
228	22			4,332	31,987	2,052	29,894	684	24,932	22			3,420	29,104	912	25,354		11	11		3	1	4	228	2
229	22			4,351	32,128	2,061	30,025	687	25,041	22			3,435	29,232	916	25,465		11	11		3	1	4	229	2
230	22			4,370	32,268	2,070	30,156	690	25,151	22			3,450	29,360	920	25,576		11	11		3	1	4	230	2
231	22			4,389	32,408	2,079	30,287	693	25,260	22			3,465	29,487	924	25,687		11	11		3	1	4	231	2
232	22			4,408	32,549	2,088	30,418	696	25,369	22			3,480	29,615	928	25,798		11	11		3	1	4	232	2
233	22			4,427	32,689	2,097	30,549	699	25,479	22			3,495	29,742	932	25,910		11	11		3	1	4	233	2
234	22			4,446	32,829	2,106	30,680	702	25,588	22			3,510	29,870	936	26,021		11	11		3	1	4	234	2
235	22			4,465	32,970	2,115	30,811	705	25,697	22			3,525	29,998	940	26,132		11	11		3	1	4	235	2
236	22			4,484	33,110	2,124	30,942	708	25,807	22			3,540	30,125	944	26,243		11	11		3	1	4	236	2
237	22			4,503	33,250	2,133	31,074	711	25,916	22			3,555	30,253	948	26,354		11	11		3	1	4	237	2
238	22			4,522	33,390	2,142	31,205	714	26,025	22			3,570	30,381	952	26,466		11	11		3	1	4	238	2
239	22			4,541	33,531	2,151	31,336	717	26,135	22			3,585	30,508	956	26,577		11	11		3	1	4	239	2
240	22			4,560	33,671	2,160	31,467	720	26,244	22			3,600	30,636	960	26,688		11	11		3	1	4	240	2
241	22			4,579	33,811	2,169	31,598	723	26,353	22			3,615	30,764	964	26,799		11	11		3	1	4	241	2
242	22			4,598	33,952	2,178	31,729	726	26,463	22			3,630	30,891	968	26,910		11	11		3	1	4	242	2
243	22			4,617	34,092	2,187	31,860	729	26,572	22			3,645	31,019	972	27,022		11	11		3	1	4	243	2
244	22			4,636	34,232	2,196	31,991	732	26,681	22			3,660	31,147	976	27,133		11	11		3	1	4	244	2
245	22			4,655	34,373	2,205	32,122	735	26,791	22			3,675	31,274	980	27,244		11	11		3	1	4	245	2
246	22			4,674	34,513	2,214	32,254	738	26,900	22			3,690	31,402	984	27,355		11	11		3	1	4	246	2
247	22			4,693	34,653	2,223	32,385	741	27,009	22			3,705	31,530	988	27,466		11	11		3	1	4	247	2
248	22			4,712	34,793	2,232	32,516	744	27,119	22			3,720	31,657	992	27,578		11	11		3	1	4	248	2
249	22			4,731	34,934	2,241	32,647	747	27,228	22			3,735	31,785	996	27,689		11	11		3	1	4	249	2
250	22			4,750	35,074	2,250	32,778	750	27,338	22			3,750	31,913	1,000	27,800		11	11		3	1	4	250	2
251	22			4,769	35,214	2,259	32,909	753	27,447	22			3,765	32,040	1,004	27,911		11	11		3	1	4	251	2
252	22			4,788	35,355	2,268	33,040	756	27,556	22			3,780	32,168	1,008	28,022		11	11		3	1	4	252	2
253	22			4,807	35,495	2,277	33,171	759	27,666	22			3,795	32,295	1,012	28,134		11	11		3	1	4	253	2
254	22			4,826	35,635	2,286	33,302	762	27,775	22			3,810	32,423	1,016	28,245		11	11		3	1	4	254	2

*1: The number of the Shard Memory option(DKC-F460I-S512) necessary is refer to table 1.1.2-3A and 1.1.2-3B.
Please note that location of shared memory varies according to the purpose such as additional cache installation or additional LDEV installation.

Note1: In addition to the Options listed in above table as necessary parts, the Power Cable Kit option, the AC Box Kit option and the Channel options are required.

Note2: Even lines of RAID group are the storage capacity of RAID1 (4D+4D), and required cache capacity.

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8.4 Standard Configuration for OPEN-V

(1) 36GB 15K rpm HDD, OPEN-V

RAID group	Storage Capacity									Number of Options								
	RAID5(3D+1P) 53.618 GB / Vol *1			RAID5(7D+1P) 62.554 GB / Vol *1			RAID1(2D+2D) 35.744 GB / Vol *1			DKC options						DKU options		
										F460I-2048			F460I	F460I	F460I	455I	F455I	F455I
	Cache (GB)	Vol	Cap	Cache (GB)	Vol	Cap	Cache (GB)	Vol	Cap	3D+1P	7D+1P	2D+2D	-S512	-200	-L1C	-18	-36K4	-EXC
1	2	2	107				2	2	71	1		1	*2			1	1	
2	4	4	214	4	4	250	2	4	143	2	2	1				1	2	
3	4	6	322				4	6	214	2		2				1	3	
4	4	8	429	4	8	500	4	8	286	2	2	2				1	4	
5	4	10	536				4	10	357	2		2				1	5	
6	4	12	643	6	12	751	4	12	429	2	3	2				1	6	
7	6	14	751				4	14	500	3		2				1	7	
8	6	16	858	6	16	1,001	4	16	572	3	3	2				1	8	
9	6	18	965				4	18	643	3		2				1	9	
10	6	20	1,072	6	20	1,251	4	20	715	3	3	2				1	10	
11	6	22	1,180				6	22	786	3		3				1	11	
12	6	24	1,287	8	24	1,501	6	24	858	3	4	3				1	12	
13	6	26	1,394				6	26	929	3		3				1	13	
14	8	28	1,501	8	28	1,751	6	28	1,001	4	4	3				1	14	
15	8	30	1,609				6	30	1,072	4		3				1	15	
16	8	32	1,716	8	32	2,001	6	32	1,144	4	4	3				1	16	
17	8	34	1,823				6	34	1,215	4		3				1	17	
18	8	36	1,930	8	36	2,252	6	36	1,287	4	4	3				1	18	
19	8	38	2,037				6	38	1,358	4		3				1	19	
20	8	40	2,145	8	40	2,502	6	40	1,430	4	4	3				1	20	
21	8	42	2,252				8	42	1,501	4		4				1	21	
22	8	44	2,359	8	44	2,752	8	44	1,573	4	4	4				1	22	
23	8	46	2,466				8	46	1,644	4		4				1	23	
24	8	48	2,574	10	48	3,002	8	48	1,716	4	5	4				1	24	
25	8	50	2,681				8	50	1,787	4		4				1	25	
26	8	52	2,788	10	52	3,252	8	52	1,859	4	5	4				1	26	
27	10	54	2,895				8	54	1,930	5		4				1	27	
28	10	56	3,003	10	56	3,502	8	56	2,002	5	5	4				1	28	
29	10	58	3,110				8	58	2,073	5		4				1	29	
30	10	60	3,217	10	60	3,753	8	60	2,145	5	5	4				1	30	
31	10	62	3,324				8	62	2,216	5		4				1	31	
32	10	64	3,432	10	64	4,003	8	64	2,288	5	5	4		1		1	32	
33	10	66	3,539				8	66	2,359	5		4		1		1	33	
34	10	68	3,646	10	68	4,253	8	68	2,431	5	5	4		1		1	34	
35	10	70	3,753				8	70	2,502	5		4		1		1	35	
36	10	72	3,860	10	72	4,503	8	72	2,574	5	5	4		1		1	36	
37	10	74	3,968				8	74	2,645	5		4		1		1	37	
38	10	76	4,075	10	76	4,753	8	76	2,717	5	5	4		1		1	38	
39	10	78	4,182				8	78	2,788	5		4		1		1	39	
40	10	80	4,289	10	80	5,004	8	80	2,860	5	5	4		1		1	40	
41	10	82	4,397				8	82	2,931	5		4		1		1	41	
42	10	84	4,504	10	84	5,254	10	84	3,002	5	5	5		1		1	42	
43	10	86	4,611				10	86	3,074	5		5		1		1	43	
44	10	88	4,718	10	88	5,504	10	88	3,145	5	5	5		1		1	44	
45	10	90	4,826				10	90	3,217	5		5		1		1	45	
46	10	92	4,933	12	92	5,754	10	92	3,288	5	6	5		1		1	46	
47	10	94	5,040				10	94	3,360	5		5		1		1	47	
48	10	96	5,147	12	96	6,004	10	96	3,431	5	6	5		1		1	48	
49	10	98	5,255				10	98	3,503	5		5		1		1	49	
50	10	100	5,362	12	100	6,254	10	100	3,574	5	6	5		1		1	50	
51	10	102	5,469				10	102	3,646	5		5		1		1	51	
52	10	104	5,576	12	104	6,505	10	104	3,717	5	6	5		1		1	52	
53	10	106	5,684				10	106	3,789	5		5		1		1	53	
54	12	108	5,791	12	108	6,755	10	108	3,860	6	6	5		1		1	54	
55	12	110	5,898				10	110	3,932	6		5		1		1	55	
56	12	112	6,005	12	112	7,005	10	112	4,003	6	6	5		1		1	56	
57	12	114	6,112				10	114	4,075	6		5		1		1	57	
58	12	116	6,220	12	116	7,255	10	116	4,146	6	6	5		1		1	58	
59	12	118	6,327				10	118	4,218	6		5		1		1	59	
60	12	120	6,434	12	120	7,505	10	120	4,289	6	6	5		1		1	60	
61	12	122	6,541				10	122	4,361	6		5		1		1	61	
62	12	124	6,649	12	124	7,755	10	124	4,432	6	6	5		1		1	62	
63	12	126	6,756				10	126	4,504	6		5		1		1	63	

(To be continued)

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(Continued from preceding sheet)

RAID group	Storage Capacity									Number of Options								
	RAID5(3D+1P) 53.618 GB / Vol *1			RAID5(7D+1P) 62.554 GB / Vol *1			RAID1(2D+2D) 35.744 GB / Vol *1			DKC options						DKU options		
										F460I-2048			F460I	F460I	F460I	455I	F455I	F455I
	Cache (GB)	Vol	Cap	Cache (GB)	Vol	Cap	Cache (GB)	Vol	Cap	3D+1P	7D+1P	2D+2D	-S512	-200	-L1C	-18	-36K4	-EXC
64	12	128	6,863	12	128	8,006	10	128	4,575	6	6	5		1		2	64	1
65	12	130	6,970				10	130	4,647	6		5		1		2	65	1
66	12	132	7,078	12	132	8,256	10	132	4,718	6	6	5		1		2	66	1
67	12	134	7,185				10	134	4,790	6		5		1		2	67	1
68	12	136	7,292	14	136	8,506	10	136	4,861	6	7	5		1		2	68	1
69	12	138	7,399				10	138	4,933	6		5		1		2	69	1
70	12	140	7,507	14	140	8,756	10	140	5,004	6	7	5		1		2	70	1
71	12	142	7,614				10	142	5,076	6		5		1		2	71	1
72	12	144	7,721	14	144	9,006	10	144	5,147	6	7	5		1		2	72	1
73	12	146	7,828				10	146	5,219	6		5		1		2	73	1
74	12	148	7,935	14	148	9,257	10	148	5,290	6	7	5		1		2	74	1
75	12	150	8,043				10	150	5,362	6		5		1		2	75	1
76	12	152	8,150	14	152	9,507	10	152	5,433	6	7	5		1		2	76	1
77	12	154	8,257				10	154	5,505	6		5		1		2	77	1
78	12	156	8,364	14	156	9,757	10	156	5,576	6	7	5		1		2	78	1
79	12	158	8,472				10	158	5,648	6		5		1		2	79	1
80	14	160	8,579	14	160	10,007	10	160	5,719	7	7	5		1		2	80	1
81	14	162	8,686				10	162	5,791	7		5		1		2	81	1
82	14	164	8,793	14	164	10,257	10	164	5,862	7	7	5		1		2	82	1
83	14	166	8,901				10	166	5,934	7		5		1		2	83	1
84	14	168	9,008	14	168	10,507	12	168	6,005	7	7	6		1		2	84	1
85	14	170	9,115				12	170	6,076	7		6		1		2	85	1
86	14	172	9,222	14	172	10,758	12	172	6,148	7	7	6		1		2	86	1
87	14	174	9,330				12	174	6,219	7		6		1		2	87	1
88	14	176	9,437	14	176	11,008	12	176	6,291	7	7	6		1		2	88	1
89	14	178	9,544				12	178	6,362	7		6		1		2	89	1
90	14	180	9,651	14	180	11,258	12	180	6,434	7	7	6		1		2	90	1
91	14	182	9,758				12	182	6,505	7		6		1		2	91	1
92	14	184	9,866	16	184	11,508	12	184	6,577	7	8	6		1		2	92	1
93	14	186	9,973				12	186	6,648	7		6		1		2	93	1
94	14	188	10,080	16	188	11,758	12	188	6,720	7	8	6		1		2	94	1
95	14	190	10,187				12	190	6,791	7		6		1		2	95	1
96	14	192	10,295	16	192	12,008	12	192	6,863	7	8	6		1		2	96	1
97	14	194	10,402				12	194	6,934	7		6		1		2	97	1
98	14	196	10,509	16	196	12,259	12	196	7,006	7	8	6		1		2	98	1
99	14	198	10,616				12	198	7,077	7		6		1		2	99	1
100	14	200	10,724	16	200	12,509	12	200	7,149	7	8	6		1		2	100	1
101	14	202	10,831				12	202	7,220	7		6		1		2	101	1
102	14	204	10,938	16	204	12,759	12	204	7,292	7	8	6		1		2	102	1
103	14	206	11,045				12	206	7,363	7		6		1		2	103	1
104	14	208	11,153	16	208	13,009	12	208	7,435	7	8	6		1		2	104	1
105	14	210	11,260				12	210	7,506	7		6		1		2	105	1
106	14	212	11,367	16	212	13,259	12	212	7,578	7	8	6		1		2	106	1
107	16	214	11,474				12	214	7,649	8		6		1		2	107	1
108	16	216	11,581	16	216	13,510	12	216	7,721	8	8	6		1		2	108	1
109	16	218	11,689				12	218	7,792	8		6		1		2	109	1
110	16	220	11,796	16	220	13,760	12	220	7,864	8	8	6		1		2	110	1
111	16	222	11,903				12	222	7,935	8		6		1		2	111	1
112	16	224	12,010	16	224	14,010	12	224	8,007	8	8	6		1		2	112	1
113	16	226	12,118				12	226	8,078	8		6		1		2	113	1
114	16	228	12,225	18	228	14,260	12	228	8,150	8	9	6		1		2	114	1
115	16	230	12,332				12	230	8,221	8		6		1		2	115	1
116	16	232	12,439	18	232	14,510	12	232	8,293	8	9	6		1		2	116	1
117	16	234	12,547				12	234	8,364	8		6		1		2	117	1
118	16	236	12,654	18	236	14,760	12	236	8,436	8	9	6		1		2	118	1
119	16	238	12,761				12	238	8,507	8		6		1		2	119	1
120	16	240	12,868	18	240	15,011	12	240	8,579	8	9	6		1		2	120	1
121	16	242	12,976				12	242	8,650	8		6		1		2	121	1
122	16	244	13,083	18	244	15,261	12	244	8,722	8	9	6		1		2	122	1
123	16	246	13,190				12	246	8,793	8		6		1		2	123	1
124	16	248	13,297	18	248	15,511	12	248	8,865	8	9	6		1		2	124	1
125	16	250	13,405				12	250	8,936	8		6		1		2	125	1
126	16	252	13,512	18	252	15,761	14	252	9,007	8	9	7		1		2	126	1
127	16	254	13,619				14	254	9,079	8		7		1		2	127	1
128	16	256	13,726	18	256	16,011	14	256	9,150	8	9	7		2	1	3	128	1
129	16	258	13,833				14	258	9,222	8		7		2	1	3	129	1

