INSTALLATION SECTION

INSTALLATION

1 Subsystem Configuration Outline

1.1 General Information

1.1.1 Model List

(1) Model of DKC460I

Table 1.1.1-1 shows the model list of DKC460I.

Table 1.1.1-1 Model List of DKC460I

No	Model Number	Model Name	Major Part	Remarks
1	DKC460I-5 *1 DKC460I-5F *1 DKC460I-5FE *2 *1: NAS CHA not support model *2: NAS CHA support model	Disk Control Frame Disk Control Frame without doors Disk Control Frame without doors (NAS support Model)	• SVP PC • LR013-A (PS-PL) • LR014-A (SH-PL) • SH302-A(DKC-PANEL) • Special PCB • 3VPS × 4 *1 • 3/12VPS × 4 *2 • 5/3VPS × 4 • SUBPS × 2 • FAN ASSY × 16 *1 • FAN (NAS) ASSY × 16 *2 • LR009-A (L/G-PL) • DKA × 2 • CACHE-A × 2 • CSW × 4 • Battery Assy × 4 • Battery Control × 4 • Device I/F Cable × 16 (DKC – R1-DKU) • Cable Duct ASSY (Power Cable for NAS) *2	DKC460I Disk Subsystem doesn't contain channel adapters, cache memory modules, shared memory modules, AC Box Kit and AC Power cables. It is necessary to attach the following options according to the configuration. • Channel Adapters (CHA) DKC-F460I-8S/8GS/ 4HSE/8HSE/8HLE/8MS/8ML/ 16HSF • NAS CHA DKC-F460I-4NS • Cache Memory Modules DKC-F460I-2048 • Shared Memory Modules DKC-F460I-S512 • AC Box Kit DKC-F460I-1PS/3PS/1PSD/3PSD • AC Power cables DKC-F460I-1EC/1UC/ 1ECD/1UCD/3ECD/3UCD
2	DKC-F460I-1PS	AC Box Kit for Single Phase/40A	• AC Box × 2	
3	DKC-F460I-1EC	Power Cable Kit for Single Phase/50A (50Hz for Europe)	• Power Cable Unit (IE)	
4	DKC-F460I-1UC	Power Cable Kit for Single Phase/50A (60Hz for USA)	• Power Cable Unit (IU)	
5	DKC-F460I-3PS	Breaker Box Kit for 3 Phase	• Breaker Box × 2	
6	DKC-F460I-1PSD	AC Box Kit for Single Phase /30A	• AC Box × 2	
7	DKC-F460I-1ECD	Power Cable Kit for Single Phase/30A (50Hz for Europe)	• Power Cable Unit (IE)	
8	DKC-F460I-1UCD	Power Cable Kit for Single Phase/30A (60Hz for USA)	• Power Cable Unit (IU)	
9	DKC-F460I-3PSD	AC Box Kit for 3 Phase/30A	• AC Box × 2	

(To be continued)

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No	Model Number	Model Name	Major Part	Remarks
10	DKC-F460I-3ECD	Power Cable Kit for 3 Phase/ 30A (50Hz for Europe)	• Power Cable Unit (IE)	
11	DKC-F460I-3UCD	Power Cable Kit for 3 Phase/ 30A (60Hz for USA)	• Power Cable Unit (IU)	
12	DKC-F460I-80	DKC Additional Power Supply	• 3VPS × 4	This model must be installed when the total number of the installation of CHA and DKA options are 4 or more.
13	DKC-F460I-41	Cache Access Throughput Expansion Kit	• Cache-B × 2	This model must be installed when access performance to the cache memory is expanded in two times.
14	DKC-F460I-42	Additional Battery for Cache Memory	• Battery Assy × 2 • Battery Control × 2	This model must be installed when the cache memory is installed 34GB or more
15	DKC-F460I-2048	Additional Cache Memory Module (2048 MB)	• SH288-B (512 MB) × 4	
16	DKC-F460I-S512	Additional Shared Memory Module (512 MB)	• SH287-B (256 MB) × 2	
17	DKC-F460I-200	Additional High Performance Disk Adapter	• WP471-B × 2 SH281-B × 4	
18	DKC-F460I-18	PCI I/F Connector	• PCI I/F Con.	
19	DKC-F460I-UPS	UPS Connection Kit	• DKC Panel • UPS CON	
20	DKC-F460I-SVP	SVP High Reliability Kit	• SVP	
21	DKC-F460I-L1C	Device Interface Cable 1	• FC Cable × 16 • LED Cable × 16	

(To be continued)

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No	Model Number	Model Name	Major Part	Remarks
22	DKC-F460I-U405R	DKU405 Connection Kit (for R1 DKU)	• MONI Cable (R1) × 2 • MONI CON × 2 • DEV I/F cable, CAP	
23	DKC-F460I-U405L	DKU405 Connection Kit (for L1 DKU)	• MONI Cable (L1) × 2 • MONI CON × 2 • DEV I/F cable, CAP	
24	DKC-F460I-8S	Serial 8-port Adapter	• WP462-A, SH281-C × 4] × 2 • I/F Con. Panel	
25	DKC-F460I-8GSE	Fibre 8-port Adapter for Short Wavelength (1Gbps support)	• WP461-D, SH281-A × 2] × 2 • I/F Con. Panel	
26	DKC-F460I-4HSE	Fibre 4-port Adapter for Short Wavelength (1-2Gbps support)	• WP461-E, SH281-A × 2] × 2 • I/F Con. Panel	
27	DKC-F460I-8HSE	Fibre 8-port Adapter for Short Wavelength (1-2Gbps support)	• WP461-B, SH281-A × 4] × 2 • I/F Con. Panel	
28	DKC-F460I-8HLE	Fibre 8-port Adapter for Long Wavelength (1-2Gbps support)	• WP461-C, SH281-A × 4] × 2 • I/F Con. Panel	
29	DKC-F460I-8MS	Mainframe Fibre 8-port Adapter for Short Wavelength (1-2Gbps support)	• WP465-A, SH281-A × 4] × 2 • I/F Con. Panel	
30	DKC-F460I-8ML	Mainframe Fibre 8-port Adapter for Long Wavelength (1-2Gbps support)	• WP465-B, SH281-A × 4] × 2 • I/F Con. Panel	
31	DKC-F460I-256M	256MB Additional Memory for SVP	• Additional SVP Memory × 2	
32	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
33	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
34	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
35	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
36	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

(To be continued)

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No	Model Number	Model Name	Major Part	Remarks
37	DKC-F460I-DH	Door Kit for Lightning 9980V	• Front and Rear doors • Side doors	
38	DKC-F460I-DS	Door Kit for StorEdge 9980V	• Front and Rear doors • Side doors	
39	DKC-F460I-4NS	NAS 4-port Adapter for SX (1.25Gbps support)	• WP467-A × 1, SH281-D × 2] × 2 • I/F Con. Panel	
40	DKC-F460I-NENB	NAS Enable kit for MC model	• 3/12VPS ×4 • FAN(NAS) ASSY × 16 • Cable Duct Assy	
41	DKC-F460I-NAPS	NAS Available Power Supply	• 3/12VPS × 4	Note1
42	DKC-F460I-8SE	Serial 8-port Adapter	• WP468-A × 1, SH281-C × 4] × 2 • I/F Con. Panel	This model can be installed also in the DKA locations.
43	DKC-F460I-8IS	iSCSI 8-port Adapter for Short Wavelength (1.25Gbps support)	• WP466-A × 1, SH281-D × 4] × 2 • I/F Con. Panel	
44	DKC-F460I-4096	Additional Cache Memory Module (4096MB)	• SH288-C (1024MB) × 4	
45	DKC-F460I-S1024	Additional Shared Memory Module (1024MB)	• SH287-C (512MB) × 2	

Note1: The NAS Available Additional Power Supply (DKC-F460I-NAPS) is indispensable option in the following case.

a: When the total numbers of the installation of CHA and DKA option are 4 or more.

b: When NAS CHA is installed in the CHA slot of 3rd CHA (Add.2) or 4th CHA (Add.3). (Even when the total number of the CHA/DKA options does not exceed four sets, the A/H-F65A2-NAPS must be installed if the NAS CHA is to be installed as the 3rd CHA or 4th CHA.)

c: When DKC-F460I-80 is installed in the existing DKC which adds NAS CHA. In this case, DKC-F460I-80 is exchanged for DKC-F460I-NAPS.

This model is applicable also to NAS CHA not support model.

(2) Model of DKU455I

Table 1.1.1-2 shows the model list of DKU455I.

Table 1.1.1-2 Model List of DKU455I

No	Model Number	Model Name	Major Part	Remarks
1	DKU455I-18 DKU455I-18F	Disk Array Frame Disk Array Frame without doors	• HDU Box × 8 • HDD PL × 8 • HDD-PS PL × 8 • FSW-A × 16 • FSW-B × 16 • FAN ASSY × 4 • 5/12V PS × 16 • JMP PK × 32	DKU455I Disk Unit doesn't contain AC Box Kit, AC Power cables and HDD canisters.
2	DKU-F455I-1PS	AC Box Kit for Single Phase/ 50A	• AC Box × 2	
3	DKU-F455I-1EC	Power Cable Kit for Single Phase/50A (50Hz for Europe)	• Power Cable Unit (IE)	
4	DKU-F455I-1UC	Power Cable Kit for Single Phase/50A (60Hz for USA)	• Power Cable Unit (IU)	
5	DKU-F455I-3PS	AC Box Kit for 3 Phase/60A	• AC Box × 2	
6	DKU-F455I-3EC	Power Cable Kit for 3 Phase/ 60A (50Hz for Europe)	• Power Cable Unit (IE)	
7	DKU-F455I-3UC	Power Cable Kit for 3 Phase/ 60A (60Hz for USA)	• Power Cable Unit (IU)	
8	DKU-F455I-1PSD	AC Box Kit for Single Phase/ 30A	• AC Box × 2	
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	DKU-F455I-3PSD	AC Box Kit for 3 Phase/30A	• AC Box × 2	
12	DKC-F460I-3ECD	Power Cable Kit for 3 Phase /30A (50Hz for Europe)	• Power Cable Unit (IE)	
13	DKC-F460I-3UCD	Power Cable Kit for 3 Phase /30A (60Hz for USA)	• Power Cable Unit (IU)	
14	DKU-F455I-EXC	Device Interface Cable 2	• FC Cable × 16 • LED Cable × 16	
15	DKU-F455I-36K4	4 HDD Canisters	• DKS2B/DKS2C-K36FC × 4	
16	DKU-F455I-36K1	1 HDD Canister	• DKS2B/DKS2C-K36FC × 1	
17	DKU-F455I-72J4	4 HDD Canisters	• DKR2D/DKR2E-J72FC × 4	
18	DKU-F455I-72J1	1 HDD Canister	• DKR2D/DKR2E-J72FC × 1	
19	DKU-F455I-72K4	4 HDD Canisters	• DKS2C-K72FC × 4	
20	DKU-F455I-72K1	1 HDD Canister	• DKS2C-K72FC × 1	
21	DKU-F455I-146J4	4 HDD Canisters	• DKR2E-J146FC × 4	
22	DKU-F455I-146J1	1 HDD Canister	• DKR2E-J146FC × 1	
23	DKU-F455I-146JF	4 HDD Canisters	• DKR2E/DKS2C-J146FC × 4	
24	DKU-F455I-146JS	1 HDD Canister	• DKR2E/DKS2C-J146FC × 1	
25	DKU-F455I-146JQ	4 HDD Canisters	• DKS2C-J146FC × 4	
26	DKU-F455I-146JM	1 HDD Canister	• DKS2C-J146FC × 1	
27	DKU-F455I-DH	Door Kit for Lightning 9980V	• Front and Rear doors	
28	DKU-F455I-DS	Door Kit for StorEdge 9980V	• Front and Rear doors	

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

(3) Model of DKU405I

Table 1.1.1-3 shows the model list of DKU405I.

Table 1.1.1-3 Model List of DKU405I

No	Model Number	Model Name	Major Part	Remarks
1	DKU405I-14	Disk Unit	• SH224-A × 2 • HDU Box × 4 • LP007-A × 4 • SH217-A × 8 • FAN ASSY × 4 • 5/12V PS × 8	The basic part of Disk Unit has no HDD canister.
2	DKU-F405I-B4	Platform for Canister Mount	• HDU Box × 4 • LP007-A × 4 • SH217-A × 8 • FAN ASSY × 4 • 5/12V PS × 8	
3	DKU-F405I-EXC	DEV I/F Cable 2 (DKU-DKU)	• FC Cable × 16 • LED Cable × 16	
4	DKU-F405I-18J4	4 HDD Canisters	• DKR2B/DKR2C/DKR2D-J18FC or DKR2D/DKR2E-J18FD × 4	
5	DKU-F405I-18J1	1 HDD Canister	• DKR2B/DKR2C/DKR2D-J18FC or DKR2D/DKR2E-J18FD × 1	
6	DKU-F405I-18K4	4 HDD Canisters	• DKS2A-K18FC × 4	
7	DKU-F405I-18K1	1 HDD Canister	• DKS2A-K18FC × 1	
8	DKU-F405I-36K4	4 HDD Canisters	• DKS2B/DKS2C-K36FC × 4	
9	DKU-F405I-36K1	1 HDD Canister	• DKS2B/DKS2C-K36FC × 1	
10	DKU-F405I-47J4	4 HDD Canisters	• DKR1B/DKR1C-J47FC or DKR2D/DKR2E-J47FD × 4	
11	DKU-F405I-47J1	1 HDD Canister	• DKR1B/DKR1C-J47FC or DKR2D/DKR2E-J47FD × 1	
12	DKU-F405I-72J4	4 HDD Canisters	• DKR1C/DKR2D/DKR2E-J72FC × 4	
13	DKU-F405I-72J1	1 HDD Canister	• DKR1C/DKR2D/DKR2E-J72FC × 1	
14	DKU-F405I-72K4	4 HDD Canisters	• DKS2C-K72FC × 4	
15	DKU-F405I-72K1	1 HDD Canister	• DKS2C-K72FC × 1	
16	DKU-F405I-146J4	4 HDD Canisters	• DKR2E-J146FC × 4	
17	DKU-F405I-146J1	1 HDD Canister	• DKR2E-J146FC × 1	
18	DKU-F405I-180H4	4 HDD Canisters	• DKS1A-H180FC × 4	
19	DKU-F405I-180H1	1 HDD Canister	• DKS1A-H180FC × 1	
20	DKU-F405I-3EC	Power Cable Kit (for 3 phase model for Europe)	• Power Cable Unit (IE)	
21	DKU-F405I-3UC	Power Cable Kit (for 3 phase model for USA)	• Power Cable Unit (IU)	
22	DKU-F405I-1EC	Power Cable Kit (for Single phase model for Europe)	• Power Cable Unit (IE)	
23	DKU-F405I-1UC	Power Cable Kit (for Single phase model for USA)	• Power Cable Unit (IU)	
24	DKU-F405I-3PS	AC Box Kit for 3 phase	• AC Box × 2	
25	DKU-F405I-1PS	AC Box Kit for Single phase	• AC Box × 2	

SVP displays each drive model as the following table.

Disk drive model	SVP screen
DKR2B-J18FC	DKR2B-J018FC
DKR2C-J18FC	DKR2C-J018FC
DKR2D-J18FC	DKR2D-J018FC
DKR2D-J18FD	
DKR2E-J18FD	DKR2E-J018FC
DKR2F-J18FD	DKR2F-J018FC
DKS2A-K18FC	DKS2A-K018FC
DKS2B-K36FC	DKS2B-K036FC
DKS2C-K36FC	DKS2C-K036FC
DKR1B-J47FC	DKR1B-J047FC
DKR1C-J47FC	DKR1C-J047FC
DKR2D-J47FD	DKR2D-J047FC
DKR2E-J47FD	DKR2E-J047FC
DKR2F-J47FD	DKR2F-J047FC
DKR1C-J72FC	DKR1C-J072FC
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
DKS1A-H180FC	DKS1A-H180FC

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 and maximum Cache Memory capacity with using HMRCF/HOMRCF/HRC/HORC/HIHSM/ShadowImage-FlashCopy® version2 functions is different from ones without using these functions.

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

(2) When using the ShadowImage-FlashCopy® version2 function, refer to Table 1.1.2.3-3, Table 1.1.2.3-6, or Table 1.1.2.3-11.

(3) Refer to Table1.1.2.3-1, Table1.1.2.3-4 and Table 1.1.2.3-9 in these functions non-use.

1.1.2.1 Shared memory capacity and number of necessary options

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

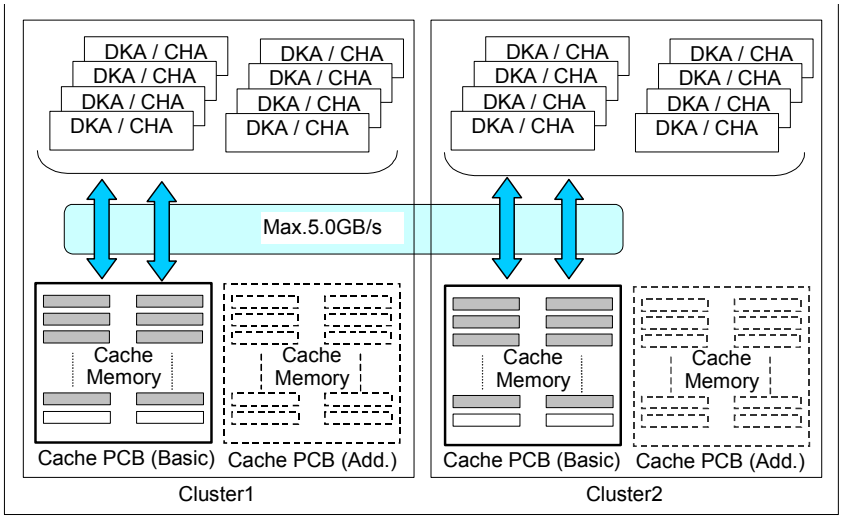
Table 1.1.2.1-1 Shared memory capacity and number of necessary options

Shared memory Capacity	Number of options	
	DKC-F460I-S512	DKC-F460I-S1024
512MB	1	-
1,024MB	2	1
1,536MB	3	-
2,048MB	4	2
2,560MB	5	-
3,072MB	6	3
4,096MB	-	4
5,120MB	-	5
6,144MB	-	6

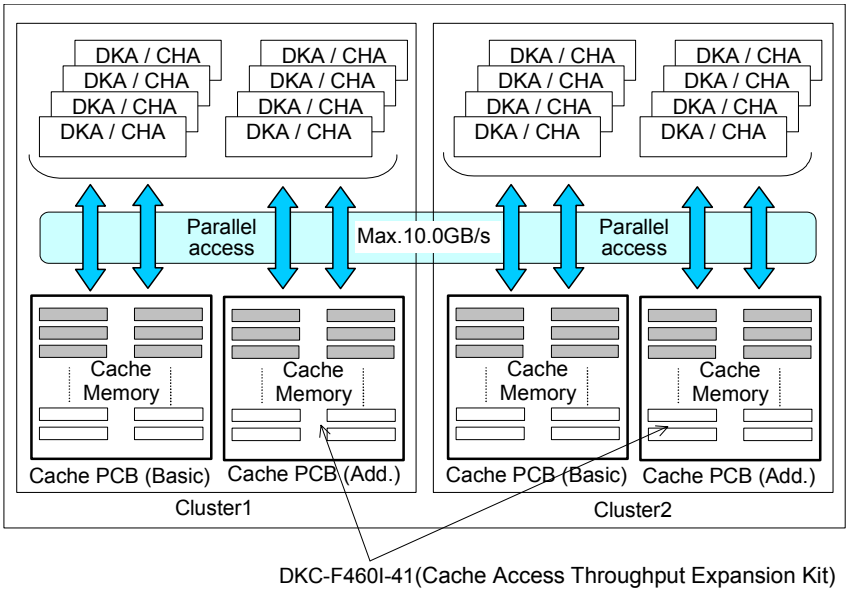
Note: Please note that location of shared memory module varies according to the purpose such as additional cache installation or additional LDEV installation.
(Refer to table 1.1.2.3-1 and 1.1.2.3-2)

1.1.2.2 Cache memory capacity and number of necessary options

There are two types of cache memory upgrade. The first one is called Standard Model Installation in which firstly Basic PCB fully is installed then additional PCB (DKC-F460I-41) is installed. The second one is High Performance Model installation in which Basic PCB and additional PCB (DKC-F460I-41) are installed parallels.
RAID450 improves the 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. RAID450 is realized the data transfer speed of the maximum 10.0GB/s when the DKC-F460I-41 (Cache Access Throughput Expansion Kit) is installed and cache memory capacity is installed 8GB or more.



Standard Model installation



High Performance Model installation

(1) Composition of only DKC-F460I-2048
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 (DKC-F460I-2048 only installed)

Cache Memory Capacity	Standard Model				High Performance Model				DKC-F460I-42 Additional Battery
	DKC-F460I-2048			DKC-F460I-41	DKC-F460I-2048			DKC-F460I-41	
	Install PCB		Total		Install PCB		Total		
	Basic PCB	Add. PCB			Basic PCB	Add. PCB			
2GB	1	0	1	0	-	-	-	-	0
4GB	2	0	2	0	1	1	2	1	0
6GB	3	0	3	0	-	-	-	1	0
8GB	4	0	4	0	2	2	4	1	0
10GB	5	0	5	0	-	-	-	1	0
12GB	6	0	6	0	3	3	6	1	0
14GB	7	0	7	0	-	-	-	1	0
16GB	8	0	8	0	4	4	8	1	0
18GB	9	0	9	0	-	-	-	1	0
20GB	10	0	10	0	5	5	10	1	0
22GB	11	0	11	0	-	-	-	1	0
24GB	12	0	12	0	6	6	12	1	0
26GB	13	0	13	0	-	-	-	1	0
28GB	14	0	14	0	7	7	14	1	0
30GB	15	0	15	0	-	-	-	1	0
32GB	16	0	16	0	8	8	16	1	0
34GB	16	1	17	1	-	-	-	1	1
36GB	16	2	18	1	9	9	18	1	1
38GB	16	3	19	1	-	-	-	1	1
40GB	16	4	20	1	10	10	20	1	1
42GB	16	5	21	1	-	-	-	1	1
44GB	16	6	22	1	11	11	22	1	1
46GB	16	7	23	1	-	-	-	1	1
48GB	16	8	24	1	12	12	24	1	1
50GB	16	9	25	1	-	-	-	1	1
52GB	16	10	26	1	13	13	26	1	1
54GB	16	11	27	1	-	-	-	1	1
56GB	16	12	28	1	14	14	28	1	1
58GB	16	13	29	1	-	-	-	1	1
60GB	16	14	30	1	15	15	30	1	1
62GB	16	15	31	1	-	-	-	1	1
64GB	16	16	32	1	16	16	32	1	1

Note: A cache memory can't be set up in the '–' mark.
High performance model is effective when the cache memory is installed 8GB or more, and recommend the addition of 8GB.

(2) Composition of only DKC-F460I-4096
Cache memory capacities and corresponding number of options required are shown in Table 1.1.2.2-2.

Table 1.1.2.2-2 Cache memory upgrade table (DKC-F460I-4096 only installed)

Cache Memory Capacity	Standard Model				High Performance Model				DKC-F460I-42 Additional Battery
	DKC-F460I-4096			DKC-F460I -41	DKC-F460I-4096			DKC-F460I -41	
	Install PCB		Total		Install PCB		Total		
	Basic PCB	Add. PCB			Basic PCB	Add. PCB			
4GB	1	0	1	0	-	-	-	-	0
8GB	2	0	2	0	1	1	2	1	0
12GB	3	0	3	0	-	-	-	1	0
16GB	4	0	4	0	2	2	4	1	0
20GB	5	0	5	0	-	-	-	1	0
24GB	6	0	6	0	3	3	6	1	0
28GB	7	0	7	0	-	-	-	1	0
32GB	8	0	8	0	4	4	8	1	0
36GB	9	0	9	0	-	-	-	1	0
40GB	10	0	10	0	5	5	10	1	0
44GB	11	0	11	0	-	-	-	1	0
48GB	12	0	12	0	6	6	12	1	0
52GB	13	0	13	0	-	-	-	1	0
56GB	14	0	14	0	7	7	14	1	0
60GB	15	0	15	0	-	-	-	1	0
64GB	16	0	16	0	8	8	16	1	0
68GB	16	1	17	1	-	-	-	-	1
72GB	16	2	18	1	9	9	18	1	1
76GB	16	3	19	1	-	-	-	1	1
80GB	16	4	20	1	10	10	20	1	1
84GB	16	5	21	1	-	-	-	1	1
88GB	16	6	22	1	11	11	22	1	1
92GB	16	7	23	1	-	-	-	1	1
96GB	16	8	24	1	12	12	24	1	1
100GB	16	9	25	1	-	-	-	1	1
104GB	16	10	26	1	13	13	26	1	1
108GB	16	11	27	1	-	-	-	1	1
112GB	16	12	28	1	14	14	28	1	1
116GB	16	13	29	1	-	-	-	1	1
120GB	16	14	30	1	15	15	30	1	1
124GB	16	15	31	1	-	-	-	1	1
128GB	16	16	32	1	16	16	32	1	1

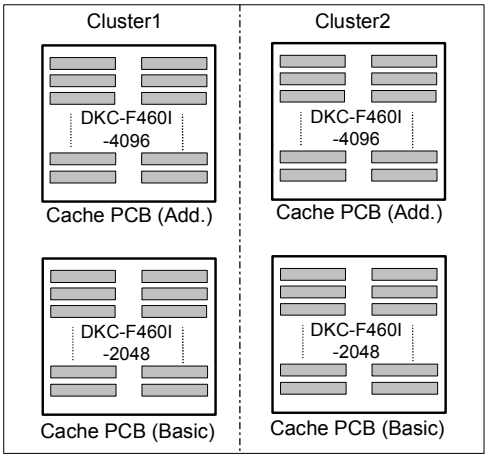
Note: A cache memory can't be set up in the '–' mark.
High performance model is effective when the cache memory is installed 16GB or more, and recommend the addition of 16GB.
When cache memory capacity is 64GB or less, refer to the table 1.1.2.2-1.

(3) Intermix composition of DKC-F460I-2048 and DKC-F460I-4096

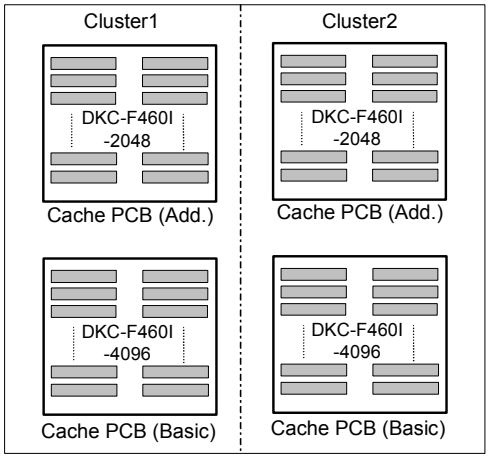
Mixed installation with DKC-F460I-2048 and DKC-F460I-4096 within one Cache PCB is not supported.

Intermixing different cache PCBs which have different size of DIMM is supported.

Two patterns of intermixing configuration shown in the following figure are supported.



Pattern 1:
Basic Cache PCB installed only DKC-F460I-2048.
Additional Cache PCB installed only DKC-F460I-4096.



Pattern2:
Basic Cache PCB installed only DKC-F460I-4096.
Additional Cache PCB installed only DKC-F460I-2048.

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, 1.1.2.3-4 or 1.1.2.3-9 when none of the functions is supported (in the case of basic configuration) or Table 1.1.2.3-2, 1.1.2.3-5 or 1.1.2.3-10 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, 1.1.2.3-6, or 1.1.2.3-11.

(1) Composition of only DKC-F460I-2048

Table 1.1.2-3-1 Size of Cache Memory and Shared Memory
(HRC/HORC/HMRCF/HOMRCF/HIHSM/ShadowImage-FlashCopy® version2 not supported)

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

Note. *1: Location ①-⑥ shows actual location of shared memory module on Cache PCB. (Refer to Fig. 1.1.2.3-1)

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

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

*4: When DKU405I is connected to DKC460I.

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

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

Note. *1: Location ①-⑥ shows actual location of shared memory module on Cache PCB. (Refer to Fig. 1.1.2.3-1)
A shared memory can't be set up in the '–' mark.

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

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

*4: When DKU405I is connected to DKC460I.

Table 1.1.2.3-3 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 & TPF (to 8192LDEV)		
	SM (MB)	S512	Install loc. *1	SM (MB)	S512	Install loc. *1	SM (MB)	S512	Install loc. *1	SM (MB)	S512	Install loc. *1
2GB	1536	3	③①④	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤
4GB	1536	3	③①④	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤
6GB	1536	3	③①④	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤
8GB	1536	3	③①④	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤
10GB	2048	4	③①④⑤	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤
12GB	2048	4	③①④⑤	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤
14GB	2048	4	③①④⑤	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤
16GB	2048	4	③①④⑤	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①②④⑤
18GB	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
20GB	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
22GB	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
24GB	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
26GB	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
28GB	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
30GB	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
32GB	2048	4	③①④⑤	2048	4	③①④⑤	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
34GB	2048	4	③①④⑤	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
36GB	2048	4	③①④⑤	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
38GB	2048	4	③①④⑤	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
40GB	2048	4	③①④⑤	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
42GB	2048	4	③①④⑤	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
44GB	2048	4	③①④⑤	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
46GB	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
48GB	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
50GB	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
52GB	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
54GB	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
56GB	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
58GB	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	3072	6	③①②④⑤⑥
60GB	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	-	-	-	-	-	-
62GB	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	-	-	-	-	-	-
64GB	2560	5	③①④⑤⑥	2560	5	③①④⑤⑥	-	-	-	-	-	-
Subsystem Capacity *2	to 18TB			to 72TB			to 144TB			over 144TB		
Number of HDD Canister Options *3	DKU-F455I-36K4: 128 DKU-F455I-72J4/K4: 64 DKU-F455I-146J4/JF/JQ: 32 DKU-F405I-18J4: 256 *4 DKU-F405I-47J4: 98 *4 DKU-F405I-72J4/K4: 64 *4 DKU-F405I-180H4: 24 *4			DKU-F455I-36K4: 256 DKU-F455I-72J4/K4: 256 DKU-F455I-146J4/JF/JQ: 128 DKU-F405I-18J4: 256 *4 DKU-F405I-47J4: 256 *4 DKU-F405I-72J4/K4: 256 *4 DKU-F405I-180H4: 96 *4			DKU-F455I-36K4: 256 DKU-F455I-72J4/K4: 256 DKU-F455I-146J4/JF/JQ: 256 DKU-F405I-18J4: 256 *4 DKU-F405I-47J4: 256 *4 DKU-F405I-72J4/K4: 256 *4 DKU-F405I-180H4: 128 *4			DKU-F455I-36K4: 256 DKU-F455I-72J4/K4: 256 DKU-F455I-146J4/JF/JQ: 256 DKU-F405I-18J4: 256 *4 DKU-F405I-47J4: 256 *4 DKU-F405I-72J4/K4: 256 *4 DKU-F405I-180H4: 128 *4		

Note. *1: Location ①-⑥ shows actual location of shared memory module on Cache PCB. (Refer to Fig. 1.1.2.3-1)
A shared memory can't be set up in the '–' mark.

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

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

*4: When DKU405I is connected to DKC460I.

