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3. Hardware Installation

3.1 Common Item of Installation and De-Installation

3.1.1 How to removal/attachment the Bezel

⚠ CAUTION

The stopper of Bezel is unlocked and released easily at the 60 degree rotation, stop point, of the hexagon socket head screw Latch toward clockwise, and Bezel can remove by pull in to front.
Over force/torque to the Latch might become the cause of Latch damage.

1. Removal of the Logic Box Bezel
   a. The wrench is put in the access hole of the Logic Box Bezel.
   b. Afterwards, the wrench is rotated.
   c. And, the Logic Box Bezel is removed.

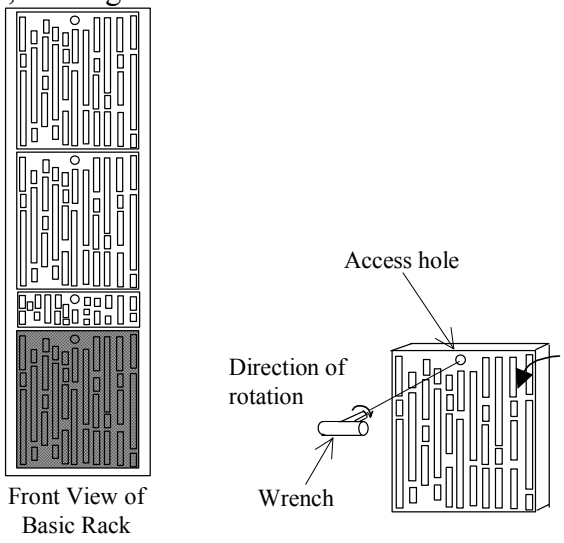


Fig. 3.1.1-1 Removal of Logic Box Bezel

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2. Removed of the OP Bezel
   a. The wrench is put in the access hole of OP Bezel.
   b. Afterwards, the wrench is rotated.
   c. And, the OP Bezel is removed.

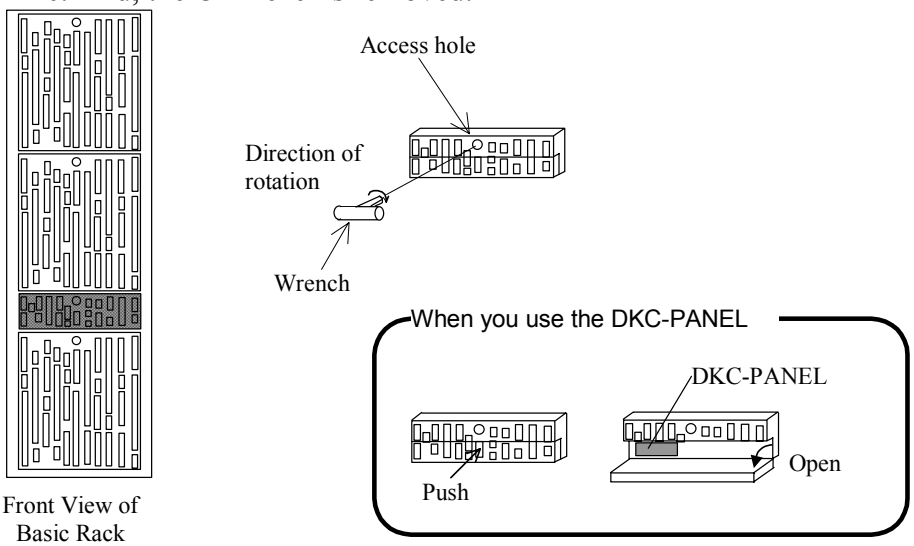


Fig. 3.1.1-2 Removal of OP Bezel

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3. Removed of the HDD BOX Bezel
   a. The wrench is put in the access hole of the HDD BOX Bezel.
   b. Afterwards, the wrench is rotated.
   c. And, the HDD BOX Bezel is removed.

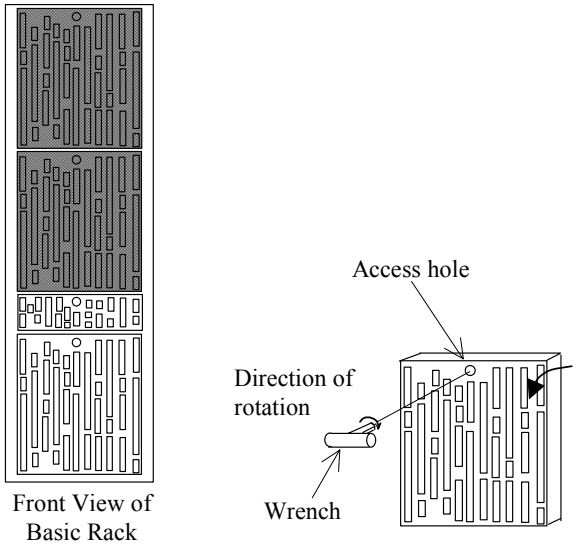


Fig. 3.1.1-3 Removal of HDD BOX Bezel

4. Attached of all Bezel
   a. Put the pin of the Bezel in the ditch of Rack.
   b. Push the Bezel downward after it puts it in the ditch of Rack.
   c. Push the upper of Bezel.

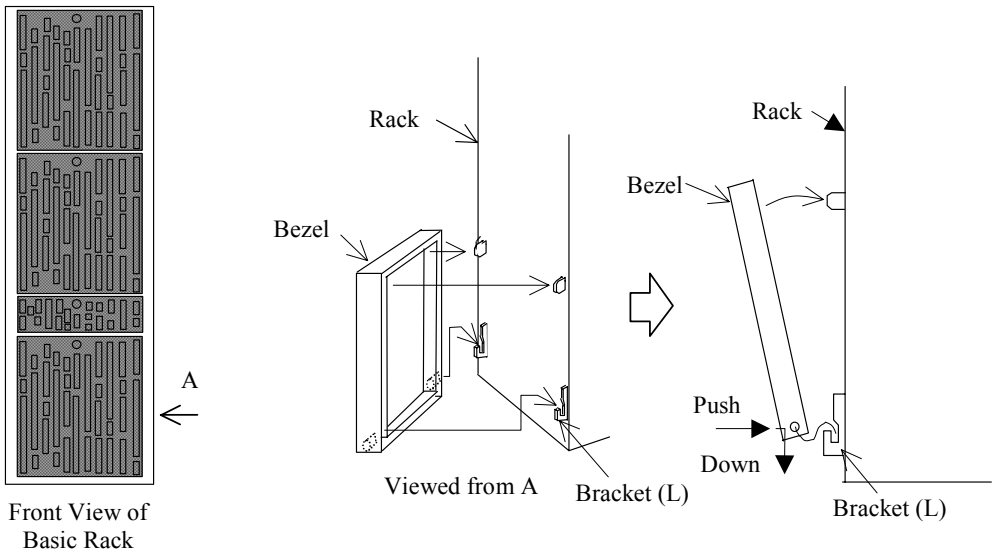


Fig. 3.1.1-4 Attachment of Bezel

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3.1.2 How to open/close the cover

1. DKC PANEL Cover

   Attachment

   a. Attach the DKC PANEL Cover to the Frame.
   b. Fasten the two screws.

