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INSTALLATION SECTION

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1. Subsystem Configuration Outline

1.1 General Information

1.1.1 Model List

Notice: There are two kinds of models: a “model that conforms to the RoHS” and a “model that does not conform to the RoHS.” When selecting a model, make a correct selection referring to “Notes on Conformity to the RoHS” on page INST01-52.

(1) Model of DKC510I
Table 1.1.1-1 shows the model list of DKC510I.

Table 1.1.1-1 Model List of DKC510I

No.	Model Number	Model Name	Major Part	Remarks
1	DKC510I-5 DKC510I-5P (RoHS not applied)	Disk Control Frame Disk Control Frame for hp	DKC • SVP ×1 • PC Breaker Box ×1 • SH357-A/B (SVP CON) × 1 • SH351-A/B (SSVP) × 1 • SH353-A/B (DKCMN) × 2 • SH354-A/B (DKC PANEL) ×1 • LR017-A/B (PS-PL1) × 1 • LR019-A/B (PS PL2) × 1 • LR020-A/B (BAT-PL) × 2 • DKCPS × 4 • Battery Box × 6 • DKC FAN ASSY ×6 • I/F Cable ×16 (DKF – HDU Box) • LR016-A/B (Logic PL) × 1 • WP541-A/B (CACHE) × 2 • WP551-A/B (SM-A) × 1 • WP552-A/B (SM-B) × 1 • WP530-A/B (CSW) × 2 DKU • HDU Box × 2 • LR018-A/B (HDD PL) × 2 • SH358-A/C (FSW-A) × 16 • HDD FAN ASSY ×6	DKC510I Disk Subsystem doesn’t contain AC Box, AC Power cables, Channel Adapters (CHA), Disk Adapter (DKA), Cache Memory (CM), Shared Memory(SM) and HDD. It is necessary to attach the following options according to the configuration. AC Box Option DKC-F510I-1PS/1PSD/3PS/1PSR/1PSDR/3PSR AC Power cable Option DKC-F510I-1EC/1UC/1ECD/1UCD/1ECR/1UCR/1ECDR/1UCDR/3ECR/3UCR DKC-F460I-3ECD/3UCD CHA Option DKC-F510I-16S/8MS/8ML/16MS/16ML/16HS/32HS/8NS/16SR/8MSR/8MLR/8HSR/16HSR/32HSR/8NSR/8ISR/8FS2R/16FS2R/32FS2R/16MFSR/16MFLR/16MFL4R DKA Option DKC-F510I-400/400R CM/SM Option DKC-F510I-C4G/C4GR/C8GR/S1G/S1GR/S2GR HDD Option DKU-F505I-xxxJS/xxxKS/xxxJSR/xxxKSR

(To be continued)

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(Continued from the preceding page)

No.	Model Number	Model Name	Major Part	Remarks
	DKC510I-5R DKC510I-5PR (RoHS applied)	Disk Control Frame Disk Control Frame for hp	DKC • SVP × 1 • PC Breaker Box × 1 • SH357-B (SVP CON) × 1 • SH351-B (SSVP) × 1 • SH353-B (DKCMN) × 2 • SH354-B (DKC PANEL) × 1 • LR017-B (PS-PL1) × 1 • LR019-B (PS PL2) × 1 • LR020-B (BAT-PL) × 2 • DKCPS × 4 • Battery Box × 6 • DKC FAN ASSY × 6 • I/F Cable × 16 (DKF – HDU Box) • LR016-B (Logic PL) × 1 • WP541-B (CACHE) × 2 • WP551-B (SM-A) × 1 • WP552-B (SM-B) × 1 • WP530-B (CSW) × 2 DKU • HDU Box × 2 • LR018-B (HDD PL) × 2 • SH358-C (FSW-A) × 16 • HDD FAN ASSY × 6	DKC510I Disk Subsystem doesn't contain AC Box, AC Power cables, Channel Adapters (CHA), Disk Adapter (DKA), Cache Memory (CM), Shared Memory(SM) and HDD. It is necessary to attach the following options according to the configuration. AC Box Option DKC-F510I-1PSR1PSDR/3PSR AC Power cable Option DKC-F510I-1ECR/1UCR/1ECDR/1UCDR/3ECR/3UCR CHA Option DKC-F510I-16SR/8MSR/8MLR/8NSR/32HSR/16HSR/8HSR/8FS2R/16FS2R/32FS2R/16MFSR/16MFLR/16MFL4R DKA Option DKC-F510I-400R CM/SM Option DKC-F510I-C4GR/C8GR/S1GR/S2GR HDD Option DKU-F505I-xxxJSR/xxxKSR
2	DKC-F510I-DH (RoHS not applied)	DKC Door Kit for HDS	• Front/Rear/Side Doors	
	DKC-F510I-DHR (RoHS applied)	DKC Door Kit for HDS	• Front/Rear/Side Doors	
3	DKC-F510I-DS (RoHS not applied)	DKC Door Kit for SUN	• Front/Rear/Side Doors	
	DKC-F510I-DSR (RoHS applied)	DKC Door Kit for SUN	• Front/Rear/Side Doors	
4	DKC-F510I-3PS (RoHS not applied)	AC Box Kit for 3 Phase/30A	• AC Box × 2	
	DKC-F510I-3PSR (RoHS applied)	AC Box Kit for 3 Phase/30A	• AC Box × 2	

(To be continued)

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(Continued from the preceding page)

No.	Model Number	Model Name	Major Part	Remarks
5	DKC-F460I-3ECD (RoHS not applied)	Power Cable Kit for 3 Phase/30A (50Hz for Europe)	• Power Cable Unit (IE)	This is common to the option installed in DKC460I.
	DKC-F510I-3ECR (RoHS applied)	Power Cable Kit for 3 Phase/30A (50Hz for Europe)	• Power Cable Unit (IE)	
6	DKC-F460I-3UCD (RoHS not applied)	Power Cable Kit for 3 Phase/30A (60Hz for USA)	• Power Cable Unit (IU)	This is common to the option installed in DKC460I.
	DKC-F510I-3UCR (RoHS applied)	Power Cable Kit for 3 Phase/30A (60Hz for USA)	• Power Cable Unit (IU)	
7	DKC-F510I-1PSD (RoHS not applied)	AC Box Kit for Single Phase/30A	• AC Box × 2	*1
	DKC-F510I-1PSDR (RoHS applied)	AC Box Kit for Single Phase/30A	• AC Box × 2	*1
8	DKC-F510I-1ECD (RoHS not applied)	Power Cable Kit for Single Phase/30A (50Hz for Europe)	• Power Cable Unit (IE)	*1
	DKC-F510I-1ECDR (RoHS applied)	Power Cable Kit for Single Phase/30A (50Hz for Europe)	• Power Cable Unit (IE)	*1
9	DKC-F510I-1UCD (RoHS not applied)	Power Cable Kit for Single Phase/30A (60Hz for USA)	• Power Cable Unit (IU)	*1
	DKC-F510I-1UCDR (RoHS applied)	Power Cable Kit for Single Phase/30A (60Hz for USA)	• Power Cable Unit (IU)	*1

(To be continued)

*1: When the option is installed in the DKC frame
- In the case of DKC configuration that does not require the DKC-F510I-AP/APR
  Provide the facility with two 30A breakers and connect them to the AC Box with a set of the DKC-F510I-1UCD/1UDR or DKC-F510I-1ECD/1ECDR cables.
- In the case of DKC configuration that require the DKC-F510I-AP/APR
  Provide the facility with four 30A breakers and connect them to the AC Box with two sets of the DKC-F510I-1UCD/1UCDR or DKC-F510I-1ECD/1ECDR cables.

When the option is installed in the DKU frame
Provide the facility with four 30A breakers and connect them to the AC Box with two sets of the DKC-F510I-1UCD/1UCDR or DKC-F510I-1ECD/1ECDR cables.

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(Continued from the preceding page)

No.	Model Number	Model Name	Major Part	Remarks
10	DKC-F510I-1PS (RoHS not applied)	AC Box for Single Phase/50A	• AC Box × 2	
	DKC-F510I-1PSR (RoHS applied)	AC Box for Single Phase/50A	• AC Box × 2	
11	DKC-F510I-1EC (RoHS not applied)	Power Cable Kit for Single Phase/50A (50Hz for Europe)	• Power Cable Unit (IE)	
	DKC-F510I-1ECR (RoHS applied)	Power Cable Kit for Single Phase/50A (50Hz for Europe)	• Power Cable Unit (IE)	
12	DKC-F510I-1UC (RoHS not applied)	Power Cable Kit for Single Phase/50A (60Hz for USA)	• Power Cable Unit (IU)	
	DKC-F510I-1UCR (RoHS applied)	Power Cable Kit for Single Phase/50A (60Hz for USA)	• Power Cable Unit (IU)	
13	DKC-F510I-AP (RoHS not applied)	Additional Power Supply	• DKCPS × 4	*2
	DKC-F510I-APR (RoHS applied)	Additional Power Supply	• DKCPS × 4	*2

(To be continued)

*2: This is an indispensable option that is to be installed when the DKC configuration is one of the following.
- When the total number of the installed CHA/DKA options is four or more
- When the cache memories with a total capacity of 68 GB or larger are installed
- When 65 or more HDD canisters are installed

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(Continued from the preceding page)

No.	Model Number	Model Name	Major Part	Remarks
14	DKC-F510I-AB (RoHS not applied)	Additional Battery	• Battery Box × 2	*3
	DKC-F510I-ABR (RoHS applied)	Additional Battery	• Battery Box × 2	*3
15	DKC-F510I-CSW (RoHS not applied)	Data Path Expansion Kit	• WP530-A/B × 2	*4
	DKC-F510I-CSWR (RoHS applied)	Data Path Expansion Kit	• WP530-B × 2	*4

(To be continued)

*3: This is an indispensable option that is to be installed when the subsystem configuration is one of the following.

DKC frame

■ Add one set of this option when it corresponds to one of the following three conditions.
- Total number of installed CHA and DKA options are four sets or more.
- When DKC-F510I-CX/CXR/CX1GR (Cache Data Path Expansion Kit) is installed in the Cache location Add. (1CC/2CD)
- When DKC-F510I-SX/SXR/SX1GR (Shared Memory Path Expansion Kit) is installed in the SM location Add. (1SC/2SD)

■ Add one set of this option when it corresponds to one of the following two conditions.
- Cache memory capacity is 68GB(17 sets of the DKC-F510I-C4G/C4GR or 9 sets of the DKC-F510I-C8GR) or more.
- Number of disk drives is 65 or more installed in DKU-R0.

DKU frame
- Two sets of this option is to be added when 129 or more HDD canisters are installed.

*4: This is an indispensable option that is to be installed when the CHA/DKA option is installed in the following location.
- When the CHA is installed in the CHA location Add. 2 (1G/2T) or Add. 3 (1H/2U).
- When the DKA or CHA is installed in the DKA location Add. 2 (1L/2X) or Add. 3 (1K/2W).

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No.	Model Number	Model Name	Major Part	Remarks
16	DKC-F510I-CX (RoHS not applied)	Cache Path Expansion Kit	• WP541-A/WP541-B (Part No. 5524251-C) × 2	DKC-F510I-C4G/C4GR can be installed in this option. However, DKC-F510I-C8GR cannot be installed in it.
	DKC-F510I-CXR (RoHS applied)	Cache Path Expansion Kit	• WP541-B (Part No. 5524251-C) × 2	
17	DKC-F510I-SX (RoHS not applied)	Shared Memory Path Expansion Kit	• WP551-A/B × 1 • WP552-A/B × 1	DKC-F510I-S1G/S1GR can be installed in this option. However, DKC-F510I-S2GR cannot be installed in it.
	DKC-F510I-SXR (RoHS applied)	Shared Memory Path Expansion Kit	• WP551-B × 1 • WP552-B × 1	
18	DKC-F510I-C4G (RoHS not applied)	Additional Cache Memory Module (4GB)	• SH342-A/C × 4	This option can be installed in DKC-F510I-CX/CXR/ CX1GR.
	DKC-F510I-C4GR (RoHS applied)	Additional Cache Memory Module (4GB)	• SH342-C × 4	
19	DKC-F510I-S1G (RoHS not applied)	Additional Shared Memory Module (1GB)	• SH341-A/C × 2	This option can be installed in DKC-F510I-SX/SXR/ SX1GR.
	DKC-F510I-S1GR (RoHS applied)	Additional Shared Memory Module (1GB)	• SH341-C × 2	
20	DKC-F510I-CX1GR (RoHS applied)	Cache Path Expansion Kit	• WP541-B (Part No. 5524246-C) × 2	*5
21	DKC-F510I-SX1GR (RoHS applied)	Shared Memory Path Expansion Kit	• WP551-B × 1 WP552-B × 1	*6
22	DKC-F510I-C8GR (RoHS applied)	Additional Cache Memory Module (8GB)	• SH342-D × 4	*7
23	DKC-F510I-S2GR (RoHS applied)	Additional Shared Memory Module (2GB)	• SH341-D × 2	*8

(To be continued)

*5: DKC-F510I-C4G/C4GR/C8GR can be installed in DKC-F510I-CX1GR. However, DKC-F510I-C4G/C4GR and DKC-F510I-C8GR cannot be used at the same time. DKC-F510I-CX1GR can be installed in the basic slot of DKC510I-5/5P too.

*6: DKC-F510I-S1G/S1GR/S2GR can be installed in DKC-F510I-SX1GR. DKC-F510I-SX1GR can be installed in the basic slot of DKC510I-5/5P too.

*7: DKC-F510I-C8GR can be installed on the Cache Memory PCB of DKC510I-5R/5PR's Basic PCB and DKC-F510I-CX1GR. However, it cannot be installed on the Cache Memory PCB of DKC510I-5/5P's Basic PCB and DKC-F510I-CX/CXR. It is necessary to replace the Cache Memory PCB to DKC-F510I-CX1GR to install DKC-F510I-C8GR.

*8: DKC-F510I-S2GR can be installed on the Shared Memory PCB of DKC510I-5R/5PR's Basic PCB and DKC-F510I-SX1GR. However, it cannot be installed on the Shared Memory PCB of DKC510I-5/5P's Basic PCB and DKC-F510I-SX/SXR. It is necessary to replace the Shared Memory PCB to DKC-F510I-SX1GR to install DKC-F510I-S2GR.

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No.	Model Number	Model Name	Major Part	Remarks
24	DKC-F510I-400 (RoHS not applied)	Disk Adapter	• WP520-A/C × 1 SH343-A/B × 4] × 2	
	DKC-F510I-400R (RoHS applied)	Disk Adapter	• WP520-C × 1 SH343-B × 4] × 2	
25	DKC-F510I-SVP (RoHS not applied)	SVP High Reliability Support Kit	• SVP PC × 1	
	DKC-F510I-SVPR (RoHS applied)	SVP High Reliability Support Kit	• SVP PC × 1	
26	DKC-F510I-PCI (RoHS not applied)	Power Control Interface Kit for Mainframe	• PCI CON × 1	
	DKC-F510I-PCIR (RoHS applied)	Power Control Interface Kit for Mainframe	• PCI CON × 1	
27	DKC-F510I-R11C (RoHS not applied)	Device Interface Cable connects DKU-R0 and DKU-R1	• Fibre Cable × 16 • HBC Cable × 8	
	DKC-F510I-R11CR (RoHS applied)	Device Interface Cable connects DKU-R0 and DKU-R1	• Fibre Cable × 16 • HBC Cable × 8	
28	DKC-F510I-R12C (RoHS not applied)	Device Interface Cable connects DKC and DKU-R1	• Fibre Cable × 16 • HBC Cable × 8	
	DKC-F510I-R12CR (RoHS applied)	Device Interface Cable connects DKC and DKU-R1	• Fibre Cable × 16 • HBC Cable × 8	
29	DKC-F510I-L11C (RoHS not applied)	Device Interface Cable connects DKC and DKU-L1	• Fibre Cable × 16 • HBC Cable × 8	
	DKC-F510I-L11CR (RoHS applied)	Device Interface Cable connects DKC and DKU-L1	• Fibre Cable × 16 • HBC Cable × 8	
30	DKC-F510I-L12C (RoHS not applied)	Device Interface Cable connects DKC and DKU-L1	• Fibre Cable × 16 • HBC Cable × 8	
	DKC-F510I-L12CR (RoHS applied)	Device Interface Cable connects DKC and DKU-L1	• Fibre Cable × 16 • HBC Cable × 8	
31	DKC-F510I-MDM (RoHS not applied)	Modem Card for Remote Maintenance	• LAN & MODEM Card	
	DKC-F510I-MDMR (RoHS applied)	Modem Card for Remote Maintenance	• MODEM Card	
32	DKC-F510I-16S (RoHS not applied)	Serial 16-port Adapter	• WP512-A/B × 1 SH343-A/B × 4] × 2	
	DKC-F510I-16SR (RoHS applied)	Serial 16-port Adapter	• WP512-B × 1 SH343-B × 4] × 2	
33	DKC-F510I-8MS (RoHS not applied)	Mainframe Fibre 8-port Adapter for Short Wavelength (1-2Gbps)	• WP515-A/C × 1 SH343-A/B × 4] × 2	
	DKC-F510I-8MSR (RoHS applied)	Mainframe Fibre 8-port Adapter for Short Wavelength (1-2Gbps)	• WP515-C × 1 SH343-B × 4] × 2	

(To be continued)

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No.	Model Number	Model Name	Major Part	Remarks
34	DKC-F510I-8ML (RoHS not applied)	Mainframe Fibre 4-port Adapter for Long Wavelength (1-2Gbps)	• WP515-B × 1 SH343-A × 4] × 2	
	DKC-F510I-8MLR (RoHS applied)	Mainframe Fibre 4-port Adapter for Long Wavelength (1-2Gbps)	• WP515-D × 1 SH343-B × 4] × 2	
35	DKC-F510I-16MSR (RoHS applied)	Mainframe Fibre 16-port Adapter for Short Wavelength (1-2Gbps)	• WP514-C × 1 SH343-B × 4] × 2	
36	DKC-F510I-16MLR (RoHS applied)	Mainframe Fibre 16-port Adapter for Long Wavelength (1-2Gbps)	• WP514-D × 1 SH343-B × 4] × 2	
37	DKC-F510I-8HSR (RoHS applied)	Fibre 8-port High Performance Adapter (1-2Gbps)	• WP513-E × 1 SH343-B × 2] × 2	
38	DKC-F510I-16HS (RoHS not applied)	Fibre 16-port High Performance Adapter (1-2Gbps)	• WP513-A/C × 1 SH343-A/B × 2] × 2	
	DKC-F510I-16HSR (RoHS applied)	Fibre 16-port High Performance Adapter (1-2Gbps)	• WP513-C × 1 SH343-B × 2] × 2	
39	DKC-F510I-32HS (RoHS not applied)	Fibre 32-port High Performance Adapter (1-2Gbps)	• WP513-B/D × 1 SH343-A/B × 4] × 2	
	DKC-F510I-32HSR (RoHS applied)	Fibre 32-port High Performance Adapter (1-2Gbps)	• WP513-D × 1 SH343-B × 4] × 2	
40	DKC-F510I-1HL (RoHS not applied)	Fibre SFP Transceiver for Long Wavelength	• Transceiver for Fibre Long Wave × 1	
	DKC-F510I-1HLR (RoHS applied)	Fibre SFP Transceiver for Long Wavelength	• Transceiver for Fibre Long Wave × 1	
41	DKC-F510I-1HS (RoHS not applied)	Fibre SFP Transceiver for Short Wavelength	• Transceiver for Fibre Short Wave × 1	
	DKC-F510I-1HSR (RoHS applied)	Fibre SFP Transceiver for Short Wavelength	• Transceiver for Fibre Short Wave × 1	
42	DKC-F510I-8NS (RoHS not applied)	NAS 8-port Adapter for Short Wavelength (1.25Gbps)	• WP517-A/C × 1 SH343-A/B × 1] × 2	*9
	DKC-F510I-8NSR (RoHS applied)	NAS 8-port Adapter for Short Wavelength (1.25Gbps)	• WP517-C × 1 SH343-B × 1] × 2	*9
43	DKC-F510I-8ISR (RoHS applied)	iSCSI 8-port Adapter for Short Wavelength (1.25Gbps)	• WP516-B × 1 SH343-B × 2] × 2	
44	DKC-F510I-32FSR (RoHS applied)	Fibre 32-port High Performance Adapter (1-4Gbps)	• WP518-D × 1 SH343-B × 4] × 2	

(To be continued)

*9: The NAS8 port adapter (DKC-F510I-8NS/8NSR) cannot be added to the following slots.
Slot No. 1A, 1B, 1K, 1L, 2M, 2N, 2W and 2X
(addition 4, addition 5, addition 6 and addition 7)

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No.	Model Number	Model Name	Major Part	Remarks
45	DKC-F510I-1FLR (RoHS applied)	Fibre SFP Transceiver for Long Wavelength (1-4Gbps)	• Transceiver for Fibre Long Wave × 1	
46	DKC-F510I-1FSR (RoHS applied)	Fibre SFP Transceiver for Short Wavelength (1-4Gbps)	• Transceiver for Fibre Short Wave × 1	
47	DKC-F510I-1FL4R (RoHS applied)	Fibre SFP Transceiver for Long Wavelength (1-4Gbps: Max.4km)	• Transceiver for Fibre Long Wave × 1	
48	DKC-F510I-8FS2R (RoHS applied)	Fibre 8-port High Performance Adapter 2 (1-4Gbps)	• WP518-G × 1 SH343-B × 2] × 2	
49	DKC-F510I-16FS2R (RoHS applied)	Fibre 16-port High Performance Adapter 2 (1-4Gbps)	• WP518-E × 1 SH343-B × 2] × 2	
50	DKC-F510I-32FS2R (RoHS applied)	Fibre 32-port High Performance Adapter 2 (1-4Gbps)	• WP518-F × 1 SH343-B × 4] × 2	
51	DKC-F510I-16MFSR (RoHS applied)	Mainframe Fibre 16-port Adapter for Short Wavelength (1-4Gbps)	• WP514-E × 1 SH343-B × 4] × 2	
52	DKC-F510I-16MFLR (RoHS applied)	Mainframe Fibre 16-port Adapter for Long Wavelength (1-4Gbps)	• WP514-F × 1 SH343-B × 4] × 2	
53	DKC-F510I-16MFL4R (RoHS applied)	Mainframe Fibre 16-port Adapter for Long Wave (1-4Gbps: Max.4km)	• WP514-H × 1 SH343-B × 4] × 2	
54	DKC-F510I-PCBR (RoHS not applied)	Breaker Box for CE Laptop PC	• PC BREAKER BOX • Nameplate	
	DKC-F510I-PCBRR (RoHS applied)	Breaker Box for CE Laptop PC	• PC BREAKER BOX • Nameplate	

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(2) Model of DKU505I

Table 1.1.1-2 shows the model list of DKU505I.

Table 1.1.1-2 Model List of DKU505I

No.	Model Number	Model Name	Major Part	Remarks
1	DKU505I-18 DKU505I-18P (RoHS not applied)	Disk Array Frame Disk Array Frame for hp	• HDU Box × 4 • LR018-A/B (HDD PL) × 4 • SH358-A/C (FSW-A) × 16 • SH360-A/B (ALPA) × 8 • SH395-A/B (PS PNL) × 2 • DKUPS × 4 • Battery Box × 4 • HDD FAN ASSY × 6	Disk Array Frame doesn't contain AC Box Kit, AC Power cables and HDD canisters.
	DKU505I-18R DKU505I-18PR (RoHS applied)	Disk Array Frame Disk Array Frame for hp	• HDU Box × 4 • LR018-B (HDD PL) × 4 • SH358-C (FSW-A) × 16 • SH360-B (ALPA) × 8 • SH395-B (PS PNL) × 2 • DKUPS × 4 • Battery Box × 4 • HDD FAN ASSY × 6	Disk Array Frame doesn't contain AC Box Kit, AC Power cables and HDD canisters.
2	DKU-F505I-FSWA (RoHS not applied)	Disk Path Expansion Kit	• SH358-A (FSW-A) × 16 • SH360-A (ALPA) × 8	
	DKU-F505I-FSWAR (RoHS applied)	Disk Path Expansion Kit	• SH358-C (FSW-A) × 16 • SH360-B (ALPA) × 8	
3	DKU-F505I-EXC (RoHS not applied)	Device Interface Cable connects DKU and DKU	• Fibre Cable × 16 • HBC Cable × 8	
	DKU-F505I-EXCR (RoHS applied)	Device Interface Cable connects DKU and DKU	• Fibre Cable × 16 • HBC Cable × 8	
4	DKU-F505I-72JSR (RoHS applied)	1 HDD Canister	• HDD Canister × 1	
5	DKU-F505I-72KS (RoHS not applied)	1 HDD Canister (72GB/ 15kmin^{-1}/Multi vendor)	• HDU500-72KSFC/ 72K1FC/72K2FC × 1	
	DKU-F505I-72KSR (RoHS applied)	1 HDD Canister (72GB/ 15kmin^{-1}/Multi vendor)	• HDU500-72KSFC/ 72K1FC/72K2FC × 1	
6	DKU-F505I-72K1R (RoHS applied)	1 HDD Canister (72GB/15kmin^{-1}/Seagate)	• HDU500-72K1FC × 1	
7	DKU-F505I-146JS (RoHS not applied)	1 HDD Canister (146GB/ 10kmin^{-1}/Multi vendor)	• HDU500-146JSFC/ 146J1FC/146J2FC × 1	
	DKU-F505I-146JSR (RoHS applied)	1 HDD Canister (146GB/ 10kmin^{-1}/Multi vendor)	• HDU500-146JSFC/ 146J1FC/146J2FC × 1	
8	DKU-F505I-146J1R (RoHS applied)	1 HDD Canister (146GB/ 10kmin^{-1}/HGST)	• HDU500-146J1FC × 1	

(To be continued)

(Continued from the preceding page)

No.	Model Number	Model Name	Major Part	Remarks
9	DKU-F505I-146KSR (RoHS applied)	1 HDD Canister (146GB/ 15kmin^{-1}/Multi vendor)	• HDU500-146KSFC/ 146K1FC/146K2FC × 1	
10	DKU-F505I-146K1R (RoHS applied)	1 HDD Canister (146GB/ 15kmin^{-1}/Seagate)	• HDU500-146K1FC × 1	
11	DKU-F505I-300JSR (RoHS applied)	1 HDD Canister (300GB/ 10kmin^{-1}/Multi vendor)	• HDU500-300JSFC/ 300J1FC/300J2FC × 1	
12	DKU-F505I-300J1R (RoHS applied)	1 HDD Canister (300GB/ 10kmin^{-1}/HGST)	• HDU500-300J1FC × 1	
13	DKU-F505I-300KSR (RoHS applied)	1 HDD Canister (300GB/ 15kmin^{-1}/Multi vendor)	• HDU500-300K1FC × 1	
14	DKU-F505I-400JSR (RoHS applied)	1 HDD Canister (400GB/ 10kmin^{-1}/Multi vendor)	• HDU500-400J1FC × 1	
15	DKU-F505I-DH (RoHS not applied)	DKU Door Kit for HDS	• Front and Rear doors	
	DKU-F505I-DHR (RoHS applied)	DKU Door Kit for HDS	• Front and Rear doors	
16	DKU-F505I-DS (RoHS not applied)	DKU Door Kit for SUN	• Front and Rear doors	
	DKU-F505I-DSR (RoHS applied)	DKU Door Kit for SUN	• Front and Rear doors	

SVP displays each drive model as the table (written at THEORY section “3.7 Inter Mix of Drives and Emulation types”).

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[Notes on Conformity to the RoHS]

Whether a subsystem conforms to the RoHS or not is judged from a model name of a DKC. When the DKC model name represents unconformity to the RoHS, the subsystem concerned does not conform to the RoHS and when it represents conformity to the RoHS, the subsystem concerned conforms to the RoHS.

(1) Subsystem that does not conform to the RoHS
When a subsystem does not conform to the RoHS, both “options that conform to the RoHS” and “options that do not conform to the RoHS” can be installed in it.

Subsystem that does not conform to the RoHS

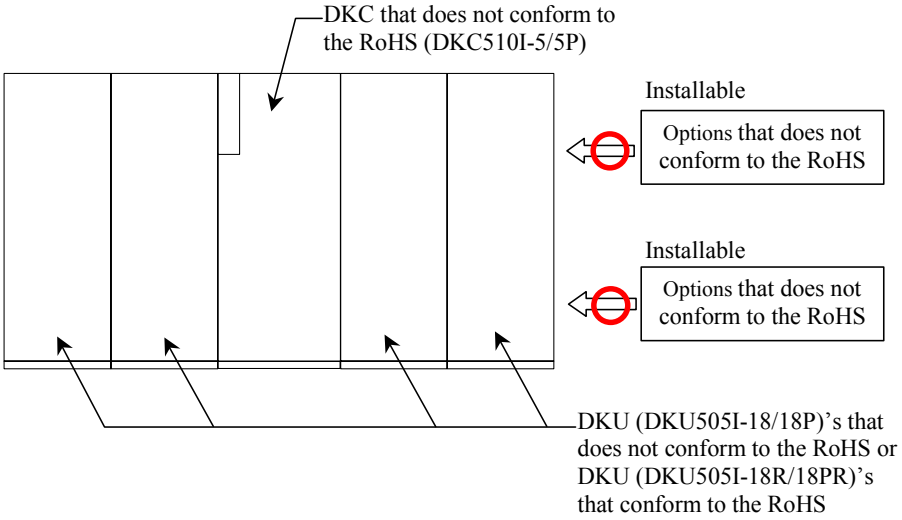

Fig. 6-1 Subsystem That Does Not Conform to RoHS

(2) Subsystem that conforms to the RoHS
When a subsystem conforms to the RoHS, only “options that conform to the RoHS” can be installed in it.

Subsystem that conforms to the RoHS

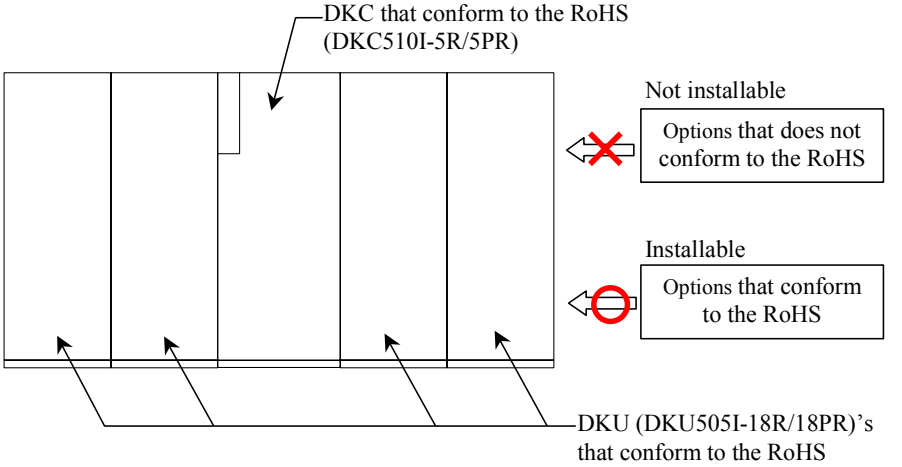

Fig. 6-2 Subsystem That Conform to RoHS

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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 INST03-08A-10.
2. Required shared memory capacity is determined by cache memory capacity, the number of LDEV, and the kind of program product to apply. Furthermore, when connecting an external storage, required shared memory capacity differs.
3. To create a CLPR, if your subsystem has any additional printed circuit boards (PCBs), you must install the cache memories with the High Performance Cache Access Model. There is a case of that expansion of cache memory. If necessary, see INST03-08B-10.

1.1.2.1 Shared memory capacity and number of necessary options

Required shared memory capacity is determined by cache memory capacity, the number of LDEV, and the kind of program product to apply. Furthermore, when connecting an external storage, 300GB or larger HDD use and the number of VDEV required shared memory capacity differs. Required shared memory capacity is determined with reference to the table indicated at the following table.

No.	Program Product application situation				Reference Table			
	TC, SI, UR, VM or Hi-Copy (*1)	TPF or E-Copy	FCV2 or COW (*1)	VFS SYS Area (*2)	Standard Shared Memory Access Model		High Performance Shared Memory Access Model	
					Page	Table number	Page	Table number
1	Not Applied	Not Applied	Not Applied	Not Applied	INST07-40	Table 7.2-1	INST07-91	Table 7.2-7
2	Applied	Not Applied	Not Applied	Not Applied	INST07-50	Table 7.2-2	INST07-92	Table 7.2-8
3	Not Applied	Applied	Not Applied	Not Applied	INST07-60	Table 7.2-3	INST07-93	Table 7.2-9
4	Applied	Applied	Not Applied	Not Applied	INST07-70	Table 7.2-4	INST07-94	Table 7.2-10
5	Applied	Not Applied	Applied	Not Applied	INST07-80	Table 7.2-5	INST07-95	Table 7.2-11
6	Applied	Applied	Applied	Not Applied	INST07-90	Table 7.2-6	INST07-96	Table 7.2-12
7	Not Applied	Not Applied	Not Applied	Applied	–	–	INST07-97	Table 7.2-13
8	Applied	Not Applied	Not Applied	Applied	–	–	INST07-97B	Table 7.2-14
9	Not Applied	Applied	Not Applied	Applied	–	–	INST07-97H	Table 7.2-15
10	Applied	Applied	Not Applied	Applied	–	–	INST07-97K	Table 7.2-16
11	Applied	Not Applied	Applied	Applied	–	–	INST07-97R	Table 7.2-17
12	Applied	Applied	Applied	Applied	–	–	INST07-98	Table 7.2-18

*1: TrueCopy : TC Volume Migration : VM
ShadowImage : SI Flash Copy Version2 : FCV2
Universal Replicator : UR COW Snapshot : COW

*2: When using COW Snapshot function, VFS SYS area is needed.
VFS SYS area: V-VOL management area

Please note that location of shared memory module varies according to the purpose such as additional cache installation or additional LDEV installation.

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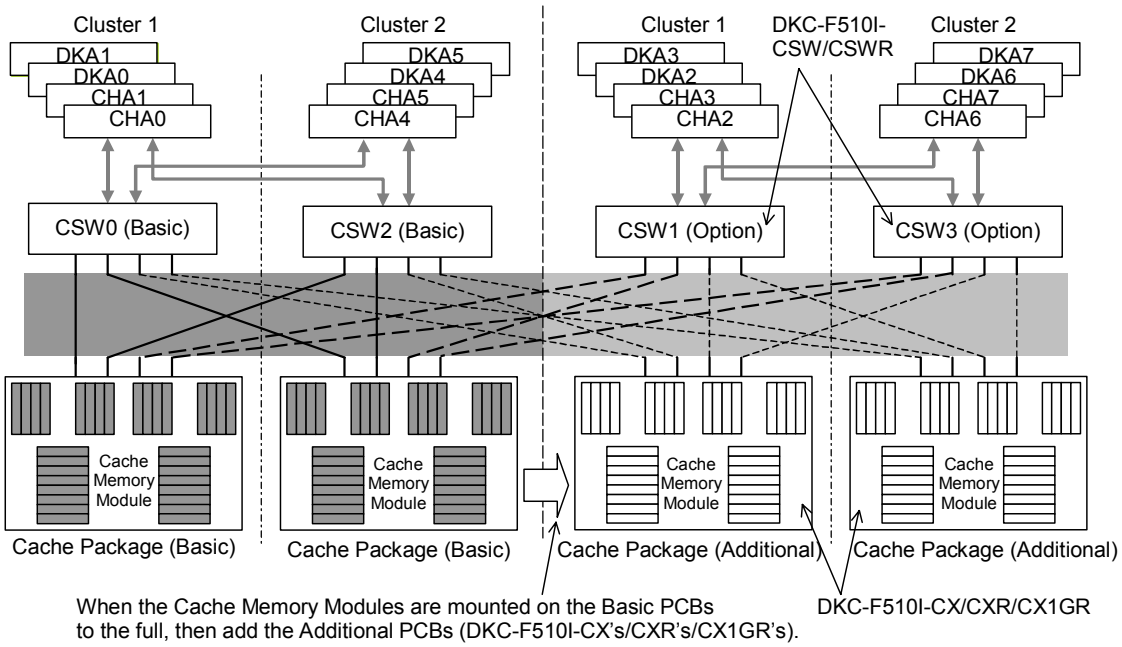
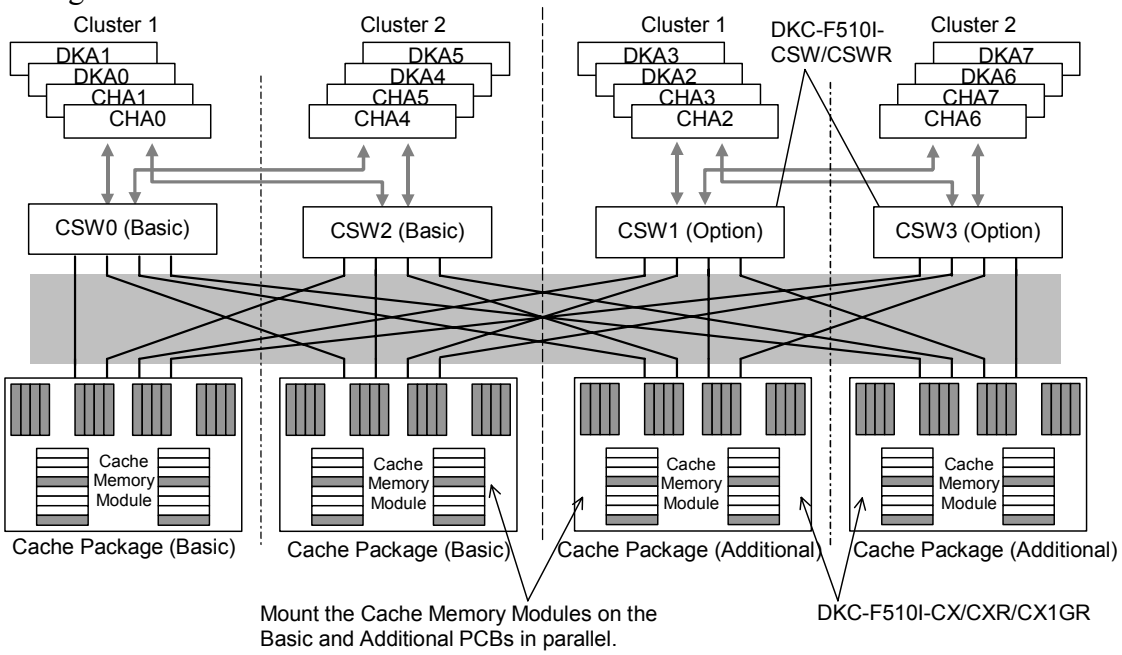
1.1.2.2 Cache memory capacity and number of necessary options

There are two types of cache memory upgrade. The first one is called Standard Cache Access Model in which firstly Basic PCB fully is installed then additional PCB (DKC-F510I-CX/CXR/CX1GR) is installed. The second one is High Performance Cache Access Model in which Basic PCB and additional PCB (DKC-F510I-CX/CXR/CX1GR) are installed parallels.

1. Standard Cache Access Model



2. High Performance Cache Access Model



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Cache memory capacities and corresponding number of options required are shown in Table 1.1.2.2-1 through 1.1.2.2-6.

Table 1.1.2.2-1 Cache memory capacity and number of necessary options (RoHS not applied, Standard Cache Access Model ①)

Cache Memory Capacity	Number of options (Standard Cache Access model)								
	Using DKC-F510I-C4G/C4GR				Using DKC-F510I-C8GR				
	Cache PCB		DKC-F510I -C4G/ C4GR	DKC-F510I -AB/ ABR	Cache PCB		DKC-F510I -C8GR	DKC-F510I -AB/ ABR	DKC-F510I -AP/ APR
	Basic Slot Basic PCB	Add. Slot CX/CXR/ CX1GR			Basic Slot CX1GR	Add. Slot CX1GR			
4GB	(Note 2)	—	1	0	—	—	—	—	0
8GB	(Note 2)	—	2	0	1	—	1	0	0
12GB	(Note 2)	—	3	0	—	—	—	—	0
16GB	(Note 2)	—	4	0	1	—	2	0	0
20GB	(Note 2)	—	5	0	—	—	—	—	0
24GB	(Note 2)	—	6	0	1	—	3	0	0
28GB	(Note 2)	—	7	0	—	—	—	—	0
32GB	(Note 2)	—	8	0	1	—	4	0	0
36GB	(Note 2)	—	9	0	—	—	—	—	0
40GB	(Note 2)	—	10	0	1	—	5	0	0
44GB	(Note 2)	—	11	0	—	—	—	—	0
48GB	(Note 2)	—	12	0	1	—	6	0	0
52GB	(Note 2)	—	13	0	—	—	—	—	0
56GB	(Note 2)	—	14	0	1	—	7	0	0
60GB	(Note 2)	—	15	0	—	—	—	—	0
64GB	(Note 2)	—	16	0	1	—	8	0	0
68GB	(Note 2)	1	17	2	—	—	—	—	1
72GB	(Note 2)	1	18	2	1	—	9	1	1
76GB	(Note 2)	1	19	2	—	—	—	—	1
80GB	(Note 2)	1	20	2	1	—	10	1	1
84GB	(Note 2)	1	21	2	—	—	—	—	1
88GB	(Note 2)	1	22	2	1	—	11	1	1
92GB	(Note 2)	1	23	2	—	—	—	—	1
96GB	(Note 2)	1	24	2	1	—	12	1	1
100GB	(Note 2)	1	25	2	—	—	—	—	1
104GB	(Note 2)	1	26	2	1	—	13	1	1
108GB	(Note 2)	1	27	2	—	—	—	—	1
112GB	(Note 2)	1	28	2	1	—	14	1	1
116GB	(Note 2)	1	29	2	—	—	—	—	1
120GB	(Note 2)	1	30	2	1	—	15	1	1
124GB	(Note 2)	1	31	2	—	—	—	—	1
128GB	(Note 2)	1	32	2	1	—	16	1	1
136GB	—	—	—	—	1	1	17	2	1
144GB	—	—	—	—	1	1	18	2	1
152GB	—	—	—	—	1	1	19	2	1
160GB	—	—	—	—	1	1	20	2	1

(To be continued)

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(Continued from the preceding page)

Cache Memory Capacity	Number of options (Standard Cache Access model)								
	Using DKC-F510I-C4G/C4GR				Using DKC-F510I-C8GR				DKC-F510I -AP/ APR
	Cache PCB		DKC-F510I -C4G/ C4GR	DKC-F510I -AB/ ABR	Cache PCB		DKC-F510I -C8GR	DKC-F510I -AB/ ABR	
	Basic Slot Basic PCB	Add. Slot CX/CXR/ CX1GR			Basic Slot CX1GR	Add. Slot CX1GR			
168GB	—	—	—	—	1	1	21	2	1
176GB	—	—	—	—	1	1	22	2	1
184GB	—	—	—	—	1	1	23	2	1
192GB	—	—	—	—	1	1	24	2	1
200GB	—	—	—	—	1	1	25	2	1
208GB	—	—	—	—	1	1	26	2	1
216GB	—	—	—	—	1	1	27	2	1
224GB	—	—	—	—	1	1	28	2	1
232GB	—	—	—	—	1	1	29	2	1
240GB	—	—	—	—	1	1	30	2	1
248GB	—	—	—	—	1	1	31	2	1
256GB	—	—	—	—	1	1	32	2	1

Note 1: The WP541-A, WP541-B (Part No. 5524251-C) or WP541-B (Part No. 5524246-C) is installed in the basic slot.