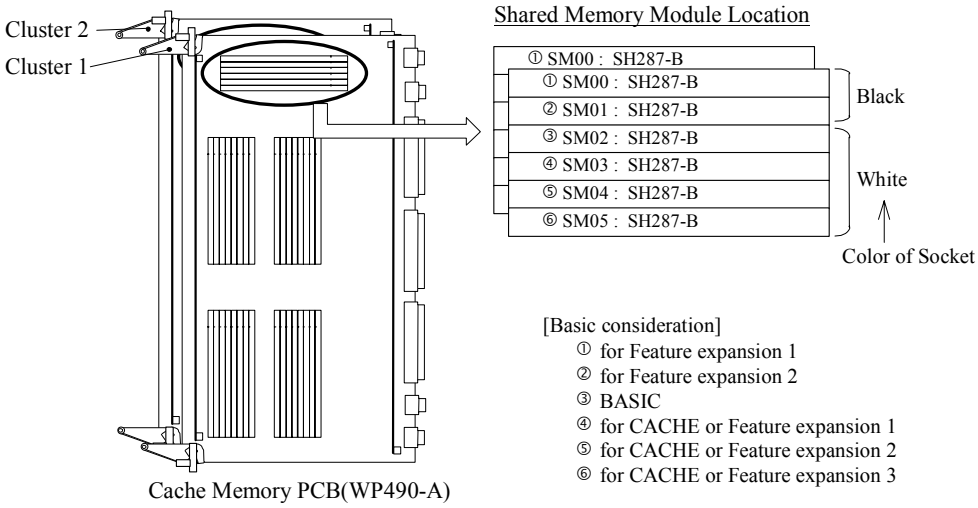


Fig. 1.1.2.3-1 Location of shared memory module

(2) Composition of only DKC-F460I-4096

Table 1.1.2.3-4 Size of Cache Memory and Shared Memory (HRC/HORC/HMRCF/ HOMRCF/HIHSM/ShadowImage-FlashCopy® version2 not supported)

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

Note. *1: Location ①-④ shows actual location of shared memory module on Cache PCB. (Refer to Fig. 1.1.2.3-2)

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

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

*4: When DKU405I is connected to DKC460I.

*5: When cache memory capacity is 64GB or less, refer to the Table 1.1.2.3-1 or 1.1.2.3-9.

Table 1.1.2.3-5 Size of Cache Memory and Shared Memory
(HRC/HORC/HMRCF/HOMRCF/HIHSM supported)

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

Note. *1: Location ①-⑤ shows actual location of shared memory module on Cache PCB. (Refer to Fig. 1.1.2.3-2)

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

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

*4: When DKU405I is connected to DKC460I.

*5: When cache memory capacity is 64GB or less, refer to the Table 1.1.2.3-2 or 1.1.2.3-10.

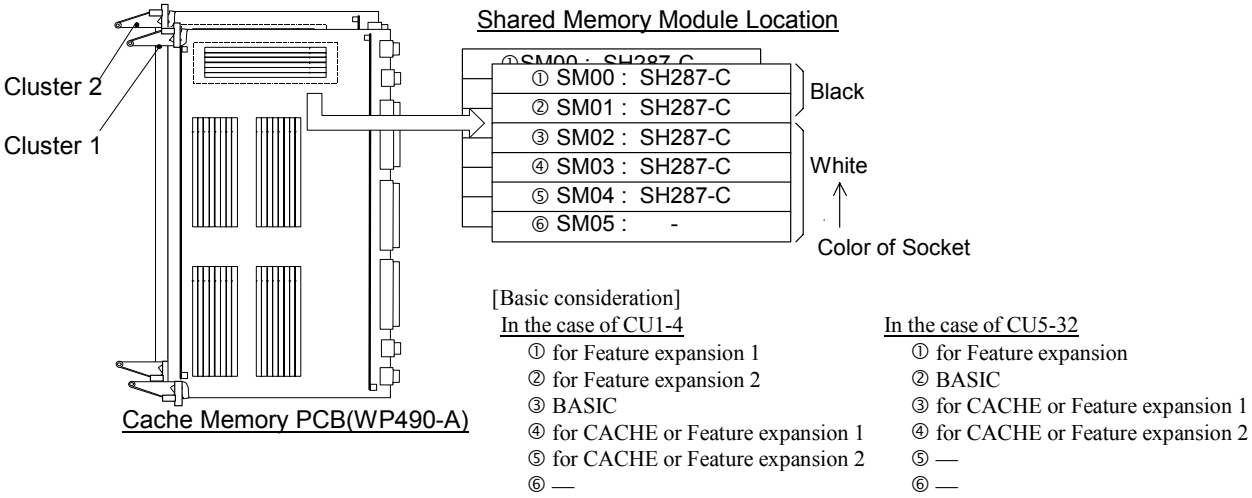


Fig. 1.1.2.3-2 Actual location of shared memory module

Table 1.1.2.3-6 Size of Cache Memory and Shared Memory (ShadowImage-FlashCopy® version2 supported)

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

Note. *1: Location ①-⑤ shows actual location of shared memory module on Cache PCB. (Refer to Fig. 1.1.2.3-2)

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

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

*4: When DKU405I is connected to DKC460I.

*5: When cache memory capacity is 64GB or less, refer to the Table 1.1.2.3-3 or 1.1.2.3-11.

(3) 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 1.1.2.3-9 and 1.1.2.3-10 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 1.1.2.3-7 and 1.1.2.3-8)

Table 1.1.2.3-7 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 1.1.2.3-8 Shared Memory Module Mixture Pattern

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

Note. 1: Location ①-⑥ shows actual location of shared memory module on Cache PCB. (Refer to Fig. 1.1.2.3-3)

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.

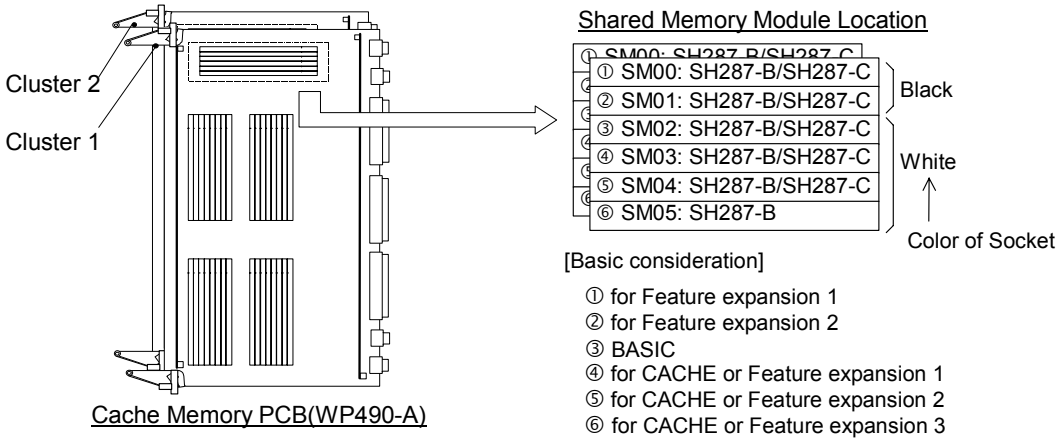


Fig. 1.1.2.3-3 Actual location of shared memory module

Table 1.1.2.3-9 Size of Cache Memory and Shared Memory (TrueCopy/ShadowImage/ ShadowImage-FlashCopy® version2/Cruise Control function not supported)

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

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

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

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

*4: When DKU405I is connected to DKC460I.

*5: 'A' to 'L' should refer a Table 1.1.2.3-7, and refer to the Table 1.1.2.3-8 for 'o' from 'a'. The memory module corresponding to each mixture pattern is installed in the install locations ①-⑥.

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

Table 1.1.2.3-10 Size of Cache Memory and Shared Memory (TrueCopy/ShadowImage/Cruise Control function supported)

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

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

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

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

*4: When DKU405I is connected to DKC460I.

*5: 'A' to 'L' should refer a Table 1.1.2.3-7, and refer to the Table 1.1.2.3-8 for 'o' from 'a'. The memory module corresponding to each mixture pattern is installed in the install locations ①-⑥.

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

Table 1.1.2.3-11 Size of Cache Memory and Shared Memory (ShadowImage-FlashCopy® version2 supported)

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

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

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

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

*4: When DKU405I is connected to DKC460I.

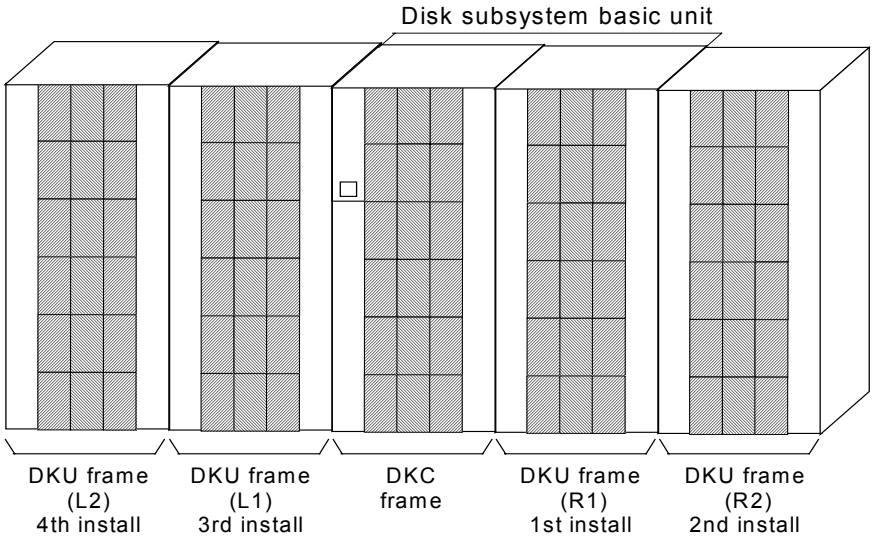
*5: 'A' to 'L' should refer a Table 1.1.2.3-7, and refer to the Table 1.1.2.3-8 for 'o' from 'a'. The memory module corresponding to each mixture pattern is installed in the install locations ①-⑥.

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

1.1.2.4 DKU Frame and RAID Group Installation Order

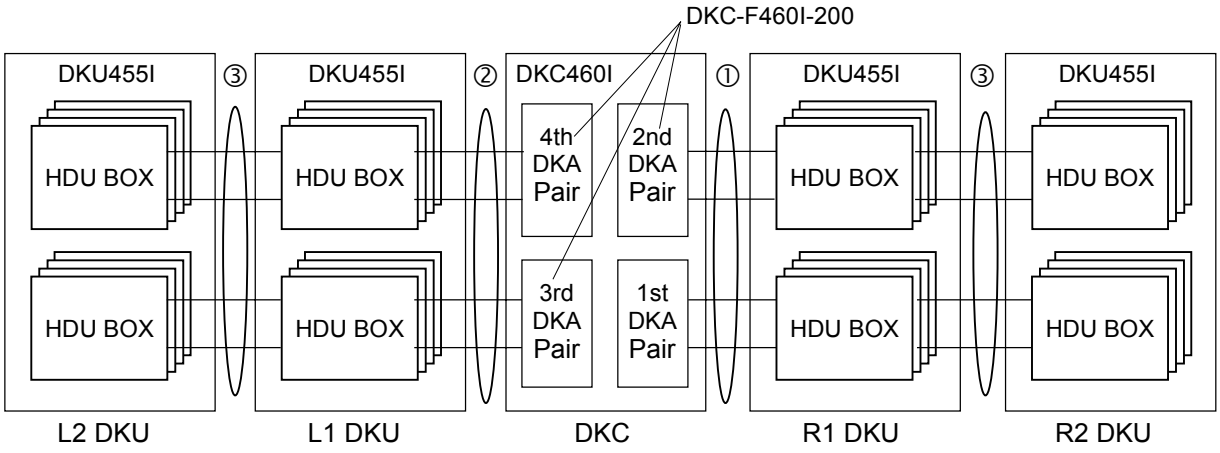
(1) DKU Frame installation order

DKU frame installation order is shown in the following figure in principle.



(2) Subsystem Layout and number of necessary option

The relationship between subsystem layout and device interface cable option is shown in the following figure.

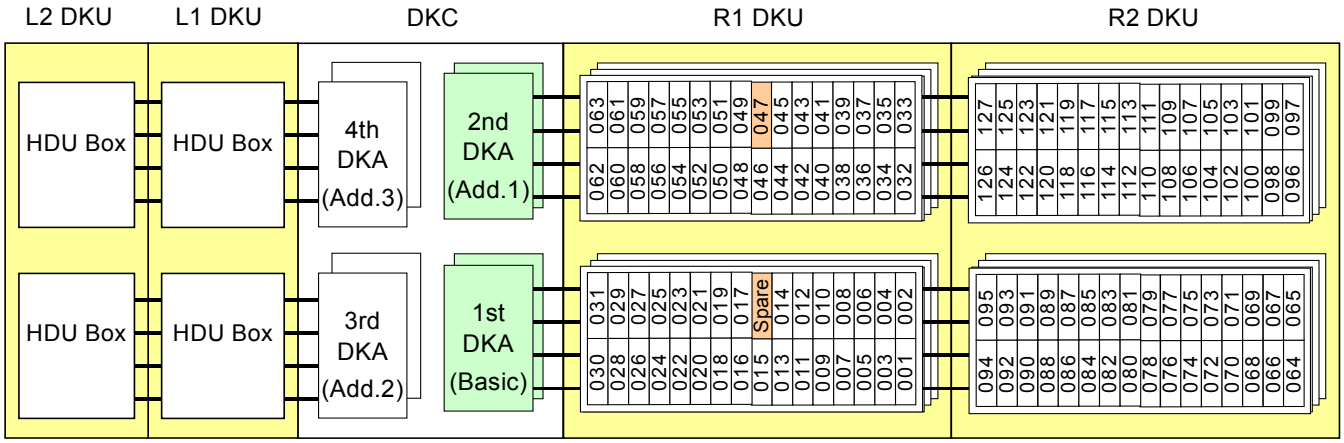


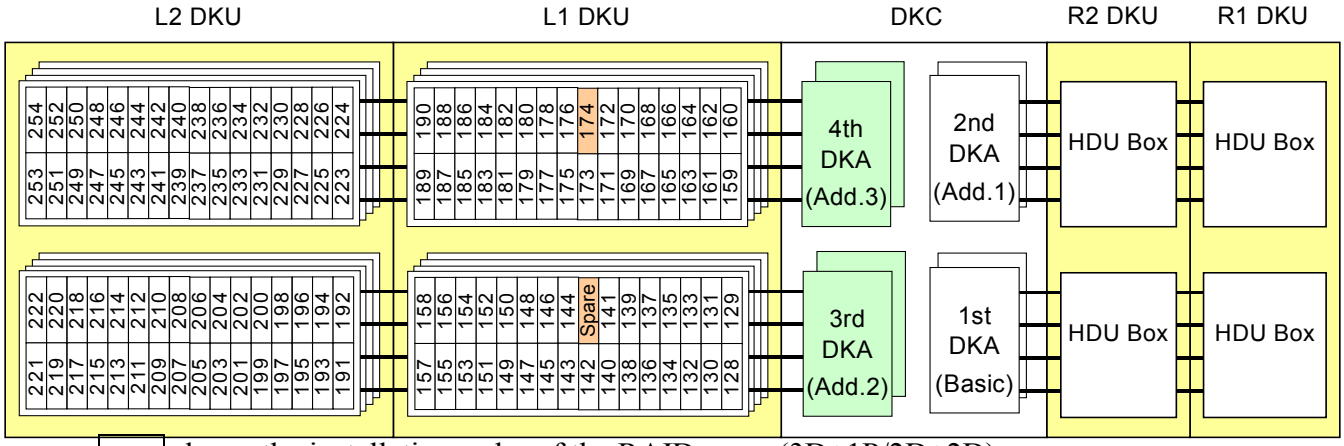
①:Standard equipment of DKC460I (between DKC to R1 DKU)
②:DKC-F460I-L1C (between DKC to L1 DKU)
③:DKU-F455I-EXC (between DKU to DKU)

(3) RAID Group Installation Order

RAID group installation order is shown in the following figure in principle.

- RAID1(2D+2D) / RAID5(3D+1P)





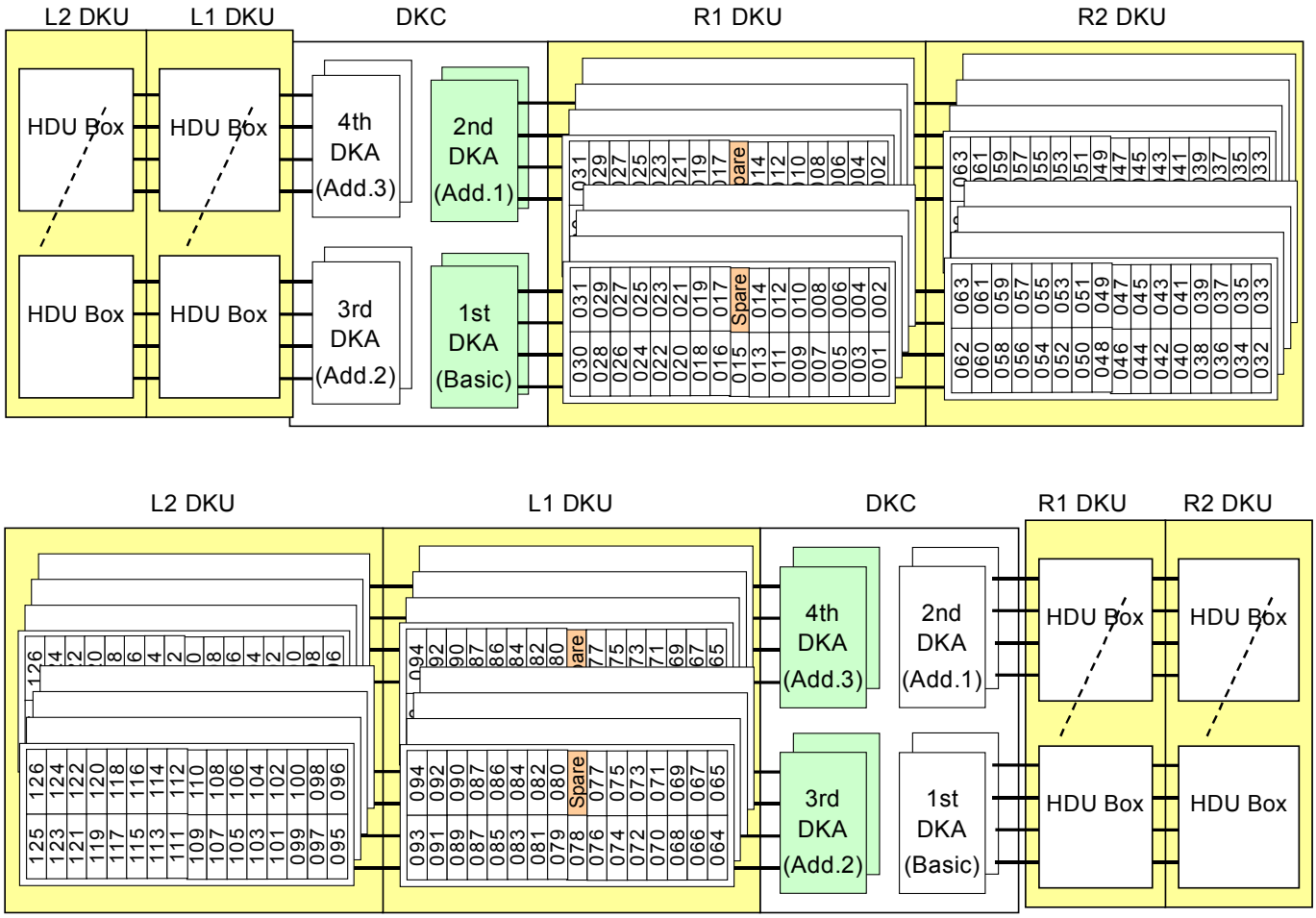
nnn shows the installation order of the RAID group(3D+1P/2D+2D).

RAID group install location of No.047 and 174 can be used as a spare disk. In this case, the number of RAID groups can be installed up to 252.

The relationship between subsystem layout and number of necessary options is shown in the following table.

Frame Layout Configuration					Number of Options				
L2	L1	DKC	R1	R2	DKC460I -5	DKC-F460I -200	DKU455I-18	DKC-F460I -L1C	DKU-F455I -EXC
		DKC	R1 DKU		1	0 or 1	1	0	0
		DKC	R1 DKU	R2 DKU	1	1	2	0	1
	L1 DKU	DKC	R1 DKU		1	2 or 3	2	1	0
	L1 DKU	DKC	R1 DKU	R2 DKU	1	2 or 3	3	1	1
L2 DKU	L1 DKU	DKC	R1 DKU		1	3	3	1	1
L2 DKU	L1 DKU	DKC	R1 DKU	R2 DKU	1	3	4	1	2

- RAID5(7D+1P)



nnn shows the installation order of the RAID group(7D+1P).
In this case, install two sets of DKU-F455I-18K4, DKU-F455I-36J4, DKU-F455I-38K4 or DKU-F455I-72J4 respectively.

The relationship between subsystem layout and number of necessary options is shown in the following table.

Frame Layout Configuration					Number of Options				
L2	L1	DKC	R1	R2	DKC460I-5	DKC-F460I-200	DKU455I-18	DKC-F460I-L1C	DKU-F455I-EXC
		DKC	R1 DKU		1	1	1	0	0
		DKC	R1 DKU	R2 DKU	1	1	2	0	1
	L1 DKU	DKC	R1 DKU		1	3	2	1	0
	L1 DKU	DKC	R1 DKU	R2 DKU	1	3	3	1	1
L2 DKU	L1 DKU	DKC	R1 DKU		1	3	3	1	1
L2 DKU	L1 DKU	DKC	R1 DKU	R2 DKU	1	3	4	1	2

1.1.3 Specifications

(1) DKC460I Physical Specifications
The DKC460I physical specifications are shown in the following table:

Table 1.1.3-1 DKC460I Physical Specifications

No	Model Number	Weight (kg)	Heat Output (kW)	Power Consumption (kVA)	Dimension (mm)			Air Flow (m^3/min.)
					Width	Depth	Height	
1	DKC460I-5 *2	466.0	0.73	0.77	782 *1	800	1,860	18
	DKC460I-5F *2	395.0	0.73	0.77	782 *1	800	1,860	18
	DKC460I-5FE *3	402.0	0.74	0.78	782 *1	800	1,860	26
2	DKC-F460I-1PS	10.0	—	—	—	—	—	—
3	DKC-F460I-1EC	7.5	—	—	—	—	—	—
4	DKC-F460I-1UC	10.5	—	—	—	—	—	—
5	DKC-F460I-3PS	7.0	—	—	—	—	—	—
6	DKC-F460I-200	3.6	0.21	0.22	—	—	—	—
7	DKC-F460I-2048	0.2	0.007	0.008	—	—	—	—
8	DKC-F460I-S512	0.05	0.004	0.004	—	—	—	—
9	DKC-F460I-8S	4.2	0.28	0.29	—	—	—	—
10	DKC-F460I-8MS	4.2	0.31	0.33	—	—	—	—
11	DKC-F460I-8ML	4.2	0.31	0.33	—	—	—	—
12	DKC-F460I-8GSE	4.0	0.15	0.15	—	—	—	—
13	DKC-F460I-4HSE	4.2	0.12	0.13	—	—	—	—
14	DKC-F460I-8HSE	4.2	0.21	0.22	—	—	—	—
15	DKC-F460I-8HLE	4.2	0.21	0.22	—	—	—	—
16	DKC-F460I-SVP	5.5	0.07	0.07	—	—	—	—
17	DKC-F460I-UPS	1.2	0.01	0.01	—	—	—	—
18	DKC-F460I-80	8.8	—	—	—	—	—	—
19	DKC-F460I-41	5.6	0.06	0.06	—	—	—	—
20	DKC-F460I-42	42.2	0.09	0.10	—	—	—	—
21	DKC-F460I-L1C	3.5	—	—	—	—	—	—
22	DKC-F460I-U405R	10.0	0.06	0.07	—	—	—	—
23	DKC-F460I-U405L	10.0	0.06	0.07	—	—	—	—
24	DKC-F460I-18	0.6	0.002	0.003	—	—	—	—
25	DKC-F460I-256M	0.04	0.003	0.003	—	—	—	—
26	DKC-F460I-1PSD	11.0	—	—	—	—	—	—
27	DKC-F460I-1ECD	8.0	—	—	—	—	—	—
28	DKC-F460I-1UCD	10.0	—	—	—	—	—	—
29	DKC-F460I-3PSD	12.0	—	—	—	—	—	—
30	DKC-F460I-3ECD	8.0	—	—	—	—	—	—
31	DKC-F460I-3UCD	11.0	—	—	—	—	—	—
32	DKC-F460I-8GSF	4.0	0.15	0.15	—	—	—	—
33	DKC-F460I-4HSF	4.2	0.12	0.13	—	—	—	—
34	DKC-F460I-8HSF	4.2	0.21	0.22	—	—	—	—
35	DKC-F460I-8HLF	4.2	0.21	0.22	—	—	—	—
36	DKC-F460I-16HSF	4.3	0.23	0.24	—	—	—	—

(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	
37	DKC-F460I-DH	71.0	—	—	—	—	—	—
38	DKC-F460I-DS	71.0	—	—	—	—	—	—
39	DKC-F460I-4NS	4.5	0.39	0.40	—	—	—	—
40	DKC-F460I-NENB	36.5	0.28	0.28	—	—	—	—
41	DKC-F460I-NAPS	10.0	—	—	—	—	—	—
42	DKC-F460I-8SE	4.2	0.28	0.29	—	—	—	—
43	DKC-F460I-8IS	4.6	0.25	0.26	—	—	—	—
44	DKC-F460I-4096	0.2	0.007	0.008	—	—	—	—
45	DKC-F460I-S1024	0.05	0.004	0.004	—	—	—	—

Note. *1: This includes the thickness of side covers (16mm × 2).
*2: This model does not support the NAS CHA.
*3: This model supports the NAS CHA.

(2) DKU455I Physical Specifications
The DKU455I physical specifications are shown in the following table:

Table 1.1.3-2 DKU455I Physical Specifications

No	Model number	Weight (kg)	Heat Output (kW)	Power Consumption (kVA)	Dimension (mm)			Air Flow (m^3/min.)
					Width	Depth	Height	
1	DKU455I-18	460.0	0.51	0.54	750	800	1,860	32
	DKU455I-18F	419.0	0.51	0.54	750	800	1,860	32
2	DKU-F455I-1PS	20.0	—	—	—	—	—	—
3	DKU-F455I-1EC	7.0	—	—	—	—	—	—
4	DKU-F455I-1UC	10.0	—	—	—	—	—	—
5	DKU-F455I-3PS	20.0	—	—	—	—	—	—
6	DKU-F455I-3EC	11.0	—	—	—	—	—	—
7	DKU-F455I-3UC	16.0	—	—	—	—	—	—
8	DKU-F455I-EXC	3.0	—	—	—	—	—	—
9	DKU-F455I-36K1	1.0	0.022	0.024	—	—	—	—
10	DKU-F455I-36K4	4.0	0.088	0.096	—	—	—	—
11	DKU-F455I-72J1	1.0	0.023	0.025	—	—	—	—
12	DKU-F455I-72J4	4.0	0.092	0.100	—	—	—	—
13	DKU-F455I-72K1	1.1	0.022	0.024	—	—	—	—
14	DKU-F455I-72K4	4.4	0.088	0.096	—	—	—	—
15	DKU-F455I-146J1	1.0	0.023	0.025	—	—	—	—
16	DKU-F455I-146J4	4.0	0.092	0.100	—	—	—	—
17	DKU-F455I-146JS	1.0	0.023	0.025	—	—	—	—
18	DKU-F455I-146JF	4.0	0.092	0.100	—	—	—	—
19	DKU-F455I-146JM	1.0	0.023	0.025	—	—	—	—
20	DKU-F455I-146JQ	4.0	0.092	0.100	—	—	—	—
21	DKU-F455I-1PSD	20.0	—	—	—	—	—	—
22	DKC-F460I-1ECD	8.0	—	—	—	—	—	—
23	DKC-F460I-1UCD	10.0	—	—	—	—	—	—
24	DKU-F455I-3PSD	20.0	—	—	—	—	—	—
25	DKC-F460I-3ECD	8.0	—	—	—	—	—	—
26	DKC-F460I-3UCD	11.0	—	—	—	—	—	—
27	DKU-F455I-DH	41.0	—	—	—	—	—	—
28	DKU-F455I-DS	41.0	—	—	—	—	—	—

(3) DKU405I Physical Specifications
The DKU405I physical specifications are shown in the following table:

Table 1.1.3-3 DKU405I Physical Specifications

No	Model Number	Weight (kg)	Heat Output (kW)	Power Consumption (kVA)	Dimension (mm)			Air Flow (m^3/min.)
					Width	Depth	Height	
1	DKU405I-14	206.0	0.561	0.704	600	800	1790	6
2	DKU-F405I-3EC	6.0	—	—	—	—	—	—
3	DKU-F405I-3UC	6.0	—	—	—	—	—	—
4	DKU-F405I-1EC	6.0	—	—	—	—	—	—
5	DKU-F405I-1UC	6.0	—	—	—	—	—	—
6	DKU-F405I-3PS	18.0	—	—	—	—	—	—
7	DKU-F405I-1PS	18.0	—	—	—	—	—	—
8	DKU-F405I-EXC	3.0	—	—	—	—	—	—
9	DKU-F405I-B4	70.0	0.561	0.704	—	—	—	6
10	DKU-F405I-18J1	1.4	0.018	0.018	—	—	—	—
11	DKU-F405I-18J4	5.6	0.072	0.072	—	—	—	—
12	DKU-F405I-18K1	1.6	0.020	0.020	—	—	—	—
13	DKU-F405I-18K4	6.4	0.080	0.080	—	—	—	—
14	DKU-F405I-36K1	1.8	0.023	0.023	—	—	—	—
15	DKU-F405I-36K4	7.2	0.092	0.092	—	—	—	—
16	DKU-F405I-47J1	1.8	0.024	0.024	—	—	—	—
17	DKU-F405I-47J4	7.2	0.096	0.096	—	—	—	—
18	DKU-F405I-72J1	1.8	0.024	0.024	—	—	—	—
19	DKU-F405I-72J4	7.2	0.096	0.096	—	—	—	—
20	DKU-F405I-72K1	1.9	0.023	0.023	—	—	—	—
21	DKU-F405I-72K4	7.6	0.092	0.092	—	—	—	—
22	DKU-F405I-146J1	1.8	0.024	0.024	—	—	—	—
23	DKU-F405I-146J4	7.2	0.096	0.096	—	—	—	—
24	DKU-F405I-180H1	1.8	0.017	0.017	—	—	—	—
25	DKU-F405I-180H4	7.2	0.068	0.068	—	—	—	—

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 1.5 Connection of External Power Cable (INST01-390), 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.