(To be continued)

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(Continued from preceding sheet)

RAID group	Storage Capacity									Number of Options								
	RAID5(3D+1P) 53.618 GB / Vol *1			RAID5(7D+1P) 62.554 GB / Vol *1			RAID1(2D+2D) 35.744 GB / Vol *1			DKC options						DKU options		
										F460I-2048			F460I	F460I	F460I	455I	F455I	F455I
	Cache (GB)	Vol	Cap	Cache (GB)	Vol	Cap	Cache (GB)	Vol	Cap	3D+1P	7D+1P	2D+2D	-S512	-200	-L1C	-18	-36K4	-EXC
130	16	260	13,941	18	260	16,261	14	260	9,293	8	9	7		2	1	3	130	1
131	16	262	14,048				14	262	9,365	8		7		2	1	3	131	1
132	16	264	14,155	18	264	16,512	14	264	9,436	8	9	7		2	1	3	132	1
133	18	266	14,262				14	266	9,508	9		7		2	1	3	133	1
134	18	268	14,370	18	268	16,762	14	268	9,579	9	9	7		2	1	3	134	1
135	18	270	14,477				14	270	9,651	9		7		2	1	3	135	1
136	18	272	14,584	20	272	17,012	14	272	9,722	9	10	7		2	1	3	136	1
137	18	274	14,691				14	274	9,794	9		7		2	1	3	137	1
138	18	276	14,799	20	276	17,262	14	276	9,865	9	10	7		2	1	3	138	1
139	18	278	14,906				14	278	9,937	9		7		2	1	3	139	1
140	18	280	15,013	20	280	17,512	14	280	10,008	9	10	7		2	1	3	140	1
141	18	282	15,120				14	282	10,080	9		7		2	1	3	141	1
142	18	284	15,228	20	284	17,762	14	284	10,151	9	10	7		2	1	3	142	1
143	18	286	15,335				14	286	10,223	9		7		2	1	3	143	1
144	18	288	15,442	20	288	18,013	14	288	10,294	9	10	7		2	1	3	144	1
145	18	290	15,549				14	290	10,366	9		7		2	1	3	145	1
146	18	292	15,656	20	292	18,263	14	292	10,437	9	10	7		2	1	3	146	1
147	18	294	15,764				14	294	10,509	9		7		2	1	3	147	1
148	18	296	15,871	20	296	18,513	14	296	10,580	9	10	7		2	1	3	148	1
149	18	298	15,978				14	298	10,652	9		7		2	1	3	149	1
150	18	300	16,085	20	300	18,763	14	300	10,723	9	10	7		2	1	3	150	1
151	18	302	16,193				14	302	10,795	9		7		2	1	3	151	1
152	18	304	16,300	20	304	19,013	14	304	10,866	9	10	7		2	1	3	152	1
153	18	306	16,407				14	306	10,938	9		7		2	1	3	153	1
154	18	308	16,514	20	308	19,264	14	308	11,009	9	10	7		2	1	3	154	1
155	18	310	16,622				14	310	11,081	9		7		2	1	3	155	1
156	18	312	16,729	20	312	19,514	14	312	11,152	9	10	7		2	1	3	156	1
157	18	314	16,836				14	314	11,224	9		7		2	1	3	157	1
158	18	316	16,943	20	316	19,764	14	316	11,295	9	10	7		2	1	3	158	1
159	18	318	17,051				14	318	11,367	9		7		3	1	3	159	1
160	20	320	17,158	20	320	20,014	14	320	11,438	10	10	7		3	1	3	160	1
161	20	322	17,265				14	322	11,510	10		7		3	1	3	161	1
162	20	324	17,372	22	324	20,264	14	324	11,581	10	11	7		3	1	3	162	1
163	20	326	17,479				14	326	11,653	10		7		3	1	3	163	1
164	20	328	17,587	22	328	20,514	14	328	11,724	10	11	7		3	1	3	164	1
165	20	330	17,694				14	330	11,796	10		7		3	1	3	165	1
166	20	332	17,801	22	332	20,765	14	332	11,867	10	11	7		3	1	3	166	1
167	20	334	17,908				14	334	11,938	10		7		3	1	3	167	1
168	20	336	18,016	22	336	21,015	16	336	12,010	10	11	8		3	1	3	168	1
169	20	338	18,123				16	338	12,081	10		8		3	1	3	169	1
170	20	340	18,230	22	340	21,265	16	340	12,153	10	11	8		3	1	3	170	1
171	20	342	18,337				16	342	12,224	10		8		3	1	3	171	1
172	20	344	18,445	22	344	21,515	16	344	12,296	10	11	8		3	1	3	172	1
173	20	346	18,552				16	346	12,367	10		8		3	1	3	173	1
174	20	348	18,659	22	348	21,765	16	348	12,439	10	11	8		3	1	3	174	1
175	20	350	18,766				16	350	12,510	10		8		3	1	3	175	1
176	20	352	18,874	22	352	22,015	16	352	12,582	10	11	8		3	1	3	176	1
177	20	354	18,981				16	354	12,653	10		8		3	1	3	177	1
178	20	356	19,088	22	356	22,266	16	356	12,725	10	11	8		3	1	3	178	1
179	20	358	19,195				16	358	12,796	10		8		3	1	3	179	1
180	20	360	19,302	22	360	22,516	16	360	12,868	10	11	8		3	1	3	180	1
181	20	362	19,410				16	362	12,939	10		8		3	1	3	181	1
182	20	364	19,517	22	364	22,766	16	364	13,011	10	11	8		3	1	3	182	1
183	20	366	19,624				16	366	13,082	10		8		3	1	3	183	1
184	20	368	19,731	22	368	23,016	16	368	13,154	10	11	8		3	1	3	184	1
185	20	370	19,839				16	370	13,225	10		8		3	1	3	185	1
186	20	372	19,946	22	372	23,266	16	372	13,297	10	11	8		3	1	3	186	1
187	20	374	20,053				16	374	13,368	10		8		3	1	3	187	1
188	20	376	20,160	22	376	23,517	16	376	13,440	10	11	8		3	1	3	188	1
189	20	378	20,268				16	378	13,511	10		8		3	1	3	189	1
190	20	380	20,375	22	380	23,767	16	380	13,583	10	11	8		3	1	3	190	1
191	20	382	20,482				16	382	13,654	10		8		3	1	4	191	2
192	20	384	20,589	22	384	24,017	16	384	13,726	10	11	8		3	1	4	192	2
193	20	386	20,697				16	386	13,797	10		8		3	1	4	193	2
194	20	388	20,804	22	388	24,267	16	388	13,869	10	11	8		3	1	4	194	2

(To be continued)

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(Continued from preceding sheet)

RAID group	Storage Capacity									Number of Options								
	RAID5(3D+1P) 53.618 GB / Vol *1			RAID5(7D+1P) 62.554 GB / Vol *1			RAID1(2D+2D) 35.744 GB / Vol *1			DKC options						DKU options		
										F460I-2048			F460I	F460I	F460I	455I	F455I	F455I
	Cache (GB)	Vol	Cap	Cache (GB)	Vol	Cap	Cache (GB)	Vol	Cap	3D+1P	7D+1P	2D+2D	-S512	-200	-L1C	-18	-36K4	-EXC
195	20	390	20,911				16	390	13,940	10		8		3	1	4	195	2
196	20	392	21,018	22	392	24,517	16	392	14,012	10	11	8		3	1	4	196	2
197	22	394	21,125				16	394	14,083	11		8		3	1	4	197	2
198	22	396	21,233	22	396	24,767	16	396	14,155	11	11	8		3	1	4	198	2
199	22	398	21,340				16	398	14,226	11		8		3	1	4	199	2
200	22	400	21,447	22	400	25,018	16	400	14,298	11	11	8		3	1	4	200	2
201	22	402	21,554				16	402	14,369	11		8		3	1	4	201	2
202	22	404	21,662	22	404	25,268	16	404	14,441	11	11	8		3	1	4	202	2
203	22	406	21,769				16	406	14,512	11		8		3	1	4	203	2
204	22	408	21,876	22	408	25,518	16	408	14,584	11	11	8		3	1	4	204	2
205	22	410	21,983				16	410	14,655	11		8		3	1	4	205	2
206	22	412	22,091	22	412	25,768	16	412	14,727	11	11	8		3	1	4	206	2
207	22	414	22,198				16	414	14,798	11		8		3	1	4	207	2
208	22	416	22,305	22	416	26,018	16	416	14,870	11	11	8		3	1	4	208	2
209	22	418	22,412				18	418	14,941	11		9		3	1	4	209	2
210	22	420	22,520	22	420	26,268	18	420	15,012	11	11	9		3	1	4	210	2
211	22	422	22,627				18	422	15,084	11		9		3	1	4	211	2
212	22	424	22,734	22	424	26,519	18	424	15,155	11	11	9		3	1	4	212	2
213	22	426	22,841				18	426	15,227	11		9		3	1	4	213	2
214	22	428	22,949	22	428	26,769	18	428	15,298	11	11	9		3	1	4	214	2
215	22	430	23,056				18	430	15,370	11		9		3	1	4	215	2
216	22	432	23,163	22	432	27,019	18	432	15,441	11	11	9		3	1	4	216	2
217	22	434	23,270				18	434	15,513	11		9		3	1	4	217	2
218	22	436	23,377	22	436	27,269	18	436	15,584	11	11	9		3	1	4	218	2
219	22	438	23,485				18	438	15,656	11		9		3	1	4	219	2
220	22	440	23,592	22	440	27,519	18	440	15,727	11	11	9		3	1	4	220	2
221	22	442	23,699				18	442	15,799	11		9		3	1	4	221	2
222	22	444	23,806	22	444	27,770	18	444	15,870	11	11	9		3	1	4	222	2
223	22	446	23,914				18	446	15,942	11		9		3	1	4	223	2
224	22	448	24,021	22	448	28,020	18	448	16,013	11	11	9		3	1	4	224	2
225	22	450	24,128				18	450	16,085	11		9		3	1	4	225	2
226	22	452	24,235	22	452	28,270	18	452	16,156	11	11	9		3	1	4	226	2
227	22	454	24,343				18	454	16,228	11		9		3	1	4	227	2
228	22	456	24,450	22	456	28,520	18	456	16,299	11	11	9		3	1	4	228	2
229	22	458	24,557				18	458	16,371	11		9		3	1	4	229	2
230	22	460	24,664	22	460	28,770	18	460	16,442	11	11	9		3	1	4	230	2
231	22	462	24,772				18	462	16,514	11		9		3	1	4	231	2
232	22	464	24,879	22	464	29,020	18	464	16,585	11	11	9		3	1	4	232	2
233	22	466	24,986				18	466	16,657	11		9		3	1	4	233	2
234	22	468	25,093	22	468	29,271	18	468	16,728	11	11	9		3	1	4	234	2
235	22	470	25,200				18	470	16,800	11		9		3	1	4	235	2
236	22	472	25,308	22	472	29,521	18	472	16,871	11	11	9		3	1	4	236	2
237	22	474	25,415				18	474	16,943	11		9		3	1	4	237	2
238	22	476	25,522	22	476	29,771	18	476	17,014	11	11	9		3	1	4	238	2
239	22	478	25,629				18	478	17,086	11		9		3	1	4	239	2
240	22	480	25,737	22	480	30,021	18	480	17,157	11	11	9		3	1	4	240	2
241	22	482	25,844				18	482	17,229	11		9		3	1	4	241	2
242	22	484	25,951	22	484	30,271	18	484	17,300	11	11	9		3	1	4	242	2
243	22	486	26,058				18	486	17,372	11		9		3	1	4	243	2
244	22	488	26,166	22	488	30,521	18	488	17,443	11	11	9		3	1	4	244	2
245	22	490	26,273				18	490	17,515	11		9		3	1	4	245	2
246	22	492	26,380	22	492	30,772	18	492	17,586	11	11	9		3	1	4	246	2
247	22	494	26,487				18	494	17,658	11		9		3	1	4	247	2
248	22	496	26,595	22	496	31,022	18	496	17,729	11	11	9		3	1	4	248	2
249	22	498	26,702				18	498	17,801	11		9		3	1	4	249	2
250	22	500	26,809	22	500	31,272	18	500	17,872	11	11	9		3	1	4	250	2
251	22	502	26,916				20	502	17,943	11		10		3	1	4	251	2
252	22	504	27,023	22	504	31,522	20	504	18,015	11	11	10		3	1	4	252	2
253	22	506	27,131				20	506	18,086	11		10		3	1	4	253	2
254	22	508	27,238				20	508	18,158	11	11	10		3	1	4	254	2

