INSTALLATION SECTION

INSTALLATION

1 Subsystem Configuration Outline

1.1 General Information

1.1.1 Model List

Table 1.1.1-1 shows the model list of DKC465I.

Table 1.1.1-1 Model List of DKC465I

No	Model Number	Model Name	Major Part	Remarks
1	DKC465I-5 *1 DKC465I-5F *1 DKC465I-5FE *2 DKC465I-5EN*2*3 *1: NAS CHA not support model *2: NAS CHA support model *3: This model preinstall one pair of high performance disk adapter.	Disk Control Frame Disk Control Frame without doors Disk Control Frame without doors (NAS support Model) Disk Control Frame with High Performance DKA Pair (NAS support Model)	• LR012-A (PS-PL) • SH302-A(DKC-PANEL) • Special PCB • 3VPS × 4 *1 • 3/12VPS × 4 *2 • 5/3VPS × 4 • SUBPS × 2 • FAN ASSY × 8 *1 • FAN(NAS) ASSY × 8 *2 • LR010-A (L/G-PL) • CACHE × 2 • CSW × 2 • HDU Box × 4 • LR011-A (HDD PL) × 4 • FSW-A × 8 • JMP × 16 • FAN ASSY × 4 • 5/12V PS × 8 • Cable Duct ASSY (Power Cable for NAS) *2	DKC465I Disk Subsystem doesn't contain DKAs, channel adapters, cache memory modules, shared memory modules, AC Box Kit, AC Power cables and HDD canisters. It is necessary to attach the following options according to the configuration. • Channel Adapters (CHA) DKC-F460I-8S/8SE/8GS/4HSE/8HSE/8HLE/8MS/8ML/16HSF • NAS CHA DKC-F460I-4NS • Disk Adapter DKC-F465I-100, DKC-F460I-200 • Cache Memory Modules DKC-F460I-2048 • Shared Memory Modules DKC-F460I-S512 • AC Box Kit DKC-F465I-1PS/3PS/1PSD • AC Power cables DKC-F465I-3EC/3UC/1EC/1UC DKC-F460I-1ECD/1UCD • HDD canisters DKU-F455I-18K4/18K1/36J4/36J1/36K4/36K1/72J4/72J1/146J4/146J1
2	DKC-F465I-1PS	AC Box Kit for Single Phase/50A	• AC Box × 2	
3	DKC-F465I-3PS	AC Box Kit for 3 Phase/30A	• AC Box × 2	
4	DKC-F465I-1EC	Power Cable Kit for Single Phase/50A (50Hz for Europe)	• Power Cable Unit (IE)	
5	DKC-F465I-1UC	Power Cable Kit for Single Phase/50A (60Hz for USA)	• Power Cable Unit (IU)	
6	DKC-F465I-3EC	Power Cable Kit for 3 Phase/30A (50Hz for Europe)	• Power Cable Unit (IE)	
7	DKC-F465I-3UC	Power Cable Kit for 3 Phase/30A (60Hz for USA)	• Power Cable Unit (IU)	

(To be continued)

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No	Model Number	Model Name	Major Part	Remarks
8	DKC-F465I-1PSD	AC Box Kit for Single Phase/ 30A	• AC Box × 2	Serial numbers of subsystems in which the AC Box Kit above can be installed: S#: 20121-20125, 20127-20129, 20131-20133, 20135, 20138-
9	DKC-F460I-1ECD	Power Cable Kit for Single Phase/30A (50Hz for Europe)	• Power Cable Unit (IE)	
10	DKC-F460I-1UCD	Power Cable Kit for Single Phase/30A (60Hz for USA)	• Power Cable Unit (IU)	
11	DKC-F460I-2048	Additional Cache Memory Module (2048 MB)	• SH288-B (512 MB) × 4	
12	DKC-F460I-S512	Additional Shared Memory Module (512 MB)	• SH287-B (256 MB) × 2	
13	DKC-F465I-100	Additional Disk Adapter	• WP471-A × 2 SH281-B × 2	
14	DKC-F460I-200	Additional High Performance Disk Adapter	• WP471-B × 2 SH281-B × 4	
15	DKC-F460I-8S	Serial 8-port Adapter	• WP462-A × 2 SH281-C × 4 • I/F Con. Panel	
16	DKC-F460I-8GSE	Fibre 8-port Adapter for Short Wavelength (1Gbps support)	• WP461-D SH281-A × 2] × 2 • I/F Con. Panel	
17	DKC-F460I-4HSE	Fibre 4-port Adapter for Short Wavelength (1-2Gbps support)	• WP461-E SH281-A × 2] × 2 • I/F Con. Panel	
18	DKC-F460I-8HSE	Fibre 8-port Adapter for Short Wavelength (1-2Gbps support)	• WP461-B SH281-A × 4] × 2 • I/F Con. Panel	
19	DKC-F460I-8HLE	Fibre 8-port Adapter for Long Wavelength (1-2Gbps support)	• WP461-C SH281-A × 4] × 2 • I/F Con. Panel	
20	DKC-F460I-8MS	Mainframe Fibre 8-port Adapter for Short Wavelength (1-2Gbps support)	• WP465-A SH281-A × 4] × 2 • I/F Con. Panel	
21	DKC-F460I-8ML	Mainframe Fibre 8-port Adapter for Long Wavelength (1-2Gbps support)	• WP465-B SH281-A × 4] × 2 • I/F Con. Panel	
22	DKC-F460I-18	PCI I/F Connector	• PCI I/F Con.	
23	DKC-F460I-SVP	SVP High Reliability Kit	• SVP	
24	DKC-F465I-FSW	Additional Disk Port Switch	• FSW-B × 8	
25	DKC-F465I-FSW2	Disk Path Expansion Kit	• FSW-C × 8	
26	DKC-F460I-UPS	UPS Connection Kit	• DKC Panel • UPS CON	
27	DKU-F455I-36K4	4 HDD Canisters	• DKS2B/DKS2C-K36FC × 4	
28	DKU-F455I-36K1	1 HDD Canister	• DKS2B/DKS2C-K36FC × 1	
29	DKU-F455I-72J4	4 HDD Canisters	• DKR2D/DKR2E-J72FC × 4	
30	DKU-F455I-72J1	1 HDD Canister	• DKR2D/DKR2E-J72FC × 1	

(To be continued)

(Continued from the preceding page)

No	Model Number	Model Name	Major Part	Remarks
31	DKU-F455I-72K4	4 HDD Canisters	• DKS2C-K72FC × 4	
32	DKU-F455I-72K1	1 HDD Canister	• DKS2C-K72FC × 1	
33	DKU-F455I-146J4	4 HDD Canisters	• DKR2E-J146FC × 4	
34	DKU-F455I-146J1	1 HDD Canister	• DKR2E-J146FC × 1	
35	DKU-F455I-146JF	4 HDD Canisters	• DKR2E/DKS2C-J146FC × 4	
36	DKU-F455I-146JS	1 HDD Canister	• DKR2E/DKS2C-J146FC × 1	
37	DKU-F455I-146JQ	4 HDD Canisters	• DKS2C-J146FC × 4	
38	DKU-F455I-146JM	1 HDD Canister	• DKS2C-J146FC × 1	
39	DKC-F460I-256M	256MB Additional Memory for SVP	• Additional SVP Memory × 2	
40	DKC-F460I-8GSF	Fibre 8-port Adapter for Short Wavelength (1Gbps support)	• WP461-H, SH281-A × 2] × 2 • I/F Con. Panel	DB Validator support
41	DKC-F460I-4HSF	Fibre 4-port Adapter for Short Wavelength (1-2Gbps support)	• WP461-J, SH281-A × 2] × 2 • I/F Con. Panel	DB Validator support
42	DKC-F460I-8HSF	Fibre 8-port Adapter for Short Wavelength (1-2Gbps support)	• WP461-F, SH281-A × 4] × 2 • I/F Con. Panel	DB Validator support
43	DKC-F460I-8HLF	Fibre 8-port Adapter for Long Wavelength (1-2Gbps support)	• WP461-G, SH281-A × 4] × 2 • I/F Con. Panel	DB Validator support
44	DKC-F460I-16HSF	Fibre 16-port Adapter for Short Wavelength (1-2Gbps support)	• WP463-B, SH281-D × 4] × 2 • I/F Con. Panel	DB Validator support
45	DKC-F465I-DH	Door Kit for Lightning 9970V	• Front and Rear doors • Side doors	
46	DKC-F465I-DS	Door Kit for StorEdge 9970V	• Front and Rear doors • Side doors	
47	DKC-F460I-4NS	NAS 4-port Adapter for SX (1.25Gbps support)	• WP467-A, SH281-D × 2] × 2 • I/F Con. Panel	
48	DKC-F465I-NENB	NAS Enable kit for SC model	• 3/12VPS × 4 • FAN(NAS) ASSY× 8 • Cable duct ASSY	
49	DKC-F460I-8SE	Serial 8-port Adapter	• WP468-A × 1, SH281-C × 4] × 2 • I/F Con. Panel	
50	DKC-F460I-8IS	iSCSI 8-port Adapter for Short Wavelength (1.25Gbps support)	• WP466-A × 1, SH281-D × 4] × 2 • I/F Con. Panel	
51	DKC-F460I-4096	Additional Cache Memory Module (4096MB)	• SH288-C (1024MB) × 4	
52	DKC-F460I-S1024	Additional Shared Memory Module (1024MB)	• SH287-C (512MB) × 2	

SVP displays each drive model as the following table.

Disk drive model	SVP screen
DKS2B-K36FC	DKS2B-K036FC
DKS2C-K36FC	DKS2C-K036FC
DKR2D-J72FC	DKR2D-J072FC
DKR2E-J72FC	DKR2E-J072FC
DKR2F-J72FC	DKR2F-J072FC
DKS2C-K72FC	DKS2C-K072FC
DKR2E-J146FC	DKR2E-J146FC
DKR2F-J146FC	DKR2F-J146FC
DKS2C-J146FC	DKS2C-J146FC

1.1.2 Configuration and number of necessary options

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

(1) Refer to the Table 1.1.2.3-2 or Table 1.1.2.3-7 in these functions use.
(Note1) When you use these functions, you need to install more Shared Memory.
(2) When using the ShadowImage-FlashCopy® version2 function, refer to Table 1.1.2.3-3 or Table 1.1.2.3-8.
(3) Refer to the Table 1.1.2.3-1 or Table 1.1.2.3-6 in these functions non-use.

1.1.2.1 Shared memory capacity and number of necessary options

Shared memory capacities and corresponding number of options required are shown in Table 1.1.2.1-1.

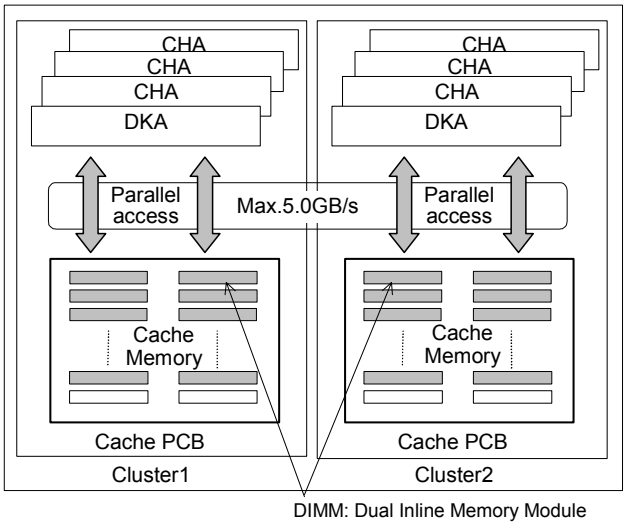
Table 1.1.2.1-1 Shared memory capacity and number of necessary options

Shared memory capacity	Number of options	
	DKC-F460I-S512	DKC-F460I-S1024
512MB	1	-
1024MB	2	1
1536MB	3	-
2048MB	4	2
2560MB	5	-
3072MB	6	3
4096MB	-	4

Note: Please note that location of shared memory module varies according to the purpose such as additional cache installation or additional LDEV installation. (Refer to Table 1.1.2.3-1 and 1.1.2.3-2.)

1.1.2.2 Cache memory capacity and number of necessary options

DKC465I improves a hierarchical star net, and access time to the cache memory is sped up. Furthermore, it is improved so that two paths can access the cache memory on Cache PCB at the same time.
DKC465I is realized the data transfer speed of the maximum 5.0GB when cache memory capacity is installed 4GB or more.



The Cache memory option has two kinds, DKC-F460I-2048 and DKC-F460I-4096.
Mixed installation with DKC-F460I-2048 and DKC-F460I-4096 within one Cache PCB is not supported.
Cache memory capacities and corresponding number of options required are shown in Table 1.1.2.2-1.

Table 1.1.2.2-1 Cache memory capacity and number of necessary options

Cache Memory Capacity	DKC-F460I-2048	DKC-F460I-4096
2GB	1	-
4GB	2	1
6GB	3	-
8GB	4	2
10GB	5	-
12GB	6	3
14GB	7	-
16GB	8	4
18GB	9	-
20GB	10	5
22GB	11	-
24GB	12	6
26GB	13	-
28GB	14	7
30GB	15	-
32GB	16	8
36GB	-	9
40GB	-	10
44GB	-	11
48GB	-	12
52GB	-	13
56GB	-	14
60GB	-	15
64GB	-	16

1.1.2.3 Relation between Shared Memory and Cache Memory

The relationship between Cache Memory and Shared Memory is shown in following table. Please note that Location of shared memory varies according to the purpose such as additional cache installation or additional LDEV installation.

Notice
1. When the number of CUs is added accompanying the HDD installation, there is a case that expansion of shared memory is required. If necessary, see INST03-SM-10.
2. The required capacity of the shared memory varies depending on whether the HRC/HORC/HMRCF/HOMRCF/HIHSM/ShadowImage-FlashCopy® version2 function is supported or not.

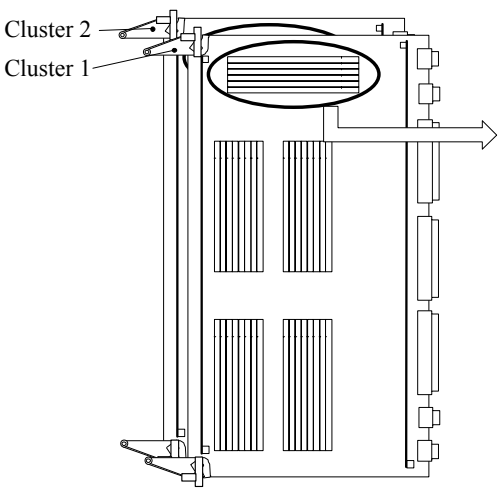
Calculate the required shared memory capacity referring to Table 1.1.2.3-1 or Table 1.1.2.3-6 when none of the functions is supported (in the case of basic configuration) or Table 1.1.2.3-2 or Table 1.1.2.3-7 when at least one of the functions is supported.
When supporting the ShadowImage-FlashCopy® version2 function, calculate the required capacity of the shared memory referring to Table 1.1.2.3-3 or 1.1.2.3-8.

(1) Composition of only DKC-F460I-S512

Table 1.1.2.3-1 Size of Cache Memory and Shared Memory (BASIC)

Cache Memory Capacity (GB)	Number of CU:1-4 (to 1024LDEV)			Number of CU:5-8 (to 2048LDEV)			Number of CU:9-16 (to 4096LDEV)			Number of CU:17-32 (to 8192LDEV)		
	SM (MB)	S512	Install loc. *1	SM (MB)	S512	Install loc. *1	SM (MB)	S512	Install loc. *1	SM (MB)	S512	Install loc. *1
2	512	1	③	1536	3	③①④	1536	3	③①④	2048	4	③①②④
4	512	1	③	1536	3	③①④	1536	3	③①④	2048	4	③①②④
6	512	1	③	1536	3	③①④	1536	3	③①④	2048	4	③①②④
8	512	1	③	1536	3	③①④	1536	3	③①④	2048	4	③①②④
10	1024	2	③④	1536	3	③①④	1536	3	③①④	2048	4	③①②④
12	1024	2	③④	1536	3	③①④	1536	3	③①④	2048	4	③①②④
14	1024	2	③④	1536	3	③①④	1536	3	③①④	2048	4	③①②④
16	1024	2	③④	1536	3	③①④	1536	3	③①④	2048	4	③①②④
18	1024	2	③④	1536	3	③①④	2048	4	③①④⑤	2560	5	③①②④⑤
20	1024	2	③④	1536	3	③①④	2048	4	③①④⑤	2560	5	③①②④⑤
22	1024	2	③④	1536	3	③①④	2048	4	③①④⑤	2560	5	③①②④⑤
24	1024	2	③④	1536	3	③①④	2048	4	③①④⑤	2560	5	③①②④⑤
26	1024	2	③④	1536	3	③①④	2048	4	③①④⑤	2560	5	③①②④⑤
28	1024	2	③④	1536	3	③①④	2048	4	③①④⑤	2560	5	③①②④⑤
30	1024	2	③④	1536	3	③①④	2048	4	③①④⑤	2560	5	③①②④⑤
32	1024	2	③④	1536	3	③①④	2048	4	③①④⑤	2560	5	③①②④⑤

Note. *1: Location ①-⑥ shows actual location of shared memory module on Cache PCB.



Cache Memory PCB
(WP490-A)

Shared Memory Module Location

① SM00 : SH287-B	
① SM00 : SH287-B	Black
② SM01 : SH287-B	
③ SM02 : SH287-B	White
④ SM03 : SH287-B	
⑤ SM04 : SH287-B	
⑥ SM05 : SH287-B	

Color of Socket

[Basic consideration]
- ① for Feature expansion 1
- ② for Feature expansion 2
- ③ BASIC
- ④ for CACHE or Feature expansion 1
- ⑤ for CACHE or Feature expansion 2
- ⑥ for CACHE or Feature expansion 3

Table 1.1.2.3-2 Size of Cache Memory and Shared Memory (HRC/HORC/HMRCF/HOMRCF/HIHSM supported)

Cache Memory Capacity (GB)	Number of CU:1-4 (to 1024LDEV)			Number of CU:5-8 (to 2048LDEV)			Number of CU:9-16 (to 4096LDEV)			Number of CU:17-32&TPF (to 8192LDEV)		
	SM (MB)	S512	Install loc. *1	SM (MB)	S512	Install loc. *1	SM (MB)	S512	Install loc. *1	SM (MB)	S512	Install loc. *1
2	1024	2	③④	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤
4	1024	2	③④	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤
6	1024	2	③④	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤
8	1024	2	③④	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤
10	1536	3	③④⑤	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤
12	1536	3	③④⑤	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤
14	1536	3	③④⑤	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤
16	1536	3	③④⑤	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤
18	1536	3	③④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
20	1536	3	③④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
22	1536	3	③④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
24	1536	3	③④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
26	1536	3	③④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
28	1536	3	③④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
30	1536	3	③④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
32	1536	3	③④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥

Note. *1: Location ①-⑥ shows actual location of shared memory module on Cache PCB.

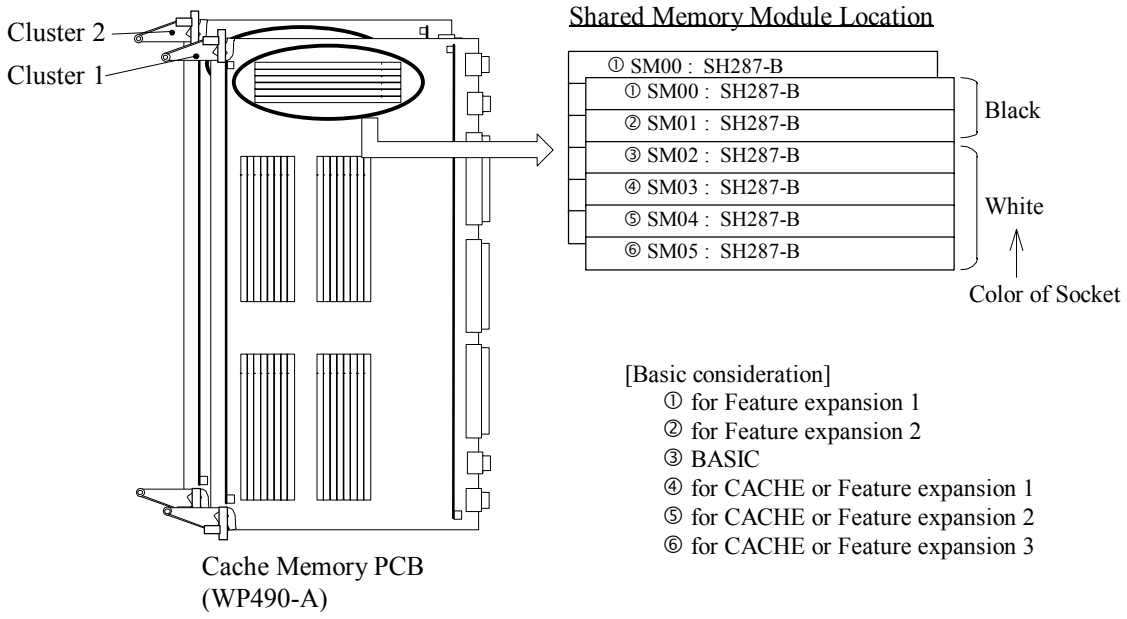


Table 1.1.2.3-3 Size of Cache Memory and Shared Memory
(ShadowImage-FlashCopy® version2 supported)

Cache Memory Capacity (GB)	Number of CU:1-4 (to 1024LDEV)			Number of CU:5-8 (to 2048LDEV)			Number of CU:9-16 (to 4096LDEV)			Number of CU:17-32&TPF (to 8192LDEV)		
	SM (MB)	S512	Install loc. *1	SM (MB)	S512	Install loc. *1	SM (MB)	S512	Install loc. *1	SM (MB)	S512	Install loc. *1
2	1536	3	③①④	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤
4	1536	3	③①④	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤
6	1536	3	③①④	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤
8	1536	3	③①④	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤
10	2048	4	③①④⑤	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤
12	2048	4	③①④⑤	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤
14	2048	4	③①④⑤	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤
16	2048	4	③①④⑤	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤
18	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
20	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
22	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
24	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
26	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
28	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
30	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
32	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥

Note. *1: Location ①-⑥ shows actual location of shared memory module on Cache PCB.

(2) Mixture composition of DKC-F460I-S512 and DKC-F460I-S1024
The mixture composition of DKC-F460I-S512 and DKC-F460I-S1024 is allowed. However, depending on cache capacity, it may have to constitute from DKC-F460I-S512 or DKC-F460I-S1024 independent one. (Refer to Table 1.1.2.3-6, 1.1.2.3-7 and 1.1.2.3-8 for details.)
The mixture pattern of DKC-F460I-S512 and DKC-F460 I-S1024 is shown in the following table. Since it is decided for every pattern, it must be careful of the installing location of two shared memory modules.
In order to prevent a maintenance mistake, it recommends constituting from DKC-F460I-S512 or DKC-F460I-S1024 independent one. (Refer to Table 1.1.2.3-4 and 1.1.2.3-5)

Table 1.1.2.3-4 Shared Memory Module Mixture Pattern
(Composition of only DKC-F460I-S512)

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

Table 1.1.2.3-5 Shared Memory Module Mixture Pattern (Mixture composition)

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

Note. 1: Location ①-⑥ shows actual location of shared memory module on Cache PCB. (Refer to Fig. 1.1.2.3-1)
2: S1024 means installing the shared memory module which constitutes DKC-F460I-S1024 option.
3: S512 means installing the shared memory module which constitutes DKC-F460I-S512 option.