   Removal

   a. Loosen the two screws.
   b. Remove the DKC PANEL Cover from the Frame.

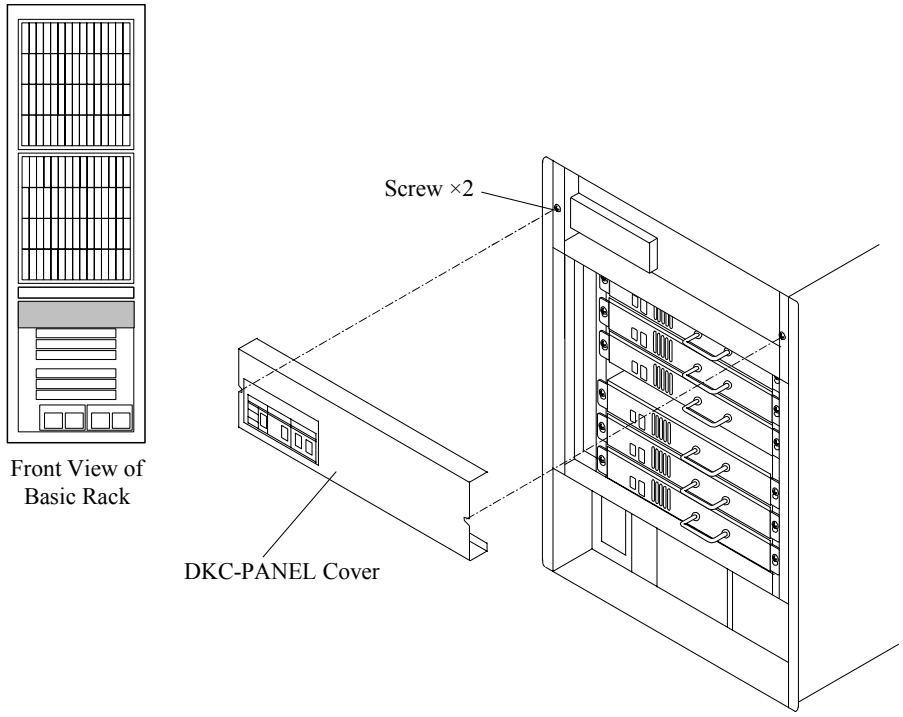


Fig.3.1.2-1 Attachment/Removal of Covers

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2. Rear Logic Box Cover

   Attachment

   a. Attach the Rear Logic Box Cover to the Frame.
   b. Fasten the six screws.

   Removal

   a. Loosen the six screws.
   b. Remove the Rear Logic Box Cover from the Frame.

3. HDD Box Cover

   Attachment

   a. Attach the HDD Box Cover to the Frame.
   b. Fasten the four screws.

   Removal

   a. Loosen the four screws.
   b. Remove the HDD Box Cover from the Frame.

