REPLACE SECTION

⚠ **SAFETY SUMMARY**

Notes on the operation on the password inputting screen.

The password inputting screen is displayed on the SVP screen to arouse maintenance person's attention when the operation concerned can cause a serious failure such as a system down or a data loss.

- When the password inputting screen is displayed, be sure to observe the cautions given in the procedure concerned in the maintenance manual.

- When a confirmation by the technical support division is required in the maintenance manual, be sure to get it before executing the maintenance procedure concerned.

- Each PCB is operated by the microprogram owned by it individually.
  If the PCB is replaced in the procedure that makes the version of the microprogram disagree with that of the PCB, the subsystem cannot operate normally. Be sure to make the revisions consistent each other.
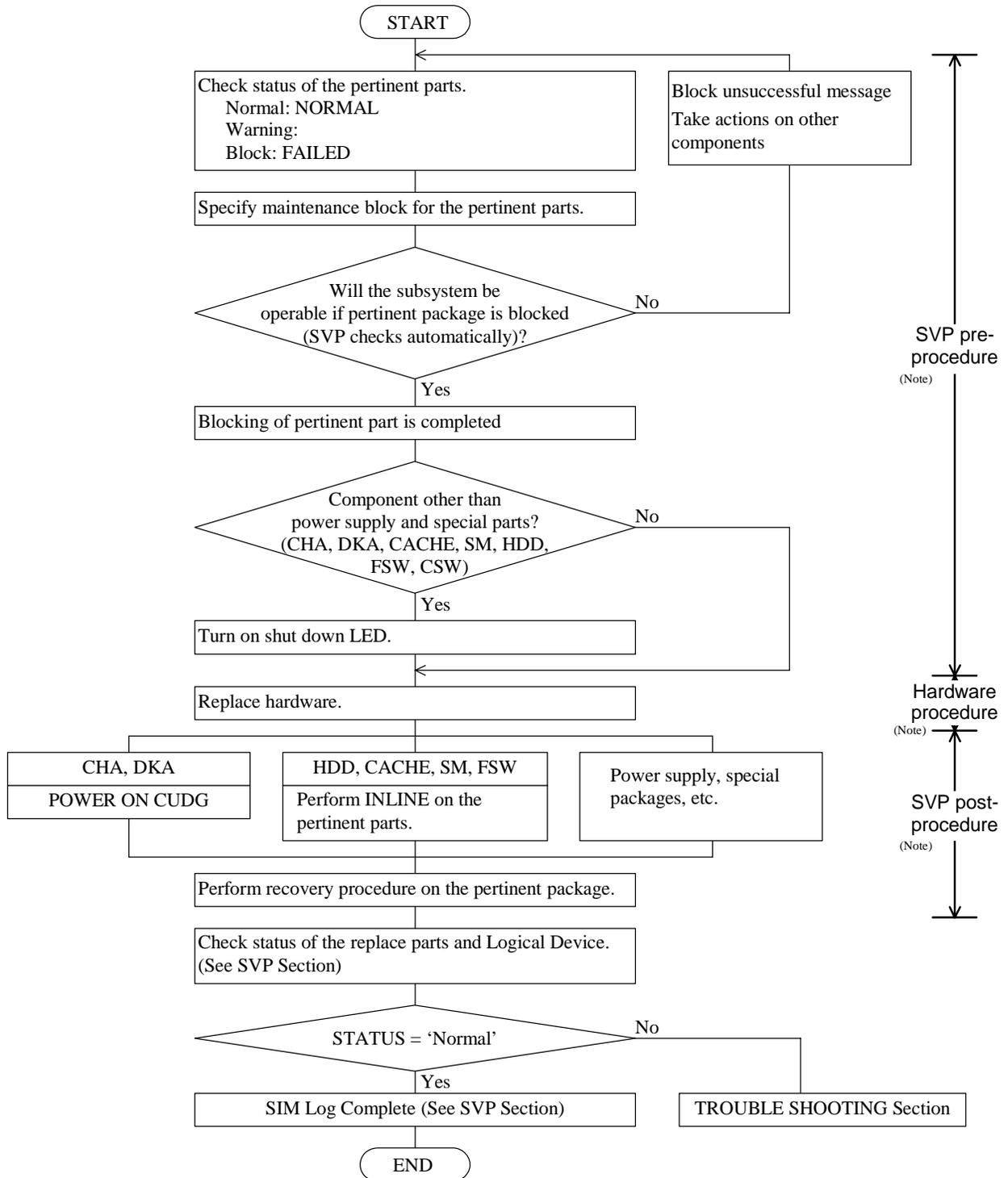
Contents

1. Hot Replace

1.1 Hot Replace Flowchart

```
                              ┌─────────┐
                              │  START  │
                              └─────────┘
                                   │
                                   ▼                                        ┌──────────────────────────┐
   ┌─────────────────────────────────────┐                                 │ Block unsuccessful message│
   │ Check status of the pertinent parts. │                                 │ Take actions on other     │
   │    Normal: NORMAL                    │                                 │ components                │
   │    Warning:                          │                                 └──────────────────────────┘
   │    Block: FAILED                     │
   └─────────────────────────────────────┘
                                   │
   ┌─────────────────────────────────────┐
   │ Specify maintenance block for the    │
   │ pertinent parts.                     │
   └─────────────────────────────────────┘
                                   │
                       ╱───────────────────────╲
                      ╱  Will the subsystem be   ╲        No
                      ╲ operable if pertinent     ╱────────────►
                       ╲ package is blocked      ╱
                        ╲(SVP checks automatically)?╱
                              │ Yes
   ┌─────────────────────────────────────┐
   │ Blocking of pertinent part is        │
   │ completed                            │
   └─────────────────────────────────────┘
                                   │
                       ╱───────────────────────╲
                      ╱  Component other than    ╲        No
                      ╲ power supply and special  ╱────────────►
                       ╲ parts? (CHA, DKA, CACHE, ╱
                        ╲SM, HDD, FSW, CSW)       ╱
                              │ Yes
   ┌─────────────────────────────────────┐
   │ Turn on shut down LED.               │
   └─────────────────────────────────────┘
                                   │
   ┌─────────────────────────────────────┐
   │ Replace hardware.                    │
   └─────────────────────────────────────┘
```

CHA, DKA	HDD, CACHE, SM, FSW	Power supply, special
POWER ON CUDG	Perform INLINE on the pertinent parts.	packages, etc.

```
   ┌─────────────────────────────────────┐
   │ Perform recovery procedure on the    │
   │ pertinent package.                   │
   └─────────────────────────────────────┘
                                   │
   ┌─────────────────────────────────────┐
   │ Check status of the replace parts    │
   │ and Logical Device. (See SVP Section)│
   └─────────────────────────────────────┘
                                   │
                       ╱───────────────────────╲       No
                      ╱    STATUS = 'Normal'     ╲────────────►
                       ╲                         ╱
                              │ Yes
```

SIM Log Complete (See SVP Section)	TROUBLE SHOOTING Section

```
                              ┌─────────┐
                              │   END   │
                              └─────────┘
```

SVP pre-procedure (Note)

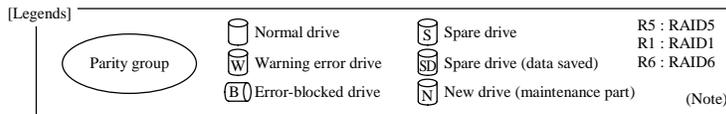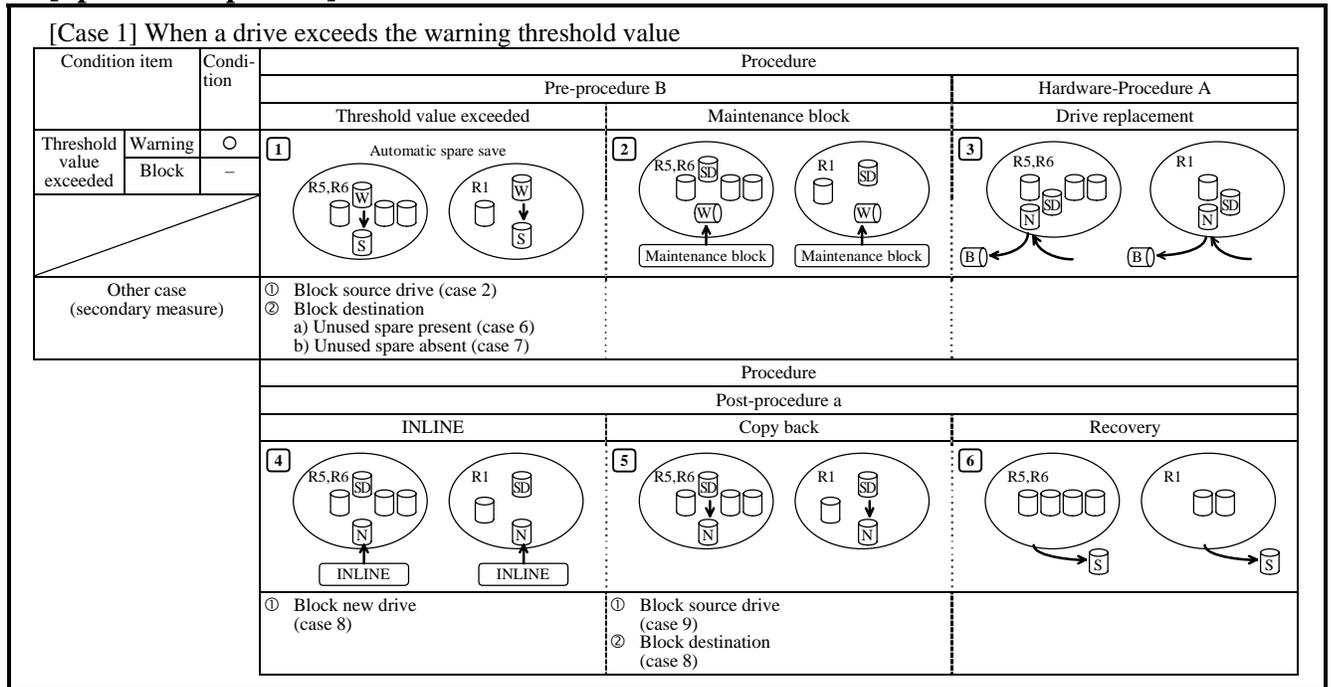Hardware procedure (Note)

SVP post-procedure (Note)

Note :

SVP pre-procedure: An SVP (PC) process of issuing a maintenance block instruction after checking the status of the parts to be replaced so that the live parts can be removed and replaced.

Hard ware procedure: A process of removing a parts to be replaced (shut down LED on) and installing a maintenance package.
                       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.

SVP post-procedure: An SVP (PC) process of making functional checks (CUDG and INLINE) on the replacement package and building it into the subsystem.

1.2 Concept of Drive Maintenance

[Spare drive present]

[Case 1] When a drive exceeds the warning threshold value

[Legends]

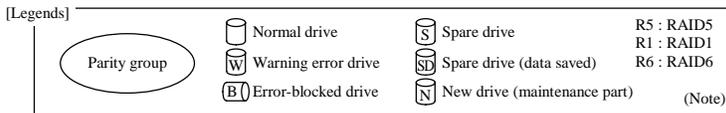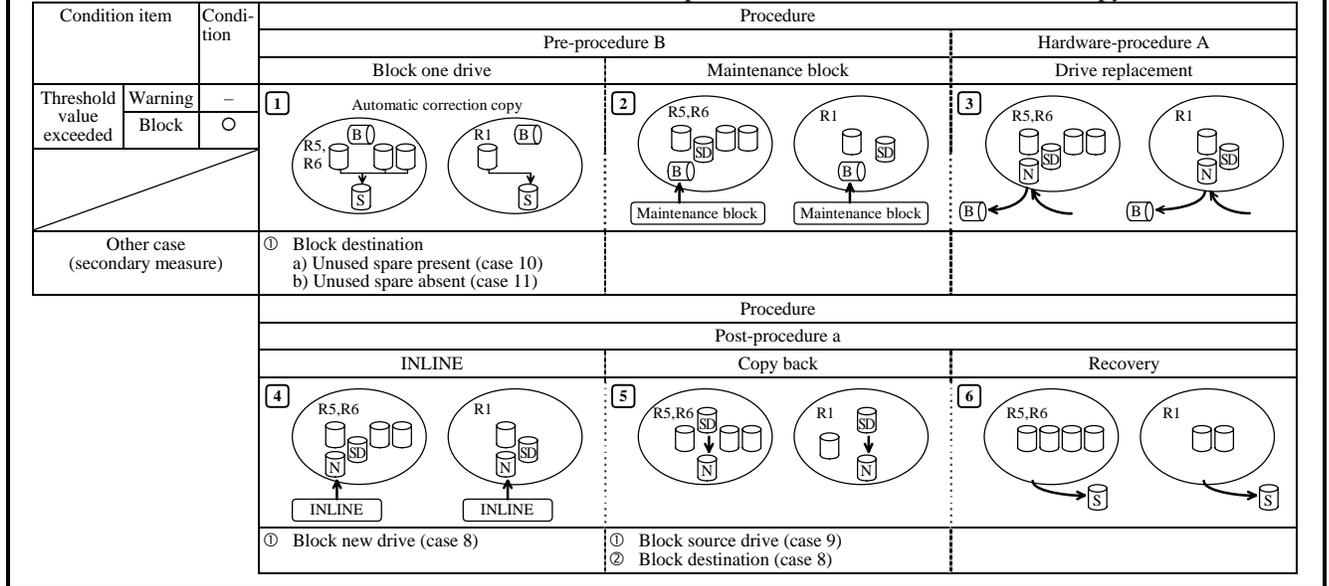| Parity group | Normal drive | S Spare drive | R5 : RAID5 |
| | W Warning error drive | SD Spare drive (data saved) | R1 : RAID1 |
| | B() Error-blocked drive | N New drive (maintenance part) | R6 : RAID6 (Note) |

Note: In the RAID system, two drives form a mirroring pair and the two mirroring pairs (four drives) compose the RAID. In the above diagram, only the two mirroring pairs are shown. The RAID 6 system consists of eight drives practically.

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SC02540Z

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[Spare drive present]

[Case 2] A case where the one drive is blocked
 When a spare drive exists, a correction copy from the blocked drive is started automatically.
 In this case, go to Case 2.1 when the blocked drive is to be replaced during the correction copy from it and a copy back that follows is to be made automatically, or go to Case 2.2 when the blocked drive is to be replaced after the correction copy is completed.

[Case 2.1] A case where the one drive is blocked and it is replaced during an automatic correction copy is made from it

Condition item		Condi-tion	Procedure

Procedure split: Pre-procedure B (Block one drive, Maintenance block), Hardware-procedure A (Drive replacement)

| Threshold value exceeded | Warning | – | [1] Automatic correction copy | [2] A blocked drive is replaced during an automatic correction copy. | [3] A blocked drive is replaced during an automatic correction copy. |
| | Block | O | | | |

Other case (secondary measure):
① When a copy destination drive is blocked
 a) Unused spare present (case 10)
 b) Unused spare absent (case 11)

Note: When the blocked drive is replaced while the automatic correction copy is being made from it, the copy back written in Item [5] is started automatically. When you replace the drive after the automatic correction copy is completed, refer to Case 2.2.

Procedure — Post-procedure a: INLINE, Automatic copy back, Recovery

[4] INLINE
[5] The copy back is started automatically after the correction copy is completed.
[6] Recovery

① Block new drive (case 8)
① Block source drive (case 9)
② Block destination (case 8)

[Legends]

Parity group
Normal drive
W Warning error drive
B() Error-blocked drive
S Spare drive
SD Spare drive (data saved)
N New drive (maintenance part)

R5 : RAID5
R1 : RAID1
R6 : RAID6

(Note)

Note: In the RAID system, two drives form a mirroring pair and the two mirroring pairs (four drives) compose the RAID. In the above diagram, only the two mirroring pairs are shown. The RAID 6 system consists of eight drives practically.
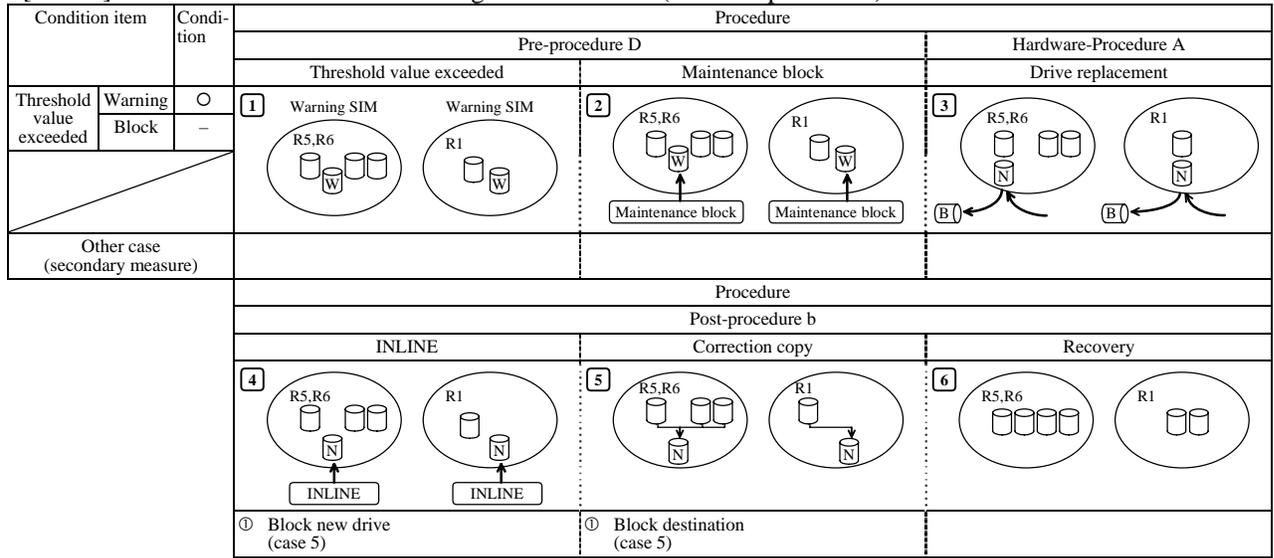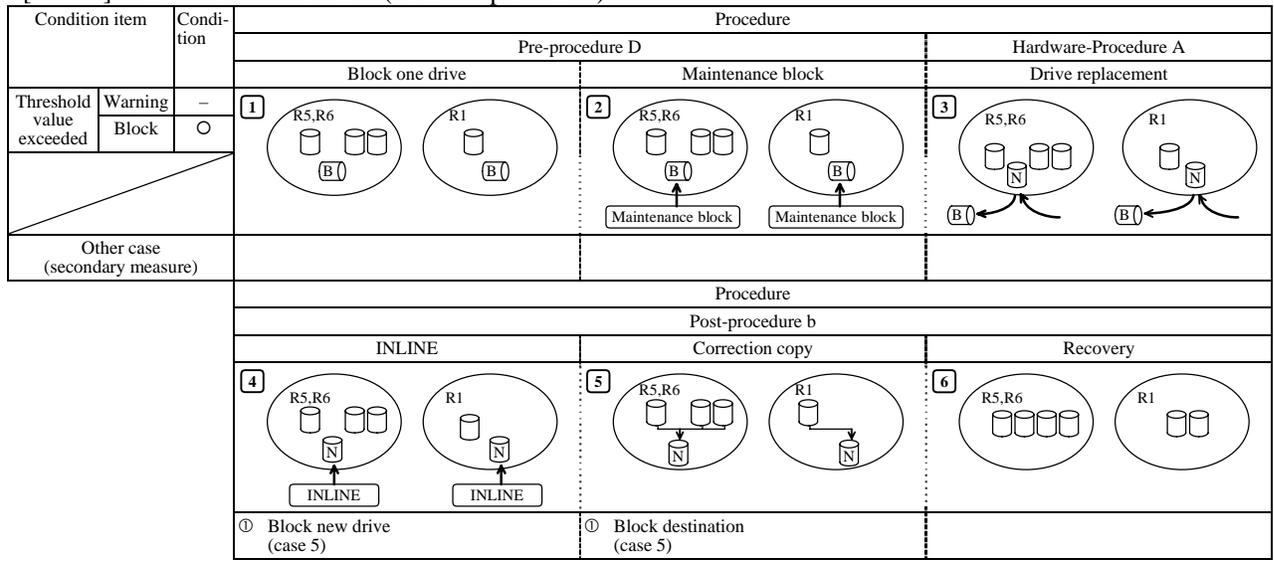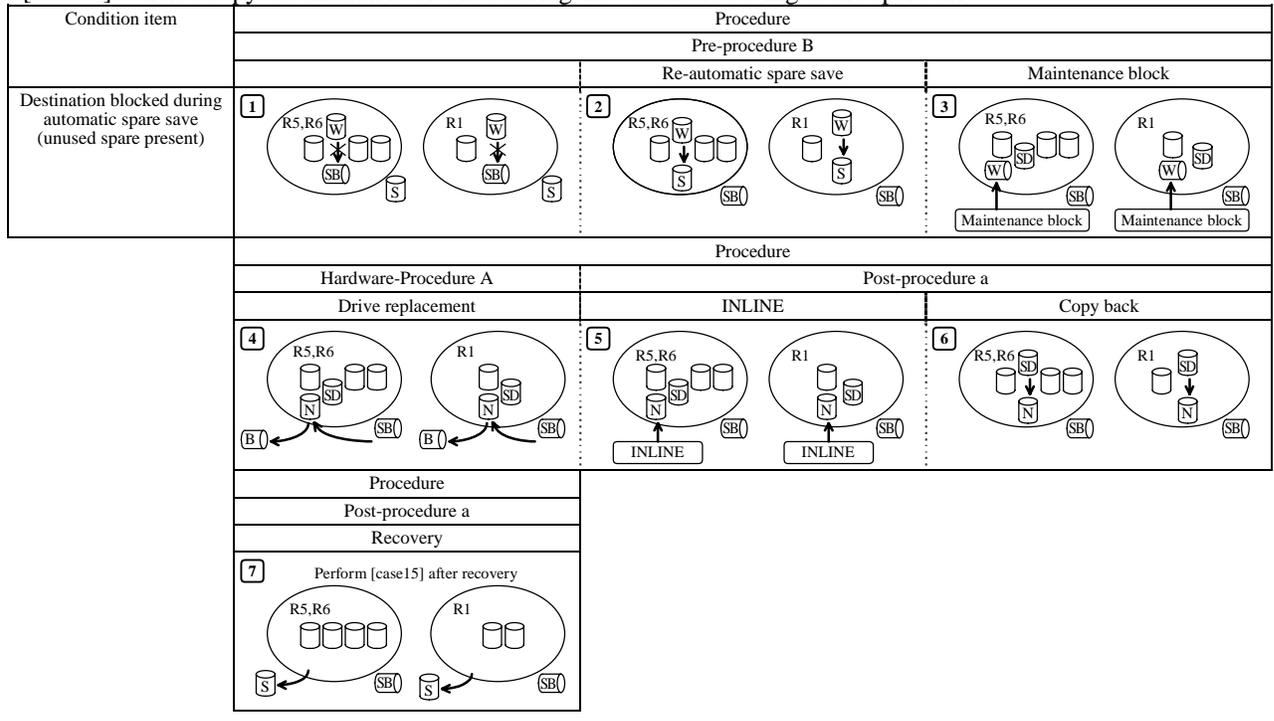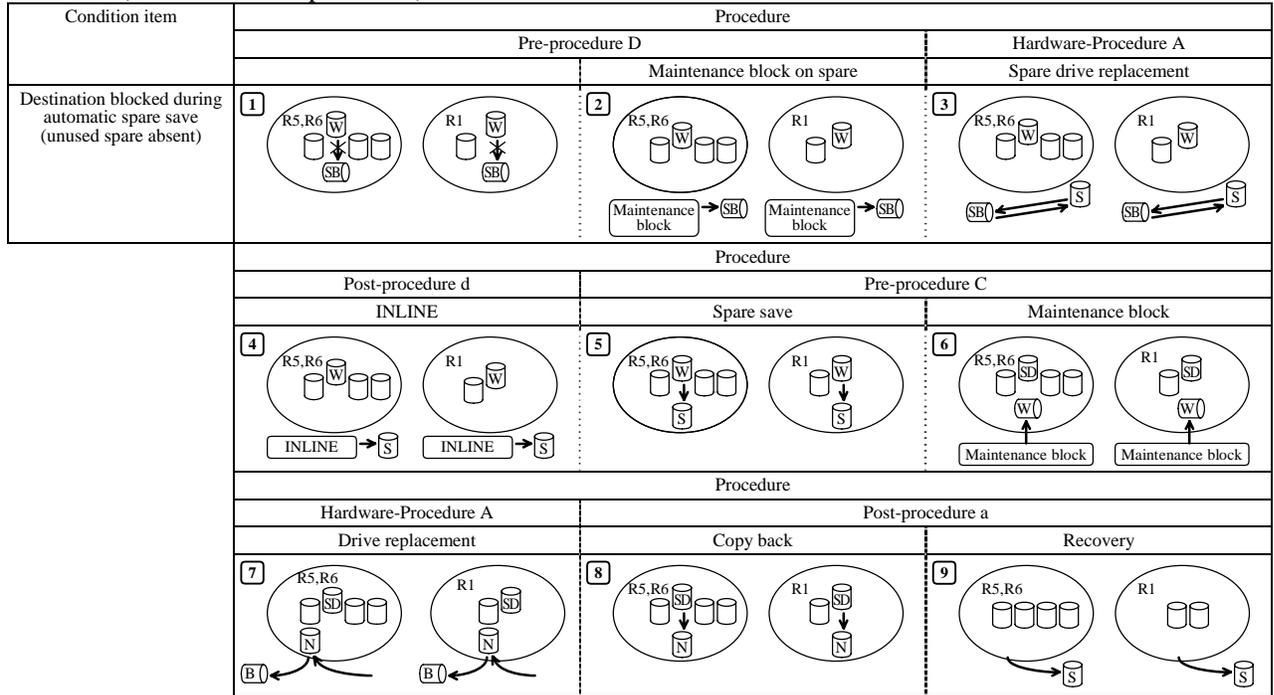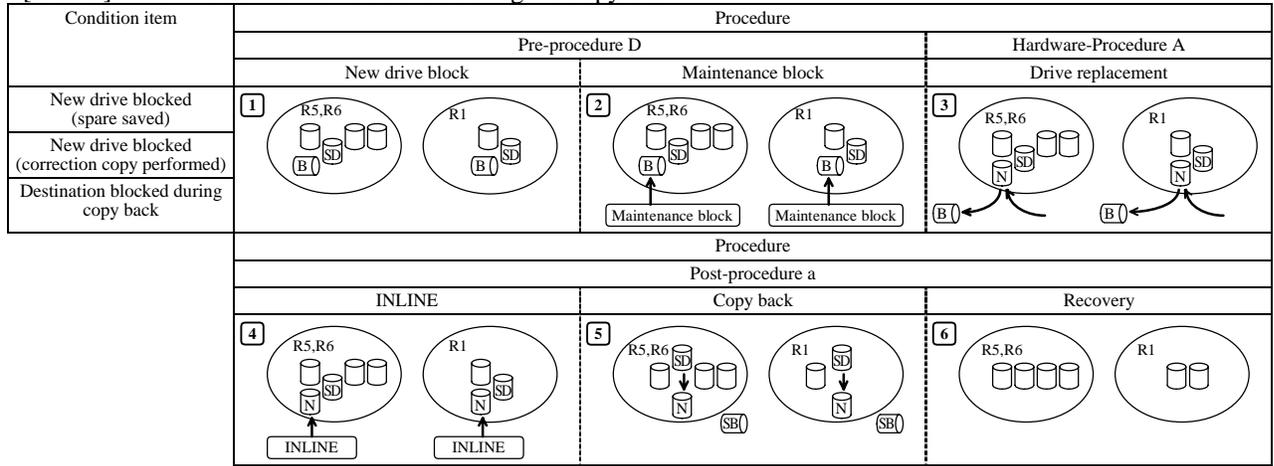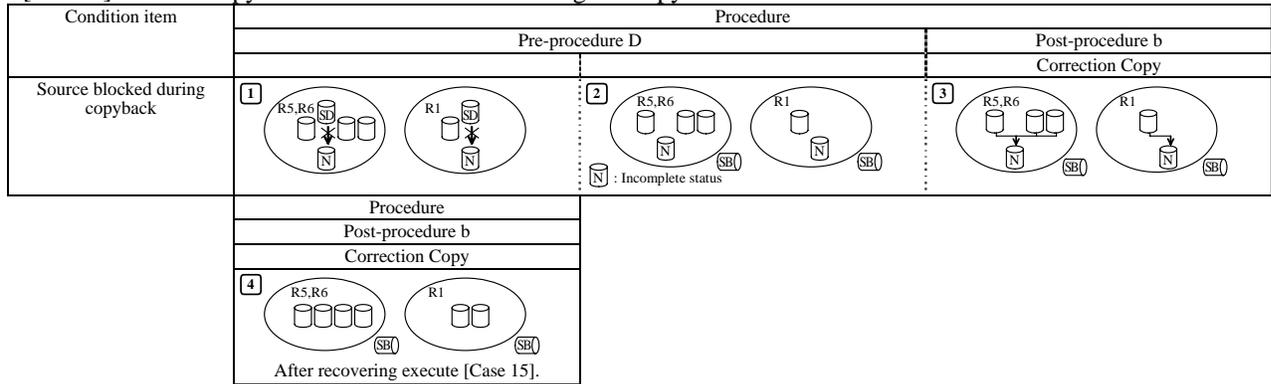
[Spare drive present]

[Case 2.2] A case where the one drive is blocked and it is replaced after an automatic correction copy is made from it

Condition item		Condi-tion	Procedure		
			Pre-procedure B		Hardware-procedure A
			Block one drive	Maintenance block	Drive replacement
Threshold value exceeded	Warning	–	☐1 Automatic correction copy	☐2	☐3
	Block	○			
Other case (secondary measure)			① Block destination a) Unused spare present (case 10) b) Unused spare absent (case 11)		

Procedure		
Post-procedure a		
INLINE	Copy back	Recovery
☐4	☐5	☐6
① Block new drive (case 8)	① Block source drive (case 9) ② Block destination (case 8)	

[Legends]

	Normal drive	Ⓢ Spare drive	R5 : RAID5
Parity group	Ⓦ Warning error drive	Ⓢ⃝ Spare drive (data saved)	R1 : RAID1 R6 : RAID6
	Ⓑ( ) Error-blocked drive	Ⓝ New drive (maintenance part)	(Note)

Note: In the RAID system, two drives form a mirroring pair and the two mirroring pairs (four drives) compose the RAID. In the above diagram, only the two mirroring pairs are shown. The RAID 6 system consists of eight drives practically.

[Spare drive absent]

[Case 3] When a drive exceeds the warning threshold value (without spare drive)

[Case 4] When a drive is blocked (without spare drive)

[Legends]

Parity group — Normal drive — New drive (maintenance part)
W Warning error drive — R5 : RAID5
B() Error-blocked drive — R1 : RAID1
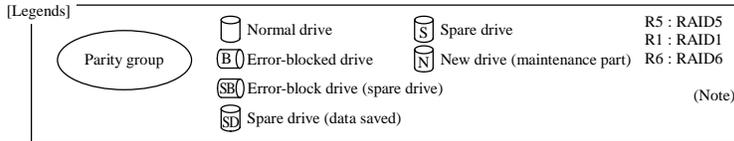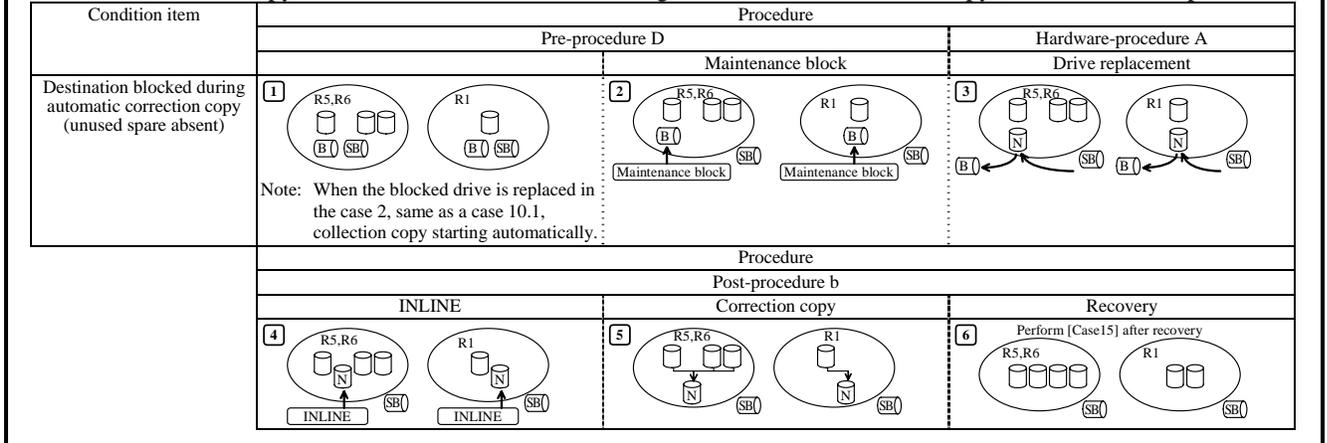R6 : RAID6

(Note)

Note: In the RAID system, two drives form a mirroring pair and the two mirroring pairs (four
drives) compose the RAID. In the above diagram, only the two mirroring pairs are shown.
The RAID 6 system consists of eight drives practically.

[Case in which a secondary error occurred during error]

[Case 5] When a copy destination is blocked during the correction copy
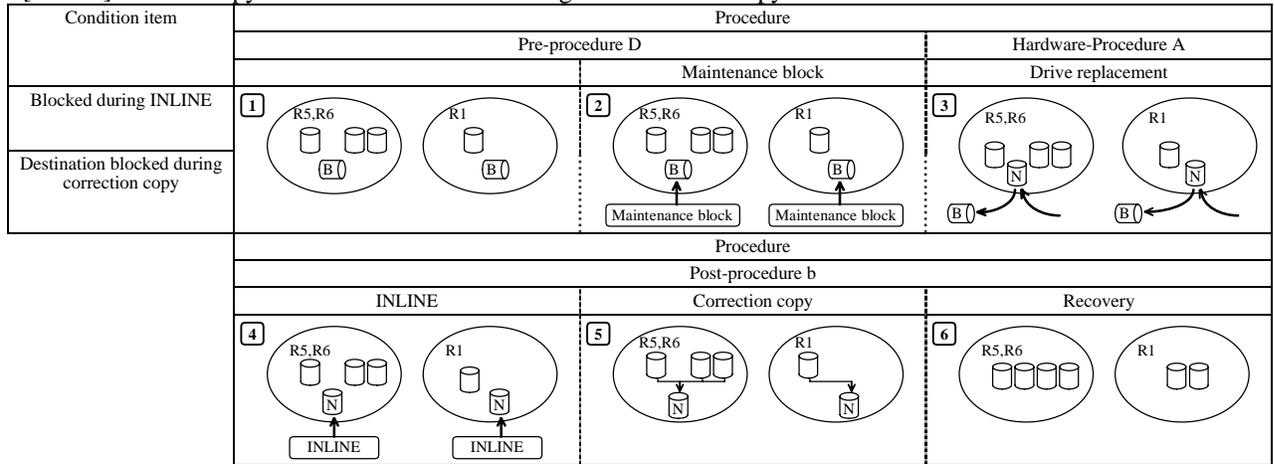
[Case 6] When a copy destination is blocked during the automatic saving to the spare drive

[Legends]

Parity group · Normal drive · Warning error drive · B( ) Error-blocked drive · SB( ) Error-block drive (spare drive) · S Spare drive · SD Spare drive (data saved) · N New drive (maintenance part)

R5 : RAID5
R1 : RAID1
R6 : RAID6

(Note)

Note: In the RAID system, two drives form a mirroring pair and the two mirroring pairs (four drives) compose the RAID. In the above diagram, only the two mirroring pairs are shown. The RAID 6 system consists of eight drives practically.

[Case in which a secondary error occurred during error recovery]

[Case 7] When a copy destination drive is blocked during the automatic saving to the spare drive
(without unused spare drive)

[Case 8] When the new drive is blocked during the copy back

[Legends]

- Parity group
- Normal drive
- W Warning error drive
- B() Error-blocked drive
- SB() Error-block drive (spare drive)
- S Spare drive
- SD Spare drive (data saved)
- N New drive (maintenance part)
- R5 : RAID5
- R1 : RAID1
- R6 : RAID6
- (Note)

Note: In the RAID system, two drives form a mirroring pair and the two mirroring pairs (four drives) compose the RAID. In the above diagram, only the two mirroring pairs are shown. The RAID 6 system consists of eight drives practically.

[Case in which a secondary error occurred during error recovery]

[Case 9] When a copy source drive is blocked during the copy back

Condition item	Procedure				
	Pre-procedure D			Post-procedure b	
				Correction Copy	
Source blocked during copyback	1		2 N : Incomplete status	3	

	Procedure
	Post-procedure b
	Correction Copy
	4 After recovering execute [Case 15].

[Case 10] A case where the copy destination drive is blocked during the automatic correction copy (and a unused spare drive exists)

When the blocked drive has been replaced through performance of the operation for Case 2.1, go to Case 10.1 or otherwise, go to Case 10.2.

[Case 10.1] When the blocked drive has been replaced through performance of the operation for Case 2.1

Condition item	Procedure		
	Pre-procedure B		
		Starting collection copy automatically	Maintenance block
Destination blocked during automatic correction copy (unused spare present)	1 Correction cop error	2	3 Perform [case 15] after recovery.
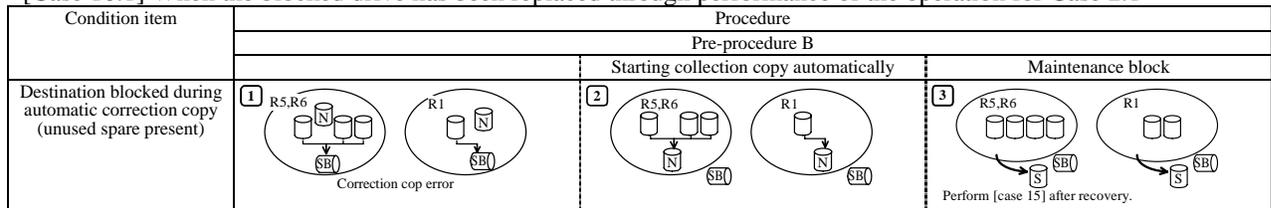
[Case 10.2] When the operation for Case 2.1 has not been performed
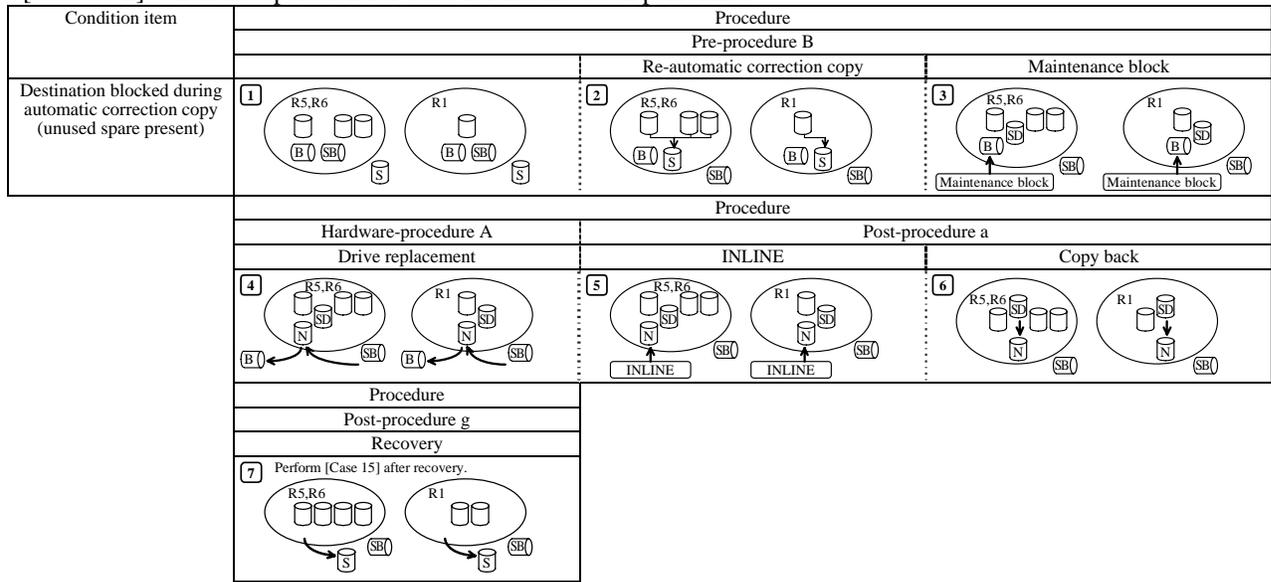
Condition item	Procedure		
	Pre-procedure B		
		Re-automatic correction copy	Maintenance block
Destination blocked during automatic correction copy (unused spare present)	1	2	3 Maintenance block Maintenance block

	Procedure		
	Hardware-procedure A	Post-procedure a	
	Drive replacement	INLINE	Copy back
	4	5 INLINE INLINE	6

	Procedure
	Post-procedure g
	Recovery
	7 Perform [Case 15] after recovery.

[Legends]

Parity group

Normal drive   S Spare drive   R5 : RAID5
B Error-blocked drive   N New drive (maintenance part)   R1 : RAID1
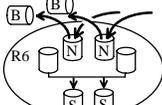SB Error-block drive (spare drive)   R6 : RAID6
SD Spare drive (data saved)   (Note)

Note: In the RAID system, two drives form a mirroring pair and the two mirroring pairs (four drives) compose the RAID. In the above diagram, only the two mirroring pairs are shown. The RAID 6 system consists of eight drives practically.

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[Case in which a secondary error occurred during error recovery]

[Case 11] When a copy destination drive is blocked during the automatic correction copy (without unused spare drive)

[Legends]

Note: In the RAID system, two drives form a mirroring pair and the two mirroring pairs (four drives) compose the RAID. In the above diagram, only the two mirroring pairs are shown. The RAID 6 system consists of eight drives practically.

[Spare drive present]

[Case 12] RAID6   When two drives exceed the warning threshold value

Condition item		Condi-tion	Procedure		
			Pre-procedure B		Hardware-Procedure A
			Threshold value exceeded	Maintenance block	Replacement of the first drive
Threshold value exceeded	Warning	○	**1** Automatic saving(s) to the spare drive allowed to be made up to twice	**2** Maintenance block	Proceed the drive to the next step when the copying from it is completed. It is not necessary to wait until the copying from the two drives is completed.	**3**
	Block	–			
Other case (secondary measure)			① Block source drive (case 2) ② Block destination a) Unused spare present (case 6) b) Unused spare absent (case 7)		

Procedure		
Post-procedure a		Hardware-Procedure A
INLINE test of the first drive	Copy back to the first drive	Replacement of the second drive during the copy back to the first drive
4 INLINE	**5**	**6**
① Block new drive (case 8)	① Block source drive (case 9) ② Block destination (case 8)	

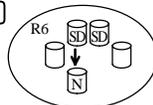| Procedure		
Post-procedure a		
INLINE test of the second drive	Copy back to the second drive	Recovery
7 INLINE	**8**	**9**
① Block new drive (case 8)	① Block source drive (case 9) ② Block destination (case 8)	

[Legends]

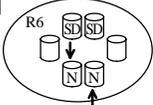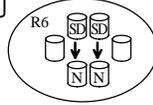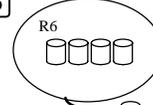|			
Parity group	Normal drive	Spare drive	R6 : RAID6
	W Warning error drive	SD Spare drive (data saved)	
	B() Error-blocked drive	N New drive (maintenance part)	

Note: In the RAID 6 system, eight drives compose a parity group.

[Spare drive present]

[Case 13] RAID6   When two drives are blocked
- When you replace the two blocked drives while making an automatic correction copy from them, go to Case 13.1.
- When you replace the two blocked drives after making an automatic correction copy from them, go to Case 13.2.
- When you replace one of the two blocked drives from each of which an automatic correction copy is being made, go to Case 13.3.

[Case 13.1] RAID6   A case where the two drives is blocked and it is replaced while an automatic correction copy is made from it

Condition item		Condi-tion	Procedure		
			Pre-procedure B		Hardware-procedure A
			Detachment of the two drives	Maintenance block	Replacement of the first drive
Threshold value exceeded	Warning	–	☐1 Automatic correction copy (allowed to be made up to twice)	☐2 A blocked drive is replaced during an automatic correction copy.	☐3 A blocked drive is replaced during an automatic correction copy.
	Block	○			
Other case (secondary measure)			① Block destination a) Unused spare present (case 10) b) Unused spare absent (case 11)	Note: When the blocked drive is replaced while an automatic correction copy is being made from it, the copy-back written in Item [5] is started automatically. When you replace the drive after the automatic correction copy is completed, refer to Case 13.2.	
			Procedure		
			Post-procedure a		
			INLINE test of the first drive	Copy back to the first drive	Recovery
			☐4 INLINE	☐5 The copy-back is started automatically after the correction copy is completed.	☐6
			① Block new drive (case 8)	① Block source drive (case 9) ② Block destination (case 8)	

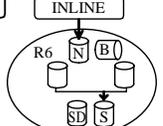[Legends]

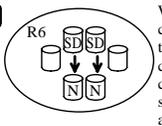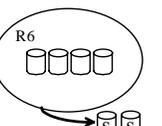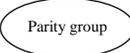| Parity group | Normal drive | S Spare drive | R6 : RAID6 |
| | W Warning error drive | SD Spare drive (data saved) | |
| | B() Error-blocked drive | N New drive (maintenance part) | |

Note: In the RAID 6 system, eight drives compose a parity group.

[Spare drive present]

[Case 13.2] RAID6   A case where the two drives is blocked and it is replaced after an automatic correction copy is made from it

Condition item		Condi-tion	Procedure		
			Pre-procedure B		Hardware-procedure A
			Detachment of the two drives	Maintenance block	Replacement of the first drive
Threshold value exceeded	Warning	–	**1** Automatic correction copy or copies allowed to be made up to twice	**2**	**3**
	Block	○			
Other case (secondary measure)			① Block destination a) Unused spare present (case 10) b) Unused spare absent (case 11)		

Procedure		
Post-procedure a		Hardware-procedure A
INLINE test of the first drive	Copy back to the first drive	Replacement of the second drive during the copy back to the first drive
4	**5**	**6**
① Block new drive (case 8)	① Block source drive (case 9) ② Block destination (case 8)	

Procedure		
Post-procedure a		
INLINE test of the second drive	Copy back to the second drive	Recovery
7	**8**	**9**
① Block new drive (case 8)	① Block source drive (case 9) ② Block destination (case 8)	

[Legends]

Parity group	Normal drive	S Spare drive
	W Warning error drive	SD Spare drive (data saved)
	B() Error-blocked drive	N New drive (maintenance part)

R6 : RAID6

Note: In the RAID 6 system, eight drives compose a parity group.

[Spare drive present]

[Case 13.3] RAID6   A case where the two drives is blocked and it is an automatic correction copy from one of the drives is in progress and that from the other drive is completed

Condition item		Condi-tion	Procedure		
			Pre-procedure B		Hardware-procedure A
			Detachment of the two drives	Maintenance block	Replacement of the first drive
Threshold value exceeded	Warning	–	**1** Automatic correction copy or copies allowed to be made up to twice.	**2** Maintenance block — Select the drive which is completed automatic collection copy.	**3**
	Block	○			
Other case (secondary measure)			① Block destination a) Unused spare present (case 10) b) Unused spare absent (case 11)		

Procedure		
Post-procedure a		Hardware-procedure A
INLINE test of the first drive	Copy back to the first drive	Replacement of the second drive during the copy back to the first drive
4 INLINE	**5**	**6** Make a copy-back to the first drive, and then replace the second drive while an automatic correction copy is being made from the second drive.
① Block new drive (case 8)	① Block source drive (case 9) ② Block destination (case 8)	

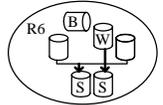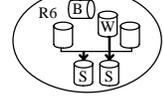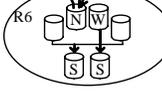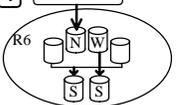| Procedure		
Post-procedure a		
INLINE test of the second drive	Copy back to the second drive	Recovery
7 INLINE	**8** When an automatic correction copy from the second drive is completed, a copy-back to the second drive is started automatically in the same way as Case 2.1.	**9**
① Block new drive (case 8)	① Block source drive (case 9) ② Block destination (case 8)	

[Legends]

Parity group   Normal drive   S Spare drive   R6 : RAID6

W Warning error drive   SD Spare drive (data saved)
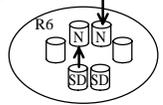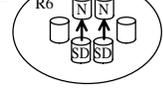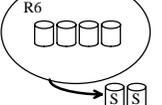
B() Error-blocked drive   N New drive (maintenance part)

Note: In the RAID 6 system, eight drives compose a parity group.

[Spare drive present]

[Case 14] RAID6 　When a drive is blocked and another drive exceeds the warning threshold value
　　When replacing a blocked drive while an automatic correction copy is being made from it, go to Case 14.1.
　　When replacing a blocked drive after the automatic correction copy from it is completed, go to Case 14.2.

[Case 14.1] When replacing a blocked drive while an automatic correction copy is being made from it

Condition item		Condi-tion	Procedure		
			Pre-procedure B		Hardware-procedure A
			Detachment of the two drives	Maintenance block	Replacement of the first drive
Threshold value exceeded	Warning	○	[1] Automatic correction copy + Automatic saving to the spare disk	[2] Maintenance block A blocked drive is replaced during an automatic correction copy.	[3]
	Block	○			
Other case (secondary measure)			① Block destination a) Unused spare present (case 10) b) Unused spare absent (case 11)	Note: When an automatic saving to a spare drive is completed before this operation is performed, the following Items [6] and [7] may be executed in advance.	

Procedure		
Post-procedure a		Hardware-procedure A
INLINE test of the first drive	Copy back to the first drive	Replacement of the second drive during the copy back to the first drive
[4] INLINE	[5] A blocked drive is replaced during an automatic correction copy.	[6]
① Block new drive (case 8)	① Block source drive (case 9) ② Block destination (case 8)	

Procedure		
Post-procedure a		
INLINE test of the second drive	Copy back to the second drive	Recovery
[7] INLINE	[8]	[9]
① Block new drive (case 8)	① Block source drive (case 9) ② Block destination (case 8)	

[Legends]

Parity group　　☐ Normal drive　　⊡S Spare drive　　R6 : RAID6
　　　　　　　　　☐W Warning error drive　　⊡SD Spare drive (data saved)
　　　　　　　　　☐B() Error-blocked drive　　⊡N New drive (maintenance part)

Note: In the RAID 6 system, eight drives compose a parity group.

[Spare drive present]

[Case 14.2] When replacing a blocked drive after the automatic correction copy from it is completed

Condition item		Condi-tion	Procedure		
			Pre-procedure B		Hardware-procedure A
			Detachment of the two drives	Maintenance block	Replacement of the first drive
Threshold value exceeded	Warning	○	**1** Automatic correction copy + Automatic saving to the spare disk	**2** Proceed the drive to the next step when the copying from it is completed. It is not necessary to wait until the copying from the two drives is completed.	**3**
	Block	○			
Other case (secondary measure)			① Block destination a) Unused spare present (case 10) b) Unused spare absent (case 11)		

			Procedure		
			Post-procedure a		Hardware-procedure A
			INLINE test of the first drive	Copy back to the first drive	Replacement of the second drive during the copy back to the first drive
			4	**5**	**6**
			① Block new drive (case 8)	① Block source drive (case 9) ② Block destination (case 8)	

			Procedure		
			Post-procedure a		
			INLINE test of the second drive	Copy back to the second drive	Recovery
			7	**8**	**9**
			① Block new drive (case 8)	① Block source drive (case 9) ② Block destination (case 8)	

[Legends]

Parity group — Normal drive — S Spare drive — R6 : RAID6
W Warning error drive — SD Spare drive (data saved)
B( ) Error-blocked drive — N New drive (maintenance part)
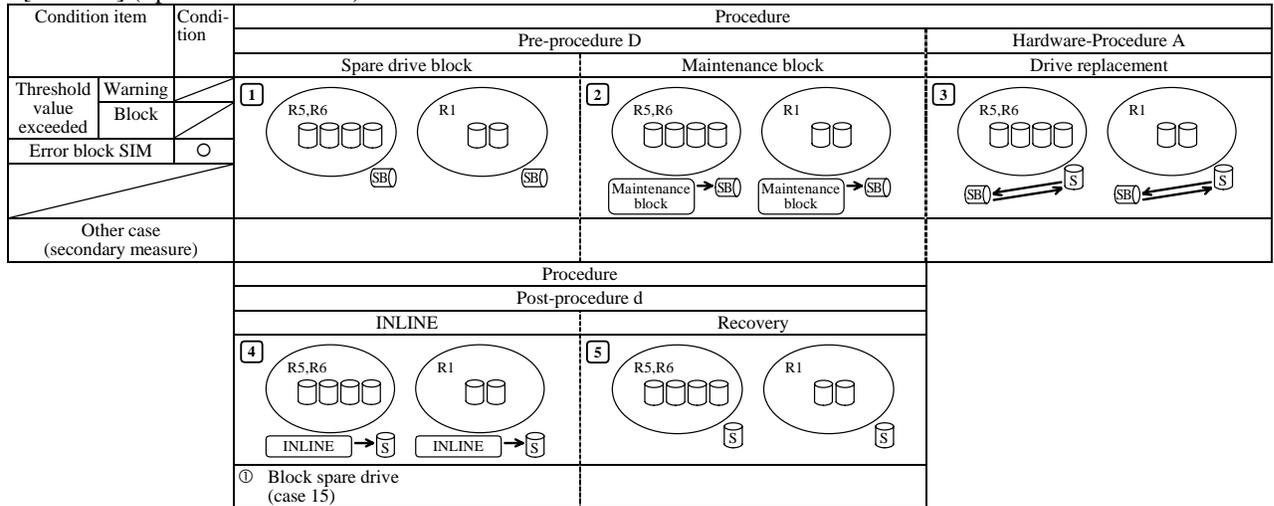
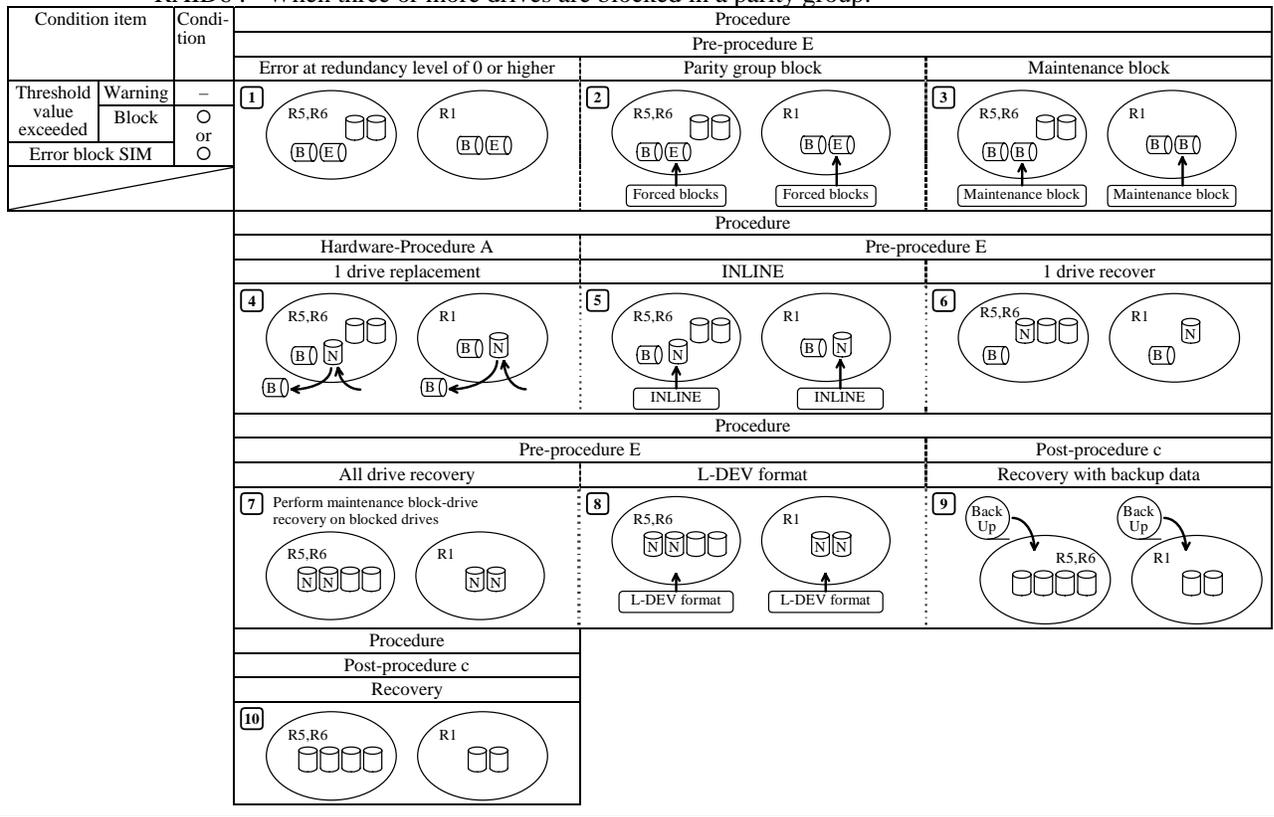Note: In the RAID 6 system, eight drives compose a parity group.

[Other Cases]

[Case 15] (Spare drive blocked)

[Case 16] (Case in which a block level error occurred in a normal drive with a redundancy level of 0)

RAID5 : When two or more drives are blocked in a parity group.
RAID1 : When two drives are blocked in a Mirroring pair.
RAID6 : When three or more drives are blocked in a parity group.

[Legends]

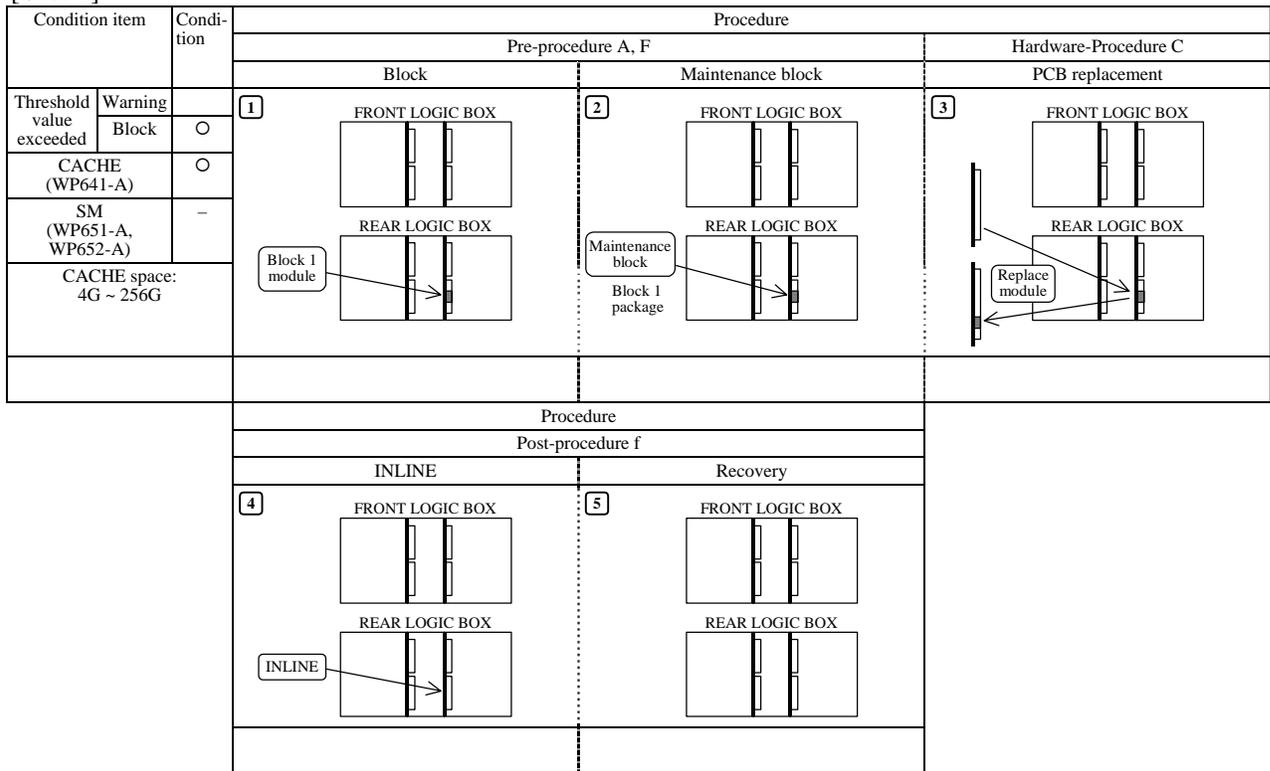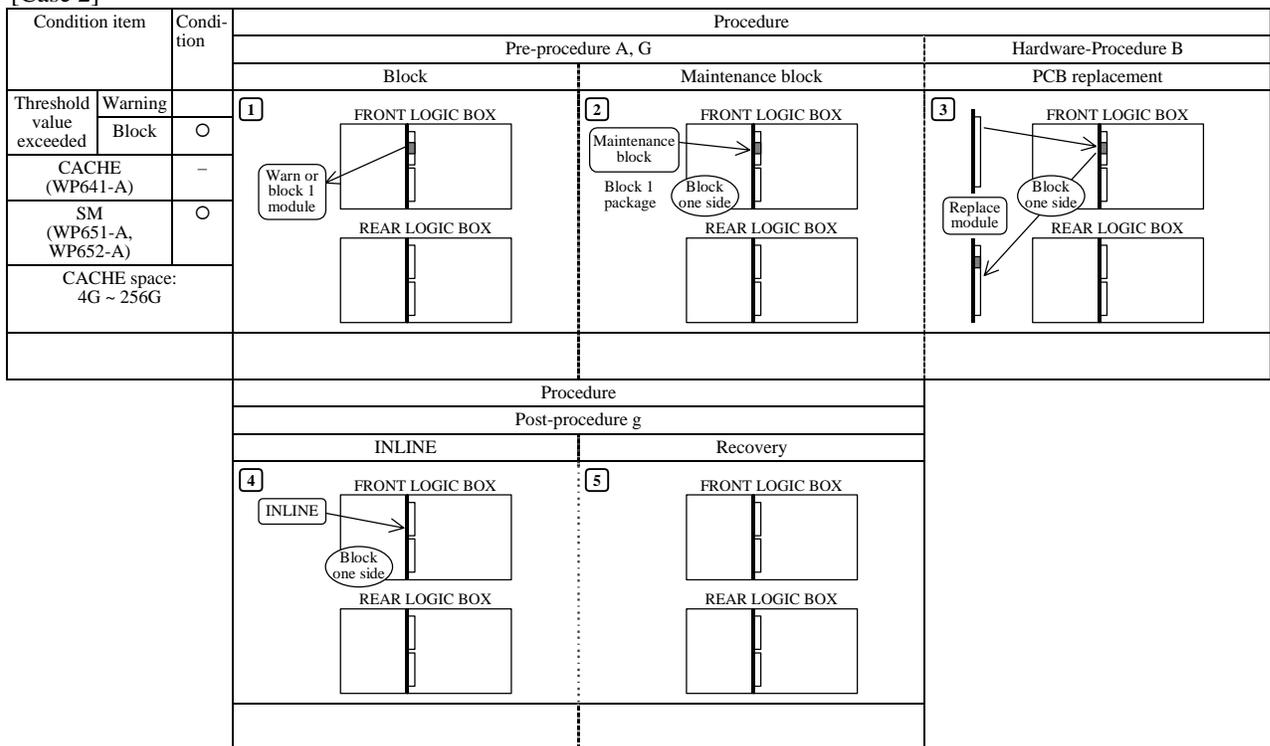| Symbol	Meaning
Parity group	
(cylinder)	Normal drive
S	Spare drive
B( )	Error-blocked drive
N	New drive (maintenance part)
SB( )	Error-block drive (spare drive)
E( )	Error drive (not blocked)

R5 : RAID5
R1 : RAID1
R6 : RAID6

(Note)

Note: In the RAID system, two drives form a mirroring pair and the two mirroring pairs (four drives) compose the RAID. In the above diagram, only the two mirroring pairs are shown. The RAID 6 system consists of eight drives practically.

[Other Cases]

[Case 17] (Preventive drive replacement 1)

Condition item		Condition	Procedure
			Pre-procedure C
			Replacement / Spare save / Maintenance block
Threshold value exceeded	Warning	–	1, 2, 3 (diagrams)
	Block	–	
Others (unusual noise, etc.)		O	
Spare drive		O	
Other case (secondary measure)			① Block source drive (case 2) ② Block destination drive a) Unused spare present (case 6) b) Unused spare absent (case 7)

Procedure — Hardware-Procedure A / Post-procedure a
Drive replacement (4) / INLINE (5) / Copy back (6)

① Block new drive (case 8)
① Block source drive (case 9)
② Block destination drive (case 8)

Procedure — Post-procedure a — Recovery (7)

[Case 18] (Preventive drive replacement 2)

Condition item		Condition	Procedure
			Pre-procedure D / Hardware-Procedure A
			Replacemant / Maintenance block / Drive replacement
Threshold value exceeded	Warning	–	1, 2, 3 (diagrams)
	Block	–	
Others (unusual noise, etc.)		O	
Spare drive		–	
Other case (secondary measure)			

Procedure — Post-procedure b
INLINE (4) / Correction copy (5) / Recovery (6)

① Block new drive (case 5)
② Block destination drive (case 5)

[Legends]

- Parity group
- Normal drive
- B () Error-blocked drive
- SD () Spare drive (data saved)
- E () Error drive (not blocked)
- S Spare drive
- N New drive (maintenance part)
- R5 : RAID5
- R1 : RAID1
- R6 : RAID6
- (Note)

Note: In the RAID system, two drives form a mirroring pair and the two mirroring pairs (four drives) compose the RAID. In the above diagram, only the two mirroring pairs are shown. The RAID 6 system consists of eight drives practically.

1.3 Concept of Cache Maintenance

[Case 1]

Condition item		Condi-tion	Procedure		
			Pre-procedure A, F		Hardware-Procedure C
			Block	Maintenance block	PCB replacement
Threshold value exceeded	Warning		⑴ FRONT LOGIC BOX	⑵ FRONT LOGIC BOX	⑶ FRONT LOGIC BOX
	Block	○			
CACHE (WP641-A)		○			
SM (WP651-A, WP652-A)		–	REAR LOGIC BOX	Maintenance block REAR LOGIC BOX	REAR LOGIC BOX
CACHE space: 4G ~ 256G			Block 1 module	Block 1 package	Replace module

Procedure	
Post-procedure f	
INLINE	Recovery
⑷ FRONT LOGIC BOX	⑸ FRONT LOGIC BOX
REAR LOGIC BOX	REAR LOGIC BOX
INLINE	

[Case 2]

Condition item		Condi-tion	Procedure		
			Pre-procedure A, G		Hardware-Procedure B
			Block	Maintenance block	PCB replacement
Threshold value exceeded	Warning		⑴ FRONT LOGIC BOX	⑵ FRONT LOGIC BOX	⑶ FRONT LOGIC BOX
	Block	○		Maintenance block	
CACHE (WP641-A)		–	Warn or block 1 module	Block 1 package / Block one side	Replace module / Block one side
SM (WP651-A, WP652-A)		○	REAR LOGIC BOX	REAR LOGIC BOX	REAR LOGIC BOX
CACHE space: 4G ~ 256G					

Procedure	
Post-procedure g	
INLINE	Recovery
⑷ FRONT LOGIC BOX	⑸ FRONT LOGIC BOX
INLINE / Block one side	
REAR LOGIC BOX	REAR LOGIC BOX

1.4 How to Interpret the Hot Replace Procedure

[In case of replacement when SIM was reported]

① Search a work ID which coincides with the work ID corresponding to SIM ACC (FPC) (refer to FPC list on page ACC04-10) from Parts Replacement Process Table on page REP01-250.
Search a work ID corresponding to the pertinent condition if "Condition Item" is described in Parts Replacement Process Table.

② If the work ID is found,
  • Take actions according to the SVP pre-procedure, hardware procedure, SVP post-procedure number that match the work ID.
  If no work ID is found,
  • Search a work ID corresponding to SIM ACC (FPC, and error details) from Parts Replacement Process Table on page REP01-250.
  • Take actions according to the SVP pre-procedure, hardware procedure, SVP post-procedure number that match the work ID.

  Note : See page REP01-230 for the procedure for searching a work ID to replace a drive.
          When replacing a drive, be sure to see page REP01-210 and REP01-220.

[In case of replacement when SIM was not reported]

① Search a work ID corresponding to the part to be replaced from Parts Replacement Process Table on page REP01-250.

② Take actions according to the SVP pre-procedure, hardware procedure, SVP post-procedure number that match the work ID.

  Note: See page REP01-230 for the procedure for searching the work ID to replace a drive.
          When replacing a drive, be sure to see page REP01-210 and REP01-220.

---<Example>---
Condition to replace
    SIM was reported
    Work ID corresponding to SIM ACC FPC is RCA1

    * Search an applicable Work ID identified by shaded area in the following sample of Parts Replacement Process Table under the above conditions.

<CACHE>

Work ID	Part Name	Procedure			Replacing Time
		SVP Pre-procedure	Hardware procedure	SVP post-procedure	
RCA1	Shared Memory (Shared Memory Module)	Pre Z (REP02-1060), Pre A (REP02-10), Pre G (REP02-300)	Hardware B (REP03-60)	Post g (REP04-200), Post z (REP04-1030)	50 min
RCA2					

PROCEDURE BEFORE PDEV EXCHANGE AND CORRECTION COPY

Instructions before blocking and exchanging PDEV with a drive failure error is listed below:
When exchanging unblocked PDEV, redundancy in the ECC group is lost. Therefore, during PDEV exchange, the other PDEV in the same ECC group is fenced by a drive failure error, all the LDEV in the ECC group is fenced. Accordingly, to prevent the above problem from occurring, the status of PDEV. When there is a PDEV in the same ECC group having more drive failure errors than the exchanging PDEV exists, replace the PDEV with highest drive failure errors.

Table1.4-1   Before PDEV exchange, following items are checked.

#	Items checked	Procedure
1	Error Count	"Threshold Counter Display" (See SVP02-490)
2	ORM Over Rate	"ORM Over Rate HDD# Display" (See SVP02-320)
3	Write Error	"Pinned Track Display" (See SVP02-1000)

PROCEDURE BEFORE PDEV EXCHANGE and CORRECTION COPY

ENTRY → PDEV exchange and correction copy

1A

Display "Threshold Counter Display" using the INFORMATION Display function in the SVP. Display ERROR COUNT for the exchanging PDEV and the other PDEV in same ECC group. (See SVP02-490)

Are any PDEV in same ECC group having more ERROR COUNT than the exchanging PDEV?

Yes → Replace PDEV with highest ERROR COUNT. → 1A

No →

Display "ORM Over Rate HDD# Display" using the INFORMATION Display function in the SVP. Display OVER RATE ERROR COUNT for the exchanging PDEV and the other PDEV in same ECC group. (See SVP02-320)

Are any PDEV in same ECC group having more OVER RATE ERROR COUNT than the exchanging PDEV

Yes → Replace PDEV with highest OVER RATE ERROR COUNT. → 1A

No →

Display 'Pinned Track' window using the 'Maintenance' window function in the SVP. (See SVP02-1000)

Are any PDEV having more Write Error track than the exchanging PDEV?

Yes → Replace PDEV with Most Write Error tracks. → 1A

No → Replace the exchanging PDEV.

END

REP01-220

How to search a work ID to replace a drive

Drive replacement

Note: When a work ID cannot be found by this procedure or when multiple errors in drives, see the page TRBL05-280 on TROUBLR SHOOTING section.

Does the system option (see page SVP02-1090) prohibit the dynamic sparing and correction copy?

Yes → Execute the recovery referring to the drive failure recovery procedure on page TRBL05-280.

No

Was SIM reported? — No

Yes

Is the level of SIM Serious? — Yes

No

Condition Item[Condition]= Warning SIM

Condition Item[Condition]= Block SIM

Condition Item[Condition]= Preventive

Is there the SIM indicating Drive Copy Started/Ended in the drive? (SIM RC = 4510, 4520, 4524, 4610, 4620, 4624) — Yes

No ← No — Spare drive is installed on th system of current configuration. Is it unused drive? — Yes

Condition Item[Configuration]=No spare drive

Condition Item[Configuration]=Spare drive exists

Search an appropriate Work ID from the Parts Replacement Process Table on REP01-250 according to the Condition Item [Condition] and Condition Item [Configuration] gotten in the above flowchart, and whether the drive to be replaced is installed in the position of spare drive or not.

-----------------<<Example>>-----------------

- SIM was reported.
- Level of the SIM is not "Serious".   = Condition Item[Condition] is "Warning SIM".
- There is the SIM that RC is 4510 in the drive.   = Condition Item[Configuration] is "Unused spare drive exists".
- The drive to be replaced is not a spare drive.   = "Data Drive"
* Under the above conditions, the shaded area is searched from Parts Replacement Process Table. Therefore, in this example Work ID should be RDK1.

<Data Drive, Spare Drive>

Work ID	Parts Name	Condition Item				Procedure			Reference information		
		Condition			Config-uration	SVP pre-procedure	Hardware procedure	SVP post-procedure	Replacing time	Outline	Case
		Failure		Preventive	Unused Spare drive						
		Warning SIM	Block SIM								
RDK1	Data Drive	×	—	—	Yes	Pre A (REP02-10), Pre B (REP02-40)	Hardware A (REP03-10)	Post a (REP04-10), Post z (REP04-1030)	20 min	Drive replace ~ Copy back	Case1
RDK2	Data Drive	—	×	—	Yes						

1.5 Parts Replacement Process Table

Note : If any other message that is not explained below is displayed, see the SVP Message Section (SVPMSG00-00).

<Data Drive, Spare Drive>

Work ID	Parts Name	Warning SIM	Block SIM	Preventive	Unused Spare drive	SVP pre-procedure	Hardware procedure	SVP post-procedure	Replacing time *2 *8 *9	Outline	Case *1
RDK1	Data Drive *3	×	—	—	Yes	Pre A (REP02-10), Pre B (REP02-40)	Hardware A (REP03-10)	Post a (REP04-10), Post z (REP04-1030)	20 min	Drive replace ~ Copy back	Case1
RDK2	Data Drive *3	—	×	—	Yes	Pre A (REP02-10), Pre B (REP02-40)	Hardware A (REP03-10)	Post a (REP04-10), Post z (REP04-1030)	20 min	Drive replace ~ Copy back	Case 2
RDK3	Data Drive *3	—	—	×	Yes	Pre A (REP02-10), Pre C (REP02-90), Pre B (REP02-40)	Hardware A (REP03-10)	Post a (REP04-10), Post z (REP04-1030)	—	Copy to Spare drive ~ Drive replace ~ Copy back	Case 17
RDK4	Data Drive *3, *6	×	—	—	No	Pre A (REP02-10), Pre D (REP02-140)	Hardware A (REP03-10)	Post b (REP04-50), Post z (REP04-1030)	20 min	Drive replace ~ Correction copy	Case 3
RDK5	Data Drive *3, *6	—	×	—	No	Pre A (REP02-10), Pre D (REP02-140)	Hardware A (REP03-10)	Post b (REP04-50), Post z (REP04-1030)	20 min	Drive replace ~ Correction copy	Case 4
RDK6	Data Drive *3, *6	—	—	×	No	Pre A (REP02-10), Pre D (REP02-140)	Hardware A (REP03-10)	Post b (REP04-50), Post z (REP04-1030)	20 min	Drive replace ~ Correction copy	Case 18
RDK7 *4, *5	Data Drive *3	*4				Pre A (REP02-10), Pre E (REP02-190)	Hardware A (REP03-10)	Post c (REP04-90), Post z (REP04-1030)	—	LDEV formatting after replacing all the HDDs blocked in a parity group *5	Case 16
RDK8	Spare Drive *3	—				Pre A (REP02-10), Pre D (REP02-140)	Hardware A (REP03-10)	Post d (REP04-150), Post z (REP04-1030)	20 min	Spare drive replace	Case 15

*1: Refer to REP01-20

*2: This time does not include copy back time of data in HDD. Refer to *8 for the HDD copy time.

*3: Parts Name is indicates attribute of a drive.
Data Drive: The drive is installed in the position for a drive except spare drive (Data Drive).
Spare Drive: The drive is installed in the position for a spare drive.

*4: RDK7 is a Work ID for a work which is applicable to a case that two or more drives in a same parity group are blocked. As to RAID 6, when three or more drives are blocked. When the procedures instructed by RDK7 are executed, data will be lost. Ask the technical support division about the appropriateness of the operation. When you want to restore LDEV status for the purpose of data backup, please go to TRBL05-490.

*5: Confirm the parity group and the LDEV No. corresponding to the HDD through the SVP STATUS. See page SVP03-130 for the procedure for referring to SVP STATUS

*6: See "PROCEDURE BEFORE PDEV EXCHANGE AND CORRECTION COPY" (REP01-210).

*7: In case of RAID6, when two HDDs were blocked in the parity group, you can start the replacement from either of two HDDs.

Note: If a Work ID cannot be found or if multiple drive error is occurring, see page TRBL05-280 on TROUBLE SHOOTING section.

*8: HDD copy time

(1) No IO, Other than OPEN-V   Copy Mode = Interleave Medium

HDD type	Copy type	RAID1 (2D+2D)	RAID5 (3D+1P)	RAID5 (7D+1P)	RAID6 (6D+2P)
K600	Drive copy	2h30m	←	←	←
(15Krpm)	Correction copy	↑	10h55m	16h00m	16h00m
K450	Drive copy	2h15m	←	←	←
(15Krpm)	Correction copy	↑	9h40m	14h10m	14h10m
J400	Drive copy	2h45m	←	←	←
(10Krpm)	Correction copy	↑	7h00m	9h10m	9h10m
J300	Drive copy	2h30m	←	←	←
(10Krpm)	Correction copy	↑	6h00m	8h40m	8h40m
K300	Drive copy	2h00m	←	←	←
(15Krpm)	Correction copy	↑	5h00m	7h00m	7h00m
K146	Drive copy	1h05m	←	←	←
(15Krpm)	Correction copy	↑	2h50m	4h20m	4h20m
K072	Drive copy	35m	←	←	←
(15Krpm)	Correction copy	↑	1h15m	2h05m	2h05m
H0R7AT	Drive copy	9h20m	←	←	←
(SATA)	Correction copy	↑	13h50m	16h30m	16h30m
H1R0AT	Drive copy	12h30m	←	←	←
(SATA)	Correction copy	↑	18h30m	22h00m	22h00m
H2R0AT	Drive copy	25h00m	←	←	←
(SATA)	Correction copy	↑	37h00m	44h00m	44h00m
S072	Drive copy	25m	←	←	←
(SSD)	Correction copy	↑	25m	40m	40m
S146	Drive copy	50m	←	←	←
(SSD)	Correction copy	↑	50m	1h20m	1h20m
S200	Drive copy	1h15m	←	←	←
(SSD)	Correction copy	↑	1h15m	2h00m	2h00m
S400	Drive copy	2h30m	←	←	←
(SSD)	Correction copy	↑	2h30m	4h00m	4h00m

(2) No IO, OPEN-V   Copy Mode = Interleave Medium

HDD type	Copy type	RAID1 (2D+2D)	RAID5 (3D+1P)	RAID5 (7D+1P)	RAID6 (6D+2P)
K600	Drive copy	2h10m	←	←	←
(15Krpm)	Correction copy	↑	5h00m	7h00m	7h00m
K450	Drive copy	1h40m	←	←	←
(15Krpm)	Correction copy	↑	4h00m	5h50m	5h50m
J400	Drive copy	2h30m	←	←	←
(10Krpm)	Correction copy	↑	3h45m	5h00m	5h00m
J300	Drive copy	2h10m	←	←	←
(10Krpm)	Correction copy	↑	3h05m	4h20m	4h20m
K300	Drive copy	1h45m	←	←	←
(15Krpm)	Correction copy	↑	2h30m	3h30m	3h30m
K146	Drive copy	55m	←	←	←
(15Krpm)	Correction copy	↑	1h35m	2h20m	2h20m
K072	Drive copy	30m	←	←	←
(15Krpm)	Correction copy	↑	45m	1h15m	1h15m
H0R7AT	Drive copy	8h55m	←	←	←
(SATA)	Correction copy	↑	8h40m	11h10m	11h10m
H1R0AT	Drive copy	12h00m	←	←	←
(SATA)	Correction copy	↑	11h40m	14h50m	14h50m
H2R0AT	Drive copy	24h15m	←	←	←
(SATA)	Correction copy	↑	24h30m	31h10m	31h10m
S072	Drive copy	20m	←	←	←
(SSD)	Correction copy	↑	15m	25m	25m
S146	Drive copy	40m	←	←	←
(SSD)	Correction copy	↑	30m	50m	50m
S200	Drive copy	1h00m	←	←	←
(SSD)	Correction copy	↑	45m	1h15m	1h15m
S400	Drive copy	2h00m	←	←	←
(SSD)	Correction copy	↑	1h30m	2h30m	2h30m

• In the case of RAID1 (2D+2D), the copy time of the primary HDD and that of the secondary HDD are the same.
• The copy time of RAID1 (4D+4D) is the same as RAID1 (2D+2D).
• When CVS is used, the copy time is proportional to the amount of LDEV assigned in the parity group.
  (Eg: If the amount of LDEV assigned is 50%, the copy time is half the above-mentioned values.)

*9: The drive copy to the spare drive of the RAID1 is copied from the drive (normal drive) of the pair of which the failure occurred.
(Because there is a case where a failure occurs in the copy source drive and the copy time is delayed in the usual form that performs copying from the drive of which the failure occurred.)
However, the copy back (copy from the spare drive to the data drive) is copied from the spare drive as usual.

*10: When SATA-Enhance method (Refer to THEORY03-3350) is applied, the correction copy time takes 1.3 times more than that shown in the above table, except for RAID1 (2D+2D).

• Time changes by the Device constitution (the HDD number of DKA subordinates, etc), and the Internal re-try processing (Head positioning, Handling of re-covered process).
Please make a range to 1.5 times of above time an aim.

<Shared Memory, Cache Memory>

Work ID	Part Name	Procedure			Replacing Time (*1)(*2)
		SVP Pre-procedure	Hardware procedure	SVP post-procedure	
RCA1	Shared Memory Shared Memory Module (*3)	Pre Z (REP02-1060) (*3), Pre A (REP02-10), Pre G (REP02-300)	Hardware B (REP03-60)	Post g (REP04-200), Post z (REP04-1030)	50 min
RCA2	Cache Memory Cache Memory Module (*3)	Pre Z (REP02-1060) (*3), Pre A (REP02-10), Pre F (REP02-250)	Hardware C (REP03-110)	Post f (REP04-180), Post z (REP04-1030)	20 min

*1: The destaging operation takes 30 minutes to 2 hours (SVP time out).

*2: The time for the dump is not included.

*3: In the case of Memory Module, the dump to removable media is unnecessary.
Thus you can skip the SVP pre-procedure Z, so start from SVP pre-procedure A.

Note: When a cache PCB is replaced for preventive reasons, one side of cache is blocked. As a result, the subsystem performance may degrade.

<Channel Adapter, Disk Adapter, FSW, and CARB Switch>

Work ID	Part Name	Procedure			Replacing Time (*2)
		SVP Pre-procedure	Hardware procedure	SVP post-procedure	
RCH1	Serial CHA	Pre Z (REP02-1060) (*4), Pre A (REP02-10), Pre H (REP02-350)	Hardware D (REP03-160)	Post h (REP04-220), Post z (REP04-1030)	20 min
RCH2	Fibre-T CHA	Pre Z (REP02-1060) (*4), Pre A (REP02-10), Pre H (REP02-350)	Hardware E (REP03-200)	Post h (REP04-220), Post z (REP04-1030)	20 min
RCH3	Mainframe Fibre CHA	Pre Z (REP02-1060) (*4), Pre A (REP02-10), Pre H (REP02-350)	Hardware F (REP03-240)	Post h (REP04-220), Post z (REP04-1030)	20 min
RDA1	DKA (DKF, EDKF)	Pre Z (REP02-1060) (*4), Pre A (REP02-10), Pre H (REP02-350)	Hardware J (REP03-360)	Post h (REP04-220), Post z (REP04-1030)	20 min
RFS1	FSW	Pre Z (REP02-1060) (*4), Pre A (REP02-10), Pre L (REP02-460)	Hardware T16 (REP03-1010)	Post j (REP04-250), Post z (REP04-1030)	10 min
RCS1	CSW	Pre Z (REP02-1060) (*4), Pre A (REP02-10), Pre M (REP02-510)	Hardware K (REP03-400)	Post k (REP04-280), Post z (REP04-1030)	13 min

*2: The time for the dump is not included.

*4: Caution of the USB device insertion to SVP
If revision control does not indicates "C" or "T", it means that the FC of "SVP down induced by USB memory insertion" has been applied yet, please carry out the FC according to the FCB.
If voltages are abnormal or if there appears to be damage to the cable, then please contact Technical Support Team for guidance.

If a failure occurs in replacing a channel adaptor or a disk adaptor, see "Error Recovery Procedure during CHA/DKA replacement" (TRBL05-130).
If a failure occurs in replacing a CSW PCB, see "Recovery procedure for failed CSW PCB replacement" (TRBL05-640).

<DKC, special P/K, Fan, Others>

Work ID	Part Name	Procedure			Replacing Time
		SVP Pre-procedure	Hardware procedure	SVP post-procedure	
RTC1	DKCPANEL	Pre A (REP02-10), Pre T1 (REP02-550)	Hardware T1 (REP03-440)	Post t1 (REP04-300), Post z (REP04-1030)	16 min
RTC2	EPOSW	Pre A (REP02-10), Pre T1 (REP02-550)	Hardware T2 (REP03-470)	Post t1 (REP04-300), Post z (REP04-1030)	12 min
RTC3	SSVP/MN	Pre A (REP02-10), Pre T1 (REP02-550)	Hardware T3 (REP03-500)	Post t1 (REP04-300), Post z (REP04-1030)	22 min
RTC4	PCICON (*1)	Pre A (REP02-10), Pre T1 (REP02-550)	Hardware T4 (REP03-520)	Post t1 (REP04-300), Post z (REP04-1030)	16 min
RTC5	FAN Assembly (LG)	Pre A (REP02-10), Pre T1 (REP02-550)	Hardware T5 (REP03-570)	Post t1 (REP04-300), Post z (REP04-1030)	8 min
RTC6	Thermostat Assembly	Pre A (REP02-10), Pre T1 (REP02-550)	Hardware T6 (REP03-590)	Post t1 (REP04-300), Post z (REP04-1030)	8 min
RTC7	SVP	Pre A (REP02-10), Pre T1 (REP02-550) (*2)	Hardware T7 (REP03-610)	Post t1 (REP04-300), Post z (REP04-1030)	40 min
RTC8	FAN Assembly (HDD)	Pre A (REP02-10), Pre T4 (REP02-810)	Hardware T8 (REP03-750)	Post t4 (REP04-850), Post z (REP04-1030)	15 min
RTC9	Battery Box (12V)	Pre A (REP02-10), Pre T1 (REP02-550)	Hardware T9 (REP03-770)	Post t1 (REP04-300), Post z (REP04-1030)	11 min
RTCB	DKC PS	Pre A (REP02-10), Pre T1 (REP02-550)	Hardware T11 (REP03-870)	Post t1 (REP04-300), Post z (REP04-1030)	11 min
RTCC	AC BOX (*3) (3 Phase/30A DKC)	Pre A (REP02-10), Pre T1 (REP02-550)	Hardware T18 (REP03-1110)	Post t1 (REP04-300), Post z (REP04-1030)	28 min
RTCD	AC BOX (*3) (Single Phase/30A DKC)	Pre A (REP02-10), Pre T1 (REP02-550)	Hardware T19 (REP03-1260)	Post t1 (REP04-300), Post z (REP04-1030)	28 min
RTCE	AC BOX (*3) (Single Phase/50A DKC)	Pre A (REP02-10), Pre T1 (REP02-550)	Hardware T20 (REP03-1410)	Post t1 (REP04-300), Post z (REP04-1030)	28 min
RTCF	Fibre SFP Transceiver	Pre A (REP02-10), Pre T5 (REP02-960)	Hardware T21 (REP03-1540)	Post t5 (REP04-960), Post z (REP04-1030)	5 min
—	FDD	—	Hardware T22 (REP03-1580)	—	10 min
RTCG	FUSE	Pre A (REP02-10), Pre T1 (REP02-550)	Hardware T24 (REP03-1670)	Post t4 (REP04-850), Post z (REP04-1030)	10 min
RTCH	BATREG	Pre A (REP02-10), Pre T1 (REP02-550)	Hardware T23 (REP03-1640)	Post t1 (REP04-300), Post z (REP04-1030)	10 min

*1: All connected devices to DKC610I are powered off by EPO signal of PCI when the PCICON PCB is removed.
     Prevent the trouble for connected devices from EPO signal.
*2: When SVP is not able to operate, start from Hardware procedure. (When SVP High Reliability Kit is not installed.)
*3: Caution of the ACBOX Replacement
     If revision control does not indicates "C" or "T", it means that the FC of "SVP down induced by USB memory insertion" has been applied yet, please carry out the FC according to the FCB.
     If voltages are abnormal or if there appears to be damage to the cable, then please contact Technical Support Team for guidance.

<DKU, Special P/K, Power Supply, Fan>

Work ID	Part Name	Procedure			Replacing Time
		SVP Pre-procedure	Hardware procedure	SVP post-procedure	
RTU1	SVR	Pre A (REP02-10), Pre T4 (REP02-810)	Hardware T17 (REP03-1050)	Post t4 (REP04-850), Post z (REP04-1030)	10 min
RTU2	DKU PS	Pre A (REP02-10), Pre T4 (REP02-810) *1	Hardware T15 (REP03-980)	Post t4 (REP04-850), Post z (REP04-1030)	10 min
RTU3	FAN Assembly (DKU)	Pre A (REP02-10), Pre T4 (REP02-810) *1	Hardware T14 (REP03-950)	Post t4 (REP04-850), Post z (REP04-1030)	15 min
RTU4	AC BOX (3 Phase/30A DKU)	Pre A (REP02-10), Pre T4 (REP02-810) *1	Hardware T18 (REP03-1110)	Post t4 (REP04-850), Post z (REP04-1030)	30 min
RTU5	AC BOX (Single Phase/30A DKU)	Pre A (REP02-10), Pre T4 (REP02-810) *1	Hardware T19 (REP03-1260)	Post t4 (REP04-850), Post z (REP04-1030)	30 min
RTU6	AC BOX (Single Phase/50A DKU)	Pre A (REP02-10), Pre T4 (REP02-810) *1	Hardware T20 (REP03-1410)	Post t4 (REP04-850), Post z (REP04-1030)	30 min
RTU7	BATTERY BOX (56V)	Pre A (REP02-10), Pre T4 (REP02-810)	Hardware T10 (REP03-810)	Post t4 (REP04-850)	11 min
RTU8	FUSE	Pre A (REP02-10), Pre T4 (REP02-810)	Hardware T24 (REP03-1670)	Post t4 (REP04-850), Post z (REP04-1030)	10 min

*1: When SVP is not able to operate, start from Hardware procedure.

1.6 Availability of the online maintenance when HRC/HORC/HAM is used

Component	Maintenance Type	Condition	HRC path established		During initial copy		After completing initial copy		Suspend	
			MCU	RCU	MCU	RCU	MCU	RCU	MCU	RCU
Logical Device	Blockade	—	×	×	SVP2031W (*3)	SVP2034W (*3)	SVP2031W (*3)	SVP2034W (*3)	SVP2031W (*3)	SVP2034W (*3)
	Recovery	—	×	×	SVP2031W (*3)	SVP2034W (*3)	SVP2031W (*3)	SVP2034W (*3)	SVP2031W (*3)	SVP2034W (*3)
	Format	—	×	×	SVP2031W (*3)	SVP2034W (*3)	SVP2031W (*3)	SVP2034W (*3)	SVP2031W (*3)	SVP2034W (*3)
	Verify	—	×	×	×	×	×	×	×	×
HDD canister	Replace	—	×	×	×	×	×	×	×	×
Cache or SM	Replace	—	×	×	SVP2059W	SVP2079W	× (*1)(*2)	× (*2)	×	×
CHE or CHF	Replace	With Alternate path.	×	×	×	SVP2038W	×	SVP2038W	×	SVP2038W
		Without Alternate path.	×	×	SVP2073W	SVP2038W	SVP2074W	SVP2038W	×	SVP2038W
DKA	Replace	—	×	×	×	×	×	×	×	×
CSW PCB	Replace	—	×	×	×	×	×	×	×	×
DKC	Replace	With Alternate path.	×	×	SVP2059W	SVP2079W		SVP2038W	×	SVP2038W
		Without Alternate path.	×	×	SVP2059W	SVP2079W	SVP2074W	SVP2038W	×	SVP2038W

Component	Maintenance Type	Condition	Suspending		Deleting	
			MCU	RCU	MCU	RCU
Logical Device	Blockade	—	SVP2031W (*3)	SVP2034W (*3)	SVP2031W (*3)	SVP2034W (*3)
	Recovery	—	SVP2031W (*3)	SVP2034W (*3)	SVP2031W (*3)	SVP2034W (*3)
	Format	—	SVP2031W (*3)	SVP2034W (*3)	SVP2031W (*3)	SVP2034W (*3)
	Verify	—	×	×	×	×
HDD canister	Replace	—	×	×	×	×
Cache or SM	Replace	—	× (*1)	×	× (*1)	×
CHE or CHF	Replace	With Alternate path.	×	SVP2038W	×	SVP2038W
		Without Alternate path.	SVP2075W	SVP2038W	SVP2075W	SVP2038W
DKA	Replace	—	×	×	×	×
CSW PCB	Replace	—	×	×	×	×
DKC	Replace	With Alternate path.	×	SVP2038W	×	SVP2038W
		Without Alternate path.	SVP2075W	SVP2038W	SVP2075W	SVP2038W

×: Maintenance is available.
SVPXXXXW : Maintenance is not available based on the specification.
Refer to SVP MESSAGE SECTION.

Note: About replacement of CHE in the RCU side.
　　　 If the CHE that will be replaced is connected to a path, from MCU please confirm that the
　　　 Path is deleted from MCU.
　　　 After replacement, please add the Path.

The pair can be suspended if the ESTPAIR or paircreate (pairresync) command is issued during the
HDD Canister or the Cache PCB replacement. Please ask your customer before the online
maintenance operation.
Refer to "11. Procedures for online microprogram exchange and CHF replacement using alternate
path" (MICRO11-10).

*1: For HRC ASYNC Pairs, a maintenance with the cache blockage is recommended to operate
　　 with capacities of Sidefile and Write Pending Data being 20% below. If the above maintenance
　　 is Performed with high capacities of Sidefile and Write Pending Data, the operation will take
　　 long and way cause impact such as MIH occurrence on the host operation.
　　 Besides, in the case of cache de-install operation, you must suspend ASYNC HRC pairs by
　　 RMC (SVP) before operation regardless of the capacities of Sidefile and Write Pending Data.
　　 If you don't suspend the ASYNC pairs as above, available cache capacity will decrease to
　　 suspend the pairs.
　　 Refer to "Monitoring" in the SVP SECTION for the Sidefile monitor.

*2: In the case of distinct UR pairs, it is recommended to execute the maintenance activity
　　 involving cache blockade at primary / secondary sites of Sync Pairs, keeping the write-pending
　　 data volumes at below 20%.
　　 Also, if the maintenance activity is carried out at the aforesaid sites, maintenance activity
　　 consumes time, further there is a possibility of MIH occurrence etc., to the extent of affecting
　　 the processing on the host.

Note the following when performing a maintenance operation in an environment where TPC-R,
which is disaster recovery software of IBM, is used.

*3: If you need to delete a pair used by TrueCopy for Mainframe when performing a maintenance
　　 operation, delete the TrueCopy for Mainframe pair by using Web Console.
　　 After the maintenance operation is completed, you can restore the status of the TrueCopy for
　　 Mainframe pair by performing operations using TPC-R.

1.7 (Blank)

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1.8 Availability of the online maintenance when HMRCF/HOMRCF is used

Component	Maintenance Type	Cond-ition	Reserve-Volume	Pending/Resync/ SP-PEND		Duplex		Split		Suspend	
				S-VOL/ P-VOL	T-VOL/ S-VOL	S-VOL/ P-VOL	T-VOL/ S-VOL	S-VOL/ P-VOL	T-VOL/ S-VOL	S-VOL/ P-VOL	T-VOL/ S-VOL
Logical Device	Blockade	—	SVP2484W	SVP2483W	SVP2485W	SVP2483W	SVP2485W	SVP2483W	SVP2485W	×	
	Restore	—	×	SVP2483W	SVP2485W	SVP2483W	SVP2485W	SVP2483W	SVP2485W	×	
	Format	—	×	SVP2483W	SVP2485W	SVP2483W	SVP2485W	SVP2483W	SVP2485W	×	
	Verify	—	×	×		×		×		×	
HDD canister	Replace	—	×	×		×		×		×	
	Dynamic Sparing	—	×	×		×		×		×	
	Correction Copy	—	×	×		×		×		×	
Cache PCB	Replace	—	×	×		×		×		×	
CHA	Replace	—	×	×		×		×		×	
DKA	Replace	—	×	×		×		×		×	

1.9 Availability of the online maintenance when HXRC is used

Component	Maintenance Type	During initial copy		Established		Suspend	
		Primary	Secondary	Primary	Secondary	Primary	Secondary
Logical Device	Blockade	**	**	**	**	**	**
	Recovery	**	**	**	**	**	**
	Format	**	**	**	**	**	**
	Verify	×	×	×	×	×	×
HDD canister	Replace	×	×	×	×	×	×
Cache PCB	Replace	*	×	*	×	*	×
CHA	Replace	×	×	×	×	×	×
		×	×	×	×	×	×
DKA	Replace	×	×	×	×	×	×
CSW PCB	Replace	×	×	×	×	×	×

×:   Maintenance is available

*:   When a maintenance operation is needed while HXRC is being used, I/O's for HXRC pair volumes or HXRC itself should be stopped before the maintenance operation.
If the maintenance operation must be done while HXRC is being used, you must confirm that the usage of Sidefile monitor is less than 20% of total Cache capacity before you start the maintenance operation. Only when the usage of Sidefile monitor is less than 20% of total Cache capacity, you can proceed the maintenance operation.
Refer to "Monitoring" in the SVP SECTION about Sidefile monitor.
Select the [Monitor] icon in the 'SVP' window.
Next select the [Monitor] menu in the 'Information' window and select [start....].
Next select the 'Sidefile' box in the 'Item' menu in the 'Monitoring' window and select [OK].

**:   When a maintenance operation is needed while HXRC is being used, HXRC should be stopped before the maintenance operation.

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1.10 Availability of the online maintenance when UR is used

JNL-GROUP

Component	Maintenance Type	Condition	HRC path established		Initial		Active	
			MCU	RCU	MCU	RCU	MCU	RCU
Logical Device	Blockade	—	×	×	SVP3825W	SVP3825W	SVP3825W	SVP3825W
	Recovery	—	×	×	SVP3825W	SVP3825W	SVP3825W	SVP3825W
	Format	—	×	×	SVP3825W	SVP3825W	SVP3825W	SVP3825W
	Verify	—	×	×	×	×	×	×
HDD canister	Replace	—	×	×	×	×	×	×
CACHE or SM	Replace	—	×	×	×	×	×	×
CHE or CHF	Replace	With Alternate path	×	×	×	×	×	×
		Without Alternate path	×	×	×	×	×	×
DKA	Replace	—	×	×	×	×	×	×
CSW	Replace	—	×	×	×	×	×	×
DKC	Replace	With Alternate path	×	×	×	×	×	×
		Without Alternate path	×	×	×	×	×	×

Component	Maintenance Type	Condition	Halt		Halting	
			MCU	RCU	MCU	RCU
Logical Device	Blockade	—	SVP3825W	SVP3825W	SVP3825W	SVP3825W
	Recovery	—	SVP3825W	SVP3825W	SVP3825W	SVP3825W
	Format	—	SVP3825W	SVP3825W	SVP3825W	SVP3825W
	Verify	—	×	×	×	×
HDD canister	Replace	—	×	×	×	×
CACHE or SM	Replace	—	×	×	×	×
CHE or CHF	Replace	With Alternate path	×	×	×	×
		Without Alternate path	×	×	×	×
DKA	Replace	—	×	×	×	×
CSW	Replace	—	×	×	×	×
DKC	Replace	With Alternate path	×	×	×	×
		Without Alternate path	×	×	×	×

Component	Maintenance Type	Condition	Stop		Stopping	
			MCU	RCU	MCU	RCU
Logical Device	Blockade	—	SVP3825W	SVP3825W	SVP3825W	SVP3825W
	Recovery	—	SVP3825W	SVP3825W	SVP3825W	SVP3825W
	Format	—	SVP3825W	SVP3825W	SVP3825W	SVP3825W
	Verify	—	×	×	×	×
HDD canister	Replace	—	×	×	×	×
CACHE or SM	Replace	—	×	×	×	×
CHE or CHF	Replace	With Alternate path	×	×	×	×
		Without Alternate path	×	×	×	×
DKA	Replace	—	×	×	×	×
CSW	Replace	—	×	×	×	×
DKC	Replace	With Alternate path	×	×	×	×
		Without Alternate path	×	×	×	×

DATA-VOL

Component	Maintenance Type	Condition	HRC path established		During initial copy		After completing initial copy	
			MCU	RCU	MCU	RCU	MCU	RCU
Logical Device	Blockade	—	×	×	SVP2031W	SVP2034W	SVP2031W	SVP2034W
	Recovery	—	×	×	SVP2031W	SVP2034W	SVP2031W	SVP2034W
	Format	—	×	×	SVP2031W	SVP2034W	SVP2031W	SVP2034W
	Verify	—	×	×	×	×	×	×
HDD canister	Replace	—	×	×	×	×	×	×
CACHE or SM	Replace	—	×	×	SVP2059W	SVP2079W	×	×
CHE or CHF	Replace	With Alternate path	×	×	SVP3848W	×	SVP3848W	×
		Without Alternate path	×	×	SVP3848W	SVP2073W	SVP3848W	SVP2074W
DKA	Replace	—	×	×	×	×	×	×
CSW	Replace	—	×	×	×	×	×	×
DKC	Replace	With Alternate path	×	×	SVP3848W	×	SVP3848W	×
		Without Alternate path	×	×	SVP3848W	SVP2073W	SVP3848W	SVP2074W

Component	Maintenance Type	Condition	Suspend		Suspending		Deleting	
			MCU	RCU	MCU	RCU	MCU	RCU
Logical Device	Blockade	—	SVP2031W	SVP2034W	SVP2031W	SVP2034W	SVP2031W	SVP2034W
	Recovery	—	SVP2031W	SVP2034W	SVP2031W	SVP2034W	SVP2031W	SVP2034W
	Format	—	SVP2031W	SVP2034W	SVP2031W	SVP2034W	SVP2031W	SVP2034W
	Verify	—	×	×	×	×	×	×
HDD canister	Replace	—	×	×	×	×	×	×
CACHE or SM	Replace	—	×	×	×	×	×	×
CHE or CHF	Replace	With Alternate path	×	×	SVP3848W	×	SVP3848W	×
		Without Alternate path	×	×	SVP3848W	SVP2075W	SVP3848W	SVP2075W
DKA	Replace	—	×	×	×	×	×	×
CSW	Replace	—	×	×	×	×	×	×
DKC	Replace	With Alternate path	×	×	SVP3848W	×	SVP3848W	×
		Without Alternate path	×	×	SVP3848W	SVP2075W	SVP3848W	SVP2075W

×: Maintenance is available

SVPXXXXW: Maintenance is not available based on the specification. Refer to SVP MESSAGE
SECTION.

1.11 About the storage media used for installation/maintenance process

The media showed in following table are attached in subsystem, in order to advance installation, maintenance, and failure analysis smoothly.   Please implement installation or collect information according to the work procedure indicated in each section.

No.	Media	Description	Installation device	Remarks
1	CD-ROM	CD-R for micro program storage. Used for installation or micro program download in time of micro FC.	CD-R Drive of CE Laptop PC	Attached to the device
2	USB Memory	The USB memory for configuration information backup. Used for configuration information storage in time of device configuration change.	USB Connector of SVP	Attached to the device
3	USB Memory	USB memory for collecting device dump information. Used for collecting dump information in time of failure analysis or operation investigation.	USB Connector of SVP	Attached to the device
4	CD-R	CD-R Used for collecting PCB dump information in time of PCB (CHA/DKA/CMA/SMA/CSW/FSW) replacement.	CD-R Drive of CE Laptop PC	Attached to PCB as a spare part
5	Floppy Disk	FD for collecting HDD dumps information in time of HDD replacement.	FDD	Attached to HDD as a spare part

Information collection device for each media
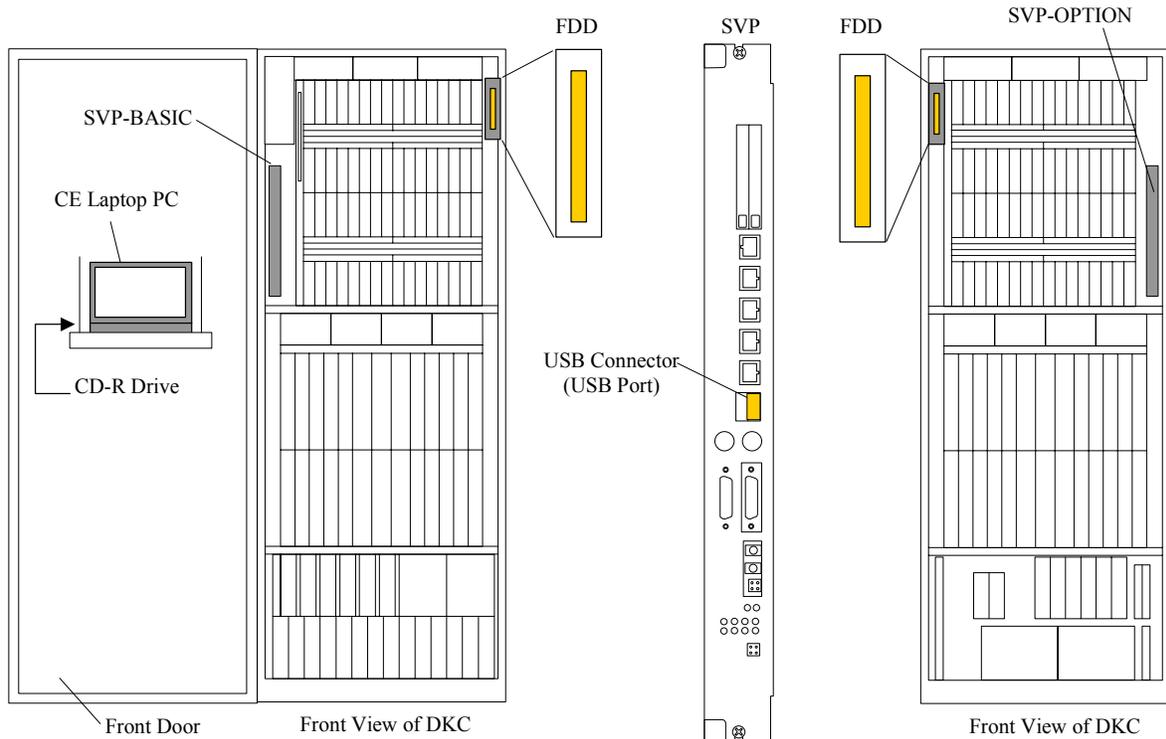
[PRE-PROCEDURE A]

— OUTLINE —

① Display Initial Screen
② Change SVP operation mode
③ Open Maintenance window

1. <Initial screen>
    Display the SVP initial screen from SVP Section "1. How to Operate the SVP (PC)" (SVP01-10).

2. <Checking Apache version >
    To replace other than the SVP, go to step 3.
    To replace the SVP, you may need to replace the Apache.
    When the option WEB server is installed in the SVP before replacement, you need to install the option WEB server to the SVP after replacement. In such case, it is required to install Apache whose version is the same as the one before the replacement.
    When the SVP High Reliability Support Kit has been installed, or when you can check the version in the SVP before the replacement, use the following procedure to check the Apache version installed in the SVP before replacement.
    When the SVP High Reliability Support Kit has not been installed, and if you cannot operate the SVP before the replacement, apply the shipped Apache version. If you replace the SVP, Apache program before product shipment which is corresponding to the microprogram version after replacement is installed. Refer to the WEB CONSOLE section for the relation between the version of SVP and Apache.

    (1)
        Select (DR) [Start]-[Control Panel].
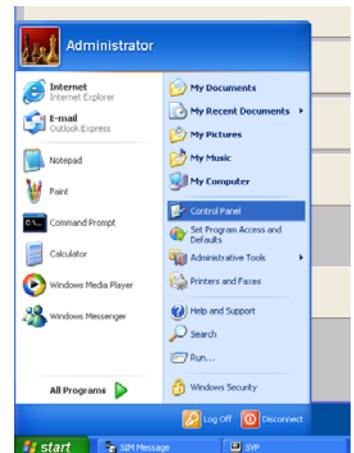
(2)
[In case of Windows XP]
  Select (DC) [Add or Remove Programs].

[In case of Windows Vista]
  Select (DC) [Programs and Features].

(3)
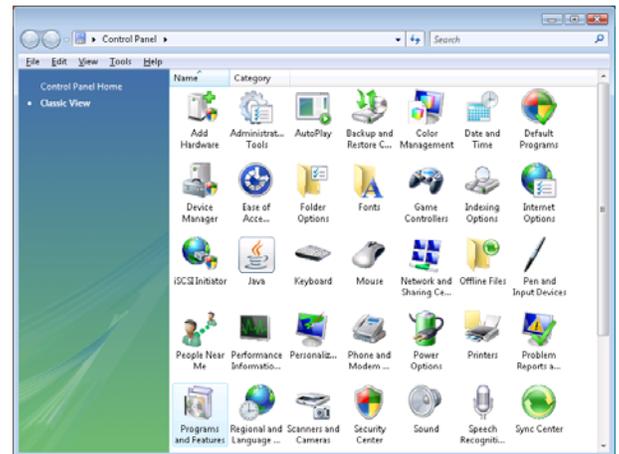
[In case of Windows XP]

Check the content of [Currently installed programs] in the 'Add or Remove Programs' window.
If [Apache HTTP Server 2.0.54] exists, Apache 2.0.54 is installed.
If [Apache HTTP Server 2.2.4] exists, Apache 2.2.4 is installed.

When the Apache version check is completed, select (CL) the [×] button.
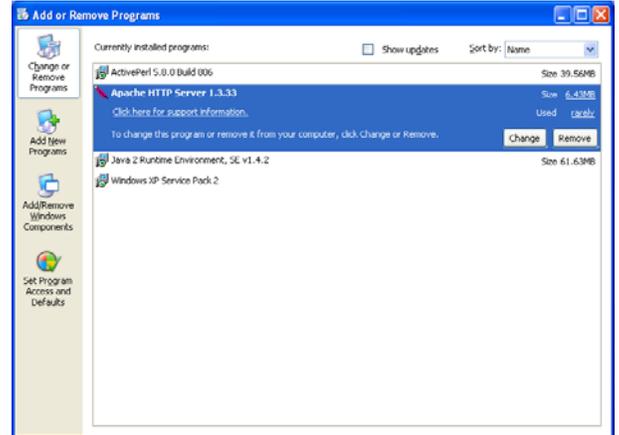
[In case of Windows Vista]

Check the content of program list in the 'Programs and Features' window.
If [Apache HTTP Server 2.0.54] exists, Apache 2.0.54 is installed.
If [Apache HTTP Server 2.2.4] exists, Apache 2.2.4 is installed.

When the Apache version check is completed, select (CL) the [×] button.
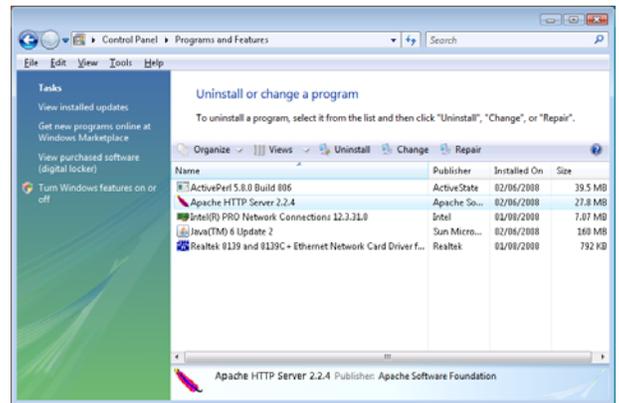
3. <Operation mode change>
   Change the mode to [Modify Mode].
   Select (CL) [Maintenance].

4. <Maintenance window>
   The 'Maintenance' window is displayed.
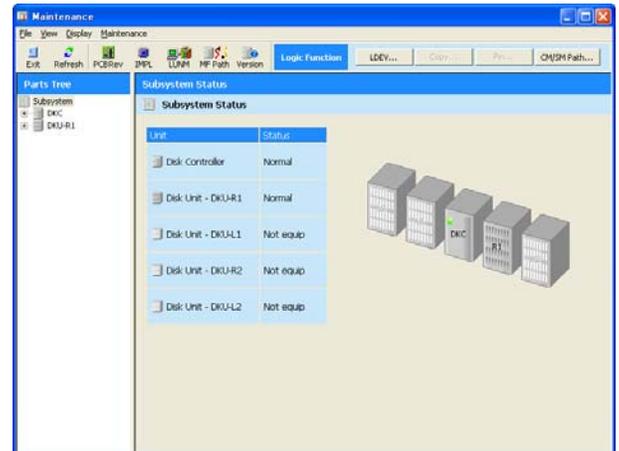
[PRE-PROCEDURE B]

— OUTLINE —

① Select drive (status check)
② Check progress of copy processing
③ Specify Replacement
④ Place HDD into unpluggable state

1. <Maintenance window>
    Select (CL) the DKU information of the DKU
    which installs the HDD to be replaced in the
    'Maintenance' window.

    • In case of DKU-R0
      Select (CL) [Disk controller].

    • In case of other than DKU-R0
      Select (CL) [Disk Unit - DKU-XX].

2. <Select HDU>
    Select (CL) the HDU information of the HDU which installs the HDD to be replaced.

    • In case of DKU-R0
      Select (CL) [DKU-R0 Front] or [DKU-R0
      Back].

    Select (CL) [HDU-R0X / HDU-R0X].

• In case of other than DKU-R0
  Select (CL) [HDU-XXX / HDU-XXX].

3. <Select HDD>
   Check and select (CL) [nn] to be replaced.
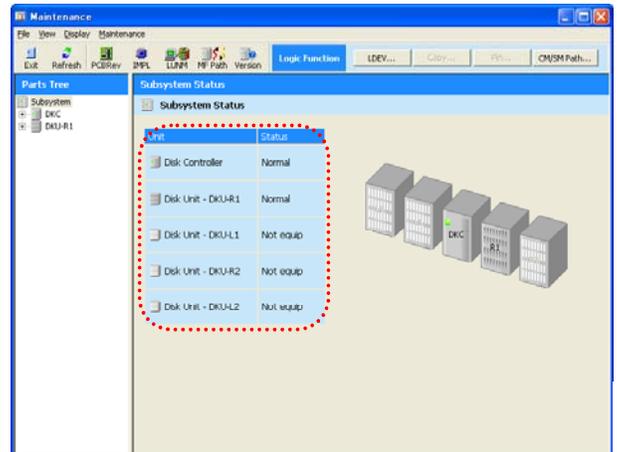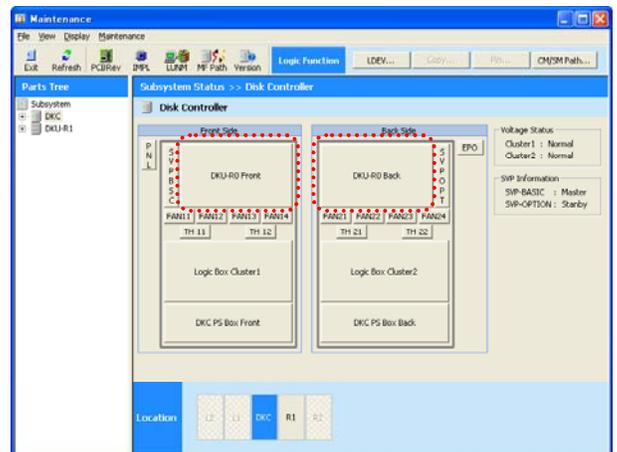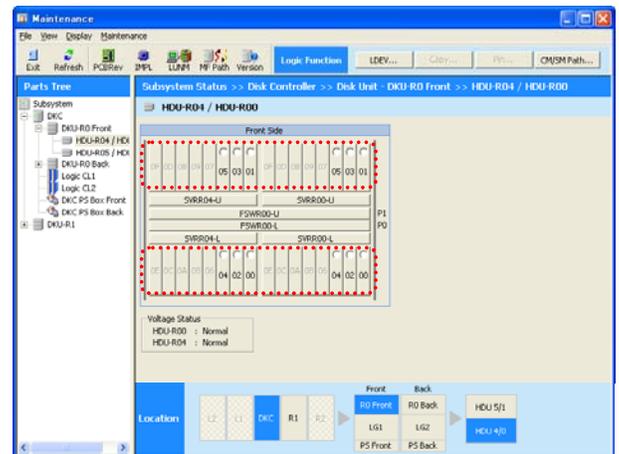
4. <Specify replacement of HDD>
   Make sure that the "Device Status" is [Failed]
   or [Warning] or [Reserved].