Note 2: A cache memory can't be set up in the ' - ' mark.

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Table 1.1.2.2-2 Cache memory capacity and number of necessary options (RoHS not applied, Standard Cache Access Model ②)

Cache Memory Capacity	Number of options (Standard Cache Access model)					
	DKC-F510I-C4G/C4GR and DKC-F510I-C8GR intermix					DKC-F510I -AP/APR
	Cache PCB				DKC-F510I -AB/ABR	
	Basic Slot		Add. Slot			
	Basic PCB	C4G/C4GR	CX1GR	C8GR		
4GB	(Note 2)	1	—	0	0	0
8GB	(Note 2)	2	—	0	0	0
12GB	(Note 2)	3	—	0	0	0
16GB	(Note 2)	4	—	0	0	0
20GB	(Note 2)	5	—	0	0	0
24GB	(Note 2)	6	—	0	0	0
28GB	(Note 2)	7	—	0	0	0
32GB	(Note 2)	8	—	0	0	0
36GB	(Note 2)	9	—	0	0	0
40GB	(Note 2)	10	—	0	0	0
44GB	(Note 2)	11	—	0	0	0
48GB	(Note 2)	12	—	0	0	0
52GB	(Note 2)	13	—	0	0	0
56GB	(Note 2)	14	—	0	0	0
60GB	(Note 2)	15	—	0	0	0
64GB	(Note 2)	16	—	0	0	0
72GB	(Note 2)	16	1	1	2	1
80GB	(Note 2)	16	1	2	2	1
88GB	(Note 2)	16	1	3	2	1
96GB	(Note 2)	16	1	4	2	1
104GB	(Note 2)	16	1	5	2	1
112GB	(Note 2)	16	1	6	2	1
120GB	(Note 2)	16	1	7	2	1
128GB	(Note 2)	16	1	8	2	1
136GB	(Note 2)	16	1	9	2	1
144GB	(Note 2)	16	1	10	2	1
152GB	(Note 2)	16	1	11	2	1
160GB	(Note 2)	16	1	12	2	1
168GB	(Note 2)	16	1	13	2	1
176GB	(Note 2)	16	1	14	2	1
184GB	(Note 2)	16	1	15	2	1
192GB	(Note 2)	16	1	16	2	1

Note 1: The WP541-A, WP541-B (Part No. 5524251-C) or WP541-B (Part No. 5524246-C) is installed in the basic slot.

Note 2: A cache memory can't be set up in the ' - ' mark.

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Table 1.1.2.2-3 Cache memory capacity and number of necessary options (RoHS not applied, High Performance Cache Access Model)

Cache Memory Capacity	Number of options (Standard Cache Access model)								
	Using DKC-F510I-C4G/C4GR				Using DKC-F510I-C8GR				DKC-F510I -AP/ APR
	Cache PCB		DKC-F510I -C4G/ C4GR	DKC-F510I -AB/ ABR	Cache PCB		DKC-F510I -C8GR	DKC-F510I -AB/ ABR	
	Basic Slot	Add. Slot			Basic Slot	Add. Slot			
	Basic PCB	CX/CXR/ CX1GR			CX1GR	CX1GR			
8GB	(Note 2)	1	2	1	—	—	—	—	0
16GB	(Note 2)	1	4	1	1	1	2	1	0
24GB	(Note 2)	1	6	1	—	—	—	—	0
32GB	(Note 2)	1	8	1	1	1	4	1	0
40GB	(Note 2)	1	10	1	—	—	—	—	0
48GB	(Note 2)	1	12	1	1	1	6	1	0
56GB	(Note 2)	1	14	1	—	—	—	—	0
64GB	(Note 2)	1	16	1	1	1	8	1	0
72GB	(Note 2)	1	18	2	—	—	—	—	1
80GB	(Note 2)	1	20	2	1	1	10	2	1
88GB	(Note 2)	1	22	2	—	—	—	—	1
96GB	(Note 2)	1	24	2	1	1	12	2	1
104GB	(Note 2)	1	26	2	—	—	—	—	1
112GB	(Note 2)	1	28	2	1	1	14	2	1
120GB	(Note 2)	1	30	2	—	—	—	—	1
128GB	(Note 2)	1	32	2	1	1	16	2	1
144GB	—	—	—	—	1	1	18	2	1
160GB	—	—	—	—	1	1	20	2	1
176GB	—	—	—	—	1	1	22	2	1
192GB	—	—	—	—	1	1	24	2	1
208GB	—	—	—	—	1	1	26	2	1
224GB	—	—	—	—	1	1	28	2	1
240GB	—	—	—	—	1	1	30	2	1
256GB	—	—	—	—	1	1	32	2	1

Note 1: The WP541-A, WP541-B (Part No. 5524251-C) or WP541-B (Part No. 5524246-C) is installed in the basic slot.

Note 2: A cache memory can't be set up in the ' - ' mark.
High performance model is effective when the cache memory is installed 16GB or more, and recommend the addition of 16GB.

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Table 1.1.2.2-4 Cache memory capacity and number of necessary options (RoHS applied, Standard Cache Access Model ①)

Cache Memory Capacity	Number of options (Standard Cache Access model)								
	Using DKC-F510I-C4GR				Using DKC-F510I-C8GR				DKC-F510I-APR
	Cache PCB		DKC-F510I-C4GR	DKC-F510I-ABR	Cache PCB		DKC-F510I-C8GR	DKC-F510I-ABR	
	Basic Slot	Add. Slot			Basic Slot	Add. Slot			
	Basic PCB	CXR/ CX1GR			Basic PCB	CX1GR			
4GB	(Note 2)	—	1	0	—	—	—	—	0
8GB	(Note 2)	—	2	0	(Note 2)	—	1	0	0
12GB	(Note 2)	—	3	0	—	—	—	—	0
16GB	(Note 2)	—	4	0	(Note 2)	—	2	0	0
20GB	(Note 2)	—	5	0	—	—	—	—	0
24GB	(Note 2)	—	6	0	(Note 2)	—	3	0	0
28GB	(Note 2)	—	7	0	—	—	—	—	0
32GB	(Note 2)	—	8	0	(Note 2)	—	4	0	0
36GB	(Note 2)	—	9	0	—	—	—	—	0
40GB	(Note 2)	—	10	0	(Note 2)	—	5	0	0
44GB	(Note 2)	—	11	0	—	—	—	—	0
48GB	(Note 2)	—	12	0	(Note 2)	—	6	0	0
52GB	(Note 2)	—	13	0	—	—	—	—	0
56GB	(Note 2)	—	14	0	(Note 2)	—	7	0	0
60GB	(Note 2)	—	15	0	—	—	—	—	0
64GB	(Note 2)	—	16	0	(Note 2)	—	8	0	0
68GB	(Note 2)	1	17	2	—	—	—	—	1
72GB	(Note 2)	1	18	2	(Note 2)	—	9	1	1
76GB	(Note 2)	1	19	2	—	—	—	—	1
80GB	(Note 2)	1	20	2	(Note 2)	—	10	1	1
84GB	(Note 2)	1	21	2	—	—	—	—	1
88GB	(Note 2)	1	22	2	(Note 2)	—	11	1	1
92GB	(Note 2)	1	23	2	—	—	—	—	1
96GB	(Note 2)	1	24	2	(Note 2)	—	12	1	1
100GB	(Note 2)	1	25	2	—	—	—	—	1
104GB	(Note 2)	1	26	2	(Note 2)	—	13	1	1
108GB	(Note 2)	1	27	2	—	—	—	—	1
112GB	(Note 2)	1	28	2	(Note 2)	—	14	1	1
116GB	(Note 2)	1	29	2	—	—	—	—	1
120GB	(Note 2)	1	30	2	(Note 2)	—	15	1	1
124GB	(Note 2)	1	31	2	—	—	—	—	1
128GB	(Note 2)	1	32	2	(Note 2)	—	16	1	1
136GB	—	—	—	—	(Note 2)	1	17	2	1
144GB	—	—	—	—	(Note 2)	1	18	2	1
152GB	—	—	—	—	(Note 2)	1	19	2	1
160GB	—	—	—	—	(Note 2)	1	20	2	1

(To be continued)

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(Continued from the preceding page)

Cache Memory Capacity	Number of options (Standard Cache Access model)								
	Using DKC-F510I-C4GR				Using DKC-F510I-C8GR				DKC-F510I -APR
	Cache PCB		DKC-F510I -C4GR	DKC-F510I -ABR	Cache PCB		DKC-F510I -C8GR	DKC-F510I -ABR	
	Basic Slot	Add. Slot			Basic Slot	Add. Slot			
	Basic PCB	CXR/ CX1GR			Basic PCB	CX1GR			
168GB	—	—	—	—	(Note 2)	1	21	2	1
176GB	—	—	—	—	(Note 2)	1	22	2	1
184GB	—	—	—	—	(Note 2)	1	23	2	1
192GB	—	—	—	—	(Note 2)	1	24	2	1
200GB	—	—	—	—	(Note 2)	1	25	2	1
208GB	—	—	—	—	(Note 2)	1	26	2	1
216GB	—	—	—	—	(Note 2)	1	27	2	1
224GB	—	—	—	—	(Note 2)	1	28	2	1
232GB	—	—	—	—	(Note 2)	1	29	2	1
240GB	—	—	—	—	(Note 2)	1	30	2	1
248GB	—	—	—	—	(Note 2)	1	31	2	1
256GB	—	—	—	—	(Note 2)	1	32	2	1

Note 1: The WP541-B (Part No. 5524246-C) is installed in the basic slot.

Note 2: A cache memory can't be set up in the ' - ' mark.

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Table 1.1.2.2-5 Cache memory capacity and number of necessary options (RoHS applied, Standard Cache Access Model ②)

Cache Memory Capacity	Number of options (Standard Cache Access model)					
	DKC-F510I-C4GR and DKC-F510I-C8GR intermix				DKC-F510I -ABR	DKC-F510I -APR
	Cache PCB					
	Basic Slot		Add. Slot			
	Basic PCB	C8GR	CXR/ CX1GR	C4GR		
8GB	(Note 2)	1	—	0	0	0
16GB	(Note 2)	2	—	0	0	0
24GB	(Note 2)	3	—	0	0	0
32GB	(Note 2)	4	—	0	0	0
40GB	(Note 2)	5	—	0	0	0
48GB	(Note 2)	6	—	0	0	0
56GB	(Note 2)	7	—	0	0	0
64GB	(Note 2)	8	—	0	0	0
72GB	(Note 2)	9	—	0	1	1
80GB	(Note 2)	10	—	0	1	1
88GB	(Note 2)	11	—	0	1	1
96GB	(Note 2)	12	—	0	1	1
104GB	(Note 2)	13	—	0	1	1
112GB	(Note 2)	14	—	0	1	1
120GB	(Note 2)	15	—	0	1	1
128GB	(Note 2)	16	—	0	1	1
132GB	(Note 2)	16	1	1	2	1
136GB	(Note 2)	16	1	2	2	1
140GB	(Note 2)	16	1	3	2	1
144GB	(Note 2)	16	1	4	2	1
148GB	(Note 2)	16	1	5	2	1
152GB	(Note 2)	16	1	6	2	1
156GB	(Note 2)	16	1	7	2	1
160GB	(Note 2)	16	1	8	2	1
164GB	(Note 2)	16	1	9	2	1
168GB	(Note 2)	16	1	10	2	1
172GB	(Note 2)	16	1	11	2	1
176GB	(Note 2)	16	1	12	2	1
180GB	(Note 2)	16	1	13	2	1
184GB	(Note 2)	16	1	14	2	1
188GB	(Note 2)	16	1	15	2	1
192GB	(Note 2)	16	1	16	2	1

Note 1: The WP541-B (Part No. 5524246-C) is installed in the basic slot.

Note 2: A cache memory can't be set up in the ' - ' mark.

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Table 1.1.2.2-6 Cache memory capacity and number of necessary options (RoHS applied, High Performance Cache Access Model)

Cache Memory Capacity	Number of options (Standard Cache Access model)								
	Using DKC-F510I-C4GR				Using DKC-F510I-C8GR				DKC-F510I-APR
	Cache PCB		DKC-F510I-C4GR	DKC-F510I-ABR	Cache PCB		DKC-F510I-C8GR	DKC-F510I-ABR	
	Basic Slot	Add. Slot			Basic Slot	Add. Slot			
	Basic PCB	CXR/ CX1GR			Basic PCB	CX1GR			
8GB	(Note 2)	1	2	1	—	—	—	—	0
16GB	(Note 2)	1	4	1	(Note 2)	1	2	1	0
24GB	(Note 2)	1	6	1	—	—	—	—	0
32GB	(Note 2)	1	8	1	(Note 2)	1	4	1	0
40GB	(Note 2)	1	10	1	—	—	—	—	0
48GB	(Note 2)	1	12	1	(Note 2)	1	6	1	0
56GB	(Note 2)	1	14	1	—	—	—	—	0
64GB	(Note 2)	1	16	1	(Note 2)	1	8	1	0
72GB	(Note 2)	1	18	2	—	—	—	—	1
80GB	(Note 2)	1	20	2	(Note 2)	1	10	2	1
88GB	(Note 2)	1	22	2	—	—	—	—	1
96GB	(Note 2)	1	24	2	(Note 2)	1	12	2	1
104GB	(Note 2)	1	26	2	—	—	—	—	1
112GB	(Note 2)	1	28	2	(Note 2)	1	14	2	1
120GB	(Note 2)	1	30	2	—	—	—	—	1
128GB	(Note 2)	1	32	2	(Note 2)	1	16	2	1
144GB	—	—	—	—	(Note 2)	1	18	2	1
160GB	—	—	—	—	(Note 2)	1	20	2	1
176GB	—	—	—	—	(Note 2)	1	22	2	1
192GB	—	—	—	—	(Note 2)	1	24	2	1
208GB	—	—	—	—	(Note 2)	1	26	2	1
224GB	—	—	—	—	(Note 2)	1	28	2	1
240GB	—	—	—	—	(Note 2)	1	30	2	1
256GB	—	—	—	—	(Note 2)	1	32	2	1

Note 1: The WP541-B (Part No. 5524246-C) is installed in the basic slot.

Note 2: A cache memory can't be set up in the ' - ' mark.
High performance model is effective when the cache memory is installed 16GB or more, and recommend the addition of 16GB.

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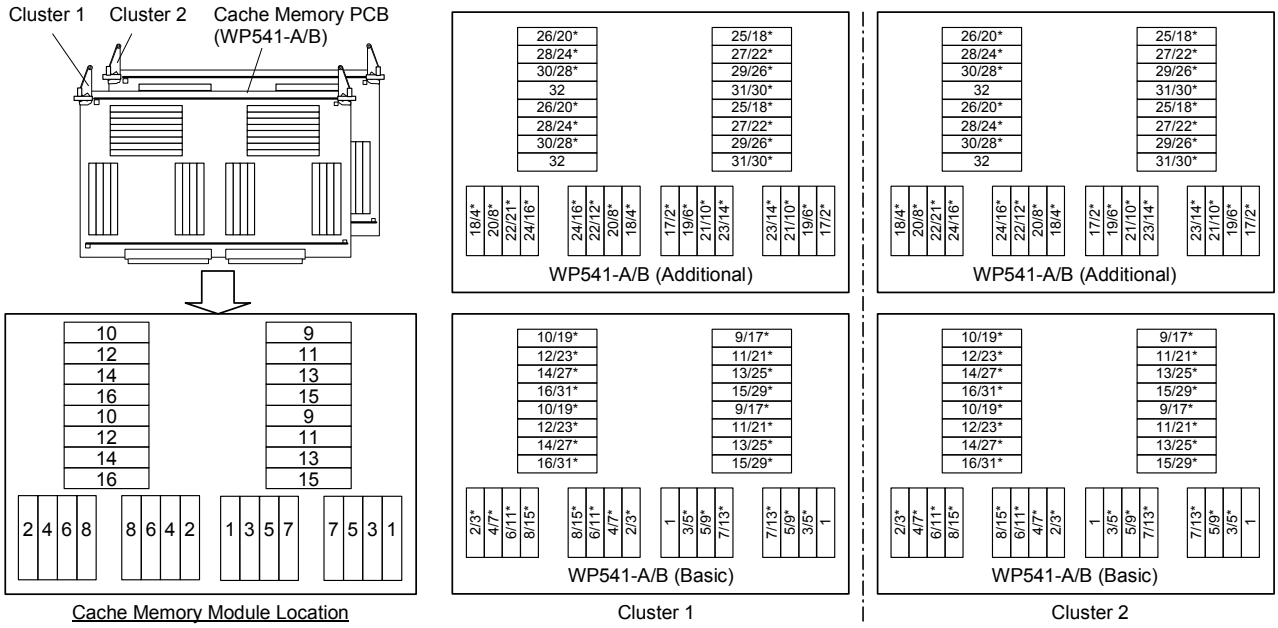

"ss/hh*" shown in the figure above indicates an order of mounting the Cache Memory Module on each PCB.
"ss" denotes the order in the Standard Module configuration and "hh*", order in the High Performance Mode configuration.

Fig. 1.1.2.2-1 Location of Cache Memory Module

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1.1.2.3 Frame addition and option(s) required for it

1. Outline
   As for the DKC510I, up to four sets of the DKC options can be installed and the scale of the disk access path can be expanded from 16 paths to up to 64 paths through choices of the DKC frame, cable, and/or FSW option, etc.
   - 1-DKA pair model … Up to 256 HDDs/16 disk paths
   - 2-DKA pair model … Up to 640 HDDs/32 disk paths
   - 4-DKA pair model … Up to 1152 HDDs/64 disk paths

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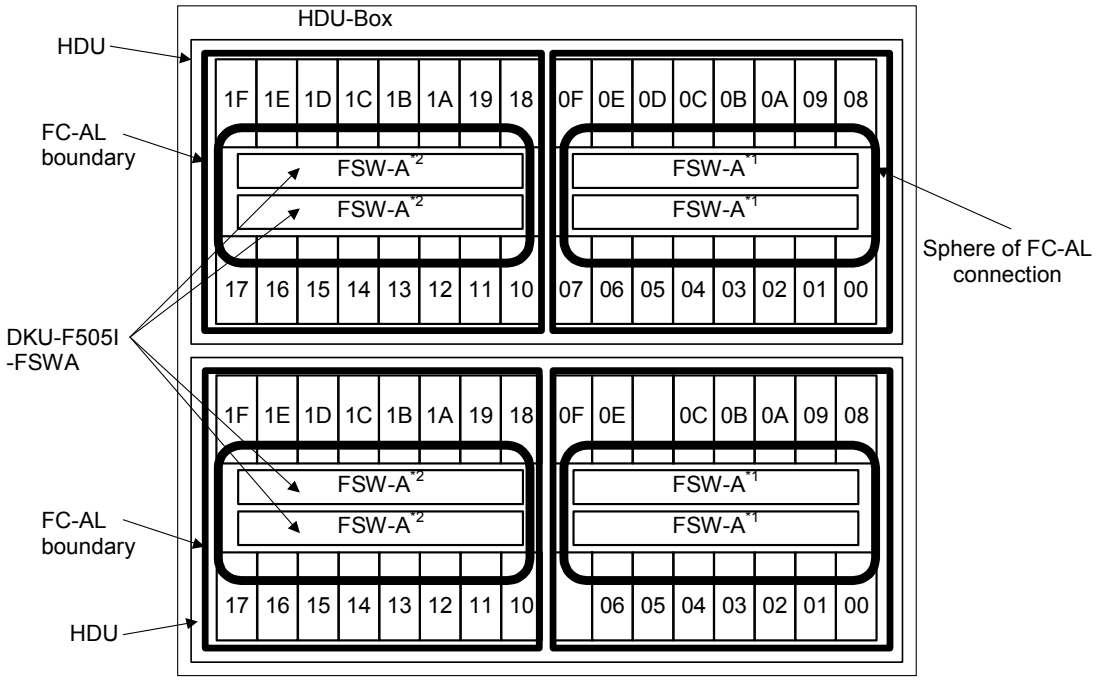
(1) HDU Box structure

In the HDU Box installed in the DKC/DKU frame, the two HDUs, each of which is equipped with 32 HDDs, are installed. These HDDs are connected to the DKA via the FSW through the FCAL.

Incidentally, the FSW-A's are installed in the DKC main body as standard components because only the 16 HDDs/FCAL control method is adopted for the HDU-Box (DKU-R0) installed in the DKC.

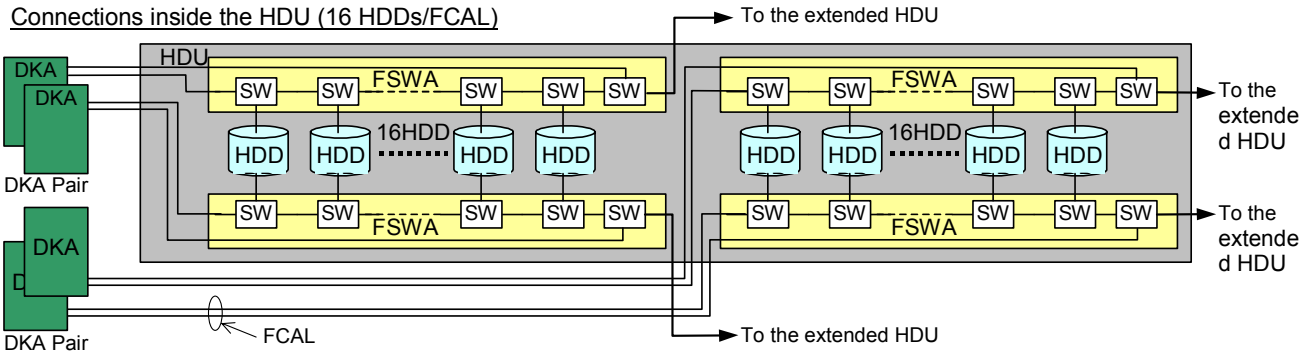
Internal structure of the HDU



*1 : The FSW-A's are installed as standard components irrespective of a number of the HDDs connected through the FCAL.

*2: When connecting the 32 HDD locations in the HDU using the two FCALs, installation of the FSW-A7s is indispensable.

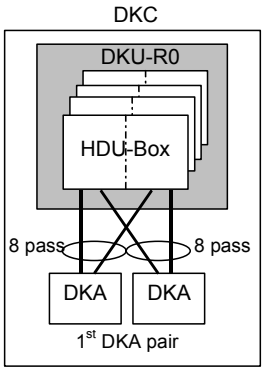
Connections inside the HDU (16 HDDs/FCAL)



(2) Configuration of each model

When adding the frame of the DKC510I/DKU505I disk subsystem, options required for the addition differ depending on which of the two models, Standard Disk Access Model and High Performance Disk Access Model, is selected.

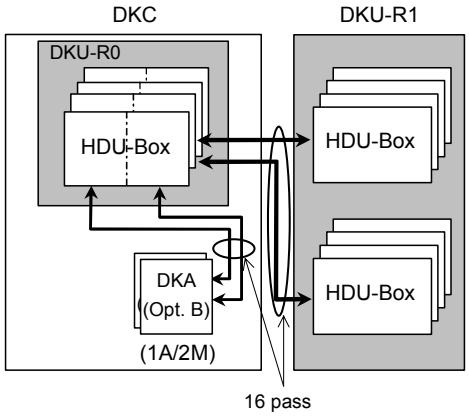
Single Cabinet Model (1 DKA Pair Model)



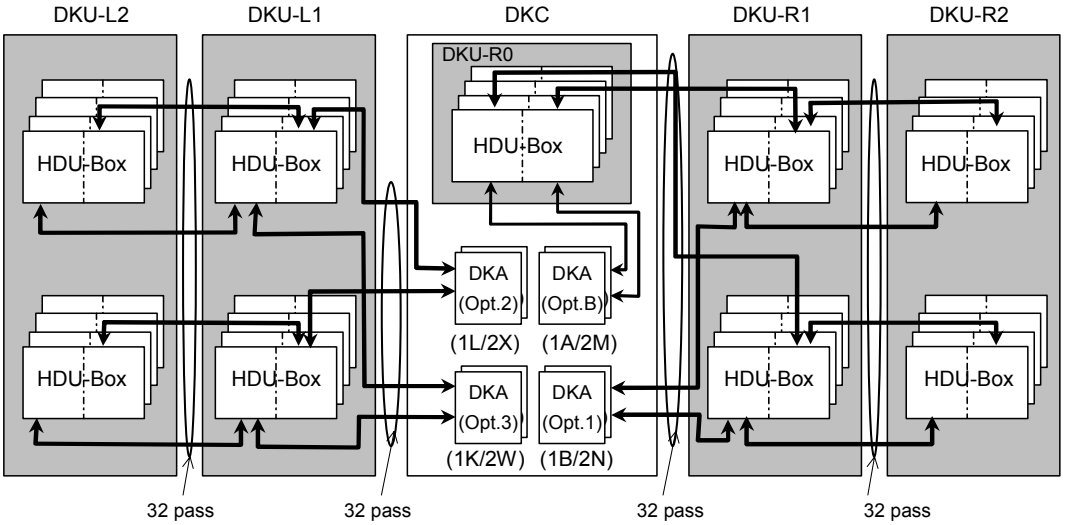
The 128 HDDs can be installed in the DKU-R0 and are placed under the dual port control using two sets of the eight Back-End FCALs connected to the 1st DKA pair. (16 HDDs/FCAL ×8 = 126 HDDs)
When the 1 DKA Pair Model is selected, install the HDDs in the DKU-R0 in full. When the configuration requires larger subsystem capacity, install the DKU-R1 first and connect it through the FCAL.
When the 2/4 DKA Pairs Model is selected, install the DKU-R1, and connect the HDDs to the DKU-R0 and DKU-R1 in parallel.

1 DKA Pair Model	:	The HDDs are accessed through 16 paths.
2 DKA Pairs Model	:	The HDDs are accessed through 32 paths.
4 DKA Pairs Model	:	The HDDs are accessed through 64 paths.

1 DKA Pair Model



2/4 DKA Pairs Model



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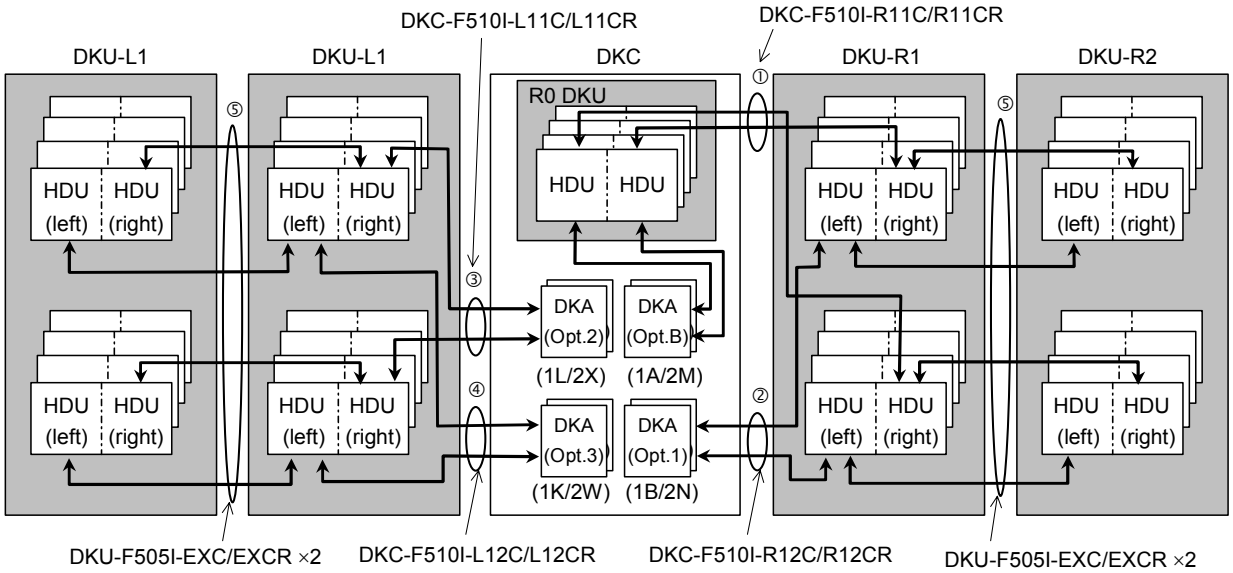
2. Frame Configuration and Required Option(s) of Each Model



Frame Layout					Required Number of Options									
DKU -L2	DKU -L1	DKC	DKU -R1*1	DKU -R2	DKC 510I-5/5R	DKC-F510I- 400/400R	DKC-F510I- R11C/R11CR ①	DKC-F510I- L11C/L11CR ③	DKC-F510I- R12C/R12CR ②	DKC-F510I- L12C/L12CR ④	DKU 505I-18/18R	DKU-F505I- EXC/EXCR ⑤	DKU-F505I- FSWA/FSWAR *2	DKU-F505I- HDD*3
		DKC			1	1	0	0	0	0	0	0	0	Max.128
		DKC	R1		1	1	1	0	0	0	1	0	0	Max.256
		DKC	R1*4		1	2	1	0	1	0	1	0	1	Max.384
		DKC	R1	R2*5	1	2	1	0	1	0	2	2	2	Max.640
	L1	DKC	R1		1	4	1	1	1	1	2	0	2	Max.640
	L1	DKC	R1	R2*5	1	4	1	1	1	1	3	2	3	Max.896
L2	L1	DKC	R1		1	4	1	1	1	1	3	2	3	Max.896
L2	L1	DKC	R1	R2*5	1	4	1	1	1	1	4	4	4	Max.1152

*1: When installing the DKU frame, be sure to install the DKU-R1 first. The configuration with no DKU-R1 installed is not allowed.

*2: When not installing HDD in HDU(left), there is no necessity of installing DKU-F505I-FSWA/FSWAR.

*3: The maximum number of installable HDDs includes the spare disk(s).

*4: Even when not installing HDD in HDU(right), it is necessary to connect DKC-F510I-R11C/R11CR.

*5: Even when not installing HDD in HDU(right), it is necessary to connect DKU-F505I-EXC/EXCR.

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1.1.3 Specifications

(1) DKC510I Physical Specifications

The DKC510I physical specifications are shown in the following table:

Table 1.1.3-1 DKC510I Physical Specifications

No.	Model Number	Weight (kg)	Heat Output (kW)	Power Consumption (kVA)	Dimension (mm)			Air Flow (m^3/min.)
					Width	Depth	Height	
1	DKC510I-5/5R	590.0	1.178	1.219	782 *1	925	1,860	44
2	DKC-F510I-DH/DHR	90.0	—	—	—	—	—	—
3	DKC-F510I-DS/DSR	90.0	—	—	—	—	—	—
4	DKC-F510I-3PS/3PSR	7.2	—	—	—	—	—	—
5	DKC-F460I-3ECD	8.0	—	—	—	—	—	—
	DKC-F510I-3ECR							
6	DKC-F460I-3UCD	11.0	—	—	—	—	—	—
	DKC-F510I-3UCR							
7	DKC-F510I-1PS/1PSR	7.2	—	—	—	—	—	—
8	DKC-F510I-1EC/1ECR	5.6	—	—	—	—	—	—
9	DKC-F510I-1UC/1UCR	9.4	—	—	—	—	—	—
10	DKC-F510I-1PSD/1PSDR	7.2	—	—	—	—	—	—
11	DKC-F510I-1ECD/1ECDR	3.4	—	—	—	—	—	—
12	DKC-F510I-1UCD/1UCDR	4.0	—	—	—	—	—	—
13	DKC-F510I-AP/APR	23.2	—	—	—	—	—	—
14	DKC-F510I-AB/ABR	13.6	0.064	0.066	—	—	—	—
15	DKC-F510I-CX/CXR	6.2	0.007	0.007	—	—	—	—
16	DKC-F510I-SX/SXR	2.2	0.006	0.006	—	—	—	—
17	DKC-F510I-CX1GR	6.2	0.007	0.007	—	—	—	—
18	DKC-F510I-SX1GR	2.2	0.006	0.006	—	—	—	—
19	DKC-F510I-C8GR	0.2	0.014	0.014	—	—	—	—
20	DKC-F510I-S2GR	0.06	0.014	0.014	—	—	—	—
21	DKC-F510I-C4G/C4GR	0.2	0.014	0.014	—	—	—	—
22	DKC-F510I-S1G/S1GR	0.06	0.011	0.012	—	—	—	—
23	DKC-F510I-CSW/CSWR	3.6	0.057	0.059	—	—	—	—
24	DKC-F510I-400/400R	4.8	0.318	0.328	—	—	—	—
25	DKC-F510I-SVP/SVPR	8.8	0.074	0.076	—	—	—	—
26	DKC-F510I-PCI/PCIR	0.4	0.002	0.002	—	—	—	—
27	DKC-F510I-R11C/R11CR	3.3	—	—	—	—	—	—
28	DKC-F510I-R12C/R12CR	4.2	—	—	—	—	—	—
29	DKC-F510I-L11C/L11CR	4.2	—	—	—	—	—	—
30	DKC-F510I-L12C/L12CR	4.3	—	—	—	—	—	—

(To be continued)

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(Continued from preceding sheet)

No.	Model Number	Weight (kg)	Heat Output (kW)	Power Consumption (kVA)	Dimension (mm)			Air Flow (m^3/min.)
					Width	Depth	Height	
31	DKC-F510I-MDM/MDMR	0.04	0.006	0.006	—	—	—	—
32	DKC-F510I-16S/16SR	5.4	0.313	0.323	—	—	—	—
33	DKC-F510I-8MS/8MSR	5.7	0.346	0.356	—	—	—	—
34	DKC-F510I-8ML/8MLR	5.7	0.346	0.356	—	—	—	—
35	DKC-F510I-16MSR	5.7	0.350	0.361	—	—	—	—
36	DKC-F510I-16MLR	5.7	0.350	0.361	—	—	—	—
37	DKC-F510I-8HSR	4.6	0.273	0.281	—	—	—	—
38	DKC-F510I-16HS/16HSR	5.0	0.287	0.296	—	—	—	—
39	DKC-F510I-32HS/32HSR	5.8	0.382	0.394	—	—	—	—
40	DKC-F510I-1HL/1HLR	0.02	—	—	—	—	—	—
41	DKC-F510I-1HS/1HSR	0.02	—	—	—	—	—	—
42	DKC-F510I-8NS/8NSR	6.5	0.446	0.46	—	—	—	—
43	DKC-F510I-8ISR	4.2	0.198	0.204	—	—	—	—
44	DKC-F510I-32FSR	5.8	0.382	0.394	—	—	—	—
45	DKC-F510I-1FLR	0.02	—	—	—	—	—	—
46	DKC-F510I-1FSR	0.02	—	—	—	—	—	—
47	DKC-F510I-1FL4R	0.02	—	—	—	—	—	—
48	DKC-F510I-PCBR/PCBRR	1.5	—	—	—	—	—	—
49	DKC-F510I-8FS2R	4.6	0.273	0.281	—	—	—	—
50	DKC-F510I-16FS2R	5.0	0.287	0.296	—	—	—	—
51	DKC-F510I-32FS2R	5.8	0.382	0.394	—	—	—	—
52	DKC-F510I-16MFSR	5.7	0.360	0.371	—	—	—	—
53	DKC-F510I-16MFLR	5.7	0.360	0.371	—	—	—	—
54	DKC-F510I-16MFL4R	5.7	0.360	0.371	—	—	—	—

*1: This includes the thickness of side covers (16mm × 2).

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(2) DKU505I Physical Specifications

The DKU505I physical specifications are shown in the following table:

Table 1.1.3-2 DKU505I Physical Specifications

No.	Model Number	Weight (kg)	Heat Output (kW)	Power Consumption (kVA)	Dimension (mm)			Air Flow (m^3/min.)
					Width	Depth	Height	
1	DKU505I-18/18R	430.0	0.659	0.686	650	925	1,860	31
2	DKU-F505I-DH/DHR	40.0	—	—	—	—	—	—
3	DKU-F505I-DS/DSR	40.0	—	—	—	—	—	—
4	DKU-F505I-FSWA/FSWAR	6.7	0.264	0.275	—	—	—	—
5	DKU-F505I-EXC/EXCR	2.4	—	—	—	—	—	—
6	DKU-F505I-72JSR	1.0	0.022	0.024	—	—	—	—
7	DKU-F505I-72KS	1.1	0.022	0.024	—	—	—	—
8	DKU-F505I-72KSR	1.0	0.022	0.024	—	—	—	—
	DKU-F505I-72K1R							
9	DKU-F505I-146JS/146JSR	1.0	0.023	0.025	—	—	—	—
	DKU-F505I-146J1R							
10	DKU-F505I-146KSR	1.0	0.023	0.025	—	—	—	—
	DKU-F505I-146K1R							
11	DKU-F505I-300JSR	1.0	0.023	0.025	—	—	—	—
	DKU-F505I-300J1R							
12	DKU-F505I-300KSR	1.0	0.023	0.025	—	—	—	—
13	DKU-F505I-400JSR	1.0	0.023	0.025	—	—	—	—

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1.1.4 Environmental Specifications

The environmental specifications are shown in the following table.

Item	Condition		
	Operating *1	Non-operation *2	Shipping & Storage *3
Temperature (ºC)	16 ~ 32	-10 ~ 43	-25 ~ 60
Relative Humidity (%)*4	20 ~ 80	8 ~ 90	5 ~ 95
Max. Wet Bulb (ºC)	26	27	29
Temperature Deviation (ºC/hour)	10	10	20
Vibration *5	5 ~ 10Hz: 0.25mm 10 ~ 300Hz: 0.49m/s^2	5 ~ 10Hz: 2.5mm 10 ~ 70Hz: 4.9m/s^2 70 ~ 99Hz: 0.05mm 99 ~ 300Hz: 9.8m/s^2	4.9m/s^2, 15min. At four most severe resonance between 5 ~ 200Hz *6
Shock	—	78.4m/s^2, 15ms	Horizontal: Incline Impact 1.22m/s *7 Vertical: Rotational Edge 0.1m *8
Acoustic level *9	65 dB	—	—

*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.

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1.1.5 Power requirement

The input voltage and input frequency are as follows:

(1) 3 phase AC input

Frequency	Input Voltages (AC)	Conditions	Tolerance (%)	Remarks
60Hz ± 2Hz	200V, 208V or 230V	3 Phase 3 Wire + Ground	+6% or -8%	for North America200V : for Japan
50Hz ± 3Hz	200V, 220V, 230V or 240V	3 Phase 3 Wire + Ground	+6% or -8%	for Europe200V : for Japan
50Hz ± 3Hz	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 ± 2Hz	200V, 208V or 230V	1 Phase 2 Wire + Ground	+6% or -8%	for North America200V : for Japan
50Hz ± 3Hz	200V, 220V, 230V or 240V	1 Phase 2 Wire + Ground	+6% or -8%	for Europe200V : for Japan

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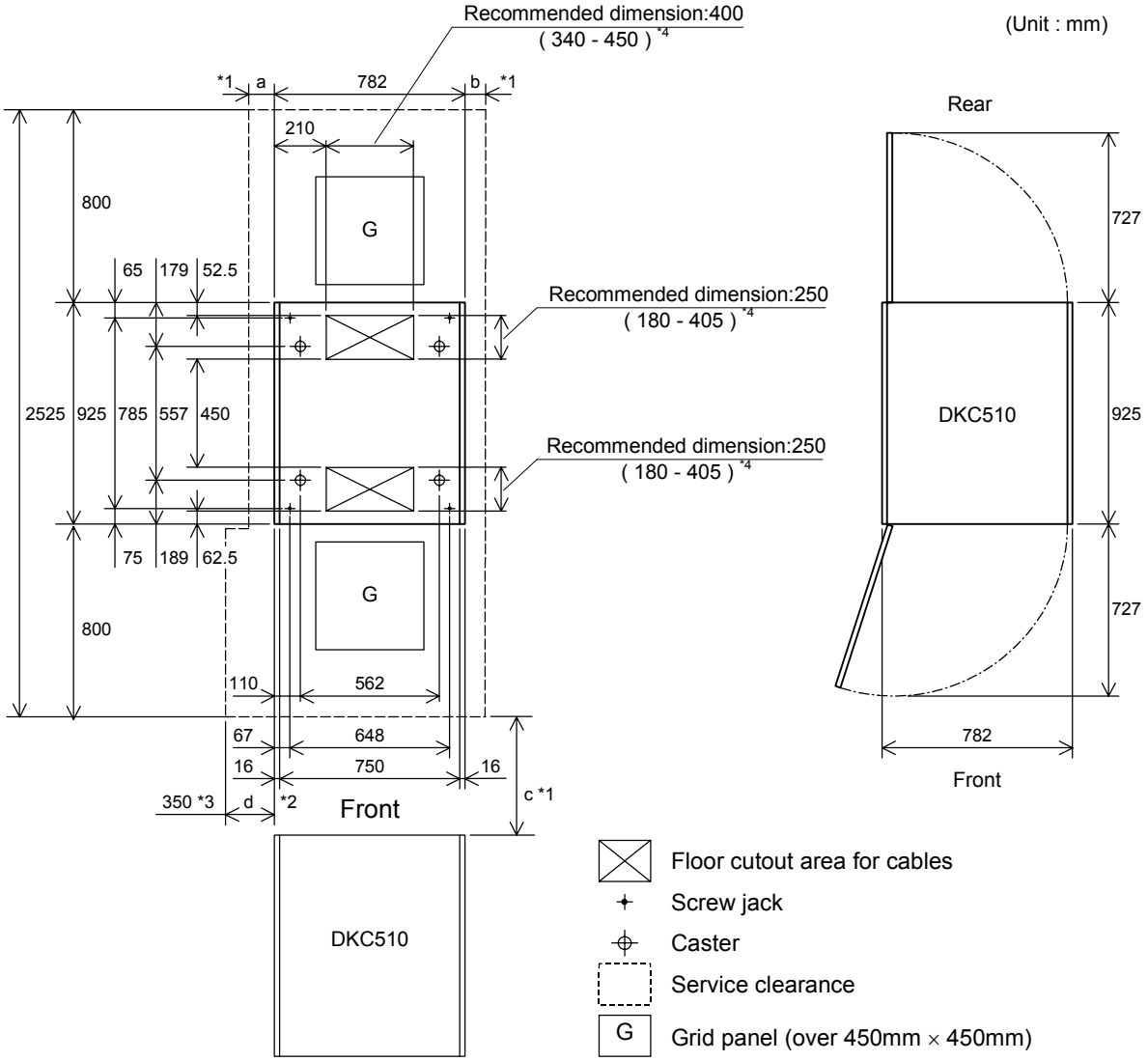
1.1.6 Service Clearance and Floor Cutout

(1) Stand Alone Configuration

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



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

Floor Load Rating for Service Clearances (Stand alone)

Floor load rating (kg/m^2)	Required clearance (a+b)m				
	Clearance (c)m				
	C=0	C=0.2	C=0.4	C=0.6	C=1.0
500	0.4	0.3	0.2	0	0
450	0.5	0.4	0.3	0.2	0
400	0.8	0.6	0.5	0.4	0.2
350	1.1	0.9	0.8	0.6	0.4
300	1.7	1.4	1.2	1.0	0.8

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

*2: Clearance (d) is required over 350 mm so as to open the subsystem front door. In case that clearance(d) is less than clearance(a), give priority to clearance(a).