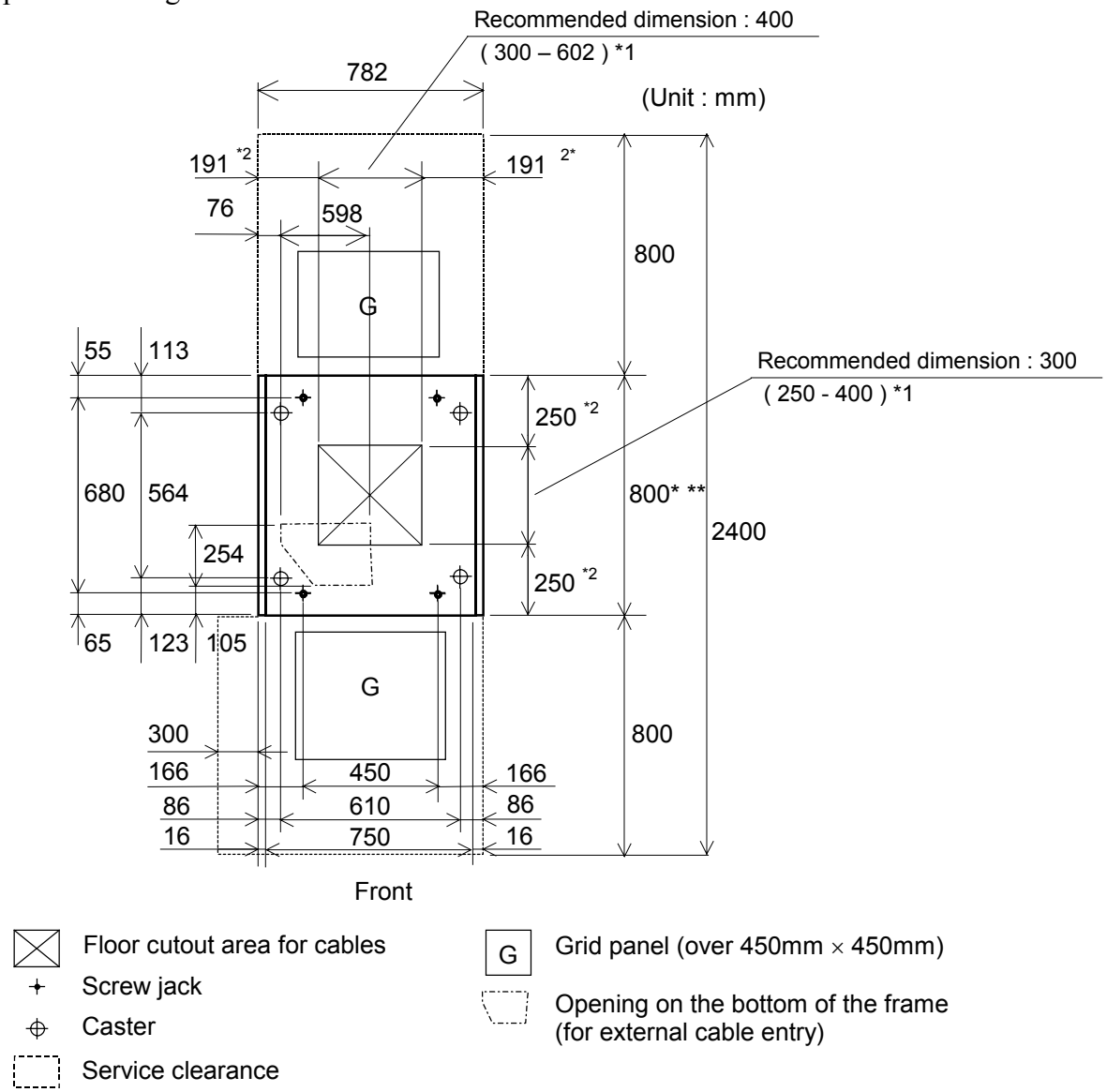
(2) Single phase AC input

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

(1) DKC460I

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



Floor cutout area for cables

Screw jack

Caster

Service clearance

G Grid panel (over 450mm × 450mm)

Opening on the bottom of the frame (for external cable entry)

*1 Values of parenthesis show allowable range of the floor cutout dimension.
The floor cutout should be planned in the center of the DKC. In case that the floor cutout is planned in a right position for the external cable work and it is within the allowable range, the cutout position may be off-center.
In this case, check the relation between the positions of the cutout and the opening on the bottom of the frame.
If the floor cutout width is planned more than 552 mm,be careful about the restriction of the movable direction because there is a possibility that the caster wheels fall down into the cutout.

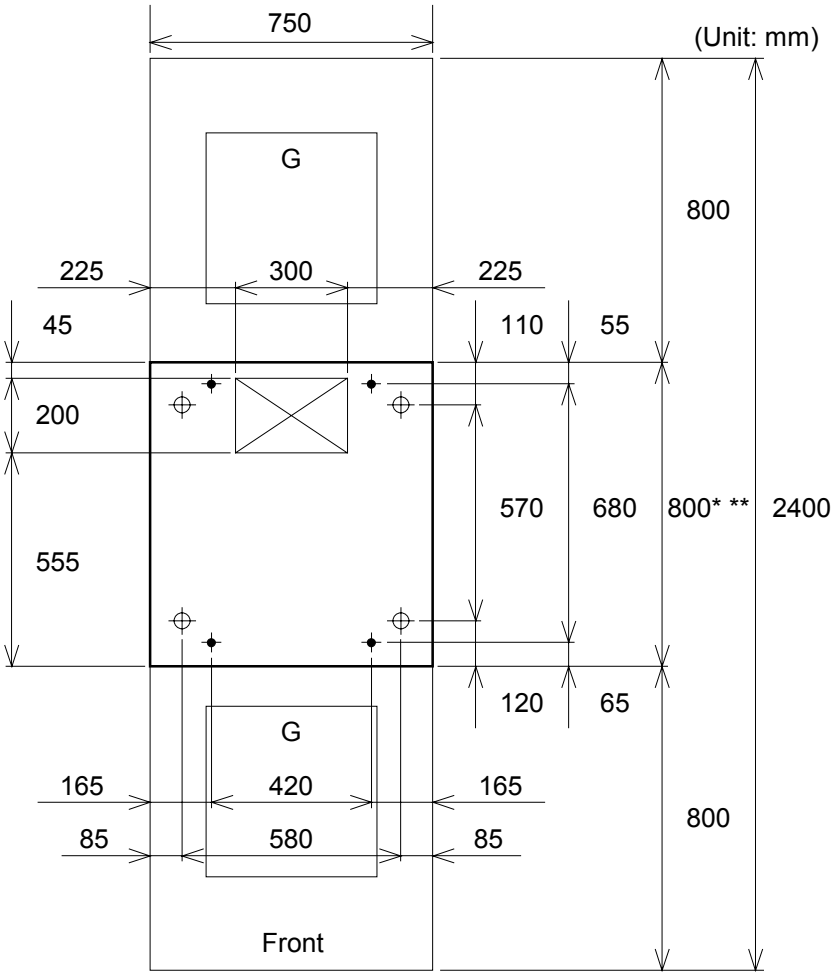
*2 These dimensions vary with the floor cutout dimension.

*: 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.

(2) DKU455I

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



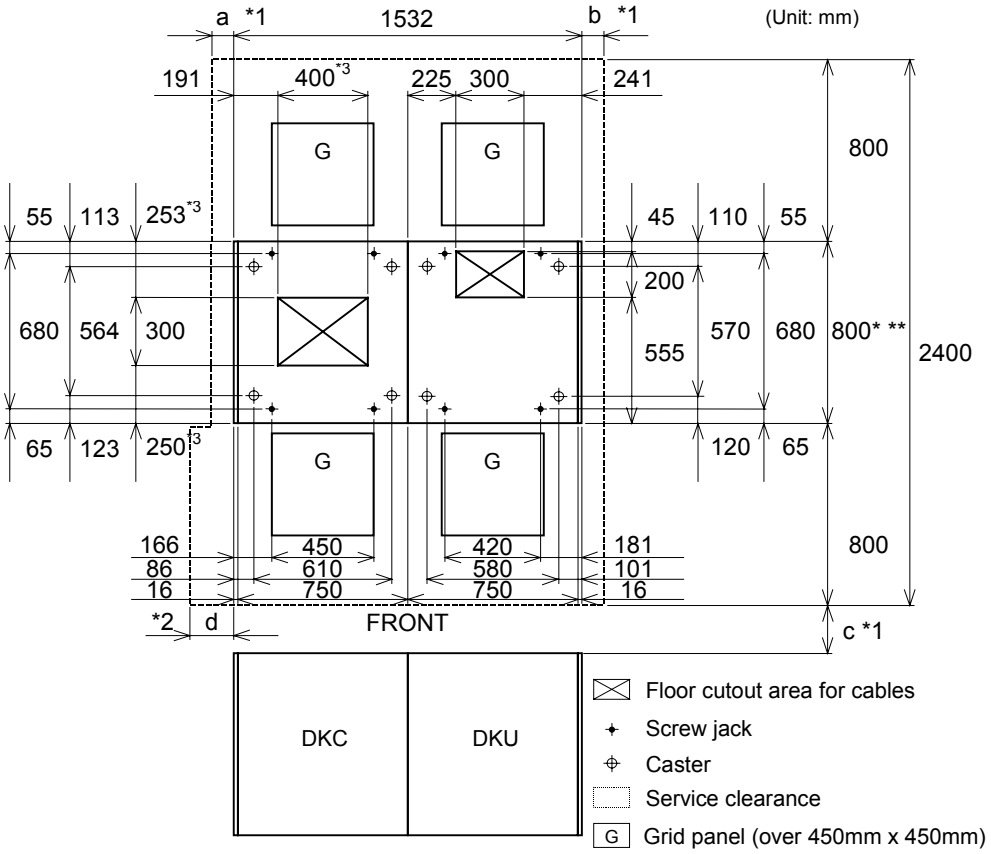
Floor cutout area for cables
Screw jack
Caster
Service clearance
G Grid panel (over 450mm x 450mm)

*: 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.

(2) Subsystem Basic Configuration

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) depend on the floor load rating and clearance (c). Floor load rating and required clearances are shown below.

*2: Clearance (d) is required over 0.3m so as to open the DKC front door, refer to page INST01-160. In case that clearance (d) is less than clearance (a), give priority to clearance (a).

*3: See INST01-160 about details of the DKC floor cutout.

Floor Load Rating for Service Clearances (Minimum Configuration)

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	0.6	0.4	0.2	0	0
450	0.9	0.7	0.4	0.3	0
400	1.4	1.0	0.8	0.6	0.3
350	2.0	1.6	1.3	1.0	0.7
300	3.0	2.5	2.1	1.8	1.3

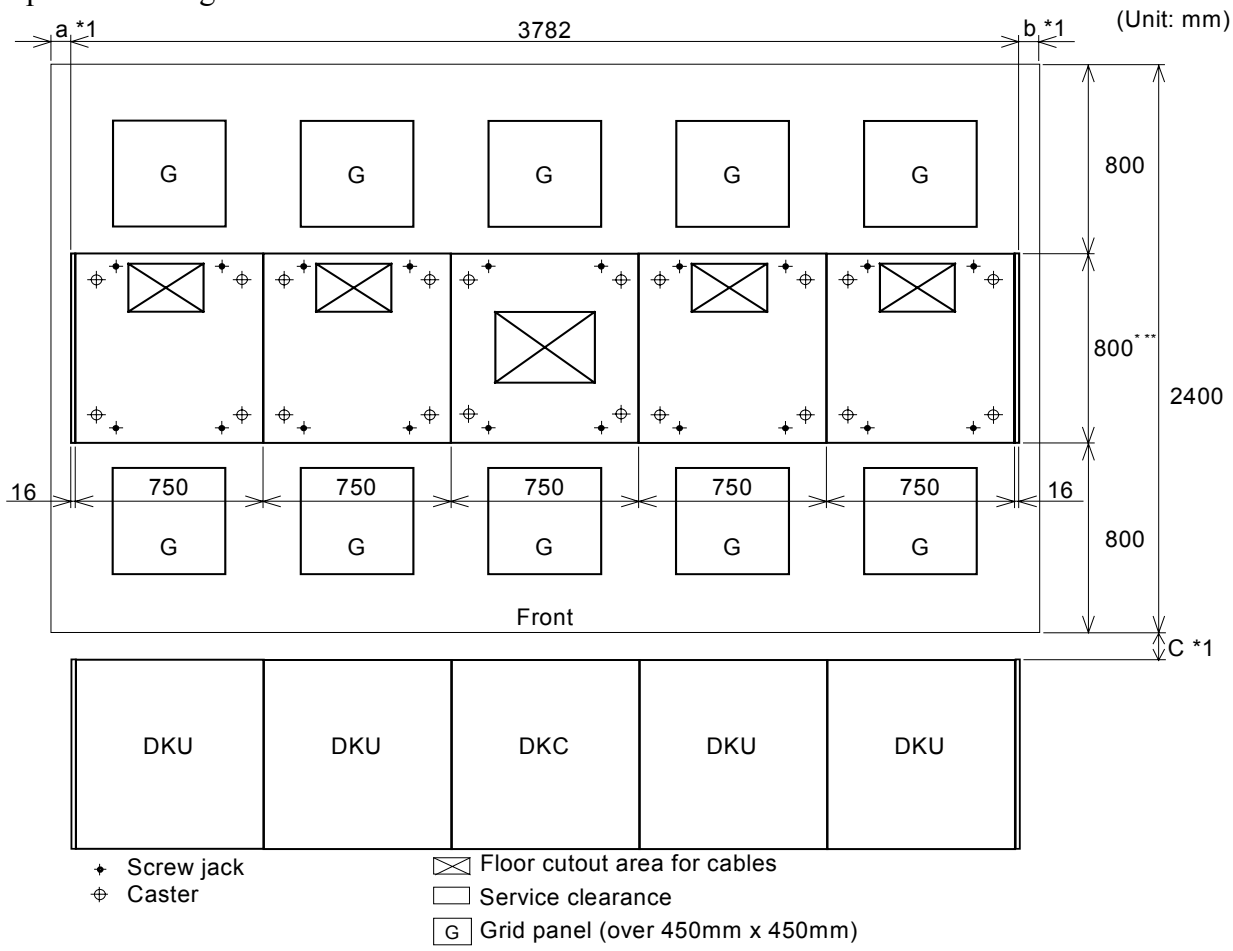
NOTE: 1. Actual clearances for installation should be decided after consulting with construction specialist responsible for installation building, as they could vary depending on the size/layout of the system and building conditions.

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.

(4) Subsystem Full configuration

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) depend on the floor load rating and clearance (c).
Floor load rating and required clearances are shown below.

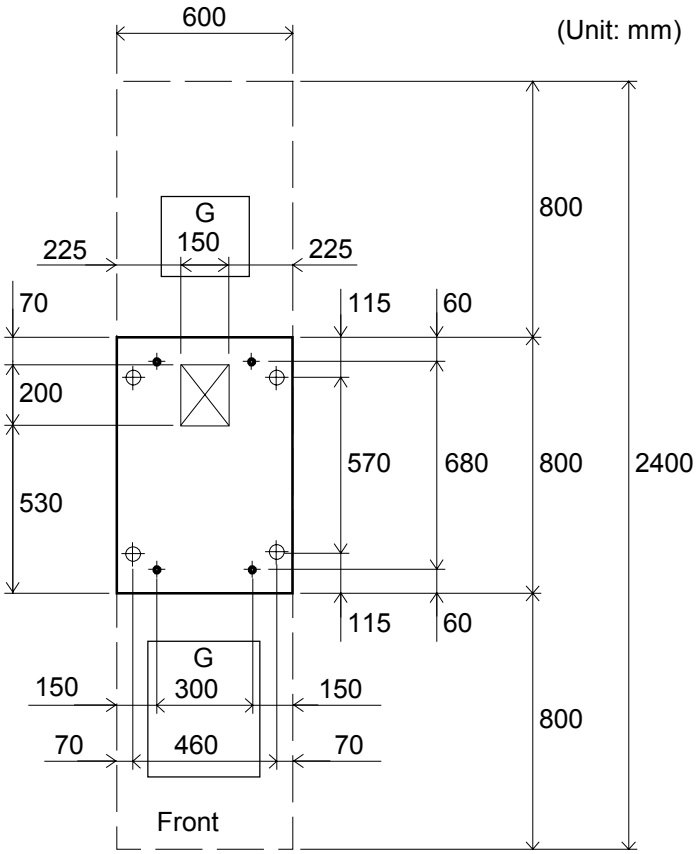
Floor Load Rating for Service Clearances (Maximum Configuration)

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	1.9	1.2	0.8	0.3	0
450	2.7	2.0	1.4	1.0	0.2
400	3.9	3.1	2.4	1.8	1.0
350	5.6	4.6	3.7	3.1	2.0
300	8.3	6.9	5.9	5.0	3.7

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

(5) DKU405I

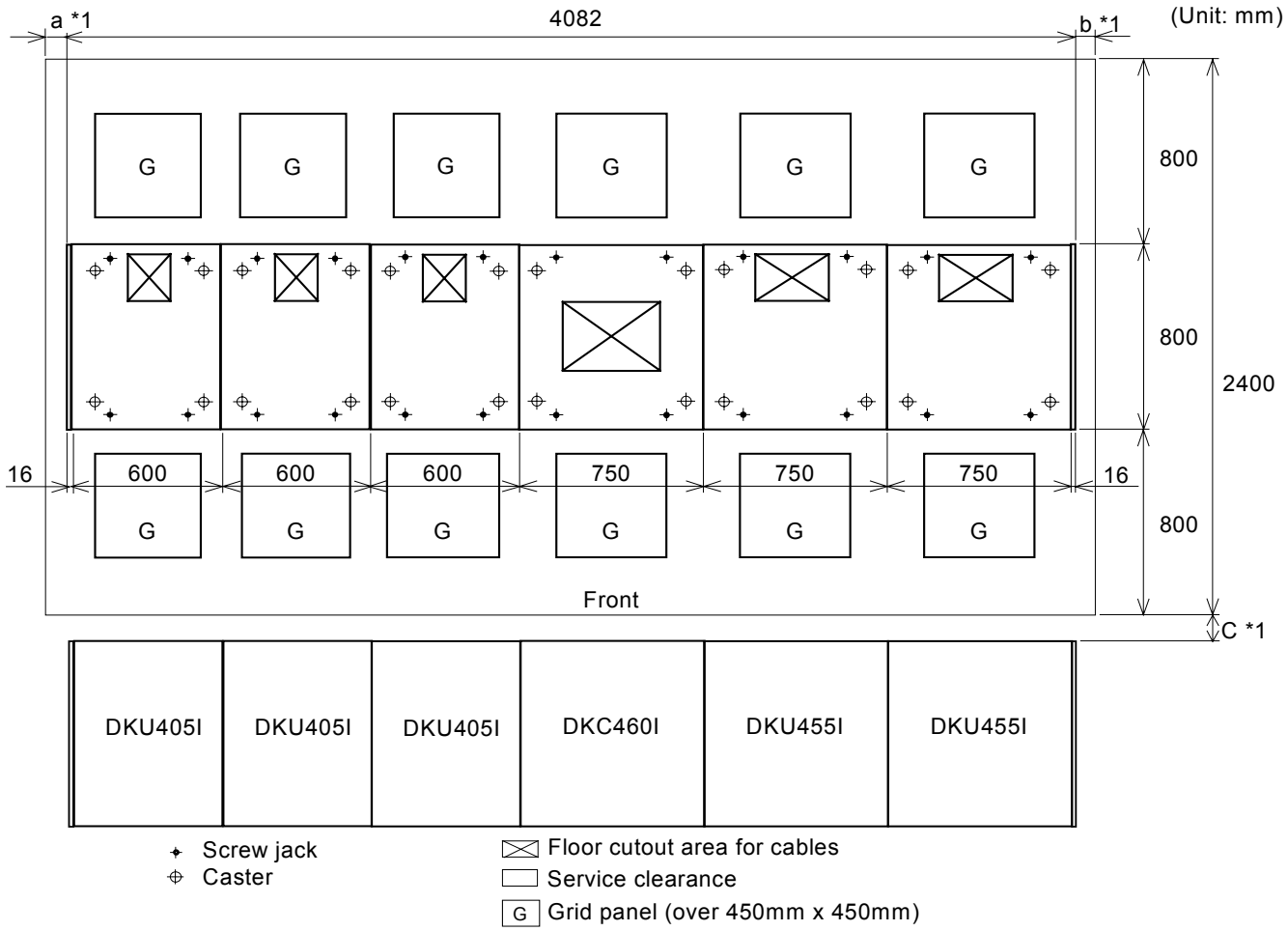
The service clearance is the space required for CE work. Never use this space for storage of any article to prevent damage.



Floor cutout area for cables
Screw jack
Caster
Service clearance
G Grid panel (over 450mm x 450mm)

(6) DKU405I Mixture Configuration

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



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

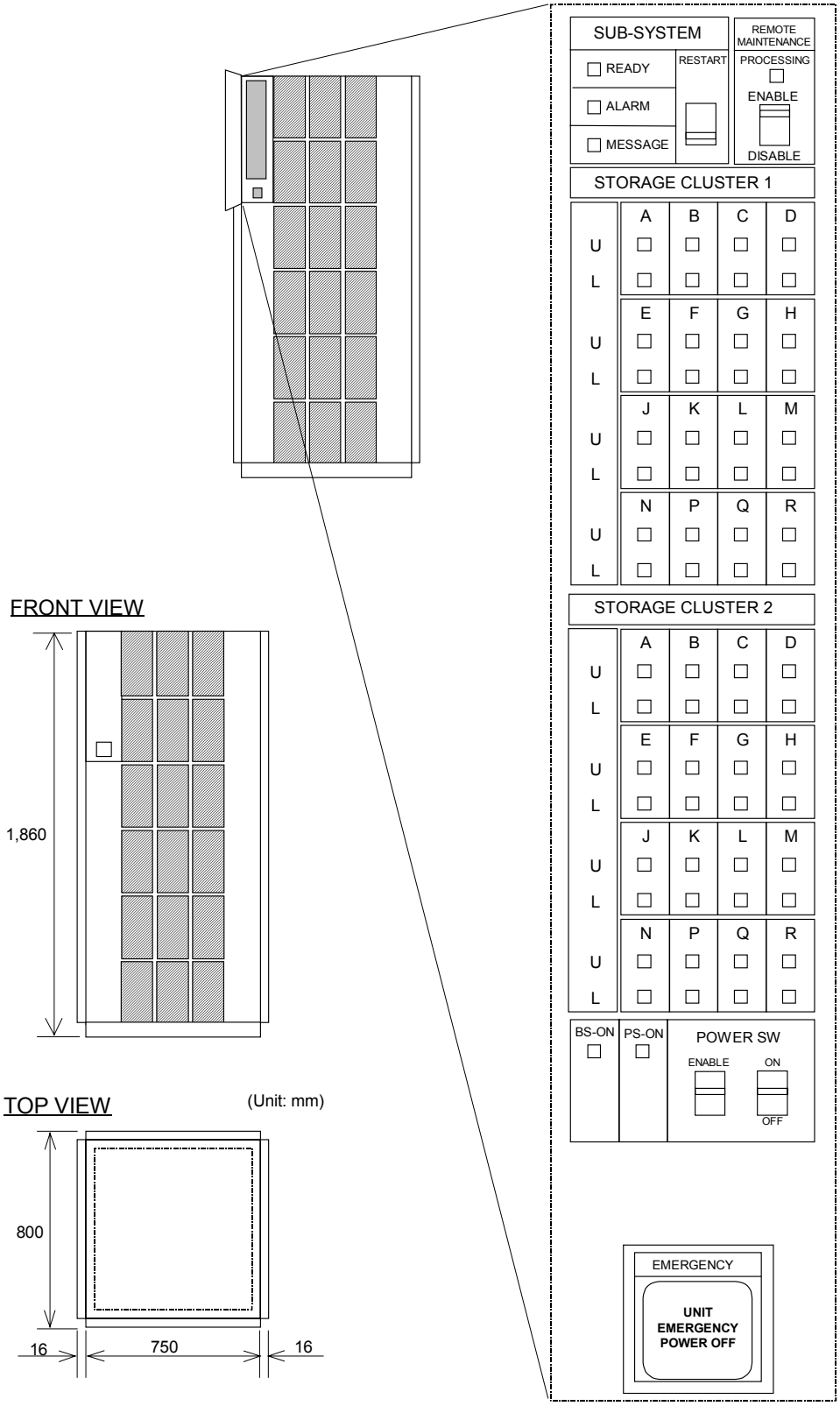
Floor Load Rating for Service Clearances (DKU405I Mixture Configuration)

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	1.7	1.0	0.5	0.1	0
450	2.5	1.8	1.2	0.7	0
400	3.7	2.9	2.2	1.6	0.7
350	5.5	4.4	3.6	2.9	1.8
300	8.2	6.8	5.7	4.8	3.5

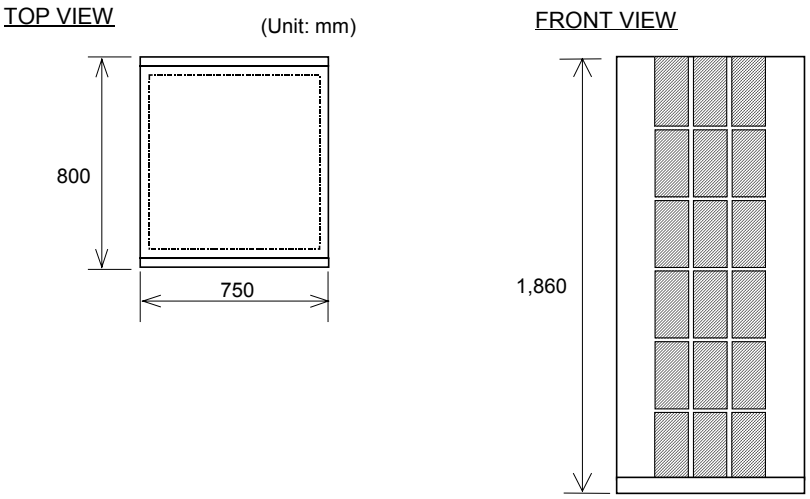
NOTE: 1. Actual clearances for installation should be decided after consulting with construction specialist responsible for installation building, as they could vary depending on the size/layout of the system and building conditions.
2. When various configurations of subsystems are arranged in a row, 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

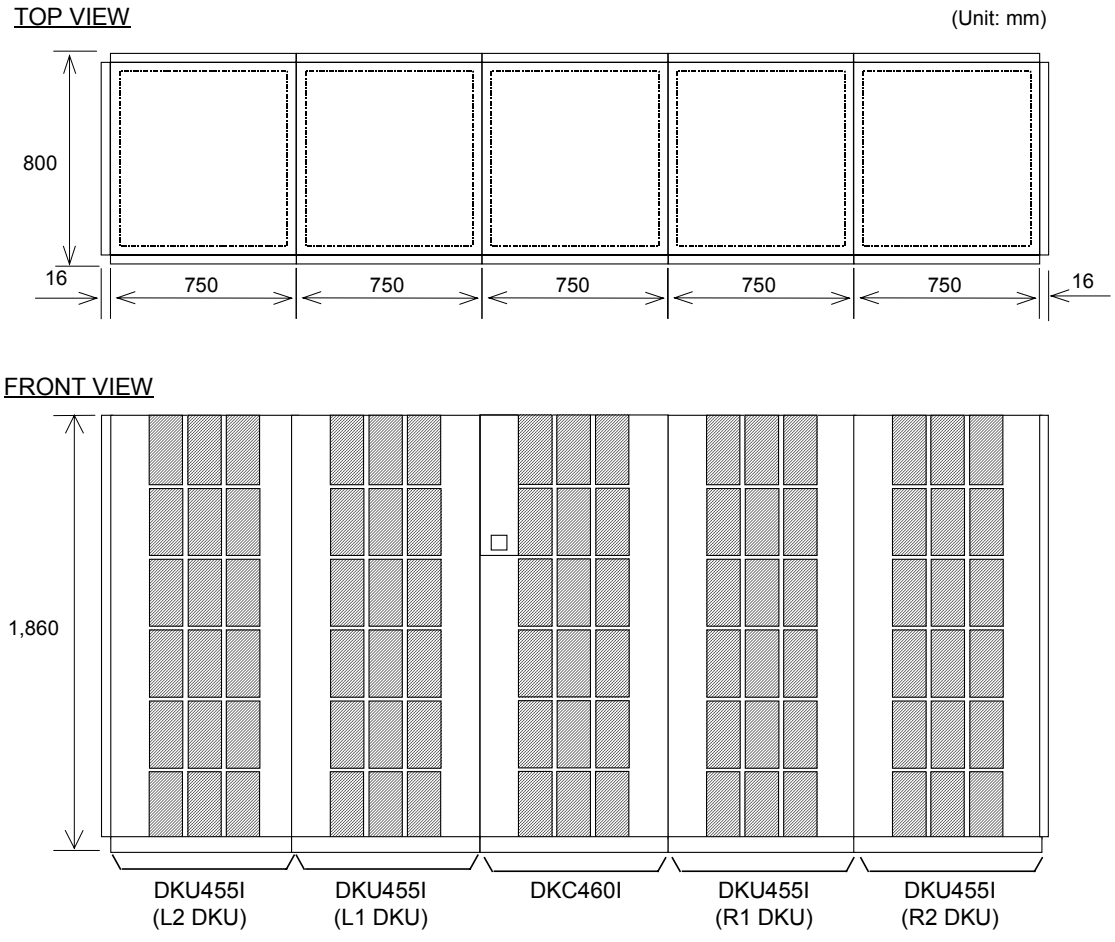
(1) DKC460I Layout



(2) DKU455I Layout



(3) Full Configuration of Disk Subsystem



1.1.8 Power and Grounding Check

1.1.8.1 Facility power check

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

Model Number	Plug			Receptacle	
	Rating	Maker	Part Number	Maker	Part Number
DKC-F460I-1UC	50 A	Thomas & Betts	9P53U2	Thomas & Betts	9C53U2 or 9R53U2W
DKU-F455I-1UC	50 A	Thomas & Betts	9P53U2	Thomas & Betts	9C53U2 or 9R53U2W
DKU-F455I-3UC	60 A	Thomas & Betts	RS460P9W	Thomas & Betts	RS460C9W
DKC-F460I-3UCD	30A	Thomas & Betts	3760PDG	Thomas & Betts	3934
		DDK	115J-AP8508	Thomas & Betts	3934
DKC-F460I-1UCD	30A	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

(1) DKU455I

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 Fig. 1.2-2, the order in which DKU-F455I-36K1/72J1/72K1/146J1/146JS/146JM (spare HDD) units are to be installed in Fig. 1.2-3.