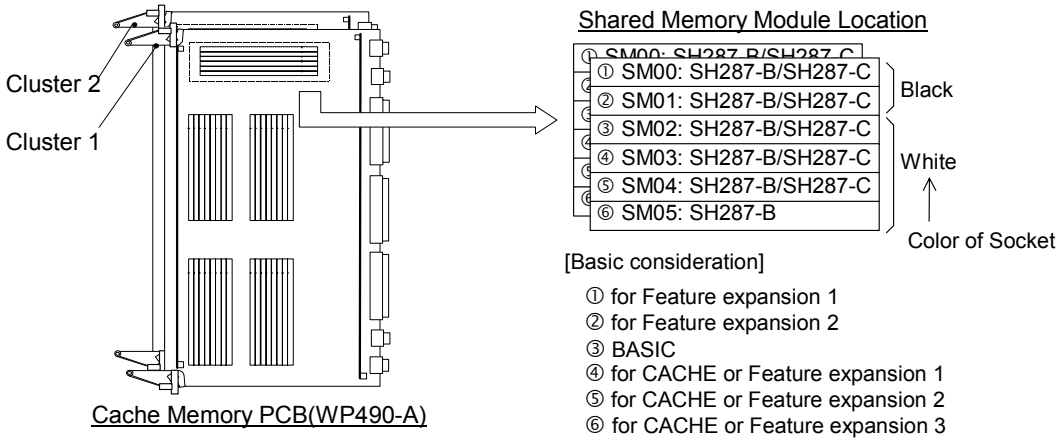


Fig. 1.1.2.3-1 Actual location of shared memory module

Table 1.1.2.3-6 Size of Cache Memory and Shared Memory (TrueCopy/ShadowImage/ ShadowImage-FlashCopy® version2/Cruise Control function not supported)

Cache Memory Capacity	Number of CU:1-4 (to 1024LDEV)				Number of CU:5-8 (to 2048LDEV)				Number of CU:9-16 (to 4096LDEV)				Number of CU:17-32 (to 8192LDEV)			
	SM *1 Cap. (GB)	Number of SM options		Mixture Pattern *2	SM *1 Cap. (GB)	Number of SM options		Mixture Pattern *2	SM *1 Cap. (GB)	Number of SM options		Mixture Pattern *2	SM *1 Cap. (GB)	Number of SM options		Mixture Pattern *2
		S1024	S512			S1024	S512			S1024	S512			S1024	S512	
2GB	512	-	1	A	1536	-	3	F	1536	-	3	F	2048	-	4	J
4GB	512	-	1	A	1536	-	3	F	1536	-	3	F	2048	-	4	J
6GB	512	-	1	A	1536	-	3	F	1536	-	3	F	2048	-	4	J
8GB	512	-	1	A	1536	-	3	F	1536	-	3	F	2048	-	4	J
10GB	1024	-	2	B	1536	-	3	F	1536	-	3	F	2048	-	4	J
12GB	1024	-	2	B	1536	-	3	F	1536	-	3	F	2048	-	4	J
14GB	1024	-	2	B	1536	-	3	F	1536	-	3	F	2048	-	4	J
16GB	1024	-	2	B	1536	-	3	F	1536	-	3	F	2048	-	4	J
18GB	1024	-	2	B	1536	-	3	F	2048 or 2560 or 3072	Refer to mix. Pattern table *3		G, e, f, l, m	2560 or 3072	Refer to mix. Pattern table *3		K, i, l, m
20GB	1024	-	2	B	1536	-	3	F								
22GB	1024	-	2	B	1536	-	3	F								
24GB	1024	-	2	B	1536	-	3	F								
26GB	1024	-	2	B	1536	-	3	F								
28GB	1024	-	2	B	1536	-	3	F								
30GB	1024	-	2	B	1536	-	3	F								
32GB	1024	-	2	B	1536	-	3	F								
36GB	1024	-	2	B	2048 or 2560 or 3072	Refer to mix. Pattern table *3		G, e, f, l, m								
40GB	1024	-	2	B												
44GB	1024	-	2	B												
48GB	1536 or 2048	Refer to mix. Pattern table *3		a, b												
52GB																
56GB									2560 or 3072	Refer to mix. Pattern table *3		H, f, m	3072	Refer to mix. Pattern table *3		L, i, m
60GB																
64GB																

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

*2: A' to 'L' should refer a Table 1.1.2.3-4, and refer to the Table 1.1.2.3-5 for 'o' from 'a'. The memory module corresponding to each mixture pattern is installed in the install locations ①-⑥.

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

Table 1.1.2.3-7 Size of Cache Memory and Shared Memory (TrueCopy/ShadowImage/Cruise Control function supported)

Cache Memory Capacity	Number of CU:1-4 (to 1024LDEV)				Number of CU:5-8 (to 2048LDEV)				Number of CU:9-16 (to 4096LDEV)				Number of CU:17-32 (to 8192LDEV)			
	SM *1 Cap. (GB)	Number of SM options		Mixture Pattern *2	SM *1 Cap. (GB)	Number of SM options		Mixture Pattern *2	SM *1 Cap. (GB)	Number of SM options		Mixture Pattern *2	SM *1 Cap. (GB)	Number of SM options		Mixture Pattern *2
		S1024	S512			S1024	S512			S1024	S512			S1024	S512	
2GB	1024	-	2	B	2048 or 2560 or 3072	Refer to mix. Pattern table *3		G, e, f, l, m	2048 or 2560 or 3072	Refer to mix. Pattern table *3		G, e, f, l, m	2560 or 3072	Refer to mix. Pattern table *3		K, i, l, m
4GB	1024	-	2	B												
6GB	1024	-	2	B												
8GB	1024	-	2	B												
10GB	1536	-	3	C												
12GB	1536	-	3	C												
14GB	1536	-	3	C												
16GB	1536	-	3	C												
18GB	1536	-	3	C					2560 or 3072	Refer to mix. Pattern table *3		H, f, m	3072	Refer to mix. Pattern table *3		L, i, m
20GB	1536	-	3	C												
22GB	1536	-	3	C												
24GB	1536	-	3	C												
26GB	1536	-	3	C												
28GB	1536	-	3	C												
30GB	1536	-	3	C												
32GB	1536	-	3	C												
36GB	1536	-	3	C	2560 or 3072	Refer to mix. Pattern table *3		H, f, m								
40GB	1536	-	3	C												
44GB	1536	-	3	C												
48GB	2048	Refer to mix. Pattern table *3		D, b												
52GB																
56GB																
60GB									3072 or 3584	Refer to mix. Pattern table *3		g, h	3584 or 4096	Refer to mix. Pattern table *3		j, k, n, o
64GB																

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

*2: 'A' to 'L' should refer a Table 1.1.2.3-4, and refer to the Table 1.1.2.3-5 for 'o' from 'a'. The memory module corresponding to each mixture pattern is installed in the install locations ①-⑥.

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

Table 1.1.2.3-8 Size of Cache Memory and Shared Memory (ShadowImage-FlashCopy® version2 supported)

Cache Memory Capacity	Number of CU:1-4 (to 1024LDEV)				Number of CU:5-8 (to 2048LDEV)				Number of CU:9-16 (to 4096LDEV)				Number of CU:17-32 (to 8192LDEV)			
	SM *1 Cap. (GB)	Number of SM options		Mixture Pattern *2	SM *1 Cap. (GB)	Number of SM options		Mixture Pattern *2	SM *1 Cap. (GB)	Number of SM options		Mixture Pattern *2	SM *1 Cap. (GB)	Number of SM options		Mixture Pattern *2
		S1024	S512			S1024	S512			S1024	S512			S1024	S512	
2GB	1536	-	3	F	2048 or 2560 or 3072	Refer to mix. Pattern table *3		G, e, f, l, m	2048 or 2560 or 3072	Refer to mix. Pattern table *3		G, e, f, l, m	2560 or 3072	Refer to mix. Pattern table *3		K, i, l, m
4GB	1536	-	3	F												
6GB	1536	-	3	F												
8GB	1536	-	3	F												
10GB	2048	-	4	G												
12GB	2048	-	4	G												
14GB	2048	-	4	G												
16GB	2048	-	4	G												
18GB	2048	-	4	G					2560 or 3072	Refer to mix. Pattern table *3		H, f, m	3072	Refer to mix. Pattern table *3		L, i, m
20GB	2048	-	4	G												
22GB	2048	-	4	G												
24GB	2048	-	4	G												
26GB	2048	-	4	G												
28GB	2048	-	4	G												
30GB	2048	-	4	G												
32GB	2048	-	4	G												
36GB	2048	-	4	G	2560 or 3072	Refer to mix. Pattern table *3		H, f, m								
40GB	2048	-	4	G												
44GB	2048	-	4	G												
48GB	2560	Refer to mix. Pattern table *3		H, f												
52GB																
56GB																
60GB									3072 or 3584	Refer to mix. Pattern table *3		g, h	3584 or 4096	Refer to mix. Pattern table *3		j, k, n, o
64GB																

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

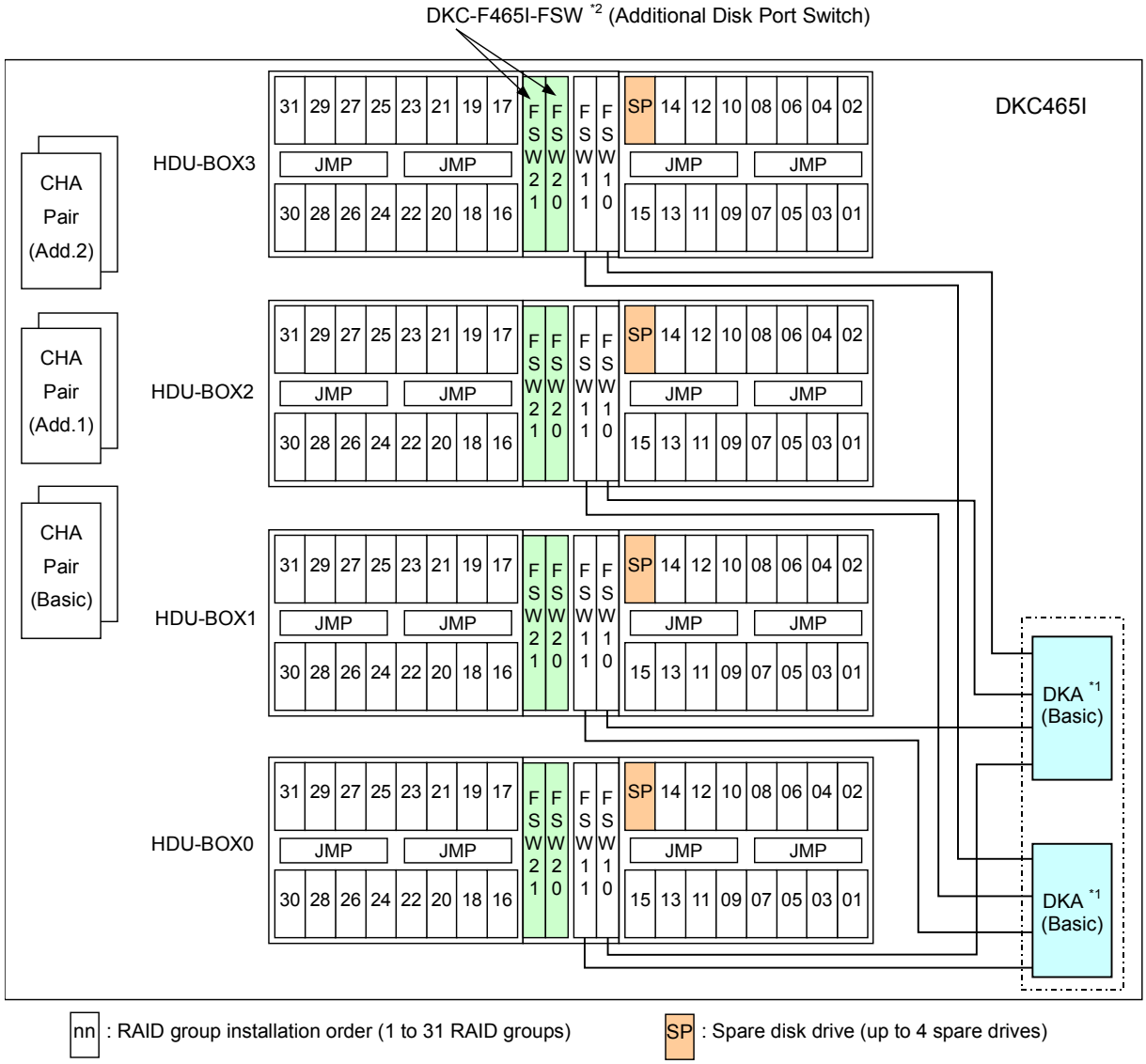
*2: 'A' to 'L' should refer a Table 1.1.2.3-4, and refer to the Table 1.1.2.3-5 for 'o' from 'a'. The memory module corresponding to each mixture pattern is installed in the install locations ①-⑥.

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

1.1.2.4 RAID Group Installation Order

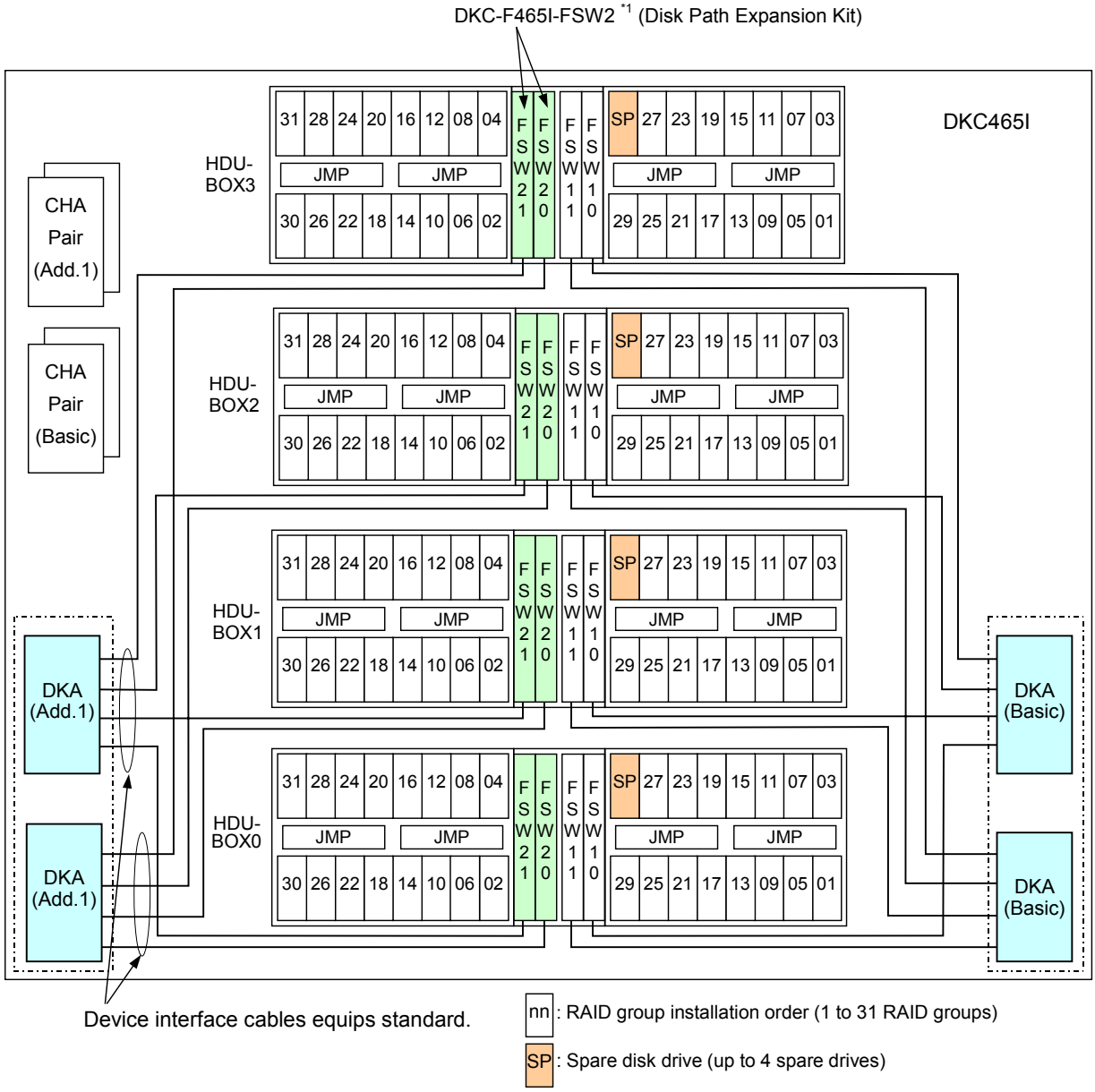
RAID group installation order shown in the following figure.

(1) Entry Model and Full-specification Model(1 DKA Pair Model)



Note *1: Entry Model install the DKC-F465I-100.
Full-specification Model(1 DKA Pair Model) install the DKC-F460I-200.
*2: DKC-F465I-FSW is necessary when the RAID group is installed 16 or more.

(2) Full-specification Model (2 DKA Pairs Model)



Note 1. *1: DKC-F460I-FSW2 is an indispensable option with the 2 DKA Pair Model.

1.1.3 Specifications

The DKC465I disk subsystem physical specifications are shown in the following table:

Table 1.1.3-1 DKC465I Disk Subsystem Physical Specifications

No	Model number	Weight (kg)	Heat Output (kW)	Power Consumption (kVA)	Dimension (mm)			Air Flow (m^3/min.)
					Width	Depth	Height	
1	DKC465I-5 *4	586.0	0.52	0.55	782 *3	800	1,860	25
	DKC465I-5F *4	515.0	0.52	0.55	782 *3	800	1,860	25
	DKC465I-5FE *5	519.0	0.53	0.56	782 *3	800	1,860	29
	DKC465I-5EN *5, *6	522.6	0.74	0.78	782 *3	800	1,860	29
2	DKC-F465I-1PS	15.0	—	—	—	—	—	—
3	DKC-F465I-1EC	7.5	—	—	—	—	—	—
4	DKC-F465I-1UC	10.5	—	—	—	—	—	—
5	DKC-F465I-3PS	12.0	—	—	—	—	—	—
6	DKC-F465I-3EC	6.0	—	—	—	—	—	—
7	DKC-F465I-3UC	10.0	—	—	—	—	—	—
8	DKC-F465I-FSW	2.0	0.20	0.21	—	—	—	—
9	DKC-F465I-FSW2	2.0	0.22	0.23	—	—	—	—
10	DKC-F465I-100	3.4	0.13	0.13	—	—	—	—
11	DKC-F460I-200 *1	3.6	0.21	0.22	—	—	—	—
12	DKC-F460I-2048 *1	0.2	0.007	0.008	—	—	—	—
13	DKC-F460I-S512 *1	0.05	0.004	0.004	—	—	—	—
14	DKC-F460I-SVP *1	14.5	0.07	0.07	—	—	—	—
15	DKC-F460I-UPS *1	1.2	0.01	0.01	—	—	—	—
16	DKC-F460I-8S *1	4.2	0.28	0.29	—	—	—	—
17	DKC-F460I-8MS *1	4.2	0.31	0.33	—	—	—	—
18	DKC-F460I-8ML *1	4.2	0.31	0.33	—	—	—	—
19	DKC-F460I-8GSE *1	4.0	0.15	0.15	—	—	—	—
20	DKC-F460I-4HSE *1	4.2	0.12	0.13	—	—	—	—
21	DKC-F460I-8HSE *1	4.2	0.21	0.22	—	—	—	—
22	DKC-F460I-8HLE *1	4.2	0.21	0.22	—	—	—	—
23	DKC-F460I-18 *1	0.6	0.002	0.003	—	—	—	—
24	DKU-F455I-36K1 *2	1.0	0.022	0.024	—	—	—	—
25	DKU-F455I-36K4 *2	4.0	0.088	0.096	—	—	—	—
26	DKU-F455I-72J1 *2	1.0	0.023	0.025	—	—	—	—
27	DKU-F455I-72J4 *2	4.0	0.092	0.100	—	—	—	—
28	DKU-F455I-72K1 *2				—	—	—	—
29	DKU-F455I-72K4 *2				—	—	—	—
30	DKU-F455I-146J1 *2	1.0	0.023	0.025	—	—	—	—
31	DKU-F455I-146J4 *2	4.0	0.092	0.100	—	—	—	—
32	DKU-F455I-146JS *2	1.0	0.023	0.025	—	—	—	—
33	DKU-F455I-146JF *2	4.0	0.092	0.100	—	—	—	—
34	DKU-F455I-146JM *2	1.0	0.023	0.025	—	—	—	—
35	DKU-F455I-146JQ *2	4.0	0.092	0.100	—	—	—	—
36	DKC-F460I-256M	0.04	0.003	0.003	—	—	—	—
37	DKC-F465I-1PSD	13.0	—	—	—	—	—	—
38	DKC-F460I-1ECD	8.0	—	—	—	—	—	—
39	DKC-F460I-1UCD	10.0	—	—	—	—	—	—

(To be continued)

(Continued from the preceding page)

No	Model number	Weight (kg)	Heat Output (kW)	Power Consumption (kVA)	Dimension (mm)			Air Flow (m^3/min.)
					Width	Depth	Height	
40	DKC-F460I-8GSF	4.0	0.15	0.15	—	—	—	—
41	DKC-F460I-4HSF	4.2	0.12	0.13	—	—	—	—
42	DKC-F460I-8HSF	4.2	0.21	0.22	—	—	—	—
43	DKC-F460I-8HLF	4.2	0.21	0.22	—	—	—	—
44	DKC-F460I-16HSF	4.3	0.23	0.24	—	—	—	—
45	DKC-F465I-DH	71.0	—	—	—	—	—	—
46	DKC-F465I-DS	71.0	—	—	—	—	—	—
47	DKC-F460I-4NS *1	4.5	0.39	0.40	—	—	—	—
48	DKC-F465I-NENB	21.5	0.14	0.14	—	—	—	—
49	DKC-F460I-8SE	4.2	0.28	0.29	—	—	—	—
50	DKC-F460I-8IS *1	4.6	0.25	0.26	—	—	—	—
51	DKC-F460I-4096 *1	0.2	0.007	0.008	—	—	—	—
52	DKC-F460I-S1024 *1	0.05	0.004	0.004	—	—	—	—

Note. *1: They are common to the options installed in DKC460I-5.
Note. *2: They are common to the options installed in DKU455I-18.
Note. *3: This includes the thickness of side covers (16mm × 2).
Note. *4: This model does not support the NAS CHA.
Note. *5: This model supports the NAS CHA.
Note. *6: This model preinstall one pair of high performance disk adapter.

1.1.4 Environmental Specifications

The environmental specifications are shown in the following table.