*3: The side clearance on the front left side of the subsystem must be 350 mm or wider in order to open the DKC front door. However, priority should be given to the side clearance value “a” according to the load on the floor when the dimension “a” exceeds 350 mm.

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

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

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

Note 2: When various configurations of subsystems are arranged in a row, clearance values based on the largest subsystem configuration should be used.

Note 3: From the viewpoint of maintenance operations, it is suggested that Clearance (c) be made as large as possible.

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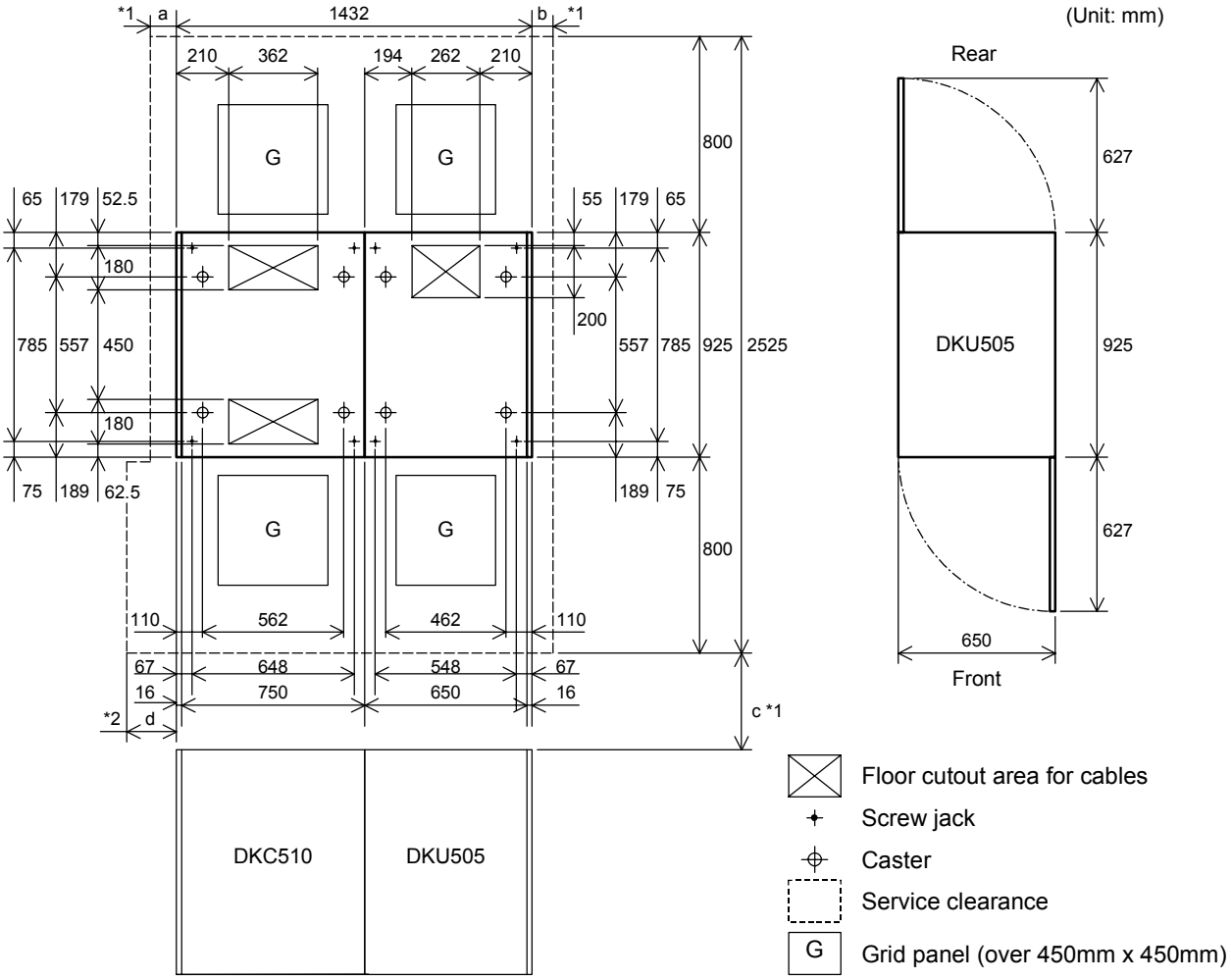
(2) DKC+1DKU Configuration

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



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*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 350 mm so as to open the DKC front door, refer to INST01-210. In case that clearance (d) is less than clearance (a), give priority to clearance (a).

*3: See INST01-210 about details of the DKC floor cutout.

Floor Load Rating for Service Clearances (DKC+1DKU 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	0.8	0.6	0.4	0.2	0
450	1.1	0.9	0.7	0.5	0.2
400	1.6	1.3	1.0	0.8	0.5
350	2.3	1.9	1.6	1.3	0.9
300	3.3	2.8	2.4	2.1	1.6

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.

Note 2: When various configurations of subsystems are arranged in a row, clearance values based on the largest subsystem configuration should be used.

Note 3: From the viewpoint of maintenance operations, it is suggested that Clearance (c) be made as large as possible.

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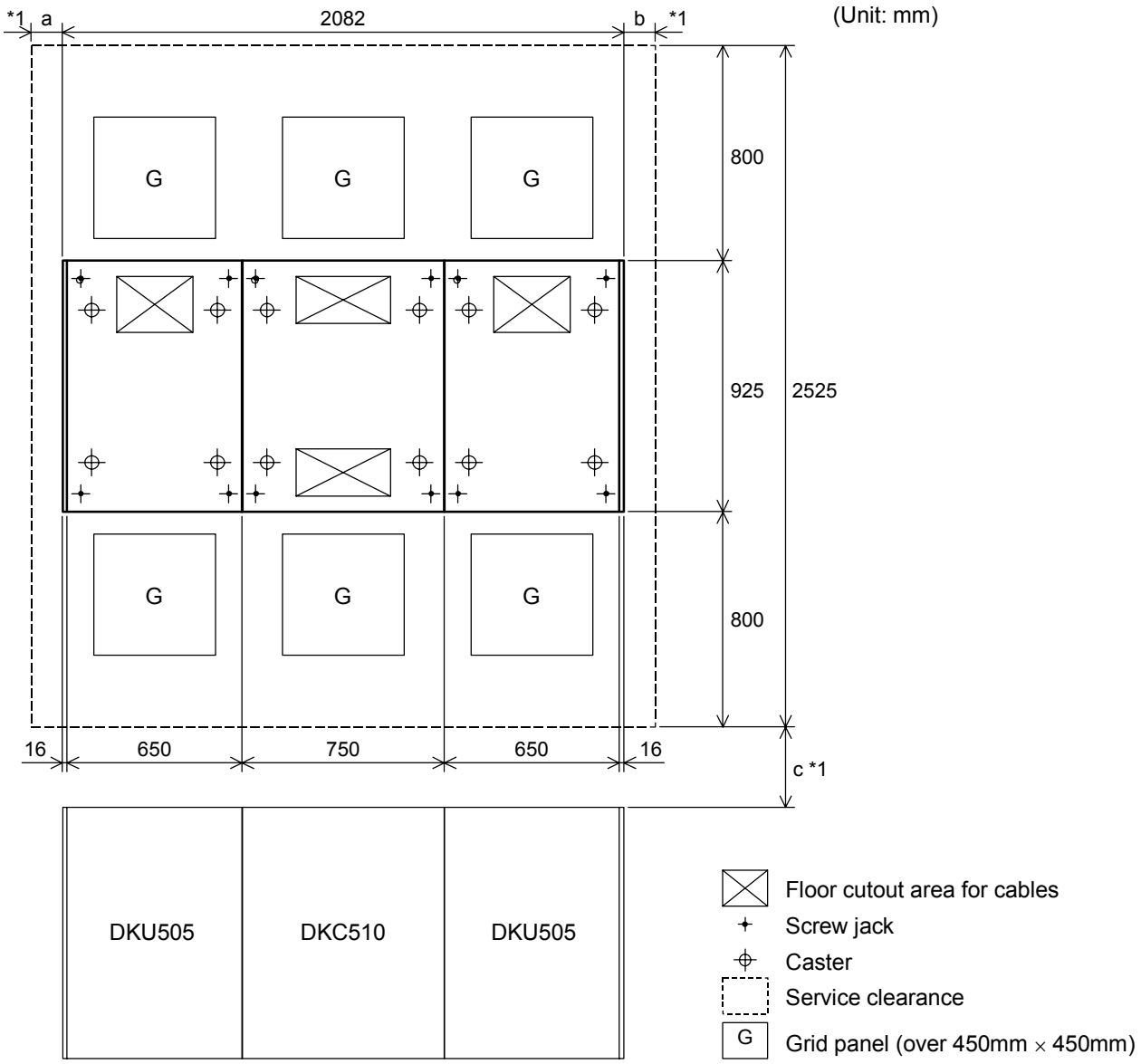
(3) DKC+2DKU Configuration

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



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*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 (DKC+2DKU 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	1.2	0.9	0.6	0.4	0.0
450	1.7	1.3	1.0	0.7	0.3
400	2.4	2.0	1.6	1.3	0.8
350	3.4	2.8	2.4	2.0	1.4
300	5.0	4.3	3.7	3.2	2.4

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.

Note 2: When various configurations of subsystems are arranged in a row, clearance values based on the largest subsystem configuration should be used.

Note 3: From the viewpoint of maintenance operations, it is suggested that Clearance (c) be made as large as possible.

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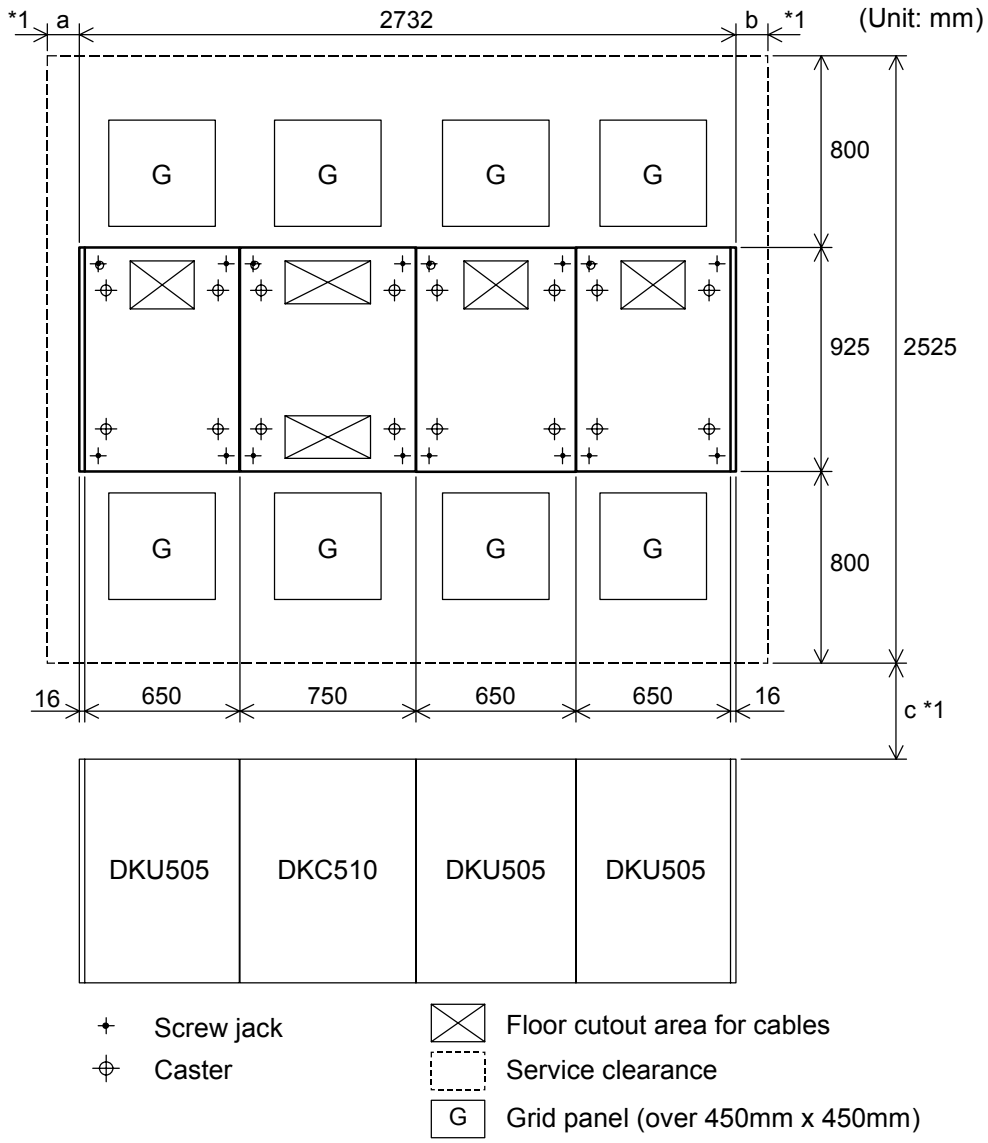
(4) DKC+3DKU Configuration

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



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*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 (DKC+3DKU 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	1.6	1.2	0.8	0.5	0.0
450	2.3	1.8	1.4	1.0	0.5
400	3.2	2.6	2.1	1.7	1.0
350	4.6	3.8	3.2	2.7	1.9
300	6.6	5.7	4.9	4.2	3.2

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.

Note 2: When various configurations of subsystems are arranged in a row, clearance values based on the largest subsystem configuration should be used.

Note 3: From the viewpoint of maintenance operations, it is suggested that Clearance (c) be made as large as possible.

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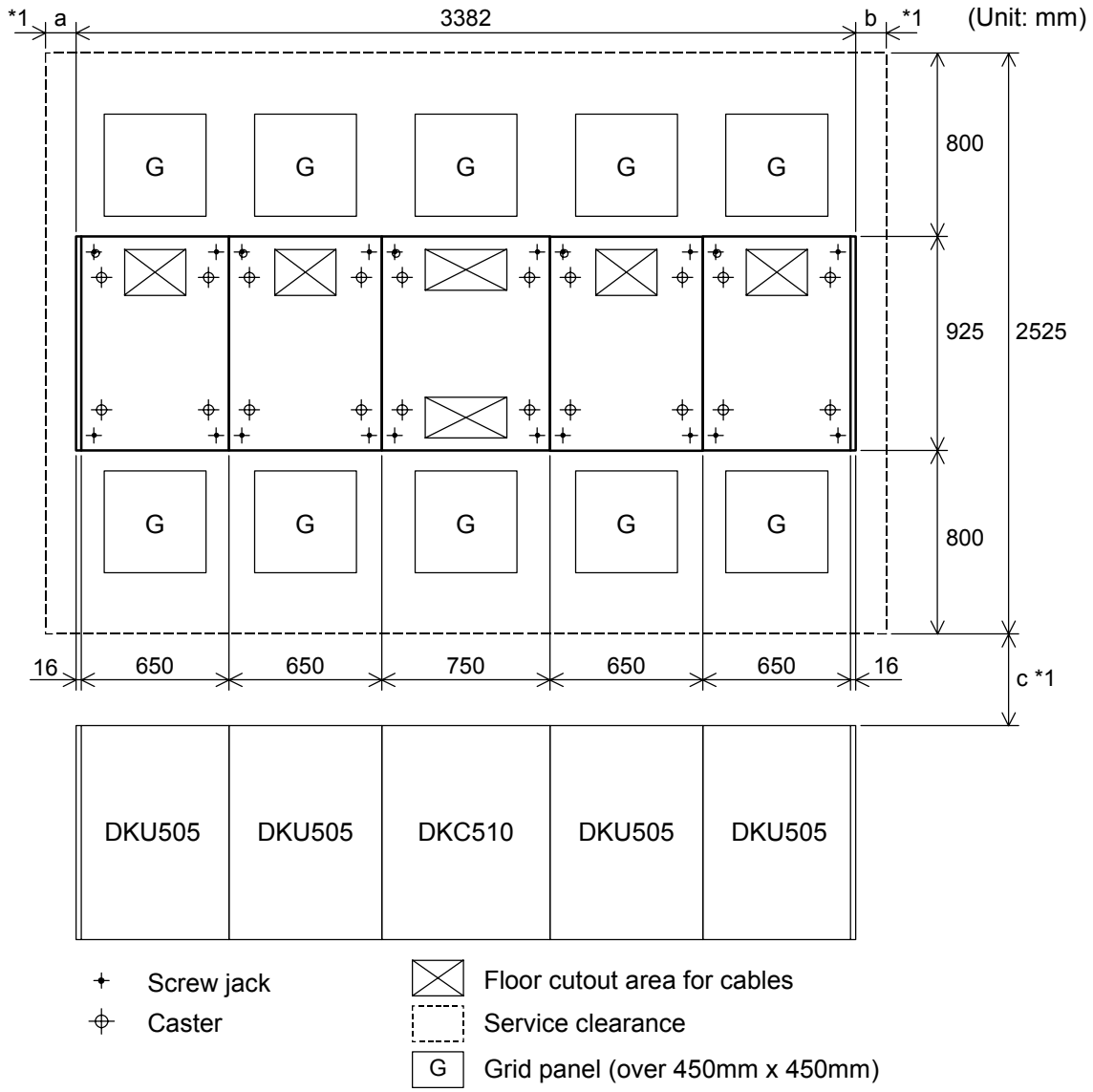
(5) Subsystem Full Configuration

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



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*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	2.0	1.5	1.0	0.7	0.0
450	2.9	2.3	1.7	1.3	0.6
400	4.1	3.3	2.7	2.1	1.3
350	5.7	4.8	4.0	3.4	2.4
300	8.3	7.1	6.1	5.3	4.0

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.

Note 2: When various configurations of subsystems are arranged in a row, clearance values based on the largest subsystem configuration should be used.

Note 3: From the viewpoint of maintenance operations, it is suggested that Clearance (c) be made as large as possible.

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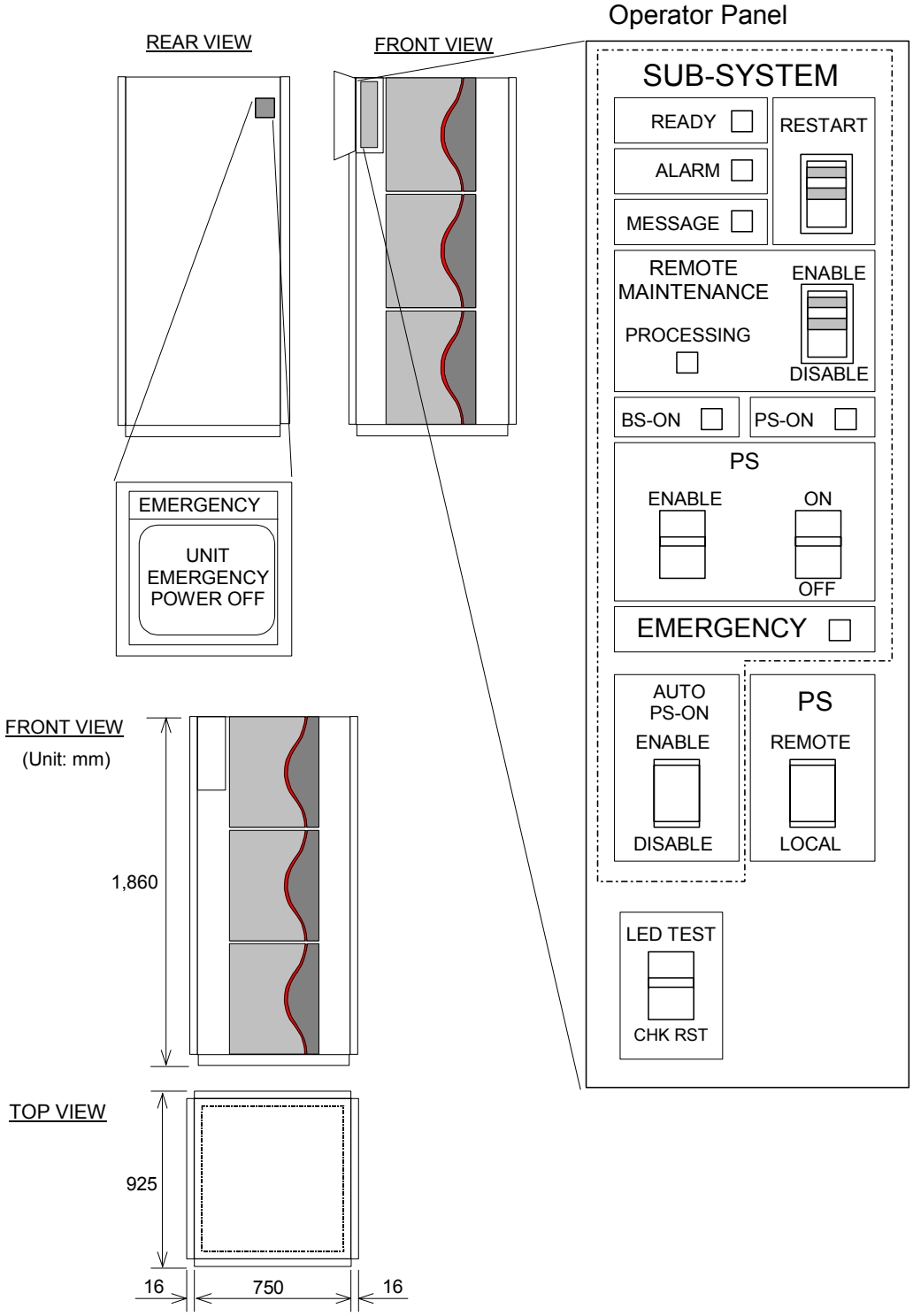
1.1.7 Layout

(1) DKC510I Layout



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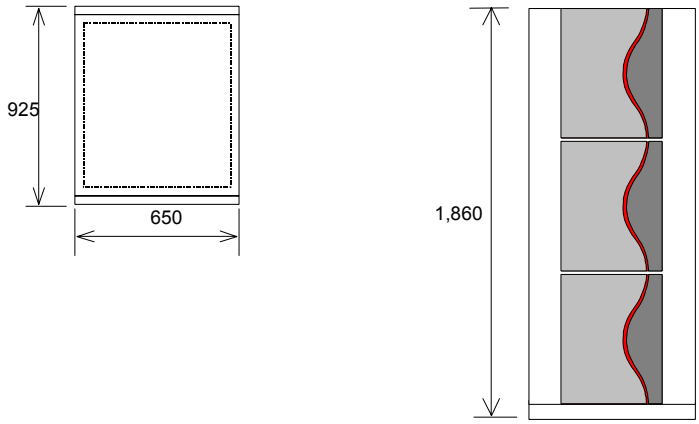
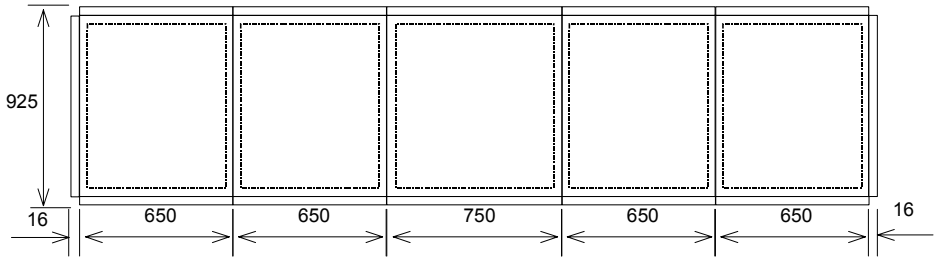
(2) DKU505I Layout

TOP VIEW (Unit: mm) FRONT VIEW

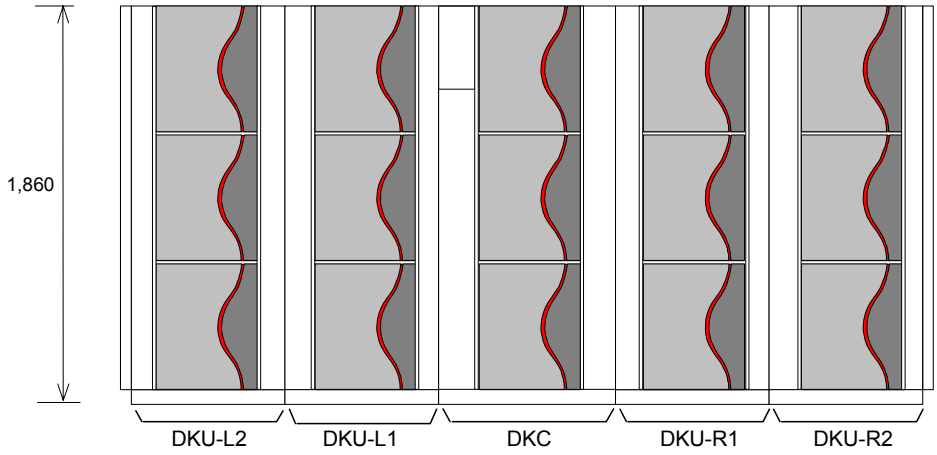


(3) Full Configuration of Disk Subsystem

TOP VIEW (Unit: mm)



FRONT VIEW



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1.1.8 Power and Grounding Check

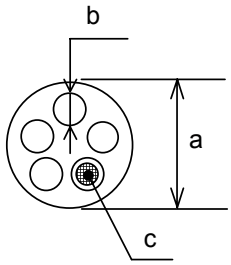
1.1.8.1 Facility power check

1. AC Power Cable Plug and Receptacle (only for 60Hz)
   AC power cable plug and receptacle for 60Hz are following part number or an equivalent.

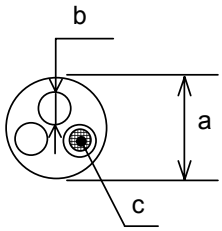
Model	Model Number	Plug			Receptacle	
		Rating	Maker	Part Number	Maker	Part Number
Single phase	DKC-F510I-1UCD, DKC-F510I-1UCDR	30 A	Thomas & Betts	3750DP	Thomas & Betts	3933
	DKC-F510I-1UC, DKC-F510I-1UCR	50 A	Thomas & Betts	9P53U2	Thomas & Betts	9C53U2 or 9R53U2W
3 phase	DKC-F460I-3UCD, DKC-F510I-3UCR	30A	Thomas & Betts	3760PDG	Thomas & Betts	3934
			DDK	115J-AP8508	Thomas & Betts	3934

2. AC Power Cable and Terminal specifications (only for 50Hz)
   AC power cable and terminal specifications for 50Hz are following table.

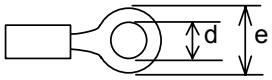
Model	Model Number	Rating	Power Cable			Terminal	
			Outer sheath overall diameter	Insulator outer diameter	Electric wire cross-section area	Internal Diameter	External Diameter
			a	b	C	d	e
Single phase	DKC-F510I-1ECD, DKC-F510I-1ECDR	30A	14.5-20.0mm	5.2mm	6.0mm^2	6.4mm	12.0mm
	DKC-F510I-1EC, DKC-F510I-1ECR	50A	20.0-25.5mm	6.6mm	10.0mm^2	6.4mm	12.0mm
3 phase	DKC-F460I-3ECD, DKC-F510I-3ECR	30A	18.0-24.5mm	5.2mm	6.0mm^2	6.4mm	12.0mm



Cable section (3 Phase)



Cable section (Single Phase)



Terminal

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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.

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1.2 Drive Expansion Sequence

The order in which DKU-F505I-72KS/72JSR/72KSR/146JS/146JSR/146KSR/300JSR/300KSR/400JSR/72K1R/146J1R/146K1R/300J1R units are to be installed in Fig. 1.2-1 to Fig. 1.2-5.

In case of RAID1 (4D+4D), two RAID groups of RAID1 (2D+2D) are concatenated and composed. Each RAID1 (2D+2D) can be arranged under the control of an arbitrary DKA pair though the arrangement of each RAID1 (2D+2D) is similar to below-mentioned RAID1 (2D+2D).
The source (7D+1P) can be arranged under the optional DKA pair as well as RAID1 (4D+4D) for two concatenation and four concatenation of RAID5 (7D+1P).
However, it is recommended to arrange it under the control of the same DKA pair because there is a possibility that the state of the load is different in each DKA pair.

NOTICE:

- 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	DKR2x-JxxFx DKS2x-JxxFx	DKR2x-KxxFx DKS2x-KxxFx
DKR2x-JxxFx DKS2x-JxxFx	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.
DKR2x-KxxFx DKS2x-KxxFx	Assignment cannot be done.	A spare HDD can be assigned when the following condition is satisfied. Capacity of a copy source data HDD ≤ Capacity of a copy destination spare HDD.

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No.	Model Number	Model Name	Data and Parity
1	DKU-F505I-72KS/72JSR/72KSR/146JS/146JSR/146KSR/300JSR/300KSR/400JSR/72K1R/146J1R/146K1R/300J1R × 4	1 HDD Canister	

(1) RAID5(3D+1P)/RAID1(2D+2D), 1 DKA Pair Model

1 DKA Pair Model

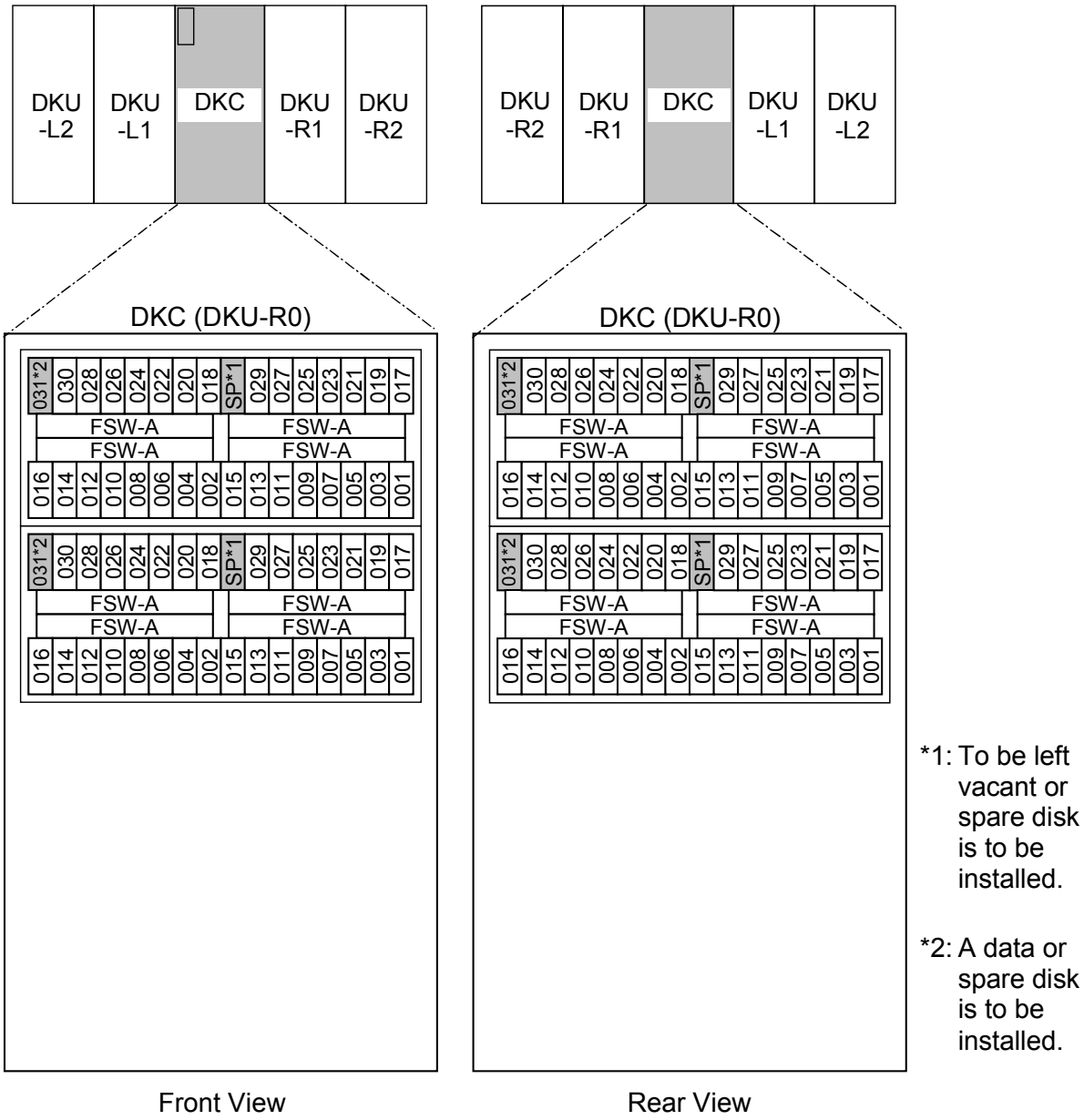

Fig. 1.2-1 (3D+1P/2D+2P, 1 DKA Pair Model) Data Drive/Parity Drive Expansion Sequence (1/2)

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

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1 DKA Pair Model

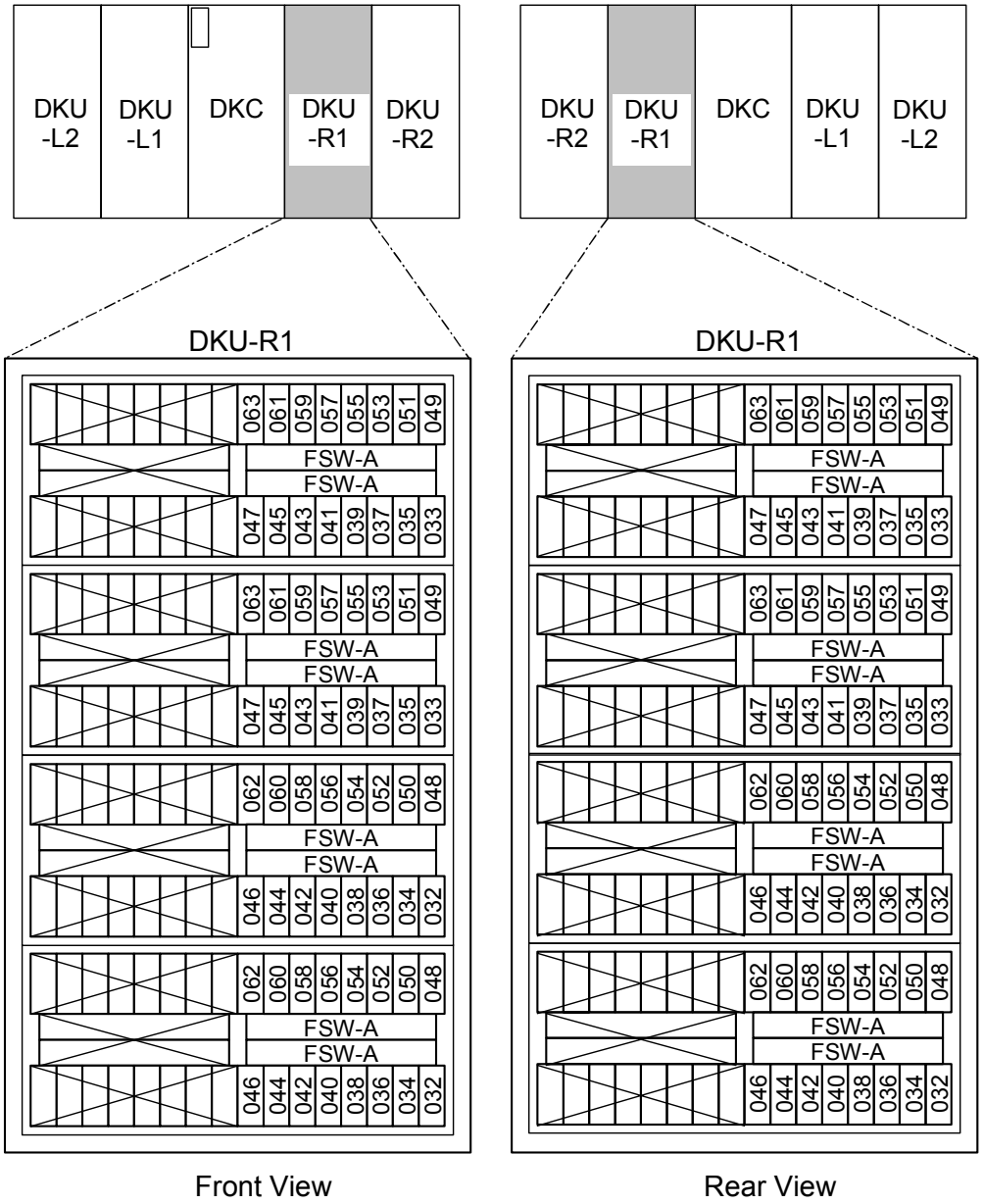

Fig. 1.2-1 (3D+1P/2D+2P, 1 DKA Pair Model) Data Drive/Parity Drive Expansion Sequence (2/2)

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

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

DKC		DKU-R1	
Installation Order	RAID Group No.	Installation Order	RAID Group No.
001	01-01	032	03-01
002	02-01	033	04-01
003	01-02	034	03-02
004	02-02	035	04-02
005	01-03	036	03-03
006	02-03	037	04-03
007	01-04	038	03-04
008	02-04	039	04-04
009	01-05	040	03-05
010	02-05	041	04-05
011	01-06	042	03-06
012	02-06	043	04-06
013	01-07	044	03-07
014	02-07	045	04-07
015	01-08	046	03-08
016	02-08	047	04-08
017	01-09	048	03-09
018	02-09	049	04-09
019	01-10	050	03-10
020	02-10	051	04-10
021	01-11	052	03-11
022	02-11	053	04-11
023	01-12	054	03-12
024	02-12	055	04-12
025	01-13	056	03-13
026	02-13	057	04-13
027	01-14	058	03-14
028	02-14	059	04-14
029	01-15	060	03-15
030	02-15	061	04-15
Spare*1	Spare	062	03-16
031 (Spare)*2	Spare/ 02-16	063	04-16

*1: To be left vacant or a spare disk is to be installed.
*2: A data or spare disk is to be installed.