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

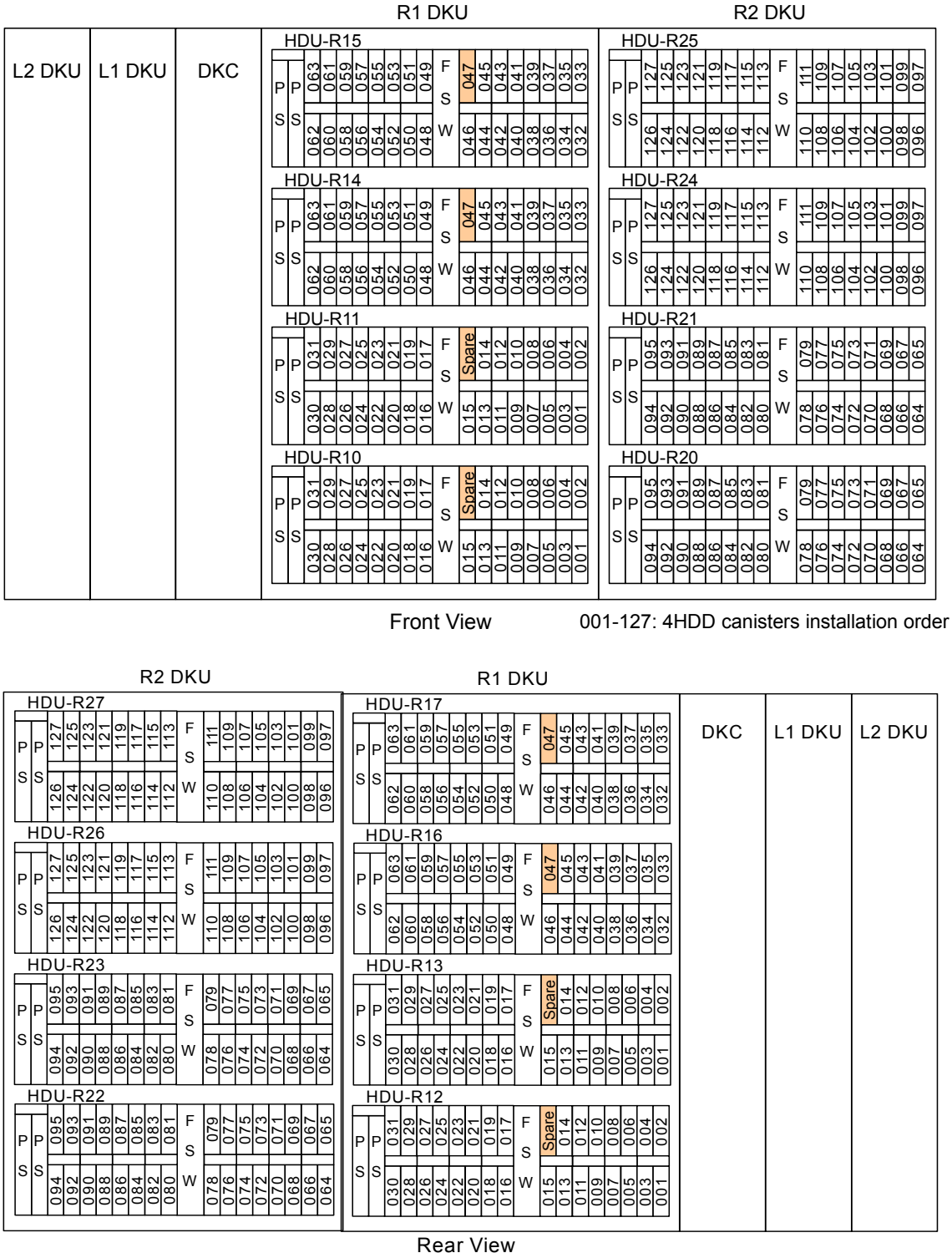
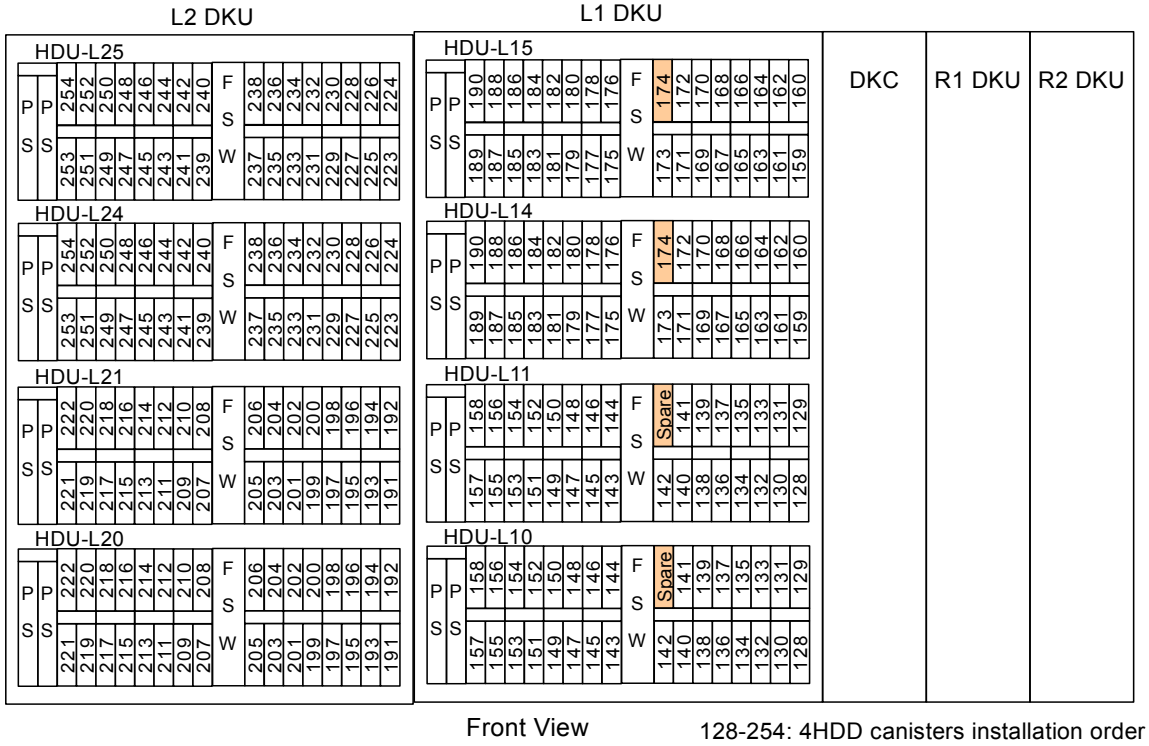


Fig. 1.2-1 (3D+1P) or (2D+2P) Data Drive/Parity Drive Expansion Sequence (1/2)

The relationship between HDDs installation order and RAID group number is shown in the Table 1.2-1.



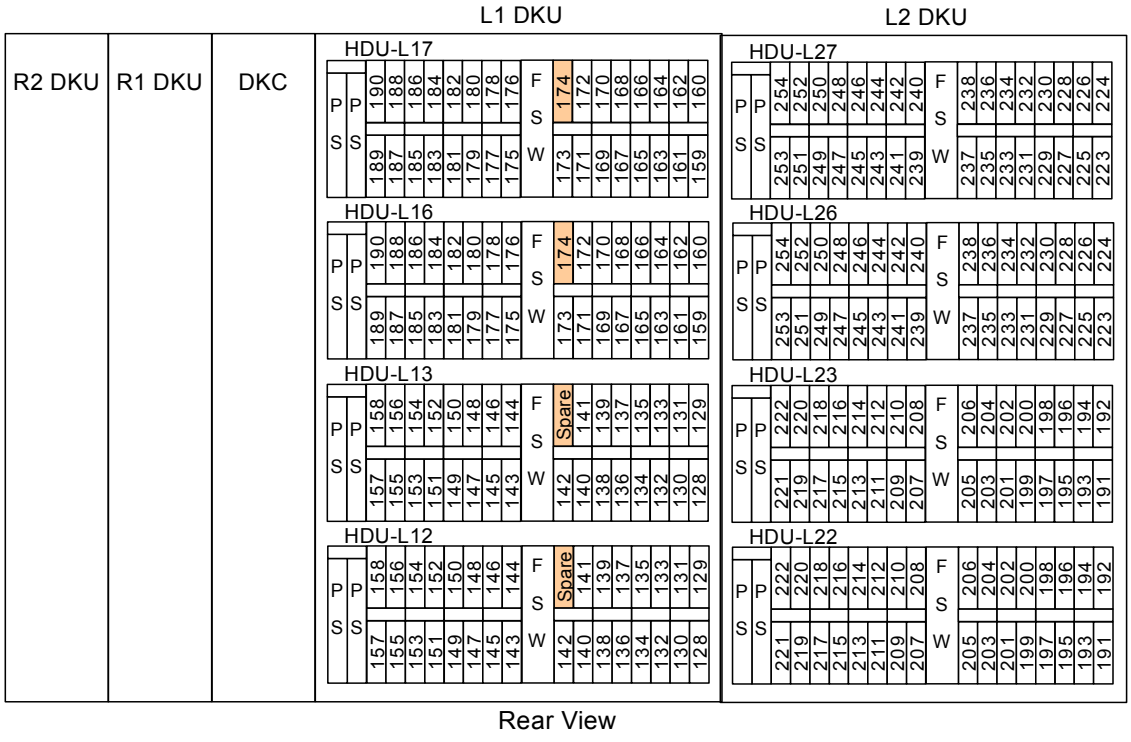


Fig. 1.2-1 (3D+1P) or (2D+2P) Data Drive/Parity Drive Expansion Sequence (2/2)

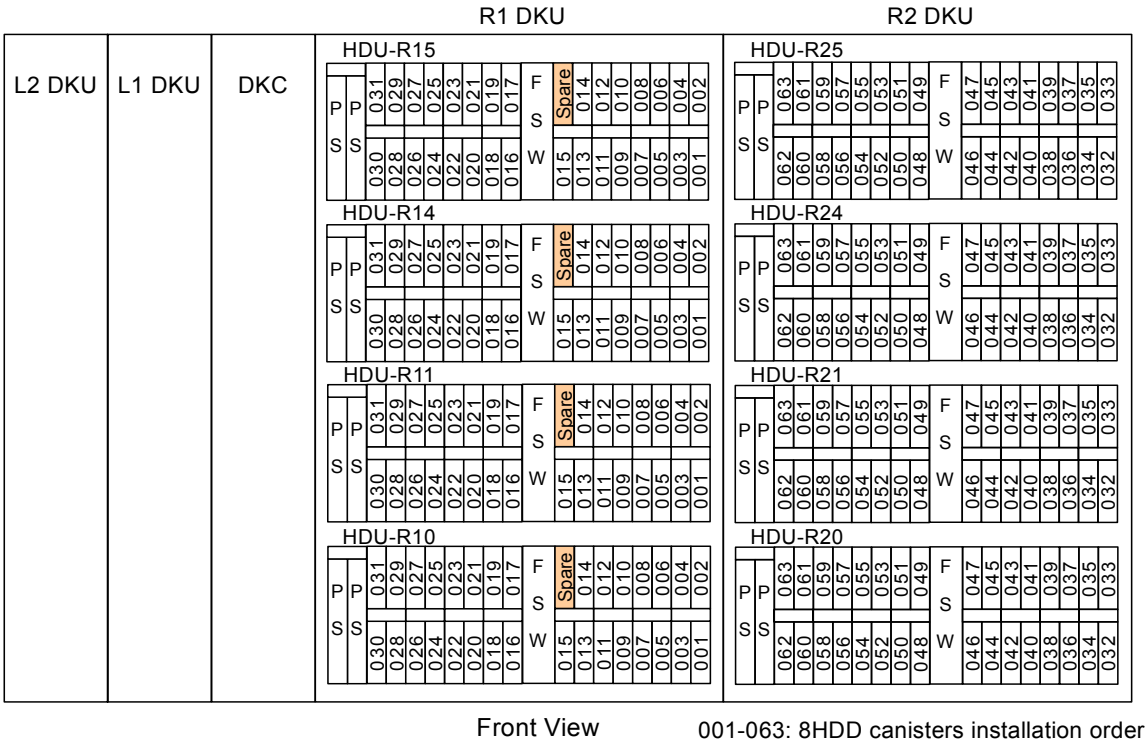
The relationship between HDDs installation order and RAID group number is shown in the Table 1.2-1.

Table 1.2-1 Relation between HDDs installation order and RAID group number (3D+1P/2D+2D)

	L2 DKU		L1 DKU		DKC		R1 DKU		R2 DKU	
	Installation Order	RAID Group No.	Installation Order	RAID Group No.			Installation Order	RAID Group No.	Installation Order	RAID Group No.
Upper	223	8-1	159	4-1	4th DKA Pair	2nd DKA Pair	032	2-1	096	6-1
	224	8-2	160	4-2			033	2-2	097	6-2
	225	8-3	161	4-3			034	2-3	098	6-3
	226	8-4	162	4-4			035	2-4	099	6-4
	227	8-5	163	4-5			036	2-5	100	6-5
	228	8-6	164	4-6			037	2-6	101	6-6
	229	8-7	165	4-7			038	2-7	102	6-7
	230	8-8	166	4-8			039	2-8	103	6-8
	231	8-9	167	4-9			040	2-9	104	6-9
	232	8-10	168	4-10			041	2-10	105	6-10
	233	8-11	169	4-11			042	2-11	106	6-11
	234	8-12	170	4-12			043	2-12	107	6-12
	235	8-13	171	4-13			044	2-13	108	6-13
	236	8-14	172	4-14			045	2-14	109	6-14
	237	8-15	173	4-15			046	2-15	110	6-15
	238	8-16	174(Spare)	4-16			047(Spare)	2-16	111	6-16
	239	8-17	175	4-17			048	2-17	112	6-17
	240	8-18	176	4-18			049	2-18	113	6-18
	241	8-19	177	4-19			050	2-19	114	6-19
	242	8-20	178	4-20			051	2-20	115	6-20
	243	8-21	179	4-21			052	2-21	116	6-21
	244	8-22	180	4-22			053	2-22	117	6-22
	245	8-23	181	4-23			054	2-23	118	6-23
	246	8-24	182	4-24			055	2-24	119	6-24
	247	8-25	183	4-25			056	2-25	120	6-25
	248	8-26	184	4-26			057	2-26	121	6-26
	249	8-27	185	4-27			058	2-27	122	6-27
	250	8-28	186	4-28			059	2-28	123	6-28
	251	8-29	187	4-29			060	2-29	124	6-29
	252	8-30	188	4-30			061	2-30	125	6-30
	253	8-31	189	4-31			062	2-31	126	6-31
	254	8-32	190	4-32			063	2-32	127	6-32
Lower	191	7-1	128	3-1	3rd DKA Pair	1st DKA Pair	001	1-1	064	5-1
	192	7-2	129	3-2			002	1-2	065	5-2
	193	7-3	130	3-3			003	1-3	066	5-3
	194	7-4	131	3-4			004	1-4	067	5-4
	195	7-5	132	3-5			005	1-5	068	5-5
	196	7-6	133	3-6			006	1-6	069	5-6
	197	7-7	134	3-7			007	1-7	070	5-7
	198	7-8	135	3-8			008	1-8	071	5-8
	199	7-9	136	3-9			009	1-9	072	5-9
	200	7-10	137	3-10			010	1-10	073	5-10
	201	7-11	138	3-11			011	1-11	074	5-11
	202	7-12	139	3-12			012	1-12	075	5-12
	203	7-13	140	3-13			013	1-13	076	5-13
	204	7-14	141	3-14			014	1-14	077	5-14
	205	7-15	142	3-15			015	1-15	078	5-15
	206	7-16	Spare	3-16			Spare	1-16	079	5-16
	207	7-17	143	3-17			016	1-17	080	5-17
	208	7-18	144	3-18			017	1-18	081	5-18
	209	7-19	145	3-19			018	1-19	082	5-19
	210	7-20	146	3-20			019	1-20	083	5-20
	211	7-21	147	3-21			020	1-21	084	5-21
	212	7-22	148	3-22			021	1-22	085	5-22
	213	7-23	149	3-23			022	1-23	086	5-23
	214	7-24	150	3-24			023	1-24	087	5-24
	215	7-25	151	3-25			024	1-25	088	5-25
	216	7-26	152	3-26			025	1-26	089	5-26
	217	7-27	153	3-27			026	1-27	090	5-27
	218	7-28	154	3-28			027	1-28	091	5-28
	219	7-29	155	3-29			028	1-29	092	5-29
	220	7-30	156	3-30			029	1-30	093	5-30
	221	7-31	157	3-31			030	1-31	094	5-31
	222	7-32	158	3-32			031	1-32	095	5-32

No.	Model Number	Model Name	Data and Parity
1	DKU-F455I-36K4/72J4/72K4/146J4/146JF/146JQ	4 HDD Canisters × 2sets	Data and Parity Drive

(2) RAID5 (7D+1P)



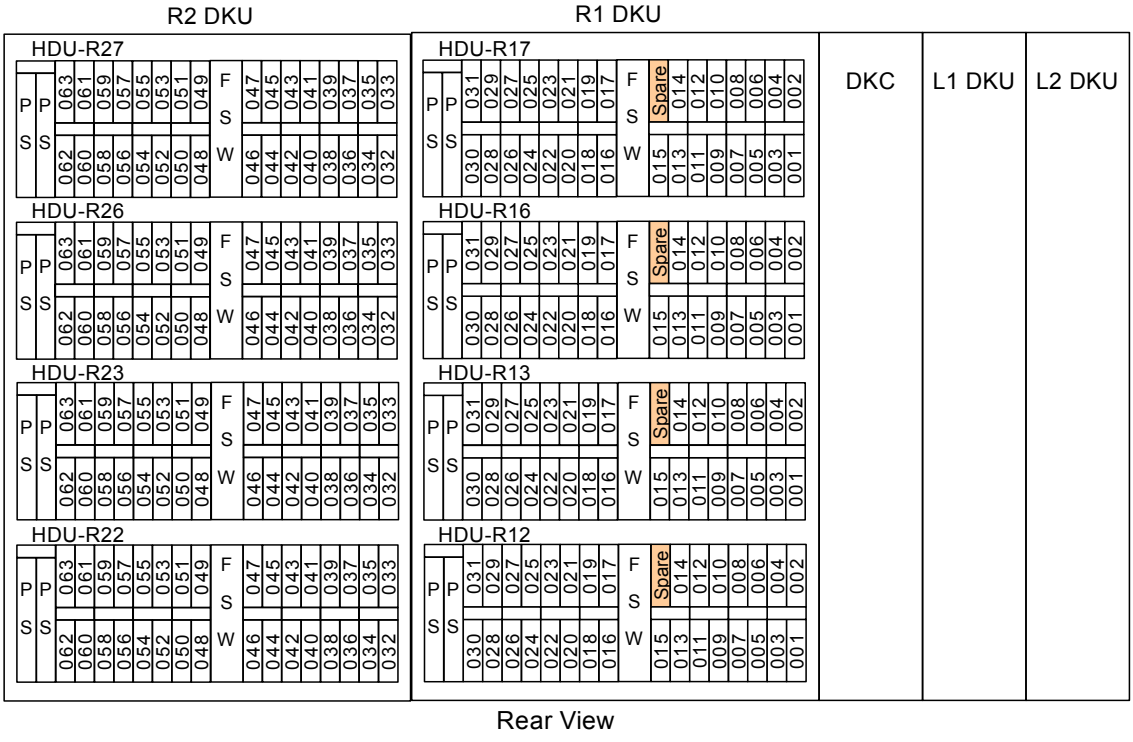
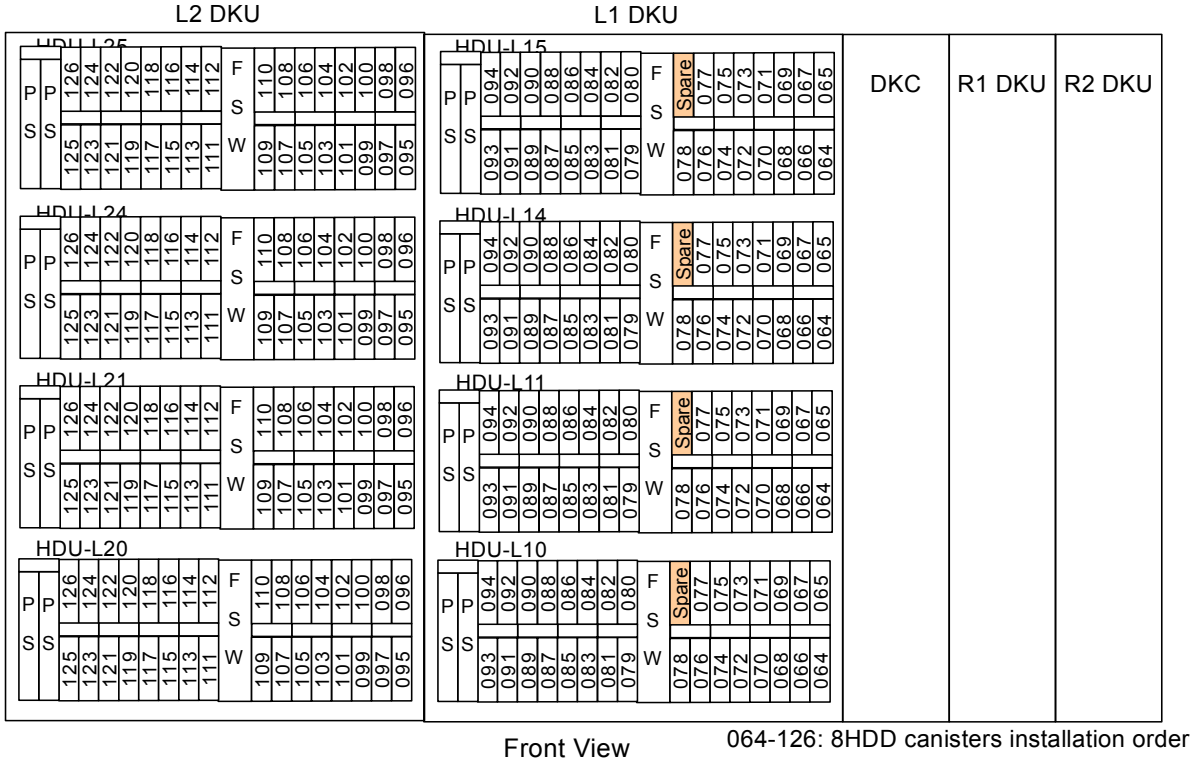


Fig. 1.2-2 (7D+1P) Data Drive/Parity Drive Expansion Sequence (1/2)

The relationship between HDDs installation order and RAID group number is shown in the Table 1.2-2.



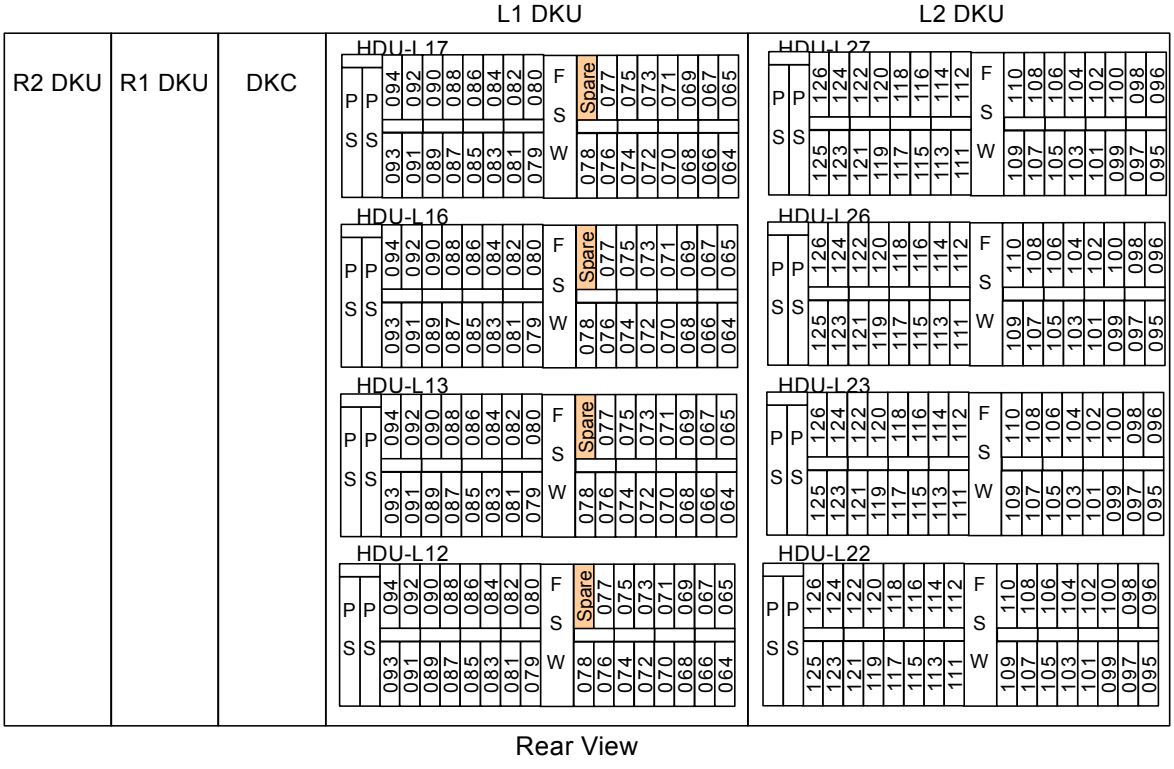


Fig. 1.2-2 (7D+1P) Data Drive/Parity Drive Expansion Sequence (2/2)

The relationship between HDDs installation order and RAID group number is shown in the Table 1.2-2.

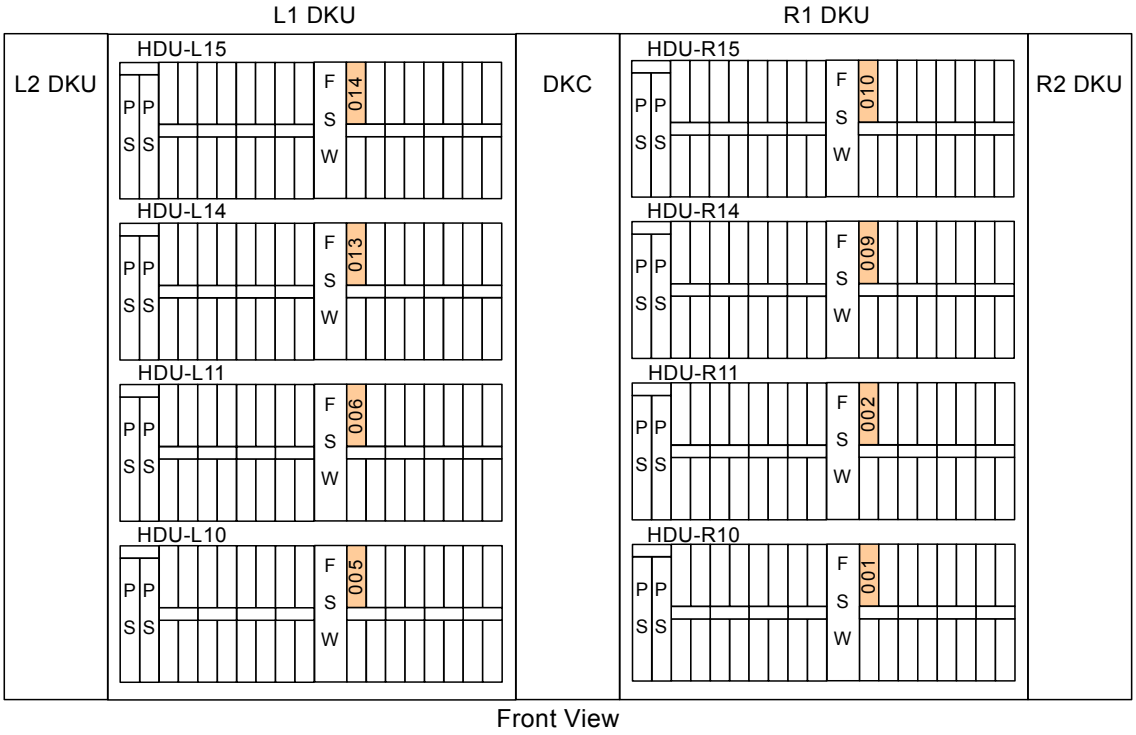
Table 1.2-2 Relation between HDDs installation order and RAID group number (7D+1P)

L2 DKU		L1 DKU		DKC		R1 DKU		R2 DKU	
Installation Order	RAID Group No.	Installation Order	RAID Group No.			Installation Order	RAID Group No.	Installation Order	RAID Group No.
095	7-1 , (8-1)	064	3-1 , (4-1)			001	1-1 , (2-1)	032	5-1 , (6-1)
096	7-2 , (8-2)	065	3-2 , (4-2)			002	1-2 , (2-2)	033	5-2 , (6-2)
097	7-3 , (8-3)	066	3-3 , (4-3)			003	1-3 , (2-3)	034	5-3 , (6-3)
098	7-4 , (8-4)	067	3-4 , (4-4)			004	1-4 , (2-4)	035	5-4 , (6-4)
099	7-5 , (8-5)	068	3-5 , (4-5)			005	1-5 , (2-5)	036	5-5 , (6-5)
100	7-6 , (8-6)	069	3-6 , (4-6)			006	1-6 , (2-6)	037	5-6 , (6-6)
101	7-7 , (8-7)	070	3-7 , (4-7)			007	1-7 , (2-7)	038	5-7 , (6-7)
102	7-8 , (8-8)	071	3-8 , (4-8)			008	1-8 , (2-8)	039	5-8 , (6-8)
103	7-9 , (8-9)	072	3-9 , (4-9)			009	1-9 , (2-9)	040	5-9 , (6-9)
104	7-10 , (8-10)	073	3-10 , (4-10)			010	1-10 , (2-10)	041	5-10 , (6-10)
105	7-11 , (8-11)	074	3-11 , (4-11)			011	1-11 , (2-11)	042	5-11 , (6-11)
106	7-12 , (8-12)	075	3-12 , (4-12)			012	1-12 , (2-12)	043	5-12 , (6-12)
107	7-13 , (8-13)	076	3-13 , (4-13)			013	1-13 , (2-13)	044	5-13 , (6-13)
108	7-14 , (8-14)	077	3-14 , (4-14)			014	1-14 , (2-14)	045	5-14 , (6-14)
109	7-15 , (8-15)	078	3-15 , (4-15)	3rd / 4th	1st / 2nd	015	1-15 , (2-15)	046	5-15 , (6-15)
110	7-16 , (8-16)	(Spare)	3-16 , (4-16)	DKA	DKA	(Spare)	1-16 , (2-16)	047	5-16 , (6-16)
111	7-17 , (8-17)	079	3-17 , (4-17)	Pairs	Pairs	016	1-17 , (2-17)	048	5-17 , (6-17)
112	7-18 , (8-18)	080	3-18 , (4-18)			017	1-18 , (2-18)	049	5-18 , (6-18)
113	7-19 , (8-19)	081	3-19 , (4-19)			018	1-19 , (2-19)	050	5-19 , (6-19)
114	7-20 , (8-20)	082	3-20 , (4-20)			019	1-20 , (2-20)	051	5-20 , (6-20)
115	7-21 , (8-21)	083	3-21 , (4-21)			020	1-21 , (2-21)	052	5-21 , (6-21)
116	7-22 , (8-22)	084	3-22 , (4-22)			021	1-22 , (2-22)	053	5-22 , (6-22)
117	7-23 , (8-23)	085	3-23 , (4-23)			022	1-23 , (2-23)	054	5-23 , (6-23)
118	7-24 , (8-24)	086	3-24 , (4-24)			023	1-24 , (2-24)	055	5-24 , (6-24)
119	7-25 , (8-25)	087	3-25 , (4-25)			024	1-25 , (2-25)	056	5-25 , (6-25)
120	7-26 , (8-26)	088	3-26 , (4-26)			025	1-26 , (2-26)	057	5-26 , (6-26)
121	7-27 , (8-27)	089	3-27 , (4-27)			026	1-27 , (2-27)	058	5-27 , (6-27)
122	7-28 , (8-28)	090	3-28 , (4-28)			027	1-28 , (2-28)	059	5-28 , (6-28)
123	7-29 , (8-29)	091	3-29 , (4-29)			028	1-29 , (2-29)	060	5-29 , (6-29)
124	7-30 , (8-30)	092	3-30 , (4-30)			029	1-30 , (2-30)	061	5-30 , (6-30)
125	7-31 , (8-31)	093	3-31 , (4-31)			030	1-31 , (2-31)	062	5-31 , (6-31)
126	7-32 , (8-32)	094	3-32 , (4-32)			031	1-32 , (2-32)	063	5-32 , (6-32)

- Install RAID 5 (7D+1P) forming pairs using the same number of the two RAID groups (RAID groups 1 and 2, 3 and 4, 5 and 6, and 7 and 8) of RAID 5 (3D+1P).
  (Example: RAID group numbers 1-1 and 2-1)
  The types of HDDs to be installed in each pair must be the same.
- In the case of RAID 5 (7D+1P), only odd RAID numbers are displayed on the SVP. (Group numbers shown in parentheses in the table above are not displayed.)
- When RAID 5 (3D+1P) or RAID 1 (2D+2D) and RAID 5 (7D+1P) are configured mixture, note that duplicated group numbers are excluded.
  Example: When Group No. 1-1 is configured for RAID 5 (7D+1P), Group No. 2-1 is excluded and cannot be configure for RAID 5 (3D+1P).