*1: OPEN-V is volume based on CVS. A customer can set up the volume capacity of OPEN-V freely from 48.1MB among 64.422GB. Each volume capacity is a default value for using the user area in RAID group about 100%.

*2: The number of the Shard Memory option(DKC-F460I-S512) necessary is refer to table 1.1.2-3A and 1.1.2-3B. Please note that location of shared memory varies according to the purpose such as additional cache installation or additional LDEV installation.
In addition to the Options listed in above table as necessary parts, Power Cable Kit option, the AC Box Kit option and the Channel options are required.

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(2) 73GB 10K rpm HDD, OPEN-V

RAID group	Storage Capacity									Number of Options								
	RAID5(3D+1P) 54.684 GB / Vol *1			RAID5(7D+1P) 63.799 GB / Vol *1			RAID1(2D+2D) 48.607 GB / Vol *1			DKC options						DKU options		
										F460I-2048			F460I	F460I	F460I	455I	F455I	F455I
	Cache (GB)	Vol	Cap	Cache (GB)	Vol	Cap	Cache (GB)	Vol	Cap	3D+1P	7D+1P	2D+2D	-S512	-200	-L1C	-18	-72J4	-EXC
1	4	4	219				2	3	146	2		1	*2			1	1	
2	4	8	437	4	8	510	4	6	292	2	2	2				1	2	
3	4	12	656				4	9	437	2		2				1	3	
4	6	16	875	6	16	1,021	4	12	583	3	3	2				1	4	
5	6	20	1,094				6	15	729	3		3				1	5	
6	6	24	1,312	8	24	1,531	6	18	875	3	4	3				1	6	
7	8	28	1,531				6	21	1,021	4		3				1	7	
8	8	32	1,750	8	32	2,042	6	24	1,167	4	4	3				1	8	
9	8	36	1,969				6	27	1,312	4		3				1	9	
10	8	40	2,187	8	40	2,552	8	30	1,458	4	4	4				1	10	
11	8	44	2,406				8	33	1,604	4		4				1	11	
12	8	48	2,625	10	48	3,062	8	36	1,750	4	5	4				1	12	
13	8	52	2,844				8	39	1,896	4		4				1	13	
14	10	56	3,062	10	56	3,573	8	42	2,041	5	5	4				1	14	
15	10	60	3,281				8	45	2,187	5		4				1	15	
16	10	64	3,500	10	64	4,083	8	48	2,333	5	5	4				1	16	
17	10	68	3,719				8	51	2,479	5		4				1	17	
18	10	72	3,937	10	72	4,594	8	54	2,625	5	5	4				1	18	
19	10	76	4,156				10	57	2,771	5		5				1	19	
20	10	80	4,375	10	80	5,104	10	60	2,916	5	5	5				1	20	
21	10	84	4,593				10	63	3,062	5		5				1	21	
22	10	88	4,812	10	88	5,614	10	66	3,208	5	5	5				1	22	
23	10	92	5,031				10	69	3,354	5		5				1	23	
24	10	96	5,250	12	96	6,125	10	72	3,500	5	6	5				1	24	
25	10	100	5,468				10	75	3,646	5		5				1	25	
26	10	104	5,687	12	104	6,635	10	78	3,791	5	6	5				1	26	
27	10	108	5,906				10	81	3,937	5		5				1	27	
28	12	112	6,125	12	112	7,145	10	84	4,083	6	6	5				1	28	
29	12	116	6,343				10	87	4,229	6		5				1	29	
30	12	120	6,562	12	120	7,656	10	90	4,375	6	6	5				1	30	
31	12	124	6,781				10	93	4,520	6		5				1	31	
32	12	128	7,000	12	128	8,166	10	96	4,666	6	6	5		1		1	32	
33	12	132	7,218				10	99	4,812	6		5		1		1	33	
34	12	136	7,437	12	136	8,677	10	102	4,958	6	6	5		1		1	34	
35	12	140	7,656				10	105	5,104	6		5		1		1	35	
36	12	144	7,874	14	144	9,187	10	108	5,250	6	7	5		1		1	36	
37	12	148	8,093				10	111	5,395	6		5		1		1	37	
38	12	152	8,312	14	152	9,697	10	114	5,541	6	7	5		1		1	38	
39	12	156	8,531				10	117	5,687	6		5		1		1	39	
40	12	160	8,749	14	160	10,208	12	120	5,833	6	7	6		1		1	40	
41	14	164	8,968				12	123	5,979	7		6		1		1	41	
42	14	168	9,187	14	168	10,718	12	126	6,124	7	7	6		1		1	42	
43	14	172	9,406				12	129	6,270	7		6		1		1	43	
44	14	176	9,624	14	176	11,229	12	132	6,416	7	7	6		1		1	44	
45	14	180	9,843				12	135	6,562	7		6		1		1	45	
46	14	184	10,062	16	184	11,739	12	138	6,708	7	8	6		1		1	46	
47	14	188	10,281				12	141	6,854	7		6		1		1	47	
48	14	192	10,499	16	192	12,249	12	144	6,999	7	8	6		1		1	48	
49	14	196	10,718				12	147	7,145	7		6		1		1	49	
50	14	200	10,937	16	200	12,760	12	150	7,291	7	8	6		1		1	50	
51	14	204	11,156				12	153	7,437	7		6		1		1	51	
52	14	208	11,374	16	208	13,270	12	156	7,583	7	8	6		1		1	52	
53	14	212	11,593				12	159	7,729	7		6		1		1	53	
54	16	216	11,812	16	216	13,781	12	162	7,874	8	8	6		1		1	54	
55	16	220	12,030				12	165	8,020	8		6		1		1	55	
56	16	224	12,249	16	224	14,291	12	168	8,166	8	8	6		1		1	56	
57	16	228	12,468				12	171	8,312	8		6		1		1	57	
58	16	232	12,687	18	232	14,801	12	174	8,458	8	9	6		1		1	58	
59	16	236	12,905				12	177	8,603	8		6		1		1	59	
60	16	240	13,124	18	240	15,312	14	180	8,749	8	9	7		1		1	60	
61	16	244	13,343				14	183	8,895	8		7		1		1	61	
62	16	248	13,562	18	248	15,822	14	186	9,041	8	9	7		1		1	62	
63	16	252	13,780				14	189	9,187	8		7		1		1	63	
64	16	256	13,999	18	256	16,333	14	192	9,333	8	9	7		1		2	64	1

(To be continued)

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(Continued from preceding sheet)

RAID group	Storage Capacity									Number of Options								
	RAID5(3D+1P) 54.684 GB / Vol *1			RAID5(7D+1P) 63.799 GB / Vol *1			RAID1(2D+2D) 48.607 GB / Vol *1			DKC options						DKU options		
										F460I-2048			F460I	F460I	F460I	455I	F455I	F455I
	Cache (GB)	Vol	Cap	Cache (GB)	Vol	Cap	Cache (GB)	Vol	Cap	3D+1P	7D+1P	2D+2D	-S512	-200	-L1C	-18	-72J4	-EXC
65	16	260	14,218				14	195	9,478	8		7		1		2	65	1
66	16	264	14,437	18	264	16,843	14	198	9,624	8	9	7		1		2	66	1
67	18	268	14,655				14	201	9,770	9		7		1		2	67	1
68	18	272	14,874	18	272	17,353	14	204	9,916	9	9	7		1		2	68	1
69	18	276	15,093				14	207	10,062	9		7		1		2	69	1
70	18	280	15,312	20	280	17,864	14	210	10,207	9	10	7		1		2	70	1
71	18	284	15,530				14	213	10,353	9		7		1		2	71	1
72	18	288	15,749	20	288	18,374	14	216	10,499	9	10	7		1		2	72	1
73	18	292	15,968				14	219	10,645	9		7		1		2	73	1
74	18	296	16,186	20	296	18,885	14	222	10,791	9	10	7		1		2	74	1
75	18	300	16,405				14	225	10,937	9		7		1		2	75	1
76	18	304	16,624	20	304	19,395	14	228	11,082	9	10	7		1		2	76	1
77	18	308	16,843				14	231	11,228	9		7		1		2	77	1
78	18	312	17,061	20	312	19,905	14	234	11,374	9	10	7		1		2	78	1
79	18	316	17,280				14	237	11,520	9		7		1		2	79	1
80	20	320	17,499	22	320	20,416	16	240	11,666	10	11	8		1		2	80	1
81	20	324	17,718				16	243	11,812	10		8		1		2	81	1
82	20	328	17,936	22	328	20,926	16	246	11,957	10	11	8		1		2	82	1
83	20	332	18,155				16	249	12,103	10		8		1		2	83	1
84	20	336	18,374	22	336	21,436	16	252	12,249	10	11	8		1		2	84	1
85	20	340	18,593				16	255	12,395	10		8		1		2	85	1
86	20	344	18,811	22	344	21,947	16	258	12,541	10	11	8		1		2	86	1
87	20	348	19,030				16	261	12,686	10		8		1		2	87	1
88	20	352	19,249	22	352	22,457	16	264	12,832	10	11	8		1		2	88	1
89	20	356	19,468				16	267	12,978	10		8		1		2	89	1
90	20	360	19,686	22	360	22,968	16	270	13,124	10	11	8		1		2	90	1
91	20	364	19,905				16	273	13,270	10		8		1		2	91	1
92	20	368	20,124	22	368	23,478	16	276	13,416	10	11	8		1		2	92	1
93	20	372	20,342				16	279	13,561	10		8		1		2	93	1
94	20	376	20,561	22	376	23,988	16	282	13,707	10	11	8		1		2	94	1
95	22	380	20,780				16	285	13,853	11		8		1		2	95	1
96	22	384	20,999	22	384	24,499	16	288	13,999	11	11	8		1		2	96	1
97	22	388	21,217				16	291	14,145	11		8		1		2	97	1
98	22	392	21,436	22	392	25,009	16	294	14,290	11	11	8		1		2	98	1
99	22	396	21,655				16	297	14,436	11		8		1		2	99	1
100	22	400	21,874	22	400	25,520	18	300	14,582	11	11	9		1		2	100	1
101	22	404	22,092				18	303	14,728	11		9		1		2	101	1
102	22	408	22,311	22	408	26,030	18	306	14,874	11	11	9		1		2	102	1
103	22	412	22,530				18	309	15,020	11		9		1		2	103	1
104	22	416	22,749	22	416	26,540	18	312	15,165	11	11	9		1		2	104	1
105	22	420	22,967				18	315	15,311	11		9		1		2	105	1
106	22	424	23,186	22	424	27,051	18	318	15,457	11	11	9		1		2	106	1
107	22	428	23,405				18	321	15,603	11		9		1		2	107	1
108	22	432	23,623	22	432	27,561	18	324	15,749	11	11	9		1		2	108	1
109	22	436	23,842				18	327	15,894	11		9		1		2	109	1
110	22	440	24,061	22	440	28,072	18	330	16,040	11	11	9		1		2	110	1
111	22	444	24,280				18	333	16,186	11		9		1		2	111	1
112	22	448	24,498	22	448	28,582	18	336	16,332	11	11	9		1		2	112	1
113	22	452	24,717				18	339	16,478	11		9		1		2	113	1
114	22	456	24,936	22	456	29,092	18	342	16,624	11	11	9		1		2	114	1
115	22	460	25,155				18	345	16,769	11		9		1		2	115	1
116	22	464	25,373	22	464	29,603	18	348	16,915	11	11	9		1		2	116	1
117	22	468	25,592				18	351	17,061	11		9		1		2	117	1
118	22	472	25,811	22	472	30,113	18	354	17,207	11	11	9		1		2	118	1
119	22	476	26,030				18	357	17,353	11		9		1		2	119	1
120	22	480	26,248	22	480	30,624	20	360	17,499	11	11	10		1		2	120	1
121	22	484	26,467				20	363	17,644	11		10		1		2	121	1
122	22	488	26,686	22	488	31,134	20	366	17,790	11	11	10		1		2	122	1
123	22	492	26,905				20	369	17,936	11		10		1		2	123	1
124	22	496	27,123	22	496	31,644	20	372	18,082	11	11	10		1		2	124	1
125	22	500	27,342				20	375	18,228	11		10		1		2	125	1
126	22	504	27,561	22	504	32,155	20	378	18,373	11	11	10		1		2	126	1
127	22	508	27,779				20	381	18,519	11		10		1		2	127	1
128	22	512	27,998	22	512	32,665	20	384	18,665	11	11	10		2	1	3	128	1
129	22	516	28,217				20	387	18,811	11		10		2	1	3	129	1