   Select (CL) [Replace]-[Replace].
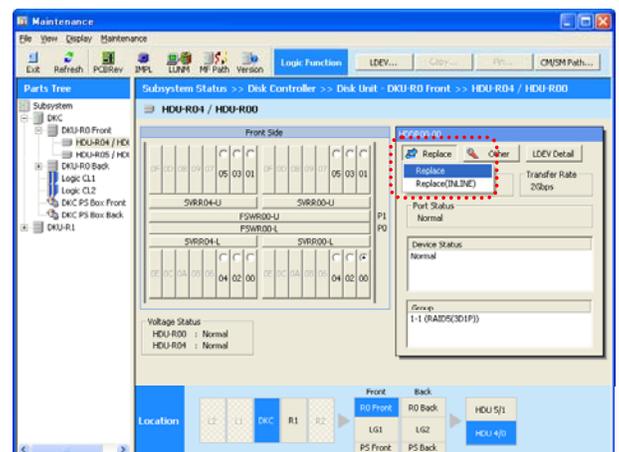
5. <Checking the P-DEV status>
   "Checking..." is displayed.

6. <P-DEV blocking>

⚠ CAUTION

When the screen appears prompting the operator to input a password to prevent multiple maintenance or for executing a pin check, contact the technical support division to ask for instructions.


If any other message that is not explained below is displayed, see the SVP Message Section (SVPMSG00-00).

Select (CL) [Yes] in response to "Are you sure you want to replace the physical device?".

```
Replace                                    ☒
   ⓘ   [ONL2311i]

        Are you sure you want to replace the physical device?

           [ Yes ]          No
```

7. <Blocking the Physical device>
   "Blocking..." is displayed.

8. <Spin down the Physical device>
   "Spinning down..." is displayed.

Perform the dummy replacement of the displayed FSW(s) when the window is displayed. Select the DKU list and record the target FSW(s) because two or more DKU might be listed.
Select (CL) [Close] button and perform the dummy replacement of the target FSW(s).

Retry the replacement after completing the dummy replacement of FSW.

```
Replace                                    ☒
   ❌   [ONL4189E]

        The process ended abnormally.
        Record all the displayed FSW(s).
        Recover first the failed or blocked part, and then
        perform dummy replacement for the displayed FSW(s).
        After that, repeat the same operation.

        DKU              Target FSW
        ┌──────────┬─┐   ┌──────────────┐
        │ DKU-R0   │▼│   │ FSWR00-L     │
        └──────────┴─┘   │ FSWR01-L     │
                         │ FSWR02-L     │
                         │              │
                         └──────────────┘
                              [ Close ]
```

9. <Check shut down LED>

> ⚠ **CAUTION**
>
> If a wrong HDD is removed, a data loss or a system down may occur.

Check the shut down LED on the HDD to be replaced.
If LED is off, reconfirm the location of the HDD to be replaced with LOCATION SECTION before replacing the hardware.

---

10. <Confirm Replacement>
    Select (CL) [OK] in response to "The LED of some other disk drive might be on. Please check the location of the disk drive that you want to replace. After that, please replace the disk drive and then select OK. (HDDxnn-nn)" after the unit is replaced.

Replace

[ONL2314i]

The LED of some other disk drive might be on.
Please check the location of the disk drive that you want to replace.
After that, please replace the disk drive and then select OK.
(HDDR00-00)

OK

---

11. <Replace HDD>
    Replace HDD.
    See HARDWARE A (REP03-10).

[PRE-PROCEDURE C]

— OUTLINE —

① Select drive (status check)
② Specify Replacement
③ Save Spare

Hitachi Proprietary

REP02-100
Rev.0 / Mar.2007

SC02540Z

DKC610I
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1. \<Maintenance window>
Select (CL) the DKU information of the DKU which installs the HDD to be replaced in the 'Maintenance' window.

   • In case of DKU-R0
     Select (CL) [Disk controller].

   • In case of other than DKU-R0
     Select (CL) [Disk Unit - DKU-XX].

2. \<Select HDU>
Select (CL) the HDU information of the HDU which installs the HDD to be replaced.
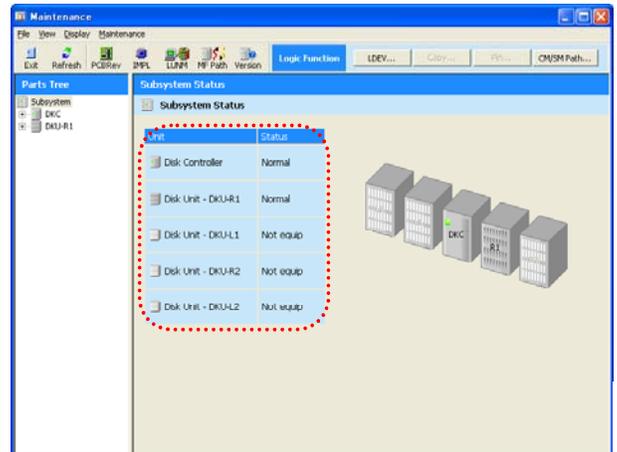
   • In case of DKU-R0
     Select (CL) [DKU-R0 Front] or [DKU-R0 Back].
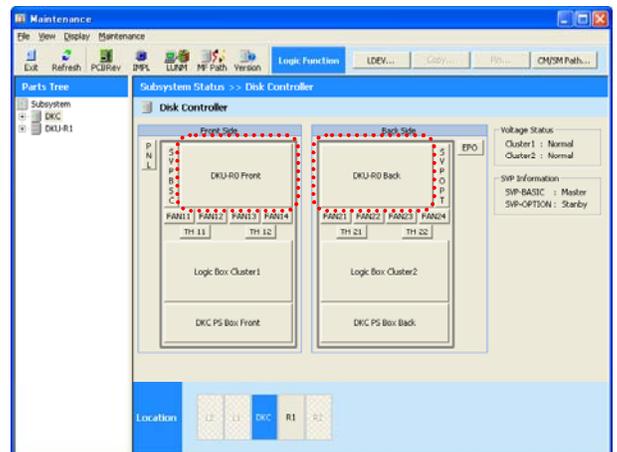
Select (CL) [HDU-R0X / HDU-R0X].
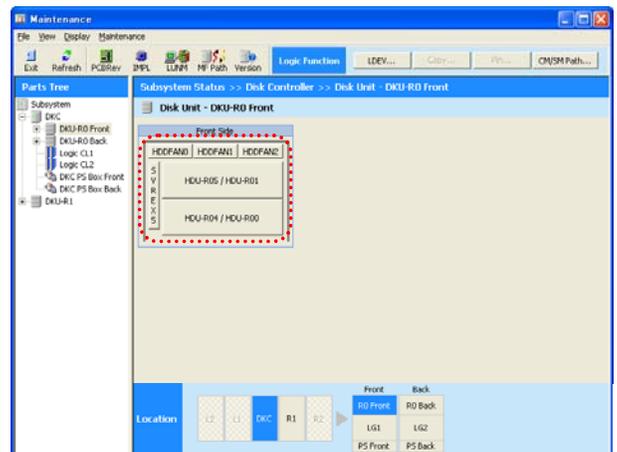
• In case of other than DKU-R0
  Select (CL) [HDU-XXX / HDU-XXX].
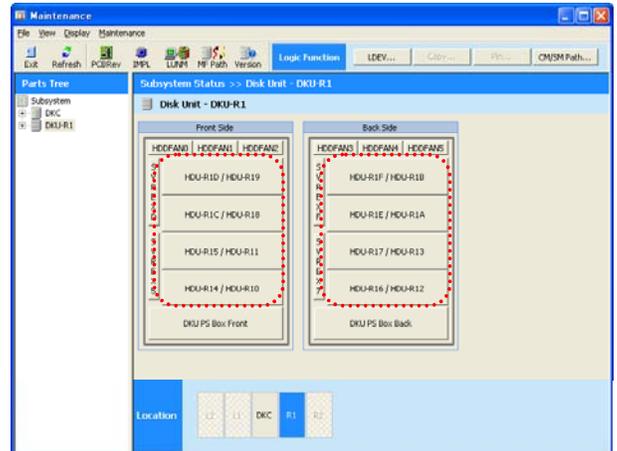
3. <Select HDD>
   Check and select (CL) [nn] to be replaced.
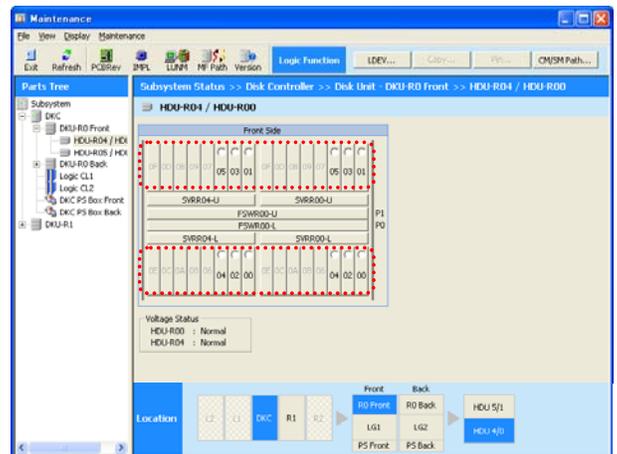
4. <Specify replacement of HDD>
   Select (CL) [Other]-[Spare Disk].

5. \<Checking the P-DEV status>

⚠ **CAUTION**

When the screen appears prompting the operator to input a password to prevent multiple maintenance, or for executing a pin check, contact the technical support division to ask for instructions.

If any other message that is not explained below is displayed, see the SVP Message Section (SVPMSG00-00).

"Checking..." is displayed.

---

6. \<Saving the spare>
Select (CL) [Yes] in response to "Are you sure you want to copy data in the physical device to spare?".

Replace

[ONL2401i]

Are you sure you want to copy data in the physical device to spare?

Yes No

---

7. \<Saving in process>
"Copying..." is displayed.

---

8. \<End of spare saving>
Select (CL) [Yes] in response to "Copying data in the physical device to spare has been started.".

Replace

[ONL2402i]

Copying data in the physical device to spare has been started.

Yes No

9.

When interrupting a copy, select (CL) the
[Drive Interrupt] button.

10.

Please execute Pre procedure B after finishing copy. (REP02-40)

[PRE-PROCEDURE D]

— OUTLINE —

① Select P-DEV (status check)
② Specify Replacement
③ Place HDD into unpluggable state

1. <Maintenance window>
    Select (CL) the DKU information of the DKU
    which installs the HDD to be replaced in the
    'Maintenance' window.

    • In case of DKU-R0
      Select (CL) [Disk controller].

    • In case of other than DKU-R0
      Select (CL) [Disk Unit - DKU-XX].

2. <Select HDU>
    Select (CL) the HDU information of the HDU which installs the HDD to be replaced.

    • In case of DKU-R0
      Select (CL) [DKU-R0 Front] or [DKU-R0
      Back].

    Select (CL) [HDU-R0X / HDU-R0X].

- In case of other than DKU-R0
  Select (CL) [HDU-XXX / HDU-XXX].

3. <Select HDD>
    Check and select (CL) [nn] to be replaced.

4. <Specify replacement of HDD>
    Make sure that the "Device Status" is [Failed] or [Warning].
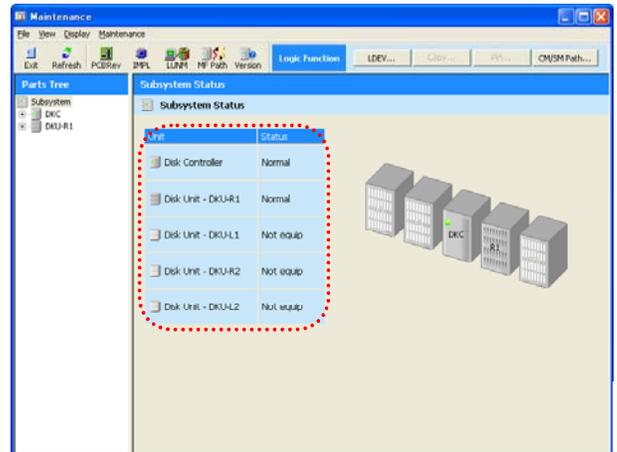
    Select (CL) [Replace]-[Replace].
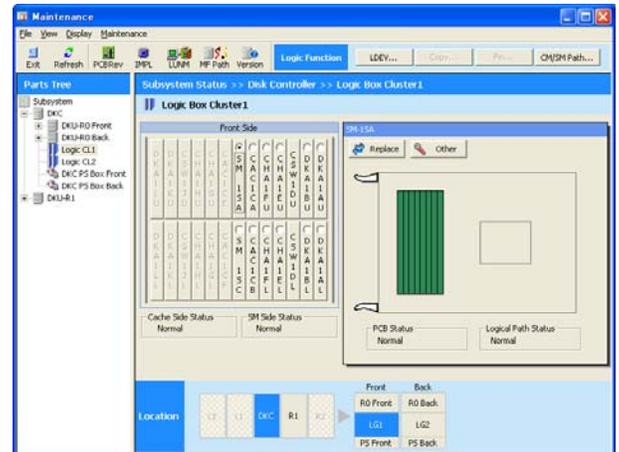
5. <Checking the P-DEV status & saving the spare>

> ⚠ **CAUTION**
>
> When the screen appears prompting the operator to input a password to prevent multiple maintenance or for executing a pin check, contact the technical support division to ask for instructions.


If any other message that is not explained below is displayed, see the SVP Message Section (SVPMSG00-00).

"Checking..." is displayed.

---

6. <P-DEV blocking>
    Select (CL) [Yes] in response to "Are you sure you want to replace the physical device?".

    Replace
    [ONL2311i]
    Are you sure you want to replace the physical device?
    [Yes]   [No]

---

7. <Blocking the Physical device>
    "Blocking..." is displayed.

---

8. <Spin down the Physical device>
    "Spinning down..." is displayed

    Perform the dummy replacement of the displayed FSW(s) when the window is displayed. Select the DKU list and record the target FSW(s) because two or more DKU might be listed.
    Select (CL) [Close] button and perform the dummy replacement of the target FSW(s).

    Retry the replacement after completing the dummy replacement of FSW.

    Replace
    [ONL4189E]
    The process ended abnormally.
    Record all the displayed FSW(s).
    Recover first the failed or blocked part, and then perform dummy replacement for the displayed FSW(s).
    After that, repeat the same operation.

    DKU   Target FSW
    DKU-R0 ▼   FSWR00-L
                           FSWR01-L
                           FSWR02-L

                           [Close]

---

9. <Check shut down LED>

⚠ **CAUTION**

If a wrong HDD is removed, a data loss or a system down may occur.

Check the shut down LED on the HDD to be replaced.
If LED is off, reconfirm the location of the HDD to be replaced with LOCATION SECTION before replacing the hardware.

---

10. <Confirmation of replace>
Select (CL) [OK] in response to "The LED of some other disk drive might be on. Please check the location of the disk drive that you want to replace. After that, please replace the disk drive and then select OK. (HDDxnn-nn)" after the unit is replaced (Step 11).

Replace
ⓘ [ONL2314i] The LED of some other disk drive might be on. Please check the location of the disk drive that you want to replace. After that, please replace the disk drive and then select OK. (HDDR00-00) OK

---

11. <Replace HDD>
Replace HDD.
See HARDWARE A (REP03-10).

[PRE-PROCEDURE E]

— OUTLINE —

① Select HDD (status check)
② Specify Replacement
③ Block parity group (enter password)
④ Place HDD into unpluggable state
⑤ Replace HDD
⑥ Perform steps ② to ⑤ on blocked drives in parity group

⚠ **CAUTION**

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 division about the appropriateness of the operation, and input the password after getting an approval of executing the operation.

---

1. <Maintenance window>
    Select (CL) the DKU information of the DKU
    which installs the HDD to be replaced in the
    'Maintenance' window.

    • In case of DKU-R0
      Select (CL) [Disk controller].

    • In case of other than DKU-R0
      Select (CL) [Disk Unit - DKU-XX].

2. <Select HDU>
    Select (CL) the HDU information of the HDU which installs the HDD to be replaced.

    • In case of DKU-R0
      Select (CL) [DKU-R0 Front] or [DKU-R0
      Back].

      Select (CL) [HDU-R0X / HDU-R0X].

• In case of other than DKU-R0
Select (CL) [HDU-XXX / HDU-XXX].

3. <Select HDD>
Check and select (CL) [nn] to be replaced.
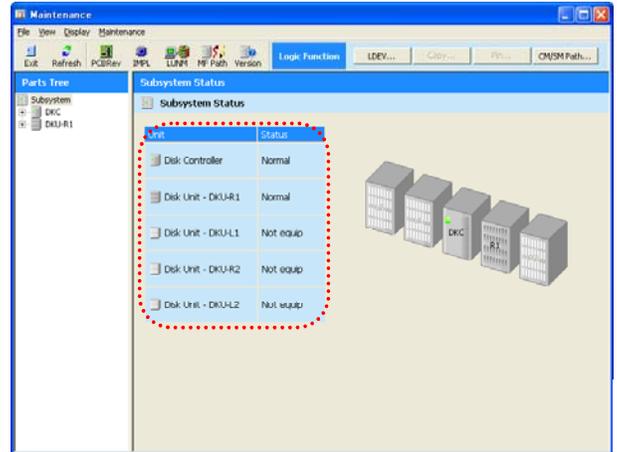
4. <Specify replacement of HDD>
Make sure that the "Device Status" is
[Failed].

Select (CL) [Replace]-[Replace].
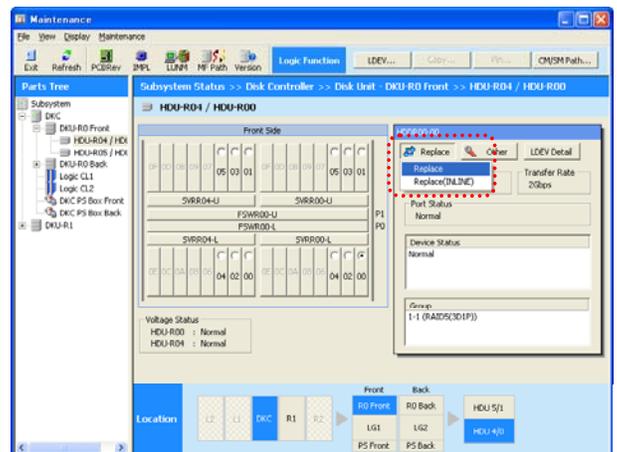
5. <Confirm lost data>

> ## ⚠ CAUTION
>
> Executing this operation may cause a serious error such as a system down or a data loss. Accordingly, confirmation of the appropriateness of the operation and input of a password on the succeeding password input screen is required.

Select (CL) [No] in response to "Redundancy is lost and blocking this part stops subsystem functionality.　Do you want to stop this process?".

---
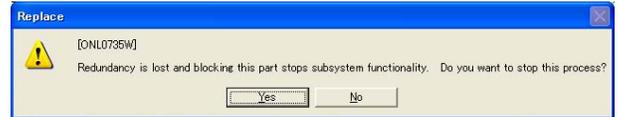
6. <Enter password>

> ## ⚠ CAUTION
>
> 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 division about the appropriateness of the operation, and input the password after getting an approval of executing the operation.

Enter the password in response to "Ask the Technical Support Division about the appropriateness of this operation, and enter the password." and select (CL) [OK]. Password is needed for this operation.
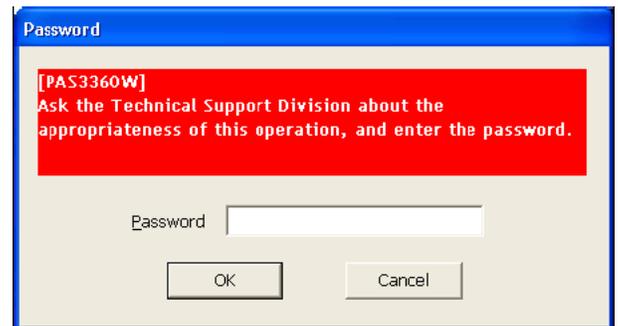
7. <Checking the P-DEV status>
   If any other message that is not explained below is displayed, see the SVP Message
   Section (SVPMSG00-00).

   "Checking..." is displayed.

   When "You can restore the replaced physical
   device by restoring logical devices. Do you
   continue to this operation?" is displayed,
   PDEV is automatically recovered by recovering LDEV.

   When you replace PDEV and format LDEV, please select (CL) [Yes].
   When you want to change LDEV into a collection access state for the purpose of data backup,
   please select [No] and go to LDEV recovery for multiple PDEV failures (SVP02-940).

8. <P-DEV blocking>
   Select (CL) [Yes] in response to "Are you
   sure you want to replace the physical
   device?".

9. <Blocking the Physical device>
   "Blocking..." is displayed.

10. <Spin down the Physical device>
    "Spinning down..." is displayed.
    The Shut down LED is lit.

    Perform the dummy replacement of the
    displayed FSW(s) when the window is
    displayed. Select the DKU list and record the
    target FSW(s) because two or more DKU
    might be listed.
    Select (CL) [Close] button and perform the
    dummy replacement of the target FSW(s).

    Retry the replacement after completing the
    dummy replacement of FSW.
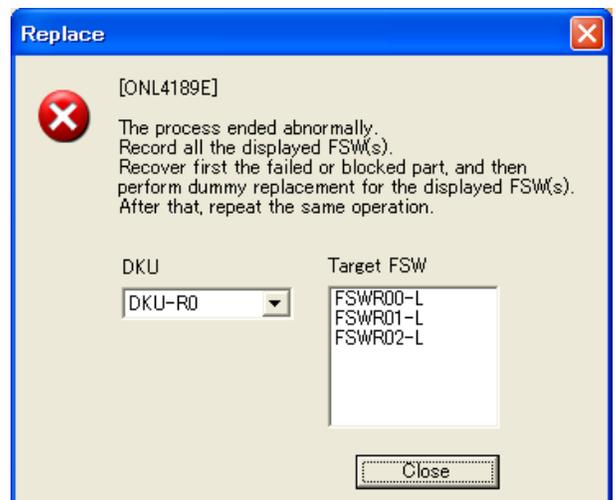
11. <Replace HDU>
     Select (CL) [OK] in response to "The LED of
     some other disk drive might be on. Please
     check the location of the disk drive that you
     want to replace. After that, please replace the
     disk drive and then select OK. (HDDxnn-nn)"
     after the unit is replaced.
     (See HARDWARE A (REP03-10))

```
┌─ Replace ────────────────────────────────── ☒ ┐
│                                                │
│   ┌─┐   [ONL2314i]                             │
│   │i│                                          │
│   └─┘   The LED of some other disk drive might be on.    │
│         Please check the location of the disk drive that you want to replace.  │
│         After that, please replace the disk drive and then select OK.   │
│         (HDDR00-00)                            │
│                                                │
│              ┌──────────────┐                  │
│              │      OK      │                  │
│              └──────────────┘                  │
└────────────────────────────────────────────────┘
```

12. <Replace HDD>
     Replace HDD.
     See HARDWARE A (REP03-10).

[PRE-PROCEDURE F]

— OUTLINE —

① Select cache (status check)
② Specify Replacement
③ Place PCB into unpluggable state

1. <Maintenance window>
    Select (CL) [Disk Controller] in the
    'Maintenance' window.

2. <DKC window>
    Select (CL) [Logic Box ClusterX] in the
   'DKC' window.

3. <Select Cache>
    Select (CL) Cache.
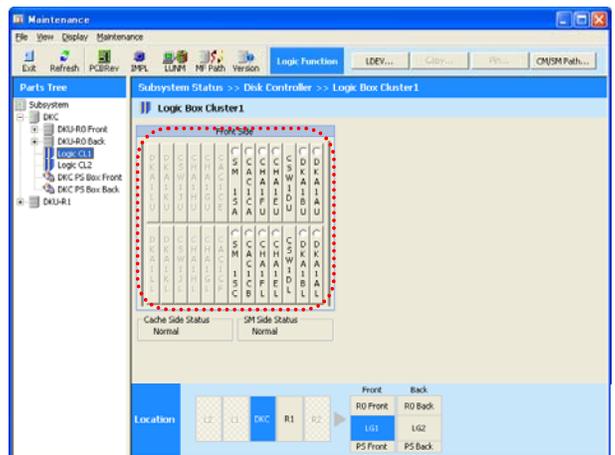
4. \<Specify replacement of cache\>

⚠ CAUTION

When the screen appears prompting the operator to input a password to prevent multiple maintenance or for executing a pin check, contact the technical support division to ask for instructions.

If any other message that is not explained below is displayed, see the SVP Message Section (SVPMSG00-00).

Check status display.
Select (CL) [Replace].

---

5. \<Check the beginning of cache replace\>
   Select (CL) [Yes] after making sure that the package to be replaced is correct in response to "Do you want to replace the PCB(CACHE-nnn)? If [Yes] is selected, the PCB needs to be removed and inserted again.".
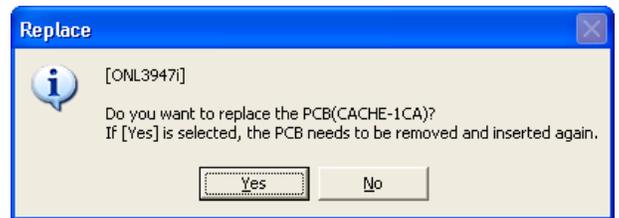
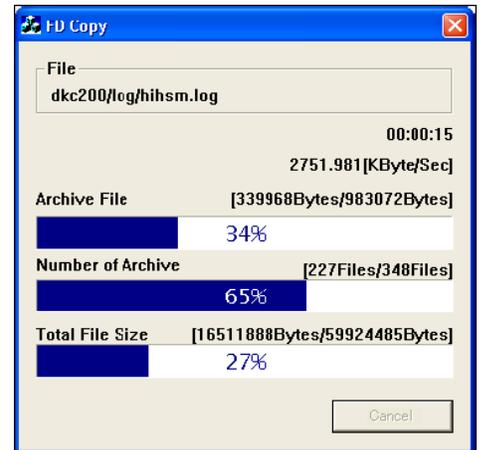6. \<Compression of the error information\>
    The error information is compressed.
    The dialog of FDCopy is displayed.

---

7. <Get the error information>
    Input the Field Failure Information, and select (CL) [Ok].
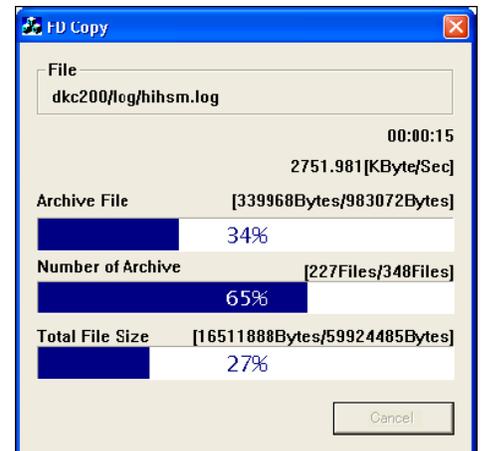
[HDS]	[HP]

"Insert a removable media for gathering error information and select [OK]. The information will be essential to investigate the problem of the hardware. You can select [Cancel] only when removable media is not available." is displayed.

*:   When Cache Memory Module is replaced, select (CL) [Cancel] because the dump is not required.

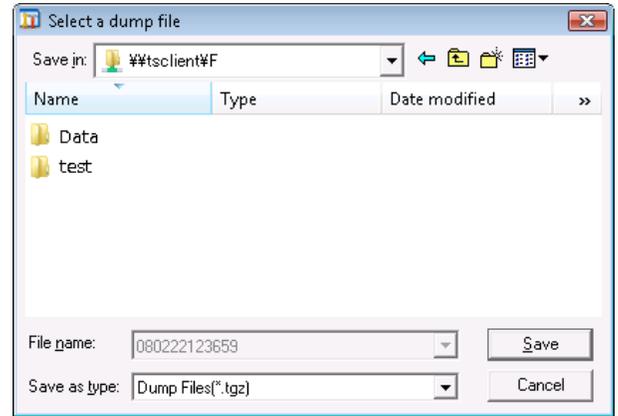A Primary copy is always placed on the SVP HD in the "c:\dkc200\others\pcbinfo\" directory with the following file name format "YYMMDDhhmmss.tzg".
(YY denotes Year, MM denotes Month, DD denotes Day, hh denotes Hour, mm denotes Minute, and ss denotes Second).

If Client PC is selected, a second copy is placed into the root directory of the drive selected on the Client PC. Please burn this to CDROM from the Client PC and return it with the defective part.

It is suggested to move it from the root directory to another directory of the CE's choosing if desired. Unfortunately it is not possible to select this directory initially. Therefore it must be a manual process as follows. After Client PC is selected, the 'Select a dump file' window is displayed to select a directory. In this window, specify a desired directory, and select (CL) [Save].

Note: Operation steps when the icon of the new folder creation is grayed out.
        Right click the button, select "New" then "Folder", and then a new folder is created.

• When the destination media is write-protected.
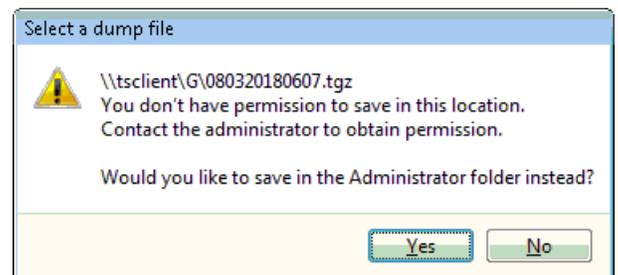<For Windows XP>

<For Windows Vista>
Select (CL) [Yes] displays the "C:\users\Administrator" folder of SVP.
Select (CL) [No] displays the folder selected with the Client PC.

• When dialog of the destination drive specified with the Client PC is open, the media is removed, and then select (CL) [Save].

• When the memory in the destination drive specified with the Client PC is corrupted.
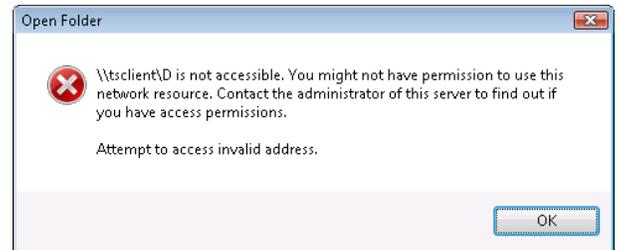<For Windows XP>
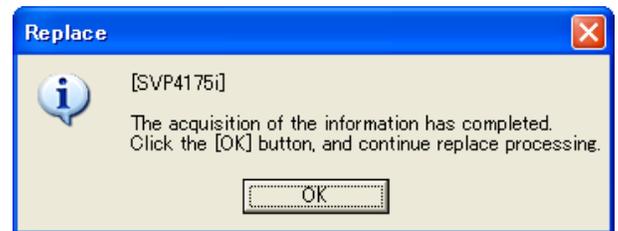The dialog remains displayed after select (CL) [OK].

< For Windows Vista>
The dialog remains displayed after select (CL)
[OK].

Select (CL) [OK] in response to "The
acquisition of the information has completed.
Click the [OK] button, and continue replace
processing.".

8. <Cache blocking>
"The Cache Memory PCB (CACHE-nnn) is being blocked." is displayed.

9. <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(s) lit?".
When [No] is selected, the same message is displayed again.
Check the LED and then reply to a message.

<Forcing shut down LED on>
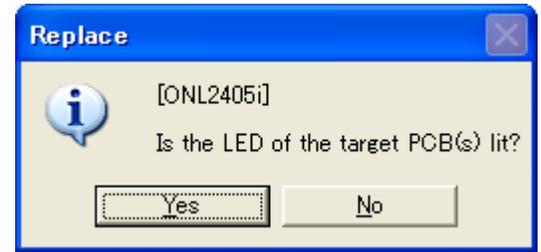
⚠ CAUTION
If the jumper is inserted in the wrong PCB, a system down may be caused.

If [No] is selected:
Insert a jumper in response to "Please insert the jumper into the target PCB(CACHE-nnn), then pull out the PCB without considering the status of the LED.". (Refer REP03-120)
Select (CL) [OK] after the jumper is inserted. Go to step 10.

10. <Cache Replacement>
"Please replace the PCB(CACHE-nnn). After replacement, please select OK." is displayed.
(Select (CL) [OK] after replacing the PCB.)
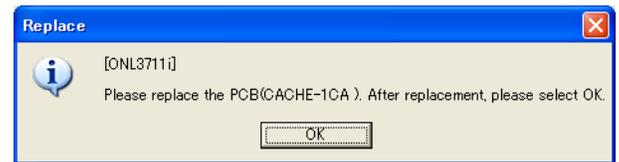
11. <Replace cache PCB>
Replace cache.

For CACHE see HARDWARE C (REP03-110)

[PRE-PROCEDURE G]

— OUTLINE —

① Select SM (status check)
② Specify Replacement
③ Place PCB into unpluggable state

1. <Maintenance window>
    Select (CL) [Disk Controller] in the
    'Maintenance' window.

2. <DKC window>
    Select (CL) [Logic Box ClusterX] in the
    'DKC' window.

3. <Select SM>
    Select (CL) SM.
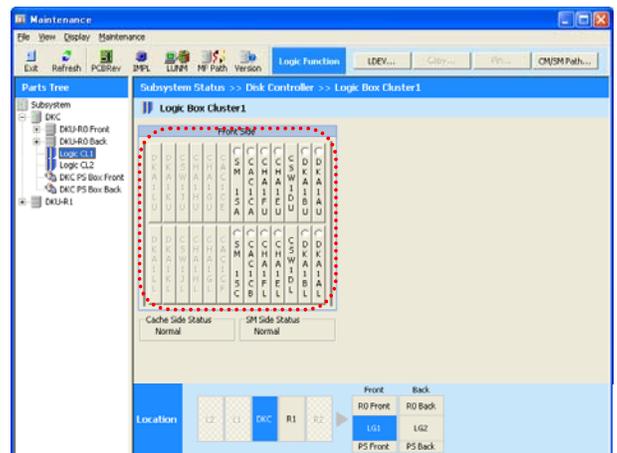
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4. <Specify replacement of SM>

⚠ **CAUTION**

When the screen appears prompting the operator to input a password to prevent multiple maintenance or for executing a pin check, contact the technical support division to ask for instructions.

If any other message that is not explained below is displayed, see the SVP Message Section (SVPMSG00-00).

Check status display.
Select (CL) [Replace].

---

5. <Check the beginning of SM replace>
Select (CL) [Yes] after making sure that the package to be replaced is correct in response to "Do you want to replace the PCB(SM-nnn)? If [Yes] is selected, the PCB needs to be removed and inserted again.".
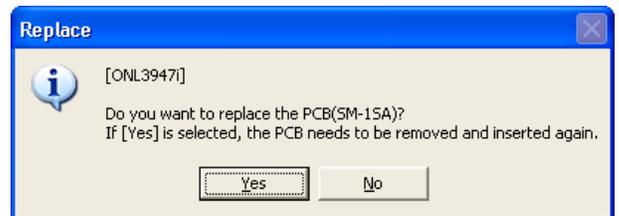
---

6. <Compression of the error information>
The error information is compressed.
The dialog of FDCopy is displayed.

---

7. <Get the error information>
   Input the Field Failure Information, and select (CL) [Ok].

[HDS]

[HP]
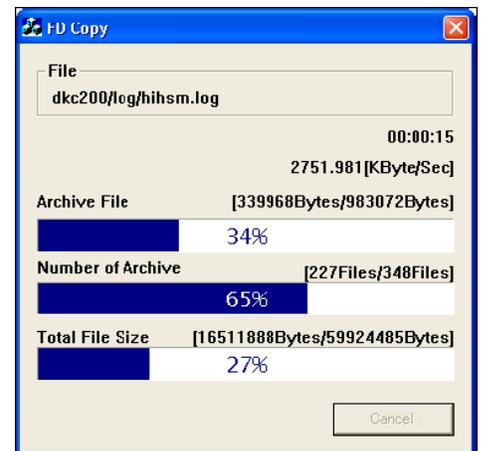
"Insert a removable media for gathering error information and select [OK]. The information will be essential to investigate the problem of the hardware. You can select [Cancel] only when removable media is not available." is displayed.

*:   When Shared Memory Module is replaced, select (CL) [Cancel] because the dump is not required.

A Primary copy is always placed on the SVP HD in the "c:\dkc200\others\pcbinfo\" directory with the following file name format "YYMMDDhhmmss.tzg".
(YY denotes Year, MM denotes Month, DD denotes Day, hh denotes Hour, mm denotes Minute, and ss denotes Second).

If Client PC is selected, a second copy is placed into the root directory of the drive selected on the Client PC. Please burn this to CDROM from the Client PC and return it with the defective part.
It is suggested to move it from the root directory to another directory of the CE's choosing if desired. Unfortunately it is not possible to select this directory initially. Therefore it must be a manual process as follows. After Client PC is selected, the 'Select a dump file' window is displayed to select a directory. In this window, specify a desired directory, and select (CL) [Save].

Note: Operation steps when the icon of the new folder creation is grayed out.
        Right click the button, select "New" then "Folder", and then a new folder is created.

• When the destination media is write-protected.
<For Windows XP>

<For Windows Vista>
Select (CL) [Yes] displays the "C:\users\Administrator" folder of SVP.
Select (CL) [No] displays the folder selected with the Client PC.

• When dialog of the destination drive specified with the Client PC is open, the media is removed, and then select (CL) [Save].

• When the memory in the destination drive specified with the Client PC is corrupted.
<For Windows XP>
The dialog remains displayed after select (CL) [OK].

< For Windows Vista>
The dialog remains displayed after select (CL) [OK].

Select (CL) [OK] in response to "The acquisition of the information has completed. Click the [OK] button, and continue replace processing.".

---

8. <SM blocking>
"The Shared Memory PCB (SM-nnn) is being blocked." is displayed.

9.   <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(s)
     lit?".
     When [No] is selected, the same message is
     displayed again.
     Check the LED and then reply to a message.

     <Forcing shut down LED on>
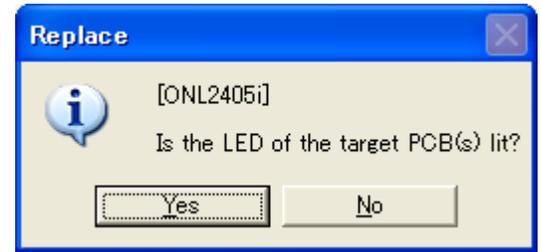
⚠ CAUTION

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(SM-nnn), then
     pull out the PCB without considering the
     status of the LED.". (Refer REP03-70)
     Select (CL) [OK] after the jumper is inserted. Go to step 10.

---
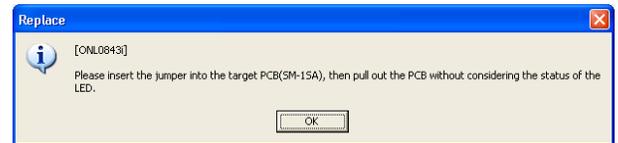
10. <SM Replacement>
     "Please replace the PCB(SM-nnn). After
     replacement, please select OK." is displayed.
     (Select (CL) [OK] after replacing the PCB.)

---

11. <Replace SM PCB>
     Replace SM.

     For SM see HARDWARE B (REP03-60)

[PRE-PROCEDURE H]

— OUTLINE —

① Select CHA/DKA (status check)
② Specify Replacement
③ Place PCB into blocked state

1. <Set path offline or switch of channel path>

> ⚠ **CAUTION**
>
> For Mainframe, the path to be placed offline is that connected with the CHA concerned.
> For Open host, the switch to the alternate channel path or host shutdown is that connected with the CHA concerned.
> As for other channel path, it switch to the alternate channel path or host shutdown is unnecessary.
> However, the host must shutdown when the Pinned track in CHA connected port.

> [Notes for the case where DKN-200-NGW1 (NAS Unit) is connected to this device]
>
> [Points to be checked in advance]
>   Prior to this operation, if all of the following three cases applies to this device, execute [Correspondence when connecting the NAS Unit].
>   1. NAS Unit is connected to this device. (*1)
>   2. NAS Unit is in operation. (*2)
>   3. A failure has not occurred on the NAS Unit. (*3)
>   *1: Confirm with the disk array device administrator to check whether the NAS Unit is connected or not.
>   *2: Confirm with the NAS Unit administrator to check whether the NAS service is operating or not.
>   *3: Ask the NAS Unit administrator to check whether failure has occurred or not by checking with the NAS administration software, NAS Manager GUI, List of RAS Information, etc. In case of failure, execute the maintenance operation together with the NAS maintenance personnel.
>
> [Correspondence when connecting the NAS Unit]
>   Confirm with the NAS Unit administrator whether it is possible to terminate the NAS service. Determine how to react according to the confirmation result.
>   1. If the NAS service can be terminated:
>   Before starting this operation, ask the NAS Unit administrator for the planned shutdown of the NAS Unit.
>   After completing this operation, ask the NAS Unit administrator to reboot the NAS Unit.
>   2. If the NAS service cannot be terminated:
>   When the replacement operation of CHA used by the NAS Unit is completed, the Fibre Channel path (FC path) of the NAS Unit might go into the Failure status. Before starting the operation of the next CHA replacement, contact the NAS Unit administrator, refer to "Recovering from FC path errors" of "Hitachi NAS Manager User's Guide", confirm the FC path status and, if the status is Failure, ask for the recovery of the FC path.
>   In addition, if there are any personnel for the NAS Unit maintenance, ask the NAS Unit maintenance personnel to refer to "NAS IMS 2.9.8 Displaying LU Path Setting Screen (NAS IMS 02-0490)" in "DKN-200-NGW1 NAS Unit Maintenance Manual", and ask to check the status of the FC path and to recover the FC path if it is in a failure status after completing the replacement operation of CHA used by the NAS Unit.

2. <Maintenance window>
    Select (CL) [Disk Controller] in the
    'Maintenance' window.

3. <DKC window>
    Select (CL) [Logic Box ClusterX] in the
    'DKC' window.

4. **<Select CHA/DKA>**
    Select (CL) CHA/DKA.
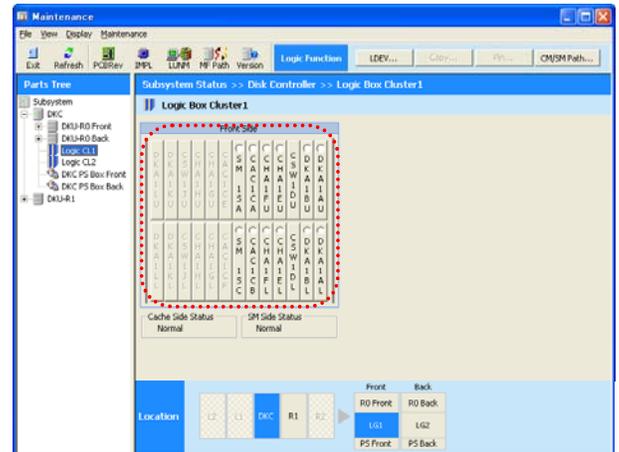
5. **<Specify Replacement of CHA/DKA>**

⚠ **CAUTION**

- When the path to the PCB to be replaced is online, ask the customer to place it offline. (For CHA replacement)

- For Mainframe, vary off the concerned channel paths.
  For Open host, switch to the alternate channel path or shutdown the host.
  However, the host must shutdown when the Pinned track in CHA connected port.

- When the CUIR function is executed when Mainframe Fibre CHA is replaced, an online path need not be made offline.

- When the screen requests an operator to input a password in order to prevent multiple maintenance contact the technical support division to ask for instructions.

If any other message that is not explained below is displayed, see the SVP Message Section (SVPMSG00-00).

Make sure that the status is WARNING.
Select (CL) [Replace].
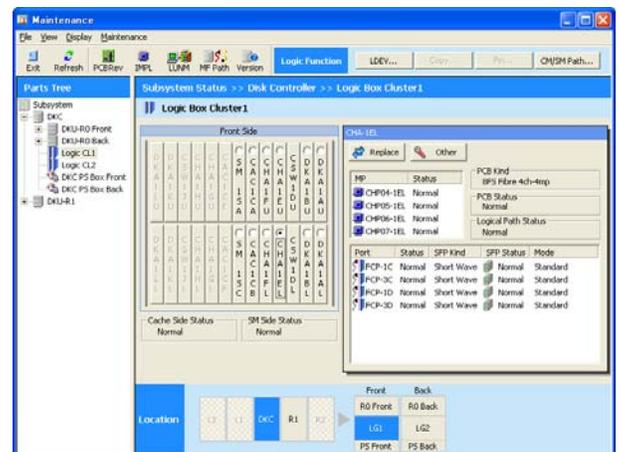
6. <CHA/DKA replace>
    Select (CL) [Yes] in response to:
    "Do you want to replace the PCB(DKA-nnn)?
    If [Yes] is selected, the PCB needs to be
    removed and inserted again."
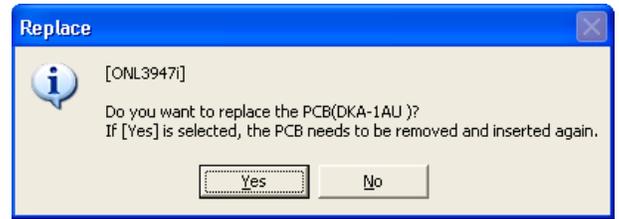
(Eg. DKA)

7. <Compression of the error information>
    The error information is compressed.
    The dialog of FDCopy is displayed.

8.   <Get the error information>
     Input the Field Failure Information, and select (CL) [Ok].

[HDS]   [HP]

"Insert a removable media for gathering error
information and select [OK]. The information will
be essential to investigate the problem of the
hardware. You can select [Cancel] only when
removable media is not available." is displayed.

A Primary copy is always placed on the SVP HD in
the "c:\dkc200\others\pcbinfo\" directory with the
following file name format
"YYMMDDhhmmss.tzg".
(YY denotes Year, MM denotes Month, DD
denotes Day, hh denotes Hour, mm denotes
Minute, and ss denotes Second).

If Client PC is selected, a second copy is placed into the root directory of the drive selected on the Client PC. Please burn this to CDROM from the Client PC and return it with the defective part.
It is suggested to move it from the root directory to another directory of the CE's choosing if desired. Unfortunately it is not possible to select this directory initially. Therefore it must be a manual process as follows. After Client PC is selected, the 'Select a dump file' window is displayed to select a directory. In this window, specify a desired directory, and select (CL) [Save].

Note: Operation steps when the icon of the new folder creation is grayed out.
Right click the button, select "New" then "Folder", and then a new folder is created.

* For CHA -------- Go to step 9.
* For DKA -------- Go to step 10.

• When the destination media is write-protected.
<For Windows XP>

<For Windows Vista>
Select (CL) [Yes] displays the "C:\users\Administrator" folder of SVP.
Select (CL) [No] displays the folder selected with the Client PC.

• When dialog of the destination drive specified with the Client PC is open, the media is removed, and then select (CL) [Save].

• When the memory in the destination drive specified with the Client PC is corrupted.
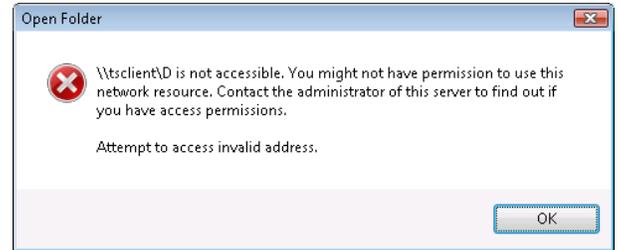<For Windows XP>
The dialog remains displayed after select (CL) [OK].
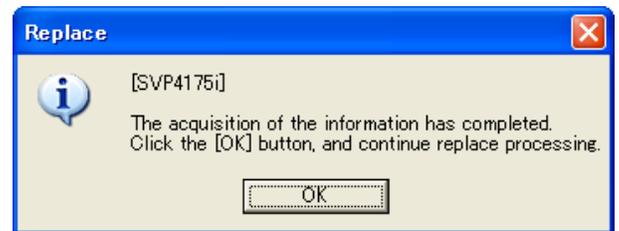
< For Windows Vista>
The dialog remains displayed after select (CL) [OK].

Select (CL) [OK] in response to "The acquisition of the information has completed. Click the [OK] button, and continue replace processing.".

9. <Confirm Channel Path offline>
   This operation is only CHA. If DKA Replacement, go to step 10.

   Select (CL) [Yes] or [OK] in response to following message.

   For Serial CHA or Mainframe Fiber CHA:
   "Please confirm you have already varied off
   the concerned Channel paths for all HOST
   connected to this PCB. If OK, please press
   [OK]."

   For Fiber CHA:
   "Confirm that you have already shut down the
   corresponding connected host(s) or switched
   to the alternate channel path(s) for all HOST
   connected to this PCB. Do you want to continue processing?"

   *For Mainframe Fibre CHA
   The channel path offline confirmation message is not displayed when the CUIR function is
   effective, and the following messages are displayed.

   Note: In the case of the FNP port, the CUIR function is not performed.

   Select (CL) [Yes] in response to:
   "Do you want to execute CUIR? Do not
   change the path configuration of mainframe
   when executing CUIR".
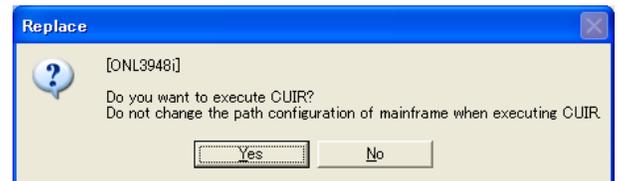
   "CUIR blockade processing..." is displayed.
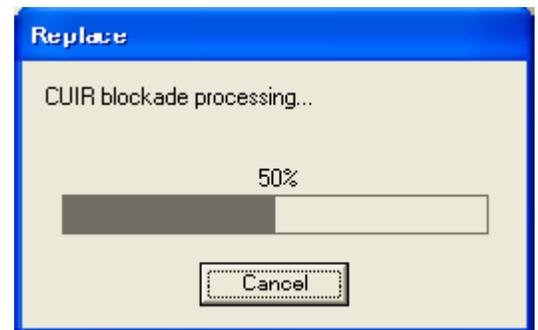
10. <Caution message for system down>

⚠ **CAUTION**

Select (CL) [Yes] in response to the message below.

"Do you want to replace the PCB by using the
normal replacement procedure?
　　Yes = Normal replacement
　　No = Forcible replacement.
(Possible critical errors)"

---
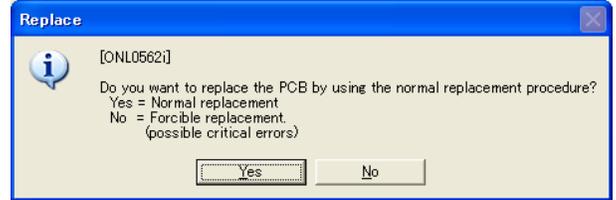
11. <CHA/DKA blocking>
　　　* For CHA
　　　"CHA-xxx is being blocked... Usually, several minutes (maximum 15 minutes)"
　　　"CHA-xxx is lighting the LED..."

　　　* For DKA
　　　"DKA is being blocked..."
　　　"DKA-xxx is lighting the LED..."

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12. <Check to see if the shut down LED is lit>
Select (CL)
* [Yes] if LED is on
* [No] if LED is off
in response to "Is the LED of the target PCB lit?".
If [No] is selected:
Select in response to "Is the LED of the target
PCB(s) lit?" again.

<Forcing shut down LED on>
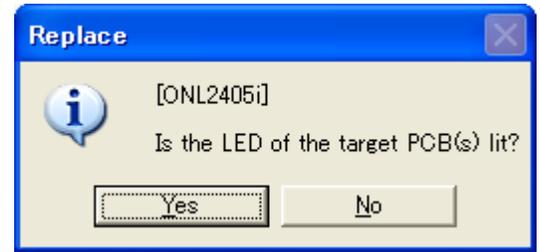
⚠ **CAUTION**

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

If [No] is selected twice:
Insert a jumper in response to "Please insert
the jumper into the target PCB(CHA-nnn/
DKA-nnn), then pull out the PCB without
considering the status of the LED.". (Refer REP03-110)
Select (CL) [OK] after the jumper is inserted. Go to step 13.
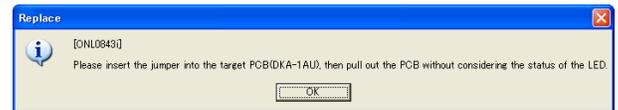
For Serial CHA	(Refer REP03-160)
For Fibre CHA	(Refer REP03-200)
For MF Fibre CHA	(Refer REP03-240)
For DKA	(Refer REP03-360)

---

13. <Beginning of CHA/DKA Replacement>
"Please replace the PCB(CHA-nnn/DKA-
nnn). After replacement, please select OK." is
displayed.   Select (CL) [OK] after replacing
the PCBs.
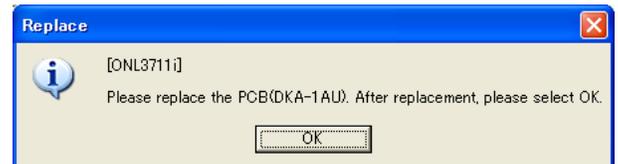
For Serial CHA	See HARDWARE D (REP03-160)
For Fibre CHA	See HARDWARE E (REP03-200)
For MF Fibre CHA	See HARDWARE F (REP03-240)
For DKA	See HARDWARE J (REP03-360)

[PRE-PROCEDURE K]

— OUTLINE —

① Select drive (status check)
② Check progress of copy processing
③ Specify Correction Copy
④ Save Spare

1. <Maintenance window>
   Select (CL) the DKU information of the DKU
   which installs the HDD to be replaced in the
   'Maintenance' window.

   • In case of DKU-R0
     Select (CL) [Disk controller].

   • In case of other than DKU-R0
     Select (CL) [Disk Unit - DKU-XX].

2. <Select HDU>
   Select (CL) the HDU information of the HDU which installs the HDD to be replaced.

   • In case of DKU-R0
     Select (CL) [DKU-R0 Front] or [DKU-R0
     Back].

   Select (CL) [HDU-R0X / HDU-R0X].

• In case of other than DKU-R0
  Select (CL) [HDU-XXX / HDU-XXX].

3. <Select HDD>
   Check and select (CL) [nn] to be replaced.
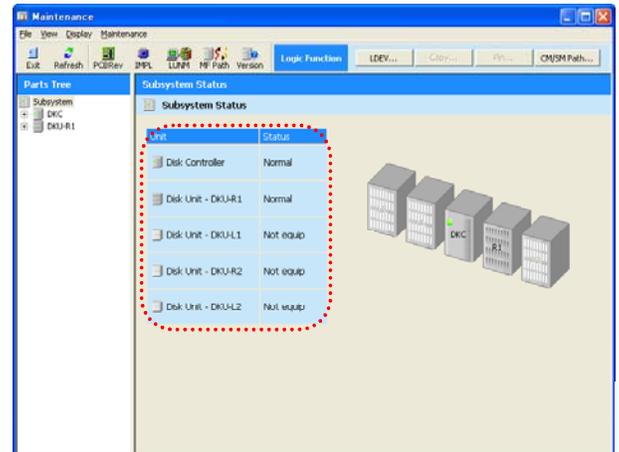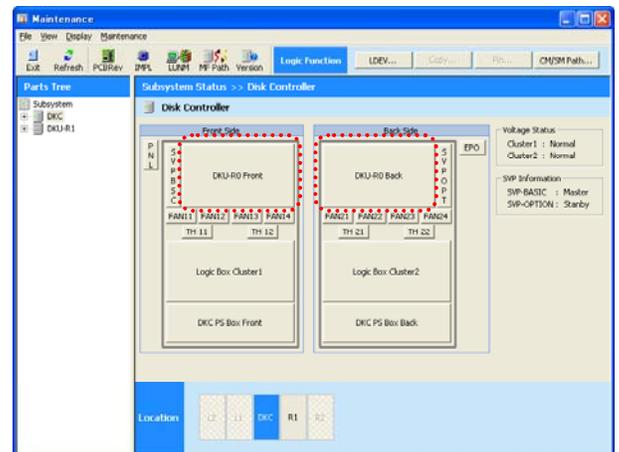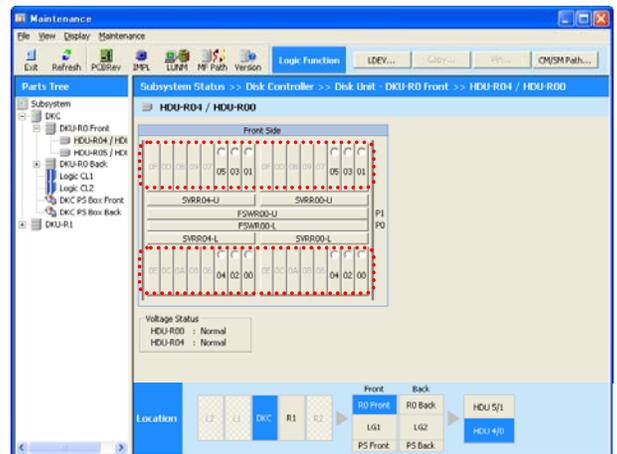
4. <Specify replacement of HDD>
   Make sure that the "Device Status" is [Failed]
   or [Warning].

   Select (CL) [Other]-[Correction Copy].
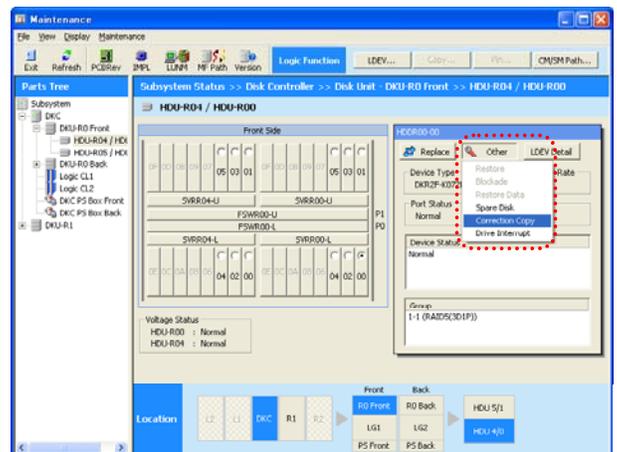
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5. <Reading the subsystem configuration data and Checking the P-DEV status>
    If any other message that is not explained below is displayed, see the SVP Message Section (SVPMSG00-00).

    "Checking..." is displayed.

6. <Saving the spare>
    Select (CL) [Yes] in response to "Are you sure you want to correct data in the physical device?".
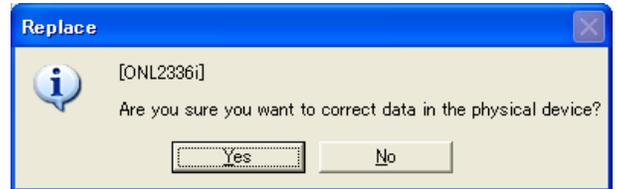
7. <Correction copy in progress>
    "Correcting..." is displayed.

8. <End of starting correction copy>
    Select (CL) [Yes] in response to "Correcting data in the physical device has been started.".
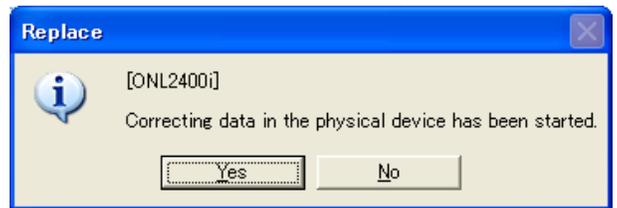
9.

    When interrupting the correction copy, select the PDEV to which the copy is being made and select (CL) the [Drive Interrupt] button.
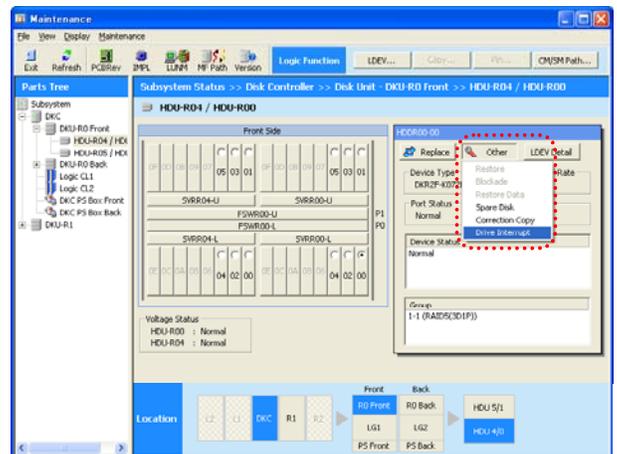
[PRE-PROCEDURE L]

— OUTLINE —

① Select FSW
② Specify Replacement
③ Please FSW into unplugable state

1. <Maintenance window>
    Select (CL) the DKU information of the DKU
    which installs the HDD to be replaced in the
    'Maintenance' window.

    • In case of DKU-R0
      Select (CL) [Disk controller].

    • In case of other than DKU-R0
      Select (CL) [Disk Unit - DKU-XX].

2. <Select HDU>
    Select (CL) the HDU information of the HDU which installs the HDD to be replaced.
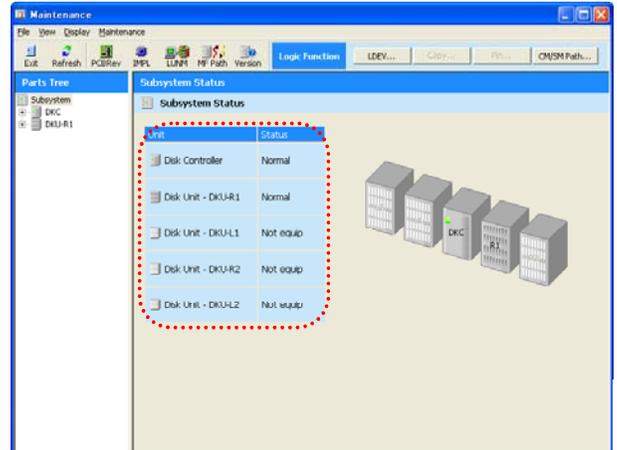
    • In case of DKU-R0
      Select (CL) [DKU-R0 Front] or [DKU-R0
      Back].
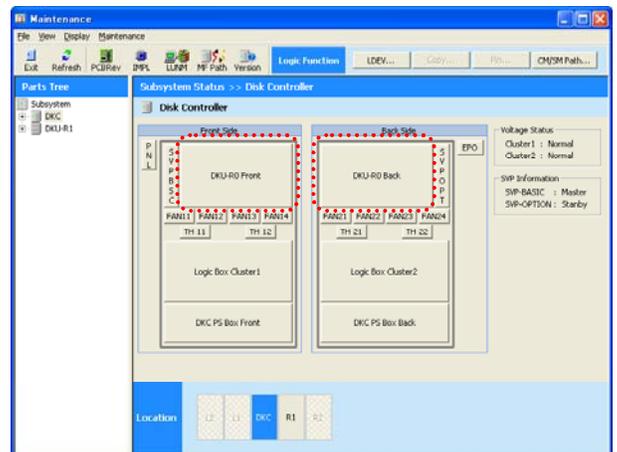
      Select (CL) [HDU-R0X / HDU-R0X].
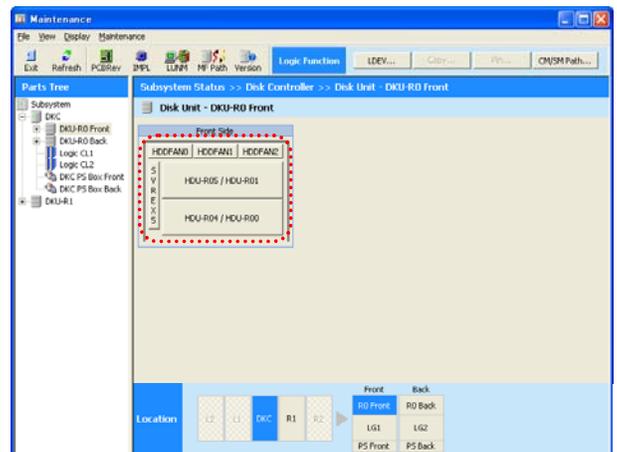
• In case of other than DKU-R0
  Select (CL) [HDU-XXX / HDU-XXX].
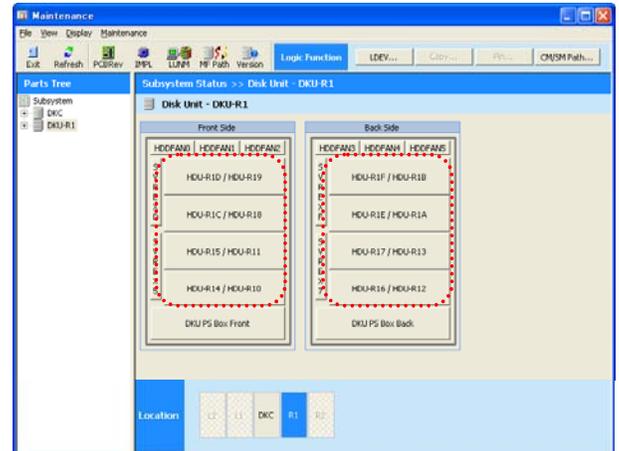
3. <Select FSW>
   Check and select (CL) [FSWXXX-X] to be replaced.

4. <Specify replacement>
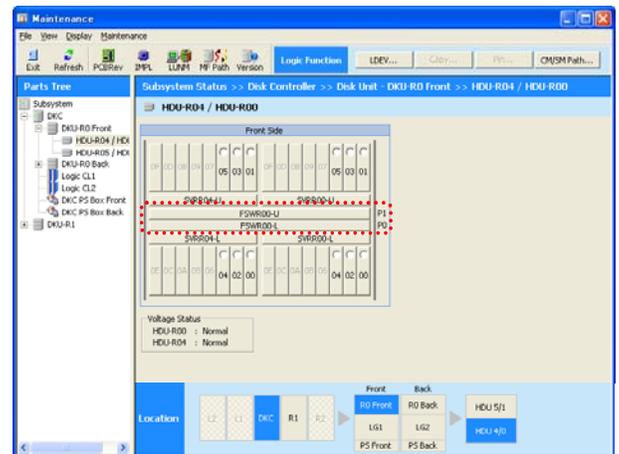
⚠ **CAUTION**

When the screen requests an operator to input a password in order to prevent multiple
maintenance, contact the technical support division to ask for instructions.

If any other message that is not explained below is displayed, see the SVP Message
Section (SVPMSG00-00).

Select (CL) [Execute].

Selecting (CL) [Cancel] returns you to step 3.

Replace Check

FSWR00-L

Execute

Cancel

---

5. <Compression of the error information>
    The error information is compressed.
    The dialog of FDCopy is displayed.

FD Copy

File
dkc200/log/hihsm.log

00:00:15
2751.981[KByte/Sec]

Archive File   [339968Bytes/983072Bytes]
34%

Number of Archive   [227Files/348Files]
65%

Total File Size   [16511888Bytes/59924485Bytes]
27%

Cancel

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6. <Get the error information>
Input the Field Failure Information, and select (CL) [Ok].

FFI (Field Failure Information)	
Date Time :	02/01/2008 10:56:32
Failure parts name :	FSW
Failure parts location :	FSWR00-U
Serial Number :	00005
Site-ID & Case No :	
SIM/SSB :	
Failure Description :	

[HDS]

FFI (Field Failure Information)	
Date Time :	02/07/2007 15:38:47
Failure parts name :	FSW
Failure parts location :	FSWR00-L
Serial Number :	64005
CSO# :	
SIM/SSB :	
Failure Description :	

[HP]

"Insert a removable media for gathering error information and select [OK]. The information will be essential to investigate the problem of the hardware. You can select [Cancel] only when removable media is not available." is displayed.

A Primary copy is always placed on the SVP HD in the "c:\dkc200\others\pcbinfo\" directory with the following file name format "YYMMDDhhmmss.tzg".
(YY denotes Year, MM denotes Month, DD denotes Day, hh denotes Hour, mm denotes Minute, and ss denotes Second).

Replace FSWR00-L

[SVP2318i]

Insert a removable media for gathering error information and select [OK].
The information will be essential to investigate the problem of the hardware. You can select [Cancel] only when removable media is not available.

FSWR00-L

○ SVP   [A: ▼]
○ Client PC

Ok   Cancel

If Client PC is selected, a second copy is placed into the root directory of the drive selected on the Client PC. Please burn this to CDROM from the Client PC and return it with the defective part.

It is suggested to move it from the root directory to another directory of the CE's choosing if desired. Unfortunately it is not possible to select this directory initially. Therefore it must be a manual process as follows. After Client PC is selected, the 'Select a dump file' window is displayed to select a directory. In this window, specify a desired directory, and select (CL) [Save].

Note: The message is displayed two or more times, and operate it in every case.

Note: Operation steps when the icon of the new folder creation is grayed out.
       Right click the button, select "New" then "Folder", and then a new folder is created.

• When the destination media is write-protected.
<For Windows XP>

<For Windows Vista>
Select (CL) [Yes] displays the "C:\users\Administrator" folder of SVP.
Select (CL) [No] displays the folder selected with the Client PC.

• When dialog of the destination drive specified with the Client PC is open, the media is removed, and then select (CL) [Save].

• When the memory in the destination drive specified with the Client PC is corrupted.
<For Windows XP>
The dialog remains displayed after select (CL) [OK].

< For Windows Vista>
The dialog remains displayed after select (CL) [OK].

Select (CL) [OK] in response to "The acquisition of the information has completed. Click the [OK] button, and continue replace processing.".

7. <Check beginning of DKP blocking>
Select (CL) [Yes] in response to "Are you
sure you want to replace the FSW? If you
select [Yes], blocking of the DKP will be
unavoidable.".
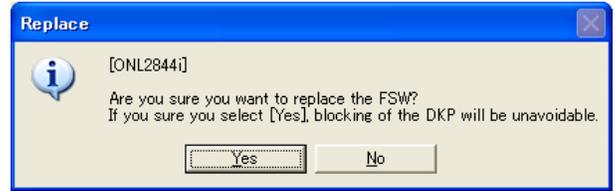
8. <Check system down>

⚠ **CAUTION**

Select (CL) [Yes] in response to the message below.

"Do you want to replace the PCB by using the
normal replacement procedure?
　　Yes = Normal replacement
　　No = Forcible replacement.
(Possible critical errors)"
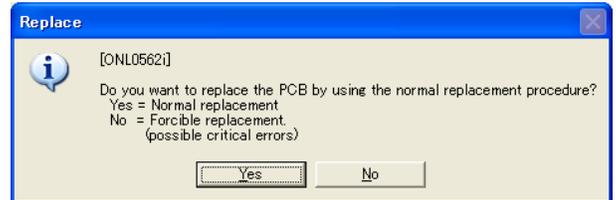
9. <Check DKP blocking>
"The DKP is being blocked..." is displayed.

10. <Replace FSW>

Make sure of the FSW PCB location is displayed, replace all target FSW PCB.
If the FSW LED is not turned on, please replace FSW PCB.

Confirm the label on DKU.
To confirm the label, the right messages are displayed.

Please confirm the display position referring to the Location section so that the installing position is different on the Maintenance screen.
The name in parentheses shows the position where FSW show in LOC02-10.

"Please replace the FSW connected by the same fibre interface cable, and then select OK. (FSWxnn-x) The LED of the target FSW will not be turned off until you select [OK]."
is displayed.

Make sure of the FSW PCB location is displayed, select (CL) the [OK] button after replaced all target FSW PCB.
If the FSW LED is not turned on, please replace FSW PCB.

Refer HARDWARE T16 (REP03-1010)

[PRE-PROCEDURE M]

— OUTLINE —

① Select CSW (status check)
② Specify Replacement
③ Place PCB into blocked state

Hitachi Proprietary

REP02-520
Rev.0 / Mar.2007

SC02540Z

DKC610I
Copyright © 2007, Hitachi, Ltd.

1. <Maintenance window>
   Select (CL) [Disk Controller] in the
   'Maintenance' window.
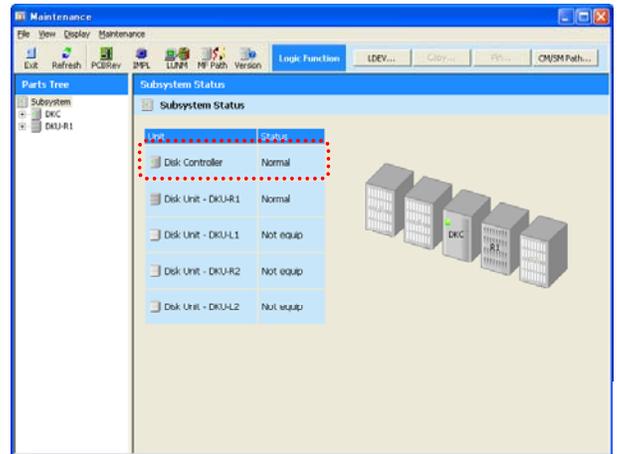
2. <DKC window>
   Select (CL) [Logic Box ClusterX] in the
   'DKC' window.

3. <Select CSW>
   Select (CL) CSW.

4. <Specify replacement>
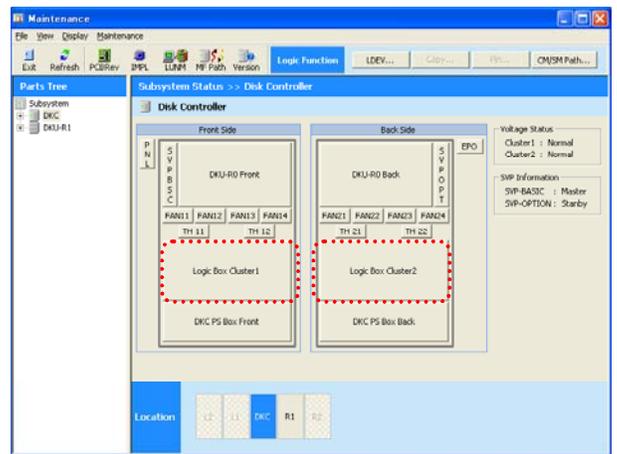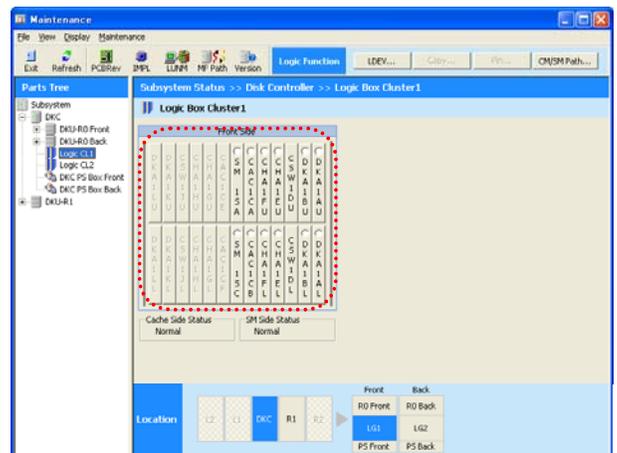
┌───┐
│   ⚠ **CAUTION**   │
│ Be sure to operate procedure 5 to 7 within thirty minutes.   │
└───┘

Select (CL) [Execute].
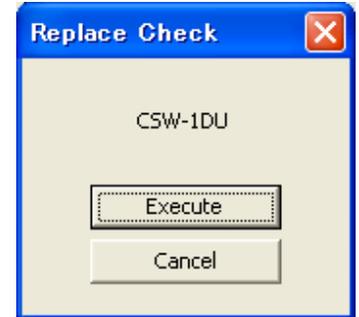
Selecting (CL) [Cancel] returns you to step 3.

5. <CSW replace>
    If any other message that is not explained below is displayed, see the SVP Message
    Section (SVPMSG00-00).

    Select (CL) [Yes] in response to:
    "Do you want to replace the PCB(CSW-nnn)?
    If [Yes] is selected, the PCB needs to be
    removed and inserted again."

6. <Compression of the error information>
    The error information is compressed.
    The dialog of FDCopy is displayed.

7. <Get the error information>
Input the Field Failure Information, and select (CL) [Ok].

[HDS]   [HP]

"Insert a removable media for gathering error information and select [OK]. The information will be essential to investigate the problem of the hardware. You can select [Cancel] only when removable media is not available." is displayed.

A Primary copy is always placed on the SVP HD in the "c:\dkc200\others\pcbinfo\" directory with the following file name format "YYMMDDhhmmss.tzg".
(YY denotes Year, MM denotes Month, DD denotes Day, hh denotes Hour, mm denotes Minute, and ss denotes Second).

If Client PC is selected, a second copy is placed into the root directory of the drive selected on the Client PC. Please burn this to CDROM from the Client PC and return it with the defective part.

It is suggested to move it from the root directory to another directory of the CE's choosing if desired. Unfortunately it is not possible to select this directory initially. Therefore it must be a manual process as follows. After Client PC is selected, the 'Select a dump file' window is displayed to select a directory. In this window, specify a desired directory, and select (CL) [Save].

Note: Operation steps when the icon of the new folder creation is grayed out.
        Right click the button, select "New" then "Folder", and then a new folder is created.

• When the destination media is write-protected.
<For Windows XP>

<For Windows Vista>
Select (CL) [Yes] displays the "C:\users\Administrator" folder of SVP.
Select (CL) [No] displays the folder selected with the Client PC.

• When dialog of the destination drive specified with the Client PC is open, the media is removed, and then select (CL) [Save].

• When the memory in the destination drive specified with the Client PC is corrupted.
<For Windows XP>
The dialog remains displayed after select (CL) [OK].

< For Windows Vista>
The dialog remains displayed after select (CL) [OK].

Select (CL) [OK] in response to "The acquisition of the information has completed. Click the [OK] button, and continue replace processing.".

8. <Check CSW blocking>
    If any other message that is not explained below is displayed, see the SVP Message
    Section (SVPMSG00-00).

    "Blocking the CSW..." is displayed.

9. <Check to see if shut down LED is lit>
    Select (CL)
    * [Yes] if the LED is on
    * [No] if the LED is off
    in response to "Is the LED of the target PCB(s) lit?".
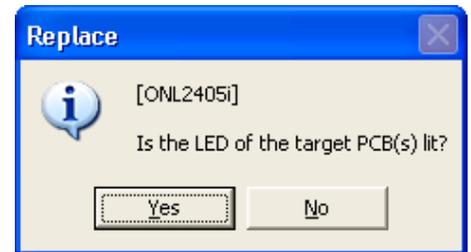
    Replace
    [ONL2405i]
    Is the LED of the target PCB(s) lit?
    Yes   No

    <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 twice:
    Insert a jumper in response to "Please insert
    the jumper into the target PCB(CSW-nnn),
    then pull out the PCB without considering the
    status of the LED.". (Refer REP03-410)
    Select (CL) [OK] after the jumper is inserted. Go to step 10.

    Replace
    [ONL0843i]
    Please insert the jumper into the target PCB(CSW-1DU), then pull out the PCB without considering the status of the LED.
    OK
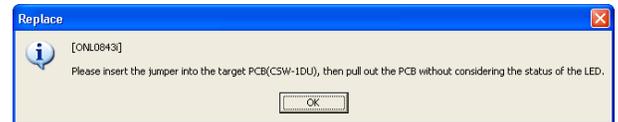
10. <Beginning of CSW replacement>
    "Please replace the PCB(CSW-nnn). After
    replacement, please select OK." is displayed.
    Select (CL) [OK] after replacing the CSW.

    Go to HARDWARE K (REP03-400)

    Replace
    [ONL3711i]
    Please replace the PCB(CSW-1DU). After replacement, please select OK.
    OK

[PRE-PROCEDURE T1]

— OUTLINE —

① Select special (DKC) part (status check)
② Specify Replacement
③ Detach parts related to special part

[1] Select special part

⚠ **CAUTION**

<When the parts to be replaced is the SVP>
When the AuditLog information which is not downloaded remains, ask the customer to download the AuditLog information as needed.

---

1. <Maintenance window>
    In the 'Maintenance' window, check and select (CL) [Disk Controller] to be replaced.

---

2. <Specify special part>
    Select (CL) the button to indicate the parts to be replaced.

    [Disk Controller]
    • DKCPANEL-------------- [PNL]
                                [2] (REP02-580)
    • EPOSW -------------------- [EPO]
                                [4] (REP02-620)
    • SVP-BASIC -------------- [SVPBSC]
                                [5] (REP02-630)
    • SVP-OPTION ------------- [SVPOPT]
                                [5] (REP02-630)
    • DKCFAN ------------------ [FANXn]
                                [7] (REP02-700)
    • Thermostat ---------------- [TH-nn]
                                [8] (REP02-720)

[DKC PS Box Front]
- DKCPS --------------------- [PSnn]
  [9] (REP02-730)
- DKC Battery Box --------- [BATTnn]
  [10] (REP02-750)
- DKUPS -------------------- [DKUPS-R0n]
  (REP02-860)
- DKU Battery Box --------- [BTUR0n]
  (REP02-880)
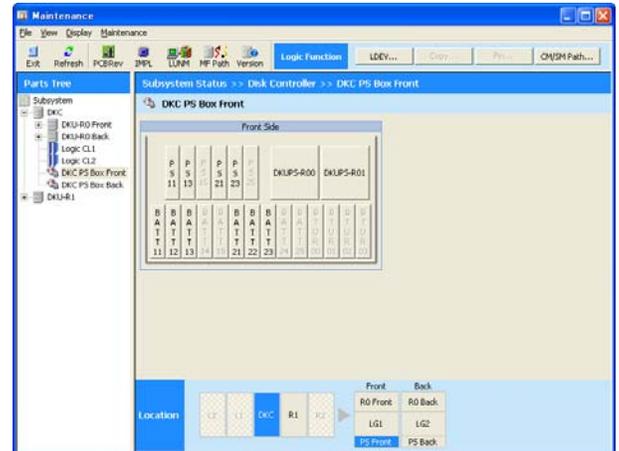
[DKC PS Box Back]
- PCICON-------------------- [PCICON]
  [3] (REP02-590)
- DKCPS --------------------- [PSnn]
  [9] (REP02-730)
- SSVP/MN ----------------- [SSVP]
  [6] (REP02-670)
- DKC AC BOX ------------ [ACBOX-n]
  [11] (REP02-770)
- FUSE ---------------------- [FUSEn]
  (REP02-920)
- BATREG------------------- [RGn]
  [12] (REP02-780)
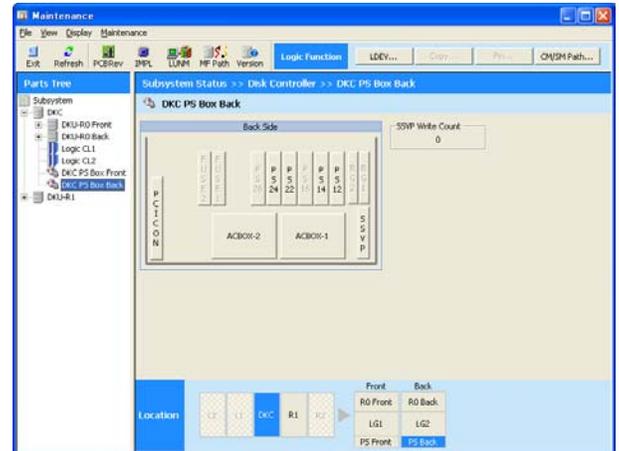
[2] DKCPANEL

1. <Execute>

⚠ **CAUTION**

When the screen prompting an operator to input a password in order to prevent a
multiple maintenance, contact the technical support division to ask for an instruction.

If any other message that is not explained below is displayed, see the SVP Message
Section (SVPMSG00-00).

A window shown on the right is displayed.
Select (CL) [Execute].
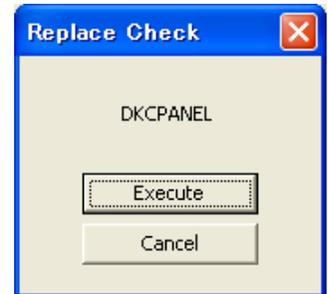
2. <Check beginning of special part Replacement>
Select (CL) [Yes] in response to "Do you want to
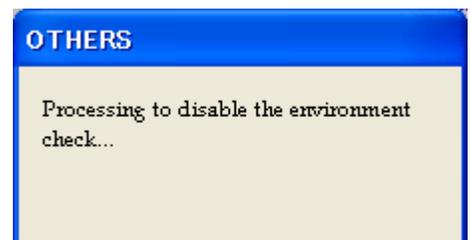replace the "DKCPANEL?"".
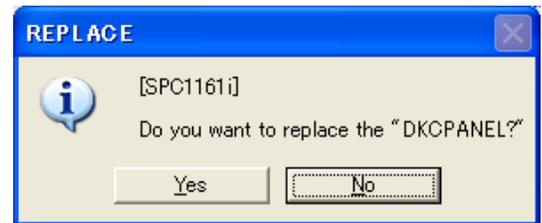
3. <Check environment monitor stopped state>
The message "Processing to disable the environment
check..." is displayed.
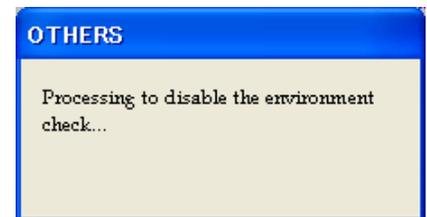
4. <Check beginning of special part Replacement>
The message "Please replace the
"DKCPANEL." After replacement, press
OK." is displayed.
(Reply with [OK] after replacing the special
part.)

See HARDWARE T1 (REP03-440)

[End of PRE-PROCEDURE]

[3] PCICON

1. <Execute>

⚠ **CAUTION**

When the screen prompting an operator to input a password in order to prevent a multiple maintenance, contact the technical support division to ask for an instruction.
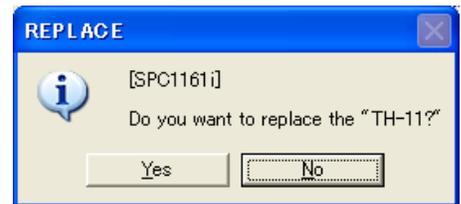

If any other message that is not explained below is displayed, see the SVP Message Section (SVPMSG00-00).

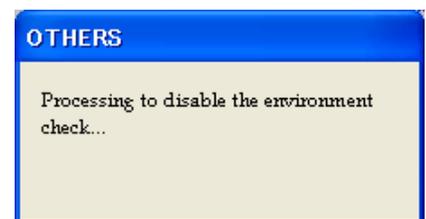A window shown on the right is displayed.
Select (CL) [Execute].

2. <Check beginning of special part Replacement>
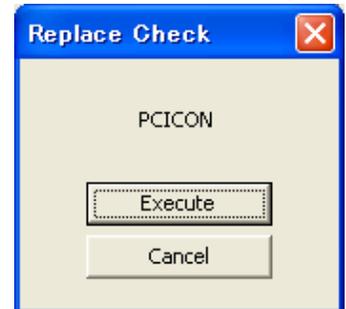
⚠ **CAUTION**

< When the part concerned is the PCICON>

Replacement of PCICON causes other devices running on the same PCI connection line to be powered off except a) and b) shown below (because giving the EPO instruction is assumed). Therefore, stop the other device before performing replacement.

a) If PCI cable is not connected to the replacing DKC.

b) If the replacing DKC (DKC concerned) is connected to the end of the PCI cable as shown below.
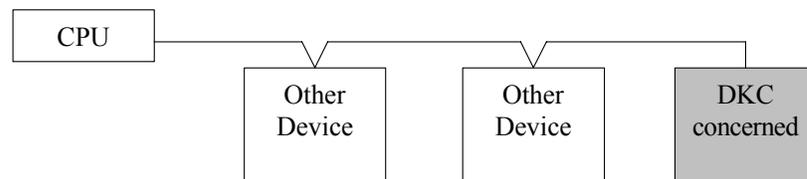
If you find no problem concerning the message, "When the PCI cable is daisy-chained, you cannot replace the PCICON unless the corresponding DKC is connected to the PCI cable end (see the Replace Section in the Maintenance Manual for detail). Do you want to replace the PCICON?" select (CL) [Yes].

(Eg. PCICON)

3.   <Checking switch on the DKCPANEL>
The SVP reads the setting of the
REMOTE/LOCAL switch on the DKC-
PANEL automatically.
When the REMOTE/LOCAL switch is set to
LOCAL, go to Step 5.
When the REMOTE/LOCAL switch is set to REMOTE, reset the switch to LOCAL and select
(CL) [OK] in response to the message, "Please switch REMOTE/LOCAL switch on DKC-
PANEL to the LOCAL position. Then press OK."
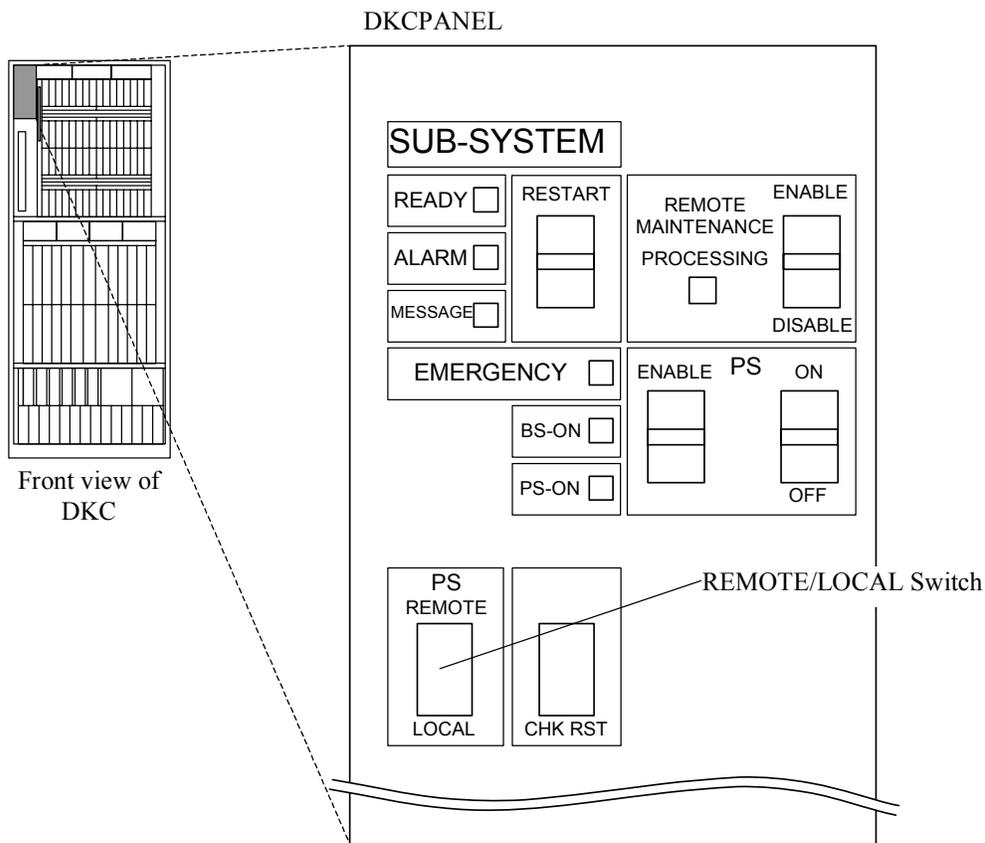
Go to Step 5.
When the REMOTE/LOCAL switch is not set to LOCAL, go to Step 4.

4. <Check if the REMOTE/LOCAL switch on the DKCPANEL is set to LOCAL>

    When the REMOTE/LOCAL switch is not set
    to LOCAL, the message, "REMOTE/LOCAL
    switch is not LOCAL. Please check it. If you
    want to abort the replacement of the PCICON,
    press Cancel." is displayed. Reset the switch
    to LOCAL and select (CL) [OK] or select
    (CL) [Cancel] to abort the replacement.
    When the REMOTE/LOCAL switch is not set to LOCAL, re-execute Step 4.

5. <Check environment monitor stopped state>
    The message "Processing to disable the environment
    check..." is displayed.
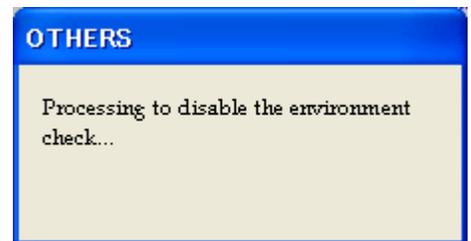
6. <Check beginning of special part Replacement>
    The message "Please replace the "PCICON."
    After replacement, press OK." is displayed.
    (Reply with [OK] after replacing the special
    part.)

    See HARDWARE T4 (REP03-520)

    [End of PRE-PROCEDURE]

[4] EPOSW

1. \<Execute\>

⚠ **CAUTION**

When the screen prompting an operator to input a password in order to prevent a multiple maintenance, contact the technical support division to ask for an instruction.

If any other message that is not explained below is displayed, see the SVP Message Section (SVPMSG00-00).

A window shown on the right is displayed.
Select (CL) [Execute].
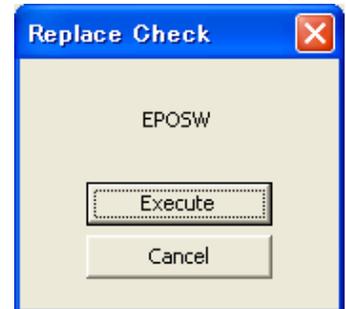
2. \<Check beginning of special part Replacement\>
Select (CL) [Yes] in response to "Do you want to replace the "EPOSW?"".

3. \<Check environment monitor stopped state\>
The message "Processing to disable the environment check..." is displayed.
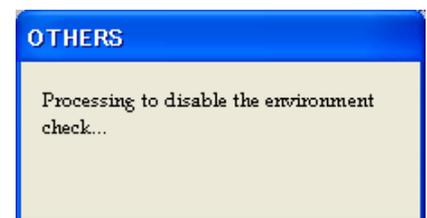
4. \<Check beginning of special part Replacement\>
The message "Please replace the "EPOSW." After replacement, press OK." is displayed.
(Reply with [OK] after replacing the special part.)

See HARDWARE T2 (REP03-470)

[End of PRE-PROCEDURE]

[5] SVP

1. <Execute>

⚠ **CAUTION**

When the screen prompting an operator to input a password in order to prevent a
multiple maintenance, contact the technical support division to ask for an instruction.

If any other message that is not explained below is displayed, see the SVP Message
Section (SVPMSG00-00).

<When the SVP High Reliability Support Kit has not been added>

A window shown on the right is displayed.
Select (CL) [Execute].
Go to Step 2.
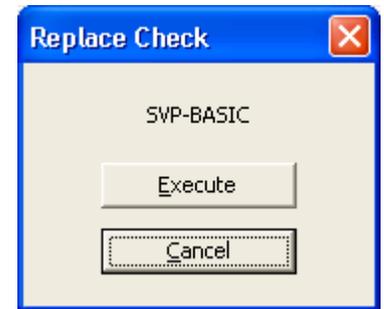
<When the SVP High Reliability Support Kit has been added>
The SVP to be replaced must be a standby SVP. When the SVP to be replaced is a master SVP,
replace it after switching its status to standby. (See SVP02-1280) Replace the master SVP only
when the SVP status cannot be switched to standby.

• In the case of a standby SVP
Check the location of the SVP to be replaced.
Power off the SVP to be replaced if the SVP is powered on.
Refer to SVP section (SVP01-190 "1.10 Power Off")
Go to Step 7.

• In the case of a master SVP
A window shown on the right is displayed.
Select (CL) [Execute].
Go to Step 2.
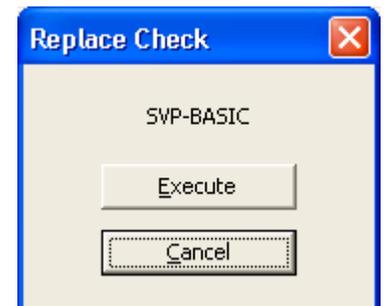
2.   <Check beginning of special part Replacement>
   <When the SVP High Reliability Support Kit has not been added>
     The message, "DKC-SVP communication
     will be blocked. Do you want to replace the
     "SVP-BASIC?"" is displayed.
     When you perform the replacement, select
     (CL) [Yes].
     Go to Step 3.

(Eg. SVP-BASIC)

     <When the SVP High Reliability Support Kit has been added>
     The message, "There are duplicated SVPs. It
     is safer if you switch to the other SVP and
     replace SVP-BASIC according to the
     instruction in the maintenance manual. Do
     you want to replace SVP-BASIC?" is
     displayed.
     When you perform the replacement, select (CL) [Yes].
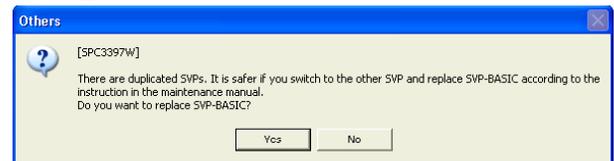
(Eg. SVP-BASIC)

     The message, "DKC - SVP communication
     will be blocked. Do you want to replace the
     SVP-BASIC?" is displayed.
     When you perform the replacement, select
     (CL) [Yes].
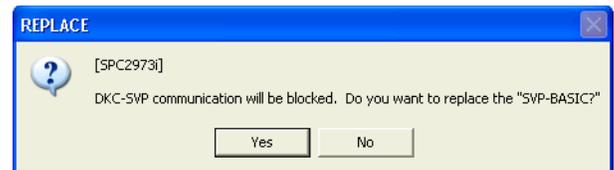
     Go to Step 3.

(Eg. SVP-BASIC)

3. <Attaching a jumper plug>
    Attach a maintenance jumper plug to the
    jumper pin JP1 of the SVP to be replaced and
    select (CL) [OK] following the message,
    "Please attach a jumper plug to JP1, and then
    select [OK]."

REPLACE

[SPC2962i]

Please attach a jumper plug to JP1, and then select [OK].

OK   Cancel

SVP-
BASIC

Front view of DKC

SVP-
OPTION

Rear view of DKC

SVP

SVP PS ON/OFF INH Jumper setting

JP1

JP1

Maintenance Jumper
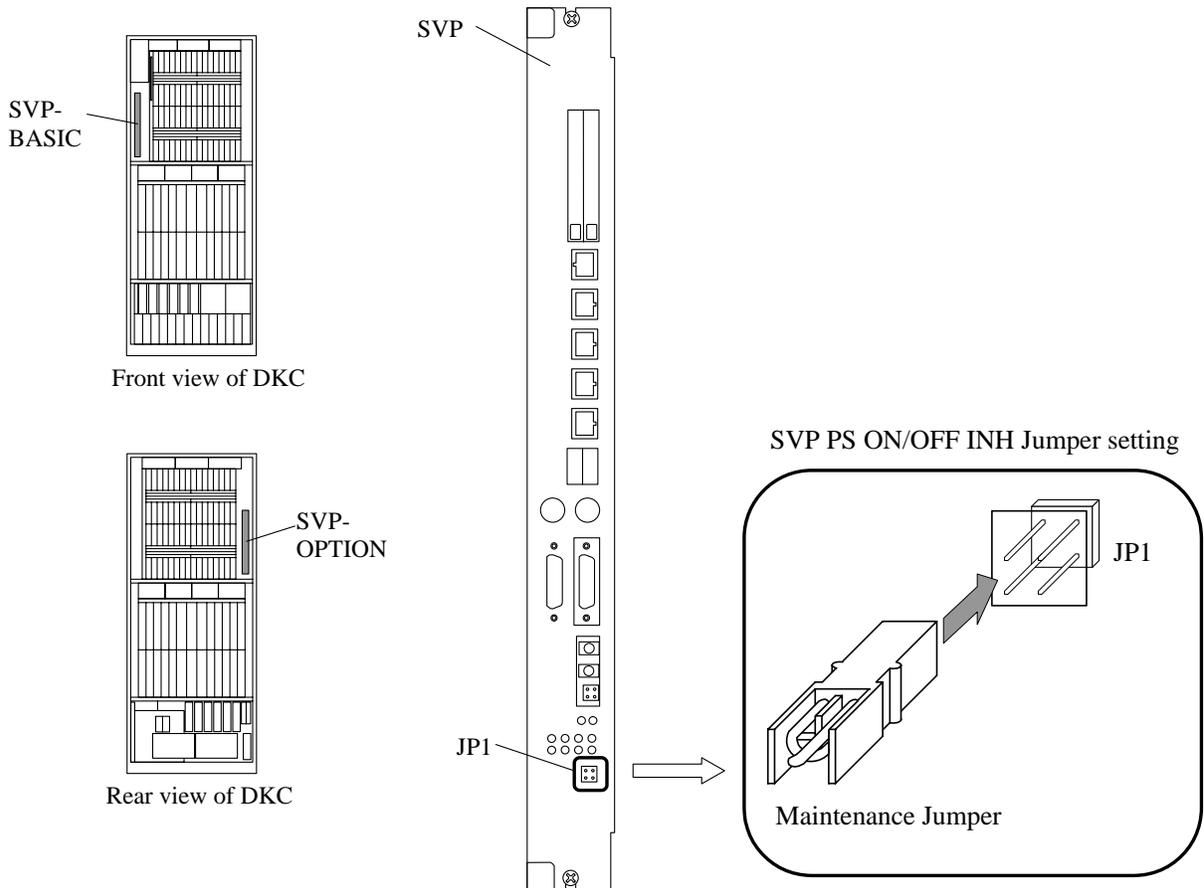
Go to Step 5.
When the maintenance jumper plug is not attached, go to Step 4.

4. <Checking re-attachment of the jumper plug>
    When the jumper plug is not attached, the
    message, "The jumper plug is not attached to
    JP1. If you want to replace the SVP-BASIC,
    attach the jumper plug and then select [OK]."
    is displayed. Attach the jumper plug to the
    jumper pin JP1 of the SVP to be replaced and
    select (CL) [OK].
    Go to Step 5.
    When the jumper plug is not attached, re-execute Step 4.

(Eg. SVP-BASIC)

5. <Powering off the SVP>
    The message, "After the SVP was turned off
    automatically, replace the SVP-BASIC." is
    displayed.
    Select (CL) [OK].
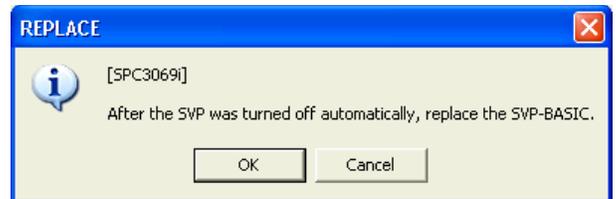
(Eg. SVP-BASIC)

6. <The check of Console PC shut down>
    The message, "If you shut down this remote
    computer, no one can use it until someone at
    the remote location manually restart it. Do
    you want to continue shutting down?" is
    displayed.
    Select (CL) [Yes].
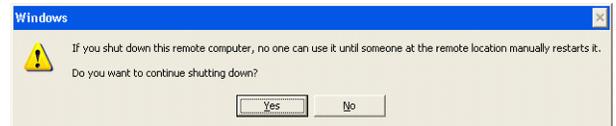
7. <Special parts replacement>
    Replace the SVP after checking that the SVP PS is turned off.

    See HARDWARE T7 (REP03-610)

    [End of PRE-PROCEDURE]

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[6] SSVP/MN

1. <Execute>

⚠ **CAUTION**

When the screen prompting an operator to input a password in order to prevent a
multiple maintenance, contact the technical support division to ask for an instruction.

If any other message that is not explained below is displayed, see the SVP Message
Section (SVPMSG00-00).

A window shown on the right is displayed.
Select (CL) [Execute].
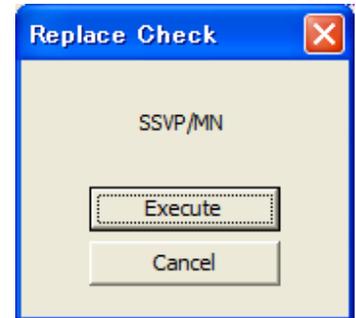
2. <Check beginning of special part Replacement>
    The message "RESTART switch, REMOTE
    MAINTENANCE switch and the
   environment check will be disabled. SVP-
    SSVP communication will be blocked. Do
    you want to replace the "SSVP/MN?"" is displayed.
    Select (CL) [OK].
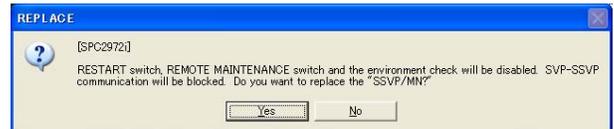
3. <Check environment monitor stopped state>
    The message "Turning on the LED of the target PCB..."
    is displayed.
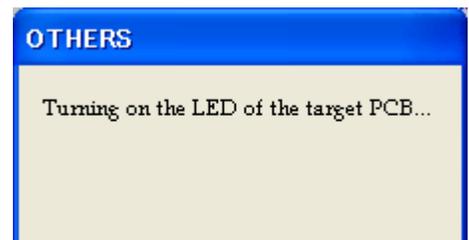
4. <Checking lighting of the LED on the PCB to be pulled out>
    The message, "Are the LED of the target
    PCB(s) turned on?" is displayed.
    When the LED on the PCB to be pulled out is
    on, select (CL) [Yes] and go to Step 6.
    When the LED on the PCB to be pulled out is
    kept off, select (CL) [No] and go to Step 5.
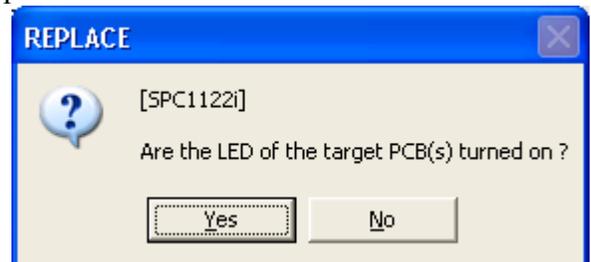
5. <Making sure of the SSVP/MN location>
Since a message shown on the right is displayed,
make sure of a location of the SSVP/MN.

REPLACE

[SPC2249i]

Please check the location of the target PCB.

OK
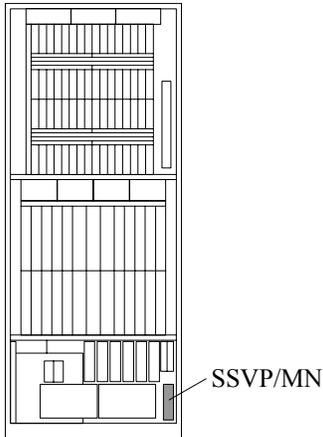
SSVP/MN

Rear view of DKC

After making sure of the SSVP/MN location, select (CL) [OK] and go to Step 6.

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REP02-690

DKC610I

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6. <Check beginning of special part Replacement>
   The message "Please replace the
   "SSVP/MN." After replacement, press OK."
   is displayed.
   (Reply with [OK] after replacing the special
   part.)

REPLACE

[SPC1198i]

Please replace the "SSVP/MN." After replacement, press OK.

OK   Cancel

See HARDWARE T3 (REP03-500)

[End of PRE-PROCEDURE]

[7] DKCFAN

1. <Execute>

⚠ **CAUTION**

When the screen prompting an operator to input a password in order to prevent a multiple maintenance, contact the technical support division to ask for an instruction.

If any other message that is not explained below is displayed, see the SVP Message Section (SVPMSG00-00).

A window shown on the right is displayed.
Select (CL) [Execute].

2. <Check beginning of special part Replacement>
Select (CL) [Yes] in response to "Do you want to replace the "FAN-nn?"".

(Eg. FAN-11)

3. <Checking the FAN>
The SVP automatically checks the DKC FAN to see if it is replaceable.

4. <Check environment monitor stopped state>
The message "Processing to disable the environment check..." is displayed.

5. <Check beginning of special part Replacement>
   The message "Please replace the "FAN-nn."
   After replacement, press OK." is displayed.
   (Reply with [OK] after replacing the special
   part.)

   DKCFAN:
   See HARDWARE T5 (REP03-570)

(Eg. FAN-11)

REPLACE

[SPC1198i]

Please replace the "FAN-11." After replacement, press OK.

OK   Cancel

[End of PRE-PROCEDURE]

[8] Thermostat

1. <Execute>

> ⚠ **CAUTION**
>
> When the screen prompting an operator to input a password in order to prevent a multiple maintenance, contact the technical support division to ask for an instruction.

If any other message that is not explained below is displayed, see the SVP Message Section (SVPMSG00-00).

A window shown on the right is displayed.
Select (CL) [Execute].

2. <Check beginning of special part Replacement>
Select (CL) [Yes] in response to "Do you want to replace the "TH-nn?"".

(Eg. TH-11)

3. <Check environment monitor stopped state>
The message "Processing to disable the environment check..." is displayed.

4. <Check beginning of special part Replacement>
The message "Please replace the "TH-nn."
After replacement, press OK." is displayed.
(Reply with [OK] after replacing the special part.)

See HARDWARE T6 (REP03-590)

[End of PRE-PROCEDURE]


(Eg. TH-11)

[9] DKCPS

1.   <Execute>

⚠ **CAUTION**

When the screen prompting an operator to input a password in order to prevent a multiple maintenance, contact the technical support division to ask for an instruction.

If any other message that is not explained below is displayed, see the SVP Message Section (SVPMSG00-00).

A window shown on the right is displayed.
Select (CL) [Execute].
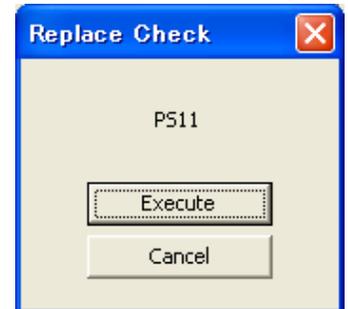
2.   <Check beginning of special part Replacement>
Select (CL) [Yes] in response to "Do you want to replace the "PSnn?"".

(Eg. PS11)

3.   <Checking power supply>
The SVP automatically checks the DKC PS to see if it is replaceable.

4.   <Check environment monitor stopped state>
The message "Processing to disable the environment check..." is displayed.
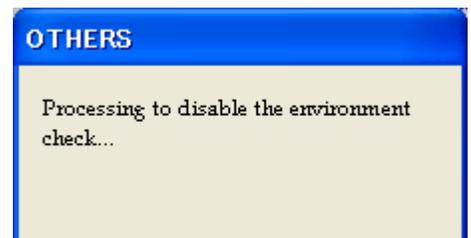
5. <Check beginning of special part Replacement>
    The message "Please switch "PSnn". After
    replacement, press OK." is displayed.
    (Reply with [OK] after replacing the special part.)

    DKCPS:
    See HARDWARE T11 (REP03-870)

    [End of PRE-PROCEDURE]

(Eg. PS11)

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[10] DKC Battery Box

1. \<Execute>

⚠ **CAUTION**

When the screen prompting an operator to input a password in order to prevent a
multiple maintenance, contact the technical support division to ask for an instruction.

If any other message that is not explained below is displayed, see the SVP Message
Section (SVPMSG00-00).

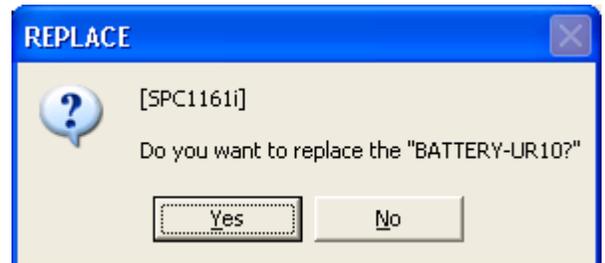A window shown on the right is displayed.
Select (CL) [Execute].

---

2. \<Check beginning of special part Replacement>
Select (CL) [Yes] in response to "Do you want to
replace the "BATTERY-nn?"".
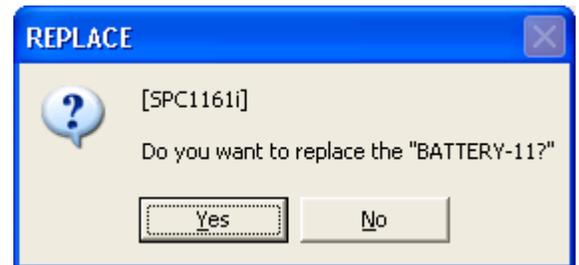
(Eg. BATTERY-11)

---

3. \<Checking power supply>
The SVP automatically checks the DKC Battery to see if it is replaceable.

---

4. \<Check environment monitor stopped state>
The message "Processing to disable the environment
check..." is displayed.
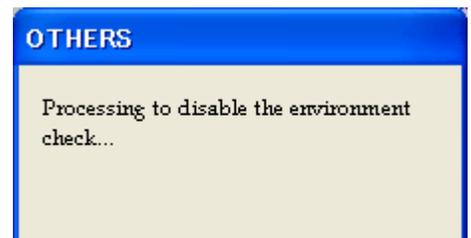
5. \<Check beginning of special part Replacement>
    The message "Please set the "BATTERY-nn"
    switch to OFF and replace the hardware. After
    replacement finishes, set the switch to ON and
    select OK." is displayed.
    (Reply with [OK] after replacing the special
    part.)

    DKC Battery Box:
    See HARDWARE T9 (REP03-770)

(Eg. BATTERY-11)

    [End of PRE-PROCEDURE]

[11] DKC AC BOX

1. <Execute>

⚠ **CAUTION**

When the screen prompting an operator to input a password in order to prevent a
multiple maintenance, contact the technical support division to ask for an instruction.

If any other message that is not explained below is displayed, see the SVP Message
Section (SVPMSG00-00).

A window shown on the right is displayed.
Select (CL) [Execute].
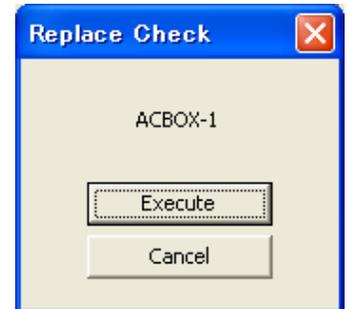
2. <Check beginning of special part Replacement>
Select (CL) [Yes] in response to "Do you want to
replace the "ACBOX-n?"".

(Eg. ACBOX-1)

3. <Checking power supply>
The SVP automatically checks the DKC AC BOX to see if it is replaceable.

4. <Check environment monitor stopped state>
The message "Processing to disable the environment
check..." is displayed.
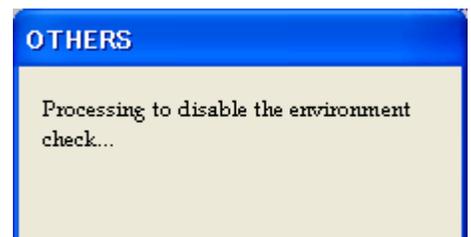
5. <Check beginning of special part Replacement>
   The message "Turn off the breaker which
    supplies power source for ACBOX-n. After
    that please replace it. When replacement is
    completed, press OK." is displayed.
    (Reply with [OK] after replacing the special
    part.)
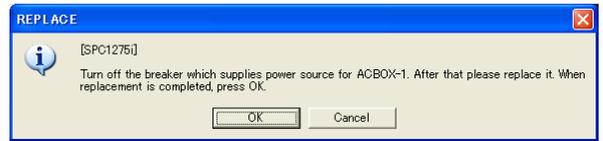
(Eg. ACBOX-1)

AC BOX (Three phase power supply 30A) ----- see HARDWARE T18 (REP03-1110)
AC BOX (Single phase power supply 30A) ----- see HARDWARE T19 (REP03-1260)
AC BOX (Single phase power supply 50A) ----- see HARDWARE T20 (REP03-1410)

[End of PRE-PROCEDURE]

[12] BATREG

1. <Execute>

⚠ **CAUTION**

When the screen prompting an operator to input a password in order to prevent a multiple maintenance, contact the technical support division to ask for an instruction.

If any other message that is not explained below is displayed, see the SVP Message Section (SVPMSG00-00).

A window shown on the right is displayed.
Select (CL) [Execute].

2. <Check beginning of special part Replacement>
    Select (CL) [Yes] in response to "Do you want to replace the "BATREG-n?"".

(Eg. BATREG-1)

3. <Checking power supply>
    The SVP automatically checks the BATREG to see if it is replaceable.

4. <Check environment monitor stopped state>
    The message "Processing to disable the environment check..." is displayed.

5. <Check beginning of special part Replacement>
   The message "Please replace the "BATREG-
   n." After replacement, press OK." is
   displayed.
   (Reply with [OK] after replacing the special
   part.)

   See HARDWARE TX (REP03-XXX)

(Eg. BATREG-1)

[End of PRE-PROCEDURE]

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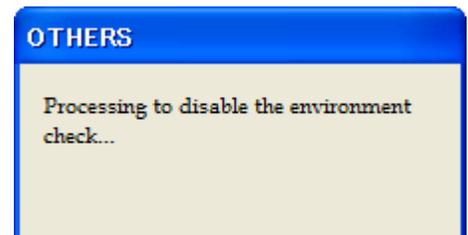
Blank Sheet

Blank Sheet

[PRE-PROCEDURE T4]

— OUTLINE —

① Select special (DKU) part (status check)
② Specify Replacement
③ Detach parts related to special part
④ Place part into unpluggable state

[1] Select special part

1. <Maintenance window>
   Select (CL) [Disk Unit – DKU-XX] in the
   'Maintenance' window.
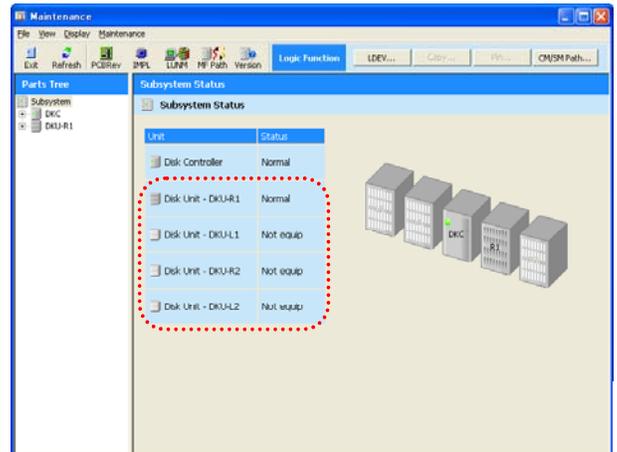
2. <Specify special part>
   Select (CL) the button to indicate the parts to be replaced.