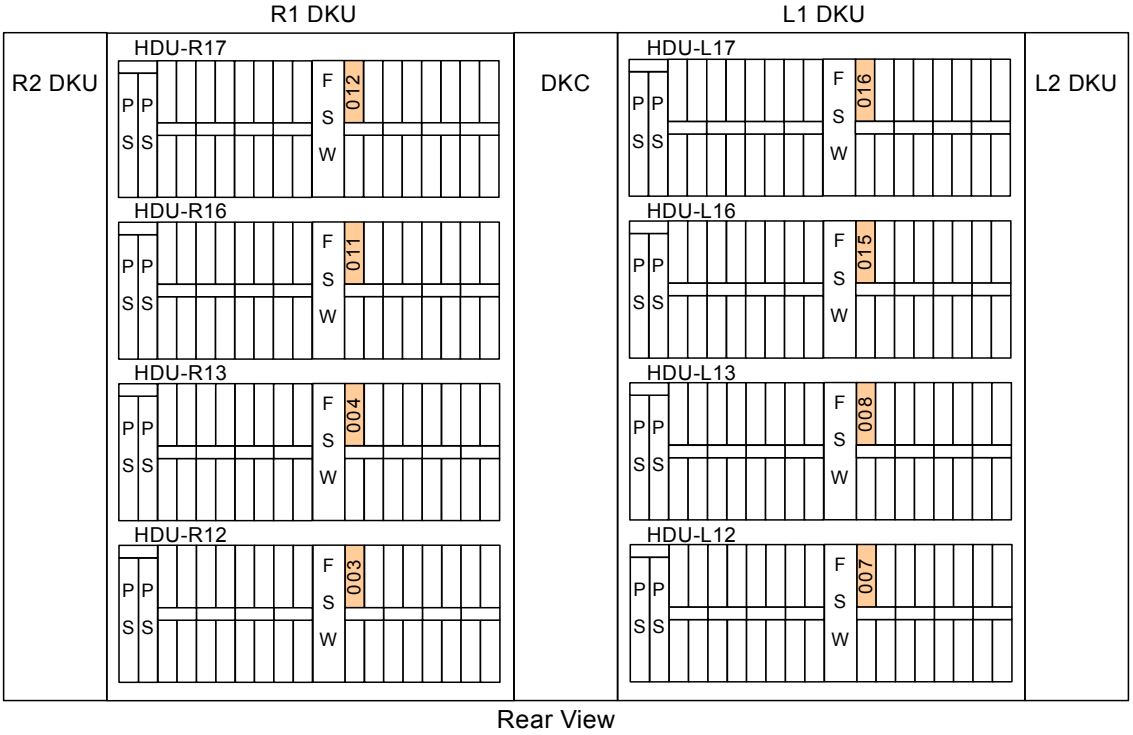
No.	Model Number	Model Name	Data and Parity
1	DKU-F455I-36K1/72J1/72K1/146J1/146JS/146JM	1 HDD Canister	Spare Drive

(3) Spare HDD



Front View

001-016: Spare HDD canister installation order



Rear View

Fig. 1.2-3 Spare Drive Expansion Sequence

(2) DKU405I

The order in which DKU-F405I-18J4/18K4/36K4/47J4/72J4/72K4/146J4/180H4 (4 HDD canisters) units are to be installed in a DKU-F405I-B4 is shown in Fig. 1.2-4 and the order in which DKU-F405I-18J1/18K1/36K1/47J1/72J1/72K1/146J1/180H1 (spare HDD) units are to be installed in Fig. 1.2-5.

NOTICE:

(1) The position to be installed in the DKU-R2 or DKU-L2 is different from one in the DKU-R1 or DKU-L1.
Be sure to set the HDDs in the right position.

(2) Don't use the position marked as X in the DKU-R3 and DKU-L3.
Wrong setting of a HDD in the DKU-R3 or DKU-L3 may cause DKU failure on the same SCSI path.

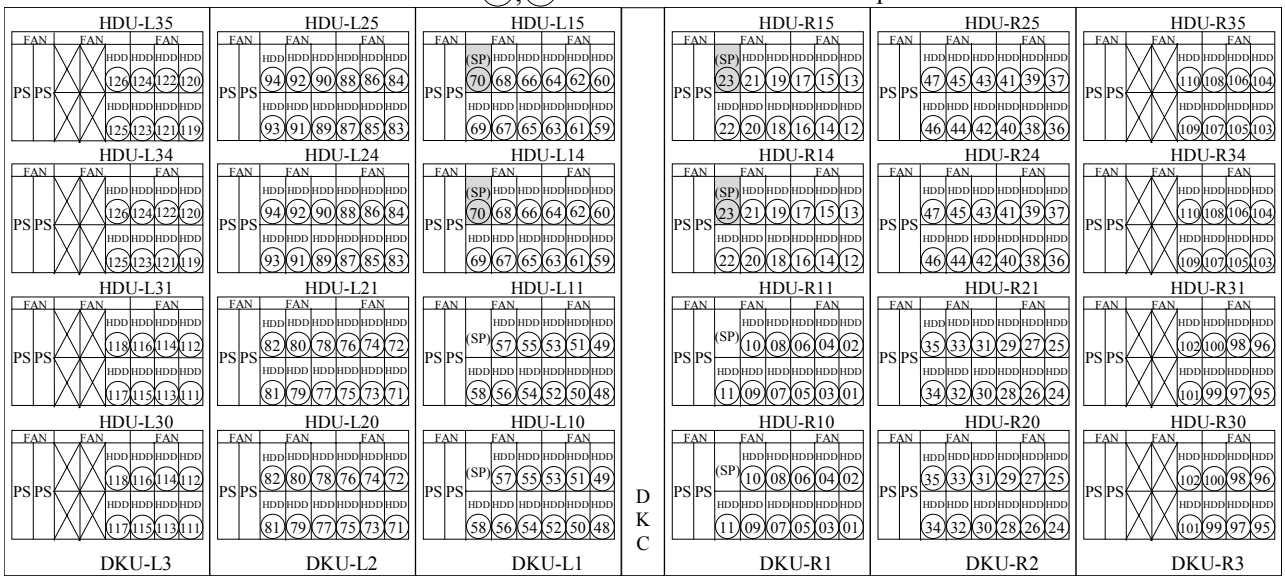
(3) Specifications for the selection of the spare HDD are shown below.
A sparing of an HDD with a smaller capacity for an HDD with a larger capacity is possible. However, there are some cases in which an HDD cannot be assigned depending on the drive type as shown in the table below.

Copy destination spare HDD / Copy source data HDD	DKR1B-Jxx DKR1C-Jxx DKR2B-Jxx DKR2C-Jxx DKR2D-Jxx DKR2E-Jxx DKR2F-Jxx	DKS2A-Kxx DKS2B-Kxx DKS2C-Kxx	DKS1A-Hxx
DKR1B-Jxx DKR1C-Jxx DKR2B-Jxx DKR2C-Jxx DKR2D-Jxx DKR2E-Jxx DKR2F-Jxx	A spare HDD can be assigned when the following condition is satisfied. Capacity of a copy source data HDD ≤ Capacity of a copy destination spare HDD.	Assignment cannot be done.	Assignment cannot be done.
DKS2A-Kxx DKS2B-Kxx DKS2C-Kxx	Assignment cannot be done.	A spare HDD can be assigned when the following condition is satisfied. Capacity of a copy source data HDD ≤ Capacity of a copy destination spare HDD	Assignment cannot be done.
DKS1A-Hxx	Assignment cannot be done.	Assignment cannot be done.	A spare HDD can be assigned when the following condition is satisfied. Capacity of a copy source data HDD ≤ Capacity of a copy destination spare HDD

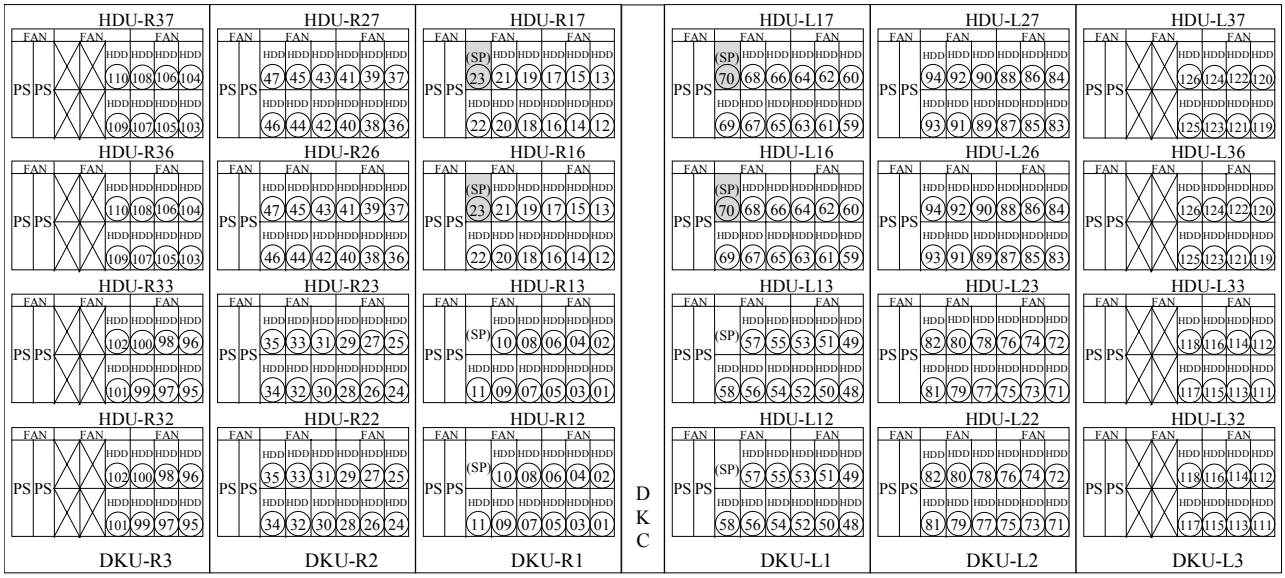
No.	Model Number	Model Name	Data and Parity
1	DKU-F405I- 18J4/18K4/36K4/47J4/72J4/72K4/146J4/180H4	4 HDD Canisters	Data and Parity Drive

(01) - (126) : 4HDD canister expansion sequence

Note: Number of (23), (70) can be used as data HDD or spare HDD



Front view



Rear view

Fig. 1.2-4 Data Drive/Parity Drive Expansion Sequence

No.	Model Number	Model Name	Data and Parity
1	DKU-F405I- 18J1/18K1/36K1/47J1/72J1/72K1/146J1/180H1	1 HDD Canister	Spare Drive

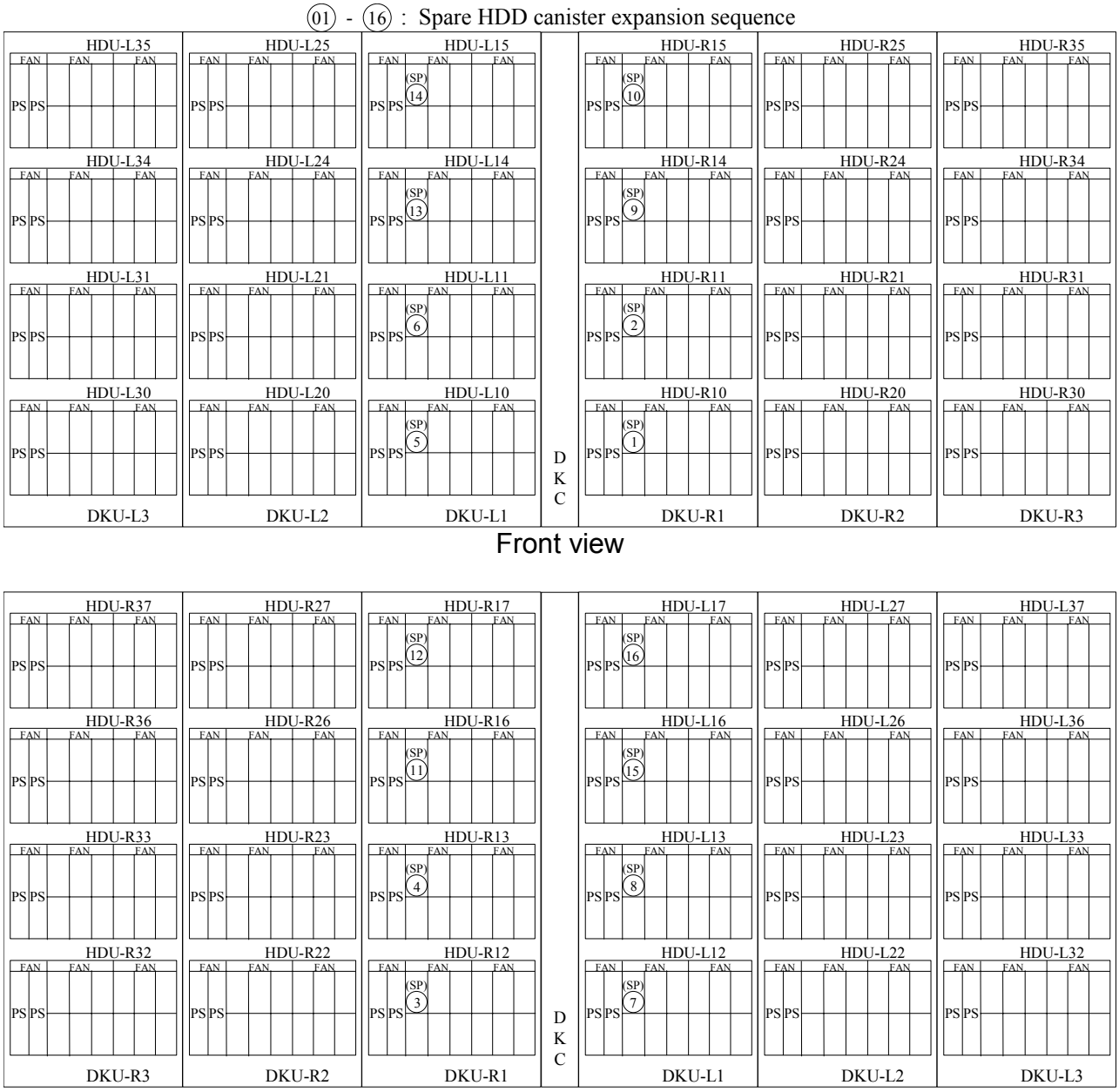


Fig. 1.2-5 Spare Drive Expansion Sequence

1.3 Explanation of Channel Option Configuration

1.3.1 List of Channel Options

Channel options which can be installed in the DKC460I are shown in Table 1.3-1. Up to 4 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	8-port	Short Wave 8-port	Long Wave 8-port	2Gbps 8-port
Option name	8S	8SE *4	8MS	8ML	8HLE/8HLF
Data transfer rate (MB/s)	17	17	100/200	100/200	100/200
Number of connected ports/option	8	8	8	8	8
Host interface	Serial	Serial	FICON	FICON	FCP
Number of installable options/subsystem	1/2/3/4	1/2/3/4/5 *4/ 6 *4	1/2/3/4	1/2/3/4	1/2/3/4
Cable length	3km	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	1/2/3/4	1/2/3/4	1/2/3/4	1/2/3/4	1/2/3/4	1/2/3/4
Cable length	500m *1	500m/300m *2	500m/300m *2	500m/300m *2	500m/275m *3	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 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.
*4 A maximum of two sets of DKC-F460I-8SE are installable in the DKA locations. In this case, the number of installations of the DKA pair is restricted to two or three sets.

Up to 4 sets of combinations of the aforementioned channel options and up to 64 ports can be connected to each subsystem. Further, the number of ports connected to the subsystem is extensible up to 80 ports by adding the 8SE (Serial CHA) to the DKA locations.

1.3.3 Installing Location

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

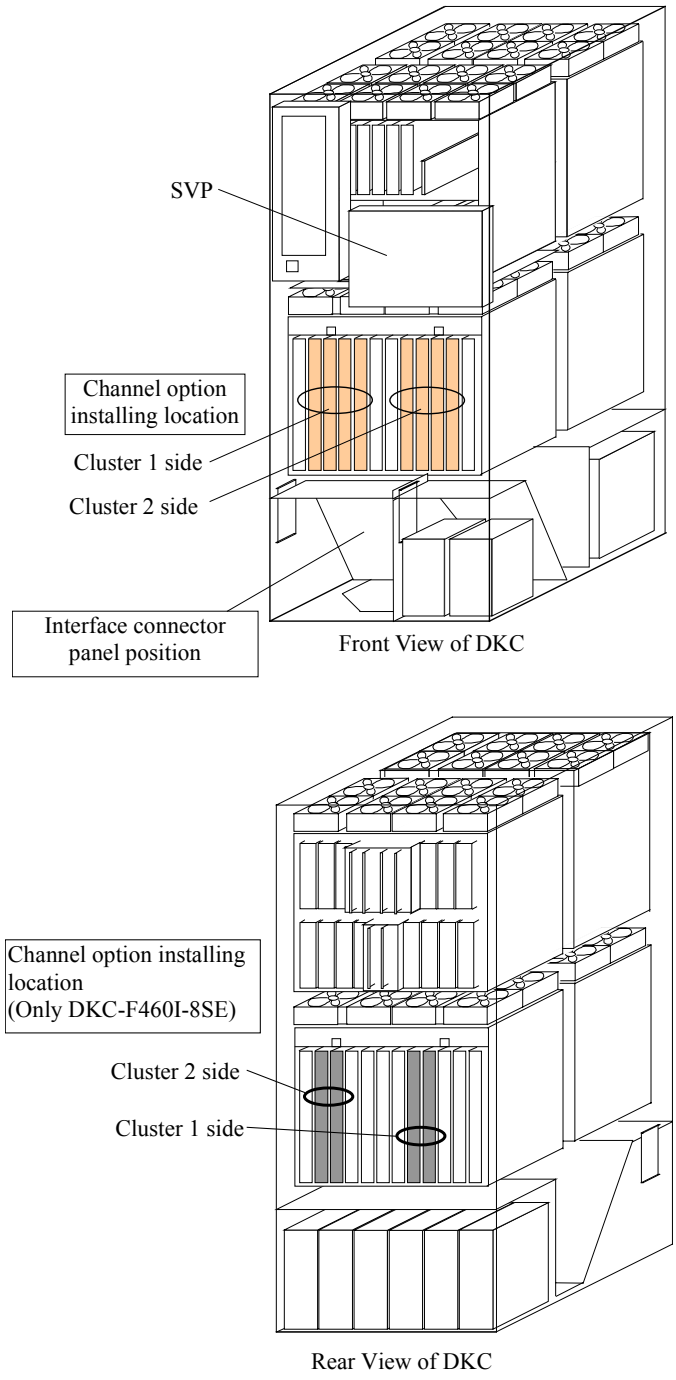


Fig. 1.3-1 Channel Option Installation

(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				
N	P	Q	R	S	T	U	V	W	X	Y	Z
W	8S/8SE	8S/8SE	8S/8SE	8S/8SE	W	W	8S/8SE	8S/8SE	8S/8SE	8S/8SE	W
P	8GSE/F	8GSE/F	8GSE/F	8GSE/F	P	P	8GSE/F	8GSE/F	8GSE/F	8GSE/F	P
4	4HSE/F	4HSE/F	4HSE/F	4HSE/F	4	4	4HSE/F	4HSE/F	4HSE/F	4HSE/F	4
8	8HSE/F	8HSE/F	8HSE/F	8HSE/F	9	9	8HSE/F	8HSE/F	8HSE/F	8HSE/F	8
1	8HLE/F	8HLE/F	8HLE/F	8HLE/F	0	0	8HLE/F	8HLE/F	8HLE/F	8HLE/F	1
-	16HSF	16HSF	16HSF	16HSF	-	-	16HSF	16HSF	16HSF	16HSF	-
A	8MS	8MS	8MS	8MS	A	B	8MS	8MS	8MS	8MS	B
	8ML	8ML	8ML	8ML			8ML	8ML	8ML	8ML	
	4NS	4NS	4NS	4NS			4NS	4NS	4NS	4NS	
	8IS	8IS	8IS	8IS			8IS	8IS	8IS	8IS	
CSW-1N	CHA-1P (Basic)	CHA-1Q (Add.1)	CHA-1R (Add.2)	CHA-1S (Add.3)	CACHE-1T	CACHE-1U	CHA-2V (Basic)	CHA-2W (Add.1)	CHA-2X (Add.2)	CHA-2Y (Add.3)	CSW-2Z

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. For the configuration of each PCB, see Table 1.3-1.

Table 1.3-4 PCB Location Diagram (Rear Logic Box)

CL2									CL1						
M	L		K		J	H	G	F	E		D		C	B	A
W	8SE	4th	8SE	3rd	2nd	1st	W	W	8SE	4th	8SE	3rd	2nd	1st	W
P	-		-				P	P	-		-				P
4	-	D	-	D	D	D	4	4	-	D	-	D	D	D	4
8	-	K	-	K	K	K	9	9	-	K	-	K	K	K	8
1	-	A	-	A	A	A	0	0	-	A	-	A	A	A	1
-A	-		-				-A	-B	-		-				-B
CSW-1N	CHA-2L (Add.5)	DKA-2L	CHA-2K (Add.4)	DKA-2K	DKA-2J	DKA-2H	CACHE-2G	CACHE-2F	CHA-1E (Add.5)	DKA-1E	CHA-1D (Add.4)	DKA-1D	DKA-1C	DKA-1B	CSW-2Z

8SE: PCB for DKC-F460I-8SE

(3) Interface connector panel location
The interface connector panel location is shown in Fig. 1.3-2.

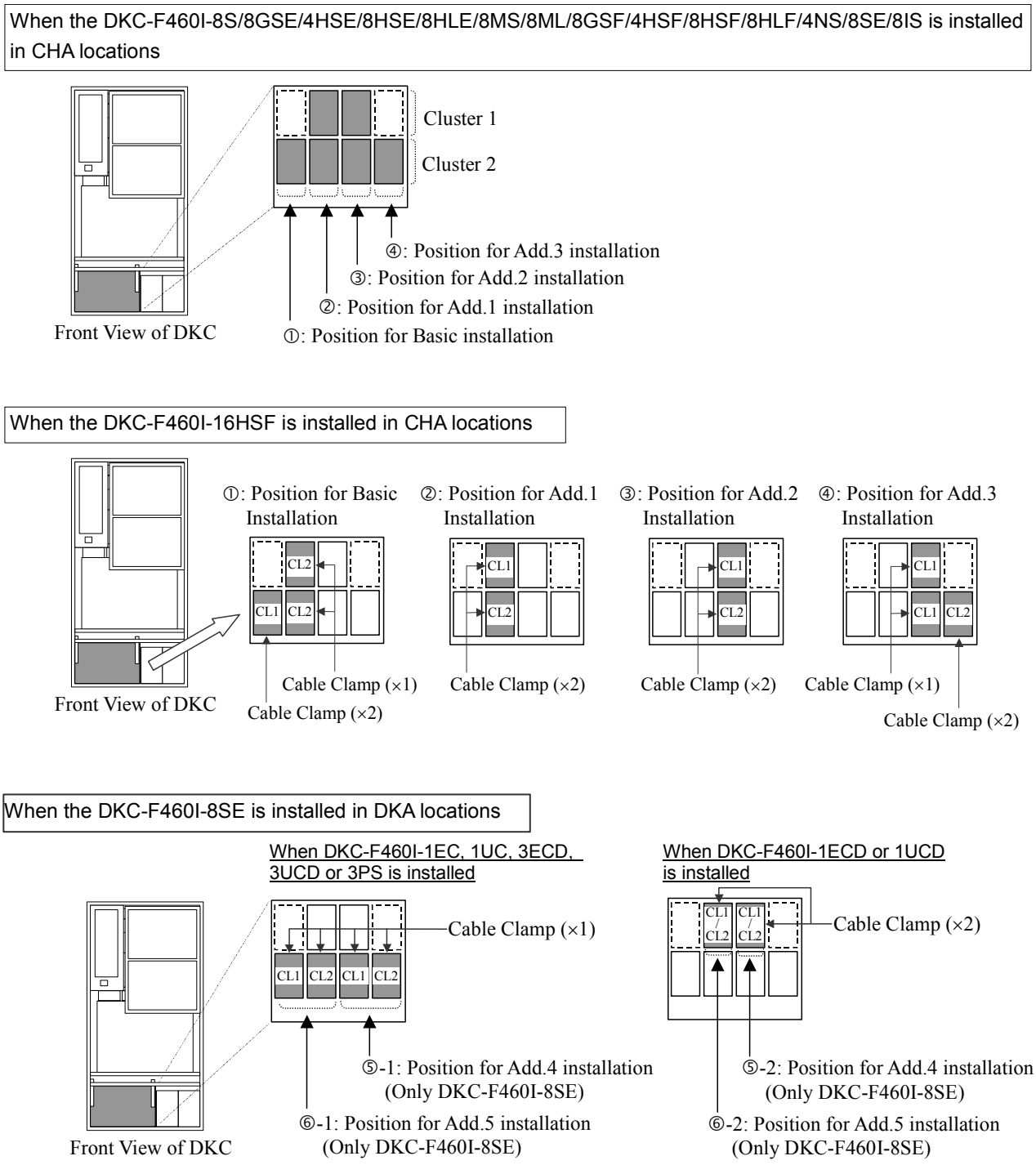


Fig. 1.3-2 Interface connector panel location

Refer to the LOCATION04-80 through 04-87 for how to attach the cable clamp and channel interface cable routing.

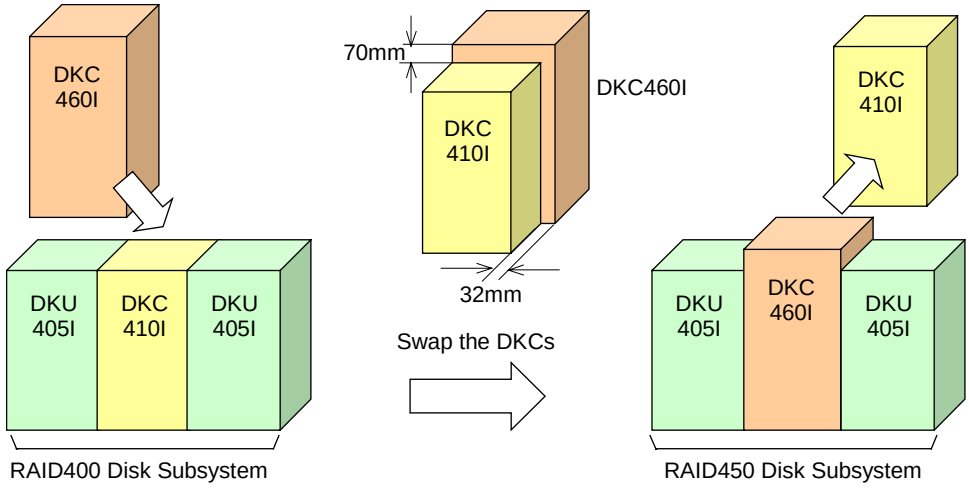
1.4 RAID400 DKU Connection

1.4.1 Configuration

The configuration which connects RAID450 and DKU405 has a DKC swap and DKU addition.

(1) DKC Swap

DKC410I of the already installed RAID400 disk subsystem is swapped to DKC460I.



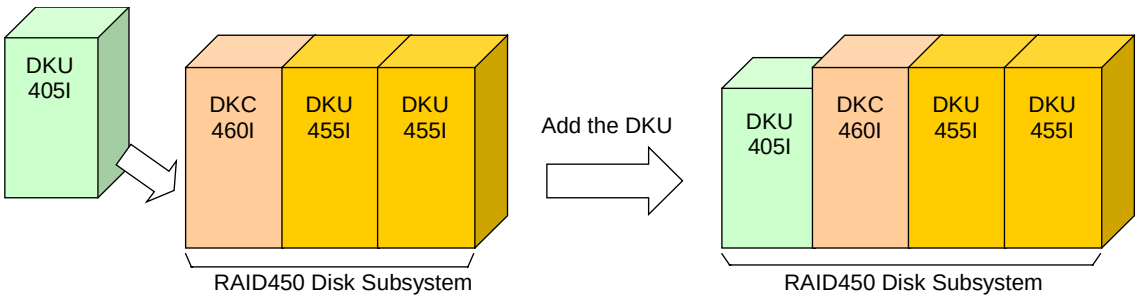
RAID400I differs in a frame dimension and breaker capacity from RAID450.

Item		RAID450	RAID400
Dimension W / D / H (mm)	DKC	782 / 800 / 1,860	750 / 800 / 1,790
	DKU	750 / 800 / 1,860	600 / 800 / 1,790
Breaker Capacity	DKC	3 Phase: 60A*1 /30A Single Phase:40A	3 Phase: –*1 Single Phase:20A
	DKU	3 Phase: 60A/30A Single Phase: 50A	3 Phase: 30A Single Phase: 20A

*1: 3 phase AC power model received power from the AC power supplier in the R1 DKU. When DKC410I is swapped to DKC460I, the power consumption of DKC460I is large, and since it cannot supply from R1 DKU (DKU405I). In this case, DKC460I must be 3 phase/30A AC input model.
Or DKC460I and DKU405I must be single phase AC input model.

(2) DKU Addition

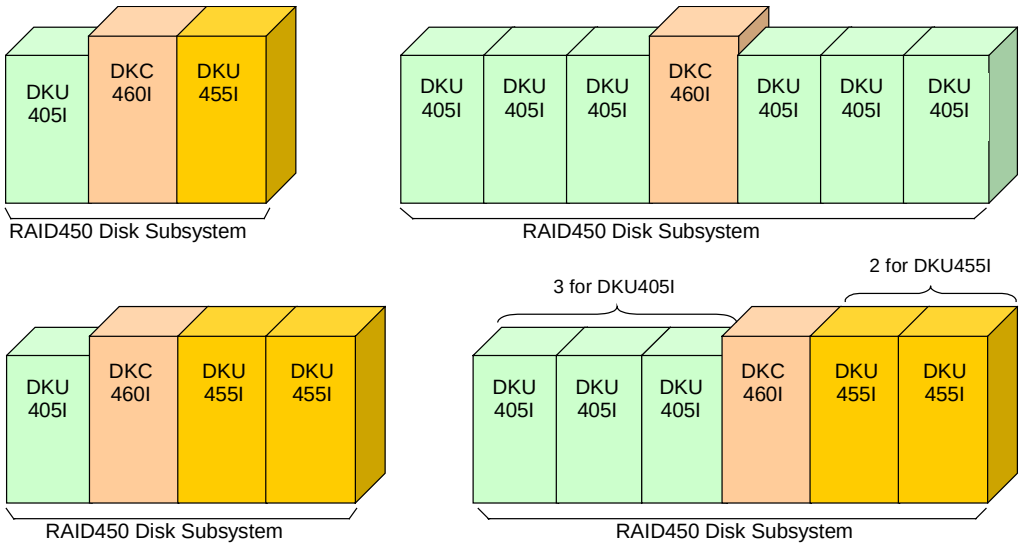
DKU405I is added to the existing RAID450 disk subsystem.



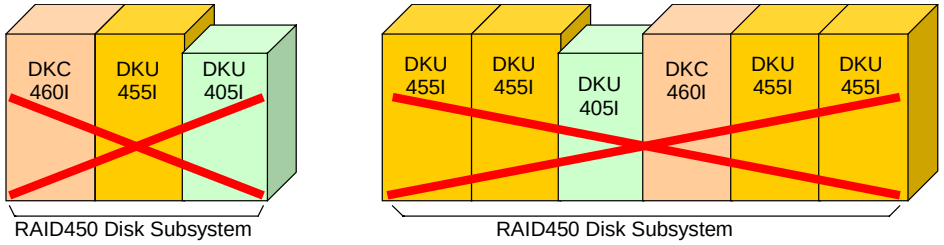
In this case, DKU405I must be installed in the left side of the front of DKC460I.

1.4.2 Restriction

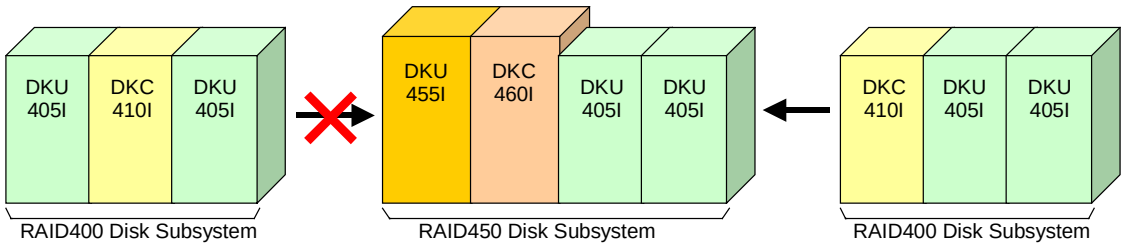
(1) The same type of DKUs can be connected on each side of DKC460I.
(2) The maximum numbers of DKUs on each side of DKC460I are 2 for DKU455I and 3 for DKU405I.