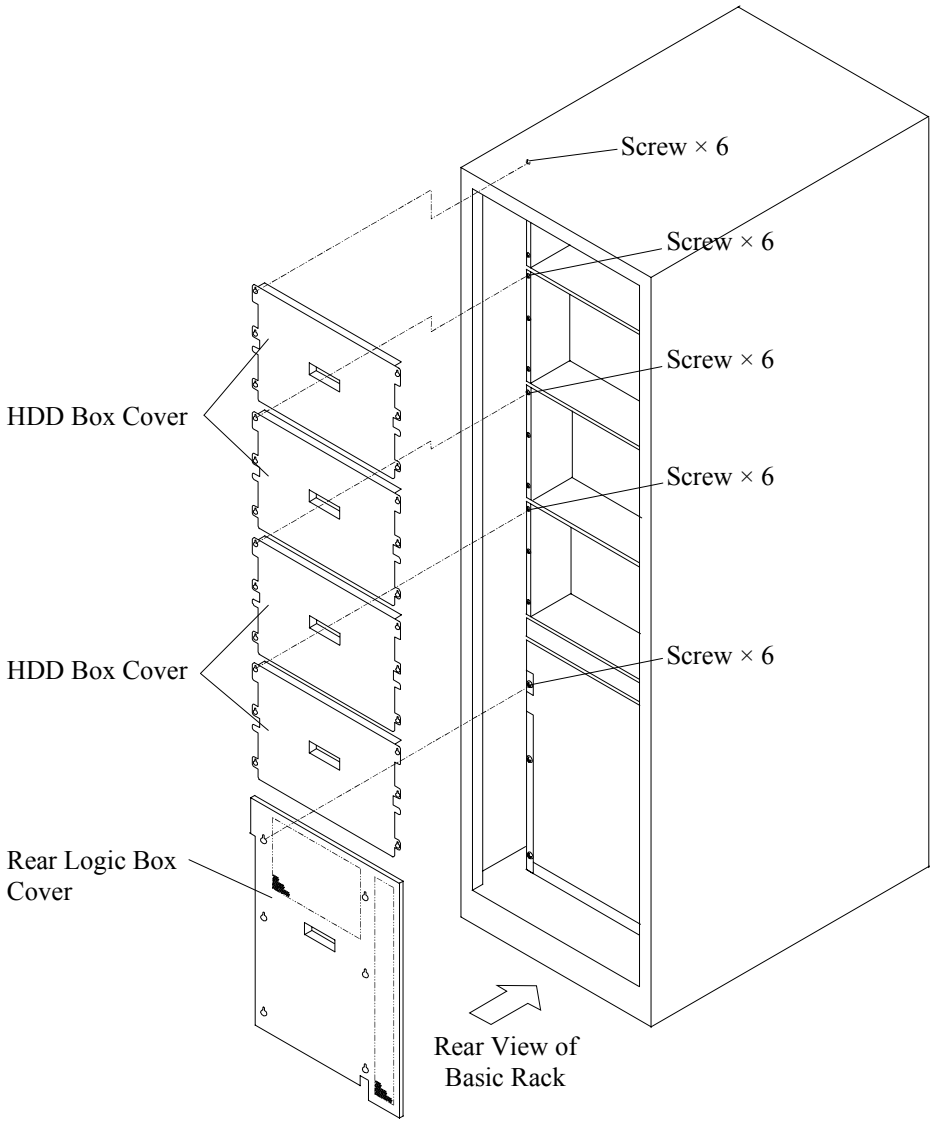


Fig.3.1.2-2 Attachment/Removal of Covers

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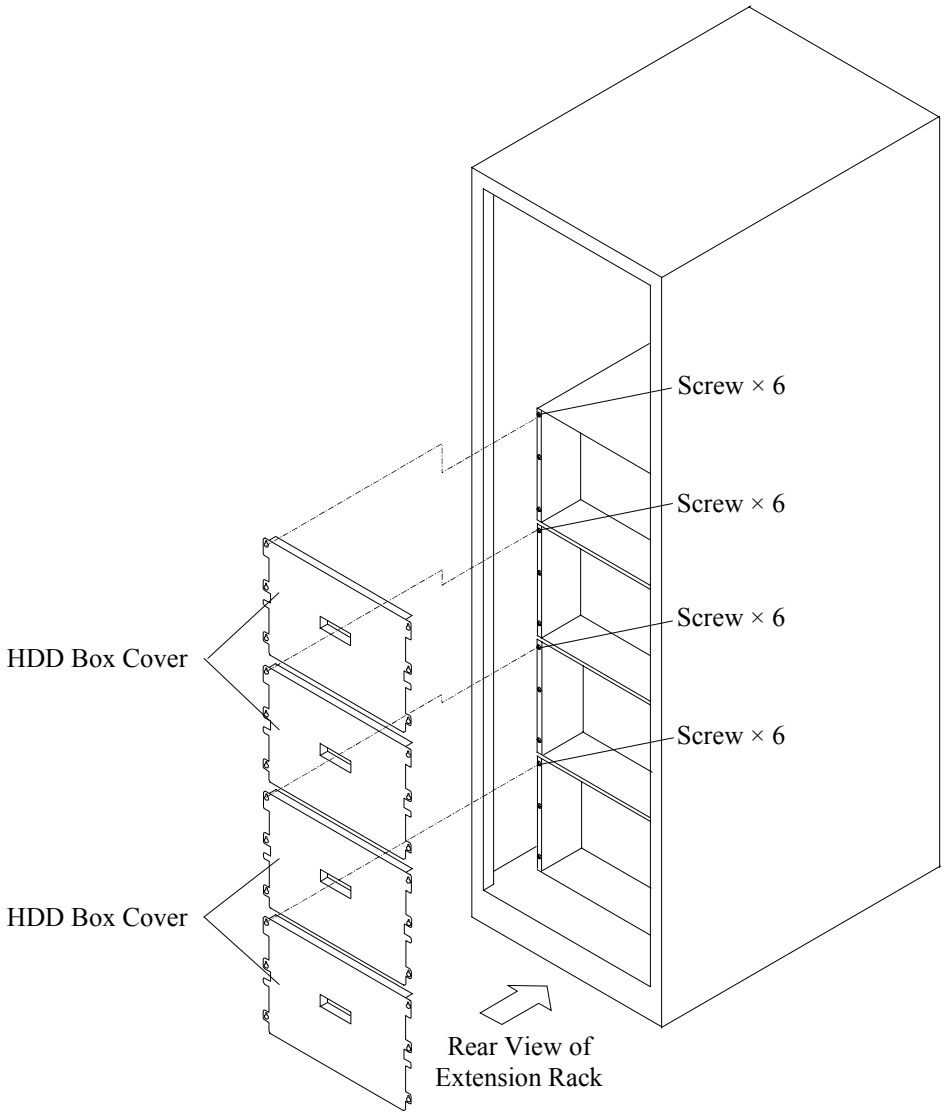


Fig.3.1.2-3 Attachment/Removal of Covers

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3.1.3 Attaching the Wrist Strap

- In order to protect parts from the electrostatic discharge, every worker must put a wrist strap on his/her wrist before starting installation or maintenance work and start the work after connecting the grounding clip to a metallic portion of the frame. (The wrist strap must be put on when connecting the LAN, RS232C or channel interface cable.)
- When handling a part, hold it in the way that fingertips of the hand putting the wrist strap on touch a metallic portion of the part.
  (The above is necessary in order to discharge the charged static electricity and prevent a charge caused by handling.)
- Be sure to keep the wrist strap close to the subsystem.
- Be sure to touch the subsystem with the wrist strap put on. If you touch the subsystem without putting on the wrist strap, the static electricity charged on your body flows to the subsystem in an instant because no resistance exists between your body and the subsystem causing a subsystem trouble.
- Wear a wrist strap until the work is finished when working with the door of device or the platter cover open (for change of channel interface cable connection etc.).

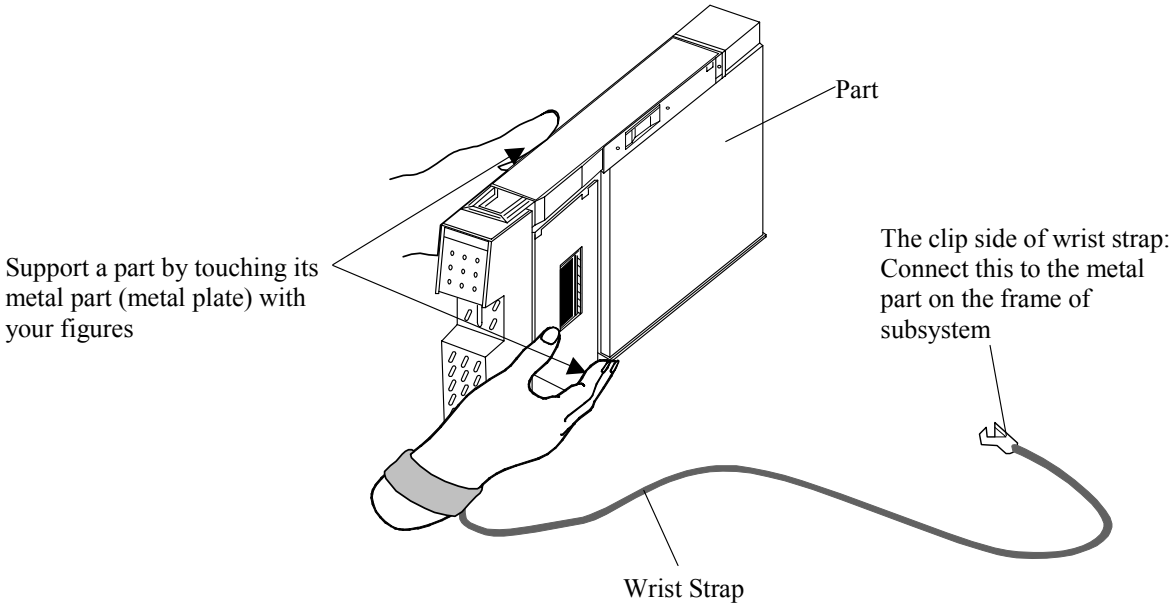


Fig. 3.1.3-1 Attachment of Wrist Strap

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3.2 UNPACKING AND INSPECTION