(To be continued)

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(Continued from preceding sheet)

RAID group	Storage Capacity									Number of Options								
	RAID5(3D+1P) 54.684 GB / Vol *1			RAID5(7D+1P) 63.799 GB / Vol *1			RAID1(2D+2D) 48.607 GB / Vol *1			DKC options						DKU options		
										F460I-2048			F460I	F460I	F460I	455I	F455I	F455I
	Cache (GB)	Vol	Cap	Cache (GB)	Vol	Cap	Cache (GB)	Vol	Cap	3D+1P	7D+1P	2D+2D	-S512	-200	-L1C	-18	-72J4	-EXC
130	22	520	28,436	22	520	33,175	20	390	18,957	11	11	10		2	1	3	130	1
131	22	524	28,654				20	393	19,103	11		10		2	1	3	131	1
132	22	528	28,873	22	528	33,686	20	396	19,248	11	11	10		2	1	3	132	1
133	22	532	29,092				20	399	19,394	11		10		2	1	3	133	1
134	22	536	29,311	22	536	34,196	20	402	19,540	11	11	10		2	1	3	134	1
135	22	540	29,529				20	405	19,686	11		10		2	1	3	135	1
136	22	544	29,748	22	544	34,707	20	408	19,832	11	11	10		2	1	3	136	1
137	22	548	29,967				20	411	19,977	11		10		2	1	3	137	1
138	22	552	30,186	22	552	35,217	20	414	20,123	11	11	10		2	1	3	138	1
139	22	556	30,404				20	417	20,269	11		10		2	1	3	139	1
140	22	560	30,623	22	560	35,727	20	420	20,415	11	11	10		2	1	3	140	1
141	22	564	30,842				20	423	20,561	11		10		2	1	3	141	1
142	22	568	31,061	22	568	36,238	20	426	20,707	11	11	10		2	1	3	142	1
143	22	572	31,279				20	429	20,852	11		10		2	1	3	143	1
144	22	576	31,498	22	576	36,748	20	432	20,998	11	11	10		2	1	3	144	1
145	22	580	31,717				22	435	21,144	11		11		2	1	3	145	1
146	22	584	31,935	22	584	37,259	22	438	21,290	11	11	11		2	1	3	146	1
147	22	588	32,154				22	441	21,436	11		11		2	1	3	147	1
148	22	592	32,373	22	592	37,769	22	444	21,582	11	11	11		2	1	3	148	1
149	22	596	32,592				22	447	21,727	11		11		2	1	3	149	1
150	22	600	32,810	22	600	38,279	22	450	21,873	11	11	11		2	1	3	150	1
151	22	604	33,029				22	453	22,019	11		11		2	1	3	151	1
152	22	608	33,248	22	608	38,790	22	456	22,165	11	11	11		2	1	3	152	1
153	22	612	33,467				22	459	22,311	11		11		2	1	3	153	1
154	22	616	33,685	22	616	39,300	22	462	22,456	11	11	11		2	1	3	154	1
155	22	620	33,904				22	465	22,602	11		11		2	1	3	155	1
156	22	624	34,123	22	624	39,811	22	468	22,748	11	11	11		2	1	3	156	1
157	22	628	34,342				22	471	22,894	11		11		2	1	3	157	1
158	22	632	34,560	22	632	40,321	22	474	23,040	11	11	11		2	1	3	158	1
159	22	636	34,779				22	477	23,186	11		11		3	1	3	159	1
160	22	640	34,998	22	640	40,831	22	480	23,331	11	11	11		3	1	3	160	1
161	22	644	35,216				22	483	23,477	11		11		3	1	3	161	1
162	22	648	35,435	22	648	41,342	22	486	23,623	11	11	11		3	1	3	162	1
163	22	652	35,654				22	489	23,769	11		11		3	1	3	163	1
164	22	656	35,873	22	656	41,852	22	492	23,915	11	11	11		3	1	3	164	1
165	22	660	36,091				22	495	24,060	11		11		3	1	3	165	1
166	22	664	36,310	22	664	42,363	22	498	24,206	11	11	11		3	1	3	166	1
167	22	668	36,529				22	501	24,352	11		11		3	1	3	167	1
168	22	672	36,748	22	672	42,873	22	504	24,498	11	11	11		3	1	3	168	1
169	22	676	36,966				22	507	24,644	11		11		3	1	3	169	1
170	22	680	37,185	22	680	43,383	22	510	24,790	11	11	11		3	1	3	170	1
171	22	684	37,404				22	513	24,935	11		11		3	1	3	171	1
172	22	688	37,623	22	688	43,894	22	516	25,081	11	11	11		3	1	3	172	1
173	22	692	37,841				22	519	25,227	11		11		3	1	3	173	1
174	22	696	38,060	22	696	44,404	22	522	25,373	11	11	11		3	1	3	174	1
175	22	700	38,279				22	525	25,519	11		11		3	1	3	175	1
176	22	704	38,498	22	704	44,914	22	528	25,664	11	11	11		3	1	3	176	1
177	22	708	38,716				22	531	25,810	11		11		3	1	3	177	1
178	22	712	38,935	22	712	45,425	22	534	25,956	11	11	11		3	1	3	178	1
179	22	716	39,154				22	537	26,102	11		11		3	1	3	179	1
180	22	720	39,372	22	720	45,935	22	540	26,248	11	11	11		3	1	3	180	1
181	22	724	39,591				22	543	26,394	11		11		3	1	3	181	1
182	22	728	39,810	22	728	46,446	22	546	26,539	11	11	11		3	1	3	182	1
183	22	732	40,029				22	549	26,685	11		11		3	1	3	183	1
184	22	736	40,247	22	736	46,956	22	552	26,831	11	11	11		3	1	3	184	1
185	22	740	40,466				22	555	26,977	11		11		3	1	3	185	1
186	22	744	40,685	22	744	47,466	22	558	27,123	11	11	11		3	1	3	186	1
187	22	748	40,904				22	561	27,269	11		11		3	1	3	187	1
188	22	752	41,122	22	752	47,977	22	564	27,414	11	11	11		3	1	3	188	1
189	22	756	41,341				22	567	27,560	11		11		3	1	3	189	1
190	22	760	41,560	22	760	48,487	22	570	27,706	11	11	11		3	1	3	190	1
191	22	764	41,779				22	573	27,852	11		11		3	1	4	191	2
192	22	768	41,997	22	768	48,998	22	576	27,998	11	11	11		3	1	4	192	2
193	22	772	42,216				22	579	28,143	11		11		3	1	4	193	2
194	22	776	42,435	22	776	49,508	22	582	28,289	11	11	11		3	1	4	194	2

(To be continued)

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(Continued from preceding sheet)

RAID group	Storage Capacity									Number of Options								
	RAID5(3D+1P) 54.684 GB / Vol *1			RAID5(7D+1P) 63.799 GB / Vol *1			RAID1(2D+2D) 48.607 GB / Vol *1			DKC options						DKU options		
										F460I-2048			F460I	F460I	F460I	455I	F455I	F455I
	Cache (GB)	Vol	Cap	Cache (GB)	Vol	Cap	Cache (GB)	Vol	Cap	3D+1P	7D+1P	2D+2D	-S512	-200	-L1C	-18	-72J4	-EXC
195	22	780	42,654				22	585	28,435	11		11		3	1	4	195	2
196	22	784	42,872	22	784	50,018	22	588	28,581	11	11	11		3	1	4	196	2
197	22	788	43,091				22	591	28,727	11		11		3	1	4	197	2
198	22	792	43,310	22	792	50,529	22	594	28,873	11	11	11		3	1	4	198	2
199	22	796	43,528				22	597	29,018	11		11		3	1	4	199	2
200	22	800	43,747	22	800	51,039	22	600	29,164	11	11	11		3	1	4	200	2
201	22	804	43,966				22	603	29,310	11		11		3	1	4	201	2
202	22	808	44,185	22	808	51,550	22	606	29,456	11	11	11		3	1	4	202	2
203	22	812	44,403				22	609	29,602	11		11		3	1	4	203	2
204	22	816	44,622	22	816	52,060	22	612	29,747	11	11	11		3	1	4	204	2
205	22	820	44,841				22	615	29,893	11		11		3	1	4	205	2
206	22	824	45,060	22	824	52,570	22	618	30,039	11	11	11		3	1	4	206	2
207	22	828	45,278				22	621	30,185	11		11		3	1	4	207	2
208	22	832	45,497	22	832	53,081	22	624	30,331	11	11	11		3	1	4	208	2
209	22	836	45,716				22	627	30,477	11		11		3	1	4	209	2
210	22	840	45,935	22	840	53,591	22	630	30,622	11	11	11		3	1	4	210	2
211	22	844	46,153				22	633	30,768	11		11		3	1	4	211	2
212	22	848	46,372	22	848	54,102	22	636	30,914	11	11	11		3	1	4	212	2
213	22	852	46,591				22	639	31,060	11		11		3	1	4	213	2
214	22	856	46,810	22	856	54,612	22	642	31,206	11	11	11		3	1	4	214	2
215	22	860	47,028				22	645	31,352	11		11		3	1	4	215	2
216	22	864	47,247	22	864	55,122	22	648	31,497	11	11	11		3	1	4	216	2
217	22	868	47,466				22	651	31,643	11		11		3	1	4	217	2
218	22	872	47,684	22	872	55,633	22	654	31,789	11	11	11		3	1	4	218	2
219	22	876	47,903				22	657	31,935	11		11		3	1	4	219	2
220	22	880	48,122	22	880	56,143	22	660	32,081	11	11	11		3	1	4	220	2
221	22	884	48,341				22	663	32,226	11		11		3	1	4	221	2
222	22	888	48,559	22	888	56,654	22	666	32,372	11	11	11		3	1	4	222	2
223	22	892	48,778				22	669	32,518	11		11		3	1	4	223	2
224	22	896	48,997	22	896	57,164	22	672	32,664	11	11	11		3	1	4	224	2
225	22	900	49,216				22	675	32,810	11		11		3	1	4	225	2
226	22	904	49,434	22	904	57,674	22	678	32,956	11	11	11		3	1	4	226	2
227	22	908	49,653				22	681	33,101	11		11		3	1	4	227	2
228	22	912	49,872	22	912	58,185	22	684	33,247	11	11	11		3	1	4	228	2
229	22	916	50,091				22	687	33,393	11		11		3	1	4	229	2
230	22	920	50,309	22	920	58,695	22	690	33,539	11	11	11		3	1	4	230	2
231	22	924	50,528				22	693	33,685	11		11		3	1	4	231	2
232	22	928	50,747	22	928	59,205	22	696	33,830	11	11	11		3	1	4	232	2
233	22	932	50,965				22	699	33,976	11		11		3	1	4	233	2
234	22	936	51,184	22	936	59,716	22	702	34,122	11	11	11		3	1	4	234	2
235	22	940	51,403				22	705	34,268	11		11		3	1	4	235	2
236	22	944	51,622	22	944	60,226	22	708	34,414	11	11	11		3	1	4	236	2
237	22	948	51,840				22	711	34,560	11		11		3	1	4	237	2
238	22	952	52,059	22	952	60,737	22	714	34,705	11	11	11		3	1	4	238	2
239	22	956	52,278				22	717	34,851	11		11		3	1	4	239	2
240	22	960	52,497	22	960	61,247	22	720	34,997	11	11	11		3	1	4	240	2
241	22	964	52,715				22	723	35,143	11		11		3	1	4	241	2
242	22	968	52,934	22	968	61,757	22	726	35,289	11	11	11		3	1	4	242	2
243	22	972	53,153				22	729	35,435	11		11		3	1	4	243	2
244	22	976	53,372	22	976	62,268	22	732	35,580	11	11	11		3	1	4	244	2
245	22	980	53,590				22	735	35,726	11		11		3	1	4	245	2
246	22	984	53,809	22	984	62,778	22	738	35,872	11	11	11		3	1	4	246	2
247	22	988	54,028				22	741	36,018	11		11		3	1	4	247	2
248	22	992	54,247	22	992	63,289	22	744	36,164	11	11	11		3	1	4	248	2
249	22	996	54,465				22	747	36,309	11		11		3	1	4	249	2
250	22	1,000	54,684	22	1,000	63,799	22	750	36,455	11	11	11		3	1	4	250	2
251	22	1,004	54,903				22	753	36,601	11		11		3	1	4	251	2
252	22	1,008	55,121	22	1,008	64,309	22	756	36,747	11	11	11		3	1	4	252	2
253	22	1,012	55,340				22	759	36,893	11		11		3	1	4	253	2
254	22	1,016	55,559				22	762	37,039	11	11	11		3	1	4	254	2

*1: OPEN-V is volume based on CVS. A customer can set up the volume capacity of OPEN-V freely from 48.1MB among 64.422GB. Each volume capacity is a default value for using the user area in RAID group about 100%.