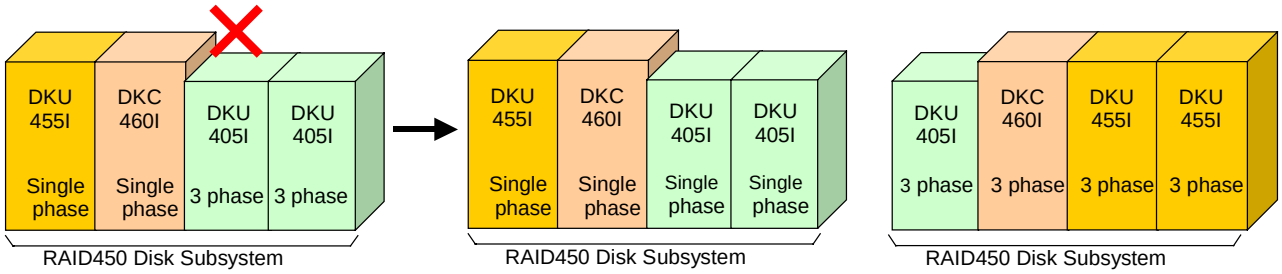
(3) DKU405I can not connect directly DKU455I.



(4) When connecting with DKC460I, don't change the location of existing DKU405I.



(5) 3 phase frame and single phase frame is not mixed in one disk subsystem.



1.4.3 Notes

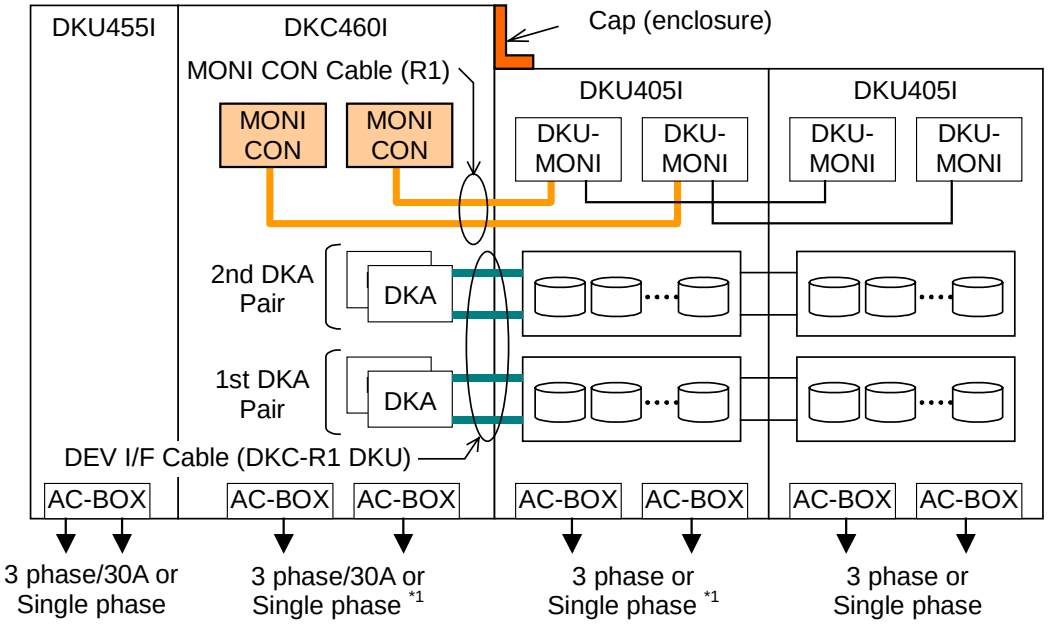
(1) RAID450 differ in frame dimension from RAID400. Therefore, it is necessary to pay attention to the installation place.
(2) RAID450 needs more electrical power than RAID400. It is necessary to confirm if customer's power facility has enough capacity to introduce RAID450.
(3) 3 phase AC power model received power from the AC power supplier in the R1 DKU.
When DKC410I is swapped to DKC460I, the power consumption of DKC460I is large, and since it cannot supply from R1 DKU (DKU405I). In this case, DKC460I must be 3 phase/30A AC input model. Or DKC460I and DKU405I must be single phase AC input model.
(4) RAID5 (7D+1P) and RAID1 (4D+4D) are not supported for HDDs in DKU405I controlled by DKC460I.
(5) Install the spare disk in the object for DKU405I, and DKU455I, respectively.
The spare disk in DKU405I cannot be used as an object for DKU455I. Similarly the spare disk in DKU455 cannot be used as an object for DKU405I.
(6) Shared memory and cache memory capacity required when DKU405I is connected to DKC460I is the same as the case where DKU455I is connected. (Refer to the Table 3.1.3-1 and 3.1.3-2 and Appendix)

1.4.4 Option Kit

An option required for RAID400 DKU connection is shown in the following table.

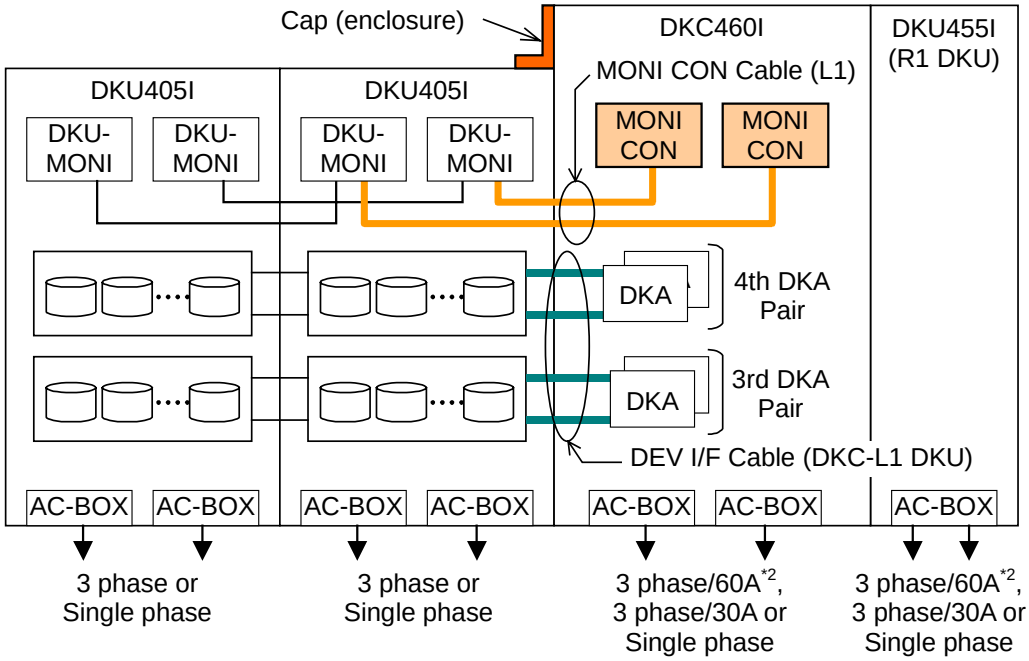
No.	Configuration	Model Name	Parts	Remarks
1	DKU405I is connected to the right side of DKC460I	DKC-F460I-U405R	• MONI CON PCB × 2 • MONI CON Cable(R1) × 2 • DEV I/F Cable(DKC-R1 DKU) × 16 • CAP × 1	AC inputs are 3 phase/30A or single phase
2	DKU405I is connected to the left side of DKC460I	DKC-F460I-U405L	• MONI CON PCB × 2 • MONI CON Cable(L1) × 2 • DEV I/F Cable(DKC-L1 DKU) × 16 • CAP × 1	
3	DKU405I is connected to the both side of DKC460I	DKC-F460I-U405R + DKC-F460I-U405L	Parts of No.1 and 2 are required.	One set of MONI CON PCB is used.

DKU405I is connected to the right side of DKC460I



*1: DKC460I has large power consumption and cannot receive power from the AC power supplier in the R1 DKU (DKU405), DKC460I must receive 3 phase/30A or single phase AC power supplies independently. In addition, 3 phase and single phase cannot mix in one subsystem.

DKU405I is connected to the left side of DKC460I

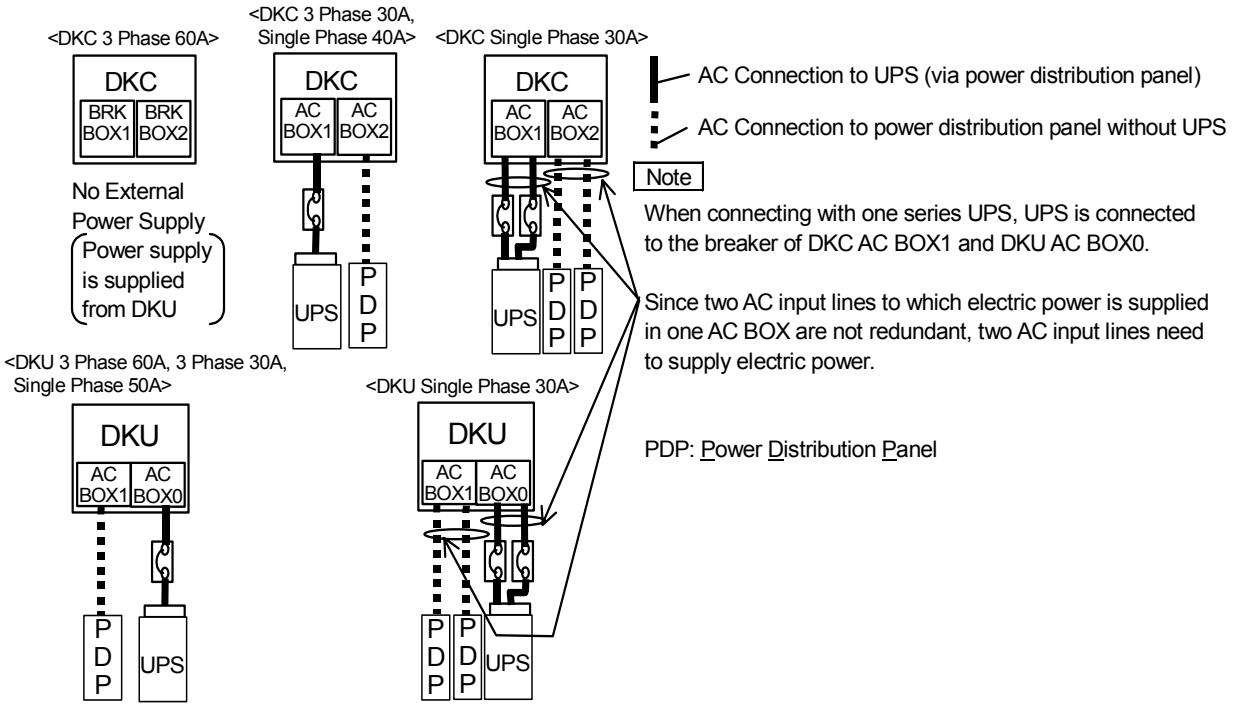


*2: In this case, DKC460I received power from the AC power supplier in the R1 DKU. In addition, 3 phase and single phase cannot mix in one subsystem.

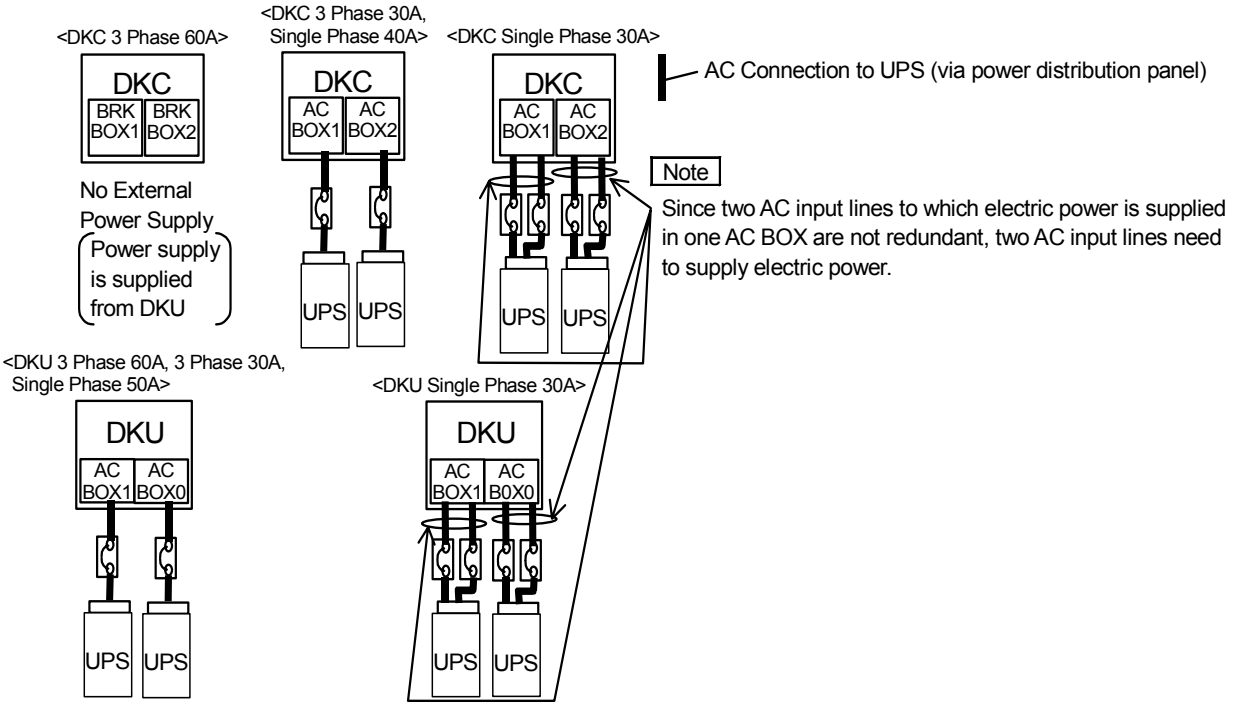
1.5 Connection of External Power Cable

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.

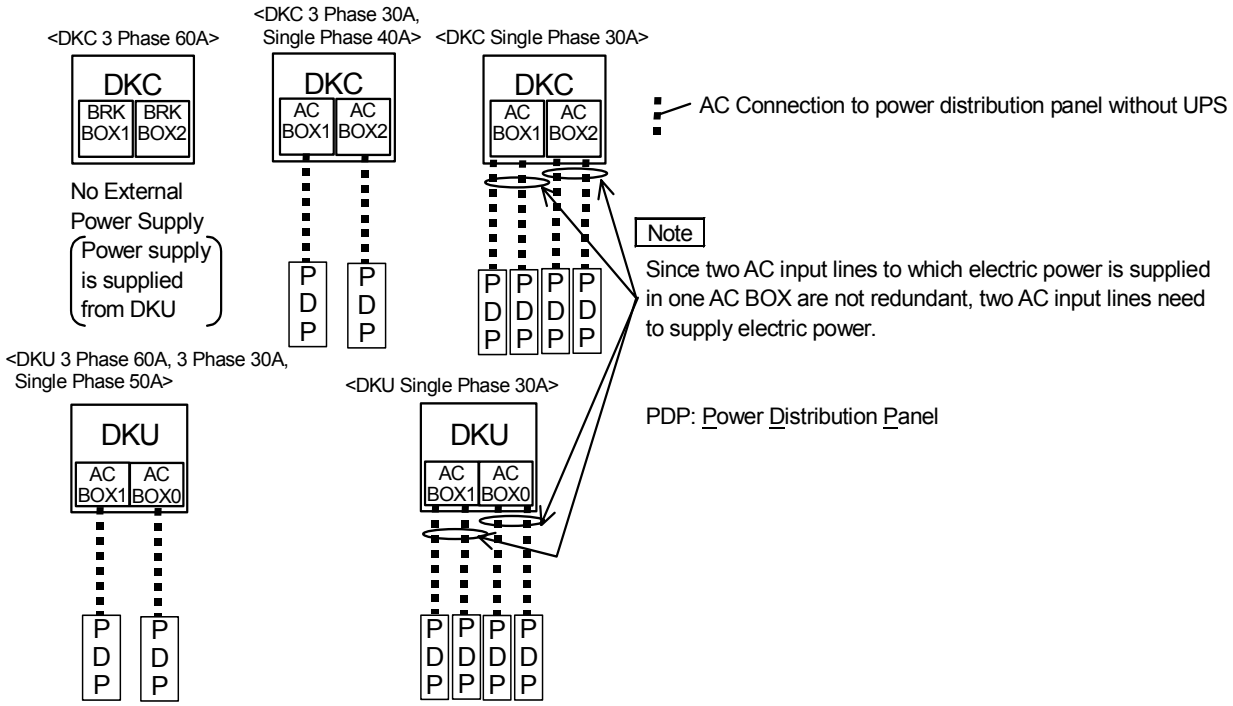
- UPS Connection (one series)



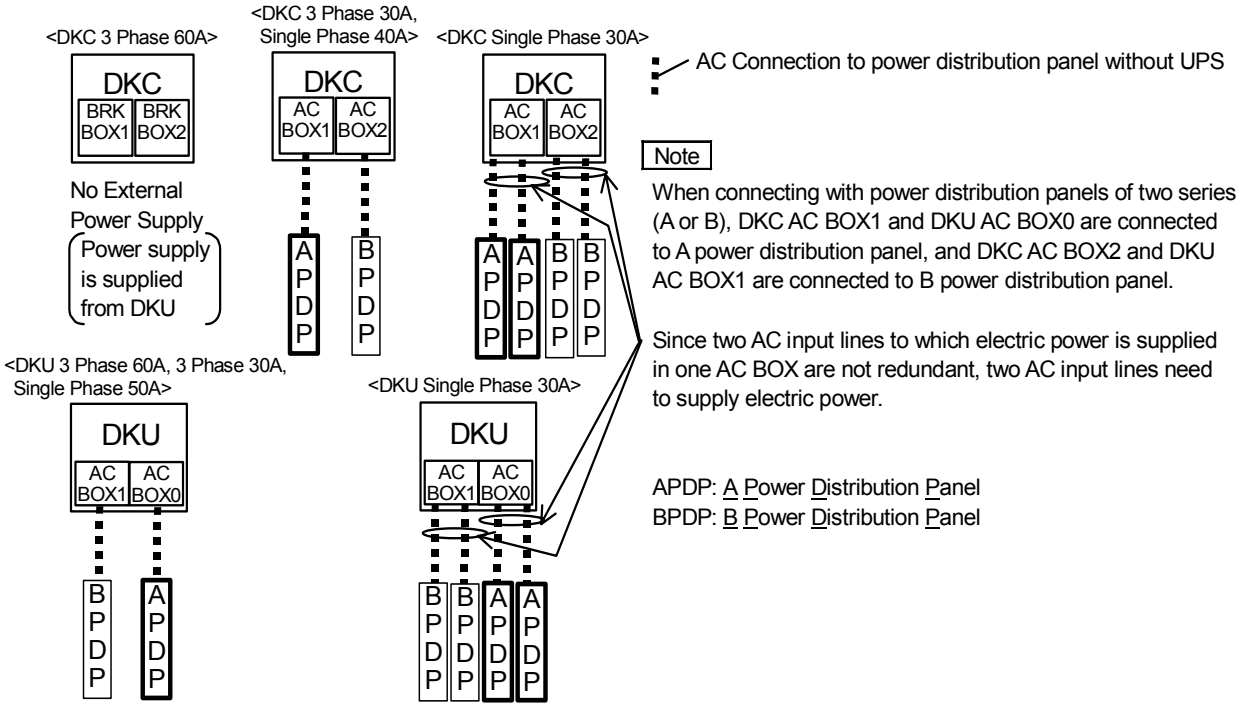
- UPS Connection (two series)



- Power Distribution Panel Connection (one series)



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



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.

Precaution on New Installation

- The DKC Additional Power Supply (DKC-F460I-80) must be installed when the total numbers of the installation of CHA and DKA options are 4 or more.
- The NAS Available Additional Power Supply (DKC-F460I-NAPS) is an indispensable option in the following case.
  - When the total numbers of the installation of CHA and DKA option are 4 or more.
  - When NAS CHA is installed in the CHA slot of 3rd CHA (Add.2) or 4th CHA (Add.3).
  - When DKC-F460I-80 is installed in the existing DKC which adds NAS CHA.
    In this case, DKC-F460I-80 is exchanged for DKC-F460I-NAPS.

Table 2.1-1 New Installation Procedure Table

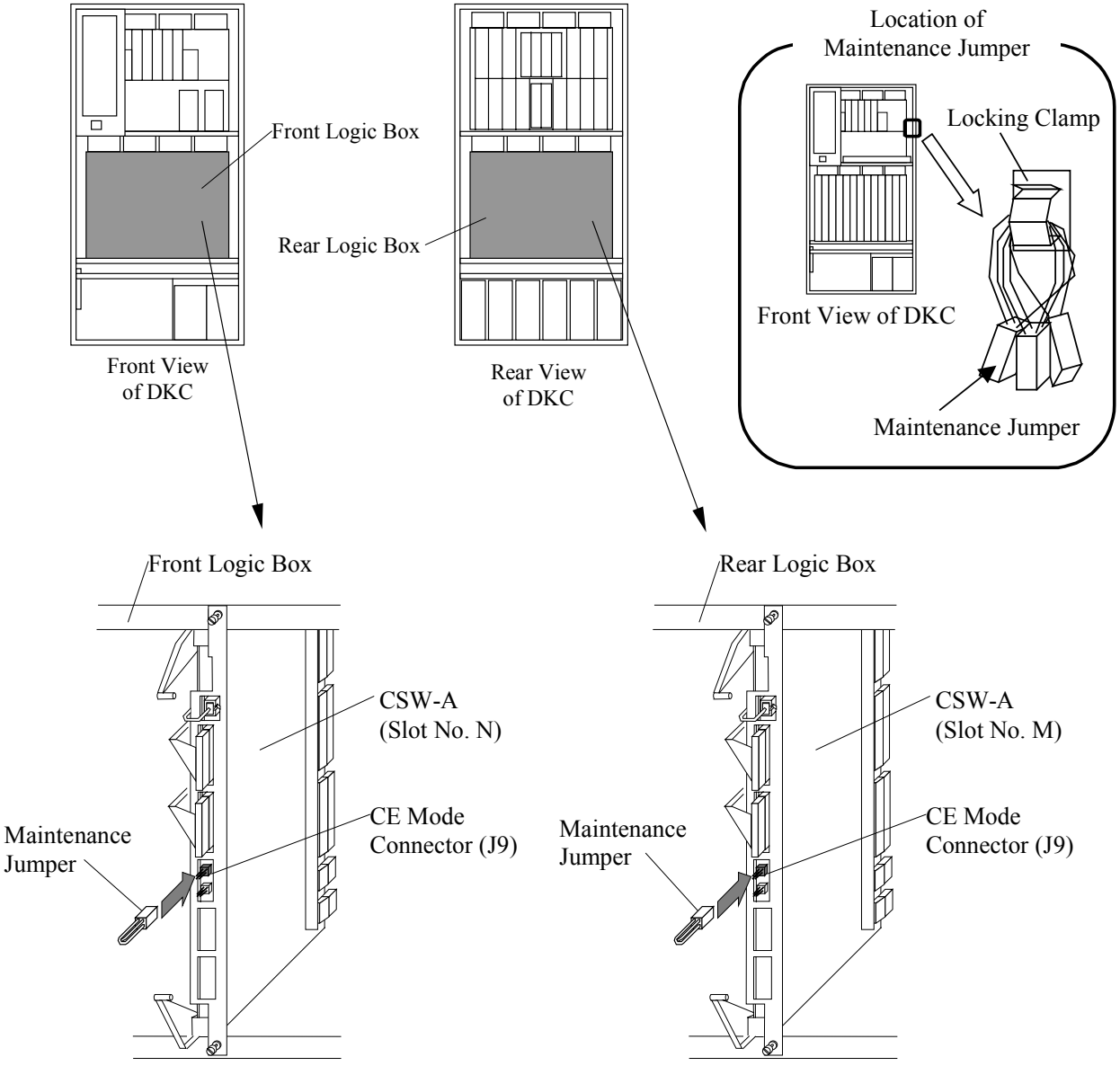
No.	Working Item	Model Number	Page
1	Unpacking and Inspection	—	INST03-INS-10 through 70
1A	DKU405I Connection (DKU405I-14, DKU-F405I-xxxx, DKC-F460I-U405R/U405L)	←	INST03-U40-10 through 20
2	Basic Subsystem Installation (DKC460I-5)	←	INST03-SUB-10 through 240
3	Disk Unit Installation (DKU455I-18)	←	INST03-DKU-10 through 280
4	Breaker Box Installation (DKC-F460I-3PS)	←	INST03-BBK-10 through 50
5	AC Box Installation (DKC-F460I-1PS/1PSD/3PSD, DKU-F455I-1PS/3PS/1PSD/3PSD)	←	INST03-ACB-10 through 210
6	AC Power Cable Installation (DKC-F460I-1EC/1UC/1ECD/1UCD/3ECD/3UCD, DKU-F455I-1EC/1UC/3EC/3UC)	←	INST03-PCK-10 through 260

(To be continued.)

(Continued from preceding sheet.)

No.	Working Item	Model Number	Page
7	PCI I/F Connector Installation (DKC-F460I-18)	←	INST03-PCI-10 through 50
7A	NAS Enable Kit for MC model Installation (DKC-F460I-NENB)	NENB	INST03-NEN-10 through 280 (Only hardware procedure)
7B	NAS Available Additional Power Supply Installation (DKC-F460I-NAPS)	NAPS	INST03-NAP-10 through 270 (Only hardware procedure)
8	DKC Additional Power Supply Installation (DKC-F460I-80)	←	INST03-PS-10 through 90
9	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 220 (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 120 (Only hardware procedure)
		4NS	INST03-4NS-10 through 110 (Only hardware procedure)
		8IS	INST03-8IS-10 through 90 (Only hardware procedure)
10	Cache memory and Shared memory Installation (DKC-F460I-41/42/S512/S1024/2048/4096)	S512/S1024	INST03-SM-10 through 170 (Only hardware procedure)
		41/42/ 2048/4096	INST03-CM-10 through 210 (Only hardware procedure)
11	DEV Interface Cable, Additional Disk Adapter and HDD Canister Installation (DKC-F460I-L1C/200, DKU-F455I-36K1/36K4/72J1/72J4/72K1/72K4/146J1/ 146J4/146JS/146JF/146JM/146JQ/EXC)	←	INST03-DKA-10 through 3000 (Only hardware procedure)
12	SVP High Reliability Kit Installation (DKC-F460I-SVP)	←	INST03-SVP-40 through 100 (Only hardware procedure)
13	UPS Connection Kit Installation (DKC-F460I-UPS)	←	INST03-UPS-10 through 140
14	256MB Additional Memory for SVP Installation (DKC-F460I-256M)	←	INST03-SVM-10 through 120
15	SVP “New Installation” Procedure	—	INST02-520
16	END		

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



2.2 Non-Disruptive Installation Procedure Table

⚠ CAUTION

A serious failure will occur if the works are not done in numerical order shown in the table. Perform the non-disruptive addition of the options in numerical order (from No.1 to No.13) shown in the table below. Neglect a unnecessary work and proceed to the next work.

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-41/42/S512/2048) on one side first without affecting subsystem operation according to the SVP guidance.
- The DKC Additional Power Supply (DKC-F460I-80) must be installed when the total numbers of the installation of CHA and DKA options are 4 or more.
  In such a case, be sure to add the channel option(s) after the DKC Additional Power Supply is added.
- The NAS Available Additional Power Supply (DKC-F460I-NAPS) is an indispensable option in the following case.
  - When the total numbers of the installation of CHA and DKA option are 4 or more.
  - When NAS CHA is installed in the CHA slot of 3rd CHA (Add.2) or 4th CHA (Add.3).
  - When DKC-F460I-80 is installed in the existing DKC which adds NAS CHA.
    In this case, DKC-F460I-80 is exchanged for DKC-F460I-NAPS.
- When the type of the CHAs is changed (e.g. from serial to fibre channel), de-install the old CHAs temporarily before installing new CHAs.

*1: In addition, if AC input is the same phase, AC Box option from which breaker specification differs can be intermixed within a subsystem.
When the 60A circuit breaker is chosen, AC input of DKC460 is supplied from AC power boxes in R1 DKU.

Table 2.2-1 Non-Disruptive Installation Procedure Table

No.	Working Item	Model Number	Page
0	**Confirm the microversion**	—	**OPTVER01-10**
1	NAS Enable Kit for MC model Installation (DKC-F460I-NENB)	NENB	INST03-NEN-10 through 280
2	NAS Available Additional Power Supply Installation (DKC-F460I-NAPS)	NAPS	INST03-NAP-10 through 190
3	DKC Additional Power Supply Installation (DKC-F460I-80)	80	INST03-PS-10 through 90

(To be continued.)

(Continued from preceding sheet.)

No.	Working Item	Model Number	Page
4	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 220
		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 120
		4NS	INST03-4NS-10 through 110
		8IS	INST03-8IS-10 through 90
5	Cache memory and Shared memory Installation (DKC-F460I-41/42/S512/S1024/2048/4096)	S512/S1024	INST03-SM-10 through 170
		41/42/ 2048/4096	INST03-CM-10 through 210
Note	**The DKU405I cannot operate with the 4-HDU Box configuration. Be sure to provide a configuration with the 8-HDU Boxes by installing the Platform for Canister Mount (DKU-F4051-B4).**		
5A	DKU405I Connection (DKU405I-14, DKU-F405I-xxxx, DKC-F460I-U405R/U405L/200)	←	INST03-U40-30 through 40
6	AC Box Installation (*1) (DKU-F455I-1PS/3PS/1PSD/3PSD)	←	INST03-ACB-10 through 210
7	AC Power Cable Installation (DKU-F455I-1EC/1UC/3EC/3UC, DKC-F465I-1ECD/1UCD/3ECD/3UCD)	←	INST03-PCK-10 through 260
8	Disk Unit Installation (DKU455I-18) (*1) **Perform the installation of the DKU frame, setting of the MPS jumper, setting of the JMP switch, and connection of the power cable.**	←	INST03-DKU-10 through 280
9	POWER ON of Disk Unit (DKU455I-18)	←	INST03-PWR-10
Note	**Caution: When the addition of the DKU frame (DKU-455I-18) is accompanied, perform the work No.8 (Disk Unit Installation) and the work No.9 (POWER ON of Disk Unit) beforehand.**		
Note	**Check CU number and necessary shared memory capacity, and make sure whether expansion of shared memory is necessary (See INST01-70 ~ 80). If necessary , see INST03-SM-10.**		
10	DEV Interface Cable, Additional Disk Adapter and HDD Canister Installation (*1) (DKC-F460I-L1C/200, DKU-F455I-36K1/36K4/72J1/72J4/72K1/72K4/146J1/ 146J4/146JS/146JF/146JM/146JQ/EXC)	←	INST03-DKA-10 through 3000
11	SVP High Reliability Kit Installation (DKC-F460I-SVP)	←	INST03-SVP-10 through 350
12	PCI I/F Connector Installation (DKC-F460I-18)	←	INST03-PCI-10 through 100
13	256MB Additional Memory for SVP Installation (DKC-F460I-256M)	←	INST03-SVM-10 through 120
14	Setup on SVP Installation	4NS	NAS03-110
15	NAS OS Installation	4NS	NAS03-310
16	END		

2.3 Non-Disruptive De-installation Procedure Table

⚠ CAUTION

A serious failure occurs if the works are not done in numerical order shown in the table. Perform the non-disruptive removal of the options in numerical order (from No.1 to No.11) shown in the table below. Neglect a unnecessary work and proceed to the next work.

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-41/42/S512/2048) 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	DEV Interface Cable, HDD Canister and Additional Disk Adapter De-installation (DKC-F460I-200/L1C, DKU-F455I-36K1/36K4/72J1/72J4/72K1/72K4/146J1/146J4/146JS/146JF/146JM/146JQ/EXC)	←	INST04-DKA-10 through 2910
Note	**Proceed to the work No.3 after performing the work No.2. The system goes down if the main breaker of the DKU to be removed in the work No.3 is turned off without performing an option removal work, that is, the work No.2.**		
3	Disk Unit De-installation (DKU455I-18) **Turn off the main breaker of the DKU.**	←	INST04-DKU-10 through 310
Note	**The DKU405I cannot operate with the 4-HDU Box configuration. Do not remove the Platform for Canister Mount (DKU-F4051-B4) individually except when removing it together with the DKU405I frame.**		
3A	DKU405I Disconnection (DKU405I-14, DKU-F405I-xxx, DKC-F460I-U405R/U405L/200)	←	INST04-U40-10 through 30
4	Cache memory and Shared memory De-installation (DKC-F460I-41/42/S512/S1024/2048/4096)	S512/S1024	INST04-SM-10 through 190
		41/42/2048/4096	INST04-CM-10 through 220

(To be continued.)