Receiving and Inspection

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

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

2. Obtain and check shipping manifest for missing units.

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

Unpacking Procedure

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

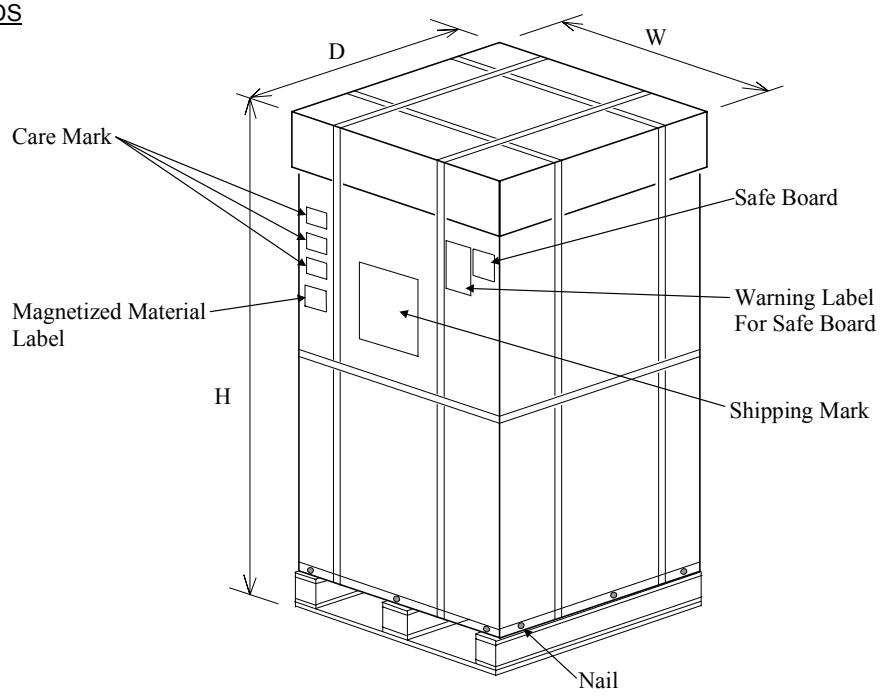
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3.2.1 Unpacking

3.2.1.1 Rack Frame

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

For HDS



For HP

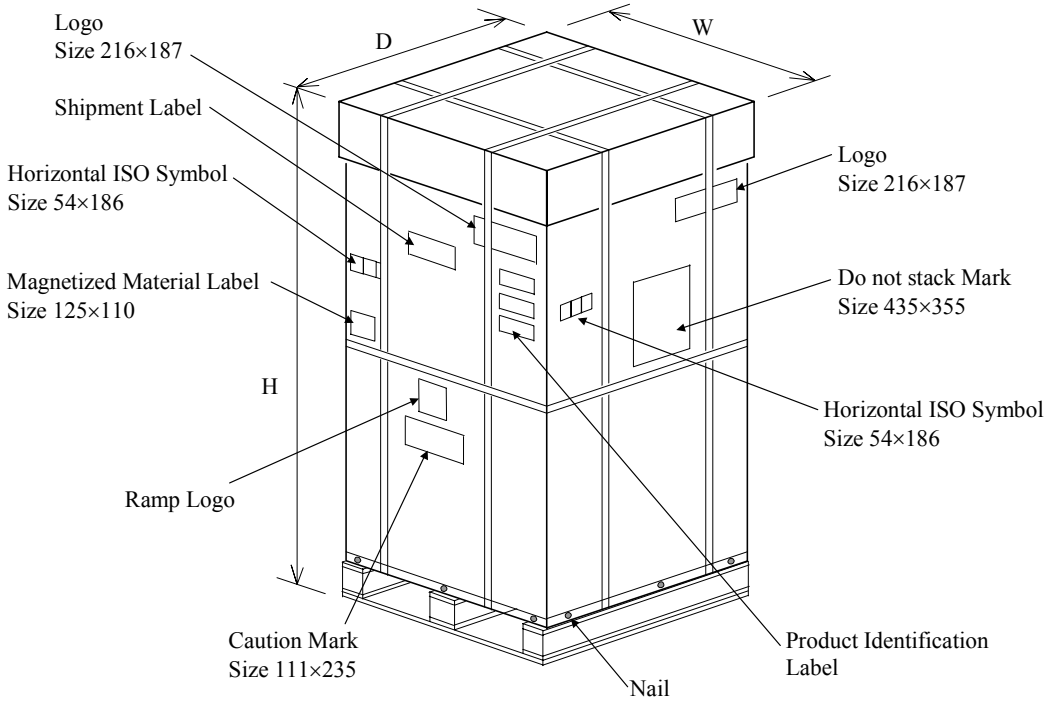


Fig. 3.2.1.1-1 Card Board Crate Overview

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4. Remove Top Cover and corrugated sleeve.

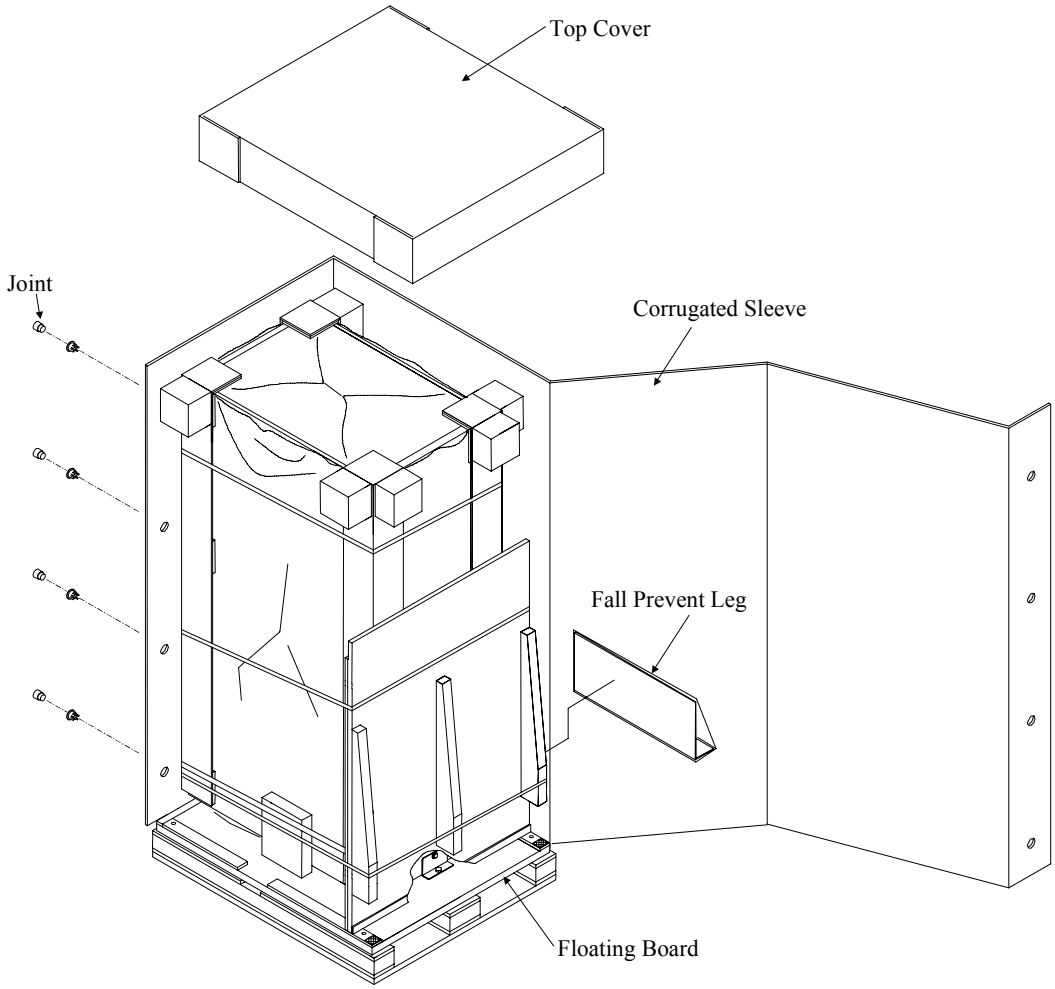


Fig. 3.2.1.1-2 Breakdown of CARD BOARD Crate

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5. Remove adhesive tape, corner protectors, ramp and accessory box.
6. Remove the bolts and adapters from the floating board.
7. Take the equipment down with the ramp onto floor.