   [Disk Unit – DKU-XX]
   • HDDFAN --------------[HDDFANn]
   [2] (REP02-840)
   • SVREX-----------------[SVREXn]
   [7] (REP02-940)

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REP02-830
Rev.1 / Mar.2007, Feb.2008

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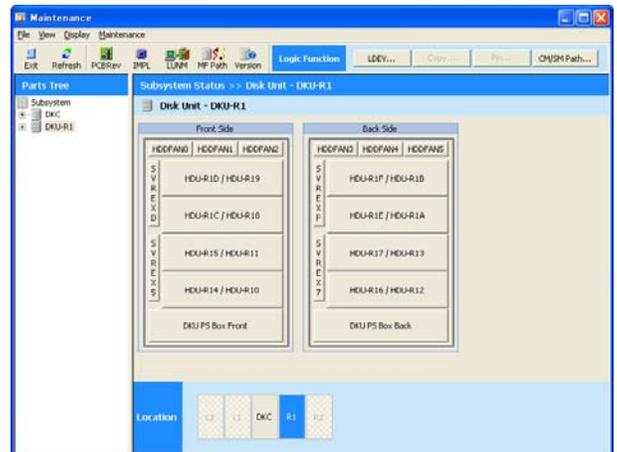
[DKU PS Box Front]
- DKUPS ----------------- [DKUPS-XXn]
  [3] (REP02-860)
- DKU Battery Box ----- [BTUXXn]
  [4] (REP02-880)
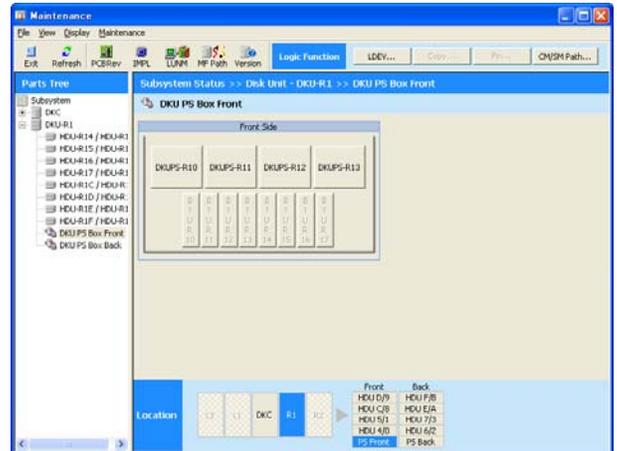
[DKU PS Box Back]
- DKU AC BOX -------- [ACBOX-UXXn]
  [5] (REP02-900)
- FUSE ------------------- [FUSEn]
  [6] (REP02-920)
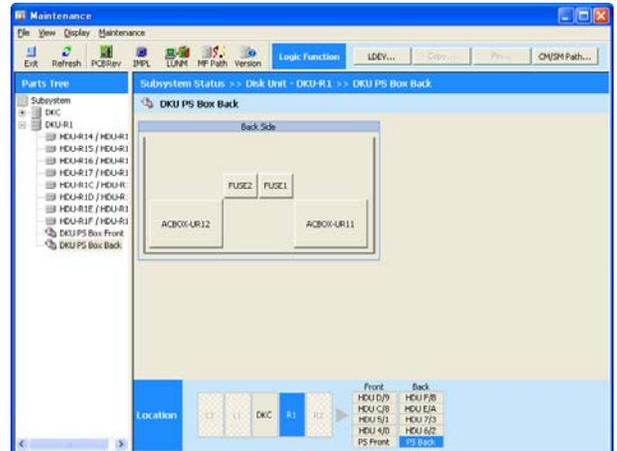
[HDU-XXn/HDU-XXn]
- SVR -------------------- [SVRXXn-X]
  [7] (REP02-940)
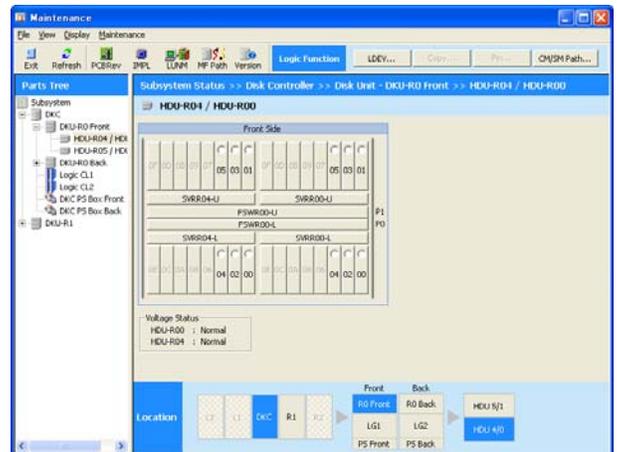
[2] HDDFAN

1. <Execute>

> ⚠ **CAUTION**
>
> When the screen prompting an operator to input a password in order to prevent a multiple maintenance, contact the technical support division to ask for an instruction.

If any other message that is not explained below is displayed, see the SVP Message Section (SVPMSG00-00).

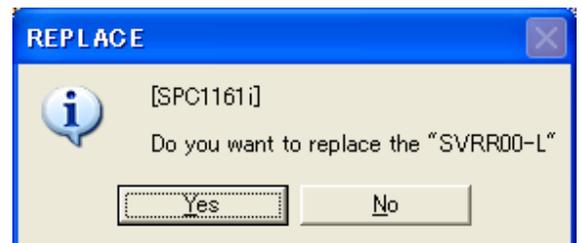A window shown on the right is displayed.
Select (CL) [Execute].
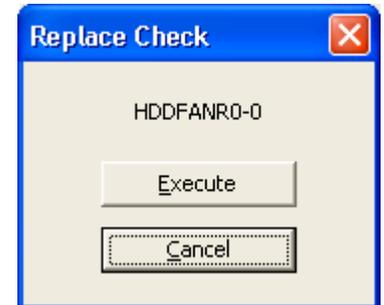
2. <Check beginning of special part Replacement>
Select (CL) [Yes] in response to "Do you want to replace the "HDDFANnn-n?"".
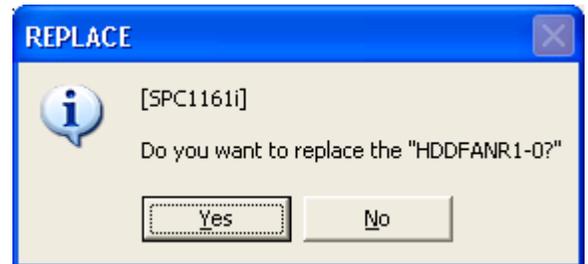
(Eg. HDDFANR1-0)

3. <Check environment monitor stopped state>
The message "Processing to disable the environment check..." is displayed.
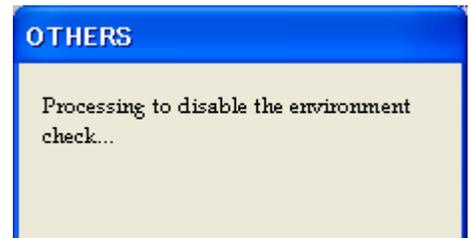
4. <Check beginning of special part Replacement>
    The message "Please replace the
    "HDDFANnn-n." After replacement, press
    OK." is displayed.
    (Reply with [OK] after replacing the special
    part.)

REPLACE

[SPC1198i]

Please replace the "HDDFANR1-0." After replacement, press OK.

OK   Cancel

(Eg. HDDFANR1-0)

FAN Assembly (HDD) -------- See HARDWARE T8 (REP03-750)
FAN Assembly (DKU) -------- See HARDWARE T14 (REP03-950)

[End of PRE-PROCEDURE]

[3] DKUPS

⚠ **CAUTION**

Before you start replacing a DKUPS, please ensure that all of LED (1, 2, 3) on the second redundant DKUPS shown on this page are lit. A system down may occur if a DKUPS is replaced when not all of the LEDs on the paired redundant DKUPS are lit. In case that the paired DKUPS has one or more LEDs not lit, call Technical Support Division. You may need to perform the DKUPS replacements off-line*.
* Please turn off the subsystem and follow the replacement procedure shown on HARDWARE T15 [REP03-980].

● LED status to be checked

DKC

PS needing replacement	1st check this redundant PS
DKUPS-R00	DKUPS-R01
DKUPS-R01	DKUPS-R00

e.g.) When replacing DKUPS-R00, make sure that all of LED 1, 2, 3 on DKUPS-R01 are lit.

DKUPS-R00
DKUPS-R01

Rear View of DKC

LED
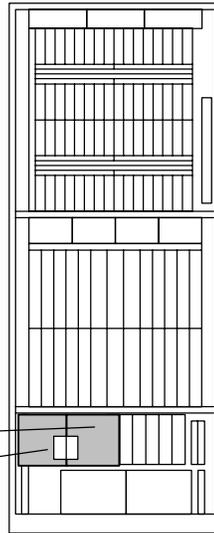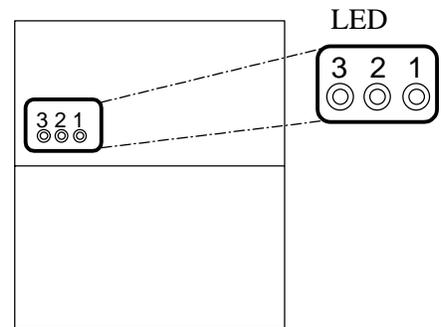
DKUPS

DKU

PS needing replacement	1st check this redundant PS
DKUPS-xx0	DKUPS-xx1
DKUPS-xx1	DKUPS-xx0
DKUPS-xx2	DKUPS-xx3
DKUPS-xx3	DKUPS-xx2

xx: R1, R2, L1, L2
e.g.) When replacing DKUPS-R00, make sure that all of LED 1, 2, 3 on DKUPS-R01 are lit.

DKUPS-xx0
DKUPS-xx1
DKUPS-xx2
DKUPS-xx3
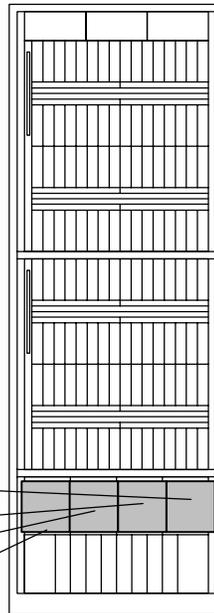
Rear View of DKU
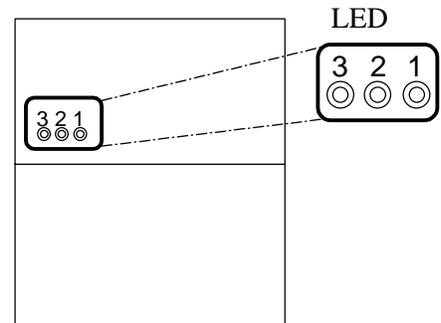
LED

DKUPS

1. <Execute>

> ⚠ **CAUTION**
>
> When the screen prompting an operator to input a password in order to prevent a
> multiple maintenance, contact the technical support division to ask for an instruction.

If any other message that is not explained below is displayed, see the SVP Message
Section (SVPMSG00-00).

A window shown on the right is displayed.
Select (CL) [Execute].
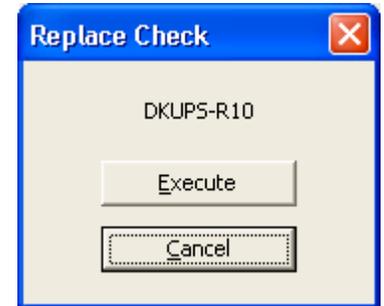
2. <Checking DKU PS>
    The SVP automatically checks the DKU PS to see if it is replaceable.

3. <Check beginning of special part Replacement>
    Select (CL) [Yes] in response to "Do you
    want to replace the "DKUPS-nnn?"".

(Eg. DKUPS-R10)

4. <Check environment monitor stopped state>
    The message "Processing to disable the environment
    check..." is displayed.
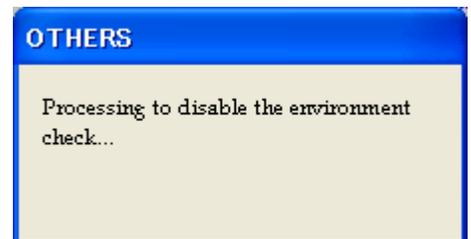
5. <Check beginning of special part Replacement>
The message "Please replace the "DKUPS-nnn." After replacement, press OK." is displayed.
(Reply with [OK] after replacing the special part.)
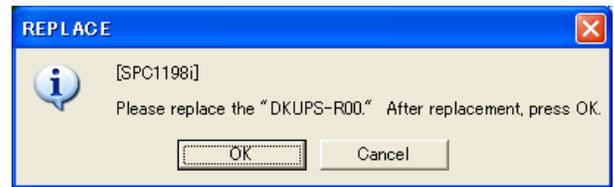
(Eg. DKUPS-R00)

See HARDWARE T15 (REP03-980)

[End of PRE-PROCEDURE]

[4] DKU Battery Box

1. <Execute>

> ### ⚠ CAUTION
>
> When the screen prompting an operator to input a password in order to prevent a
> multiple maintenance, contact the technical support division to ask for an instruction.

If any other message that is not explained below is displayed, see the SVP Message
Section (SVPMSG00-00).

A window shown on the right is displayed.
Select (CL) [Execute].

2. <Checking DKU BATTERY>
    The SVP automatically checks the DKU Battery to see if it is replaceable.

3. <Check beginning of special part Replacement>
    Select (CL) [Yes] in response to "Do you want
    to replace the "BATTERY-Unnn?"".

(Eg. BATTERY-UR10)

4. <Check environment monitor stopped state>
    The message "Processing to disable the environment
    check..." is displayed.
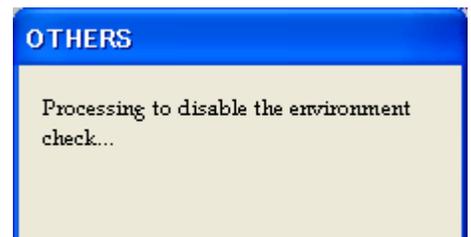
5. <Check beginning of special part Replacement>
    The message "Please replace the
    "BATTERY-Unnn." After replacement, press
    OK." is displayed.
    (Reply with [OK] after replacing the special
    part.)

(Eg. BATTERY-UR10)

See HARDWARE T10 (REP03-810)

[End of PRE-PROCEDURE]

[5] DKU AC BOX

1. <Execute>

⚠️ **CAUTION**

When the screen prompting an operator to input a password in order to prevent a multiple maintenance, contact the technical support division to ask for an instruction.

If any other message that is not explained below is displayed, see the SVP Message Section (SVPMSG00-00).

A window shown on the right is displayed.
Select (CL) [Execute].

---
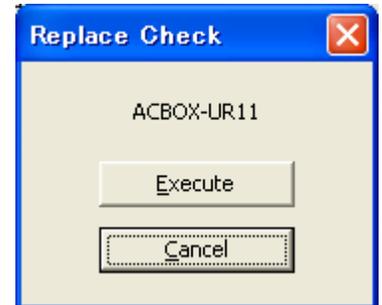
2. <Checking DKU AC Box>
The SVP automatically checks the DKU AC Box to see if it is replaceable.

---

3. <Check beginning of special part Replacement>
Select (CL) [Yes] in response to "Do you want to replace the "ACBOX-Unnn?"".

(Eg. ACBOX-UR11)

---

4. <Check environment monitor stopped state>
The message "Processing to disable the environment check..." is displayed.

---
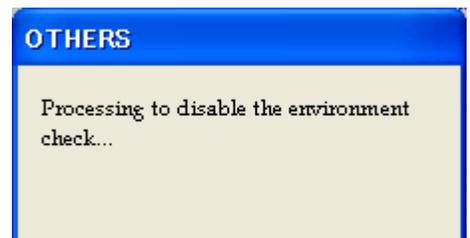
5. <Check beginning of special part Replacement>
    The message "Turn off the breaker which
    supplies power source for ACBOX-Unnn.
    After that please replace it. When replacement
    is completed, press OK." is displayed.
    (Reply with [OK] after replacing the special
    part.)
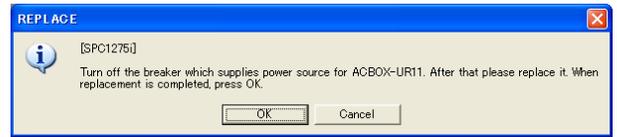
(Eg. ACBOX-UR11)

AC BOX (Three phase power supply 30A) ----- See HARDWARE T18 (REP03-1110)
AC BOX (Single phase power supply 30A) ----- See HARDWARE T19 (REP03-1260)
AC BOX (Single phase power supply 50A) ----- See HARDWARE T20 (REP03-1410)

[End of PRE-PROCEDURE]

[6] FUSE

1. <Execute>

> ⚠ **CAUTION**
>
> When the screen prompting an operator to input a password in order to prevent a multiple maintenance, contact the technical support division to ask for an instruction.

If any other message that is not explained below is displayed, see the SVP Message Section (SVPMSG00-00).

A window shown on the right is displayed.
Select (CL) [Execute].
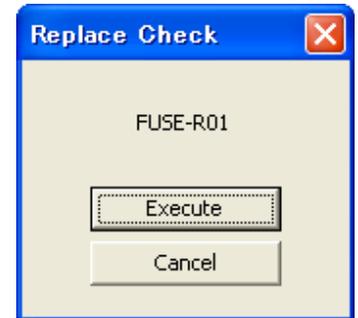
(Eg. FUSE-R01)

2. <Check beginning of special part Replacement>
Select (CL) [Yes] in response to "Do you want to replace the "FUSE-Rnn?"".
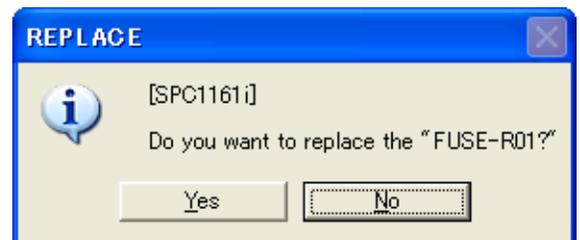
(Eg. FUSE-R01)

3. <Checking power supply>
The SVP automatically checks the FUSE to see if it is replaceable.

4. <Check environment monitor stopped state>
The message "Processing to disable the environment check..." is displayed.
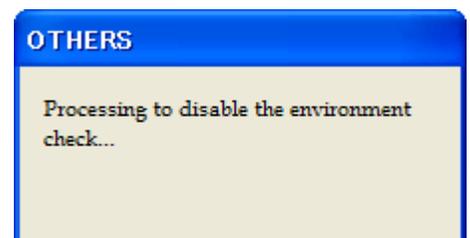
5. <Battery OFF>
The message "Turn off the BATTERY-URnn, BATTERY-URnn switches, and then select [OK]." is displayed.
After the switch of specified BATTERY is turned off, select (CL) [OK].

REPLACE

[SPC4045i]

Turn off the BATTERY-UR00,BATTERY-UR01 switches, and then select [OK].

OK   Cancel

(Eg. BATTERY-UR00, 01)

6. <Check beginning of special part Replacement>
The message "Please replace the "FUSE-Rnn." After replacement, press OK." is displayed.
(Reply with [OK] after replacing the special part.)

REPLACE

[SPC1198i]

Please replace the "FUSE-R01." After replacement, press OK.

OK   Cancel
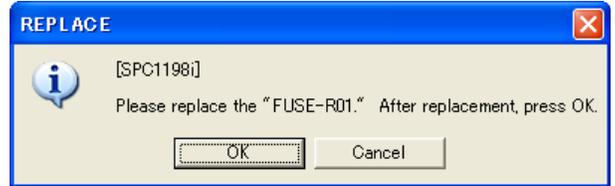
(Eg. FUSE-R01)

See HARDWARE TX (REP03-XXX)

[End of PRE-PROCEDURE]

[7] SVR/SVR-EX

1. \<Execute\>

⚠ **CAUTION**

When the screen prompting an operator to input a password in order to prevent a
multiple maintenance, contact the technical support division to ask for an instruction.

If any other message that is not explained below is displayed, see the SVP Message
Section (SVPMSG00-00).

A window shown on the right is displayed.
Select (CL) [Execute].
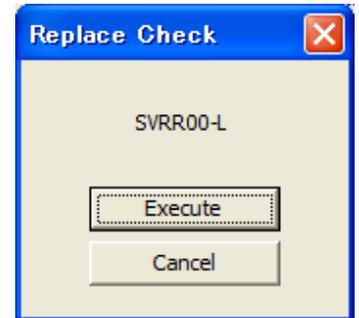
2. \<Checking Power Supply\>
   The SVP automatically checks the SVR/SVR-EX to see if it is replaceable.

3. \<Check beginning of special part Replacement\>
   Select (CL) [Yes] in response to "Do you want to
   replace the "SVRRnn-X?"".

(Eg. SVRR00-L)

4. \<Check environment monitor stopped state\>
   The message "Processing to disable the environment
   check..." is displayed.
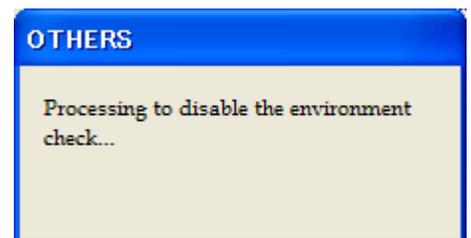
5. <Check beginning of special part Replacement>
    The message "Please replace the "SVRRnn-X." After replacement, press OK." is displayed.

    See HARDWARE T17 (REP03-1050)
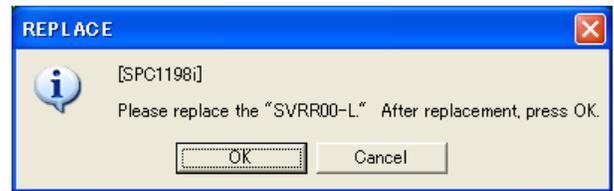
    (Eg. SVRR00-L)

    [End of PRE-PROCEDURE]

[PRE-PROCEDURE T5]

— OUTLINE —

① Select Port (SFP information check)
② Specify Replacement

1. <Set path offline>

⚠ **CAUTION**

The path to be placed offline is that connected with the CHA concerned.

[Notes for the case where DKN-200-NGW1 (NAS Unit) is connected to this device]

[Points to be checked in advance]
　　Prior to this operation, if all of the following three cases applies to this device, execute
　　[Correspondence when connecting the NAS Unit].
　　1. NAS Unit is connected to this device. (*1)
　　2. NAS Unit is in operation. (*2)
　　3. A failure has not occurred on the NAS Unit. (*3)
　　　　*1:　Confirm with the disk array device administrator to check whether the NAS Unit
　　　　　　is connected or not.
　　　　*2:　Confirm with the NAS Unit administrator to check whether the NAS service is
　　　　　　operating or not.
　　　　*3:　Ask the NAS Unit administrator to check whether failure has occurred or not by
　　　　　　checking with the NAS administration software, NAS Manager GUI, List of RAS
　　　　　　Information, etc. In case of failure, execute the maintenance operation together
　　　　　　with the NAS maintenance personnel.

[Correspondence when connecting the NAS Unit]
　　Confirm with the NAS Unit administrator whether it is possible to terminate the NAS
　　service. Determine how to react according to the confirmation result.
　　1. If the NAS service can be terminated:
　　　　Before starting this operation, ask the NAS Unit administrator for the planned
　　　　shutdown of the NAS Unit.
　　　　After completing this operation, ask the NAS Unit administrator to reboot the NAS
　　　　Unit.
　　2. If the NAS service cannot be terminated:
　　　　When the replacement operation of SFP used by the NAS Unit is completed, the
　　　　Fibre Channel path (FC path) of the NAS Unit might go into the Failure status.
　　　　Before starting the operation of the next SFP replacement, contact the NAS Unit
　　　　administrator, refer to "Recovering from FC path errors" of "Hitachi NAS Manager
　　　　User's Guide", confirm the FC path status and, if the status is Failure, ask for the
　　　　recovery of the FC path.
　　In addition, if there are any personnel for the NAS Unit maintenance, ask the NAS Unit
　　maintenance personnel to refer to "NAS IMS 2.9.8 Displaying LU Path Setting Screen
　　(NAS IMS 02-0490)" in "DKN-200-NGW1 NAS Unit Maintenance Manual", and ask to
　　check the status of the FC path and to recover the FC path if it is in a failure status
　　after completing the replacement operation of SFP used by the NAS Unit.

2.   <Maintenance window>
     Select (CL) [Disk Controller] in the
     'Maintenance' window.

3.   <DKC window>
     Select (CL) [Logic Box ClusterX] in the
     'DKC' window.

4. <Selecting CHA>
    Select (CL) the target CHA.
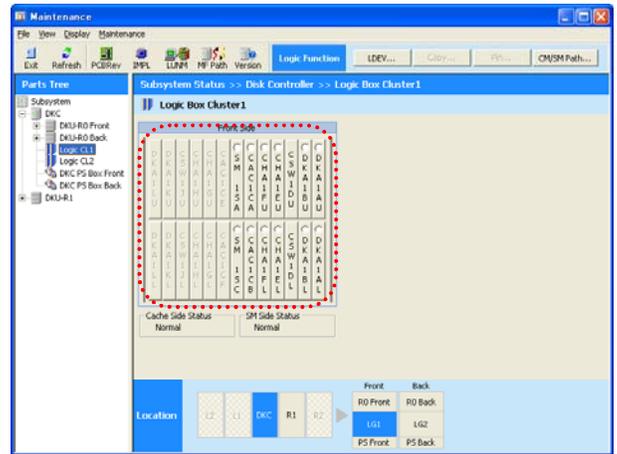
5. <SFP Maintenance window is displayed>
    Select (CL) [Other]-[SFP Maintenance].
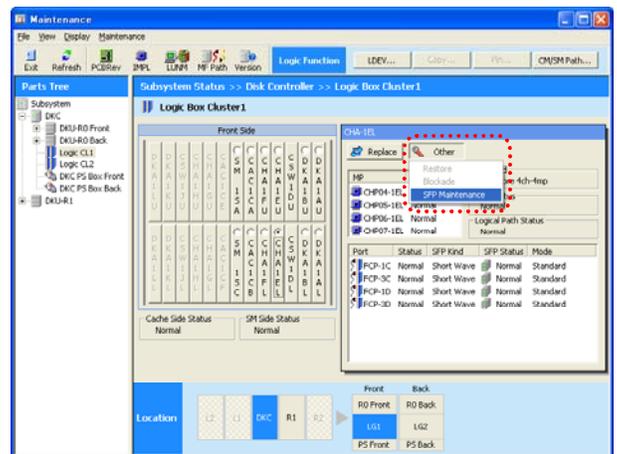
6. <Specify SFP replacement>
    Select the button of the port for which the SFP is to be
    replaced and select (CL) the [Replace] button.
    (The plural can be selected.)
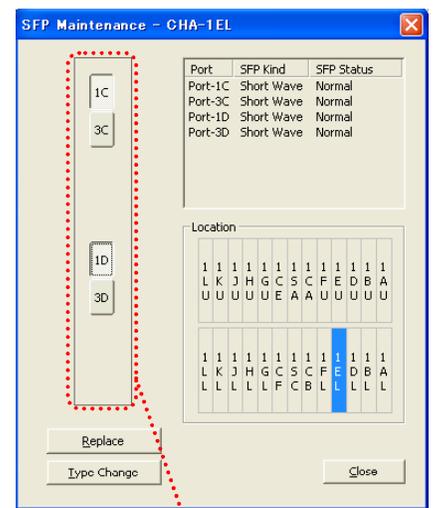
port button

7. <Replacing the SFP>
    A message, "Please replace the "SFP(Port-
    nn, ...)." After replacement, press OK." is
    displayed.

    Maintenance

    [STA1198i]

    Please replace the "Port-1C,Port-1D." After replacement, press OK.

    OK

    (Select (CL) [OK] after replacing the SFP.)
    Refer to the hardware part replacement procedure T21 (on page).

[PRE-PROCEDURE V]

— OUTLINE —

① Select P-DEV (status check)
② Specify Replacement
③ Place HDD into unpluggable state

⚠ **CAUTION**

This processing is a special operation for detecting a cause of a Fibre loop error.
Ask the technical support division about the appropriateness of the operation.

⚠ **CAUTION**

This processing is a special operation for detecting a cause of a Fibre loop error.
Ask the technical support division about the appropriateness of the operation.

---

1. <Maintenance window>
   Select (CL) the DKU information of the DKU which installs the HDD to be replaced in the 'Maintenance' window.

   • In case of DKU-R0
     Select (CL) [Disk controller].

   • In case of other than DKU-R0
     Select (CL) [Disk Unit - DKU-XX].

2. <Select HDU>
   Select (CL) the HDU information of the HDU which installs the HDD to be replaced.
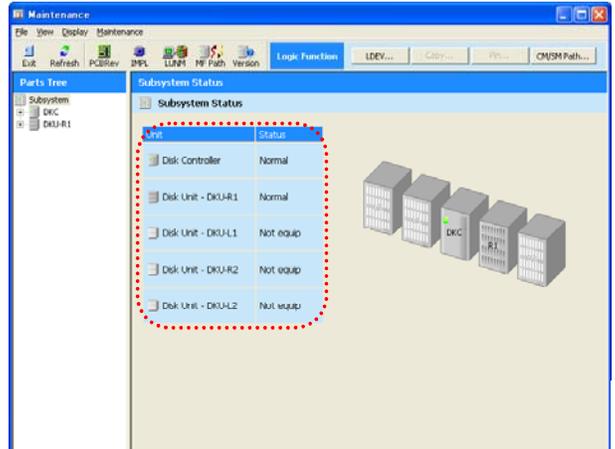
   • In case of DKU-R0
     Select (CL) [DKU-R0 Front] or [DKU-R0 Back].

Select (CL) [HDU-R0X / HDU-R0X].

- In case of other than DKU-R0
  Select (CL) [HDU-XXX / HDU-XXX].

⚠ CAUTION

This processing is a special operation for detecting a cause of a Fibre loop error.
Ask the technical support division about the appropriateness of the operation.

---

3. <Select HDD>
Check and select (CL) [nn] to be replaced.

4. <Specify replacement of HDD>
Make sure that the "Device Status" is [Failed] or [Warning].
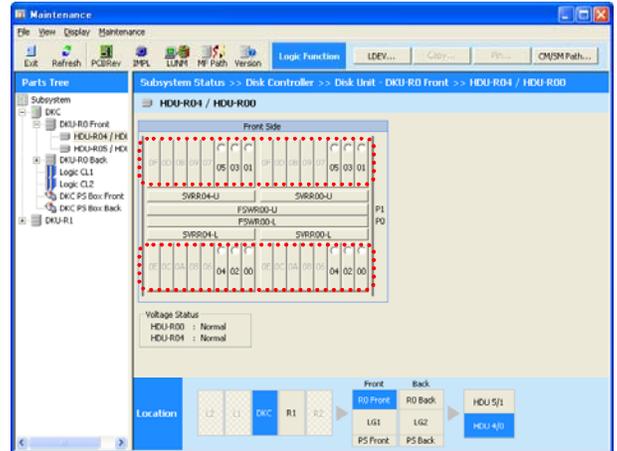
Select (CL) [Replace]-[Replace(INLINE)].
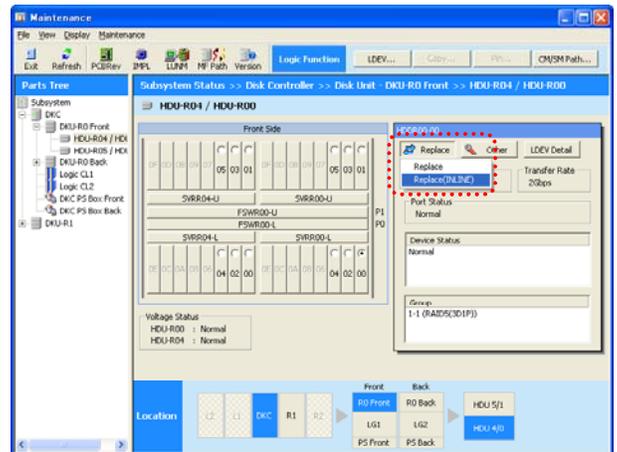
⚠ **CAUTION**

This processing is a special operation for detecting a cause of a Fibre loop error.
Ask the technical support division about the appropriateness of the operation.

5. <Checking the P-DEV status & saving the spare>

⚠ **CAUTION**

When the screen appears prompting the operator to input a password to prevent multiple maintenance or for executing a pin check, contact the technical support division to ask for instructions.

If any other message that is not explained below is displayed, see the SVP Message Section (SVPMSG00-00).

"Checking..." is displayed.

6. <P-DEV blocking>
Select (CL) [Yes] in response to "Are you sure you want to block the physical device?".

7. <Blocking the Physical device>
"Blocking..." is displayed.

8. <Spin down the Physical device>
"Spinning down..." is displayed

Perform the dummy replacement of the displayed FSW(s) when the window is displayed. Select the DKU list and record the target FSW(s) because two or more DKU might be listed.
Select (CL) [Close] button and perform the dummy replacement of the target FSW(s).

Retry the replacement after completing the dummy replacement of FSW.
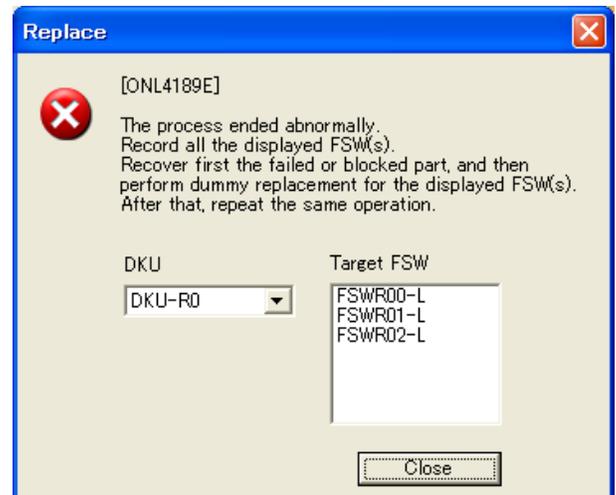
> ⚠ **CAUTION**
>
> This processing is a special operation for detecting a cause of a Fibre loop error.
> Ask the technical support division about the appropriateness of the operation.

9. \<P-DEV pull out>
   Select (CL) [Yes] in response to "Are you
   sure you want to pull out the physical
   device?".
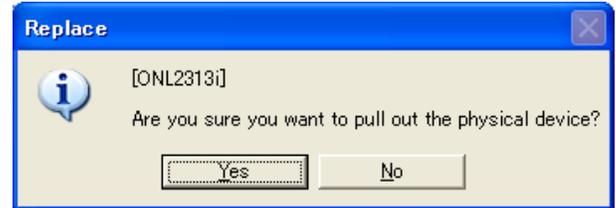
10. \<Check shut down LED>

> ⚠ **CAUTION**
>
> If a wrong HDD is removed, a data loss or a system down may occur.

   Check the shut down LED on the HDD to be replaced.
   If LED is off, reconfirm the location of the HDD to be replaced with LOCATION SECTION
   before replacing the hardware.

11. \<Confirmation of replace>
    Select (CL) [OK] in response to "The LED of
    some other disk drive might be on. Please
    check the location of the disk drive that you
    want to replace. After that, please replace the
    disk drive and then select OK. (HDDxnn-nn)"
    after the unit is replaced (Step 12).

12. \<Replace HDD>
    Replace HDD.
    See HARDWARE A (REP03-10).

[PRE-PROCEDURE Z]

— OUTLINE —

① Installation of USB memory

A USB memory is being provided with each replacement FSW, CACHE, SM-PK, CSW, DKA and CHAs assembly to collect more detailed information about transient failures. Return the USB memory that contains the failure information together with the failed PCB after the failed PCB replacement.

1. Installation of USB memory

Caution of the USB device insertion to SVP
   If revision control does not indicates "C" or "T", it means that the FC of "SVP down induced by USB memory insertion" has been applied yet, please carry out the FC according to the FCB.
   If voltages are abnormal or if there appears to be damage to the cable, then please contact Technical Support Team for guidance.

(1) Collecting information to the external USB memory.
     Connect the USB memory to one of the USB ports on the SVP in the array as shown below. If the SVP-OPTION is installed, the USB memory must be installed in the SVP that is the active SVP.
     ① Insert the USB Memory in USB port on the SVP.

SVP-BASIC

Front View of DKC

SVP-OPTION

Rear View of DKC

SVP

USB port
(Insert the USB Memory in one of USB ports)

USB Memory
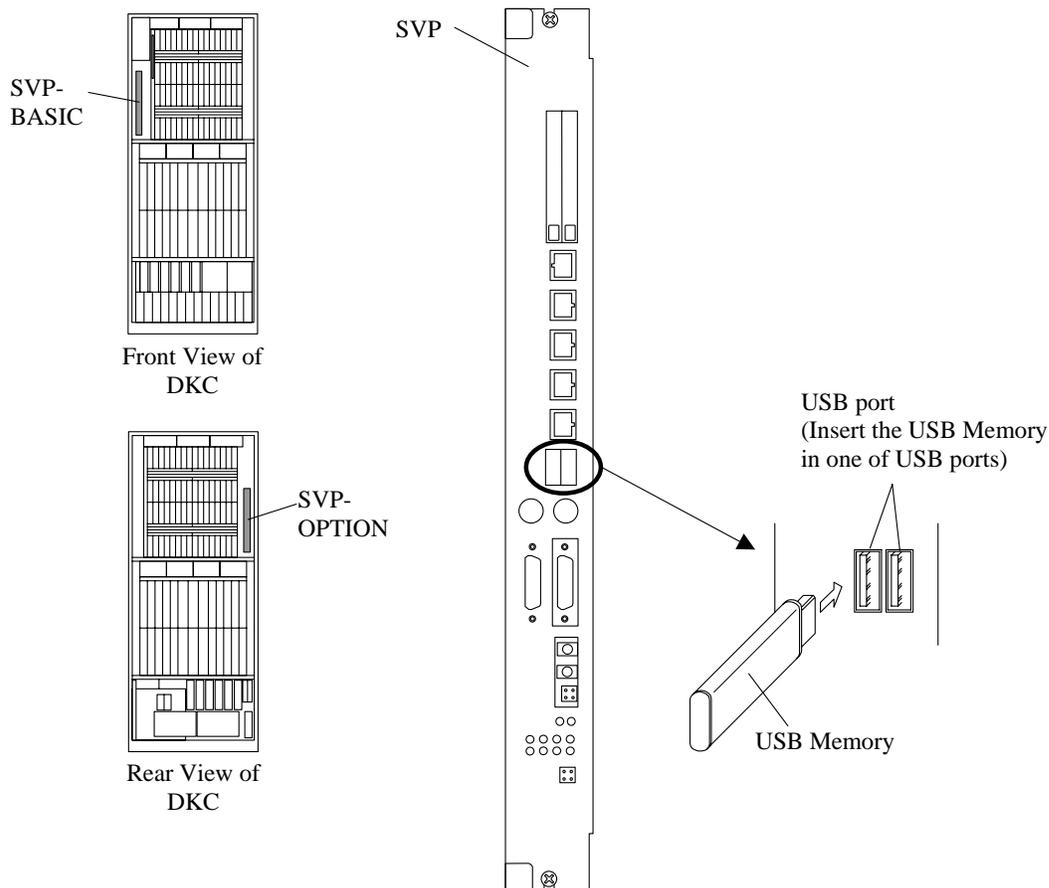
Go to PRE-PROCEDURE A (REP02-10).

[HARDWARE A]

Location		Function Name of Component	Part Name	HDA Label
HDU Box	1	HDD Canister	HDU600-72KSFC	DKS2E-K72FC
				DKS2F-K72FD
				DKS2G-K72FD
				DKR2F-K72FC
				DKR2F-K72FH
				DKR2G-K72FC
				DKR2J-K72FD
				DKx2x-K72Fx (*1)
			HDU600-146KSFC	DKS2E-K146FC
				DKS2F-K146FC
				DKS2G-K146FD
				DKR2F-K146FC
				DKR2F-K146FH
				DKR2G-K146FC
				DKR2J-K146FD
				DKx2x-K146Fx (*1)
			HDU600-300JSFC	DKS2D-J300FC
				DKR2F-J300FC
				DKR2G-J300FC
				DKR2J-J300FC
				DKx2x-J300Fx (*1)
			HDU600-300KMFC	DKS2E-K300FC
				DKS2F-K300FC
				DKS2G-K300FC
				DKR2G-K300FC
				DKR2H-K300FC
				DKR2J-K300FC
				DKx2x-K300Fx (*1)
			HDU600-300KSFC	DKS2E-K300FC
				DKS2F-K300FC
				DKS2G-K300FC
				DKx2x-K300Fx (*1)

(To be continued)

*1: This drive model name shows the compatible drive.

(Continued from the preceding page)

Location		Function Name of Component	Part Name	HDA Label
HDU Box	1	HDD Canister	HDU600-400JSFC	DKS2E-J400FC
				DKS2G-J400FD
				DKx2x-J400Fx (*1)
			HDU600-450KSFC	DKS2F-K450FC
				DKS2G-K450FC
				DKR2H-K450FC
				DKR2J-K450FC
				DKx2x-K450Fx (*1)
			HDU600-600KSFC	DKS2G-K600FC
				DKR2J-K600FC
				DKx2x-K600Fx (*1)
			HDU600-0R7HSFC	DKS2A-H0R7AT
				DKR2B-H0R7AT
				DKR2C-H0R7AD
				DKR2D-H0R7AD
				DKx2x-H0R7Ax (*1)
			HDU600-1R0HSFC	DKR2B-H1R0AT
				DKR2C-H1R0AD
				DKR2D-H1R0AD
				DKx2x-H1R0Ax (*1)
			HDU600-2R0HSFC	DKR2C-H2R0AT
				DKR2D-H2R0AT
				DKx2x-H2R0AT (*1)
	2	SSD Canister	SSD600-72S1FC	SDT2A-S072FC
				SDT2x-S072FC (*1)
			SSD600-146S1FC	SDT2A-S146FC
				SDT2x-S146FC (*1)
			SSD600-200S1FC	SDT2A-S200FC
				SDT2C-S200FC
				SDT2x-S200FC (*1)
			SSD600-400S1FC	SDT2A-S400FC
				SDT2C-S400FC
				SDT2x-S400FC (*1)

*1: This drive model name shows the compatible drive.

HDD/SSD Canister   HDD/SSD Canister

Front View of DKC   Rear View of DKC   Front View of DKU   Rear View of DKU
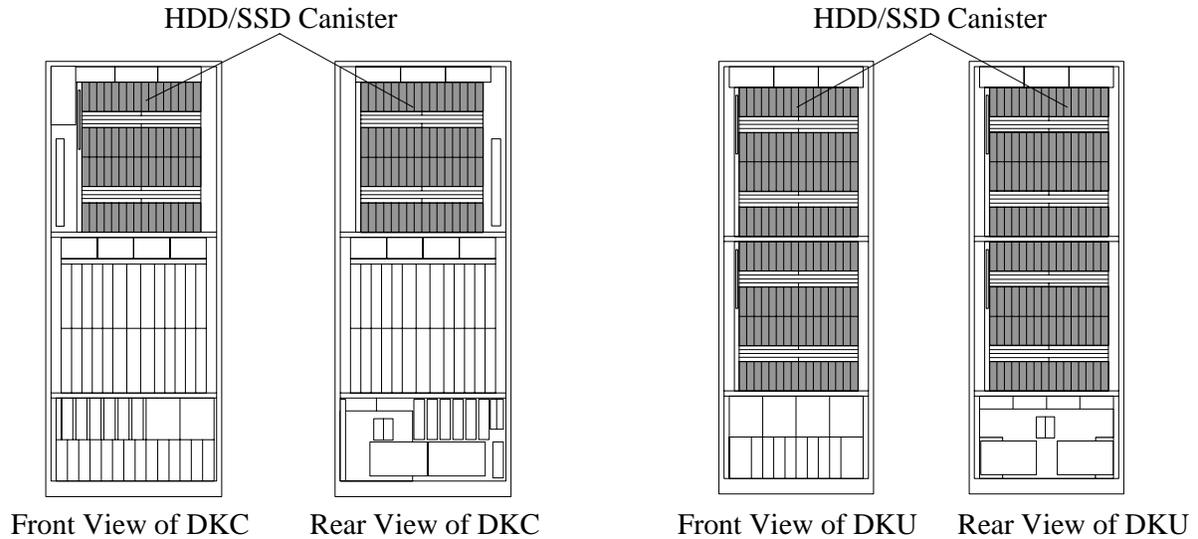
NOTICE:
- Replace the HDD/SSD canister in the subsystem power on status only.
  Do not replace with the subsystem power off status.
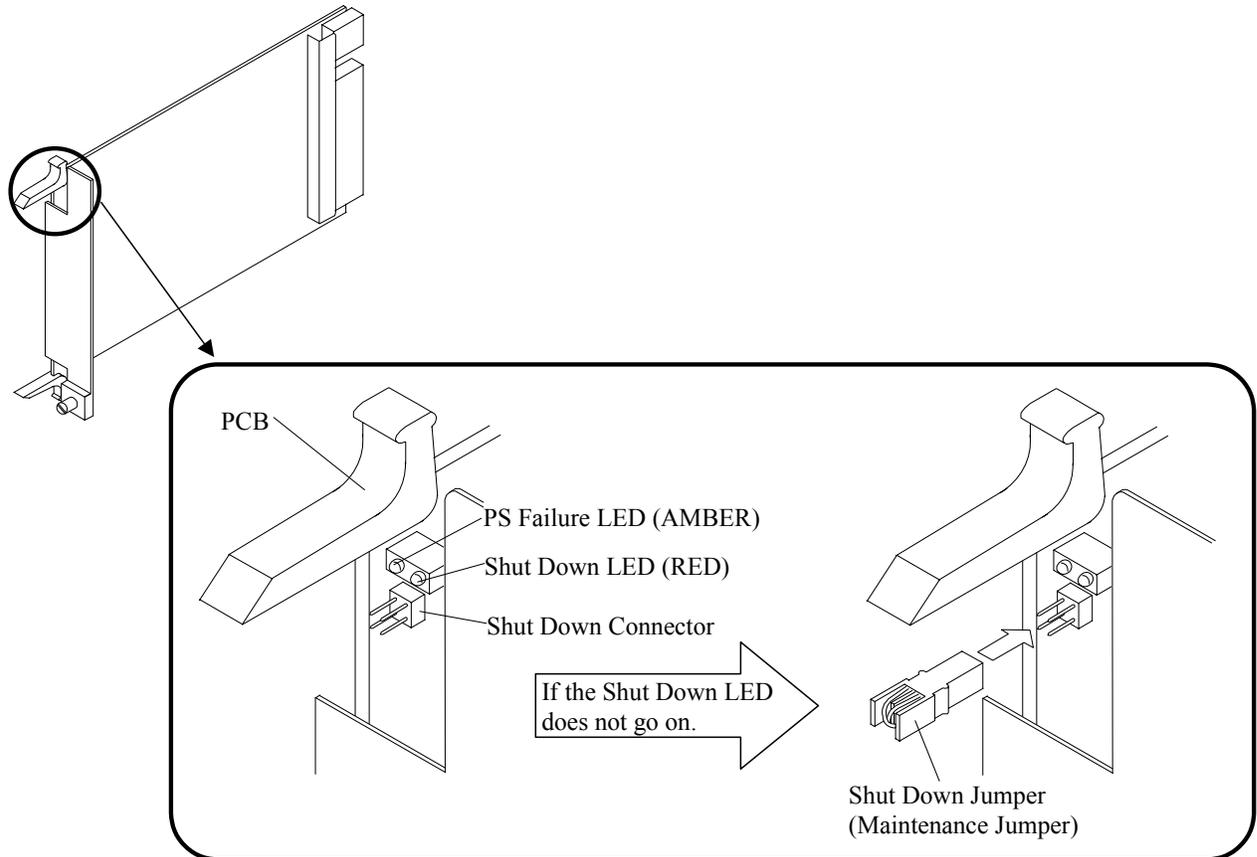- Be sure to wear your wrist strap and attach to ground prior to performing the following
  work. This will ensure that the IC and LSI on the PCB are protected from static
  electricity.
- HDD is a precise component. Be careful in handling HDD to avoid vibration and impact.

See "3.1.8 Working Procedure for Upgrade or Replacement of HDD/SSD Canister (INST03-01-170)" before starting the work.

1. Check the Shut Down LED.
    a. Check that the Shut Down LED on the SVR corresponding to HDD/SSD canister is turned on.
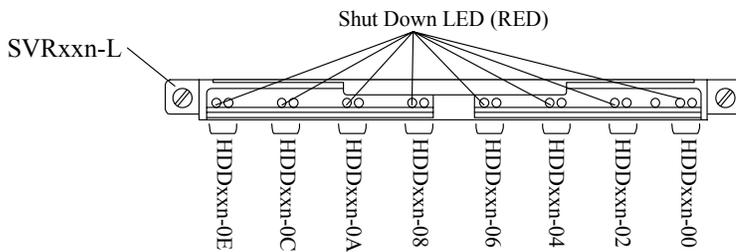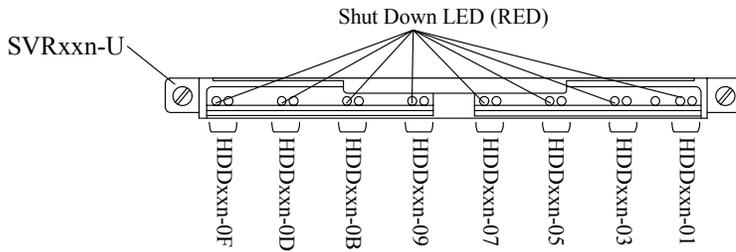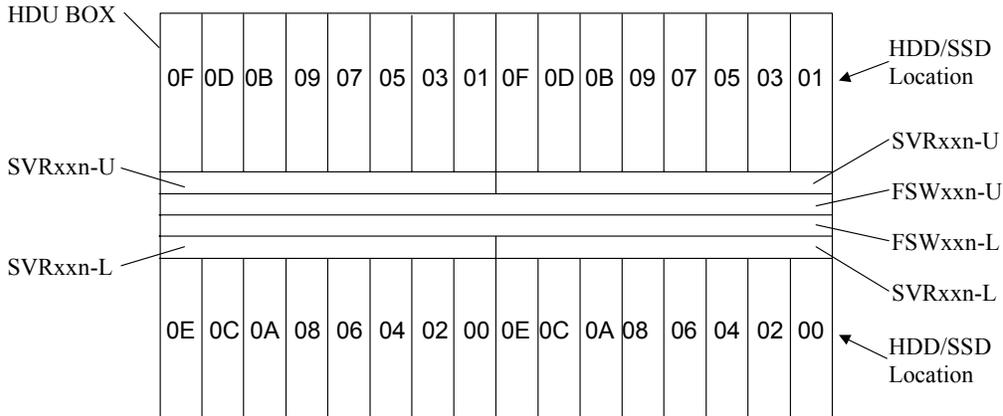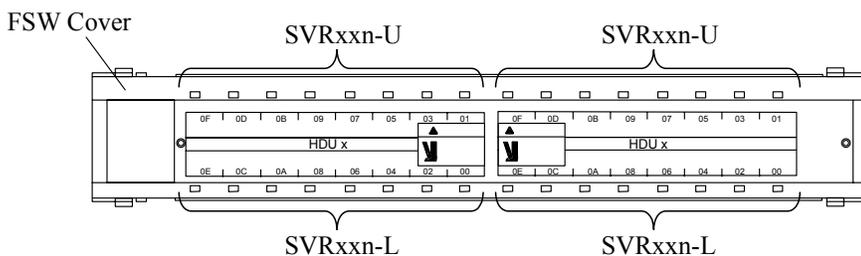
Fig. A-1   Checking of Shut Down LED

2.   Remove the HDD/SSD Canister.

> Note: If HDD/SSD canister can't be removed due to hitting cable cover, move cable cover to upper side or remove cable cover and remove HDD/SSD canister.

HDU Box

HDD/SSD Canister

FSW Cover

Move the FSW cover to upper side or remove FSW cover.

Hitting
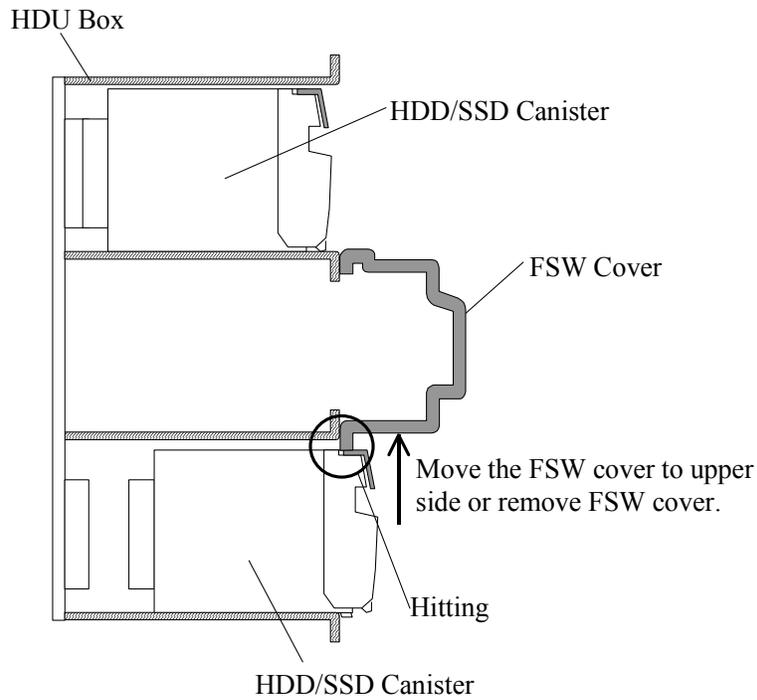
HDD/SSD Canister

Side View

Fig. A-2   Hitting of HDD/SSD Canister and FSW Cover

a. Push up the stopper of HDD/SSD canister, and bring the handle down. Don't pull the handle during this process.
b. Push down the handle.
c. Pull out the HDD/SSD canister.
d. Fig. A-4 illustrates the case of wrong procedure.

(1) Push up the stopper of HDD/SSD canister, and bring the handle down.

(2) Push down the handle.

×: Do not pull.

Handle   Stopper

Back Board   Frame of HDD/SSD Canister
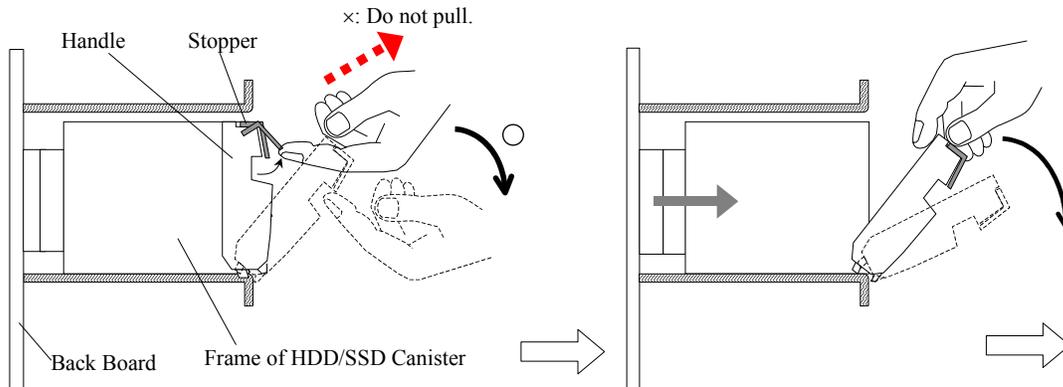
(3) Pull out the HDD/SSD canister.

Note: Do not pull out the HDD/SSD canister while pushing up the stopper.
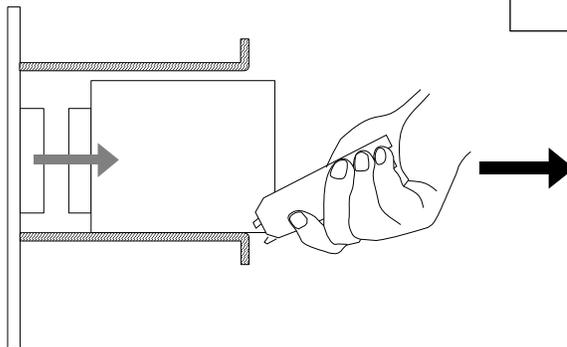
Fig. A-3   Removal of HDD/SSD Canister

Wrong Procedure

(1) Push up the stopper.

(2) Pull out the HDD/SSD canister in the diagonal upper direction with the finger putting on the stopper.

Handle   Stopper

Back Board   Frame of HDD/SSD Canister

Claws of the handle do not engage with the front side of the HDU Box.
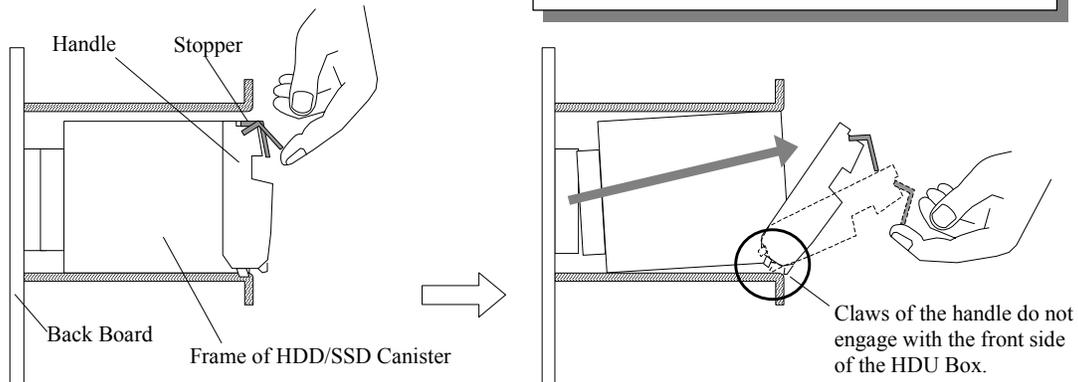
Fig. A-4   Removal of HDD/SSD Canister (Wrong Procedure)

3.   Check the condition of the HDD/SSD canister before installing it.

HDD/SSD Canister ⌒ Main Edge Connector

Note: Check that the main edge connector of the HDD/SSD canister
has no deformation, damage or sticking of dust before installing
the HDD/SSD canister.
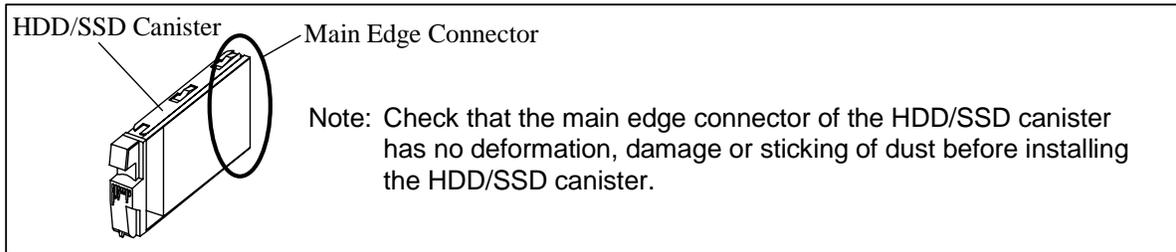
a.   Check if the spring exists in the lower part of the HDD/SSD.
b.
    <When the spring does not exist in the lower part of the HDD/SSD>
    Go to the procedure 4 of the next page.

    <When the spring exist in the lower part of the HDD/SSD>
    Check that a spring does not run onto a rail.
    If it runs onto a rail, correct the position so that it may fit in a groove.

HDD/SSD Canister (Side View)

Attachment Position of spring

A

When the spring exists

Rail

Spring   Status that the tip
                runs onto a rail

Groove

Normal status

Viewed from A

When the spring does not exist

There is no spring

Viewed from A
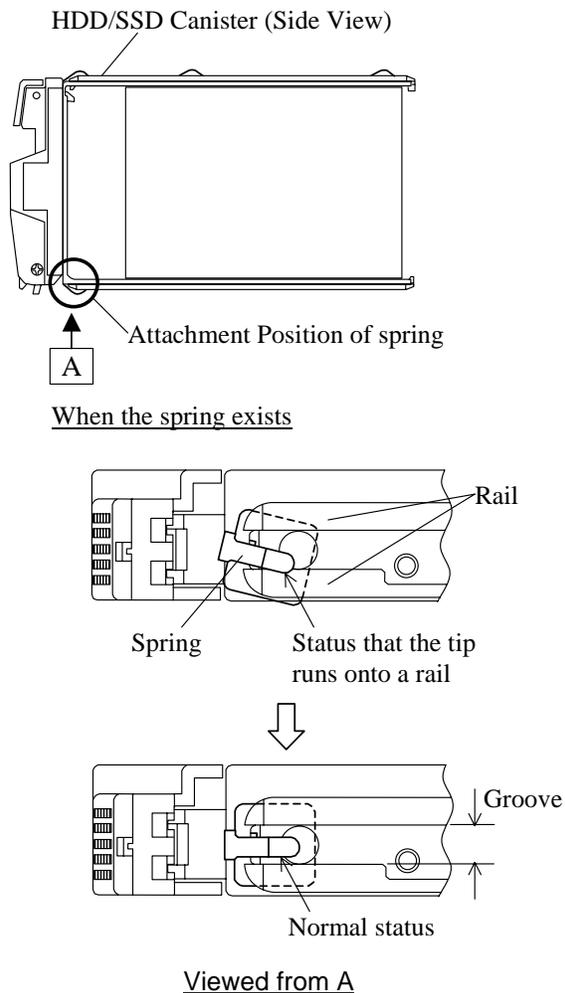
Fig. A-5   Confirmation of Spring Condition

4.   HDD/SSD canister install procedure

Caution – Back Board, or HDD/SSD connector or canister handle may be damaged when the canister is forcibly inserted.

If the canister cannot be easily inserted until the claws on the handle reach the DKU Box, or if the handle binds or stops before it can be locked, then remove the canister and perform inspection:

a) Check the HDD/SSD slot in HDU Box to be free and clear of obstructions.
b) Check connector on back board for visible defects.
c) Inspect connector on HDD/SSD for visible defects.
d) Inspect HDD/SSD canister top and bottom guide for defects. Note special alignment tab on bottom guide on some canisters. A damaged tab can bind on the lower slot guides in HDU Box.
e) During installation make sure the HDD/SSD is inserted in alignment with slot guides.
f) Check upper rear spring on SSD canister has been removed. (This applies only on SSD canister)
Reinsert HDD/SSD after inspections have passed.

Note on the installation: Do not insert the HDD/SSD canister by pushing its frame

HDD/SSD Canister (Side View)

A

Alignment tab found on lower guides on some HDD/SSDs.

Viewed from A
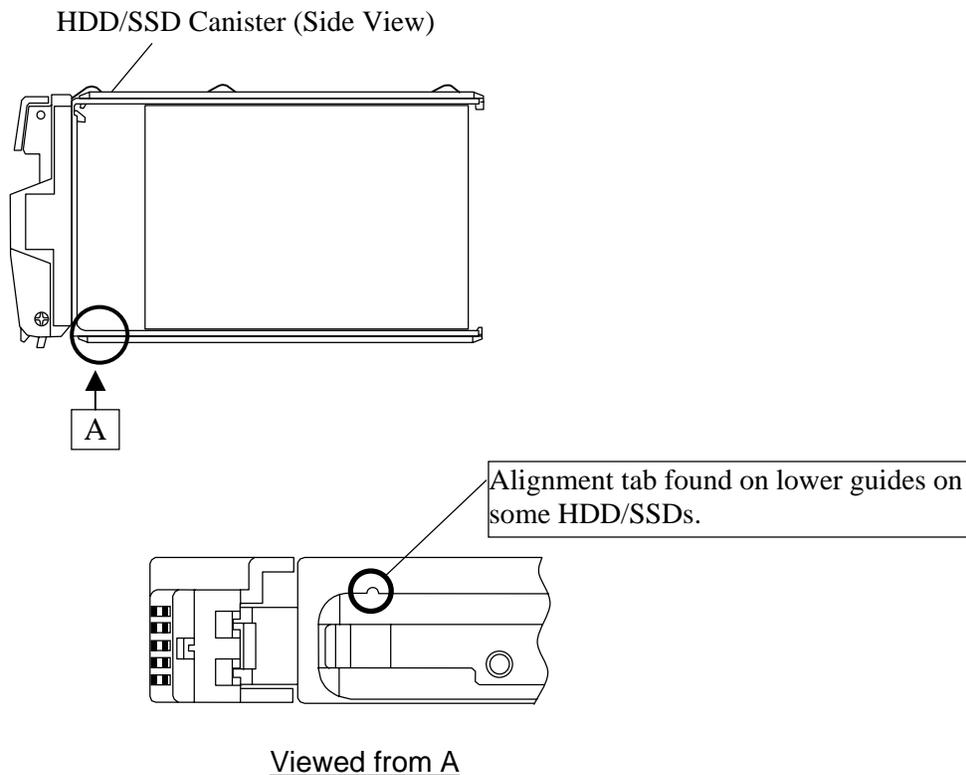
Fig. A-6   Alignment Tab of HDD/SSD Canister

(1) Insert the HDD/SSD 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) Close and latch the handle in one easy stroke by pushing its top with your thumb.
   (Do not force the handle. If it binds or stops before it can be locked, remove the canister and perform inspections provided in the Caution instructions)

Handling of the canister

Frame of the Canister

HDD/ SSD

Stopper
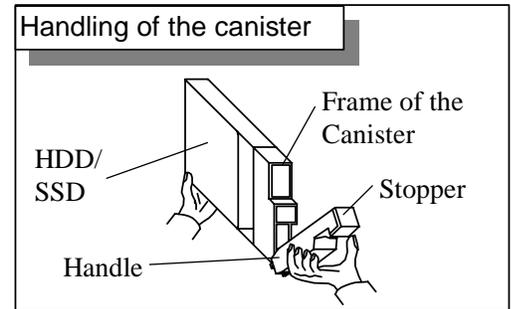
Handle

(1) Insert the HDD/SSD canister into the HDU Box holding its handle.

Small gap exists.
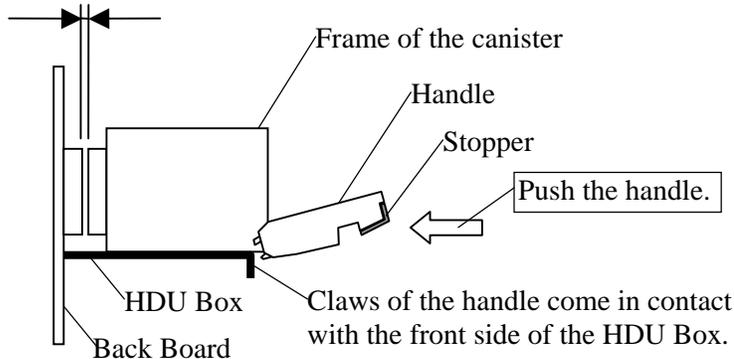
Frame of the canister

Handle

Stopper

Push the handle.

HDU Box

Claws of the handle come in contact with the front side of the HDU Box.

Back Board

(2) Close and latch the handle in one easy stroke by pushing its top with your thumb.
   (Do not force the handle. If it binds or stops before it can be locked, remove the canister and perform inspections provided in the Caution instructions)

The connectors have been coupled.

Close and lock the handle in one easy stroke by pushing its top with your thumb.

Stopper

Push the handle slightly downward with your thumb.

Handle
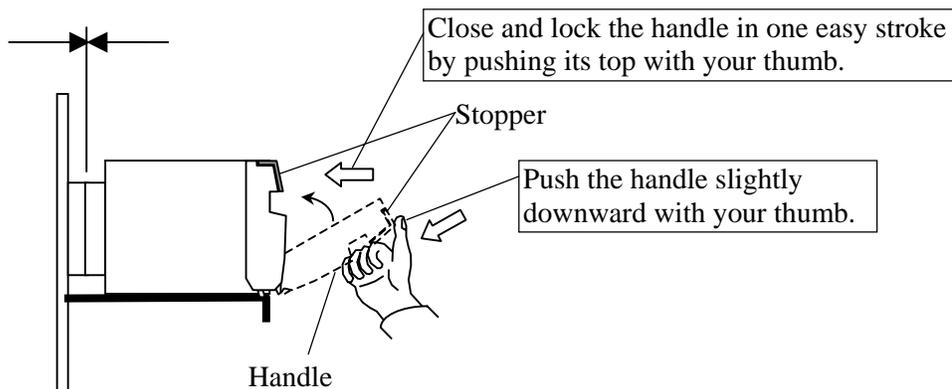
Fig. A-7   Method of Installing HDD/SSD Canister

5.　See SVP post-procedure as follows.

Note:　Before starting the <Check the beginning of recovery> operation in
　　　　POST-PROCEDURES a, b, c and d, be sure to insert a floppy disk for dump, collect
　　　　failure information, and return the floppy disk with the failed HDD.
　　　　A dump floppy disk is attached with a Spare HDD.

<Data drive, spare drive>

Work ID	Parts Name	Condition Item				Procedure
		Condition			Configuration	SVP post-procedure
		Failure		Preventive	Unused Spare drive	
		Warning SIM	Block SIM			
RDK1	Data Drive *1	×	—	—	Yes	Post a (REP04-10), Post z (REP04-1030)
RDK2	Data Drive *1	—	×	—	Yes	Post a (REP04-10), Post z (REP04-1030)
RDK3	Data Drive *1	—	—	×	Yes	Post a (REP04-10), Post z (REP04-1030)
RDK4	Data Drive *1, *4	×	—	—	No	Post b (REP04-50), Post z (REP04-1030)
RDK5	Data Drive *1, *4	—	×	—	No	Post b (REP04-50), Post z (REP04-1030)
RDK6	Data Drive *1, *4	—	—	×	No	Post b (REP04-50), Post z (REP04-1030)
RDK7 *2, *3	Data Drive *1	*2				Post c (REP04-90), Post z (REP04-1030)
RDK8	Spare Drive *1	—				Post d (REP04-150), Post z (REP04-1030)

*1:　Parts Name indicates attribute of a drive.
　　　Data Drive : The drive is installed in the position for a drive except spare drive (Data
　　　Drive).
　　　Spare Drive : The drive is installed in the position for a spare drive.

*2:　RDK7 is a Work ID for a work which is applicable to a case that two or more drives in a
　　　same parity group are blocked. When the procedures instructed by RDK7 are executed,
　　　data will be lost. Ask the technical support division about the appropriateness of the
　　　operation. When you want to restore LDEV status for the purpose of data backup, please
　　　go to TRBL05-490.

*3:　Confirm the parity group and the LDEV No. corresponding to the HDD through the SVP
　　　STATUS. See page SVP03-220 for the procedure for referring to SVP STATUS

*4:　See "PROCEDURE BEFORE PDEV EXCHANGE AND CORRECTION COPY"
　　　(REP01-210).

Note:　If a Work ID cannot be found or if multiple drive error is occurring, see page
　　　　TRBL05-280 on TROUBLE SHOOTING section.

[HARDWARE B]

Location		Function Name of Component	Part Name
Front Logic Box or Rear Logic Box in DKC	1	SM (Shared Memory) PCB	• WP651-A • WP652-A
	2	SM Module	• SH453-C (S2GQ) • SH453-E (S4GQ)
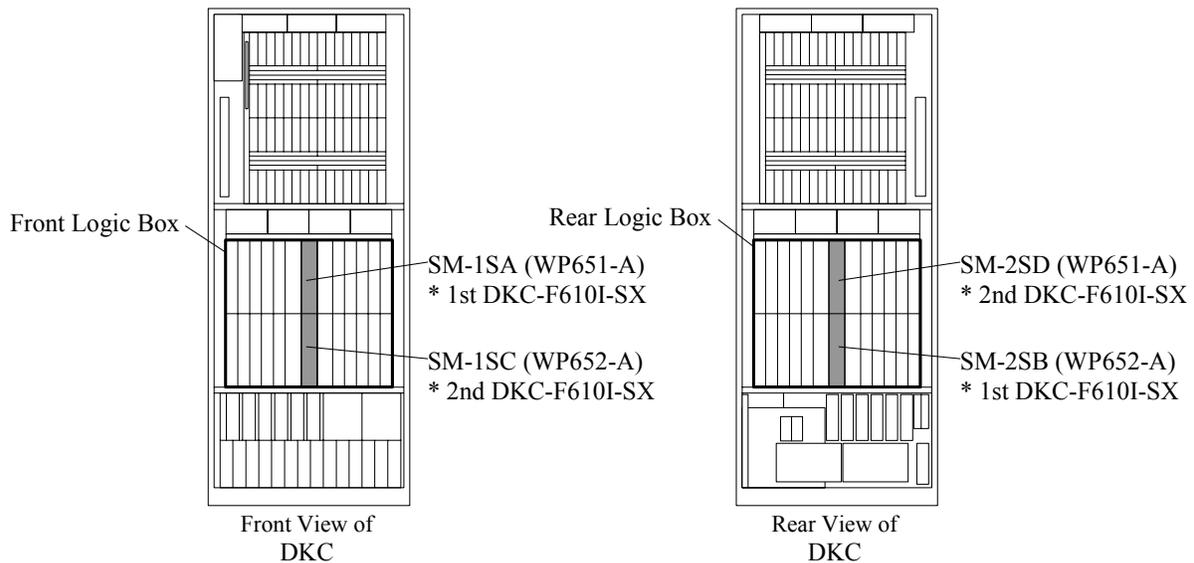
Front Logic Box

SM-1SA (WP651-A)
* 1st DKC-F610I-SX

SM-1SC (WP652-A)
* 2nd DKC-F610I-SX

Front View of
DKC

Rear Logic Box

SM-2SD (WP651-A)
* 2nd DKC-F610I-SX
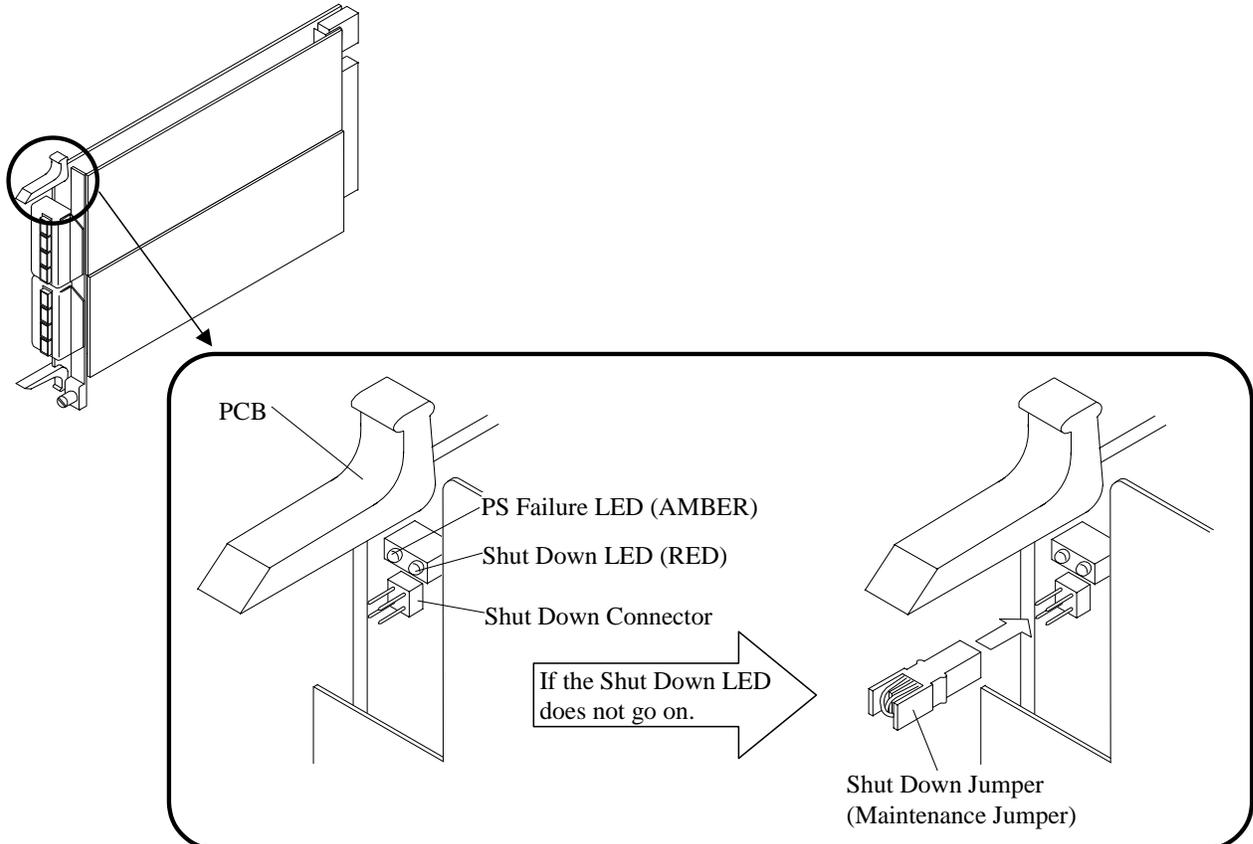
SM-2SB (WP652-A)
* 1st DKC-F610I-SX

Rear View of
DKC

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.

1. Remove the SM PCB.
    a. Check that the Shut Down LED is on. If not, connect the Maintenance Jumper to the Shut Down Connector. (only hot replace)

⚠ CAUTION

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

PCB

PS Failure LED (AMBER)

Shut Down LED (RED)

Shut Down Connector

If the Shut Down LED does not go on.

Shut Down Jumper (Maintenance Jumper)

Note: When the Maintenance Jumper is inserted in the PCB, the Shut Down LED (RED) and the PS Failure LED (AMBER) light on, but it is not a problem if they do not light on.

b. Remove the screw and remove the SM PCB.
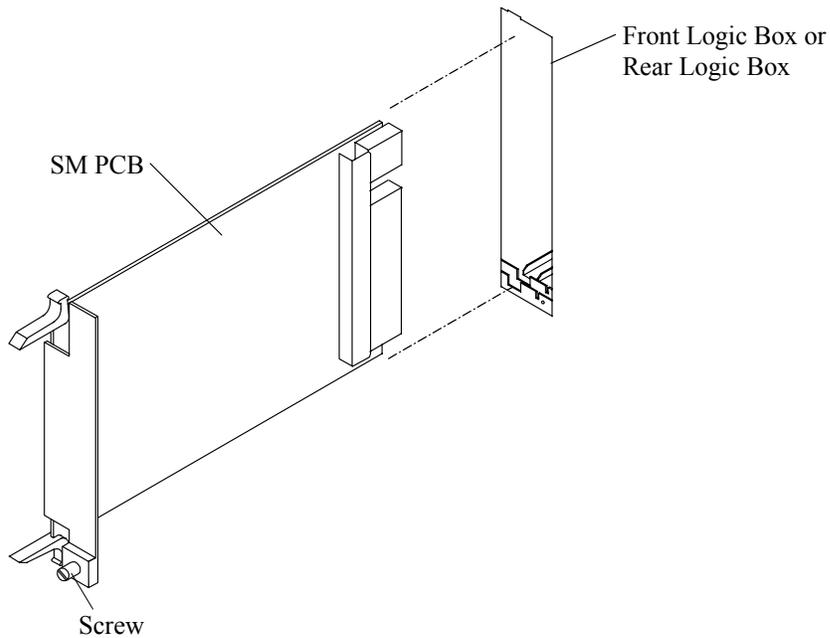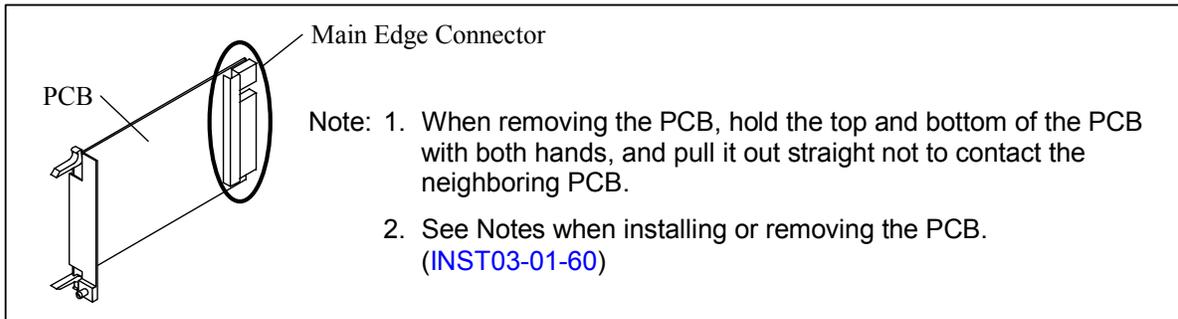
Main Edge Connector

PCB

Note: 1. When removing the PCB, hold the top and bottom of the PCB with both hands, and pull it out straight not to contact the neighboring PCB.

2. See Notes when installing or removing the PCB. (INST03-01-60)

Front Logic Box or Rear Logic Box

SM PCB

Screw

c. Remove the Maintenance Jumper if it is mounted.

2. Replace the failed part with spare part.
    a. When replacing the SM PCB, move all the shared memory modules (including dust covers if any) mounted on an extracted PCB to the same mounting positions on the spare PCB.
    b. When the failed part is SM Module, replace the SM Module.
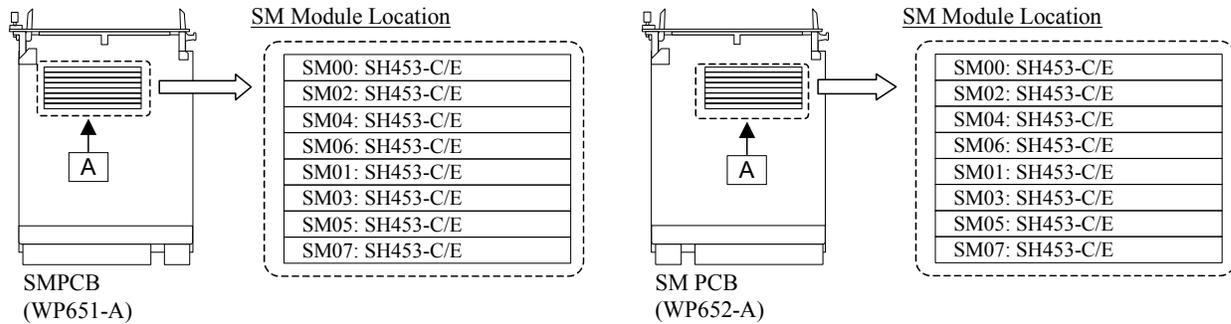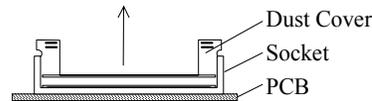
SM Module Location

| SM00: SH453-C/E |
| SM02: SH453-C/E |
| SM04: SH453-C/E |
| SM06: SH453-C/E |
| SM01: SH453-C/E |
| SM03: SH453-C/E |
| SM05: SH453-C/E |
| SM07: SH453-C/E |

A

SMPCB
(WP651-A)

SM Module Location

| SM00: SH453-C/E |
| SM02: SH453-C/E |
| SM04: SH453-C/E |
| SM06: SH453-C/E |
| SM01: SH453-C/E |
| SM03: SH453-C/E |
| SM05: SH453-C/E |
| SM07: SH453-C/E |

A

SM PCB
(WP652-A)

Removal of Dust Cover

Dust Cover
Socket
PCB

Viewed from A

Memory Module
Cut
Projection inside the slot
Socket
Lever
Lever
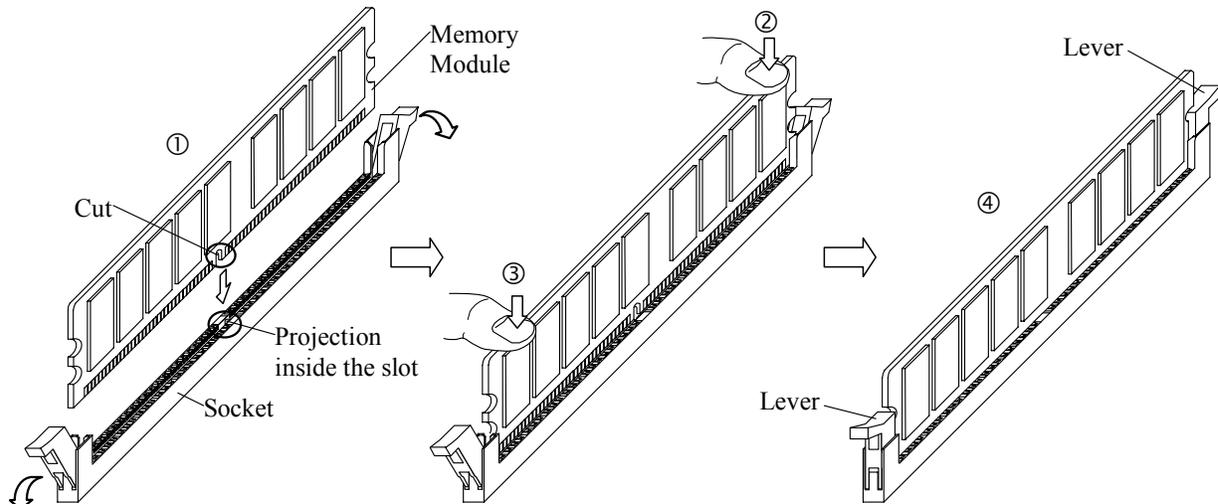
Prohibition of Use: DIMM Puller

Do not use the DIMM Puller (Figure: 5480389-A) to install or remove the Shared Memory Module. If the DIMM Puller is used, the Shared Memory Module may be damaged.

Installation

① Fit the cut of the Shared Memory Module and the projection inside the slot, and put the Shared Memory Module on the socket. (Do not insert it yet.)
② Insert one side of the Shared Memory Module into the socket by holding the both sides with your fingers.
③ Insert the other side of the Shared Memory Module into the socket by holding the both sides with your fingers.
④ Check that the slot lever fits in the Shared Memory Module.

Removal

① Press the slot lever to outside, and pull out the Shared Memory Module in the reverse order of installation step.

3. Insert the SM PCB.
    a. Insert the SM PCB and fasten the screw.

Main Edge Connector

PCB

Note: 1. Check that the main edge connector of the PCB has no deformation, damage or sticking of dust before installing the PCB. (See INST03-01-40.)

2. When installing the PCB, hold the top and bottom of the PCB with both hands, and insert it straight not to contact the neighboring PCB.

3. See Notes when installing or removing the PCB. (INST03-01-60)
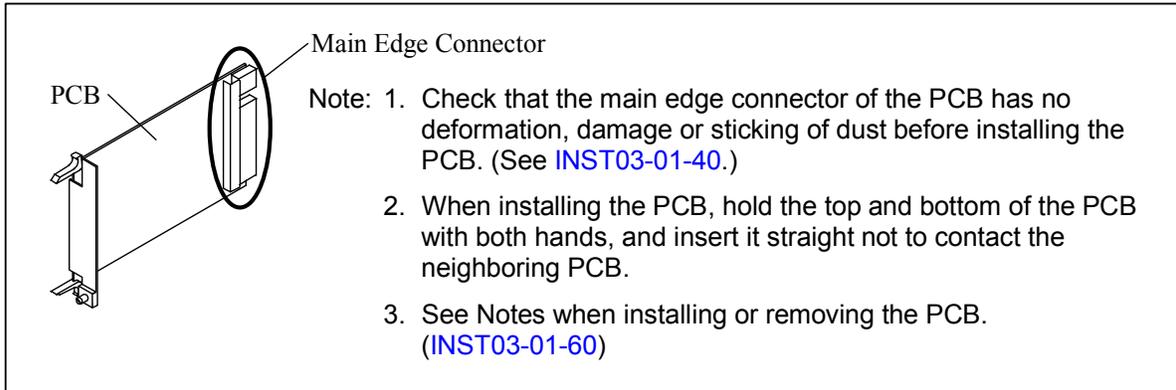
4. Go to SVP post-procedure g [REP04-200].

[HARDWARE C]

Location		Function Name of Component	Part Name
Front Logic Box or Rear Logic Box in DKC	1	CM (Cache Memory) PCB	• WP641-A
	2	CM Module	• SH454-C (C4G) • SH454-E (C8G) • SH454-G (C16G)
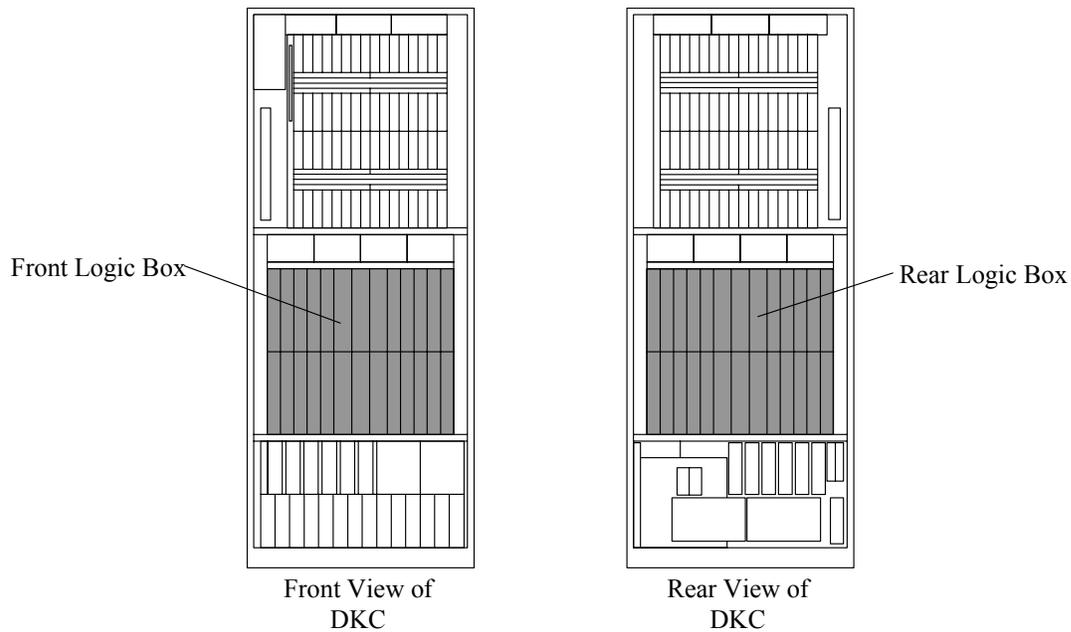
Front Logic Box
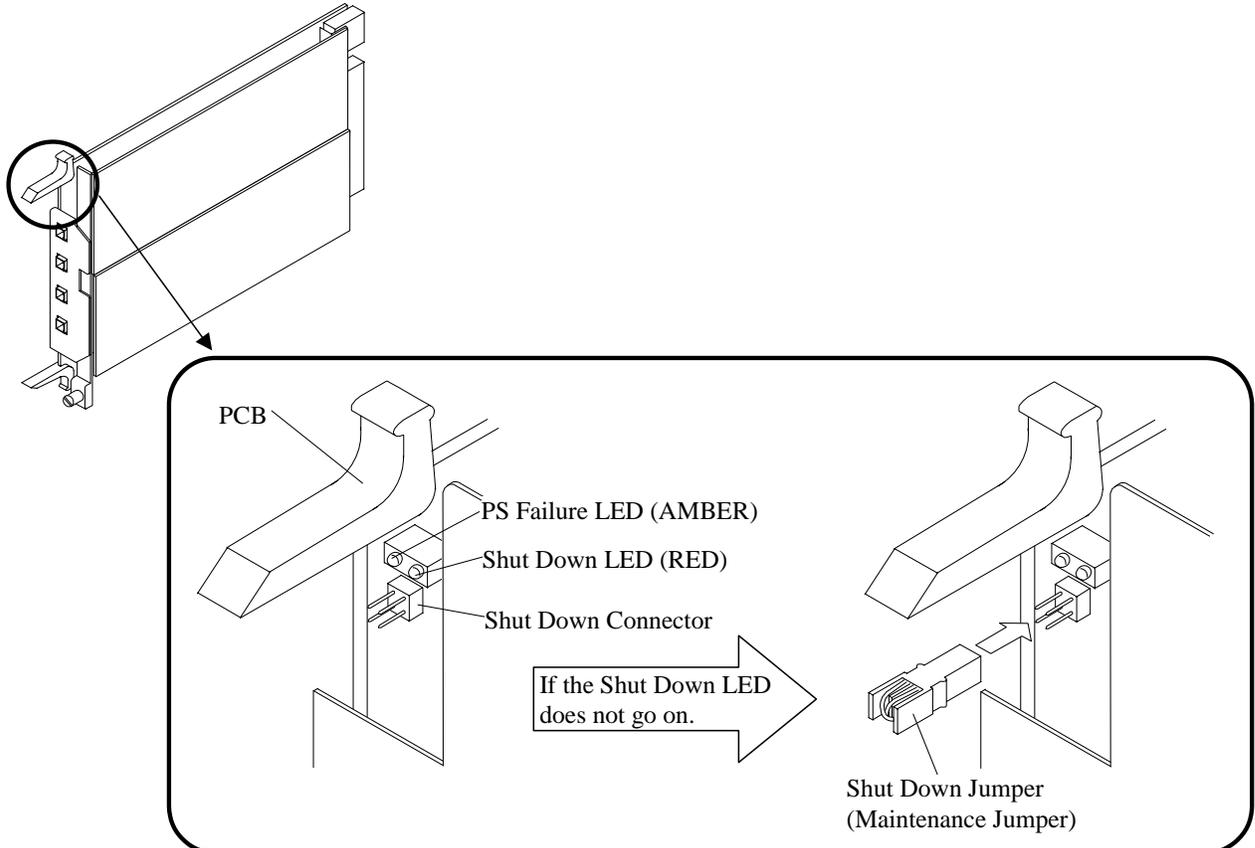
Rear Logic Box

Front View of
DKC

Rear View of
DKC

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.

1. Remove the CM PCB.
    a. Check that the Shut Down LED is on. If not, connect the Maintenance Jumper to the Shut
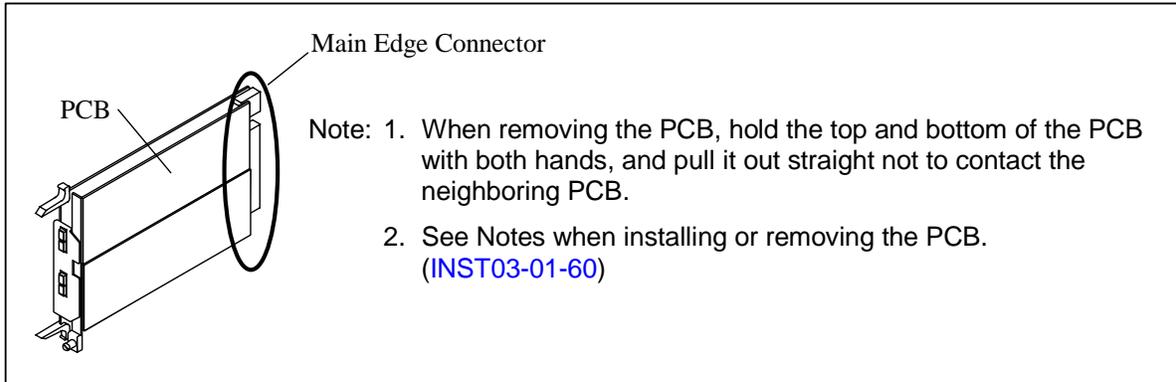   Down Connector. (only hot replace)

⚠ CAUTION

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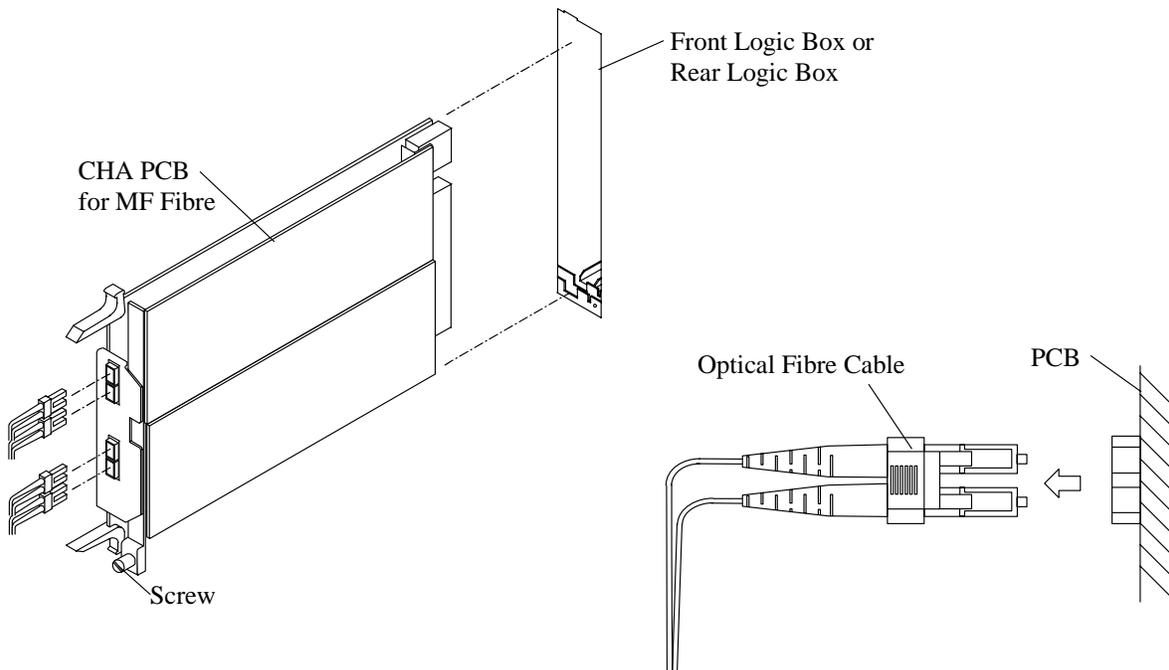that to be replaced. Make sure that it is the PCB to be replaced.

PCB

PS Failure LED (AMBER)

Shut Down LED (RED)

Shut Down Connector

If the Shut Down LED
does not go on.

Shut Down Jumper
(Maintenance Jumper)

Note: When the Maintenance Jumper is inserted in the PCB, the
      Shut Down LED (RED) and the PS Failure LED (AMBER)
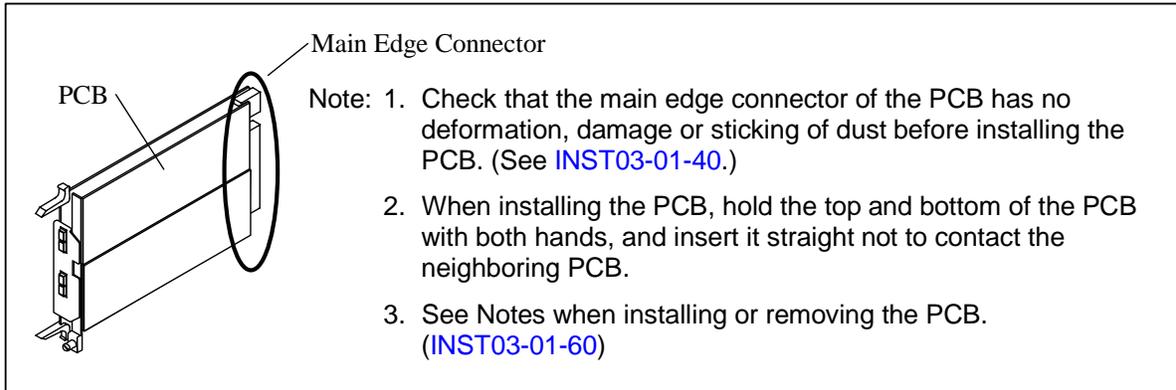   light on, but it is not a problem if they do not light on.

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b.   Remove the screw and remove the CM PCB.

PCB

Main Edge Connector

Note: 1. When removing the PCB, hold the top and bottom of the PCB
with both hands, and pull it out straight not to contact the
neighboring PCB.

2. See Notes when installing or removing the PCB.
(INST03-01-60)

CM PCB

Front Logic Box or
Rear Logic Box
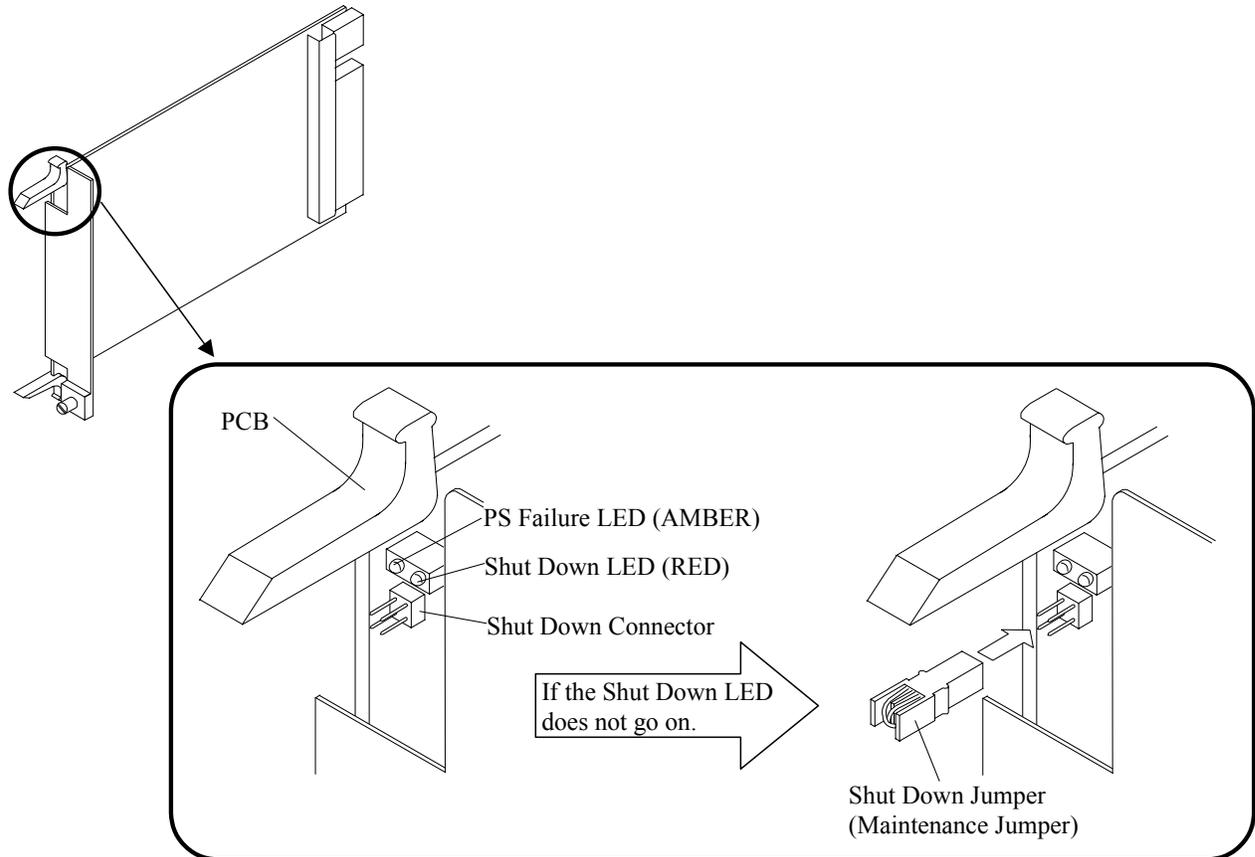
Screw

c.   Remove the Maintenance Jumper if it is mounted.

2. Replace the failed part with spare part.
   a. When replacing the CM PCB, move all the cache memory modules (including dust covers if any) mounted on an extracted PCB to the same mounting positions on the spare PCB.
   b. When the failed part is CM Module, replace the CM Module.

CM Module Location

| CM00A : SH454-C/E/G |
| CM01A : SH454-C/E/G |
| CM02A : SH454-C/E/G |
| CM03A : SH454-C/E/G |

CM PCB
(WP641-A)

CM00B : SH454-C/E/G
CM01B : SH454-C/E/G
CM02B : SH454-C/E/G
CM03B : SH454-C/E/G
CM10B : SH454-C/E/G
CM11B : SH454-C/E/G
CM12B : SH454-C/E/G
CM13B : SH454-C/E/G

| CM13A : SH454-C/E/G |
| CM12A : SH454-C/E/G |
| CM11A : SH454-C/E/G |
| CM10A : SH454-C/E/G |

Removal of Dust Cover

Dust Cover
Socket
PCB

Viewed from A

Memory Module
Cut
Projection inside the slot
Socket
Lever
Lever
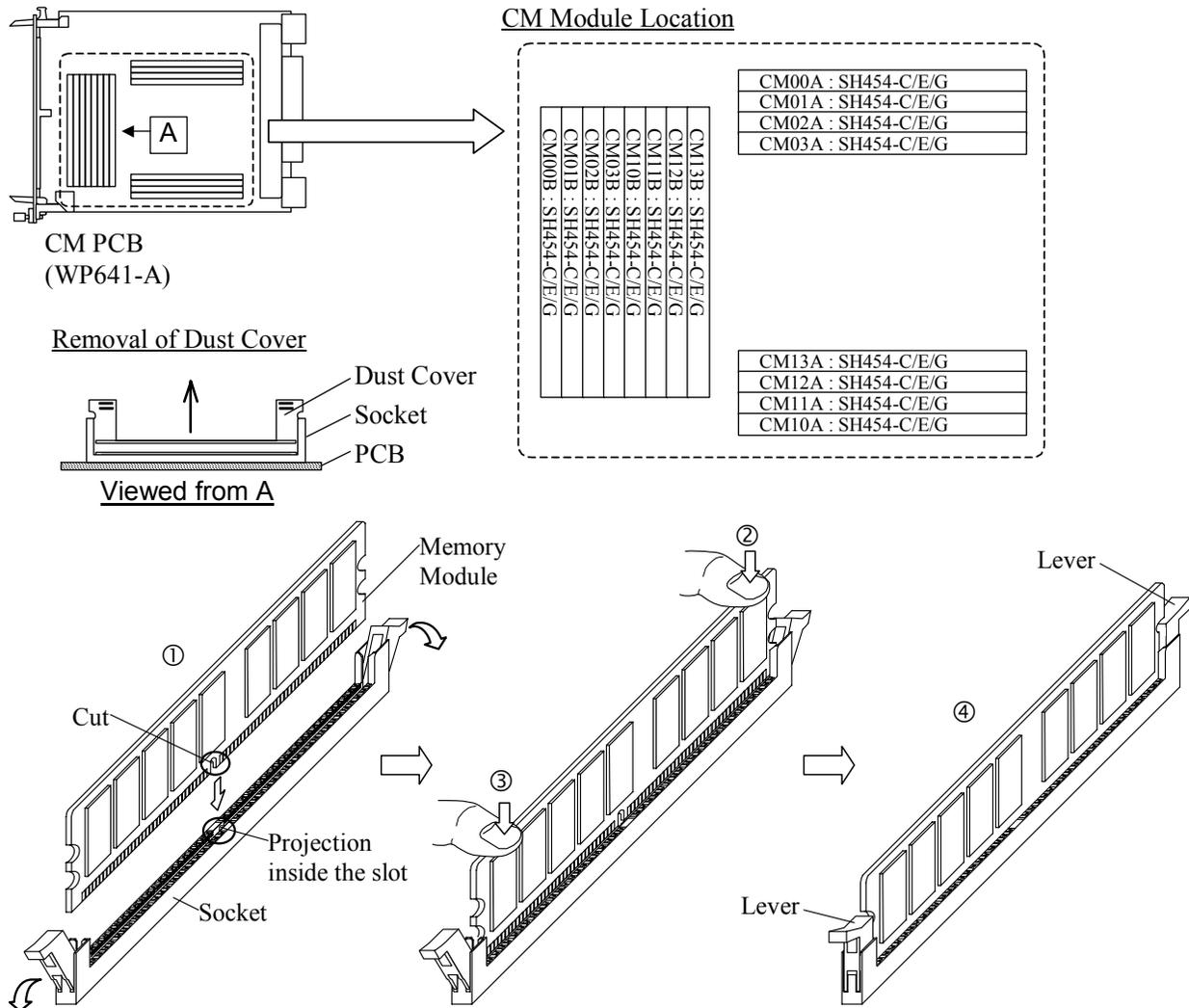
Prohibition of Use: ──DIMM Puller

Do not use the DIMM Puller (Figure: 5480389-A) to install or remove the Cache Memory Module.
If the DIMM Puller is used, the Cache Memory Module may be damaged.

Installation

① Fit the cut of the Cache Memory Module and the projection inside the slot, and put the Cache Memory Module on the socket. (Do not insert it yet.)
② Insert one side of the Cache Memory Module into the socket by holding the both sides with your fingers.
③ Insert the other side of the Cache Memory Module into the socket by holding the both sides with your fingers.
④ Check that the slot lever fits in the Cache Memory Module.

Removal

① Press the slot lever to outside, and pull out the Cache Memory Module in the reverse order of installation step.

3. Insert the CM PCB.

    a. Insert the CM PCB and fasten the screw.

PCB

Main Edge Connector

Note: 1. Check that the main edge connector of the PCB has no deformation, damage or sticking of dust before installing the PCB. (See INST03-01-40.)

2. When installing the PCB, hold the top and bottom of the PCB with both hands, and insert it straight not to contact the neighboring PCB.

3. See Notes when installing or removing the PCB. (INST03-01-60)
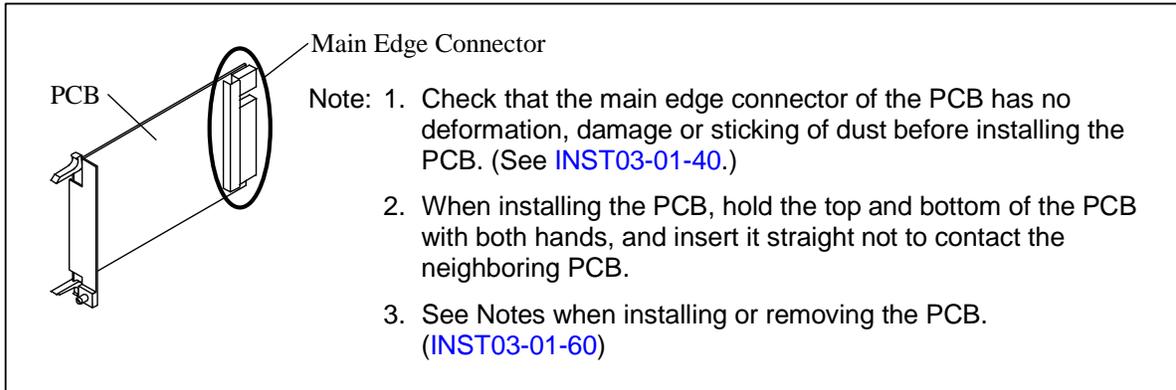
4. Go to SVP post-procedure f [REP04-180].

[HARDWARE D]

Location		Function Name of Component	Part Name
Front Logic Box or Rear Logic Box in DKC	1	CHA (Channel Adapter) PCB for Serial (Serial 4-port Adapter PCB)	• WP612-A ×1 & SH343-C ×2 (8S)

Front Logic Box

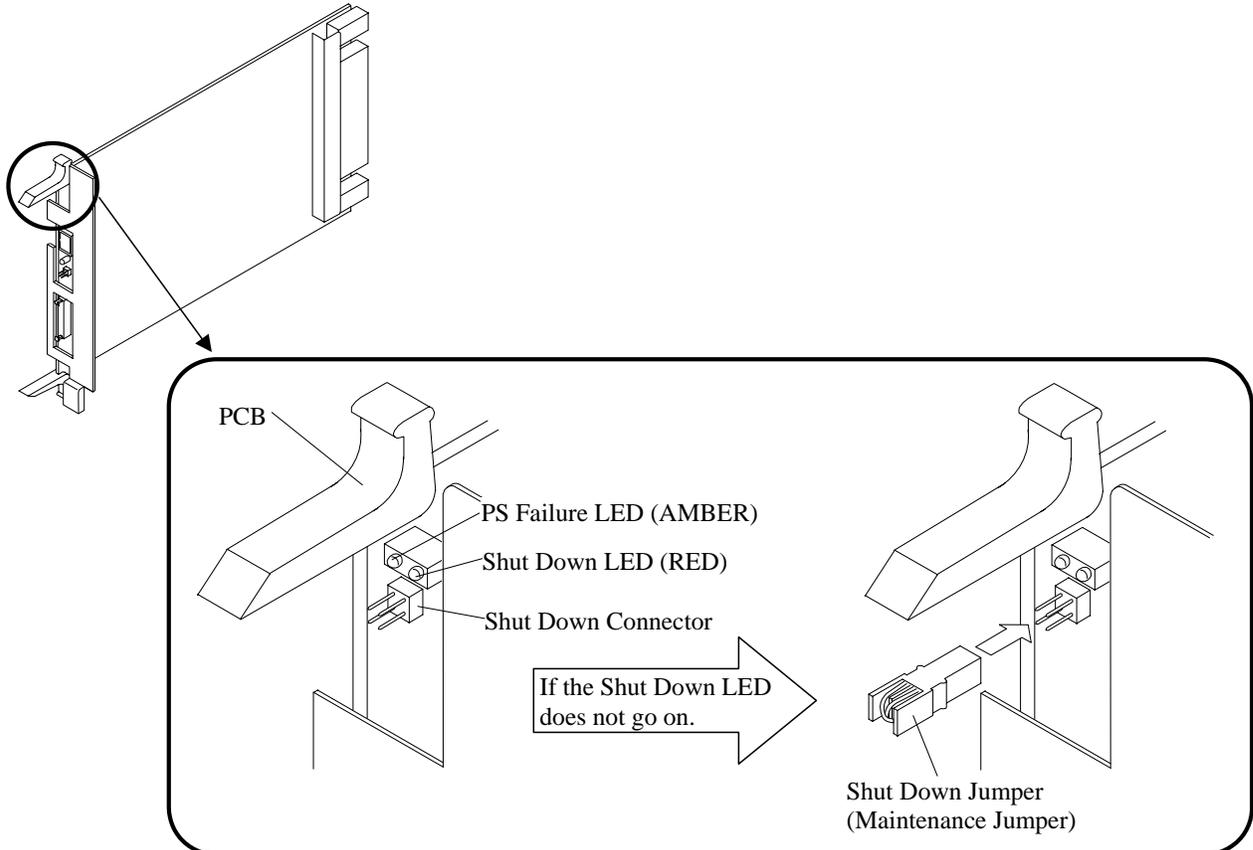Rear Logic Box

Front View of
DKC

Rear View of
DKC

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.

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1. Remove the Channel Adapter PCB.
   a. Check that the Shut Down LED is on.   If not, connect the Maintenance Jumper to the Shut Down Connector. (only hot replace)
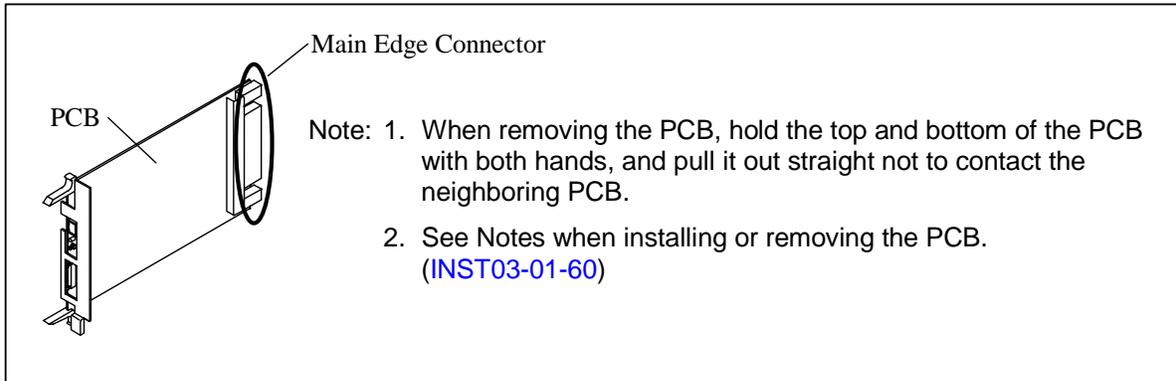

⚠ CAUTION

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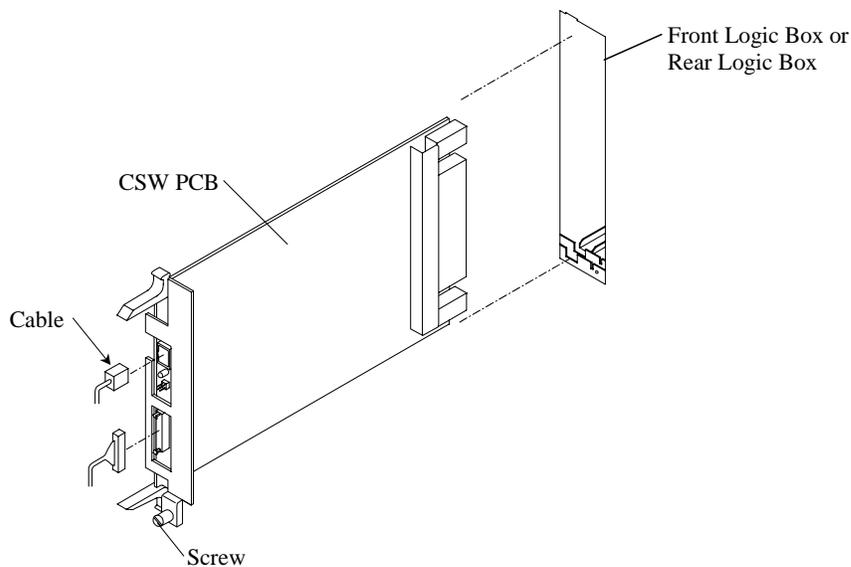

PCB

PS Failure LED (AMBER)

Shut Down LED (RED)

Shut Down Connector

If the Shut Down LED does not go on.