(Continued from preceding sheet.)

No.	Working Item	Model Number	Page
5	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 190
		8GSE/8GSF 4HSE/4HSF 8HSE/8HSF 8HLE/8HLF	INST04-FIB-10 through 90
		8MS/8ML	INST04-MF-10 through 90
		16HSF	INST04-16F-10 through 90
		4NS	INST04-4NS-10 through 100
		8IS	INST04-8IS-10 through 90
6	DKC Additional Power Supply De-installation (DKC-F460I-80)	←	INST04-PS-10 through 100
6A	NAS Available Additional Power Supply De-installation (DKC-F460I-NAPS)	NAPS	INST04-NAP-10 through 100
7	SVP High Reliability Kit De-installation (DKC-F460I-SVP)	←	INST04-SVP-10 through 140
8	PCI Connector De-installation (DKC-F460I-18)	←	INST04-PCI-10 through 40
9	AC Power Cable De-installation (DKU-F455I-1EC/1UC/3EC/3UC, DKC-F460I-1ECD/1UCD/3ECD/3UCD)	←	INST04-PCK-10 through 200
10	AC Box De-installation (DKU-F455I-1PS/3PS/1PSD/3PSD)	←	INST04-ACB-10 through 200
11	256MB Additional Memory for SVP De-installation (DKC-F460I-256M)	←	INST04-SVM-10 through 120
12	END		

2.4 Disruptive 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.

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.

*1: In addition, if AC input is the same phase, AC Box option from which breaker specification differs can be intermixed within a subsystem.
When the 60A circuit breaker is chosen, AC input of DKC460 is supplied from AC power boxes in R1 DKU.

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-70 through 90
2	UPS Connection Kit Installation (DKC-F460I-UPS)	←	INST03-UPS-10 through 100 (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 120
5	AC Box Installation (*1) (DKC-F460I-1PS/1PSD/3PSD, DKU-F455I-1PS/3PS/1PSD/3PSD)	←	INST03-ACB-10 through 210
6	AC Power Cable Installation (DKC-F460I-1EC/1UC/1ECD/1UCD/3ECD/3UCD, DKU-F455I-1EC/1UC/3EC/3UC)	←	INST03-PCK-10 through 260
7	Disk Subsystem Power on	—	INST03-PWR-10 through 50
8	Change Configuration Information for UPS Connection Kit	←	INST03-UPS-110 through 140
9	AC Box Configuration Setting and Confirmation (*1)	←	INST03-ACB-220 through 330
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-220
2	Disk Subsystem Power OFF	←	INST03-PWR-70 through 90
3	UPS Connection Kit De-Installation (DKC-F460I-UPS)	←	INST04-UPS-10 through 100 (Only hardware procedure)
4	PCI I/F 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 120
6	AC Power Cable De-Installation (DKC-F460I-1EC/1UC/3EC/3UC/1ECD/ 1UCD/3ECD/3UCD, DKU-F455I-1EC/1UC/3EC/3UC)	←	INST04-PCK-10 through 200
7	AC Box De-Installation (DKC-F460I-1PS/3PS/1PSD/3PSD, DKU-F455I-1PS/3PS/1PSD/3PSD)	←	INST04-ACB-10 through 200
8	Disk Subsystem Power ON	—	INST03-PWR-10 through 50
9	UPS Connection Kit Change Configuration Information	UPS	INST04-UPS-110 through 140
10	END		

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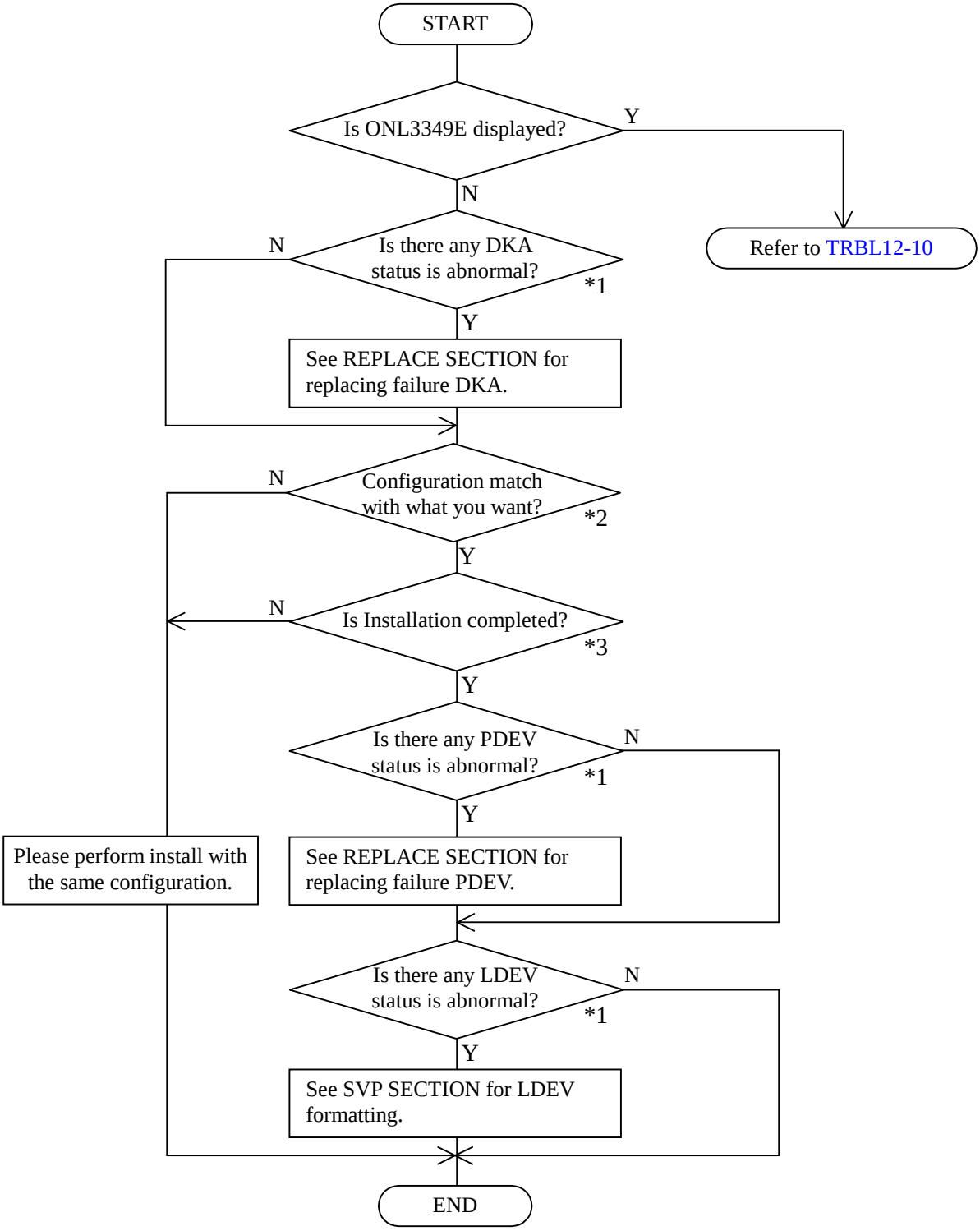
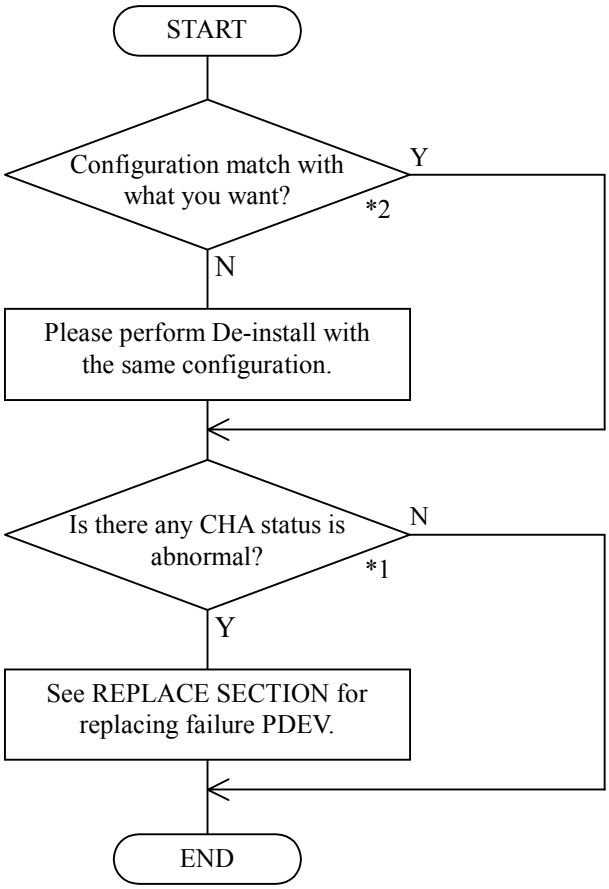
2.6 Trouble shooting for errors in install SVP procedure

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?

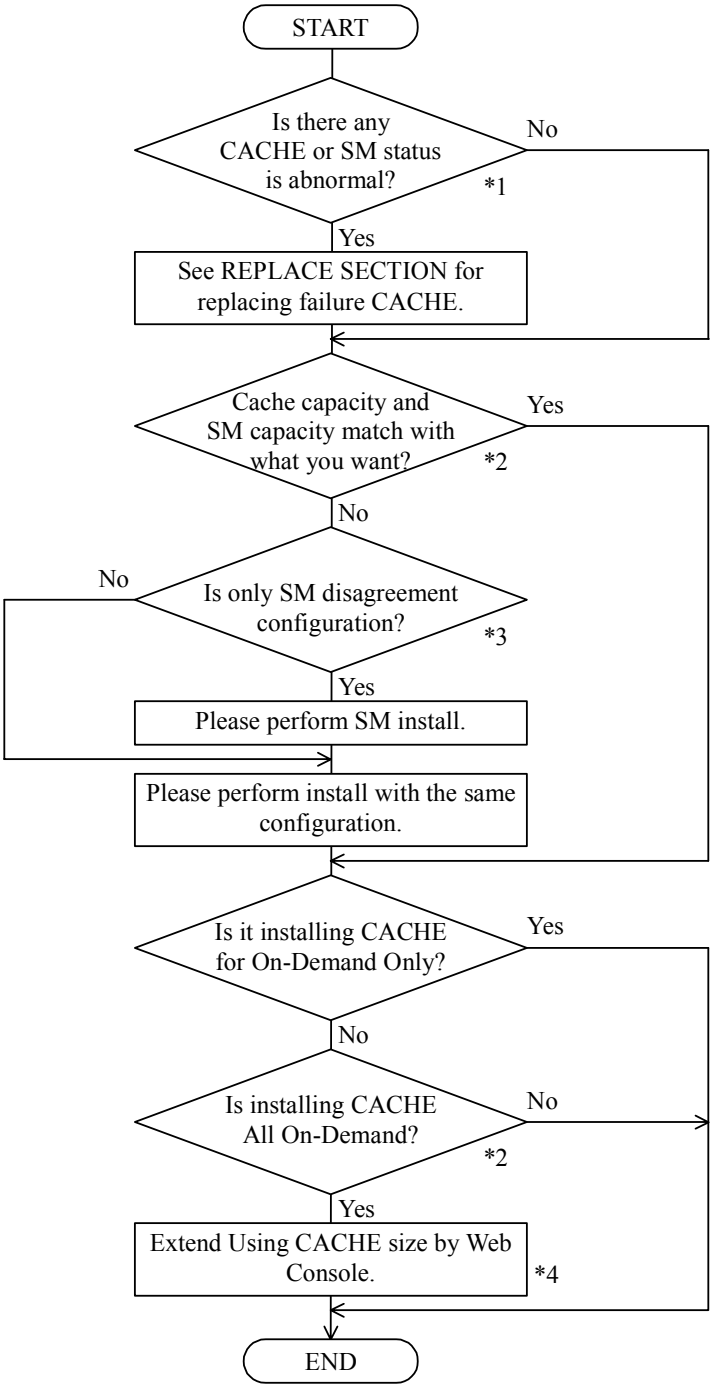
2.6.2 Number of Channel



*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.

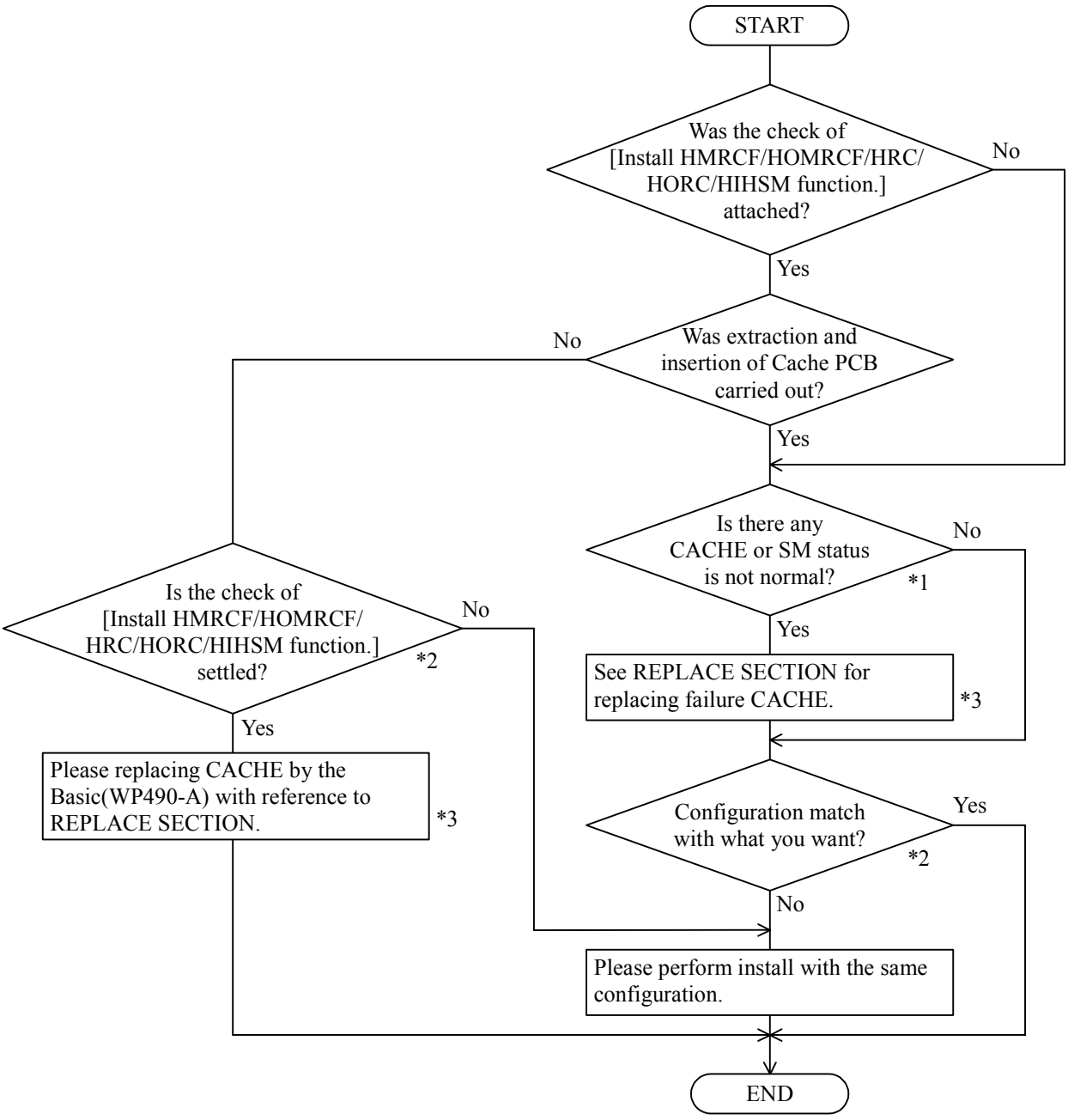
*2 Select (CL) [Install] – [Refer Configuration] in the 'SVP' Window.

2.6.3 Cache Capacity



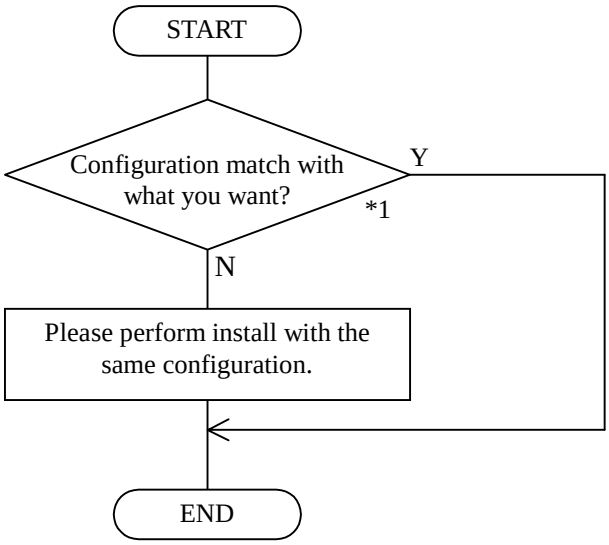
*1 Select (CL) [Maintenance] in the 'SVP' Window.
*2 Select (CL) [Install] – [Refer Configuration] in the 'SVP' Window. Cache capacity may be on-demand capacity.
*3 Was INS2566I displayed when select (CL) [Install] – [Change Configuration] in the 'SVP' Window?
*4 Select (CL) [Web Console] – [Just in 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.

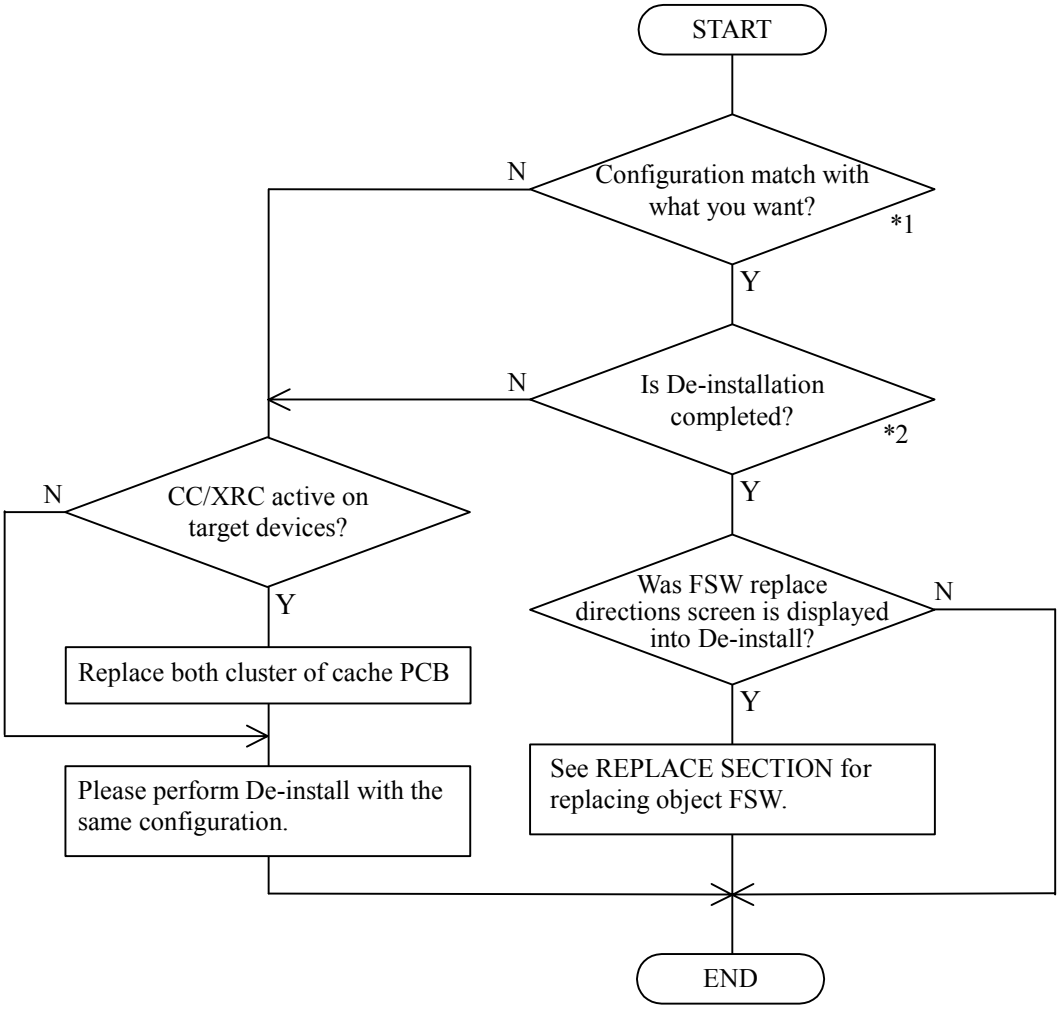
2.6.5 Power Supply



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

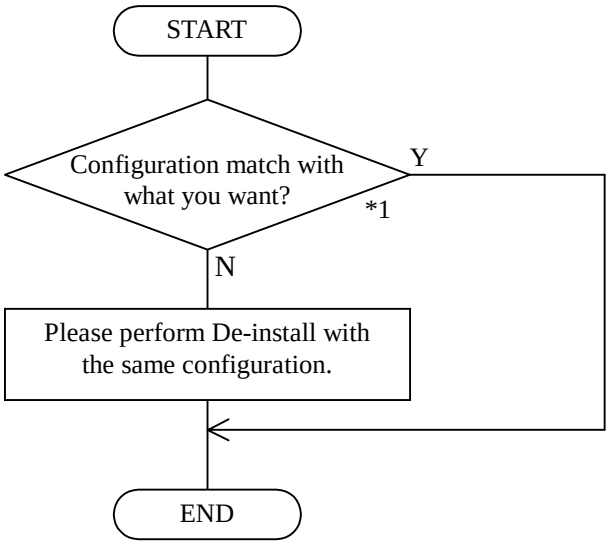
2.7 Trouble shooting for errors in de-install SVP procedure

2.7.1 DKA + ECC group + LDEV



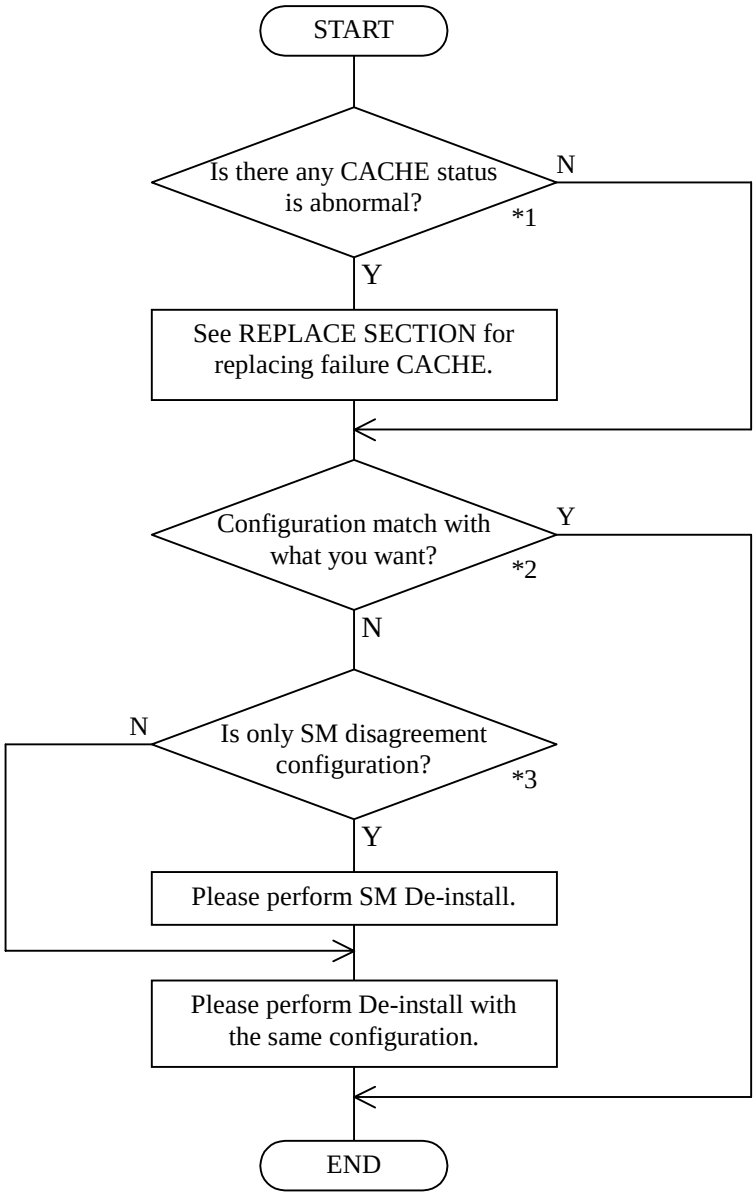
*1 Select (CL) [Install] – [Refer Configuration] in the 'SVP' Window.
*2 Wasn't INS2450I displayed when select (CL) [Install] – [Change Configuration] in the 'SVP' Window?

2.7.2 Number of Channel



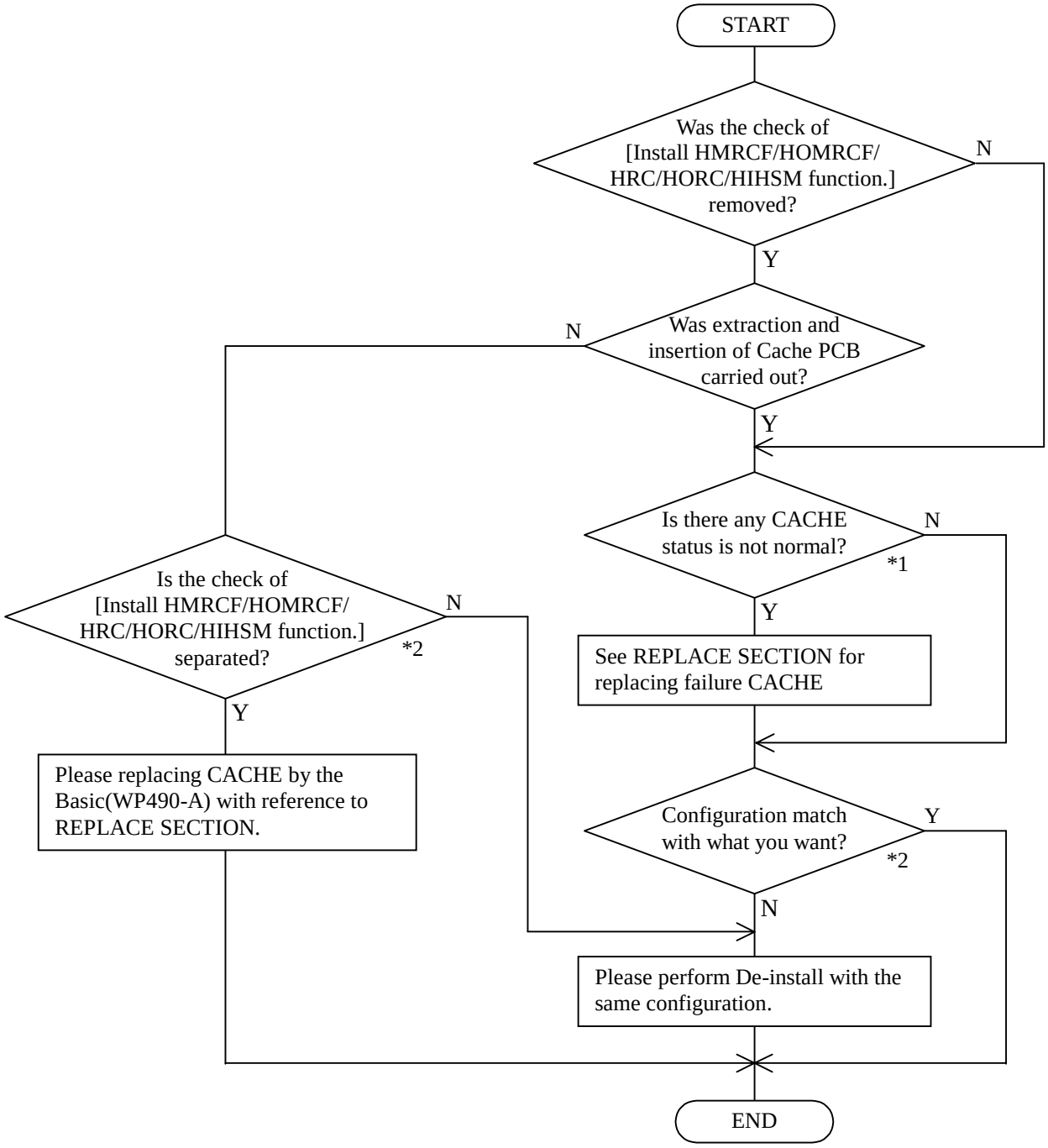
*1 Select (CL) [Install] – [Refer Configuration] in the ‘SVP’ Window.

2.7.3 Cache Capacity



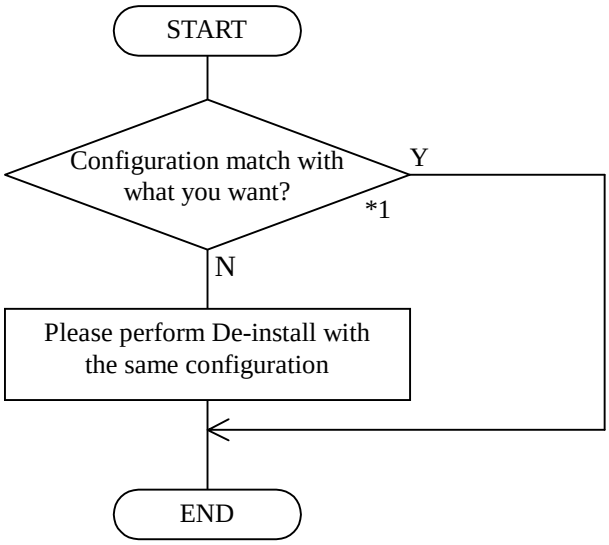
*1 Select (CL) [Maintenance] in the 'SVP' Window.
*2 Select (CL) [Install] – [Refer Configuration] in the 'SVP' Window.
*3 'Was INS2566I displayed when select (CL) [Install] – [Change Configuration] in the 'SVP' Window?

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	—	×	×		×		×		×	

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 and DKC). (If it is "on", turn off the breaker after the SVP is shut down.). [Breaker:INST03-PWR-80 – INST03-PWR-90, 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 DKC) 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 – INST03-PWR-20]

(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.