*2: The number of the Shard Memory option(DKC-F460I-S512) necessary is refer to table 1.1.2-3A and 1.1.2-3B. Please note that location of shared memory varies according to the purpose such as additional cache installation or additional LDEV installation.
In addition to the Options listed in above table as necessary parts, Power Cable Kit option, the AC Box Kit option and the Channel options are required.

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(3) 146GB 10K rpm HDD, OPEN-V

RAID group	Storage Capacity									Number of Options								
	RAID5(3D+1P) 61.612 GB / Vol *1			RAID5(7D+1P) 64.422/58.311GB/Vol *1			RAID1(2D+2D) 57.503 GB / Vol *1			DKC options						DKU options		
										F460I-2048			F460I	F460I	F460I	455I	F455I	F455I
	Cache (GB)	Vol	Cap	Cache (GB)	Vol	Cap	Cache (GB)	Vol	Cap	3D+1P	7D+1P	2D+2D	-S512	-200	-L1C	-18	-146J4	-EXC
1	4	7	431				4	5	288	2		2	*2			1	1	
2	6	14	863	6	16	1,006	4	10	575	3	3	2				1	2	
3	6	21	1,294				6	15	863	3		3				1	3	
4	8	28	1,725	8	32	2,013	6	20	1,150	4	4	3				1	4	
5	8	35	2,156				8	25	1,438	4		4				1	5	
6	8	42	2,588	10	48	3,019	8	30	1,725	4	5	4				1	6	
7	10	49	3,019				8	35	2,013	5		4				1	7	
8	10	56	3,450	10	64	4,025	8	40	2,300	5	5	4				1	8	
9	10	63	3,882				10	45	2,588	5		5				1	9	
10	10	70	4,313	10	80	5,032	10	50	2,875	5	5	5				1	10	
11	10	77	4,744				10	55	3,163	5		5				1	11	
12	10	84	5,175	12	96	6,038	10	60	3,450	5	6	5				1	12	
13	10	91	5,607				10	65	3,738	5		5				1	13	
14	12	98	6,038	12	112	7,044	10	70	4,025	6	6	5				1	14	
15	12	105	6,469				10	75	4,313	6		5				1	15	
16	12	112	6,901	12	128	8,050	10	80	4,600	6	6	5				1	16	
17	12	119	7,332				10	85	4,888	6		5				1	17	
18	12	126	7,763	14	144	9,057	10	90	5,175	6	7	5				1	18	
19	12	133	8,194				10	95	5,463	6		5				1	19	
20	14	140	8,626	14	160	10,063	12	100	5,750	7	7	6				1	20	
21	14	147	9,057				12	105	6,038	7		6				1	21	
22	14	154	9,488	16	176	11,069	12	110	6,325	7	8	6				1	22	
23	14	161	9,920				12	115	6,613	7		6				1	23	
24	14	168	10,351	16	192	12,076	12	120	6,900	7	8	6				1	24	
25	14	175	10,782				12	125	7,188	7		6				1	25	
26	14	182	11,213	16	208	13,082	12	130	7,475	7	8	6				1	26	
27	16	189	11,645				12	135	7,763	8		6				1	27	
28	16	196	12,076	18	224	14,088	12	140	8,050	8	9	6				1	28	
29	16	203	12,507				12	145	8,338	8		6				1	29	
30	16	210	12,939	18	240	15,095	14	150	8,625	8	9	7				1	30	
31	16	217	13,370				14	155	8,913	8		7				1	31	
32	16	224	13,801	18	256	16,101	14	160	9,200	8	9	7		1		1	32	
33	18	231	14,232				14	165	9,488	9		7		1		1	33	
34	18	238	14,664	20	272	17,107	14	170	9,776	9	10	7		1		1	34	
35	18	245	15,095				14	175	10,063	9		7		1		1	35	
36	18	252	15,526	20	288	18,114	14	180	10,351	9	10	7		1		1	36	
37	18	259	15,958				14	185	10,638	9		7		1		1	37	
38	18	266	16,389	20	304	19,120	14	190	10,926	9	10	7		1		1	38	
39	18	273	16,820				14	195	11,213	9		7		1		1	39	
40	20	280	17,251	22	320	20,126	16	200	11,501	10	11	8		1		1	40	
41	20	287	17,683				16	205	11,788	10		8		1		1	41	
42	20	294	18,114	22	336	21,132	16	210	12,076	10	11	8		1		1	42	
43	20	301	18,545				16	215	12,363	10		8		1		1	43	
44	20	308	18,976	22	352	22,139	16	220	12,651	10	11	8		1		1	44	
45	20	315	19,408				16	225	12,938	10		8		1		1	45	
46	20	322	19,839	22	368	23,145	16	230	13,226	10	11	8		1		1	46	
47	22	329	20,270				16	235	13,513	11		8		1		1	47	
48	22	336	20,702	22	384	24,151	16	240	13,801	11	11	8		1		1	48	
49	22	343	21,133				16	245	14,088	11		8		1		1	49	
50	22	350	21,564	22	400	25,158	18	250	14,376	11	11	9		1		1	50	
51	22	357	21,995				18	255	14,663	11		9		1		1	51	
52	22	364	22,427	22	416	26,164	18	260	14,951	11	11	9		1		1	52	
53	22	371	22,858				18	265	15,238	11		9		1		1	53	
54	22	378	23,289	22	432	27,170	18	270	15,526	11	11	9		1		1	54	
55	22	385	23,721				18	275	15,813	11		9		1		1	55	
56	22	392	24,152	22	448	28,177	18	280	16,101	11	11	9		1		1	56	
57	22	399	24,583				18	285	16,388	11		9		1		1	57	
58	22	406	25,014	22	464	29,183	18	290	16,676	11	11	9		1		1	58	
59	22	413	25,446				18	295	16,963	11		9		1		1	59	
60	22	420	25,877	22	480	30,189	20	300	17,251	11	11	10		1		1	60	
61	22	427	26,308				20	305	17,538	11		10		1		1	61	
62	22	434	26,740	22	496	31,196	20	310	17,826	11	11	10		1		1	62	
63	22	441	27,171				20	315	18,113	11		10		1		1	63	

(To be continued)

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RAID group	Storage Capacity									Number of Options								
	RAID5(3D+1P) 61.612 GB / Vol *1			RAID5(7D+1P) 64.422/58.311GB/Vol *1			RAID1(2D+2D) 57.503 GB / Vol *1			DKC options						DKU options		
										F460I-2048			F460I	F460I	F460I	455I	F455I	F455I
	Cache (GB)	Vol	Cap	Cache (GB)	Vol	Cap	Cache (GB)	Vol	Cap	3D+1P	7D+1P	2D+2D	-S512	-200	-L1C	-18	-146J4	-EXC
64	22	448	27,602	22	512	32,202	20	320	18,401	11	11	10		1		2	64	1
65	22	455	28,033				20	325	18,688	11		10		1		2	65	1
66	22	462	28,465	22	528	33,208	20	330	18,976	11	11	10		1		2	66	1
67	22	469	28,896				20	335	19,264	11		10		1		2	67	1
68	22	476	29,327	22	544	34,214	20	340	19,551	11	11	10		1		2	68	1
69	22	483	29,759				20	345	19,839	11		10		1		2	69	1
70	22	490	30,190	22	560	35,221	20	350	20,126	11	11	10		1		2	70	1
71	22	497	30,621				20	355	20,414	11		10		1		2	71	1
72	22	504	31,052	22	576	36,227	22	360	20,701	11	11	11		1		2	72	1
73	22	511	31,484				22	365	20,989	11		11		1		2	73	1
74	22	518	31,915	22	592	37,233	22	370	21,276	11	11	11		1		2	74	1
75	22	525	32,346				22	375	21,564	11		11		1		2	75	1
76	22	532	32,778	22	608	38,240	22	380	21,851	11	11	11		1		2	76	1
77	22	539	33,209				22	385	22,139	11		11		1		2	77	1
78	22	546	33,640	22	624	39,246	22	390	22,426	11	11	11		1		2	78	1
79	22	553	34,071				22	395	22,714	11		11		1		2	79	1
80	22	560	34,503	22	640	40,252	22	400	23,001	11	11	11		1		2	80	1
81	22	567	34,934				22	405	23,289	11		11		1		2	81	1
82	22	574	35,365	22	656	41,259	22	410	23,576	11	11	11		1		2	82	1
83	22	581	35,797				22	415	23,864	11		11		1		2	83	1
84	22	588	36,228	22	672	42,265	22	420	24,151	11	11	11		1		2	84	1
85	22	595	36,659				22	425	24,439	11		11		1		2	85	1
86	22	602	37,090	22	688	43,271	22	430	24,726	11	11	11		1		2	86	1
87	22	609	37,522				22	435	25,014	11		11		1		2	87	1
88	22	616	37,953	22	704	44,278	22	440	25,301	11	11	11		1		2	88	1
89	22	623	38,384				22	445	25,589	11		11		1		2	89	1
90	22	630	38,816	22	720	45,284	22	450	25,876	11	11	11		1		2	90	1
91	22	637	39,247				22	455	26,164	11		11		1		2	91	1
92	22	644	39,678	22	736	46,290	22	460	26,451	11	11	11		1		2	92	1
93	22	651	40,109				22	465	26,739	11		11		1		2	93	1
94	22	658	40,541	22	752	47,296	22	470	27,026	11	11	11		1		2	94	1
95	22	665	40,972				22	475	27,314	11		11		1		2	95	1
96	22	672	41,403	22	768	48,303	22	480	27,601	11	11	11		1		2	96	1
97	22	679	41,835				22	485	27,889	11		11		1		2	97	1
98	22	686	42,266	22	784	49,309	22	490	28,176	11	11	11		1		2	98	1
99	22	693	42,697				22	495	28,464	11		11		1		2	99	1
100	22	700	43,128	22	800	50,315	22	500	28,752	11	11	11		1		2	100	1
101	22	707	43,560				22	505	29,039	11		11		1		2	101	1
102	22	714	43,991	22	816	51,322	22	510	29,327	11	11	11		1		2	102	1
103	22	721	44,422				22	515	29,614	11		11		1		2	103	1
104	22	728	44,854	22	832	52,328	22	520	29,902	11	11	11		1		2	104	1
105	22	735	45,285				22	525	30,189	11		11		1		2	105	1
106	22	742	45,716	22	848	53,334	22	530	30,477	11	11	11		1		2	106	1
107	22	749	46,147				22	535	30,764	11		11		1		2	107	1
108	22	756	46,579	22	864	54,341	22	540	31,052	11	11	11		1		2	108	1
109	22	763	47,010				22	545	31,339	11		11		1		2	109	1
110	22	770	47,441	22	880	55,347	22	550	31,627	11	11	11		1		2	110	1
111	22	777	47,873				22	555	31,914	11		11		1		2	111	1
112	22	784	48,304	22	896	56,353	22	560	32,202	11	11	11		1		2	112	1
113	22	791	48,735				22	565	32,489	11		11		1		2	113	1
114	22	798	49,166	22	912	57,360	22	570	32,777	11	11	11		1		2	114	1
115	22	805	49,598				22	575	33,064	11		11		1		2	115	1
116	22	812	50,029	22	928	58,366	22	580	33,352	11	11	11		1		2	116	1
117	22	819	50,460				22	585	33,639	11		11		1		2	117	1
118	22	826	50,892	22	944	59,372	22	590	33,927	11	11	11		1		2	118	1
119	22	833	51,323				22	595	34,214	11		11		1		2	119	1
120	22	840	51,754	22	960	60,378	22	600	34,502	11	11	11		1		2	120	1
121	22	847	52,185				22	605	34,789	11		11		1		2	121	1
122	22	854	52,617	22	976	61,385	22	610	35,077	11	11	11		1		2	122	1
123	22	861	53,048				22	615	35,364	11		11		1		2	123	1
124	22	868	53,479	22	992	62,391	22	620	35,652	11	11	11		1		2	124	1
125	22	875	53,911				22	625	35,939	11		11		1		2	125	1
126	22	882	54,342	22	1,008	63,397	22	630	36,227	11	11	11		1		2	126	1
127	22	889	54,773				22	635	36,514	11		11		1		2	127	1
128	22	896	55,204	22	1,024	64,404	22	640	36,802	11	11	11		2	1	3	128	1
129	22	903	55,636				22	645	37,089	11		11		2	1	3	129	1