Shut Down Jumper (Maintenance Jumper)

Note: When the Maintenance Jumper is inserted in the PCB, the Shut Down LED (RED) and the PS Failure LED (AMBER) light on, but it is not a problem if they do not light on.

b.   Disconnect the optical fibre cables from the failed Channel Adapter PCB.

c.   Remove the screw and remove the failed PCB.

PCB

Main Edge Connector

Note: 1.   When removing the PCB, hold the top and bottom of the PCB with both hands, and pull it out straight not to contact the neighboring PCB.

2.   See Notes when installing or removing the PCB. (INST03-01-60)

d.   If the Maintenance Jumper is used, remove it.

Front Logic Box or
Rear Logic Box

CHA PCB
for Serial

Screw

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REP03-190
Rev.0 / Mar.2007

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2.   Insert the spare PCB.
   a.   Insert the spare PCB to the correct location and fasten the screw.

PCB

Main Edge Connector

Note: 1. Check that the main edge connector of the PCB has no deformation, damage or sticking of dust before installing the PCB. (See INST03-01-40.)

2. When installing the PCB, hold the top and bottom of the PCB with both hands, and insert it straight not to contact the neighboring PCB.

3. See Notes when installing or removing the PCB. (INST03-01-60)

3.   Cleaning the fibre 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.)

4.   Connect the optical fibre cables to the spare PCB.

5.   Go to SVP post procedure h [REP04-220].

[HARDWARE E]

Location		Function Name of Component	Part Name
Front Logic Box or Rear Logic Box in DKC	1	CHA (Channel Adapter) PCB for Fibre (Fibre 4-port Adapter PCB)	• WP610-B ×1 & SH444-A ×2 (8FS)
	2	CHA PCB for Fibre (Fibre 8-port Adapter PCB)	• WP610-A ×1 & SH444-A ×2 (16FS)
	3	CHA PCB for Fibre (Fibre 4-port Adapter PCB)	• WP614-B ×1 & SH444-B ×2 (8US)

Front Logic Box

Rear Logic Box

Front View of
DKC

Rear View of
DKC

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.

1. Remove the Channel Adapter PCB.
    a. Check that the Shut Down LED is on.   If not, connect the Maintenance Jumper to the
        Shut Down Connector. (only hot replace)

⚠ **CAUTION**

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

PCB

PS Failure LED (AMBER)

Shut Down LED (RED)

Shut Down Connector

If the Shut Down LED
does not go on.

Shut Down Jumper
(Maintenance Jumper)

Note: When the Maintenance Jumper is inserted in the PCB, the
       Shut Down LED (RED) and the PS Failure LED (AMBER)
       light on, but it is not a problem if they do not light on.

b. Disconnect the optical fibre cables from the failed Channel Adapter PCB.

c. Remove the screw and remove the failed PCB.

Main Edge Connector

PCB

Note: 1. When removing the PCB, hold the top and bottom of the PCB with both hands, and pull it out straight not to contact the neighboring PCB.

2. See Notes when installing or removing the PCB. (INST03-01-60)

d. If the Maintenance Jumper is used, remove it.

Front Logic Box or Rear Logic Box

CHA PCB for Fibre

Screw

Optical Fibre Cable

PCB

2. Insert the spare PCB.
   a. Insert the spare PCB to the correct location and fasten the screw.

PCB

Main Edge Connector

Note: 1. Check that the main edge connector of the PCB has no deformation, damage or sticking of dust before installing the PCB. (See INST03-01-40.)

2. When installing the PCB, hold the top and bottom of the PCB with both hands, and insert it straight not to contact the neighboring PCB.

3. See Notes when installing or removing the PCB. (INST03-01-60)

3. Cleaning the fibre 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.)

4. Connect the optical fibre cables to the spare PCB.

5. Go to SVP post procedure h [REP04-220].

[HARDWARE F]

Location		Function Name of Component	Part Name
Front Logic Box or Rear Logic Box in DKC	1	CHA (Channel Adapter) PCB for Mainframe Fibre (MF Fibre 8-port Adapter PCB)	• WP611-A ×1 & SH444-A ×2 (8MFS)
	2	CHA PCB for Mainframe Fibre (MF Fibre 8-port Adapter PCB)	• WP611-B ×1 & SH444-A ×2 (8MFL)

Front Logic Box

Rear Logic Box

Front View of
DKC

Rear View of
DKC

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.

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REP03-250
Rev.0 / Mar.2007

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1. Remove the Channel Adapter PCB.
   a. Check that the Shut Down LED is on.　If not, connect the Maintenance Jumper to the Shut Down Connector. (only hot replace)

⚠ CAUTION

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

PCB

PS Failure LED (AMBER)

Shut Down LED (RED)

Shut Down Connector

If the Shut Down LED does not go on.

Shut Down Jumper
(Maintenance Jumper)

Note: When the Maintenance Jumper is inserted in the PCB, the Shut Down LED (RED) and the PS Failure LED (AMBER) light on, but it is not a problem if they do not light on.

b. Disconnect the optical fibre cables from the failed Channel Adapter PCB.

c. Remove the screw and remove the failed PCB.

Main Edge Connector

PCB

Note: 1. When removing the PCB, hold the top and bottom of the PCB with both hands, and pull it out straight not to contact the neighboring PCB.

2. See Notes when installing or removing the PCB. (INST03-01-60)

d. If the Maintenance Jumper is used, remove it.

Front Logic Box or
Rear Logic Box

CHA PCB
for MF Fibre

Optical Fibre Cable

PCB

Screw

2. Insert the spare PCB.
    a. Insert the spare PCB to the correct location and fasten the screw.

PCB

Main Edge Connector

Note: 1. Check that the main edge connector of the PCB has no deformation, damage or sticking of dust before installing the PCB. (See INST03-01-40.)

2. When installing the PCB, hold the top and bottom of the PCB with both hands, and insert it straight not to contact the neighboring PCB.

3. See Notes when installing or removing the PCB. (INST03-01-60)

3. Cleaning the fibre 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.)

4. Connect the optical fibre cables to the spare PCB.

5. Go to SVP post procedure h [REP04-220].

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REP03-280

Rev.0 / Mar.2007

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REP03-310
Rev.0 / Mar.2007

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REP03-310

Blank Sheet

Blank Sheet

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SC02540Z

REP03-340
Rev.1 / Mar.2007, Oct.2008

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Blank Sheet

Blank Sheet

[HARDWARE J]

Location		Function Name of Component	Part Name
Front Logic Box or Rear Logic Box in DKC	1	DKA (Disk Adapter) PCB	• WP620-A ×1 & SH444-A ×2
	2	Encrypt DKA PCB	• WP620-B ×1 & SH444-A ×2
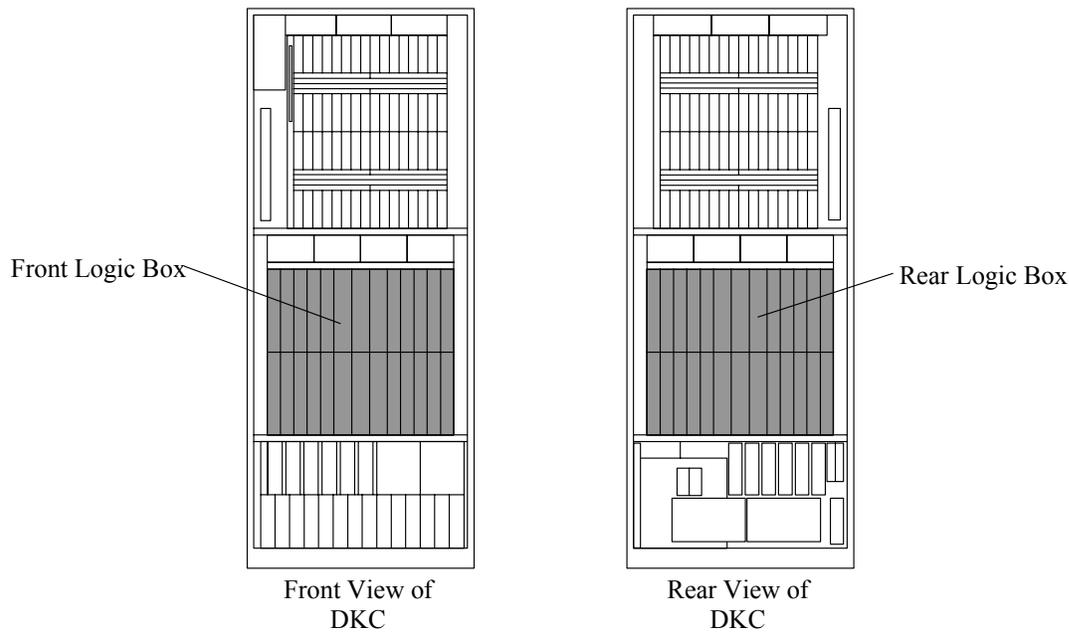
Front Logic Box

Rear Logic Box

Front View of DKC

Rear View of DKC

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.

1. Remove the DKA PCB.
   a. Check that the Shut Down LED is on.   If not, connect the Maintenance Jumper to the Shut Down Connector. (only hot replace)

⚠ **CAUTION**

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

PCB

PS Failure LED (AMBER)

Shut Down LED (RED)

Shut Down Connector

If the Shut Down LED does not go on.

Shut Down Jumper
(Maintenance Jumper)

Note: When the Maintenance Jumper is inserted in the PCB, the
Shut Down LED (RED) and the PS Failure LED (AMBER)
light on, but it is not a problem if they do not light on.

Hitachi Proprietary

SC02540Z

REP03-380
Rev.0 / Mar.2007

DKC610I
Copyright © 2007, Hitachi, Ltd.
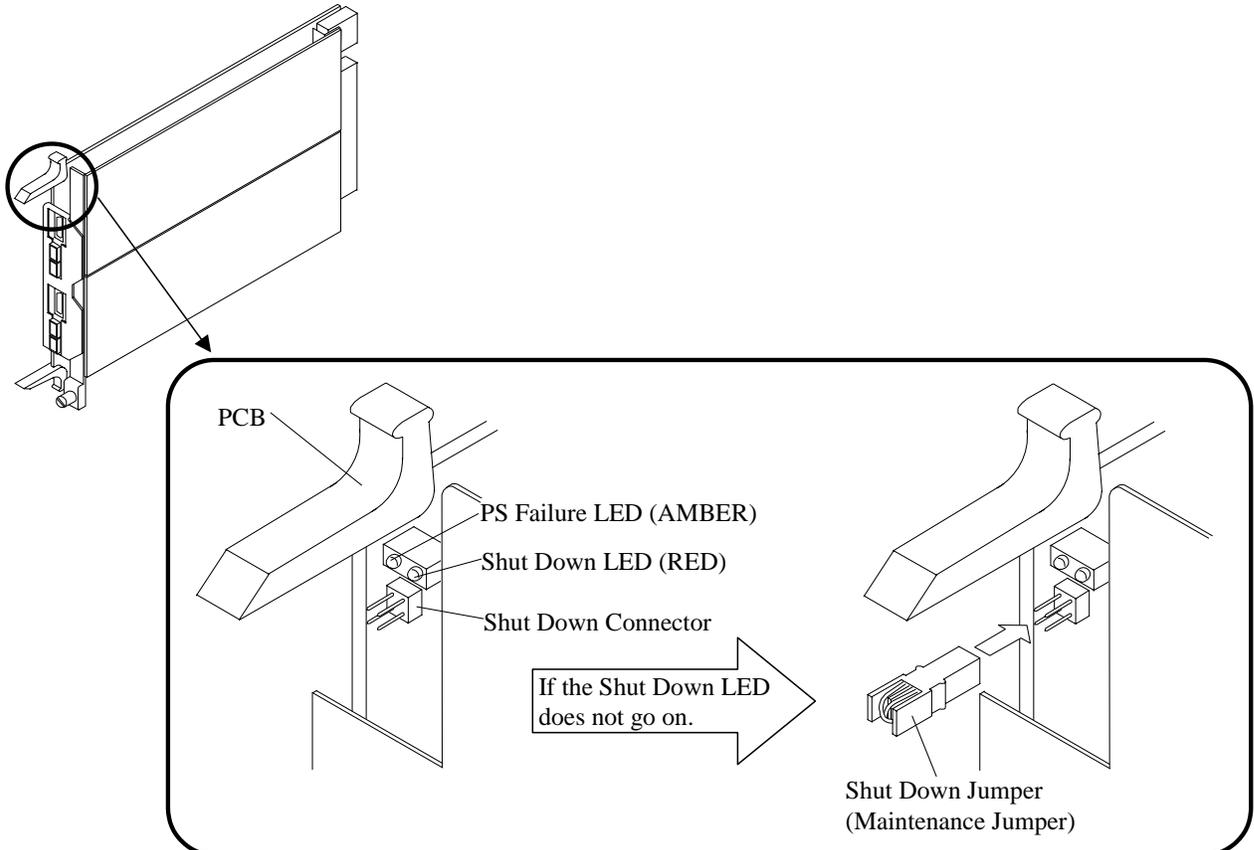
b. Disconnect the cables from the failed DKA PCB.

c. Remove the screw and remove the failed PCB.

Main Edge Connector

PCB

Note: 1. When removing the PCB, hold the top and bottom of the PCB with both hands, and pull it out straight not to contact the neighboring PCB.

2. See Notes when installing or removing the PCB. (INST03-01-60)

d. If the Maintenance Jumper is used, remove it.

Front Logic Box or
Rear Logic Box

DKA PCB

Cable

Screw

SC02540Z

    2.   Insert the spare PCB.
       a.   Insert the spare PCB to the correct location and fasten the screw.

Main Edge Connector

PCB

Note: 1. Check that the main edge connector of the PCB has no deformation, damage or sticking of dust before installing the PCB. (See INST03-01-40.)

2. When installing the PCB, hold the top and bottom of the PCB with both hands, and insert it straight not to contact the neighboring PCB.

3. See Notes when installing or removing the PCB. (INST03-01-60)

       b.   Connect the cables to the spare PCB after seeing "Notes when connecting the DEV interface cable" (INST03-01-150).

    3.   Go to SVP post procedure h [REP04-220].

[HARDWARE K]

Location		Function Name of Component	Part Name
Front Logic Box or Rear Logic Box in DKC	1	CSW PCB	• WP630-A
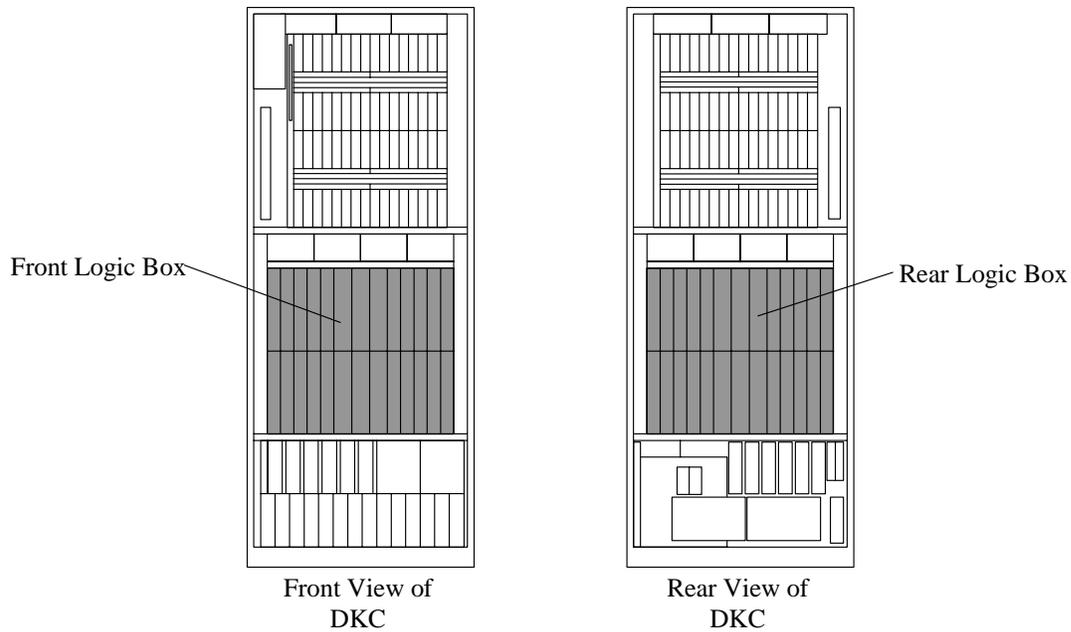
Front Logic Box

Rear Logic Box

Front View of
DKC

Rear View of
DKC

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.

1. Remove the CSW PCB.
    a. Check that the Shut Down LED is on.   If not, connect the Maintenance Jumper to the
        Shut Down Connector. (only hot replace)

⚠ CAUTION

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

PCB

PS Failure LED (AMBER)

Shut Down LED (RED)

Shut Down Connector

If the Shut Down LED
does not go on.

Shut Down Jumper
(Maintenance Jumper)

Note: • When the Maintenance Jumper is inserted in the PCB, the
        Shut Down LED (RED) and the PS Failure LED (AMBER)
        light on, but it is not a problem if they do not light on.
      • When the CSW is forcibly replaced without the SVP
        operation by the Shut Down Jumper, a dummy replacement
        by the SVP operation is required to restore the paths.

b. If the "Slot No." of the failed CSW PCB is 1DU or 2PU, disconnect the cables from the failed CSW PCB.

c. Remove the screw and remove the failed PCB.

Main Edge Connector

PCB

Note: 1. When removing the PCB, hold the top and bottom of the PCB with both hands, and pull it out straight not to contact the neighboring PCB.

2. See Notes when installing or removing the PCB. (INST03-01-60)

d. If the Maintenance Jumper is used, remove it.

Front Logic Box or
Rear Logic Box

CSW PCB

Cable

Screw

2. Insert the spare PCB.
    a. Insert the spare PCB to the correct location and fasten the screw.

Main Edge Connector

PCB

Note: 1. Check that the main edge connector of the PCB has no deformation, damage or sticking of dust before installing the PCB. (See INST03-01-40.)

2. When installing the PCB, hold the top and bottom of the PCB with both hands, and insert it straight not to contact the neighboring PCB.

3. See Notes when installing or removing the PCB. (INST03-01-60)

3. If the "Slot No." of the spare PCB is 1DU or 2PU, connect the cables to the spare PCB.

4. Go to SVP post procedure k [REP04-280].

[HARDWARE T1]

Location		Function Name of Component	Part Name
Front Door of DKC	1	DKCPANEL	• SH457-A
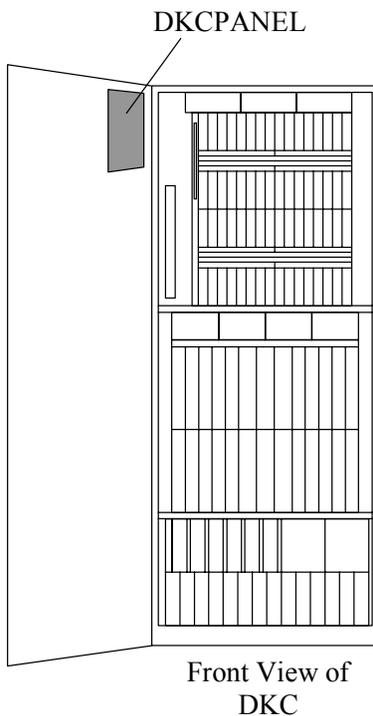
DKCPANEL

Front View of
DKC

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.

1	DKCPANEL

Note: The COMP signal of PCI is turned off, if the DKCPANEL is removed.

1. Set the switches and jumpers of the spare PCB to the same positions as those of the failed PCB.

2. Replace the PCB.
    a. Loosen the four screws and remove the cover.
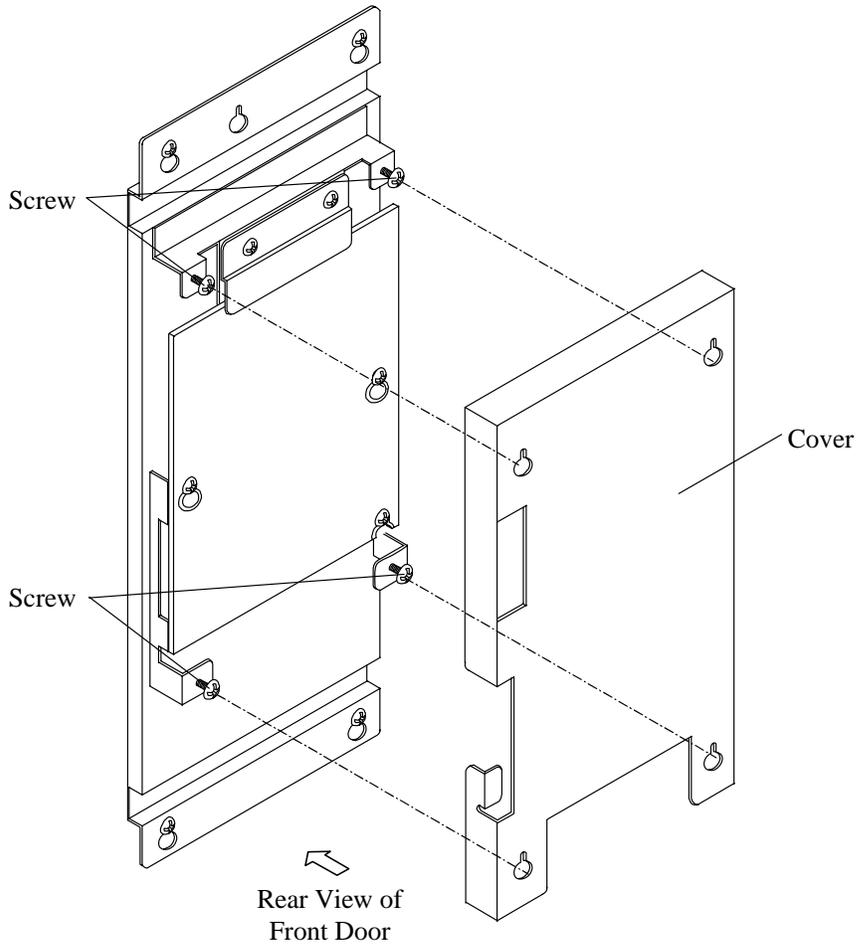
Fig. T1-1   Removal of Cover

b. Disconnect the cables (P11 and P12) from the DKCPANEL PCB.

c. Loosen the five screws and remove the DKCPANEL PCB.

d. Attach the spare PCB and fasten the five screws.

e. Connect the cables to the spare PCB.
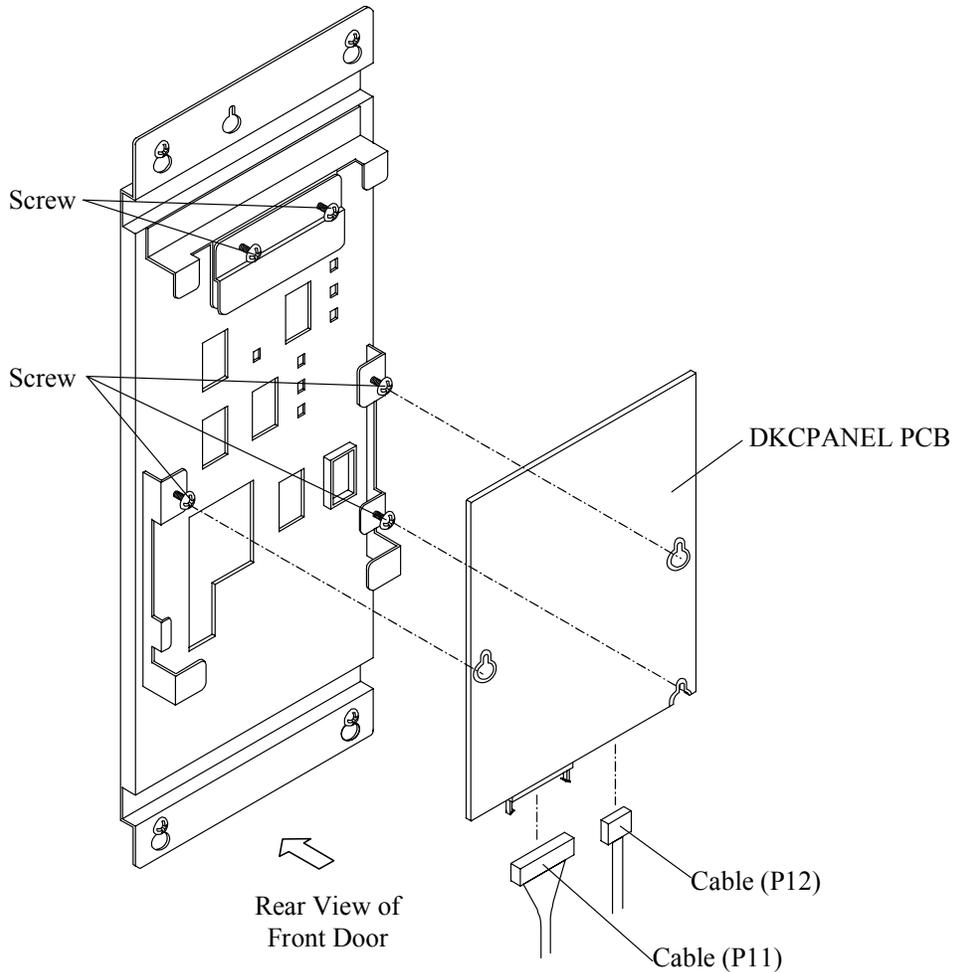
Fig. T1-2　Replace of PCB

3. Attach the Plate.

a. Attach the cover and fasten the screw. Refer to Fig. T1-1.

4. Go to SVP post procedure t1 [REP04-300].

[HARDWARE T2]

Location		Function Name of Component	Part Name
Rear Door of DKC	1	EPOSW	
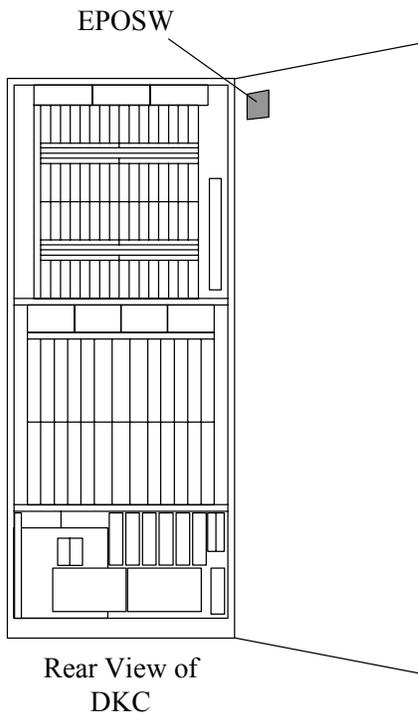
EPOSW

Rear View of
DKC

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.

1	EPOSW

1. Remove the EPOSW.
    a. Loosen the two screws and remove the bracket.
    b. Disconnect the cable (P13) from the DKC frame.
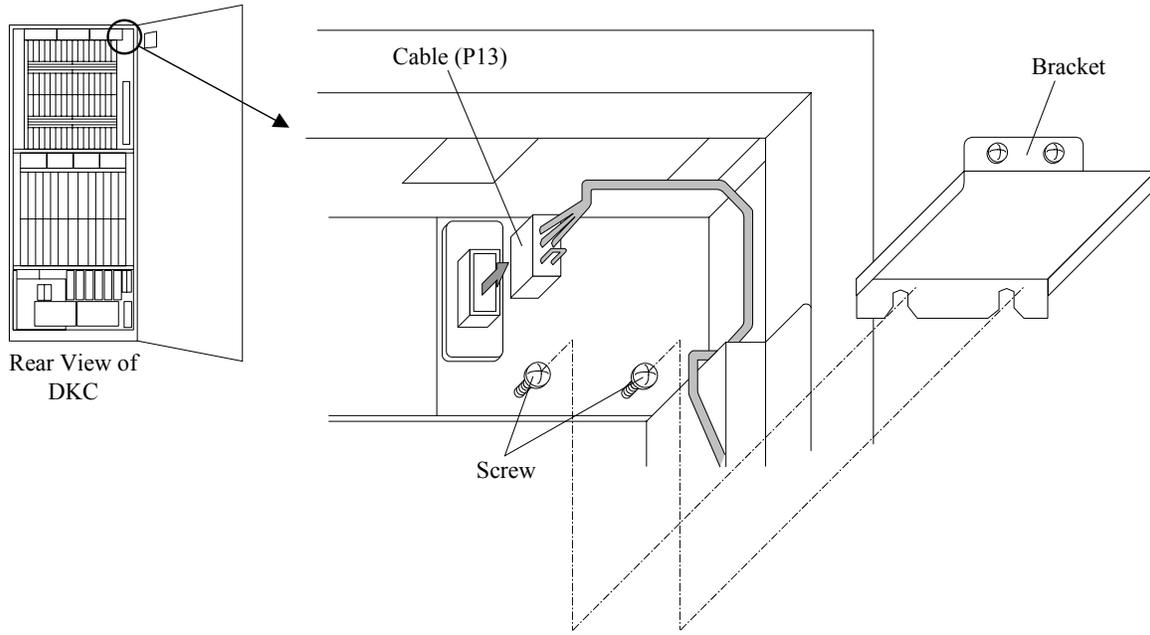
Fig. T2-1   Removal of Cable

c. Loosen the two screws and remove the EPOSW.
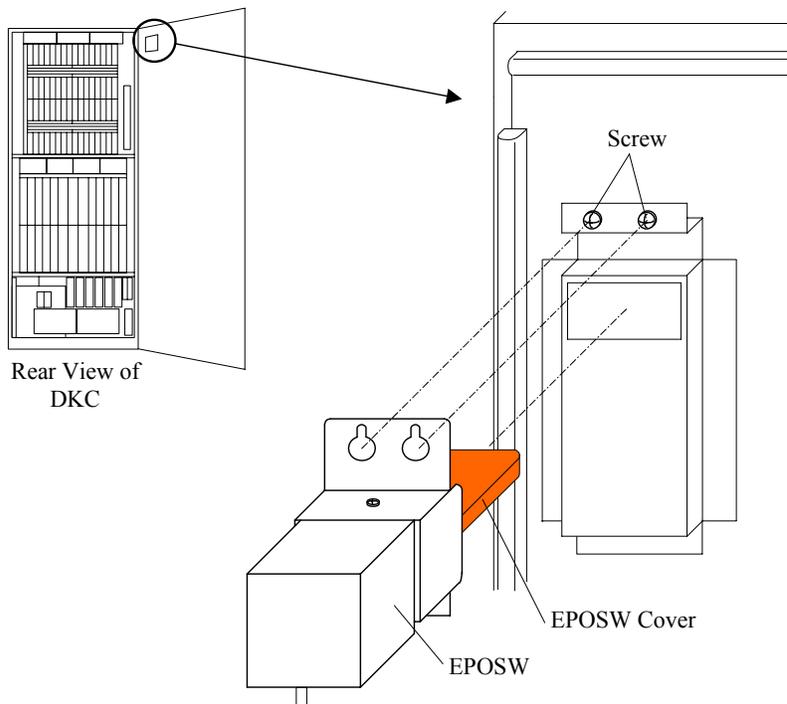
Fig. T2-2   Removal of EPOSW

2. Attach the EPOSW
    a. Remove the EPOSW cover from the failed EPOSW and attach it to the spare EPOSW.
    b. Attach the spare EPOSW with the two screws. Refer to Fig. T2-2.
    c. Connect the cable to the DKC frame. Refer to Fig. T2-1.
    d. Attach the EPOSW with the two screws.
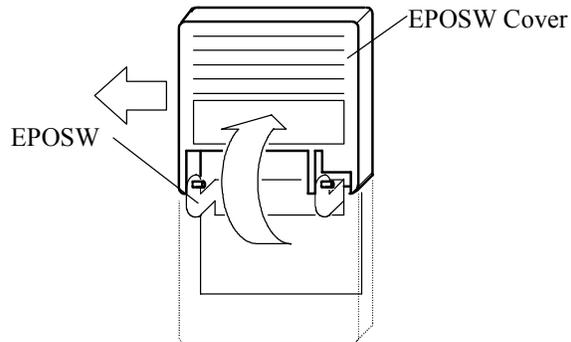
Fig. T2-3   Removal of EPOSW Cover

3. Go to SVP post procedure t1 [REP04-300].

[HARDWARE T3]

Location		Function Name of Component	Part Name
Lower front of DKC	1	SSVP/MN	• SH455-A
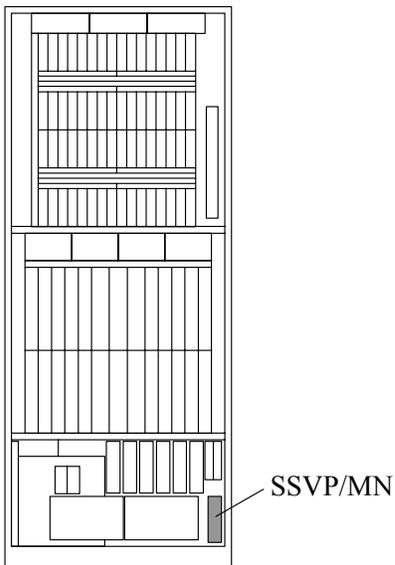
SSVP/MN

Rear View of
DKC

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.

1	SSVP/MN

1. Replace the SSVP/MN PCB.
   a. Check that the Shut Down LED is on.
   b. Remove the two screws and remove the SSVP/MN PCB.
   c. Insert the spare SSVP/MN PCB and fasten the screws.

PCB

Main Edge Connector

Note: Check that the main edge connector of the PCB has no deformation, damage or sticking of dust before installing the PCB.

Shut Down LED (RED)

Screw
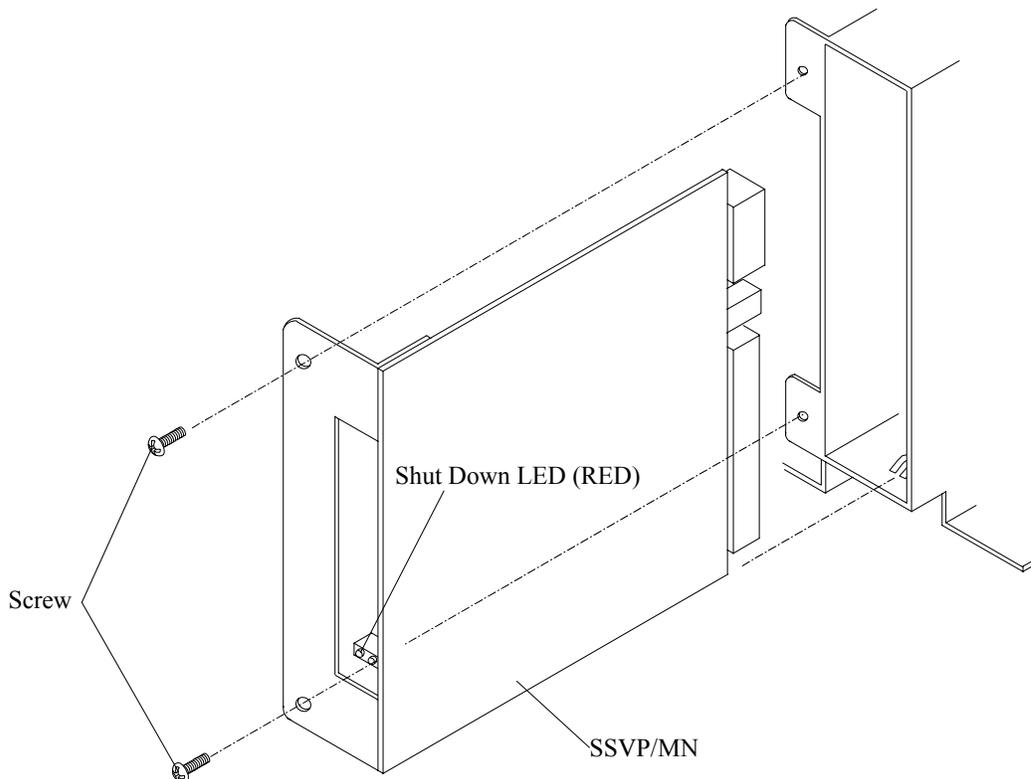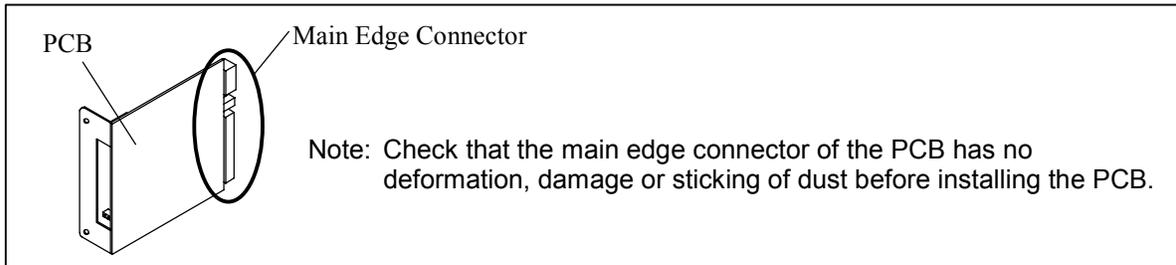
SSVP/MN

Fig. T3-1   Replacement of SSVP/MN

2. Go to SVP post procedure t1 [REP04-300].

[HARDWARE T4]

Location		Function Name of Component	Part Name
Lower left rear of DKC	1	PCICON	• SH355-B

(Reference)
  The related PCB for replacement PCICON.
    1. DKCPANEL PCB (Front of DKC)			
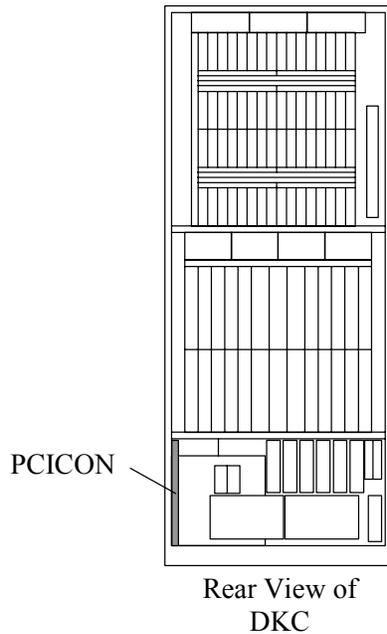
PCICON

Rear View of
DKC

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.

1	PCICON

CAUTION:

1: Replacement of PCICON causes other devices running on the same PCI connection line to be powered off except a and b shown below (because giving the EPO instruction is assumed). Therefore, stop the other device before performing replacement.

   a. If PCI cable is not connected to the replacing DKC.

   b. If the replacing DKC (DKC concerned) is connected to the end of the PCI cable as shown below.
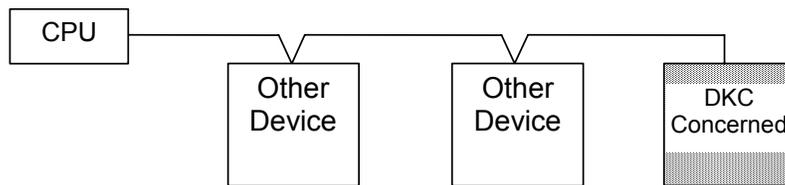
2: The COMP signal of PCI is turned off, if the PCI cable is disconnected.

---

1.   Confirm that the REMOTE/LOCAL Switch of DKCPANEL is set to LOCAL. If not, set the REMOTE/LOCAL Switch to LOCAL.
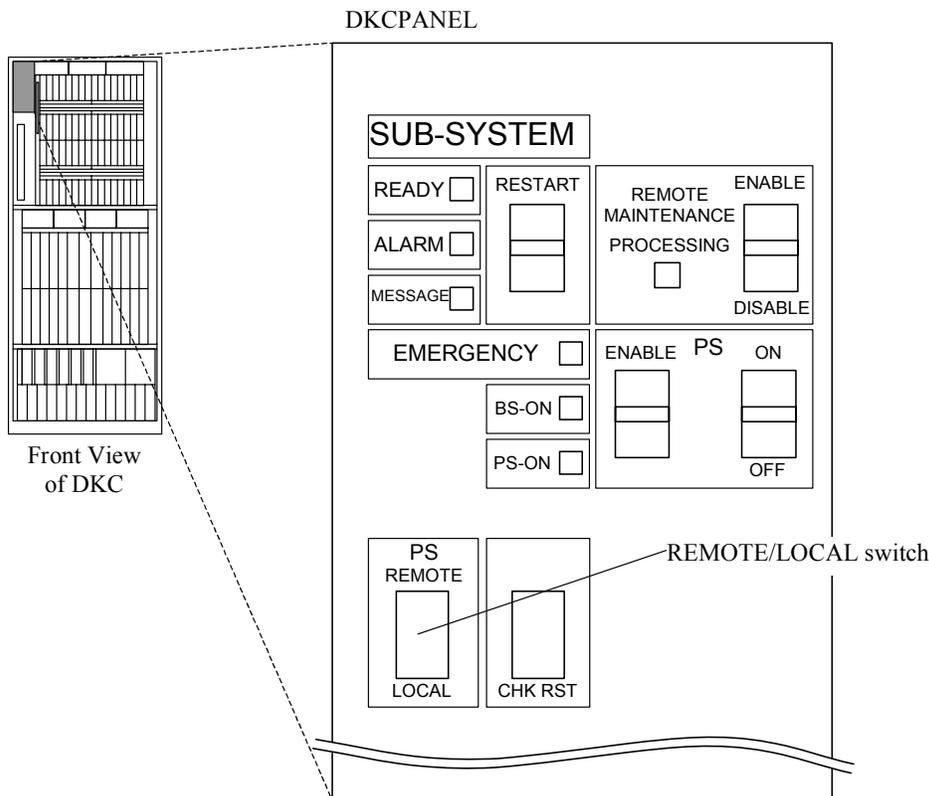
Fig.T4-1   REMOTE/LOCAL Switch on DKCPANEL

2. Set the jumper connectors.
    a. Set the jumper connectors (J1 and J2) of the failed PCICON as 1 and 2 short-circuit.
    b. Set the jumper connectors (J1 and J2) of the spare PCICON as 1 and 2 short-circuit.
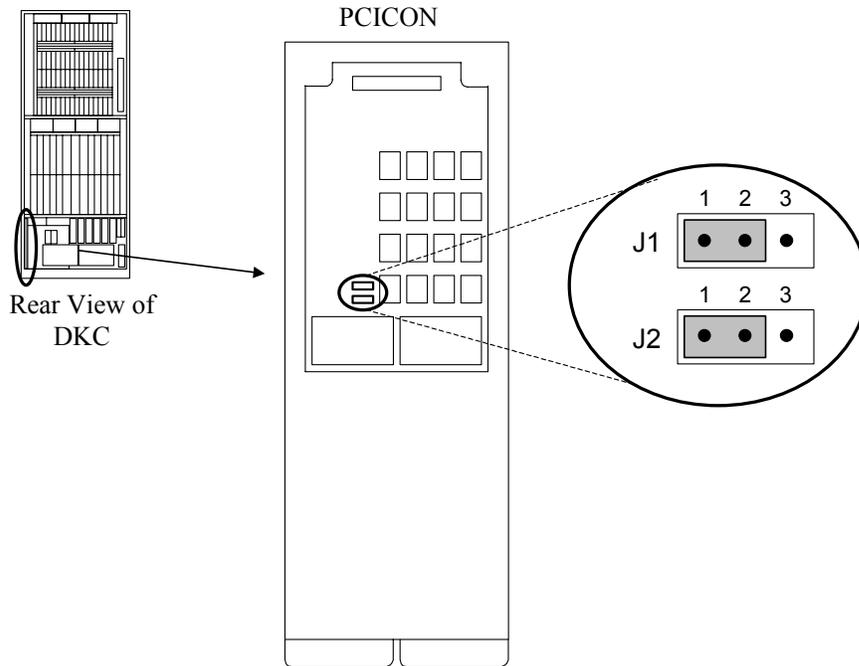
Fig.T4-2   Jumper Setting

3. Replace the PCICON.
   a. Disconnect all cables from PCICON.
   b. Remove the screw and remove the PCICON.

PCICON

Cable (P501-1)

Rear View of
DKC
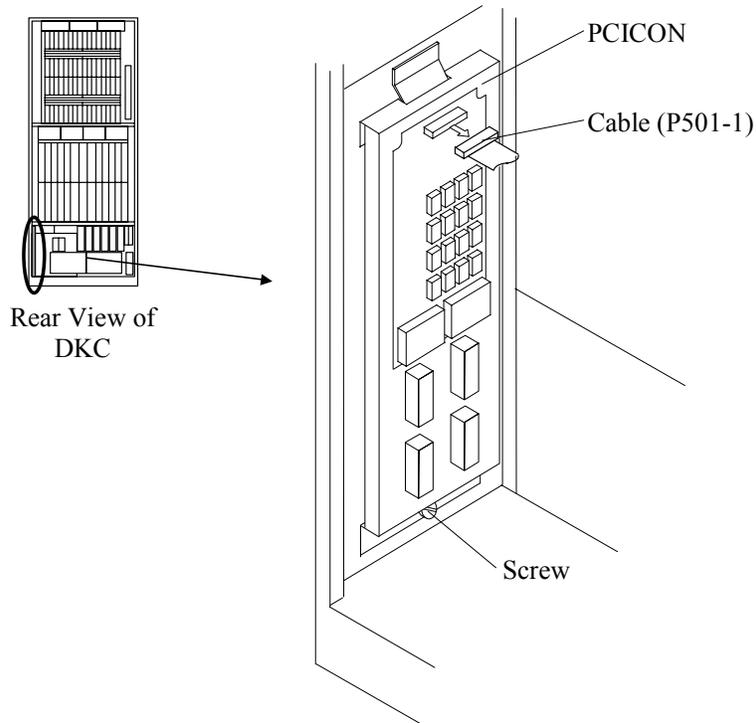
Screw

Fig.T4-3　Removal of PCICON

4. Remove the plate from the failed PCB, and then attach them to the spare PCB.
   a. Remove the six screws and the plate from the failed PCB.
   b. Attach the plate to the spare PCB and fasten the six screws.

Screw　Screw

PCICON

Screw　Screw

Screw　Screw
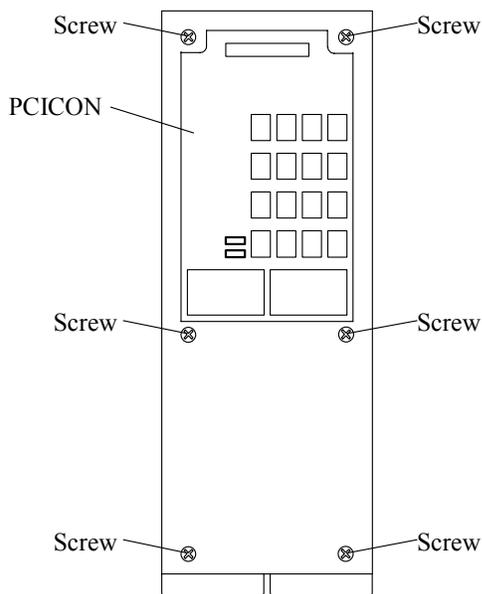
Fig.T4-4　Replacement of PCICON PCB

5. Attach the PCICON.
    a. Attach the PCICON and fasten the screw. Refer to Fig. T4-3.
    b. Connect the cables.

6. Set the jumper connectors (J1 and J2) of the PCICON.   For jumper settings, refer to
    LOC06-30.

7. Go to SVP post procedure t1 [REP04-300].

[HARDWARE T5]

Location		Function Name of Component	Part Name
Top of Front Logic Box or Rear Logic Box	1	FAN Assembly (DKC)	
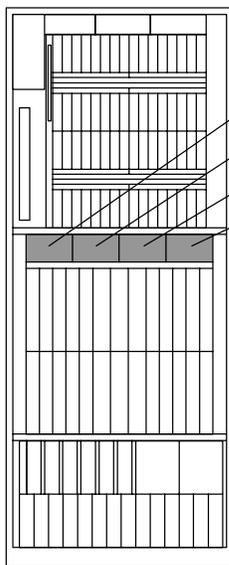
FAN-11
FAN-12
FAN-13
FAN-14
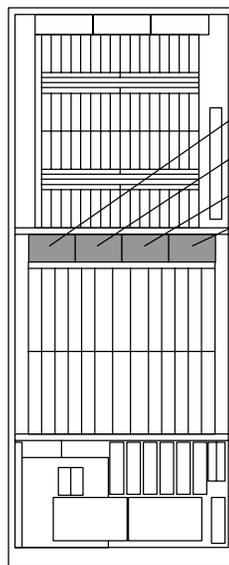
FAN-21
FAN-22
FAN-23
FAN-24

Front View of DKC

Rear View of DKC

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.

1	FAN Assembly (DKC)

> ⚠ **CAUTION**
>
> Hazardous rotating mechanism:
>   Can cause injury if touched. Stay clear of it when machine is running.

---

1.   Replace the FAN Assembly.
     a.   Loosen the screw and remove the failed FAN Assembly (DKC).
     b.   Attach the spare FAN Assembly (DKC) and fasten the screw.

FAN Assembly (DKC)

Screw
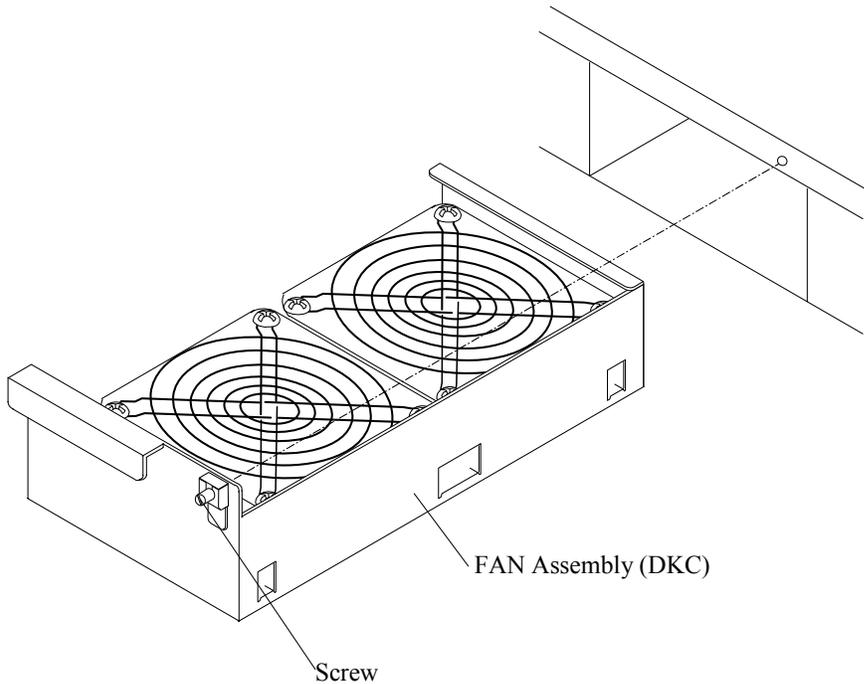
Fig. T5-1   Replacement of FAN Assembly (DKC)

---

2.   Go to SVP post procedure t1 [REP04-300].

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REP03-590
Rev.0 / Mar.2007

SC02540Z

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[HARDWARE T6]

Location		Function Name of Component	Part Name
Front Logic Box or Rear Logic Box	1	Thermostat Assembly	
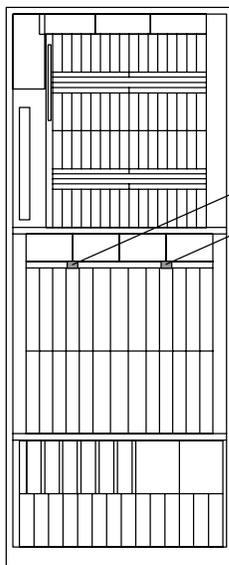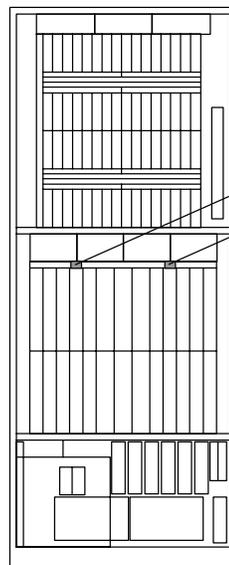
TH-11
TH-12

TH-21
TH-22

Front View of
DKC

Rear View of
DKC

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.

1	Thermostat Assembly

1. Replace the Thermostat Assembly.
   a. Loosen the screw and remove the Thermostat Assembly.
   b. Attach a spare Thermostat Assembly and fasten the screw.

Screw

Thermostat Assembly
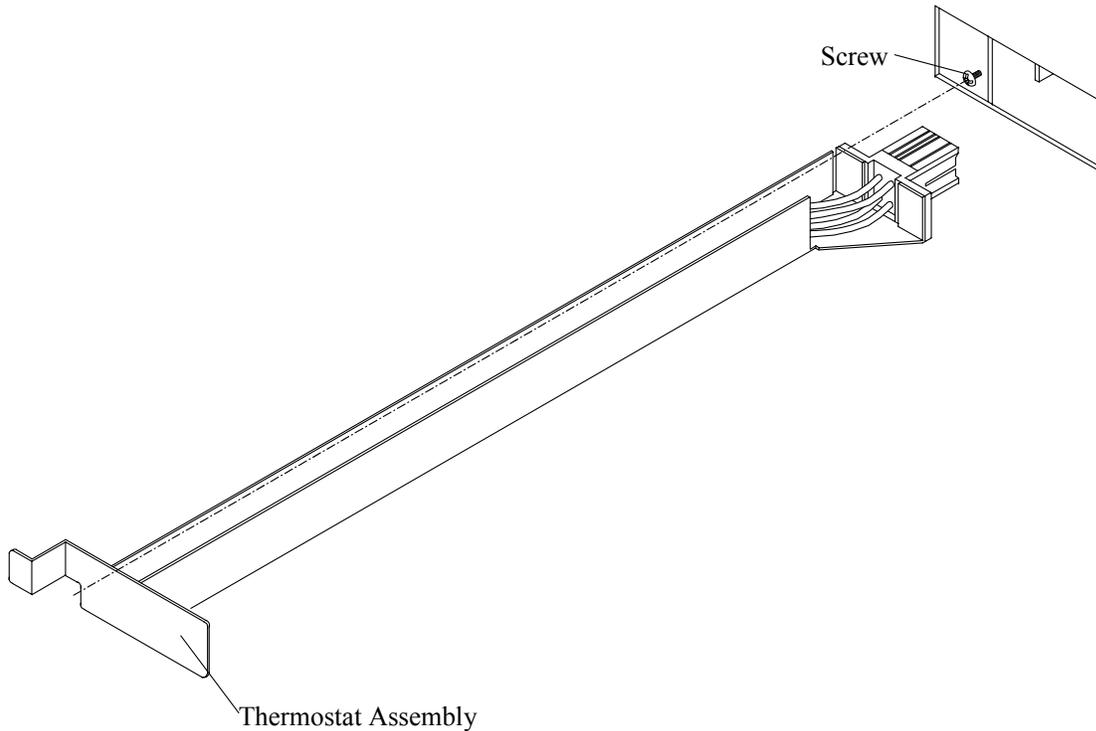
Fig. T6-1   Replacement of Thermostat Assembly

2. Go to SVP post procedure t1 [REP04-300].

[HARDWARE T7]

Location		Function Name of Component	Part Name
Front or Rear of DKC	1	SVP (XP)	• HJ-4220-60EEA
	2	SVP (VISTA)	• HJ-4220-7EWEA
	3	MODEM Card	• ME5614CG3 (OMRON)
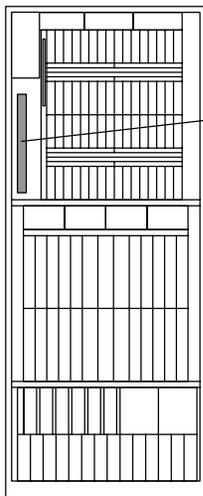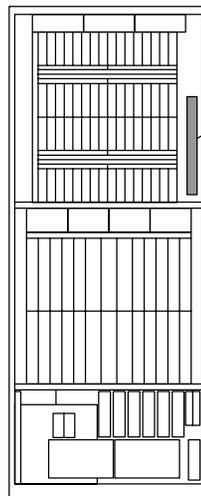
SVP-BASIC,
MODEM Card

SVP-OPTION,
MODEM Card

Front View of
DKC

Rear View of
DKC

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.

1-2	SVP

> Note: Refer to the INSTALLATION SECTION pages (INST03-11-20 through
> INST03-11-22) for the types and the supported combinations of SVP.

1. Notes when replacing the SVP
    When replacing SVP, pay attention to the following. Installation of LAN card varies with
    SPEC NO in Fig. T7.1-1 or Fig. T7.1-2.

    (1) Fig. T7.1-1 in case of SPEC NO SVP2
        The LAN card is installed in the LAN card slot. When replacing SVP, it is unnecessary to
        remove the LAN card.
    (2) Fig. T7.1-2 in case of SPEC NO SVP3 or SVP4
        The LAN card is not installed in the LAN card slot. (The function of the LAN card is taken
        into the mother board.)
        When replacing SVP, do not install the LAN card in the LAN card slot.

When SVP is SPEC NO SVP2

MODEL   HJ-4220-60EEA
SPEC NO SVP2   Rev.x
MFG NO   xxxxx-xx   R2

DATE   SEPTEMBER 2006
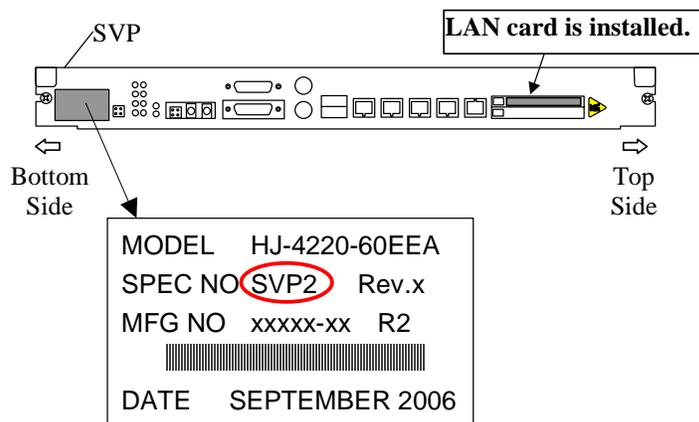
Fig. T7.1-1   In case of SPEC NO SVP2

When SVP is SPEC NO SVP3 or SVP4

MODEL   HJ-4220-60EEA
SPEC NO SVP3   Rev.x
MFG NO   xxxxx-xx   R2

DATE   AUGUST 2007

MODEL   HJ-4220-7EWEA
SPEC NO SVP4   Rev.x
MFG NO   xxxxx-xx   R2

DATE   AUGUST 2008
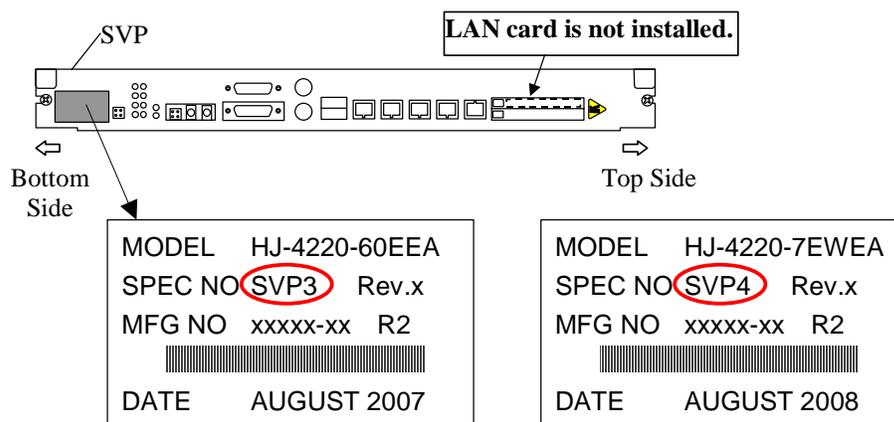
Fig. T7.1-2   In case of SPEC NO SVP3 or SVP4

2.   SVP PS OFF.
   a.   Press the SVP PS OFF switch on the SVP.

SVP-
BASIC

Front View
of DKC

SVP-
OPTION

Rear View
of DKC

SVP

SVP PS OFF Switch

SVP PS ON Switch

SVP POWER
LED (Green)
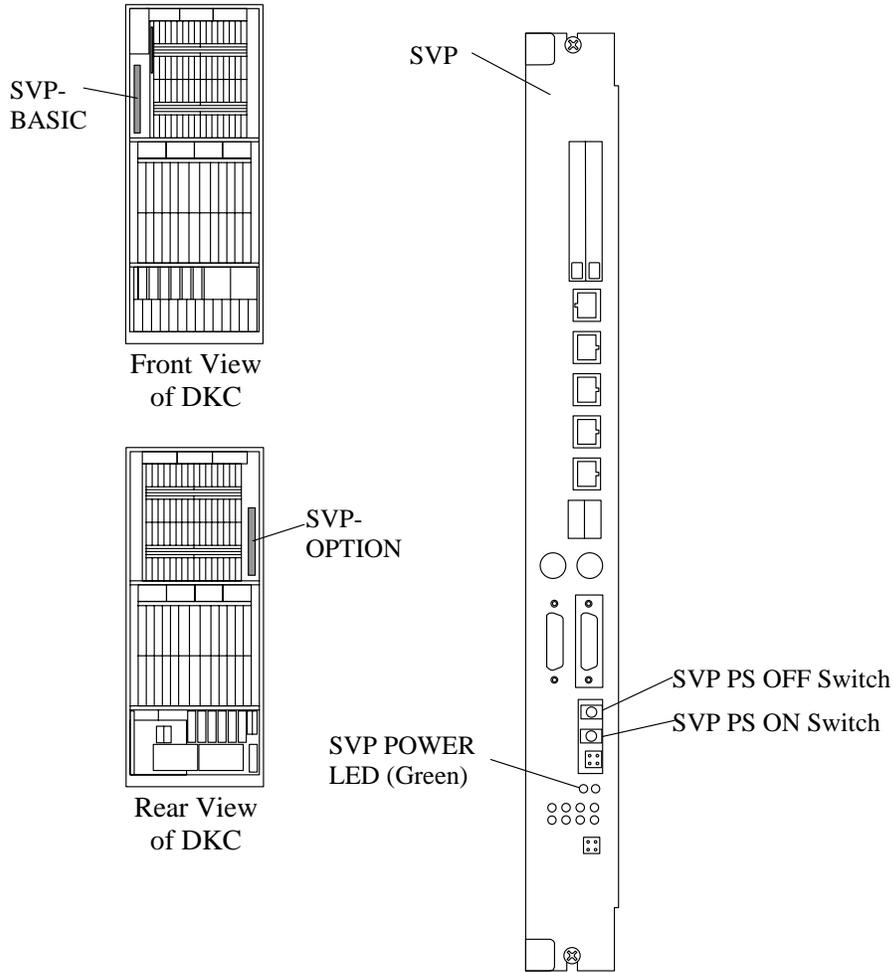
Fig. T7.1-3   SVP PS OFF

3. Remove the SVP.
    a. Disconnect the cables (P83-x, P84-x and USB) from the failed SVP.
    b. When the MODEM card is installed, disconnect the cable from the MODEM card.
    c. Loosen the two screws and remove the failed SVP.
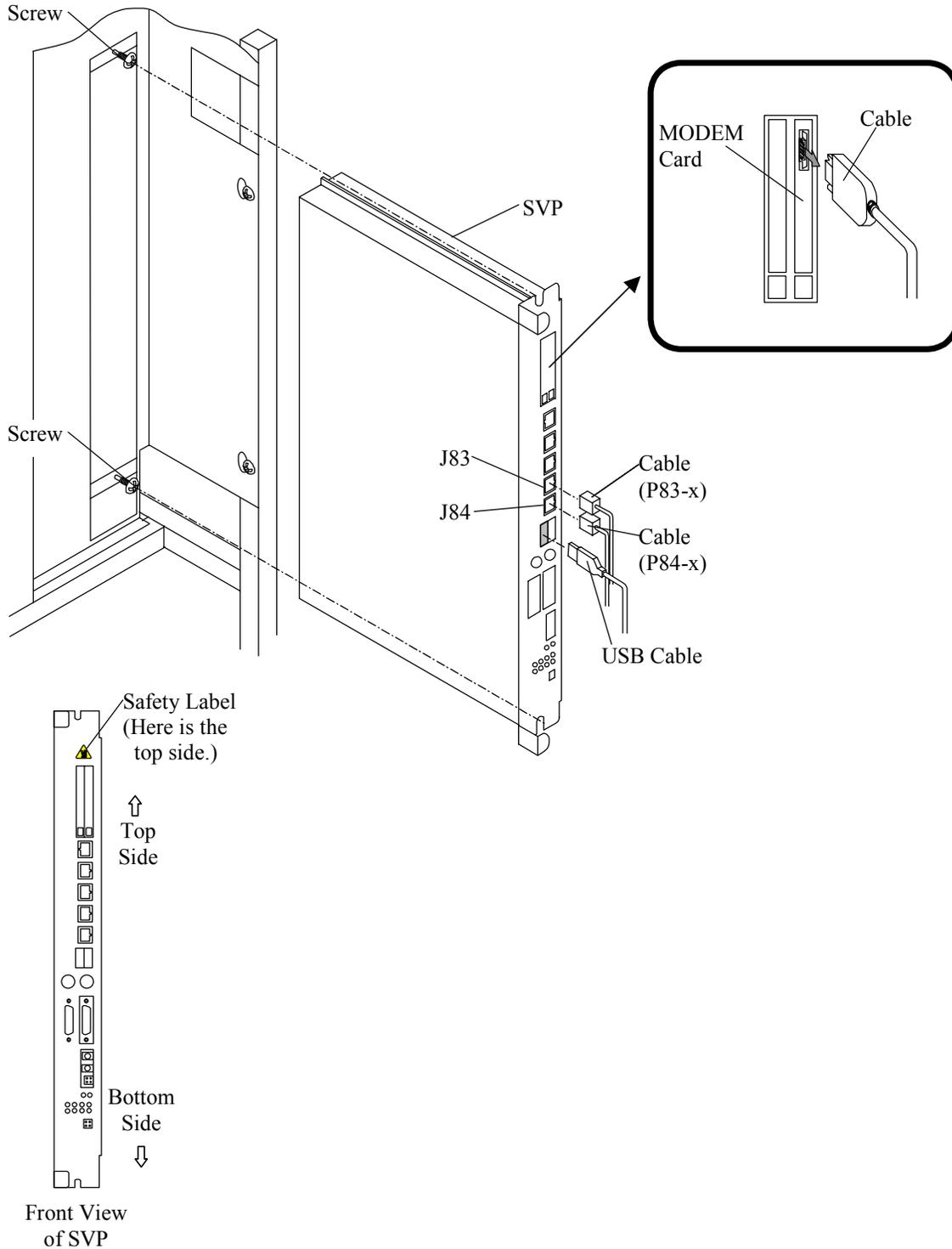
Fig. T7.1-4   Removal of SVP

4. Set the Jumper.
    a. When the maintenance jumper is inserted into the JP1 on the failed SVP, remove the maintenance jumper.
    b. Insert the maintenance jumper into the JP1 on the spare SVP.
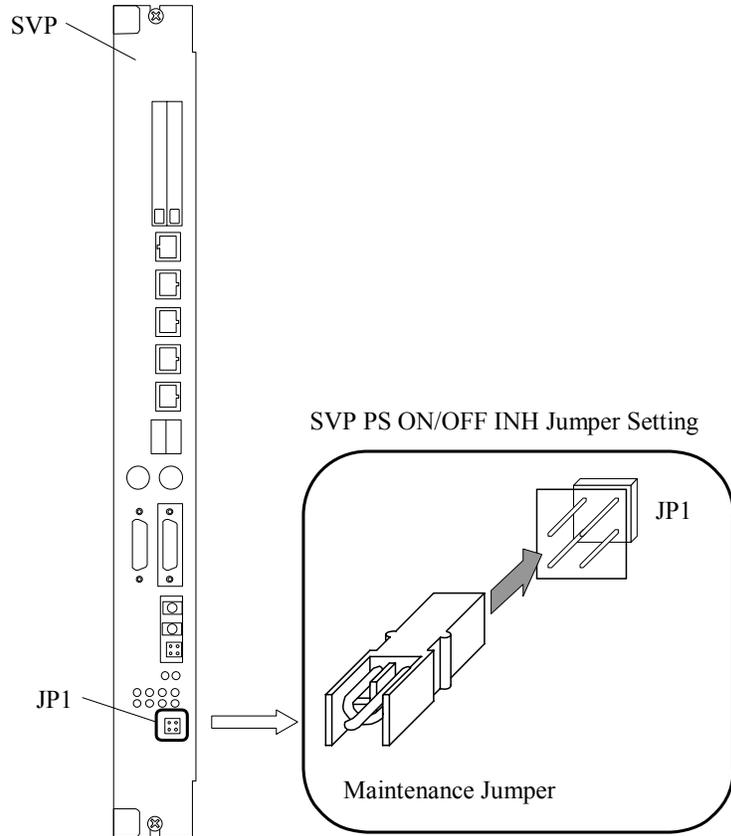
Fig. T7.1-5   Insertion of Maintenance Jumpers

5. When the MODEM card is installed, move the MODEM card.
   When the MODEM card is not installed, go to step 6.
   a. Push the right button on the failed SVP.
   b. Push the right button to remove MODEM Card from the failed SVP.
   c. Insert the MODEM Card to the spare SVP.
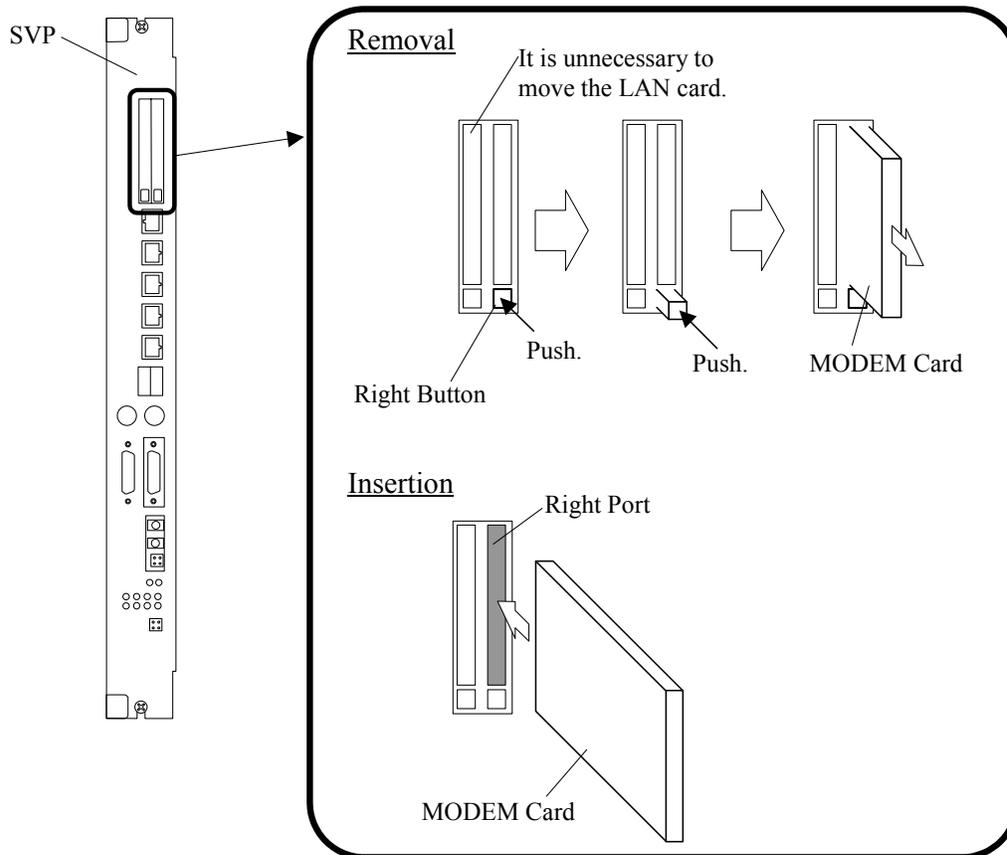
Fig. T7.1-6   Replacement of MODEM Card

6. Install the spare SVP.
   a. Install the spare SVP and fasten the two screws. (Refer to Fig. T7.1-4.)
      Note: Confirm the vertical direction of the SVP. If the direction was wrong, the SVP will
             not be ON.
   b. When the MODEM card is installed, connect the cable to the MODEM card.
   c. Connect the cables (P83-x, P84-x and USB) to the spare SVP.

7. SVP PS ON.
   a. Check that the SVP POWER LED of the SVP is on. (Refer to Fig. T7.1-3.)

8. Go to SVP post procedure t1 [REP04-300].

3	Replacement of MODEM Card

1. SVP Power OFF
   When replacing the MODEM Card of Master SVP, go to step 1-1 (REP03-670).
   When replacing the MODEM Card of Standby SVP, go to step 1-2 (REP03-690).
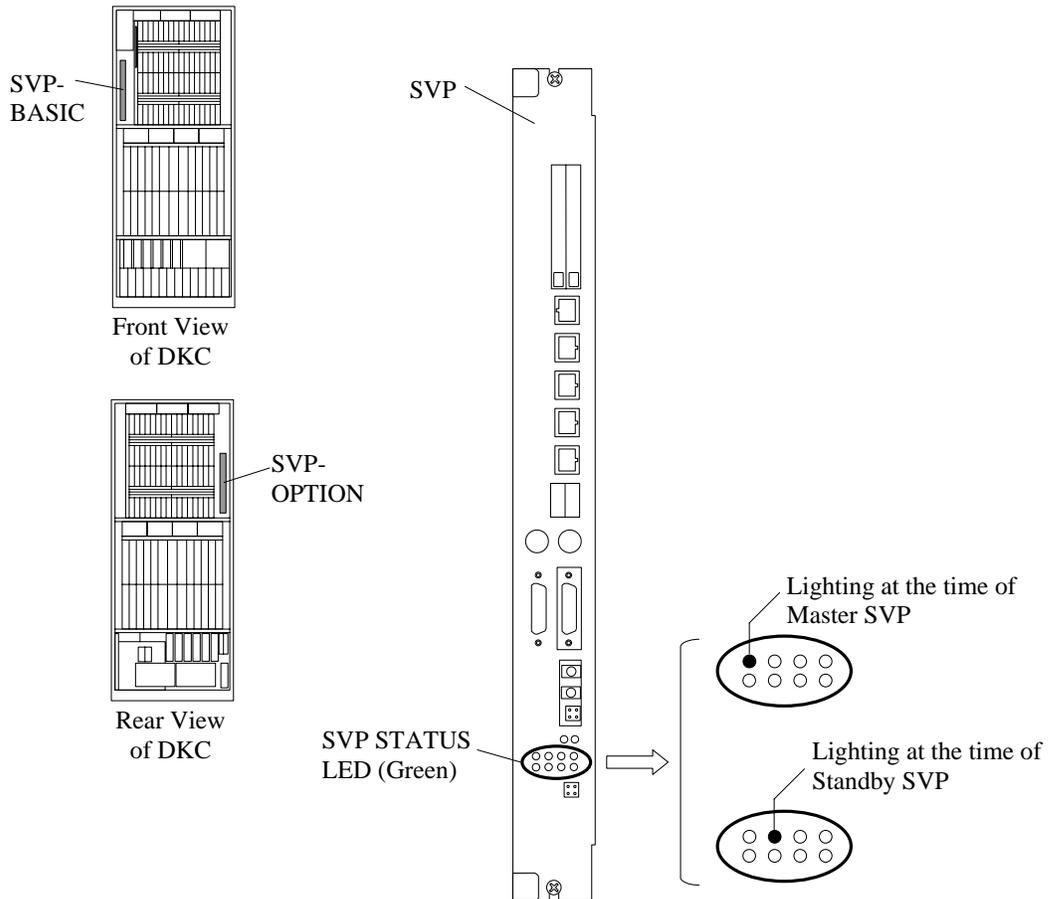
Fig. T7.2-1   Confirmation of SVP STATUS LED

1-1 When replacing the MODEM Card of Master SVP
 a. Insert the maintenance jumper into JP1 on the SVP-BASIC.
     When the SVP-OPTION is installed, insert the maintenance jumper into JP1 on the
     SVP-OPTION.
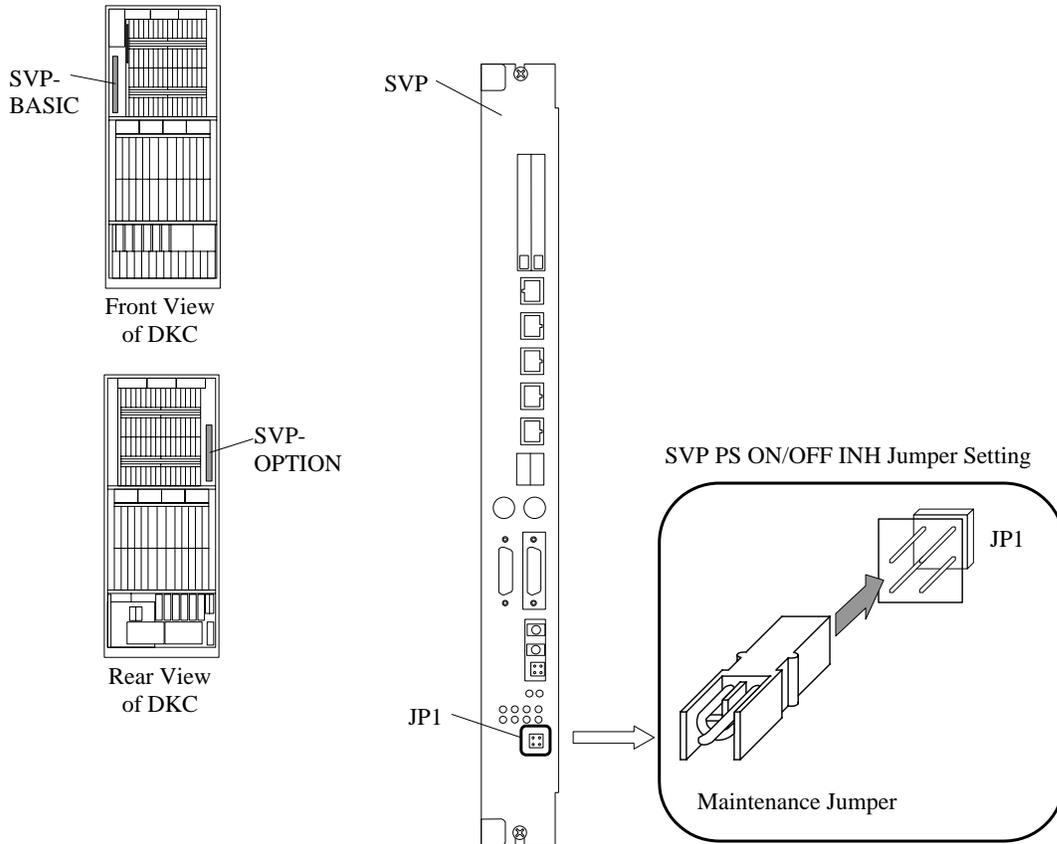
Fig. T7.2-2   Insertion of Maintenance Jumper

b. Press the SVP PS OFF switch on the Master SVP.

c. It waits until SVP POWER LED puts out the light.
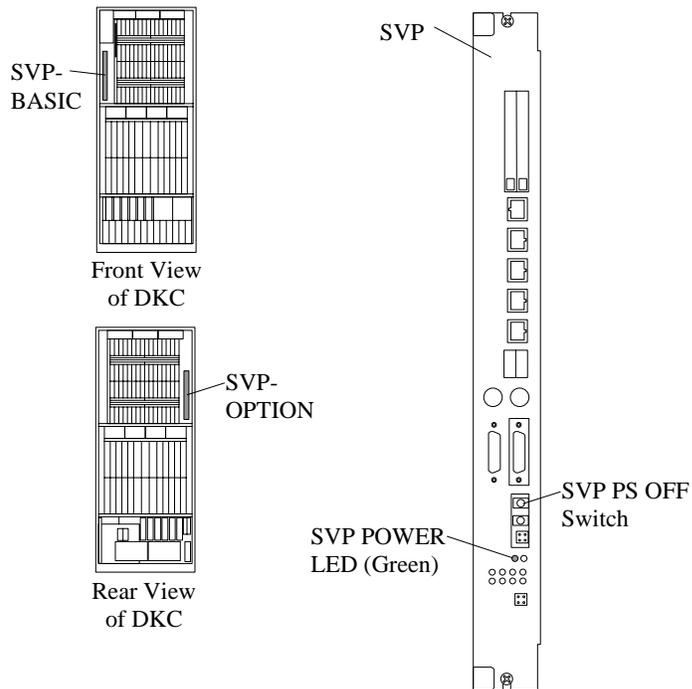
Fig. T7.2-3   Location of SVP POWER LED

d. Go to step 2.

1-2 When replacing the MODEM Card of Standby SVP
    a.   Insert the maintenance jumper into JP1 on the SVP-BASIC.
       Insert the maintenance jumper into JP1 on the SVP-OPTION.
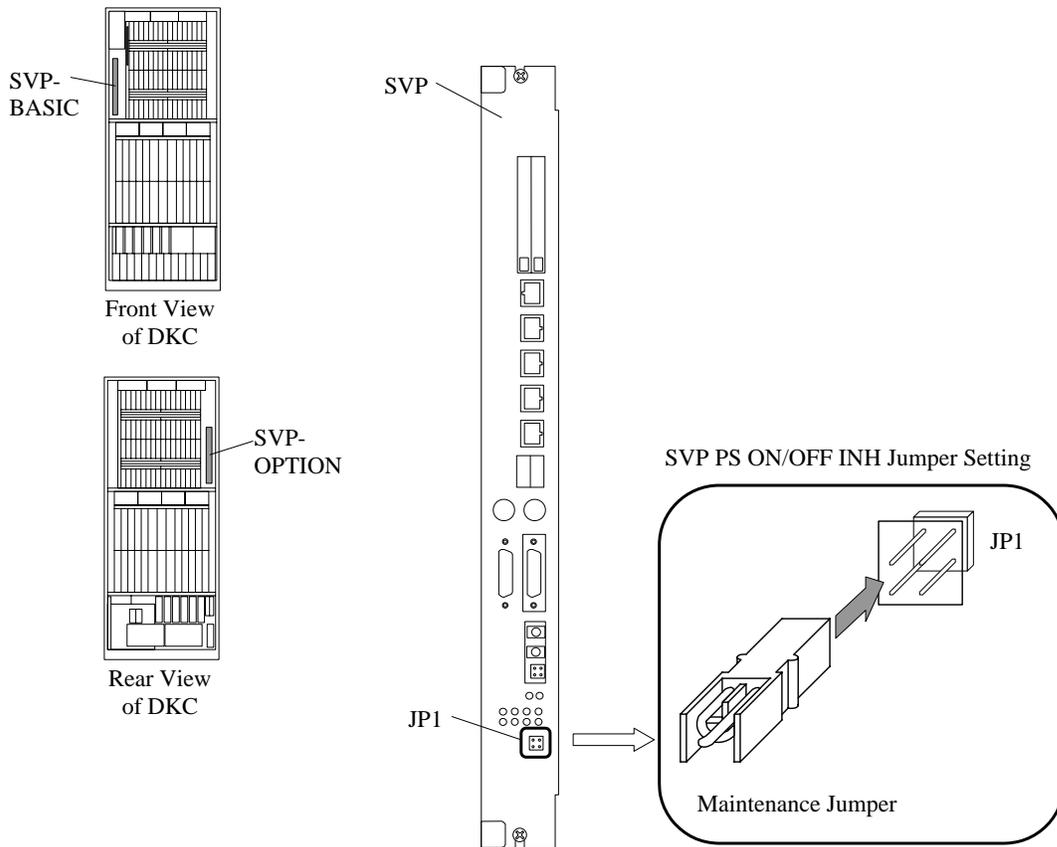
Fig. T7.2-4   Insertion of Maintenance Jumper

    b.   Change Console PC connection from the Master SVP to the Standby SVP.
       b-1 Select (CL) [start], and then select (CL) the [Disconnect] button.
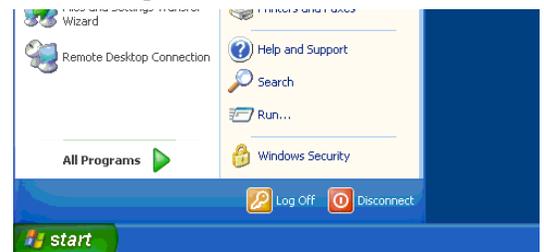
       b-2 Select (CL) the [Disconnect] button.

b-3 Select (CL) the [OK] button.
When the [Remote Desktop
Disconnected] window is not
displayed, disregard this
procedure and go to next step.

Remote Desktop Disconnected
The remote session to the remote computer was ended by means of an administration tool. Your administrator might have ended your connection.
OK   Help

b-4 Select (CL) [Search] of the SVP Connect Utility through the Console PC.
Make sure that the SVP concerned is displayed in the list.
(See SVP01-110)
[Connection destination]
xxx.xxx.xxx.14

    c.   Press the SVP PS OFF switch on the Standby SVP.

    d.   It waits until SVP POWER LED puts out the light.
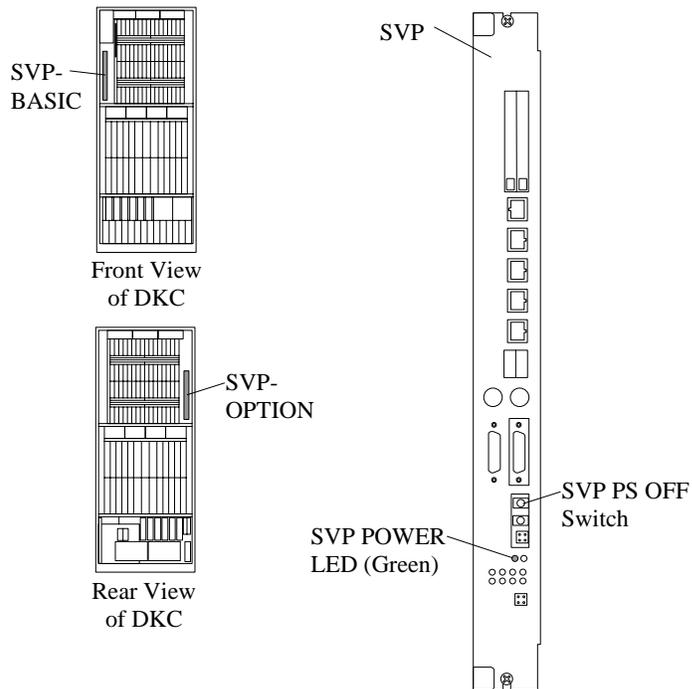
Fig. T7.2-5　Location of SVP POWER LED

2.   Remove the failed MODEM Card.

When the MODEM card is installed in the SVP-BASIC
   a.   Remove the Front Logic Box cover and two side plates from the front side of DKC.
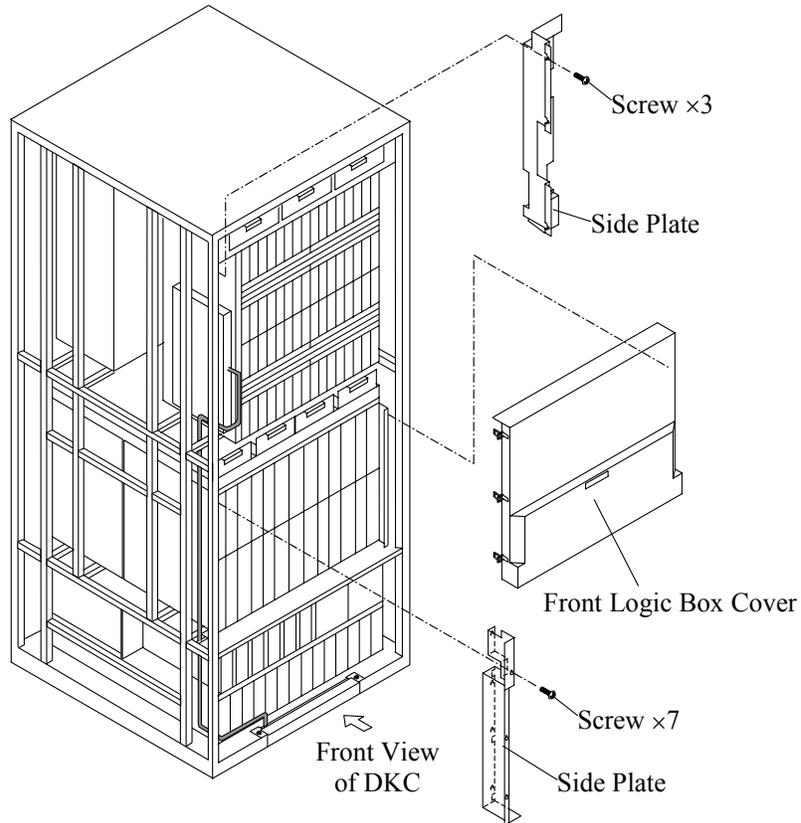
Fig. T7.2-6   Removal of Covers

b. Disconnect the cable from the MODEM cable.
c. Push the right button on the SVP.
d. Push the right button to remove MODEM card from the SVP.
e. Insert the MODEM card in the right port on the SVP.
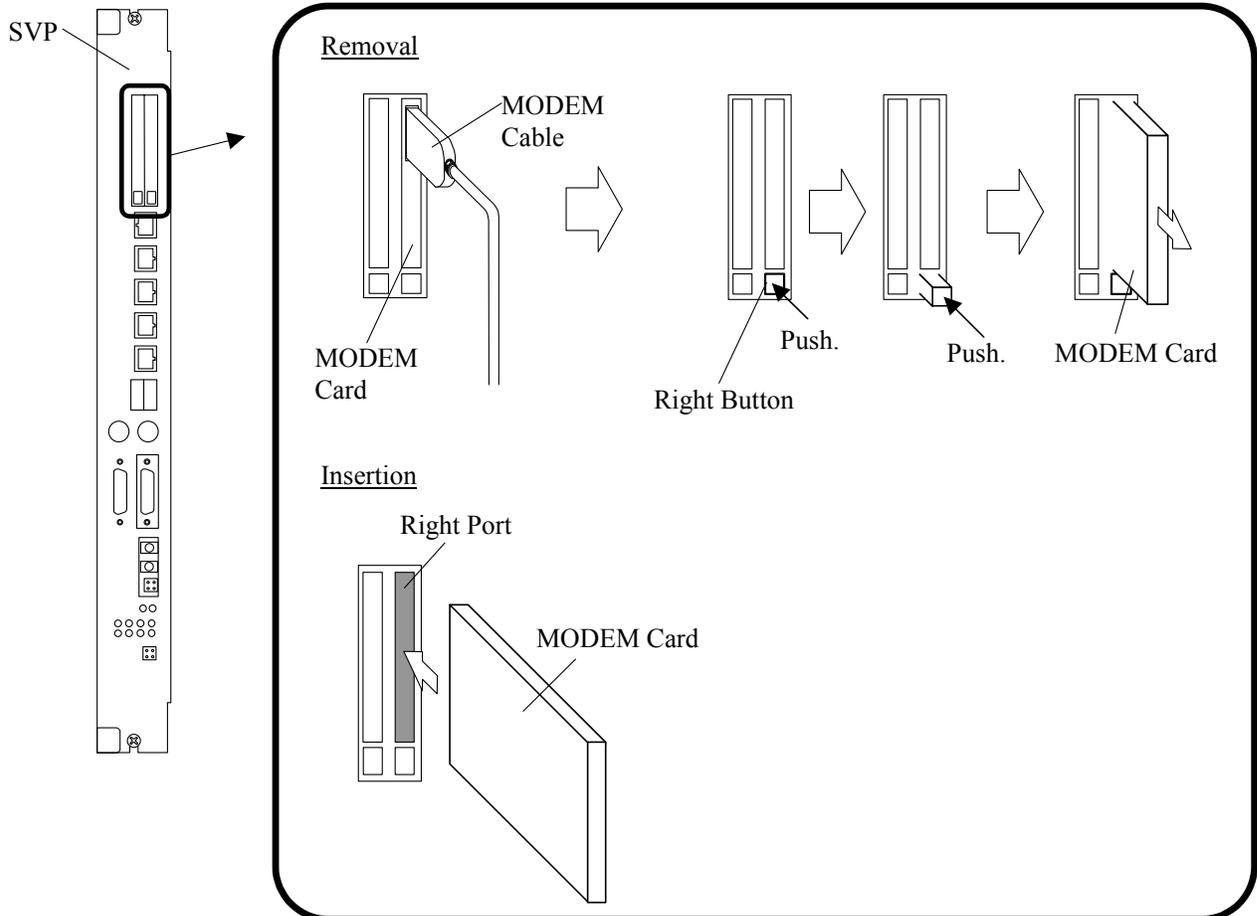
Fig. T7.2-7   Replacement of MODEM Card

f.   Disconnect the external MODEM cable from the MODEM cable coupler.

g.   Remove the MODEM cable from the DKC frame.

h.   Remove the core from the MODEM cable.

i.   Connect the spare MODEM cable to MODEM card, and wire it into DKC frame.

j.   Wind the spare MODEM cable around the core twice, and connect it to the MODEM cable coupler.

k.   Connect the external MODEM cable to the MODEM cable coupler.

l.   Attach the two side plates and the Front Logic Box cover, and then pull the MODEM Cable from the hole of the side plates.
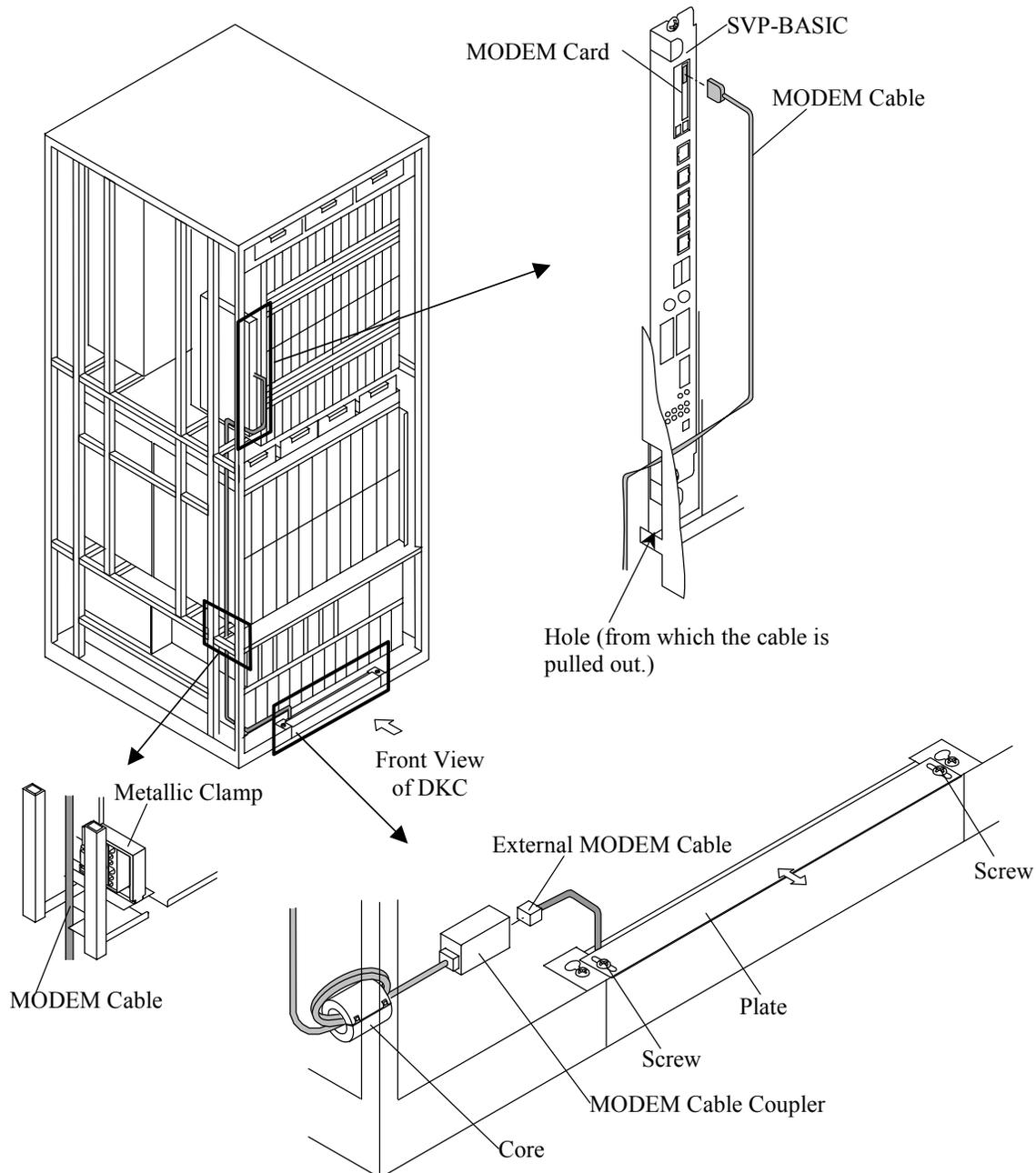
Fig. T7.2-8   MODEM Cable Wiring (SVP-BASIC)

When the MODEM card is installed in the SVP-OPTION
  a.   Remove the Rear Logic Box cover and two side plates from the rear side of DKC.
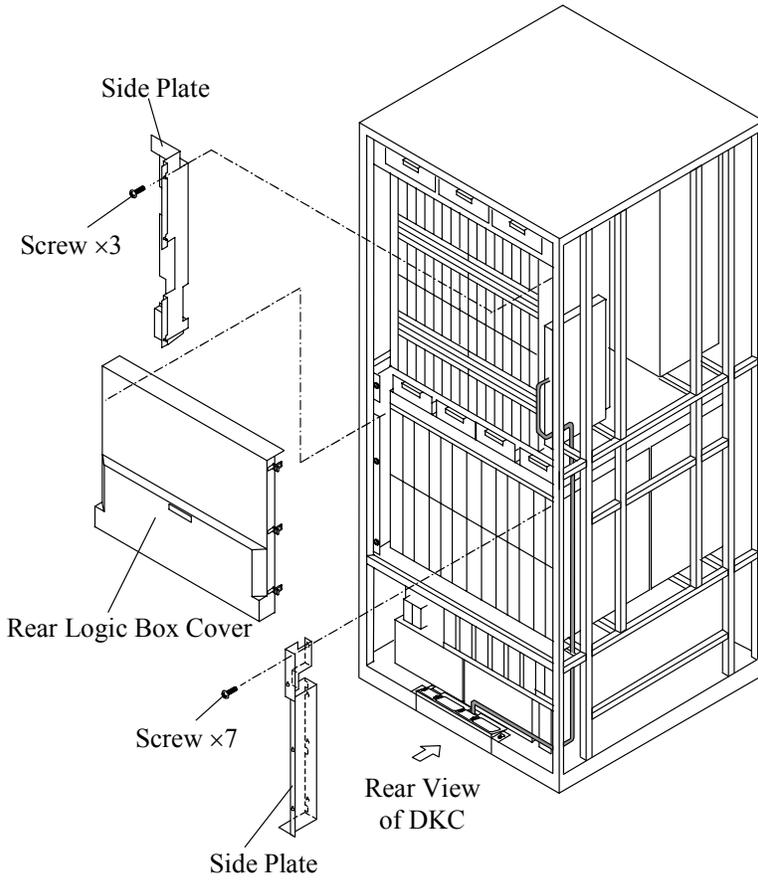
Fig. T7.2-9   Removal of Covers

    b. Disconnect the cable from the MODEM cable.

    c. Push the right button on the SVP.

    d. Push the right button to remove MODEM card from the SVP.

    e. Insert the MODEM card in the right port on the SVP.
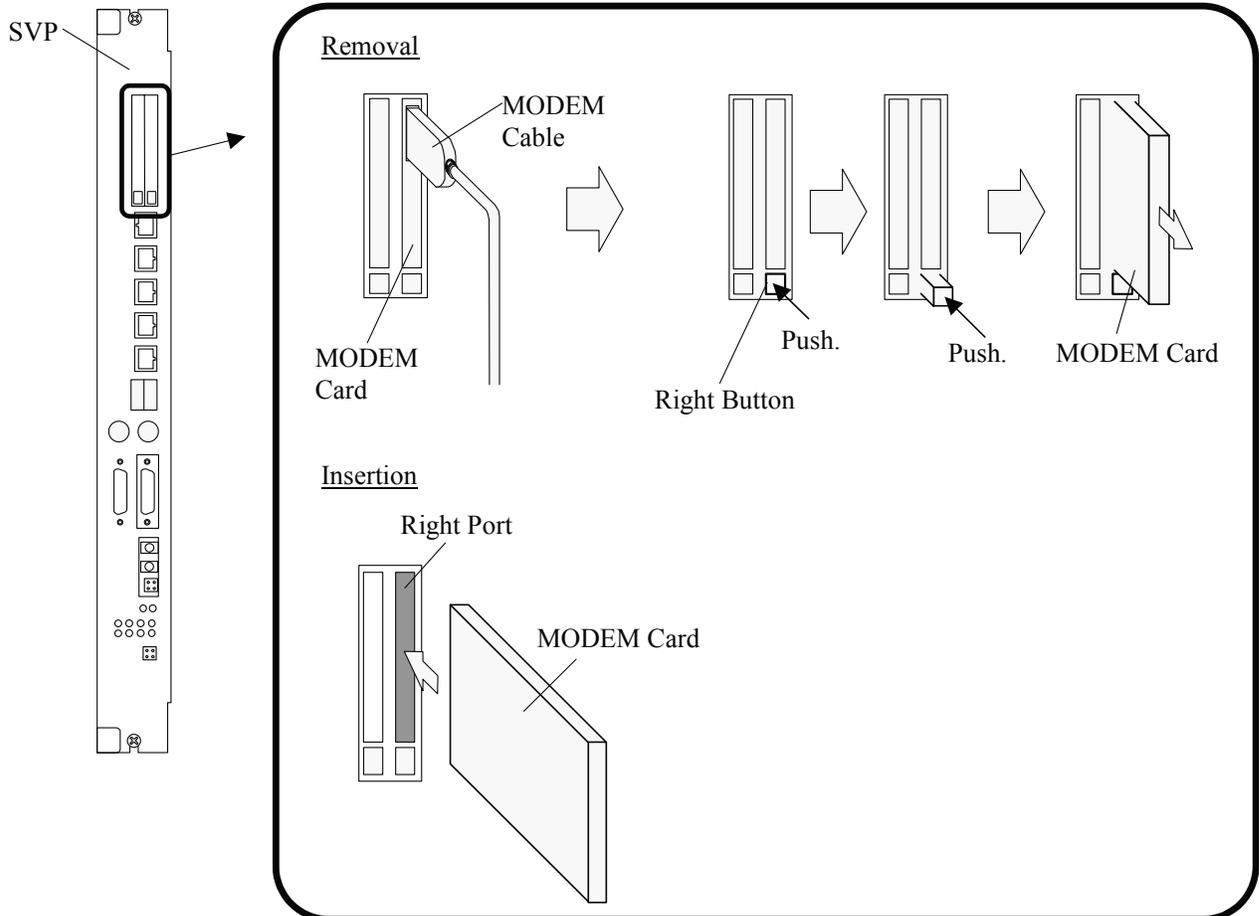
Fig. T7.2-10　Replacement of MODEM Card

    f.   Disconnect the external MODEM cable from the MODEM cable coupler.

    g.   Remove the MODEM cable from the DKC frame.

    h.   Remove the core from the MODEM cable.

    i.   Connect the spare MODEM cable to MODEM card, and wire it into DKC frame.

    j.   Wind the spare MODEM cable around the core twice, and connect it to the MODEM cable coupler.

    k.   Connect the external MODEM cable to the MODEM cable coupler.

    l.   Attach the two side plates and the Rear Logic Box cover, and then pull the MODEM Cable from the hole of the side plates.
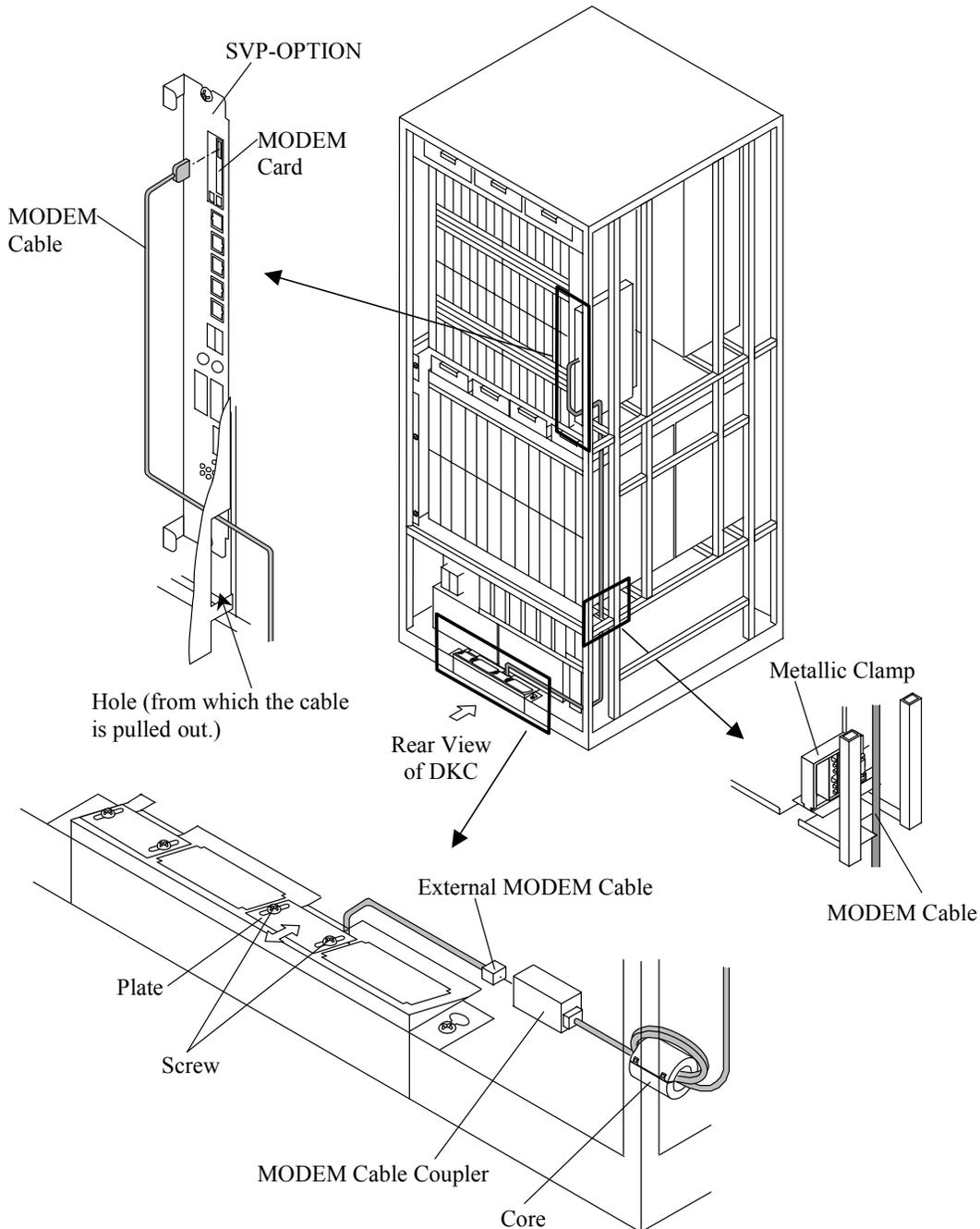
Fig. T7.2-11   MODEM Cable Wiring (SVP-OPTION)

3. SVP Power ON.
   a. Press the SVP PS ON Switch on the SVP.

SVP-BASIC

Front View of DKC

SVP-OPTION

Rear View of DKC

SVP

SVP PS ON Switch

SVP POWER LED (Green)
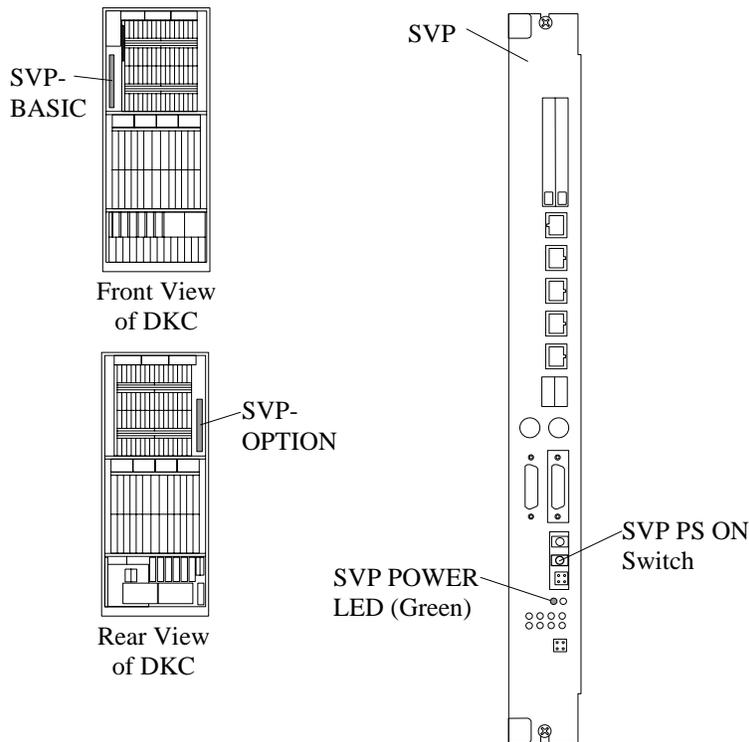
Fig. T7.2-12   SVP PS ON Switch

   b. Wait for a few minutes until the Windows system starts up.

   c. Select (CL) [Search] of the SVP Connect Utility through the Console PC.
      Make sure that the SVP concerned is displayed in the list. (See SVP01-110.)
      [Connection destination]
      • When SVP High Reliability Support Kit is not set: xxx.xxx.xxx.15
      • When SVP High Reliability Support Kit is set:
          When you change the MODEM Card of Master SVP: xxx.xxx.xxx.15
          When you change the MODEM Card of Standby SVP: xxx.xxx.xxx.14

   d. Remove the maintenance jumper of the JP1 on the SVP-BASIC.
      When the SVP-OPTION is installed, remove the maintenance jumper of the JP1 on the
      SVP-OPTION. Refer to Fig. T7.2-2.

4. Replacement work is end. (Post procedure is unnecessary.)

[HARDWARE T8]

Location		Function Name of Component	Part Name
Top of HDU Box	1	FAN Assembly (HDD)	
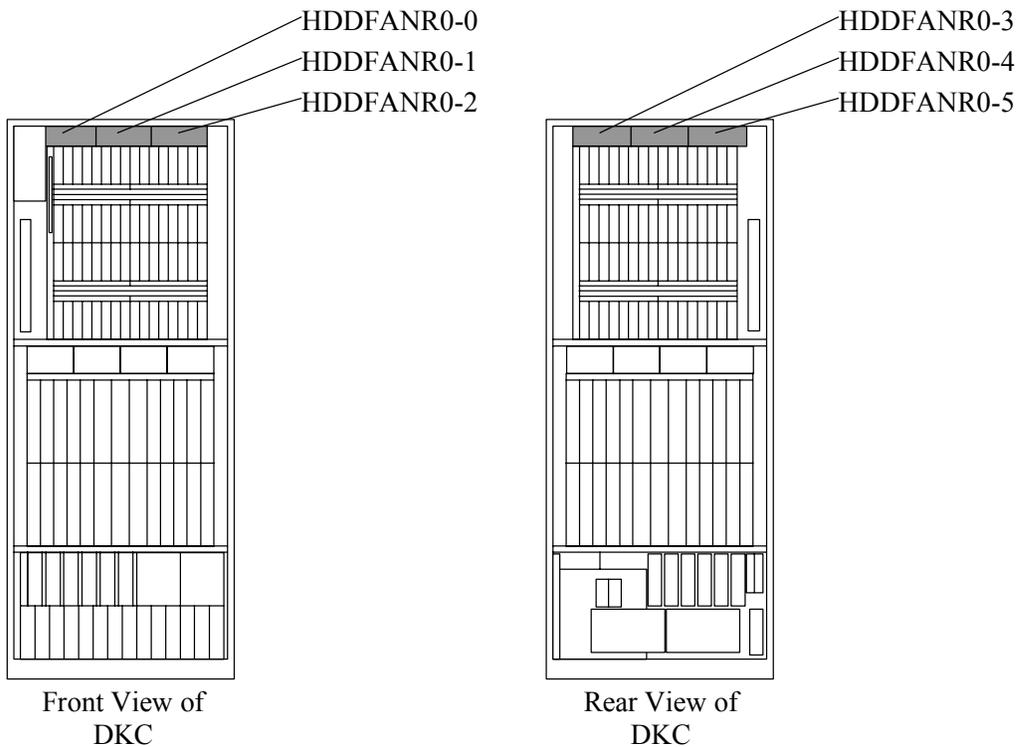
HDDFANR0-0
HDDFANR0-1
HDDFANR0-2

HDDFANR0-3
HDDFANR0-4
HDDFANR0-5

Front View of
DKC

Rear View of
DKC

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.

1	FAN Assembly (HDD)

> ⚠️ **CAUTION**
>
> Hazardous rotating mechanism:
>   Can cause injury if touched. Stay clear of it when machine is running.

1. Replace the FAN Assembly.
    a. Disconnect the cable from the failed FAN Assembly.
    b. Loosen the screw and remove the failed FAN Assembly.
    c. Attach the spare FAN Assembly and fasten the screw.
    d. Connect the cable to the spare FAN Assembly.

Screw

FAN Assembly (HDD)

Cable (P611-x)
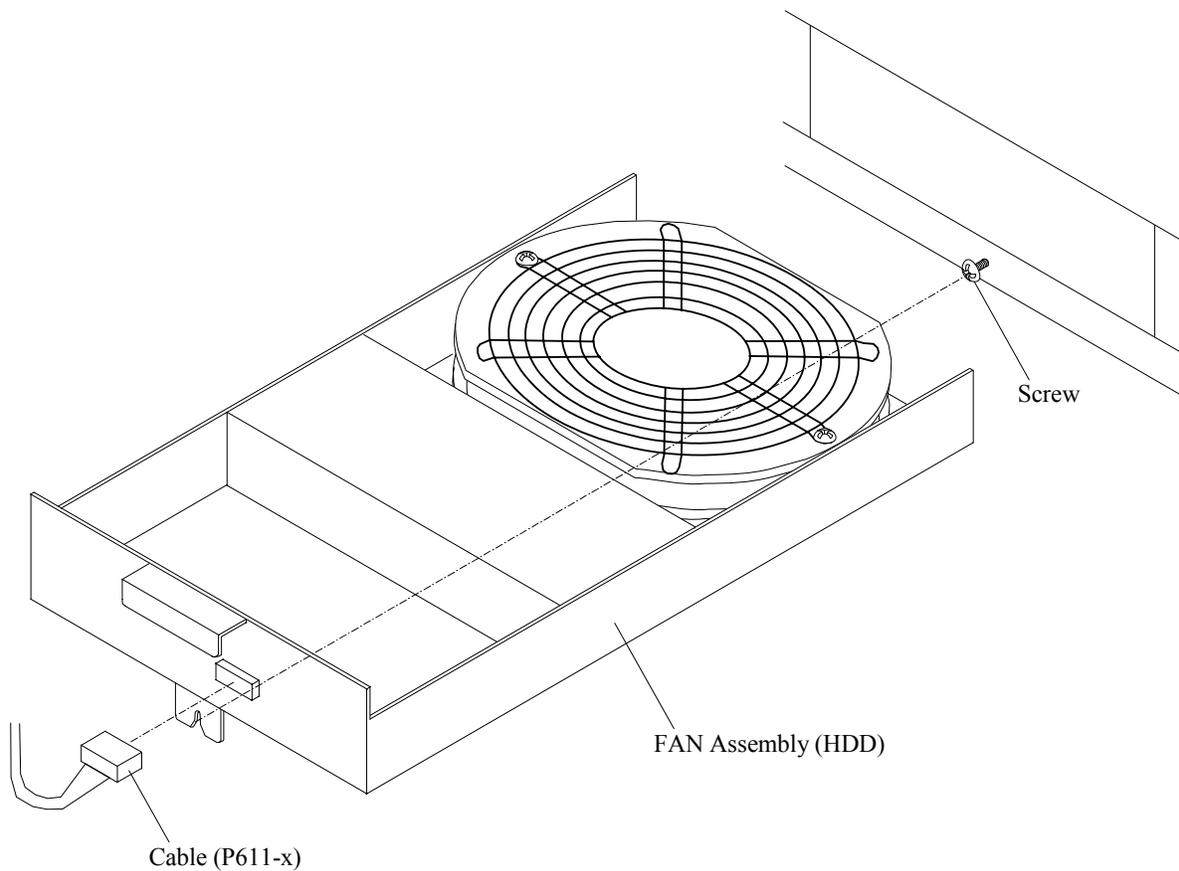
Fig. T8-1　Replacement of FAN Assembly (HDD)

2. Go to SVP post procedure t4 [REP04-850].

[HARDWARE T9]

Location		Function Name of Component	Part Name
Lower Front of DKC	1	Battery Box (12V)	
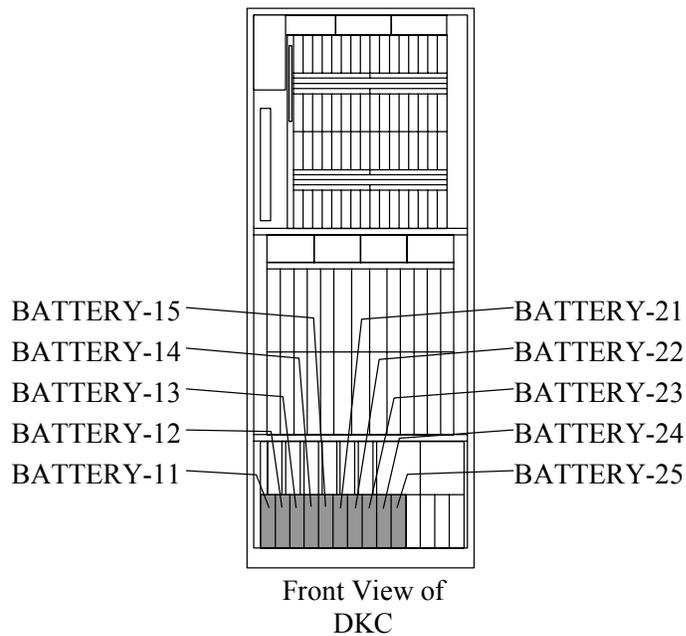
BATTERY-15   BATTERY-21
BATTERY-14   BATTERY-22
BATTERY-13   BATTERY-23
BATTERY-12   BATTERY-24
BATTERY-11   BATTERY-25

Front View of
DKC

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.