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No.	Model Number	Model Name	Data and Parity
1	DKU-F505I-72KS/72JSR/72KSR/146JS/146JSR/146KSR/300JSR/300KSR/400JSR/72K1R/146J1R/146K1R/300J1R × 4	1 HDD Canister	

(2) RAID5(3D+1P)/RAID1(2D+2D), 2/4 DKA Pairs Model

2/4 DKA Pairs Model

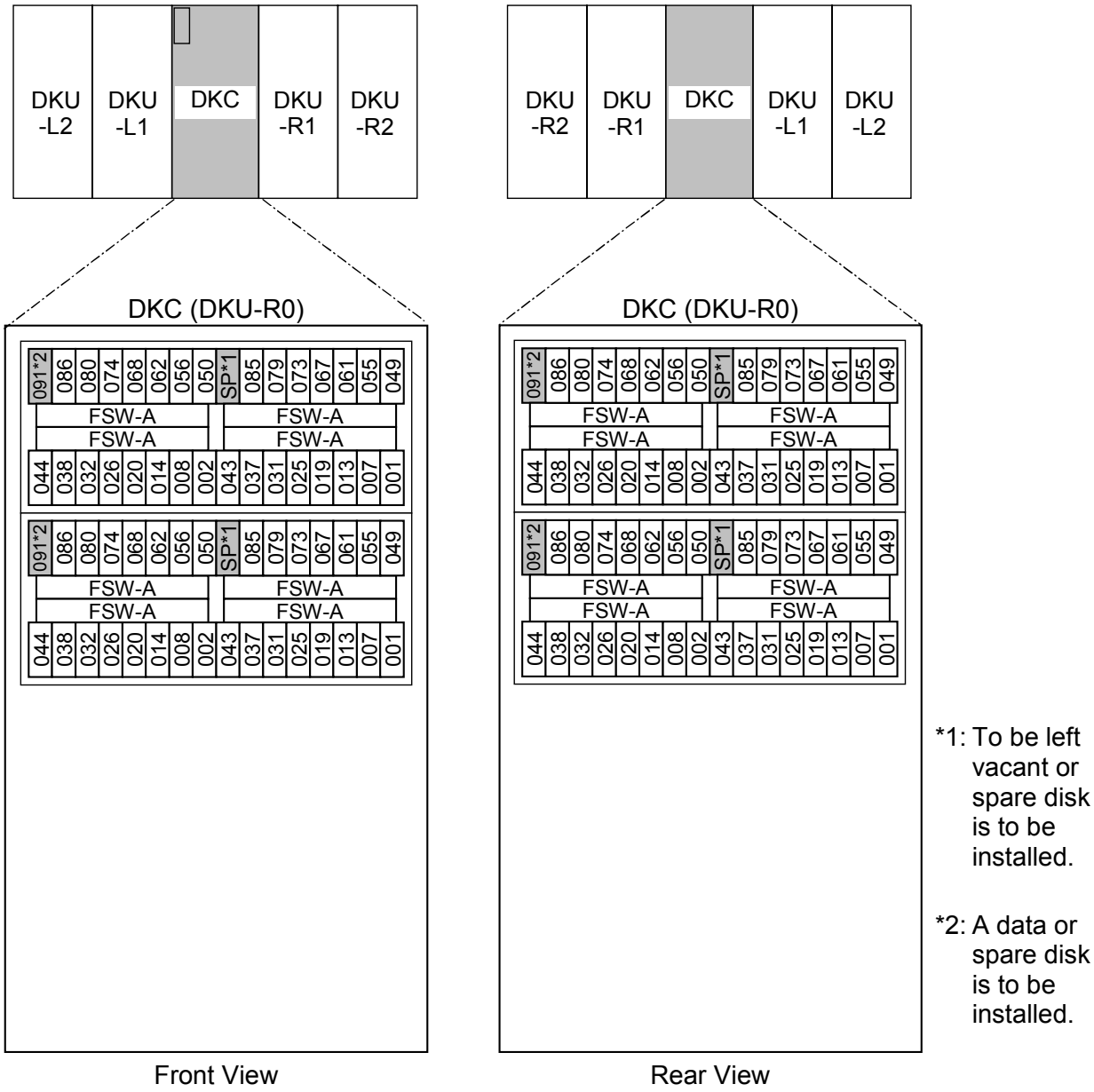

Fig. 1.2-2 (3D+1P/2D+2P, 2/4 DKA Pairs Model) Data Drive/Parity Drive Expansion Sequence (1/5)

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

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2/4 DKA Pairs Model

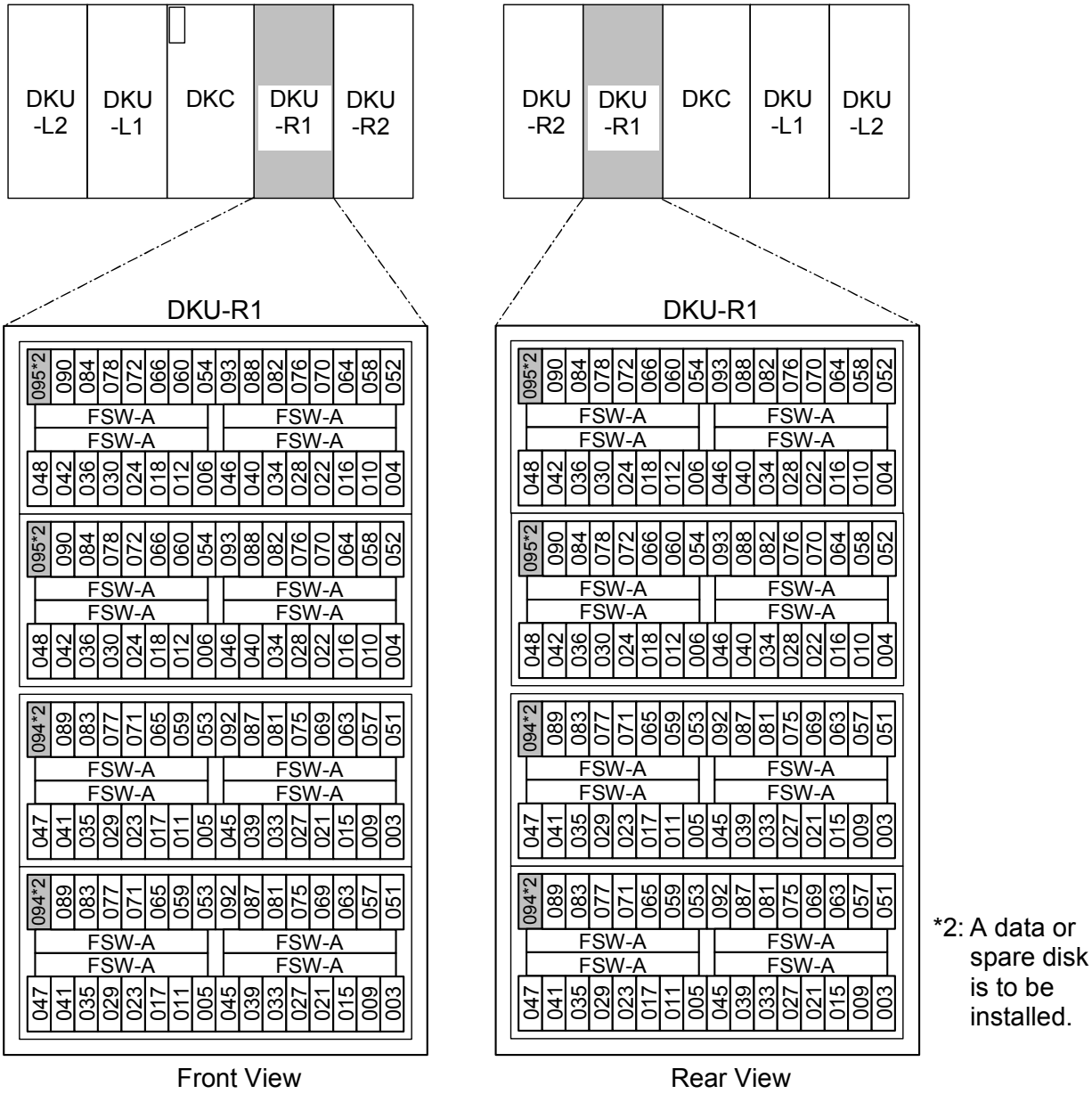

Fig. 1.2-2 (3D+1P/2D+2P, 2/4 DKA Pairs Model) Data Drive/Parity Drive Expansion Sequence (2/5)

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

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2/4 DKA Pairs Model

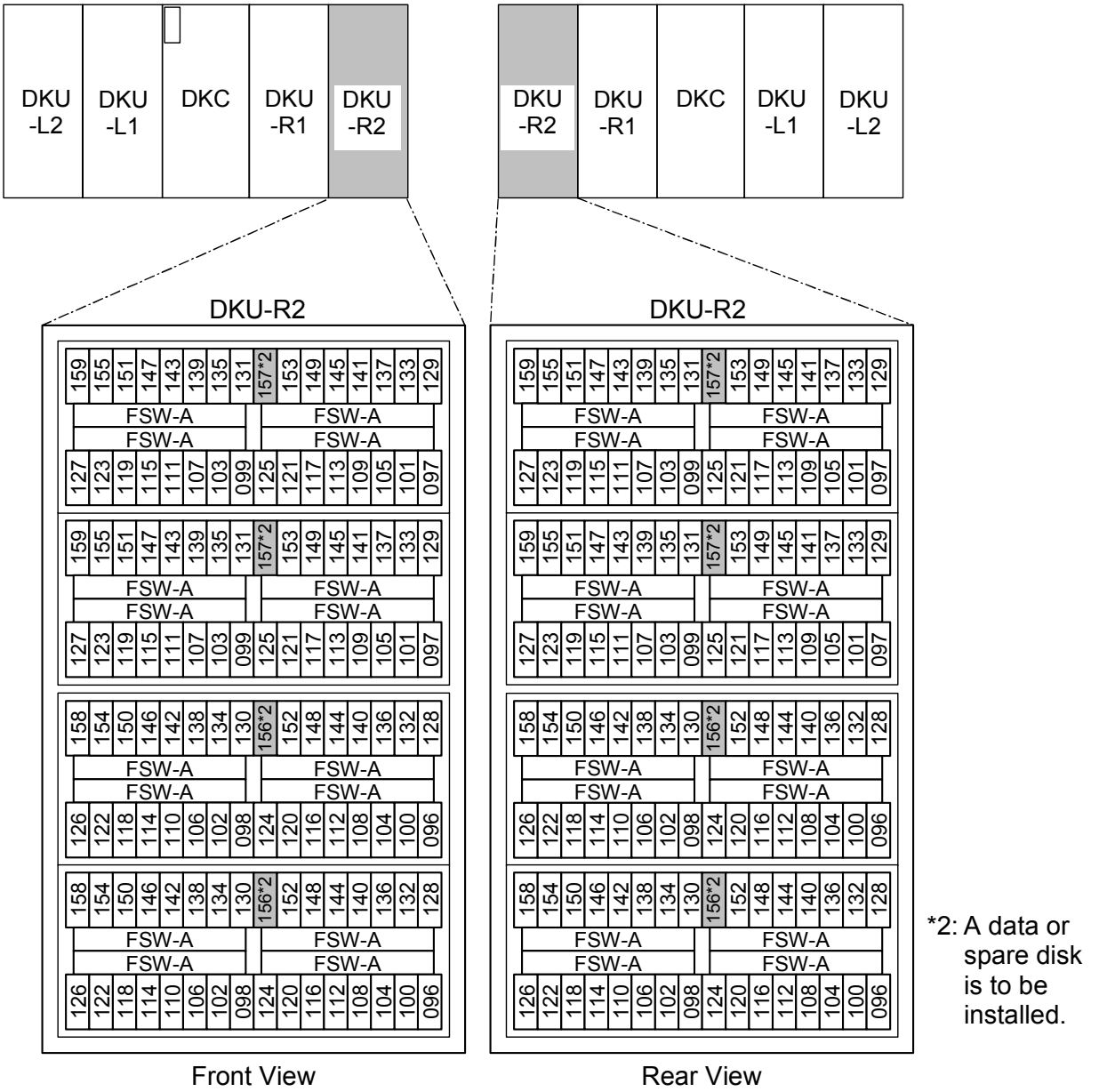

Fig. 1.2-2 (3D+1P/2D+2P, 2/4 DKA Pairs Model) Data Drive/Parity Drive Expansion Sequence (3/5)

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

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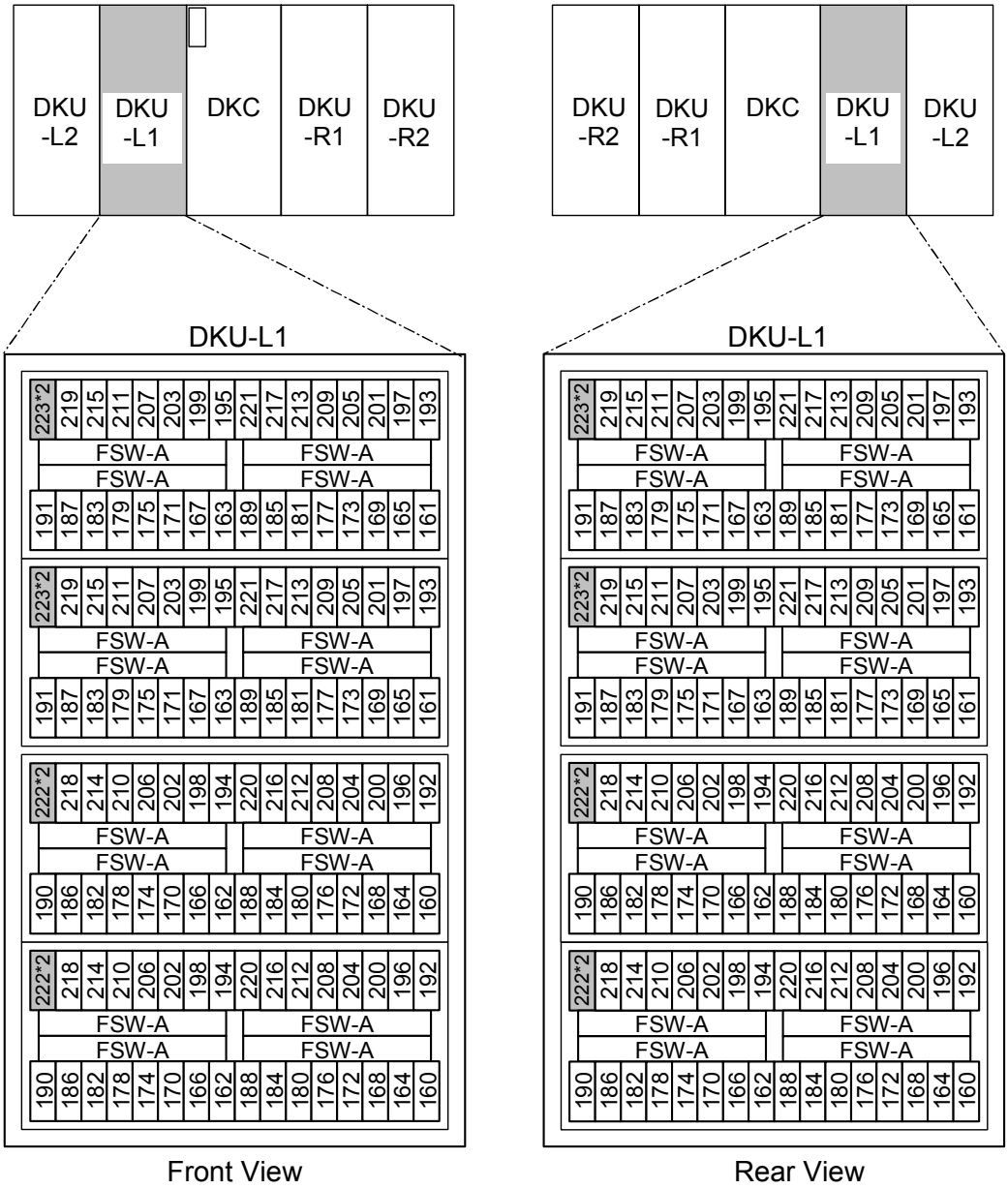
2/4 DKA Pairs Model



*2: A data or spare disk is to be installed.

Fig. 1.2-2 (3D+1P/2D+2P, 2/4 DKA Pairs Model) Data Drive/Parity Drive Expansion Sequence (4/5)

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

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2/4 DKA Pairs Model

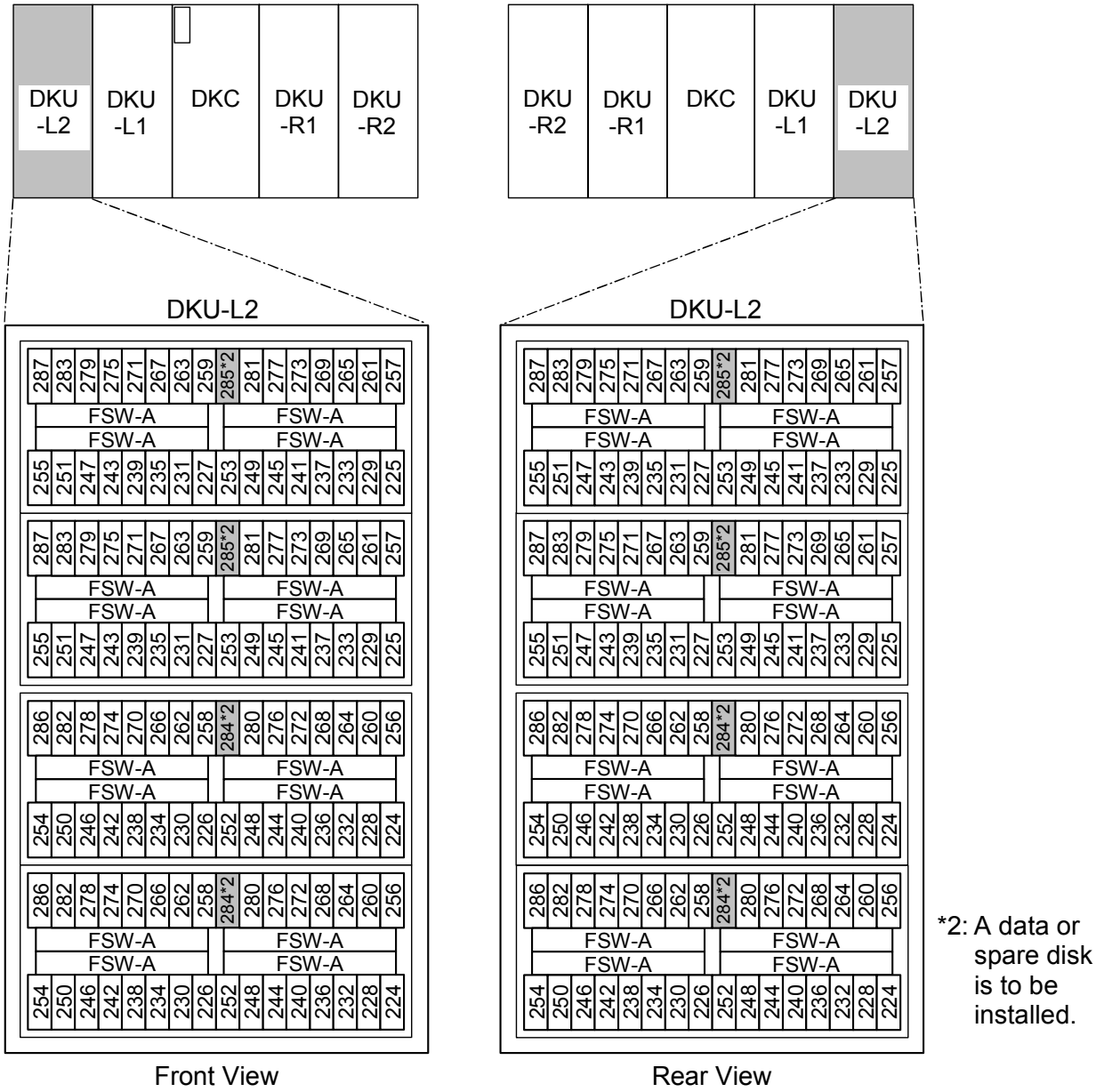

Fig. 1.2-2 (3D+1P/2D+2P, 2/4 DKA Pairs Model) Data Drive/Parity Drive Expansion Sequence (5/5)

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

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Table 1.2-2 Relation between HDDs installation order and RAID group number (3D+1P/2D+2D, 2/4 DKA Pairs Model)

DKU-L2		DKU-L1		DKC		DKU-R1		DKU-R2	
Installation Order	RAID Group No.	Installation Order	RAID Group No.	Installation Order	RAID Group No.	Installation Order	RAID Group No.	Installation Order	RAID Group No.
224	15-01	160	07-01	001	01-01	003	03-01	096	11-01
225	16-01	161	08-01	002	02-01	004	04-01	097	12-01
226	17-01	162	09-01	007	01-02	005	05-01	098	13-01
227	18-01	163	10-01	008	02-02	006	06-01	099	14-01
228	15-02	164	07-02	013	01-03	009	03-02	100	11-02
229	16-02	165	08-02	014	02-03	010	04-02	101	12-02
230	17-02	166	09-02	019	01-04	011	05-02	102	13-02
231	18-02	167	10-02	020	02-04	012	06-02	103	14-02
232	15-03	168	07-03	025	01-05	015	03-03	104	11-03
233	16-03	169	08-03	026	02-05	016	04-03	105	12-03
234	17-03	170	09-03	031	01-06	017	05-03	106	13-03
235	18-03	171	10-03	032	02-06	018	06-03	107	14-03
236	15-04	172	07-04	037	01-07	021	03-04	108	11-04
237	16-04	173	08-04	038	02-07	022	04-04	109	12-04
238	17-04	174	09-04	043	01-08	023	05-04	110	13-04
239	18-04	175	10-04	044	02-08	024	06-04	111	14-04
240	15-05	176	07-05	049	01-09	027	03-05	112	11-05
241	16-05	177	08-05	050	02-09	028	04-05	113	12-05
242	17-05	178	09-05	055	01-10	029	05-05	114	13-05
243	18-05	189	10-05	056	02-10	030	06-05	115	14-05
244	15-06	180	07-06	061	01-11	033	03-06	116	11-06
245	16-06	181	08-06	062	02-11	034	04-06	117	12-06
246	17-06	182	09-06	067	01-12	035	05-06	118	13-06
247	18-06	183	10-06	068	02-12	036	06-06	119	14-06
248	15-07	184	07-07	073	01-13	039	03-07	120	11-07
249	16-07	185	08-07	074	02-13	040	04-07	121	12-07
250	17-07	186	09-07	079	01-14	041	05-07	122	13-07
251	18-07	187	10-07	080	02-14	042	06-07	123	14-07
252	15-08	188	07-08	085	01-15	045	03-08	124	11-08
253	16-08	189	08-08	086	02-15	046	04-08	125	12-08
254	17-08	190	09-08	Spare*1	Spare	047	05-08	126	13-08
255	18-08	191	10-08	091 (Spare)*2	Spare/ 02-16	048	06-08	127	14-08

(To be continued.)

*1: To be left vacant or a spare disk is to be installed.
*2: A data or spare disk is to be installed.

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(Continued from preceding sheet.)

DKU-L2		DKU-L1		DKC		DKU-R1		DKU-R2	
Installation Order	RAID Group No.	Installation Order	RAID Group No.	Installation Order	RAID Group No.	Installation Order	RAID Group No.	Installation Order	RAID Group No.
256	15-09	192	07-09	—	—	051	03-09	128	11-09
257	16-09	193	08-09	—	—	052	04-09	129	12-09
258	17-09	194	09-09	—	—	053	05-09	130	13-09
259	18-09	195	10-09	—	—	054	06-09	131	14-09
260	15-10	196	07-10	—	—	057	03-10	132	11-10
261	16-10	197	08-10	—	—	058	04-10	133	12-10
262	17-10	198	09-10	—	—	059	05-10	134	13-10
263	18-10	199	10-10	—	—	060	06-10	135	14-10
264	15-11	200	07-11	—	—	063	03-11	136	11-11
265	16-11	201	08-11	—	—	064	04-11	137	12-11
266	17-11	202	09-11	—	—	065	05-11	138	13-11
267	18-11	203	10-11	—	—	066	06-11	139	14-11
268	15-12	204	07-12	—	—	069	03-12	140	11-12
269	16-12	205	08-12	—	—	070	04-12	141	12-12
270	17-12	206	09-12	—	—	071	05-12	142	13-12
271	18-12	207	10-12	—	—	072	06-12	143	14-12
272	15-13	208	07-13	—	—	075	03-13	144	11-13
273	16-13	209	08-13	—	—	076	04-13	145	12-13
274	17-13	210	09-13	—	—	077	05-13	146	13-13
275	18-13	211	10-13	—	—	078	06-13	147	14-13
276	15-14	212	07-14	—	—	081	03-14	148	11-14
277	16-14	213	08-14	—	—	082	04-14	149	12-14
278	17-14	214	09-14	—	—	083	05-14	150	13-14
279	18-14	215	10-14	—	—	084	06-14	151	14-14
280	15-15	216	07-15	—	—	087	03-15	152	11-15
281	16-15	217	08-15	—	—	088	04-15	153	12-15
282	17-15	218	09-15	—	—	089	05-15	154	13-15
283	18-15	219	10-15	—	—	090	06-15	155	14-15
284 (Spare)*2	Spare/ 15-16	220	07-16	—	—	092	03-16	156 (Spare)*2	Spare/ 11-16
285 (Spare)*2	Spare/ 16-16	221	08-16	—	—	093	04-16	157 (Spare)*2	Spare/ 12-16
286	17-16	222 (Spare)*2	Spare/ 09-16	—	—	094 (Spare)*2	Spare/ 05-16	158	13-16
287	18-16	223 (Spare)*2	Spare/ 10-16	—	—	095 (Spare)*2	Spare/ 06-16	159	14-16

*2: A data or spare disk is to be installed.

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No.	Model Number	Model Name	Data and Parity
1	DKU-F505I-72KS/72JSR/72KSR/146JS/146JSR/146KSR/300JSR/300KSR/400JSR/72K1R/146J1R/146K1R/300J1R × 8	1 HDD Canister	

(3) RAID5(7D+1P), RAID6(6D+2P), 1 DKA Pair Model

1 DKA Pair Model

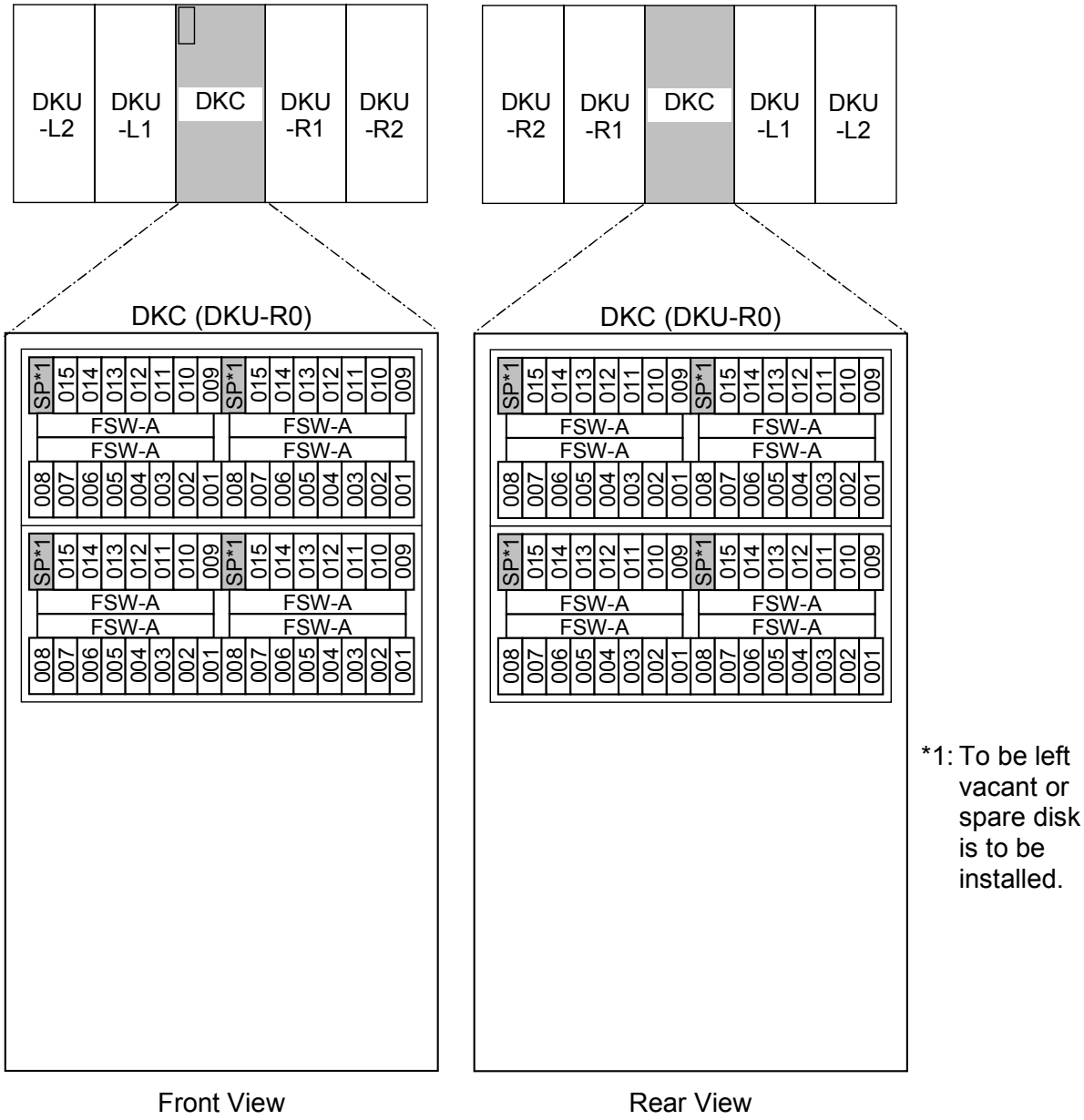

Fig. 1.2-3 (7D+1P, 6D+2P, 1 DKA Pair Model) Data Drive/Parity Drive Expansion Sequence (1/2)

The relationship between HDDs installation order and RAID group number is shown in the Table 1.2-3.

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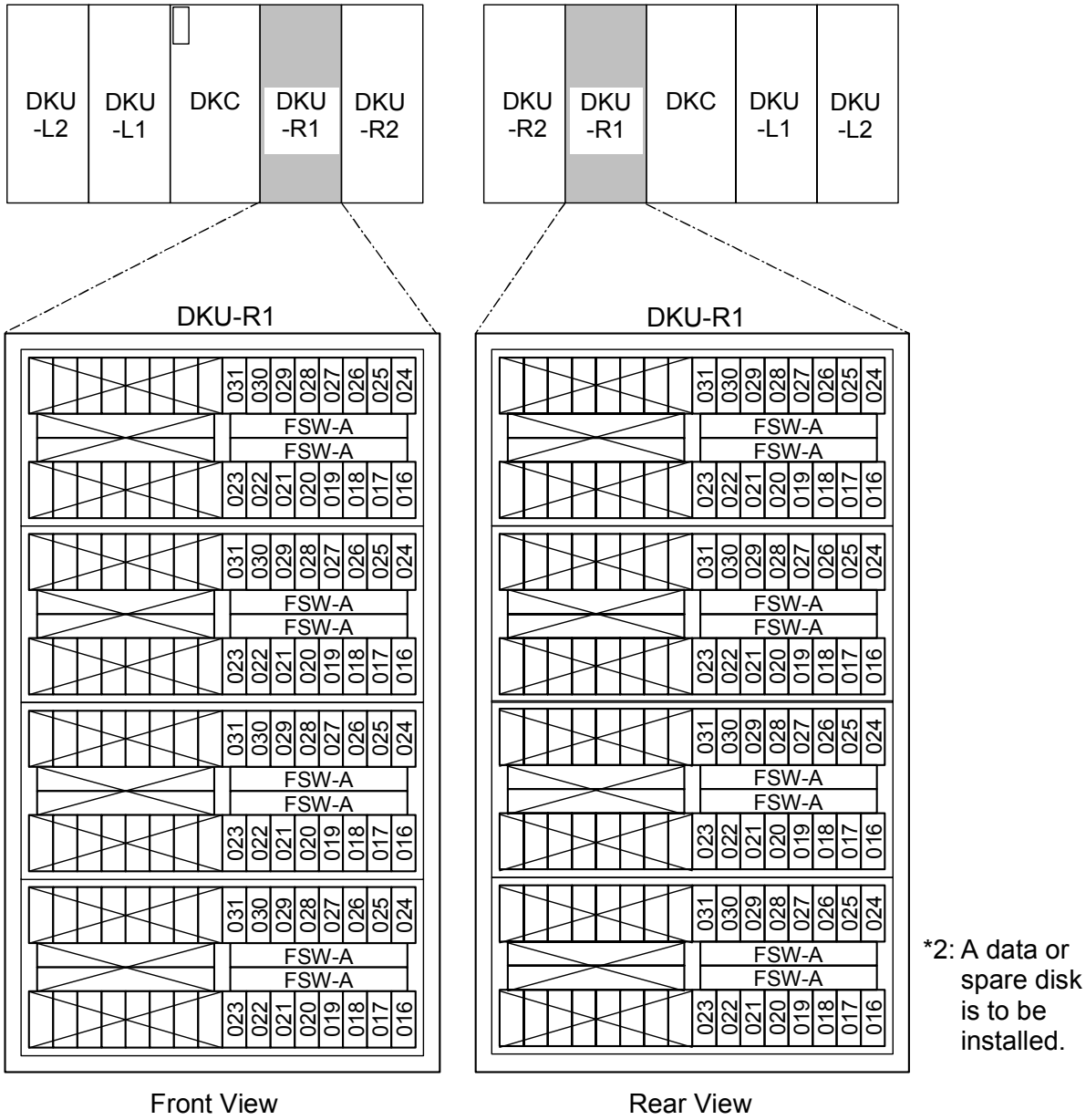
1 DKA Pair Model



*2: A data or spare disk is to be installed.

Fig. 1.2-3 (7D+1P, 6D+2P, 1 DKA Pair Model) Data Drive/Parity Drive Expansion Sequence (2/2)

The relationship between HDDs installation order and RAID group number is shown in the Table 1.2-3.

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Table 1.2-3 Relation between HDDs installation order and RAID group number (7D+1P, 6D+2P, 1 DKA Pair Model)

DKC		DKU-R1	
Installation Order	RAID Group No.	Installation Order	RAID Group No.
001	01-01	016	03-01
002	01-02	017	03-02
003	01-03	018	03-03
004	01-04	019	03-04
005	01-05	020	03-05
006	01-06	021	03-06
007	01-07	022	03-07
008	01-08	023	03-08
009	01-09	024	03-09
010	01-10	025	03-10
011	01-11	026	03-11
012	01-12	027	03-12
013	01-13	028	03-13
014	01-14	029	03-14
015	01-15	030	03-15
Spare*1	Spare	031	03-16

*1: To be left vacant or a spare disk is to be installed.

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No.	Model Number	Model Name	Data and Parity
1	DKU-F505I-72KS/72JSR/72KSR/146JS/146JSR/146KSR/300JSR/300KSR/400JSR/72K1R/146J1R/146K1R/300J1R × 8	1 HDD Canister	

(4) RAID5(7D+1P), RAID6(6D+2P), 2/4 DKA Pairs Model

2/4 DKA Pairs Model

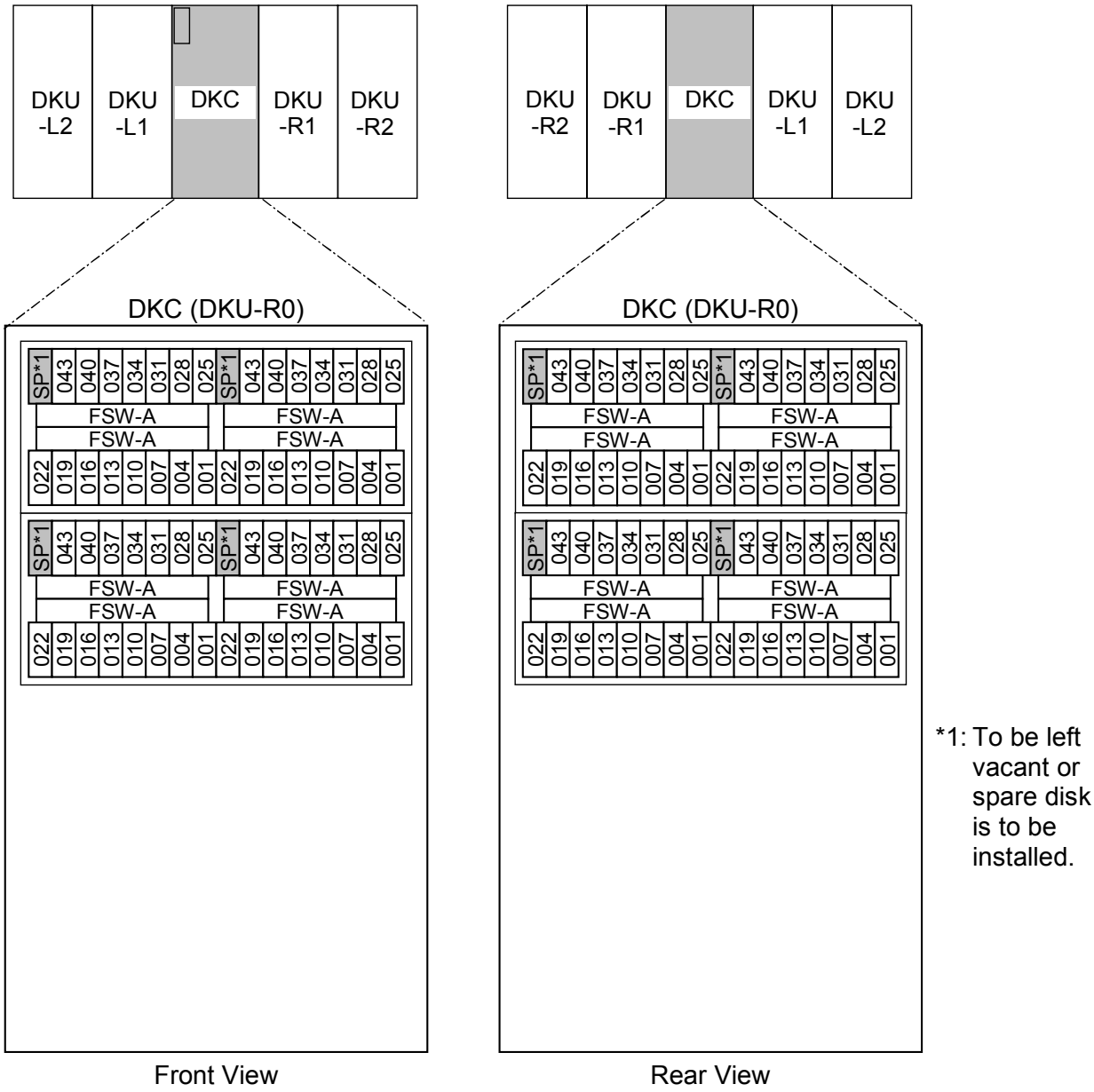

Fig. 1.2-4 (7D+1P, 6D+2P, 2/4 DKA Pairs Model) Data Drive/Parity Drive Expansion Sequence (1/5)

The relationship between HDDs installation order and RAID group number is shown in the Table 1.2-4.

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2/4 DKA Pairs Model

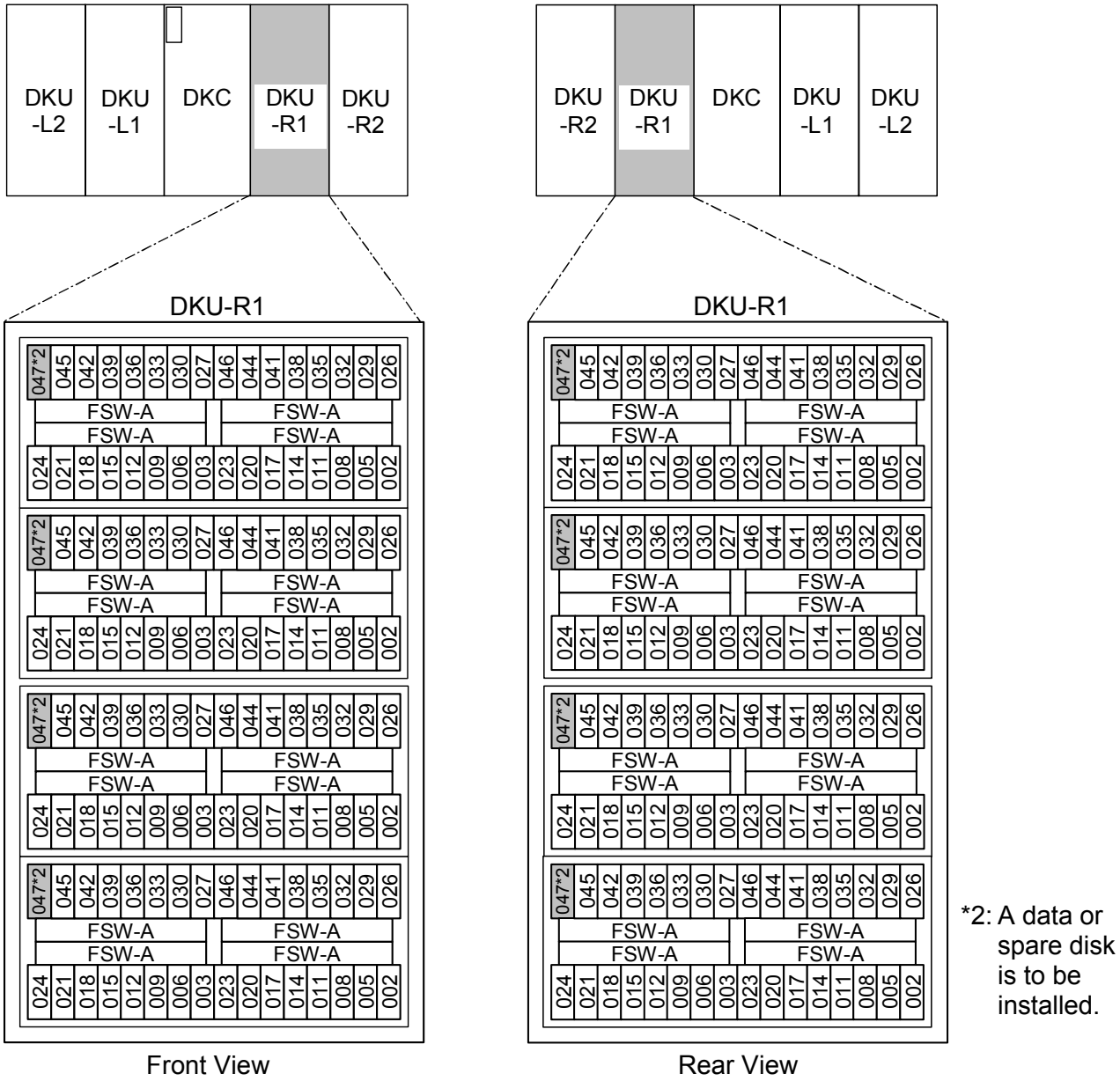

Fig. 1.2-4 (7D+1P, 6D+2P, 2/4 DKA Pairs Model) Data Drive/Parity Drive Expansion Sequence (2/5)

The relationship between HDDs installation order and RAID group number is shown in the Table 1.2-4.

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2/4 DKA Pairs Model

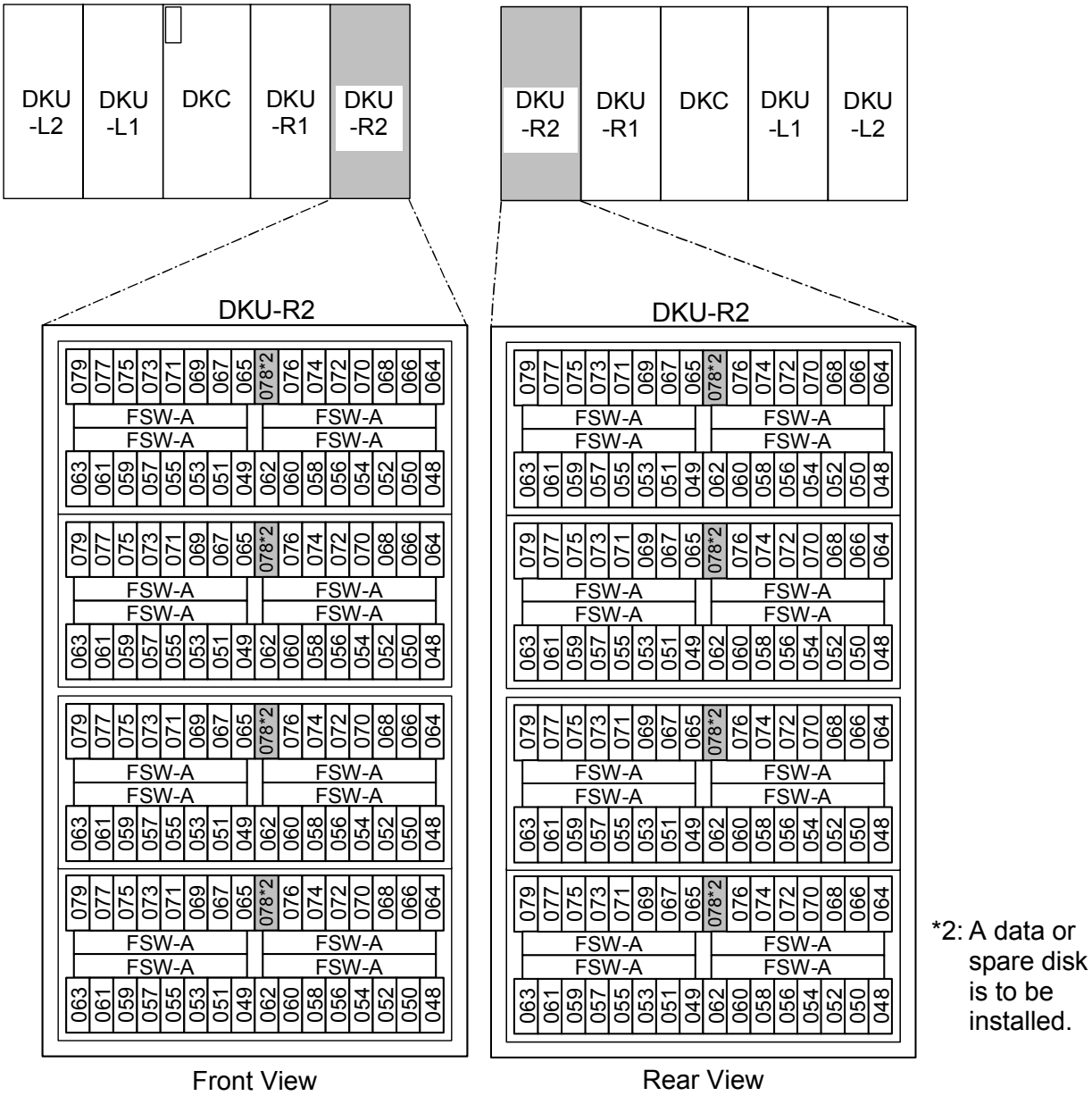

Fig. 1.2-4 (7D+1P, 6D+2P, 2/4 DKA Pairs Model) Data Drive/Parity Drive Expansion Sequence (3/5)

The relationship between HDDs installation order and RAID group number is shown in the Table 1.2-4.