(To be continued)

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RAID group	Storage Capacity									Number of Options								
	RAID5(3D+1P) 61.612 GB / Vol *1			RAID5(7D+1P) 64.422/58.311GB/Vol *1			RAID1(2D+2D) 57.503 GB / Vol *1			DKC options						DKU options		
										F460I-2048			F460I	F460I	F460I	455I	F455I	F455I
	Cache (GB)	Vol	Cap	Cache (GB)	Vol	Cap	Cache (GB)	Vol	Cap	3D+1P	7D+1P	2D+2D	-S512	-200	-L1C	-18	-146J4	-EXC
130	22	910	56,067	22	1,040	65,410	22	650	37,377	11	11	11		2	1	3	130	1
131	22	917	56,498				22	655	37,664	11		11		2	1	3	131	1
132	22	924	56,929	22	1,056	66,416	22	660	37,952	11	11	11		2	1	3	132	1
133	22	931	57,361				22	665	38,239	11		11		2	1	3	133	1
134	22	938	57,792	22	1,072	67,423	22	670	38,527	11	11	11		2	1	3	134	1
135	22	945	58,223				22	675	38,815	11		11		2	1	3	135	1
136	22	952	58,655	22	1,088	68,429	22	680	39,102	11	11	11		2	1	3	136	1
137	22	959	59,086				22	685	39,390	11		11		2	1	3	137	1
138	22	966	59,517	22	1,104	69,435	22	690	39,677	11	11	11		2	1	3	138	1
139	22	973	59,948				22	695	39,965	11		11		2	1	3	139	1
140	22	980	60,380	22	1,120	70,442	22	700	40,252	11	11	11		2	1	3	140	1
141	22	987	60,811				22	705	40,540	11		11		2	1	3	141	1
142	22	994	61,242	22	1,136	71,448	22	710	40,827	11	11	11		2	1	3	142	1
143	22	1,001	61,674				22	715	41,115	11		11		2	1	3	143	1
144	22	1,008	62,105	22	1,152	72,454	22	720	41,402	11	11	11		2	1	3	144	1
145	22	1,015	62,536				22	725	41,690	11		11		2	1	3	145	1
146	22	1,022	62,967	22	1,168	73,460	22	730	41,977	11	11	11		2	1	3	146	1
147	22	1,029	63,399				22	735	42,265	11		11		2	1	3	147	1
148	22	1,036	63,830	22	1,184	74,467	22	740	42,552	11	11	11		2	1	3	148	1
149	22	1,043	64,261				22	745	42,840	11		11		2	1	3	149	1
150	22	1,050	64,693	22	1,200	75,473	22	750	43,127	11	11	11		2	1	3	150	1
151	22	1,057	65,124				22	755	43,415	11		11		2	1	3	151	1
152	22	1,064	65,555	22	1,216	76,479	22	760	43,702	11	11	11		2	1	3	152	1
153	22	1,071	65,986				22	765	43,990	11		11		2	1	3	153	1
154	22	1,078	66,418	22	1,232	77,486	22	770	44,277	11	11	11		2	1	3	154	1
155	22	1,085	66,849				22	775	44,565	11		11		2	1	3	155	1
156	22	1,092	67,280	22	1,248	78,492	22	780	44,852	11	11	11		2	1	3	156	1
157	22	1,099	67,712				22	785	45,140	11		11		2	1	3	157	1
158	22	1,106	68,143	22	1,264	79,498	22	790	45,427	11	11	11		2	1	3	158	1
159	22	1,113	68,574				22	795	45,715	11		11		3	1	3	159	1
160	22	1,120	69,005	22	1,280	80,505	22	800	46,002	11	11	11		3	1	3	160	1
161	22	1,127	69,437				22	805	46,290	11		11		3	1	3	161	1
162	22	1,134	69,868	22	1,296	81,511	22	810	46,577	11	11	11		3	1	3	162	1
163	22	1,141	70,299				22	815	46,865	11		11		3	1	3	163	1
164	22	1,148	70,731	22	1,312	82,517	22	820	47,152	11	11	11		3	1	3	164	1
165	22	1,155	71,162				22	825	47,440	11		11		3	1	3	165	1
166	22	1,162	71,593	22	1,328	83,524	22	830	47,727	11	11	11		3	1	3	166	1
167	22	1,169	72,024				22	835	48,015	11		11		3	1	3	167	1
168	22	1,176	72,456	22	1,344	84,530	22	840	48,303	11	11	11		3	1	3	168	1
169	22	1,183	72,887				22	845	48,590	11		11		3	1	3	169	1
170	22	1,190	73,318	22	1,360	85,536	22	850	48,878	11	11	11		3	1	3	170	1
171	22	1,197	73,750				22	855	49,165	11		11		3	1	3	171	1
172	22	1,204	74,181	22	1,376	86,542	22	860	49,453	11	11	11		3	1	3	172	1
173	22	1,211	74,612				22	865	49,740	11		11		3	1	3	173	1
174	22	1,218	75,043	22	1,392	87,549	22	870	50,028	11	11	11		3	1	3	174	1
175	22	1,225	75,475				22	875	50,315	11		11		3	1	3	175	1
176	22	1,232	75,906	22	1,408	88,555	22	880	50,603	11	11	11		3	1	3	176	1
177	22	1,239	76,337				22	885	50,890	11		11		3	1	3	177	1
178	22	1,246	76,769	22	1,424	89,561	22	890	51,178	11	11	11		3	1	3	178	1
179	22	1,253	77,200				22	895	51,465	11		11		3	1	3	179	1
180	22	1,260	77,631	22	1,440	90,568	22	900	51,753	11	11	11		3	1	3	180	1
181	22	1,267	78,062				22	905	52,040	11		11		3	1	3	181	1
182	22	1,274	78,494	22	1,456	91,574	22	910	52,328	11	11	11		3	1	3	182	1
183	22	1,281	78,925				22	915	52,615	11		11		3	1	3	183	1
184	22	1,288	79,356	22	1,472	92,580	22	920	52,903	11	11	11		3	1	3	184	1
185	22	1,295	79,788				22	925	53,190	11		11		3	1	3	185	1
186	22	1,302	80,219	22	1,488	93,587	22	930	53,478	11	11	11		3	1	3	186	1
187	22	1,309	80,650				22	935	53,765	11		11		3	1	3	187	1
188	22	1,316	81,081	22	1,504	94,593	22	940	54,053	11	11	11		3	1	3	188	1
189	22	1,323	81,513				22	945	54,340	11		11		3	1	3	189	1
190	22	1,330	81,944	22	1,520	95,599	22	950	54,628	11	11	11		3	1	3	190	1
191	22	1,337	82,375				22	955	54,915	11		11		3	1	4	191	2
192	22	1,344	82,807	22	1,536	96,606	22	960	55,203	11	11	11		3	1	4	192	2
193	22	1,351	83,238				22	965	55,490	11		11		3	1	4	193	2
194	22	1,358	83,669	22	1,552	97,612	22	970	55,778	11	11	11		3	1	4	194	2

(To be continued)

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RAID group	Storage Capacity									Number of Options								
	RAID5(3D+1P) 61.612 GB / Vol *1			RAID5(7D+1P) 64.422/58.311GB/Vol *1			RAID1(2D+2D) 57.503 GB / Vol *1			DKC options						DKU options		
										F460I-2048			F460I	F460I	F460I	455I	F455I	F455I
	Cache (GB)	Vol	Cap	Cache (GB)	Vol	Cap	Cache (GB)	Vol	Cap	3D+1P	7D+1P	2D+2D	-S512	-200	-L1C	-18	-146J4	-EXC
195	22	1,365	84,100				22	975	56,065	11		11		3	1	4	195	2
196	22	1,372	84,532	22	1,568	98,618	22	980	56,353	11	11	11		3	1	4	196	2
197	22	1,379	84,963				22	985	56,640	11		11		3	1	4	197	2
198	22	1,386	85,394	22	1,584	99,624	22	990	56,928	11	11	11		3	1	4	198	2
199	22	1,393	85,826				22	995	57,215	11		11		3	1	4	199	2
200	22	1,400	86,257	22	1,600	100,631	22	1,000	57,503	11	11	11		3	1	4	200	2
201	22	1,407	86,688				22	1,005	57,791	11		11		3	1	4	201	2
202	22	1,414	87,119	22	1,616	101,637	22	1,010	58,078	11	11	11		3	1	4	202	2
203	22	1,421	87,551				22	1,015	58,366	11		11		3	1	4	203	2
204	22	1,428	87,982	22	1,632	102,643	22	1,020	58,653	11	11	11		3	1	4	204	2
205	22	1,435	88,413				22	1,025	58,941	11		11		3	1	4	205	2
206	22	1,442	88,845	22	1,648	103,650	22	1,030	59,228	11	11	11		3	1	4	206	2
207	22	1,449	89,276				22	1,035	59,516	11		11		3	1	4	207	2
208	22	1,456	89,707	22	1,664	104,656	22	1,040	59,803	11	11	11		3	1	4	208	2
209	22	1,463	90,138				22	1,045	60,091	11		11		3	1	4	209	2
210	22	1,470	90,570	22	1,680	105,662	22	1,050	60,378	11	11	11		3	1	4	210	2
211	22	1,477	91,001				22	1,055	60,666	11		11		3	1	4	211	2
212	22	1,484	91,432	22	1,696	106,669	22	1,060	60,953	11	11	11		3	1	4	212	2
213	22	1,491	91,863				22	1,065	61,241	11		11		3	1	4	213	2
214	22	1,498	92,295	22	1,712	107,675	22	1,070	61,528	11	11	11		3	1	4	214	2
215	22	1,505	92,726				22	1,075	61,816	11		11		3	1	4	215	2
216	22	1,512	93,157	22	1,728	108,681	22	1,080	62,103	11	11	11		3	1	4	216	2
217	22	1,519	93,589				22	1,085	62,391	11		11		3	1	4	217	2
218	22	1,526	94,020	22	1,744	109,688	22	1,090	62,678	11	11	11		3	1	4	218	2
219	22	1,533	94,451				22	1,095	62,966	11		11		3	1	4	219	2
220	22	1,540	94,882	22	1,760	110,694	22	1,100	63,253	11	11	11		3	1	4	220	2
221	22	1,547	95,314				22	1,105	63,541	11		11		3	1	4	221	2
222	22	1,554	95,745	22	1,776	111,700	22	1,110	63,828	11	11	11		3	1	4	222	2
223	22	1,561	96,176				22	1,115	64,116	11		11		3	1	4	223	2
224	22	1,568	96,608	22	1,792	112,706	22	1,120	64,403	11	11	11		3	1	4	224	2
225	22	1,575	97,039				22	1,125	64,691	11		11		3	1	4	225	2
226	22	1,582	97,470	22	1,808	113,713	22	1,130	64,978	11	11	11		3	1	4	226	2
227	22	1,589	97,901				22	1,135	65,266	11		11		3	1	4	227	2
228	22	1,596	98,333	22	1,824	114,719	22	1,140	65,553	11	11	11		3	1	4	228	2
229	22	1,603	98,764				22	1,145	65,841	11		11		3	1	4	229	2
230	22	1,610	99,195	22	1,840	115,725	22	1,150	66,128	11	11	11		3	1	4	230	2
231	22	1,617	99,627				22	1,155	66,416	11		11		3	1	4	231	2
232	22	1,624	100,058	22	1,856	116,732	22	1,160	66,703	11	11	11		3	1	4	232	2
233	22	1,631	100,489				22	1,165	66,991	11		11		3	1	4	233	2
234	22	1,638	100,920	22	1,872	117,738	22	1,170	67,279	11	11	11		3	1	4	234	2
235	22	1,645	101,352				22	1,175	67,566	11		11		3	1	4	235	2
236	22	1,652	101,783	22	1,888	118,744	22	1,180	67,854	11	11	11		3	1	4	236	2
237	22	1,659	102,214				22	1,185	68,141	11		11		3	1	4	237	2
238	22	1,666	102,646	22	1,904	119,751	22	1,190	68,429	11	11	11		3	1	4	238	2
239	22	1,673	103,077				22	1,195	68,716	11		11		3	1	4	239	2
240	22	1,680	103,508	22	1,920	120,757	22	1,200	69,004	11	11	11		3	1	4	240	2
241	22	1,687	103,939				22	1,205	69,291	11		11		3	1	4	241	2
242	22	1,694	104,371	22	1,936	121,763	22	1,210	69,579	11	11	11		3	1	4	242	2
243	22	1,701	104,802				22	1,215	69,866	11		11		3	1	4	243	2
244	22	1,708	105,233	22	1,952	122,770	22	1,220	70,154	11	11	11		3	1	4	244	2
245	22	1,715	105,665				22	1,225	70,441	11		11		3	1	4	245	2
246	22	1,722	106,096	22	1,968	123,776	22	1,230	70,729	11	11	11		3	1	4	246	2
247	22	1,729	106,527				22	1,235	71,016	11		11		3	1	4	247	2
248	22	1,736	106,958	22	1,984	124,782	22	1,240	71,304	11	11	11		3	1	4	248	2
249	22	1,743	107,390				22	1,245	71,591	11		11		3	1	4	249	2
250	22	1,750	107,821	22	2,000	125,789	22	1,250	71,879	11	11	11		3	1	4	250	2
251	22	1,757	108,252				22	1,255	72,166	11		11		3	1	4	251	2
252	22	1,764	108,684	22	2,016	126,795	22	1,260	72,454	11	11	11		3	1	4	252	2
253	22	1,771	109,115				22	1,265	72,741	11		11		3	1	4	253	2
254	22	1,778	109,546				22	1,270	73,029	11	11	11		3	1	4	254	2

*1: OPEN-V is volume based on CVS. A customer can set up the volume capacity of OPEN-V freely from 48.1MB among 64.422GB. Each volume capacity is a default value for using the user area in RAID group about 100%.