Item	Condition		
	Note 1 Operating	Note 2 Non-operation	Note 3 Shipping & Storage
Temperature (ºC)	16 ~ 32	-10 ~ 43	-25 ~ 60
Note 4 Relative Humidity (%)	20 ~ 80	8 ~ 90	5 ~ 95
Max. Wet Bulb (ºC)	26	27	29
Temperature Deviation (ºC/hour)	10	10	20
Note 5 Vibration	5~ 10Hz: 0.25mm 10~300Hz:0.05G	5~ 10Hz: 2.5mm 10~ 70Hz: 0.5G 70~ 99Hz: 0.05mm 99~300Hz: 1.0G	0.5G, 15min. At four most severe resonance between 5~200Hz Note 6
Shock	—	8G, 15ms	Horizontal: Incline Impact 1.22m/s Note 7 Vertical: Rotational Edge 0.1m Note 8
Note 9 Acoustic Level	65 dB	—	—

Note: 1. Environmental specification for operating condition should be satisfied before the disk subsystem is powered on. Maximum temperature of 32ºC should be strictly satisfied at air inlet portion. Recommended temperature range is 21~24ºC.

2. Non-operating condition includes both packing and unpacking conditions unless otherwise specified.
3. On shipping/storage condition, the product should be packed with factory packing.
4. No condensation in and around the drive should be observed under any conditions.
5. The above specifications of vibration apply to all three axes.
6. See ASTM D999-91 Standard Methods for Vibration Testing of Shipping Containers.
7. See ASTM D5277-92 Standard Test Methods For Performing Programmed Horizontal Impacts Using an Inclined Impact Tester.
8. See ASTM D1083-91 Standard Test Methods for Mechanical Handling of Unitized Loads and Large Shipping Cases and Creates.
9. Measurement Condition: The point lm far from floor and surface of the product.

1.1.5 Power requirement

Equipment Power Supply CAUTION:
Referring to section 1.4 Connection of External Power Cable (INST01-240), grasp an equipment power supply and its classification well, and connect a power supply cable.

The input voltage and input frequency are as follows:

1. 3 phase AC input

Frequency	Input Voltages (AC)	Conditions	Tolerance (%)	Remarks
60Hz ±0.5Hz	200V, 208V or 230V	3 Phase 3 Wire + Ground	+6% or -8%	for North America 200V : for Japan
50Hz ±0.5Hz	200V, 220V, 230V or 240V	3 Phase 3 Wire + Ground	+6% or -8%	for Europe 200V : for Japan
50Hz ±0.5Hz	380V, 400V or 415V	3 Phase 4 Wire + Ground	+6% or -8%	for Europe

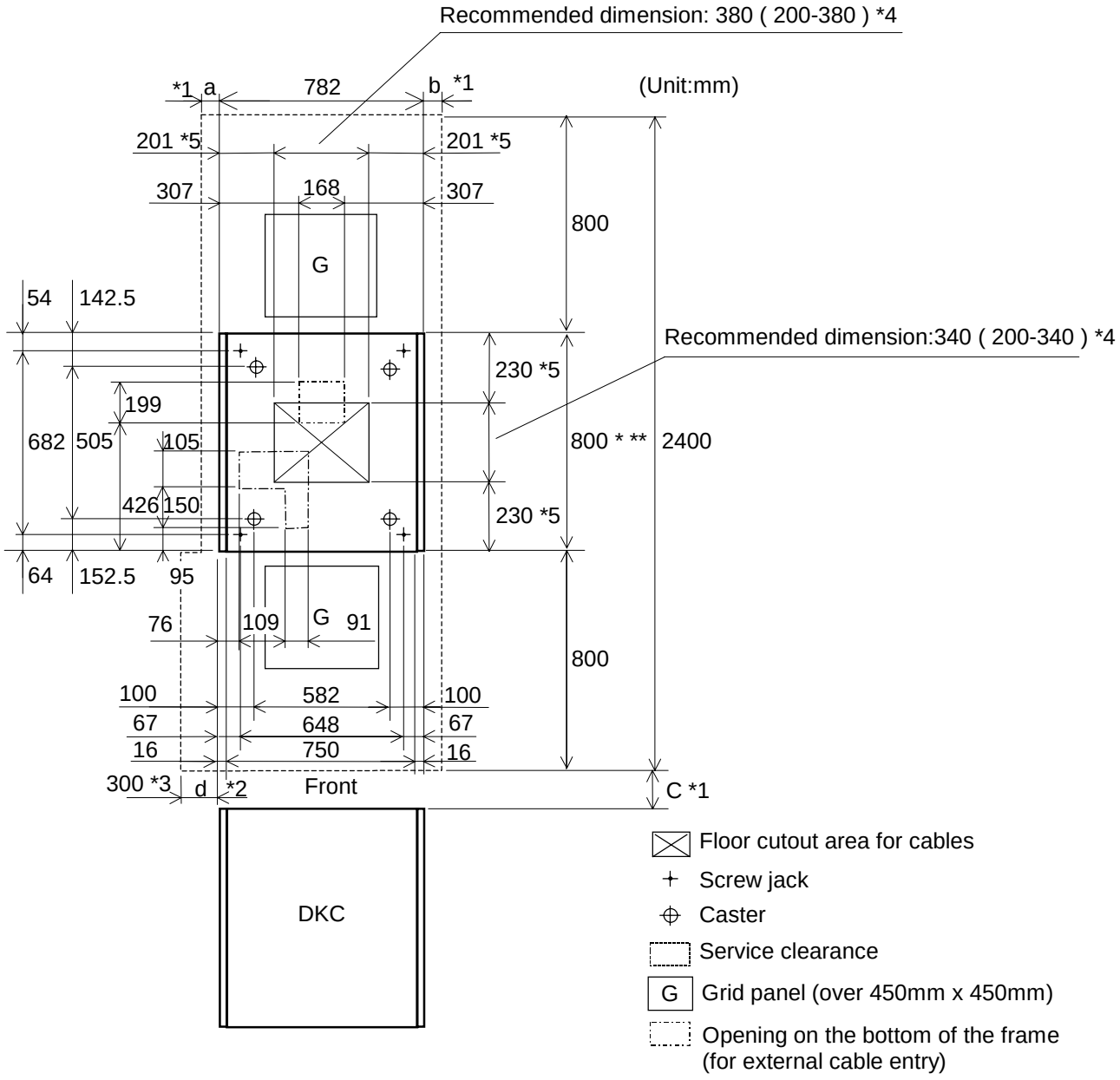
Note: This unit dose not apply to IT power system.

2. Single phase AC input

Frequency	Input Voltages (AC)	Conditions	Tolerance (%)	Remarks
60Hz ±0.5Hz	200V, 208V or 230V	1 Phase 2 Wire + Ground	+6% or -8%	for North America 200V : for Japan
50Hz ±0.5Hz	200V, 220V, 230V or 240V	1 Phase 2 Wire + Ground	+6% or -8%	for Europe 200V : for Japan

1.1.6 Service Clearance and Floor Cutout

The service clearance is the space for CE work. Never use this space for storage of any article to prevent damage.



*: The thickness of the door is different in the FRONT(35mm) from the REAR(25mm).

**: Overhang of the MOSAIC(LOUVER) of the FRONT DOOR(7mm) is not included.

*1: Clearance (a+b) depended on the floor load rating and clearance c.
Floor load rating and required clearances are shown below.

Floor Load Rating for Service Clearances

Floor load rating (kg/m^2)	Required clearance (a+b)m				
	Clearance (c)m				
	C=0	C=0.2	C=0.4	C=0.6	C=1.0
500	0.4	0.3	0.2	0.1	0
450	0.6	0.4	0.3	0.2	0.1
400	0.8	0.6	0.5	0.4	0.2
350	1.2	1.0	0.8	0.6	0.4
300	1.7	1.4	1.2	1.0	0.8

Give clearance of 100 mm on both sides of the subsystem when the kick plates are to be attached after the subsystem is installed. However, when the subsystems of the same type are to be installed adjacently to each other, a clearance between the subsystem may be 100 mm.

*2: Clearance (d) is required over 0.28m so as to open the subsystem front door. In case that clearance (d) is less than clearance (a), give priority to clearance (a).

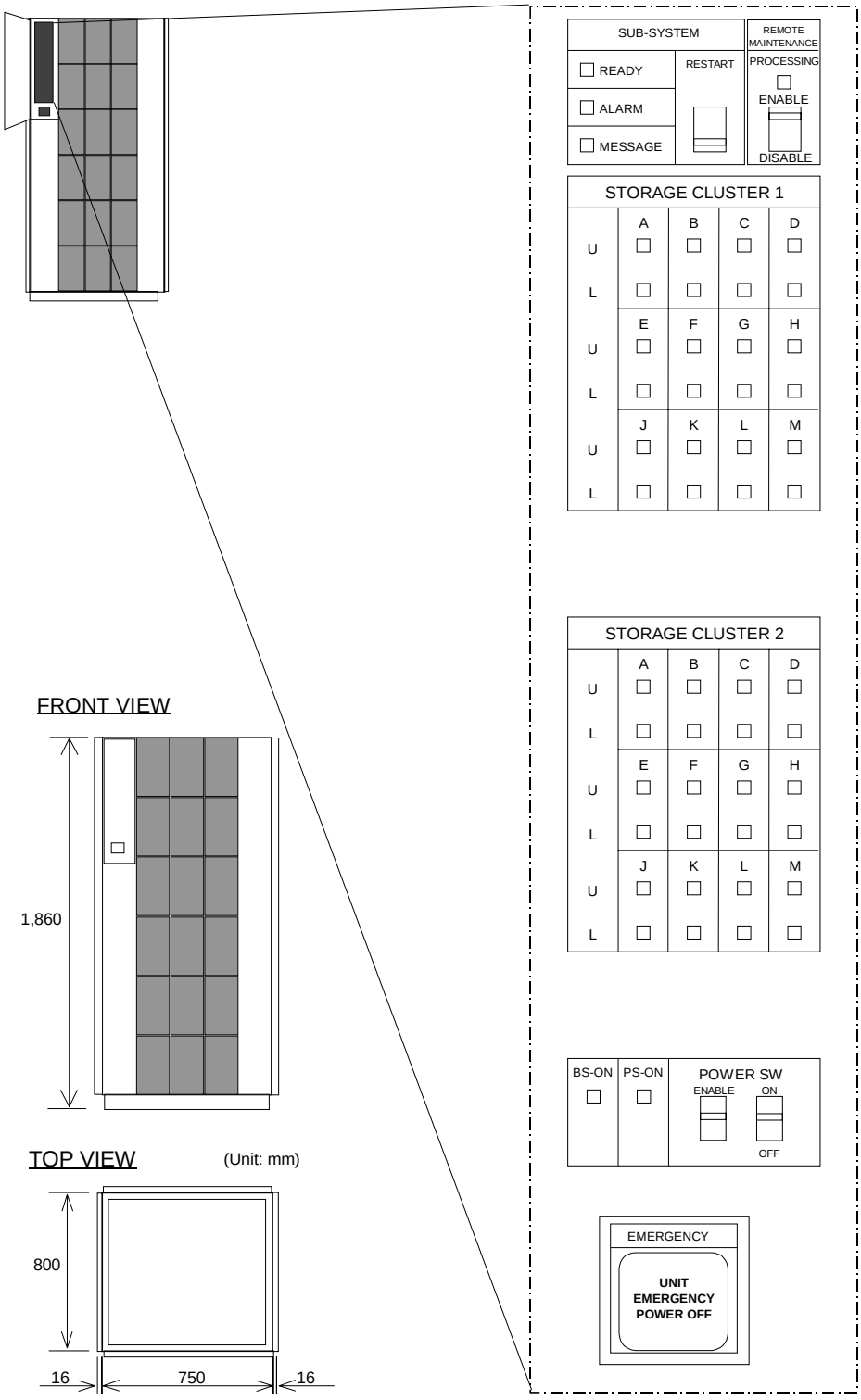
*3: The side clearance on the front left side of the subsystem must be 300 mm or wider in order to open the DKC front door. However, priority should be given to the side clearance value "a" according to the load on the floor when the dimension "a" exceeds 300 mm.

*4: Dimensions in parentheses show allowable range of the floor cutout dimensions. Basically, position the floor cutout in the center of the subsystem.
However, the position may be off-center as long as the cutout allows smooth entrance of an external cable (check the relation between the positions of the cutout and the opening on the bottom plate of the subsystem) and it is within the allowable range.

*5: This dimension varies depending on the floor cutout dimensions.

NOTE:1. Actual clearances for installation should be decided after consulting with construction specialist responsible for installation building, as they could vary depending on the size/layout of the system and building conditions.
2. When various configurations of subsystems are arranged in a row, clearance values based on the largest subsystem configuration should be used.
3. From the viewpoint of maintenance operations, it is suggested that clearance (c) be made as large as possible.

1.1.7 Layout



1.1.8 Power and Grounding Check

1.1.8.1 Facility power check

AC power cable plug and receptacle for 60Hz is part number of following table or an equivalent.

Model Number	Plug			Receptacle	
	Rating	Maker	Part number	Maker	Part number
DKC-F465I-1UC	50 A	Thomas & Betts	9P53U2	Thomas & Betts	9C53U2
DKC-F465I-3UC	30 A	Thomas & Betts	3760PDG	Thomas & Betts	3934
		DDK	115J-AP8508	Thomas & Betts	3934
DKC-F460I-1UCD	30 A	Thomas & Betts	3750DP	Thomas & Betts	3933

1.1.8.2 Facility grounding check

The subsystem must meet all of the following three conditions of installation for GROUNDING.

a. An insulated grounding conductor that is identical in size and insulation material and thickness to the grounded and ungrounded branch-circuit supply conductors. It should be green, with or without yellow stripes, and is to be installed as a part of the branch circuit that supplies the unit or system.

b. The grounding conductor mentioned in item (a.), should be grounded to earth at the service equipment or other acceptable building earth ground such as the building frame in the case of a high rise steel-frame structure.

c. The attachment-plug receptacles in the vicinity of the unit or system are all to be a grounding type. The grounding conductors serving these receptacles should be connected to earth ground at the service equipment or other acceptable building earth ground such as the building frame in the case of a high-rise steel-frame structure.

1.2 Drive Expansion Sequence

The order in which DKU-F455I-36K4/72J4/72K4/146J4/146JF/146JQ (4 HDD canisters) units are to be installed in Fig. 1.2-1 and the order in which DKU-F455I-36K1/72J1/72K1/146J1/146JS/146JM (spare HDD) units are to be installed in Fig. 1.2-2.

NOTICE:

(1) Specifications for the selection of the spare HDD are shown below.

A sparing of an HDD with a smaller capacity for an HDD with a larger capacity is possible. However, there are some cases in which an HDD cannot be assigned depending on the drive type as shown in the table below.

Copy destination spare HDD / Copy source data HDD	DKR2D-JxxFx DKR2E-JxxFx DKR2F-JxxFx DKS2C-JxxFC	DKS2B-KxxFC DKS2C-KxxFC
DKR2D-JxxFx DKR2E-JxxFx DKR2F-JxxFx DKS2C-JxxFC	A spare HDD can be assigned when the following condition is satisfied. Capacity of a copy source data HDD ≤ Capacity of a copy destination spare HDD.	Assignment cannot be done.
DKS2B-KxxFC DKS2C-KxxFC	Assignment cannot be done	A spare HDD can be assigned when the following condition is satisfied. Capacity of a copy source data HDD ≤ Capacity of a copy destination spare HDD.

No.	Model Number	Model Name	Data and Parity
1	DKU-F455I-36K4/72J4/72K4/146J4/146JF/146JQ	4 HDD Canisters	Data and Parity Drive

(1) Entry Model or Full-spec Model (1 DKA Pair Model)

i. RAID5(3D+1P)/RAID1(2D+2D)

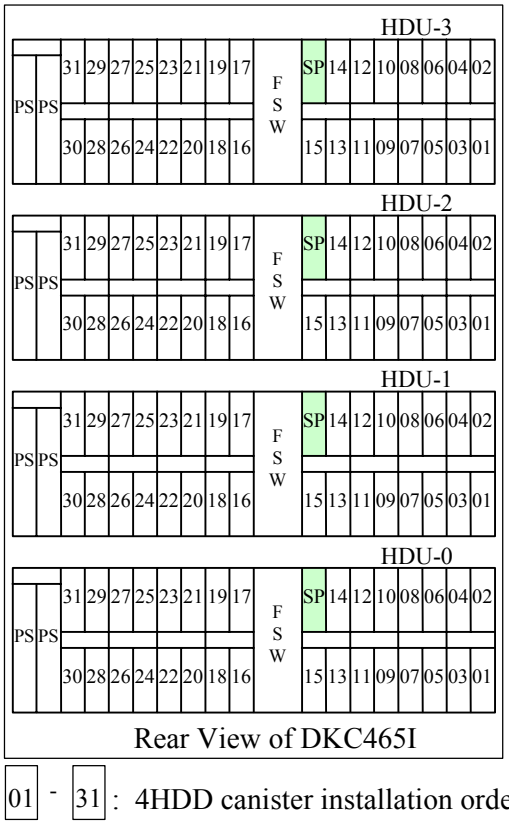


Fig. 1.2-1a Data Drive/Parity Drive Expansion Sequence (1 DKA Pair Model)

The relationship between HDDs installation order and RAID group number is shown in the following table.

Table 1.2-1a Relation between HDDs installation order and RAID group number (1 DKA Pair Model)

Group No.	Installation Order	Group No.	Installation Order	Group No.	Installation Order	Group No.	Installation Order
1-1	001	1-2	002	1-3	003	1-4	004
1-5	005	1-6	006	1-7	007	1-8	008
1-9	009	1-10	010	1-11	011	1-12	012
1-13	013	1-14	014	1-15	015	1-16	SP
1-17	016	1-18	017	1-19	018	1-20	019
1-21	020	1-22	021	1-23	022	1-24	023
1-25	024	1-26	025	1-27	026	1-28	027
1-29	028	1-30	029	1-31	030	1-32	031

(2) Full-spec Model (2 DKA Pairs Model)

i. RAID5(3D+1P)/RAID1(2D+2D)

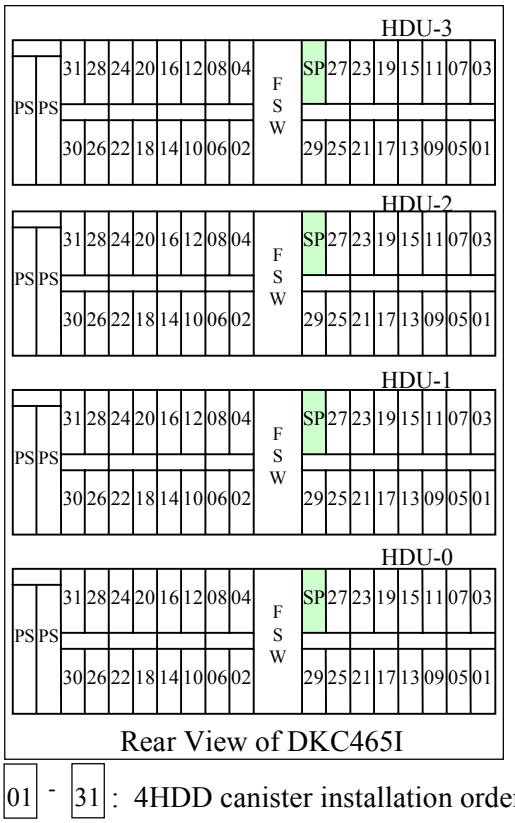


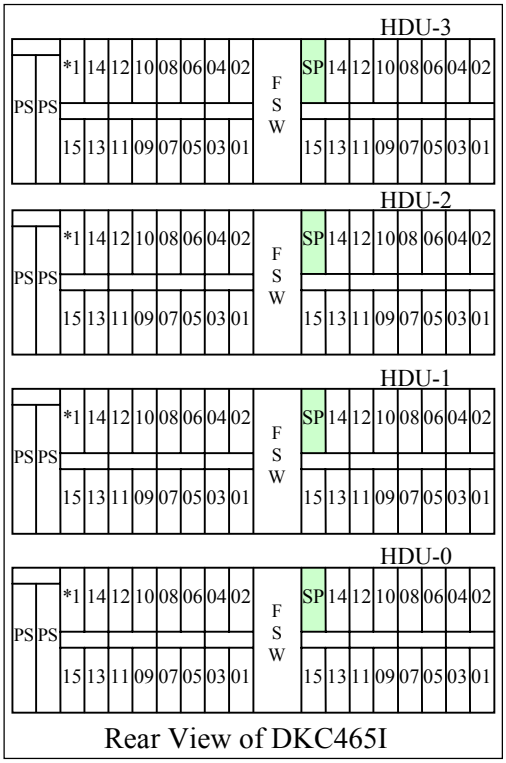
Fig. 1.2-1b Data Drive/Parity Drive Expansion Sequence (2 DKA Pairs Model)

The relationship between HDDs installation order and RAID group number is shown in the following table.

Table 1.2-1b Relation between HDDs installation order and RAID group number (2 DKA Pairs Model)

Group No.	Installation Order	Group No.	Installation Order	Group No.	Installation Order	Group No.	Installation Order
1-1	001	1-2	003	1-3	005	1-4	007
1-5	009	1-6	011	1-7	013	1-8	015
1-9	017	1-10	019	1-11	021	1-12	023
1-13	025	1-14	027	1-15	029	1-16	SP
2-1	002	2-2	004	2-3	006	2-4	008
2-5	010	2-6	012	2-7	014	2-8	016
2-9	018	2-10	020	2-11	022	2-12	024
2-13	026	2-14	028	2-15	030	2-16	031

ii. RAID5(7D+1P)



*1: In the RAID5 (7D+1P), this location becomes the vacant it. When RAID 5 (3D+1P) or RAID 1 (2D+2D) is configured mixture, this location can be mounted.

Fig. 1.2-1c Data Drive/Parity Drive Expansion Sequence (2 DKA Pairs Model)

The relationship between HDDs installation order and RAID group number is shown in the following table.