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2/4 DKA Pairs Model

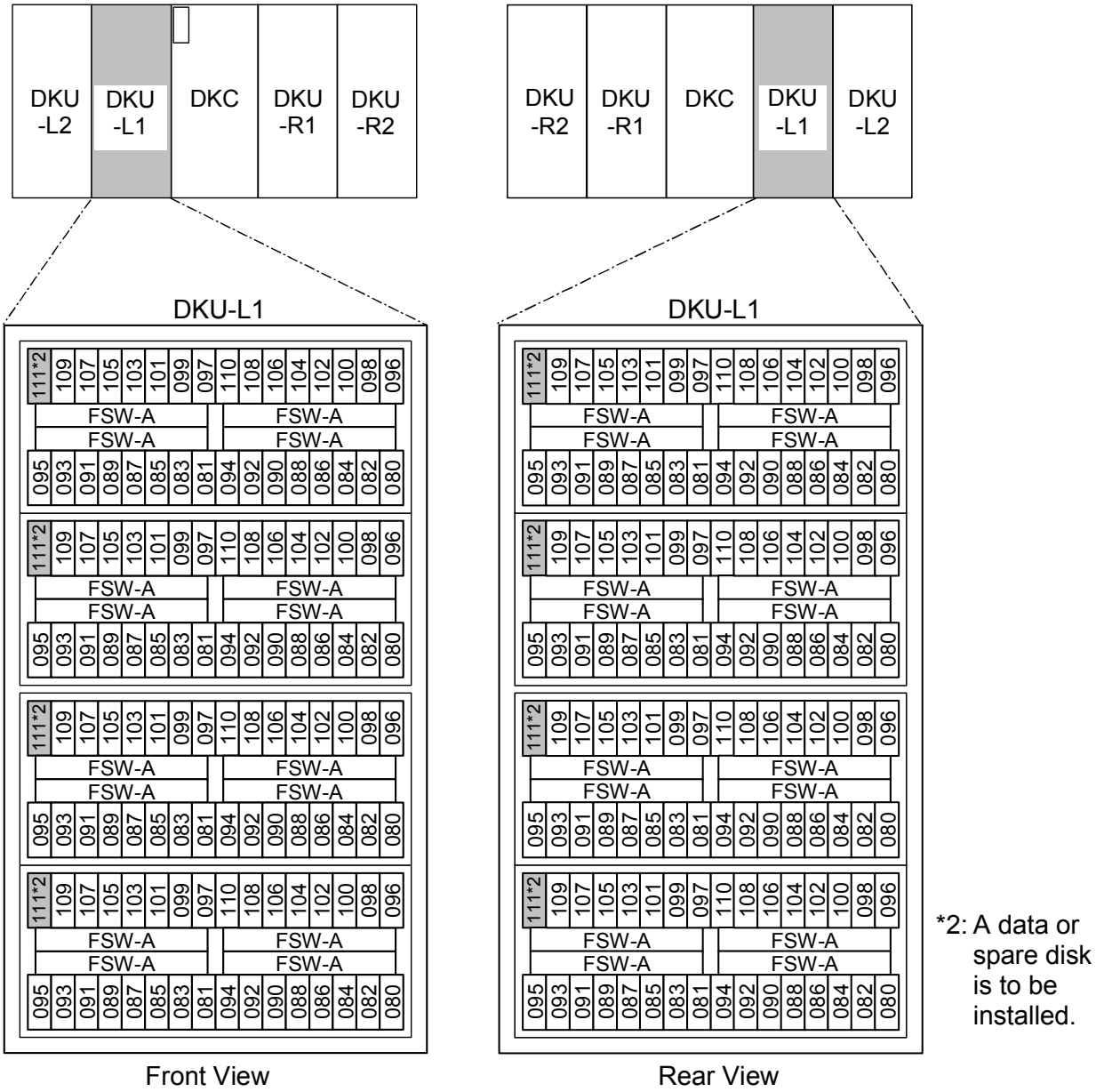

Fig. 1.2-4 (7D+1P, 6D+2P, 2/4 DKA Pairs Model) Data Drive/Parity Drive Expansion Sequence (4/5)

The relationship between HDDs installation order and RAID group number is shown in the Table 1.2-4.

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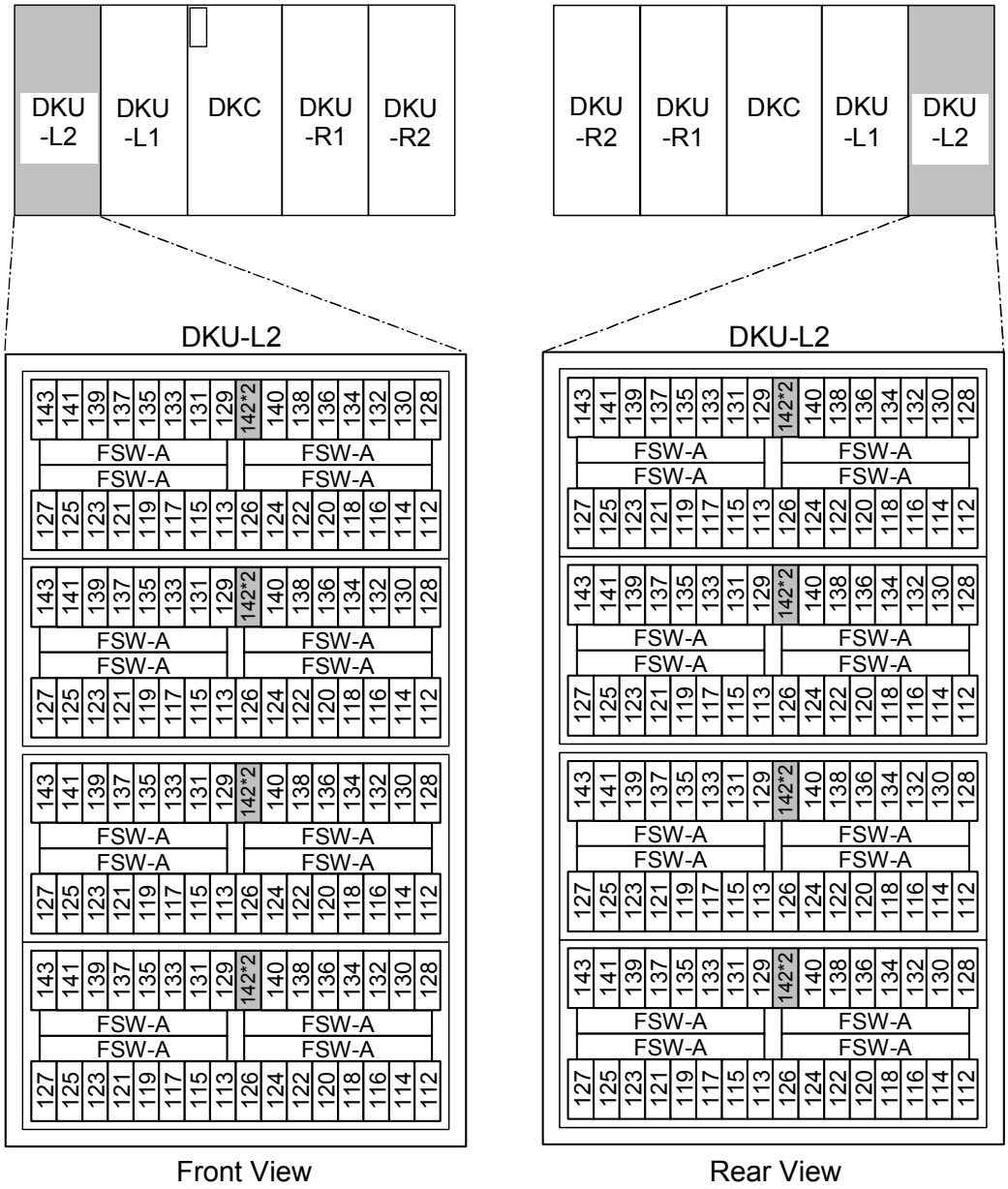
2/4 DKA Pairs Model



*2: A data or spare disk is to be installed.

Fig. 1.2-4 (7D+1P, 6D+2P, 2/4 DKA Pairs Model) Data Drive/Parity Drive Expansion Sequence (5/5)

The relationship between HDDs installation order and RAID group number is shown in the Table 1.2-4.

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Table 1.2-4 Relation between HDDs installation order and RAID group number (7D+1P, 6D+2P, 2/4 DKA Pairs Model)

DKU-L2		DKU-L1		DKC		DKU-R1		DKU-R2	
Installation Order	RAID Group No.	Installation Order	RAID Group No.	Installation Order	RAID Group No.	Installation Order	RAID Group No.	Installation Order	RAID Group No.
112	15-01	080	07-01	001	01-01	002	03-01	048	11-01
113	17-01	081	09-01	004	01-02	003	05-01	049	13-01
114	15-02	082	07-02	007	01-03	005	03-02	050	11-02
115	17-02	083	09-02	010	01-04	006	05-02	051	13-02
116	15-03	084	07-03	013	01-05	008	03-03	052	11-03
117	17-03	085	09-03	016	01-06	009	05-03	053	13-03
118	15-04	086	07-04	019	01-07	011	03-04	054	11-04
119	17-04	087	09-04	022	01-08	012	05-04	055	13-04
120	15-05	088	07-05	025	01-09	014	03-05	056	11-05
121	17-05	089	09-05	028	01-10	015	05-05	057	13-05
122	15-06	090	07-06	031	01-11	017	03-06	058	11-06
123	17-06	091	09-06	034	01-12	018	05-06	059	13-06
124	15-07	092	07-07	037	01-13	020	03-07	060	11-07
125	17-07	093	09-07	040	01-14	021	05-07	061	13-07
126	15-08	094	07-08	043	01-15	023	03-08	062	11-08
127	17-08	095	09-08	Spare*1	Spare	024	05-08	063	13-08
128	15-09	096	07-09	—	—	026	03-09	064	11-09
129	17-09	097	09-09	—	—	027	05-09	065	13-09
120	15-10	098	07-10	—	—	029	03-10	066	11-10
131	17-10	099	09-10	—	—	030	05-10	067	13-10
132	15-11	100	07-11	—	—	032	03-11	068	11-11
133	17-11	101	09-11	—	—	033	05-11	069	13-11
134	15-12	102	07-12	—	—	035	03-12	070	11-12
135	17-12	103	09-12	—	—	036	05-12	071	13-12
136	15-13	104	07-13	—	—	038	03-13	072	11-13
137	17-13	105	09-13	—	—	039	05-13	073	13-13
138	15-14	106	07-14	—	—	041	03-14	074	11-14
139	17-14	107	09-14	—	—	042	05-14	075	13-14
140	15-15	108	07-15	—	—	044	03-15	076	11-15
141	17-15	109	09-15	—	—	045	05-15	077	13-15
142 (Spare)*2	Spare/ 15-16	110	07-16	—	—	046	03-16	078 (Spare)*2	Spare/ 11-16
143	17-16	111 (Spare)*2	Spare/ 09-16	—	—	047 (Spare)*2	Spare/ 05-16	079	13-16

*1: To be left vacant or a spare disk is to be installed.

*2: A data or spare disk is to be installed.

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No.	Model Number	Model Name	Data and Parity
1	DKU-F505I-72KS/72JSR/72KSR/146JS/146JSR/146KSR/300JSR/300KSR/400JSR/72K1R/146J1R/146K1R/300J1R × 1	1 HDD Canister	Spare Drive

(5) Spare HDD

1 DKA Pair Model, 2/4 DKA Pairs Model

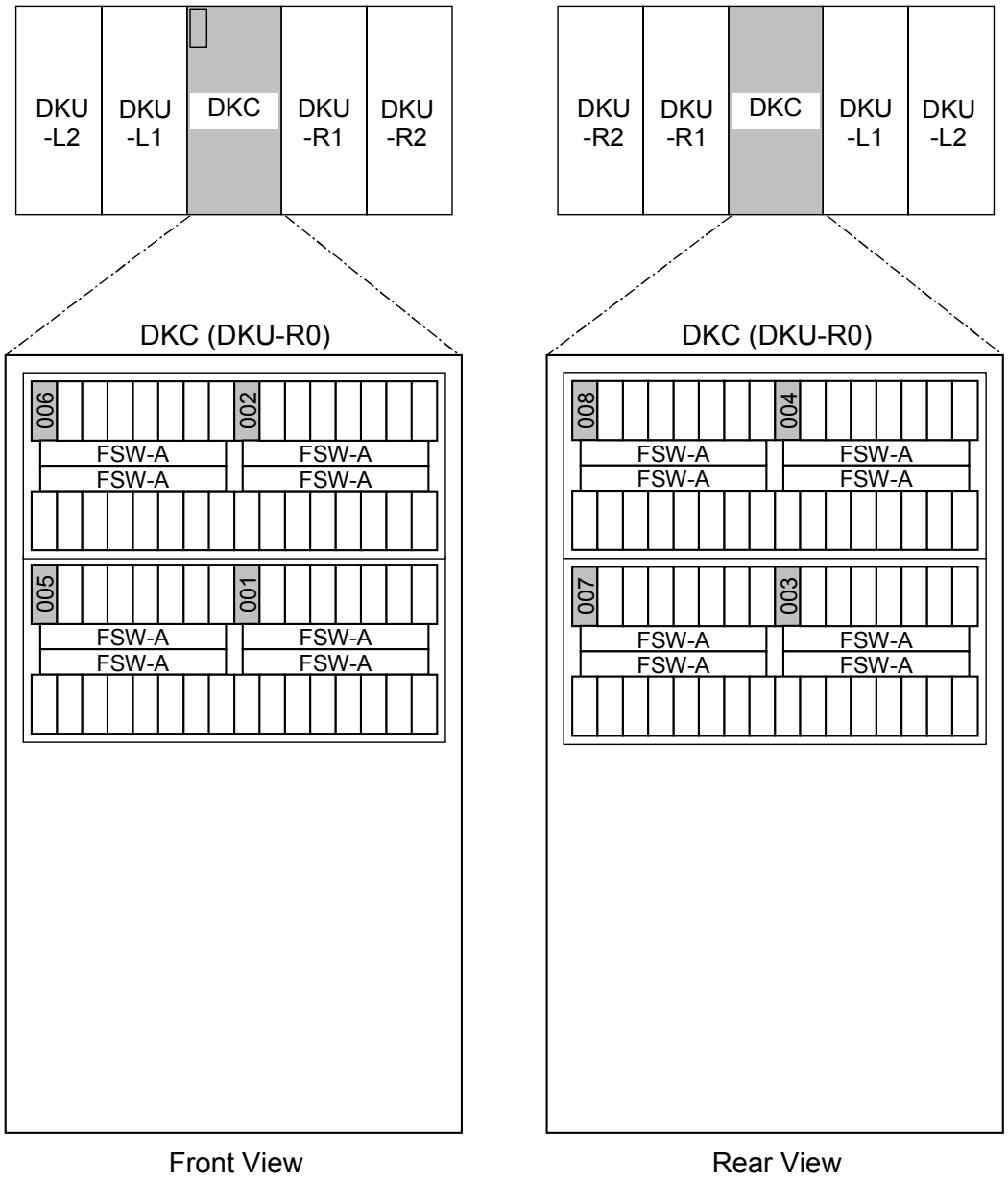

Fig. 1.2-5 Spare Drive Expansion Sequence (1/5)

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2/4 DKA Pairs Model

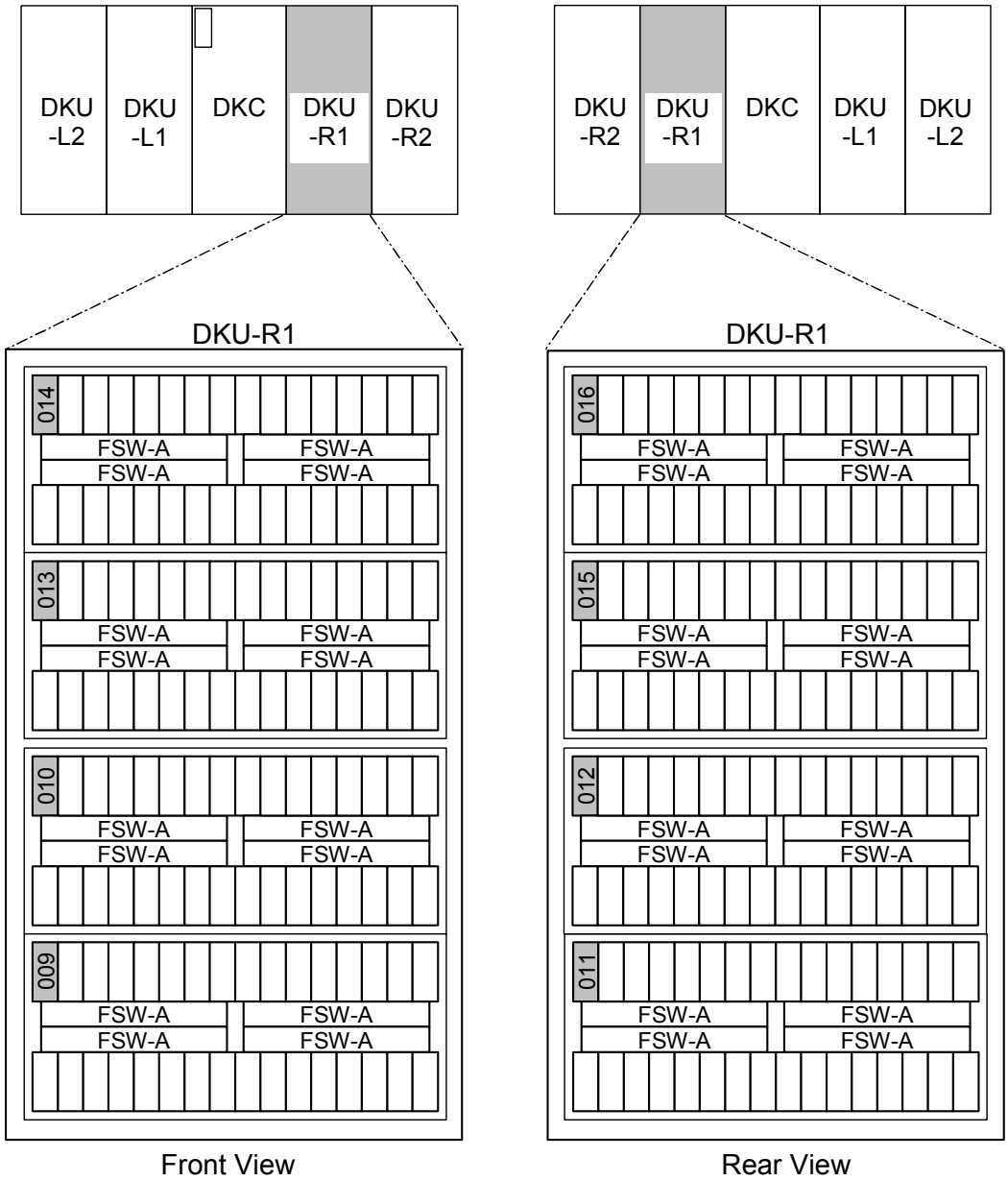

Fig. 1.2-5 Spare Drive Expansion Sequence (2/5)

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2/4 DKA Pairs Model

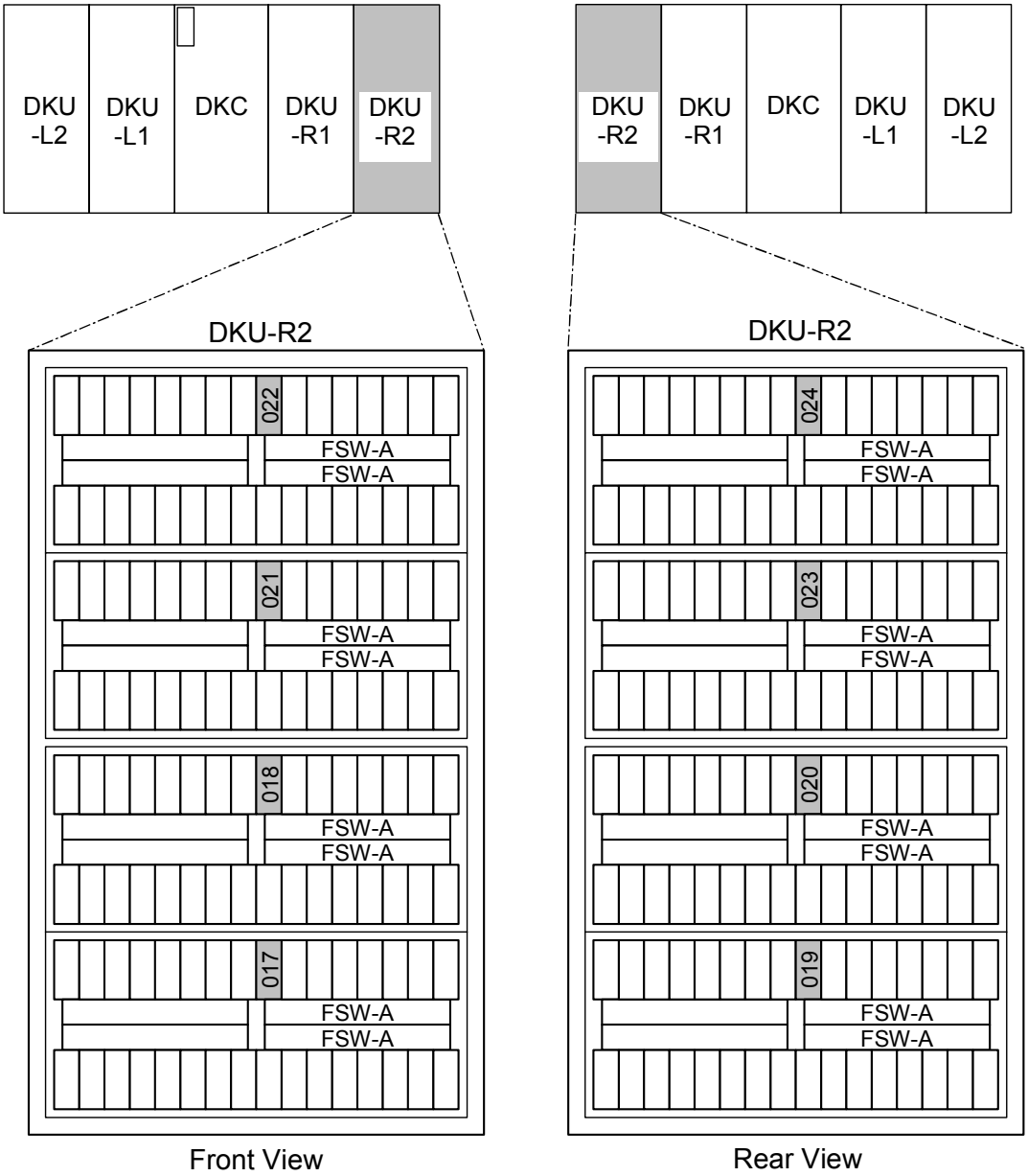

Fig. 1.2-5 Spare Drive Expansion Sequence (3/5)

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2/4 DKA Pairs Model

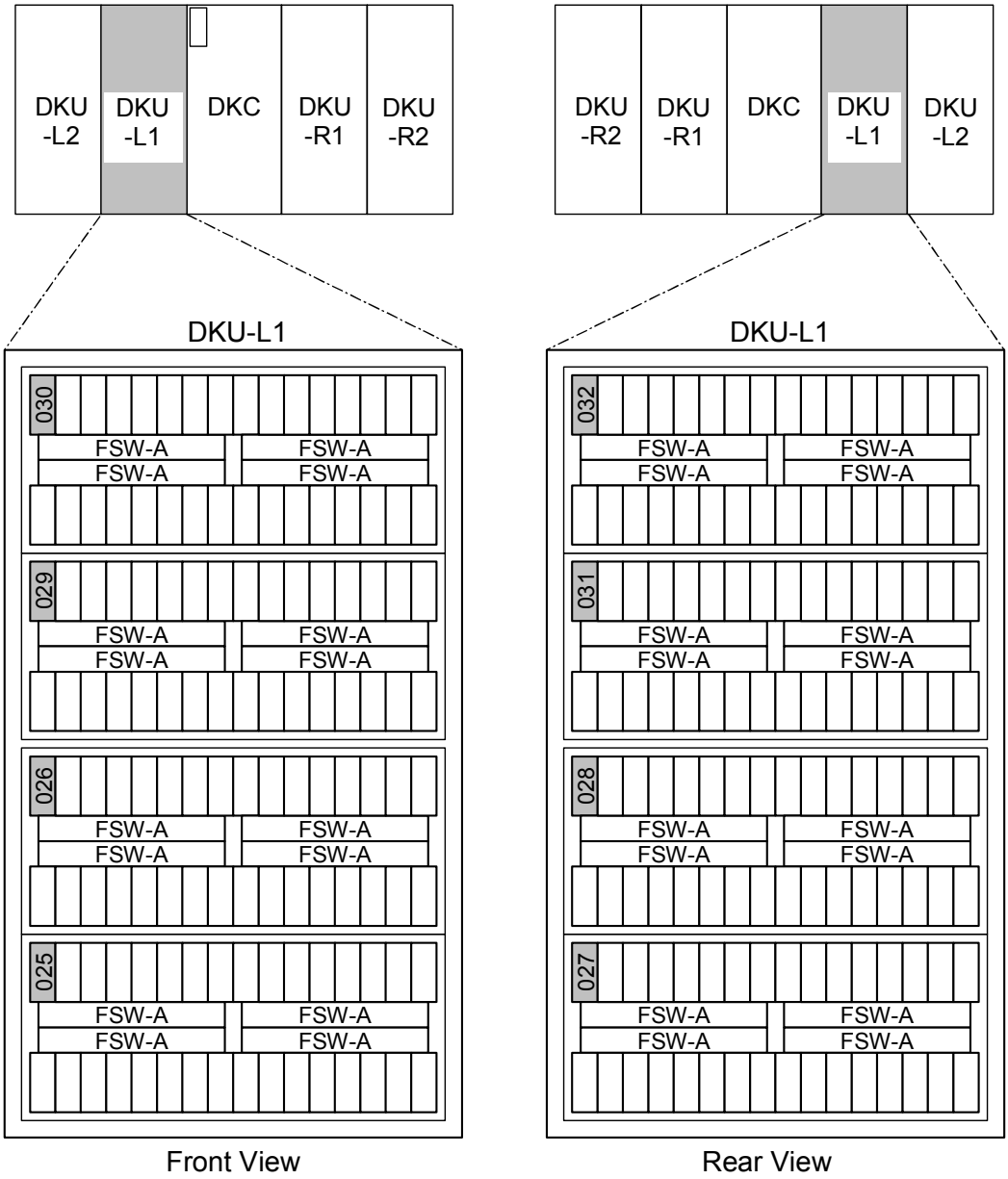

Fig. 1.2-5 Spare Drive Expansion Sequence (4/5)

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2/4 DKA Pairs Model

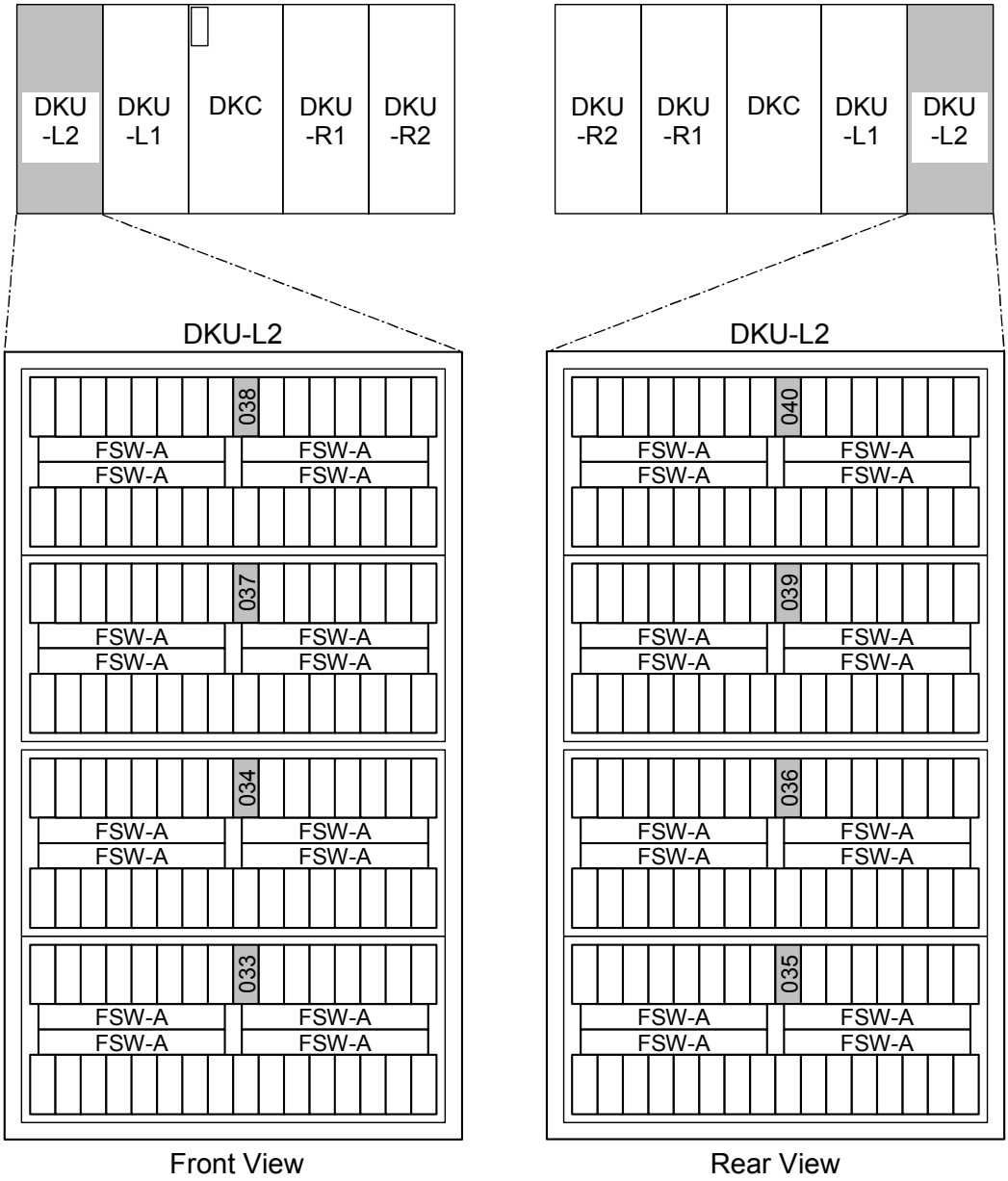

Fig. 1.2-5 Spare Drive Expansion Sequence (5/5)

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1.3 AC Power Cable Specification

1.3.1 3 Phase/30A Model for USA

The DKC has Two Main Disconnect Devices (Two Main Breaker CB101s for Dual Power Lines) so that AC Power of the unit can be supplied from the separate power distribution board with Two Power Supply Cords. Similarly, each of the DKU-R1, the DKU-R2, the DKU-L1 and the DKU-L2 also has Two Main Disconnect Devices.
Observe all instructions described in this manual before connecting the equipment to the power source and before servicing.

A. Connection of Power Supply Cord
The unit has two power supply cords with attachment plug type Thomas & Betts 3760PDG or DDK 115J-AP8508. Be sure to prepare the following socket receptacles and power cords between the power distribution board of the building and the attachment plugs for the unit.

Socket Receptacle: Thomas & Betts 3934
Power Cord: Type ST or equivalent, non-shielded type, with four min. #8 AWG conductors. Terminated at one end with an assembled on above socket receptacle cap.

B. Requirements to Branch Circuit
This unit relies on the building installation for protection of the internal components of the equipment. Each line (R/S/T line) should be protected by a short circuit protective device and by an over current protective device rated 30 amp on building installation.
The protective device on building installation shall comply with the NEC requirements (or CEC requirements when installed in Canada), and if a protective device interrupts a conductor, it shall also interrupt all other supply conductors.
This protection is not required for the neutral line of this unit.

C. Disconnection from Power Supply
DKC has Two Main Disconnect Devices (Two Main Breaker CB101s for Dual Power Lines). Each DKU has Two Main Disconnect Devices (Two Main Breaker CB101s for Dual Power Lines). To remove all utility power from the unit, turn off both main disconnect device CB101s at the same time.

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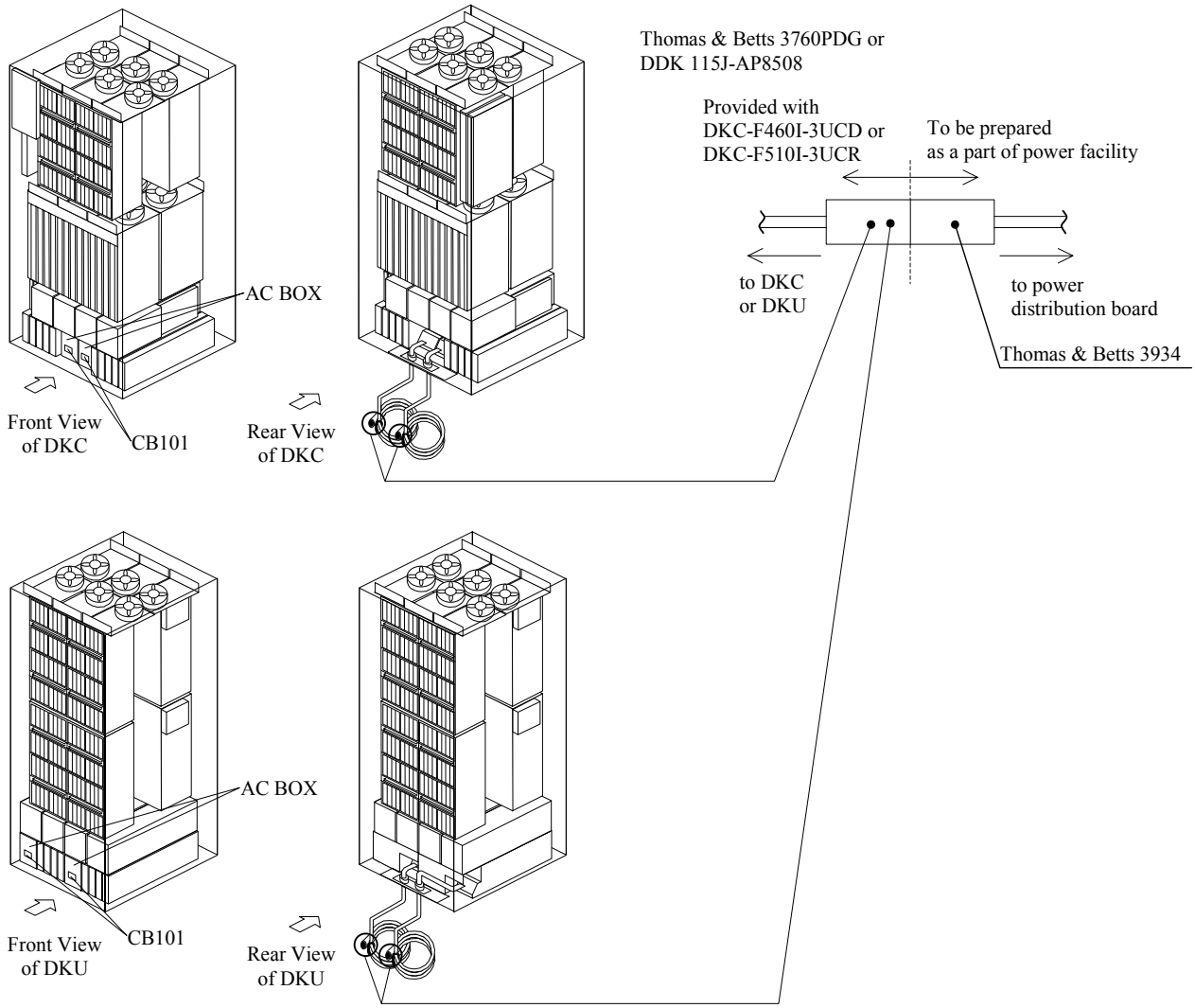

Fig. 1.3.1-1 3 Phase/30A Model for USA

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1.3.2 3 Phase/30A Model for Europe

The DKC has Two Main Disconnect Devices (Two Main Breaker CB101s for Dual Power Lines) so that AC Power of the unit can be supplied from the separate power distribution board with Two Power Supply Cords. Similarly, each of the DKU-R1, the DKU-R2, the DKU-L1 and the DKU-L2 also has Two Main Disconnect Devices.
Observe all instructions described in this manual before connecting the equipment to the power source and before servicing.

A. Connection of Power Supply Cord
The unit has two power supply cords. Be sure to prepare the following socket receptacles and power cords between the power distribution board of the building and the power cords for the unit.

Socket Receptacle : As shown in the following figure.
Power Cord : Type H07RN-F or equivalent, with five 6 mm^2 conductors.

Be sure to connect a power cord to the distribution box as illustrated in the following figure.
The wrong connection of neutral line may cause damages or fire of the equipment.
To reduce the risk of wrong connection, you should use approved type attachment plug and socket for power cord connection.
High leakage current may be caused between the power supply and this unit. To avoid an electric shock by high leakage current, perform the protective earth connection before the supply connections and disconnect it after the supply connections.

B. Requirements to Branch Circuit
This unit relies on the building installation for protection of the internal components of the equipment. Each line (R/S/T/N line) should be protected by a short circuit protective device and by an over current protective device rated 30 amp on building installation.
The protective device on building installation shall be comply with National Standards of the country where the units shall be installed, and if a protective device interrupts a conductor, it shall also interrupt all other supply conductors.
This protection is also required for the neutral line of this unit.

C. Disconnection from Power Supply
DKC has Two Main Disconnect Devices (Two Main Breaker CB101s for Dual Power Lines).
Each DKU has Two Main Disconnect Devices (Two Main Breaker CB101s for Dual Power Lines).
To remove all utility power from the unit, turn off both main disconnect device CB101s at the same time.

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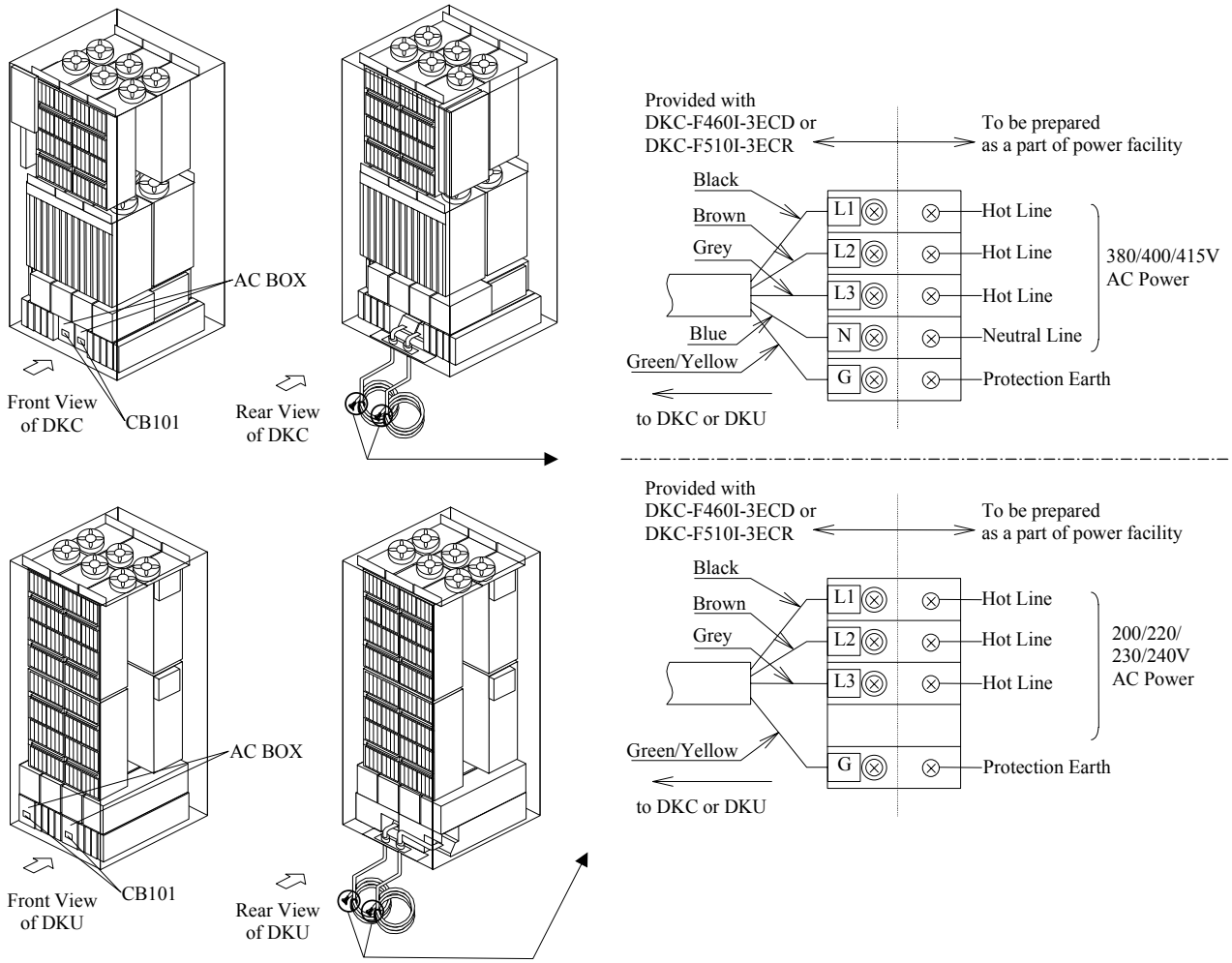

Fig. 1.3.2-1 3 Phase/30A Model for Europe

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1.3.3 Single Phase/50A Model for USA

The DKC has Two Main Disconnect Devices (Two Main Breaker CB101s for Dual Power Lines) so that AC Power of the unit can be supplied from the separate power distribution board with Two Power Supply Cords. Similarly, each of the DKU-R1, the DKU-R2, the DKU-L1, and the DKU-L2 also has Two Main Disconnect Devices (Two Main Breaker CB101s for Dual Power Lines). Observe all instructions described in this manual before connecting the equipment to the power source and before servicing.