*2: The number of the Shard Memory option(DKC-F460I-S512) necessary is refer to table 1.1.2-3A and 1.1.2-3B. Please note that location of shared memory varies according to the purpose such as additional cache installation or additional LDEV installation.
In addition to the Options listed in above table as necessary parts, Power Cable Kit option, the AC Box Kit option and the Channel options are required.

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(4) 72GB 15K rpm HDD, OPEN-V

RAID group	Storage Capacity									Number of Options								
	RAID5(3D+1P) 53.618 GB / Vol *1			RAID5(7D+1P) 62.554 GB / Vol *1			RAID1(2D+2D) 47.660 GB / Vol *1			DKC options						DKU options		
										F460I-2048			F460I	F460I	F460I	455I	F455I	F455I
	Cache (GB)	Vol	Cap	Cache (GB)	Vol	Cap	Cache (GB)	Vol	Cap	3D+1P	7D+1P	2D+2D	-S512	-200	-L1C	-18	-72K4	-EXC
1	4	4	214				2	3	143	2		1	*2			1	1	
2	4	8	429	4	8	500	4	6	286	2	2	2				1	2	
3	4	12	643				4	9	429	2		2				1	3	
4	6	16	858	6	16	1,001	4	12	572	3	3	2				1	4	
5	6	20	1,072				6	15	715	3		3				1	5	
6	6	24	1,287	8	24	1,501	6	18	858	3	4	3				1	6	
7	8	28	1,501				6	21	1,001	4		3				1	7	
8	8	32	1,716	8	32	2,002	6	24	1,144	4	4	3				1	8	
9	8	36	1,930				6	27	1,287	4		3				1	9	
10	8	40	2,145	8	40	2,502	8	30	1,430	4	4	4				1	10	
11	8	44	2,359				8	33	1,573	4		4				1	11	
12	8	48	2,574	10	48	3,003	8	36	1,716	4	5	4				1	12	
13	8	52	2,788				8	39	1,859	4		4				1	13	
14	10	56	3,003	10	56	3,503	8	42	2,002	5	5	4				1	14	
15	10	60	3,217				8	45	2,145	5		4				1	15	
16	10	64	3,432	10	64	4,003	8	48	2,288	5	5	4				1	16	
17	10	68	3,646				8	51	2,431	5		4				1	17	
18	10	72	3,860	10	72	4,504	8	54	2,574	5	5	4				1	18	
19	10	76	4,075				10	57	2,717	5		5				1	19	
20	10	80	4,289	10	80	5,004	10	60	2,860	5	5	5				1	20	
21	10	84	4,504				10	63	3,003	5		5				1	21	
22	10	88	4,718	10	88	5,505	10	66	3,146	5	5	5				1	22	
23	10	92	4,933				10	69	3,289	5		5				1	23	
24	10	96	5,147	12	96	6,005	10	72	3,432	5	6	5				1	24	
25	10	100	5,362				10	75	3,575	5		5				1	25	
26	10	104	5,576	12	104	6,506	10	78	3,717	5	6	5				1	26	
27	10	108	5,791				10	81	3,860	5		5				1	27	
28	12	112	6,005	12	112	7,006	10	84	4,003	6	6	5				1	28	
29	12	116	6,220				10	87	4,146	6		5				1	29	
30	12	120	6,434	12	120	7,506	10	90	4,289	6	6	5				1	30	
31	12	124	6,649				10	93	4,432	6		5				1	31	
32	12	128	6,863	12	128	8,007	10	96	4,575	6	6	5		1		1	32	
33	12	132	7,078				10	99	4,718	6		5		1		1	33	
34	12	136	7,292	12	136	8,507	10	102	4,861	6	6	5		1		1	34	
35	12	140	7,507				10	105	5,004	6		5		1		1	35	
36	12	144	7,721	14	144	9,008	10	108	5,147	6	7	5		1		1	36	
37	12	148	7,935				10	111	5,290	6		5		1		1	37	
38	12	152	8,150	14	152	9,508	10	114	5,433	6	7	5		1		1	38	
39	12	156	8,364				10	117	5,576	6		5		1		1	39	
40	12	160	8,579	14	160	10,009	12	120	5,719	6	7	6		1		1	40	
41	14	164	8,793				12	123	5,862	7		6		1		1	41	
42	14	168	9,008	14	168	10,509	12	126	6,005	7	7	6		1		1	42	
43	14	172	9,222				12	129	6,148	7		6		1		1	43	
44	14	176	9,437	14	176	11,010	12	132	6,291	7	7	6		1		1	44	
45	14	180	9,651				12	135	6,434	7		6		1		1	45	
46	14	184	9,866	16	184	11,510	12	138	6,577	7	8	6		1		1	46	
47	14	188	10,080				12	141	6,720	7		6		1		1	47	
48	14	192	10,295	16	192	12,010	12	144	6,863	7	8	6		1		1	48	
49	14	196	10,509				12	147	7,006	7		6		1		1	49	
50	14	200	10,724	16	200	12,511	12	150	7,149	7	8	6		1		1	50	
51	14	204	10,938				12	153	7,292	7		6		1		1	51	
52	14	208	11,153	16	208	13,011	12	156	7,435	7	8	6		1		1	52	
53	14	212	11,367				12	159	7,578	7		6		1		1	53	
54	16	216	11,581	16	216	13,512	12	162	7,721	8	8	6		1		1	54	
55	16	220	11,796				12	165	7,864	8		6		1		1	55	
56	16	224	12,010	16	224	14,012	12	168	8,007	8	8	6		1		1	56	
57	16	228	12,225				12	171	8,150	8		6		1		1	57	
58	16	232	12,439	18	232	14,513	12	174	8,293	8	9	6		1		1	58	
59	16	236	12,654				12	177	8,436	8		6		1		1	59	
60	16	240	12,868	18	240	15,013	14	180	8,579	8	9	7		1		1	60	
61	16	244	13,083				14	183	8,722	8		7		1		1	61	
62	16	248	13,297	18	248	15,513	14	186	8,865	8	9	7		1		1	62	
63	16	252	13,512				14	189	9,008	8		7		1		1	63	

(To be continued)

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(Continued from preceding sheet)

RAID group	Storage Capacity									Number of Options								
	RAID5(3D+1P) 53.618 GB / Vol *1			RAID5(7D+1P) 62.554 GB / Vol *1			RAID1(2D+2D) 47.660 GB / Vol *1			DKC options						DKU options		
										F460I-2048			F460I	F460I	F460I	455I	F455I	F455I
	Cache (GB)	Vol	Cap	Cache (GB)	Vol	Cap	Cache (GB)	Vol	Cap	3D+1P	7D+1P	2D+2D	-S512	-200	-L1C	-18	-72K4	-EXC
64	16	256	13,726	18	256	16,014	14	192	9,151	8	9	7		1		2	64	1
65	16	260	13,941				14	195	9,294	8		7		1		2	65	1
66	16	264	14,155	18	264	16,514	14	198	9,437	8	9	7		1		2	66	1
67	18	268	14,370				14	201	9,580	9		7		1		2	67	1
68	18	272	14,584	18	272	17,015	14	204	9,723	9	9	7		1		2	68	1
69	18	276	14,799				14	207	9,866	9		7		1		2	69	1
70	18	280	15,013	20	280	17,515	14	210	10,009	9	10	7		1		2	70	1
71	18	284	15,228				14	213	10,152	9		7		1		2	71	1
72	18	288	15,442	20	288	18,016	14	216	10,295	9	10	7		1		2	72	1
73	18	292	15,656				14	219	10,438	9		7		1		2	73	1
74	18	296	15,871	20	296	18,516	14	222	10,581	9	10	7		1		2	74	1
75	18	300	16,085				14	225	10,724	9		7		1		2	75	1
76	18	304	16,300	20	304	19,016	14	228	10,866	9	10	7		1		2	76	1
77	18	308	16,514				14	231	11,009	9		7		1		2	77	1
78	18	312	16,729	20	312	19,517	14	234	11,152	9	10	7		1		2	78	1
79	18	316	16,943				14	237	11,295	9		7		1		2	79	1
80	20	320	17,158	22	320	20,017	16	240	11,438	10	11	8		1		2	80	1
81	20	324	17,372				16	243	11,581	10		8		1		2	81	1
82	20	328	17,587	22	328	20,518	16	246	11,724	10	11	8		1		2	82	1
83	20	332	17,801				16	249	11,867	10		8		1		2	83	1
84	20	336	18,016	22	336	21,018	16	252	12,010	10	11	8		1		2	84	1
85	20	340	18,230				16	255	12,153	10		8		1		2	85	1
86	20	344	18,445	22	344	21,519	16	258	12,296	10	11	8		1		2	86	1
87	20	348	18,659				16	261	12,439	10		8		1		2	87	1
88	20	352	18,874	22	352	22,019	16	264	12,582	10	11	8		1		2	88	1
89	20	356	19,088				16	267	12,725	10		8		1		2	89	1
90	20	360	19,302	22	360	22,519	16	270	12,868	10	11	8		1		2	90	1
91	20	364	19,517				16	273	13,011	10		8		1		2	91	1
92	20	368	19,731	22	368	23,020	16	276	13,154	10	11	8		1		2	92	1
93	20	372	19,946				16	279	13,297	10		8		1		2	93	1
94	20	376	20,160	22	376	23,520	16	282	13,440	10	11	8		1		2	94	1
95	22	380	20,375				16	285	13,583	11		8		1		2	95	1
96	22	384	20,589	22	384	24,021	16	288	13,726	11	11	8		1		2	96	1
97	22	388	20,804				16	291	13,869	11		8		1		2	97	1
98	22	392	21,018	22	392	24,521	16	294	14,012	11	11	8		1		2	98	1
99	22	396	21,233				16	297	14,155	11		8		1		2	99	1
100	22	400	21,447	22	400	25,022	18	300	14,298	11	11	9		1		2	100	1
101	22	404	21,662				18	303	14,441	11		9		1		2	101	1
102	22	408	21,876	22	408	25,522	18	306	14,584	11	11	9		1		2	102	1
103	22	412	22,091				18	309	14,727	11		9		1		2	103	1
104	22	416	22,305	22	416	26,022	18	312	14,870	11	11	9		1		2	104	1
105	22	420	22,520				18	315	15,013	11		9		1		2	105	1
106	22	424	22,734	22	424	26,523	18	318	15,156	11	11	9		1		2	106	1
107	22	428	22,949				18	321	15,299	11		9		1		2	107	1
108	22	432	23,163	22	432	27,023	18	324	15,442	11	11	9		1		2	108	1
109	22	436	23,377				18	327	15,585	11		9		1		2	109	1
110	22	440	23,592	22	440	27,524	18	330	15,728	11	11	9		1		2	110	1
111	22	444	23,806				18	333	15,871	11		9		1		2	111	1
112	22	448	24,021	22	448	28,024	18	336	16,014	11	11	9		1		2	112	1
113	22	452	24,235				18	339	16,157	11		9		1		2	113	1
114	22	456	24,450	22	456	28,525	18	342	16,300	11	11	9		1		2	114	1
115	22	460	24,664				18	345	16,443	11		9		1		2	115	1
116	22	464	24,879	22	464	29,025	18	348	16,586	11	11	9		1		2	116	1
117	22	468	25,093				18	351	16,729	11		9		1		2	117	1
118	22	472	25,308	22	472	29,525	18	354	16,872	11	11	9		1		2	118	1
119	22	476	25,522				18	357	17,015	11		9		1		2	119	1
120	22	480	25,737	22	480	30,026	20	360	17,158	11	11	10		1		2	120	1
121	22	484	25,951				20	363	17,301	11		10		1		2	121	1
122	22	488	26,166	22	488	30,526	20	366	17,444	11	11	10		1		2	122	1
123	22	492	26,380				20	369	17,587	11		10		1		2	123	1
124	22	496	26,595	22	496	31,027	20	372	17,730	11	11	10		1		2	124	1
125	22	500	26,809				20	375	17,873	11		10		1		2	125	1
126	22	504	27,023	22	504	31,527	20	378	18,015	11	11	10		1		2	126	1
127	22	508	27,238				20	381	18,158	11		10		1		2	127	1
128	22	512	27,452	22	512	32,028	20	384	18,301	11	11	10		2	1	3	128	1
129	22	516	27,667				20	387	18,444	11		10		2	1	3	129	1