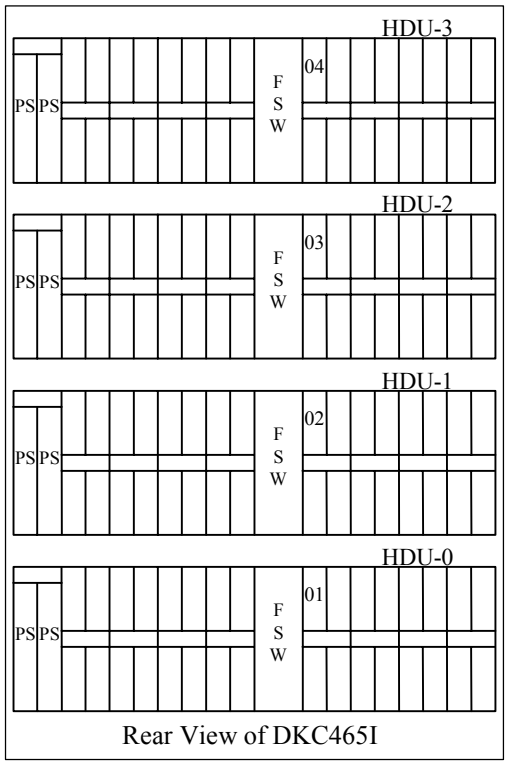
Table 1.2-1c Relation between HDDs installation order and RAID group number (2 DKA Pairs Model)

Group No.	Installation Order	Group No.	Installation Order	Group No.	Installation Order	Group No.	Installation Order
1-1 (2-1)	001	1-2 (2-2)	002	1-3 (2-3)	003	1-4 (2-4)	004
1-5 (2-5)	005	1-6 (2-6)	006	1-7 (2-7)	007	1-8 (2-8)	008
1-9 (2-9)	019	1-10 (2-10)	010	1-11 (2-11)	011	1-12 (2-12)	012
1-13 (2-13)	013	1-14 (2-14)	014	1-15 (2-15)	015	1-16	SP

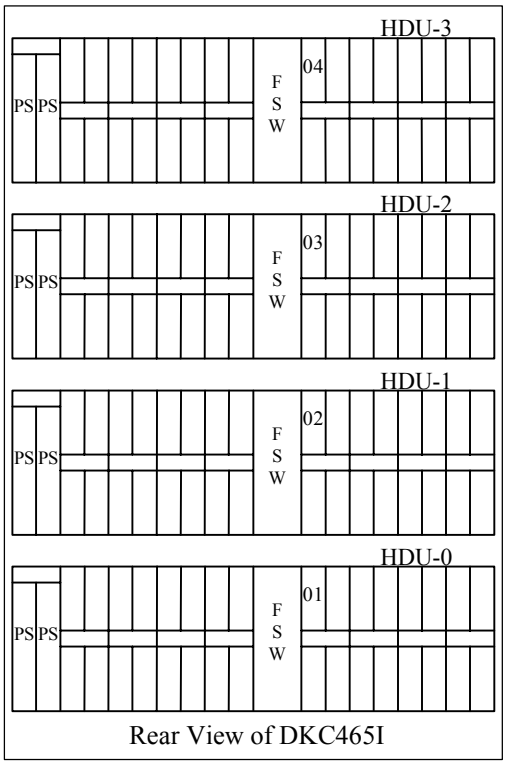
- Install RAID 5 (7D+1P) forming pairs using the same number of the two RAID groups (RAID groups 1 and 2) of RAID 5 (3D+1P). (Example: RAID group numbers 1-1 and 2-1)
  The types of HDDs to be installed in each pair must be the same.
- In the case of RAID 5 (7D+1P), only odd RAID numbers are displayed on the SVP. (Group numbers shown in parentheses in the table above are not displayed.)
- When RAID 5 (3D+1P) or RAID 1 (2D+2D) and RAID 5 (7D+1P) are configured mixture, note that duplicated group numbers are excluded.
  Example: When Group No. 1-1 is configured for RAID 5 (7D+1P), Group No. 2-1 is excluded and cannot be configure for RAID 5 (3D+1P).

No.	Model Number	Model Name	Data and Parity
1	DKU-F455I-36K1/72J1/72K1/146J1/146JS/146JM	1 HDD Canister	Spare Drive

Entry Model or
Full-spec Model (1DKA Pair Model)



Full-spec Model (2DKA Pairs Model)



01 - 04 : Spare HDD canister installation order

Fig. 1.2-2 Spare Drive Expansion Sequence

1.3 Explanation of Channel Option Configuration

1.3.1 List of Channel Options

Channel options which can be installed in the DKC465I are shown in Table 1.3-1. Up to 3 sets of them can be installed in the entire subsystem.

Table 1.3-1 List of Channel Options

No.	Model Number	Model Name	Major Part	Remarks
1	DKC-F460I-8S	Serial 8-port Adapter	• WP462-A, SH281-C × 4] × 2 • I/F Con. Panel	For connection to the main frame
2	DKC-F460I-8GSE	Fibre 8-port Adapter for Short Wavelength (1Gbps support)	• WP461-D, SH281-A × 2] × 2 • I/F Con. Panel	For connection to the open system
3	DKC-F460I-4HSE	Fibre 4-port Adapter for Short Wavelength (1-2Gbps support)	• WP461-E, SH281-A × 2] × 2 • I/F Con. Panel	For connection to the open system
4	DKC-F460I-8HSE	Fibre 8-port Adapter for Short Wavelength (1-2Gbps support)	• WP461-B, SH281-A × 4] × 2 • I/F Con. Panel	For connection to the open system
5	DKC-F460I-8HLE	Fibre 8-port Adapter for Long Wavelength (1-2Gbps support)	• WP461-C, SH281-A × 4] × 2 • I/F Con. Panel	For connection to the open system
6	DKC-F460I-8MS	Mainframe Fibre 8-port Adapter for Short Wavelength (1-2Gbps support)	• WP465-A, SH281-A × 4] × 2 • I/F Con. Panel	For connection to the main frame
7	DKC-F460I-8ML	Mainframe Fibre 8-port Adapter for Long Wavelength (1-2Gbps support)	• WP465-B, SH281-A × 4] × 2 • I/F Con. Panel	For connection to the main frame
8	DKC-F460I-8GSF	Fibre 8-port Adapter for Short Wavelength (1Gbps support)	• WP461-H, SH281-A × 2] × 2 • I/F Con. Panel	For connection to the open system Check data assist support
9	DKC-F460I-4HSF	Fibre 4-port Adapter for Short Wavelength (1-2Gbps support)	• WP461-J, SH281-A × 2] × 2 • I/F Con. Panel	For connection to the open system Check data assist support
10	DKC-F460I-8HSF	Fibre 8-port Adapter for Short Wavelength (1-2Gbps support)	• WP461-F, SH281-A × 4] × 2 • I/F Con. Panel	For connection to the open system Check data assist support
11	DKC-F460I-8HLF	Fibre 8-port Adapter for Long Wavelength (1-2Gbps support)	• WP461-G, SH281-A × 4] × 2 • I/F Con. Panel	For connection to the open system Check data assist support
12	DKC-F460I-16HSF	Fibre 16-port Adapter for Short Wavelength (1-2Gbps support)	• WP463-B, SH281-D × 4] × 2 • I/F Con. Panel	For connection to the open system Check data assist support
13	DKC-F460I-4NS	NAS 4-port Adapter for SX (1.25Gbps support)	• WP467-A, SH281-D × 2] × 2 • I/F Con. Panel	For connection to the open system

(To be continued.)

(Continued from preceding sheet.)

No.	Model Number	Model Name	Major Part	Remarks
14	DKC-F460I-8SE	Serial 8-port Adapter	• WP468-A, SH281-C × 4] × 2 • I/F Con. Panel	For connection to the main frame
15	DKC-F460I-8IS	iSCSI 8-port Adapter for Short Wavelength (1.25Gbps support)	• WP466-A, SH281-D × 4] × 2 • I/F Con. Panel	For connection to the open system

1.3.2 Channel Specifications

Specifications for each channel option are shown in table 1.3-2.

Table 1.3-2 Channel Specifications

Item	Serial	Mainframe fibre		Fibre Long Wave
	8-port	Short Wave 8-port	Long Wave 8-port	2Gbps 8-port
Option name	8S/8SE	8MS	8ML	8HLE/8HLF
Data transfer rate (MB/s)	17	100/200	100/200	100/200
Number of connected ports/option	8	8	8	8
Host interface	Serial	FICON	FICON	FCP
Number of installable options/subsystem	1/2/3	1/2/3	1/2/3	1/2/3
Cable length	3km	500m *1	10km	10km

Item	Fibre Short Wave					
	1Gbps 8-port	2Gbps 4-port	2Gbps 8-port	2Gbps 16-port	1.25Gbps 4-port	1.25Gbps 8-port
Option name	8GSE/8GSF	4HSE/4HSF	8HSE/8HSF	16HSF	4NS	8IS
Data transfer rate (MB/s)	100	100/200	100/200	100/200	100	100
Number of connected ports/option	8	4	8	16	4	8
Host interface	FCP	FCP	FCP	FCP	Gigabit Ethernet	Gigabit Ethernet
Number of installable options/subsystem	1/2/3	1/2/3	1/2/3	1/2/3	1/2	1/2/3/4
Cable length	500m *1	500m/300m *2	500m/300m *2	500m/300m *2	500m/275m *4	500m/275m *3

*1 Indicates when 50/125 μm multi-mode fiber cable is used. If 62.5/125 μm multi-mode fibre cable is used, maximum length is decreased to 300m.
*2 Indicates when 50/125 μm multi-mode fiber cable is used. If 62.5/125 μm multi-mode fibre cable is used, 500m(100MB/s) and 300m(200MB/s) is decreased to 300m and 150m respectively.
*3 Installation number of DKC-F460I-4NS is restricted to two sets.
*4 Indicates when 50/125 μm multi-mode fiber cable is used. If 62.5/125 μm multi-mode fibre cable is used, maximum length is decreased to 275m.

Up to 3 sets of combinations of the aforementioned channel options and up to 48 ports can be connected to each subsystem.

1.3.3 Installing Location

(1) Option installing location
The channel option installing location and the interface connector installing section are shown in Fig. 1.3-1.

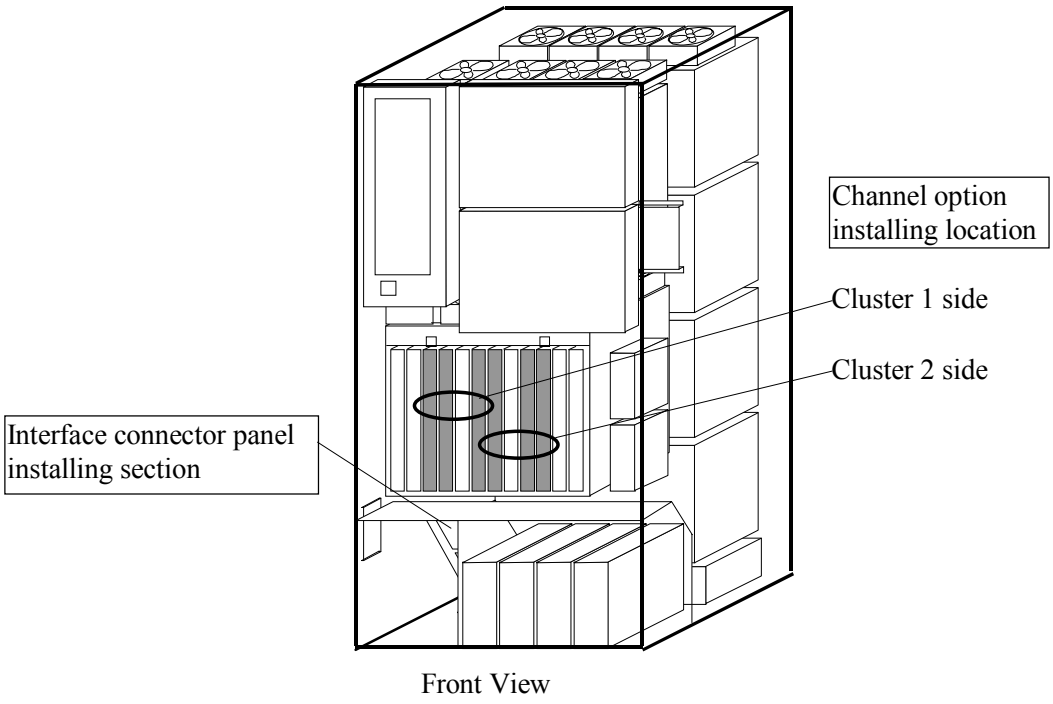


Fig. 1.3-1 Channel Option Installation

(2) PCB location diagram
Location of channel option PCBs are shown in Table 1.3-3.

Table 1.3-3 PCB Location Diagram

CL1						CL2					
A	B	C	D	E	F *2	G	H	J	K *2	L	M
WP481-C	DKA	8S/8SE	8S/8SE	WP490-A	8S/8SE	8S/8SE	WP490-A	8S/8SE	8S/8SE	DKA	WP481-C
		8GSE/F	8GSE/F		8GSE/F	8GSE/F		8GSE/F	8GSE/F		
		4HSE/F	4HSE/F		4HSE/F	4HSE/F		4HSE/F	4HSE/F		
		8HSE/F	8HSE/F		8HSE/F	8HSE/F		8HSE/F	8HSE/F		
		8HLE/F	8HLE/F		8HLE/F	8HLE/F		8HLE/F	8HLE/F		
		16HSF	16HSF		16HSF	16HSF		16HSF	16HSF		
		8MS	8MS		8MS	8MS		8MS	8MS		
		8ML	8ML		8ML	8ML		8ML	8ML		
		4NS *3	4NS *3		4NS *3	4NS *3		4NS *3	4NS *3		
		8IS	8IS		8IS	8IS		8IS	8IS		
CSW-1A	DKA-1B	CHA-1C (Basic)	CHA-1D (Add.1)	CACHE-1E	CHA-1F (Add.2)	CHA-2G (Basic)	CACHE-2H	CHA-2J (Add.1)	CHA-2K (Add.2)	DKA-2L	CSW-2M

8S/8SE: PCB for DKC-F460I-8S/8SE
8GSE/F: PCB for DKC-F460I-8GSE/8GSF
4HSE/F: PCB for DKC-F460I-4HSE/4HSF
8HSE/F: PCB for DKC-F460I-8HSE/8HSF
8HLE/F: PCB for DKC-F460I-8HLE/8HLF
16HSF: PCB for DKC-F460I-16HSF
8MS: PCB for DKC-F460I-8MS
8ML: PCB for DKC-F460I-8ML
4NS: PCB for DKC-F460I-4NS
8IS: PCB for DKC-F460I-8IS

Note. *1: For the configuration of each PCB, see Table 1.3-1.
*2: When a subsystem is a 2 DKA Pairs Model, the CHA option can't be installed in the PCB location of F and K. In this case, the DKA option (DKC-F460I-200) is installed in these locations.
*3: Installation number of DKC-F460I-4NS is restricted to two sets.

(3) Interface connector panel installing section
The interface connector panel installing section is shown in Fig. 1.3-2. (For the installing location, see Fig. 1.3-1)

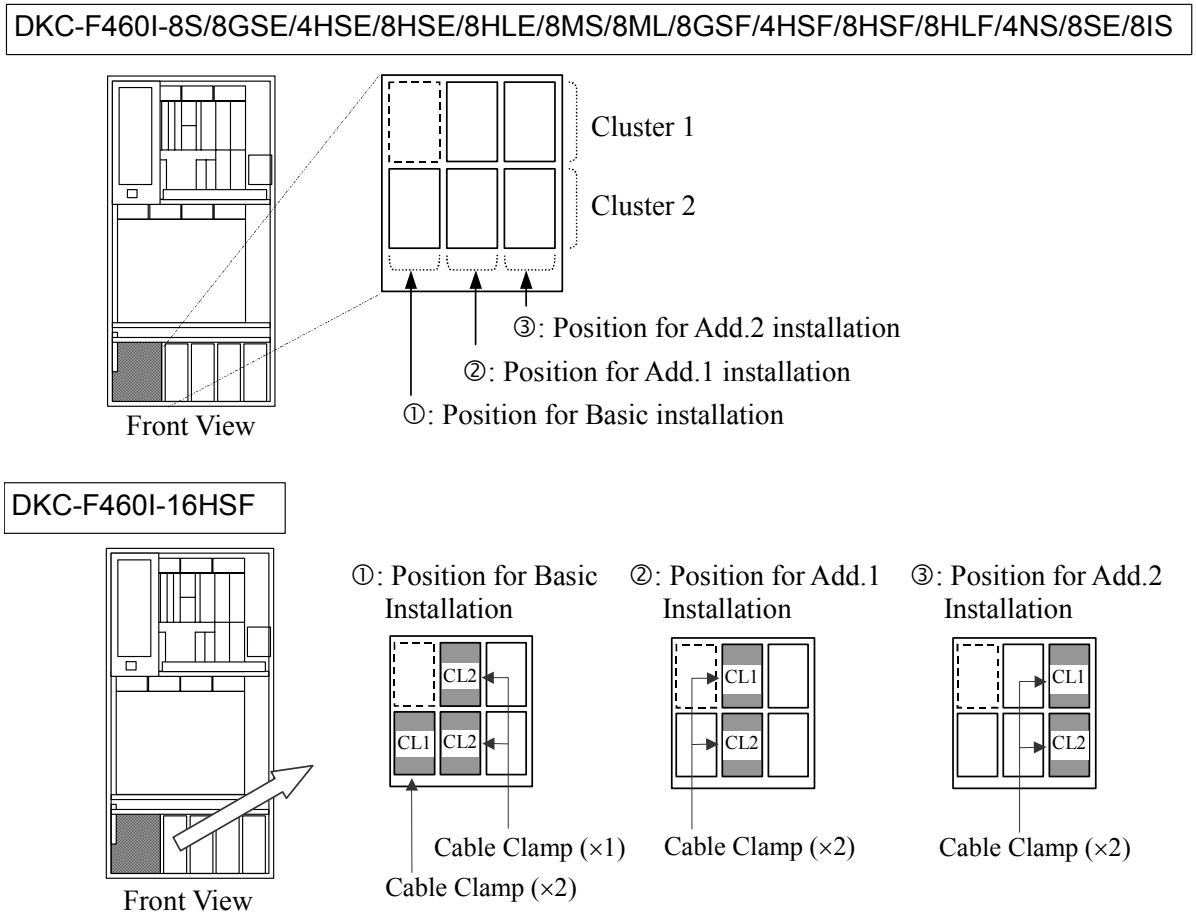


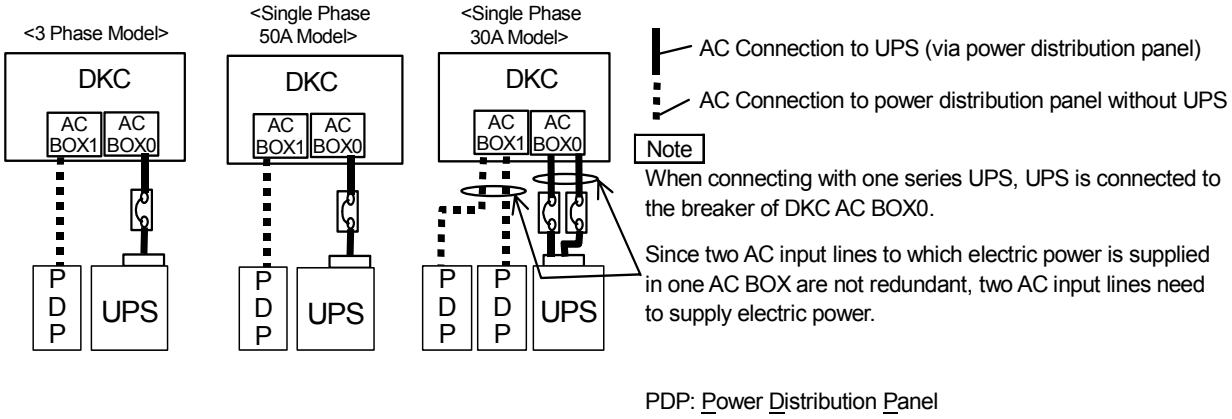
Fig. 1.3-2 Interface connector panel installing section

Refer to the LOCATION04-50 through 04-56 for how to attach the cable clamp and channel interface cable routing.

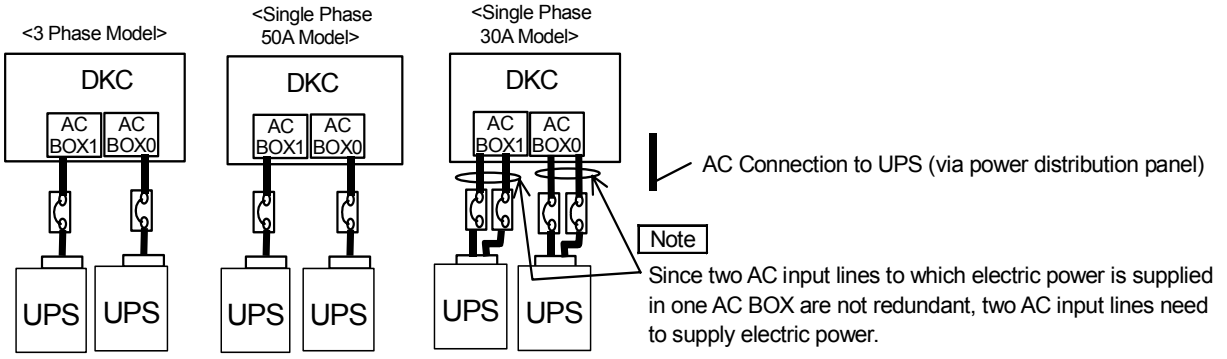
1.4 Connection of External Power Cable

Equipment power supply CAUTION:
Referring to the following figure, grasp an equipment power supply and its classification well, and connect a power supply cable.
If connection of a power supply cables is mistaken, the degree of redundancy will be lost.

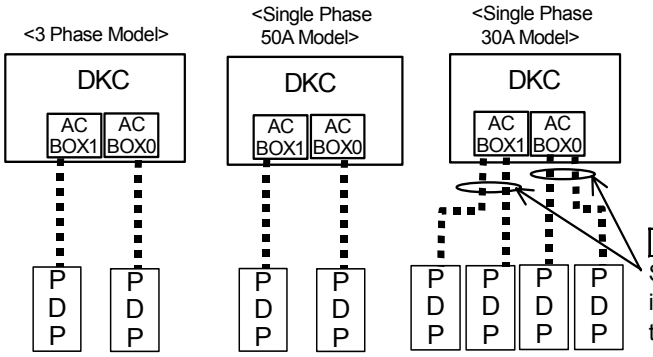
- UPS Connection (one series)



- UPS Connection (two series)



- Power Distribution Panel Connection (one series)



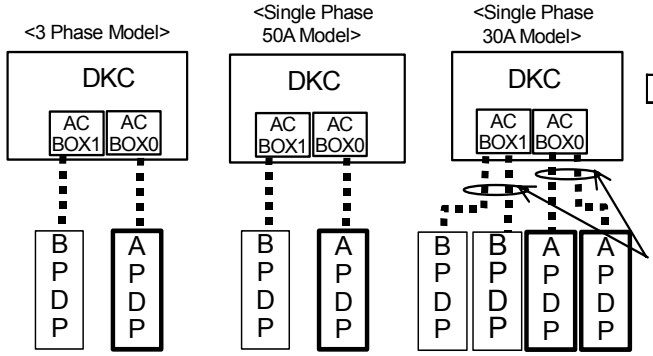
AC Connection to power distribution panel without UPS

Note

Since two AC input lines to which electric power is supplied in one AC BOX are not redundant, two AC input lines need to supply electric power.

PDP: Power Distribution Panel

- Power Distribution Panel Connection (two series) When there are individual directions



AC Connection to power distribution panel without UPS

Note

When connecting with power distribution panels of two series (A or B), DKC AC BOX0 are connected to A power distribution panel, and DKC AC BOX1 are connected to B power distribution panel.

Since two AC input lines to which electric power is supplied in one AC BOX are not redundant, two AC input lines need to supply electric power.

APDP: A Power Distribution Panel
BPDP: B Power Distribution Panel

2 Installation and De-installation procedure

2.1 New Installation Procedure Table

Note:
Perform the new installation in numerical order shown in the following table. Proceed to the next work neglecting unnecessary ones.

When installing Subsystem for the first time, perform all hardware installation procedures before initiating the installation through SVP procedure.
Skip the next procedure when the procedure is not necessary. When the SVP High Reliability Kit is installed, however, it is not required to connect the following cables since they are to be connected in the SVP Procedure: Cable (P41) and LAN Cable (LSVP-2) (See INST03-SVP-90.)
If any problems arise during the following procedure, isolate failure part with analysis of SIM log or SSB log. If neither SIM log nor SSB log has been created, re-check the general procedure and see TROUBLE SHOOTING SECTION.