1	BATTERY BOX

⚠ CAUTION

Paying attention to falls:

The weight of the battery box is 8 kg. If the battery box falls, injury may occur. Hold the battery box firmly by both hands and use caution to prevent it from falling.

⚠ CAUTION

Watching for short-circuits:

A Short-circuit may cause a fire.

Never insert metal or the like into the battery box connector or a short-circuit may occur.

---

1. Confirm the switch.
   a. Confirm the switch on the battery box is turned off.
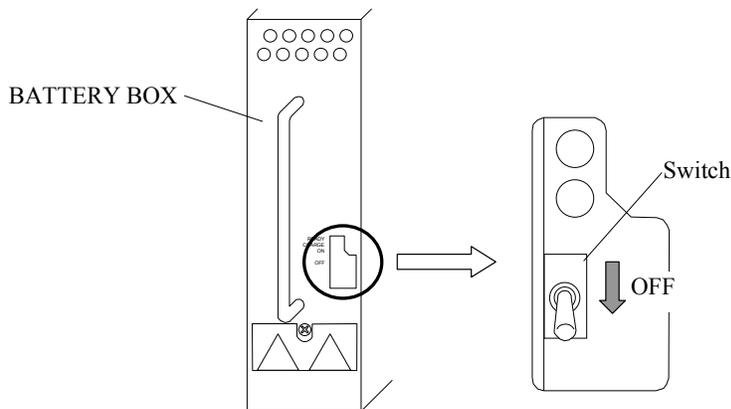
Fig. T9-1   Switch on Battery Box

2.   If the BATTERY-14, 15, 21, 22, 23, 24, or 25 is replaced, move the optical fibre cables.
      If not, go to step 3.
      a.   Loosen the two screws and slide the plate toward you.
      b.   Move the optical fibre cables in front of the BATTERY BOX to be replaced to the position
           that does not become obstructive.
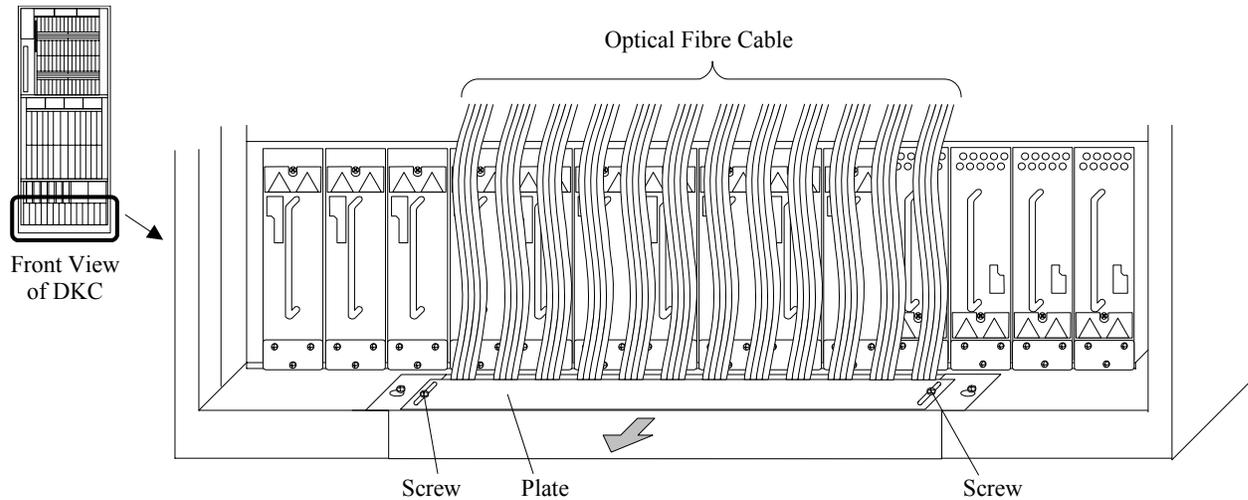
Fig. T9-2   Movement of Fibre Cables

3.   Replace the Battery Box.
      a.   When the brackets are attached to the DKC frame, go to step c.
           When the brackets are not attached to the DKC frame, go to step b.
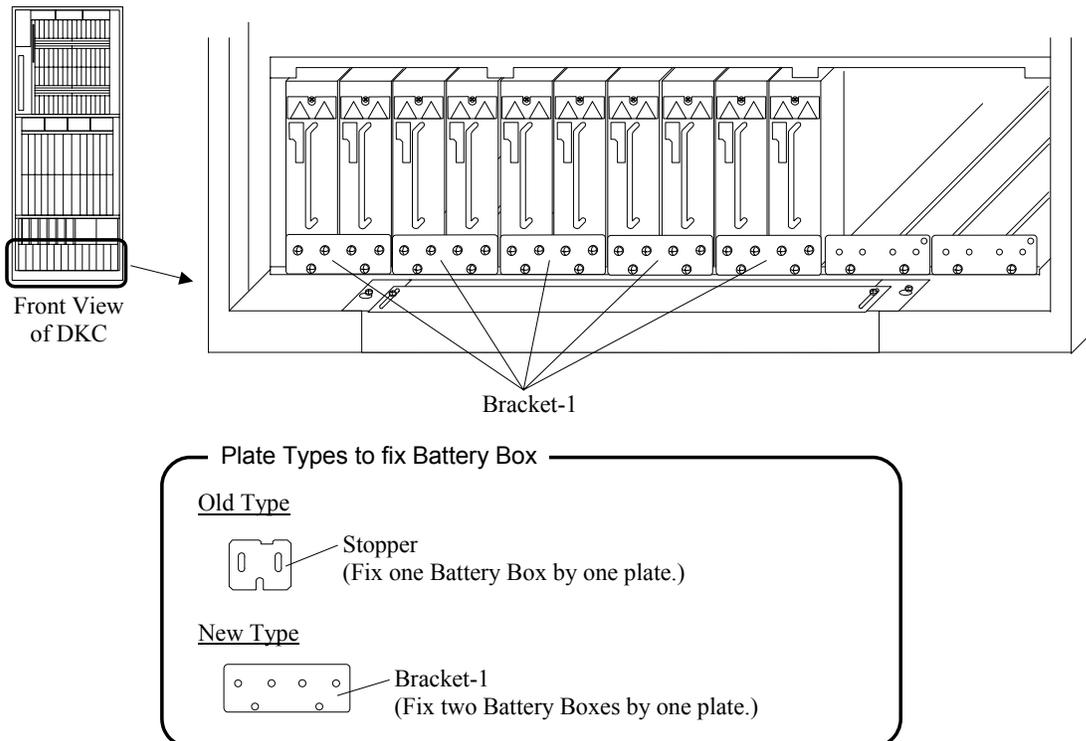
Fig. T9-3   Plate Types to fix Battery Box

b.   Replacement of Battery Boxes (Old type plate)
    b-1 Turn off the switch on the replaced Battery Box. (Refer to Fig. T9-1.)
    b-2 Loosen the two screws ① and screw ②.
    b-3 Move the stopper upper and fasten the two screws ①.
    b-4 Replace the Battery Box.
    b-5 Loosen the two screws ①, and move the stopper below.
    b-6 Fix the Battery Box with the two screws ① and screw ②.
    b-7 Turn on the switch on the Battery Box.
    b-8 Go to step 4.
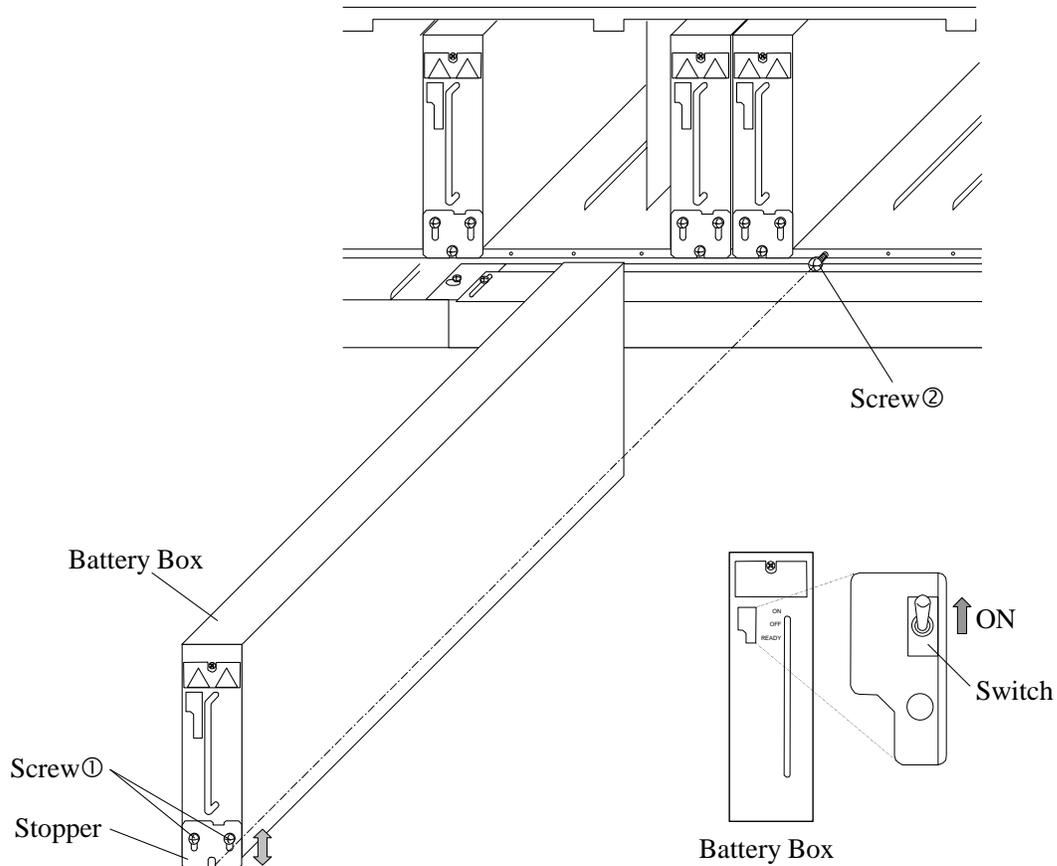
Fig. T9-4   Replacement of Battery Box

c. Replacement of Battery Boxes (New type plate)

c-1 Remove the two screws ① from spare Battery Box. Remove the stopper together in Type A (Battery Box with stopper) in the following figure.

(Note: Discard Stopper.)
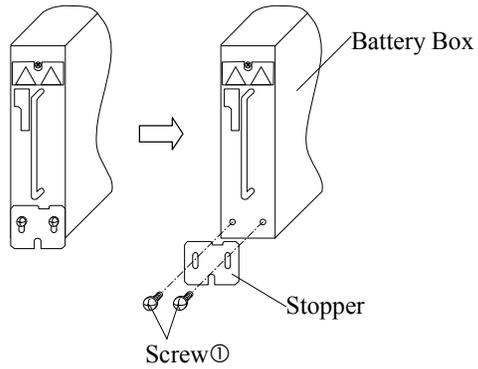
Type A (Battery Box with stopper)   Type B (Battery Box without stopper)
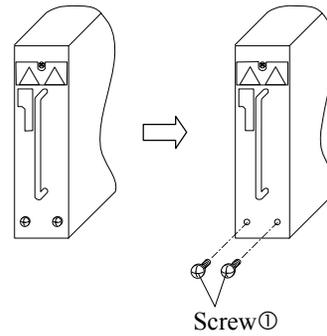
Fig. T9-5   Removal of Screws and Stoppers

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REP03-802
Rev.1 / Dec.2007, Jun.2010

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c-2 Turn off the switch on the replaced Battery Box. (Refer to Fig. T9-1.)

c-3 Remove the two screws ① when two Battery Boxes are fixed by bracket-1.

c-4 Remove the two screws ②, two screws ③, and bracket-1.
(During the detachment of bracket-1, pay attention that the existing Battery Box is not pulled out.)

c-5 Replace the Battery Box.

c-6 Attach the bracket-1 with the two screws ② and two screws ③.

c-7 Attach the two screws ① when two Battery Boxes are fixed by bracket-1.

c-8 Turn on the switch on the Battery Box.

CAUTION:
Only one Battery Box should ever be exchanged or maintained at any one time.
Never remove or insert the Battery Boxes as a pair.

Battery Box

ON

Switch

Battery Box

Screw①

Bracket-1

Screw③

Screw②
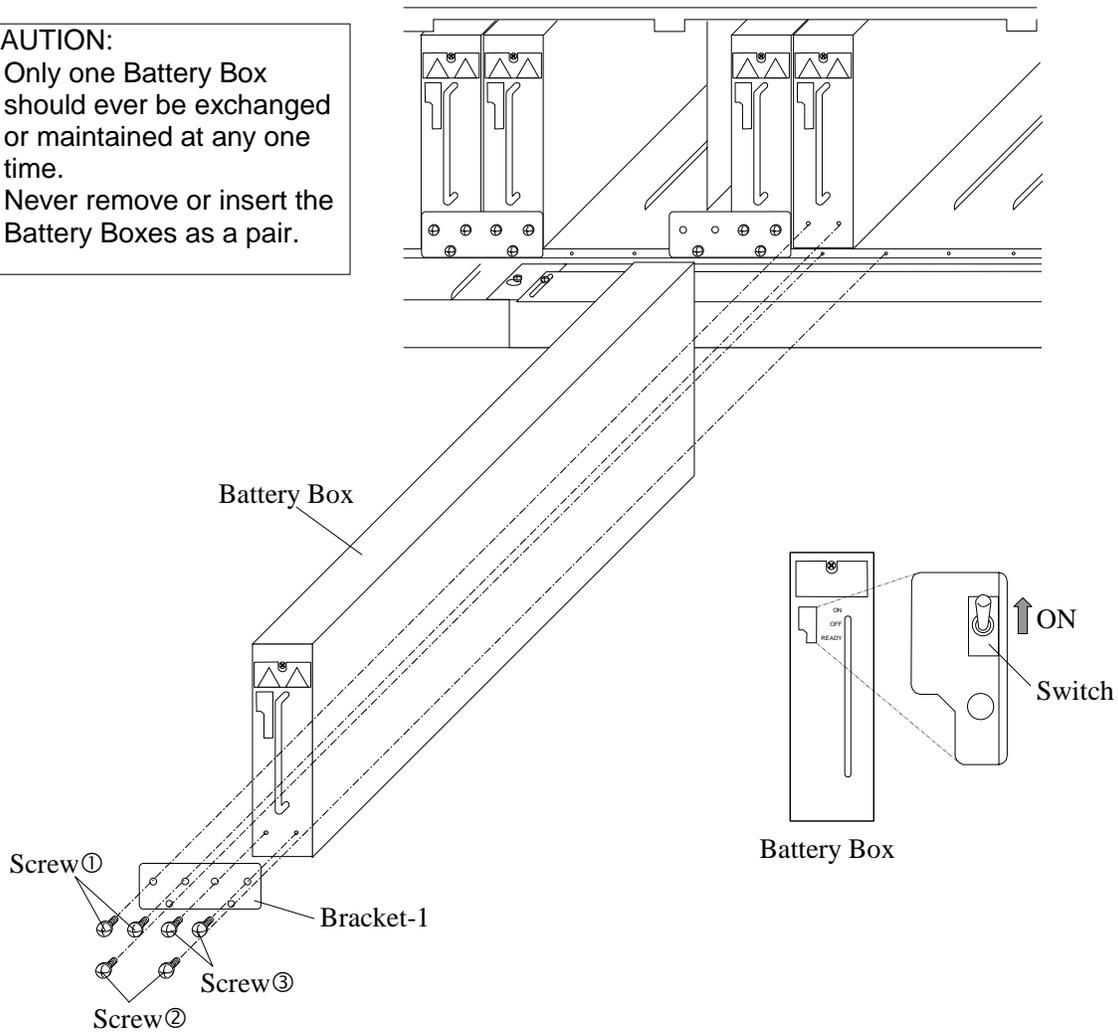
Fig. T9-6   Replacement of Battery Box

4. If the fibre cables are moved in step 2, return them to the original position. If not, go to step 5.
   a. Return the fibre cables to original position in the reverse order of step 2.

5. Go to SVP post procedure t1 [REP04-300].

[HARDWARE T10]

Location		Function Name of Component	Part Name
Lower of DKC	1	BATTERY BOX (56V)	
Lower of DKU	2	BATTERY BOX (56V)	
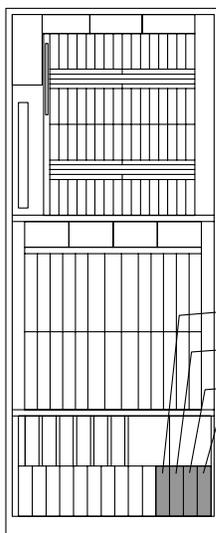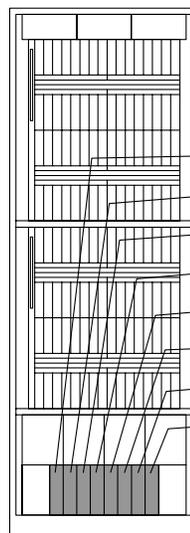
BATTERY-UR00
BATTERY-UR01
BATTERY-UR02
BATTERY-UR03

Front View of
DKC

BATTERY-Uxx0
BATTERY-Uxx1
BATTERY-Uxx2
BATTERY-Uxx3
BATTERY-Uxx4
BATTERY-Uxx5
BATTERY-Uxx6
BATTERY-Uxx7

Front View of
DKU

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.

1	BATTERY BOX (56V) in the DKC

⚠ CAUTION

Paying attention to falls:
   The weight of the battery box is 9 kg. If the battery box falls, injury may occur. Hold the battery box firmly by both hands and use caution to prevent it from falling.

⚠ CAUTION

Watching for short-circuits:
   A Short-circuit may cause a fire.
   Never insert metal or the like into the battery box connector or a short-circuit may occur.

1.   Confirmation of the switch
   a.   Confirm the switch on the battery box is turned off.

BATTERY BOX

Switch

OFF
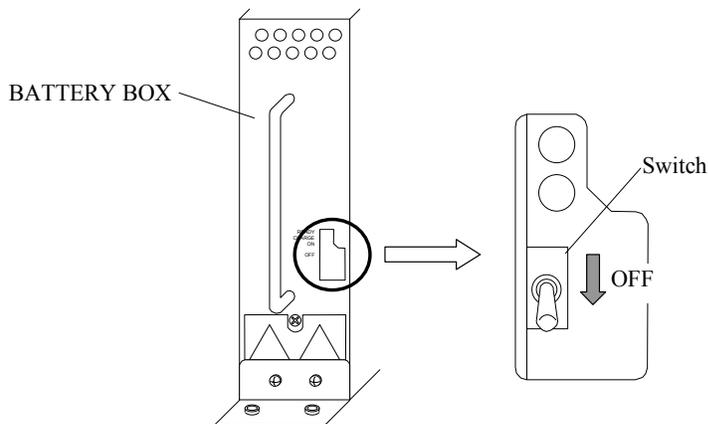
Fig. T10.1-1 Switch on Battery Box

2. If the BATTERY-UR00 is replaced, move the optical fibre cables.
    If not, go to step 3.
    a. Loosen the two screws and slide the plate toward you.
    b. Move the optical fibre cables in front of the BATTERY BOX to be replaced to the position
        that does not become obstructive.
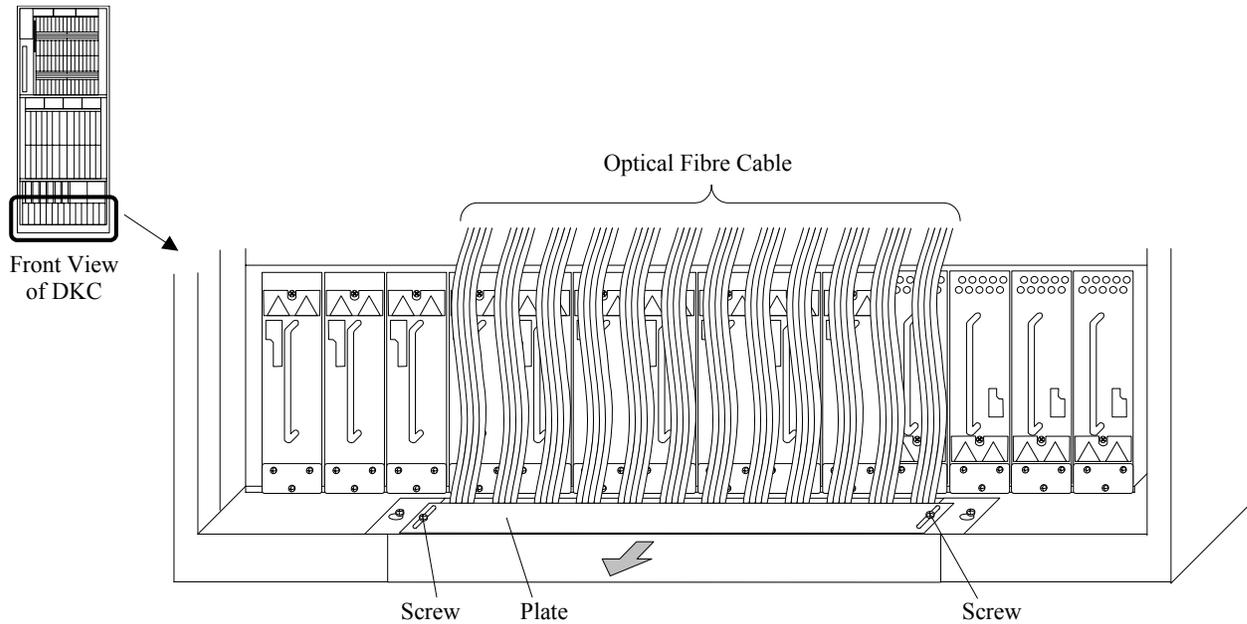
Fig. T10.1-2 Movement of Fibre Cables

3. Replacing the battery box.
    a. If the BATTERY-UR02 or UR03 is replaced, loosen the two screws and rotate the stopper.
        If not, go to step b.
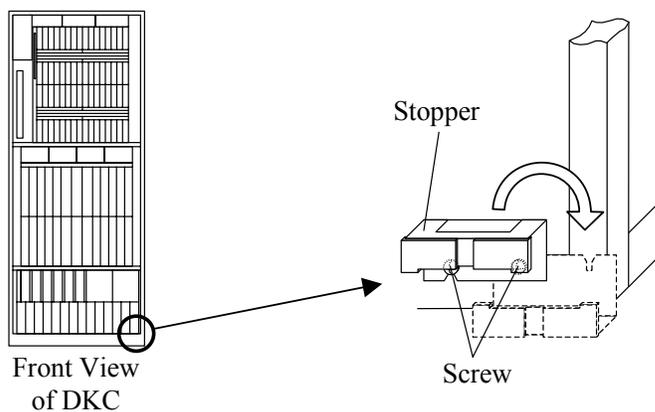
Fig. T10.1-3   Rotation of Stopper

b.   When the brackets are attached to the DKC frame, go to step d.
     When the brackets are not attached to the DKC frame, go to step c.

Front View
of DKC

Bracket-2

┌─ Plate Types to fix Battery Box ─────────────────┐

Old Type

    Stopper
    (Fix one Battery Box by one plate.)

New Type

    Bracket-2
    (Fix two Battery Boxes by one plate.)

└──┘
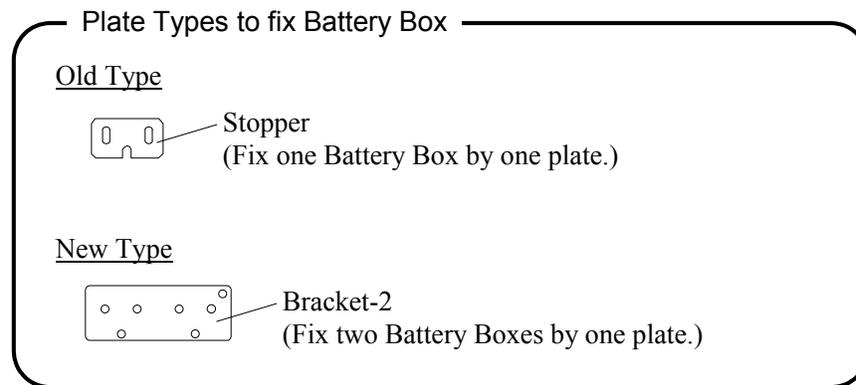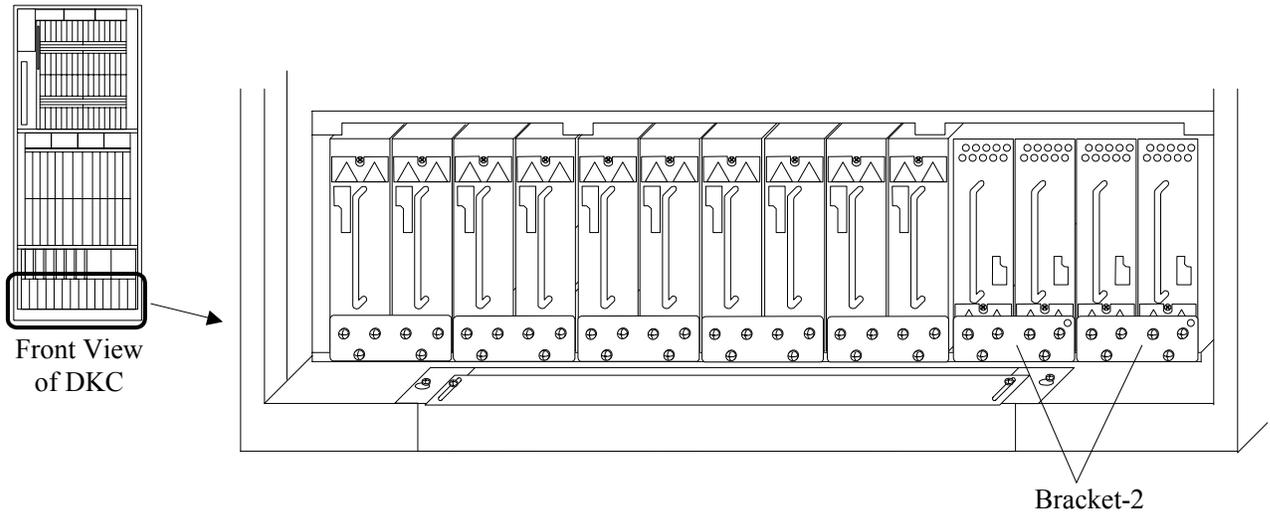
Fig. T10.1-4   Plate Types to fix Battery Box

c. Replacement of Battery Box (Old type plate)
   c-1 Turn off the switch on the replaced Battery Box. (Refer to Fig. T10.1-1.)
   c-2 Loosen the three screws and remove the stopper and battery box.
   c-3 Insert the spare battery box.
   c-4 Fix the battery box with the screws and stopper.
   c-5 Turn on the switch on the Battery Box.
   c-6 Go to step e.

Battery Box (56V)

Stopper

Screw

Switch

ON

READY
CHARGE
ON

OFF
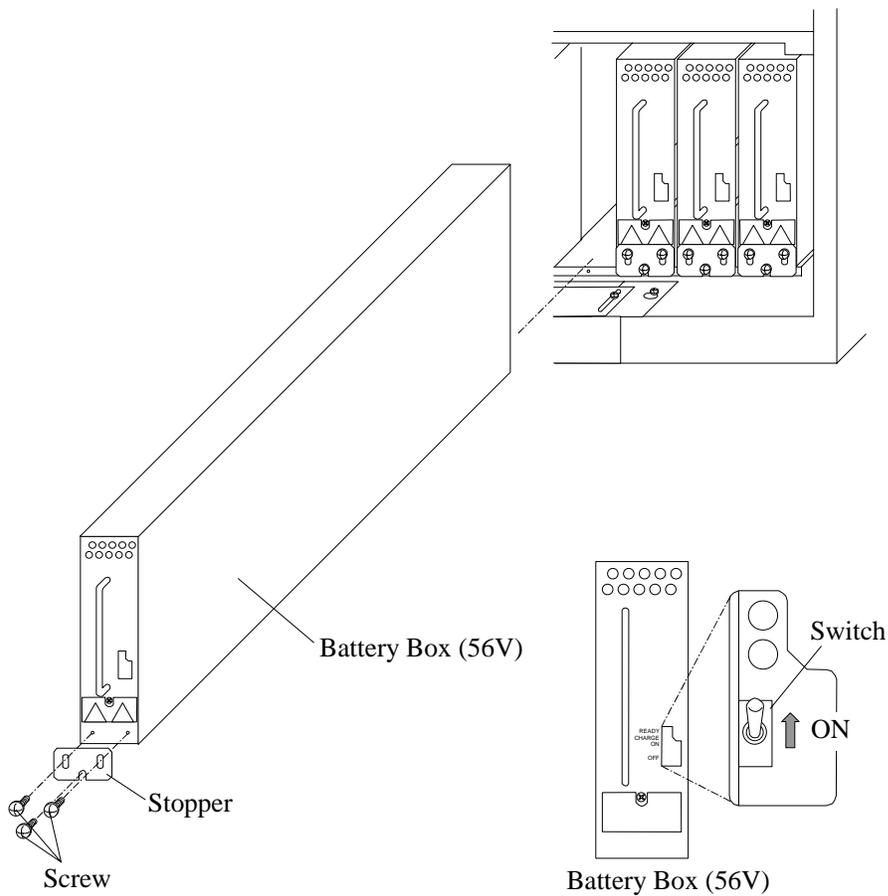
Battery Box (56V)

Fig. T10.1-5　Replacement of Battery Box

d. Replacement of Battery Box (New type plate)
  d-1 Turn off the switch on the replaced Battery Box. (Refer to Fig. T10.1-1.)
  d-2 Remove the four screws ①, two screws ②, and bracket-2.
       (During the detachment of bracket-2, pay attention that the existing Battery Box is not
       pulled out.)
  d-3 Replace the Battery Box.
  d-4 Attach the bracket-2 with the four screws ① and two screws ②.
  d-5 Turn on the switch on the Battery Box.

CAUTION:
  Only one Battery Box should ever be
  exchanged or maintained at any one time.
  Never remove or insert the Battery Boxes
  as a pair.

Battery Box (56V)

Switch

ON

Screw①

Bracket-2

Screw①

Screw②
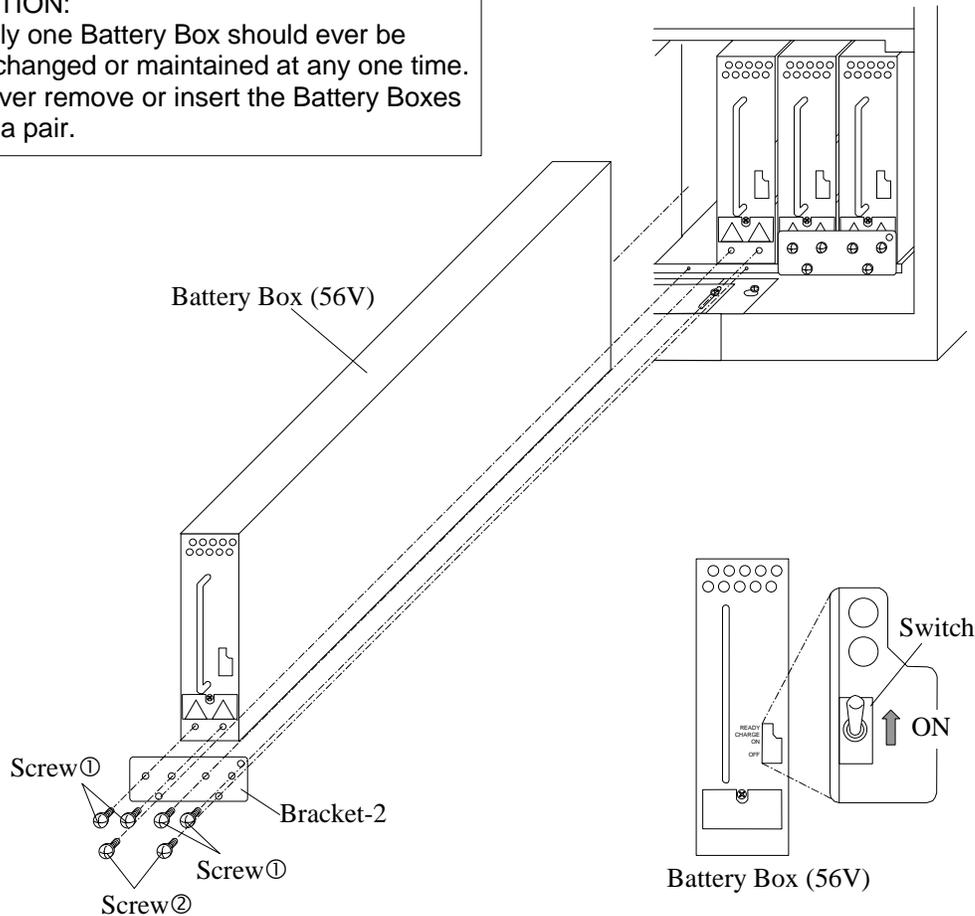
Battery Box (56V)

Fig. T10.1-6   Replacement of Battery Box

e. If the BATTERY-UR02 or UR03 is replace, return the stopper to original position in the
    reverse order of step a. If not, go to step 4.

4. If the fibre cables are moved in step 2, return them to the original position. If not, go to step 5.
  a. Return the optical fibre cables to original position in the reverse order of step 2.

5. Go to SVP post procedure t4 [REP04-850].

| 2 | BATTERY BOX (56V) in the DKU |

⚠ **CAUTION**

Paying attention to falls:
   The weight of the battery box is 9 kg. If the battery box falls, injury may occur. Hold the battery box firmly by both hands and use caution to prevent it from falling.

⚠ **CAUTION**

Watching for short-circuits:
   A Short-circuit may cause a fire.
   Never insert metal or the like into the battery box connector or a short-circuit may occur.

1.   Confirmation of the switch
   a.   Confirm the switch on the battery box is turned off.
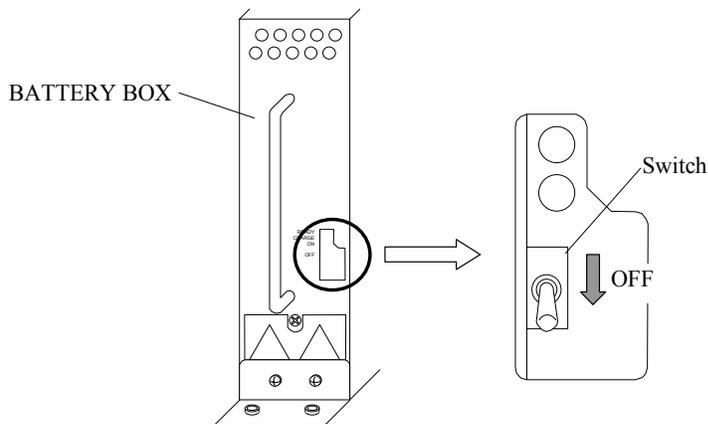
Fig. T10.2-1   Switch on Battery Box

2. Replacing the battery box.
   a. Turn off the switch on the replaced Battery Box. (Refer to Fig. T10.2-1.)
   b. Loosen the three screws and remove the stopper and battery box.
   c. Insert the spare battery box.
   d. Fix the battery box with the screws and stopper.
   e. Turn on the switch on the Battery Box.
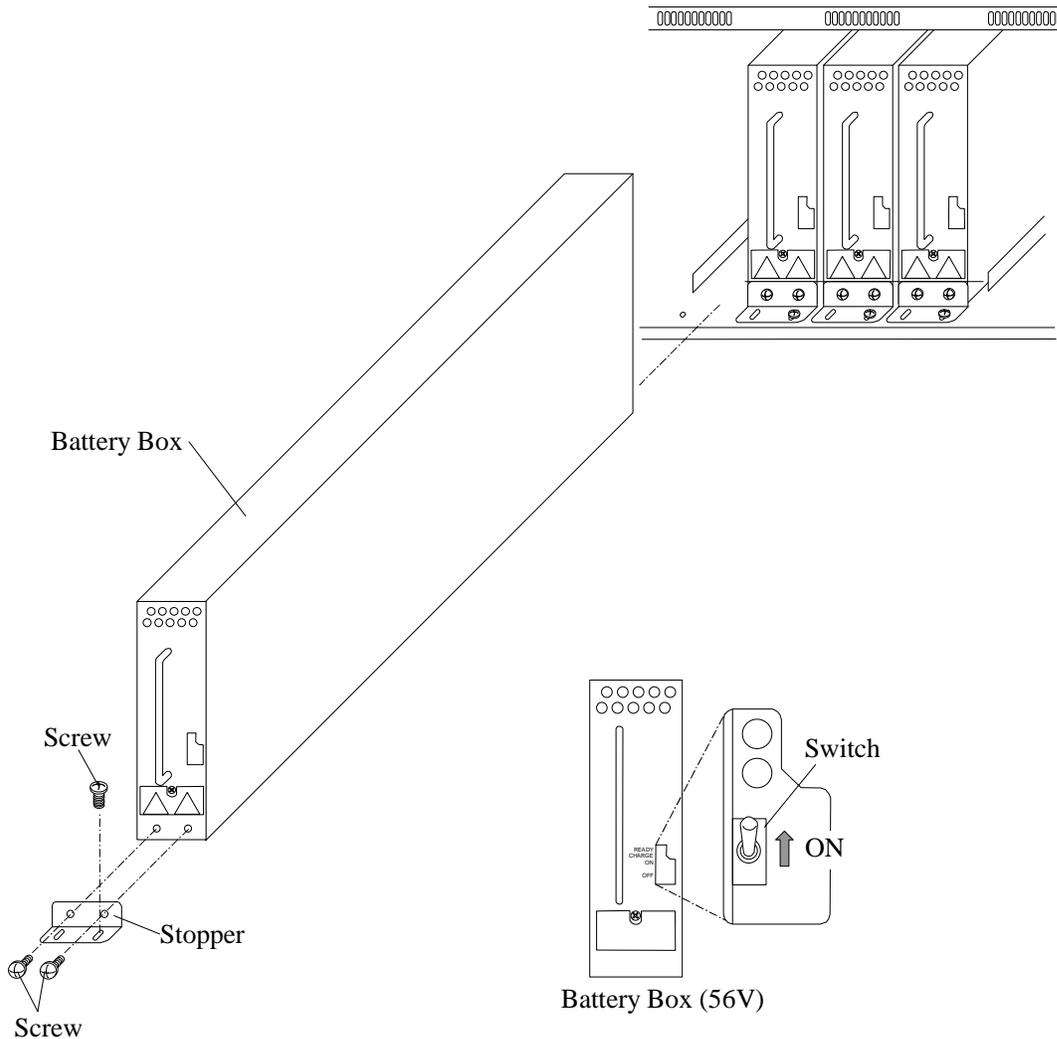
Fig. T10.2-2   Replacement of Battery Box

3. Go to SVP post procedure t4 [REP04-850].

[HARDWARE T11]

Location		Function Name of Component	Part Name
Lower of DKC	1	DKCPS	
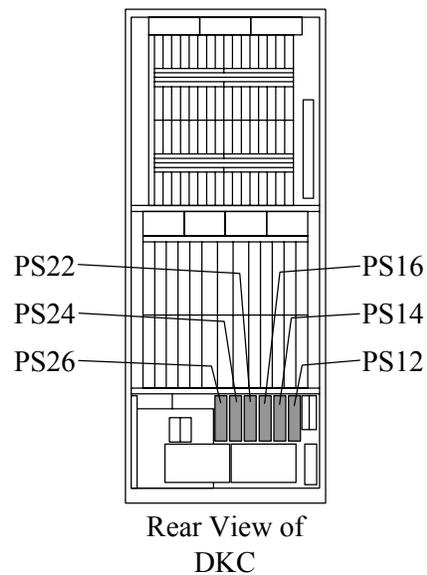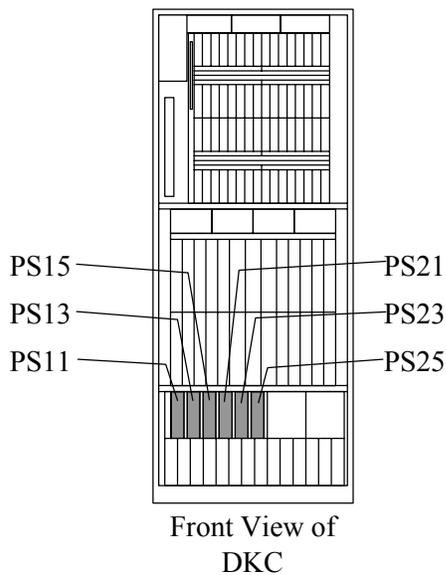
PS15   PS21   PS22   PS16
PS13   PS23   PS24   PS14
PS11   PS25   PS26   PS12

Front View of   Rear View of
DKC   DKC

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.

1	Replacement of DKCPS

1. If PS11, PS13, PS15, PS21, PS23 or PS25 is replaced, lift the core rail in the front side of DKC.
   If PS12, PS14, PS16, PS22, PS24 or PS26 is replaced, lift the core rail in the rear side of DKC.

   a. Loosen the screws. Lift the core rail and fasten the screws.
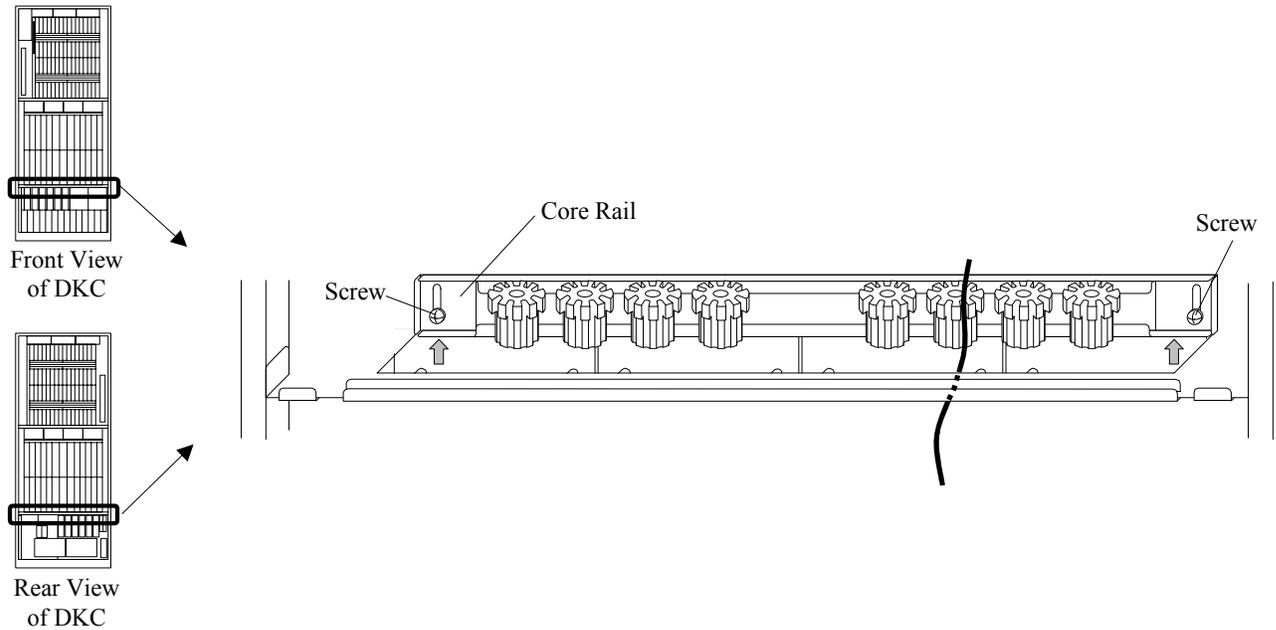
Fig. T11-1   Removal of Core Rail

2.   Replace the DKCPS.

⚠ **CAUTION**

A system down may be caused by a replacement of the DKCPS other than that to be replaced. Make sure that it is a DKCPS to be replaced.

---

    a.   Remove the lever on the failed DKCPS and disconnect the cable.

⚠ **CAUTION**

Watching for short-circuits:
   A Short-circuit may cause a fire.
   Never insert metal or the like into the cable connector or a short-circuit may occur.

---

    b.   Loosen the three screws and remove the bracket.
    c.   Replace the DKCPS.
    d.   Attach the bracket and fix it with three screws.
    e.   Connect the cable and secure it with the lever.
    f.   Loosen the screws and lower the core rails. Fasten the screws. (Refer to Fig. T11-1.)
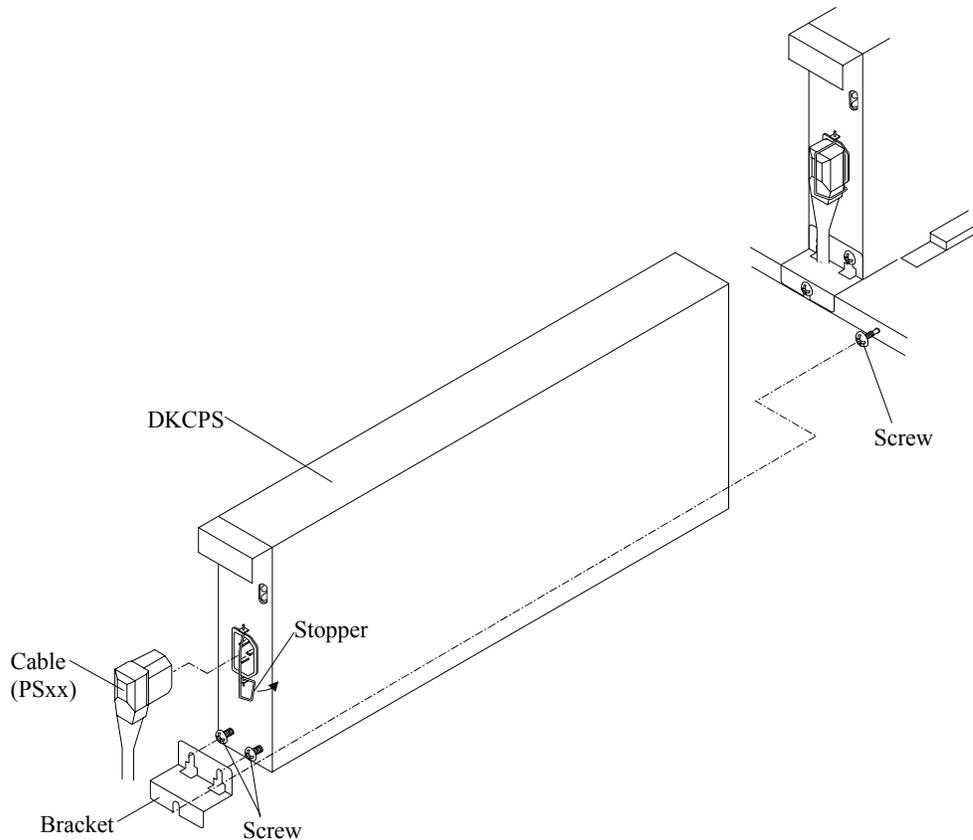
Fig. T11-2   Replacement of DKCPS

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3.   Go to SVP post procedure t1 [REP04-300].

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REP03-900

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Hitachi Proprietary

SC02540Z

REP03-940

DKC610I

Rev.0 / Mar.2007

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Blank Sheet

[HARDWARE T14]

Location		Function Name of Component	Part Name
Top of DKU	1	FAN Assembly (DKU)	
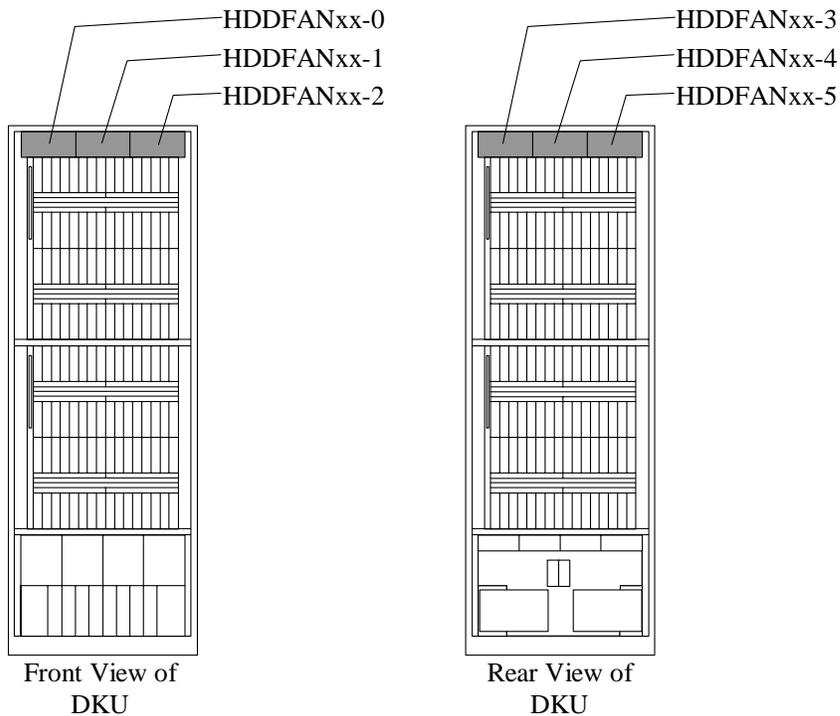
HDDFANxx-0
HDDFANxx-1
HDDFANxx-2

HDDFANxx-3
HDDFANxx-4
HDDFANxx-5

Front View of
DKU

Rear View of
DKU

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.

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REP03-960
Rev.0 / Mar.2007

SC02540Z

DKC610I
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| 1 | FAN Assembly (DKU) |

⚠ **CAUTION**

Hazardous rotating mechanism:
　Can cause injury if touched. Stay clear of it when machine is running.

---

1. Replace the FAN Assembly.
   a. If the HDDFANxx-0 or HDDFANxx-3 is replaced, loosen the two screws and rotate the stopper.　If not, go to step b.
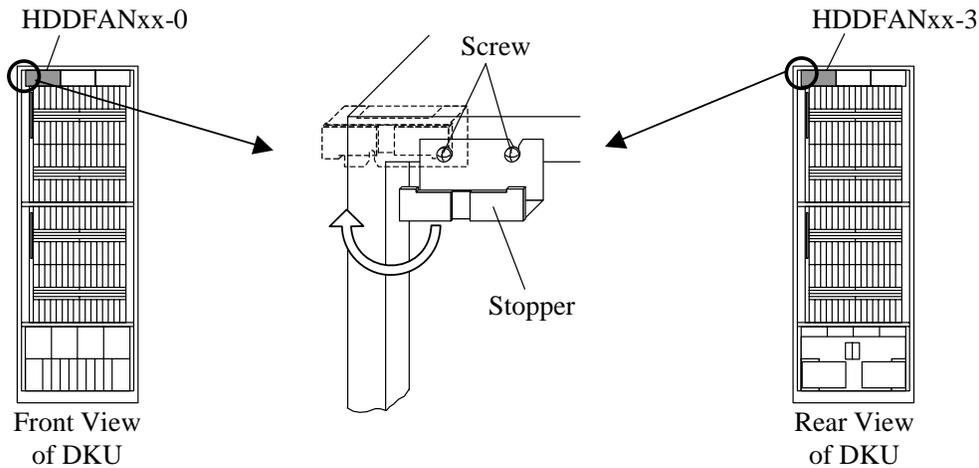
Fig. T14-1　Rotation of Stopper

b. Disconnect the cable from the FAN Assembly.
c. Loosen the two screws and remove the FAN Assembly.
d. Attach the spare FAN Assembly and fasten the two screws.
e. Connect the cable to the spare FAN Assembly.

Screw

Screw

FAN Assembly (DKU)

Cable (x-P601)
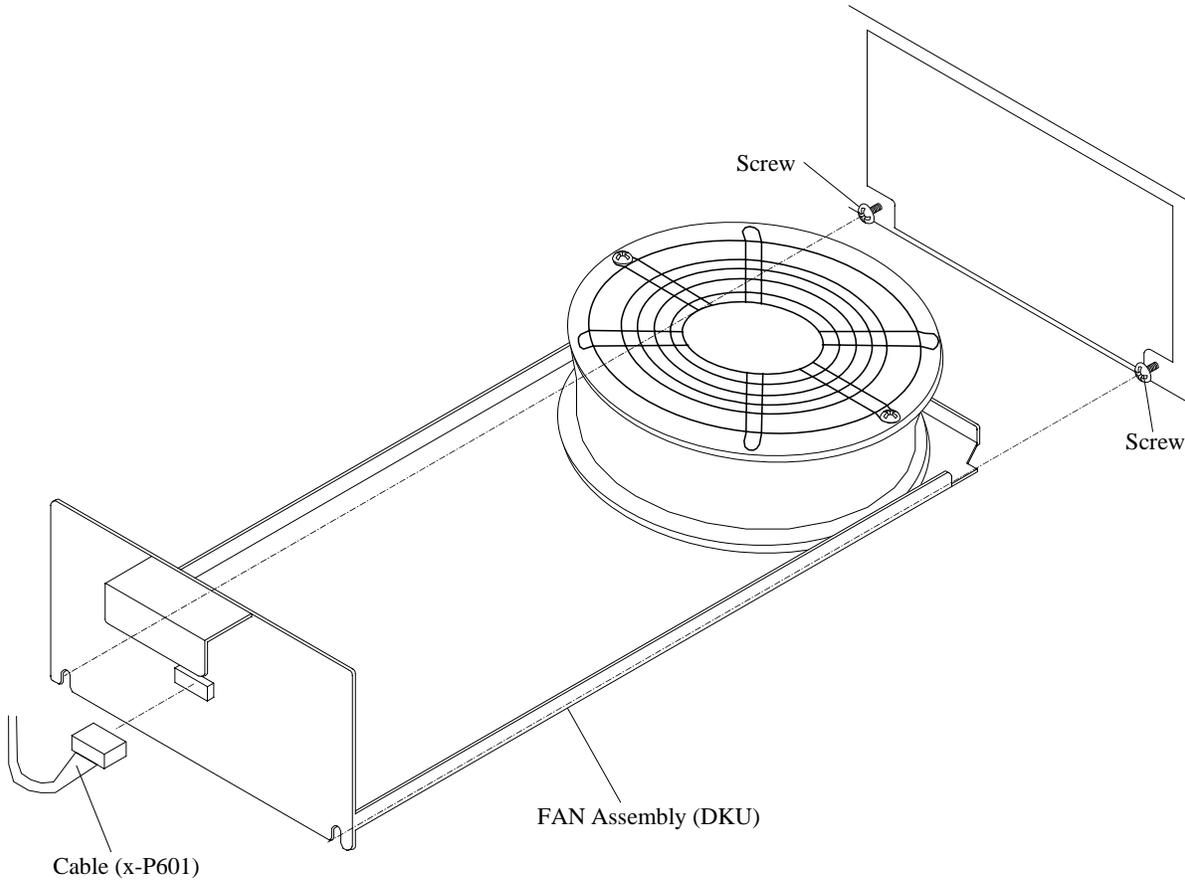
Fig. T14-2　Replacement of FAN Assembly

f. If the HDDFANxx-0 or HDDFANxx-3 is replaced, return the stopper to original position in the reverse order of step a. If not, go to step 2. (Refer to Fig. T14-1.)

2. Go to SVP post procedure t4 [REP04-850].

[HARDWARE T15]

Location		Function Name of Component	Part Name
Lower of DKC or DKU	1	DKUPS	
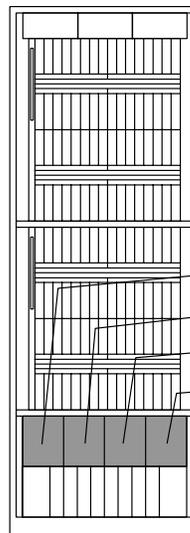
DKUPS-R00
DKUPS-R01

DKUPS-xx0
DKUPS-xx1
DKUPS-xx2
DKUPS-xx3

Front View of
DKC

Front View of
DKU

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.

1	Replacement of DKUPS

1. If the failed DKUPS is installed in the DKC, lift the core rail in the front side of DKC.
   If the failed DKUPS is installed in the DKU, go to step 2.

   a. Loosen the screws. Lift the core rail and fasten the screws.
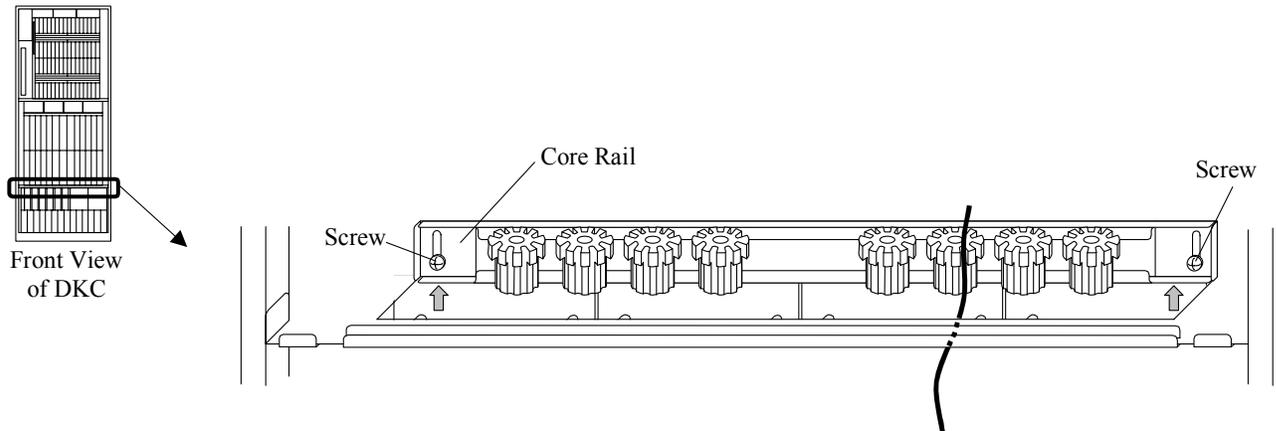
Fig. T15-1   Removal of Core Rail

2. Replace the DKUPS.

CAUTION: A system down may be caused by a replacement of the DKUPS other than
that to be replaced. Make sure that it is a DKUPS to be replaced.

   a. If the failed DKUPS is installed in the DKU, loosen the three screws and slide the PS
      bracket (R) to the right side.
      If the failed DKUPS is installed in the DKC, go to step b.
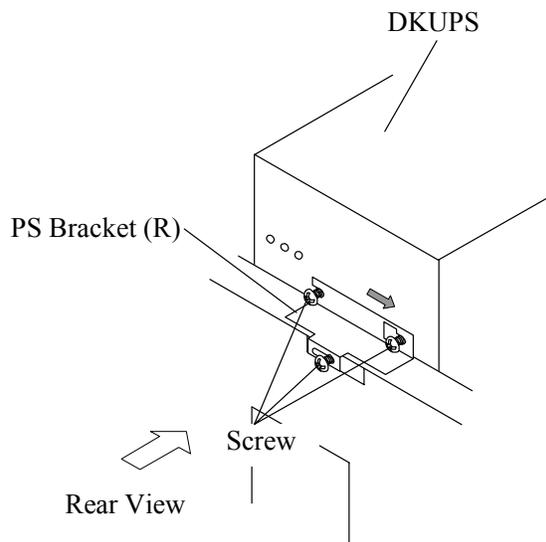
Fig. T15-2   Removal of Bracket

b.   Open the stoppers and disconnect the three cables from the DKUPS.

⚠ **CAUTION**

Watching for short-circuits:
   A Short-circuit may cause a fire.
   Never insert metal or the like into the cable connector or a short-circuit may occur.

---

c.   Loosen the four screws and remove the PS bracket (F).
d.   Replace the DKUPS.
e.   Attach the PS bracket (F) and fasten the four screws.
f.   Connect the three cables to the DKUPS and fix them with the stoppers.
g.   When the PS bracket (R) is moved by step a, slide the PS bracket (R) to the left side and fasten the three screws. (Refer to Fig. T15-2.)

For DKC: Cable (PS0,1-200)
For DKU: Cable (0,3,6,9-P220/WHITE)

For DKC: Cable (PS0,1-201)
For DKU: Cable (1,4,7,A-P220/YELLOW)

For DKC: Cable (PS0,1-202)
For DKU: Cable (2,5,8,B-P220/BLUE)

DKUPS

Screw

Front View

Stopper

Screw

Label (Connector No.)

| For DKC→ | DKC | J200 | J201 | J202 |
| For DKU→ | DKU | J220 | J220 | J220 |

PS Bracket (F)

Color: YELLOW   BLUE

Cable
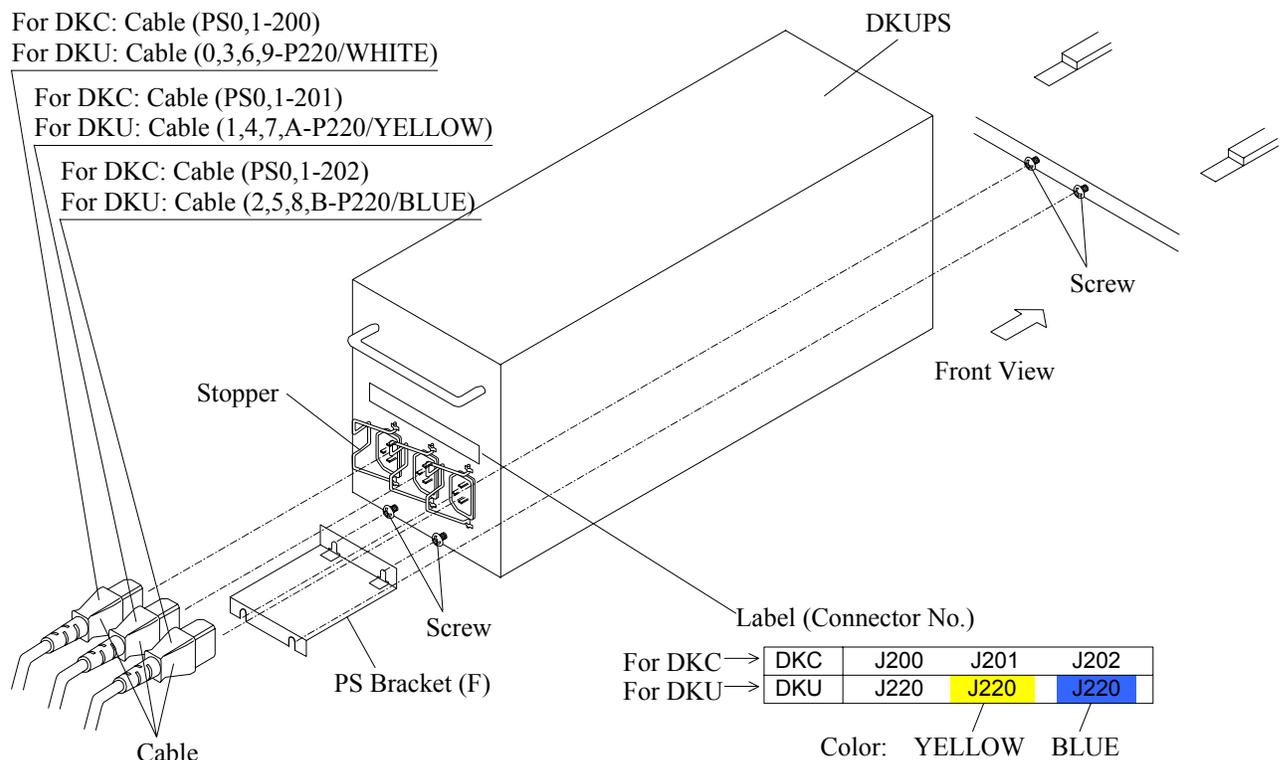
Fig. T15-3   Replacement of DKUPS

---

3.   Move the core rail.
   a.   When the core rail is moved by step 1, loosen the screws and lower the core rails. Fasten the screws. (Refer to Fig. T15-1.)
         When the core rail is not moved by step 1, go to step 4.

4.   Go to SVP post procedure t4 [REP04-850].

REP03-1000

[HARDWARE T16]

Location	Function Name of Component		Part Name
HDU Box	1	FSW	• SH449-A

FSWR01-U
FSWR01-L
FSWR00-U
FSWR00-L

Front View of
DKC

FSWxx9-U
FSWxx9-L
FSWxx8-U
FSWxx8-L
FSWxx1-U
FSWxx1-L
FSWxx0-U
FSWxx0-L

Front View of
DKU

FSWR03-U
FSWR03-L
FSWR02-U
FSWR02-L

Rear View of
DKC

FSWxxB-U
FSWxxB-L
FSWxxA-U
FSWxxA-L
FSWxx3-U
FSWxx3-L
FSWxx2-U
FSWxx2-L
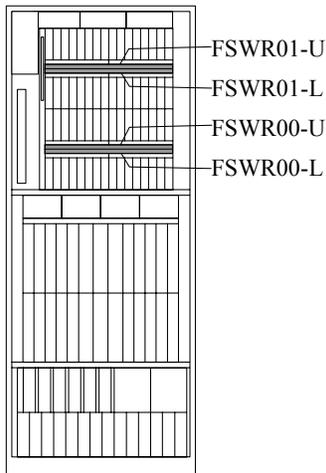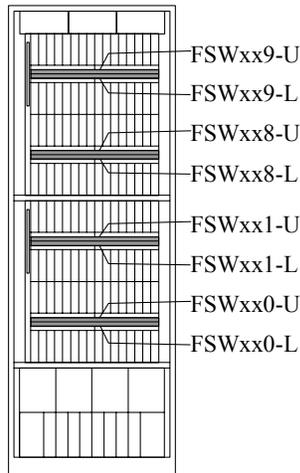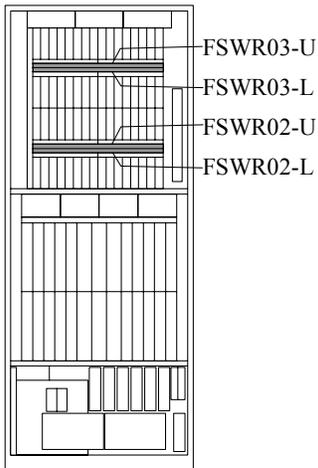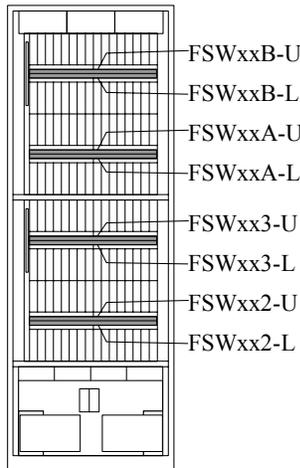
Rear View of
DKU

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 Replace the FSW to be replaced following the direction given in "Replacement of FSW
(REP03-1020)".
When coupling the frames R2 and L2, remove all the FSWs (whose Shut Down LEDs are on)
once and then installing them. The Shut Down LED light off when you operate post procedure
on SVP.

1	Replacement of FSW

1. Replace the FSW PCB.
    a. Open the hooks and remove the FSW cover.

Front View of
DKC

Rear View of
DKC

Front View of
DKU

Rear View of
DKU
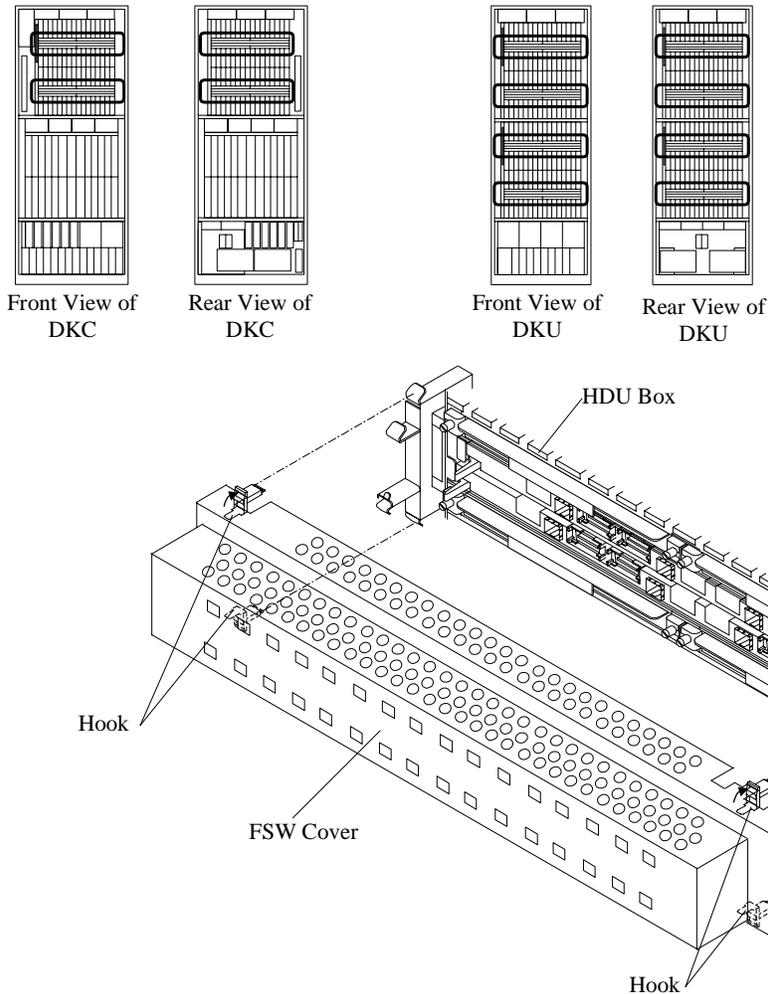
Fig. T16-1   Removal of FSW Cover

    b. Check Shut Down LED on the FSW PCB.

CAUTION: A system down is caused by a replacement of the FSW PCB other than that to
            be replaced. Make sure that it is the FSW PCB to be replaced.
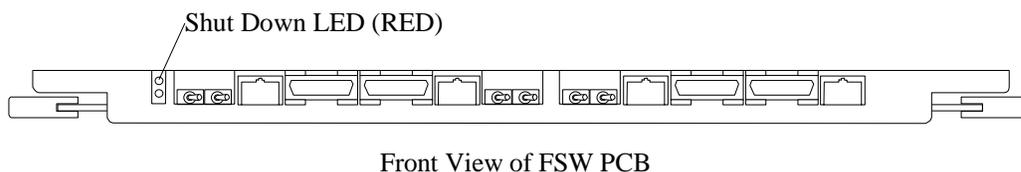
Front View of FSW PCB

Fig. T16-2   Confirmation of Shut Down LED

c. Disconnect the DEV interface cables from the FSW PCB.

HDU Box

FSW PCB

##-mn-A4

##-mn-B4

##-mn-B3

##-mn-A3

##-mn-A2

##-mn-B2

##-mn-B1

##-mn-A1

(Note) ##-mn-A1

→ FSW Location: U, L
→ HDU Box Location (for cables): 0, 1, 2, 3, 4, 5, 6, 7
→ Frame Location: R, L, RF, RR, LF, LR, -
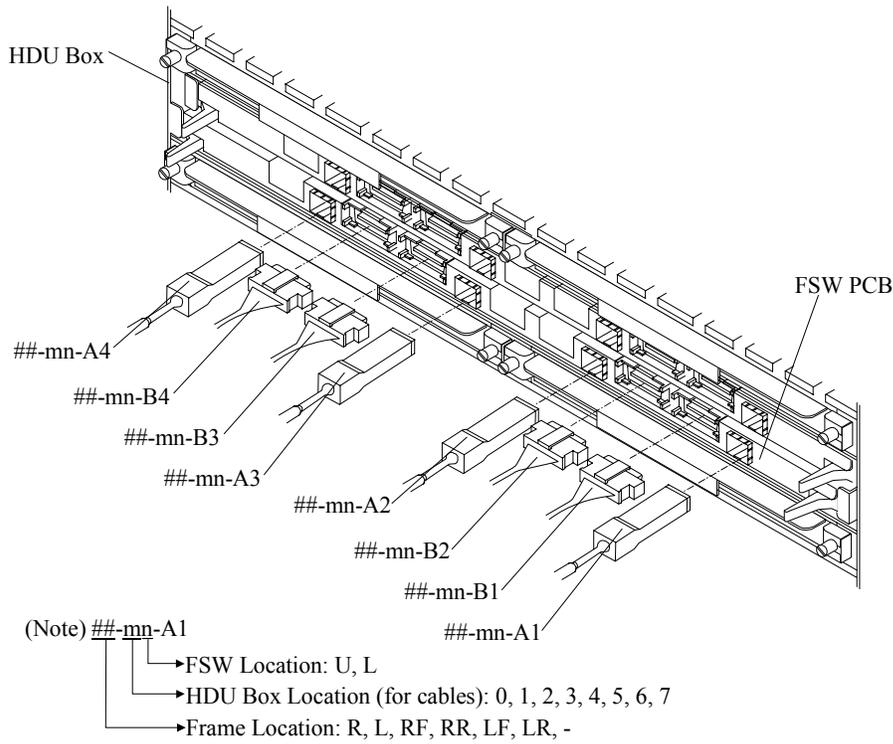
Fig. T16-3　Replacement of FSW PCB

d. Hold the lever of FSW PCB with your both hands, press the lever outward on both sides
    evenly, and remove the PCB from the platter. Note that a worker should face the front to
    the device while working.
    When the PCB comes off diagonally because one side of the lever drops first or something,
    do not force to pull it out. In this case, put back the diagonal PCB again, and remove it
    straight with putting the equal force on both sides of the lever.
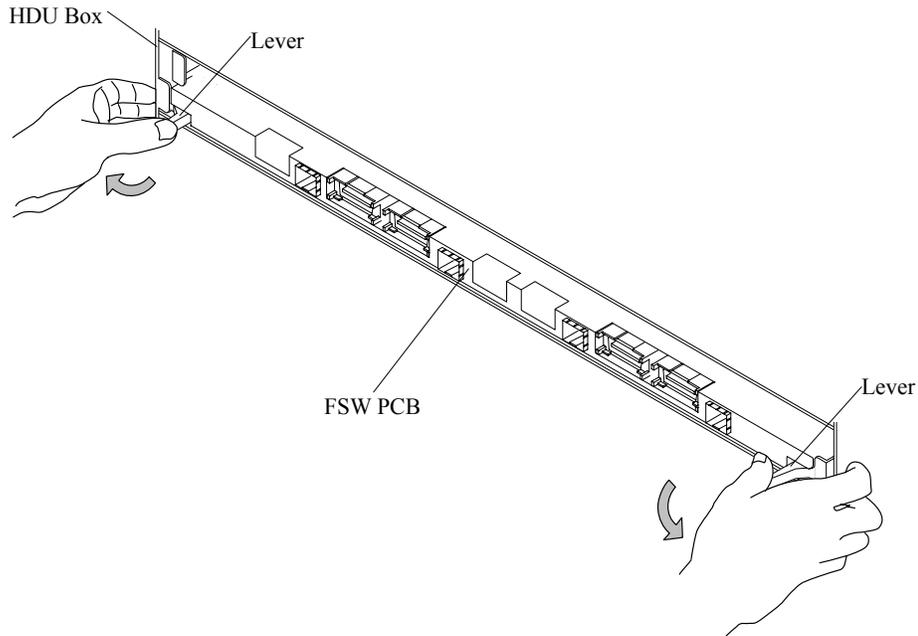
Fig. T16-4   FSW PCB Lever Release

e. Hold the center part of the FSW PCB, and pull it out slowly.
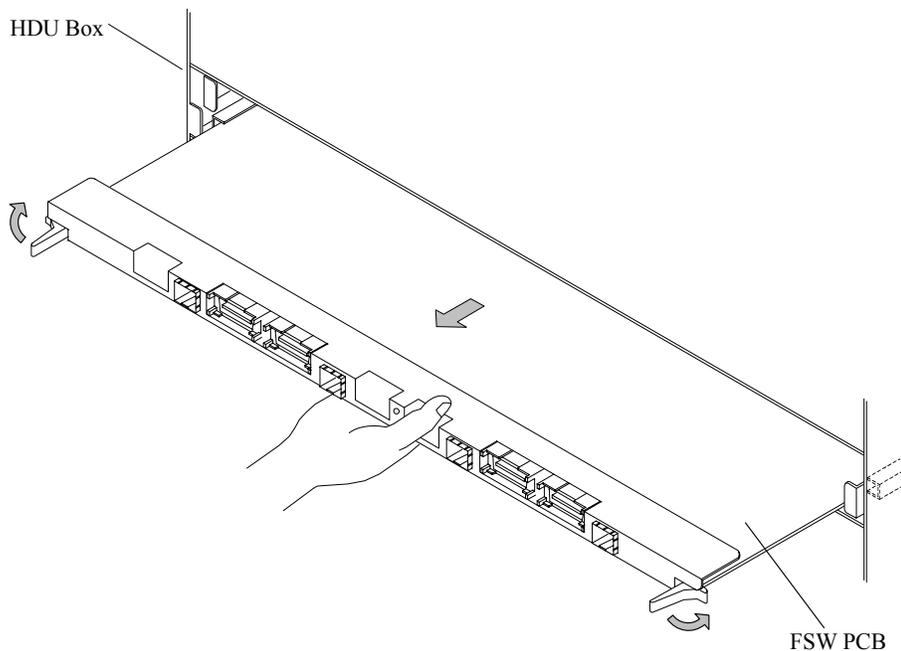
Fig. T16-5   Removal of FSW PCB

f. Set the switches of the spare FSW PCB.   For switch settings, refer to LOC06-90 through 100.

PCB

Main Edge Connector

Note: Check that the main edge connector of the PCB has no deformation, damage or sticking of dust before installing the PCB. (See INST03-01-40.)
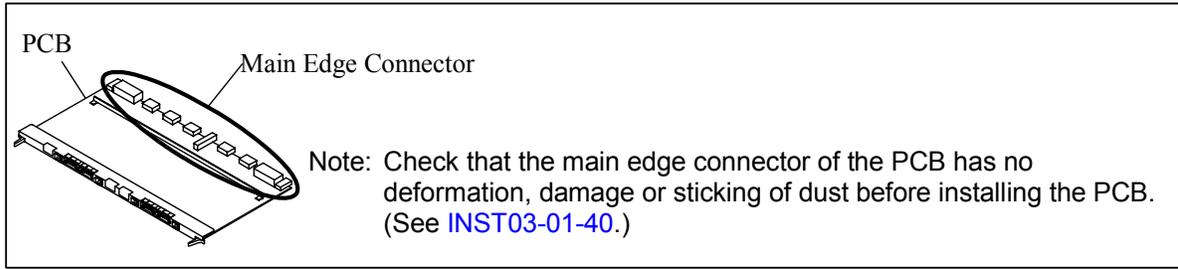
g. Take time for 10 seconds or more from removing the PCB to the installation.
h. Put the tip of the FSW PCB on the rails and insert it about 30mm. (The worker must face to the front of the device.)
i. Hold the center part of the FSW PCB, and insert it slowly.

HDU Box
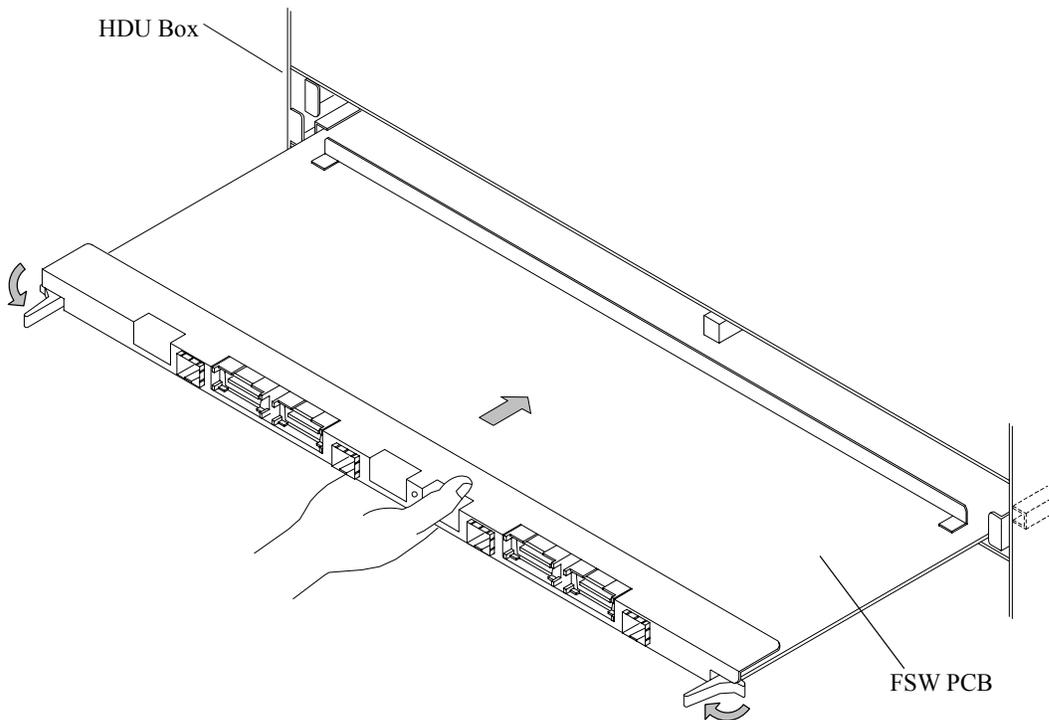
FSW PCB

Fig. T16-6   Insertion of FSW PCB

j. Hold the lever on right and left sides of the PCB. Note that a worker should hold the front
    edge of the lever evenly.
    Pulling the lever inward on both sides with the equal power applied, insert the FSW as
    pushing in.

HDU Box

Lever

FSW PCB

Lever
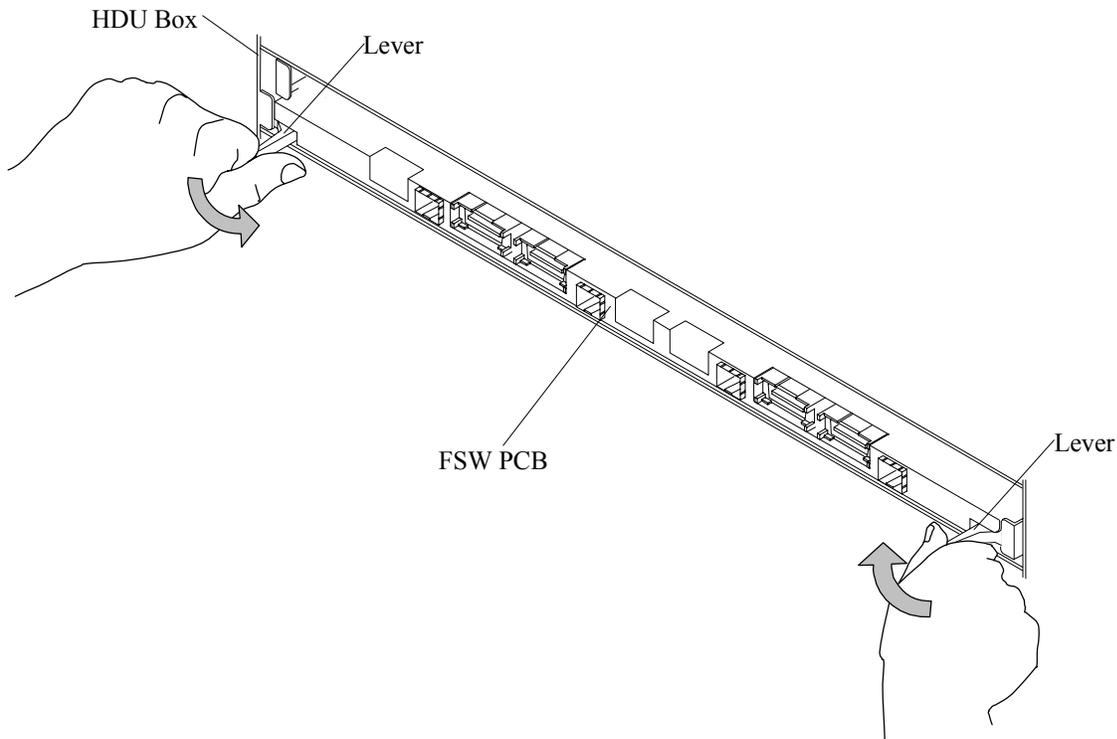
Fig. T16-7   Insertion of FSW PCB

k. Connect the DEV interface cables to the FSW PCB after seeing "Notes when connecting
    the DEV interface cable" (INST03-01-150). (Refer to Fig. T16-3.)
l. Attach the FSW cover with the hooks. (Refer to Fig. T16-1.)

2. Go to SVP post procedure j [REP04-250].

[HARDWARE T17]

Location	Function Name of Component		Part Name
HDU BOX	1	SVR (SVRxxn-U/L)	• HS0350/NJD-8500
	2	SVR (SVRxxn-EX)	
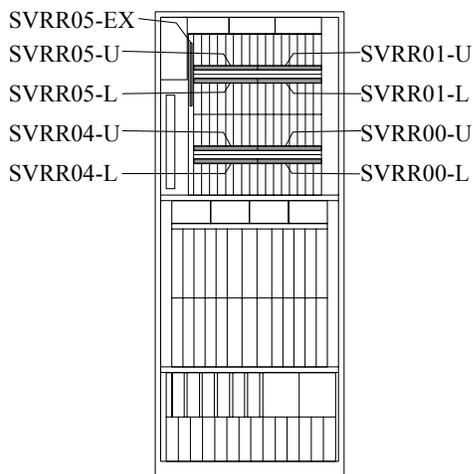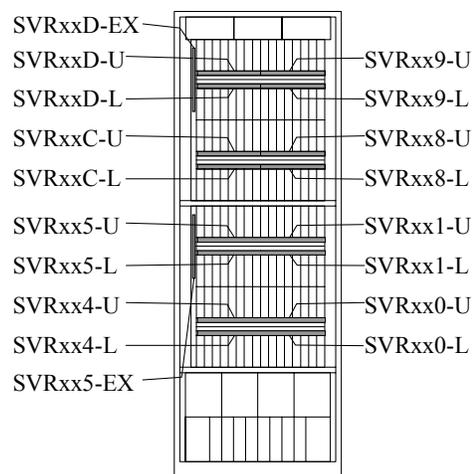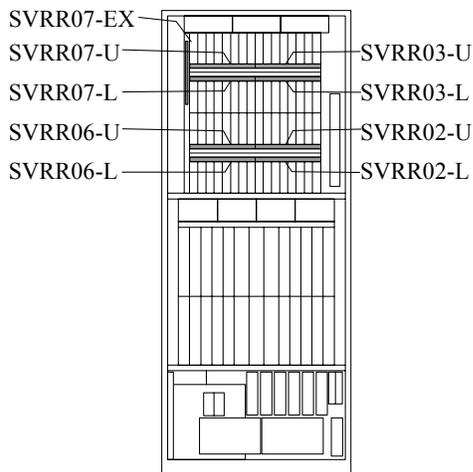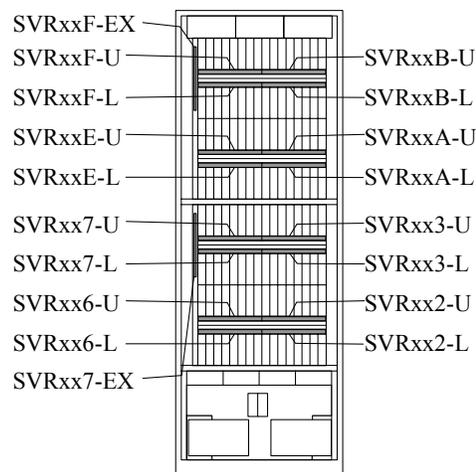
SVRR05-EX SVRR01-U
SVRR05-U
SVRR05-L SVRR01-L
SVRR04-U SVRR00-U
SVRR04-L SVRR00-L

Front View of
DKC

SVRxxD-EX
SVRxxD-U SVRxx9-U
SVRxxD-L SVRxx9-L
SVRxxC-U SVRxx8-U
SVRxxC-L SVRxx8-L

SVRxx5-U SVRxx1-U
SVRxx5-L SVRxx1-L
SVRxx4-U SVRxx0-U
SVRxx4-L SVRxx0-L
SVRxx5-EX

Front View of
DKU

SVRR07-EX
SVRR07-U SVRR03-U
SVRR07-L SVRR03-L
SVRR06-U SVRR02-U
SVRR06-L SVRR02-L

Rear View of
DKC

SVRxxF-EX
SVRxxF-U SVRxxB-U
SVRxxF-L SVRxxB-L
SVRxxE-U SVRxxA-U
SVRxxE-L SVRxxA-L

SVRxx7-U SVRxx3-U
SVRxx7-L SVRxx3-L
SVRxx6-U SVRxx2-U
SVRxx6-L SVRxx2-L
SVRxx7-EX

Rear View of
DKU

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.

1	Replacement of SVR (SVRxxn-U/L)

1. Remove the FSW cover.
   a. Open the hooks and remove the FSW cover.

Front View of DKC   Rear View of DKC   Front View of DKU   Rear View of DKU

HDU Box

Hook

FSW Cover

Hook
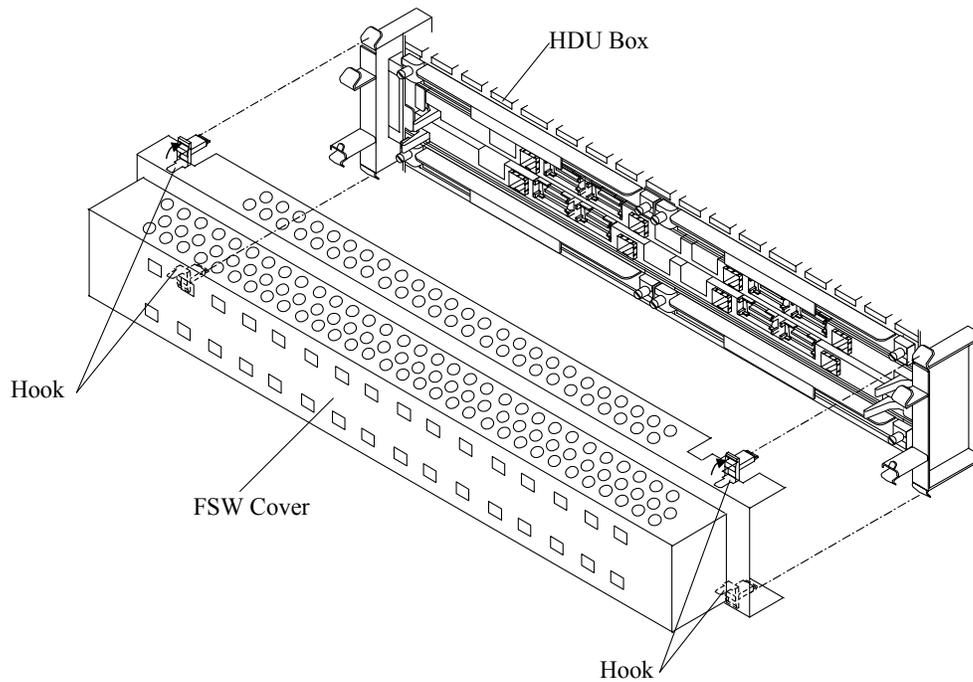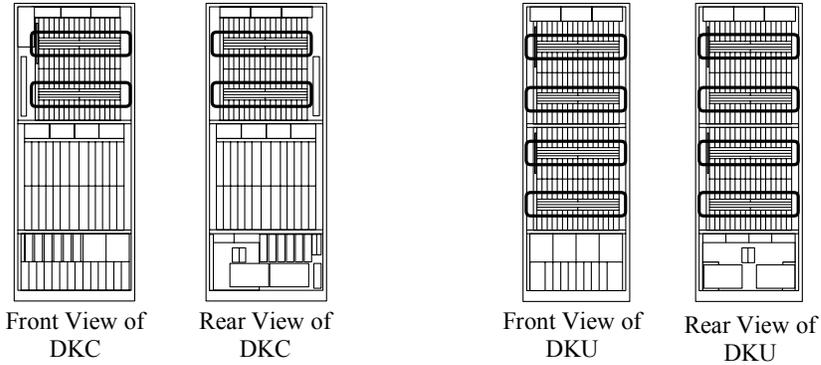
Fig. T17.1-1   Removal of FSW Cover

2. Replace the SVR.
    a. Check Shut Down LED on the SVR.

CAUTION: A system down is caused by a replacement of the SVR other than that to be replaced. Make sure that it is the FSW PCB to be replaced.

Shut Down LED (RED)

Front View of SVR
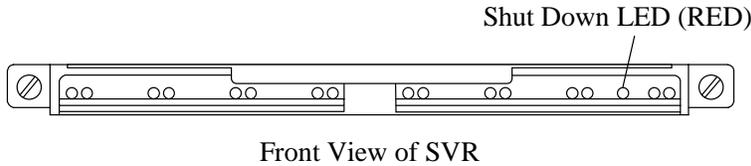
Fig. T17.1-2   Confirmation of Shut Down LED

b. Loosen the screws and remove the SVR.
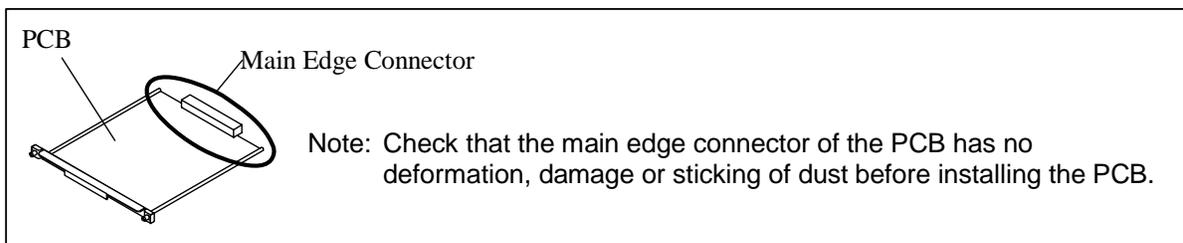
PCB

Main Edge Connector

Note: Check that the main edge connector of the PCB has no deformation, damage or sticking of dust before installing the PCB.

c. Replace the SVR and fasten the screws.
    Note: The installation of SVR must be done by pushing it all the way in with both hands.
        (See REP03-1071.)
d. Attach the FSW cover with the hooks. (Refer to Fig. T17.1-1.)

HDU Box

Screw

SVR

Screw
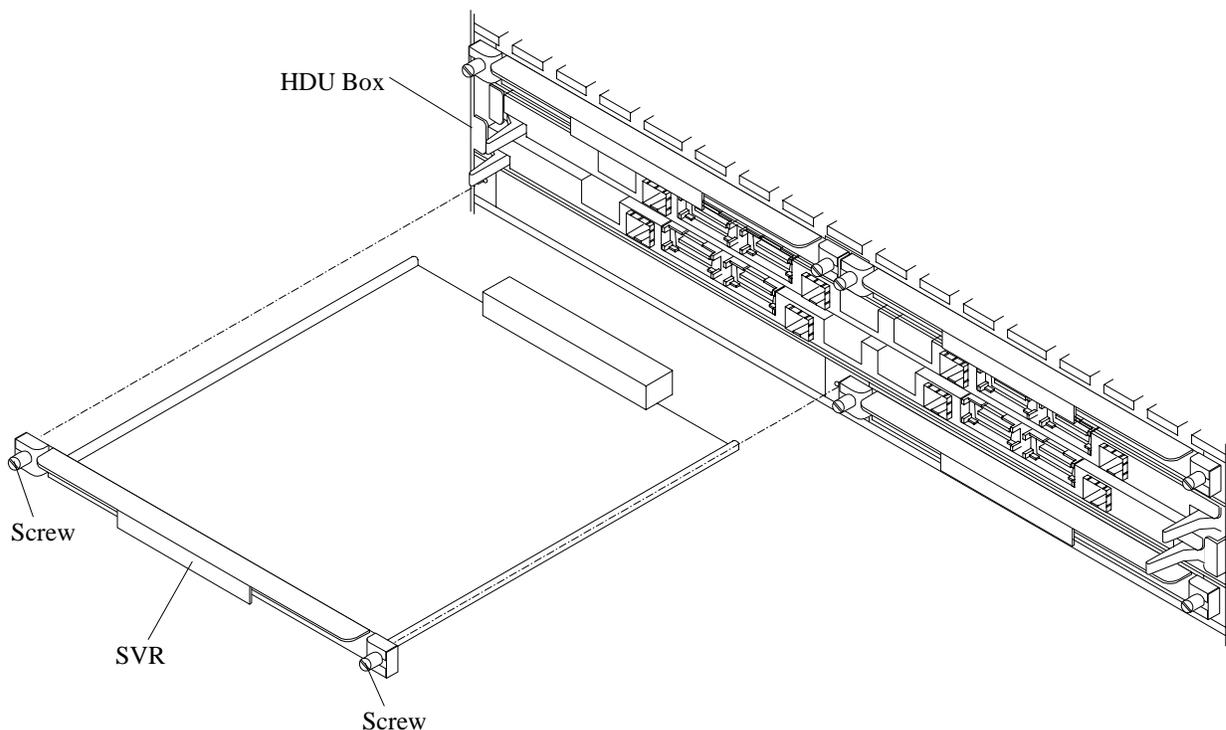
Fig. T17.1-3   Replacement of SVR

⚠️ **CAUTION**

The installation of SVR must be done by pushing it all the way in with both hands.
Make sure that the PCBs are inserted to the position of the figure of the lower left.
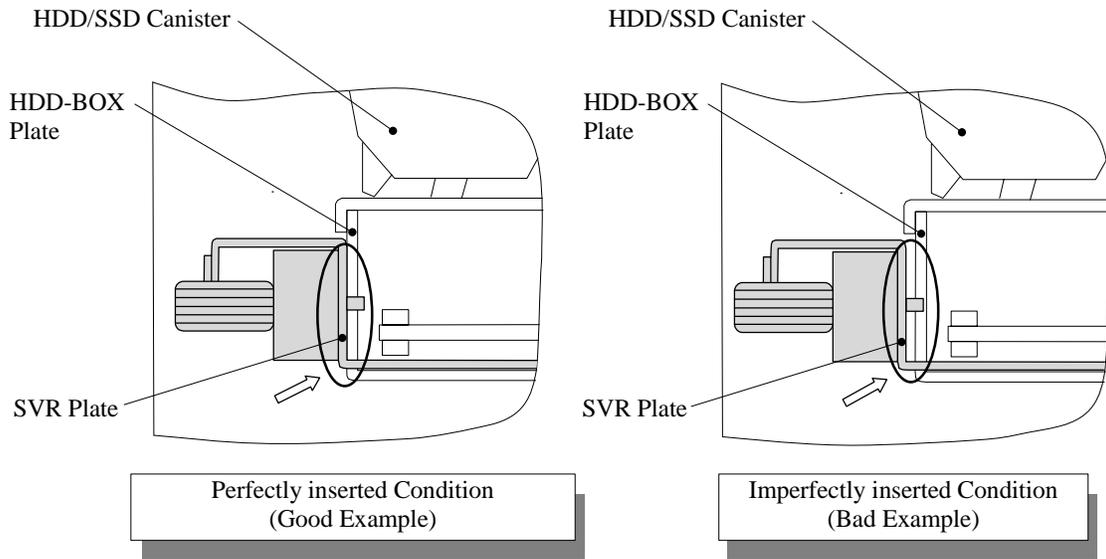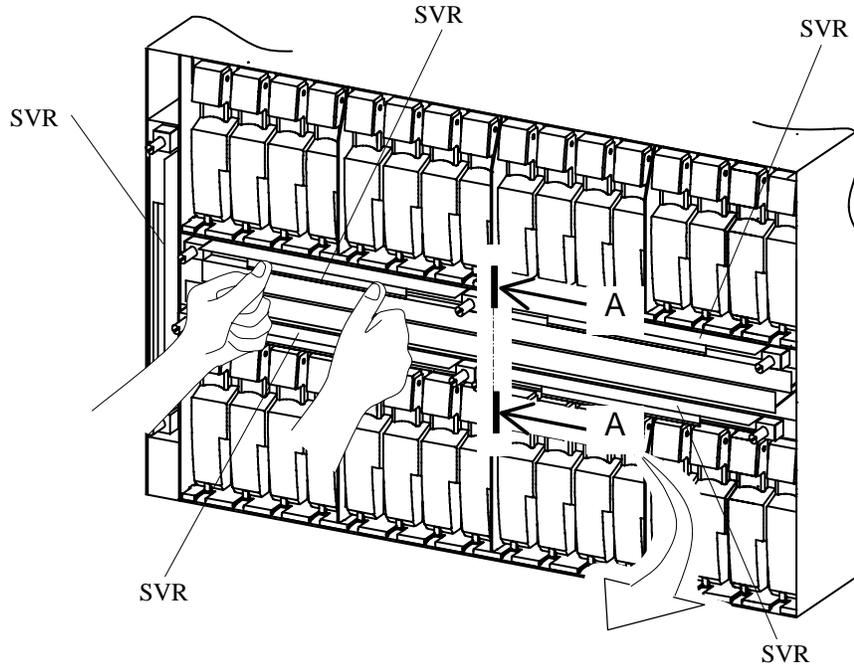
Fig. Section A-A of SVR Circumference

---

3.   Go to SVP post procedure t4 [REP04-850].

2	Replacement of SVR (SVRxxn-EX)

1. Remove the FSW cover.
   a. Open the hooks and remove the FSW cover.

Front View of
DKC

Rear View of
DKC

Front View of
DKU

Rear View of
DKU

HDU Box

Hook

FSW Cover

Hook
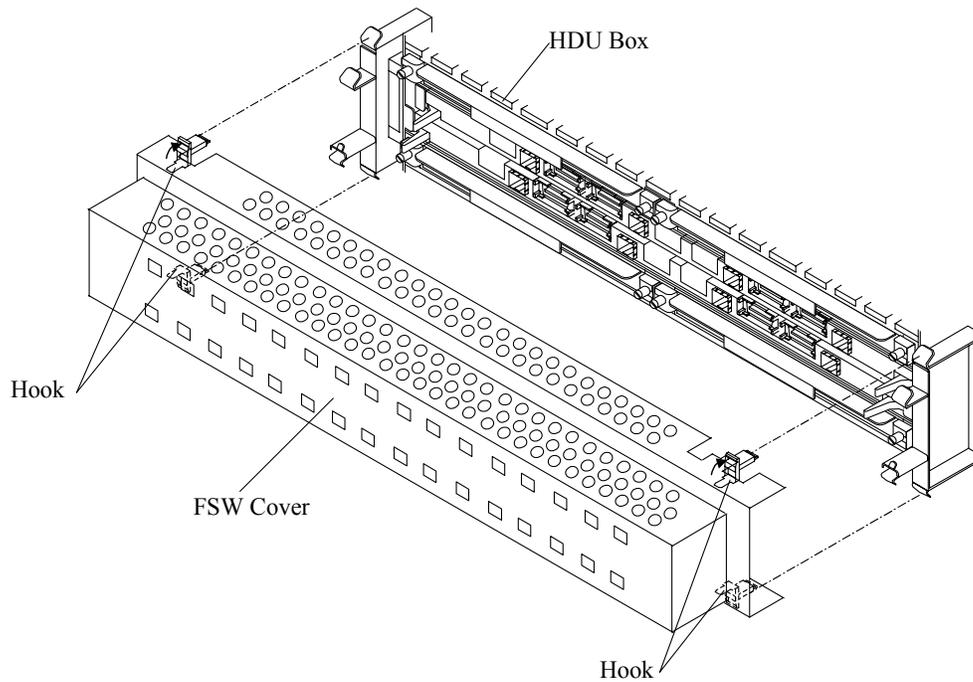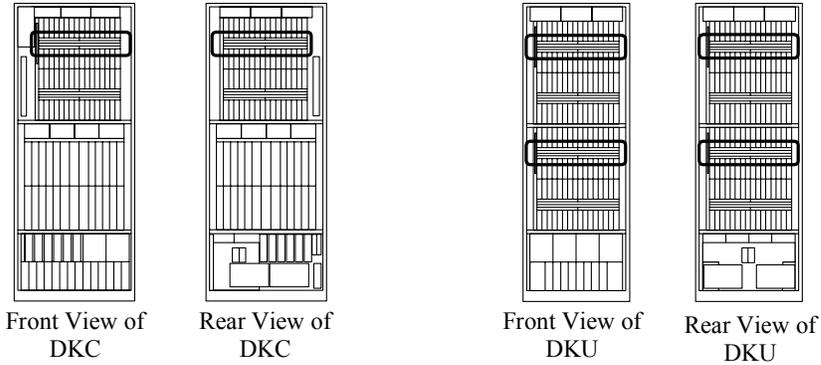
Fig. T17.2-1   Removal of FSW Cover

2.   When the failed SVR is SVRR07-EX, SVRR1x-EX, or SVRL1x-EX, pull out the cables.
     When other, go to step 3.

In case of SVRR07-EX
   a.   Loosen the three screws and remove the side plate.
   b.   Remove the metallic clamp, and remove the clip with the DEV interface cable attached.
   c.   Pull out the extra length of the cable which entered in the back of the frame, and push it
        down to the position where you can remove the SVR.
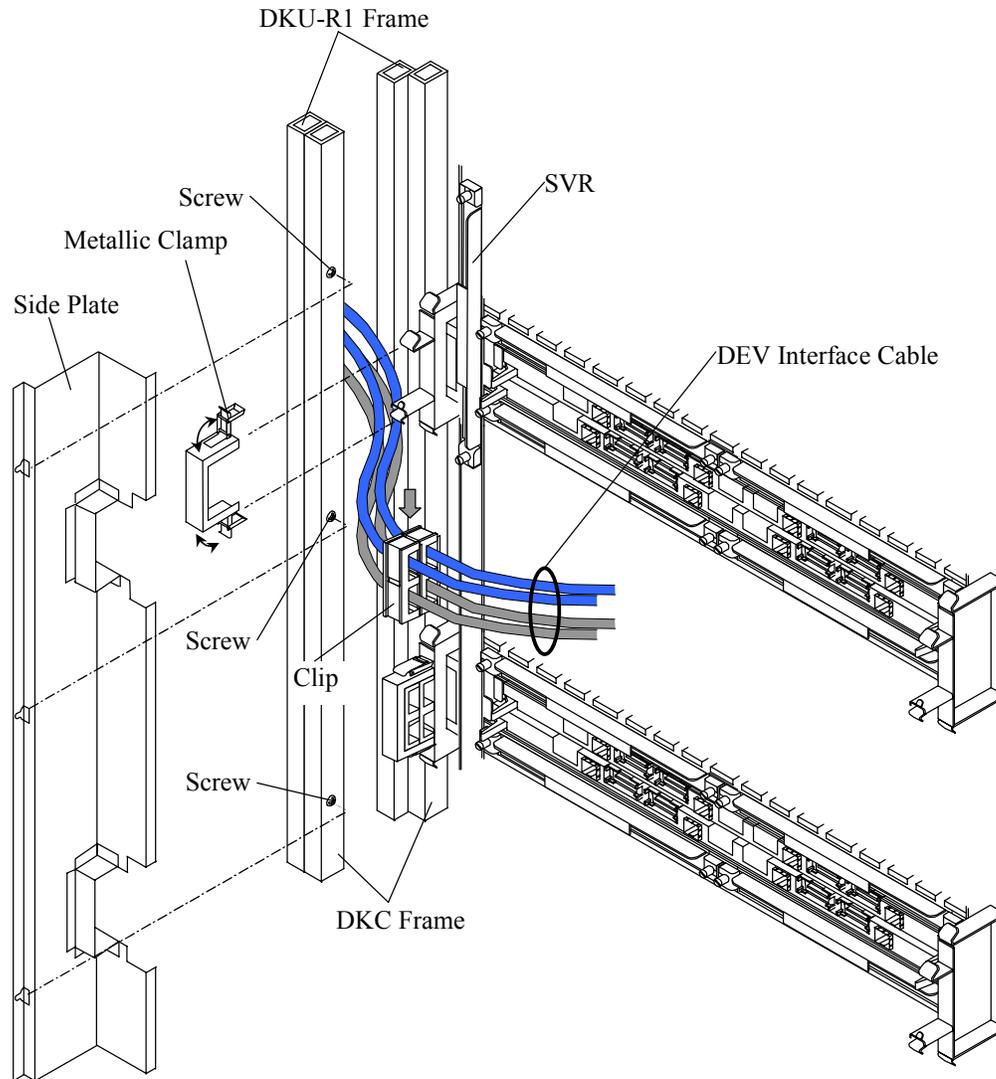
Fig. T17.2-2   Movement of Cables

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Rev.0 / Mar.2007

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In case of SVRR15-EX, SVRR1D-EX, SVRL17-EX or SVRL1F-EX

    a.   Loosen the two screws and remove the side plate.

    b.   Remove the metallic clamp, and remove the clip with the DEV interface cable attached.

    c.   Pull out the extra length of the cable which entered in the back of the frame, and push it to the position where you can remove the SVR.
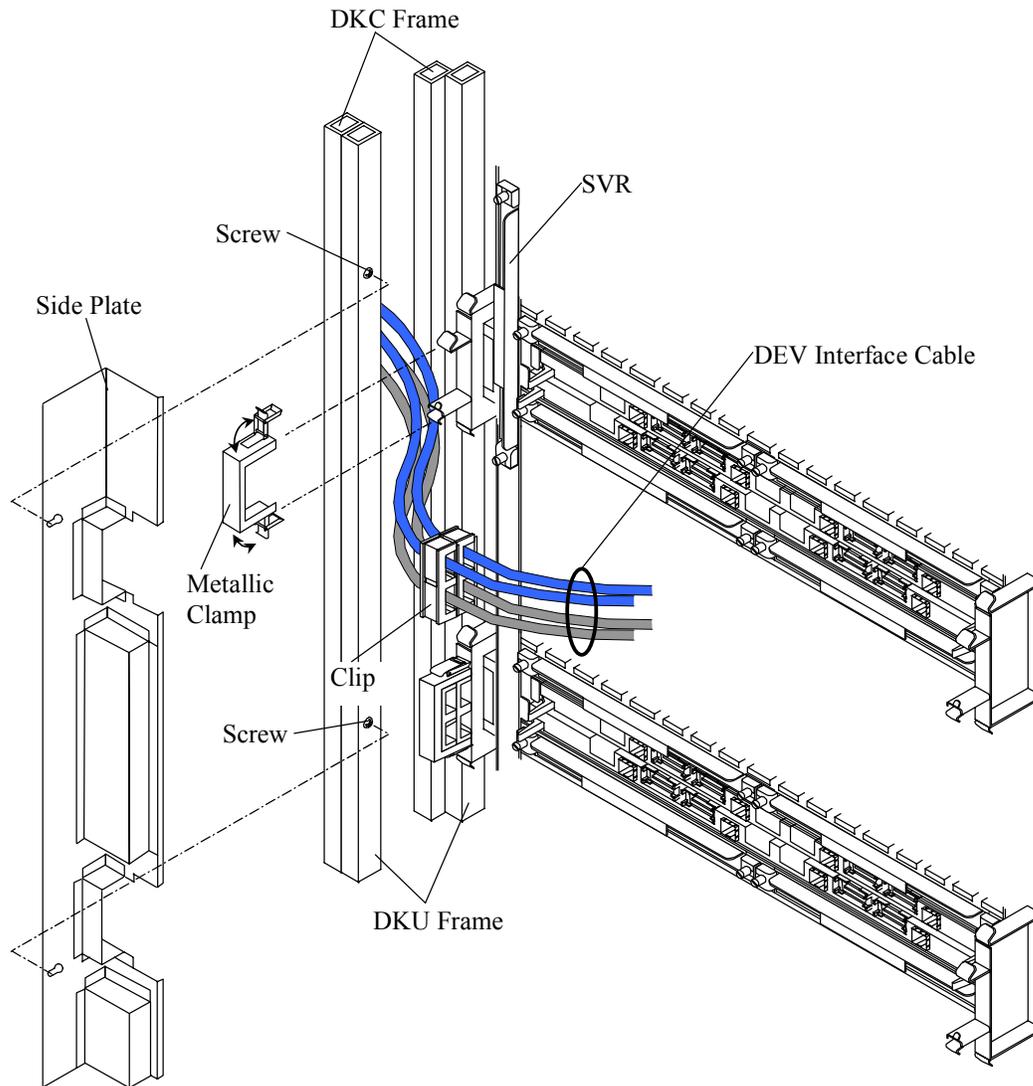
Fig. T17.2-3   Movement of Cables

In case of SVRR17-EX, SVRR1F-EX, SVRL15-EX or SVRL1D-EX
    a.   Loosen the four screws and remove the two side plates.
    b.   Remove the two metallic clamps, and remove the clip with the DEV interface cable attached.
    c.   Push the cables down to the position where you can remove the SVR.
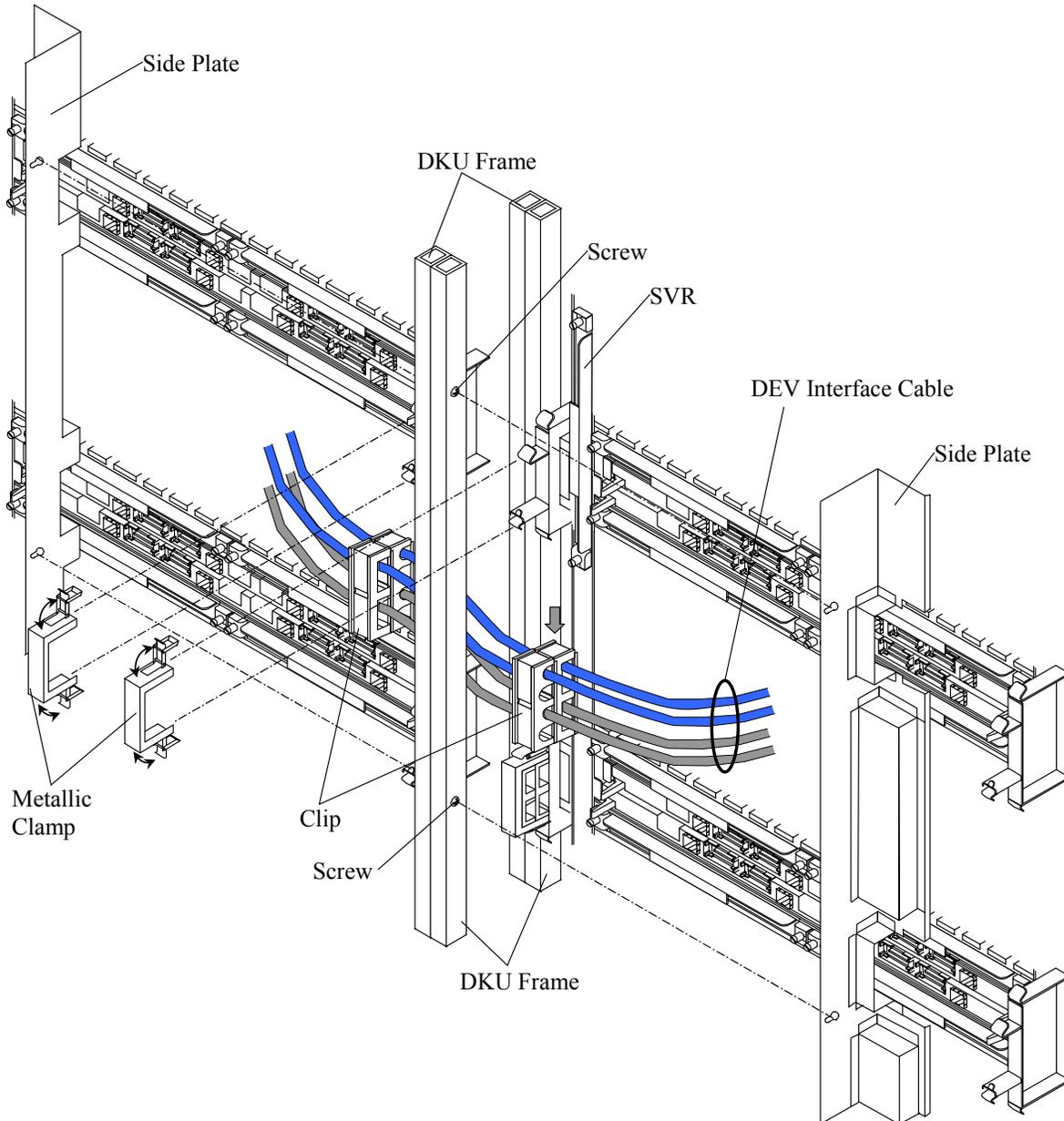
Fig. T17.2-4   Movement of Cables

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REP03-1093
Rev.0 / May.2011

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3. Replace the SVR.
   a. Check Shut Down LED on the SVR.