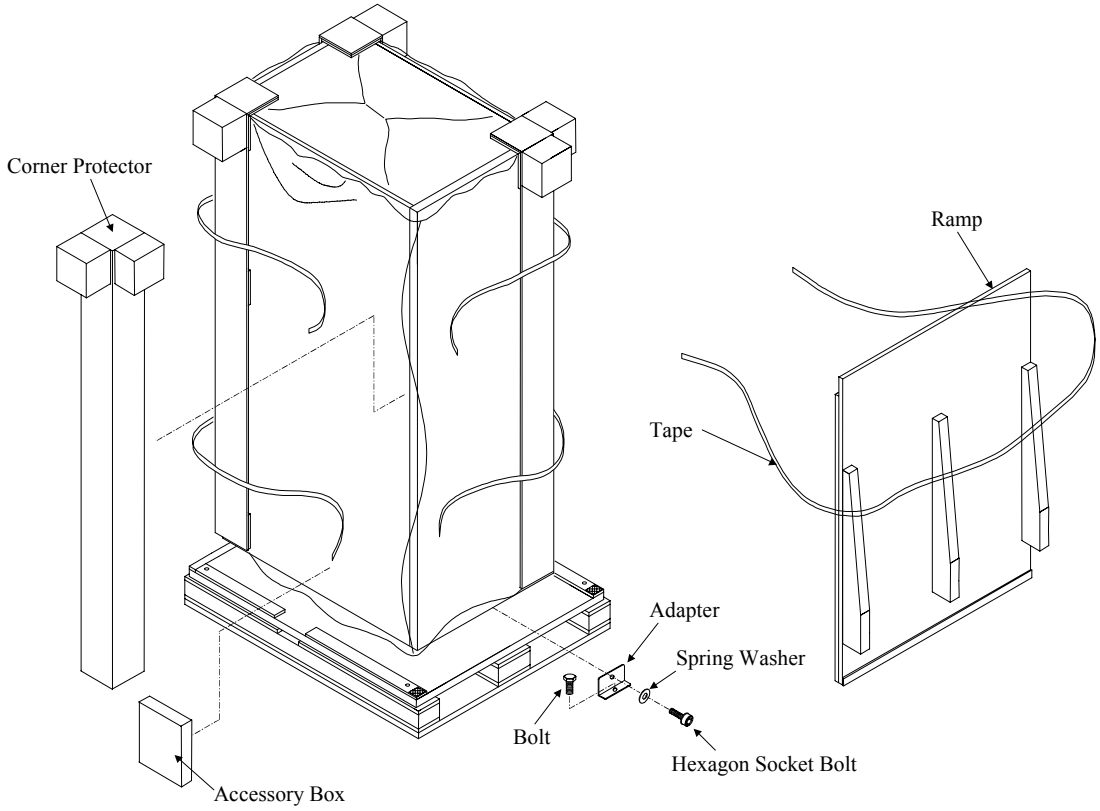


Fig. 3.2.1.1-3 Unpacking of Equipment

8. Remove the adhesive tape and anti-static bag.

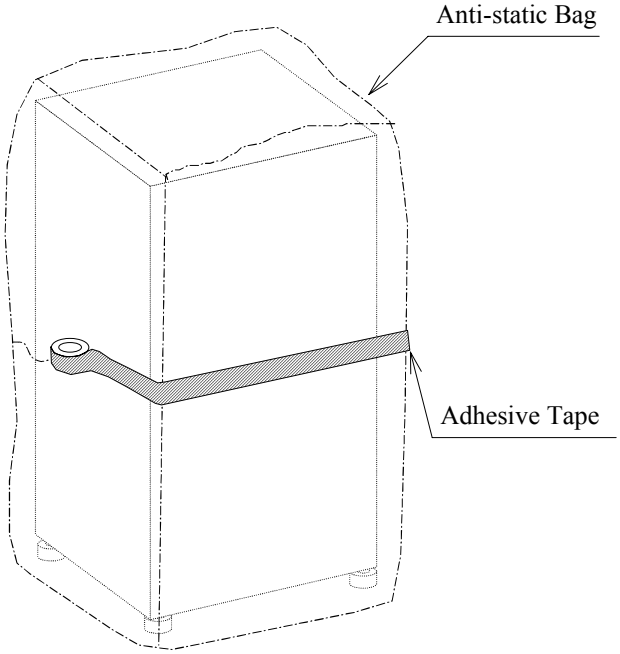


Fig. 3.2.1.1-4 Removal of Anti-static Bag

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

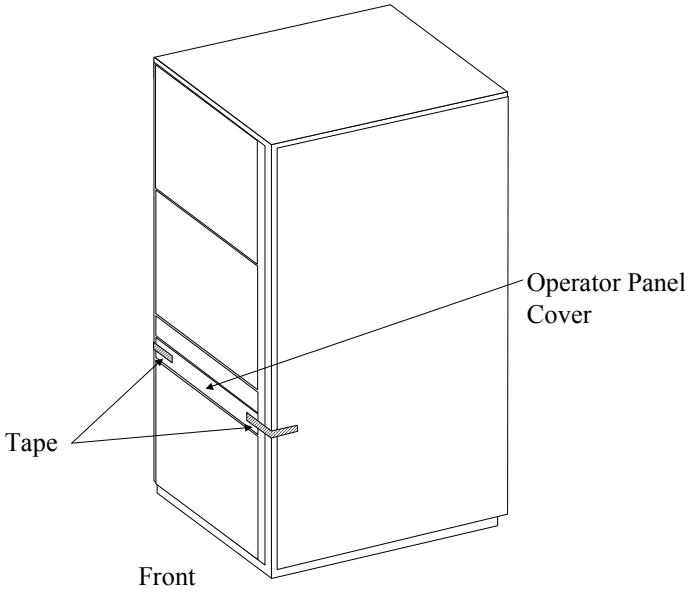


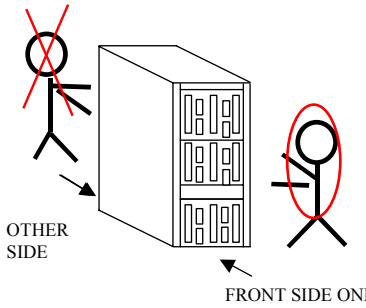
Fig. 3.2.1.1-5 Surface Unpacking

10. Open the rear door and remove the shipping cushions and tapes from the equipment.
11. Visually check the unit for any damage.

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3.3 Installation of 19-inch Rack (DKC-F515I-FRMR)

CAUTION



When transporting, push only from the front. Don't push from other side. (And work by two people.)

This device (DKC515I) adopts rigid casters for its fore casters to avoid device tumbling. Therefore, the structure of this device differs from the existing devices that adopt swivel casters.