(To be continued)

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(Continued from preceding sheet)

RAID group	Storage Capacity									Number of Options								
	RAID5(3D+1P) 53.618 GB / Vol *1			RAID5(7D+1P) 62.554 GB / Vol *1			RAID1(2D+2D) 47.660 GB / Vol *1			DKC options						DKU options		
										F460I-2048			F460I	F460I	F460I	455I	F455I	F455I
	Cache (GB)	Vol	Cap	Cache (GB)	Vol	Cap	Cache (GB)	Vol	Cap	3D+1P	7D+1P	2D+2D	-S512	-200	-L1C	-18	-72K4	-EXC
130	22	520	27,881	22	520	32,528	20	390	18,587	11	11	10		2	1	3	130	1
131	22	524	28,096				20	393	18,730	11		10		2	1	3	131	1
132	22	528	28,310	22	528	33,029	20	396	18,873	11	11	10		2	1	3	132	1
133	22	532	28,525				20	399	19,016	11		10		2	1	3	133	1
134	22	536	28,739	22	536	33,529	20	402	19,159	11	11	10		2	1	3	134	1
135	22	540	28,954				20	405	19,302	11		10		2	1	3	135	1
136	22	544	29,168	22	544	34,029	20	408	19,445	11	11	10		2	1	3	136	1
137	22	548	29,383				20	411	19,588	11		10		2	1	3	137	1
138	22	552	29,597	22	552	34,530	20	414	19,731	11	11	10		2	1	3	138	1
139	22	556	29,812				20	417	19,874	11		10		2	1	3	139	1
140	22	560	30,026	22	560	35,030	20	420	20,017	11	11	10		2	1	3	140	1
141	22	564	30,241				20	423	20,160	11		10		2	1	3	141	1
142	22	568	30,455	22	568	35,531	20	426	20,303	11	11	10		2	1	3	142	1
143	22	572	30,669				20	429	20,446	11		10		2	1	3	143	1
144	22	576	30,884	22	576	36,031	20	432	20,589	11	11	10		2	1	3	144	1
145	22	580	31,098				22	435	20,732	11		11		2	1	3	145	1
146	22	584	31,313	22	584	36,532	22	438	20,875	11	11	11		2	1	3	146	1
147	22	588	31,527				22	441	21,018	11		11		2	1	3	147	1
148	22	592	31,742	22	592	37,032	22	444	21,161	11	11	11		2	1	3	148	1
149	22	596	31,956				22	447	21,304	11		11		2	1	3	149	1
150	22	600	32,171	22	600	37,532	22	450	21,447	11	11	11		2	1	3	150	1
151	22	604	32,385				22	453	21,590	11		11		2	1	3	151	1
152	22	608	32,600	22	608	38,033	22	456	21,733	11	11	11		2	1	3	152	1
153	22	612	32,814				22	459	21,876	11		11		2	1	3	153	1
154	22	616	33,029	22	616	38,533	22	462	22,019	11	11	11		2	1	3	154	1
155	22	620	33,243				22	465	22,162	11		11		2	1	3	155	1
156	22	624	33,458	22	624	39,034	22	468	22,305	11	11	11		2	1	3	156	1
157	22	628	33,672				22	471	22,448	11		11		2	1	3	157	1
158	22	632	33,887	22	632	39,534	22	474	22,591	11	11	11		2	1	3	158	1
159	22	636	34,101				22	477	22,734	11		11		3	1	3	159	1
160	22	640	34,316	22	640	40,035	22	480	22,877	11	11	11		3	1	3	160	1
161	22	644	34,530				22	483	23,020	11		11		3	1	3	161	1
162	22	648	34,744	22	648	40,535	22	486	23,163	11	11	11		3	1	3	162	1
163	22	652	34,959				22	489	23,306	11		11		3	1	3	163	1
164	22	656	35,173	22	656	41,035	22	492	23,449	11	11	11		3	1	3	164	1
165	22	660	35,388				22	495	23,592	11		11		3	1	3	165	1
166	22	664	35,602	22	664	41,536	22	498	23,735	11	11	11		3	1	3	166	1
167	22	668	35,817				22	501	23,878	11		11		3	1	3	167	1
168	22	672	36,031	22	672	42,036	22	504	24,021	11	11	11		3	1	3	168	1
169	22	676	36,246				22	507	24,164	11		11		3	1	3	169	1
170	22	680	36,460	22	680	42,537	22	510	24,307	11	11	11		3	1	3	170	1
171	22	684	36,675				22	513	24,450	11		11		3	1	3	171	1
172	22	688	36,889	22	688	43,037	22	516	24,593	11	11	11		3	1	3	172	1
173	22	692	37,104				22	519	24,736	11		11		3	1	3	173	1
174	22	696	37,318	22	696	43,538	22	522	24,879	11	11	11		3	1	3	174	1
175	22	700	37,533				22	525	25,022	11		11		3	1	3	175	1
176	22	704	37,747	22	704	44,038	22	528	25,164	11	11	11		3	1	3	176	1
177	22	708	37,962				22	531	25,307	11		11		3	1	3	177	1
178	22	712	38,176	22	712	44,538	22	534	25,450	11	11	11		3	1	3	178	1
179	22	716	38,390				22	537	25,593	11		11		3	1	3	179	1
180	22	720	38,605	22	720	45,039	22	540	25,736	11	11	11		3	1	3	180	1
181	22	724	38,819				22	543	25,879	11		11		3	1	3	181	1
182	22	728	39,034	22	728	45,539	22	546	26,022	11	11	11		3	1	3	182	1
183	22	732	39,248				22	549	26,165	11		11		3	1	3	183	1
184	22	736	39,463	22	736	46,040	22	552	26,308	11	11	11		3	1	3	184	1
185	22	740	39,677				22	555	26,451	11		11		3	1	3	185	1
186	22	744	39,892	22	744	46,540	22	558	26,594	11	11	11		3	1	3	186	1
187	22	748	40,106				22	561	26,737	11		11		3	1	3	187	1
188	22	752	40,321	22	752	47,041	22	564	26,880	11	11	11		3	1	3	188	1
189	22	756	40,535				22	567	27,023	11		11		3	1	3	189	1
190	22	760	40,750	22	760	47,541	22	570	27,166	11	11	11		3	1	3	190	1
191	22	764	40,964				22	573	27,309	11		11		3	1	4	191	2
192	22	768	41,179	22	768	48,041	22	576	27,452	11	11	11		3	1	4	192	2
193	22	772	41,393				22	579	27,595	11		11		3	1	4	193	2
194	22	776	41,608	22	776	48,542	22	582	27,738	11	11	11		3	1	4	194	2

(To be continued)

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(Continued from preceding sheet)

RAID group	Storage Capacity									Number of Options								
	RAID5(3D+1P) 53.618 GB / Vol *1			RAID5(7D+1P) 62.554 GB / Vol *1			RAID1(2D+2D) 47.660 GB / Vol *1			DKC options						DKU options		
										F460I-2048			F460I	F460I	F460I	455I	F455I	F455I
	Cache (GB)	Vol	Cap	Cache (GB)	Vol	Cap	Cache (GB)	Vol	Cap	3D+1P	7D+1P	2D+2D	-S512	-200	-L1C	-18	-72K4	-EXC
195	22	780	41,822				22	585	27,881	11		11		3	1	4	195	2
196	22	784	42,037	22	784	49,042	22	588	28,024	11	11	11		3	1	4	196	2
197	22	788	42,251				22	591	28,167	11		11		3	1	4	197	2
198	22	792	42,465	22	792	49,543	22	594	28,310	11	11	11		3	1	4	198	2
199	22	796	42,680				22	597	28,453	11		11		3	1	4	199	2
200	22	800	42,894	22	800	50,043	22	600	28,596	11	11	11		3	1	4	200	2
201	22	804	43,109				22	603	28,739	11		11		3	1	4	201	2
202	22	808	43,323	22	808	50,544	22	606	28,882	11	11	11		3	1	4	202	2
203	22	812	43,538				22	609	29,025	11		11		3	1	4	203	2
204	22	816	43,752	22	816	51,044	22	612	29,168	11	11	11		3	1	4	204	2
205	22	820	43,967				22	615	29,311	11		11		3	1	4	205	2
206	22	824	44,181	22	824	51,544	22	618	29,454	11	11	11		3	1	4	206	2
207	22	828	44,396				22	621	29,597	11		11		3	1	4	207	2
208	22	832	44,610	22	832	52,045	22	624	29,740	11	11	11		3	1	4	208	2
209	22	836	44,825				22	627	29,883	11		11		3	1	4	209	2
210	22	840	45,039	22	840	52,545	22	630	30,026	11	11	11		3	1	4	210	2
211	22	844	45,254				22	633	30,169	11		11		3	1	4	211	2
212	22	848	45,468	22	848	53,046	22	636	30,312	11	11	11		3	1	4	212	2
213	22	852	45,683				22	639	30,455	11		11		3	1	4	213	2
214	22	856	45,897	22	856	53,546	22	642	30,598	11	11	11		3	1	4	214	2
215	22	860	46,111				22	645	30,741	11		11		3	1	4	215	2
216	22	864	46,326	22	864	54,047	22	648	30,884	11	11	11		3	1	4	216	2
217	22	868	46,540				22	651	31,027	11		11		3	1	4	217	2
218	22	872	46,755	22	872	54,547	22	654	31,170	11	11	11		3	1	4	218	2
219	22	876	46,969				22	657	31,313	11		11		3	1	4	219	2
220	22	880	47,184	22	880	55,048	22	660	31,456	11	11	11		3	1	4	220	2
221	22	884	47,398				22	663	31,599	11		11		3	1	4	221	2
222	22	888	47,613	22	888	55,548	22	666	31,742	11	11	11		3	1	4	222	2
223	22	892	47,827				22	669	31,885	11		11		3	1	4	223	2
224	22	896	48,042	22	896	56,048	22	672	32,028	11	11	11		3	1	4	224	2
225	22	900	48,256				22	675	32,171	11		11		3	1	4	225	2
226	22	904	48,471	22	904	56,549	22	678	32,313	11	11	11		3	1	4	226	2
227	22	908	48,685				22	681	32,456	11		11		3	1	4	227	2
228	22	912	48,900	22	912	57,049	22	684	32,599	11	11	11		3	1	4	228	2
229	22	916	49,114				22	687	32,742	11		11		3	1	4	229	2
230	22	920	49,329	22	920	57,550	22	690	32,885	11	11	11		3	1	4	230	2
231	22	924	49,543				22	693	33,028	11		11		3	1	4	231	2
232	22	928	49,758	22	928	58,050	22	696	33,171	11	11	11		3	1	4	232	2
233	22	932	49,972				22	699	33,314	11		11		3	1	4	233	2
234	22	936	50,186	22	936	58,551	22	702	33,457	11	11	11		3	1	4	234	2
235	22	940	50,401				22	705	33,600	11		11		3	1	4	235	2
236	22	944	50,615	22	944	59,051	22	708	33,743	11	11	11		3	1	4	236	2
237	22	948	50,830				22	711	33,886	11		11		3	1	4	237	2
238	22	952	51,044	22	952	59,551	22	714	34,029	11	11	11		3	1	4	238	2
239	22	956	51,259				22	717	34,172	11		11		3	1	4	239	2
240	22	960	51,473	22	960	60,052	22	720	34,315	11	11	11		3	1	4	240	2
241	22	964	51,688				22	723	34,458	11		11		3	1	4	241	2
242	22	968	51,902	22	968	60,552	22	726	34,601	11	11	11		3	1	4	242	2
243	22	972	52,117				22	729	34,744	11		11		3	1	4	243	2
244	22	976	52,331	22	976	61,053	22	732	34,887	11	11	11		3	1	4	244	2
245	22	980	52,546				22	735	35,030	11		11		3	1	4	245	2
246	22	984	52,760	22	984	61,553	22	738	35,173	11	11	11		3	1	4	246	2
247	22	988	52,975				22	741	35,316	11		11		3	1	4	247	2
248	22	992	53,189	22	992	62,054	22	744	35,459	11	11	11		3	1	4	248	2
249	22	996	53,404				22	747	35,602	11		11		3	1	4	249	2
250	22	1,000	53,618	22	1,000	62,554	22	750	35,745	11	11	11		3	1	4	250	2
251	22	1,004	53,832				22	753	35,888	11		11		3	1	4	251	2
252	22	1,008	54,047	22	1,008	63,054	22	756	36,031	11	11	11		3	1	4	252	2
253	22	1,012	54,261				22	759	36,174	11		11		3	1	4	253	2
254	22	1,016	54,476				22	762	36,317	11	11	11		3	1	4	254	2

*1: OPEN-V is volume based on CVS. A customer can set up the volume capacity of OPEN-V freely from 48.1MB among 64.422GB. Each volume capacity is a default value for using the user area in RAID group about 100%.

*2: The number of the Shard Memory option(DKC-F460I-S512) necessary is refer to table 1.1.2-3A and 1.1.2-3B. Please note that location of shared memory varies according to the purpose such as additional cache installation or additional LDEV installation.
In addition to the Options listed in above table as necessary parts, Power Cable Kit option, the AC Box Kit option and the Channel options are required.

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