CAUTION: A system down is caused by a replacement of the SVR other than that to be replaced. Make sure that it is the FSW PCB to be replaced.

   b. Loosen the screws and remove the SVR.
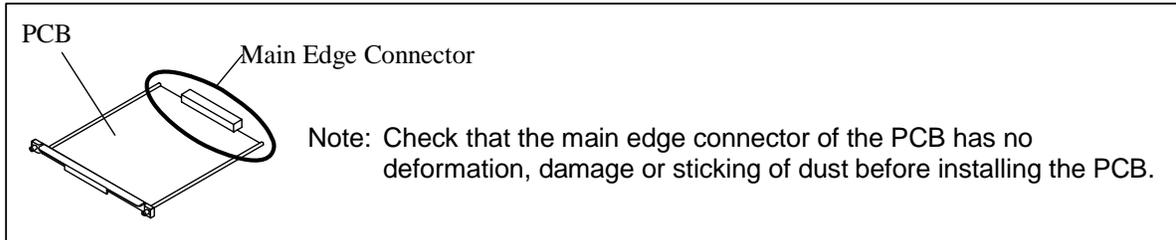
PCB

Main Edge Connector

Note: Check that the main edge connector of the PCB has no deformation, damage or sticking of dust before installing the PCB.

   c. Replace the SVR and fasten the screws.
      Note: The installation of SVR must be done by pushing it all the way in with both hands.
      (See REP03-1100.)

HDU Box

Screw

SVR
(SVRxxn-EX)

Screw

Shut Down
LED (RED)

Front View of SVR
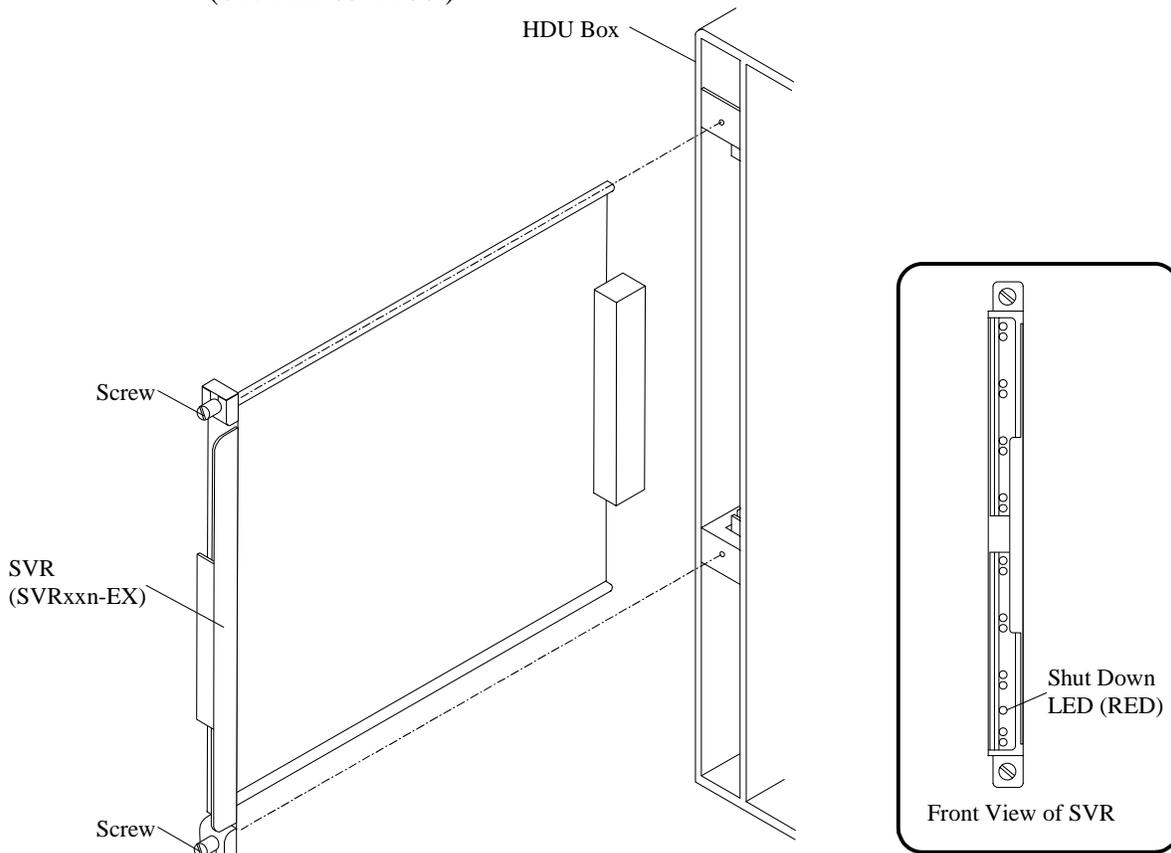
Fig. T17.2-5   Replacement of SVR

⚠ **CAUTION**

The installation of SVR must be done by pushing it all the way in with both hands.
Make sure that the PCBs are inserted to the position of the figure of the lower left.
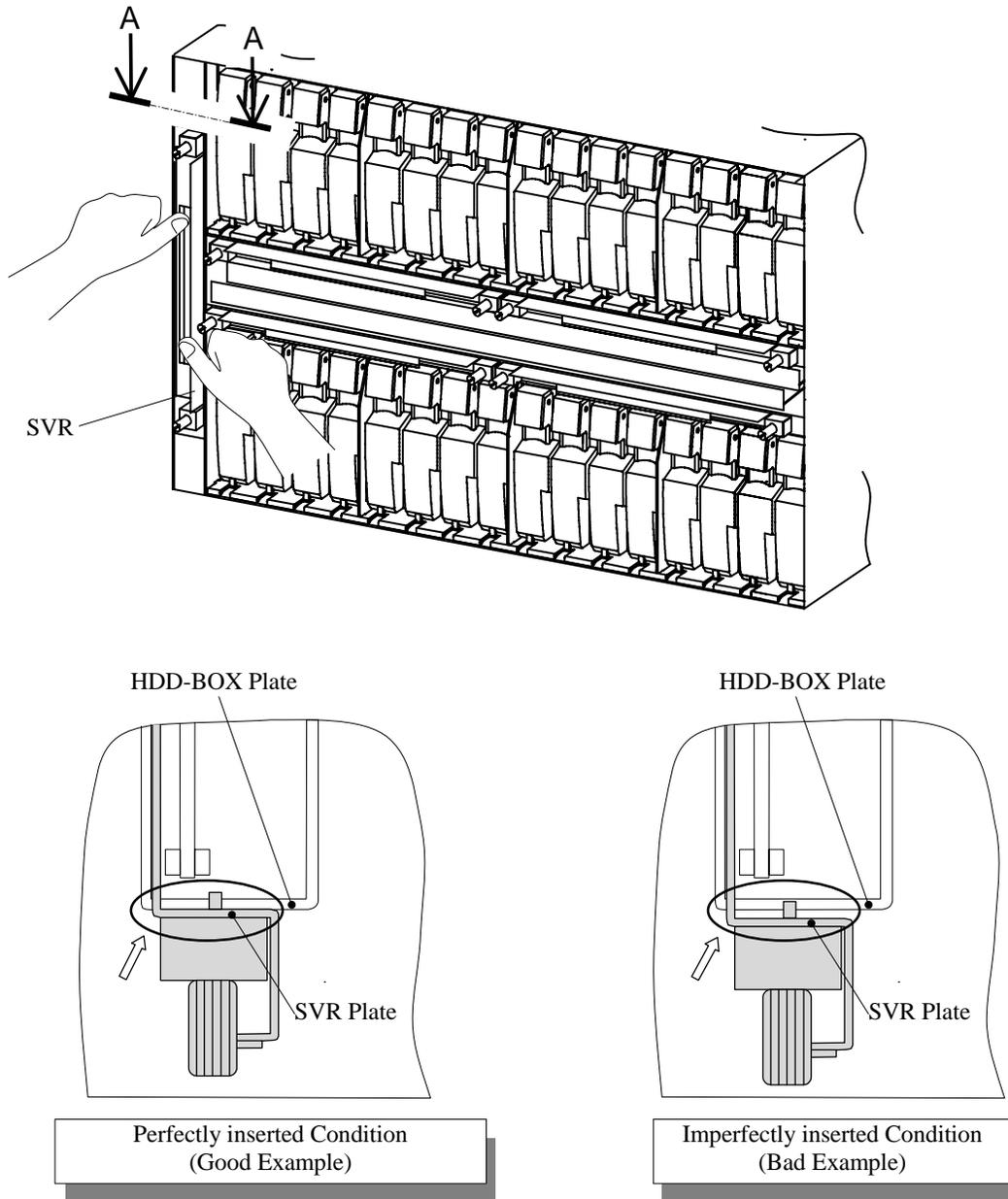
Fig. Section A-A of SVR Circumference

4.   Attach the cover.
     a.   When you pulled out the cable in step 2, return it to the original position in the reverse
          order of step (1) to (3).
     b.   Attach the FSW cover with the hooks. (Refer to Fig. T17.2-1.)

5.   Go to SVP post procedure t4 [REP04-850].

[HARDWARE T18]

Location		Function Name of Component	Part Name
Lower of DKC	1	AC BOX (3 Phase/30A)	
Lower of DKU	2	AC BOX (3 Phase/30A)	
(Reference) The related part for replacement of AC BOX. 1. Circuit breaker on the power distribution panel that is connected to the AC BOX.			

ACBOX-2
ACBOX-1

Rear View of
DKC

ACBOX-Uxx2
ACBOX-Uxx1

Rear View of
DKU

(Note)
   xx: DKU Location (R1, R2, L1, L2)

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 of the ACBOX Replacement
   If revision control does not indicates "C" or "T", it means that the FC of "SVP down
   induced by USB memory insertion" has been applied yet, please carry out the FC
   according to the FCB.
   If voltages are abnormal or if there appears to be damage to the cable, then please
   contact Technical Support Team for guidance.

1	Replacement of AC BOX for DKC frame

1. Power Off the Component to be replaced.

⚠ **WARNING**

Hazardous voltage:
Contact could cause electric shock or burn. Turn off all related breakers and discharge residual voltage, as shown below. (Follow next procedures.)

⚠ **CAUTION**

The device may be powered off when turning off the breakers not shown below.

---

   a. Turn off the circuit breaker for the AC BOX to be replaced (CB100).

Fig. T18.1-1 AC BOX Location and Turn off the Circuit Breaker

   b. Turn off the circuit breaker on the power distribution panel in the plant that is connected to the AC BOX to be replaced.

   c. The circuit has residual voltage after turning off the breakers, so wait for one minute.

⚠ **WARNING**

Hazardous voltage:
Contact could cause electric shock or burn. Turning off the breaker on the distribution board connected to the AC BOX before start your work.

2. Disconnect the AC Power Cable.
   a. Loosen the screws and remove the terminal block cover.
   b. Remove the screws and disconnect the AC power cable.
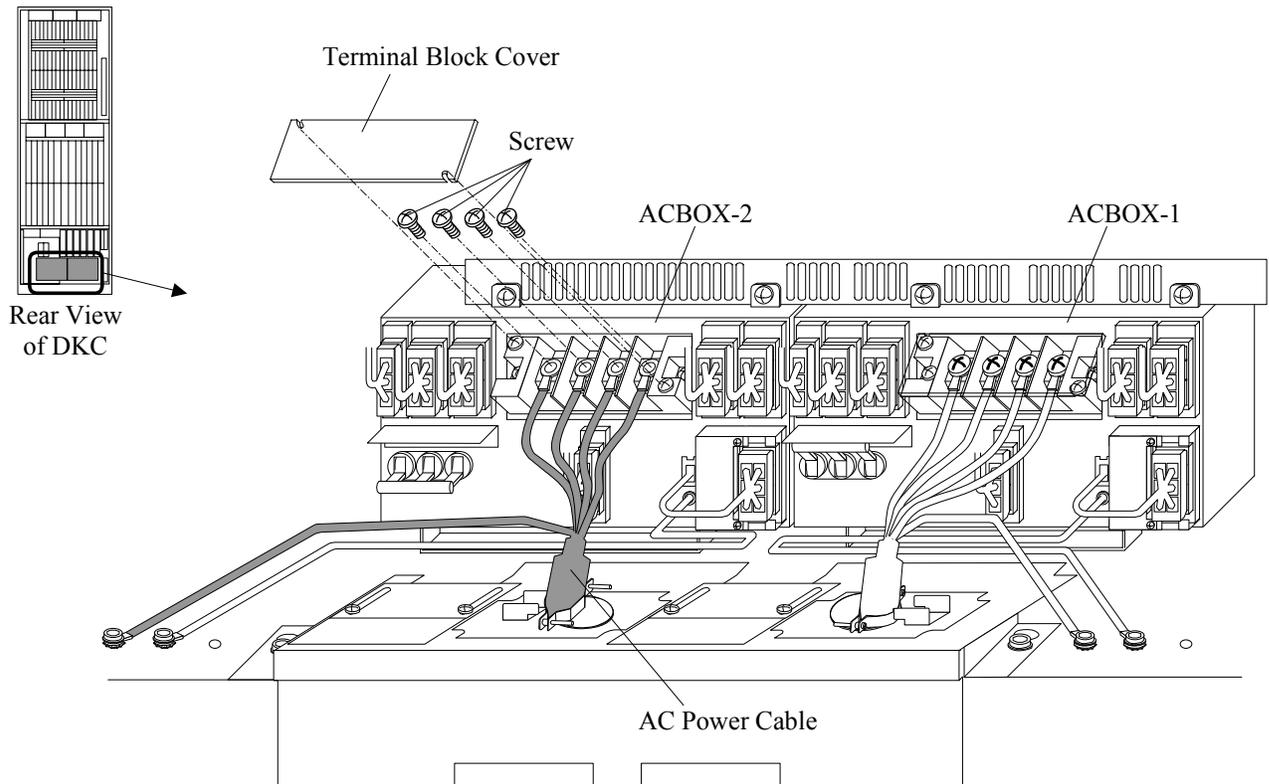
Fig. T18.1-2 Disconnection of AC Power Cable

3.   Disconnect the Cables.
   a.   Disconnect the cables (P121-#, P122-#, P123-#, P124-#, P125-# and P131-#) from AC
        BOX to be replaced.
   b.   Remove the WA socket bolt and remove the Frame Ground Cable and the lock washer.
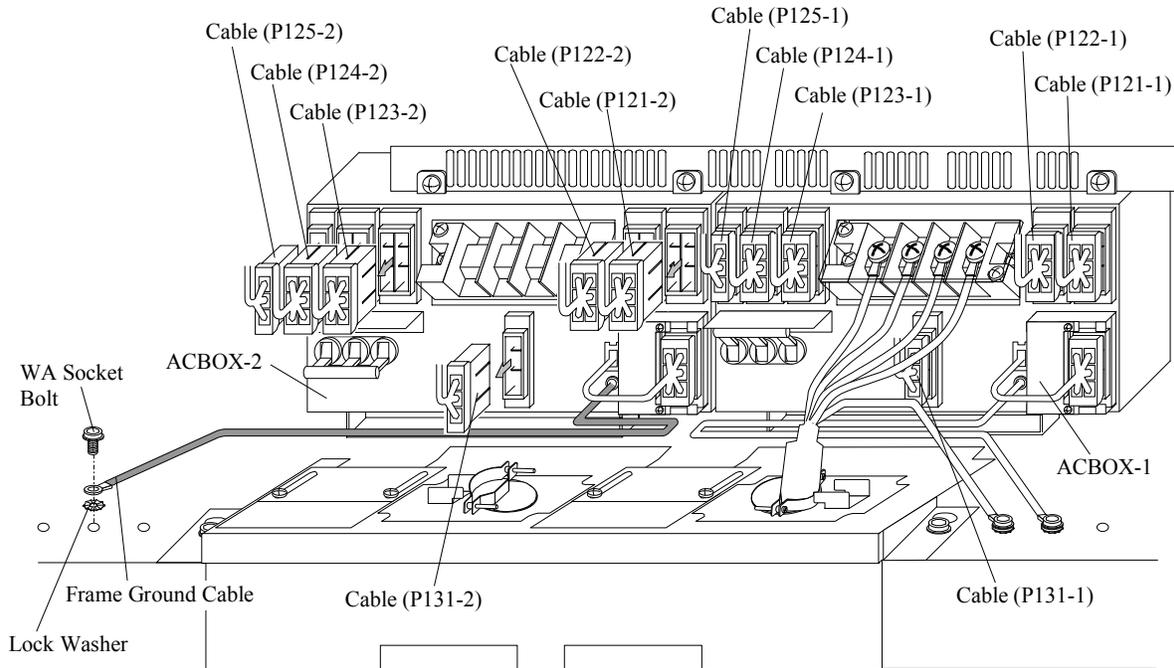
Fig. T18.1-3 Disconnection of Cables

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4. Replace the AC BOX.
   a. Remove the two WA socket bolts and remove the AC label plate.

WA Socket
Bolt

WA Socket Bolt
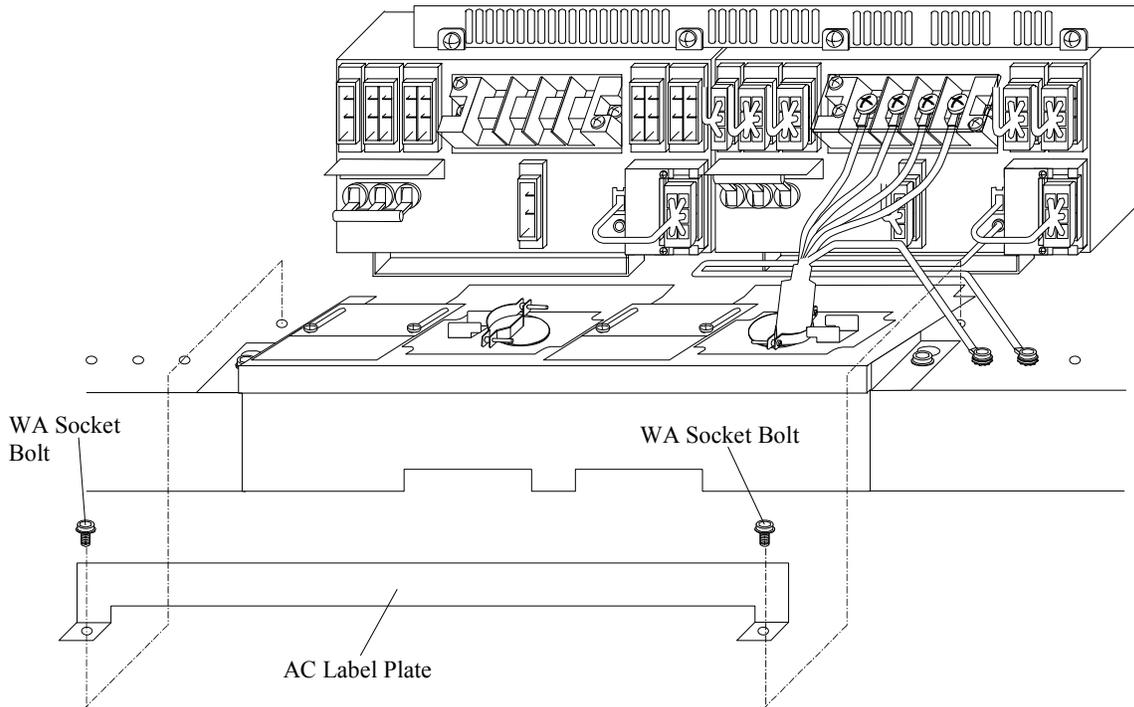
AC Label Plate

Fig. T18.1-3A Removal of AC Label Plate

   b. Remove the two screws and remove the failed AC BOX.
   c. Attach the spare AC Box and fix it with the screws.
   d. Attach the AC label plate and fasten the two WA socket bolts. (Refer to Fig. T18.1-3A.)

ACBOX-2

ACBOX-1

Screw
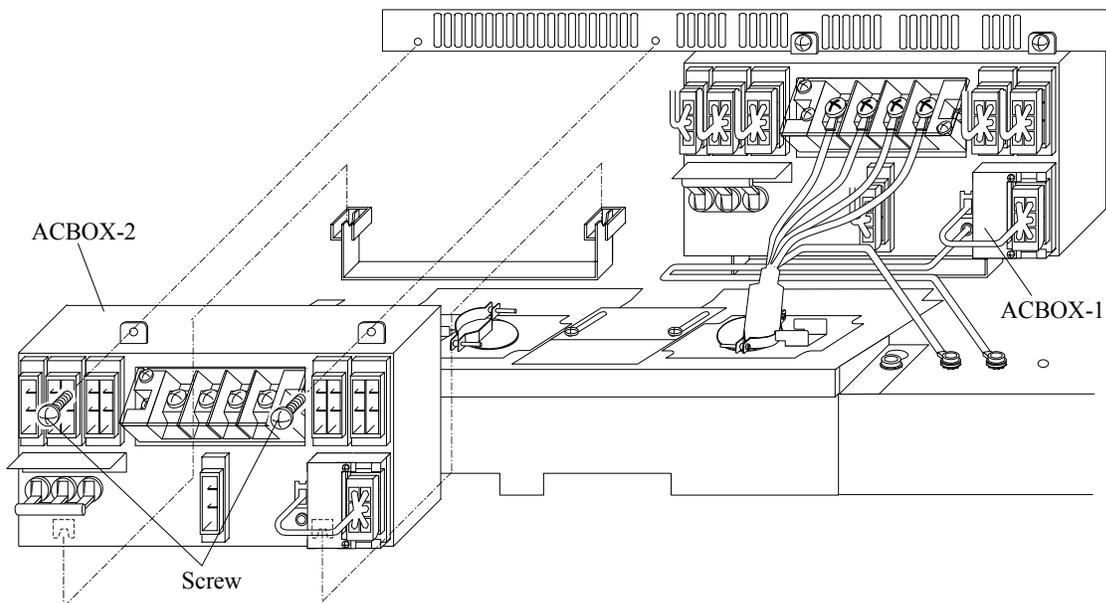
Fig. T18.1-4 Replace of AC BOX

5. Connect the cables.
   a. Attach the jumper cable and dummy plate to the AC BOX.

⚠ CAUTION

The mate connector of the P130 shown in Table T18.1-1 varies depending on the voltage of the AC power inputted.
Never make a wrong connection because the subsystem will be damaged if the connection is wrongly made.

Table T18.1-1 Jumper Cable Position

No.	Input AC Voltage	Jumper Cable (P130) Position	Dummy Plate Position	Remarks
1	200-240V	J130-1	J130-2	For USA
2	380-415V	J130-2	J130-1	For Europe

For USA
(Input AC Voltage: 200 – 240V)

For Europe
(Input AC Voltage: 380 – 415V)
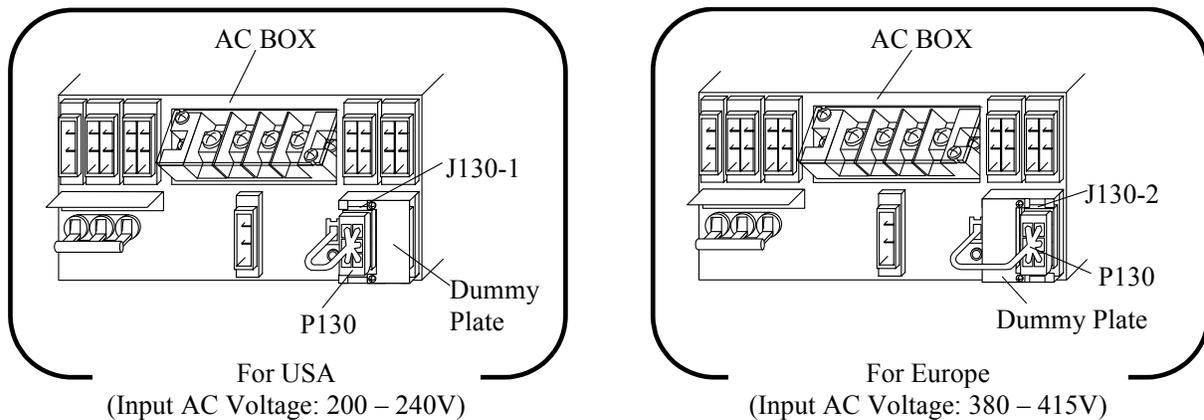
Fig. T18.1-5 Connection of Jumper Cable

   b.   Secure the frame ground cable with the WA socket bolt and lock washer.

   c.   Connect the cables (P121-#, P122-#, P123-#, P124-#, P125-# and P131-#) to the AC BOX.

Table T18.1-2 Cable Connection of AC BOX

No.	Cable No.		Connector No.	Remarks
	ACBOX-1	ACBOX-2		
1	P121-1	P121-2	J121	
2	P122-1	P122-2	J122	
3	P123-1	P123-2	J123	
4	P124-1	P124-2	J124	
5	P125-1	P125-2	J125	
6	P131-1	P131-2	J131	
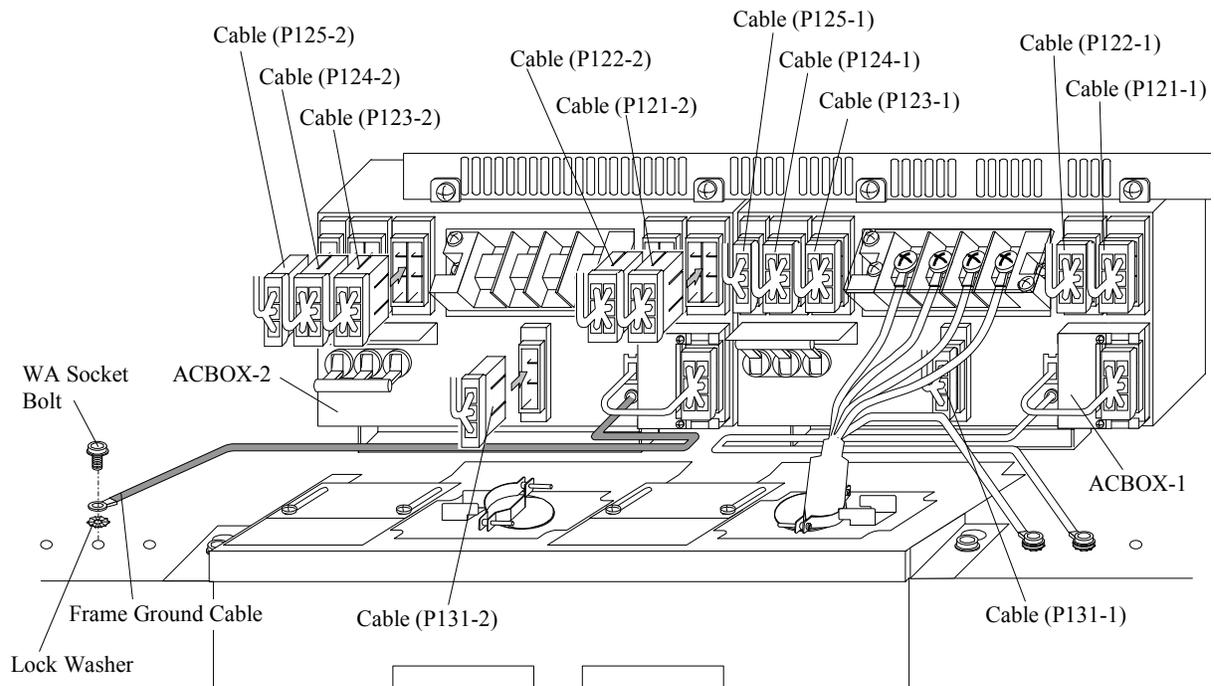
Fig. T18.1-6 Connection of Cables

6. Connect the AC power cable.
    a. Connect the AC power cable to the AC BOX.
    b. Attach the terminal block cover with the screws.

Table T18.1-3 AC Power Cable Conductors number

No.	Region	Input Voltage	AC Power Cable Conductors	Remarks
1	For USA	200-230V	4 conductors (R/L1, S/L2, T/L3, FG)	
2	For Europe	380-415V	5 conductors (R/L1, S/L2, T/L3, N, FG)	
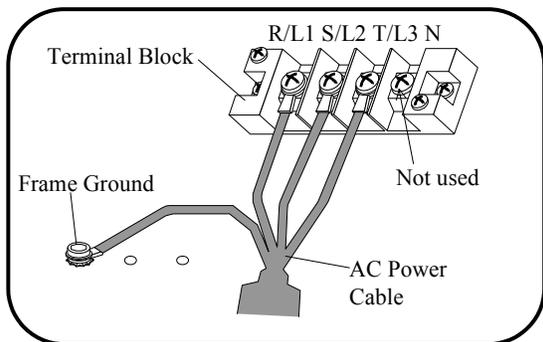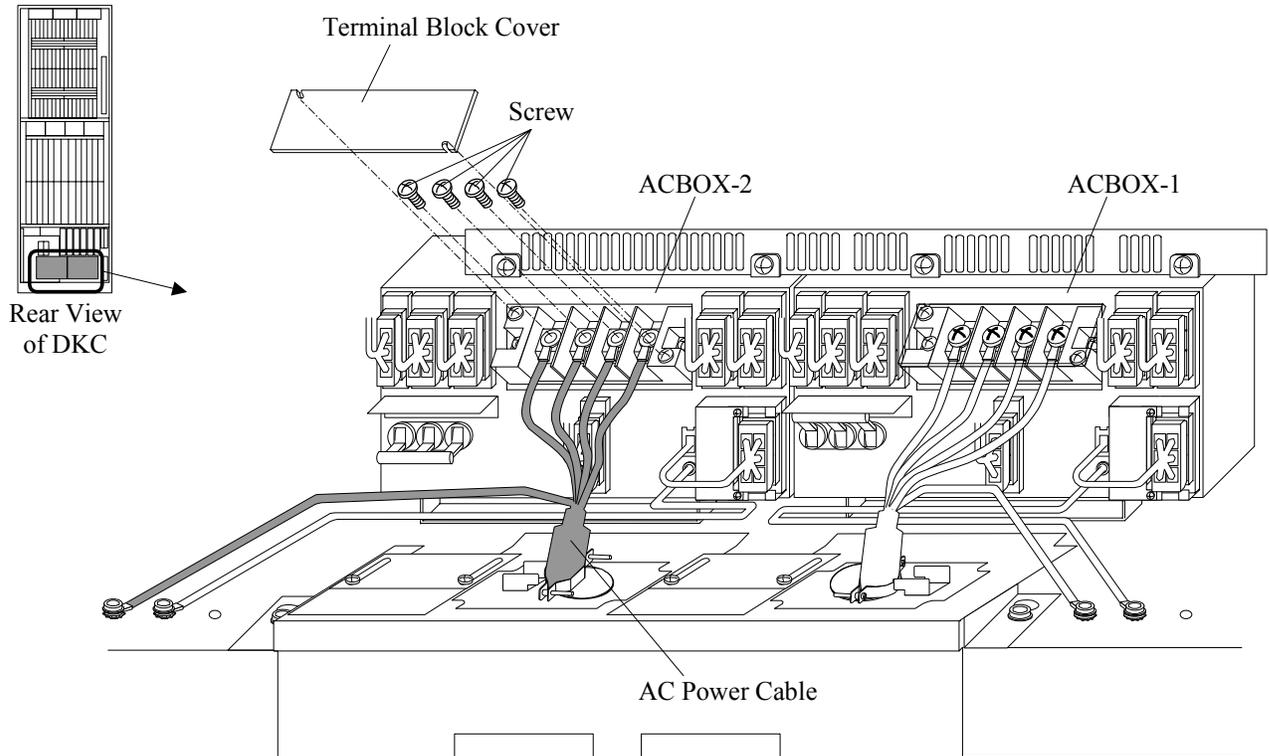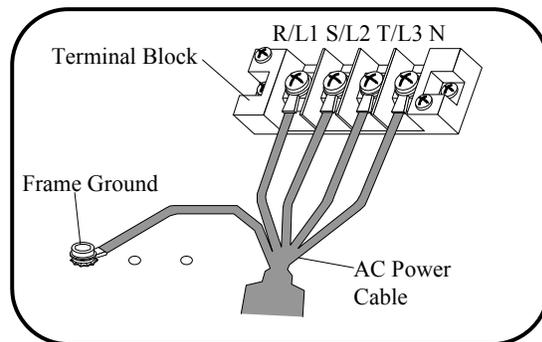
Fig. T18.1-7 Connection of AC Power Cable

7. Power On the replacement component.
    a. Turn on the circuit breaker on the power distribution panel that is connected to AC BOX.
    b. Turn on the circuit breaker on the AC BOX (CB100).
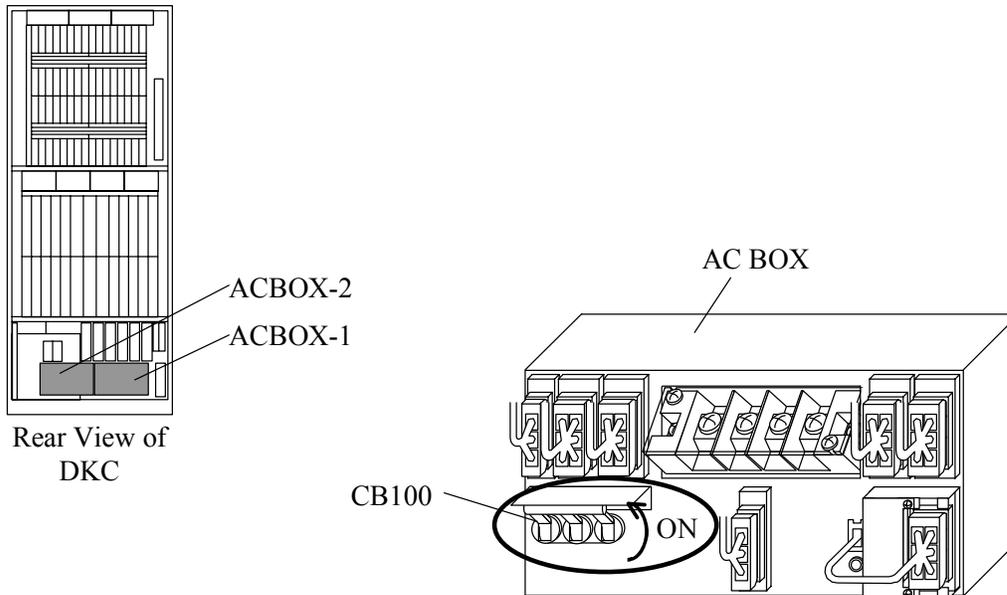
Fig. T18.1-8 Turn on the Circuit Breaker

8. Go to SVP post procedure t1 [REP04-300].

2	Replacement of AC BOX for DKU frame

1. Power Off the Component to be replaced.

> ⚠ **WARNING**
>
> Hazardous voltage:
> Contact could cause electric shock or burn. Turn off all related breakers and discharge residual voltage, as shown below. (Follow next procedures.)

> ⚠ **CAUTION**
>
> The device may be powered off when turning off the breakers not shown below.

    a.   Turn off the circuit breaker for the AC BOX to be replaced (CB100).

ACBOX-Uxx2
ACBOX-Uxx1
AC BOX
CB100
OFF
Rear View
of DKU
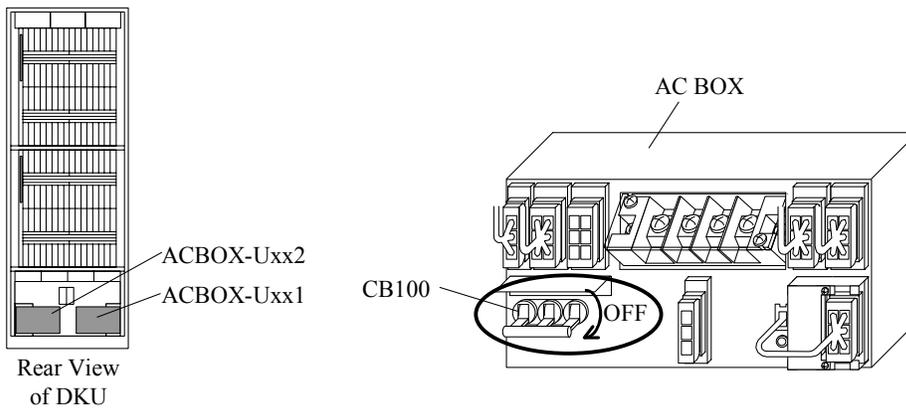
(Note)
    xx: DKU Location (R1, R2, L1, L2)

Fig. T18.2-1 AC BOX Location and Turn off the Circuit Breaker

    b.   Turn off the circuit breaker on the power distribution panel in the plant that is connected to the AC BOX to be replaced.

    c.   The circuit has residual voltage after turning off the breakers, so wait for one minute.

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⚠ **WARNING**

Hazardous voltage:

Contact could cause electric shock or burn. Turning off the breaker on the distribution board connected to the AC BOX before start your work.

2. Disconnect the AC Power Cable.
    a. Loosen the screws and remove the terminal block cover.
    b. Remove the screws and disconnect the AC power cable.
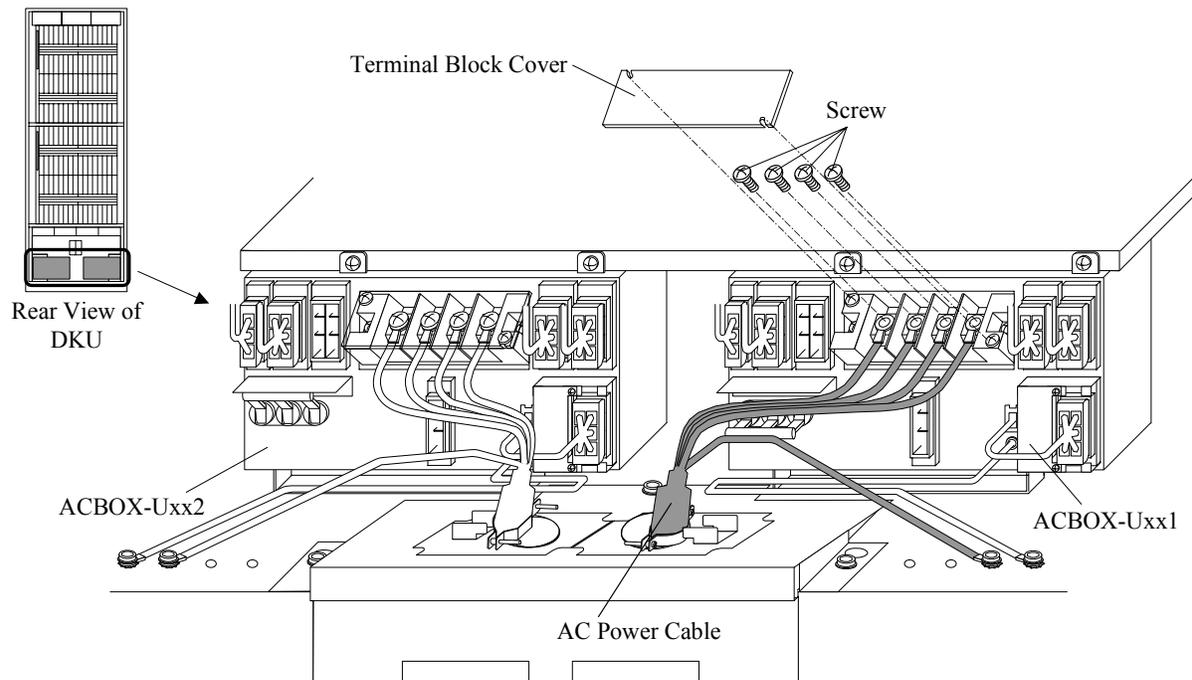
Fig. T18.2-2 Disconnection of AC Power Cable

3. Disconnect the Cables.
    a. Disconnect the cables (#-P121, #-P122, #-P124 and #-P125) from the AC BOX.
    b. Loosen the WA socket bolt and remove the frame ground cable and the lock washer.
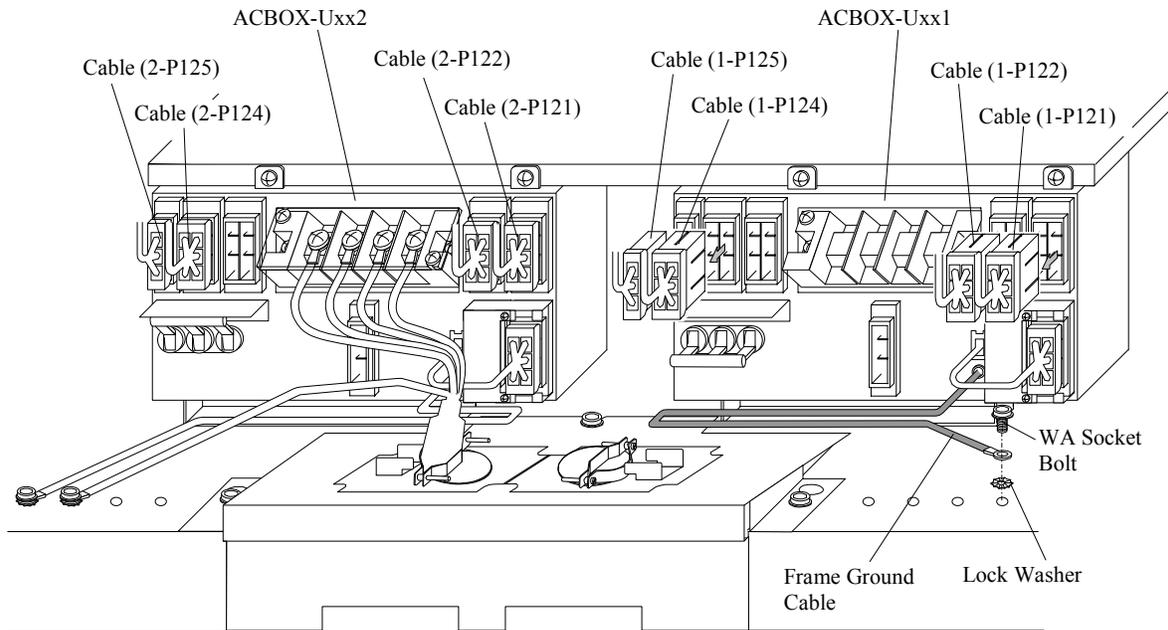
Fig. T18.2-3 Disconnection of Cable

4. Replace the AC BOX.
    a. Remove the two screws and remove the failed AC BOX.
    b. Attach the spare AC BOX and fix it with the screws.
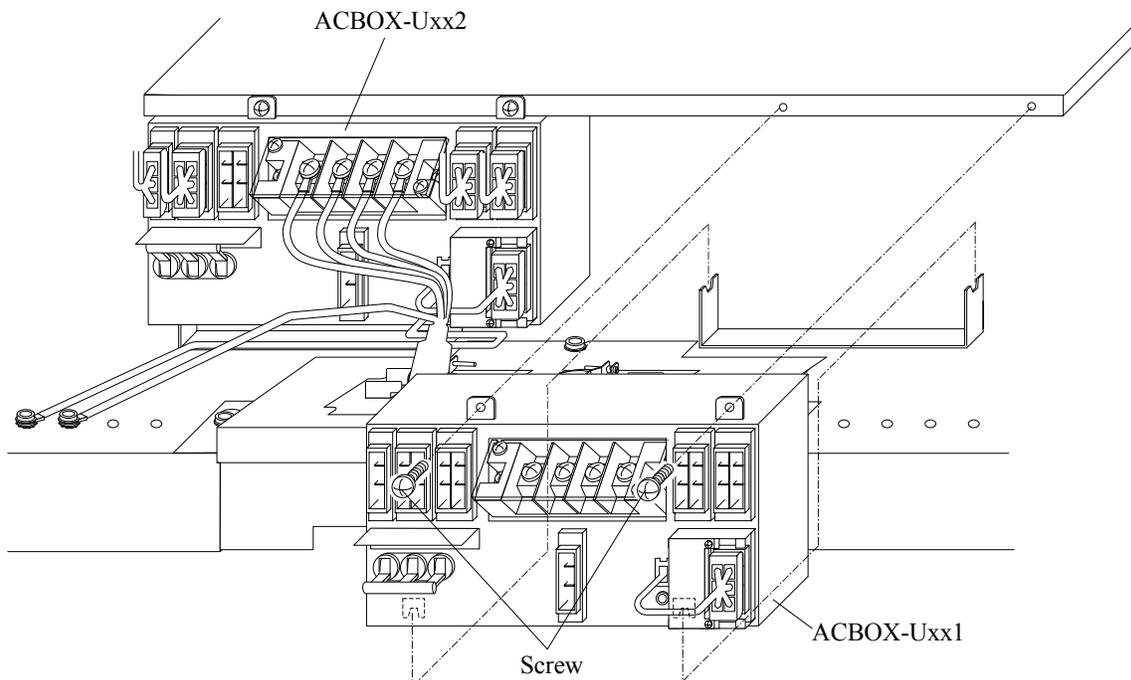
Fig. T18.2-4 Replacement of AC BOX

5. Connect the Cables.
   a. Attach the jumper cable and dummy plate to the AC BOX.

⚠ CAUTION

The mate connector of the P130 shown in Table T18.2-1 varies depending on the voltage of the AC power inputted.
Never make a wrong connection because the subsystem will be damaged if the connection is wrongly made.

Table T18.2-1 Jumper Cable Position

No.	Input AC Voltage	Jumper Cable (P130) Position	Dummy Plate Position	Remarks
1	200-240V	J130-1	J130-2	For USA
2	380-415V	J130-2	J130-1	For Europe

For USA
(Input AC Voltage: 200 – 240V)

For Europe
(Input AC Voltage: 380 – 415V)
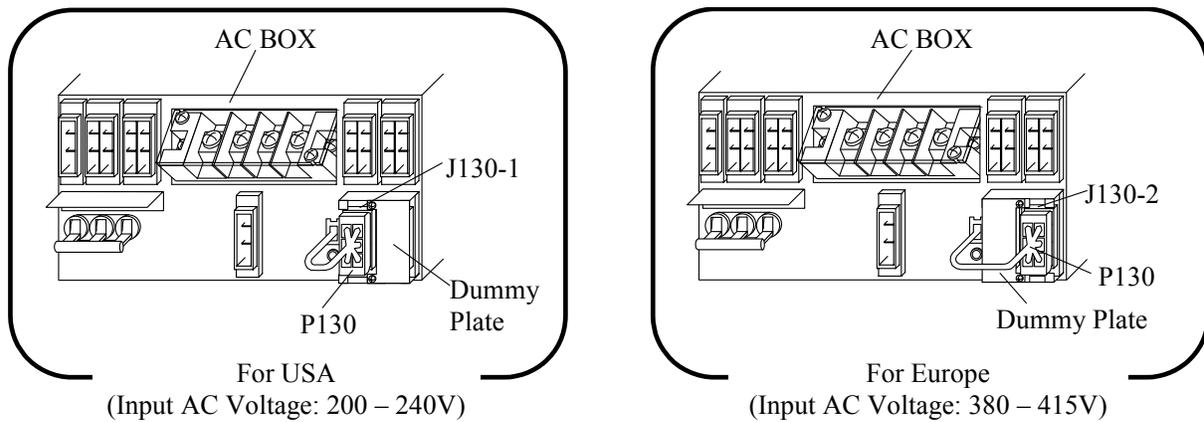
Fig. T18.2-5 Connection of Jumper Cable

    b.   Secure the frame ground cable with the WA socket bolt and lock washer.

    c.   Connect the cables (#-P121, #-P122, #-P124 and #-P125) to the AC BOX.

Table T18.2-2 Cable Connection of AC BOX

No.	Cable No.		Connector No.	Remarks
	ACBOX-Uxx1	ACBOX-Uxx2		
1	1-P121	2-P121	J121	
2	1-P122	2-P122	J122	
3	1-P124	2-P124	J124	
4	1-P125	2-P125	J125	
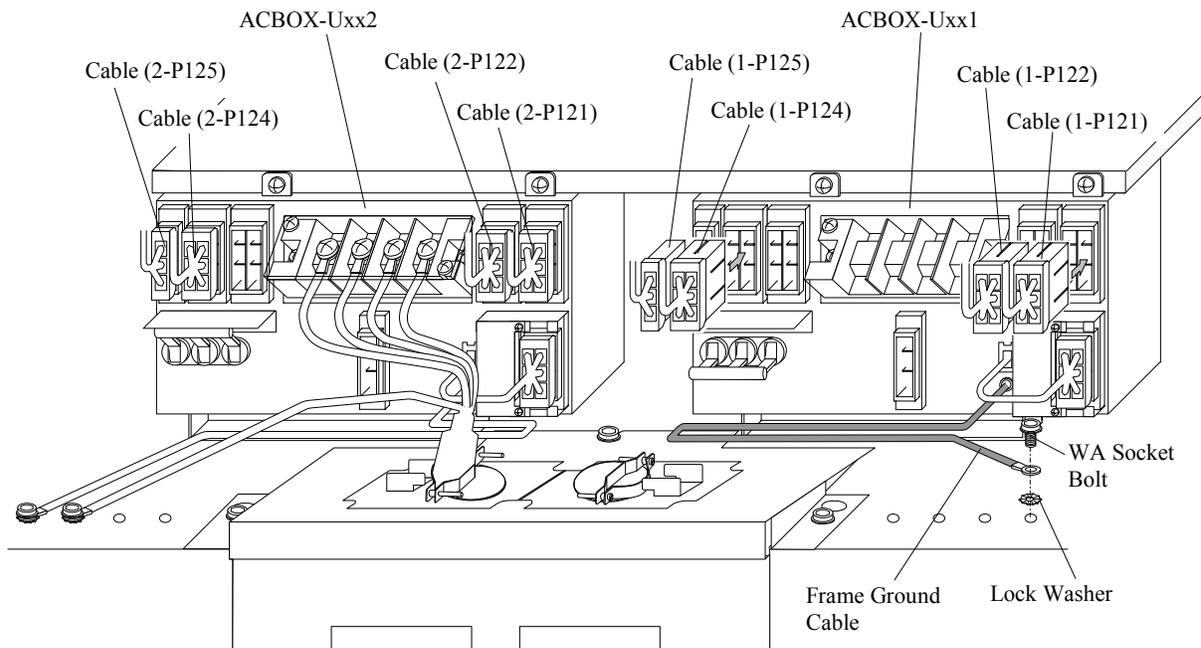
Fig. T18.2-6 Connection of Cables

6. Connect the AC power cable.
   a. Connect the AC power cable to the AC BOX.
   b. Attach the terminal block cover with the screws.

Table T18.2-3 AC Power Cable Conductors number

No.	Region	Input Voltage	AC Power Cable Conductors	Remarks
1	For USA	200-230V	4 conductors (R/L1, S/L2, T/L3, FG)	
2	For Europe	380-415V	5 conductors (R/L1, S/L2, T/L3, N, FG)	
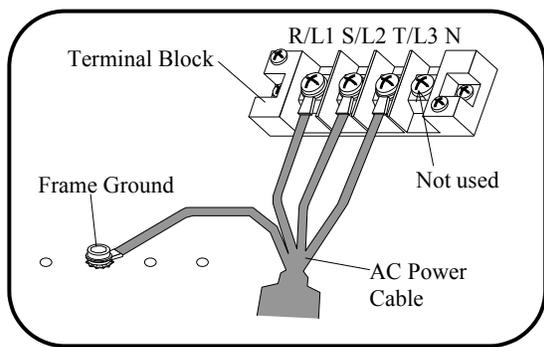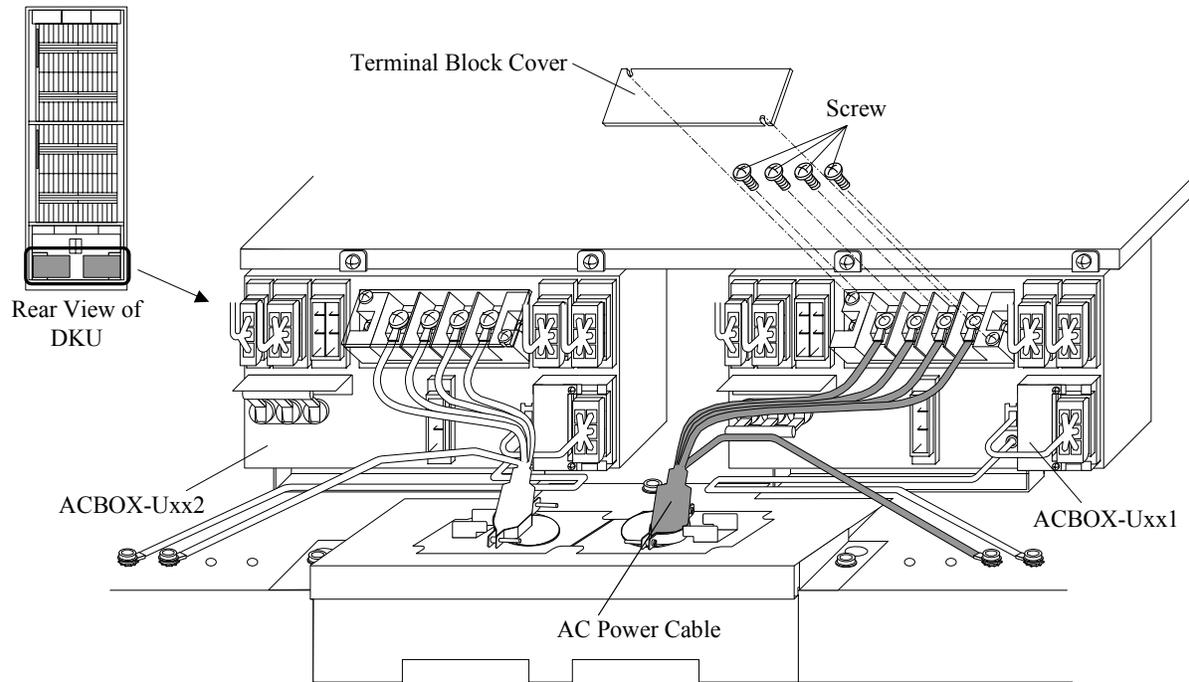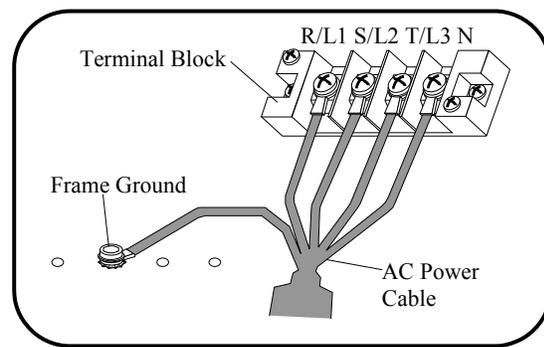
Fig. T18.2-7 Connection of AC Power Cable

7. Power On the replacement component.
    a. Turn on the circuit breaker on the power distribution panel that is connected to AC BOX.
    b. Turn on the circuit breaker on the AC BOX (CB100).
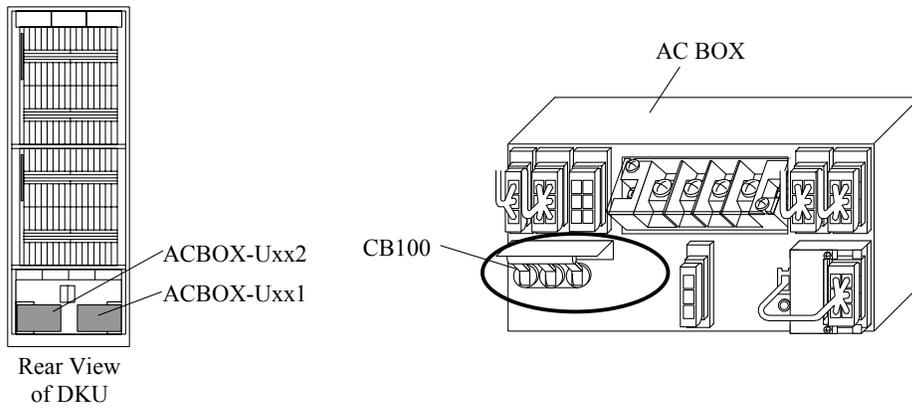
Fig. T18.2-8 Turn on the Circuit Breaker

8. Go to SVP post procedure t4 [REP04-850].

[HARDWARE T19]

Location		Function Name of Component	Part Name
Lower of DKC	1	AC BOX (1Phase/30A)	
Lower of DKU	2	AC BOX (1Phase/30A)	
(Reference) The related part for replacement of AC BOX. 1. Circuit breaker on the power distribution panel that is connected to the AC BOX.			

ACBOX-2
ACBOX-1

Rear View of
DKC

ACBOX-Uxx2
ACBOX-Uxx1

Rear View of
DKU

(Note)
   xx: DKU Location (R1, R2, L1, L2)

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 of the ACBOX Replacement
   If revision control does not indicates "C" or "T", it means that the FC of "SVP down
   induced by USB memory insertion" has been applied yet, please carry out the FC
   according to the FCB.
   If voltages are abnormal or if there appears to be damage to the cable, then please
   contact Technical Support Team for guidance.

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1	Replacement of AC BOX for DKC frame

1.   Power Off the Component to be replaced.

⚠ **WARNING**

Hazardous voltage:
Contact could cause electric shock or burn. Turn off all related breakers and discharge residual voltage, as shown below. (Follow next procedures.)

⚠ **CAUTION**

The device may be powered off when turning off the breakers not shown below.

---

a.   Turn off the circuit breaker for the AC BOX to be replaced (CB100).

Fig. T19.1-1 AC BOX Location and Turn off the Circuit Breaker

b.   Turn off the circuit breaker on the power distribution panel in the plant that is connected to the AC BOX to be replaced.

c.   The circuit has residual voltage after turning off the breakers, so wait for one minute.

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Rev.0 / Mar.2007

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⚠ WARNING

Hazardous voltage:
Contact could cause electric shock or burn. Turning off the breaker on the distribution board connected to the AC BOX before start your work.

2. Disconnect the AC Power Cable.
   a. Loosen the screws and remove the terminal block cover.
   b. Remove the screws and disconnect the AC power cable.
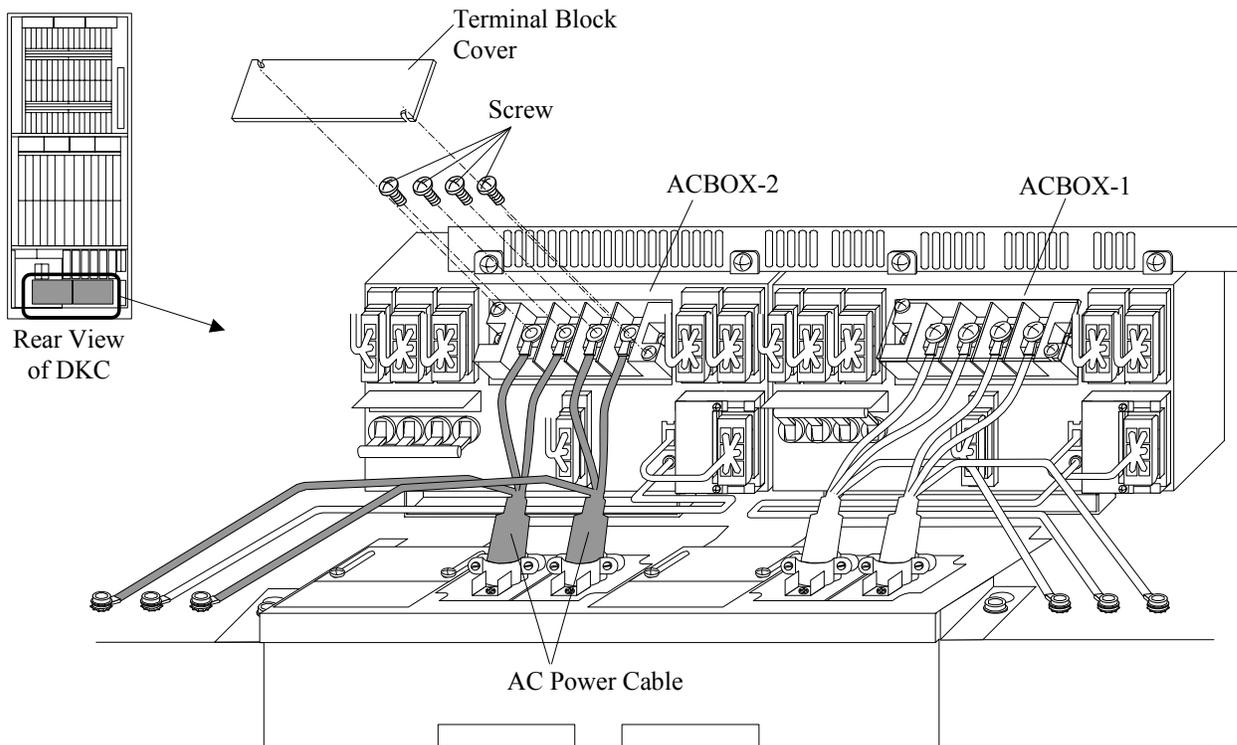
Fig. T19.1-2 Disconnection of AC Power Cable

3. Disconnect the Cables.
    a. Disconnect the cables (P121-#, P122-#, P123-#, P124-#, P125-# and P131-#) from AC
        BOX to be replaced.
    b. Loosen the WA socket bolt and remove the frame ground cable and the lock washer.
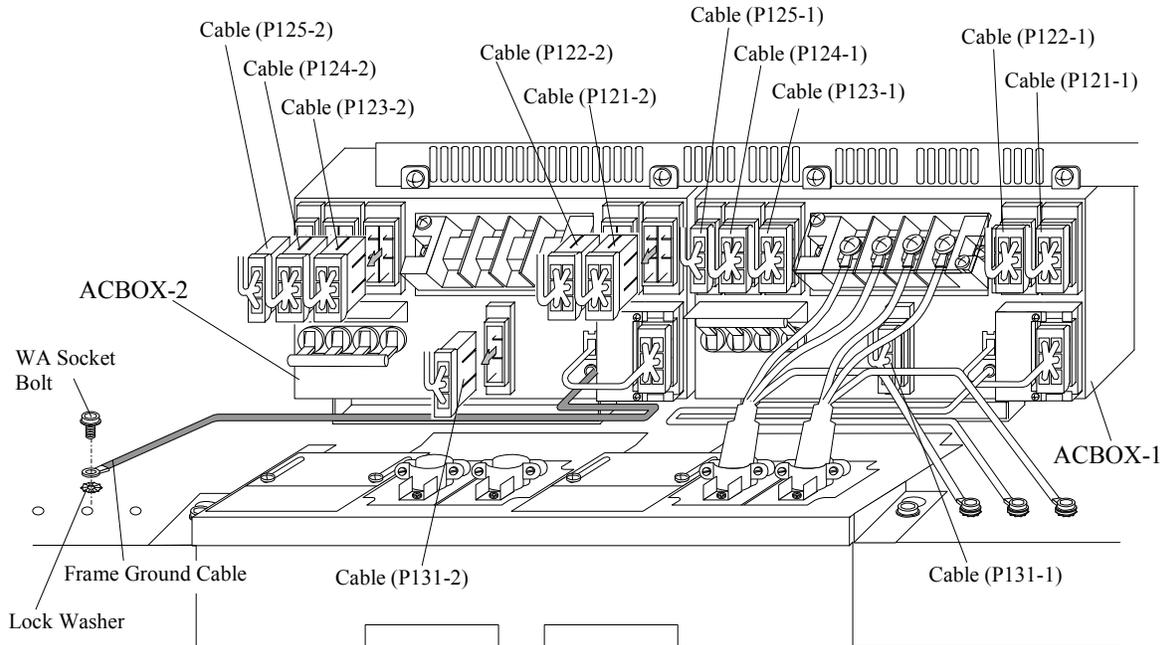
Fig. T19.1-3 Disconnection of Cables

4.   Replace the AC BOX.
   a.   Remove the two WA socket bolts and remove the AC label plate.
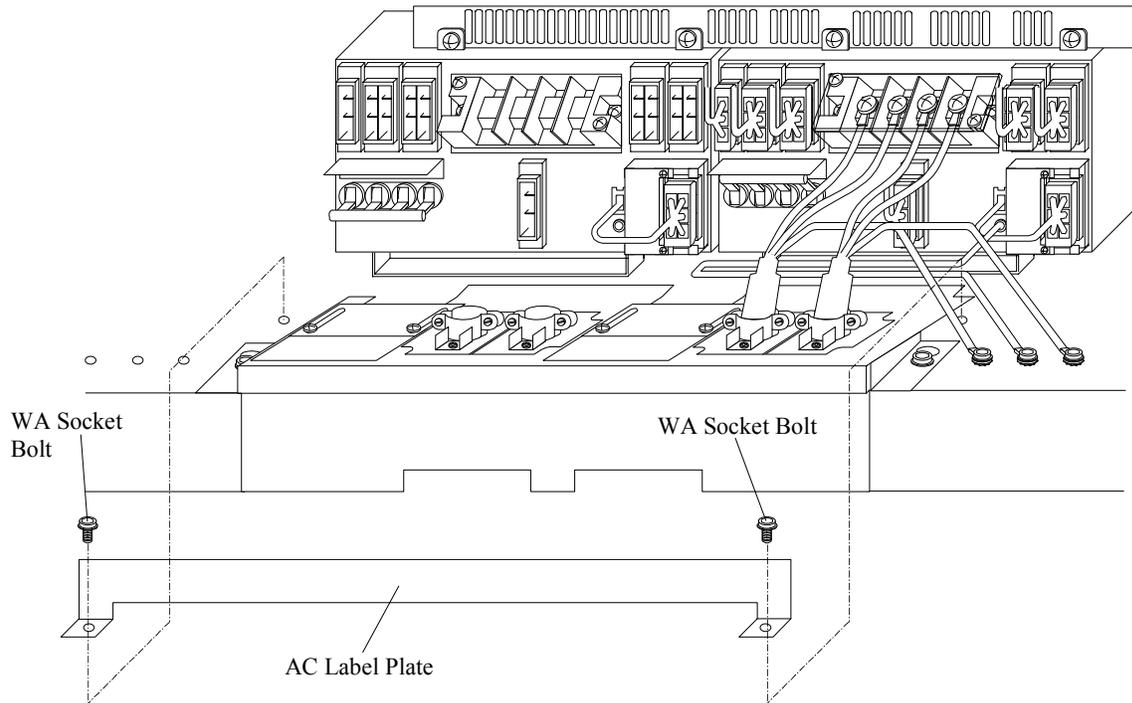
Fig. T19.1-3A Removal of AC Label Plate

   b.   Remove the two screws remove the failed AC BOX.
   c.   Attach the spare AC BOX and fix it with the screws.
   d.   Attach the AC label plate and fasten the two WA socket bolts. (Refer to Fig. T19.1-3A.)
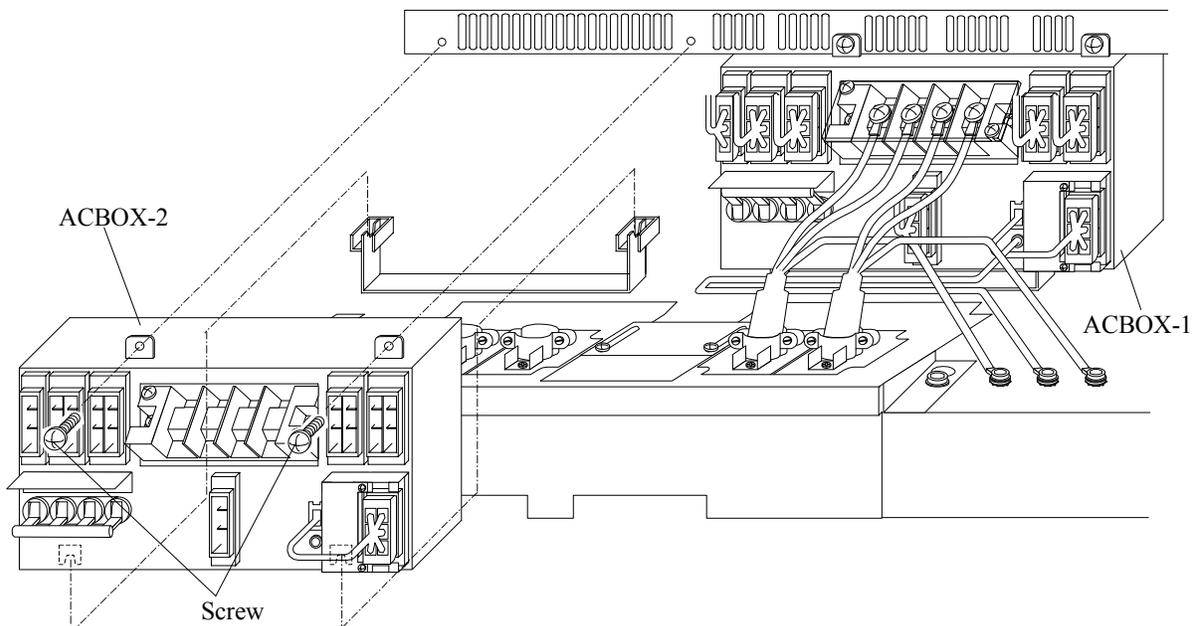
Fig. T19.1-4 Replacement of AC BOX

5. Connect the Cables.
   a. Attach the jumper cable and dummy plate to the AC BOX.

⚠ **CAUTION**

The mate connector of the P130 shown in Table T19.1-1 varies depending on the number of the Power Cable Kits.
Never make a wrong connection because the subsystem will be damaged if the connection is wrongly made.

Table T19.1-1 Jumper Cable Position

No.	Number of Power Cable Kit (DKC-F610I-1ECD/1UCD)	Jumper Cable (P130) Position	Dummy Plate Position	Remarks
1	1 set	J130-2	J130-1	
2	2 sets	J130-1	J130-2	
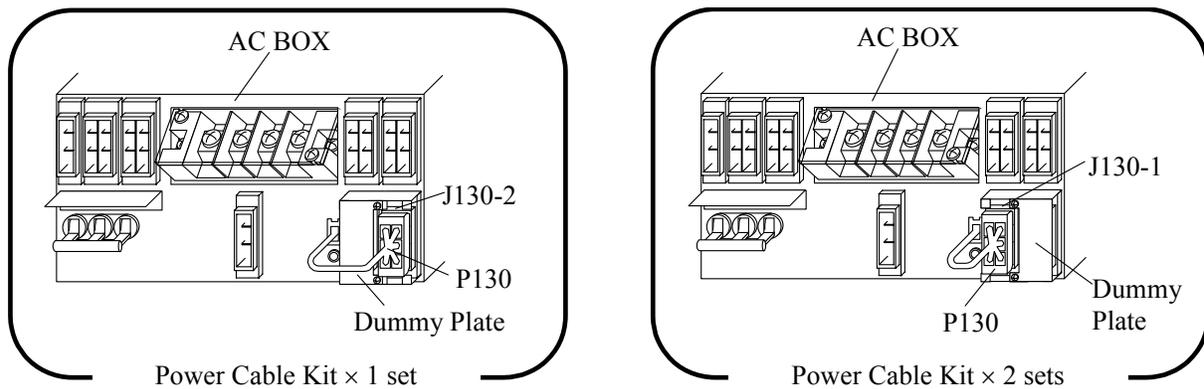
Fig. T19.1-5 Connection of Jumper Cable

b. Secure the frame ground cable with the WA socket bolt and lock washer.
c. Connect the cables (P121-#, P122-#, P123-#, P124-#, P125-# and P131-#) to the AC BOX.

Table T19.1-2 Cable Connection of AC BOX

No.	Cable No.		Connector No.	Remarks
	ACBOX-1	ACBOX-2		
1	P121-1	P121-2	J121	
2	P122-1	P122-2	J122	
3	P123-1	P123-2	J123	
4	P124-1	P124-2	J124	
5	P125-1	P125-2	J125	
6	P131-1	P131-2	J131	
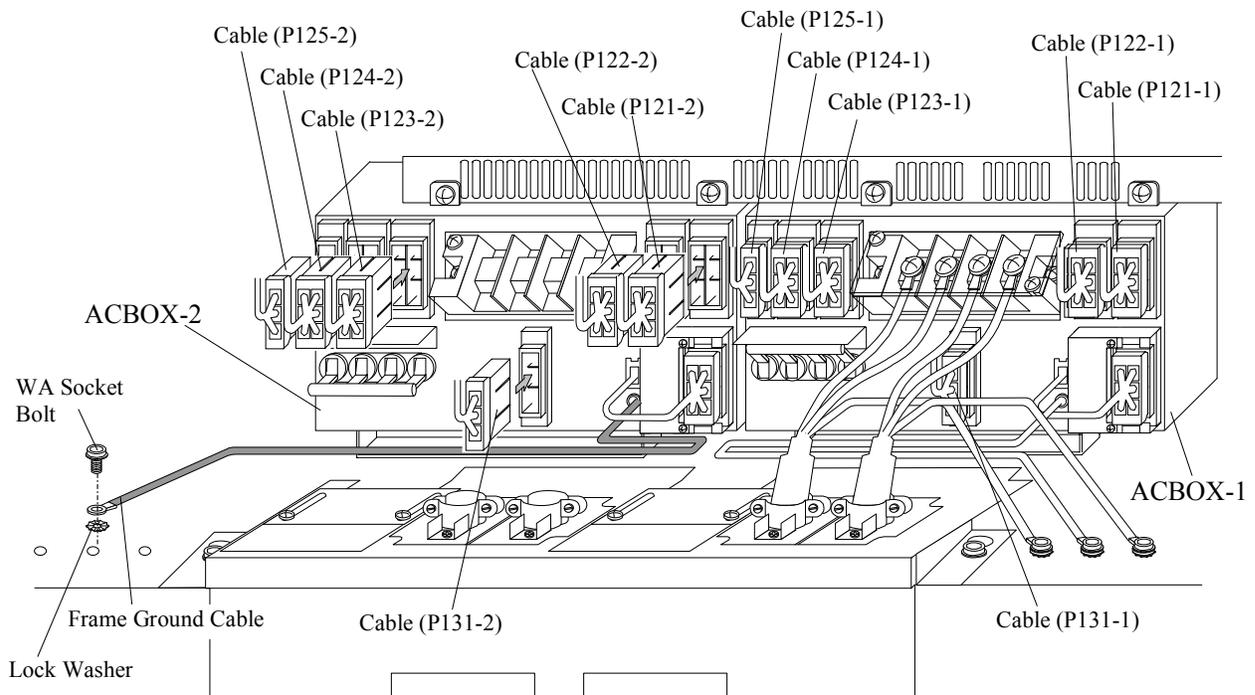
Fig. T19.1-6 Connection of Cables

6. Connect the AC power cable.
   a. Connect the AC power cable to the AC BOX.
   b. Attach the terminal block cover with the screws.

Table T19.1-3 AC Power Cable Conductors number

No.	Region	Input Voltage	AC Power Cable Conductors	Remarks
1	For USA	200-230Vac	3 conductors (U/L1, V/L2, FG)	
2	For Europe	200-240Vac	3 conductors (U/L1, V/L2, FG)	
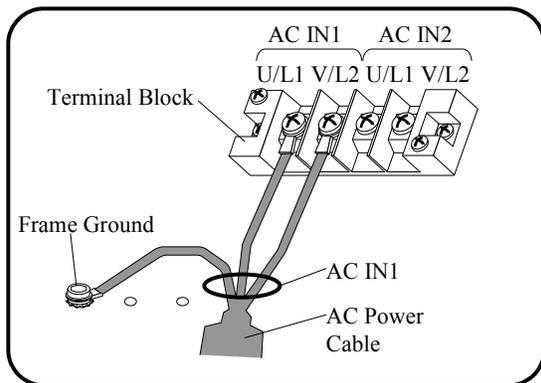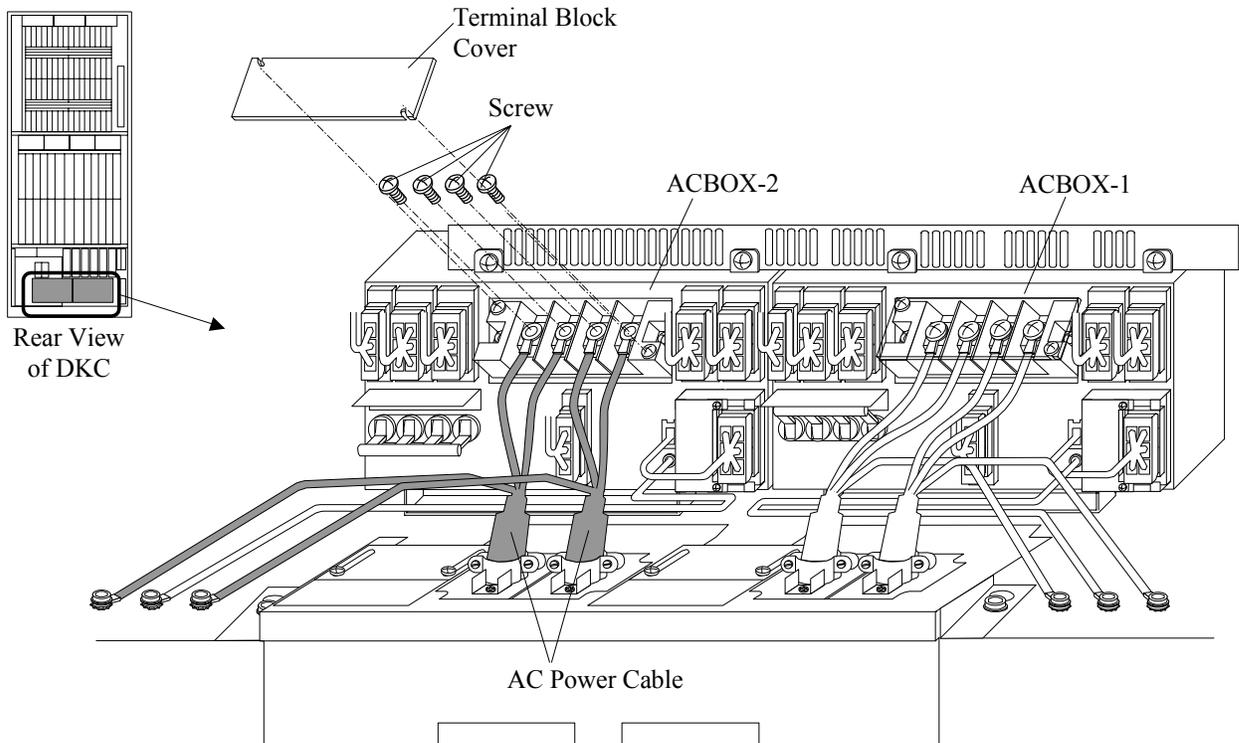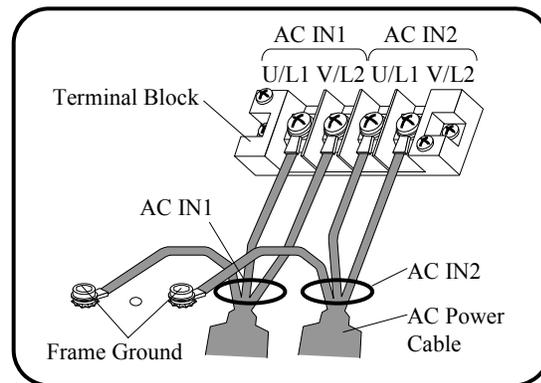
Fig. T19.1-7 Connection of AC Power Cable

7. Power On the replacement component.
    a. Turn on the circuit breaker on the power distribution panel that is connected to AC BOX.
    b. Turn on the circuit breaker on the AC BOX (CB100).
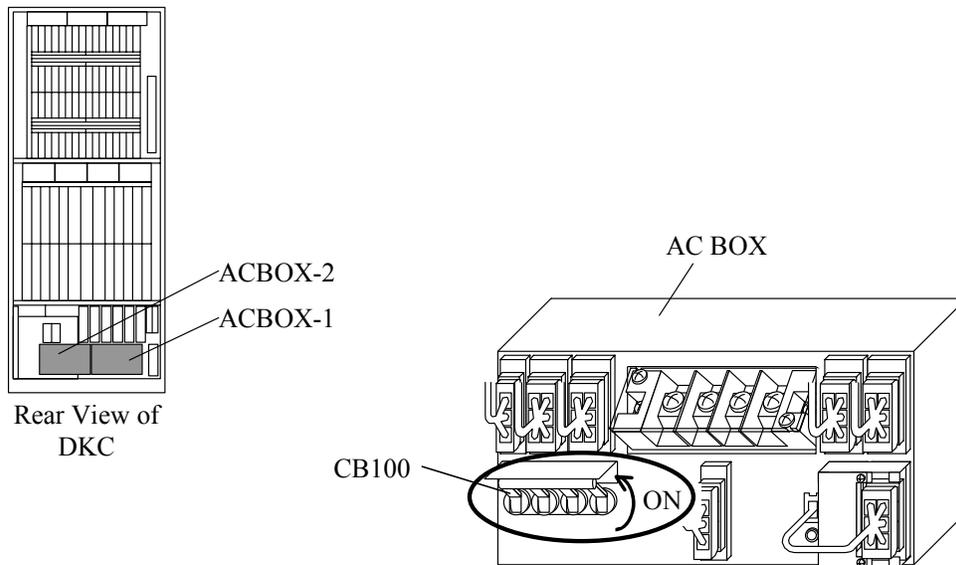
Fig. T19.1-8 Turn on the Circuit Breaker

8. Go to SVP post procedure t1 [REP04-300].

2	Replacement of AC BOX for DKU frame

1. Power Off the Component to be replaced

⚠ **WARNING**

Hazardous voltage:
Contact could cause electric shock or burn. Turn off all related breakers and discharge residual voltage, as shown below. (Follow next procedures.)

⚠ **CAUTION**

The device may be powered off when turning off the breakers not shown below.

---

   a.   Turn off the circuit breaker for the AC BOX to be replaced (CB100).
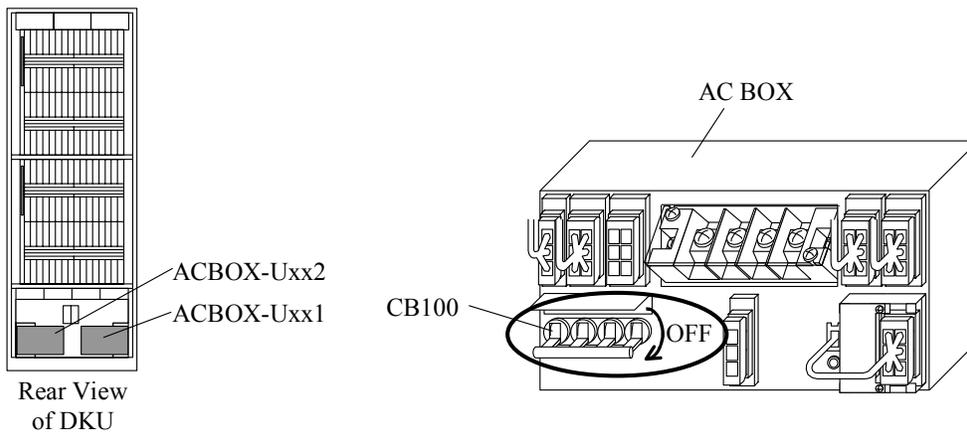
(Note)
   xx: DKU Location (R1, R2, L1, L2)

Fig. T19.2-1 AC BOX Location and Turn off the Circuit Breaker

   b.   Turn off the circuit breaker on the power distribution panel in the plant that is connected to the AC BOX to be replaced.

   c.   The circuit has residual voltage after turning off the breakers, so wait for one minute.

⚠ **WARNING**

Hazardous voltage:
Contact could cause electric shock or burn. Turning off the breaker on the distribution
board connected to the AC BOX before start your work.

---

2. Disconnect the AC Power Cable.
    a. Loosen the screws and remove the terminal block cover.
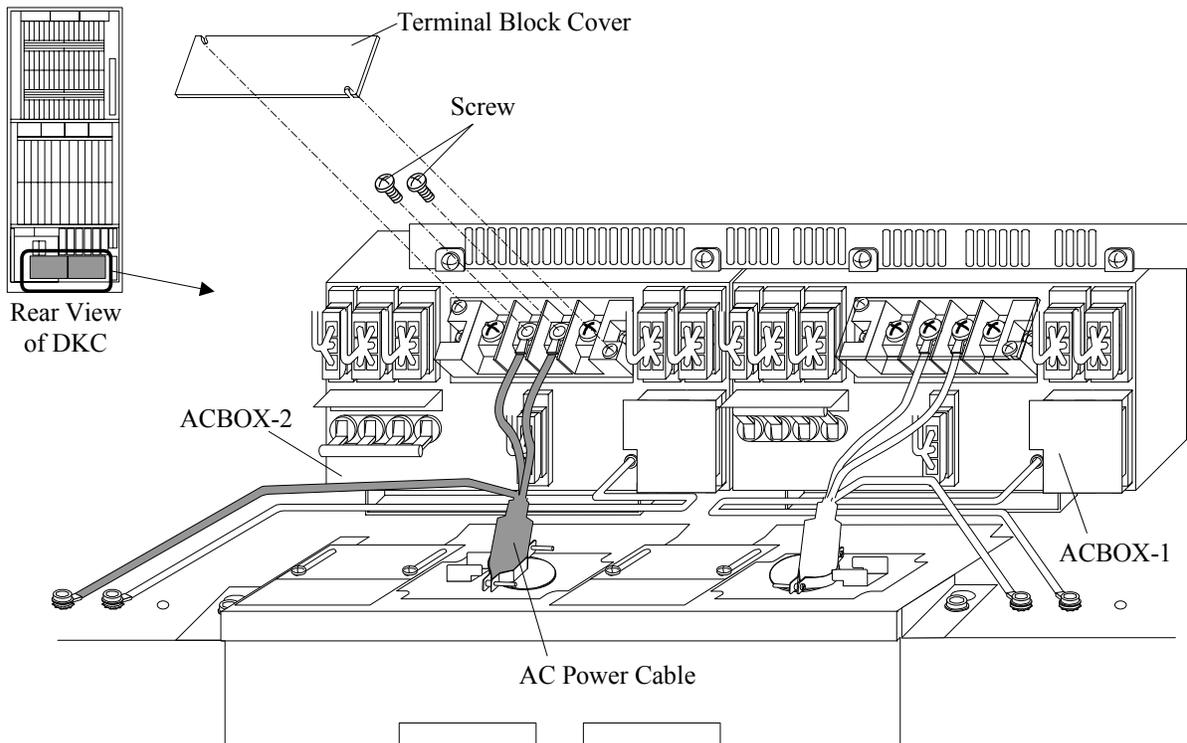   b. Remove the screws and disconnect the AC power cable.
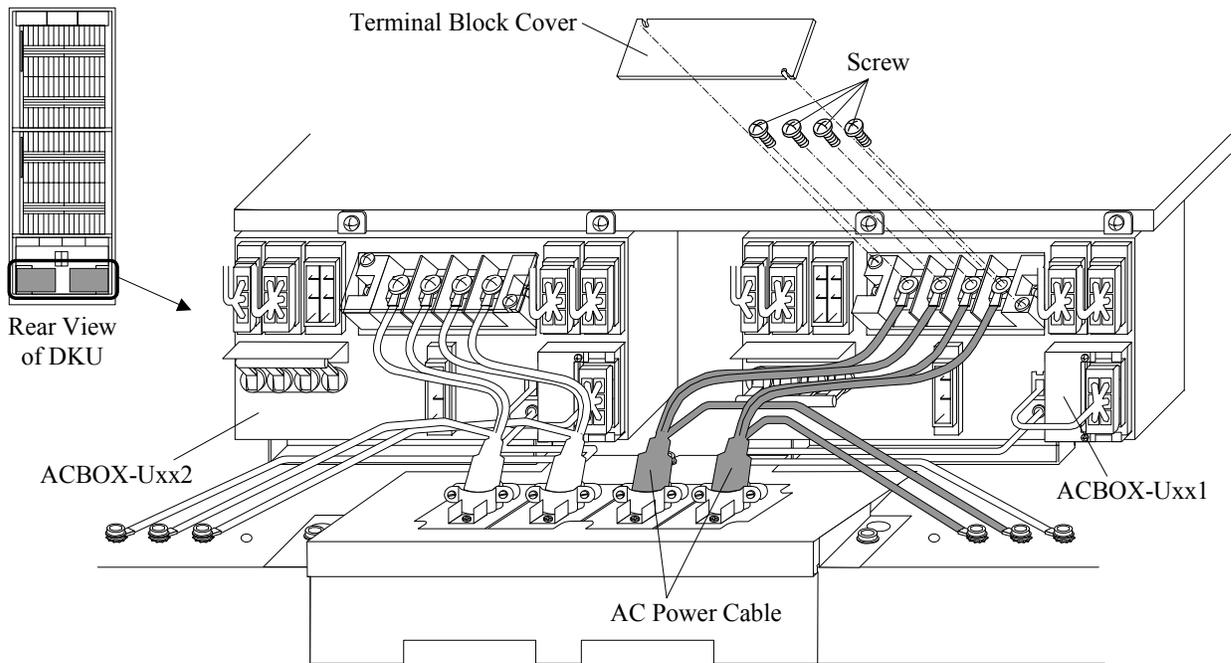
Fig. T19.2-2 Disconnection of AC Power Cable

3. Disconnect the Cables.
   a. Remove the WA socket bolt and remove the frame ground cable and the lock washer.
   b. Disconnect the cables (#-P121, #-P122, #-P124 and #-P125) from the AC BOX.
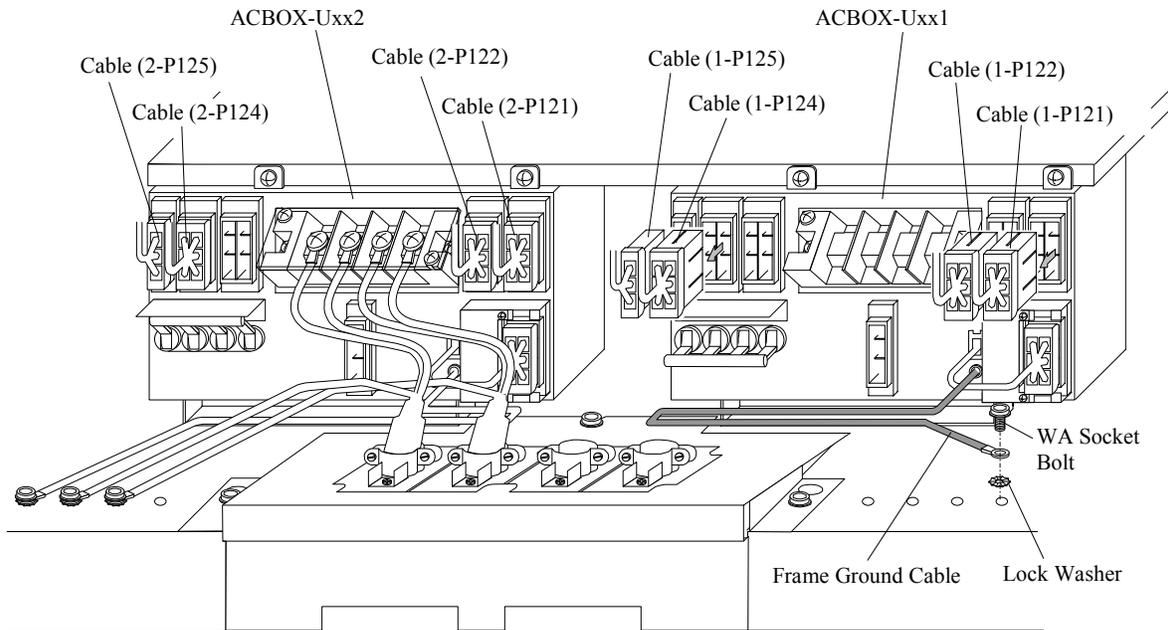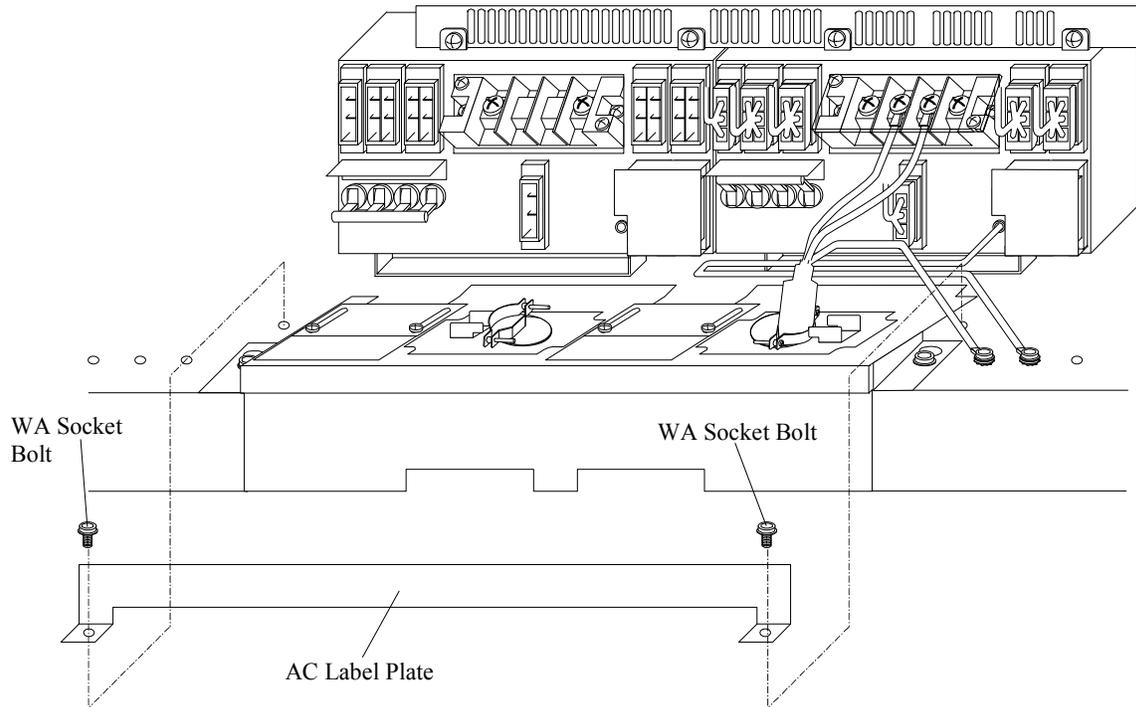

Fig. T19.2-3 Disconnection of Cables

4. Replace the AC BOX.
   a. Remove the two screws and remove the failed AC BOX.
   b. Attach the spare AC BOX and fix it with the screws.
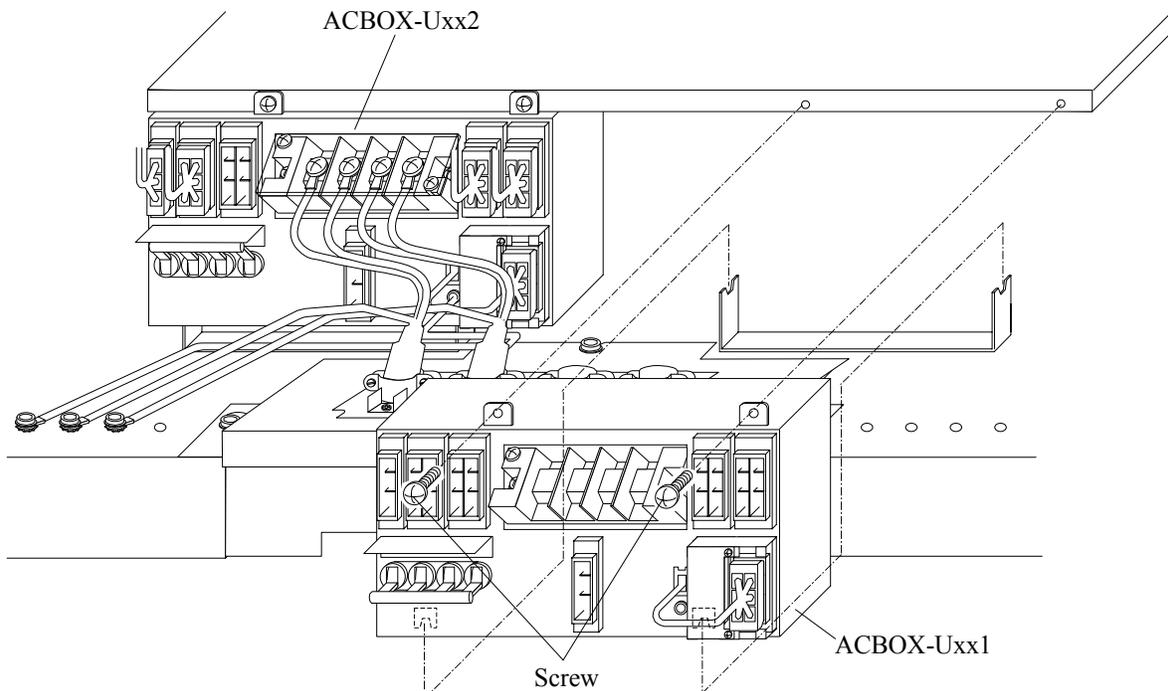
Fig. T19.2-4 Replacement of AC BOX

5. Connect the Cables.
   a. Attach the jumper cable and dummy plate to the AC BOX.

⚠ CAUTION

The mate connector of the P130 shown in Table T19.2-1 varies depending on the number of the Power Cable Kits.
Never make a wrong connection because the subsystem will be damaged if the connection is wrongly made.

Table T19.2-1 Jumper Cable Position

No.	Number of Power Cable Kit (DKC-F610I-1ECD/1UCD)	Jumper Cable (P130) Position	Dummy Plate Position	Remarks
1	1 set	J130-2	J130-1	
2	2 sets	J130-1	J130-2	
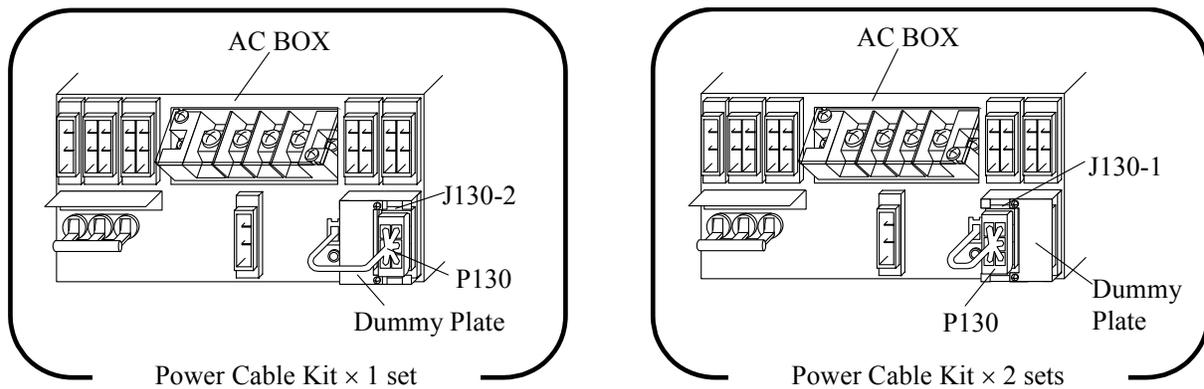
Fig. T19.2-5 Connection of Jumper Cable

b. Secure the frame ground cable with the WA socket bolt and lock washer.
c. Connect the cables (#-P121, #-P122, #-P124 and #-P125) to the AC BOX.

Table T19.2-2 Cable Connection of AC BOX

No.	Cable No.		Connector No.	Remarks
	ACBOX-Uxx1	ACBOX-Uxx2		
1	1-P121	2-P121	J121	
2	1-P122	2-P122	J122	
3	1-P124	2-P124	J124	
4	1-P125	2-P125	J125	
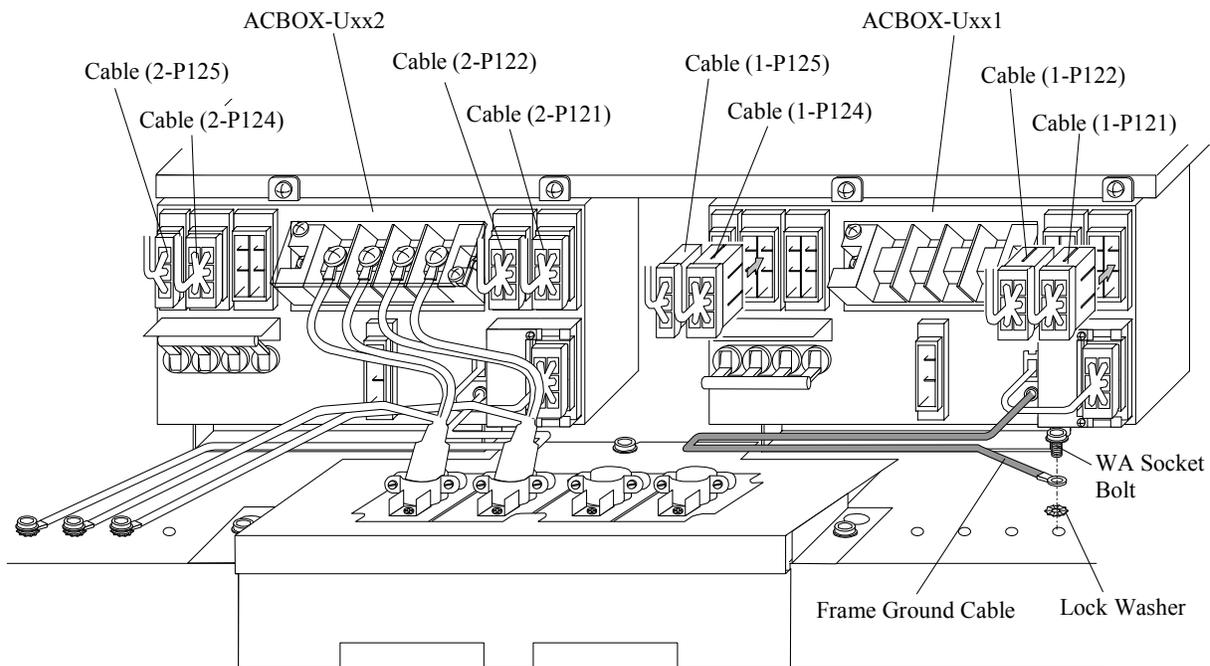
Fig. T19.2-6 Connection of Cables

6. Connect the AC power cable.
    a. Connect the AC power cable to the AC BOX.
    b. Attach the terminal block cover with the screws.

Table T19.2-3 AC Power Cable Conductors number

No.	Region	Input Voltage	AC Power Cable Conductors	Remarks
1	For USA	200-230Vac	3 conductors (U/L1, V/L2, FG)	
2	For Europe	200-240Vac	3 conductors (U/L1, V/L2, FG)	
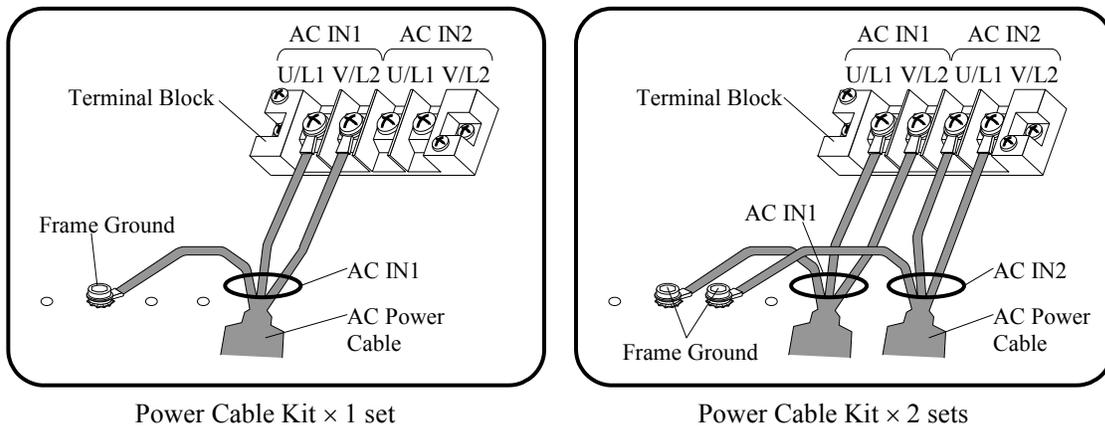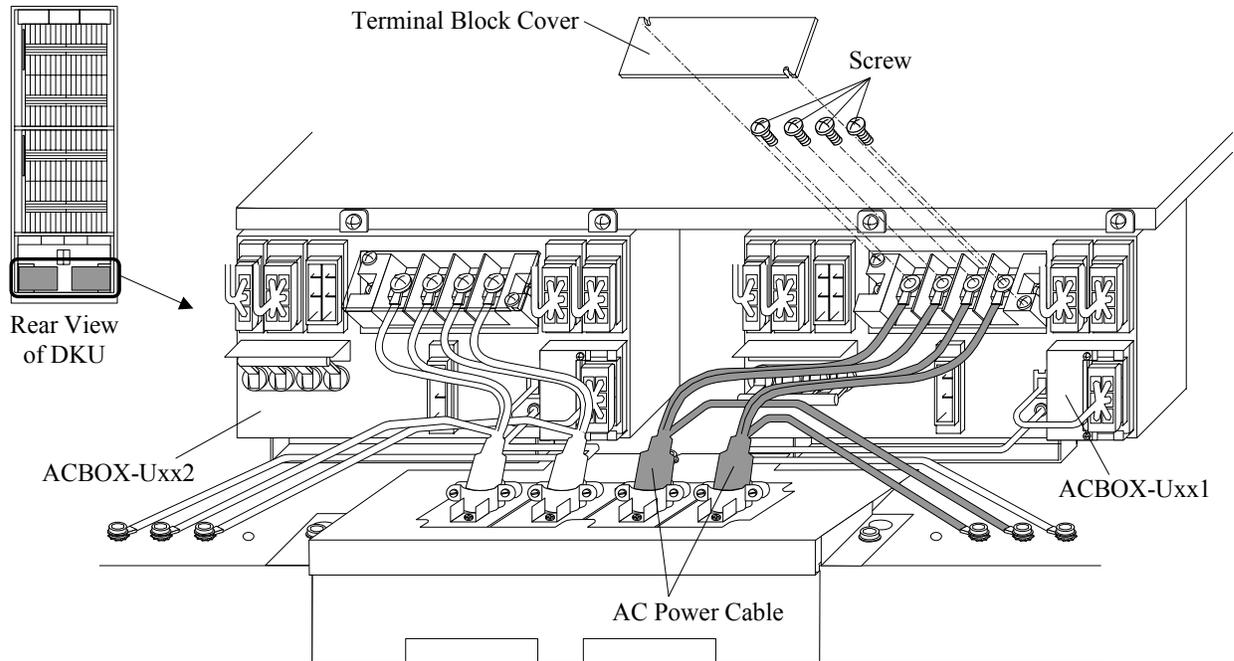
Fig. T19.2-7 Connection of AC Power Cable

7. Power On the replacement component.
    a. Turn on the circuit breaker on the power distribution panel that is connected to AC BOX.
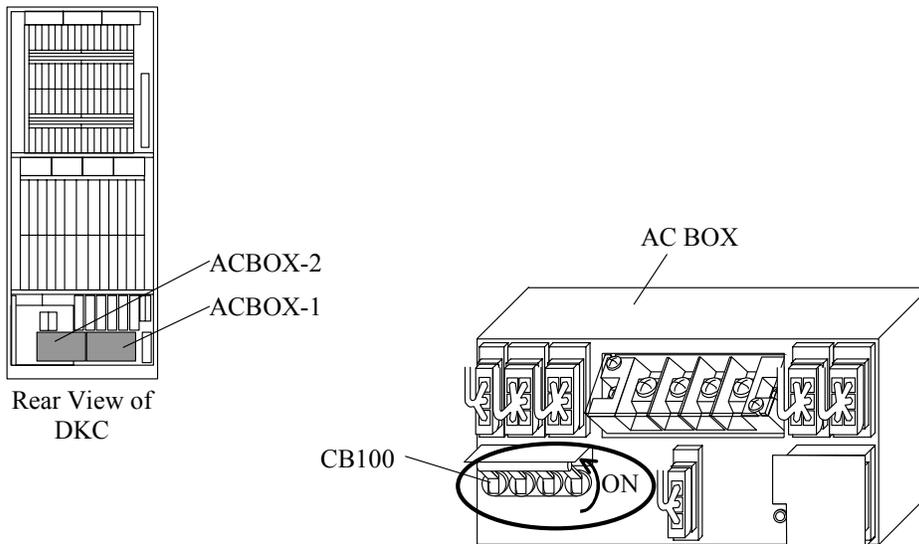   b. Turn on the circuit breaker on the AC BOX (CB100).
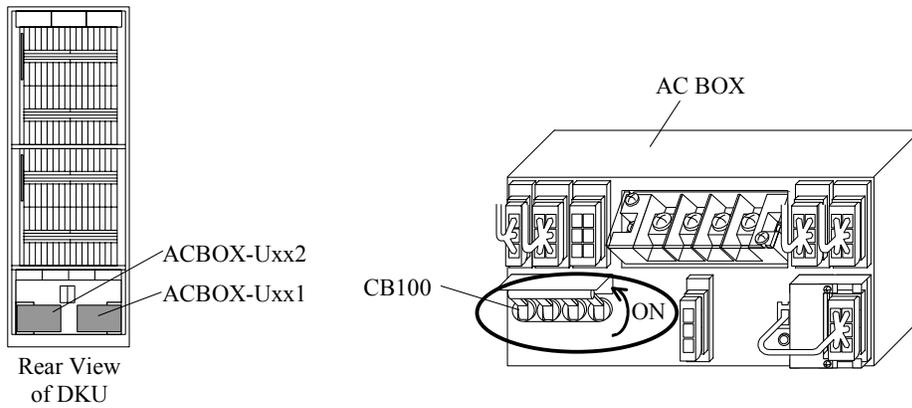
Fig. T19.2-8 Turn on the Circuit Breaker

8. Go to SVP post procedure t4 [REP04-850].

[HARDWARE T20]

Location		Function Name of Component	Part Name
Lower of DKC	1	AC BOX (1Phase/50A)	
Lower of DKU	2	AC BOX (1Phase/50A)	
(Reference) The related part for replacement of AC BOX. 1. Circuit breaker on the power distribution panel that is connected to the AC BOX.			

ACBOX-2
ACBOX-1

Rear View of
DKC

ACBOX-Uxx2
ACBOX-Uxx1

Rear View of
DKU

(Note)
  xx: DKU Location (R1, R2, L1, L2)

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 of the ACBOX Replacement
    If revision control does not indicates "C" or "T", it means that the FC of "SVP down
    induced by USB memory insertion" has been applied yet, please carry out the FC
    according to the FCB.
    If voltages are abnormal or if there appears to be damage to the cable, then please
    contact Technical Support Team for guidance.

| 1 | Replacement of AC BOX for DKC frame |

1. Power Off the Component to be replaced.

⚠ **WARNING**

Hazardous voltage:
Contact could cause electric shock or burn. Turn off all related breakers and discharge
residual voltage, as shown below. (Follow next procedures.)

⚠ **CAUTION**

The device may be powered off when turning off the breakers not shown below.

---

   a.   Turn off the circuit breaker for the AC BOX to be replaced (CB100).

Fig. T20.1-1 AC BOX Location and Turn off the Circuit Breaker

   b.   Turn off the circuit breaker on the power distribution panel in the plant that is connected to
the AC BOX to be replaced.

   c.   The circuit has residual voltage after turning off the breakers, so wait for one minute.

⚠ **WARNING**

Hazardous voltage:
Contact could cause electric shock or burn. Turning off the breaker on the distribution board connected to the AC BOX before start your work.

2. Disconnect the AC Power Cable.
    a. Loosen the screws and remove the terminal block cover.
    b. Remove the screws and disconnect the AC power cable.

Fig. T20.1-2 Disconnection of AC Power Cable

3. Disconnect the Cables.
    a. Disconnect the cables (P121-#, P122-#, P123-#, P124-#, P125-# and P131-#) from AC
        BOX to be replaced.
    b. Remove the WA socket bolt and remove the frame ground cable and the lock washer.
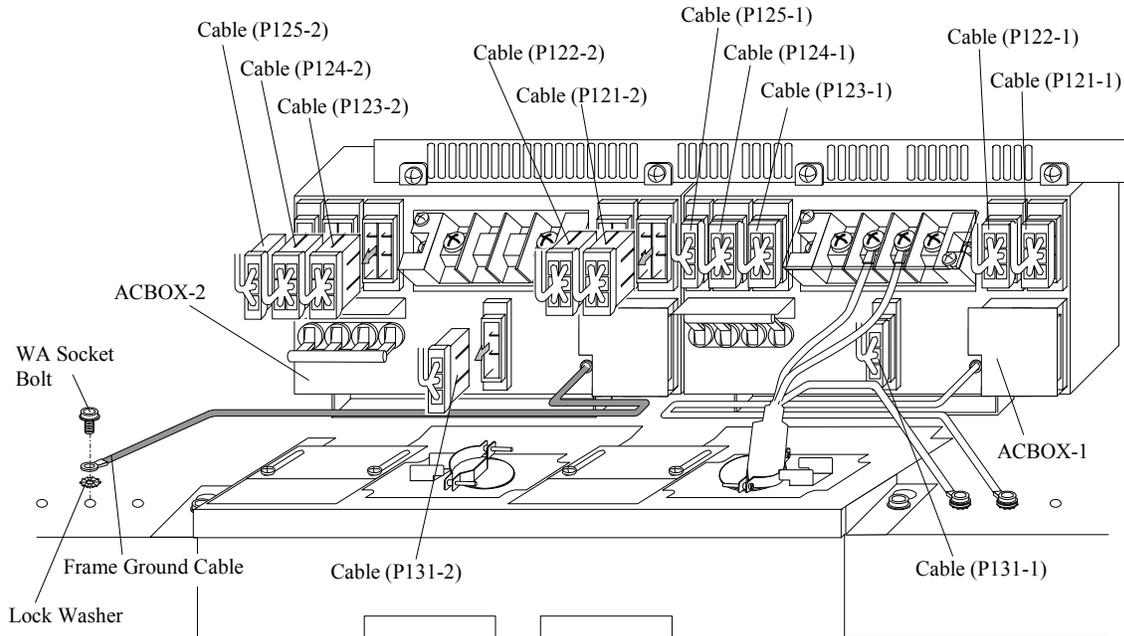
Fig. T20.1-3 Disconnection of Cables

4. Replace the AC BOX.
    a. Remove the two WA socket bolts and remove the AC label plate.

WA Socket
Bolt

WA Socket Bolt

AC Label Plate

Fig. T20.1-3A Removal of AC Label Plate

    b. Remove the two screws and remove the failed AC BOX.
    c. Attach the spare AC BOX and fix it with the screws.
    d. Attach the AC label plate and fasten the two WA socket bolts. (Refer to Fig. T20.1-3A.)

ACBOX-2

ACBOX-1

Screw
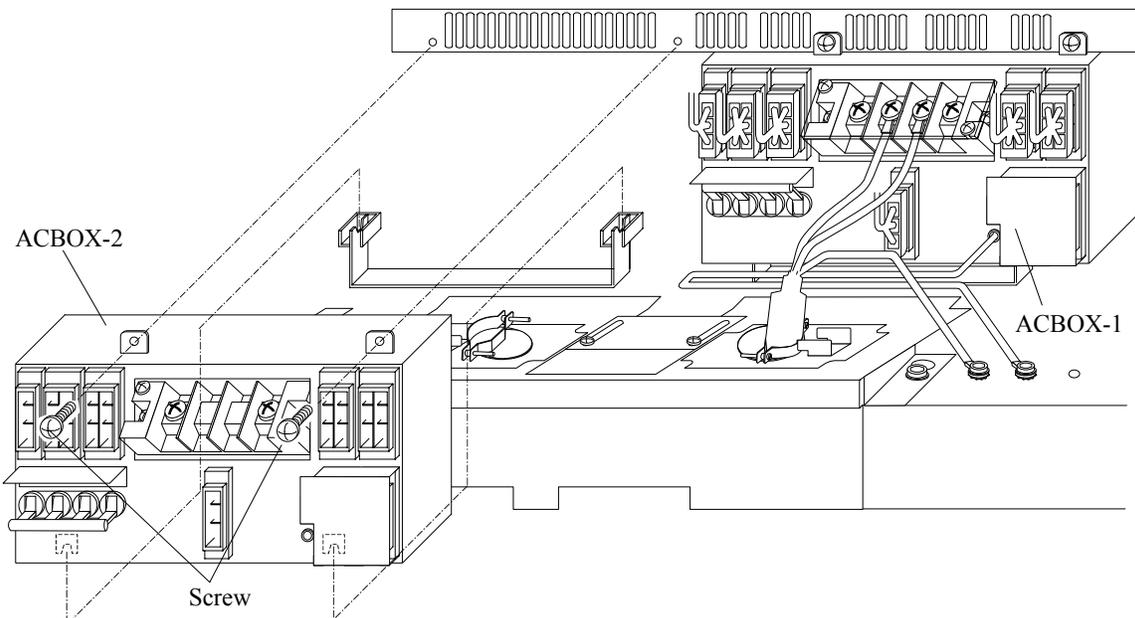
Fig. T20.1-4 Replacement of AC BOX

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SC02540Z

DKC610I
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5. Connect the Cables.
   a. Secure the frame ground cable with the WA socket bolt and the lock washer.
   b. Connect the cables (P121-#, P122-#, P123-#, P124-#, P125-# and P131-#) to the AC BOX.