A. Connection of Power Supply Cord
The unit has two power supply cords with attachment plug type Thomas & Betts 9P53U2. Be sure to prepare the following socket receptacles and power cords between the power distribution board of the building and the attachment plugs for the unit.

Socket Receptacle: Thomas & Betts 9C53U2 or 9R53U2W
Power Cord: Type ST or equivalent, non-shielded type, with three min. #6 AWG conductors. Terminated at one end with an assembled on above socket receptacle cap.

B. Requirements to Branch Circuit
This unit relies on the building installation for protection of the internal components of the equipment. Each line (U/L1, V/L2 line) should be protected by a short circuit protective device and by an over current protective device rated 50 amp on building installation.
The protective device on building installation shall comply with the NEC requirements (or CEC requirements when installed in Canada), and if a protective device interrupts a conductor, it shall also interrupt all other supply conductors.
This protection is not required for the neutral line of this unit.

C. Disconnection from Power Supply
DKC has Two Main Disconnect Devices (Two Main Breaker CB101s for Dual Power Lines). Each DKU has Two Main Disconnect Devices (Two Main Breaker CB101s for Dual Power Lines). To remove all utility power from the unit, turn off both main disconnect device CB101s at the same time.

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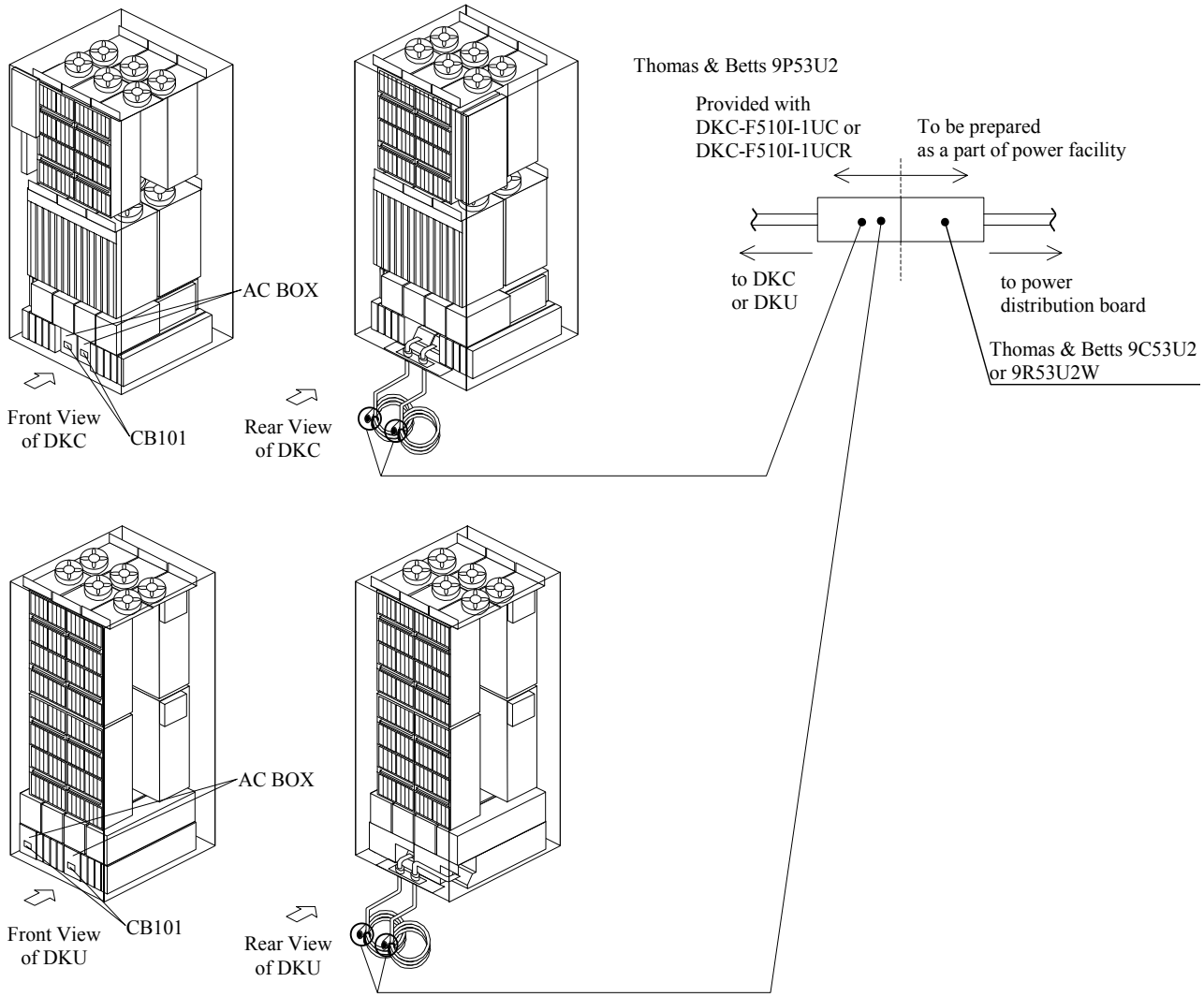

Fig. 1.3.3-1 Single Phase/50A Model for USA

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1.3.4 Single Phase/50A Model for Europe

The DKC has Two Main Disconnect Devices (Two Main Breaker CB101s for Dual Power Lines) so that AC Power of the unit can be supplied from the separate power distribution board with Two Power Supply Cords. Similarly, each of the DKU-R1, the DKU-R2, the DKU-L1, and the DKU-L2 also has Two Main Disconnect Devices (Two Main Breaker CB101s for Dual Power Lines). Observe all instructions described in this manual before connecting the equipment to the power source and before servicing.

A. Connection of Power Supply Cord

The unit has two power supply cords. Be sure to prepare the following socket receptacles and power cords between the power distribution board of the building and the power cords for the unit.

Socket Receptacle: As shown in the following figure.
Power Cord: Type H07RN-F or equivalent, with three 10 mm^2 conductors.

Be sure to connect a power cord to the distribution box as illustrated in the following figure.
The wrong connection of neutral line may cause damages or fire of the equipment.
To reduce the risk of wrong connection, you should use approved type attachment plug and socket for power cord connection.
High leakage current may be caused between the power supply and this unit. To avoid an electric shock by high leakage current, perform the protective earth connection before the supply connections and disconnect it after the supply connections.

B. Requirements to Branch Circuit

This unit relies on the building installation for protection of the internal components of the equipment. Each line (U/L1, N/L2 line) should be protected by a short circuit protective device and by an over current protective device rated 50 amp on building installation.
The protective device on building installation shall be comply with National Standards of the country where the units shall be installed, and if a protective device interrupts a conductor, it shall also interrupt all other supply conductors.
This protection is also required for the neutral line of this unit.

C. Disconnection from Power Supply

DKC has Two Main Disconnect Devices (Two Main Breaker CB101s for Dual Power Lines).
Each DKU has Two Main Disconnect Devices (Two Main Breaker CB101s for Dual Power Lines).
To remove all utility power from the unit, turn off both main disconnect device CB101s at the same time.

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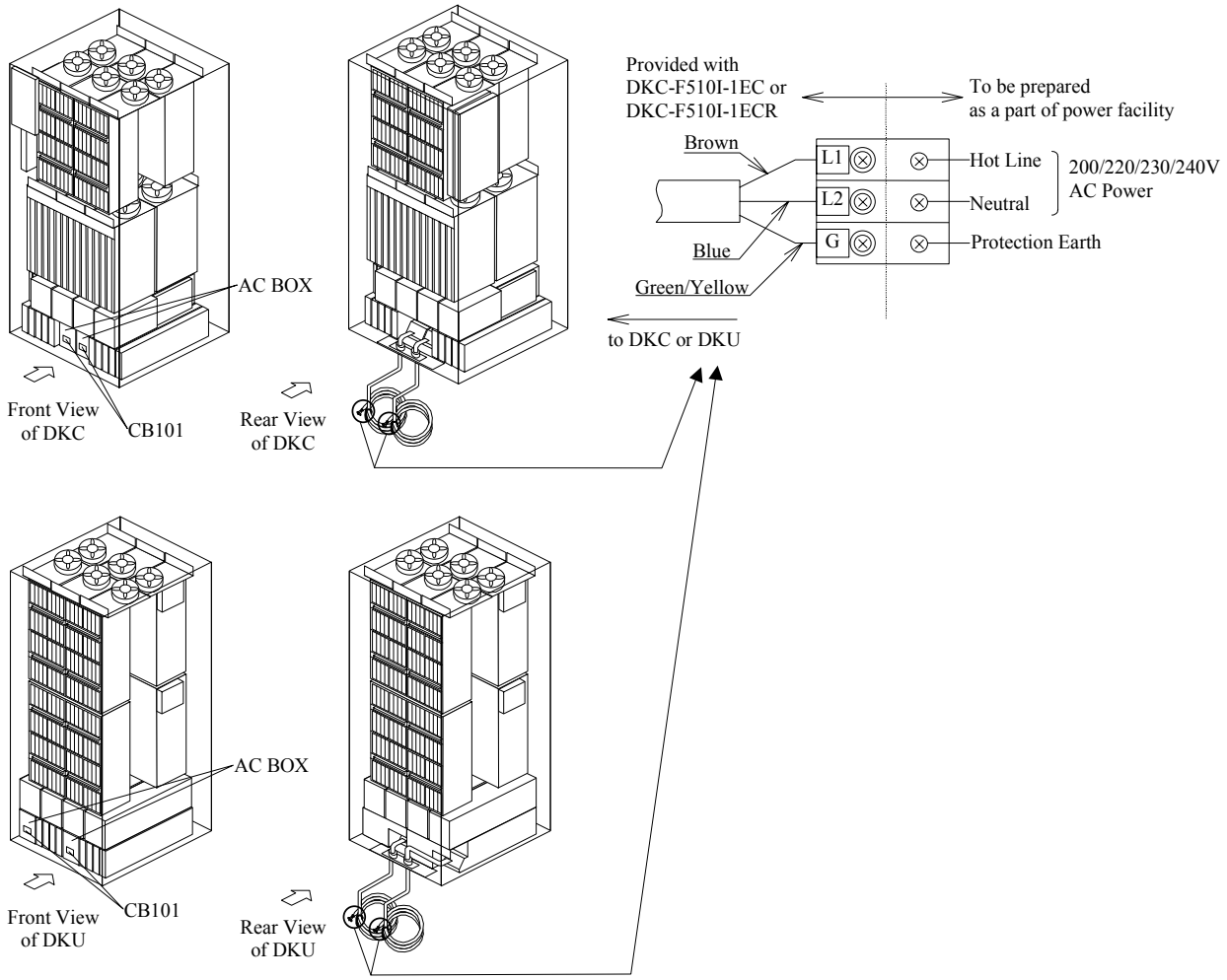

Fig. 1.3.4-1 Single Phase/50A Model for Europe

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1.3.5 Single Phase/30A Model for USA

The DKC has Two Main Disconnect Devices (Two Main Breaker CB101s for Dual Power Lines) so that AC Power of the unit can be supplied from the separate power distribution board with Four Power Supply Cords. Similarly, each of the DKU-R1, the DKU-R2, the DKU-L1, and the DKU-L2 also has Two Main Disconnect Devices (Two Main Breaker CB101s for Dual Power Lines). Observe all instructions described in this manual before connecting the equipment to the power source and before servicing.

A. Connection of Power Supply Cord
The unit has four power supply cords with attachment plug type Thomas & Betts 3750DP. Be sure to prepare the following socket receptacles and power cords between the power distribution board of the building and the attachment plugs for the unit.

Socket Receptacle: Thomas & Betts 3933
Power Cord: Type ST or equivalent, non-shielded type, with three min. #10 AWG conductors. Terminated at one end with an assembled on above socket receptacle cap.

B. Requirements to Branch Circuit
This unit relies on the building installation for protection of the internal components of the equipment. Each line (U/L1, V/L2 line) should be protected by a short circuit protective device and by an over current protective device rated 30 amp on building installation.
The protective device on building installation shall comply with the NEC requirements (or CEC requirements when installed in Canada), and if a protective device interrupts a conductor, it shall also interrupt all other supply conductors.
This protection is not required for the neutral line of this unit.

C. Disconnection from Power Supply
DKC has Two Main Disconnect Devices (Two Main Breaker CB101s for Dual Power Lines). Each DKU has Two Main Disconnect Devices (Two Main Breaker CB101s for Dual Power Lines). To remove all utility power from the unit, turn off both main disconnect device CB101s at the same time.

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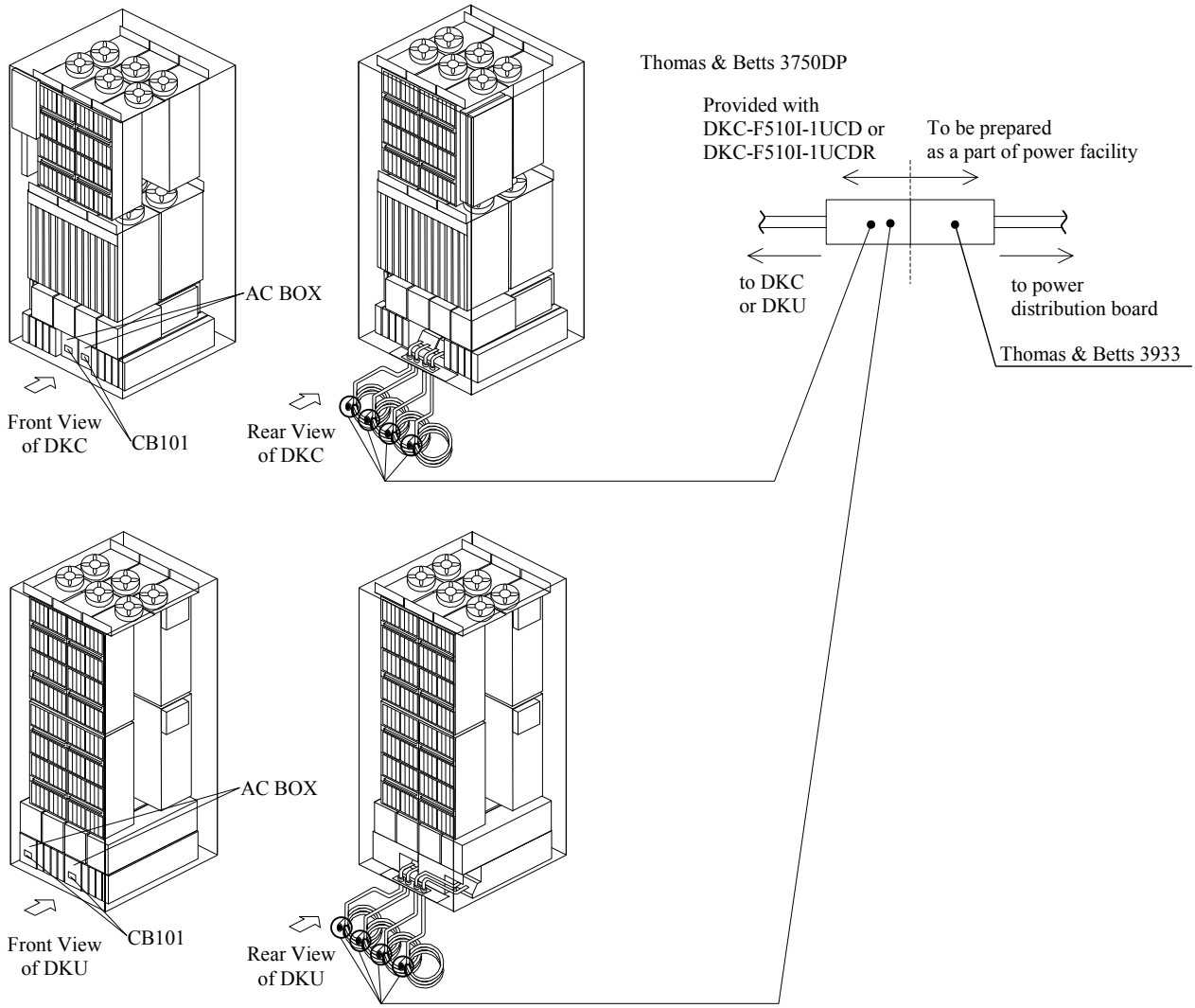

Fig. 1.3.5-1 Single Phase/30A Model for USA

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1.3.6 Single Phase/30A Model for Europe

The DKC has Two Main Disconnect Devices (Two Main Breaker CB101s for Dual Power Lines) so that AC Power of the unit can be supplied from the separate power distribution board with Four Power Supply Cords. Similarly, each of the DKU-R1, the DKU-R2, the DKU-L1, and the DKU-L2 also has Two Main Disconnect Devices (Two Main Breaker CB101s for Dual Power Lines). Observe all instructions described in this manual before connecting the equipment to the power source and before servicing.

A. Connection of Power Supply Cord

The unit has four power supply cords. Be sure to prepare the following socket receptacles and power cords between the power distribution board of the building and the power cords for the unit.

Socket Receptacle : As shown in the following figure.
Power Cord : Type H07RN-F or equivalent, with three 6 mm^2 conductors.

Be sure to connect a power cord to the distribution box as illustrated in the following figure.
The wrong connection of neutral line may cause damages or fire of the equipment.
To reduce the risk of wrong connection, you should use approved type attachment plug and socket for power cord connection.
High leakage current may be caused between the power supply and this unit. To avoid an electric shock by high leakage current, perform the protective earth connection before the supply connections and disconnect it after the supply connections.

B. Requirements to Branch Circuit

This unit relies on the building installation for protection of the internal components of the equipment. Each line (U/L1, N/L2 line) should be protected by a short circuit protective device and by an over current protective device rated 30 amp on building installation.
The protective device on building installation shall be comply with National Standards of the country where the units shall be installed, and if a protective device interrupts a conductor, it shall also interrupt all other supply conductors.
This protection is also required for the neutral line of this unit.

C. Disconnection from Power Supply

DKC has Two Main Disconnect Devices (Two Main Breaker CB101s for Dual Power Lines).
Each DKU has Two Main Disconnect Devices (Two Main Breaker CB101s for Dual Power Lines).
To remove all utility power from the unit, turn off both main disconnect device CB101s at the same time.

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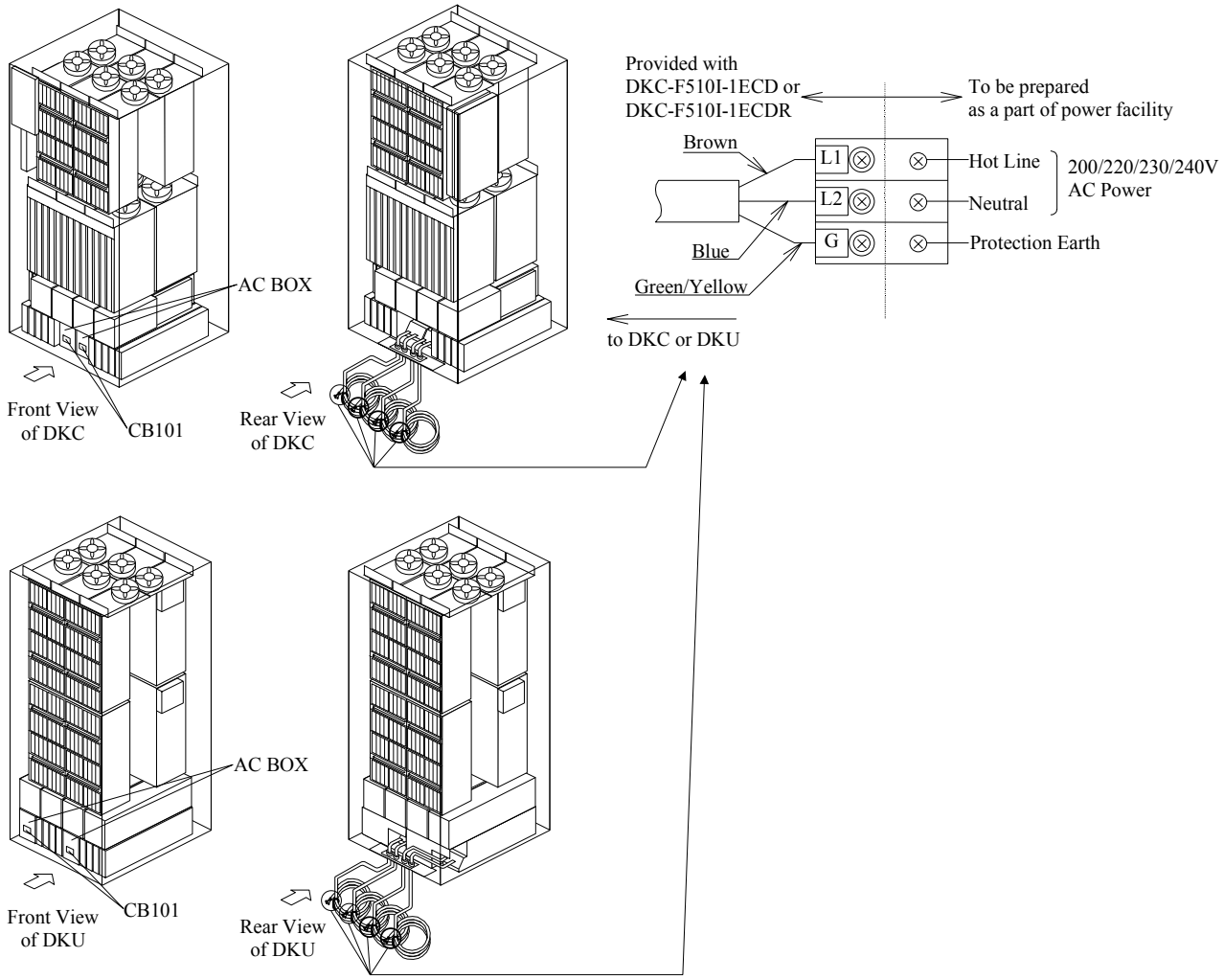

Fig. 1.3.6-1 Single Phase/30A Model for Europe

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1.4 Restriction on new installation, installation, and configuration change of HDD Canisters for Disk Unit

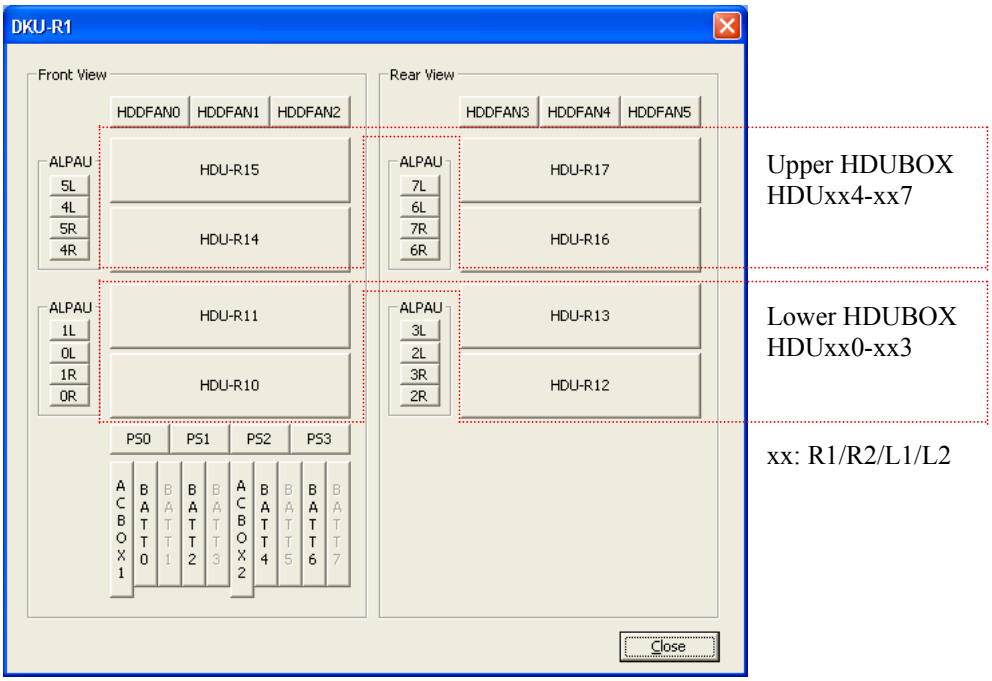
HDD canisters shown below have the restriction on LDEV-format when performing in new installation, installation, and configuration change.
When new installing, installing, and making configuration change of HDD canisters shown below for a lower HDUBOX (HDUxx0 ~ xx3) or an upper HDUBOX (HDUxx4 ~ xx7) of a DKU frame, perform the operation with 64 HDD canisters or less than 64 at a time. If the number of HDD canisters to be installed over 64, divide the new installation, installation, and configuration change operation into two new installation, installation, and configuration change to decrease the number of HDD canisters to 64 and less.

Table 1.4-1 HDD Canister that needs restriction

No	Model Number	Part Name	Remarks
1	DKU-F505I-146KSR	DKS2D-K146FC (*1)	Part No 5524276-D, 5524276-E
2	DKU-F505I-146K1R		

*1: In case of DKS2D-K146FC, refer to a flowchart of new installation, installation, and configuration change of HDD canisters (DKS2D-K146) indicated in INST01-730, and make sure the number of HDD canisters to be mounted in a HDUBOX.

For LDEV-format when performing new installation, installation, and configuration change of HDD canisters shown above for a lower or an upper HDUBOX (128 HDD canisters max.), perform the operation with 64 HDD canisters and less at a time.



(e.g. DKU-R1)

Fig 1.4-1 HDUBOX loaded location of Disk Unit (DKU)

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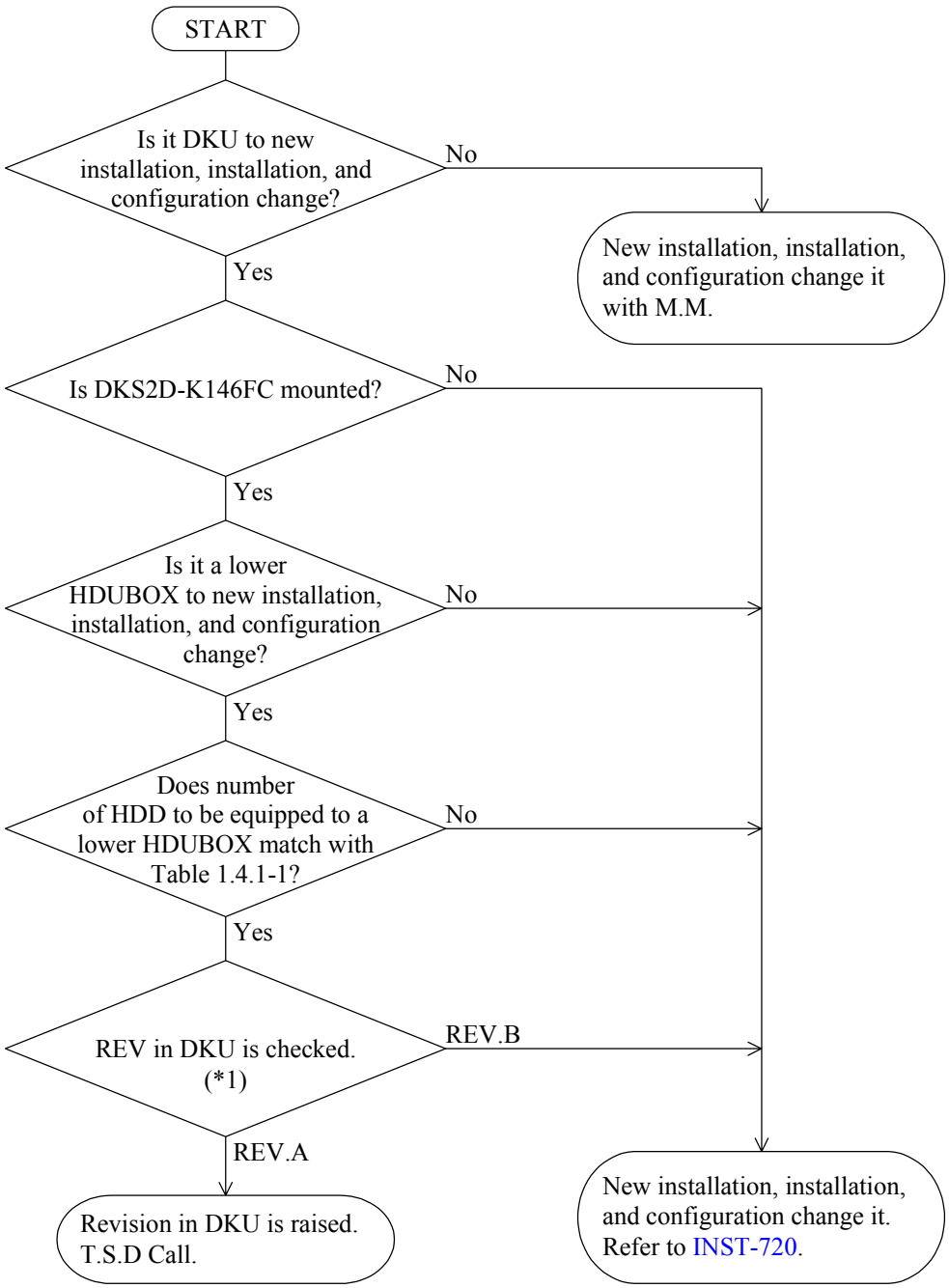
1.4.1 Flowchart in new installation, installation, and configuration change of HDD Canisters (DKS2D-K146FC)

When new installing, installing, and making configuration change of HDD canisters (DKS2D-K146FC), follow the flowchart below and check the DKU equipment revision.



*1: Refer to Fig. 5.28-2 (Position of REV. label) of TRBL05-700.

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HDD canisters, it's confirmed whether total number of DKS2D-K146FC and other HDD canisters is the condition of Table 1.4.1-1 to what.

Table 1.4.1-1 HDUBOX composition check list

Number of HDD Canisters (*1)	121	122	123	124	125	126	127	128 (*2)
With DKS2D-K146FC	121	105	95	86	76	67	58	48 (*2)
With other HDD Canisters	0	17	28	38	49	59	69	80 (*2)

Note: DKU equipment revision has to be "B" if following the condition below.

*1: No restriction is applied if the number of HDDs to be mounted in HDUBOX is 120 and less.

*2: e.g.) In this case, 128 HDDs are mounted in total in a lower HDUBOX. Among them, 48 DKS2D-K146FC HDDs and other 80 HDDs except for DKS2D-K146FC are mounted.

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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.
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.
See "3.1.4 Working Procedure for Upgrade or Replacement of HDD Canister (INST03-01-110)" before starting the work.

Precaution on New Installation

Table 2.1-1 New Installation Procedure Table

No.	Working Item	Model Number	Page
1	Unpacking and Inspection	—	INST03-02-10 through 70
1A	DKC or DKU Door Kit Installation (DKC-F510I-DH/DS/DHR/DSR, DKU-F505I-DH/DS/DHR/DSR)	←	INST03-17-10 through 120
2	Basic Subsystem Installation (DKC510I-5/5R)	←	INST03-03-10 through 80
2A	Breaker Box for CE Laptop PC Installation (DKC-F510I-PCBR/PCBRR)	←	INST03-16-10 through 90
3	Disk Unit Installation (DKU505I-18/18R)	←	INST03-04-10 through 320
4	AC Box Installation (DKC-F510I-1PS/1PSD/3PS/1PSR/1PSDR/3PSR)	←	INST03-05-10 through 130
5	AC Power Cable Installation (DKC-F510I-1EC/1UC/1ECD/1UCD/1ECR/1UCR/ 1ECDR/1UCDR/3ECR/3UCR, DKC-F460I-3ECD/3UCD)	←	INST03-06-10 through 410
6	Power Control Interface kit Installation (DKC-F510I-PCI/PCIR)	←	INST03-12-10 through 50
7	Additional Power Supply Installation (DKC-F510I-AP/APR)	←	INST03-09-10 through 100 (Only Hardware Procedure)

(To be continued.)

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(Continued from preceding sheet.)

No.	Working Item	Model Number	Page
8	Channel Adapter, CSW and Battery Installation (DKC-F510I-16S/8MS/8ML/16MSR/16MLR/ 16MFSR/16MFLR/16MFL4R/16HS/32HS/8NS/ CSW/AB/16SR/8MSR/8MLR/8HSR/16HSR/32HSR/ 8NSR/32FSR/8FS2R/16FS2R/32FS2R/8ISR/ CSWR/ABR)	16S/CSW/AB/ 16SR/CSWR/ ABR	INST03-07A-10 through 210 (Only Hardware Procedure)
		16HS/32HS/ CSW/AB/8HSR/ 16HSR/32HSR/ 32FSR/8FS2R/ 16FS2R/32FS2R/ CSWR/ABR	INST03-07B-10 through 210 (Only Hardware Procedure)
		8MS/8ML/ 16MSR/16MLR/ CSW/AB 8MSR/8MLR/ CSWR/ABR/ 16MFSR/ 16MFLR/ 16MFL4R	INST03-07C-10 through 210 (Only Hardware Procedure)
		8NS/CSW/AB/ 8NSR/CSWR/ ABR	INST03-07D-10 through 200 (Only Hardware Procedure)
		8ISR/CSW/AB/ CSWR/ABR	INST03-07E-10 through 200 (Only Hardware Procedure)
9	Shared memory Installation (DKC-F510I-AB/S1G/SX/ABR/S1GR/SXR/S2GR/ SX1GR)	←	INST03-08A-10 through 240 (Only Hardware Procedure)
10	Cache memory Installation (DKC-F510I-AB/C4G/CX/ABR/C4GR/CXR/C8GR/ CX1GR)	←	INST03-08B-10 through 260 (Only Hardware Procedure)
Note	**When installing more than 64 HDD canisters of the type shown below to a Disk Unit, refer to INST01-720.** **HDD Canister that needs restriction above** **DKU-F505I-146KSR, DKU-F505I-146K1R: Part Name only DKS2D-K146FC**		
11	DEV Interface Cable, Battery, CSW, Additional Disk Adapter, FSW and HDD Canister Installation (DKC-F510I-400/CSW/AB/R11C/R12C/L11C/L12C/ 400R/CSWR/ABR/R11CR/R12CR/L11CR/L12CR, DKU-F505I-FSWA/EXC/72KS/72JSR/72KSR/ 146JS/146JSR/146KSR/300JSR/300KSR/400JSR/ 72K1R/146J1R/146K1R/300J1R/FSWAR/EXCR)	←	INST03-10-10 through 10C-1270 (Only Hardware Procedure)
12	SVP High Reliability Kit Installation (DKC-F510I-SVP/MDM/SVPR/MDMR)	←	INST03-11-10 through 620 (Only Hardware Procedure)
13	Changing of Fibre SFP Transceiver (DKC-F510I-1HL/1HS/1HLR/1HSR/1FLR/1FSR/ 1FL4R)	←	INST03-15-10 through 80
14	SVP “New Installation” Procedure	—	INST02-250
15	END		

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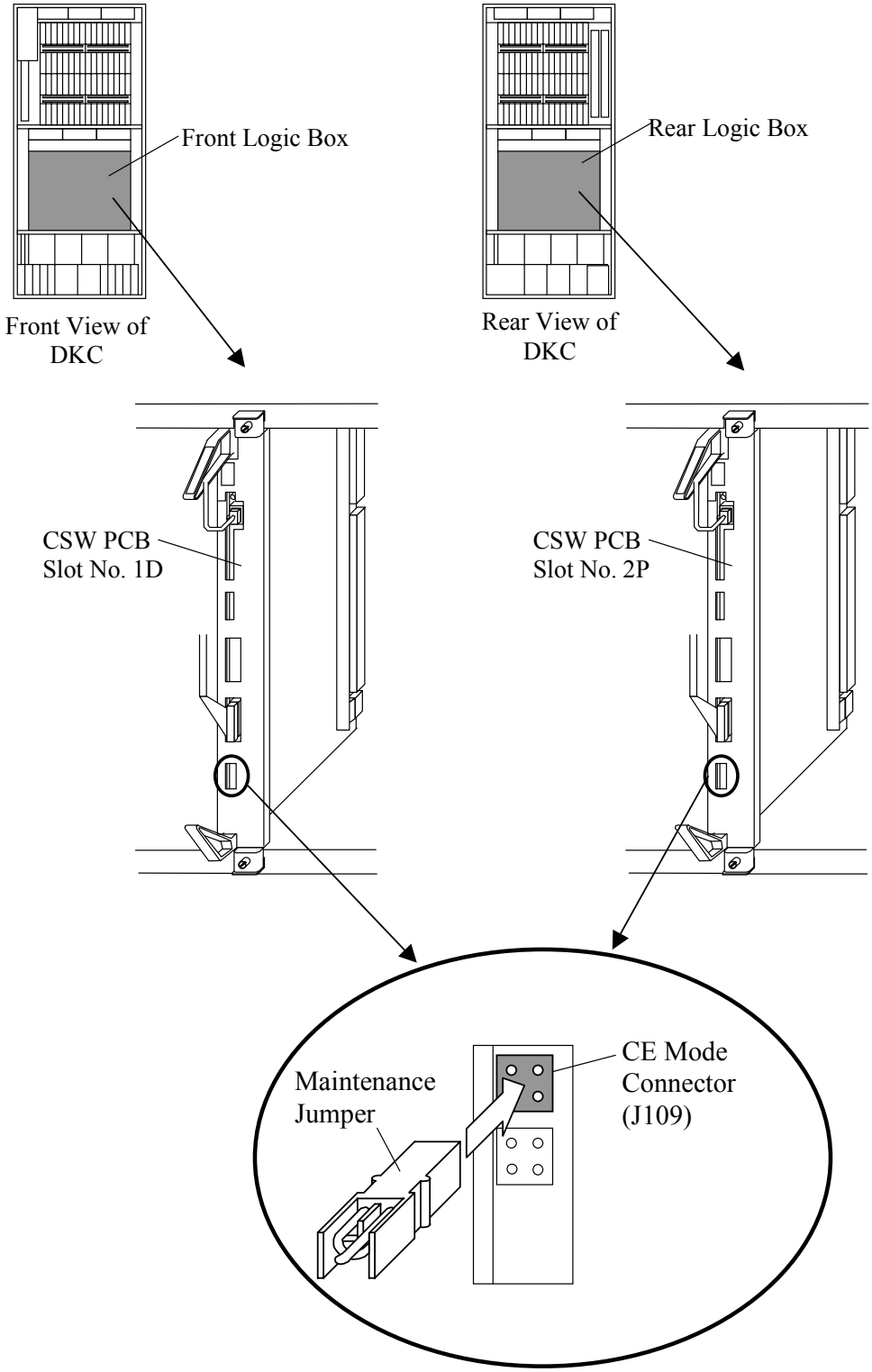
Note: The Maintenance Jumper of the CE Mode Connector (J109).



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2.2 Non-Disruptive Installation Procedure Table

Note: 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.16) 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 INST02-100 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).
- 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.
- See "3.1.4 Working Procedure for Upgrade or Replacement of HDD Canister (INST03-01-110)" before starting the work.

Table 2.2-1 Non-Disruptive Installation Procedure Table

No.	Working Item	Model Number	Page
1	Display the SVP initial screen	←	SVP01-10 through
2	Confirm the micro-version		OPTVER01-10
3	Additional Power Supply Installation (DKC-F510I-AP/APR)	←	INST03-09-10 through 100
Note	**When the number of CU is set to 65 or more, check the required shared memory capacity in advance.** **If the expansion of the share memory is necessary, perform the work No.5, No.4 in this order.**		

(To be continued.)

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(Continued from preceding sheet.)

No.	Working Item	Model Number	Page
4	Channel Adapter, CSW and Battery Installation (DKC-F510I-16S/8MS/8ML/16MSR/16MLR/ 16MFSR/16MFLR/16MFL4R /16HS/32HS/8NS/ CSW/AB/16SR/8MSR/8MLR/8HSR/16HSR/ 32HSR/8NSR/32FSR/8FS2R/16FS2R/32FS2R/ 8ISR/CSWR/ABR)	16S/CSW/AB/ 16SR/CSWR/ABR	INST03-07A-10 through 210
		16HS/32HS/ CSW/AB/8HSR/ 16HSR/32HSR/ 32FSR/8FS2R/ 16FS2R/32FS2R/ CSWR/ABR	INST03-07B-10 through 210
		8MS/8ML/16MSR/ 16MLR/CSW/AB/ 8MSR/8MLR/ CSWR/ABR/ 16MFSR/16MFLR/ 16MFL4R	INST03-07C-10 through 210
		8NS/CSW/AB/ 8NSR/CSWR/ABR	INST03-07D-10 through 200
		8ISR/CSW/AB/ CSWR/ABR	INST03-07E-10 through 200
4a	CHA PCB type change (DKC-F510I-8MS/8ML/16HS/32HS/8MSR/8MLR/ 16MSR/16MLR/16MFSR/16MFLR/16MFL4R/ 8HSR/16HSR/32HSR/32FSR/8FS2R/16FS2R/32 FS2R)	←	INST03-18-10 through 150
5	Shared memory Installation (DKC-F510I-AB/S1G/SX/ABR/S1GR/SXR/ S2GR/SX1GR)	←	INST03-08A-10 through 240
6	Cache memory Installation (DKC-F510I-AB/CX/C4G/ABR/CXR/C4GR/ C8GR/CX1GR)	←	INST03-08B-10 through 260
6a	Change CM Module group size (DKC-F510I-C4G/C4GR/C8GR)	←	INST03-08D-10 through 110
7	AC Box Installation (DKC-F510I-1PS/1PSD/3PS/1PSR/1PSDR/ 3PSR)	←	INST03-05-10 through 130
8	AC Power Cable Installation (DKC-F510I-1EC/1UC/1ECD/1UCD/1ECR/ 1UCR/1ECDR/1UCDR/3ECR/3UCR, DKC-F460I-3ECD/3UCD)	←	INST03-06-10 through 410
8A	Breaker Box for CE Laptop PC Installation (DKC-F510I-PCBR/PCBRR) Note: When the DKU-L1 is installed, the DKC-F510I-PCBR/PCBRR cannot be installed.	←	INST03-16-10 through 90
8B	DKU Door Kit Installation (DKU-F505I-DH/DS/DHR/DSR)	←	INST03-17-90 through 120

(To be continued.)