Table 2.1-1 New Installation Procedure Table

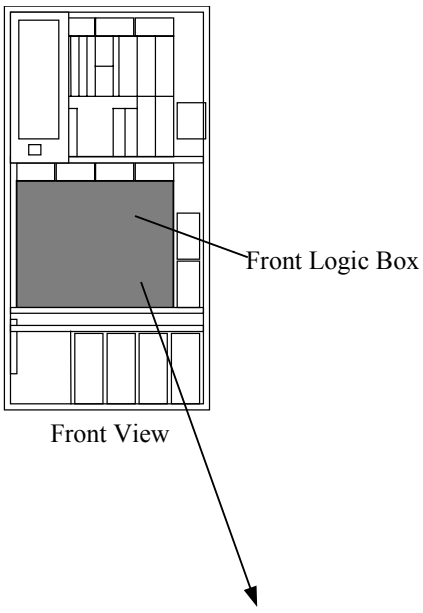
No.	Working Item	Model Number	Page
1	Unpacking and Inspection	—	INST03-INS-10 through 50
2	Subsystem Installation (DKC465I)	←	INST03-SUB-10 through 60
3	AC Box Installation (DKC-F465I-1PS/3PS/1PSD)	←	INST03-ACB-10 through 100
4	AC Power Cable Installation (DKC-F465I-1EC/1UC/3EC/3UC, DKC-F460I-1ECD/1UCD)	←	INST03-PWC-10 through 110
5	PCI I/F Connector Installation (DKC-F460I-18)	←	INST03-PCI-10 through 50
5A	NAS Enable Kit for SC model Installation (DKC-F465I-NENB)	NENB	INST03-NEN-10 through 240 (Only hardware procedure)
6	Channel Adapter Installation (DKC-F460I-8S/8MS/8ML/8GSE/4HSE/ 8HSE/8HLE/8HSF/4HSF/8HSF/8HLF/16HSF/ 4NS/8SE/8IS)	8S/8SE	INST03-8S-10 through 100 (Only hardware procedure)
		8GSE/8GSF 4HSE/4HSF 8HSE/8HSF 8HLE/8HLF	INST03-FIB-10 through 90 (Only hardware procedure)
		8MS 8ML	INST03-MF-10 through 100 (Only hardware procedure)
		16HSF	INST03-16F-10 through 110 (Only hardware procedure)
		4NS	INST03-4NS-10 through 110 (Only hardware procedure)
		8IS	INST03-8IS-10 through 90 (Only hardware procedure)
7	Cache memory and Shared memory Installation (DKC-F460I-S512/2048/S1024/4096)	S512/S1024	INST03-SM-10 through 160 (Only hardware procedure)
		2048/4096	INST03-CM-10 through 170 (Only hardware procedure)

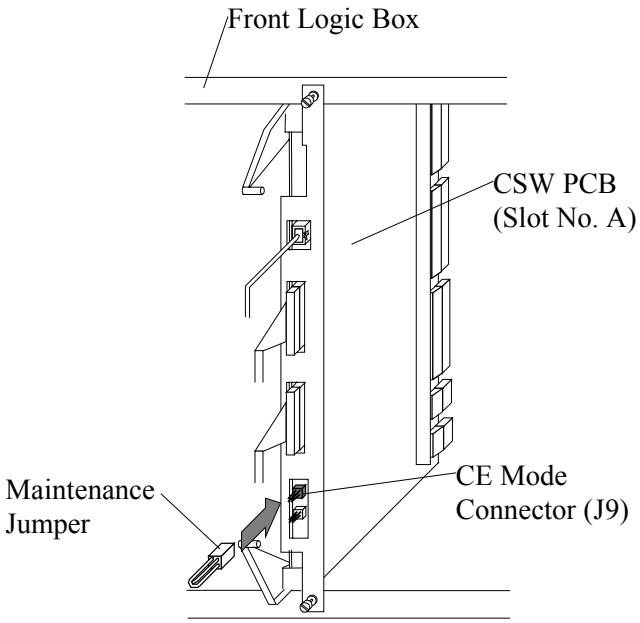
(To be continued.)

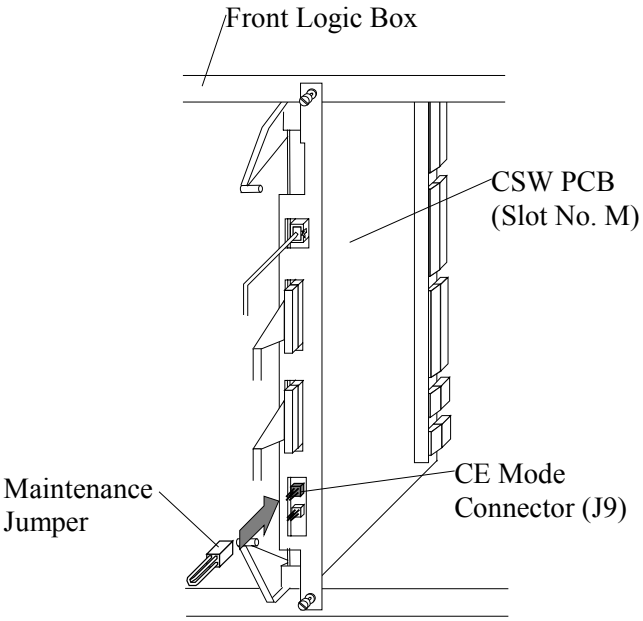
(Continued from preceding sheet.)

No.	Working Item	Model Number	Page
8	Additional Disk Adapter, Additional Disk Port Switch, Disk Path Expansion Kit and HDD Canister Installation (DKC-F465I-FSW/FSW2/100, DKC-F460I-200, DKU-F455I-36K1/36K4/72J1/72J4/72K1/72K4/ 146J1/146J4/146JS/146JF/146JM/146JQ)	←	INST03-DKA-10 through 610 (Only hardware procedure)
9	SVP High Reliability Kit Installation (DKC-F460I-SVP)	←	INST03-SVP-40 through 100 (Only hardware procedure)
10	UPS Connection Kit Installation (DKC-F460I-UPS)	←	INST03-UPS-10 through 130
11	256MB Additional Memory for SVP Installation (DKC-F460I-256M)	←	INST03-SVM-10 through 110
12	SVP “New Installation” Procedure	—	INST02-520
13	END		

Note *1 : The Maintenace Jumper of the CE Mode Connector (J9).







2.2 Non-Disruptive Installation Procedure Table

Note:
Perform the non-disruptive installation of options in numerical order shown in the following table. Proceed to the next work neglecting unnecessary ones.

Install additional non-disruptive options according to the flow shown below. This work is completed by installing additional hardware for each option and performing SVP-controlled installation.
If a fault occurs during or after additional installation, see INST02-420 to locate a faulty unit and take action. If any other message than the list is displayed, see the SVP Message section.

Precautions on Non-Disruptive Installation

- "Non-Disruptive" means that the subsystem is connected to the host (OS). Non-Disruptive Installation shall be done with the subsystem power ON. However, the subsystem may be disconnected from the host (OS).
- Install additional Cache Memory and Shared Memory (DKC-F460I-S512/2048/S1024/4096) on one side first without affecting subsystem operation according to the SVP guidance.
- When the type of the CHAs is changed (e.g. from fibre to serial channel), de-install the old CHAs temporarily before installing new CHAs.

Table 2.2-1 Non-Disruptive Installation Procedure Table

No.	Working Item	Model Number	Page
0	**Confirm the microversion**	—	**OPTVER01-10**
1	Start up the Install	—	—
2	NAS Enable Kit for SC model Installation (DKC-F465I-NENB)	NENB	INST03-NEN-10 through 240
3	Channel Adapter Installation (DKC-F460I-8S/8MS/8ML/8GSE/4HSE/ 8HSE/8HLE/8GSF/4HSF/8HSF/8HLF/16HSF/ 4NS/8SE/8IS)	8S/8SE	INST03-8S-10 through 100
		8GSE/8GSF 4HSE/4HSF 8HSE/8HSF 8HLE/8HLF	INST03-FIB-10 through 90
		8MS/8ML	INST03-MF-10 through 100
		16HSF	INST03-16F-10 through 110
		4NS	INST03-4NS-10 through 110
		8IS	INST03-8IS-10 through 90
4	Cache memory and Shared memory Installation (DKC-F460I-S512/2048/S1024/4096)	S512/S1024	INST03-SM-10 through 160
		2048/4096	INST03-CM-10 through 170
Note	**Check CU number and necessary shared memory capacity, and make sure whether expansion of shared memory is necessary (See INST01-60 ~ 70). If necessary , see INST03-SM-10.**		
5	Additional Disk Adapter, Additional Disk Port Switch, Disk Path Expansion Kit and HDD Canister Installation (DKC-F465I-FSW/FSW2/100, DKC-F460I-200, DKU-F455I-36K1/36K4/72J1/72J4/72K1/72K4/ 146J1/146J4/146JS/146JF/146JM/146JQ)	←	INST03-DKA-10 through 610

(To be continued.)

(Continued from preceding sheet.)

No.	Working Item	Model Number	Page
6	SVP High Reliability Kit Installation (DKC-F460I-SVP)	←	INST03-SVP-10 through 350
7	PCI I/F Connector Installation (DKC-F460I-18)	←	INST03-PCI-10 through 50
8	256MB Additional Memory for SVP Installation (DKC-F460I-256M)	←	INST03-SVM-10 through 110
9	Upgrade Standard performance Disk adapter to High performance Disk adapter	←	SVP02-1300 through 1350
10	Setup on SVP Installation	4NS	NAS03-110
11	NAS OS Installation	4NS	NAS03-310
12	END		

2.3 Non-Disruptive De-installation Procedure Table

Note:
Perform the non-disruptive de-installation of options in numerical order shown in the following table. Proceed to the next work neglecting unnecessary ones.

Remove additional non-disruptive options according to the flow shown below. This work is completed by removing hardware for each option and performing SVP-controlled removal.
When De-Installation has been all done, make sure that all the removed units are displayed as "empty" and that the other units are normal (See the STATUS Section).
If a fault occurs during or after removal, see INST02-440 to locate a faulty unit and take action. If any other message than the list is displayed, see the SVP Message section.

Precautions on Non-Disruptive De-Installation

- "Non-Disruptive" means that the subsystem is connected to the host (OS). Non-Disruptive De-Installation shall be done with the subsystem power ON. However, the subsystem may be disconnected from the host (OS).
- Remove additional Cache Memory and Shared Memory (DKC-F460I-S512/2048/S1024/4096) on one side first without affecting subsystem operation according to the SVP guidance.

Table 2.3-1 Non-Disruptive De-installation Procedure Table

No.	Working Item	Model Number	Page
1	Start UP the Install	—	—
2	Additional Disk Adapter, Additional Disk Port Switch, Disk Path Expansion Kit and HDD Canister De-installation (DKC-F465I-FSW/FSW2/100, DKC-F460I-200, DKU-F455I-36K1/36K4/72J1/72J4/72K1/72K4/146J1/146J4/146JS/146JF/146JM/146JQ)	←	INST04-DKA-10 through 470
3	Cache memory and Shared memory De-installation (DKC-F460I-S512/2048/S1024/4096)	S512/S1024	INST04-SM-10 through 170
		2048/4096	INST04-CM-10 through 190
4	Channel Adapter De-installation (DKC-F460I-8S/8MS/8ML/8GSE/4HSE/8HSE/8HLE/8GSF/4HSF/8HSF/8HLF/16HSF/4NS/8SE/8IS)	8S/8SE	INST04-8S-10 through 100
		8GSE/8GSF 4HSE/4HSF 8HSE/8HSF 8HLE/8HLF	INST04-FIB-10 through 90
		8MS/8ML	INST04-MF-10 through 100
		16HSF	INST04-16F-10 through 90
		4NS	INST04-4NS-10 through 100
		8IS	INST04-8IS-10 through 90
5	SVP High Reliability Kit De-installation (DKC-F460I-SVP)	←	INST04-SVP-10 through 140
6	PCI Connector De-installation (DKC-F460I-18)	←	INST04-PCI-10 through 40
7	256MB Additional Memory for SVP De-installation (DKC-F460I-256M)	←	INST04-SVM-10 through 110
8	END		

2.4 Disruptive Installation Procedure Table

Note:
Perform the disruptive installation of options in numerical order shown in the following table. Proceed to the next work neglecting unnecessary ones.

Install additional disruptive options according to the flow shown below.
If a fault occurs during or after additional installation, see INST02-420 to locate a faulty unit and take action. If any other message than the list is displayed, see the SVP Message section.

Precautions on Disruptive Installation

- "Disruptive" means that the subsystem is disconnected from the host (OS). Disruptive Installation shall be done with the subsystem power OFF.

Table 2.4-1 Disruptive Installation Procedure Table

No.	Working Item	Model Number	Page
0	**Confirm the microversion**	—	**OPTVER01-10**
1	Disk Subsystem Power OFF	—	INST03-PWR-50 through 60
2	UPS Connection Kit Installation (DKC-F460I-UPS)	←	INST03-UPS-10 through 90 (Only hardware procedure)
3	PCI I/F Connector Installation (DKC-F460I-18)	←	INST03-PCI-10 through 50 (Only hardware procedure)
4	256MB Additional Memory for SVP Installation (DKC-F460I-256M)	←	INST03-SVM-10 through 110
5	AC Box Installation (DKC-F465I-1PS/3PS/1PSD)	←	INST03-ACB-10 through 100
6	AC Power Cable Installation (DKC-F465I-1EC/1UC/3EC/3UC, DKC-F460I-1ECD/1UCD)	←	INST03-PWC-10 through 110
7	Disk Subsystem Power on	—	INST03-PWR-10 through 50
8	Change Configuration Information for UPS Connection Kit	←	INST03-UPS-100 through 130
9	AC Box Configuration Setting and Confirmation	←	INST03-ACB-110 through 220
10	END		

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2.5 Disruptive De-installation Procedure Table

Note:
Perform the disruptive de-installation of options in numerical order shown in the following table. Proceed to the next work neglecting unnecessary ones.

Remove additional disruptive options according to the flow shown below.
When De-Installation has been all done, make sure that all the removed units are displayed as "empty" and that the other units are normal (See the STATUS Section).
If a fault occurs during or after removal, see INST02-440 to locate a faulty unit and take action. If any other message than the list is displayed, see the SVP Message section.

Precautions on Disruptive De-Installation

- "Disruptive" means that the subsystem is disconnected from the host (OS). Disruptive De-installation shall be done with the subsystem power OFF.

Table 2.5-1 Disruptive De-installation Procedure Table

No.	Working Item	Model Number	Page
1	Change Configuration Information	—	INST03-ACB-110
2	Disk Subsystem Power OFF	←	INST03-PWR-50 through 60
3	UPS Connection Kit De-Installation (DKC-F460I-UPS)	←	INST04-UPS-10 through 90 (Only Hardware procedure)
4	PCI Connector De-Installation (DKC-F460I-18)	←	INST04-PCI-10 through 40 (Only Hardware procedure)
5	256MB Additional Memory for SVP Installation (DKC-F460I-256M)	←	INST04-SVM-10 through 110
6	AC Power Cable De-Installation (DKC-F465I-1EC/1UC/3EC/3UC, DKC-F460I-1ECD/1UCD)	←	INST04-PWC-10 through 80
7	AC Box De-Installation (DKC-F465I-1PS/3PS/1PSD)	←	INST04-ACB-10 through 90
8	Disk Subsystem Power ON	—	INST03-PWR-10 through 50
9	UPS Connection Kit Change Configuration Information	UPS	INST04-UPS-100 through 130
	END		

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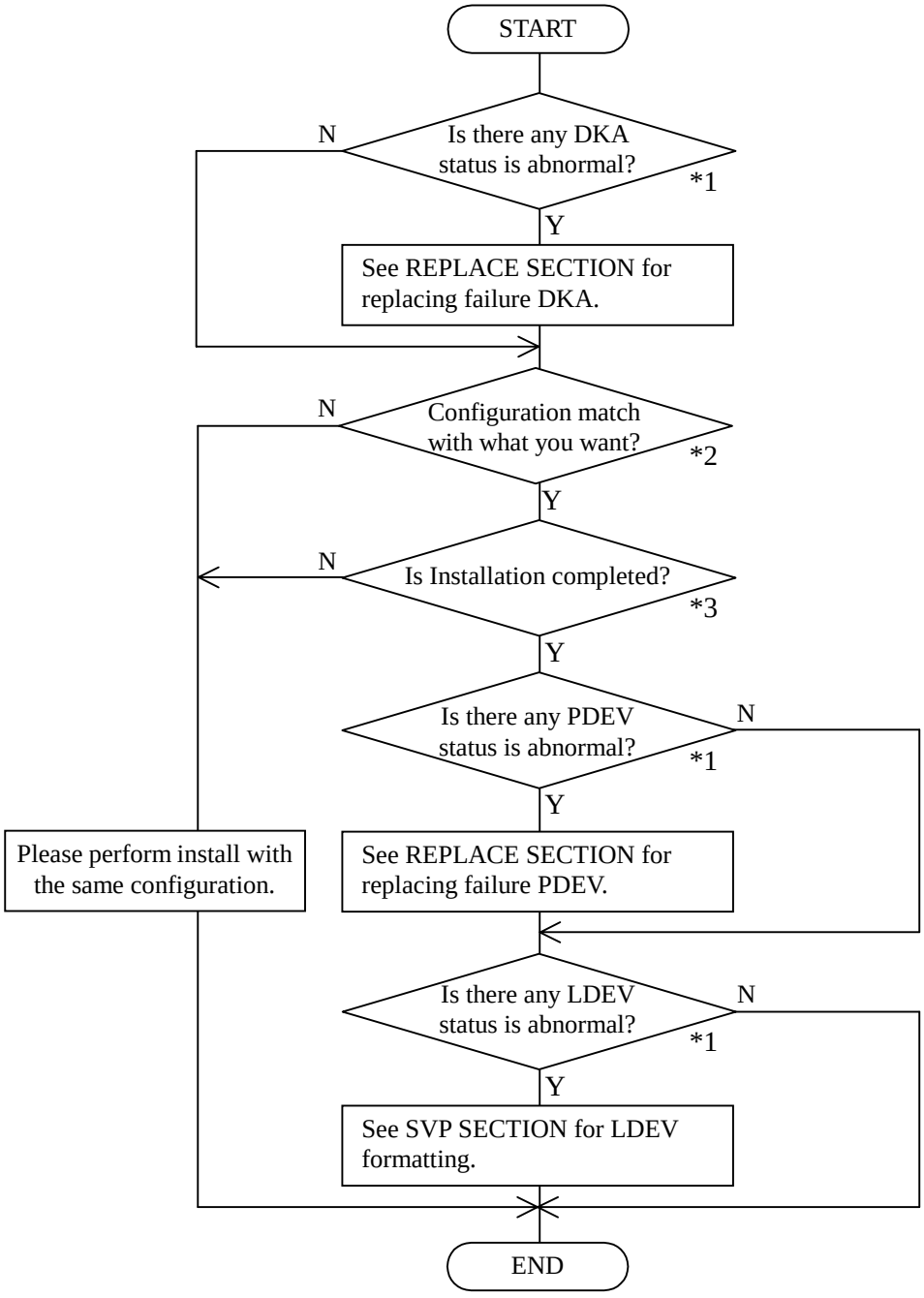
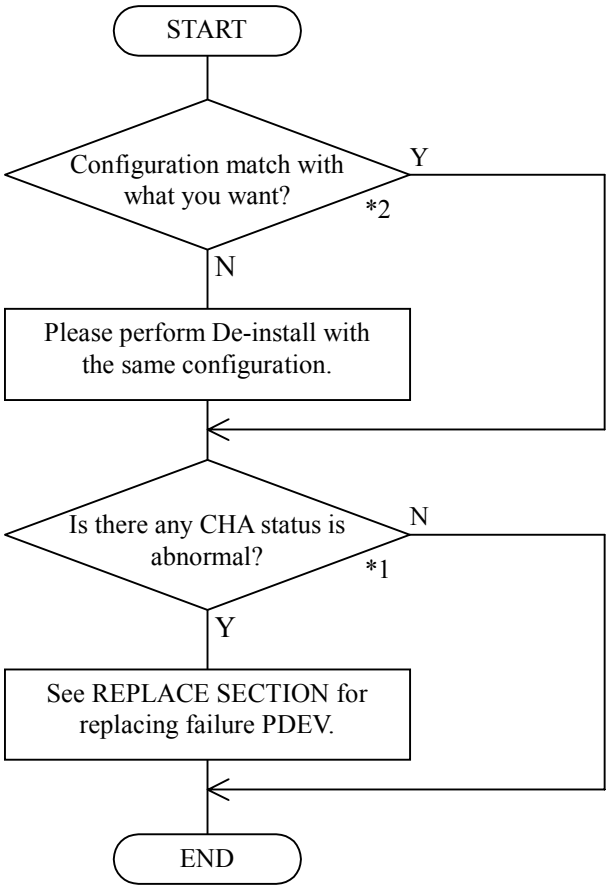
2.6 Trouble shooting for errors in install SVP procedure

2.6.1 DKA + &ECC group + LDEV



*1 Select (CL) [Maintenance] in the 'SVP' Window.
*2 Select (CL) [Install] – [Refer Configuration] in the 'SVP' Window.
*3 Wasn't INS2450I displayed when select (CL) [Install] – [Change Configuration] in the 'SVP' Window?

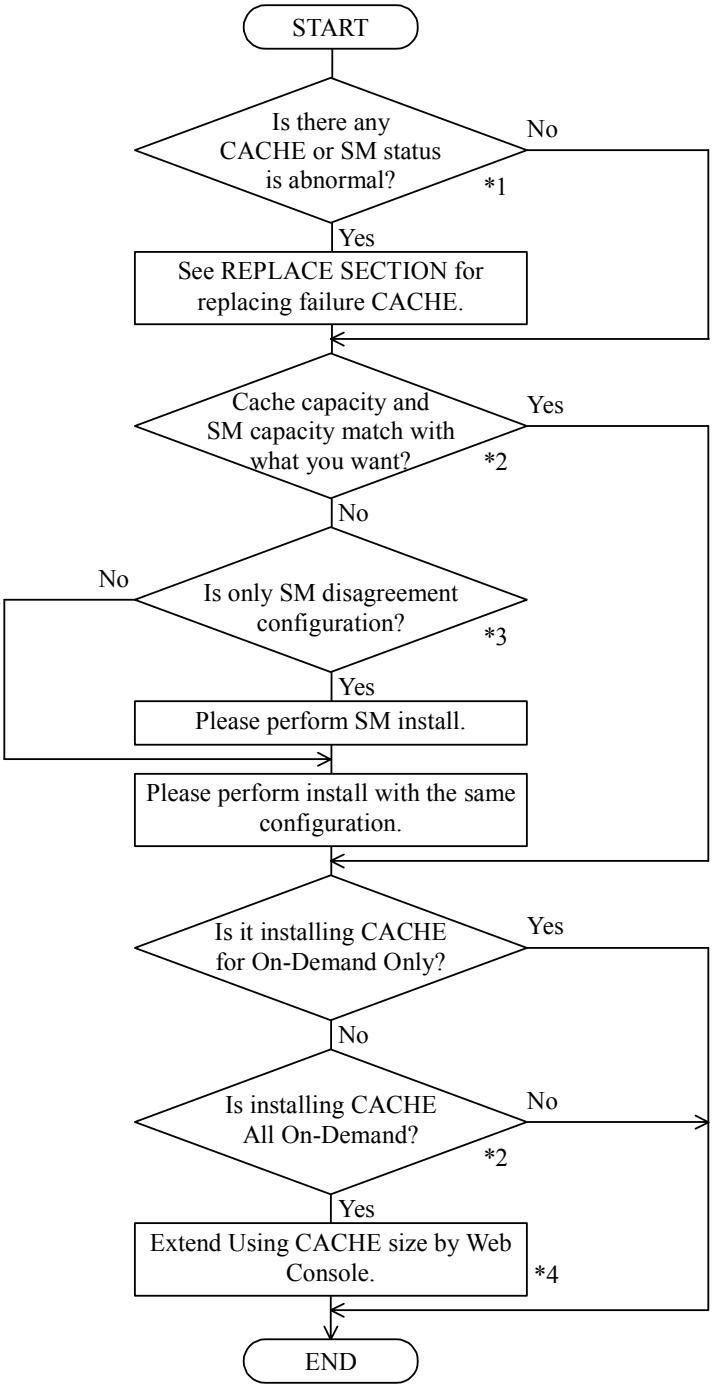
2.6.2 Number of Channel



*1 Select (CL) [Maintenance] in the 'SVP' Window.
It is no problem that "OS Status" will be failed when CHA(4NS) is installed because NAS OS is not installed yet.