3.3.1 Parts List

Table 3.3.1-1 Parts List of DKC-F515I-FRMR

Item No.	Part Name	Part No.	Quantity	Remarks
1	Frame	2751008-1	1	
2	Bolt Head HEX	BH816N	3	
3	Washer	WP008N	3	
4	Fall Prevent Leg	5526204-2	1	
5	Nameplate (HDS)	2751038-51	1	RSD
		2751040-51/251		HICAM/HICEF
6	Nameplate (HP) (AE072A)	2106989-35	1	RSD
		2106991-35/135		HICAM/HICEF

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3.3.2 Installation Procedure of 19-inch Rack

1. Settling the rack frame
   Settle the rack frame in the installation site by adjusting the leveling bolts.
   (a) Turn the each leveling bolt in the direction shown by the arrow so that the clearance between the caster and the floor becomes about 2.5 mm.
   (b) Adjust the leveling volts so that the tilts of the subsystem to the front or rear and left or right become 0 ± 2.5 mm.

⚠ CAUTION

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

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

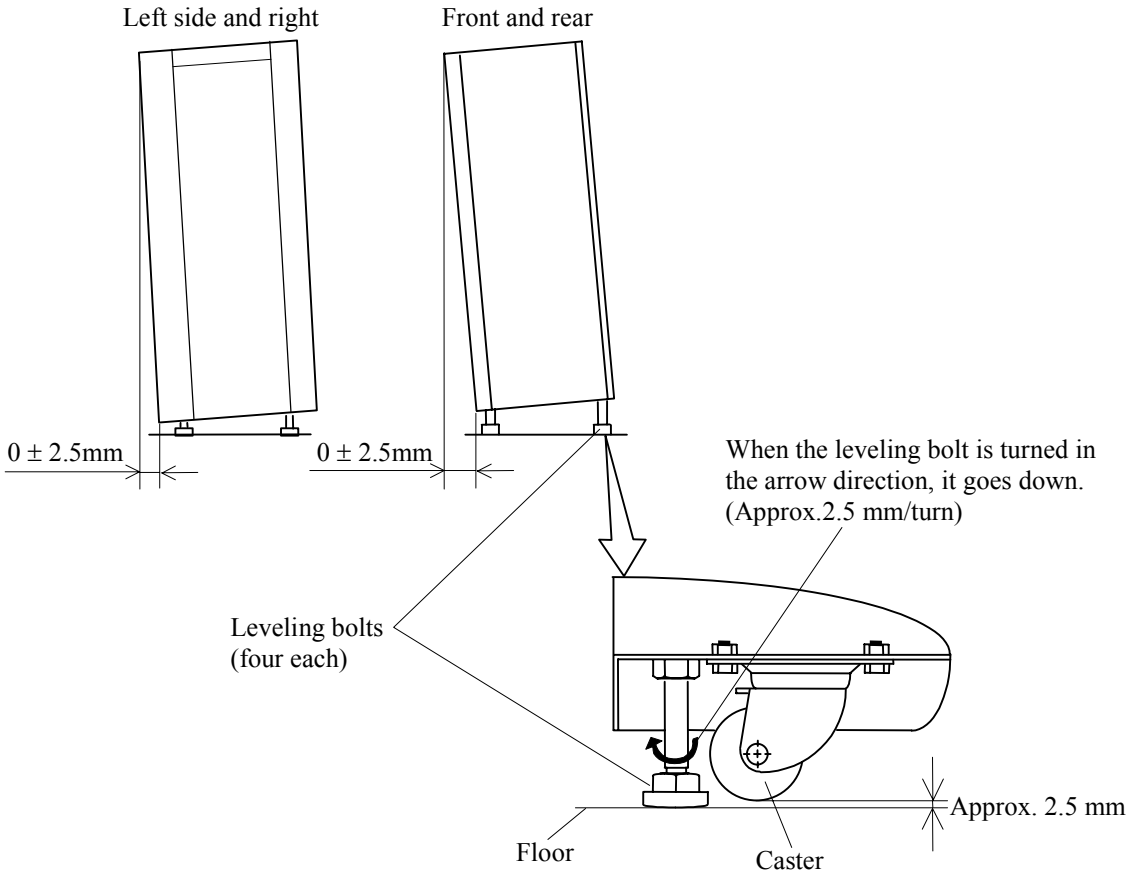


Fig. 3.3.2-1 Adjusting Leveling Bolts

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Blank Sheet

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2. Installation of Fall Prevent Leg
   a. Attach the Fall Prevent Leg with the bolts.