Table T20.1-1 Cable Connection of AC BOX

No.	Cable No.		Connector No.	Remarks
	ACBOX-1	ACBOX-2		
1	P121-1	P121-2	J121	
2	P122-1	P122-2	J122	
3	P123-1	P123-2	J123	
4	P124-1	P124-2	J124	
5	P125-1	P125-2	J125	
6	P131-1	P131-2	J131	
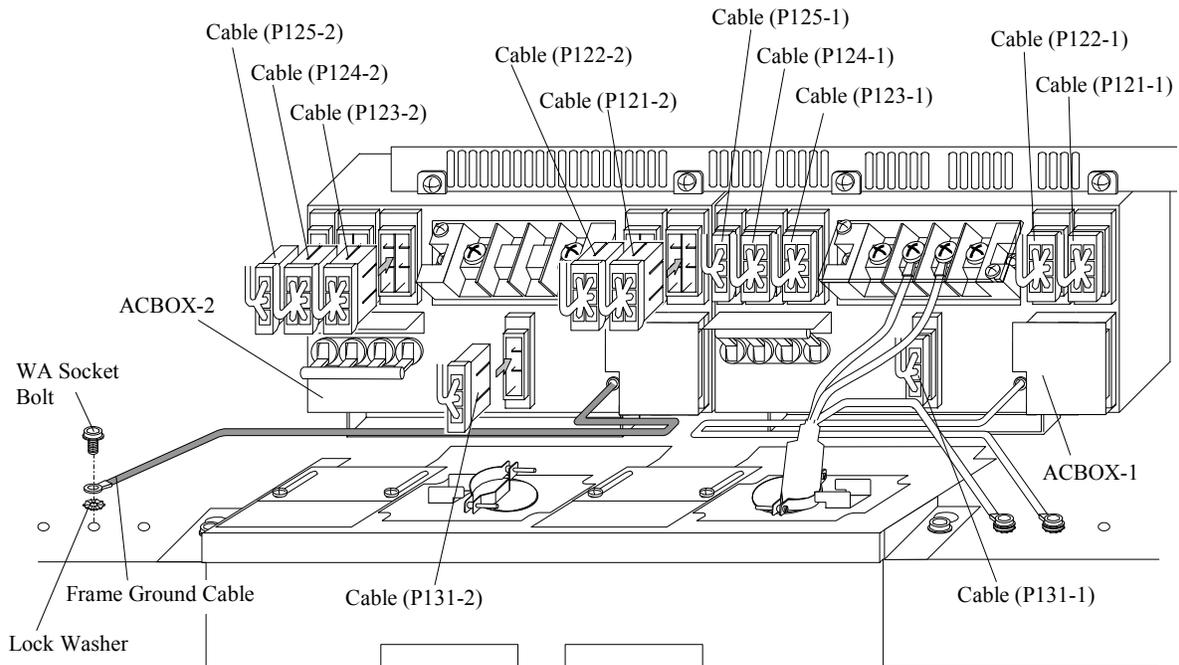
Fig. T20.1-5 Connection of Cables

6. Connect the AC power cable.
   a. Connect the AC power cable to the AC BOX.
   b. Attach the terminal block cover with the screws.

Table T20.1-2 AC Power Cable Conductors number

No.	Region	Input Voltage	AC Power Cable Conductors	Remarks
1	For USA	200-230Vac	3 conductors (U/L1, V/L2, FG)	
2	For Europe	200-240Vac	3 conductors (U/L1, V/L2, FG)	
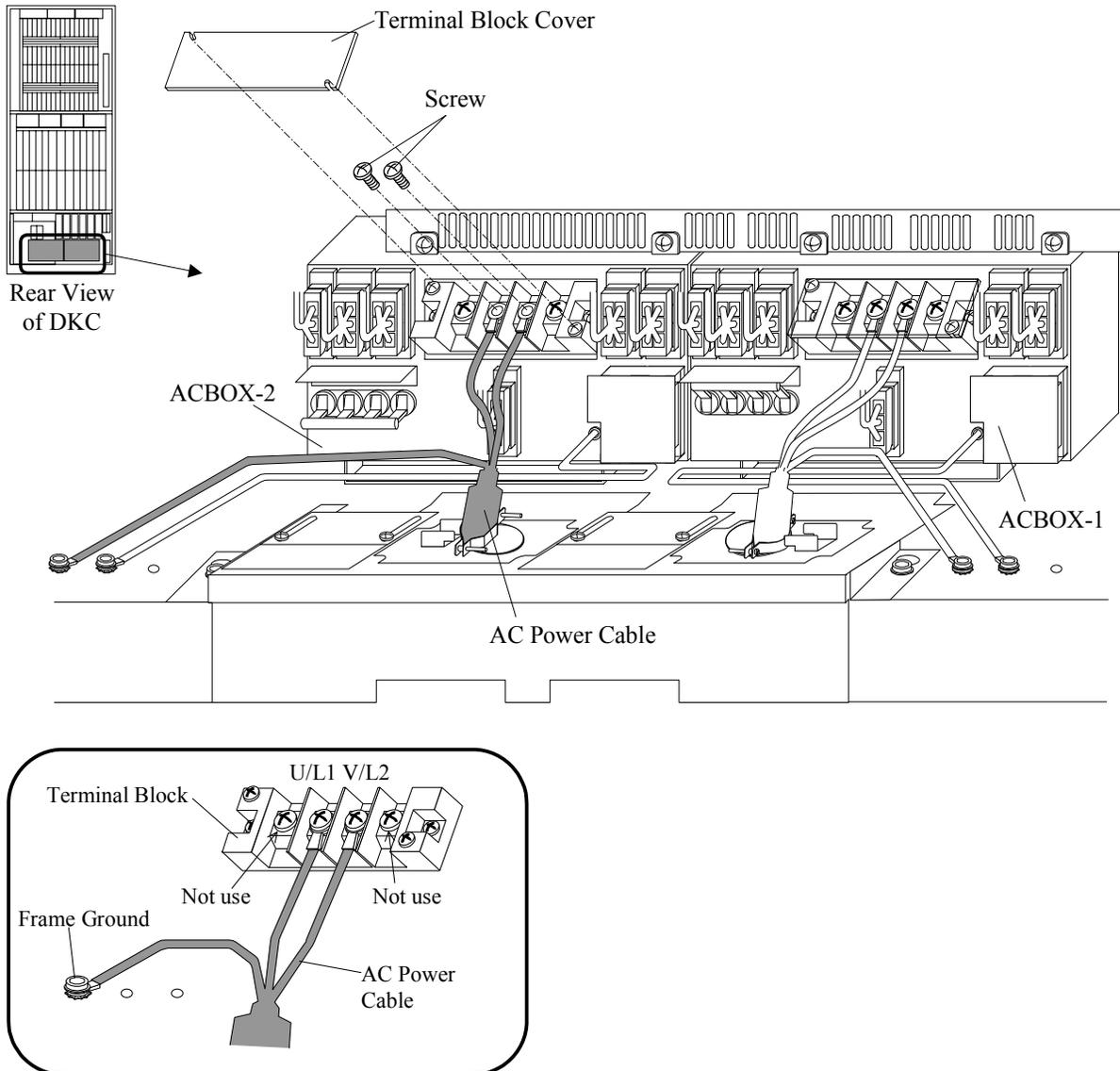
Fig. T20.1-6 Connection of AC Power Cable

7. Power On the replacement component.
   a. Turn on the circuit breaker on the power distribution panel that is connected to AC BOX.
   b. Turn on the circuit breaker on the AC BOX (CB100).

ACBOX-2
ACBOX-1

Rear View of DKC

AC BOX

CB100

ON

Fig. T20.1-7 Turn on the Circuit Breaker

8. Go to SVP post procedure t1 [REP04-300].

2	Replacement of AC BOX for DKU frame

1. Power Off the Component to be replaced

⚠ **WARNING**

Hazardous voltage:
Contact could cause electric shock or burn. Turn off all related breakers and discharge residual voltage, as shown below. (Follow next procedures.)

⚠ **CAUTION**

The device may be powered off when turning off the breakers not shown below.

---

a.   Turn off the circuit breaker for the AC BOX to be replaced (CB100).
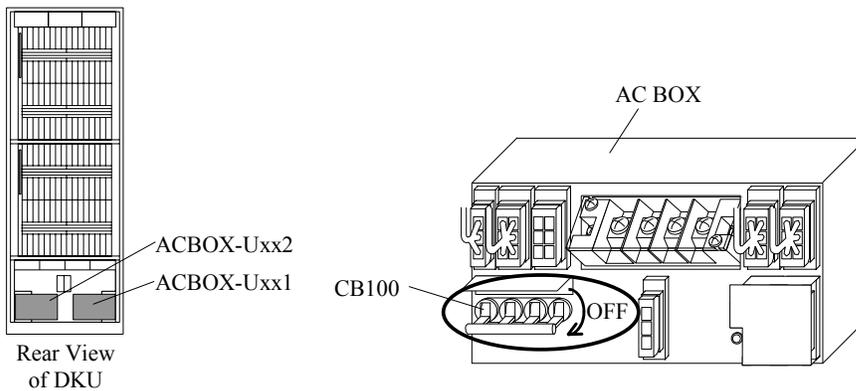
(Note)
    xx: DKU Location (R1, R2, L1, L2)

Fig. T20.2-1 AC BOX Location and Turn off the Circuit Breaker

b.   Turn off the circuit breaker on the power distribution panel in the plant that is connected to the AC BOX to be replaced.

c.   The circuit has residual voltage after turning off the breakers, so wait for one minute.

⚠ **WARNING**

Hazardous voltage:
Contact could cause electric shock or burn. Turning off the breaker on the distribution board connected to the AC BOX before start your work.

---

2. Disconnect the AC Power Cable.
   a. Loosen the screws and remove the terminal block cover.
   b. Remove the screws and disconnect the AC power cable.

Terminal Block Cover

Screw

Rear View
of DKU

ACBOX-Uxx2

ACBOX-Uxx1
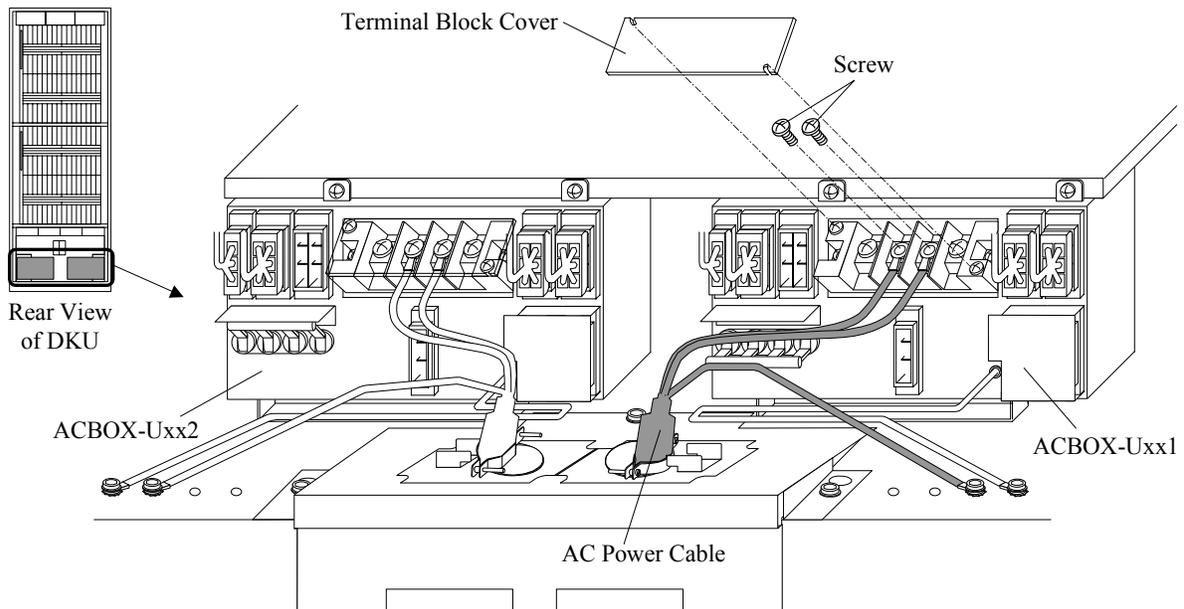
AC Power Cable

Fig. T20.2-2 Disconnection of AC Power Cable

3. Disconnect the Cables.
    a. Remove the WA socket bolt and remove the frame ground cable and the lock washer.
    b. Disconnect the cables (#-P121, #-P122, #-P124 and #-P125) from the AC BOX.
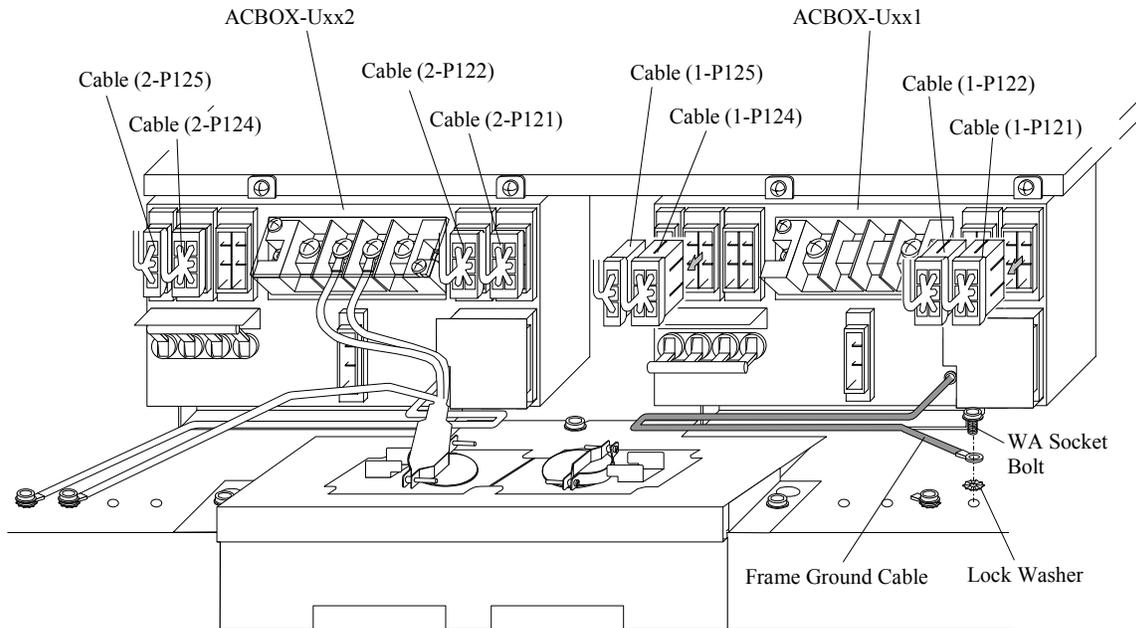
Fig. T20.2-3 Disconnection of Cables

4. Replace the AC BOX.
    a. Remove the two screws and remove the failed AC BOX.
    b. Attach the spare AC BOX and fix it with the screws.
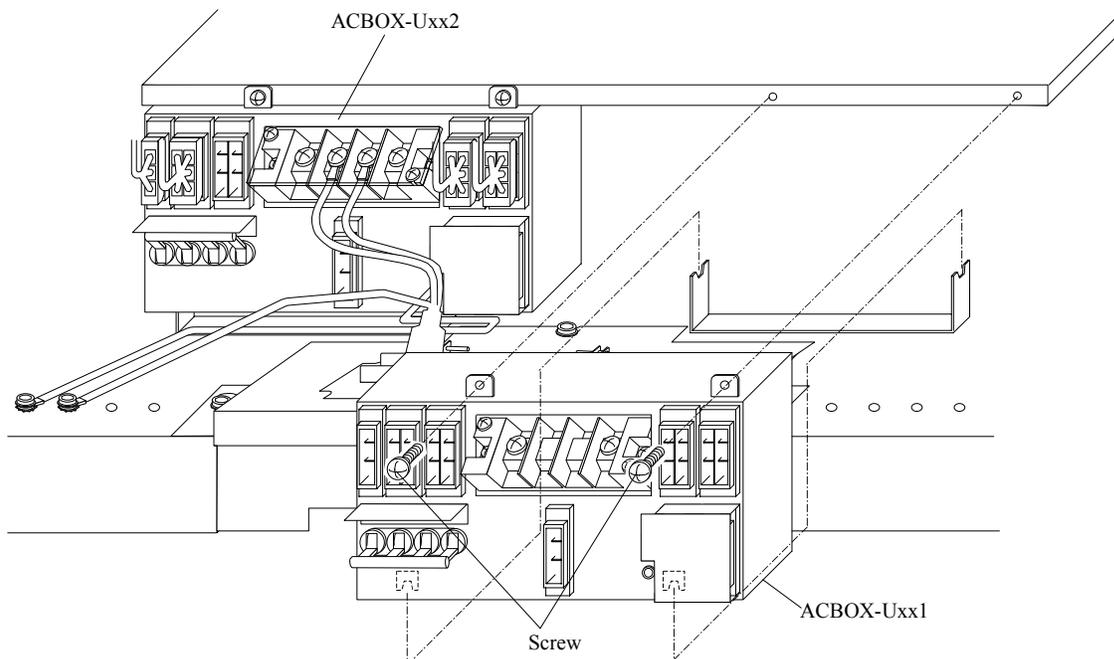
Fig. T20.2-4 Replacement of AC BOX

5. Connect the Cables.
    a. Connect the cables (#-P121, #-P122, #-P124 and #-P125) to the AC BOX.

Table T20.2-1 Cable Connection of AC BOX

No.	Cable No.		Connector No.	Remarks
	ACBOX-Uxx1	ACBOX-Uxx2		
1	1-P121	2-P121	J121	
2	1-P122	2-P122	J122	
3	1-P124	2-P124	J124	
4	1-P125	2-P125	J125	
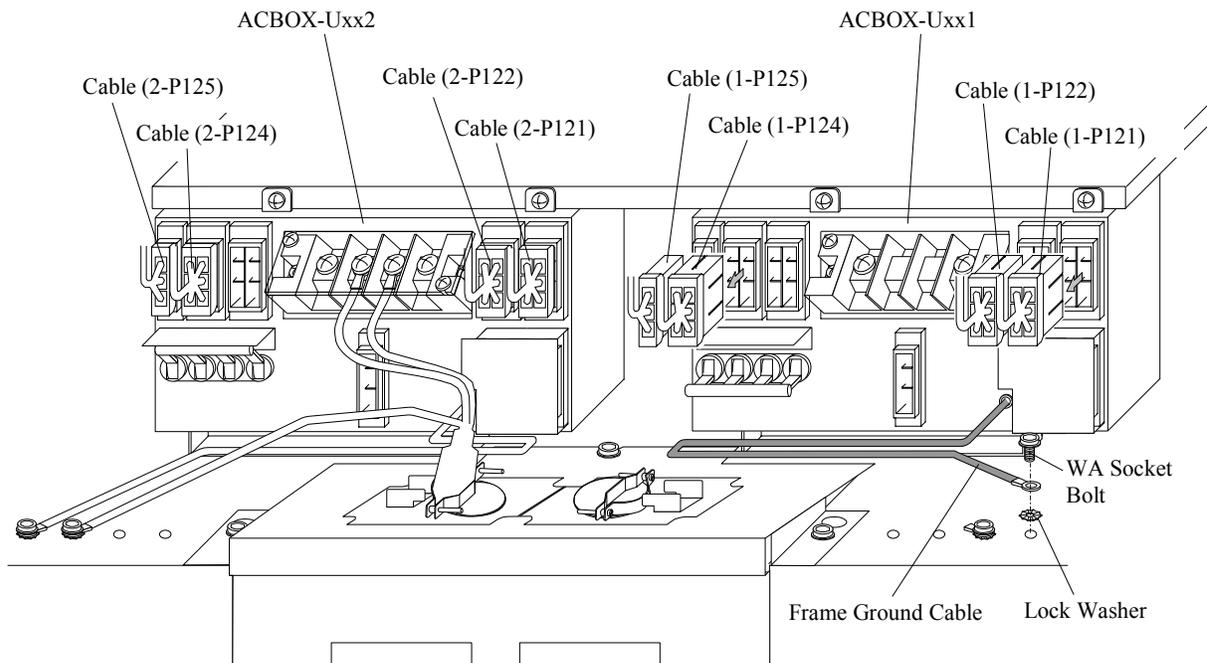
Fig. T20.2-5 Connection of Cables

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SC02540Z

REP03-1520
Rev.0 / Mar.2007

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6. Connect the AC power cable.
    a. Connect the AC power cable to the AC BOX.
    b. Attach the terminal block cover with the screws.

Table T20.2-2 AC Power Cable Conductors number

No.	Region	Input Voltage	AC Power Cable Conductors	Remarks
1	For USA	200-230Vac	3 conductors (U/L1, V/L2, FG)	
2	For Europe	200-240Vac	3 conductors (U/L1, V/L2, FG)	
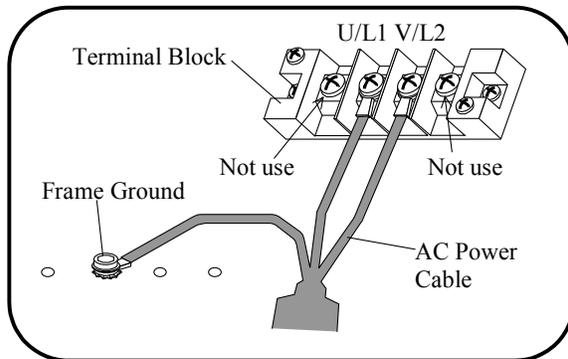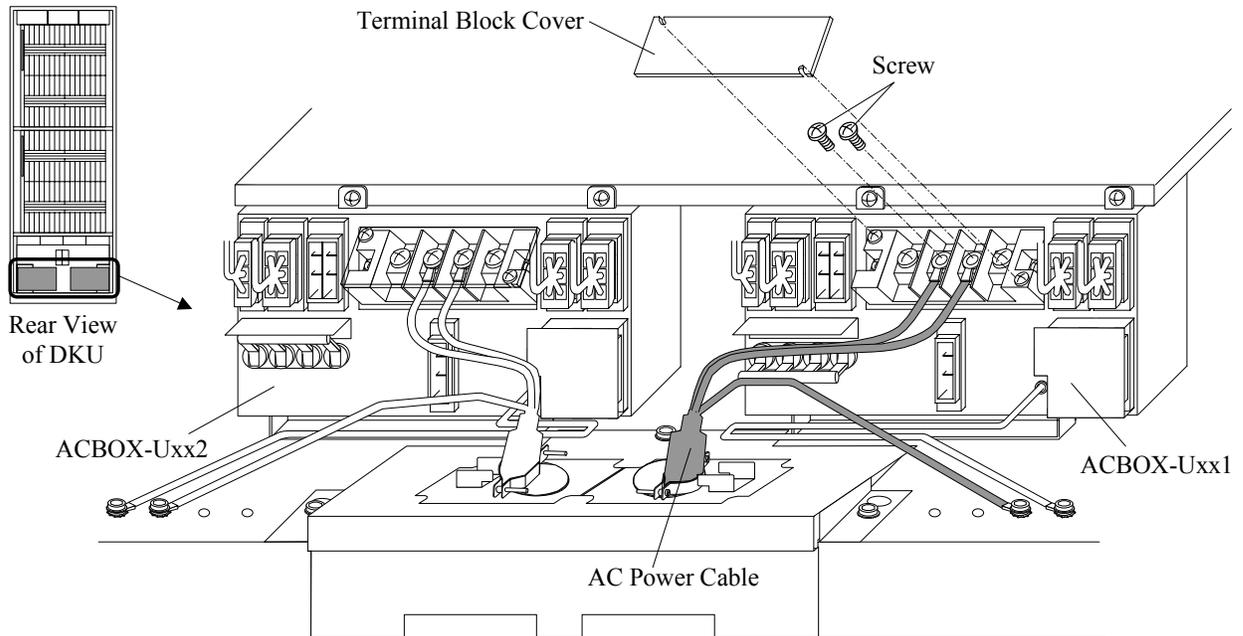
Fig. T20.2-6 Connection of AC Power Cable

7. Power On the replacement component.
    a. Turn on the circuit breaker on the power distribution panel that is connected to AC BOX.
    b. Turn on the circuit breaker on the AC BOX (CB100).
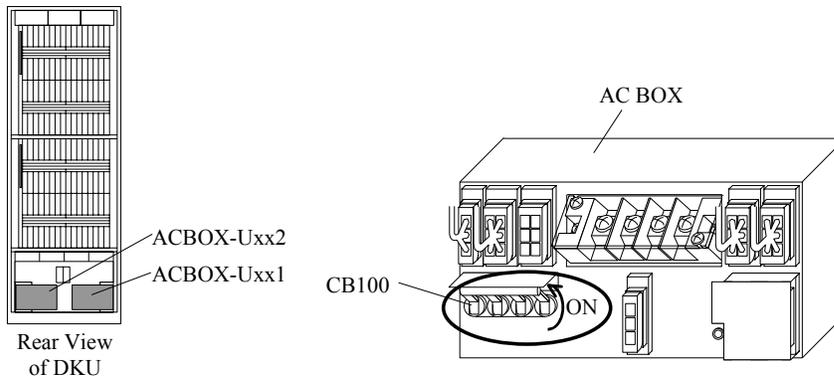
Fig. T20.2-7 Turn on the Circuit Breaker

8. Go to SVP post procedure t4 [REP04-850].

[HARDWARE T21]

Location		Function Name of Component	Part Name
Front Logic Box or Rear Logic Box	1	Fibre SFP Transceiver (1/2/4Gbps) (DKC-F610I-8FS/16FS/8MFL/8MFS)	• SFP (SHORT 4G) • SFP (LONG 4G)
	2	Fibre SFP Transceiver (2/4/8Gbps) (DKC-F610I-8US)	• SFP (SHORT 8G) • SFP (LONG 8G)
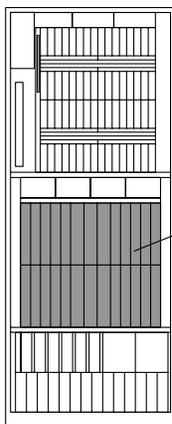
Front Logic Box

Rear Logic Box

Front View of DKC
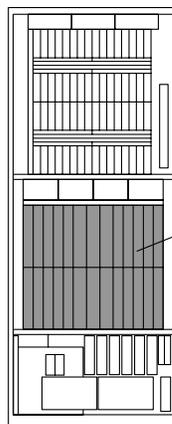
Rear View of DKC
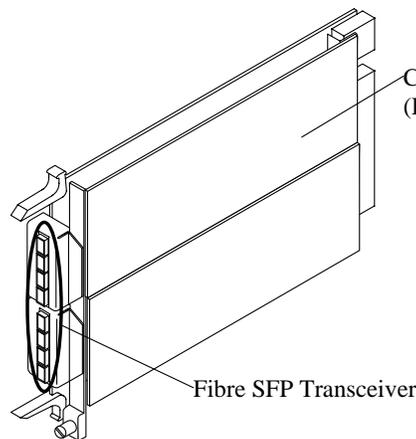
CHA PCB
(DKC-F610I-8FS/16FS/8US/8MFL/8MFS)

Fibre SFP Transceiver

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.

1	Fibre SFP Transceiver

1. Replacement of SFP
   a. Make sure of the CHA and Port Locations of the SFP to be replaced. (Refer to pages LOC04-10, LOC04-20, and LOC04-40.)

⚠ **CAUTION**

If the SFP of a wrong port is removed, a system down may be caused. Make sure that the location of the SFP to be replaced is correct.

---

   b. Disconnect the optical fibre cable from the SFP to be replaced.
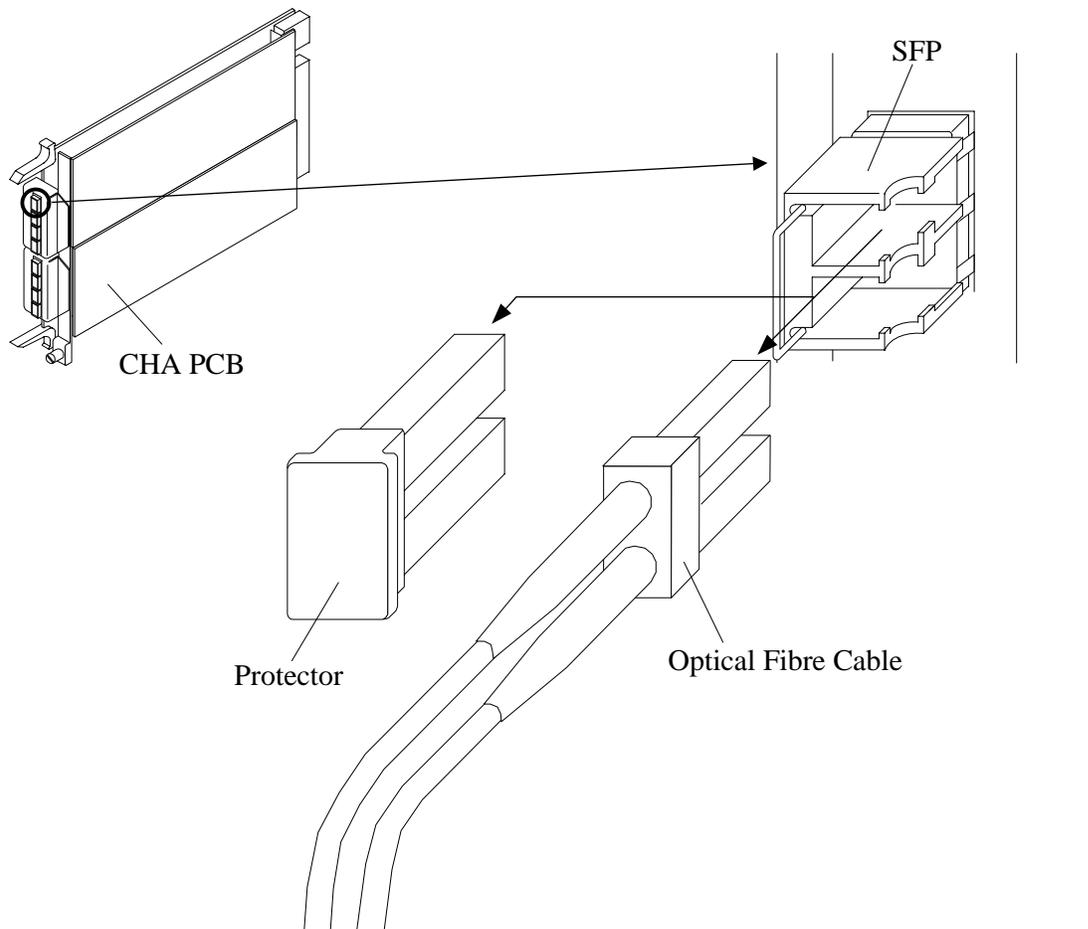
Fig. T21-1 Disconnection of Cable

c. Raise the lever forward and remove the SFP.
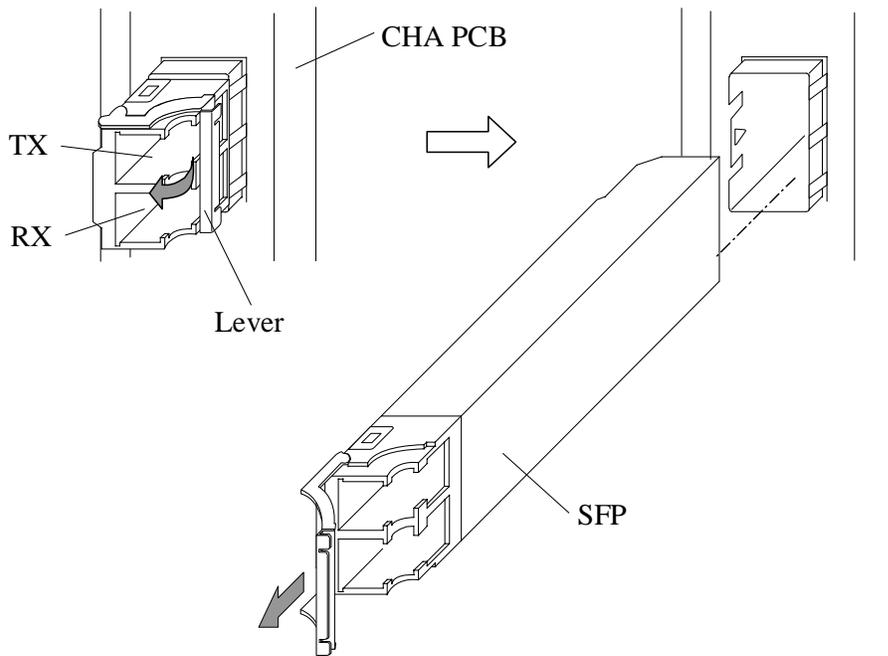
Fig. T21-2 Removal of SFP

    d.   Insert the spare SFP to the CHA PCB.

    e.   Connect the optical fibre cable to the SFP.

SFP (Short Wavelength)

SFP (SHORT)

Black
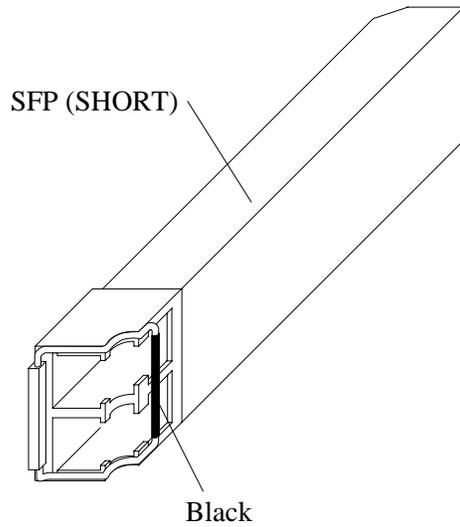
SFP (Long Wavelength)

SFP (LONG)

Blue   Blue
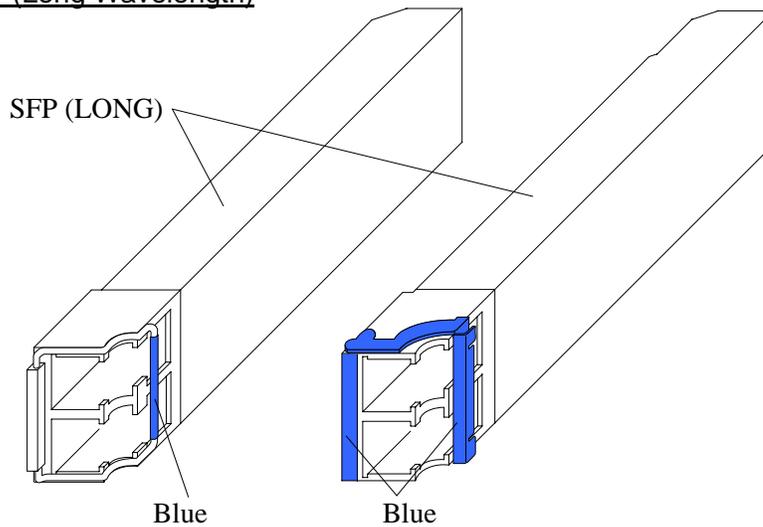
Fig. T21-3 How to distinguish SFP

2.   Go to SVP post procedure t5 [REP04-960].

[HARDWARE T22]

Location		Function Name of Component	Part Name
Upper front or upper rear of DKC	1	FDD	FDD (USB)
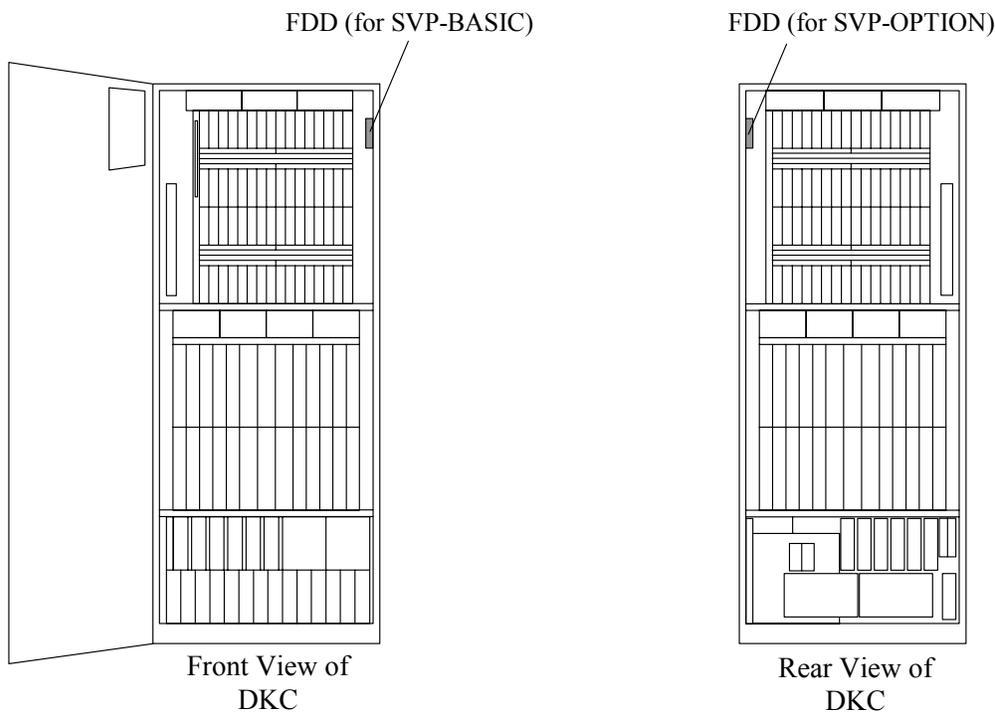
FDD (for SVP-BASIC)   FDD (for SVP-OPTION)

Front View of
DKC

Rear View of
DKC

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.

1	FDD

1. Pre-procedure of FDD removal
   a. Move a mouse cursor onto the icon that is for detaching devices. That locates on lower right of the screen. (Inside of red circle of the figure below) And, click a left button on the icon.

Icon for removing devices

   b. Then, the menu would be displayed on the icon that means removable devices. Next, move a mouse cursor onto the menu "Safely remove Y-E Data USB Floppy - Drive (A)". And, click a left button on the menu.
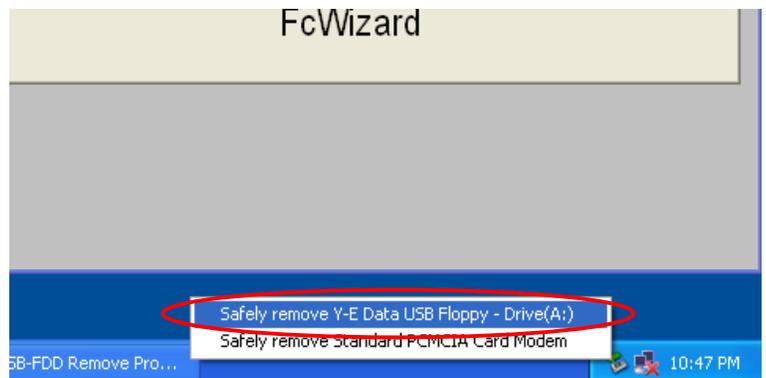
c. Confirm that the message of "The 'Y-E Data USB Floppy' device can now be safely removed from the system." is displayed.

d. Open the Windows Explorer ([Start]-[All Programs]–[Accessories]–[Windows Explorer]), and confirm non-existence of the USB-FDD "3 1/2 Floppy (A:)" in there.
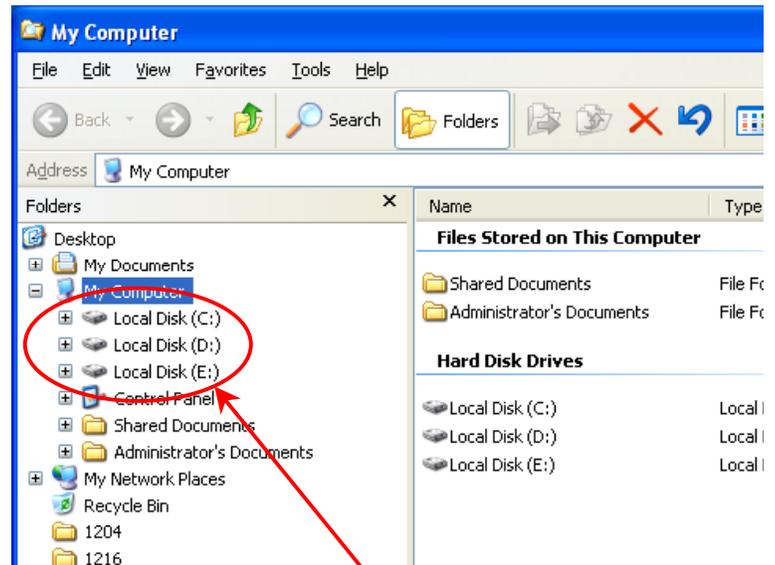
Confirm a non-existence of the FDD

2.   Remove the covers.

In case of the FDD for the SVP-BASIC

    a.   Remove the FSW covers and side plate from the front of the DKC.

Screw

Side Plate

FSW Cover

Front View of
DKC
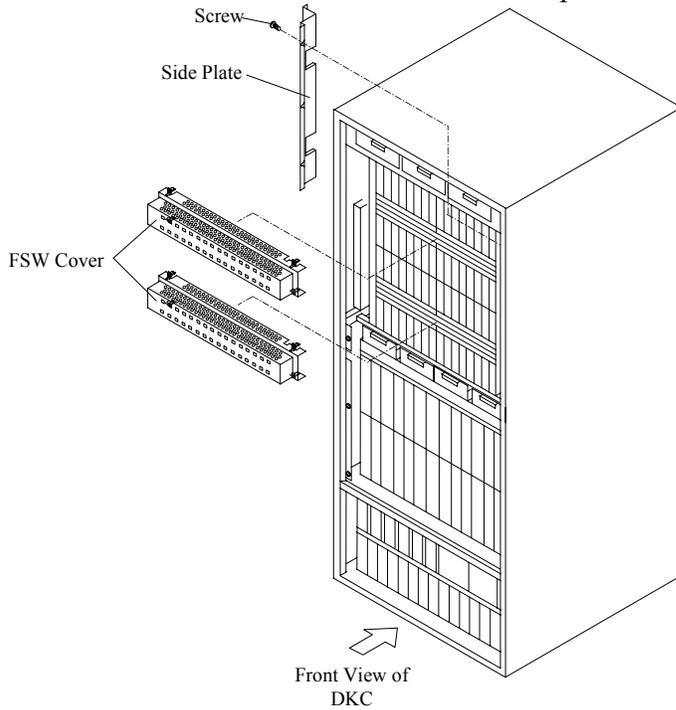
Fig. T22-1 Removal of Covers

In case of the FDD for the SVP-OPTION

    a.   Remove the FSW covers and side plate from the rear of the DKC.

Screw

Side Plate

FSW Cover

Rear View of
DKC
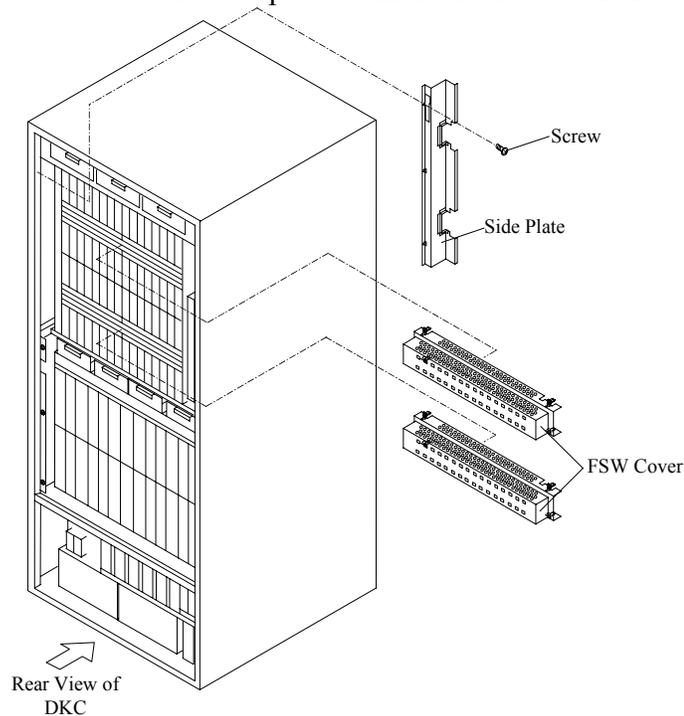
Fig. T22-2 Removal of Covers

3. Replace the FDD.
   a. Disconnect the USB cable of the FDD from the USB extension cable.
   b. Open the locking clamp and remove the excess portion of the cable.
   c. Replace the FDD.
   d. Connect the USB cable of the FDD to USB extension cable.
   e. Fix the excess portion of the cable with the locking clamp.
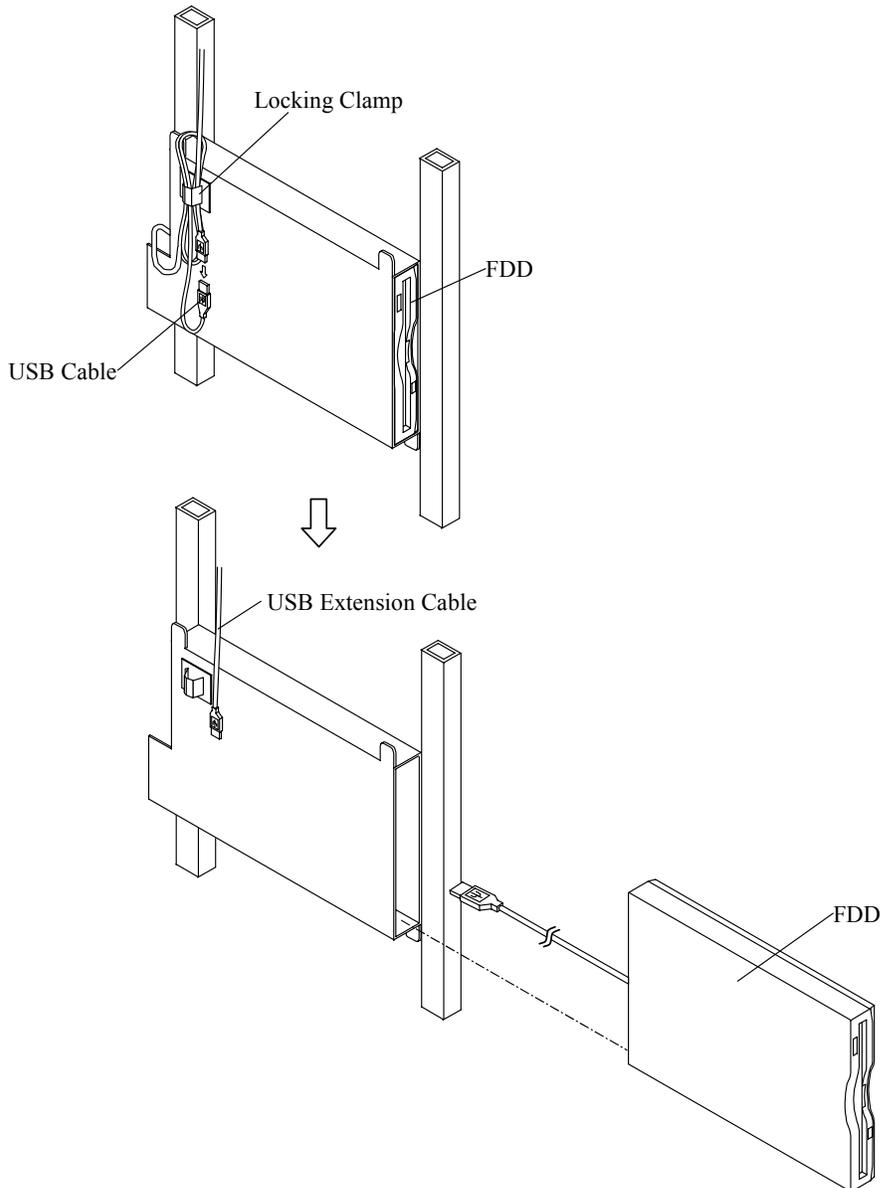
Fig. T22-3 Replacement of FDD

4. Attach the covers.
   a. Attach the side plate and FSW covers to front or rear of the DKC. Refer to Fig. T22-1 or Fig. T22-2.

5.   Confirmation of FDD attachment
   a.   Open the Windows Explorer ([Start]–[All Programs]–[Accessories]–[Windows Explorer]),
        and confirm an existence of the USB-FDD ”3 1/2 Floppy (A:)” in there.
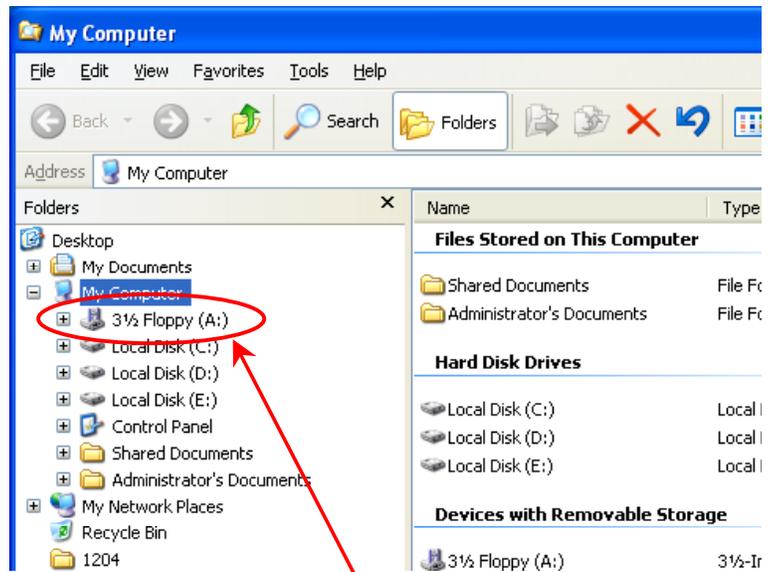
Confirm an existence of the FDD

6.   Replacement work is end. (Post procedure is unnecessary.)

[HARDWARE T23]

Location		Function Name of Component	Part Name
Lower rear of DKC	1	BATREG	• SH459-A
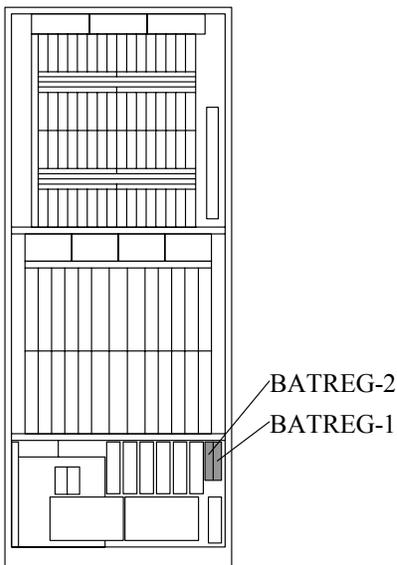
BATREG-2
BATREG-1

Rear View of
DKC

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.

1	Replacement of BATREG

1. Replace the BATREG PCB.
   a. Remove the screw from the BATREG PCB.
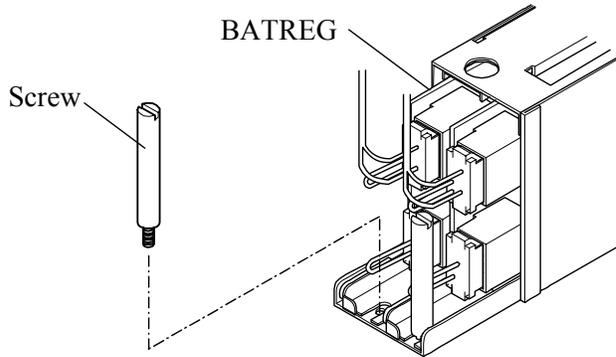
Fig. T23-1 Removal of Screw

   b. Connect the Maintenance Jumper to the Shut Down Connector on the BATREG.
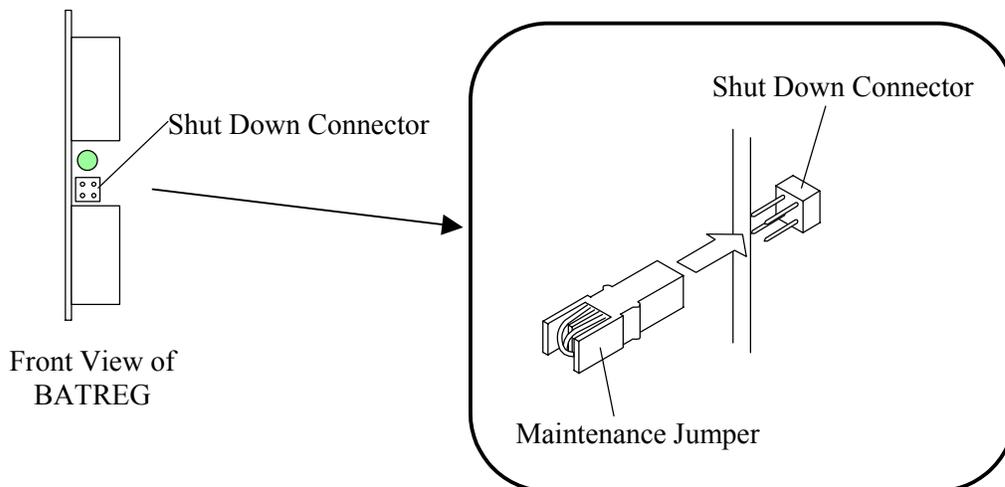
Fig. T23-2 Connection of Maintenance Jumper

    c. Disconnect the cables (P61-x, Terminal Jumper) from the BATREG PCB.
    d. Remove the BATREG PCB.
    e. Remove the Maintenance Jumper from the failed BATREG PCB to spare BATREG PCB.
    f. Insert the spare BATREG PCB.

PCB　　　Main Edge Connector

Note: Check that the main edge connector of the PCB has no
deformation, damage or sticking of dust before installing the PCB.
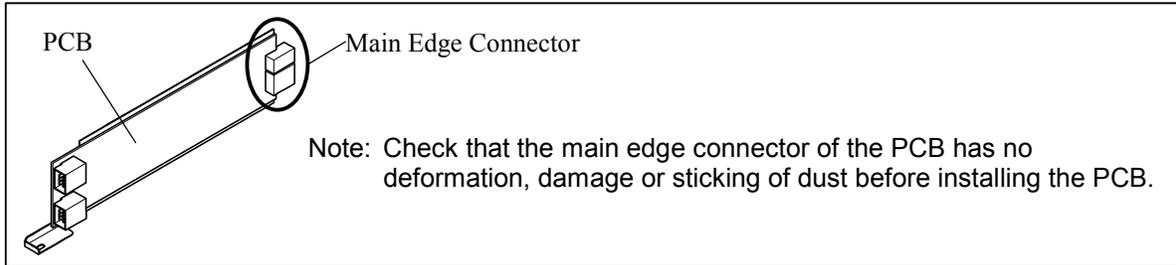
    g. Connect the cables (P61-x, Terminal Jumper) to the BATREG PCB.
    h. Remove the Maintenance Jumper from the spare BATREG PCB.
    i. Fix the BATREG PCB with the screw.

Screw　　BATREG　Cable (P61-x)　Terminal Jumper (JUMPER)

Note: P61-x → BATREG Location (1, 2)
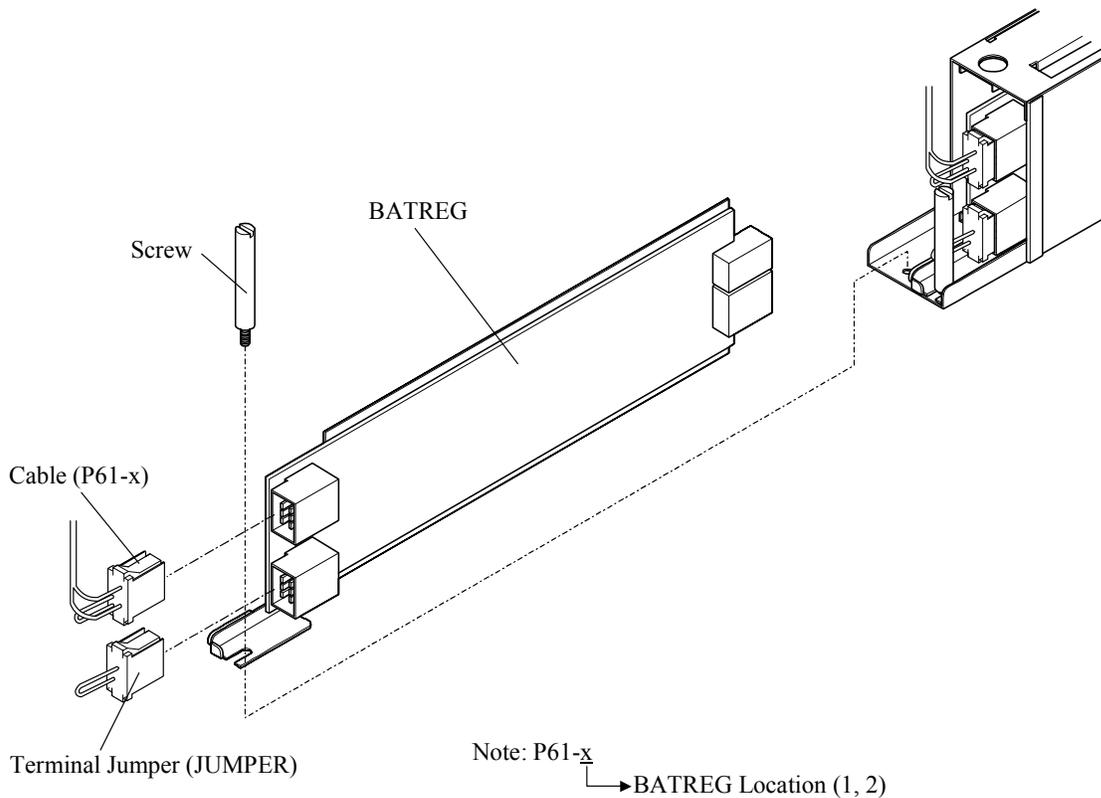
Fig. T23-3 Replacement of BATREG

2. Go to SVP post procedure t1 [REP04-300].

[HARDWARE T24]

Location		Function Name of Component	Part Name
Lower rear of DKC	1	FUSE	• SH458-A
Lower rear of DKU	2	FUSE	
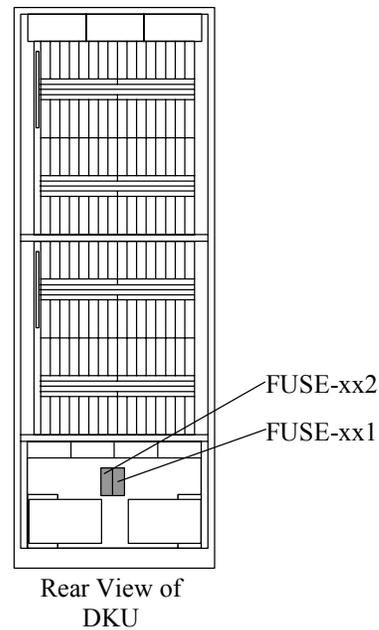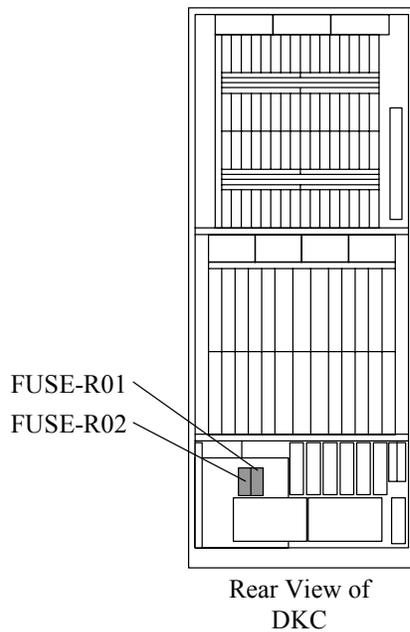
FUSE-R01

FUSE-R02

FUSE-xx2

FUSE-xx1

Rear View of
DKC

Rear View of
DKU

(Note)
xx: DKU Location (R1, R2, L1, L2)

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.

1	Replacement of FUSE in the DKC

1. Replace the FUSE PCB.
   a. Disconnect the cables (P801-x or Terminal Jumper, P802-x) from the FUSE PCB.
   b. Loosen the screw and remove the FUSE PCB.
   c. Insert the spare FUSE PCB and fasten the screw.

PCB   Main Edge Connector

Note: Check that the main edge connector of the PCB has no deformation, damage or sticking of dust before installing the PCB.

   d. Connect the cables (P801-x or Terminal Jumper, P802-x) to the FUSE PCB.

FUSE

Cable (P801-x) or
Terminal Jumper (JUMPER)

Screw

Note: P802-x
        └──► FUSE Location (1, 2)

Cable (P802-x)
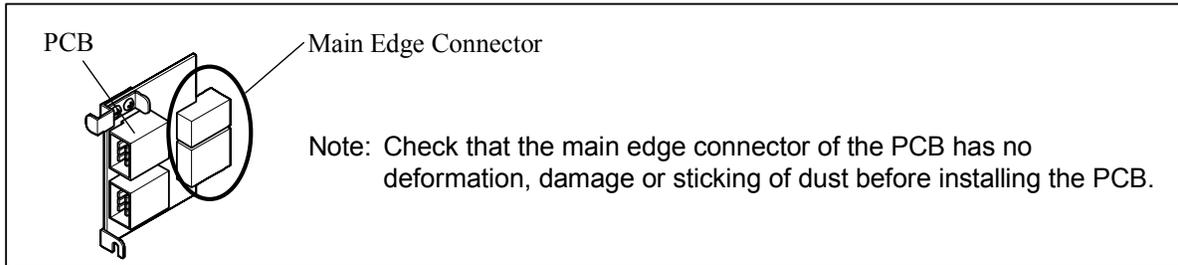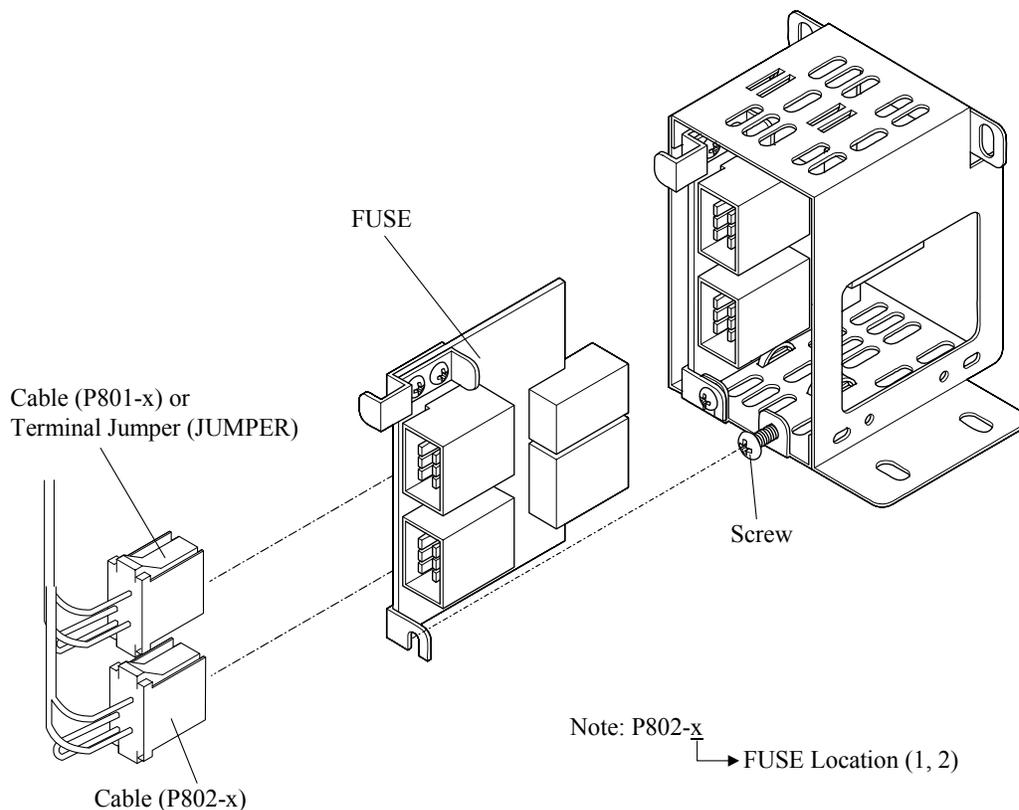
Fig. T24.1-1 Replacement of FUSE

2. Go to SVP post procedure t4 [REP04-850].

2	Replacement of FUSE in the DKU

1. Replace the FUSE PCB.
    a. Disconnect the cables (P801-x or Terminal Jumper, P802-x) from the FUSE PCB.
    b. Loosen the screw and remove the FUSE PCB.
    c. Insert the spare FUSE PCB and fasten the screw.

PCB   Main Edge Connector

Note: Check that the main edge connector of the PCB has no
      deformation, damage or sticking of dust before installing the PCB.

    d. Connect the cables (P801-x or Terminal Jumper, P802-x) to the FUSE PCB.

FUSE

Cable (P801-x) or
Terminal Jumper (JUMPER)

Screw

Cable (P802-x)

Note: P802-x
                    → FUSE Location (1, 2)
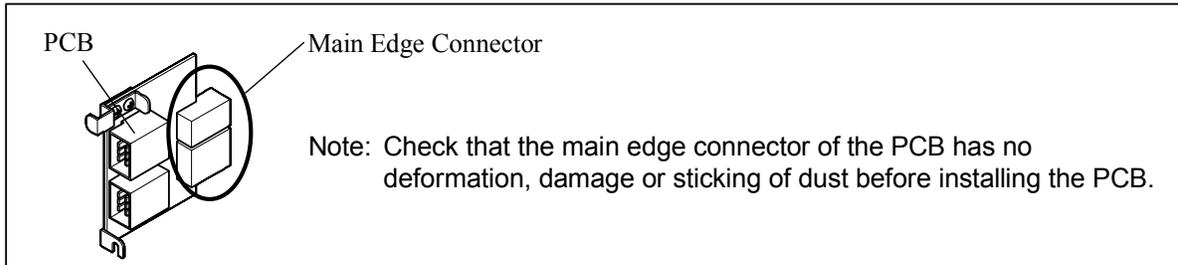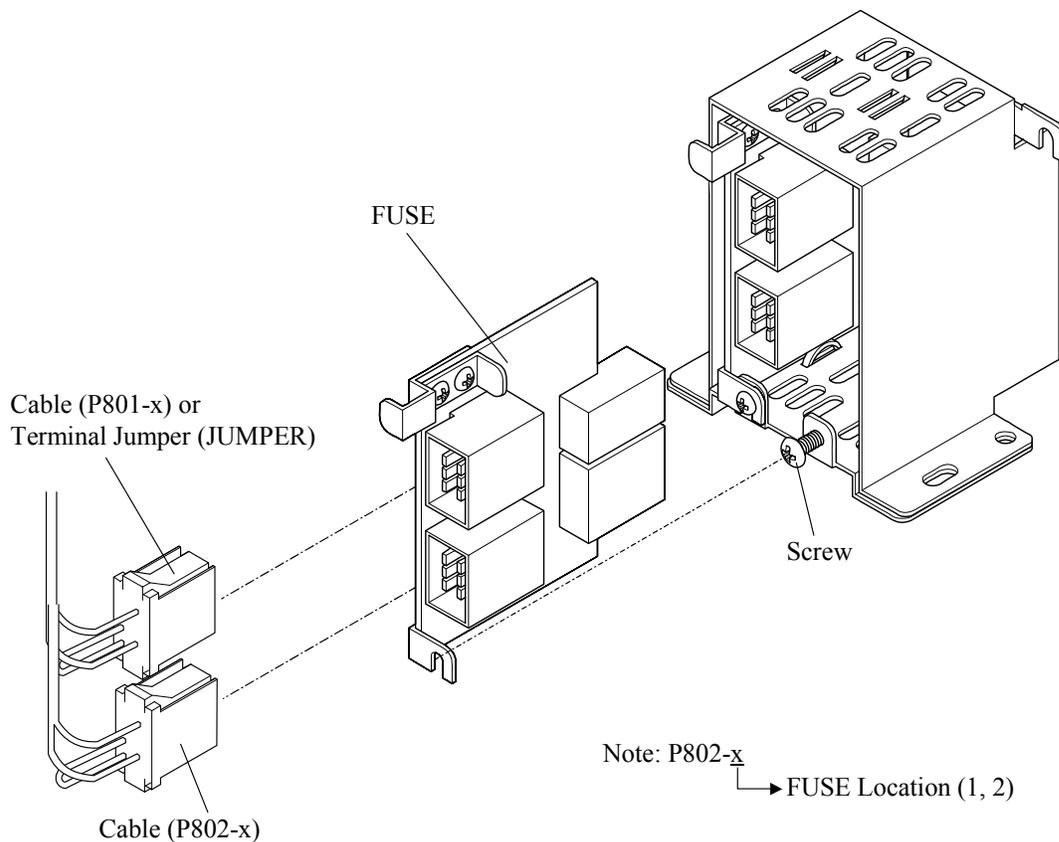
Fig. T24.2-1 Replacement of FUSE

2. Go to SVP post procedure t4 [REP04-850].

[POST-PROCEDURE a]

— OUTLINE —

① Execute CUDG on P-DEV
② Specify recovery
③ Copy back
④ SIM Complete

Before starting the <Check the beginning of recovery> operation in POST-PROCEDURES a, b, c and d, be sure to insert a removable media for dump, collect failure information, and return the removable media with the failed HDD.
A dump removable media is attached with a Spare HDD.

1. <Get the error information>
   Input the Field Failure Information, and select (CL) [Ok].

| [HDS] | [HP] |

"Insert a removable media for gathering error information and select [OK]. The information will be essential to investigate the problem of the hardware. You can select [Cancel] only when removable media is not available." is displayed.

When Client PC is selected, the directory selection dialog is displayed.
Please select an arbitrary directory if necessary.
Select (CL) [Save] when saving a file in a specified directory.
It returns to the drive selection screen when the [Cancel] is selected (CL).

• When the destination media is write-protected.
<For Windows XP>
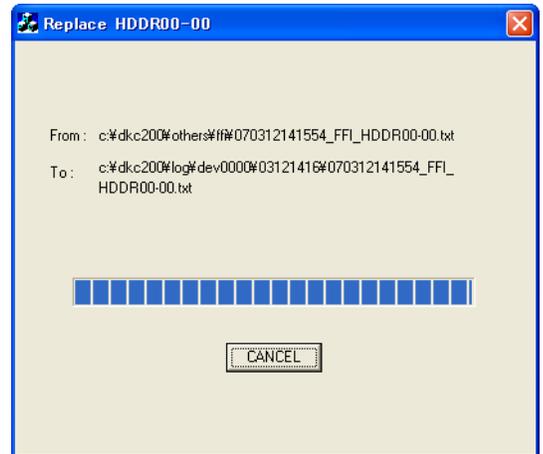The dialog remains displayed after selecting (CL)
[OK].

• When dialog of the destination drive specified with the Client PC is open, the media is
removed, and select (CL) [Save].
<For Windows XP>
The dialog remains displayed after selecting (CL) [OK].

2. \<Copy of the error information\>
    The error information is copied onto media.

Replace HDDR00-00

From : c:¥dkc200¥others¥ff¥070312141554_FFI_HDDR00-00.txt

To : c:¥dkc200¥log¥dev0000¥03121416¥070312141554_FFI_
HDDR00-00.txt

CANCEL

"Remove the media." is displayed.
Remove the removable media and select (CL) [OK].

Replace

[SVP2319i]

Remove the media.

OK

3. \<Spin up the Physical Drive\>
    "Spinning up..." is displayed.

4. \<DKU INLINE\>
    "DKU INLINE is now running..." is displayed.

5. <Replacement of the DKU micro-program>
    When the revision of the DKU micro-program in the SVP hard disk is newer than that in the
    PDEV, the following message appears on the screen.
    The message "Exchanging DKU micro-program..." appears.

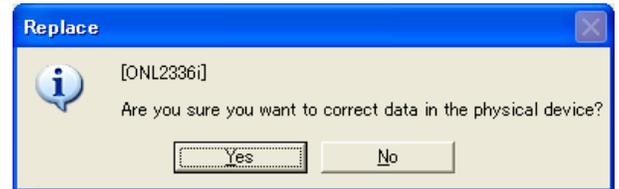6. <Restore Physical Drive>
    "Restoring..." is displayed.

7. <Check the Physical Drive>
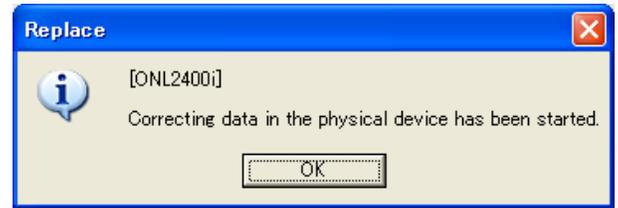   "Checking..." is displayed.

8. <Check the beginning of copy-back>
    A message, which asks for confirmation of whether or not to start a copy-back or to make the
    automatic copy-back, is displayed.

    [Confirmation of starting a copy-back]
    Select (CL) [Yes] in response to "Are you
    sure you want to copy data in spare device to
    the physical device?".
    Go to Step 9.

    [Confirmation of making an automatic copy-back]
    Select (CL) [OK] in response to a message,
    "After data is copied to the spare device,
    copy-back will be performed.".
    Go to Step 10.

9. <Check starting of copyback>
    "Copying..." is displayed.
    Select (CL) [OK] in response to "Copying
    data in spare device to the physical device has
    been started.".

10.
    When interrupting a copy, select (CL) the
    [Drive Interrupt] button.
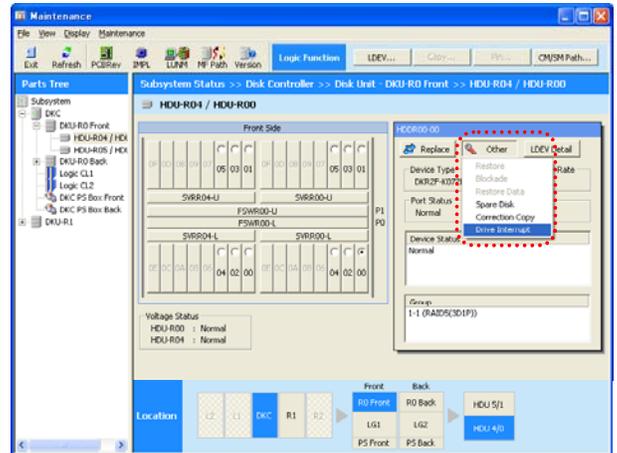
11. <SIM Complete>
    Refer to SVP02-560.

[POST-PROCEDURE b]

— OUTLINE —

① Execute CUDG on P-DEV.
② Specify recovery.
③ Correction copy
④ Reset ORM Error Count on the P-DEV.
⑤ Reset Threshold Counter
⑥ SIM Complete

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Before starting the <Check the beginning of recovery> operation in POST-PROCEDURES a, b, c and d, be sure to insert a removable media for dump, collect failure information, and return the removable media with the failed HDD.
A dump removable media is attached with a Spare HDD.

1. <Get the error information>
   Input the Field Failure Information, and select (CL) [Ok].

   [HDS]   [HP]

   "Insert a removable media for gathering error information and select [OK]. The information will be essential to investigate the problem of the hardware. You can select [Cancel] only when removable media is not available." is displayed.

   When Client PC is selected, the directory selection dialog is displayed.
   Please select an arbitrary directory if necessary.
   Select (CL) [Save] when saving a file in a specified directory.
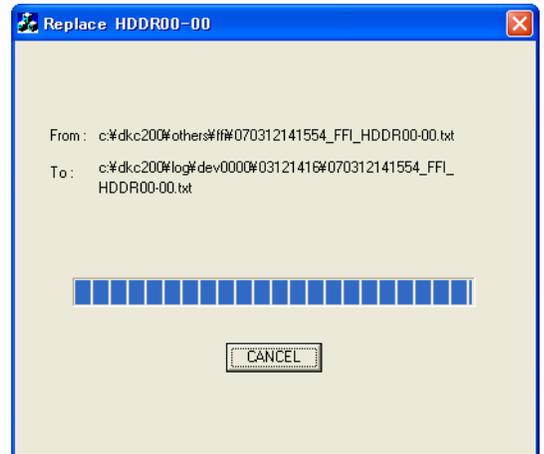   It returns to the drive selection screen when the [Cancel] is selected (CL).

• When the destination media is write-protected.
<For Windows XP>
The dialog remains displayed after selecting (CL) [OK].

• When dialog of the destination drive specified with the Client PC is open, the media is removed, and select (CL) [Save].
<For Windows XP>
The dialog remains displayed after selecting (CL) [OK].

2. <Copy of the error information>
   The error information is copied onto media.

Replace HDDR00-00

From : c:¥dkc200¥others¥ff¥070312141554_FFI_HDDR00-00.txt

To : c:¥dkc200¥log¥dev0000¥03121416¥070312141554_FFI_
HDDR00-00.txt

CANCEL

"Remove the media." is displayed.
Remove the removable media and select (CL) [OK].

Replace

[SVP2319i]

Remove the media.

OK

3. <Spin up the Physical Drive>
   "Spinning up..." is displayed.

4. <DKU INLINE>
   "DKU INLINE is now running..." is displayed.

5. <Replacement of the DKU micro-program>
   When the revision of the DKU micro-program in the SVP hard disk is newer than that in the PDEV, the following message appears on the screen.
   The message "Exchanging DKU micro-program..." appears.

6. <Restore Physical Drive>
   "Restoring..." is displayed.

7. <Check the Drive Status>
   "Checking..." is displayed.
   Device is still blocked.

8. <Check the beginning of correction copy>
   Select (CL) [Yes] in response to "Are you sure you want to correct data in the physical device?".

9. <Correct data>
   "Correcting..." is displayed.

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10. <Check the starting of Correction copy>
Select (CL) [OK] in response to "Correcting data in the physical device has been started.".

Replace

[ONL2400i]

Correcting data in the physical device has been started.

OK

11. <Check the end of P-DEV recovery>
Select (CL) [OK] in response to "Replace finished.".

Replace

[ONL2411i]

Replace finished.

OK
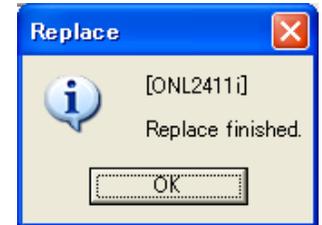
12.
When interrupting the correction copy, select the PDEV to which the copy is being made and select (CL) the [Drive Interrupt] button.
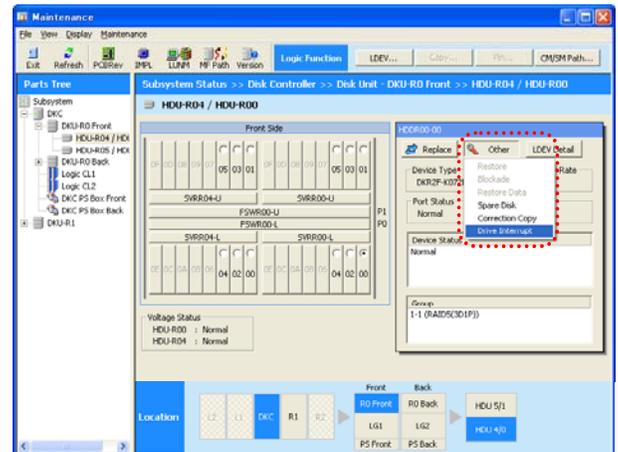
13. <SIM Complete>
Refer to SVP02-560.

[POST-PROCEDURE c]

— OUTLINE —

① Execute CUDG on P-DEV
② Perform L-DEV formatting on P-DEV
③ Reset ORM Error Count on P-DEVs
④ Recover with backup data
⑤ Reset Threshold Counter
⑥ SIM Complete

⚠ **CAUTION**

Before starting the <Check the beginning of recovery> operation in POST-
PROCEDURES a, b, c and d, be sure to insert a removable media for dump, collect
failure information, and return the removable media with the failed HDD.
A dump removable media is attached with a Spare HDD.

1. <Get the error information>
   Input the Field Failure Information, and select (CL) [Ok].

[HDS]   [HP]

"Insert a removable media for gathering error
information and select [OK]. The information will
be essential to investigate the problem of the
hardware. You can select [Cancel] only when
removable media is not available." is displayed.

When Client PC is selected, the directory selection
dialog is displayed.
Please select an arbitrary directory if necessary.
Select (CL) [Save] when saving a file in a specified
directory.
It returns to the drive selection screen when the
[Cancel] is selected (CL).

• When the destination media is write-protected.
<For Windows XP>
The dialog remains displayed after selecting (CL)
[OK].

Select Saving Directory

⚠ dummyfile
Cannot access this file.
Check security privileges over the network drive.

OK

• When dialog of the destination drive specified with the Client PC is open, the media is removed, and select (CL) [Save].
<For Windows XP>
The dialog remains displayed after selecting (CL) [OK].

Select Saving Directory

⚠ dummyfile
The above file name is invalid.

OK

2. <Copy of the error information>
   The error information is copied onto media.

"Remove the media." is displayed.
Remove the removable media and select (CL) [OK].

3. <Spin up the Physical Drive>
   "Spinning up..." is displayed.

4. <DKU INLINE>
   "DKU INLINE is now running..." is displayed.

5. <Replacement of the DKU micro-program>
   When the revision of the DKU micro-program in the SVP hard disk is newer than that in the PDEV, the following message appears on the screen.
   The message "Exchanging DKU micro-program..." appears.

6. <Restore Physical Drive>
   "Restoring..." is displayed.

7. <Check the Drive Status>
   "Checking..." is displayed.

8. <Correction Copy disable message>

⚠ **CAUTION**

If a blocked HDD exists in the same parity group, replace the HDD.
After confirming that "NORMAL" is indicated for all the HDDs in the same parity group, execute an L-DEV formatting following the procedure below.

Select (CL) [OK] in response to "Correcting data in the physical device could not be done. If the copying process is operating at the other HDD in the same parity group, retry again after completing that operation.".

9.   <Select [Logical Device]>

⚠ **CAUTION**

Before you perform following steps, be sure to call T.S.D.
Data housed in Logical Device will be lost due to formatting Logical Device.

Select (CL) [Logical Device] from
[Maintenance].
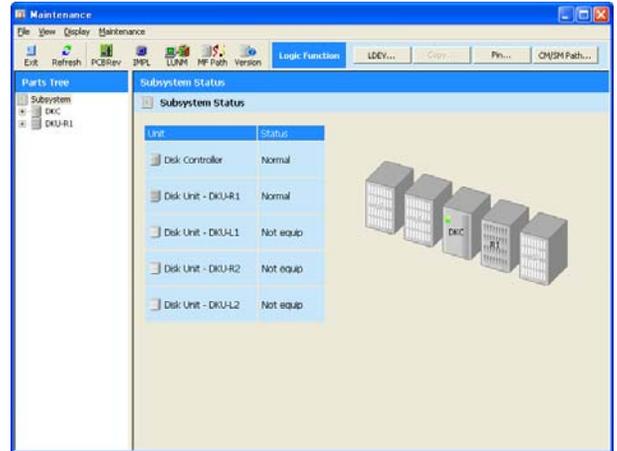
10. <Logical Device Status>
    Select (CL) [Format].
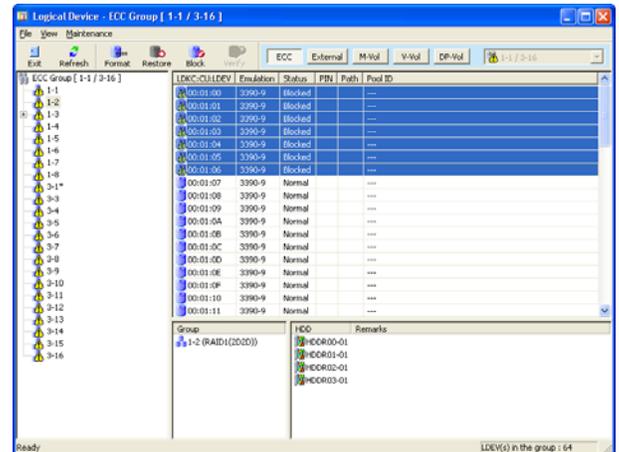
11. <Format Logical Device>
    Select (CL) [Format] or [Quick Format].
    If the target LDEV is not blocked, return to
    'Logical Device' dialog box.
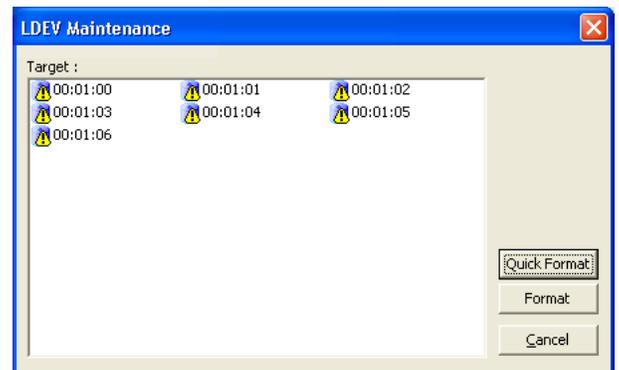
12. <Caution message for DATA lost>

⚠ **CAUTION**

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 division about the appropriateness of the operation, and input the password after
getting an approval of executing the operation.

"Data in the specified logical device may be
lost due to this operation. You need the
password to continue." is displayed.
Enter the password and select (CL) [OK].

13. <Confirmation of processing progress>
   - In case of LDEV formatting
     "Formatting logical devices..." is displayed.
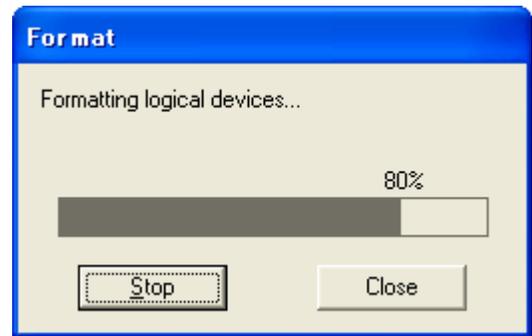
   - In case of Quick Format
     "Preparing Quick Format logical devices..." is
     displayed.
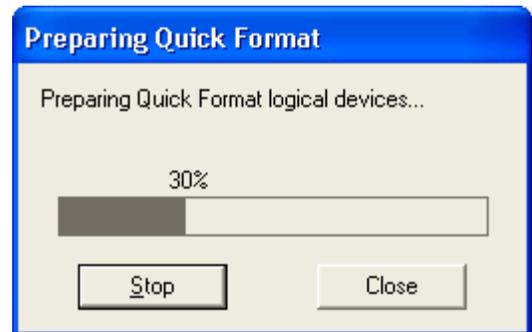
14. <Confirmation of processing end>
   - In case of LDEV formatting
     Select (CL) [OK] in response to "Formatting was
     finished.".

   - In case of Quick Format
     Select (CL) [OK] in response to
     "Preparing Quick Format processing has
     finished.".
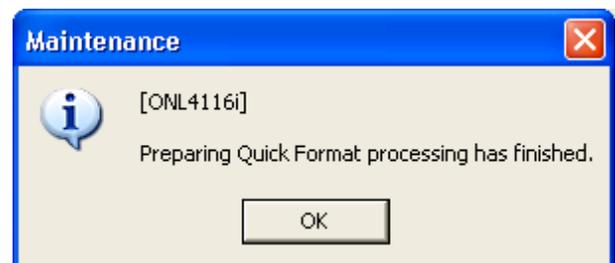
15. <SIM Complete>
   Refer to SVP02-560.

16. <Recover data>
   Ask the customer for recovering data with backup data.

[POST-PROCEDURE d]

— OUTLINE —

① Execute CUDG on P-DEV
② Specify recovery
③ Reset ORM Error Count on the P-DEV
④ Reset Threshold Counter
⑤ SIM Complete

Before starting the <Check the beginning of recovery> operation in POST-PROCEDURES a, b, c and d, be sure to insert a removable media for dump, collect failure information, and return the removable media with the failed HDD.
A dump removable media is attached with a Spare HDD.

1. <Get the error information>
   Input the Field Failure Information, and select (CL) [Ok].

FFI (Field Failure Information)	**FFI (Field Failure Information)**
Date Time : 02/01/2008 13:33:39	Date Time : 02/07/2007 15:46:59
Failure parts name : HDD	Failure parts name : HDD
Failure parts location : HDDR00-00	Failure parts location : HDDR00-00
Serial Number : 00005	Serial Number : 64005
Site-ID & Case No :	CSO# :
SIM/SSB :	SIM/SSB :
Failure Description :	Failure Description :
[Ok] [Cancel]	[Ok] [Cancel]
[HDS]	[HP]

   "Insert a removable media for gathering error information and select [OK]. The information will be essential to investigate the problem of the hardware. You can select [Cancel] only when removable media is not available." is displayed.

   Replace HDDR00-00

   [SVP2318i]

   Insert a removable media for gathering error information and select [OK].
   The information will be essential to investigate the problem of the hardware. You can select [Cancel] only when removable media is not available.

   HDDR00-00

   ⊙ SVP   [A: ▼]
   ○ Client PC

   [Ok] [Cancel]

   When Client PC is selected, the directory selection dialog is displayed.
   Please select an arbitrary directory if necessary.
   Select (CL) [Save] when saving a file in a specified directory.
   It returns to the drive selection screen when the [Cancel] is selected (CL).

   Select Saving Directory

   Save in: [\\tsclient\F on EntireNetwork ▼]
   📁 Data
   📁 Test

   File name: [dummyfile]   [Save]
   Save as type: [Dump Files[*.tgz]]   [Cancel]

• When the destination media is write-protected.
<For Windows XP>
The dialog remains displayed after selecting (CL) [OK].

• When dialog of the destination drive specified with the Client PC is open, the media is removed, and select (CL) [Save].
<For Windows XP>
The dialog remains displayed after selecting (CL) [OK].

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2. <Copy of the error information>
    The error information is copied onto media.

"Remove the media." is displayed.
Remove the removable media and select (CL) [OK].

3. <Check the spin up process>
    "Spinning up..." is displayed.

4. <Check the INLINE process>
    "DKU INLINE is now running..." is displayed.

5. <Replacement of the DKU micro-program>
When the revision of the DKU micro-program in the SVP hard disk is newer than that in the PDEV, the following message appears on the screen.
The message "Exchanging DKU micro-program..." appears.

6. <Restore Physical Drive>
"Restoring..." is displayed.

7. <Check the end of P-DEV recovery>
Select (CL) [OK] in response to "Replace finished.".

Replace

[ONL2411i]

Replace finished.

OK

8. <SIM Complete>
Refer to SVP02-560.

[POST-PROCEDURE f]

— OUTLINE —

① Execute CUDG on cache
② Specify recovery
③ SIM Complete

1. <INLINE CUDG>
   "INLINE CUDG is now running..." is displayed.

2. <Restore the Cache Memory>
   "Restoring the Cache Memory PCB..." is displayed.

3. <Check the end of Cache recovery>
   Select (CL) [OK] in response to "Replace finished.".

4. <SIM Complete>
   Refer to SVP02-560.
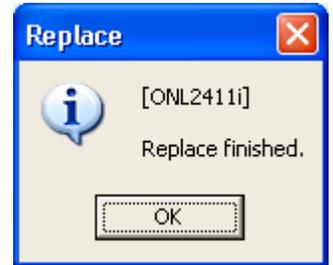
   Go to POST-PROCEDURE z (REP04-1030).

[POST-PROCEDURE g]

— OUTLINE —

① Execute CUDG on SM
② Specify recovery
③ SIM Complete

1. <INLINE CUDG>
    "INLINE CUDG is now running..." is displayed.

2. <Restore the Shared Memory>
    "Restoring the Shared Memory PCB..." is displayed.

3. <Check the end of Shared Memory recovery>
    Select (CL) [OK] in response to "Replace finished.".
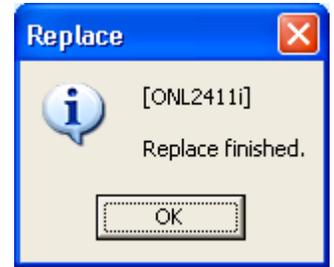
4. <SIM Complete>
    Refer to SVP02-560.

+---+
| ⚠ **CAUTION** |
| When both SM PCBs in the same cluster are blocked, the button on the 'Maintenance' |
| window blinks until replacing another SM PCB in the same cluster with the replaced SM |
| PCB. |
+---+

    Go to POST-PROCEDURE z (REP04-1030).

[POST-PROCEDURE h]

— OUTLINE —

① Specify recovery for CHA/DKA
② Path online (for CHA)
③ SIM Complete

<For CHA/DKA>

1. <Waiting for Power Event>
    "Waiting for Power Event...
    Usually several minutes (maximum 15 minutes)." is displayed.

2. <CUIR recovering when Mainframe Fibre CHA is replaced>
    When the CUIR function is effective, and the following messages are displayed.

    Select (CL) [Yes] in response to:
    "CUIR recovery processing is executed.
    Connect the cable as it was before the
    blockade processing. Please select [OK] after
    you finish connecting the cable."

    REPLACE

    [ONL3950i]

    CUIR recovery processing is executed.
    Connect the cable as it was before the blockade processing.
    Please select [OK] after you finish connecting the cable.

    OK

    "CUIR recovery processing..." is displayed.

    Replace

    CUIR recovery processing...

    50%

    Cancel
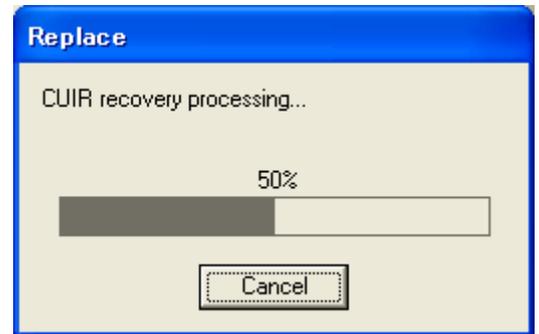
3.
    * For DKA
    "DKU PATH INLINE is now running..." is displayed.

4. <Check the recovery processing>
    The following message is displayed:

    * For DKA
    "Restoring the DKA..."

> ⚠ **CAUTION**
>
> Confirm the version of the exchanged CHA/DKA microprogram on the "STATUS" screen.
> (Refer SVP03-390)
> Check whether the version of all processors accords.

5. \<Check the end of CHA/DKA recovery>
   Select (CL) [OK] in response to "Replace finished.".

6. \<Path on-line when CHA is replaced>
   When a CHA is replaced, set the path (from the host) on the replaced CHA to ONLINE by
   your customer.

   *: 2. When \<CUIR recovering when Mainframe Fibre CHA is replaced> is executed,
      processing concerned is unnecessary.

[Notes for the case where DKN-200-NGW1 (NAS Unit) has been connected to this
device]
If the NAS Unit is connected to this device, ask the NAS Unit administrator to confirm the
following points.

[Points to be checked after completing this operation]
1. If the NAS service is terminated:
   After completing this operation, ask the NAS Unit administrator to reboot the NAS Unit.
2. If the NAS service is not terminated:
   When the replacement operation of CHA used by the NAS Unit is completed, the Fibre
   Channel path (FC path) of the NAS Unit might go into the Failure status. Before
   starting the operation of the next CHA replacement, contact the NAS Unit
   administrator, refer to "Recovering from FC path errors" of "Hitachi NAS Manager
   User's Guide", confirm the FC path status and, if the status is Failure, ask for the
   recovery of the FC path.
In addition, if there are any personnel for the NAS Unit maintenance, ask the NAS Unit
maintenance personnel to refer to "NAS IMS 2.9.8 Displaying LU Path Setting Screen
(NAS IMS 02-0490)" in "DKN-200-NGW1 NAS Unit Maintenance Manual", and ask to
check the status of the FC path and to recover the FC path if it is in a failure status after
completing the replacement operation of CHA used by the NAS Unit.

---

7. \<SIM Complete>
   Refer to SVP02-560.

   Go to POST-PROCEDURE z (REP04-1030).

[POST-PROCEDURE j]

— OUTLINE —

① Specify recovery of DKP was connected FSW
② SIM Complete

1.<Check the beginning of DKP recovery>
Select (CL) [Yes] in response to "Do you want to restore the DKP now?".

2.<DKU PATH INLINE>
"DKU PATH INLINE is now running..." is displayed.

⚠ CAUTION

When a failure is found during DKU PATH INLINE, the DKP connected to the loop are blocked.
Confirm the Diagnosis Log and solve the problem.

3.<Check DKP recovery processing>
"Restoring the DKP..." is displayed.

4.<Check the end of FSW replace>
Select (CL) [OK] in response to "Replace finished.".

5. \<SIM Complete>
   Refer to SVP02-560.
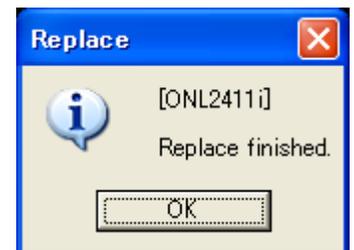
   Go to POST-PROCEDURE z (REP04-1030).

[POST-PROCEDURE k]

— OUTLINE —

① Specify recovery of CSW
② SIM Complete

1. <Check the CSW recovery procedure>
   "Restoring the CSW..." is displayed.

2. <Check the CSW replace finished>
   Select (CL) [OK] in response to "Replace finished.".

3. <SIM Complete>
   Refer to SVP02-560.
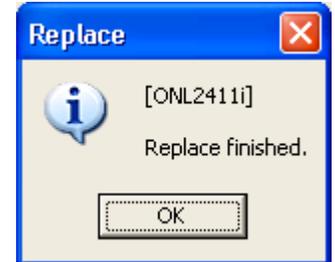
   Go to POST-PROCEDURE z (REP04-1030).

[POST-PROCEDURE t1]

— OUTLINE —

① Specify end of special part replacement
② Reinstall related parts
③ Start environment monitor
④ SIM Complete

[1] Start of POST-PROCEDURE

Valid "XXXXX" values are listed below.
- DKCPANEL --------------- [2] (REP04-320)
- PCICON -------------------- [3] (REP04-350)
- EPOSW --------------------- [4] (REP04-370)
- SVP ------------------------- [5] (REP04-380)
- SSVP/MN ------------------ [6] (REP04-740)
- DKCFAN ------------------ [7] (REP04-760)
- Thermostat ----------------- [8] (REP04-780)
- DKCPS -------------------- [9] (REP04-790)
- DKC Battery Box --------- [10] (REP04-810)
- DKC AC BOX ------------ [11] (REP04-830)
- BATREG ------------------- [12] (REP04-840)

[2] DKCPANEL

1. <Check replacement of special part>
    Select (CL) [OK] in response to "Please replace the "DKCPANEL." After replacement, press OK.".

    REPLACE

    [SPC1198i]
    Please replace the "DKCPANEL." After replacement, press OK.

    OK   Cancel

2.
    Select (CL) [OK] in response to "REMOTE MAINTENANCE SWITCH TEST: After turning switch to ENABLE position, press OK.".

    REPLACE

    [SPC1224i]

    REMOTE MAINTENANCE SWITCH TEST :
    After turning switch to ENABLE position, press OK.

    OK   Cancel
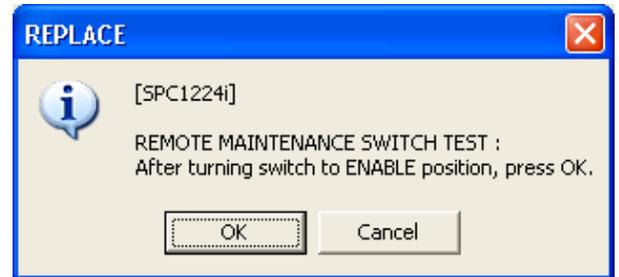
3.
    If an error has occurred in the switch test, an error message is displayed.
    If you select (CL) [Yes], go back to step 2.
    If you select (CL) [No], go to step 8.
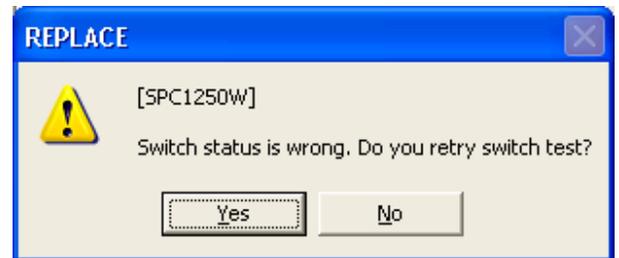
    REPLACE

    [SPC1250W]

    Switch status is wrong. Do you retry switch test?

    Yes   No

4.
    Select (CL) [OK] in response to "REMOTE MAINTENANCE SWITCH TEST: After turning switch to DISABLE position, Press OK.".

    REPLACE

    [SPC1223i]

    REMOTE MAINTENANCE SWITCH TEST :
    After turning switch to DISABLE position, press OK.

    OK   Cancel
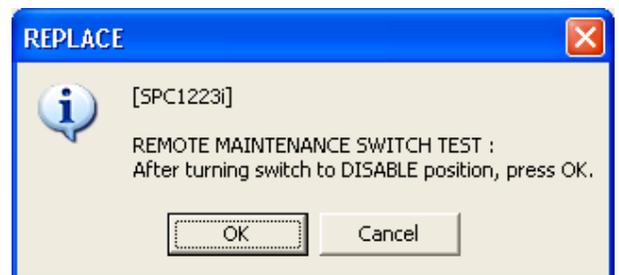
5.

If an error has occurred in the switch test, an
error message is displayed.
If you select (CL) [Yes], go back to step 4.
If you select (CL) [No], go to step 8.

REPLACE

[SPC1250W]

Switch status is wrong. Do you retry switch test?

Yes   No
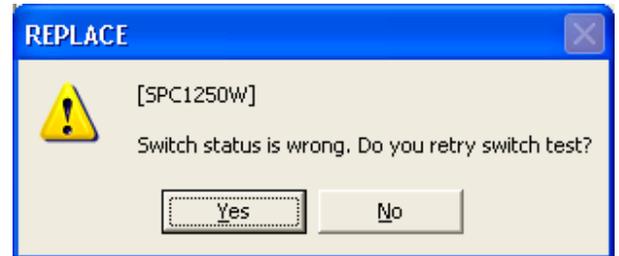
6.

Select (CL) [OK] in response to "RESTART SWITCH
TEST: After turning switch, press OK.".

REPLACE

[SPC1232i]

RESTART SWITCH TEST :
After turning switch, press OK.

OK

7.

If an error has occurred in the switch test, an
error message is displayed.
If you select (CL) [Yes], go back step 6.
If you select (CL) [No], go to step 8.

REPLACE

[SPC1250W]

Switch status is wrong. Do you retry switch test?

Yes   No
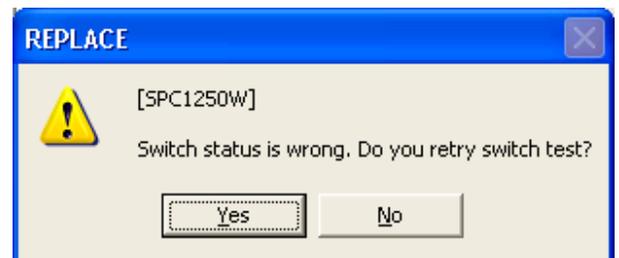
8.   <Set REMOTE/LOCAL>
Set REMOTE/LOCAL switch, in response to
the message "Please set "REMOTE/LOCAL"
switch of "DKC-PANEL" "LOCAL". Then
press OK.".
After confirming that switch set, select (CL)
[OK].
The SVP automatically checks the REMOTE/LOCAL switch status.

REPLACE

[SPC1205i]

Please set "REMOTE/LOCAL" switch of "DKC-PANEL" "LOCAL." Then press OK.

OK

9. <Check environment monitor start processing>
"Processing to enable the environment check..." is
displayed.

> **OTHERS**
>
> Processing to enable the environment check...
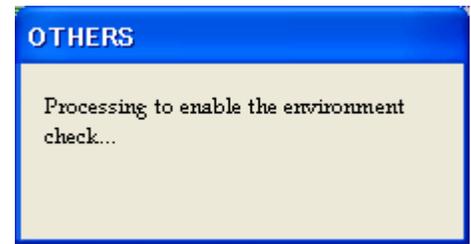
10. <Reset REMOTE/LOCAL switch>
Reset REMOTE/LOCAL switch to original
value in response to "Please return
REMOTE/LOCAL switch on DKC-PANEL
as before. Then press OK." (REP03-530).
After checking SW setting, select (CL) [OK].

> **REPLACE**
>
> [SPC2953i]
>
> Please return REMOTE/LOCAL switch on DKC-PANEL as before. Then press OK.
>
> OK

11. <Check end of replacement>
Select (CL) [OK] in response to "Replacement
of the "DKCPANEL" is done.".
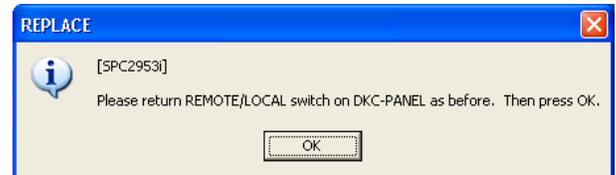
> **REPLACE**
>
> [SPC1227i]
>
> Replacement of the "DKCPANEL" is done.
>
> OK

12. <Reset REMOTE MAINTENANCE switch>
Reset REMOTE MAINTENANCE switch to original value.

13. <SIM Complete>

See SVP02-560.

Go to POST-PROCEDURE z (REP04-1030).

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REP04-350
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[3] PCICON

1. <Check replacement of special part>
    Select (CL) [OK] in response to "Please
    replace the "PCICON." After replacement,
    press OK.".

(Eg. PCICON)

2. <Check environment monitor start processing>
    The message "Processing to enable the environment
    check..." is displayed.
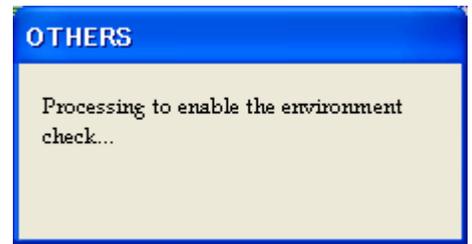
3. <Reset DKCPANEL switch>
    Reset REMOTE/LOCAL switch to original
    value in response to "Please set the
    REMOTE/LOCAL switch on DKC-PANEL
    to the REMOTE position, and then select
    OK.".
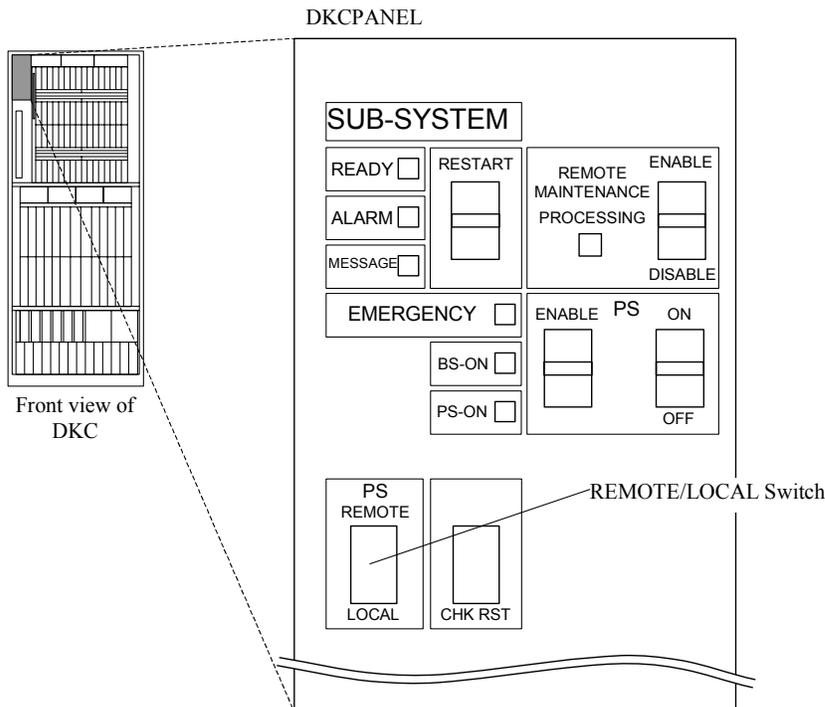
After checking SW setting, select (CL) [OK].

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4. <Check end of replacement>
Select (CL) [OK] in response to "Replacement of
the "PCICON" is done.".

REPLACE

[SPC1227i]

Replacement of the "PCICON" is done.

OK

(Eg. PCICON)

5. <SIM Complete>

See SVP02-560.

Go to POST-PROCEDURE z (REP04-1030).

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[4] EPOSW

1. <Check replacement of special part>
    Select (CL) [OK] in response to "Please replace the "EPOSW." After replacement, press OK.".

    REPLACE

    [SPC1198i]

    Please replace the "EPOSW." After replacement, press OK.

    OK   Cancel

2.

    The SVP automatically checks the EPOSW status.

3. <Check environment monitor start processing>
    The message "Processing to enable the environment check..." is displayed.
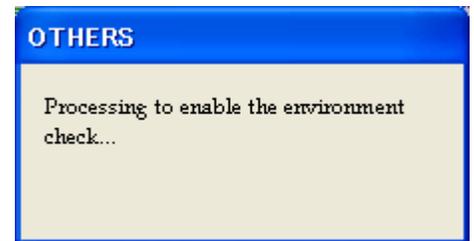
    OTHERS

    Processing to enable the environment check...

4. <Check end of replacement>
    Select (CL) [OK] in response to "Replacement of the "EPOSW" is done.".

    REPLACE

    [SPC1227i]

    Replacement of the "EPOSW" is done.

    OK

5. <SIM Complete>

    See SVP02-560.

    Go to POST-PROCEDURE z (REP04-1030).

[5] SVP

1. Powering up the SVP

⚠ CAUTION

If the MESSAGE LED on DKCPANEL has lit on when power on SVP, please complete SIM before operation.
(When the SVP high-reliability kit is installed, SIM RC=BF85A3 (Basic SVP JP1 setting error), BF86A3 (Optional SVP JP1 setting error), BFE3A2 (SVP duplication setting defect) and 7FF201 (standby SVP failure detection) may occur but there is no problem because they occur in process of the SVP replacement.)

⚠ CAUTION

When an SSVP alarm is issued during replacement of the PC, reset the SSVP.

⚠ CAUTION

If the message "Do you want to restart your computer now?" is displayed during the SVP reboot after replacement, select (CL) [Yes].

1-1 Connecting the Console PC

Connect the console PC to the SVP has been replaced using the utility for connection.

[Connection destination]   126.255.255.15

Note: Keep the IP address of Console PC, and set it to 126.255.255.x (x is the available value which is 13 or less. For example 12.) before connection. Reset it after the SVP setup. The SVP and the Console PC communicate by the auto negotiation, 100Mbps, and full-duplex.

1-2 Setting the Data and Time
　　　<Making sure of the setting of a time zone>
　　　(1) Open the 'Control Panel' window.
　　　　　Select (DR) [Control Panel] from the [Start] menu.

　　　(2) Open the 'Date and Time' window.
　　　　　Select (DC) [Date and Time]
　　　　　in the [Control Panel]
　　　　　window.
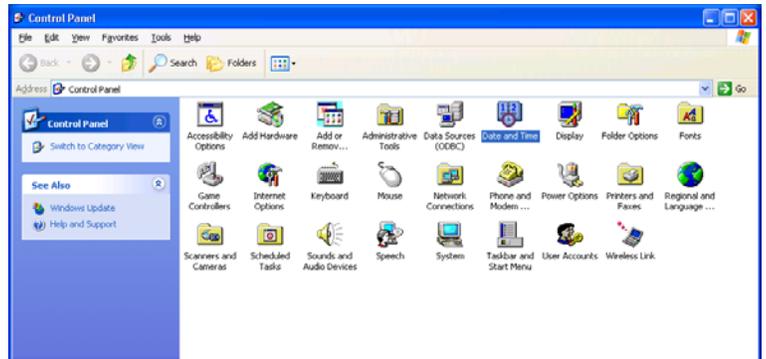
　　　(3) Select [Time Zone].
　　　　　Select (CL) [Time Zone].
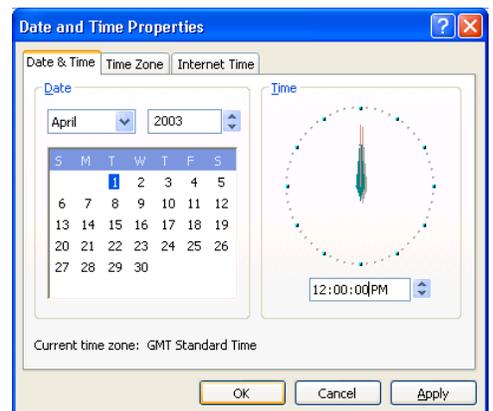
(4) Make sure of the setting of the [Time Zone].
Make sure that the [Time Zone] is set as "[GMT]
Greenwich Mean Time; Dublin, Edinburgh,
Lisbon, London" irrespective of a place where the
subsystem is installed.
Besides, make sure that the check box to the left of
the statement, "Automatically adjust clock for
daylight saving changes" is blank (not checked).
Then select (CL) [Data & Time].
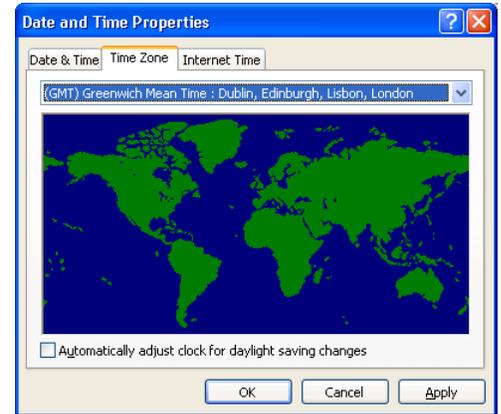
Notice: When a setup of [Time Zone] and
"Automatically adjust clock for daylight saving changes" are changed after
installation of a SVP micro program, please be sure to reboot SVP after a setup.

(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].
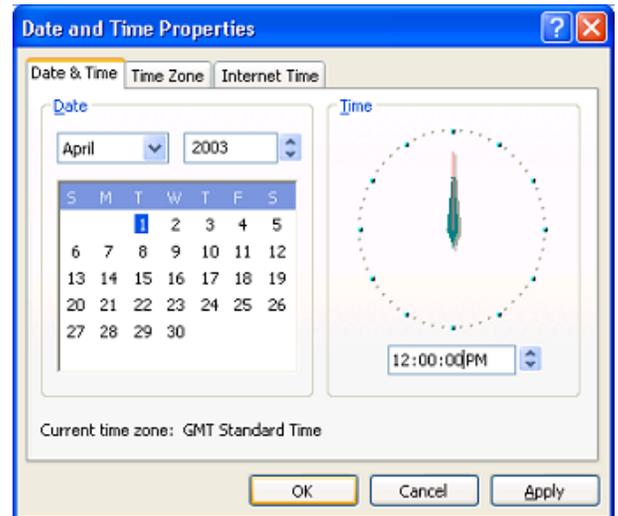
(6) Close the 'Control Panel' window.
Select (DR) [File] and [Close]
in this order in the "Control
Panel" window.
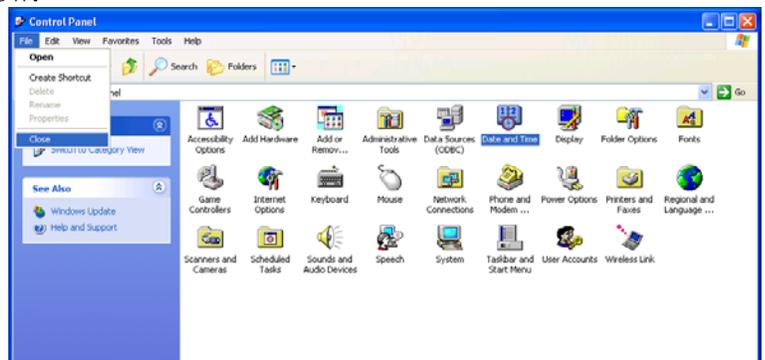
2. <Installing the Microprogram>

2.1 Preparation

When the Microprogram has already been installed in the SVP (spare part) to be replaced, perform the following operations.

① When Apache is installed, perform uninstalling Apache.

There are two type Apache, check the type of Apache and go to following procedure.
- Check the version of Apache. (Go to 2.1.1.1 Checking Apache version)
- When Apache 2.0.54 is installed, perform uninstalling Apache 2.0.54. (Go to 2.1.1.2 Uninstallation of Apache 2.0.54)
- When OpenSA (Apache corresponding to SSL) is installed, perform uninstalling OpenSA. (Go to 2.1.1.3 Uninstallation of OpenSA)
- When Apache 2.2.4 is installed, perform uninstalling Apache 2.2.4. (Go to 2.1.1.4 Uninstallation of Apache 2.2.4)

② When Java program is installed, perform uninstalling Java program. (Go to 2.1.2 Uninstalling Java program)

③ When Perl program is installed, perform uninstalling Java program. (Go to 2.1.3 Uninstalling Perl program)

2.1.1 Uninstalling Apache

It is necessary to uninstall Apache installed in the SVP. Uninstall Apache following the procedure explained below.

2.1.1.1 Checking Apache version

Check the version of Apache installed to the replaced SVP with the following procedure. When the Apache version installed in the SVP before the replacement and the shipped Apache version corresponding to the microprogram version are different, you need to install the Apache before the replacement by performing the operations described in step 6.
If you cannot check the Apache version before the replacement, you do not have to install the Apache by performing the operations described in step 6, but the Apache version would be the shipped one.
For the shipped Apache version, see the WEB CONSOLE section.

Notice: If the Apache version of SVP is 2.2.4 and is downgraded 2.0.54, the microprogram version of SVP should be less than 60-02-00/00.

(1)
Select (DR) [Start]-[Control Panel].
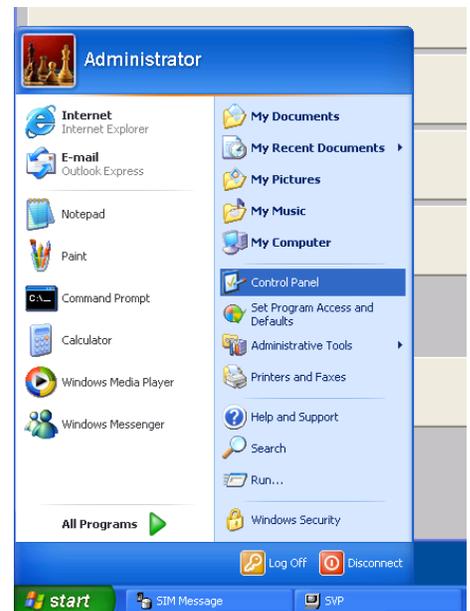
(2)

Select (DC) [Add or Remove Programs].

(3)

Check the content of [Currently installed programs] in the [Add or Remove Programs] panel.
If [Apache HTTP Server 2.0.54] exists, Apache 2.0.54 is installed.
If [OpenSA web server 1] exists, OpenSA is installed.
If [Apache HTTP Server 2.2.4] exists, Apache 2.2.4 is installed.