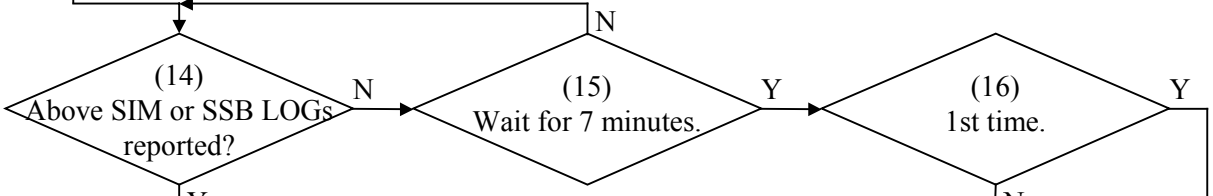
(9) Set all packages to be installed.
Set the packages(CHA,DKA and so on) to be installed to their locations of CL1 and CL2. The same kind of package must be set to the same location of each CL (CL1 and CL2).
[LOCATION02-30 – LOCATION02-40] (Note*3-1)

(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-50]

(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-70]

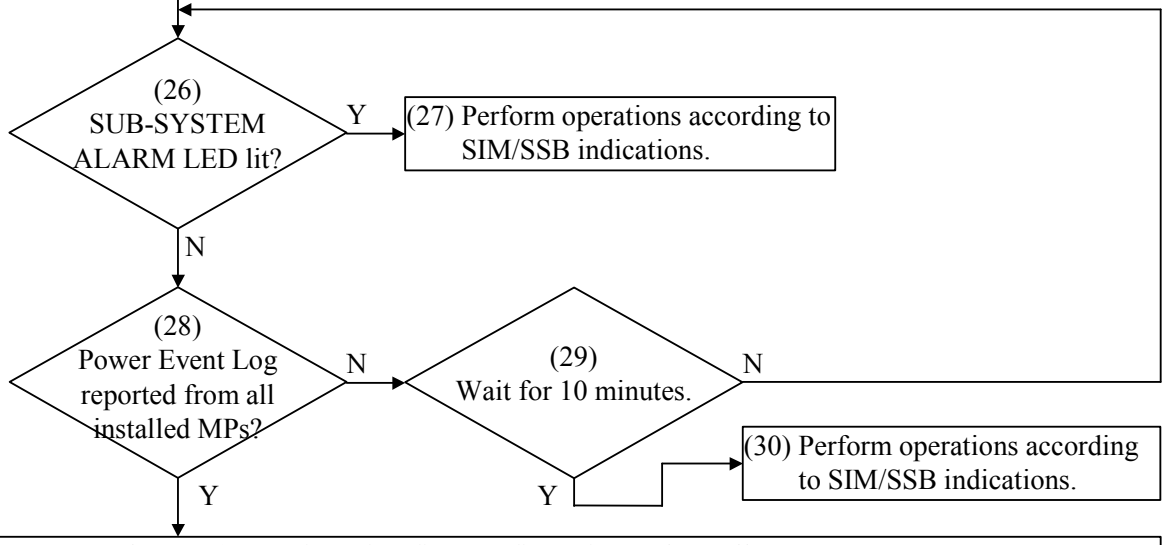
(21) Pull out the Maintenance Jumpers from the CSW PCBs. (Note *4)

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

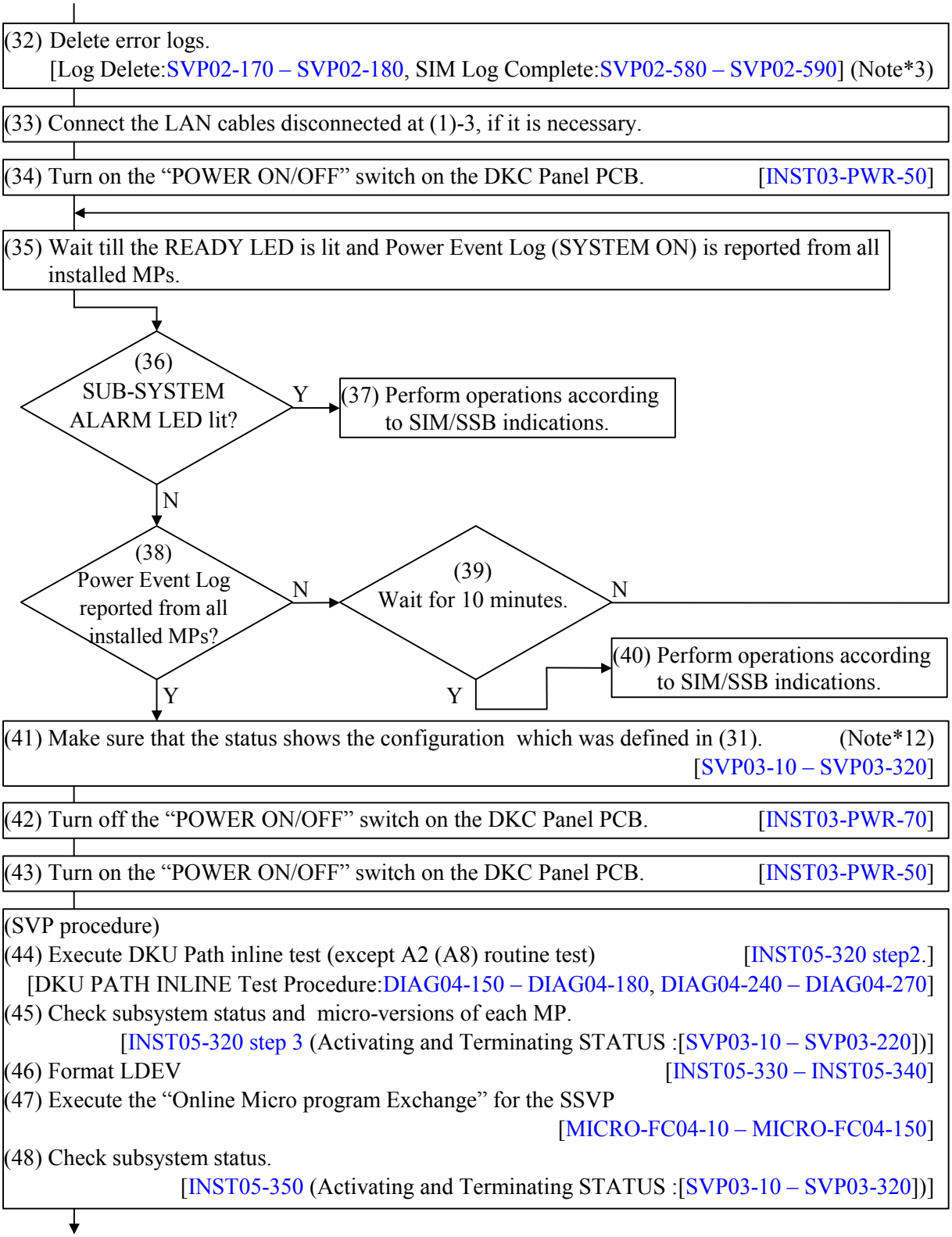
(23) Shut down the SVP and turn off the Breaker (DKC and DKU) and pull out the jumper connectors in the BATT CTR PCBs to make the SM volatilize. Then, wait for 10 minutes.
And set them again.
[SVP Shut Down:SVP01-70, Breaker:INST03-PWR-80 – INST03-PWR-90, BAT CTR PCBs: LOCATION06-70] (Note *8)

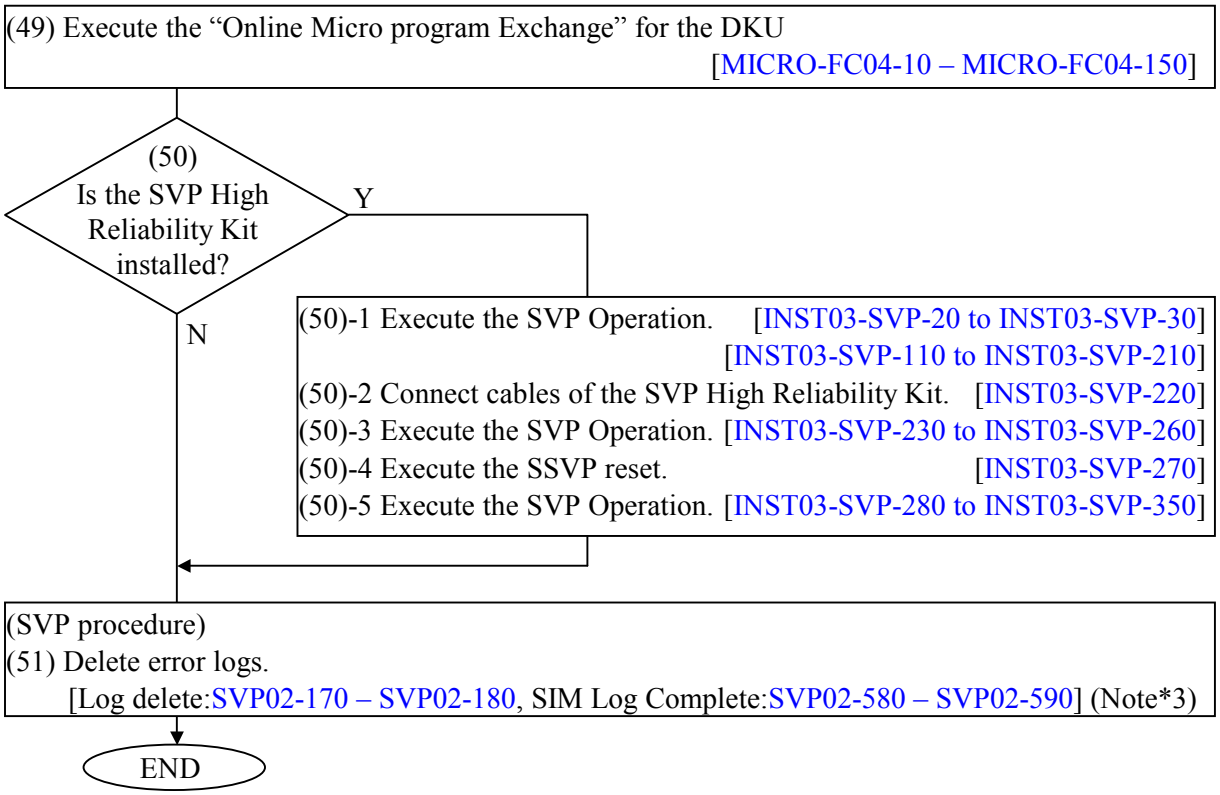
(24) Execute Power ON procedures
(24)-1 Turn on the Breaker DKC and DKU.
[Power ON procedure of Disk Subsystem:INST03-PWR-10, 20]
(24)-2 (SVP procedure)
Wait until the SVP is ready and change the SVP mode to "Initial setup". (Note *10)
(24)-3 The "POWER ON/OFF" switch on the DKC Panel PCB.
[Power ON procedure of Disk Subsystem:INST03-PWR-50]

(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.

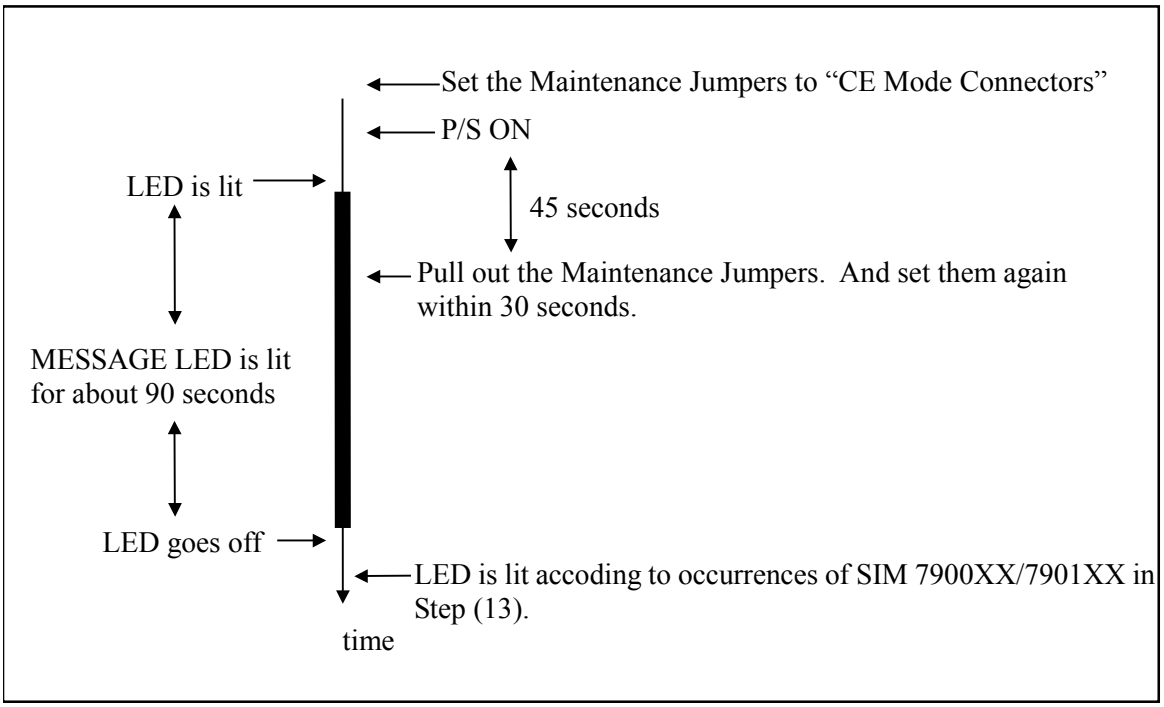
Note *2 : Even if the “IP Address” is “126.255.255.15” and the “Subnet Mask” is “255.0.0.0” on the screen of “Set IP Address”, be sure to select “OK” and reply “OK” to the message “This will reboot SVP.”.

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

Note *3-1 : At least, a pair of CHAs must be installed in the front box PCB location.
Also, a pair of DKAs must be installed in the back box PCB location.

Note *4 : Refer to the following about the Maintenance Jumpers.
- “INST02-30 Note *1”

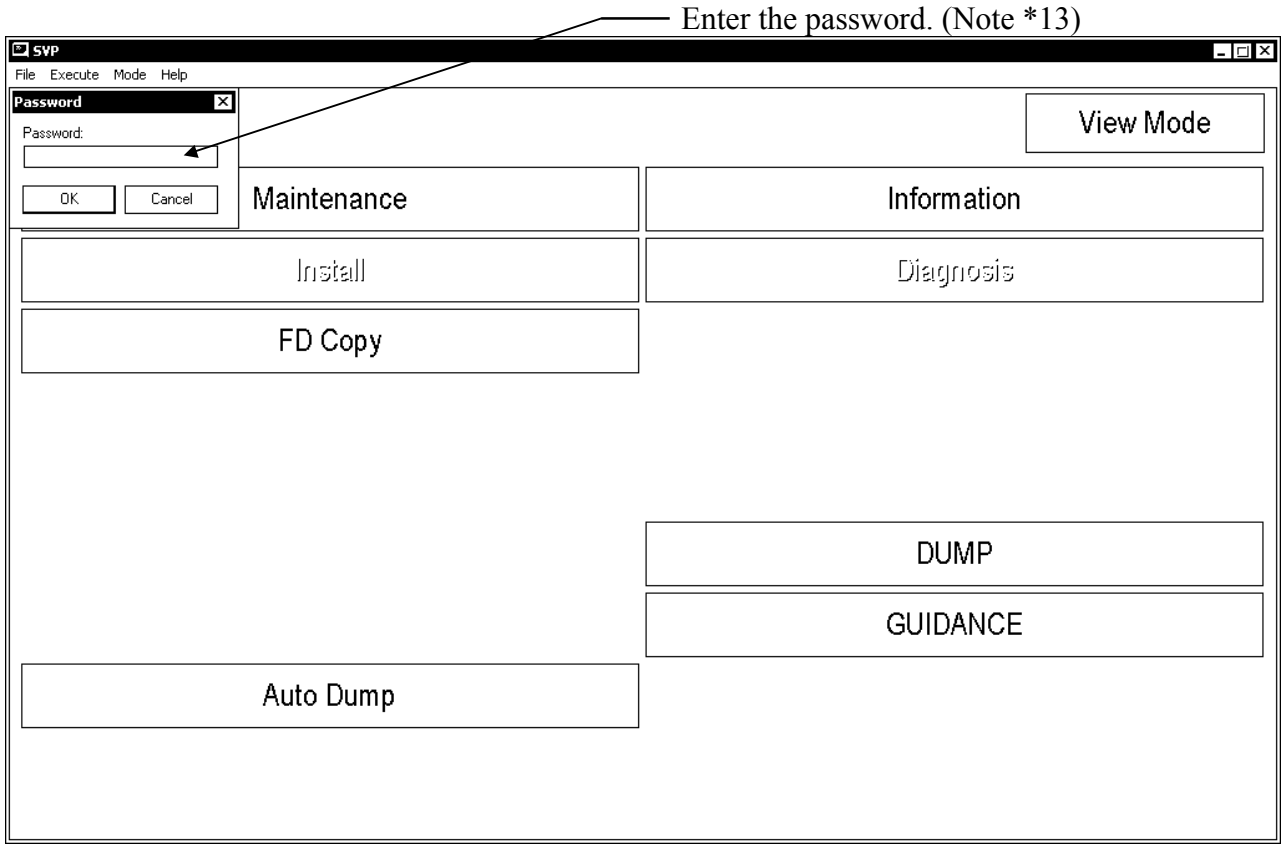
Note *5 : The detail of the jumper operation is as follows.
(1) Turn on the P/S ON switch.
(2) At 45 seconds after (1), pull out the Maintenance Jumpers from the CSW PCBs. Then if some CHAs are set in the front logic box PCB locations (1P/2V, 1Q/2W, 1R/2X, 1S/2Y), MESSAGE LED illuminates (If no CHA is in the front logic box PCB locations, MESSAGE LED is not lighted.).
(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).
If some CHAs are set in the front logic box PCB locations, MESSAGE LED must be lighting during operations (2) and (3).



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

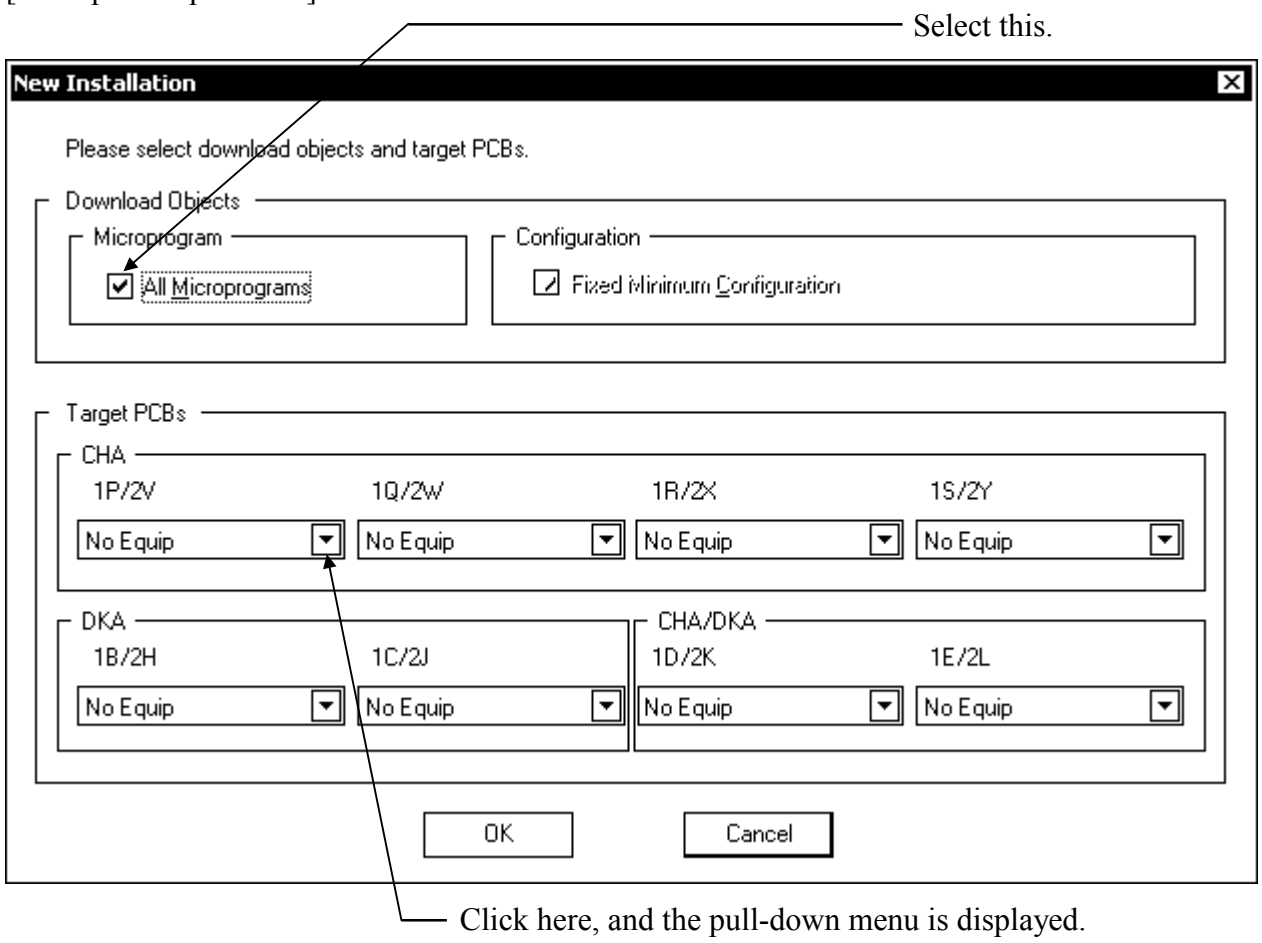
Note *7 : The procedures of "New Installation" are as follows.

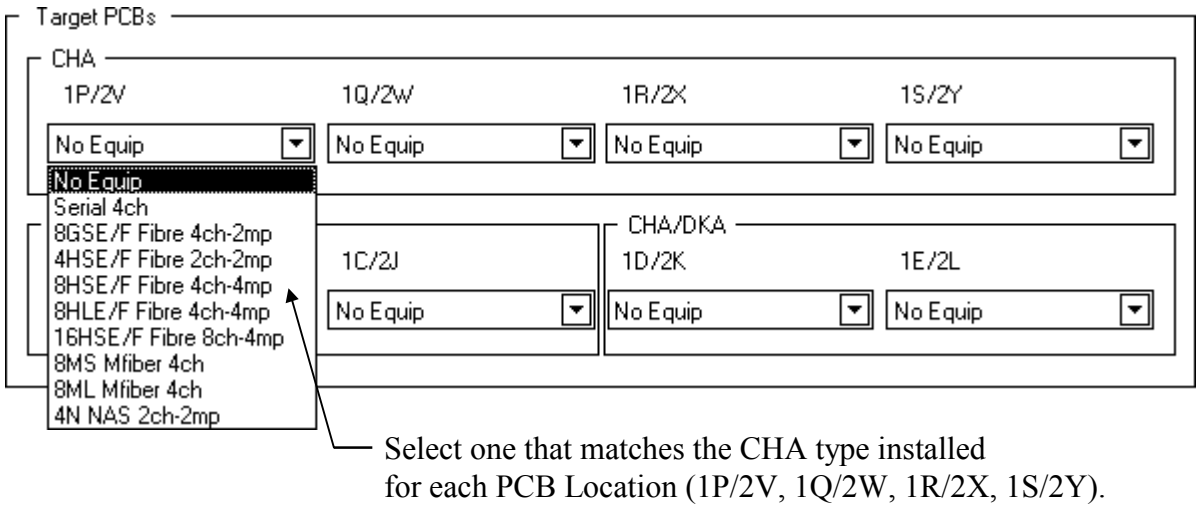
(1) Return to the SVP window.
(2) Press the following keys at the same time to change the mode to "Initial Setting".
[SHIFT], [CTRL], [I]
(3) Enter the password.
This password must be used only for this procedure. Don't use for other purposes without approval by the technical support center or the factory.

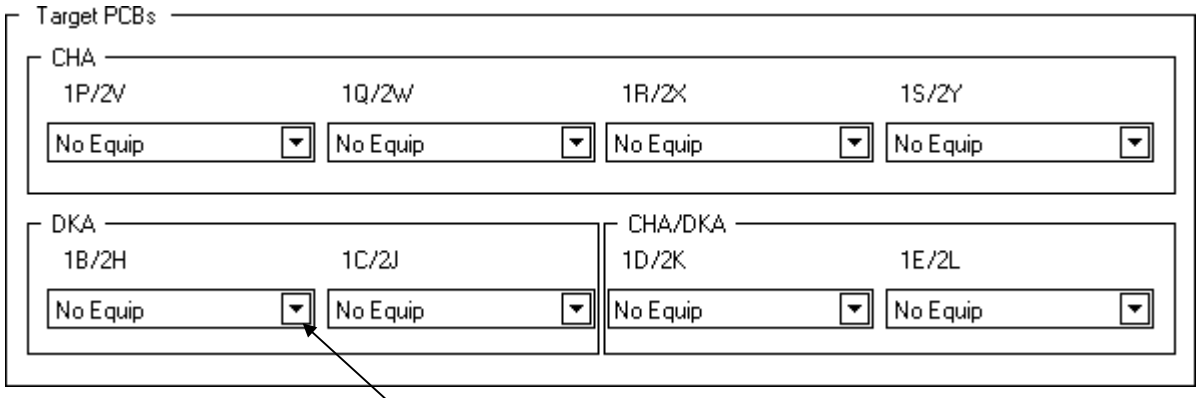


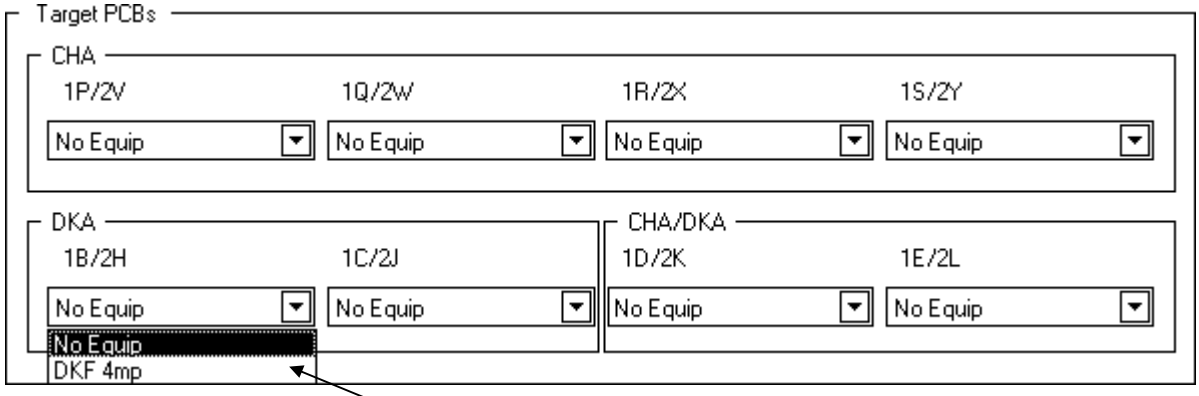
(4) Select "Install".
(5) <Install Window>
Select "Micro Program Install".
(6) <Menu Dialog Window>
Select "New Installation".
(7) Select "Yes" to the following message.
"Are you sure you want to execute new installation?"
(8) <New Installation PCB configuration Window>
After (7), the following window 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.

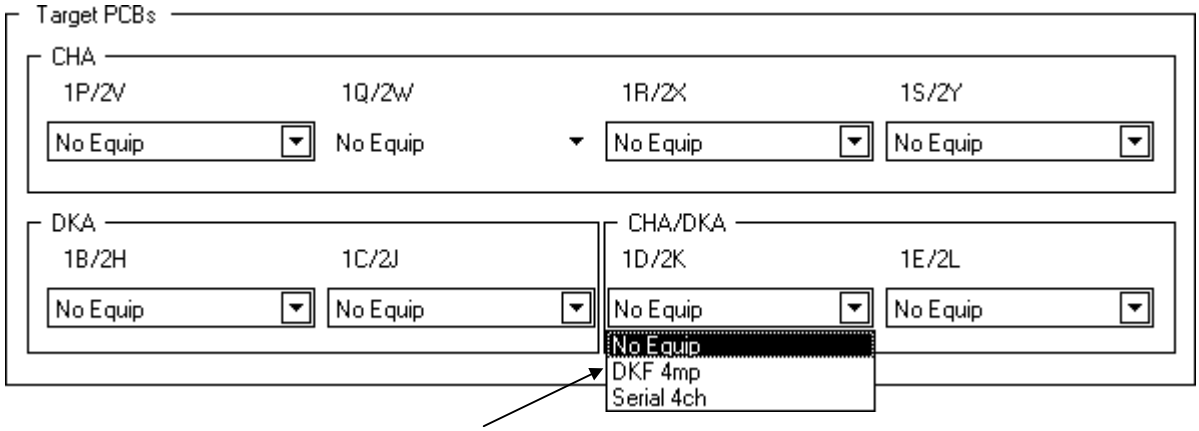
[Example of operations]











(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 (1P/2V for "CHA", 1B/2H for "DKA")
IP Address = 126.255.255.xx
Serial 4ch for Host interface configuration
4mp for the DKA
② Option PCBs Configuration (1Q/2W, 1R/2X, 1S/2Y, 1C/2J, 1D/2K, 1E/2L)
: 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

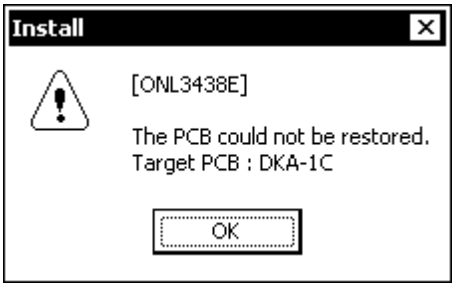
(1)

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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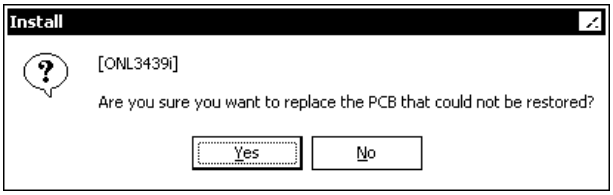
(2)

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

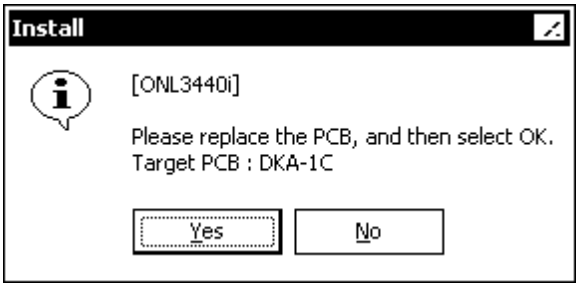


When the maintenance parts to replace exist, please select [Yes]. → Go to (3)
When the maintenance parts to replace do not exist, please select [No] and refer to trouble shooting for errors in install.

---

(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.

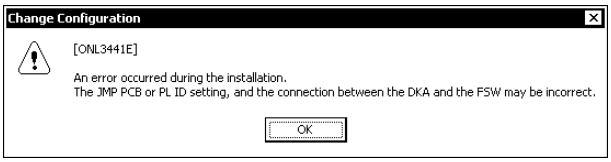
It returns to the former install section.

2.11.2 Replacement procedure when connecting the DKU frame goes wrong

(1)

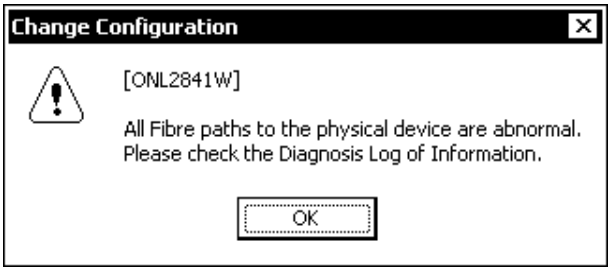
The following messages are displayed when connecting the DKU frame is failed.

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.

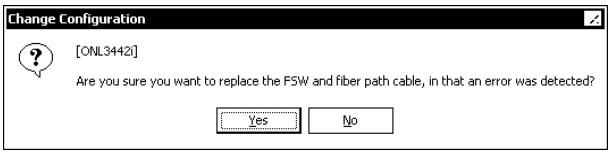
When "All Fibre paths to the physical device are abnormal. Please check the Diagnosis Log of Information." is displayed, please check Diagnosis Log.



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.

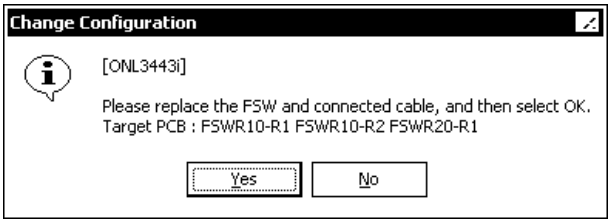


When the maintenance parts to replace exist or connection of a cable is wrong, please select (CL) [Yes]. → Go to (3)
When the cause of install failure cannot be specified, or when a JMP PCB or PL ID setup is wrong, please select (CL) [No] and refer to trouble shooting for errors in install.

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.