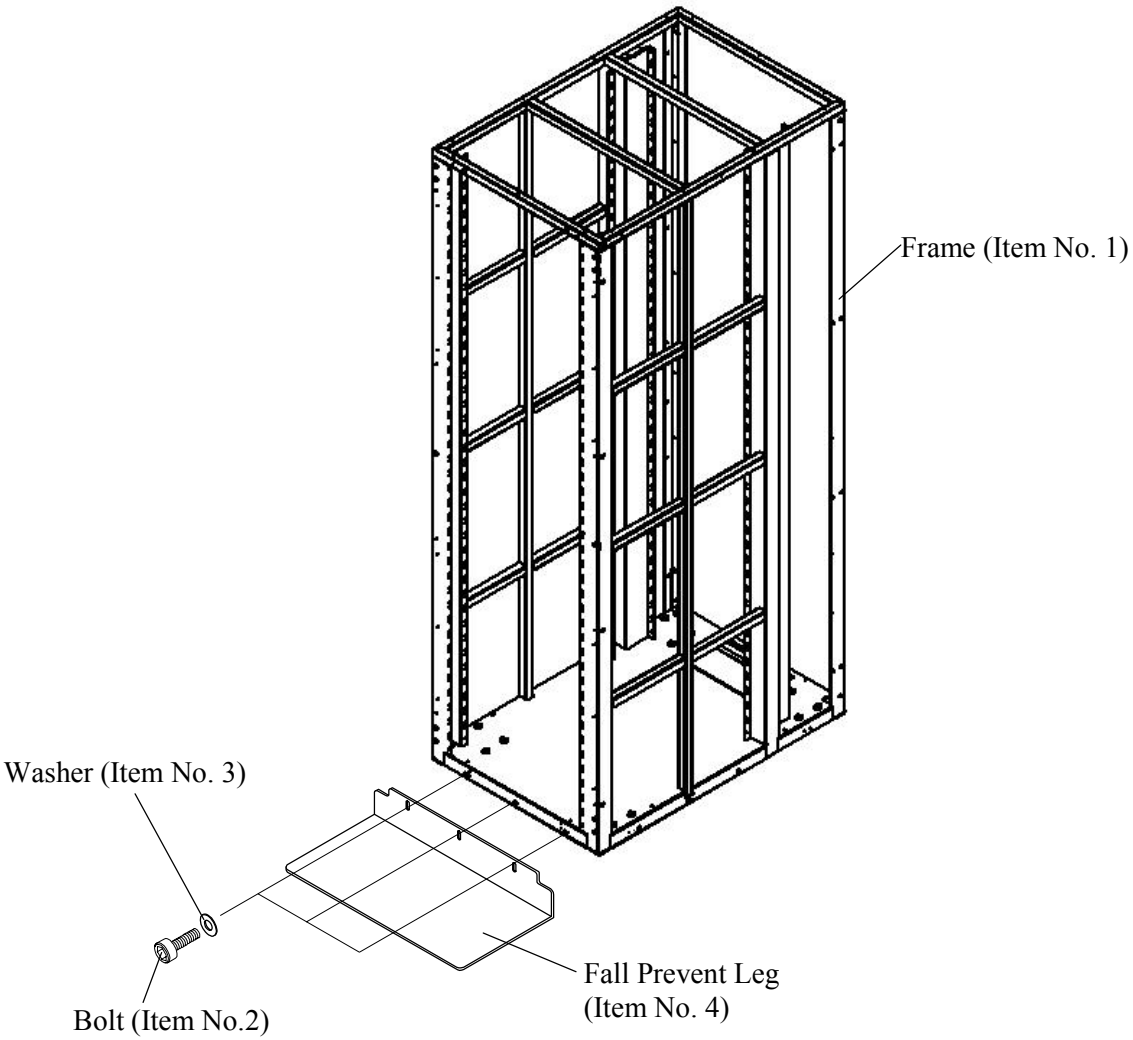


Fig. 3.3.2-2 Installation of Fall Prevent Leg

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3. Attach the nameplate.
   a. Remove the screw from the rack frame and remove the nameplate tags to be installed.
   b. Attach the nameplate to the nameplate tag on the Rack frame.
   c. Attach all the nameplate tags with the screw.

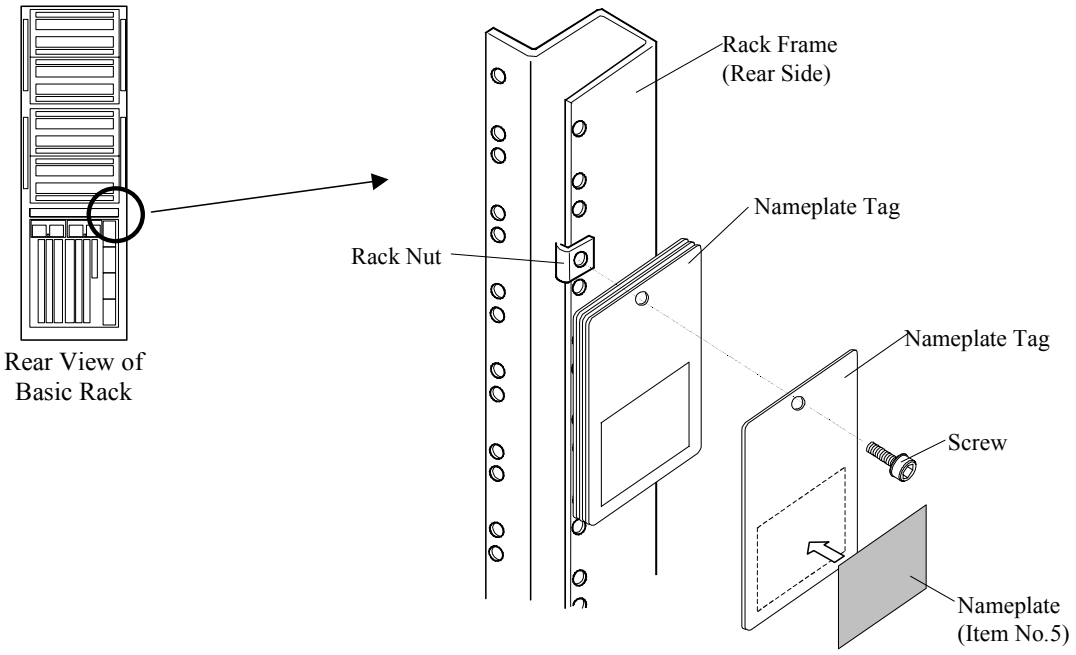


Fig. 3.3.2-3 Attachment of Nameplate

   d. When the model name is AE072A, attach the nameplate to the frame bottom base.
   When the model name is not AE072A, go to step e.

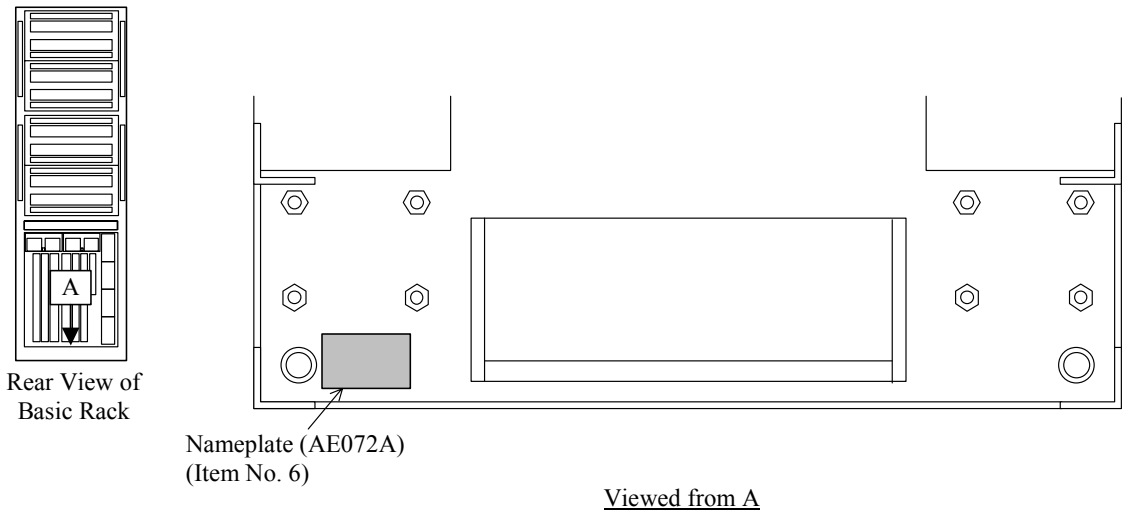


Fig. 3.3.2-4 Attachment of Nameplate

   e. Return to the working table and do the rest of the work.
   New Installation: INST02-10, Non-Disruptive Installation: INST02-50

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3.4 Installation of Control Frame (DKC515I-5/5R)