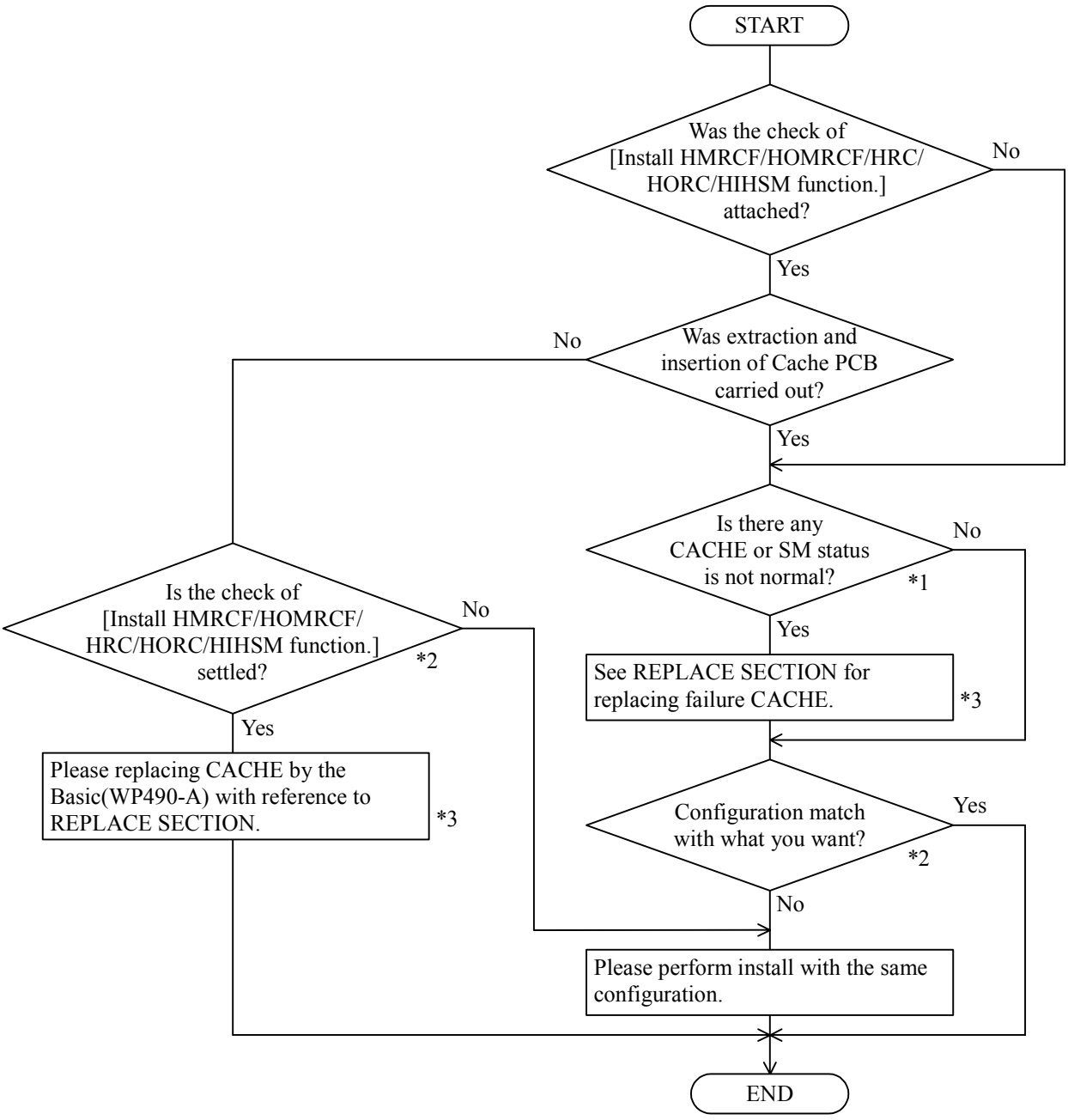
*2 Select (CL) [Install] – [Refer Configuration] in the 'SVP' Window.

2.6.3 Cache Capacity



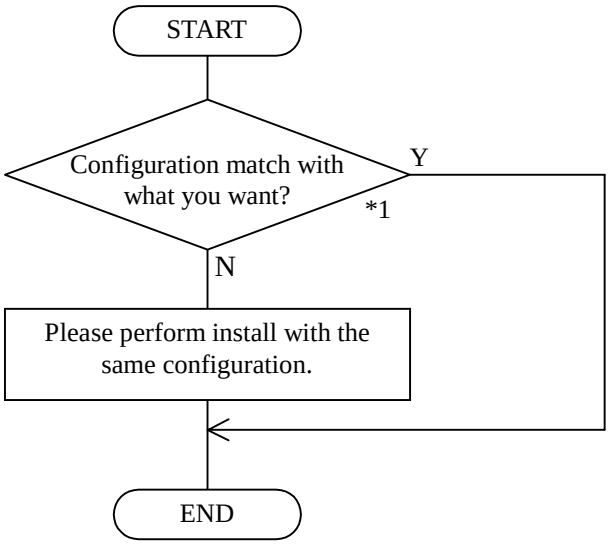
*1 Select (CL) [Maintenance] in the 'SVP' Window.
*2 Select (CL) [Install] – [Refer Configuration] in the 'SVP' Window. Cache capacity may be on-demand capacity.
*3 Was INS2566I displayed when select (CL) [Install] – [Change Configuration] in the 'SVP' Window?
*4 Select (CL) [Web Console] – [Just in Time] in the 'SVP' Window.
Extend Cache memory reference to [Remote Console – Storage Navigator User's Guide] – 3.9.3.
If this operation is performed, SIM will occur. It is not problem based on on-demand extension.

2.6.4 SM Capacity



*1 Select (CL) [Maintenance] in the 'SVP' Window.
*2 Select (CL) [Install] – [Refer Configuration] in the 'SVP' Window.
*3 Select (CL) [Install] – [Refer Configuration] in the 'SVP' Window. Confirm SM Modules size and replace same size modules.

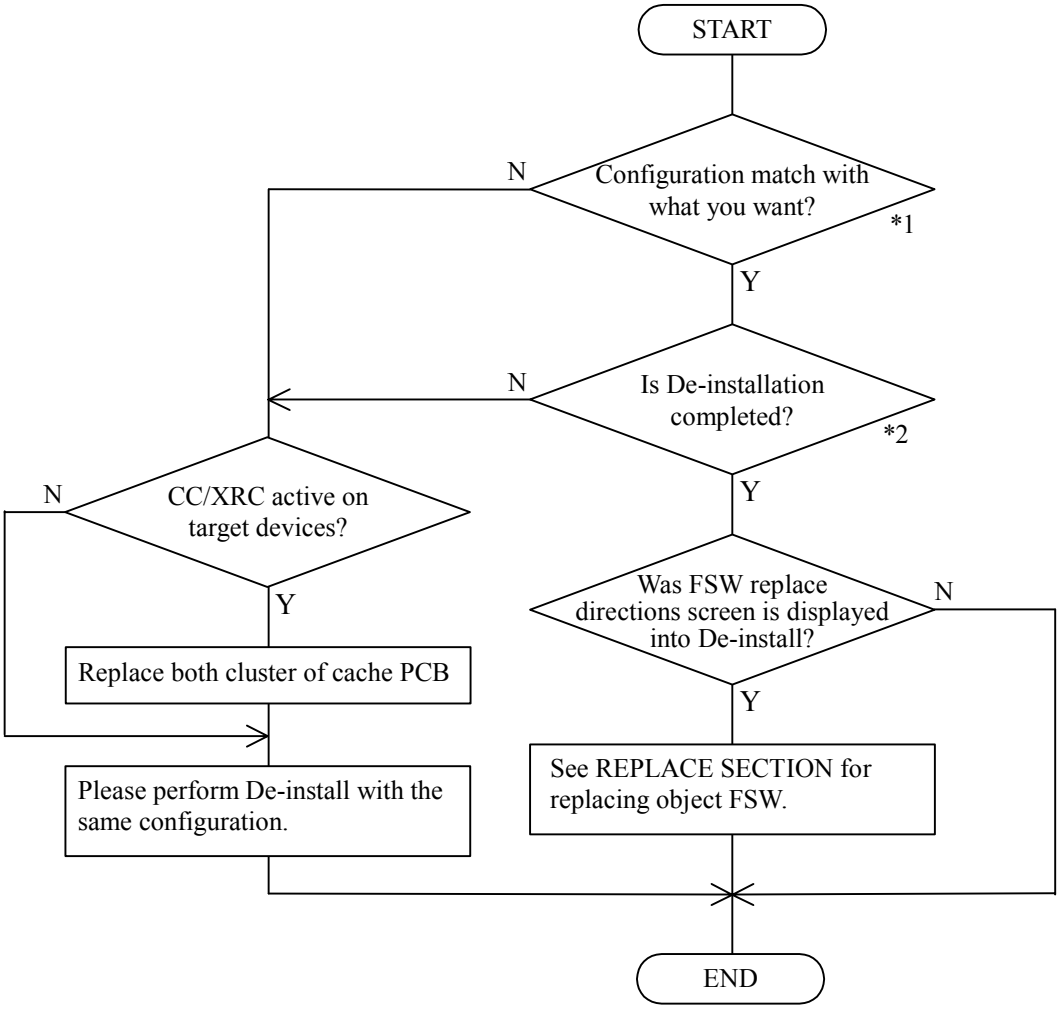
2.6.5 Power Supply



*1 Select (CL) [Install] – [Refer Configuration] in the ‘SVP’ Window.

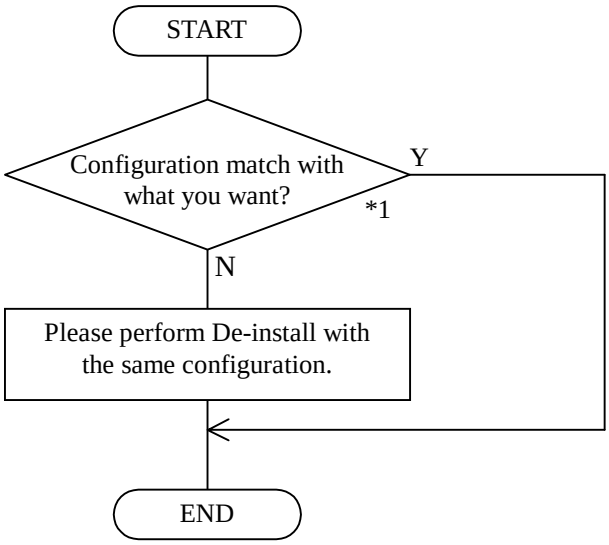
2.7 Trouble shooting for errors in de-install SVP procedure

2.7.1 DKA + ECC group + LDEV



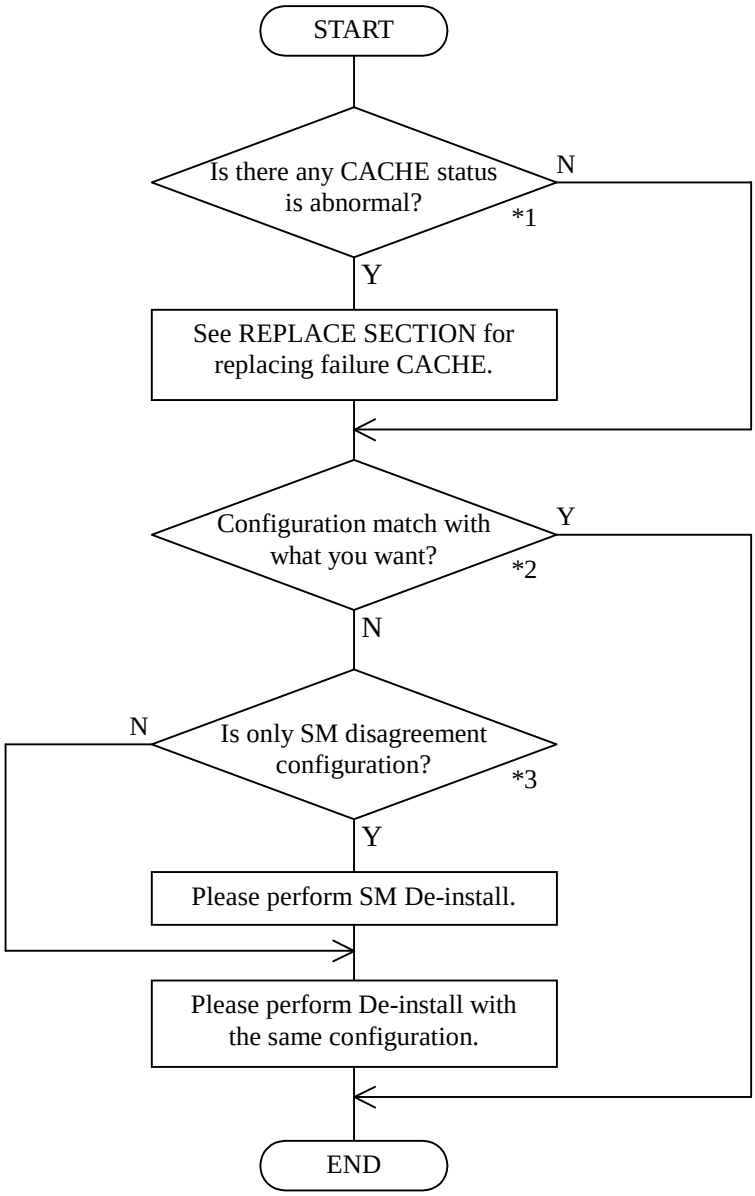
*1 Select (CL) [Install] – [Refer Configuration] in the 'SVP' Window.
*2 Wasn't INS2450I displayed when select (CL) [Install] – [Change Configuration] in the 'SVP' Window?

2.7.2 Number of Channel



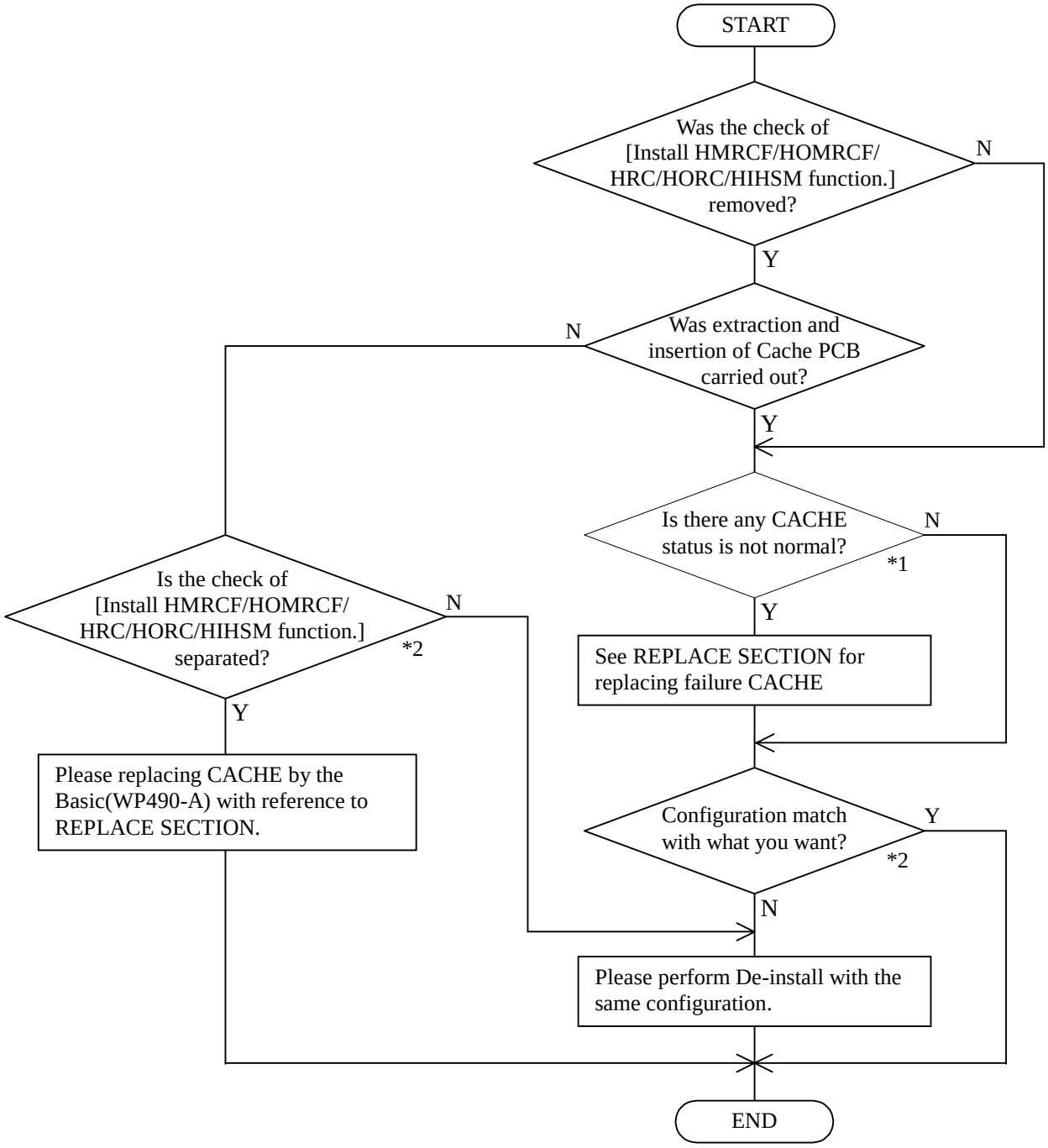
*1 Select (CL) [Install] – [Refer Configuration] in the ‘SVP’ Window.

2.7.3 Cache Capacity



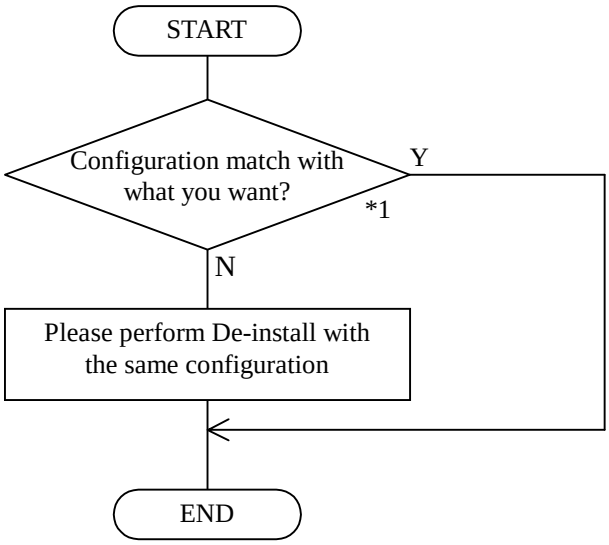
*1 Select (CL) [Maintenance] in the 'SVP' Window.
*2 Select (CL) [Install] – [Refer Configuration] in the 'SVP' Window.
*3 'Was INS2566I displayed when select (CL) [Install] – [Change Configuration] in the 'SVP' Window?

2.7.4 SM Capacity



*1 Select (CL) [Maintenance] in the 'SVP' Window.
*2 Select (CL) [Install] – [Refer Configuration] in the 'SVP' Window.

2.7.5 Power Supply



*1 Select (CL) [Install] – [Refer Configuration] in the ‘SVP’ Window.

2.8 Change Configuration

When Changing Configuration Information such as subsystem ID, DKC Emulation Type, Control Devices, Device Address, and Channel Speed, perform the following General flow chart.
Above Configuration Information can not change while subsystem is running.
After changing Configuration Information, PS off/on required.

System tuning 1) Device Structure Set Up 2) Channel Configuration 3) System Option

2.9 Availability of Installation and De-installation

(1) Availability of the Installation and De-installation when HRC/HORC 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
HDD canister	Installation	—	×	×	×	×	×	×	×	×
	De-installation	—	× (*)	×	SVP2031W (*)	SVP2034W	SVP2031W (*)	SVP2034W	SVP2031W (*)	SVP2034W
Cache PCB	Installation	—	×	×	SVP2059W	SVP2079W	× (**)	×	×	×
	De-installation	—	×	×	SVP2059W	SVP2079W	× (**)	×	×	×
CHE or CHF	Installation	With Alternate path.	×	×	× (***)	× (***)	× (***)	× (***)	× (***)	× (***)
		Without Alternate path.	×	×	× (***)	× (***)	× (***)	× (***)	× (***)	× (***)
	De-installation	With Alternate path.	×	×	×	SVP2038W	×	SVP2038W	×	SVP2038W
		Without Alternate path.	×	×	SVP2073W	SVP2038W	SVP2074W	SVP2038W	SVP2075W	SVP2038W
DKA	Installation	—	×	×	×	×	×	×	×	×
	De-Installation	—	×	×	×	×	×	×	×	×

(To be continued)

(Continued from preceding sheet)

Component	Maintenance Type	Condition	Suspending		Deleting	
			MCU	RCU	MCU	RCU
HDD canister	Installation	—	×	×	×	×
	De-Installation	—	SVP2031W (*)	SVP2034W	SVP2031W (*)	SVP2034W
CACHE	Installation	—	× (**)	×	× (**)	×
	De-Installation	—	× (**)	×	× (**)	×
CHE or CHF	Installation	With Alternate path.	× (***)	× (***)	× (***)	× (***)
		Without Alternate path.	× (***)	× (***)	× (***)	× (***)
	De-Installation	With Alternate path.	×	SVP2038W	×	SVP2038W
		Without Alternate path.	SVP2075W	SVP2038W	SVP2075W	SVP2038W
DKA	Installation	—	×	×	×	×
	De-Installation	—	×	×	×	×

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

The pair can be suspended if the ESTPAIR or paircreate (pairesync) command is issued during the HDD Canister or the Cache PCB installation/de-installation. Please ask your customer before the online maintenance operation.

* : If CU which all HDEV's are deleted from by this operation exists and there is registration of RCU in this CU, SVP will display a warning message with SVP2466W.

** : 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. Refer to "Monitoring" in the SVP SECTION for the Sidefile monitor.