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(Continued from preceding sheet.)

No.	Working Item	Model Number	Page
9	Disk Unit Installation (DKU505I-18/18R) Perform the installation of the DKU frame, setting of the ALPA jumper, setting of the FSW switch, and connection of the power cable.	←	INST03-04-10 through 320
Note	**Caution: When the addition of the DKU frame (DKU505I-18/18R) is accompanied, perform the work No.9 (Disk Unit Installation) and the work No.10 (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 INST07-30 ~ 97U).** **If necessary, see INST03-08A-10.**		
Note	**When the number of CU is set to 65 or more, check that the range of the CU number that can be connected to the port with CHA is set to 40-FE. (Refer to INST05-400 through 480.)**		
Note	**When installing more than 64 HDD canisters of the type shown below to a Disk Unit, refer to INST01-720.** **HDD Canister that needs restriction above** **DKU-F505I-146KSR, DKU-F505I-146K1R: Part Name only DKS2D-K146FC**		
10	POWER ON of Disk Unit (DKU505I-18/18R)	—	INST03-14-10 through 30
11	DEV Interface Cable, Battery, CSW, Additional Disk Adapter, FSW and HDD Canister Installation (DKC-F510I-400/CSW/AB/R11C/R12C/L11C/L12C/400R/CSWR/ABR/R11CR/R12CR/L11CR/L12CR, DKU-F505I-FSWA/EXC/72KS/72JSR/72KSR/146JS/146JSR/146KSR/300JSR/300KSR/400JSR/72K1R/146J1R/146K1R/300J1R/FSWAR/EXCR)	←	INST03-10-10 through 10C-1270
12	SVP High Reliability Kit Installation (DKC-F510I-SVP/MDM/SVPR/MDMR)	←	INST03-11-10 through 620
13	Power Control Interface kit Installation (DKC-F510I-PCI/PCIR)	←	INST03-12-10 through 50
14	Changing of Fibre SFP Transceiver (DKC-F510I-1HL/1HS/1HLR/1HSR/1FLR/1FSR/1FL4R)	←	INST03-15-10 through 80
15	Setup on SVP Installation		NAS03-110
16	NAS OS Installation		NAS03-310
17	END	—	—

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2.3 Non-Disruptive De-installation Procedure Table

Note: 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.14) shown in the table below. Neglect an 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 INST02-150 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).
- See "3.1.4 Working Procedure for Upgrade or Replacement of HDD Canister (INST03-01-110)" before starting the work.

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

No.	Working Item	Model Number	Page
1	Display the SVP initial screen	←	SVP01-10 through
2	DEV Interface Cable, Battery, CSW, Additional Disk Adapter, FSW and HDD Canister De-Installation (DKC-F510I-400/R11C/R12C/L11C/L12C/AB/CSW/400R/R11CR/R12CR/L11CR/L12CR/ABR/CSWR, DKU-F505I-FSWA/72KS/72JSR/72KSR/146JS/146JSR/146KSR/300JSR/300KSR/400JSR/72K1R/146J1R/146K1R/300J1R/EXC/FSWAR/EXCR)	←	INST04-01-10 through 01C-1350
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 (DKU505I-18/18R) **Turn off the main breaker of the DKU.**	←	INST04-02-10 through 160

(To be continued.)

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No.	Working Item	Model Number	Page
Note	**When the number of CU is set to 64 or less from 65 or more in No.4A, de-install all CHAs, whose range of the CU number that can be connected to the port is set to 40-FE, in No.4 in advance, and then go to No. 4A.**		
4	Channel Adapter, CSW and Battery De-Installation (DKC-F510I-16S/8MS/8ML/16MSR/16MLR/16MFSR/16MFLR/16MFL4R /16HS/32HS/8NS/CSW/AB/16SR/8MSR/8MLR/8HSR/16HSR/32HSR/8NSR/32FSR/8FS2R/16FS2R/32FS2R/8ISR/CSWR/ABR)	16S/CSW/AB/16SR/CSWR/ABR	INST04-04A-10 through 200
		16HS/32HS/CSW/AB/8HSR/16HSR/32HSR/32FSR/8FS2R/16FS2R/32FS2R/CSWR/ABR	INST04-04B-10 through 200
		8MS/8ML/16MSR/16MLR/CSW/AB/8MSR/8MLR/CSWR/ABR/16MFSR/16MFLR/16MFL4R	INST04-04C-10 through 200
		8NS/CSW/AB/8NSR/CSWR/ABR	INST04-04D-10 through 200
		8ISR/CSW/AB/CSWR/ABR	INST04-04E-10 through 200
4A	Shared memory De-Installation (DKC-F510I-AB/S1G/SX/ABR/S1GR/SXR/S2GR/SX1GR)	←	INST04-03A-10 through 260
5	Cache memory De-Installation (DKC-F510I-AB/CX/C4G/ABR/CXR/C4GR/C8GR/CX1GR)	←	INST04-03B-10 through 260
6	Channel Adapter, CSW and Battery De-Installation (DKC-F510I-16S/8MS/8ML/16MSR/16MLR/16MFSR/16MFLR/16MFL4R/16HS/32HS/8NS/CSW/AB/16SR/8MSR/8MLR/8HSR/16HSR/32HSR/8NSR/32FSR/8FS2R/16FS2R/32FS2R/8ISR/CSWR/ABR)	16S/CSW/AB/16SR/CSWR/ABR	INST04-04A-10 through 200
		16HS/32HS/CSW/AB/8HSR/16HSR/32HSR/32FSR/8FS2R/16FS2R/32FS2R/CSWR/ABR	INST04-04B-10 through 200
		8MS/8ML/16MSR/16MLR/CSW/AB/8MSR/8MLR/CSWR/ABR/16MFSR/16MFLR/16MFL4R	INST04-04C-10 through 200
		8NS/CSW/AB/8NSR/CSWR/ABR	INST04-04D-10 through 200
		8ISR/CSW/AB/CSWR/ABR	INST04-04E-10 through 200

(To be continued.)

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No.	Working Item	Model Number	Page
7	Additional Power Supply De-Installation (DKC-F510I-AP/APR)	←	INST04-05-10 through 110
8	AC Box De-Installation (DKC-F510I-1PS/1PSD/3PS/1PSR/1PSDR/3PSR)	←	INST04-08-10 through 150
9	AC Power Cable De-Installation (DKC-F510I-1EC/1UC/1ECD/1UCD/1ECR/1UCR/ 1ECDR/1UCDR/3ECR/3UCR, DKC-F460I-3ECD/3UCD)	←	INST04-09-10 through 340
10	SVP High Reliability Kit De-Installation (DKC-F510I-SVP/MDM/SVPR/MDMR)	←	INST04-06-10 through 210
11	Power Control Interface kit De-Installation (DKC-F510I-PCI/PCIR)	←	INST04-07-10 through 40
12	Changing of Fibre SFP Transceiver (DKC-F510I-1HL/1HS/1HLR/1HSR/1FLR/1FSR/ 1FL4R)	←	INST03-15-10 through 80
13	Breaker Box for CE Laptop PC De-Installation (DKC-F510I-PCBR/PCBRR) Note: When the DKU-L1 is installed, the DKC-F510I-PCBR/PCBRR cannot be removed.	←	INST04-10-10 through 90
14	DKU Door Kit De-Installation (DKC-F510I-DH/DS/DHR/DSR, DKU-F505I-DH/DS/DHR/DSR)	←	INST04-11-10 through 110
15	END	—	—

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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 INST02-100 to locate a faulty unit and take action. If any other message than the list is displayed, see the SVP Message section.

Precautions on Disruptive Installation

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

Table 2.4-1 Disruptive Installation Procedure Table

No.	Working Item	Model Number	Page
1	Display the SVP initial screen	←	SVP01-10 through
2	Confirm the micro-version		OPTVER01-10
3	POWER OFF of Disk Subsystem	—	INST03-14-50 through 60
4	Power Control Interface kit Installation (DKC-F510I-PCI/PCIR)	←	INST03-12-10 through 50 (Only Hardware Procedure)
5	AC Box Installation (DKC-F510I-3PS/1PS/1PSD/3PSR/1PSR/1PSDR)	←	INST03-05-10 through 130 (Only Hardware Procedure)
6	AC Power Cable Installation (DKC-F510I-1EC/1UC/1ECD/1UCD/1ECR/1UCR/1ECDR/1UCDR/3ECR/3UCR, DKC-F460I-3ECD/3UCD)	←	INST03-06-10 through 410 (Only Hardware Procedure)
7	Breaker Box for CE Laptop PC Installation (DKC-F510I-PCBR/PCBRR) Note: When the DKU-L1 is installed, the DKC-F510I-PCBR/PCBRR cannot be installed.	←	INST03-16-10 through 90
8	POWER ON of Disk Subsystem	—	INST03-14-10 through 30 (Only Hardware Procedure)
9	AC Box Configuration Setting and Confirmation	—	INST03-05-140 through 250
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 INST02-150 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	Display the SVP initial screen	←	SVP01-10 through
2	AC Box Configuration Setting and Confirmation	—	INST03-05-140 through 250
3	POWER OFF of Disk Subsystem	—	INST03-14-50 through 60
4	AC Box De-Installation (DKC-F510I-3PS/1PS/1PSD/3PSR/1PSR/1PSDR)	←	INST04-08-10 through 150 (Only Hardware Procedure)
5	AC Power Cable De-Installation (DKC-F510I-1EC/1UC/1ECD/1UCD/1ECR/1UCR/1ECDR/1UCDR/3ECR/3UCR, DKC-F460I-3ECD/3UCD)	←	INST04-09-10 through 340 (Only Hardware Procedure)
6	Power Control Interface kit De-Installation (DKC-F510I-PCI/PCIR)	←	INST04-07-10 through 40
7	Breaker Box for CE Laptop PC De-Installation (DKC-F510I-PCBR/PCBRR) Note: When the DKU-L1 is installed, the DKC-F510I-PCBR/PCBRR cannot be removed.	←	INST04-10-10 through 90
8	POWER ON of Disk Subsystem	—	INST03-14-10 through 30
9	END	—	—

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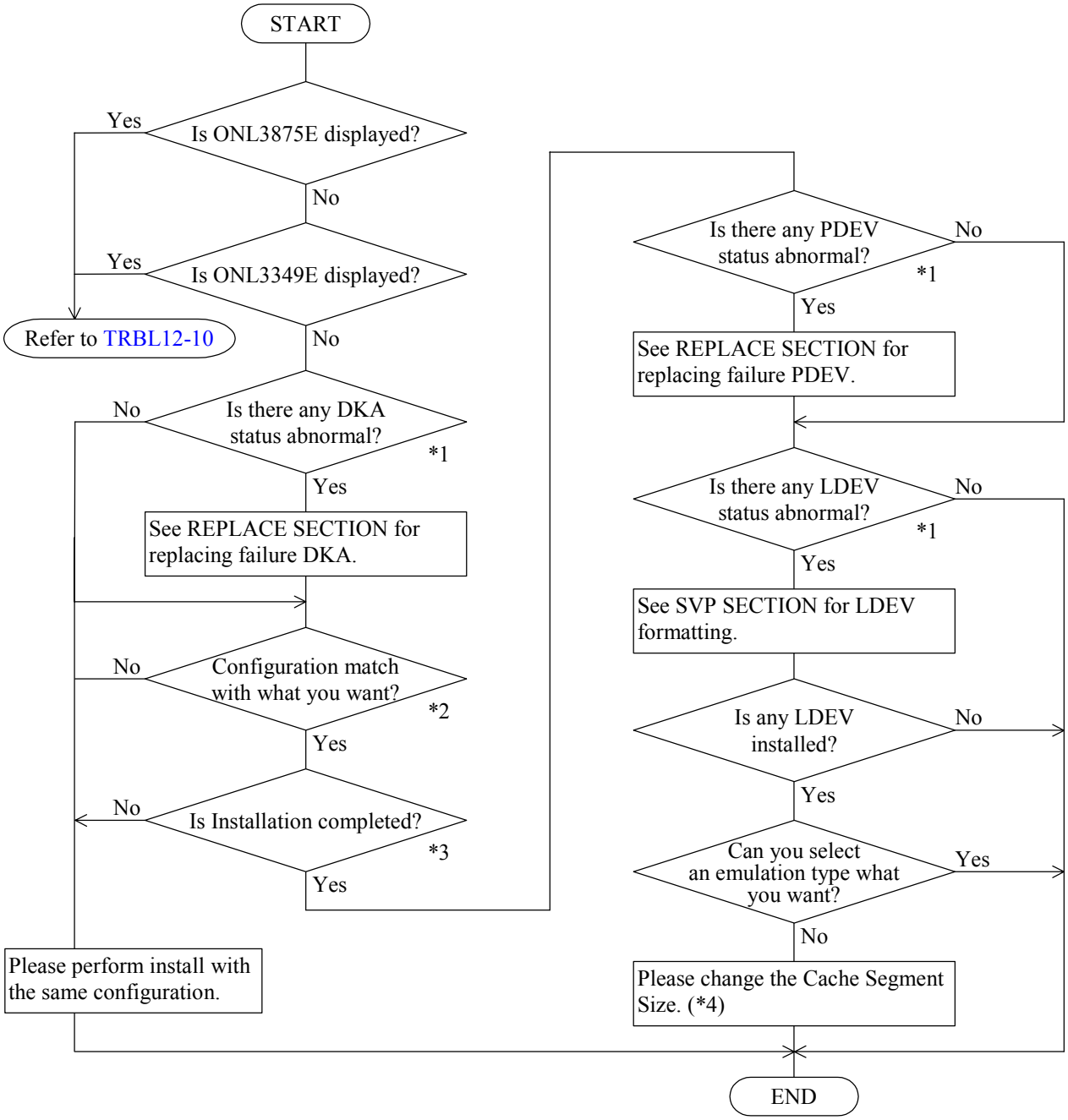
2.6 Trouble shooting for errors in install SVP procedure

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?

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*4: [Procedure]

(1) Select “Cache Segment Size” in the “System Option” Window.
(Refer SVP02-970)

Table 2.6.1-1 Cache Segment Size and that support emulation type

Cache Segment Size	Emulation Type
48 K byte	3380-K/3, H6586-K, F642X-H
58 K byte	3390-M/L/9/3/2, K-6588-3/9
64 K byte	All

Note: When you select some LDEV emulation types of different Cache Segment Size in a subsystem, Cache Segment Size treated with the subsystem is the maximum value.

(2) Replace SM-1SA and SM-2SB.
SM PK is used that has been used.
(Refer REP03-60)

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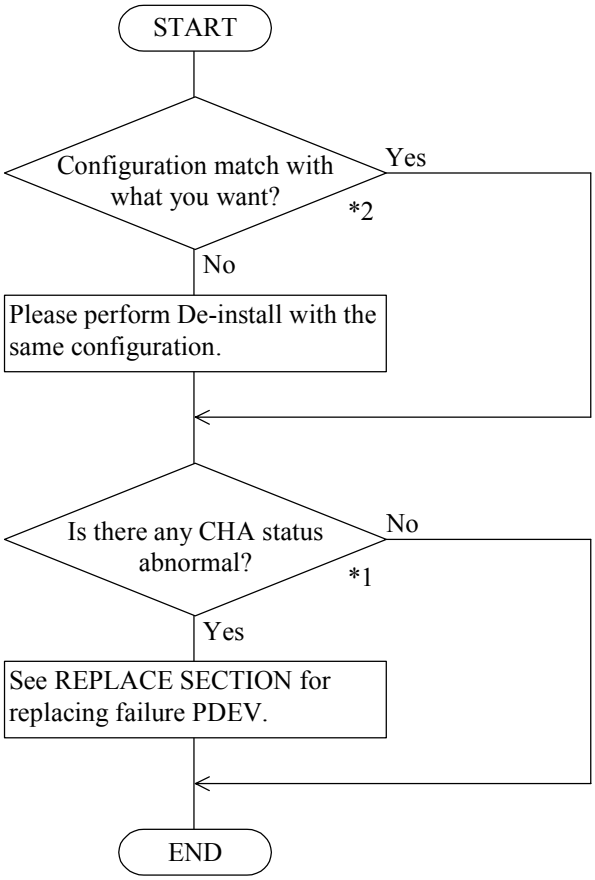
2.6.2 Number of Channel



*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.

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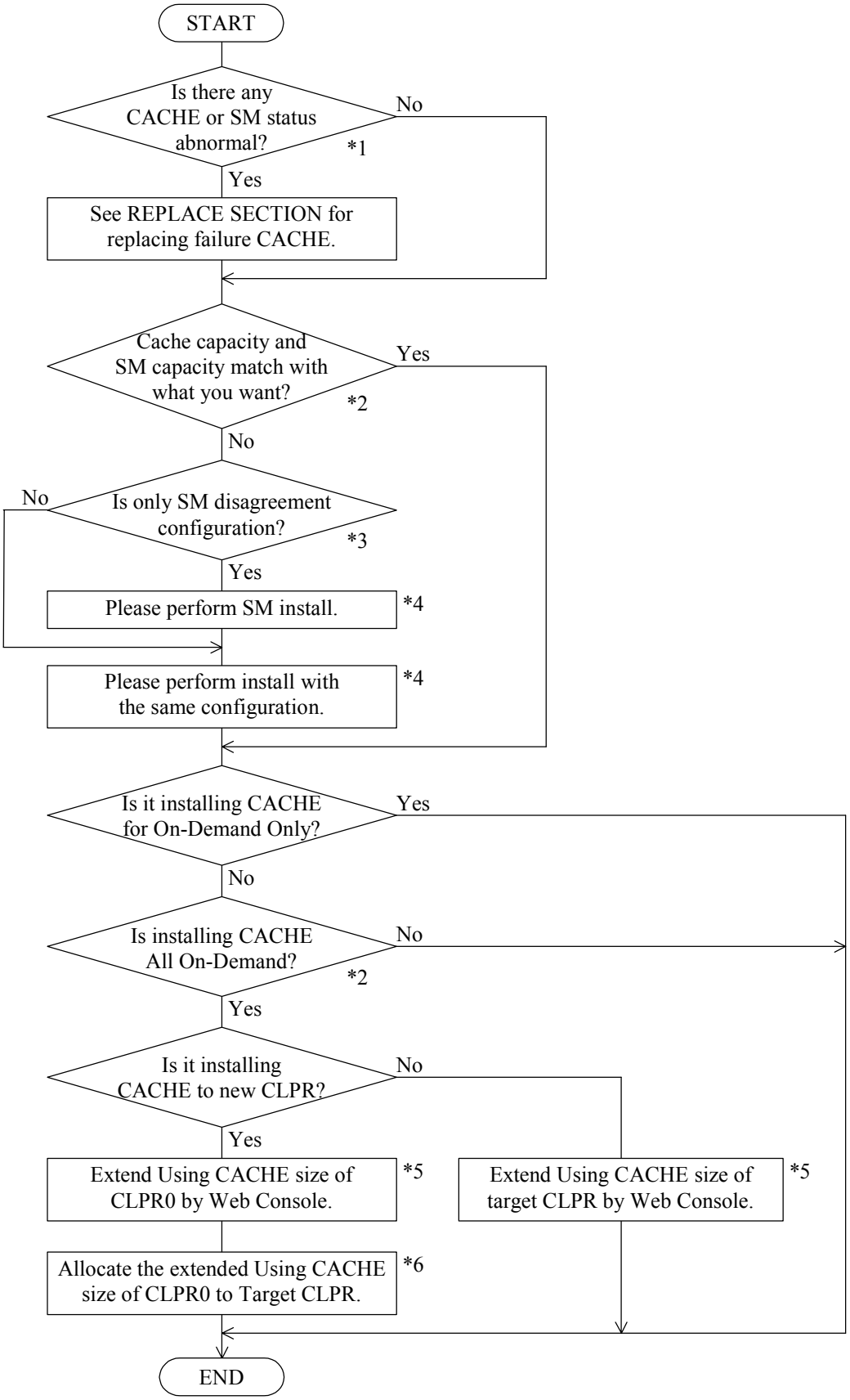
2.6.3 Cache Capacity



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*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: The installation of the cluster 1 may be completed depending on the contents of the installation failure. In this case, if the installation is performed again, processing will begin from the cluster 2.

*5: 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.

*6: Select (CL) [Web Console] – [Partition Definition] in the 'SVP' Window.
Extend Cache memory reference to [Remote Console – Virtual Partition Manager User's Guide] – 4.3.

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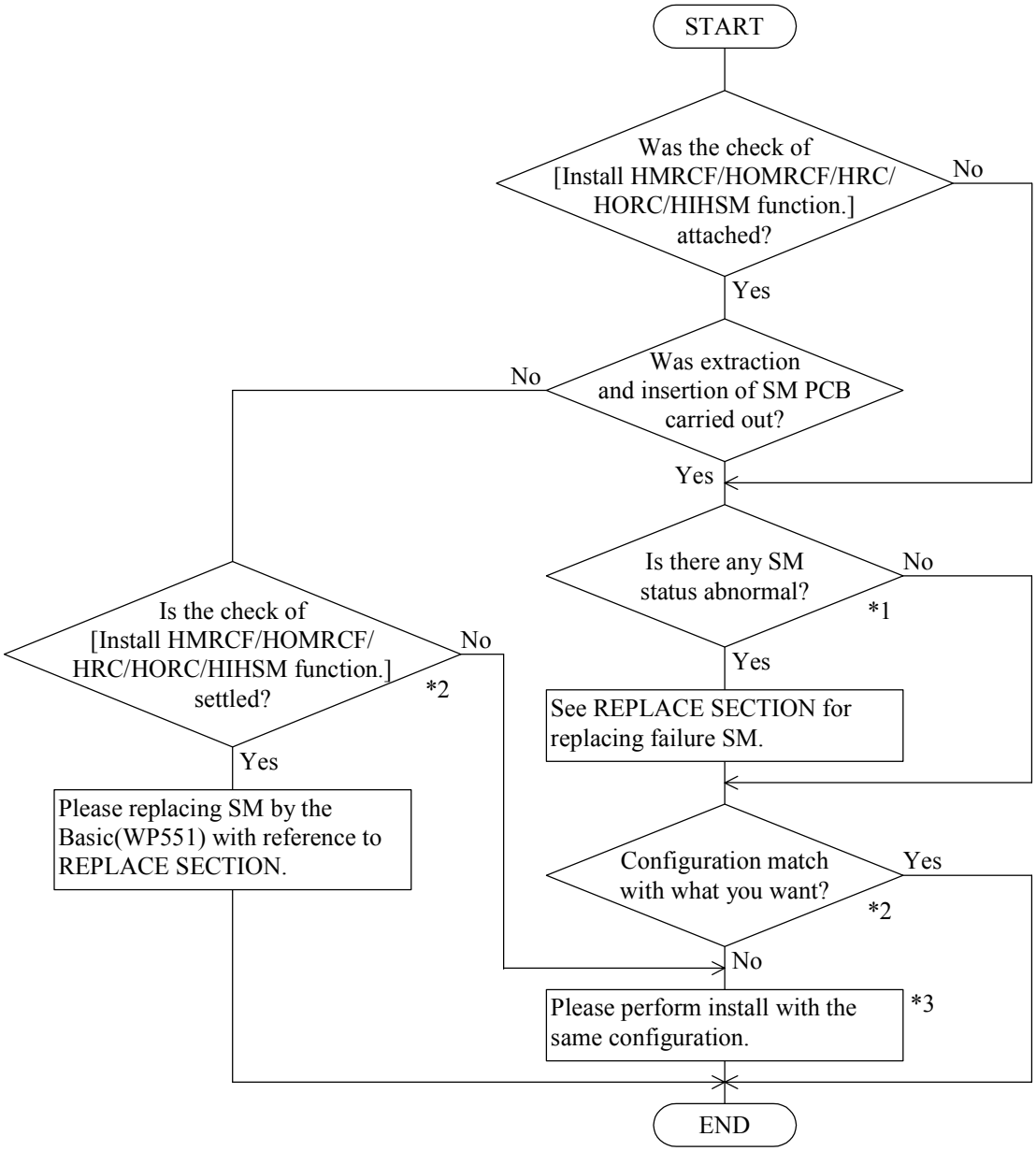
2.6.4 SM Capacity



*1: Select (CL) [Maintenance] in the 'SVP' Window.

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

*3: The installation of the cluster 1 may be completed depending on the contents of the installation failure. In this case, if the installation is performed again, processing will begin from the cluster 2.

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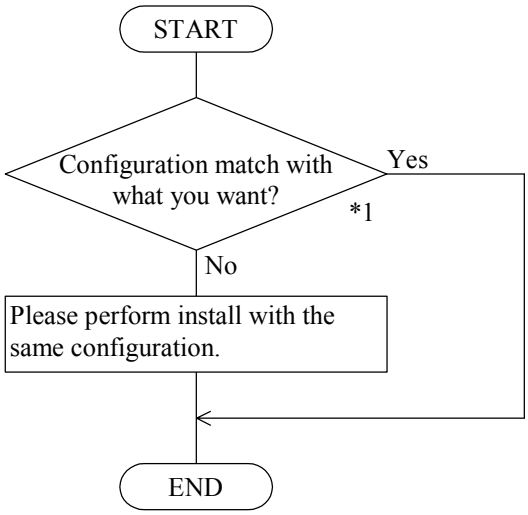
2.6.5 Power Supply



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

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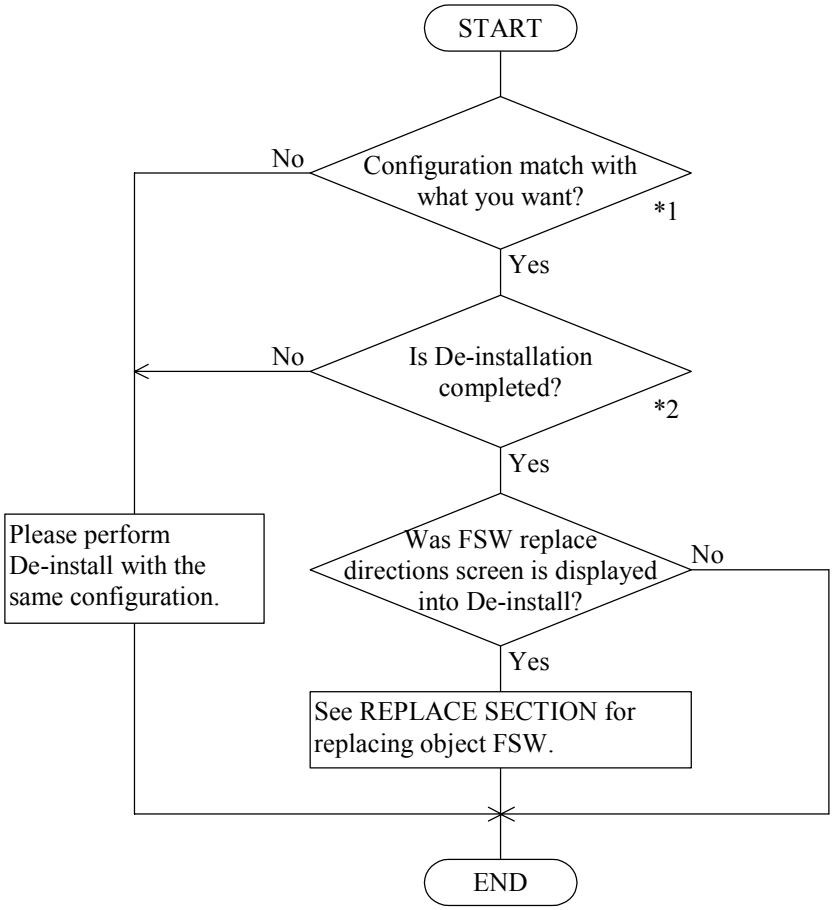
2.7 Trouble shooting for errors in de-install SVP procedure

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?

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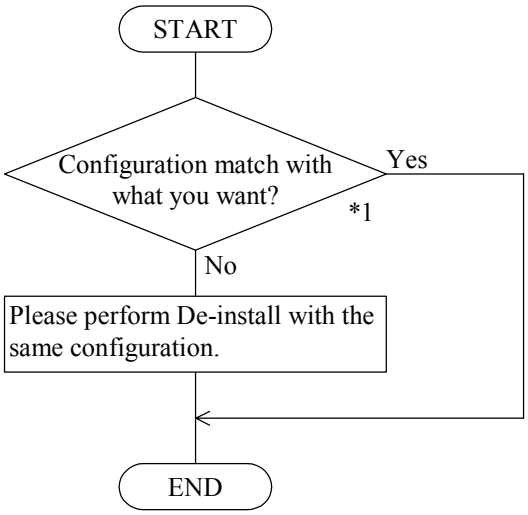
2.7.2 Number of Channel



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

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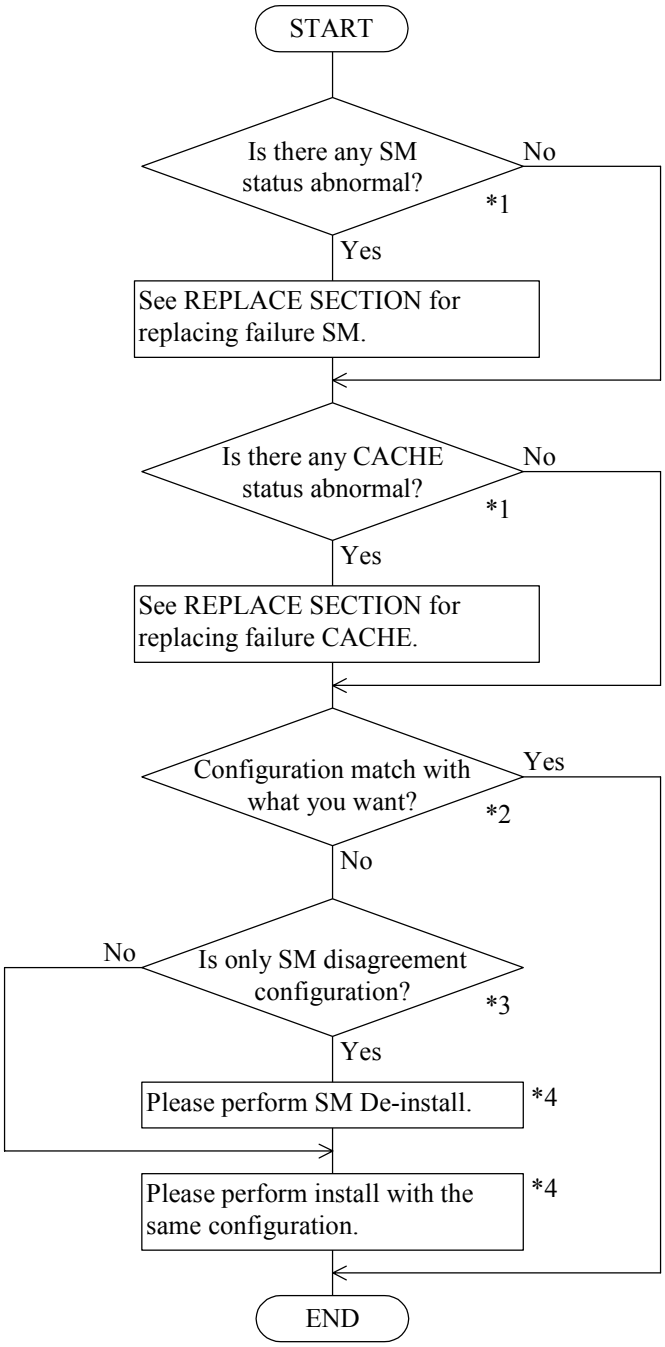
2.7.3 Cache Capacity



*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?

*4: The de-installation of the cluster 1 may be completed depending on the contents of the de-installation failure. In this case, if the de-installation is performed again, processing will begin from the cluster 2.

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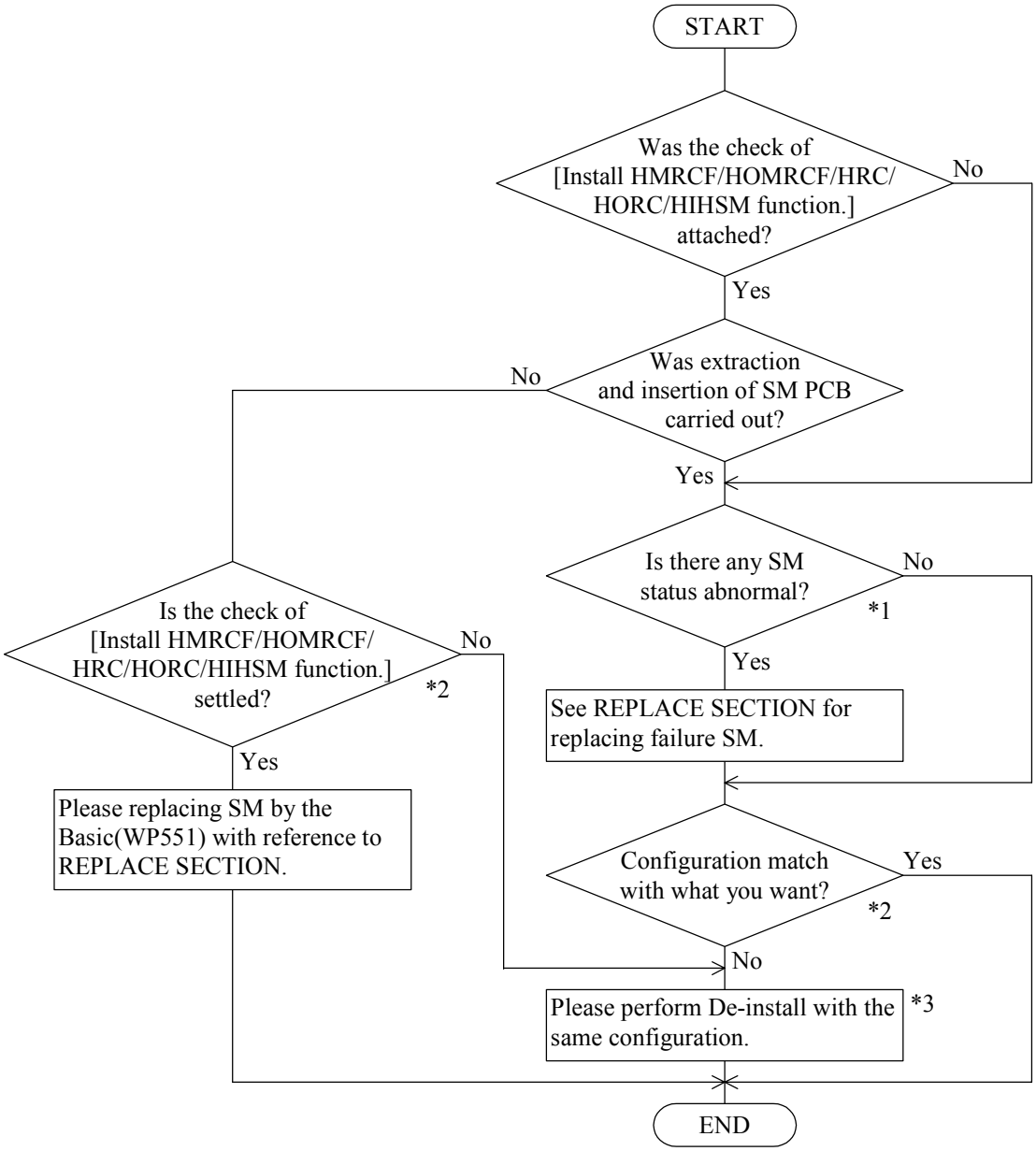
2.7.4 SM Capacity



*1: Select (CL) [Maintenance] in the 'SVP' Window.

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

*3: The de-installation of the cluster 1 may be completed depending on the contents of the de-installation failure. In this case, if the de-installation is performed again, processing will begin from the cluster 2.

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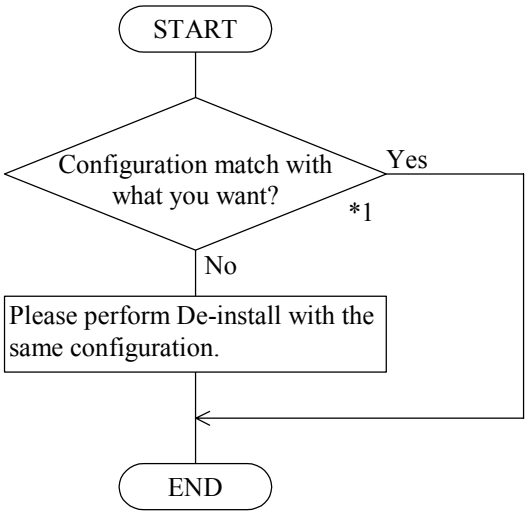
2.7.5 Power Supply



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

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2.8 (Blank)

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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 MESSAGE 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 – Emulation –Type' of CHE is installed, SVP displays a warning message with SVP 3289W.

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(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 or SM	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 or SM	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.

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(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	—	×	×		×		×		×	

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(5) Availability of the Installation and De-installation when HRC/HORC is used

JNL-GROUP

Component	Maintenance Type	Condition	HRC path established		Initial		Active	
			MCU	RCU	MCU	RCU	MCU	RCU
HDD canister	Installation	—	×	×	×	×	×	×
	De-installation	—	×	×	SVP3825W	SVP3825W	SVP3825W	SVP3825W
CACHE or SM	Installation	—	×	×	×	×	×	×
	De-installation	—	×	×	×	×	×	×
CHE or CHF	Installation	With Alternate path	×	×	×	×	×	×
		Without Alternate path	×	×	×	×	×	×
	De-installation	With Alternate path	×	×	×	×	×	×
		Without Alternate path	×	×	×	×	×	×
DKA	Installation	—	×	×	×	×	×	×
	De-installation	—	×	×	×	×	×	×

Component	Maintenance Type	Condition	Halt		Halting	
			MCU	RCU	MCU	RCU
HDD canister	Installation	—	×	×	×	×
	De-installation	—	SVP3825W	SVP3825W	SVP3825W	SVP3825W
CACHE or SM	Installation	—	×	×	×	×
	De-installation	—	×	×	×	×
CHE or CHF	Installation	With Alternate path	×	×	×	×
		Without Alternate path	×	×	×	×
	De-installation	With Alternate path	×	×	×	×
		Without Alternate path	×	×	×	×
DKA	Installation	—	×	×	×	×
	De-installation	—	×	×	×	×

Component	Maintenance Type	Condition	Stop		Stopping	
			MCU	RCU	MCU	RCU
HDD canister	Installation	—	×	×	×	×
	De-installation	—	SVP3825W	SVP3825W	SVP3825W	SVP3825W
CACHE or SM	Installation	—	×	×	×	×
	De-installation	—	×	×	×	×
CHE or CHF	Installation	With Alternate path	×	×	×	×
		Without Alternate path	×	×	×	×
	De-installation	With Alternate path	×	×	×	×
		Without Alternate path	×	×	×	×
DKA	Installation	—	×	×	×	×
	De-installation	—	×	×	×	×

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DATA-VOL

Component	Maintenance Type	Condition	HRC path established		During initial copy		After completing initial copy	
			MCU	RCU	MCU	RCU	MCU	RCU
HDD canister	Installation	—	×	×	×	×	×	×
	De-installation	—	×	×	SVP2031W	SVP2034W	SVP2031W	SVP2034W
CACHE or SM	Installation	—	×	×	SVP2059W	SVP2079W	×	×
	De-installation	—	×	×	SVP2059W	SVP2079W	×	×
CHE or CHF	Installation	With Alternate path	×	×	×	×	×	×
		Without Alternate path	×	×	×	×	×	×
	De-installation	With Alternate path	×	×	SVP3848W	× (*1)	SVP3848W	× (*1)
		Without Alternate path	×	×	SVP3848W	SVP2073W (*1)	SVP3848W	SVP2074W (*1)
DKA	Installation	—	×	×	×	×	×	×
	De-installation	—	×	×	×	×	×	×

Component	Maintenance Type	Condition	Suspend		Suspending		Deleting	
			MCU	RCU	MCU	RCU	MCU	RCU
HDD canister	Installation	—	×	×	×	×	×	×
	De-installation	—	SVP2031W	SVP2034W	SVP2031W	SVP2034W	SVP2031W	SVP2034W
CACHE or SM	Installation	—	×	×	×	×	×	×
	De-installation	—	×	×	×	×	×	×
CHE or CHF	Installation	With Alternate path	×	×	×	×	×	×
		Without Alternate path	×	×	×	×	×	×
	De-installation	With Alternate path	SVP3848W	× (*1)	SVP3848W	× (*1)	SVP3848W	× (*1)
		Without Alternate path	SVP3848W	SVP2075W (*1)	SVP3848W	SVP2075W (*1)	SVP3848W	SVP2075W (*1)
DKA	Installation	—	×	×	×	×	×	×
	De-installation	—	×	×	×	×	×	×

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

*1: When RCU-TARGET is defined in port(s) of CHA to be maintained, SVP displays a warning message with SVP 3289W.

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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.

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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 (P81-2), have not been connected. (See INST03-11-70.)

② The PC (SVP) is installed and can be used. (For the SVP installation, refer to "REP04-420 ~ REP04-770" of Maintenance Manual.)