If Apache 2.0.54 is uninstalled, go to 2.1.1.2.
If OpenSA is uninstalled, go to 2.1.1.3.
If Apache 2.2.4 is uninstalled, go to 2.1.1.4.
When the Apache version check is completed, select (CL) the [×] button.
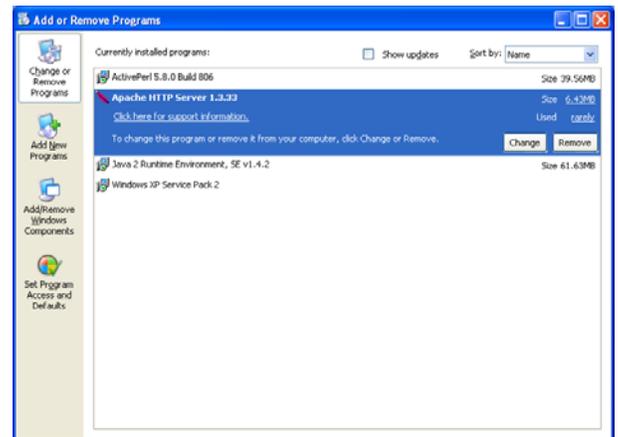
2.1.1.2 Uninstallation of Apache 2.0.54

(1)

Select (DR) [Start]-[All Programs]-
[Apache HTTP Server 2.0.54]-[Control
Apache Server]-[Stop]. Service of
Apache will stop.

(2)
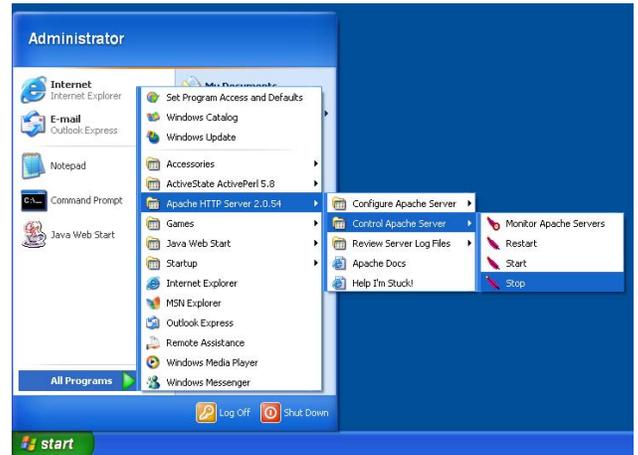
Select (DR) [Start]-[Control Panel].

(3)
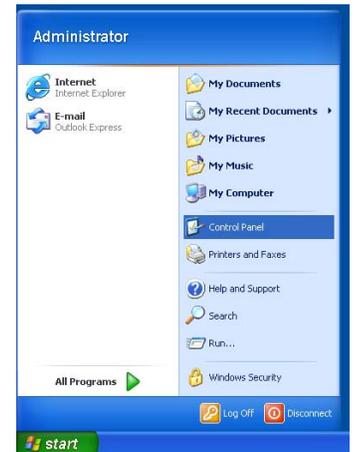
Select (DC) [Add or Remove Programs].
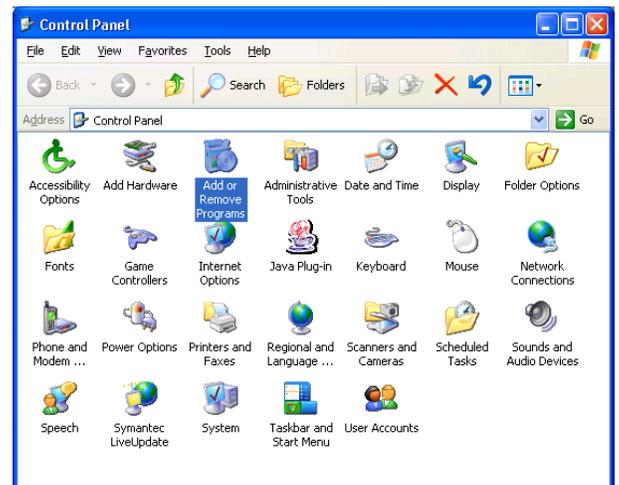
(4)

Select [Apache HTTP Server 2.0.54], and then select (CL) the [Remove] button.

(5)
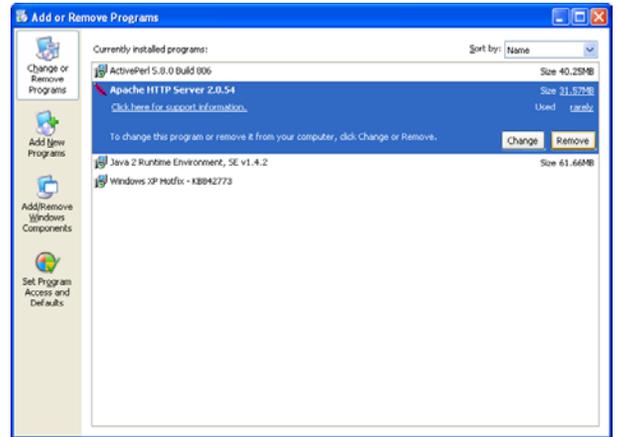
The message, "Are you sure you want to remove Apache HTTP Server 2.0.54 from your computer?" is displayed.   Select (CL) the [Yes] button.

(6)
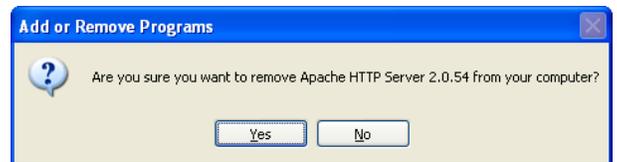
Unistallation of Apache 2.0.54 starts.
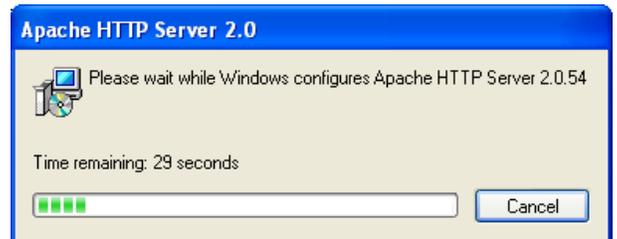
(7)

[Apache HTTP Server 2.0.54] is removed
from the [Add or Remove Programs]
panel.
Select (CL) [×] button, and close this
window.

(8)
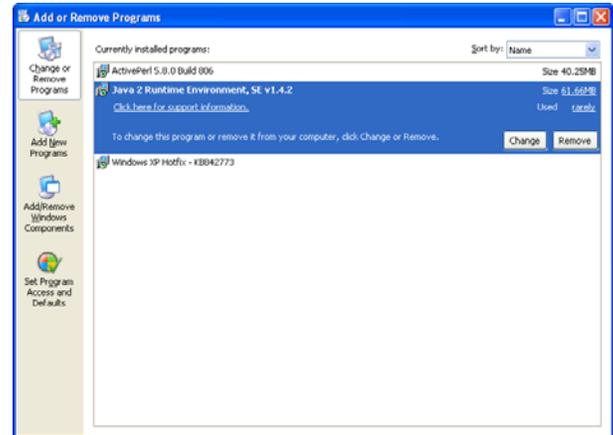
Select (DR) [Start]-[Run…].
Enter "delApacheConf.bat" and press the [OK] button.
Go to 2.1.2.

2.1.1.3 Uninstallation of OpenSA

(1)

Select (DR) [Start]-[Run...].
Enter "rmvopensa.bat" and press the [OK] button.

(2)

Select (DR) [Start]-[Control Panel].

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(3)
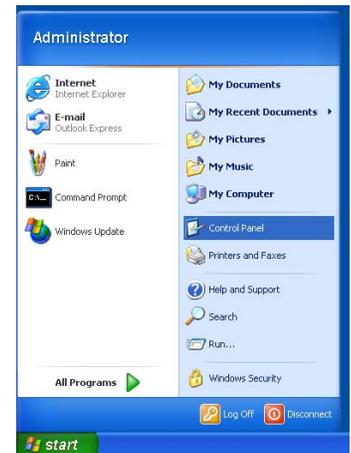
Select (DC) [Add or Remove Programs].

(4)

Select [OpenSA web server 1], and then select (CL) the [Remove] button.

(5)
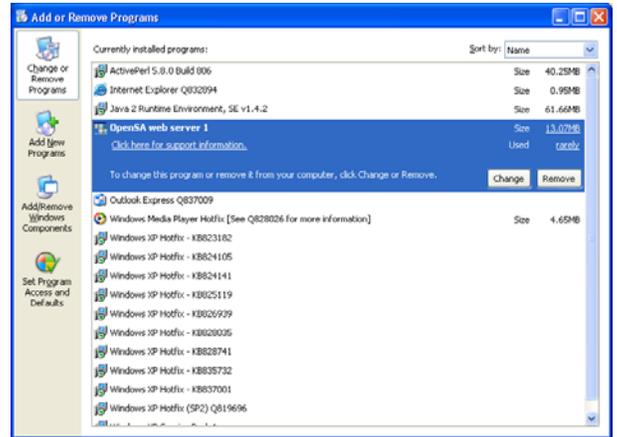
The message, "Are you sure you want to remove OpenSA web server 1 from your computer?" is displayed. Select (CL) the [Yes] button.
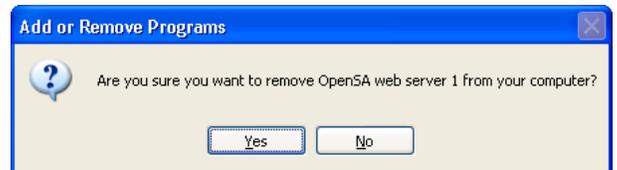
(6)

[OpenSA web server 1] is removed from
the [Add or Remove Programs] panel.
Select (CL) [×] button, and close this
window.
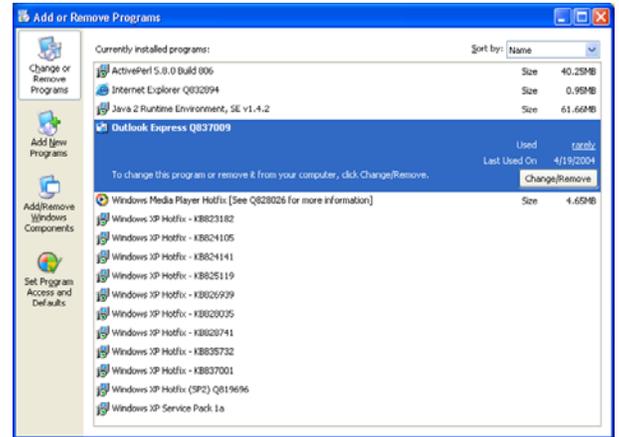
(7)

Select (DR) [Start]-[Run…].
Enter "delApacheConf.bat" and press the [OK] button.
Go to 2.1.2.

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2.1.1.4 Uninstallation of Apache 2.2.4

(1)

Select (DR) [Start]-[All Programs]-
[Apache HTTP Server 2.2.4]-[Control
Apache Server]-[Stop]. Service of Apache
will stop.
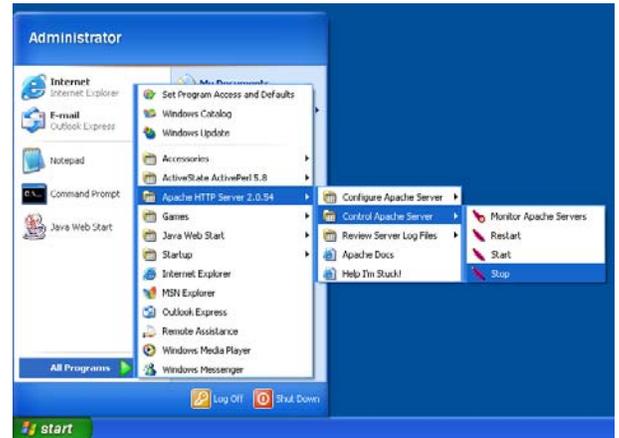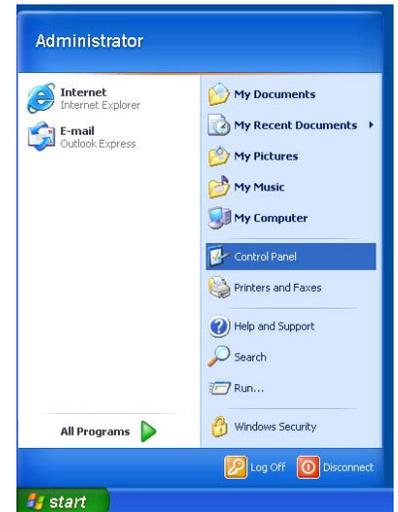
(2)

Select (DR) [Start]-[Control Panel].

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(3)
[In case of Windows XP]
　　Select (DC) [Add or Remove Programs].

[In case of Windows Vista]
　　Select (DC) [Programs and Features].

(4)
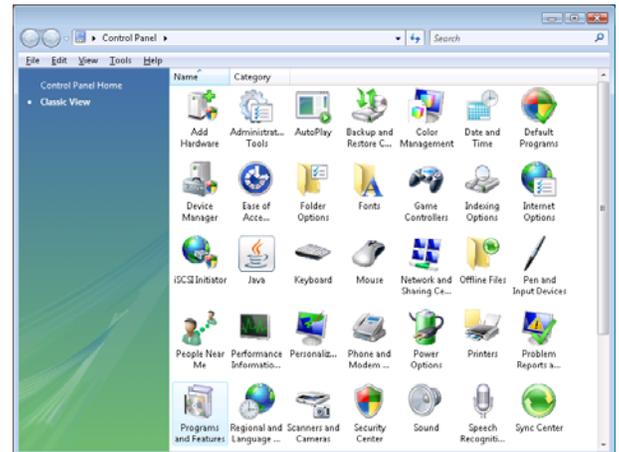
[In case of Windows XP]
　　Select [Apache HTTP Server 2.2.4], and
　　then select (CL) the [Remove] button.
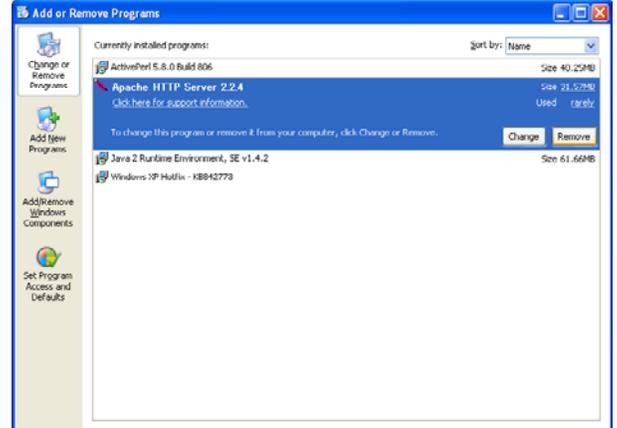
[In case of Windows Vista]
　　Select [Apache HTTP Server 2.2.4], and
　　then select (CL) the [Uninstall] button.

(5)
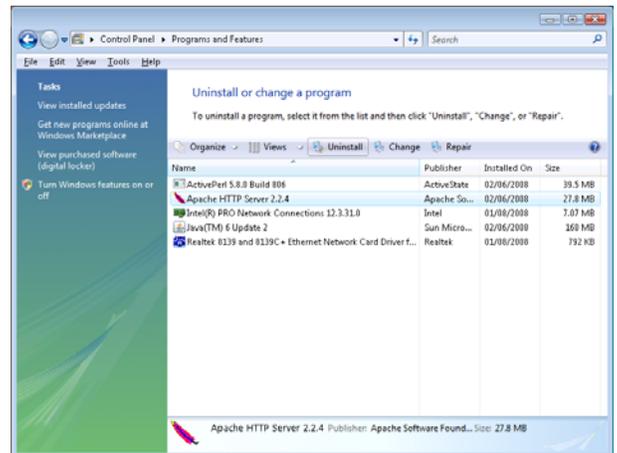
　　The message, "Are you sure you want to
　　remove Apache HTTP Server 2.2.4 from
　　your computer?" is displayed. Select (CL)
　　the [Yes] button.
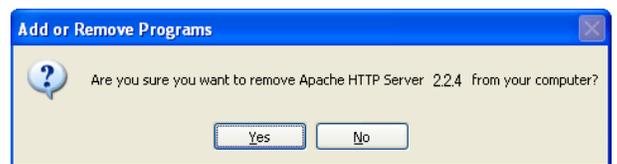
(6)

　　Uninstallation of Apache 2.2.4 starts.
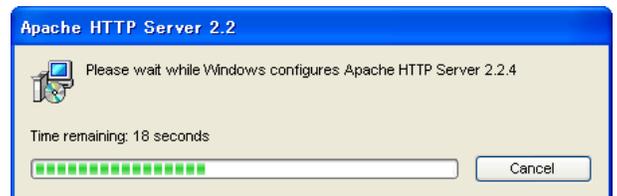
(7)

[In case of Windows XP]

[Apache HTTP Server 2.2.4] is removed from the 'Add or Remove Programs' window.
Select (CL) [×] button, and close this window.
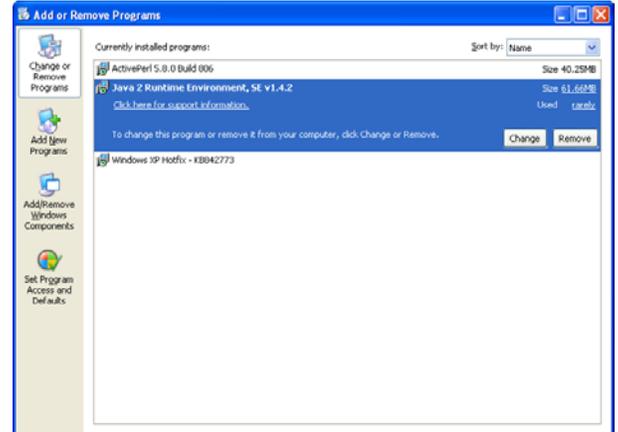
[In case of Windows Vista]

[Apache HTTP Server 2.2.4] is removed from the 'Programs and Features' window.
Select (CL) [×] button, and close this window.

(8)
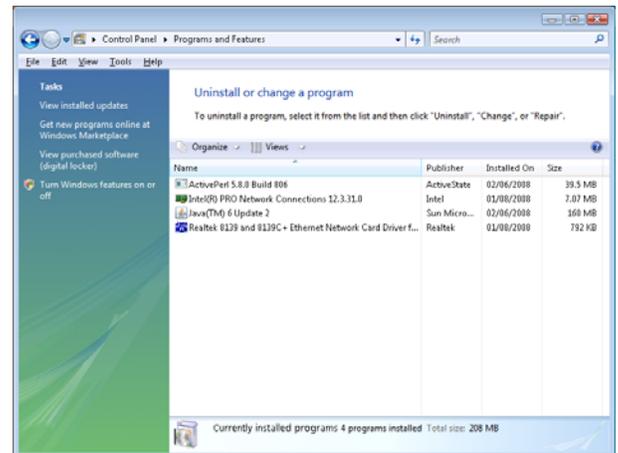
Select (DR) [Start]-[Run…].
Enter "delApacheConf.bat" and press the [OK] button.
Go to 2.1.2.

2.1.2 Uninstalling Java program

(1)
  Select (DR) [Start] and [Control Panel] in this order.

(2)
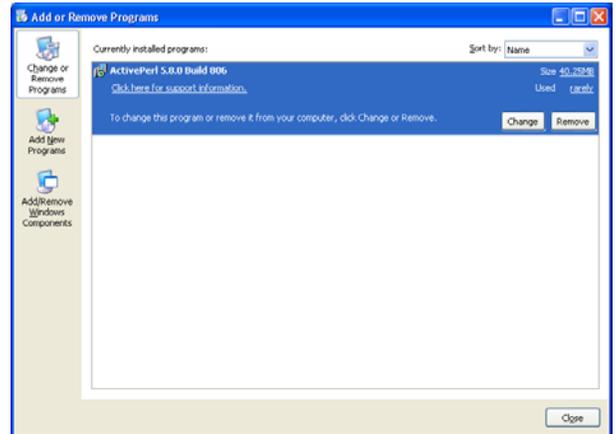[In case of Windows XP]
  Select (CL) [Add or Remove Programs].

[In case of Windows Vista]
  Select (DC) [Programs and Features].

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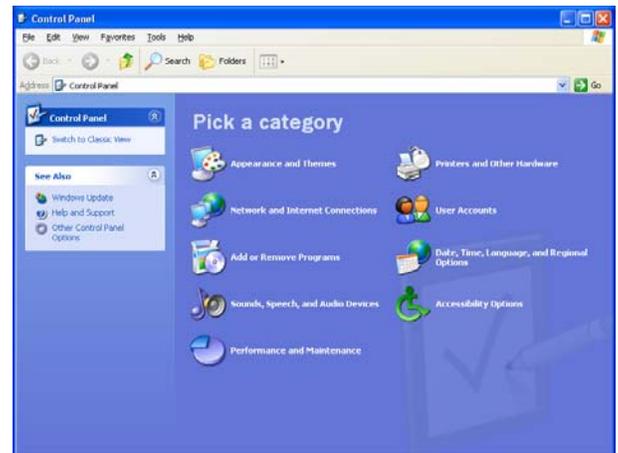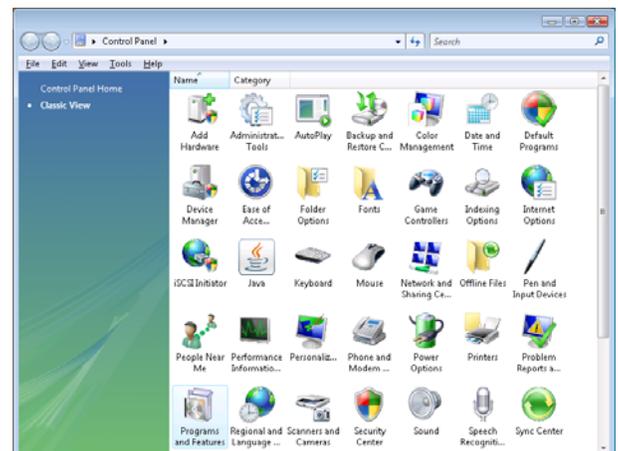
(3)
[In case of Windows XP]
　　Select [J2SE Runtime Environment 5.0
　　Update 6], and then select (CL) the
　　[Remove] button.
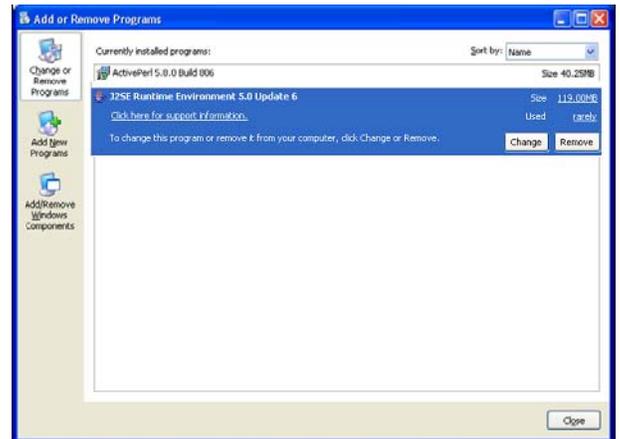
[In case of Windows Vista]
　　Select [Java(TM) 6 Update 2], and then
　　select (CL) the [Uninstall] button.
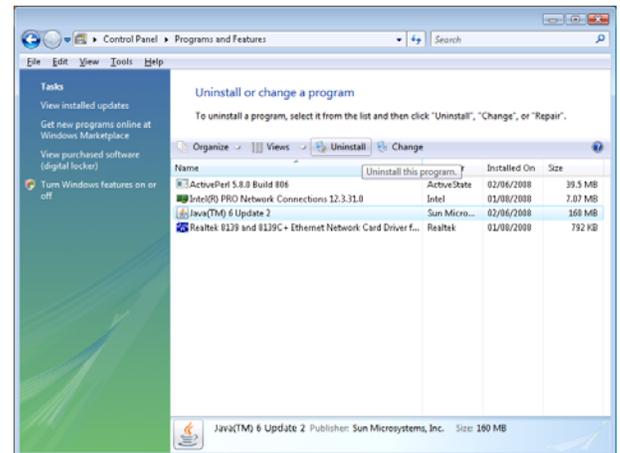
(4)
[In case of Windows XP]
　　A message, "Are you sure you want to
　　remove J2SE Runtime Environment 5.0
　　Update 6 from your computer?" is
　　displayed.
　　Select (CL) the [Yes] button.

[In case of Windows Vista]
　　A message, "Are you sure you want to
　　uninstall Java(TM) 6 Update 2?" is
　　displayed.
　　Select (CL) the [Yes] button.

(5)
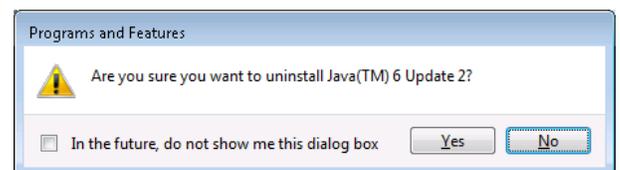
Uninstallation of Java is started.

(In case of Windows XP)
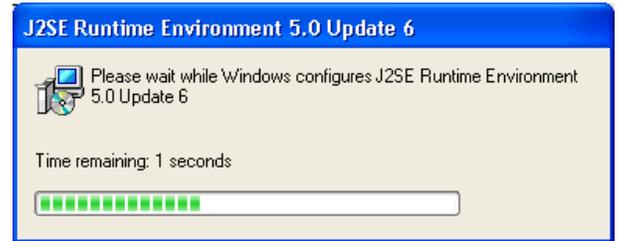
(In case of Windows Vista)

(6)
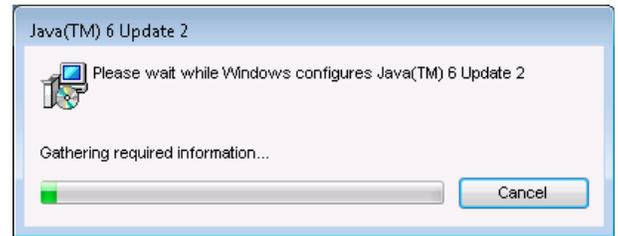
[In case of Windows XP]

The [J2SE Runtime Environment 5.0
Update 6] is deleted from the 'Add or
Remove Programs' window.
Close the window by selecting (CL) the
[×] button.
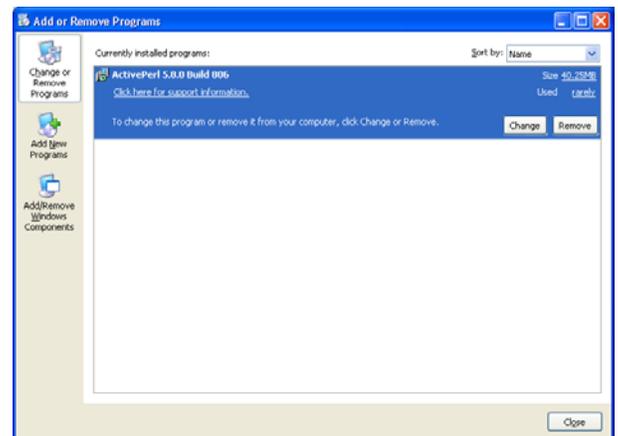
[In case of Windows Vista]

The [Java(TM) 6 Update 2] is deleted
from the 'Programs and Features'
window.
Close the window by selecting (CL) the
[×] button.
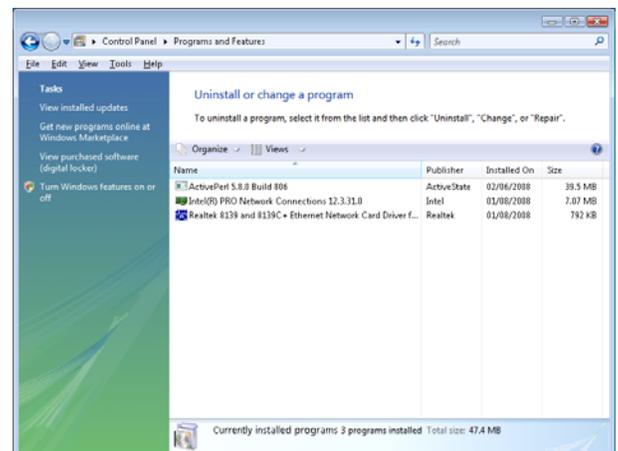
(7)

When this window is not displayed, go to
Section 2.1.3.
When this window is displayed, select
(CL) the [No] button.

(In case of Windows XP)

J2SE Runtime Environment 5.0 Update 6

You must restart your system for the configuration
changes made to J2SE Runtime Environment 5.0
Update 6 to take effect. Click Yes to restart now or
No if you plan to restart later.

Yes   No

(In case of Windows Vista)

Java(TM) 6 Update 2

You must restart your system for the
configuration changes made to Java(TM) 6
Update 2 to take effect. Click Yes to restart now
or No if you plan to restart later.

Yes   No
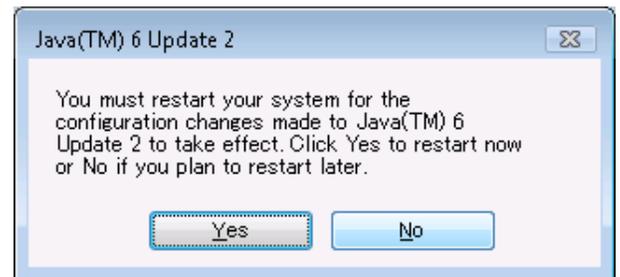
2.1.3 Uninstalling Perl program

(1)

Select (DR) [Start] and [Control Panel] in this order.

(2)

[In case of Windows XP]

Select (CL) [Add or Remove Programs].

[In case of Windows Vista]

Select (DC) [Programs and Features].

(3)
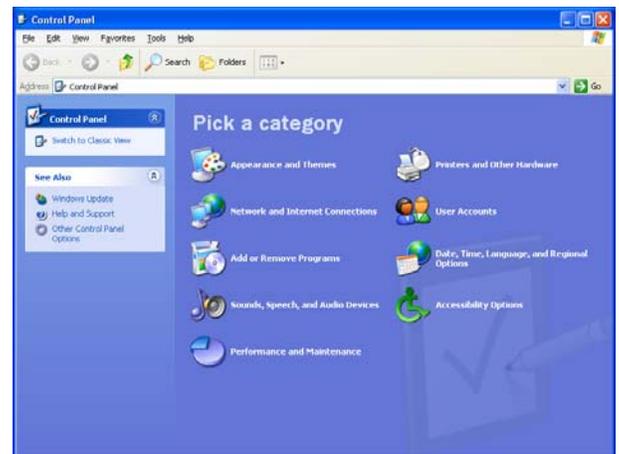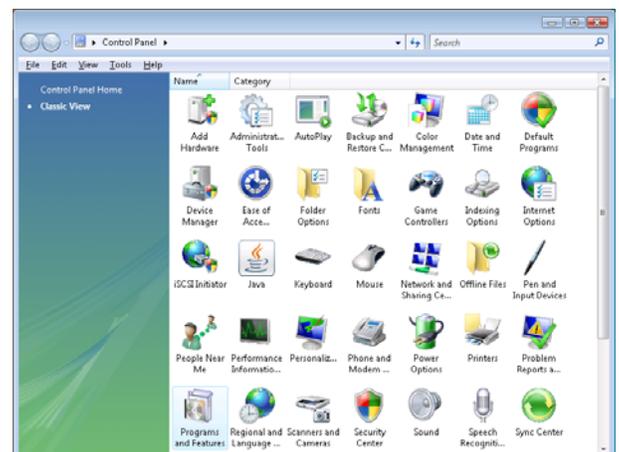
[In case of Windows XP]

      Select [ActivePerl 5.8.0 Build 806], and
then select (CL) the [Remove] button.

[In case of Windows Vista]

      Select [ActivePerl 5.8.0 Build 806], and
then select (CL) the [Uninstall] button.
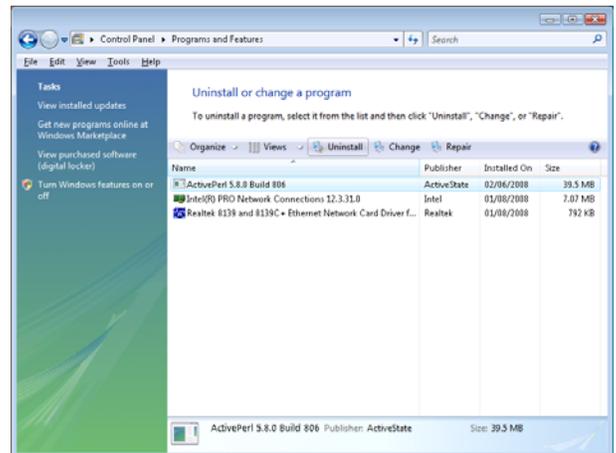
(4)

A message, "Are you sure you want to remove ActivePerl 5.8.0 Build 806 from your computer?" is displayed. Select (CL) the [Yes] button.

(5)
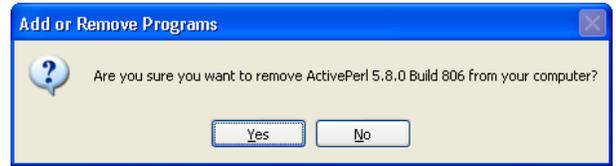
Uninstallation of Perl is started.

(6)
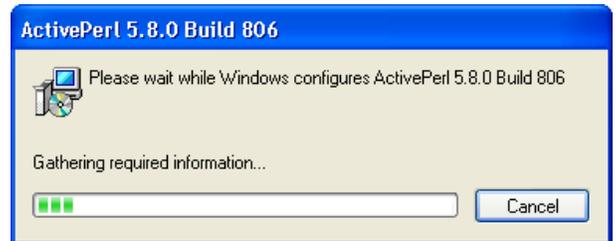
[In case of Windows XP]

The [ActivePerl 5.8.0 Build 806] is deleted from the 'Add or Remove Programs' window.
Close the window by selecting (CL) the [×] button.
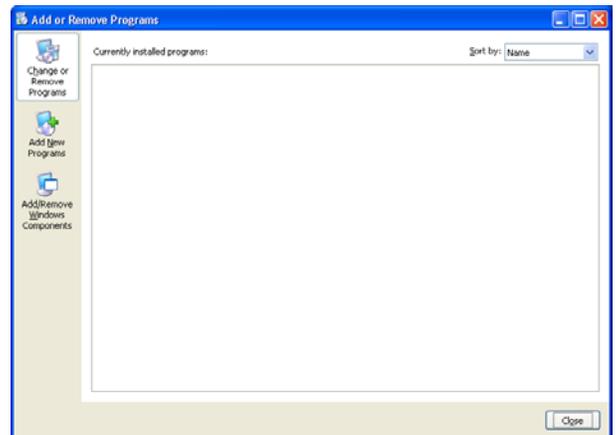
[In case of Windows Vista]

The [ActivePerl 5.8.0 Build 806] is deleted from the 'Programs and Features' window.
Close the window by selecting (CL) the [×] button.

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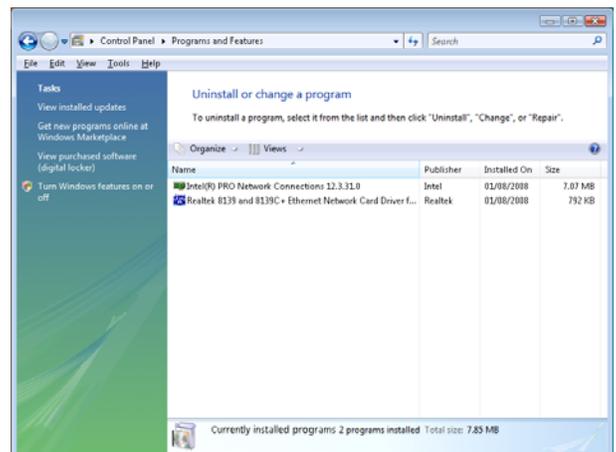
2.2 <Starting Installation>

① Insert a micro program media in the CD-ROM drive of Client PC and wait for one minutes or so.

② Select (CL) [RUN...] from the "Start" menu. Enter "\\tsclient\E\setup.exe" and select (CL) the [OK] button.

Notice1: Select the drive which inserted a CD-R in ②.
"\\tsclient\E\setup.exe"

└─ Input the drive name of the CD-ROM drive of Client PC.

└──── Indicate Client PC. (This spelling is inputted.)

Notice2: When the SVP is running, the message "The SVP is running. The PC will be rebooted to stop the SVP. Please retry the setup operation after the PC reboots." is displayed, and the PC reboots if pressing [OK].

Setup

[SUP3773E]

The SVP is running. The PC will be rebooted to stop the SVP. Please retry the setup operation after the PC reboots.

[OK]

After waiting for about five minutes, install the microprogram again after rebooting the PC.

---

3. <Using another media>

3-1 <Installing the Configuration Information>

(1)
Prepare the Config media which did backup.

---

(2)
Select (CL) Backup Config Media in the 'Select Setup Config' window and select (CL) the [OK] button.

"CD-R" : Use Only With Technical Support Authorization.

Select Setup Config

[CNF4061i]

The installation of configuration information is executed.
Select the media to be installed, and select [OK].

Config Data
○ CD-R
◉ Backup Config Media

[OK] [Cancel[X]]

********** For Technical Support Use Only ******************

(2-1)

Select (CL) "CD-R" to install configuration information from CD-R, when the message CNF4061i.
Enter the key code of the configuration information when the message CNF4055i, and then click [OK]. (Refer to INSTALLATION SECTION "2.10 New Installation procedures without the pre-installation at a customer site" *14. (INST02-430))

(2-2)

Perform copy processing of the configuration information from the CD-R to the SVP.
The 'CNFCPY Wait...' window is displayed during this time.
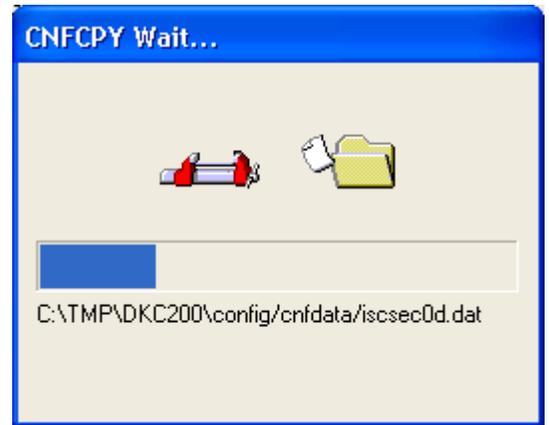
Go to 3-1-1.

****

(3)

Select the drive which insert the Backup Config Media (prepared with step (1)), and select (CL) the [OK] button.

Select (CL) [Refresh] button, Disk is updated to the latest information.

(4)

Perform copy processing of the configuration information from the Backup Config Media to the SVP.
The 'CNFCPY Wait…' window is displayed during this time.
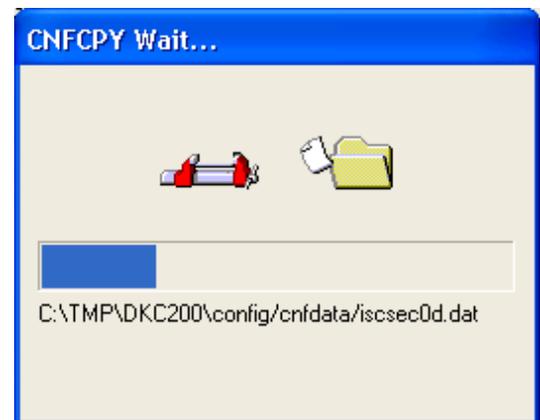
(5)

Select (CL) the [OK] button after removing the configuration information media.

3-1-1 <Installing the OSS media>

(1)

When the message of "Insert the second CD-R." is displayed, replace it to the second media. Select (CL) [OK] after the replacement.
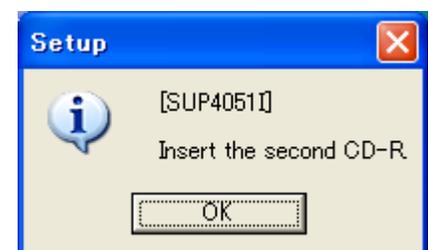
4. <Setting Up JAVA>

4-1 <Setting Up of JAVA>

Perform setting up operation of Java. When Java has already been installed, go to Section 4-2.

(1)

After selecting "Typical setup – All recommended features will be installed.", press the [Accept>] button. Copying of the file is started.
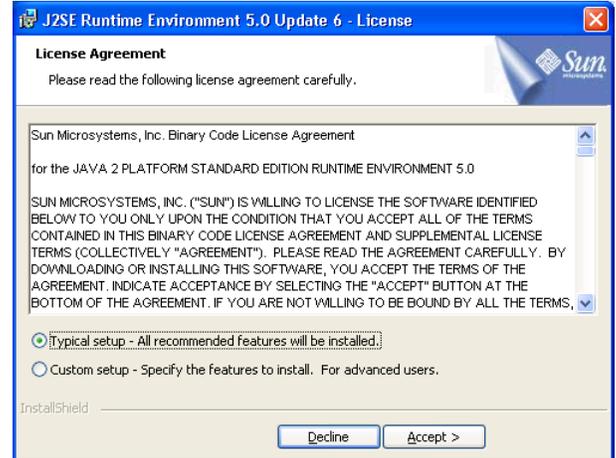
(2)

Since this window is displayed when the copying of the file is completed, press the [Finish] button.

(3)
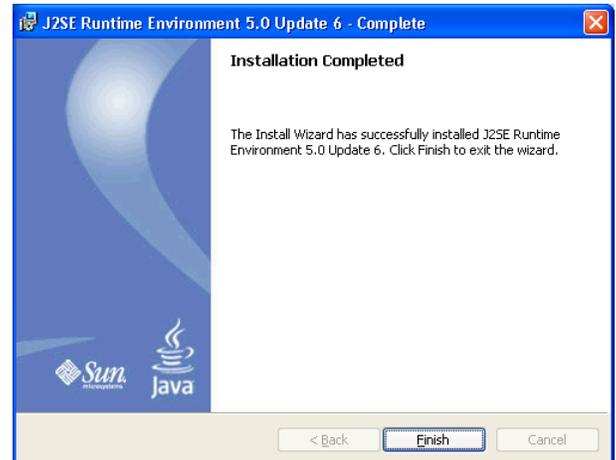
When this window is not displayed, go to
Section 4-2.
When this window is displayed, select
(CL) the [No] button.
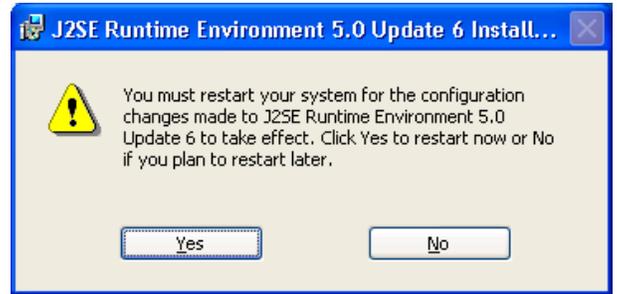
4-2 Setting Up of Apache
Execute Apache setup.

4-2-1 Setting Up of Apache 2.2.4

(1)

Press the [Next >] button.
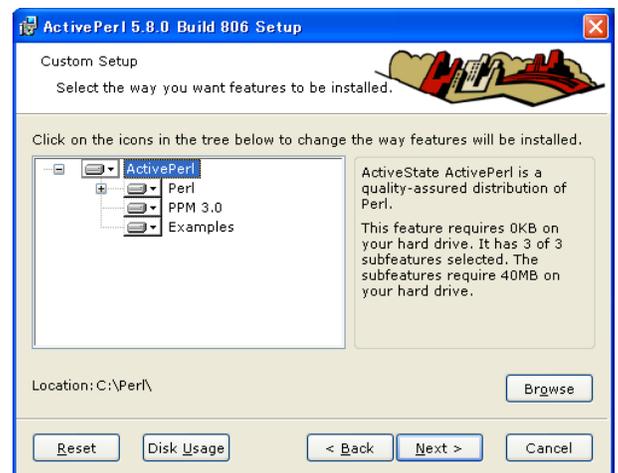When this window is not displayed, go to
step 4-3 because Apache is already
installed.
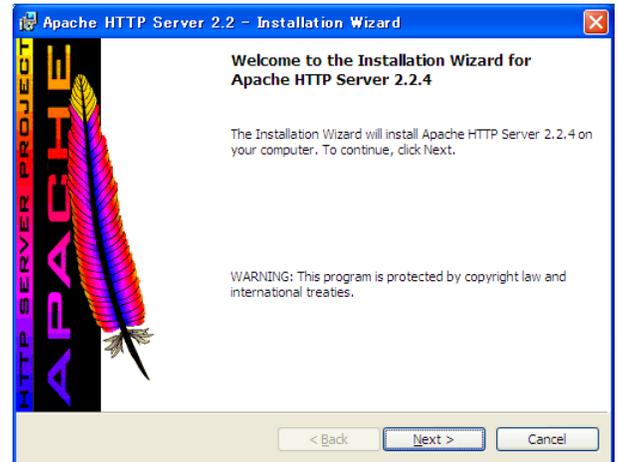
(2)

Press the [Next >] button after selecting
"I accept the terms in the license
agreement".

(3)
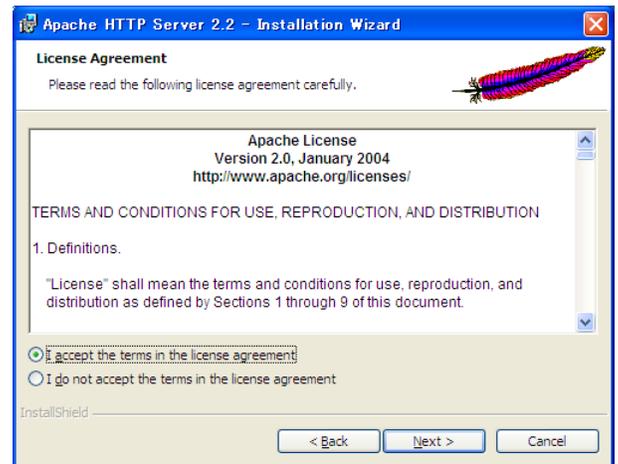
Press the [Next >] button.

(4)

Enter "domain," "svp," and "admin@domain.com" in the Network Domain, Server Name, and Administrator's Email Address fields respectively, and then select (CL) "for All Users, on Port 80, as a Service -- Recommended." and press the [Next >] button.
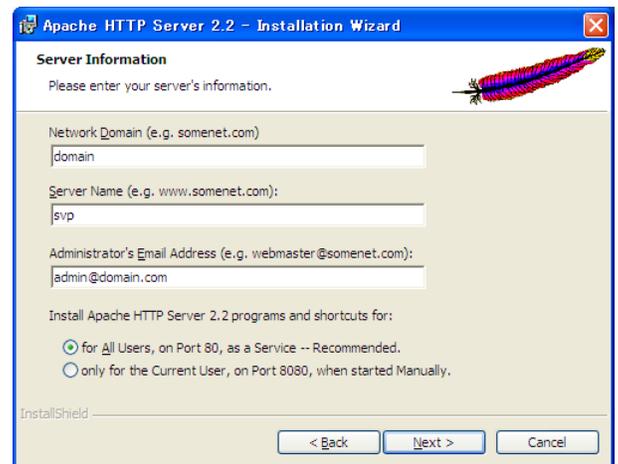
(5)

Select (CL) "Typical" and press the [Next >] button.
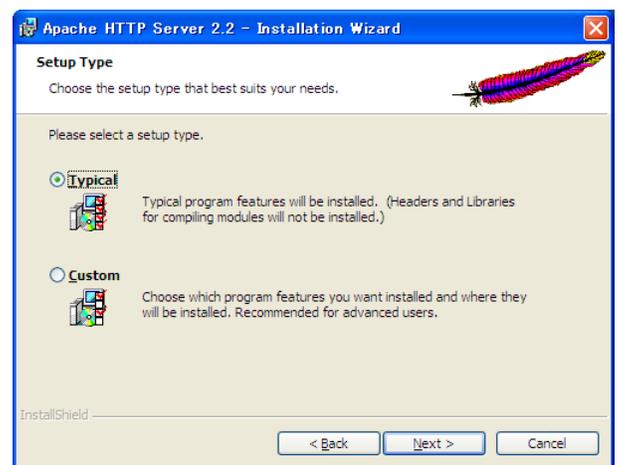
(6)

Press the [Next >] button.
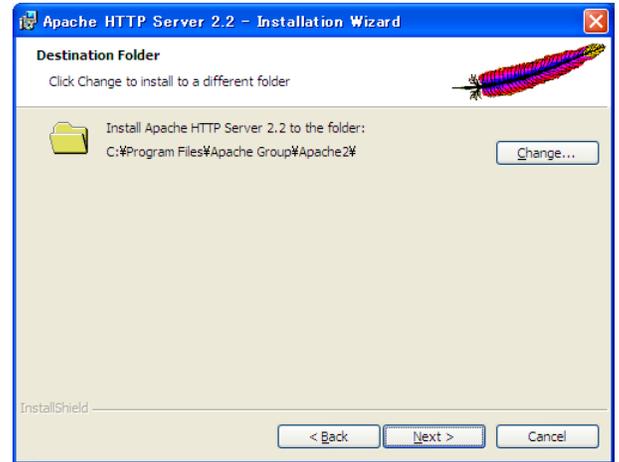
(7)

Press the [Install] button. A copying of
the file is started.
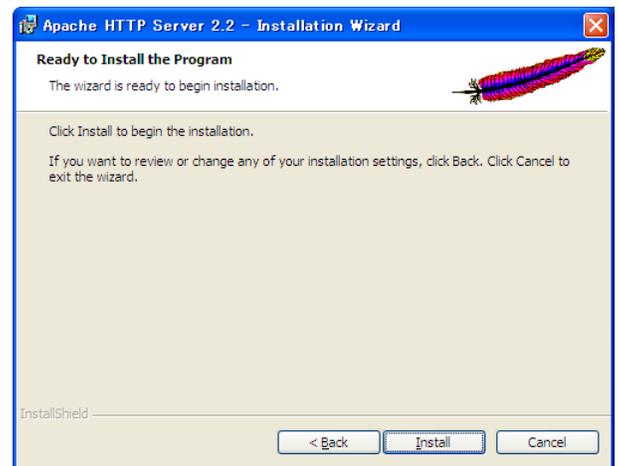
(8)

Since this panel is displayed when the
copying of the file is completed, press the
[Finish] button.
Go to step 4-3.

4-3 Setting Up of Perl
Perform setting up operation of Perl. When Perl has already been installed, go to Section 5.

(1)
Press the [Next>] button.

(2)
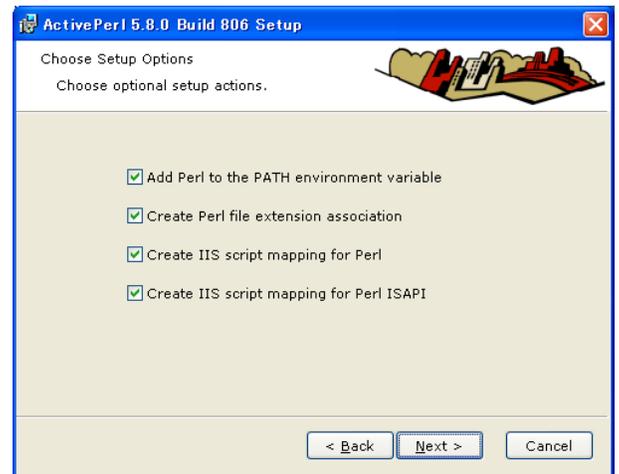After selecting "I accept the terms in the License Agreement", press the [Next>] button.
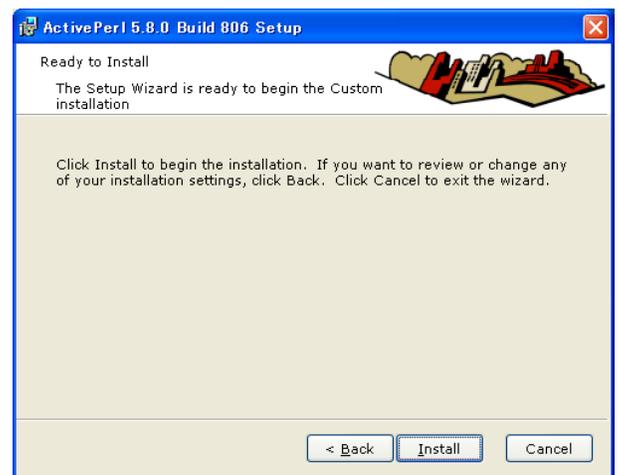
(3)
Press the [Next>] button.

(4)

Press the [Next>] button.

(5)

Press the [Next>] button.

(6)

Press the [Install] button. Copying of the
file is started.

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(7)
When the copying of the file is completed, this window is displayed. Remove the check mark from the left side check box of the "Display the release notes" and press the [Finish] button.
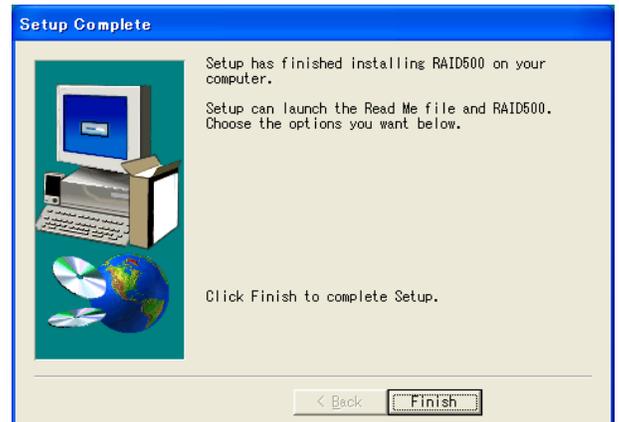
5. <Restarting the SVP>
When the setting up is completed, the following window is displayed. Take out the CD-ROM and select (CL) the [Finish] button. The SVP is restarted (disconnected from the console PC).
After waiting for about five minutes, reconnect the console PC to the SVP that has been replaced.

[Connection destination]　　126.255.255.15

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6. <Changing Web Server>
   With the confirmation on the process of "2. <Checking Apache version>" (on page REP02-20) or at the Technical Support Center, if the Apache being installed in the SVP before replacement is Apache 2.0.54 or OpenSA, you need to replace the Apache in the SVP after replacement to Apache 2.0.54 or OpenSA as well.
   In order to replace the Apache in the SVP after replacement, uninstall the Apache 2.2.4 (See WEB06-60) which is installed in the SVP after replacement, and then install the Apache 2.0.54 or OpenSA.
   If the Apache in the SVP before replacement is Apache 2.2.4, go to the next step.

7. <Removing the JP1 Jumper>
   When SVP High Reliability Support Kit is not set, remove the maintenance jumper that has been attached to the JP1 of the SVP.
   When SVP High Reliability Support Kit is set go to the next step.

⚠ **CAUTION**

The SIM bf85a3, bf86a3 may be reported, however, it is not a problem because it is one of the normal processes of the SVP replacement.
Complete the SIM concerned.

---

8. <Setting the IP Address of the SVP>

(1) <Mode change>
Change the mode to Modify Mode.

Note: Please wait for changing the mode into [Modify
Mode] till the following message is closed.
"Loading SVP Program.... SVP requests to DKC
can not be performed presently. Please wait...."
(If you do not find whether the message is
closed, please confirm "Function Name: DKC"
in 'Web Server Status' window.
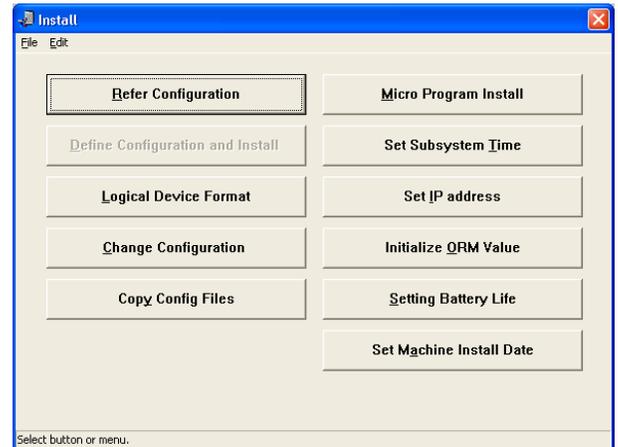If you can find the lamp yellow, you can change
the mode into [Modify Mode].)

(2) <Opening the 'Install' window>
Select (CL) [Install] in the [SVP] menu.

(3) <Selecting [Set SVP IP address]>
Select (CL) [Set IP address] in the
'Install' window.

Note: Although it may be an error display if the Web Server Status window is displayed
before the IP address setting work of SVP is completed, there is no problem because it is
the one by the process of the SVP replacement.
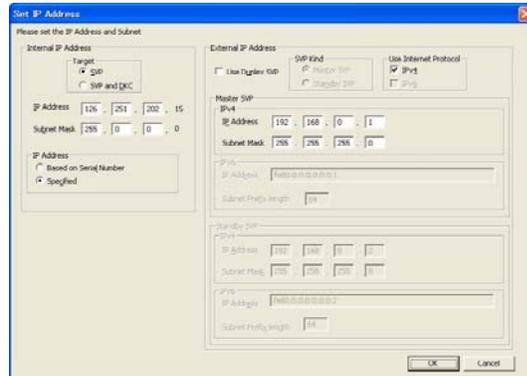
(4) <Setting the IP address>
Select (CL) [SVP], make sure of the IP Address and Subnet Mask of the Internal IP Address and the External IP Address, and select (CL) the [OK] button.
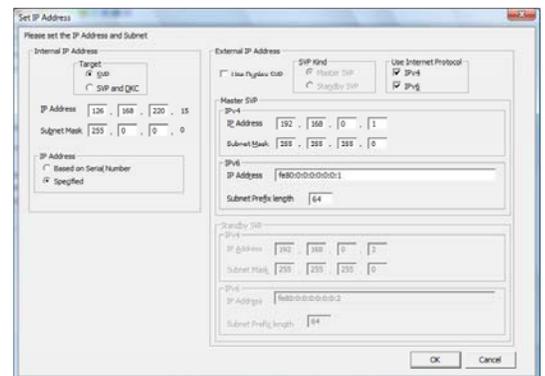When the "IP Address" and/or "Subnet Mask" are/is wrong, enter the correct one(s).

[In case of Windows Vista]
When setting IPv6, select (CL) "IPv6". Enter the "IP Address" and/or "Subnet Prefix length".
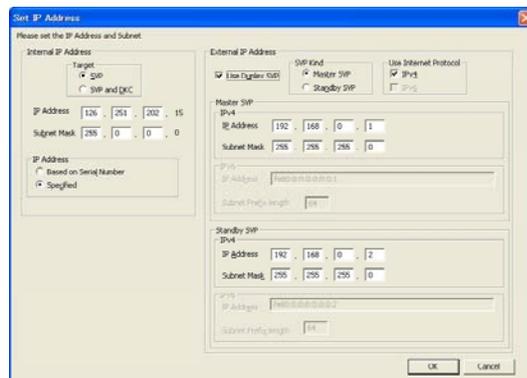

[In case of Windows XP]   [In case of Windows Vista]
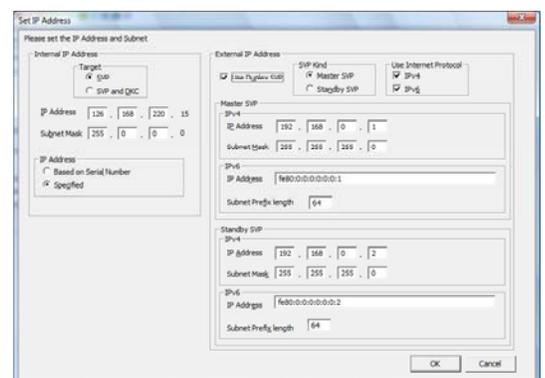
When SVP High Reliability Support Kit is not set
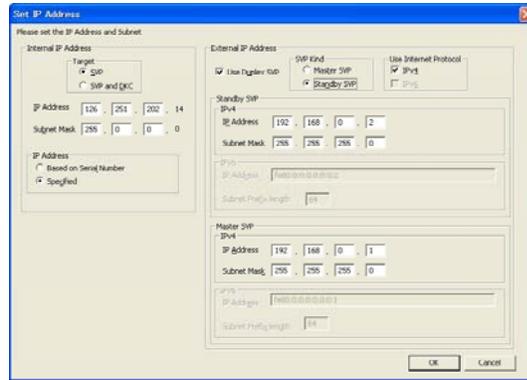

[In case of Windows XP]   [In case of Windows Vista]
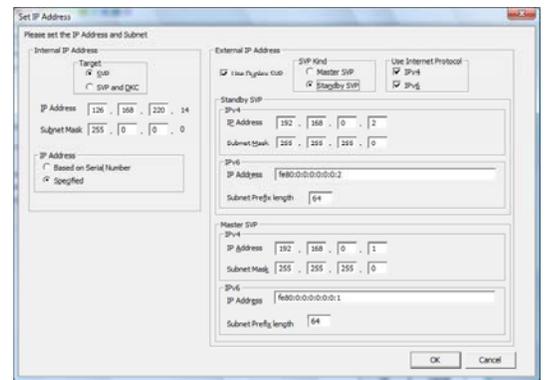
When SVP High Reliability Support Kit is set
(in the Master SVP)

[In case of Windows XP]   [In case of Windows Vista]

When SVP High Reliability Support Kit is set
(in the Standby SVP)

Note: When setting the High Reliability kit, select (CL) "Use Duplex SVP".
You can use the LED of SVP to verify the SVP, which is in operation and is not to be replaced, whether it is the master one or the standby one and whether it is in operation or not (for more information, see section SVP (SVP01-200)).
If the SVP, which is in operation, is a master one, select (CL) "Standby SVP" for the replaced SVP. If the SVP, which is in operation, is a standby one, select (CL) "Master SVP" for the replaced SVP.
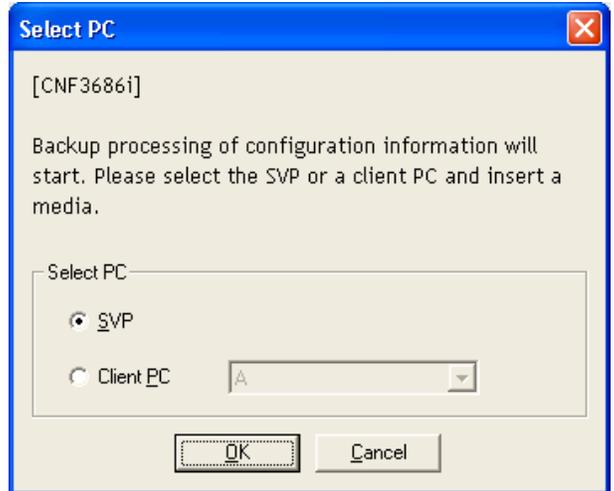
(5) <Making sure of the setting of the external IP address>
When a message, "When there are directions to set the external IP address, please set the external IP address from the "Control Panel" of Windows after performing this operation," is displayed, select (CL) the [OK] button.

(6) <Inserting the medium containing the configuration information>
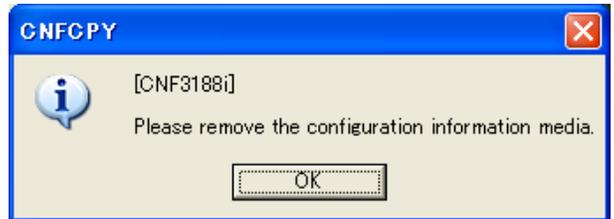Insert the medium containing the configuration information in the specified location and select (CL) the [OK] button.

(7) <Taking out the medium containing the configuration information>
When the copying of the configuration information is completed, a message, "Please remove the configuration information media." is displayed.
Take out the medium containing the configuration information and select (CL) the [OK] button.

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(8) <Making sure of the restart of the SVP>
Select (CL) the [OK] button.

The SVP is disconnected from the console PC.
After waiting for about five minutes, reconnect the SVP that
has been replaced to the console PC.

[Connection destination]
- When SVP High Reliability Support Kit is not set: xxx.xxx.xxx.15
- When SVP High Reliability Support Kit is set:
  When the Master SVP was replaced: xxx.xxx.xxx.15
  When the Standby SVP was replaced: xxx.xxx.xxx.14

Note: If the IP address of the Console PC has been changed to 126.255.255.x, reset to the
original IP address before connection.

When the SVP, which is an object of the operation, cannot be detected, retry the
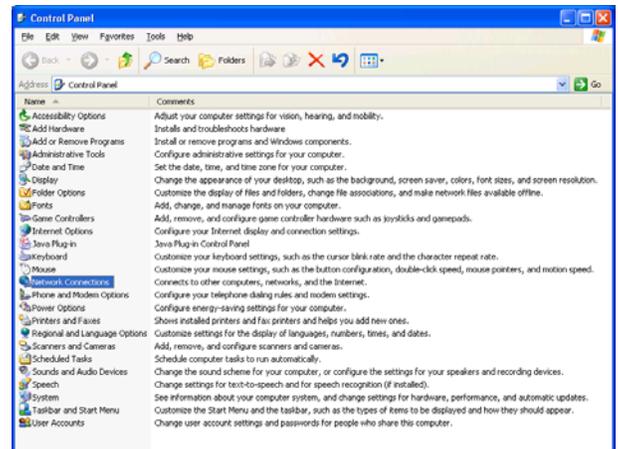connection after a while (about one minute).

(9) <When OS of SVP is Windows XP>
(a) <Opening the Control Panel window>
Select (DR) [Control Panel] from the [Start] menu.

(b) <Opening the Network Connections window>
Select (CL) [Network Connections]
in the 'Control Panel' window.

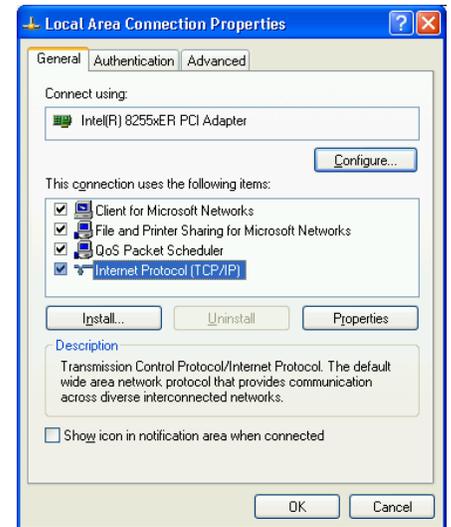(c) <Opening the Local Area Connection Properties window>
Select (CL) [Local Area Connection Properties] in the 'Network Connections' window and select (CL) [Properties] by clicking the right mouse button.
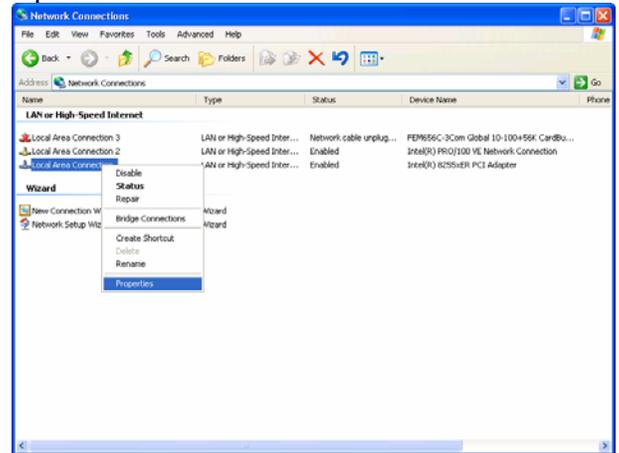
(d)
Select (CL) [Internet Protocol (TCP/IP)] in the 'Local Area Connection Properties' window and select (CL) the [Properties] button.
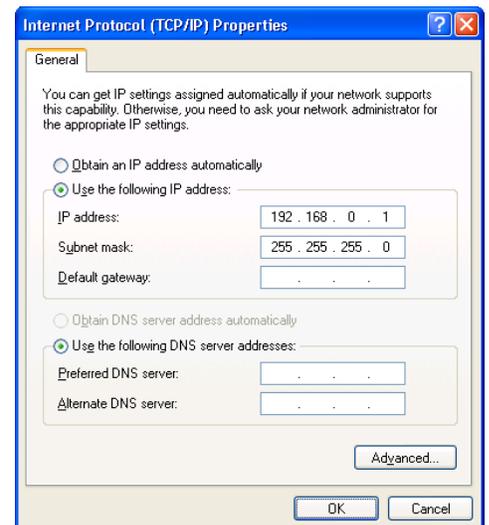
(e) <Setting the external IP address>
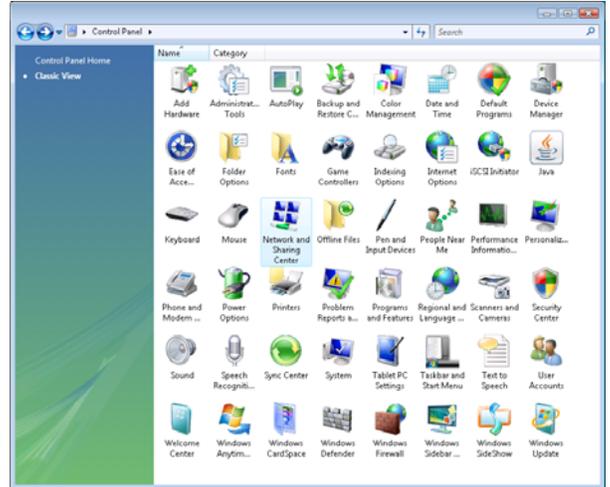Set the "IP address" and "Subnet mask" and select (CL) the [OK] button.
After the setting is completed, select (CL) the [OK] button in the "Local Area Connection Properties" window.
Close the 'Network Connections' window.

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(10) <When OS of SVP is Windows Vista>
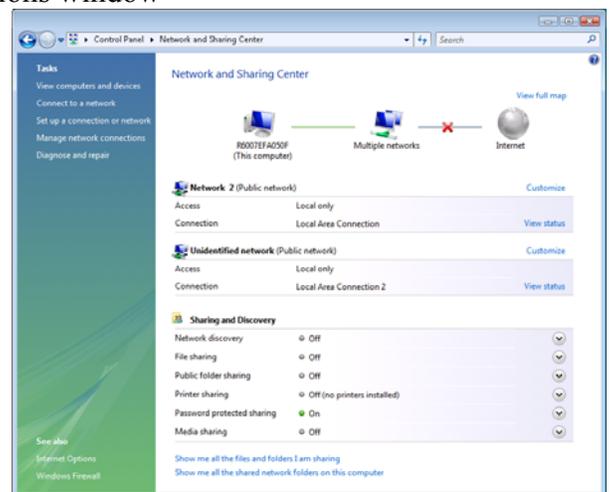   (a) <Opening the Control Panel window>
        Select (DR) [Control Panel] from the [Start] menu.

    (b) <Opening the Network and Sharing Center window>
        Select (CL) [Network and Sharing Center] in the 'Control Panel' window.

    (c) <Opening the Manage network connections window>
   Select (CL) [Manage network connections] in the 'Network and Sharing Center' window.

    (d) <Opening the Local Area Connection Properties window>
        Select (CL) [Local Area Connection Properties] in the 'Network Connections' window and select (CL) [Properties] by clicking the right mouse button.

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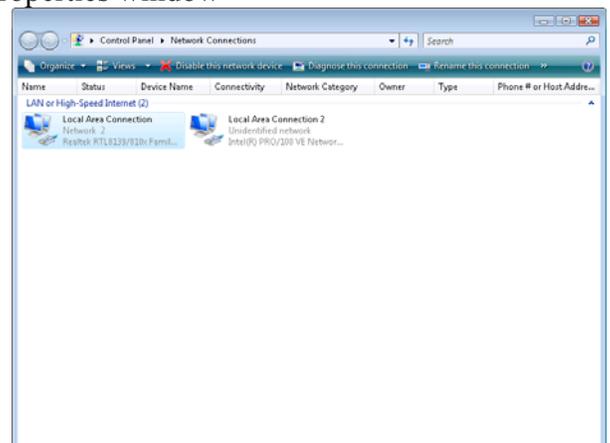
(e)

Select (CL) [Internet Protocol Version 4
(TCP/IPv4)] in the 'Local Area Connection
Properties' window and select (CL) the [Properties]
button.
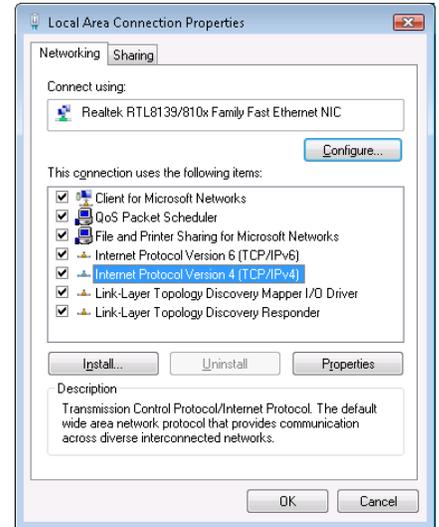
(f)   <Setting the external IP address>
Set the "IP address" and "Subnet mask" and
select (CL) the [OK] button.
When you do not set IPv6, go to step (i).
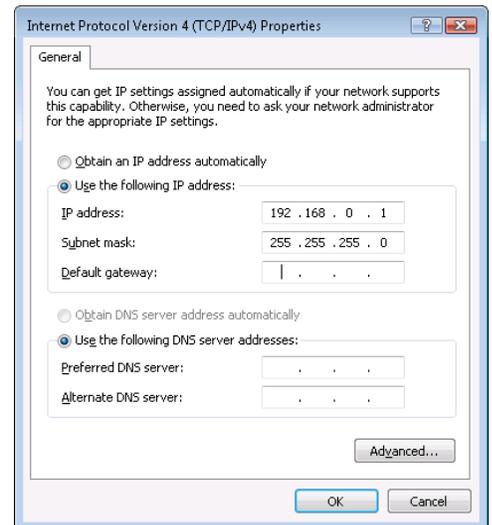
(g)

Select (CL) [Internet Protocol Version 6
(TCP/IPv6)] in the 'Local Area Connection
Properties' window and select (CL) the [Properties]
button.

(h) <Setting the external IP address>
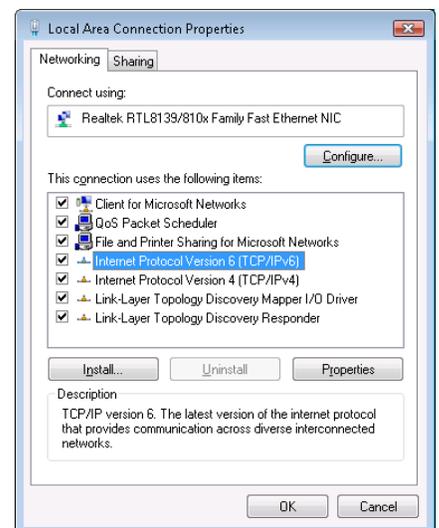Set the "IPv6 address" and "Subnet prefix length" and select (CL) the [OK] button.
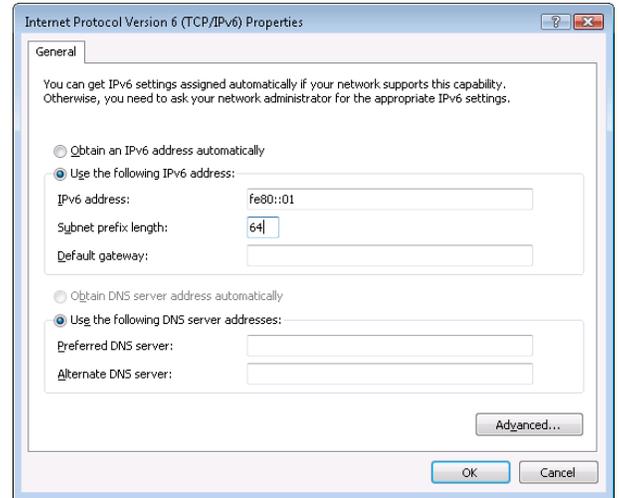
(i)

After the setting is completed, select (CL) the [OK] button in the "Local Area Connection Properties" window.
Close the 'Manage network connections' window.

9. <Removing the JP1 Jumper and connection of cable (2)>
When SVP High Reliability Support Kit is set, remove the maintenance jumper that has been attached to the JP1 of the SVP.
When SVP High Reliability Support Kit is not set, go to the next step.

10. <Resetting the SSVP>

When the SVP high-reliability kit is set, remove it after inserting the maintenance jumper in JP8 (SSVP ALARM RESET) of DKCPANEL.
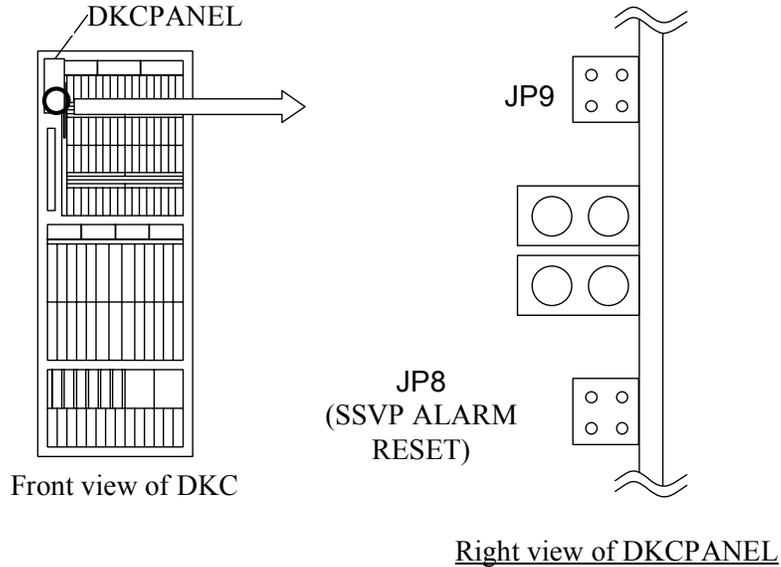
When SVP High Reliability Support Kit is not set, go to the next step.

DKCPANEL

JP9

JP8
(SSVP ALARM
RESET)

Front view of DKC

Right view of DKCPANEL

11. <Transferring the Configuration Information>

When SVP High Reliability Support Kit is set, transfer the configuration information. (See SVP02-1300 "2.20 Configuration Information Transfer".)

(When the Master SVP has been replaced, do the same in order to make sure of the setting of the Master SVP.)

When SVP High Reliability Support Kit is not set, go to the next step.

Perform the following operation for the Master SVP (IP address: xxx.xxx.xxx.15)

When the SVP, which is an object of the operation, cannot be detected, retry the connection after a while (about one minute).

12. <Setting the TOD>

When SVP High Reliability Support Kit is not set or Master SVP is replaced after SVP High Reliability Support Kit is set, set the TOD after the message, "Loading SVP Program... SVP requests to DKC can not be performed presently. Please wait ..." disappears.

When SVP High Reliability Support Kit is set, go to the next step.

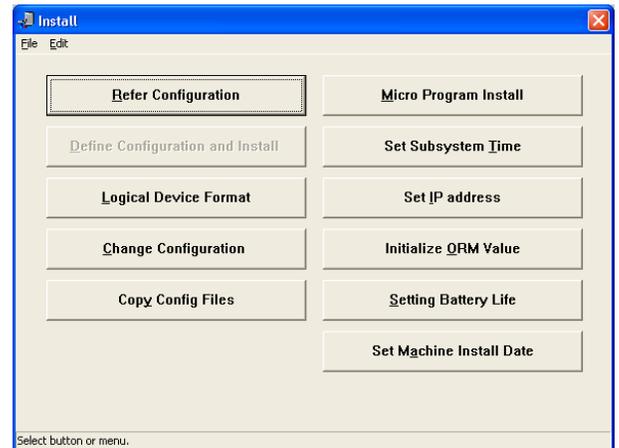(1) <Changing the mode>
Change the mode to Modify Mode.

(2) <Opening the 'Install' window>
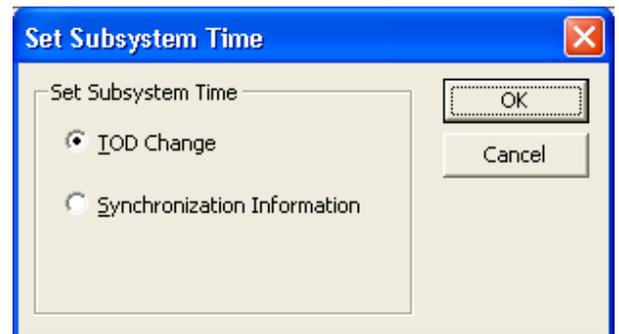Select (CL) [Install] in the [SVP] menu.

(3) <Selecting [Set Subsystem Time] >
Select (CL) [Set Subsystem Time] in the 'Install' window.

(4)
Select (CL) [TOD Change] in the 'Set Subsystem Time' window, and then select (CL) [OK].

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(5)

Enter a date (year, month, and day) and time (hours, minutes, and seconds), and then select (CL) the [OK] button.
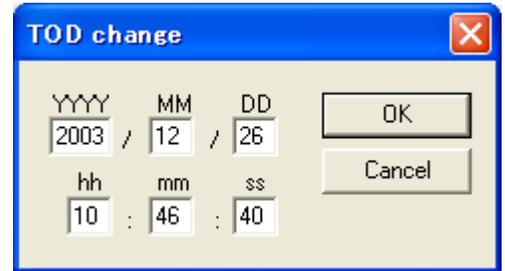
(6)

Close the 'Install' window.

13. <Loading the configuration information from the SM to an HDD of the SVP>

When SVP High Reliability Support Kit is not set, load the configuration information from the SM to an HDD of the SVP.

When SVP High Reliability Support Kit is set, go to the next step.

(1) <Opening the 'Maintenance' window>

Select (CL) [Maintenance] from the "SVP" window.

(2)

Make sure that the message, "Connection error occurred SVP-DKC," is not displayed.

If the above message is displayed, refer to page .

(3) <Selecting [Exit]>

Select (CL) [File] from the 'Maintenance' window.

Select (CL) the [Exit] button.

14. <Setting the Web Console>
    If the customer don't use Web Console (Storage Navigator), (3) and (4) are not required.
    If the customer uses neither Web Console nor SNMP Agent, (1), (2), (3) and (4) are not required.

(1) Setting Web Console
    Perform the setting of Web Console from the WEB CONSOLE section.
    Please refer to WEB CONSOLE section "1. Before using Web Console" (WEB01-10) for the setting method.

(2) Setting SNMP
    ① Please perform the following procedure, when you use SNMP Agent.
        1. Push Web Console button.
        2. Open the SNMP Information Tab.
        3. Add the check mark of Extension SNMP and push Apply button.

    ② Please perform the following procedure, when you don't use SNMP Agent.
        1. Push Web Console button.
        2. Specify Name, Contact and Location on Information Tab again.

    Please refer to the Hitachi Storage Navigator User's Guide "Information Window (3-12)" for the setting method.

(3) Setting the user account information and the environment setting information
    (The setting is not required if the SVP High Reliability Support Kit is set.)
    Ask the customer to restore the user account information and the environment setting information of Web Console using the backup which he/she is keeping.
    If the backup is not kept, ask him/her to reset it.
    Please refer to the Hitachi Storage Navigator User's Guide "Registering New Users (4-12)", "Setting Environment Parameters (4-18)", "Restoring Backups of Configuration Files (4-20)" for the restoration method and the setting method.

(4) Setting Audit Log
    When the customer is using the Syslog function of Audit Log or the FTP transfer function, request the customer to restore it by using the backup that he/she is keeping.
    If the backup is not kept, ask him/her to reset it.
    Please refer to the Storage Navigator User's Guide "Syslog Window (3-24)", "Audit Log Window (3-26)", "Restoring Backups of the Configuration Files (4-22)" for the restoration method and the setting method.

15. <Backing Up the Configuration Information>
In the case where SVP High Reliability Support Kit is not set and where SVP High Reliability Support Kit is set and the Master SVP has been replaced, make a backup of the configuration information. (See MICRO08-40 "8.2 Config Backup".)
In the case where SVP High Reliability Support Kit is set and the Standby SVP has been replaced, go to the next step.

16. <Completing the SIM Log>

Refer to page SVP02-560.

Go to POST-PROCEDURE z (REP04-1030).

[6] SSVP/MN

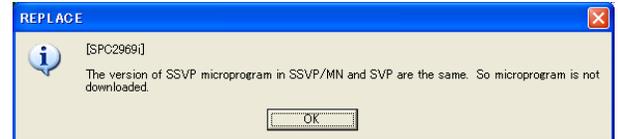1. <Check replacement of special part>
    Select (CL) [OK] in response to "Please
    replace the "SSVP/MN." After replacement,
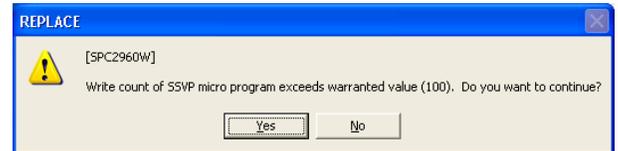   press OK.".

2. <Warning message>
    When the versions of two microprograms, one
    is to be downloaded to the SSVP/MN and the
    other is stored in an ROM of the SSVP/MN,
    are the same, a message, "The version of
    SSVP microprogram in SSVP/MN and SVP are same. So microprogram is not downloaded." is
    displayed.
    Select (CL) [OK] and go to Step 4.

    When the number of times of the SSVP
    microprogram downloading exceeds 100, a
    message, "Write count of SSVP micro
    program exceeds warranted value (100). Do
    you want to continue?" is displayed.
    When you download the microprogram, select (CL) [Yes] and proceed to the following steps.
    When you do not download the microprogram, select (CL) [No] and go to Step 4.

⚠ **CAUTION**

When you download the microprogram, an entry of a password is requested. Contact the
Technical Support Division to ask for an instruction.

3.

The message "SSVP microprogram download. (n/16)"
is displayed.
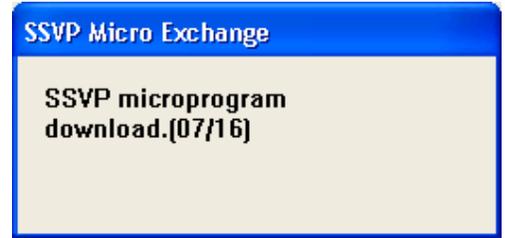
SSVP Micro Exchange

SSVP microprogram
download.(07/16)

4.   <Check end of replacement>
Select (CL) [OK] in response to "Replacement of
the "SSVP/MN" is done.".

REPLACE

[SPC1227i]

Replacement of the "SSVP/MN" is done.

OK

5.   <SIM Complete>

See SVP02-560.

Go to POST-PROCEDURE z (REP04-1030).

[7] DKCFAN

1. <Check replacement of special part>
   Select (CL) [OK] in response to "Please replace the "FAN-nn." After replacement, press OK.".

   (Eg. FAN-11)

2. <Check environment monitor start processing>
   The message "Processing to enable the environment check..." is displayed.
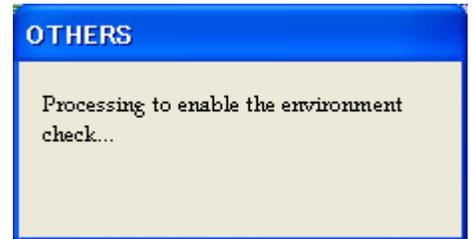
3. <Check end of replacement>
   Select (CL) [OK] in response to "Replacement of the "FAN-nn" is done.".

   (Eg. FAN-11)

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.

5. <Confirm Cluster>
    If Cluster is blocked, recover it.
    See SVP02-1170.

6. <SIM Complete>

    See SVP02-560.

    Go to POST-PROCEDURE z (REP04-1030).
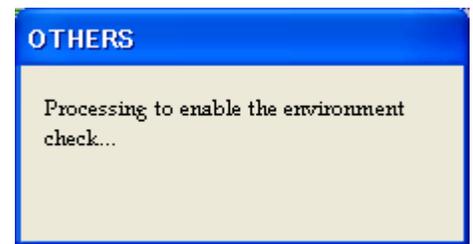
[8] Thermostat

1. <Check replacement of special part>
    Select (CL) [OK] in response to "Please
    replace the "TH-nn." After replacement, press
    OK.".

    REPLACE

    [SPC1198i]

    Please replace the "TH-11." After replacement, press OK.

    OK   Cancel

    (Eg. TH-11)

2. <Check environment monitor start processing>
    The message "Processing to enable the environment
    check..." is displayed.

    OTHERS

    Processing to enable the environment
    check...

3. <Check end of replacement>
    Select (CL) [OK] in response to "Replacement of the
    "TH-nn" is done.".

    REPLACE

    [SPC1227i]

    Replacement of the "TH-11" is done.

    OK

    (Eg. TH-11)

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.

5. <SIM Complete>

   See SVP02-560.

    Go to POST-PROCEDURE z (REP04-1030).

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[9] DKCPS

1. <Check replacement of special part>
   Select (CL) [OK] in response to "Please replace the "PSnn". After replacement, press OK.".

   REPLACE

   [SPC1198i]

   Please replace the "PS11." After replacement, press OK.

   OK   Cancel

   (Eg. PS11)

2. <Check environment monitor start processing>
   The message "Processing to enable the environment check..." is displayed.

   OTHERS

   Processing to enable the environment check...
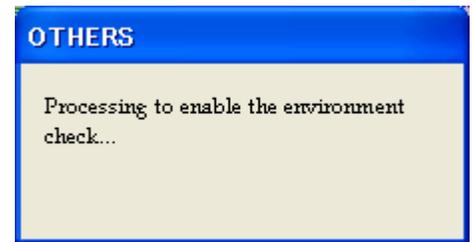
3. <Check end of replacement>
   Select (CL) [OK] in response to "Replacement of the "PSnn" is done.".

   REPLACE

   [SPC1227i]

   Replacement of the "PS11" is done.

   OK

   (Eg. PS11)

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 SVP section "2.15 Recovering of Cluster" (SVP02-1170).

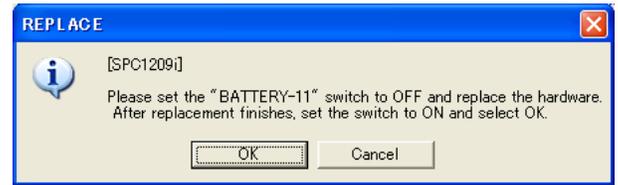6. <SIM Complete>

    See SVP02-560.

    Go to POST-PROCEDURE z (REP04-1030).
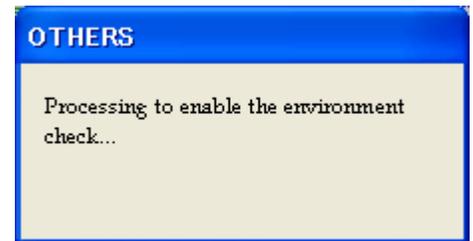
[10] DKC Battery Box

1. <Check replacement of special part>
    Select (CL) [OK] in response to "Please set
    the "BATTERY-nn" switch to OFF and
    replace the hardware. After replacement
    finishes, set the switch to ON and select
    OK.".

    (Eg. BATTERY-11)

2. <Check environment monitor start processing>
    The message "Processing to enable the environment
    check..." is displayed.

3. <Check end of replacement>
    Select (CL) [OK] in response to "Replacement of
    the "BATTERY-nn" is done.".

    (Eg. BATTERY-11)

4. <Setting the battery alarm SIM>
    The message, "Select the Setting Battery Life
    button in the Install panel and then make
    settings." is displayed. If the periodical
    exchange maintenance of a Battery, after the
    post-procedure of the part replacement is
    completed, specify a number of remaining days until the battery alarm SIM is issued for the
    "Setting Battery Life." (See page SVP02-1230.)

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5. <Confirm status>
   Confirm the status display.
   If button is normal (The string is normally display), go to step 6.
   If button is abnormal (The string is blinking), replace the target part again, or see TROUBLE
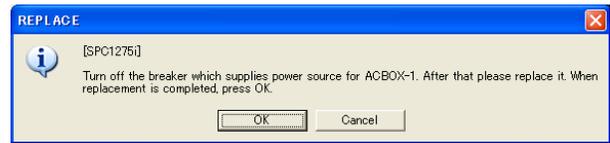   SHOOTING SECTION.

6. <SIM Complete>

   See SVP02-560.

   Go to POST-PROCEDURE z (REP04-1030).
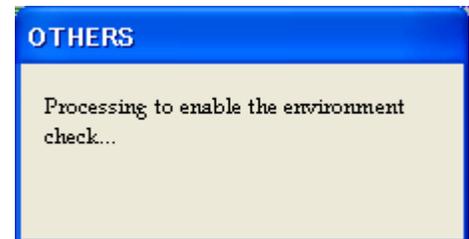
[11] DKC AC BOX

1. <Check replacement of special part>
   Select (CL) [OK] in response to "Turn off the breaker which supplies power source for ACBOX-n. After that please replace it. When replacement is completed, press OK.".
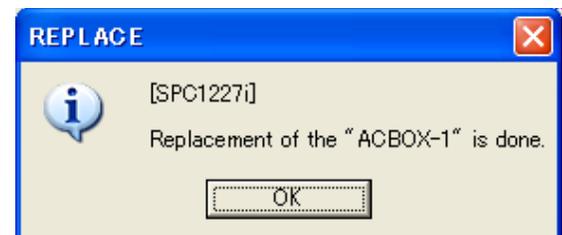
   (Eg. ACBOX-1)

2. <Check environment monitor start processing>
   The message "Processing to enable the environment check..." is displayed.

3. <Check end of replacement>
   Select (CL) [OK] in response to "Replacement of the "ACBOX-n" is done.".

   (Eg. ACBOX-1)

4. <Confirm Cluster>
   If Cluster is blocked, recover it.
   See SVP section "2.15 Recovering of Cluster" (SVP02-1170).

5. <SIM Complete>

   See SVP02-560.

   Go to POST-PROCEDURE z (REP04-1030).

[12] BATREG

1. <Check replacement of special part>
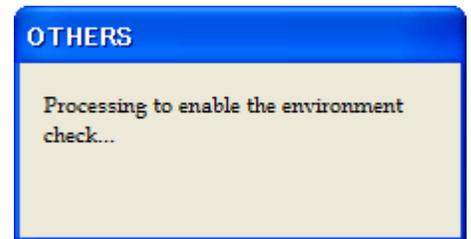   Select (CL) [OK] in response to "Please
    replace the "BATREG-n." After replacement,
    press OK.".

    (Eg. BATREG-1)

2. <Check environment monitor start processing>
    The message "Processing to enable the environment
    check..." is displayed.

3. <Check end of replacement>
    Select (CL) [OK] in response to "Replacement
    of the "BATREG-n" is done.".

    (Eg. BATREG-1)

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.

5. <SIM Complete>

    See SVP02-560.

    Go to POST-PROCEDURE z (REP04-1030).

[POST-PROCEDURE t4]

— OUTLINE —

① Specify end of special part replacement
② Reinstall related parts
③ DKU Path Inline Test
④ Start environment monitor
⑤ SIM Complete

[1] Start of POST-PROCEDURE

Valid "XXXXX" values are listed below.
• HDDFAN -------------------- [2] (REP04-870)
• DKUPS   --------------------- [3] (REP04-880)
• DKU Battery Box --------- [4] (REP04-890)
• DKU AC BOX ------------- [5] (REP04-910)
• FUSE ----------------------- [6] (REP04-930)
• SVR/SVR-EX -------------- [7] (REP04-950)

[2] HDDFAN

1. <Check beginning of special part Replacement>
    Select (CL) [Yes] in response to "Please
    replace the "HDDFANnn-n." After
    replacement, press OK.".

    REPLACE
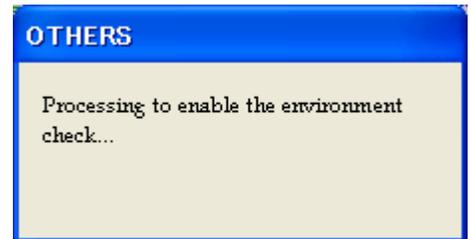
    [SPC1198i]
    Please replace the "HDDFANR1-0." After replacement, press OK.

    OK   Cancel

    (Eg. HDDFANR1-0)

2. <Check environment monitor start processing>
    The message "Processing to enable the environment
    check..." is displayed.

    OTHERS

    Processing to enable the environment
    check...

3. <Check end of replacement>
    Select (CL) [OK] in response to
    "Replacement of the "HDDFANnn-n" is
    done.".

    REPLACE

    [SPC1227i]
    Replacement of the "HDDFANR1-0" is done.

    OK

    (Eg. HDDFANR1-0)

4. <Confirm status>
    Confirm the status display.
    If button is normal (The string is normally display), go to step 6.
    If button is abnormal (The string is blinking), replace the target part again, or see TROUBLE
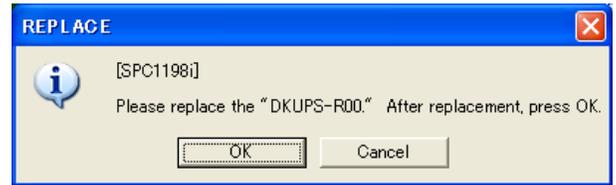   SHOOTING SECTION.

5. <SIM Complete>

    See SVP02-560.

    Go to POST-PROCEDURE z (REP04-1030).

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[3] DKUPS

1. <Check beginning of special part Replacement>
   Select (CL) [Yes] in response to "Please replace the "DKUPS-Rnn." After replacement, press OK.".

   REPLACE

   [SPC1198i]
   Please replace the "DKUPS-R00." After replacement, press OK.

   OK   Cancel

   (Eg. DKUPS-R10)

2. <Check environment monitor start processing>
   The message "Processing to enable the environment check..." is displayed.

   OTHERS

   Processing to enable the environment check...
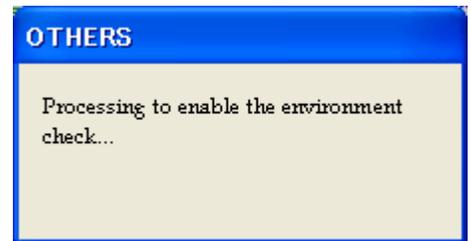
3. <Check end of replacement>
   Select (CL) [OK] in response to "Replacement of the "DKUPS-nnn" is done.".

   REPLACE

   [SPC1227i]
   Replacement of the "DKUPS-R10" is done.

   OK

   (Eg. DKUPS-R10)

4. <Confirm status>
   Confirm the status display.
   If button is normal (The string is normally display), go to step 6.
   If button is abnormal (The string is blinking), replace the target part again, or see TROUBLE SHOOTING SECTION.

5. <SIM Complete>

   See SVP02-560.

   Go to POST-PROCEDURE z (REP04-1030).

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[4] DKU Battery Box

1. <Check beginning of special part Replacement>
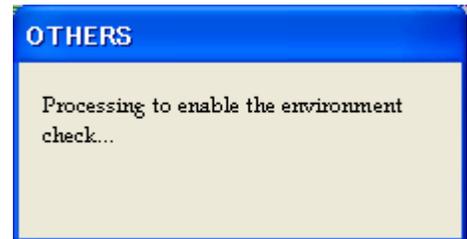   Select (CL) [Yes] in response to "Please replace the "BATTERY-Unnn." After replacement, press OK.".

    (Eg. BATTERY-UR10)

2. <Check environment monitor start processing>
    The message "Processing to enable the environment check..." is displayed.

3. <Check end of replacement>
    Select (CL) [OK] in response to "Replacement of the "BATTERY-Unnn" is done.".

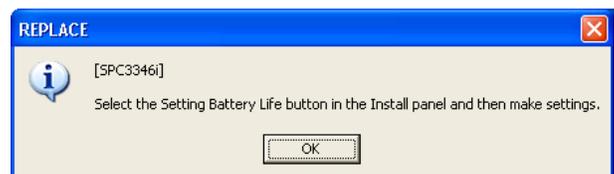   (Eg. BATTERY-UR10)

4. <Setting the battery alarm SIM>
    The message, "Select the Setting Battery Life button in the Install panel and then make settings." is displayed. If the periodical exchange maintenance of a Battery, after the post-procedure of the part replacement is completed, specify a number of remaining days until the battery alarm SIM is issued for the "Setting Battery Life." (See page SVP02-1230.)

5. <Confirm status>
   Confirm the status display.
   If button is normal (The string is normally display), go to step 6.
   If button is abnormal (The string is blinking), replace the target part again, or see TROUBLE
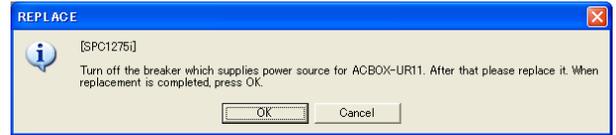   SHOOTING SECTION.

6. <SIM Complete>

   See SVP02-560.

   Go to POST-PROCEDURE z (REP04-1030).

[5] DKU AC BOX

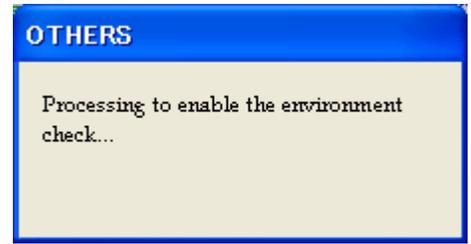1. <Check beginning of special part Replacement>
   Select (CL) [Yes] in response to "Turn off the
   breaker which supplies power source for
   ACBOX-Unnn. After that please replace it.
   When replacement is completed, press OK.".
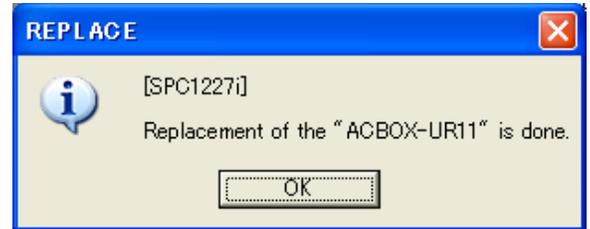

(Eg. ACBOX-UR11)

2. <Check environment monitor start processing>
   The message "Processing to enable the environment
   check..." is displayed.

3. <Check end of replacement>
   Select (CL) [OK] in response to "Replacement
   of the "ACBOX-Unnn" is done.".

(Eg. ACBOX-UR11)

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 SVP02-1170.

6. <SIM Complete>

   See SVP02-560.

   Go to POST-PROCEDURE z (REP04-1030).

[6] FUSE

1. <Check beginning of special part Replacement>
   Select (CL) [Yes] in response to "Please replace the "FUSE-Rnn." After replacement, press OK.".
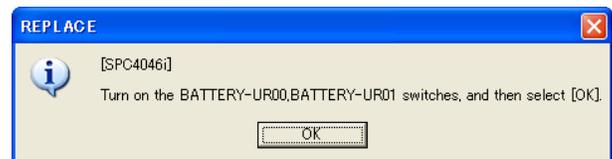

   (Eg. FUSE-R01)

2. <Battery ON>
   The message "Turn on the BATTERY-URnn, BATTERY-URnn switches, and then select [OK]." is displayed.
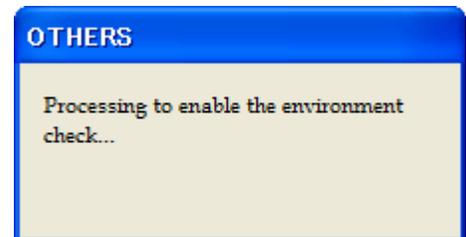   After the switch of specified BATTERY is turned on, select (CL) [OK].
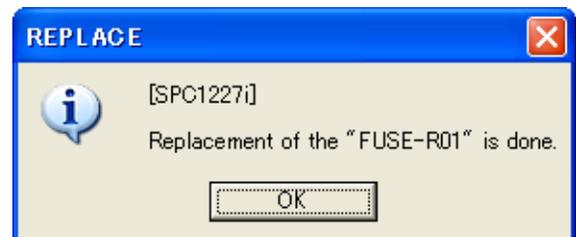

   (Eg. BATTERY-UR00, 01)

3. <Check environment monitor start processing>
   The message "Processing to enable the environment check..." is displayed.

4. <Check end of replacement>
   Select (CL) [OK] in response to "Replacement of the "FUSE-Rnn" is done.".

   (Eg. FUSE-R01)

5. <Confirm status>
   Confirm the status display.
   If button is normal (The string is normally display), go to step 6.
   If button is abnormal (The string is blinking), replace the target part again, or see TROUBLE
   SHOOTING SECTION.

6. <SIM Complete>

   See SVP02-560.

   Go to POST-PROCEDURE z (REP04-1030).

[7] SVR/SVR-EX

1.   <Check beginning of special part Replacement>
    Select (CL) [OK] in response to "Please
    replace the "SVRRnn-x." After replacement,
    press OK.".

(Eg. SVRR00-L)

2.   <Check environment monitor start processing>
    The message "Processing to enable the environment
    check..." is displayed.

3.   <Check end of replacement>
    Select (CL) [OK] in response to "Replacement of
    the "SVRRnn-x" is done.".
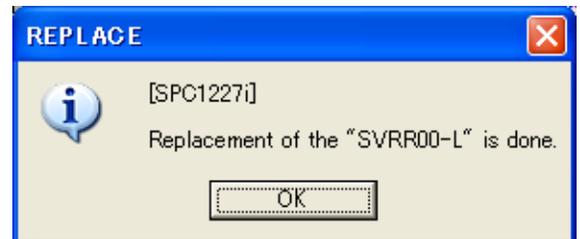
(Eg. SVRR00-L)

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
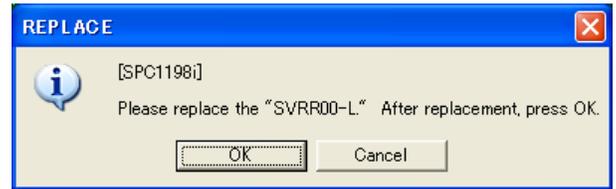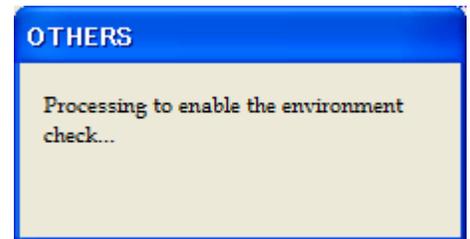   SHOOTING SECTION.

5.   <SIM Complete>

    See SVP02-560.

    Go to POST-PROCEDURE z (REP04-1030).

[POST-PROCEDURE t5]

— OUTLINE —

① Check the port Wave information.

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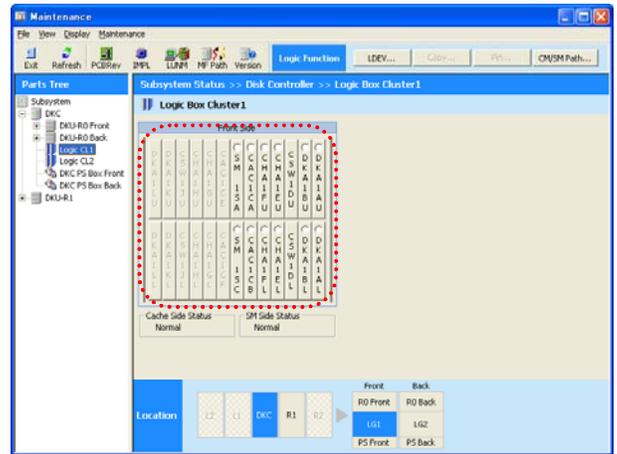1. <Maintenance window>
   Select (CL) [Disk Controller] in the
   'Maintenance' window.
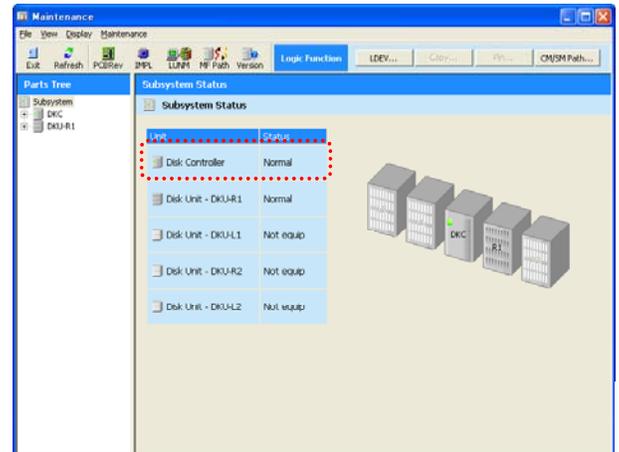
2. <DKC window>
   Select (CL) [Logic Box ClusterX] in the
   'DKC' window.
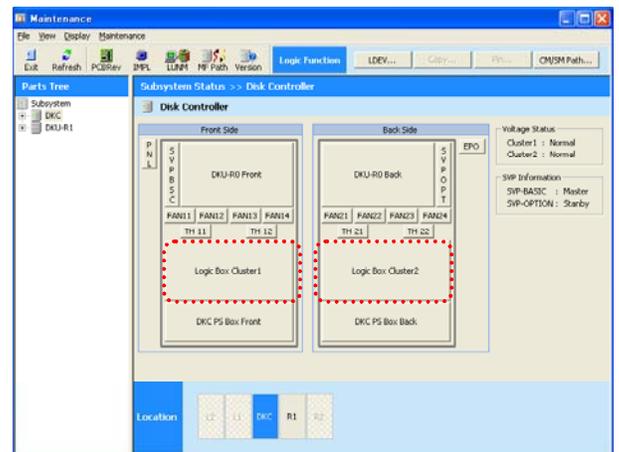
3.   <Selecting CHA>
        Select (CL) the target CHA.

4.   <Confirming SFP type information>
        Confirm that the SFP type information on the
        port information list is displayed.

5. <Set path online>
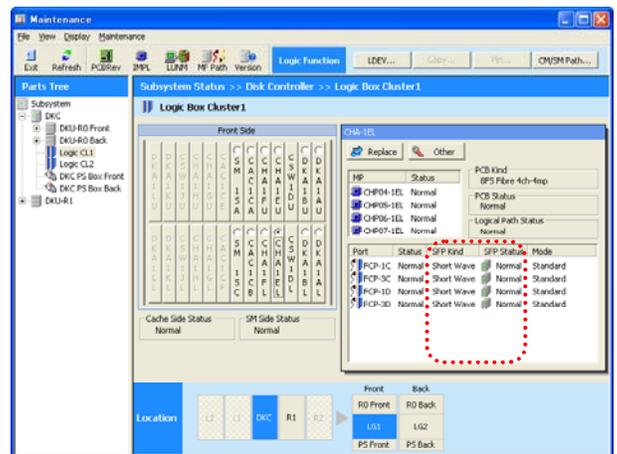
> ⚠ **CAUTION**
>
> The path to be placed online is that connected with the SFP concerned.

[Notes for the case where DKN-200-NGW1 (NAS Unit) has been connected to this device]

If the NAS Unit is connected to this device, ask the NAS Unit administrator to confirm the following points.

[Points to be checked after completing this operation]
1. If the NAS service is terminated:
   After completing this operation, ask the NAS Unit administrator to reboot the NAS Unit.
2. If the NAS service is not terminated:
   When the replacement operation of SFP used by the NAS Unit is completed, the Fibre Channel path (FC path) of the NAS Unit might go into the Failure status. Before starting the operation of the next SFP replacement, contact the NAS Unit administrator, refer to "Recovering from FC path errors" of "Hitachi NAS Manager User's Guide", confirm the FC path status and, if the status is Failure, ask for the recovery of the FC path.

In addition, if there are any personnel for the NAS Unit maintenance, ask the NAS Unit maintenance personnel to refer to "NAS IMS 2.9.8 Displaying LU Path Setting Screen (NAS IMS 02-0490)" in "DKN-200-NGW1 NAS Unit Maintenance Manual", and ask to check the status of the FC path and to recover the FC path if it is in a failure status after completing the replacement operation of SFP used by the NAS Unit.

---

6. <SIM Complete>

See SVP02-560.

Go to POST-PROCEDURE z (REP04-1030).

[POST-PROCEDURE u]

— OUTLINE —

① Execute CUDG on P-DEV.
② Specify recovery.
③ Correction copy
④ Reset ORM Error Count on the P-DEV.
⑤ Reset Threshold Counter
⑥ SIM Complete

> ⚠ **CAUTION**
>
> This processing is a special operation for detecting a cause of a Fibre loop error.
> Ask the technical support division about the appropriateness of the operation.

> ## ⚠ CAUTION
>
> This processing is a special operation for detecting a cause of a Fibre loop error.
> Ask the technical support division about the appropriateness of the operation.

1. \<Get the error information\>
   Input the Field Failure Information, and select (CL) [Ok].

[HDS]

[HP]

"Insert a removable media for gathering error information and select [OK]. The information will be essential to investigate the problem of the hardware. You can select [Cancel] only when removable media is not available." is displayed.

When Client PC is selected, the directory selection dialog is displayed.
Please select an arbitrary directory if necessary.
Select (CL) [Save] when saving a file in a specified directory.
It returns to the drive selection screen when the [Cancel] is selected (CL).

• When the destination media is write-protected.
<For Windows XP>
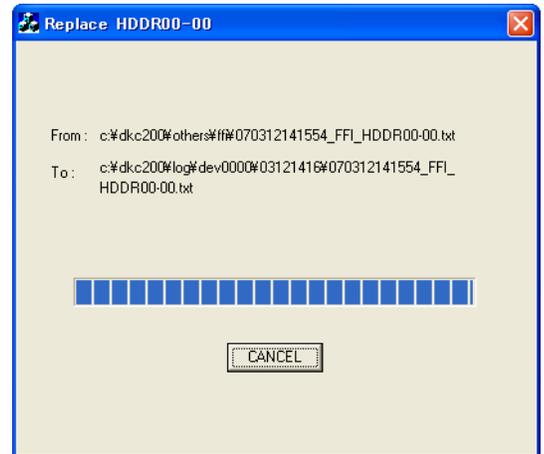The dialog remains displayed after selecting (CL)
[OK].

• When dialog of the destination drive specified with the Client PC is open, the media is
  removed, and select (CL) [Save].
<For Windows XP>
The dialog remains displayed after selecting (CL) [OK].

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2. <Copy of the error information>
The error information is copied onto media.

From : c:¥dkc200¥others¥ffi¥070312141554_FFI_HDDR00-00.txt

To : c:¥dkc200¥log¥dev0000¥03121416¥070312141554_FFI_HDDR00-00.txt

"Remove the media." is displayed.
Remove the removable media and select (CL) [OK].

[SVP2319i]
Remove the media.

3. <Spin up the Physical Drive>
"Spinning up..." is displayed.

4. <DKU INLINE>
Select (CL) [No] in response to "Are you sure you want to diagnose the physical device?".
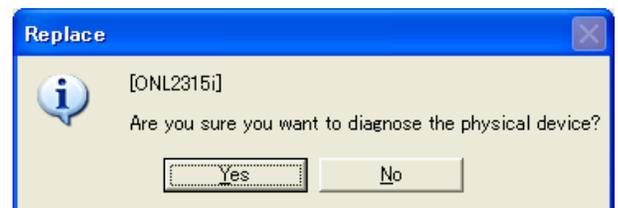
[ONL2315i]
Are you sure you want to diagnose the physical device?

> ⚠️ **CAUTION**
>
> This processing is a special operation for detecting a cause of a Fibre loop error.
> Ask the technical support division about the appropriateness of the operation.

---

5.   <Restore Physical Drive>
   Select (CL) [Yes] in response to "Are you sure you want to restore the physical device?".

   > **Replace**
   >
   > ℹ️ [ONL2317i]
   > Are you sure you want to restore the physical device?
   >
   > [Yes]　　[No]

---

6.   <Check the Drive Status>
   "Checking..." is displayed.
   Device is still blocked.

---

7.   <Check the beginning of correction copy>
   Select (CL) [Yes] in response to "Are you sure you want to correct data in the physical device?".

   > **Replace**
   >
   > ℹ️ [ONL2336i]
   > Are you sure you want to correct data in the physical device?
   >
   > [Yes]　　[No]

---
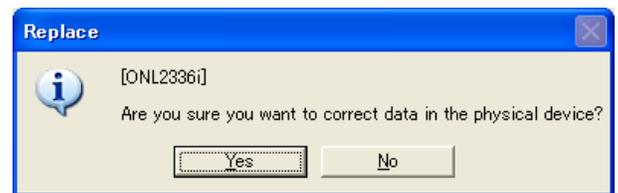
8.   <Correct data>
   "Correcting..." is displayed.

⚠ **CAUTION**

This processing is a special operation for detecting a cause of a Fibre loop error.
Ask the technical support division about the appropriateness of the operation.

---

9. <Check the starting of Correction copy>
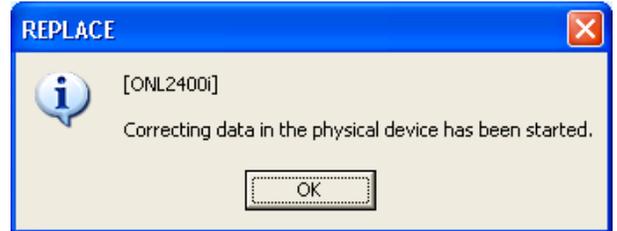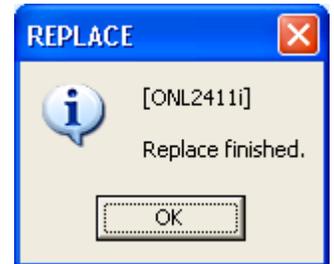   Select (CL) [OK] in response to "Correcting
   data in the physical device has been started.".

   REPLACE

   ⓘ [ONL2400i]

   Correcting data in the physical device has been started.

   [OK]

---

10. <Check the end of P-DEV recovery>
    Select (CL) [OK] in response to "Replace finished.".

    REPLACE

    ⓘ [ONL2411i]

    Replace finished.

    [OK]

---

11. <SIM Log Complete>
    Refer to SVP02-560.

[POST-PROCEDURE z]

— OUTLINE —

① Maintenance Window
② Change the SVP operation mode

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1. <Maintenance window>

In the 'Maintenance' window, check the status of subsystem.

Recover the parts if the other parts is blocked.

Close the 'Maintenance' window if there is no problem.

2. <Changing the SVP operation mode>

In the 'SVP' window, change the mode to [View Mode].