*** : When the different 'DKC – Emuration –Type' of CHE is installed, SVP displays a warning message with SVP 3289W.

(2) Availability of the Installation and De-installation when HODM is used

Component	Maintenance Type	Condition	HODM path established		During initial copy		Waiting to be erased	
			MCU	RCU	MCU	RCU	MCU	RCU
HDD canister	Installation	—	×		×		×	
	De-installation	—	× (*)		SVP2031W (*)		SVP2031W (*)	
Cache PCB	Installation	—	×		SVP2059W		×	
	De-installation	—	×		SVP2059W		×	
CHE	Installation	With Alternate path.	×		×		×	
		Without Alternate path.	×		×		×	
	De-installation	With Alternate path.	×		×		×	
		Without Alternate path.	×		SVP2076W		SVP2078W	
CHF	Installation	—	×		×		×	
	De-installation	—	×		×		×	
DKA	Installation	—	×		×		×	
	De-Installation	—	×		×		×	

Component	Maintenance Type	Condition	Suspend		During for R-Vol Erasing		Erasing Error	
			MCU	RCU	MCU	RCU	MCU	RCU
HDD canister	Installation	—	×		×		×	
	De-installation	—	SVP2031W (*)		SVP2031W (*)		SVP2031W (*)	
Cache PCB	Installation	—	×		×		×	
	De-installation	—	×		×		×	
CHE	Installation	With Alternate path.	×		×		×	
		Without Alternate path.	×		×		×	
	De-installation	With Alternate path.	×		×		×	
		Without Alternate path.	SVP2077W		SVP2078W		SVP2078W	
CHF	Installation	—	×		×		×	
	De-installation	—	×		×		×	
DKA	Installation	—	×		×		×	
	De-Installation	—	×		×		×	

× : Maintenance is available

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

* : If CU which all HDEV's are deleted from by this operation exists and there is registration of RCU in this CU, SVP will display a warning message with SVP2466W.

(3) Availability of the System tuning when HRC/HODM/HORC is used.
It is impossible to change the DKCNo ,SSID ,or DKC Emulation type by system tuning when HRC, HODM or HORC is used.

(4) Availability of the online maintenance when HMRCF is used

Component	Maintenance Type	Condition	HMRCF Reserve Volume	Pending/Resync /SP-Pend		Duplex		Split		Suspend	
				S-VOL	T-VOL	S-VOL	T-VOL	S-VOL	T-VOL	S-VOL	T-VOL
HDD canister (DATA)	Installation	—	×	×		×		×		×	
	De-installation	—	SVP2485W	SVP2485W		SVP2485W		SVP2485W		SVP2485W	
HDD canister (SPARE)	Installation	—	×	×		×		×		×	
	De-installation	—	×	×		×		×		×	
Cache PCB	Installation	—	×	SVP2486W		×		×		×	
	De-installation	—	×	SVP2486W		×		×		×	
CHA	Installation	—	×	×		×		×		×	
	De- installation	—	×	×		×		×		×	
DKA	Installation	—	×	×		×		×		×	
	De-Installation	—	×	×		×		×		×	

Blank Sheet

2.10 New Installation procedures without the pre-installation at a customer site

2.10.1 Application

These procedures are applied to a new installation without the pre-installation at a customer site or the pre-installation at the warehouse as shown below.

- Installing the micro programs into the DKC subsystem. Its version must be appropriate one.
- Installing the configuration information which is appropriate to the customer.

If these procedures are used in other cases, their processes are not assured.

2.10.2 Conditions to use these procedures

These procedures can be used in the following conditions:

① The installation of the Hardware parts (for example, the connections of cables, power supplies and so on) have been finished. (For the Hardware installation, refer to "2.1 New Installation Procedure Table" (INST02-10 ~ INST02-20) of Maintenance Manual.)
However, when the SVP High Reliability Kit is installed, the cables, Cable (P41) and LAN Cable (LSVP-2), have not been connected. (See INST03-SVP-90.)

② The PC (SVP) is installed and can be used. (For the SVP installation, refer to "REP04-460 ~ REP04-560" of Maintenance Manual.)

2.10.3 Procedures

(1) Summary

The procedures are divided roughly into 4 processes.

① Pre-processing (the installation of the micro-programs into the SVP HD : (1)-(8) in the following flow)

② Execution of "New Installation" by the SVP. (By this procedure, the micro-programs and Fixed Minimum configuration are installed into PCBs (packages). : (9)-(20) in the following flow)

③ Execution of "Define Configuration and Install" by the SVP.(By this procedure, the customer's configurations are defined.) : ((21)-(32) in the following flow)

④ Others ((33)-(50) in the following flow)

(2) Processing Flow

The processing flow of the new installation is as follow:

START

(1)-1 Make sure the breaker is off (DKU). (If it is "on", turn off the breaker after the SVP is shut down.). [Breaker:INST03-PWR-50 – INST03-PWR-60, SVP Shut Down:SVP01-70]
(1)-2 Check the size of the Cache and SM DIMM with the DKC and remember them for later use in step (31).
(1)-3 If the LAN cables of the DKC subsystem are connected, disconnect them except the SVP to the DKC subsystem.
(1)-4 When the SVP High Reliability Kit is to be installed, make sure that the following cables are not connected: [Cable (P41) and LAN Cable (LSVP-2): INST03-SVP-90]

(2) Turn on the breaker (DKU) and wait for the SVP ready to use.
(Don't turn on the "POWER ON/OFF" switch on the DKC Panel PCB)
[Power ON procedures of Disk Subsystem:INST03-PWR-10]

(3) Set the Maintenance jumper to "SVP PS ON/OFF INH jumper" (JP2) on the RS CON.
When the SVP High Reliability Kit (DKC-F460I-SVP) is installed, set the Maintenance jumper to "SVP PS ON/OFF INH jumper" (PS CTLINH) on the SVPPS Box.
[LOCATION06-50]

(SVP procedure)
(4) Set TOD
(At this time, "Communication Error" may occur. You can ignore the error.)
[INST05-20 – INST05-50]

(SVP procedure)
(5) Execute the following procedures:
[Install micro-programs and configuration to the HD to the SVP]
[REP04-480 – REP04-512]
step1: Prepare the CD-ROM and CONFIG FD. (Note *1)
step2: Insert the CD-ROM disk into its drive.
step3: Click "START" on the task bar and select "Run…".
step4: Enter the following command: e:\setup.exe (enter)
(Set the CONFIG FD when the message, "Please insert the Config FD in the FDD.", is output, and then click "OK". Also, remove the CONFIG FD when "Please remove Config FD in the FDD" message is output. And then, click "OK".
This operation causes the "SVP Reboot". And soon, the "SVP window" is displayed.)
step5: Remove the CD-ROM from its drive.

(SVP procedure)
(6) Set IP Address
IP Address must be 126.255.255.15 and Subnet mask must be 255.0.0.0. Also, "Target" must be "SVP". (Don't select "SVP and DKC" as the "Target". [INST05-60 – INST05-70] (Note*2)
Besides, do not select "Use Duplex SVP" in the "External IP Address" box.

(SVP procedure)
(7) Delete LOGs.
[Log Delete:SVP02-170 – SVP02-180, SIM LogComplete:SVP02-580 – SVP02-590] (NOTE*3)

(8) Pull out the Maintenance jumper setting to “SVP PS ON/OFF INH jumper” on the RS CON. When the SVP High Reliability Kit (DKC-F410I-SVP) is installed, pull out the Maintenance jumper setting to “SVP PS ON/OFF INH jumper” on the SVPPS Box.

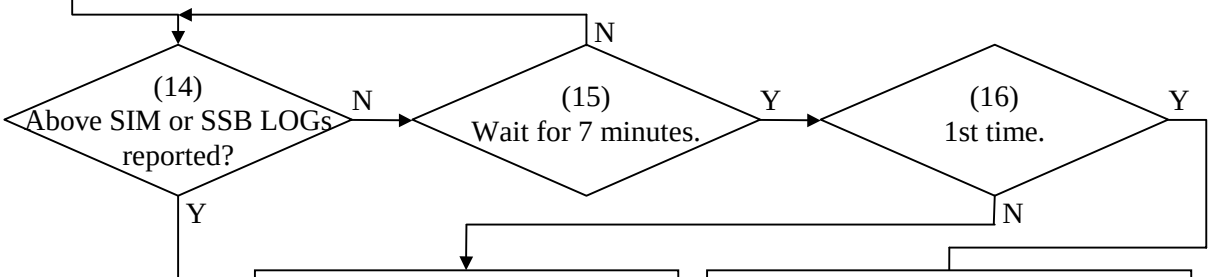
(9) Set all packages to be installed.
Set the packages(CHA,DKA and so on) to be installed to their locations of CL1 and CL2. The same kind of package must be set to the same location of each CL (CL1 and CL2).
[LOCATION02-30 – LOCATION02-40]

(10) Set the Maintenance Jumpers to CE Mode connectors (J9) on the CSW PCBs. (Note*4)

(11) Turn on the “POWER ON/OFF” switch on the DKC Panel PCB. [INST03-PWR-40]

(12) After 45 seconds, pull out the Maintenance Jumpers from the CSW PCBs when the MESSAGE LED is lit after the step (11) was done. Also, after pulling out the Maintenance Jumpers from the CSW PCBs, insert the Maintenance Jumpers to CE Mode connectors (J9) on the CSW PCBs again within 30 seconds. The MESSAGE LED is illuminated for about 90 seconds. (Note *5)

(13) Wait until SIM (Reference Code = 7900XX/7901XX) or SSB(Error Code = 3309) LOGs are reported from all installed MPs. (Check SVP Information SIM and SSB LOG.) (Note *6)



(17) Perform operations according to SIM/SSB indication.

(18) Turn off the “POWER ON/OFF switch on the DKC panel PCB

(18-1) Delete error logs.
[Log Delete: SVP02-170 – SVP02-180, SIM LOG Complete: SVP02-580 – SVP02-590] (Note *3)

Go to (10).

(SVP procedure)--(Micro Program Install)
(19) Execute “New Installation” procedures to install the micro-programs and Fixed Minimum Configuration into the DKC. (Note *7)

(20) Turn off the “POWER ON/OFF” switch on the DKC Panel PCB. [INST03-PWR-50]

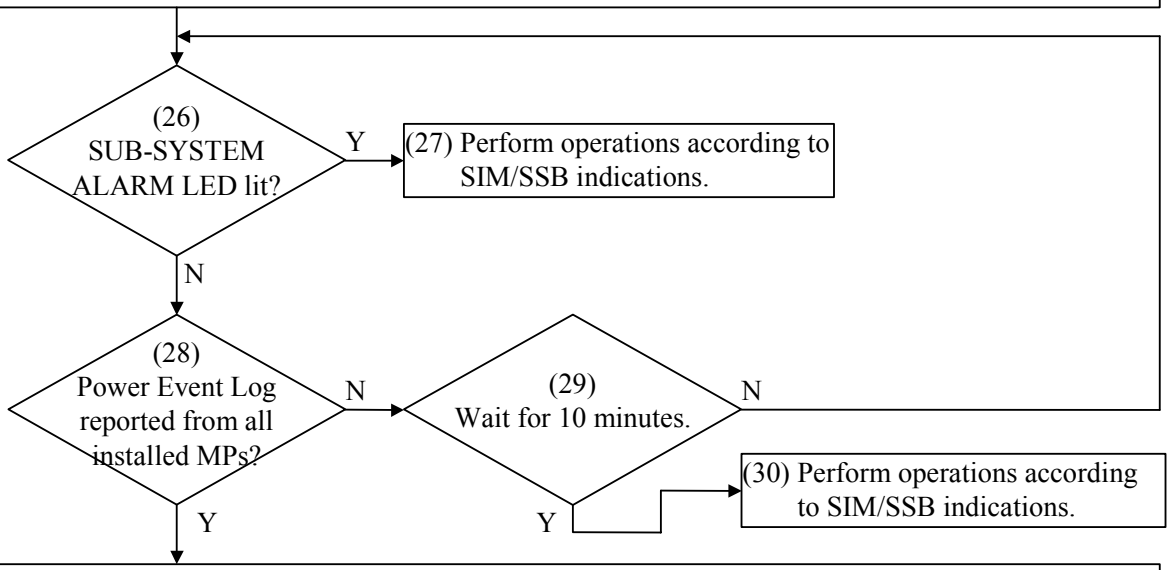
(21) Pull out the Shut Down Jumpers from the CSW PCBs. (Note *4)

(22) Delete error logs.
[Log Delete:SVP02-170 – SVP02-180, SIM Log Complete:SVP02-580 – SVP02-590] (Note*3)

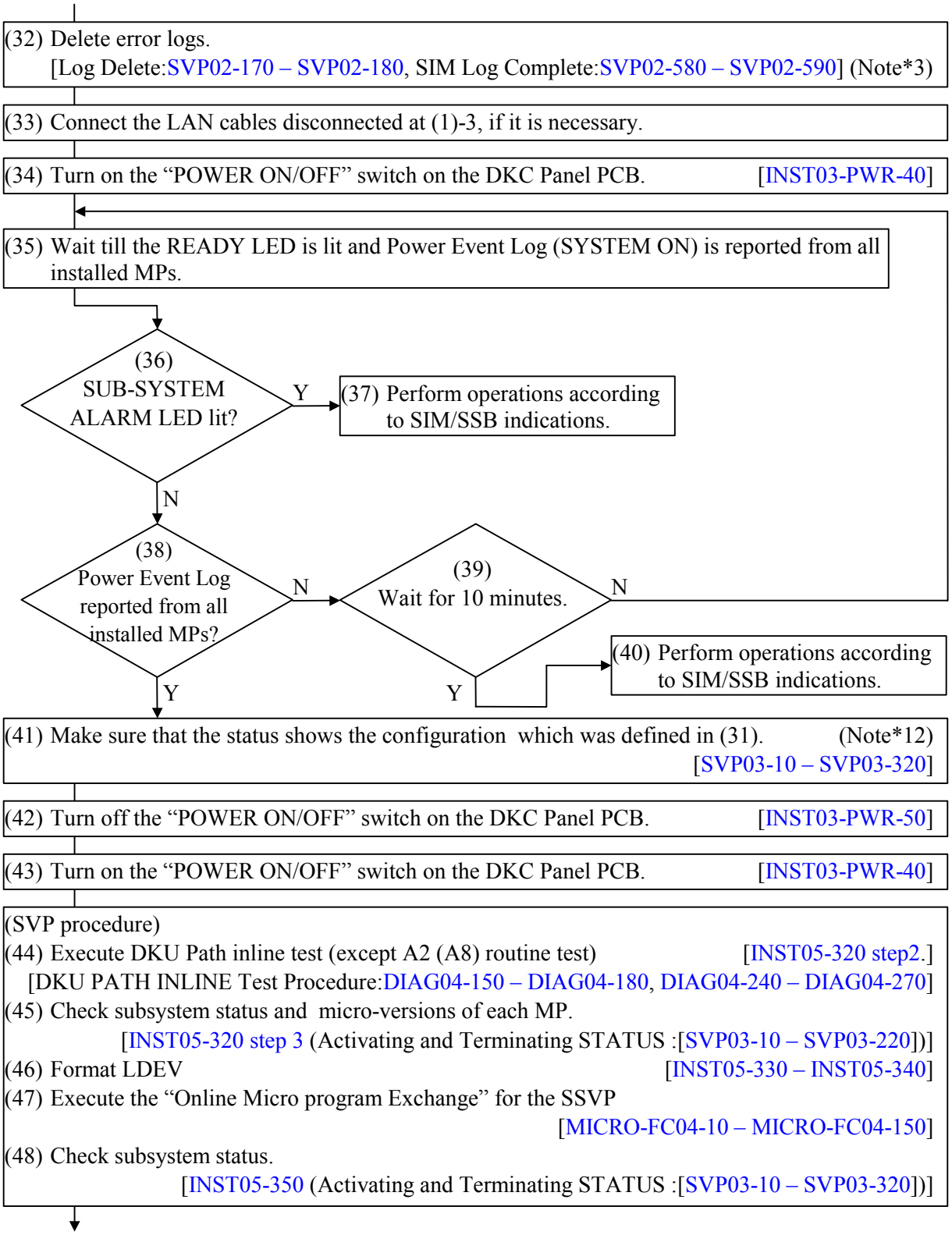
(23) Shut down the SVP and turn off the Breaker (DKU) and pull out the jumper connectors in the BATT CTR PCBs to make the SM volatilize. Then, wait for 10 minutes.
And set them again.
[SVP Shut Down:SVP01-70, Breaker:INST03-PWR-60,
BATT CTR PCBs: LOCATION06-70] (Note *8)

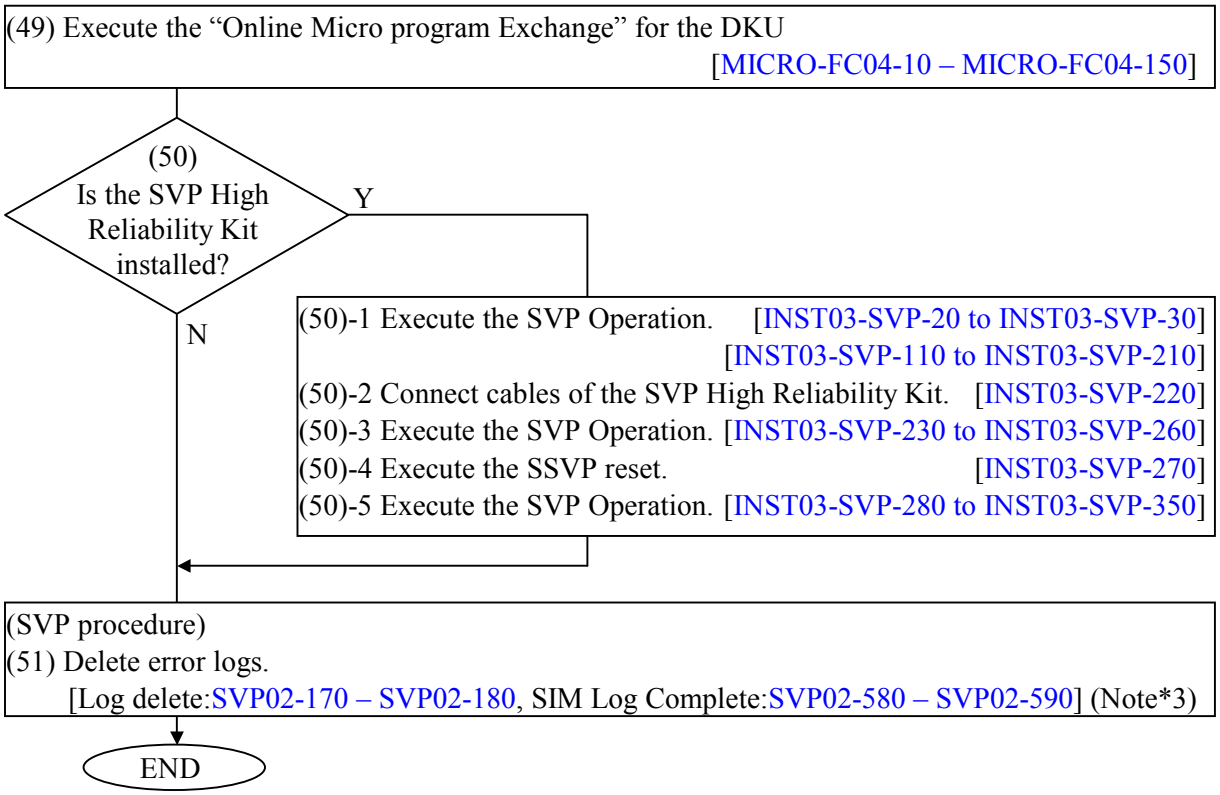
(24) Execute Power ON procedures
(24)-1 Turn on the Breaker DKC and DKU.
[Power ON procedure of Disk Subsystem: INST03-PWR-10]
(24)-2 (SVP procedure)
Wait until the SVP is ready and change the SVP mode to "Initial setup". (Note *10)
(24)-3 The "POWER ON/OFF" switch on the DKC Panel PCB.
[Power ON procedure of Disk Subsystem: INST03-PWR-40]

(25) Wait till Power Event Log (SYSTEM ON) is reported from all installed MPs. (Note *9)



(SVP procedure) -- (Execution of Define Configuration and Install)
(31)-1 Execution of Config Exchange Procedure.
Select the "Install" in the "SVP" window and select "Copy Config Files" in the "Install" window. And select "All Configuration Files" in the "Copy Config Files" window.
[MICRO-FC08-60 – MICRO-FC08-70]
(31)-2 Define the configuration information that you want to install now for this DKC subsystem. Then, the defined size of the Cache and SM DIMM must be equal to ones of the Cache and SM DIMM equipped for the DKC subsystem. (Note *11)
The configuration information must be defined according to the SVP guidance. Especially, you must not forget the definition of the following information.
① DKC Serial No., IP Address. ② Cache Configuration
③ Host Interface Configuration: ex. Serial 4ch, 8GS Fibre 4ch-2mp, etc.
④ PDEVs, LDEVs, etc. [INST05-80 – INST05-280]





Note *1 : The CD-ROM includes the micro-programs to be installed into the DKC subsystem.
And the FD should correspond to the micro-program version.

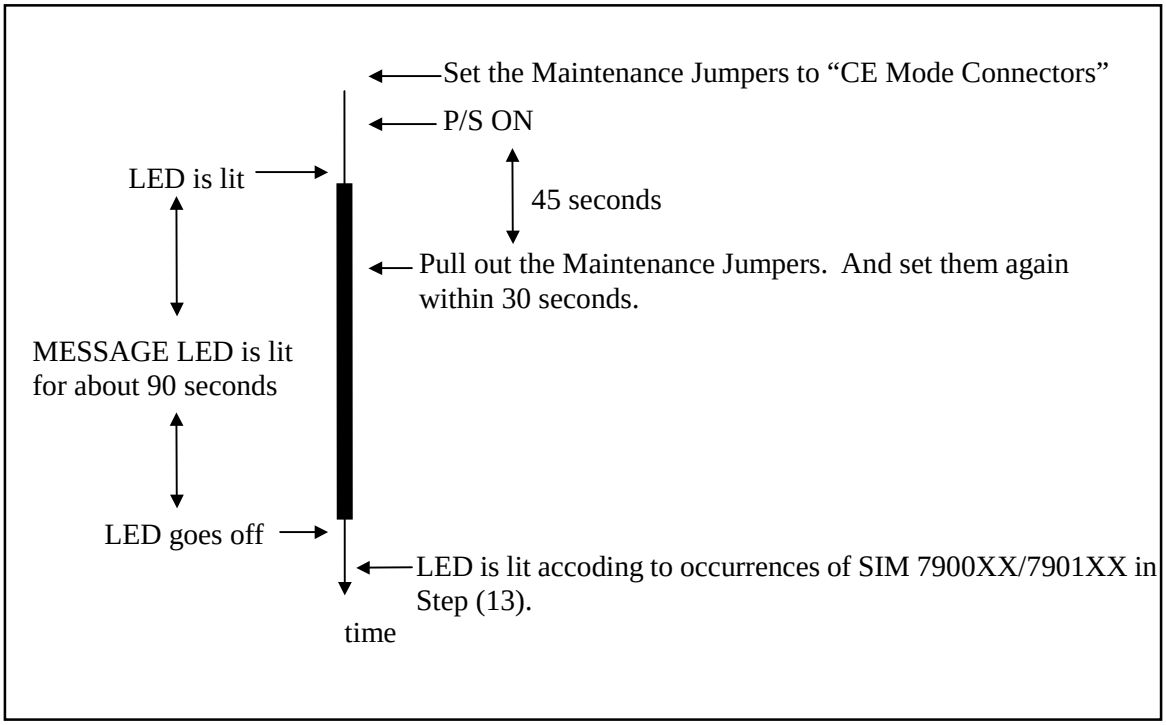
Note *2 : Even if the “IP Address” is “126.255.255.15” and the “Subnet Mask” is “255.0.0.0” on the screen of “Set IP Address”, be sure to select “OK” and reply “OK” to the message “This will reboot SVP.”.