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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)-(51) in the following flow)

(2) Processing Flow

The processing flow of the new installation is as follow:

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START

(1)-0 Back up the current Config in the ConfigFD of the same value.
(1)-1 Check the size of the Cache, SM DIMM, CU number and IP address with the DKC and remember them for later use in step (31)-1, (31)-2.
(1)-2 Turn off the "POWER ON/OFF" switch on the DKC Panel.
(1)-3 Make sure the breaker is off (DKU and DKC). (If it is "on", turn off the breaker after the SVP is shut down.).
[Breaker:INST03-14-50 ~ 70 , SVP Shut Down:SVP01-110]
(1)-4 If the PUBLIC LAN (SNMP Web Console) or INTERNAL LAN (ASSIST) or TEL (MODEM) cables in the SVP CON are connected, disconnect them. Do not disconnect other cables. [LOC04-40]
(1)-5 When the SVP High Reliability Kit is to be installed, make sure that the following cables are not connected.
[Cable (P81-2): INST03-11-70]

(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)
[Power ON procedures of Disk Subsystem:INST03-14-10 ~ INST03-14-40]

(3) Set the Maintenance jumper to "SVP PS ON/OFF INH jumper" (JP1).
When the SVP High Reliability Kit is installed, set the Maintenance jumper to "SVP PS ON/OFF INH jumper" (JP1) on the Additional SVP.
[LOC06-40]

(SVP procedure)
(4) Set TOD
(At this time, "Communication Error" may occur. You can ignore the error.)
[INST05-20 ~ INST05-40]

(SVP procedure)
(5) Execute the following procedures:
[Install micro-programs and configuration to the HD to the SVP]
[REP04-450 ~ REP04-610]
step1: Prepare the CD-ROM and CONFIG FD. (*1)
step2: Insert the CD-ROM disk into its drive.
step3: Click "START" on the task bar and select "Uninstallation of Apache, and Perl on the SVP, before insert the CD-ROM.".
step4: Enter the following command: e:\setup.exe (enter)
(Set the CONFIG FD (use the BackUp Config of (1)-0) 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". [INST05-50 ~ INST05-60] (*2)
Besides, do not select "Use Duplex SVP" in the "External IP Address" box.
Config BackUp is accompanies.

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(SVP procedure)
(7) Delete LOGs. [Log Delete:SVP02-180 ~ SVP02-190, SIM LogComplete:SVP02-520 ~ SVP02-530] (*3)

(8) Pull out the Maintenance jumper setting to "SVP PS ON/OFF INH jumper" (JP1).
When the SVP High Reliability Kit is installed, pull out the Maintenance jumper setting to "SVP PS ON/OFF INH jumper" (JP1) on the Additional SVP.

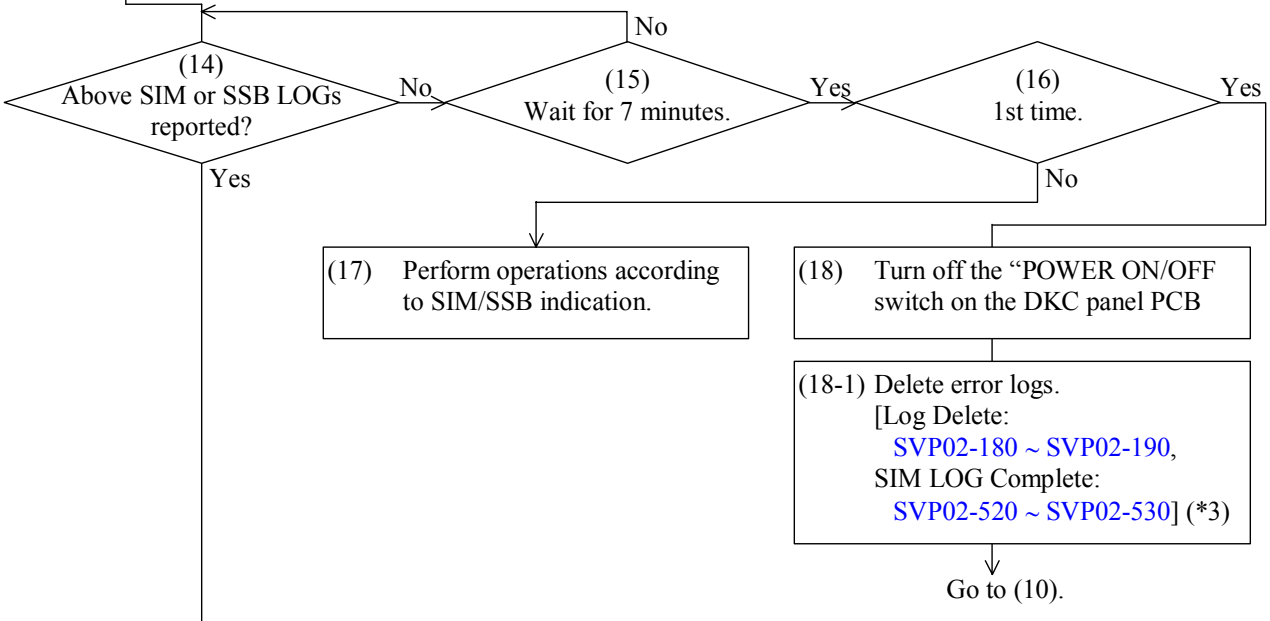
(9) Set all packages to be installed.
Set the packages(CHA,DKA and so on) to be installed to their locations of CL1 and CL2. The same kind of package must be set to the same location of each CL (CL1 and CL2).
[LOC02-50 ~ LOC02-60] (*3-1)

(10) Set the Maintenance Jumpers to CE Mode connectors (J109) on the front/rear all CSW PCBs. (*4)
[INST02-30]

(11) Turn on the "POWER ON/OFF" switch on the DKC Panel. [INST03-14-30]

(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 (J109) on the CSW PCBs again within 30 seconds. The MESSAGE LED is illuminated for about 90 seconds. (*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.) (*6)



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

(20) Turn off the "POWER ON/OFF" switch on the DKC Panel. [INST03-14-50]

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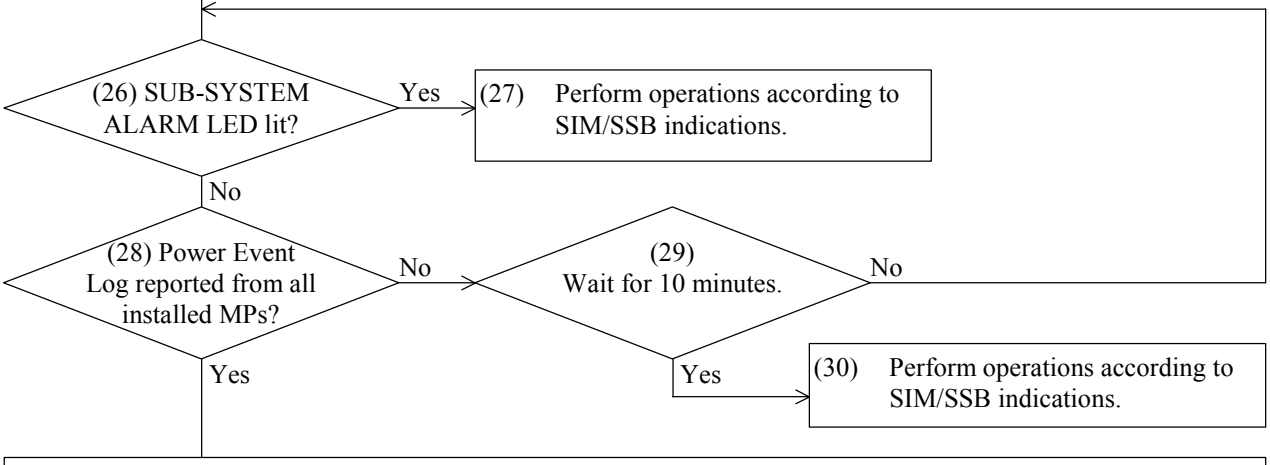
(21) Pull out the Maintenance Jumpers from the all CSW PCBs. (*4)

(22) Delete error logs.
[Log Delete:SVP02-180 ~ SVP02-190, SIM Log Complete:SVP02-520 ~ SVP02-530] (*3)

(23) Shut down the SVP, turn off the Battery and turn off the Breaker (DKC and DKU) to volatilize SM. Then, wait for 10 minutes.
When LDEV is set exceeding 16384 (when the CU number is set to 40 or more), it is necessary to insert the memory in the SM slot in advance. (Refer to INST07-10.)
Turn on the Breaker (DKC and DKU).
[SVP Shut Down:SVP01-110, Breaker:INST03-14-50 ~ INST03-14-70,
Battery Boxes: LOC06-50] (*8)

(24) Execute Power ON procedures
(24)-1 Turn on the Breaker DKC and DKU. [Power ON procedure of Disk Subsystem:INST03-14-10, 20]
(24)-2 (SVP procedure)
Wait until the SVP is ready and change the SVP mode to "Initial setup". (*10)
(24)-3 Turn on the "POWER ON/OFF" switch on the DKC Panel.
[Power ON procedure of Disk Subsystem:INST03-14-30]
(24)-4 Turn on the battery switch.

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



Change the SVP mode to "Initial Setting". (*10)
(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.
Note: Be sure to state that the ConfigFD of new μ to be replaced is used.
[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. (*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. ③ Host Interface Configuration:
② Cache Configuration ④ PDEVs, LDEVs, etc. [INST05-80 ~ INST05-320]

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(32) Delete error logs.
[Log Delete:SVP02-180 ~ SVP02-190, SIM Log Complete:SVP02-520 ~ SVP02-530] (*3)

(33) Connect the LAN cables disconnected at (1)-4, if it is necessary.

(34) Turn on the "POWER ON/OFF" switch on the DKC Panel. [INST03-14-30]

(35) Wait till the READY LED is lit and Power Event Log (SYSTEM ON) is reported from all installed MPs.

(36) SUB-SYSTEM ALARM LED lit?
- Yes → (37) Perform operations according to SIM/SSB indications.
- No ↓

(38) Power Event Log reported from all installed MPs?
- No → (39) Wait for 10 minutes.
  - No → (35)
  - Yes → (40) Perform operations according to SIM/SSB indications.
- Yes ↓

(41) Make sure that the status shows the configuration which was defined in (31)-1, (31)-2. (*12)
[SVP03-10]

(42) Turn off the "POWER ON/OFF" switch on the DKC Panel. [INST03-14-50]

(43) Turn on the "POWER ON/OFF" switch on the DKC Panel. [INST03-14-30]

(SVP procedure)

(44) Execute DKU Path inline test (A9 A6 A3 routine test) [INST05-360 step2.]
[DKU PATH INLINE Test Procedure:DIAG02-90]

(45) Check subsystem status and micro-versions of each MP.
[INST05-360 step 3 (Activating and Terminating STATUS :[SVP03-10])]

(46) Format LDEV [INST05-370]

(47) Execute the "Online Micro program Exchange" for the SSVP
[MICRO-FC04-10]

(48) Check subsystem status.
[INST05-390 step5 (Activating and Terminating STATUS :[SVP03-10])]

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(49) Execute the "Online Micro program Exchange" for the DKU
[MICRO-FC04-10]

(50)
Is the SVP High Reliability Kit installed?

Yes

(50)-1 Execute the SVP Operation. [INST03-11-20 ~ 40]
[INST03-11-100 ~ 250]
(50)-2 Connect cables of the SVP High Reliability Kit. [INST03-11-260]
(50)-3 Execute the SVP Operation. [INST03-11-270 ~ 320]
(50)-4 Execute the SSVP reset. [INST03-11-330]
(50)-5 Execute the SVP Operation. [INST03-11-340 ~ 410]

No

(SVP procedure)
(51) Delete error logs.
[Log delete:SVP02-180 ~ SVP02-190, SIM Log Complete:SVP02-520 ~ SVP02-530] (*3)

END

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*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.

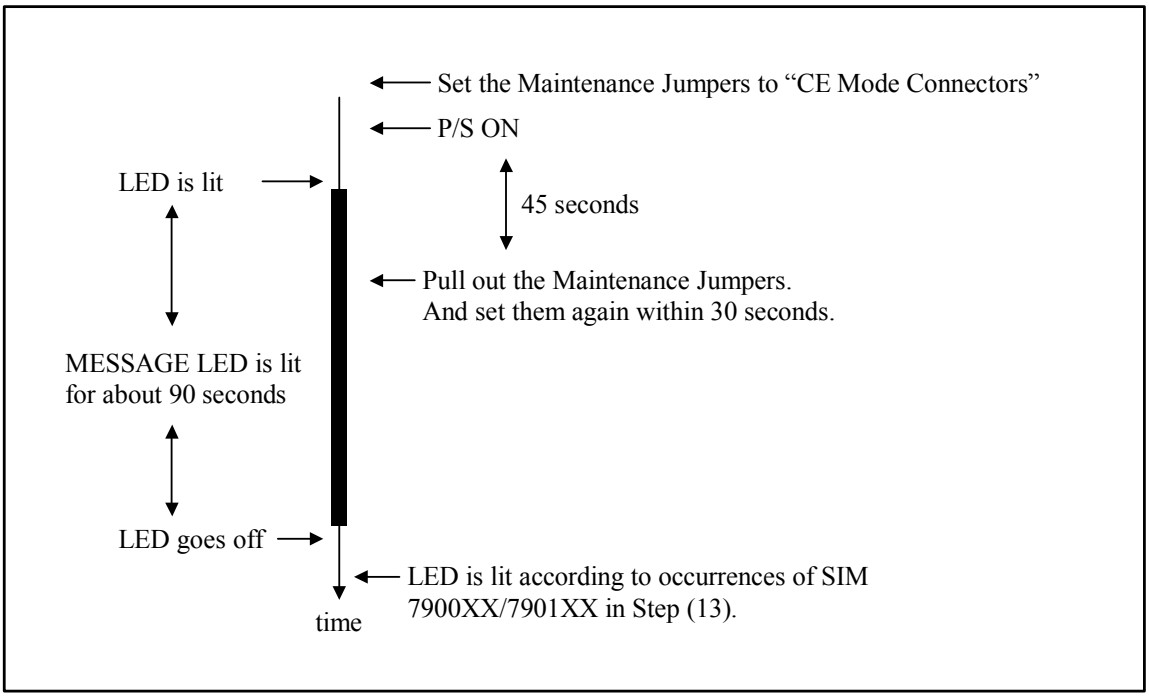
*2 : Even if the "IP Address" is "126.255.255.15" and the "Subnet Mask" is "255.0.0.0" on the screen of "Set IP Address", be sure to select "OK" and reply "OK" to the message "This will reboot SVP.".

*3 : It's necessary to execute the procedure of "SIM Log Complete" before deleting the SIM data.

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

*4 : Refer to the following about the Maintenance Jumpers.
- "INST02-30 Note"

*5 : The detail of the jumper operation is as follows.
(1) Turn on the "POWER ON/OFF" 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, 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 (J109) 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).



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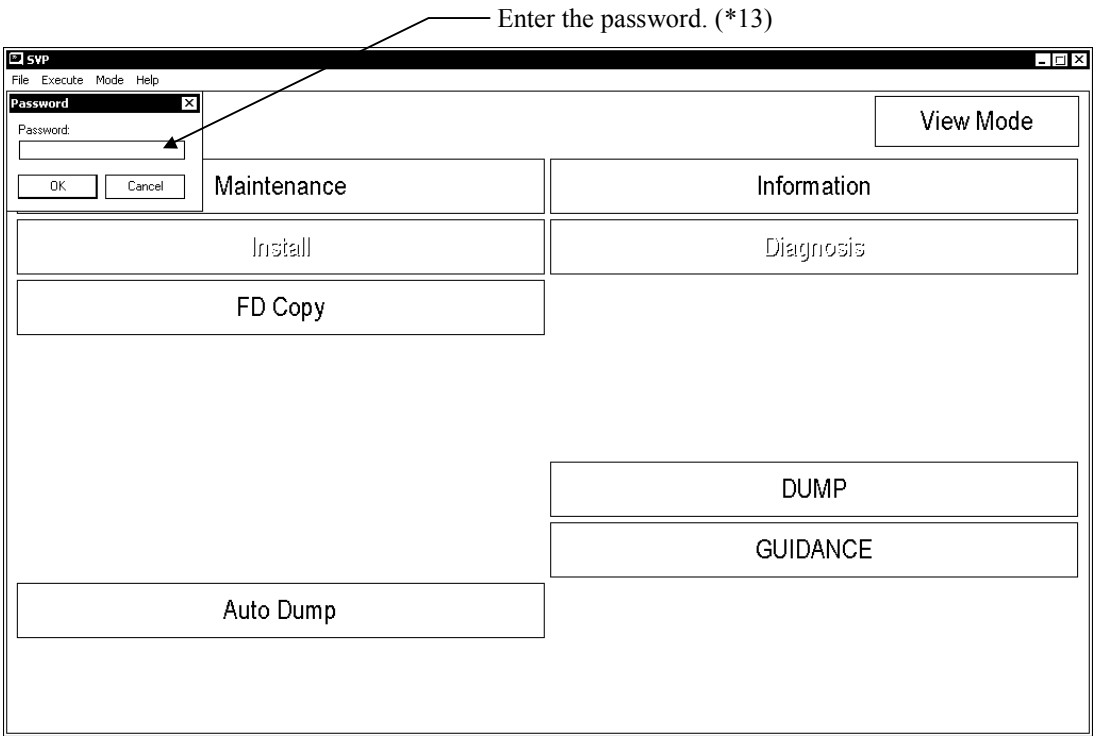
*6 : Count SSB Logs (Error Code = 3309). The number is same as the number of the installed MPs.

*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 division 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 the package type (host interface and so on) of the current packages setting in their locations of "CHA" or "DKA".
② Select "All microprograms". ("Fixed Minimum Configuration" should be selected automatically.) (*14)
③ Select "OK" after finishing the above specifications.

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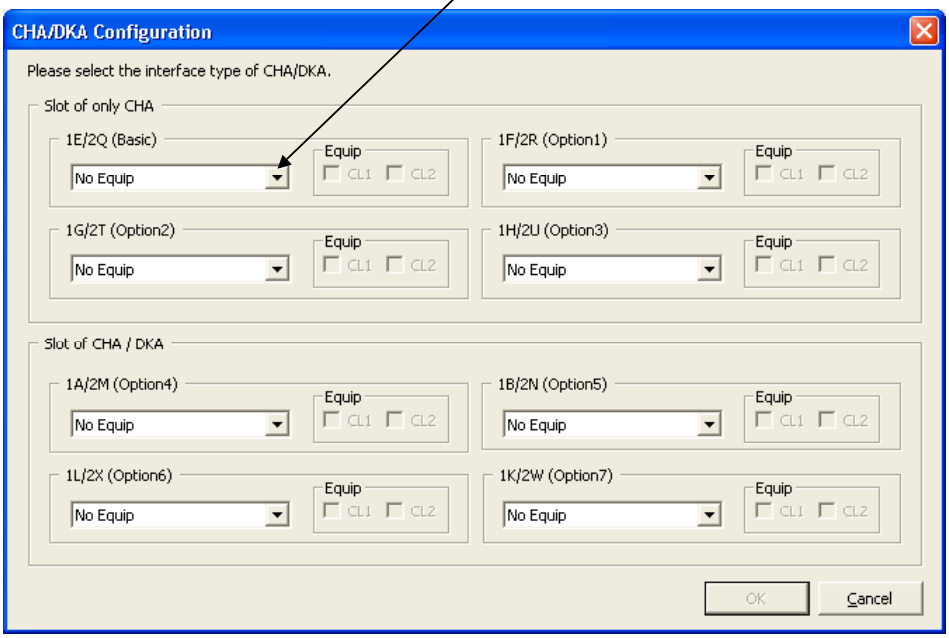
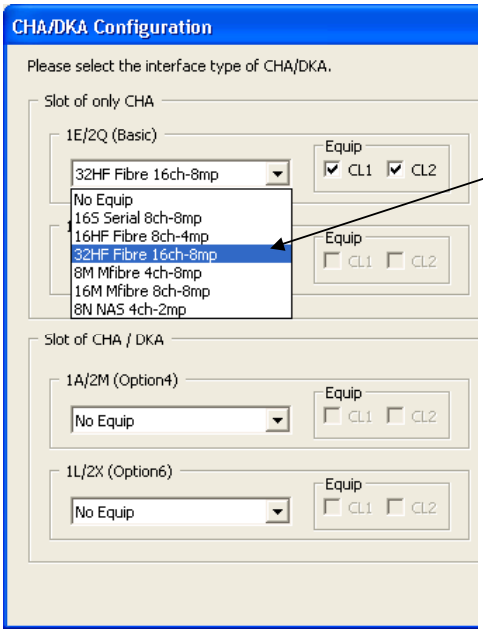
[Example of operations]

- Select installed PCB type

Click here, and the pull-down menu is displayed.





Select one that matches the CHA or DKA type installed for each PCB location.

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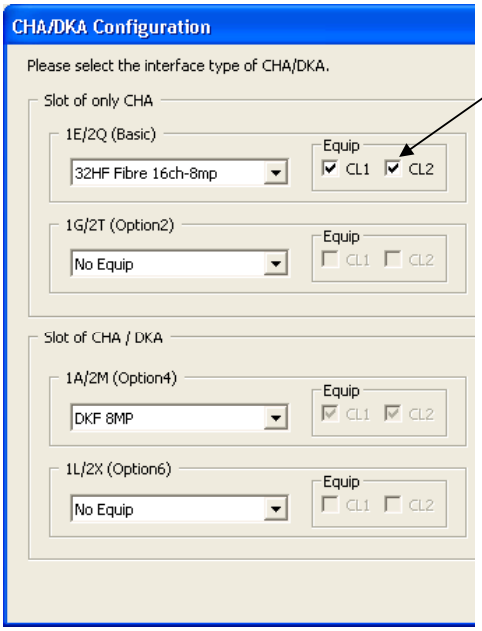
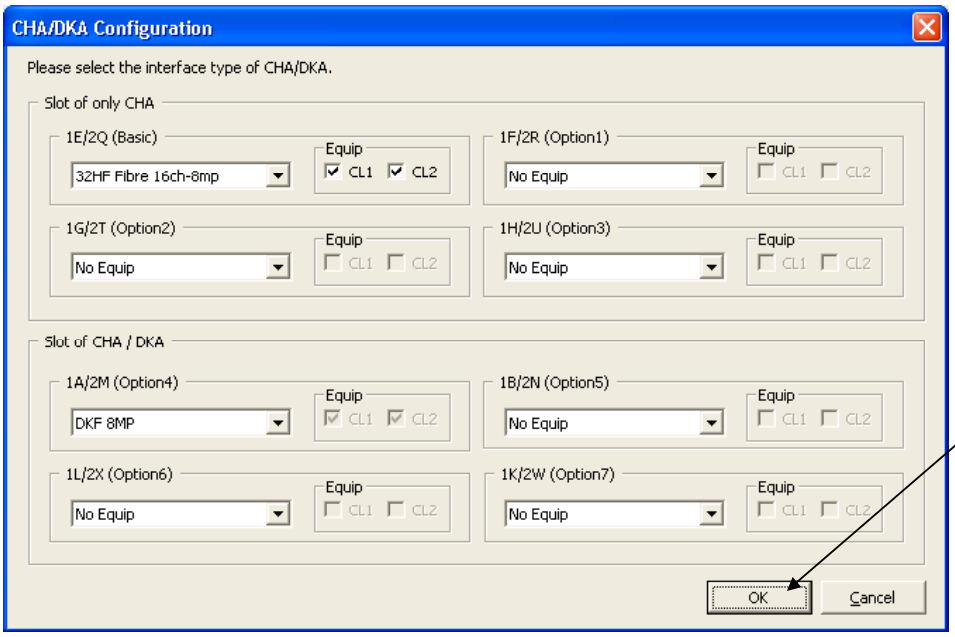
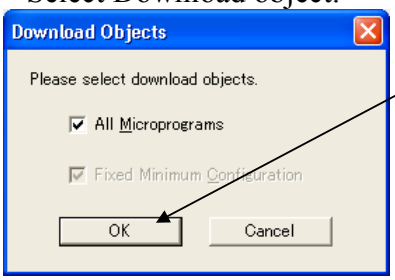


Check the check boxes according to the CHA or DKA installed status for each PCB location.



Select OK.

- Select Download object.



Select OK.

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(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 INST02-280.)

*8 : The following SIM Logs are output by turning off the battery switches.
SIM Logs: bf5010, bf5210, bf5020, bf5220
But you can ignore them.

*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 (*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)-1, (31)-2.

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

*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, Turn on the "POWER ON/OFF" switch of the DKC and the reboot of the SVP will be executed.

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

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

*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 (1E/2Q for "CHA", 1A/2M for "DKA")
IP Address = 126.255.255.xx
32HF Fibre 16ch-8mp for Host interface configuration
8mp for the DKA

② Option PCBs Configuration : None (No equip)

③ Cache size : 1024 MB for each side.

④ SM size : 512 MB for each side.

⑤ LDEV/PDEV/LCP Configuration : None

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2.11 Obstacle part replacement procedure in install

2.11.1 Replacement procedure when PCB could not be restoring

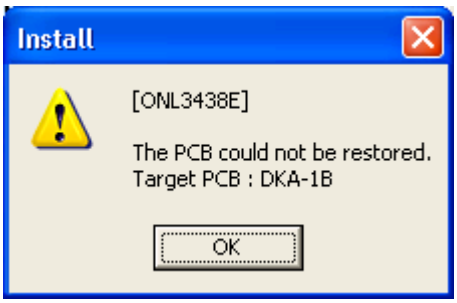
(1)

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 t he 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 : ****.)

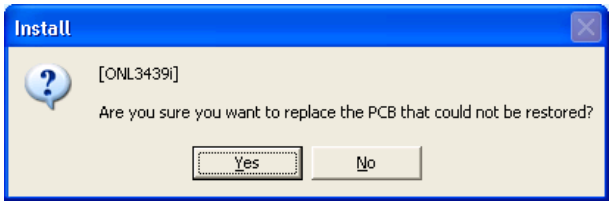


Please select(CL) [OK] after a check.

---

(2)

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

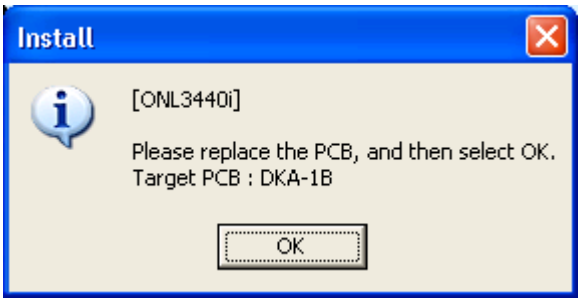


When the maintenance parts to replace exist, please select [Yes]. → Go to (3)
When the maintenance parts to replace do not exist, please select [No] and refer to trouble shooting for errors in install.

---

(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.

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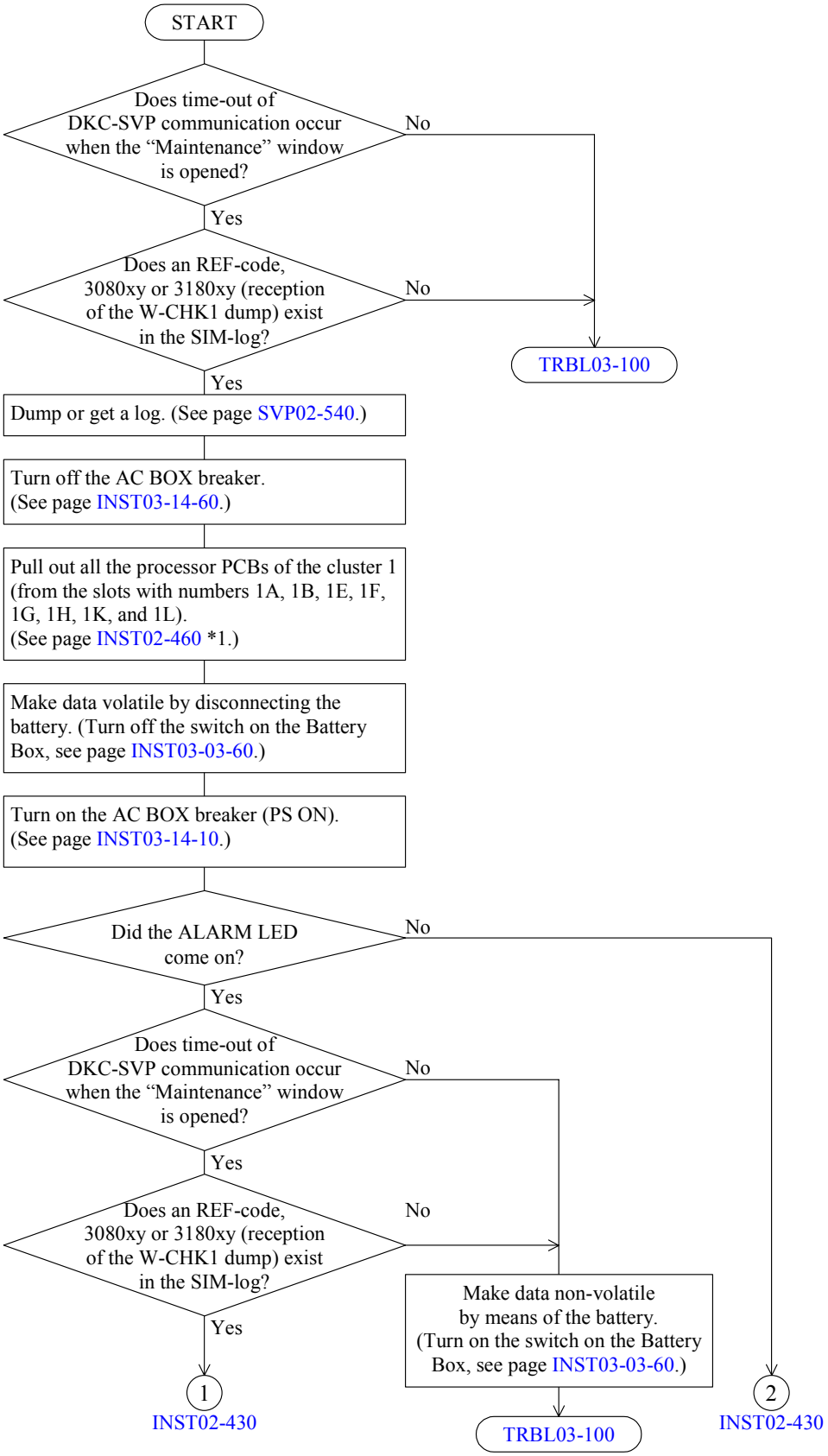
2.12 Troubleshooting at the time of new installation

(1) When the ALARM LED comes on



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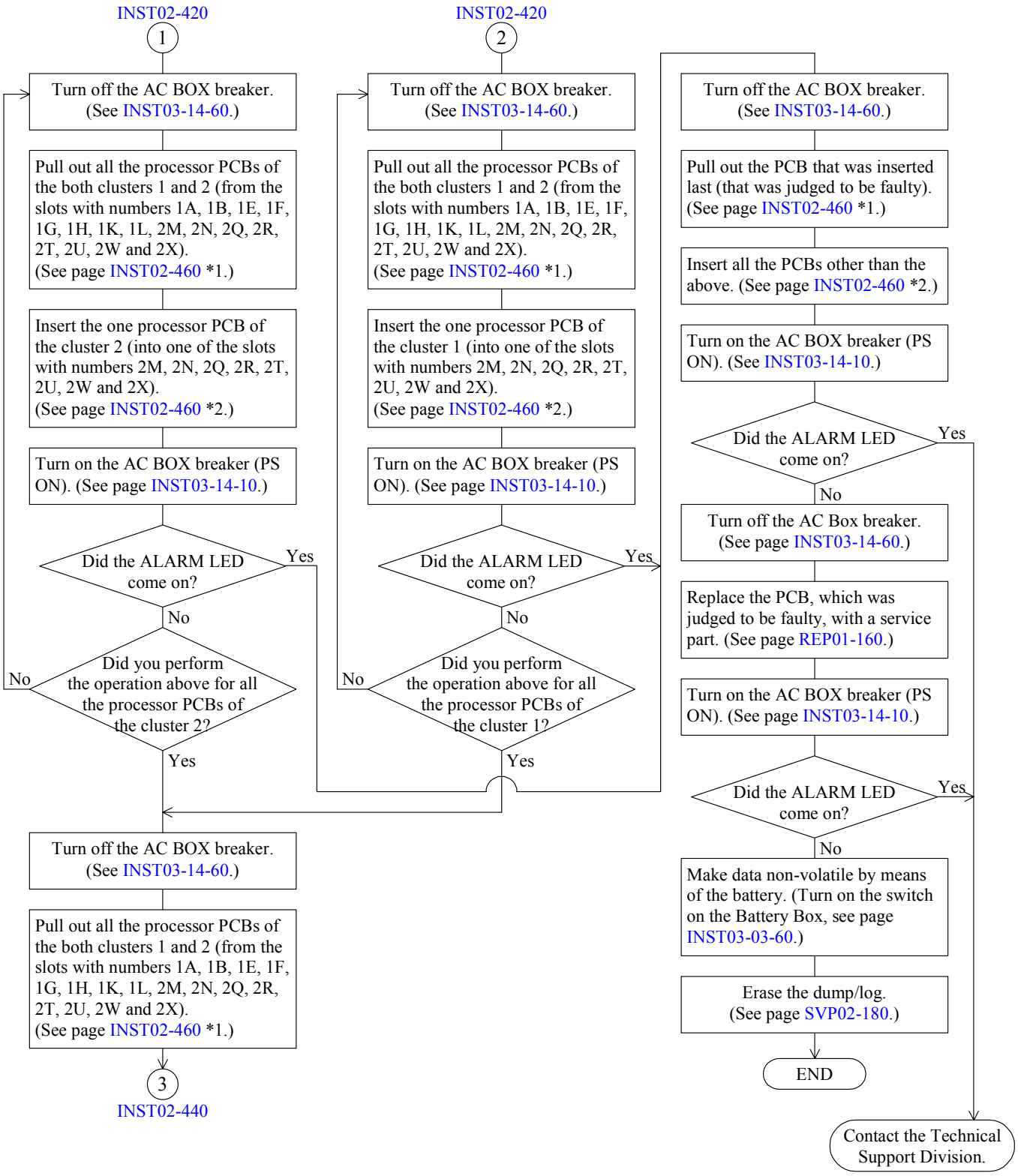

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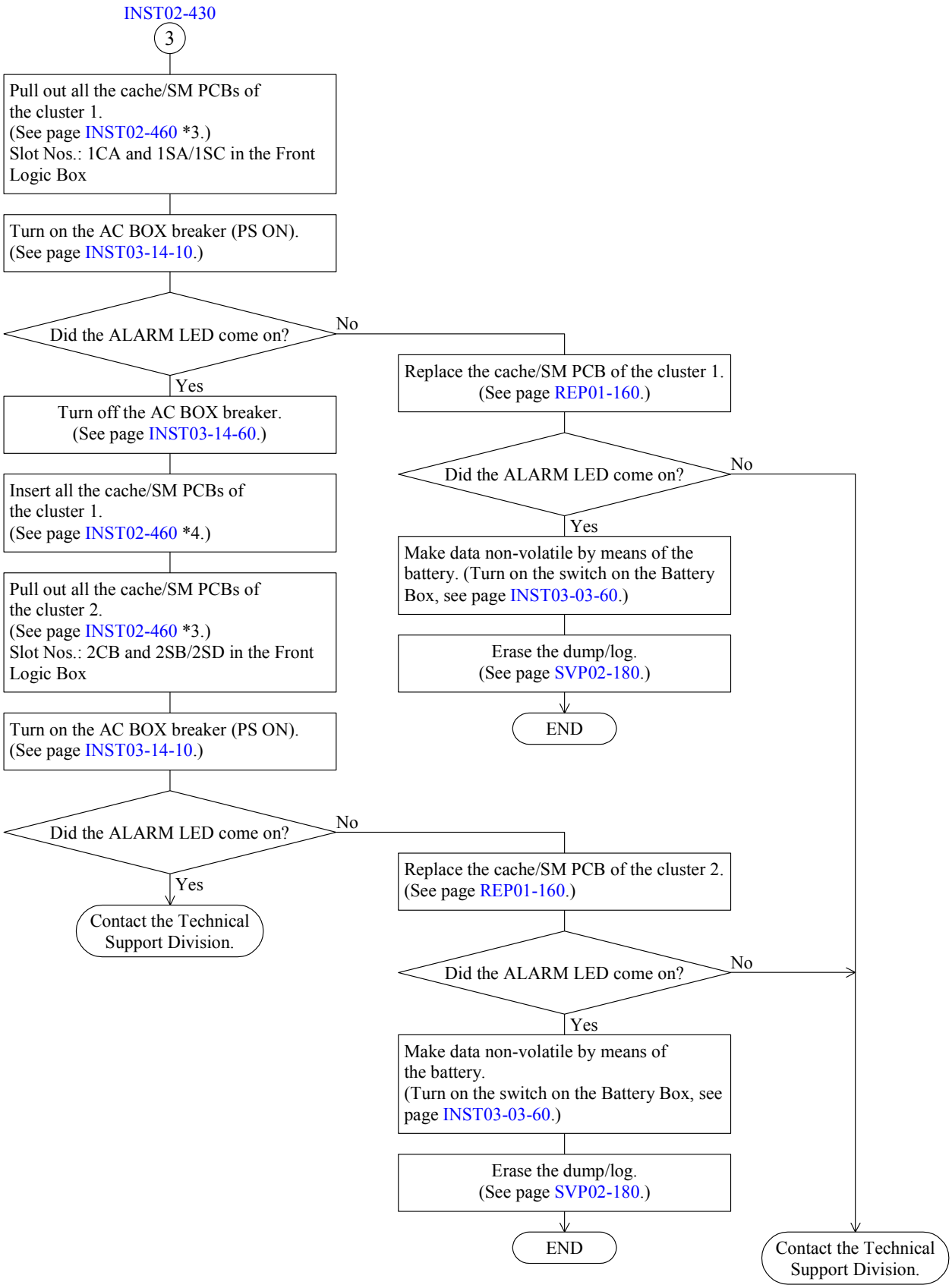

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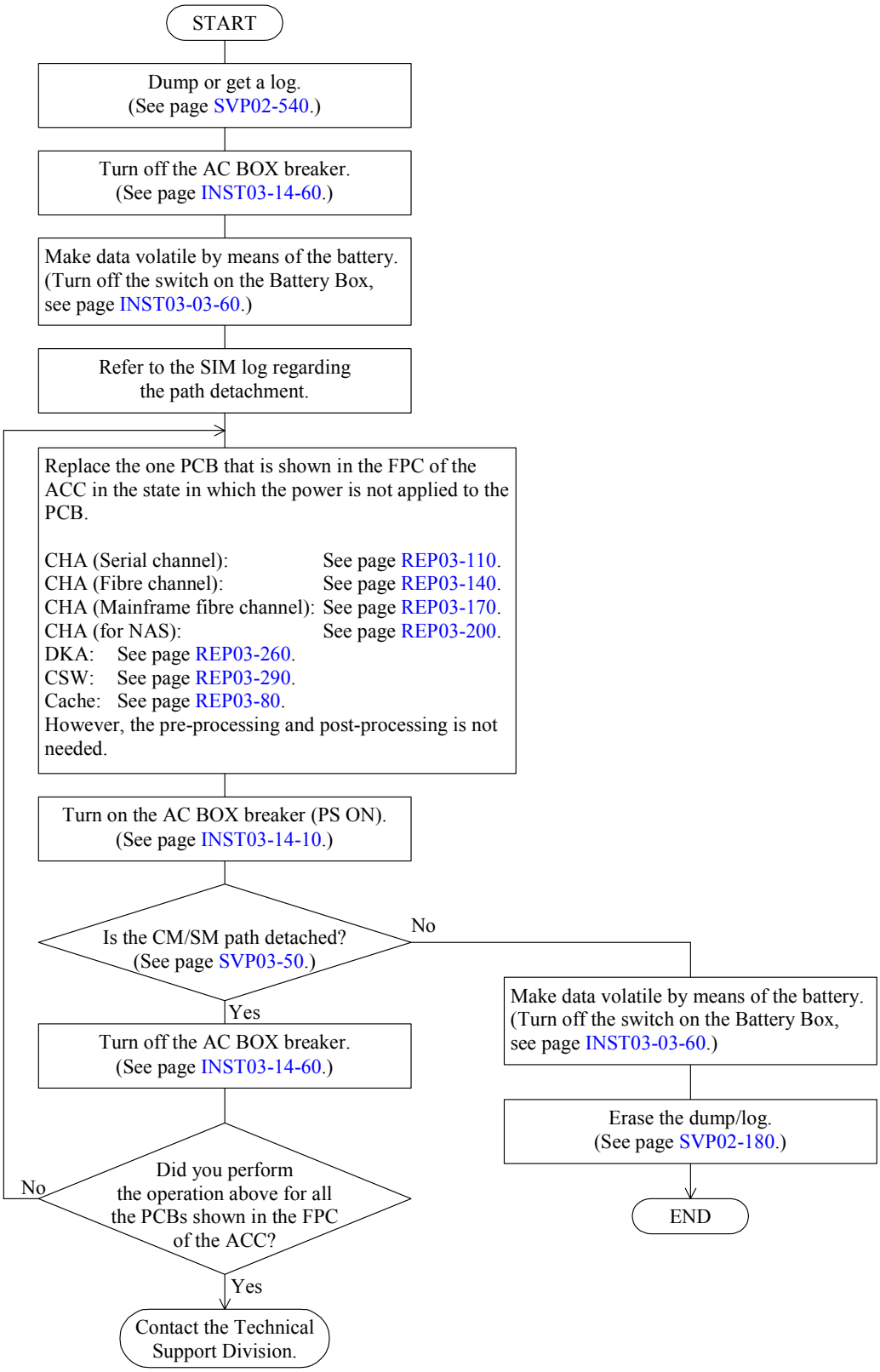
(2) When the CM/SM path is detached



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*1: Pulling out of the processor PCB
DKA: Refer to "Removing disk adapter PCB" on page INST04-01C-490.
CHA:
- Serial 16-port adapter Refer to page INST04-04A-60.
- Fibre 16/32-port adapter Refer to page INST04-04B-60.
- Mainframe fibre 8/16-port adapter Refer to page INST04-04C-60.

*2: Insertion of the processor PCB
DKA: Refer to "Adding disk adapter PCB" on page INST03-10B-60.
CHA:
- Serial 16-port adapter Refer to page INST03-07A-90.
- Fibre 16/32-port adapter Refer to page INST03-07B-90.
- Mainframe fibre 8/16-port adapter Refer to page INST03-07C-90.

*3: Pulling out of the cache PCB
Refer to page INST04-03B-90.

*4: Insertion of the cache PCB
Refer to page INST03-07B-90.