Note *3 : It’s necessary to execute the procedure of “SIM Log Complete” before deleting the SIM data.

Note *4 : Refer to the following about the Maintenance Jumpers.
- “INST02-20 Note *1”

Note *5 : The detail of the jumper operation is as follows.

(1) Turn on the P/S ON switch.
(2) At 45 seconds after (1), pull out the Maintenance Jumpers from the CSW PCBs. Then, MESSAGE LED illuminates. The LED is lighting for about 90 seconds.
(3) Insert the Maintenance Jumpers to the CE Mode connectors (J9) on the CSW PCBs again quickly (within 30 seconds) after pulling out the Jumpers at (2).
Operations (2) and (3) must be executed during the Message LED is lighting.



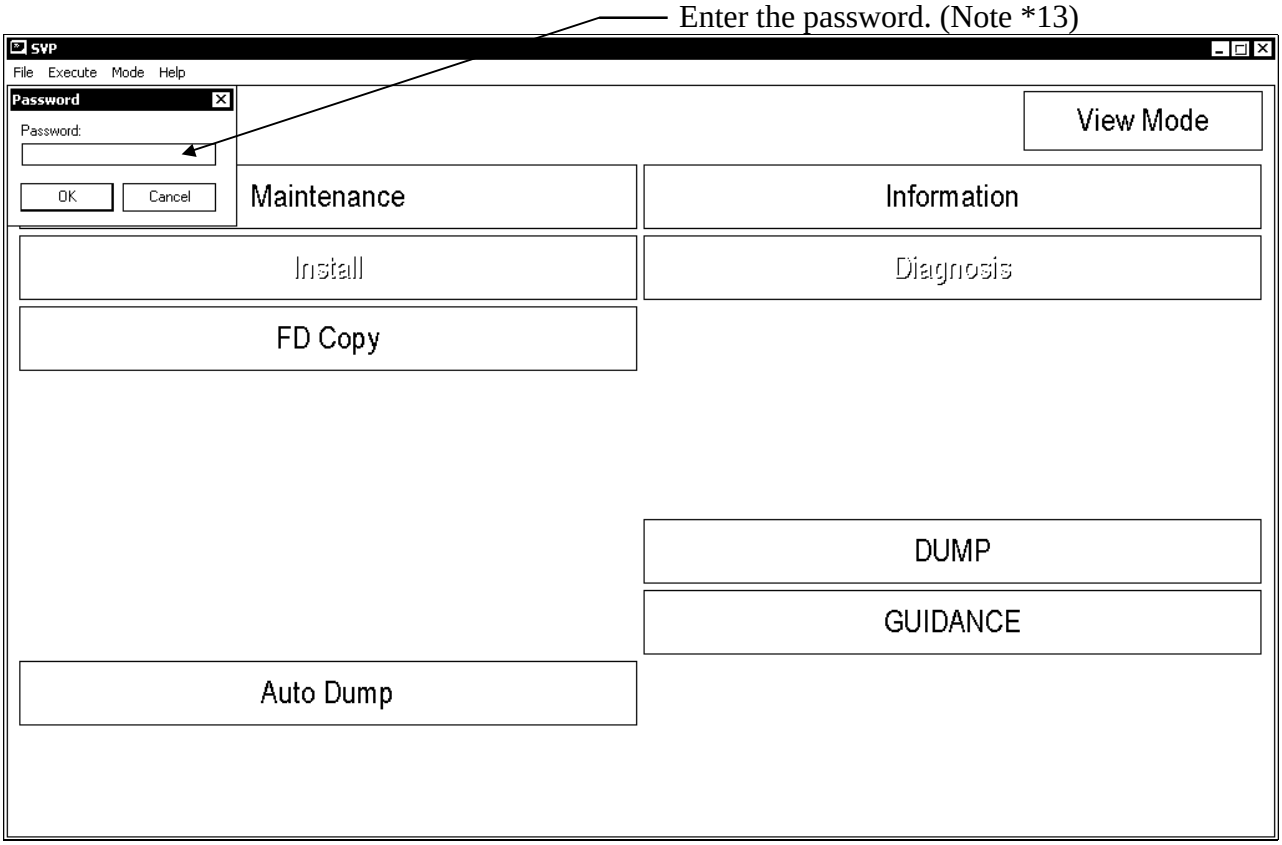
Note *6 : Count SSB Logs (Error Code = 3309). The number is same as the number of the installed MPs.

Note *7 : The procedures of “New Installation” are as follows.

(1) Return to the SVP window.

(2) Press the following keys at the same time to change the mode to “Initial Setting”.
[SHIFT], [CTRL], [I]

(3) Enter the password.
This password must be used only for this procedure. Don’t use for other purposes without approval by the technical support center or the factory.



(4) Select “Install”.

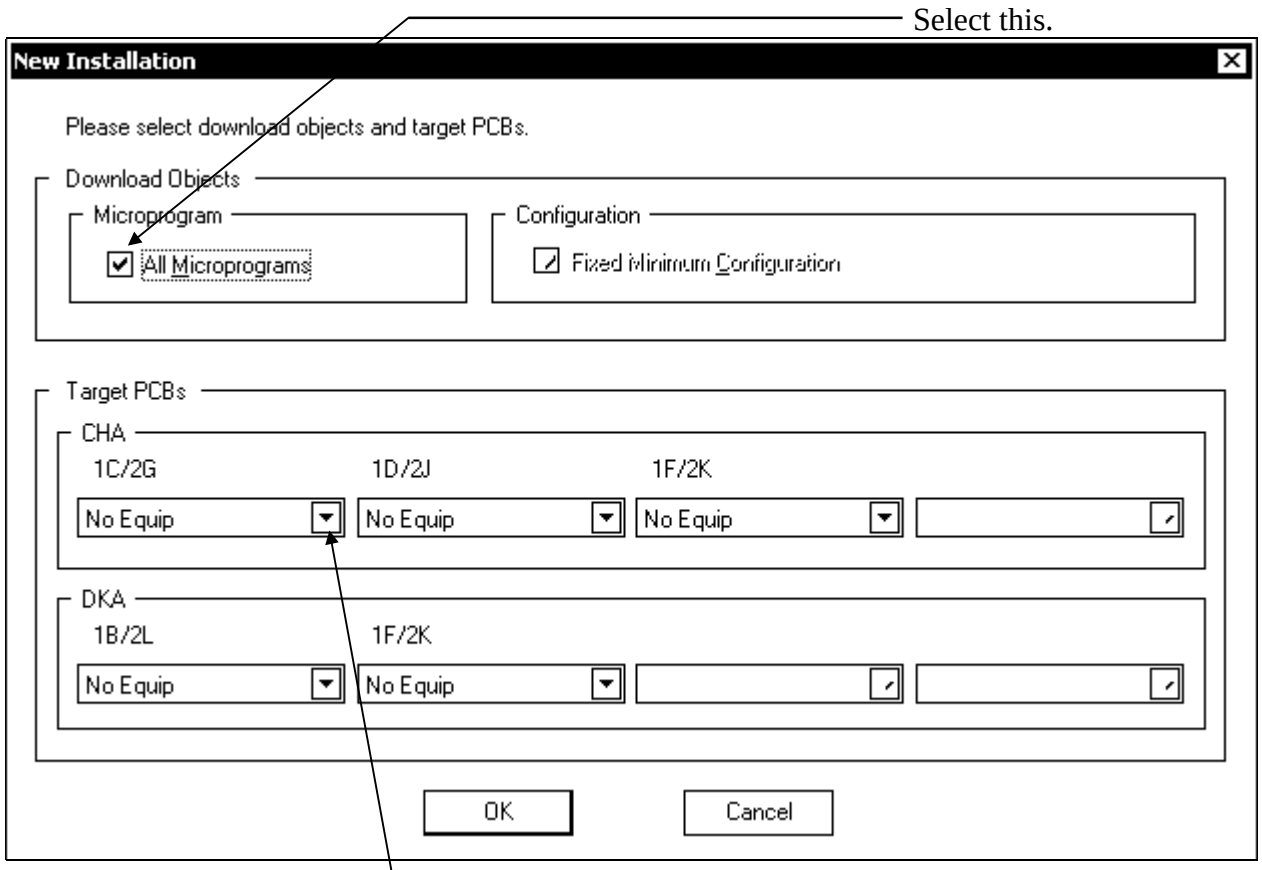
(5) <Install Window>
Select “Micro Program Install”.

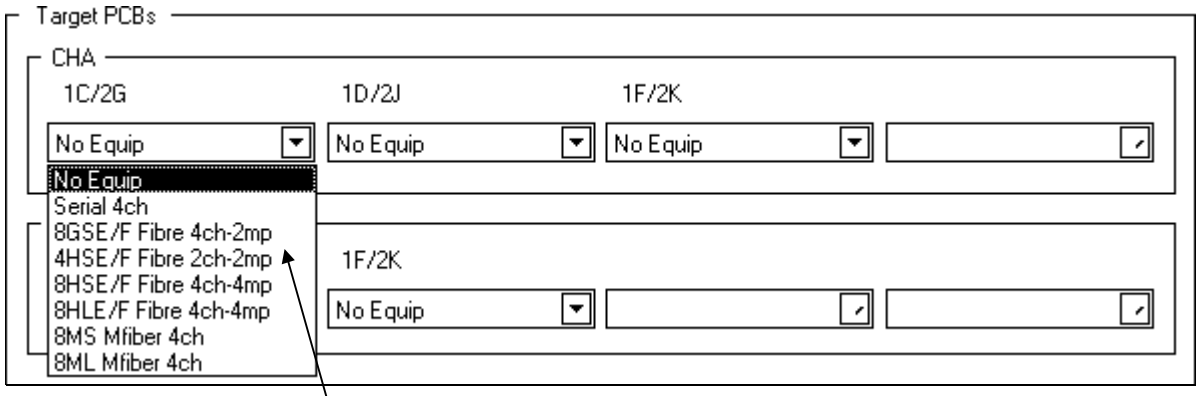
(6) <Menu Dialog Window>
Select “New Installation”.

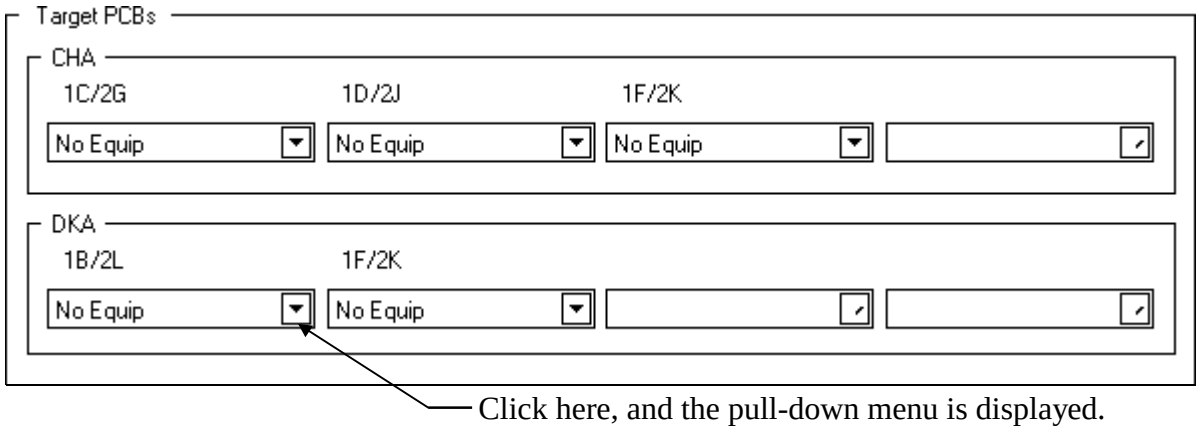
(7) Select “Yes” to the following message.
“Are you sure you want to execute new installation?”

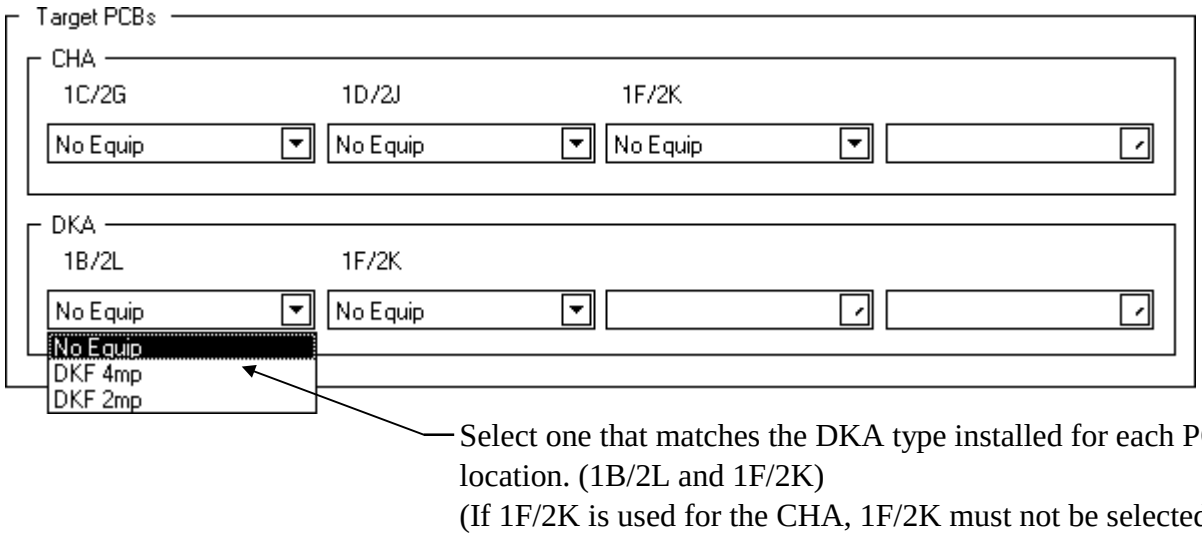
(8) <New Installation PCB configuration Window>
After (7), the following window is displayed. At the window, specify as follows:
① Select “All microprograms”. (“Fixed Minimum Configuration” should be selected automatically.) (Note *14)
② Select the package type (host interface and so on) of the current packages setting in their locations of “CHA” or “DKA”.
③ Select “OK” after finishing the above specifications.

[Example of operations]









(9) The message, “[INS3302i] New installation finished normally.”, is output.
Then, click “OK”, and the “Installation window” is closed.
(Till the message, “[INS3302i] New installation finished normally.”, is output, you must not select “Cancel” in the “Shell Batch Execute Status” window. If “Cancel” is selected, this process is interrupted. If “Cancel” is selected by a mistake operation, try again from (6) of INST02-530.)

Note *8 : The following SIM Logs are output by pulling out the jumper connectors in the BATCTR PCBs.
SIM Logs: bf5010, bf5210, bf5020, bf5220
But you can ignore them.

Note *9 : At this time, the initializing processings of the DKC subsystem are performed by using the minimum configuration. The minimum configuration is the special configuration for the New Installation Procedure (Note *14). So, the READY LED is not lit. Also, the SIM Log (3073XX, 3173XX, 3990XX, 3D90XX and FFE800) may be output if the current configuration is different from the "Fixed Minimum Configuration". But they should be ignored. And you should not select "Maintenance" in "SVP window" until the Define Configuration Procedure is performed at step (31).

Note *10: Press the following keys at the same time to change the mode to "Initial Setting".
[SHIFT], [CTRL], [I]
And input the password. (Note *13)

Note *11: In this definition, specify the actual DKC Serial Number.
Also, "IP Address" should be specified as follows:

① Specifying the IP Address according to the DKC Serial Number Select "Based on Serial Number", and the IP Address will be assigned automatically.

② Specifying the IP Address according to the magic number
Select "Based on Magic Number" and specify a magic number. Then, the IP Address will be assigned automatically.

③ Specifying in option
Select "Specified" and specify the optional address for the IP Address.
And, the defined value for the size of the Cache and SM DIMM should be equal to the value that was confirmed at (1) in the processing flow. After the configuration information is defined, P/S OFF of the DKC and the reboot of the SVP will be executed.

Note *12: Surely, check the following status:
(1) the condition of each PCB status.----- PCB Kind/Normal or not/etc
(2) the micro-program version

Note *13: For the password, ask the technical support center. And use it with their approval.

Note *14: The “Fixed Minimum configuration” is a temporary configuration to unify the condition of the power-on processing in Step (24) and is not concerned with the current configuration. It is used only in “New Installation” procedure.
The following information is defined in the “Fixed Minimum Configuration”.

① Basic DKC Configuration (1C/2G for “CHA”, 1B/2L for “DKA”)
IP Address = 126.255.255.xx
Serial 4ch for Host interface configuration
4mp for the DKA
② Option PCBs Configuration (1D/2J, 1F/2K) : None (No equip)
③ Cache size : 512 MB for each side.
④ SM size : 256 MB for each side.
(DIMM : 128 MB × 2)
⑤ LDEV/PDEV/LCP Configuration : None

2.11 Obstacle part replacement procedure in install

2.11.1 Replacement procedure when PCB could not be restoring

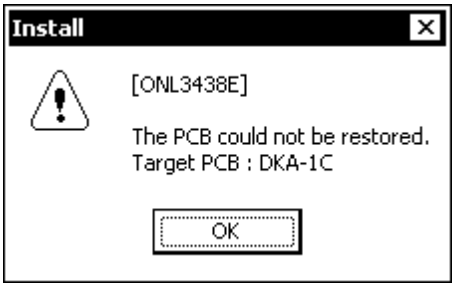
(1)

The following messages are displayed when PCB could not be restoring.

When "The PCB could not be restored because the PCB type was incorrect. Target PCB : ****" is displayed, please check the PCB type. (The target PCB location is displayed on Target PCB : ****.)

Please select(CL) [OK] after a check.

When "The PCB could not be restored. Target PCB : ****" is displayed, please check the PCB. (The target PCB location is displayed on Target PCB : ****.)



Please select(CL) [OK] after a check.

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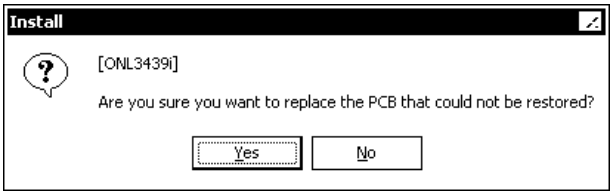
(2)

"Are you sure you want to replace the PCB that could not be restored?" is displayed.

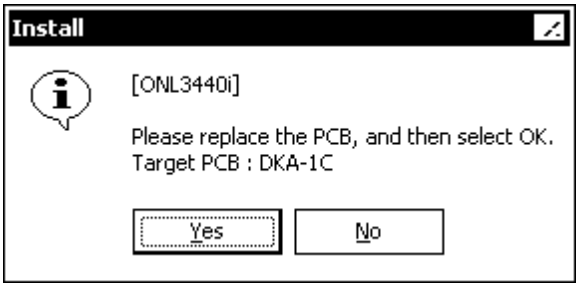


When the maintenance parts to replace exist, please select [Yes]. → Go to (3)
When the maintenance parts to replace do not exist, please select [No] and refer to trouble shooting for errors in install.

---

(3)

"Please replace the PCB, and then select OK. Target PCB : ****" is displayed.
(The target PCB location is displayed on Target PCB : ****.)



Please select OK(CL), after replacing the target PCB.

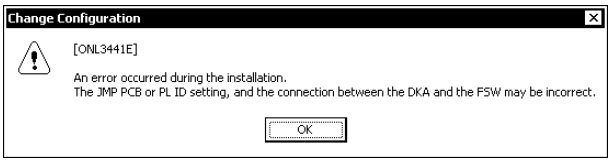
It returns to the former install section.

2.11.2 Replacement procedure when connecting the DKU frame goes wrong

(1)

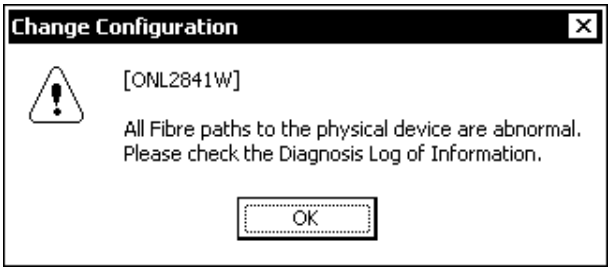
The following messages are displayed when connecting the DKU frame is failed.

When "An error occurred during the installation. The JMP PCB or PL ID setting, and the connection between the DKA and FSW may be incorrect." is displayed, please check the connection of FSW, and a setup of JMP PCB or PL ID.



Please select (CL) [OK] after a check.

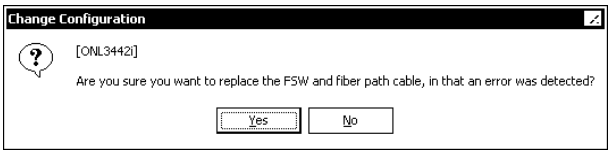
When "All Fibre paths to the physical device are abnormal. Please check the Diagnosis Log of Information." is displayed, please check Diagnosis Log.



Please select (CL) [OK] after a check.

(2)

When "Are you sure you want to replace the FSW and fiber path cable, in that an error was detected?" is displayed, please perform the following operations.

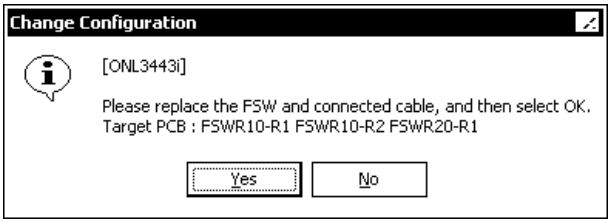


When the maintenance parts to replace exist or connection of a cable is wrong, please select (CL) [Yes]. → Go to (3)
When the cause of install failure cannot be specified, or when a JMP PCB or PL ID setup is wrong, please select (CL) [No] and refer to trouble shooting for errors in install.

When a message is not displayed, refer to trouble shooting for errors in install.

(3)

"Please replace the FSW and connected cable, and then select OK. Target PCB : ****" is displayed and LED of FSW turns it on. (The target FSW PCB location is displayed on Target PCB : ****.)



a) When connection of a cable is right, please the Target FSW and cable connected with it.

b) When connection of a cable is mistaken, please recover in a procedure below.
   (1) Cable is reconnected correctly, the cable connected accidentally additional DKU is removed.
      Note: It is satisfactory even if it removes the FSW cable of both the ports of additional DKU.
      However, don't extract the cable of the existing DKU.
   (2) Dummy replace of the FSW which LED is on of additional DKU.
      Note: FSW which LED is on may differ from displayed Target FSW.
   (3) Dummy replace of the FSW which LED is on of existing DKU.
      Note: Don't pull out FSW and the cable which LED is not on.

Please select (CL) [OK] after ending the above procedure.

It returns to the former install section.