3.4.1 Parts List

Table 3.4.1-1 Parts List of DKC515I-5/5R

Item No.	Part Name	Part No.	Quantity	Remarks
1	Logic Box	3272924-A	1	
2	SVP ASSY	5527951-C	1	
3	Cable ASSY (PS INLET)	3272976-E	1	
4	Repeat Binder	5409042-3	12	
5	HU Jumper	5521578-1	4	Maintenance Jumper
6	Label (V/Hz/PH.)	3264271-1	1	
7	Label (QTY)	3268905-1	1	
8	EMI Core	5513535-1	1	
9	Repeat Binder	5409042-2	1	
10	Label (REV)	3239458-1	1	
11	Label (PATENT-515)	3274177-1	1	
12	Label (KOREN-MIC)	3274178-1	1	For HDS
13	Label-NOISE (FCC-CSA)	3269890-1	1	
14	Label (VCCI)	5409106-1	1	
15	Label (BSMI-D3300)	3265644-2	1	For HDS
		3265644-4		
16	Label (UL4-1)	5529984-1	1	
17	Label (V/Hz-BASIC)	3274138-1	1	For HDS
18	Label (UL5)	3264272-1	1	
19	—	—	—	
20	Label (UL3)	5515795-1	1	
21	Label (BSMI)	3269907-1	1	For HP
22	Label (V/Hz-FRMR)	3274155-1	1	For HP
23	Packing Nameplate Kit	5529843-A	1	
24	Nameplate (HDS) *1	2106989-17	1	RSD
	(DKC515I-5)	2106991-17/117		HICAM/HICEF
	Nameplate (HDS) *2	2751037-17	1	RSD
	(DKC515I-5R)	2751039-17/117		HICAM/HICEF
25	Nameplate (HDS) *1	2106990-16	1	RSD
	(DKC-F510I-C4G)	2106992-16/216		HICAM/HICEF
	Nameplate (HDS) *2	2751038-16	1	RSD
	(DKC-F510I-C4GR)	2751040-16/216		HICAM/HICEF

(To be continued)

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(Continued from preceding page)

Item No.	Part Name	Part No.	Quantity	Remarks
26	Nameplate (HDS) *1	2106990-17	1	RSD
	(DKC-F510I-S1G)	2106992-17/217		HICAM/HICEF
	Nameplate (HDS) *2	2751038-17	1	RSD
	(DKC-F510I-S1GR)	2751040-17/217		HICAM/HICEF
27	Nameplate (HDS) *1	2106990-34	1	RSD
	(DKC-F510I-1HL)	2106992-34/234		HICAM/HICEF
	Nameplate (HDS) *2	2751038-34	1	RSD
	(DKC-F510I-1HLR)	2751040-34/234		HICAM/HICEF
28	Nameplate (HDS) *1	2106990-35	1	RSD
	(DKC-F510I-1HS)	2106992-35/235		HICAM/HICEF
	Nameplate (HDS) *2	2751038-35	1	RSD
	(DKC-F510I-1HSR)	2751040-35/235		HICAM/HICEF
29	—	—	—	
30	Nameplate (HDS) *2	2751038-65	1	RSD
	(DKC-F510I-1FSR)	2751040-65/265		HICAM/HICEF
31	Nameplate (HP)	2106989-26	1	RSD
	(AE102A)	2106991-26/126		HICAM/HICEF
32	Nameplate (HP)	2106989-34	1	RSD
	(AE071-63001)	2106991-34/134		HICAM/HICEF
33	Nameplate (HP) *1	2106990-116	1	RSD
	(AE025AX)	2106992-116/316		HICAM/HICEF
	Nameplate (HP) *2	2751038-116	1	RSD
	(AE025AX)	2751040-116/316		HICAM/HICEF
34	Nameplate (HP) *1	2106990-117	1	RSD
	(AE030AX)	2106992-117/317		HICAM/HICEF
	Nameplate (HP) *2	2751038-117	1	RSD
	(AE030AX)	2751040-117/317		HICAM/HICEF
35	Nameplate (HP) *1	2106990-134	1	RSD
	(AE008AX)	2106992-134/314		HICAM/HICEF
	Nameplate (HP) *2	2751038-134	1	RSD
	(AE008AX)	2751040-134/314		HICAM/HICEF

(To be continued)

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(Continued from preceding page)

Item No.	Part Name	Part No.	Quantity	Remarks
36	Nameplate (HP) *1	2106990-135	1	RSD
	(AE009AX)	2106992-135/335		HICAM/HICEF
	Nameplate (HP) *2	2751038-135	1	RSD
	(AE009AX)	2751040-135/335		HICAM/HICEF
37	Nameplate (HP) *2	2751038-165	1	RSD
		2751040-165/365		HICAM/HICEF
38	Bundle ID Label		1	

*1: DKC515I-5
*2: DKC515I-5R

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Table 3.4.1-2 Parts List of DKC-F515I-BCHR/BCSR

Item No.	Part Name	Part No.	Quantity	Remarks
100	Bezel (12U) ASSY	2751646-A	1	For DKC-F515I-BCHR
		2751191-B		For DKC-F515I-BCSR
101	Bezel (4U) ASSY	2751649-A	1	For DKC-F515I-BCHR
		2751192-B		For DKC-F515I-BCSR
102	Bracket (L)	3274066-1	1	
103	Bracket (L)	3274066-2	1	
104	Bracket (U)	3274067-1	4	
105	Screw	SB305N	4	
106	Screw	SB306N	8	
107	L/G Rail (HDS)	2751615-1	1	
108	L/G Rail (HDS)	2751615-2	1	
109	SVP Rail (HDS)	2751616-1	1	
110	SVP Rail (HDS)	2751616-2	1	
111	L/G Stopper (HDS)	5529966-1	2	
112	SVP Stopper (HDS)	5529967-1	2	
113	WA Socket Bolt	3261959-306	4	
114	WA Socket Bolt	3261959-408	6	
115	Screw	SB408N	2	
116	Nameplate (HDS)	2751038-71	1	RSD
	(DKC-F515I-BCHR)	2751040-71/271		HICAM/HICEF
	Nameplate (SUN)	2751038-73		RSD
	(DKC-F515I-BCSR)	2751040-73/273		HICAM/HICEF

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Table 3.4.1-3 Parts List of DKC-F515I-BCPR

Item No.	Part Name	Part No.	Quantity	Remarks
200	Bezel (12U) ASSY	2751650-A	1	
201	Bezel (4U) ASSY	2751651-A	1	
202	Bracket (L)	3274066-1	1	
203	Bracket (L)	3274066-2	1	
204	Bracket (U)	3274067-1	4	
205	Screw	SB305N	4	
206	Screw	SB306N	8	
207	Rail (L/G)	3272911-101	2	
208	Stopper (R)	5529494-1	2	
209	Rail (RK-SVP)	3269758-1	1	
210	Rail (RK-SVP)	3269758-2	1	
211	Stopper (SVP-R)	5524949-1	2	
212	WA Socket Bolt	3261959-516	16	
213	Screw	SB510N	8	
214	WA Socket Bolt	3261959-408	12	
215	Screw	SB408N	2	
216	Rack Nut	5510146-1	24	
217	MODEM Card	5524212-C	1	
218	Nameplate (HDS)	2751038-69	1	RSD
		2751040-69/269		HICAM/HICEF

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3.4.2 Installation Procedure of Control Frame (RSD Rack Frame)

1. Installing the rails (If the rails are already installed, this installation procedure is not required.)

RSD Rack Frame (DKC-F515I-FRMR)

EIA units and intervals of mounting holes of 19-inch rack frame conforming to EIA standard

- A unit (U) space conforming to EIA standard is 19 inches wide and 44.5 mm high as shown in the figure below.
- The boundary of the unit falls on the middle of the interval of 12.7 mm.
- Wide intervals: Repeat of 44.45 mm (31.75 mm + 12.7 mm)
  Maximum number of mountable unit spaces: 40

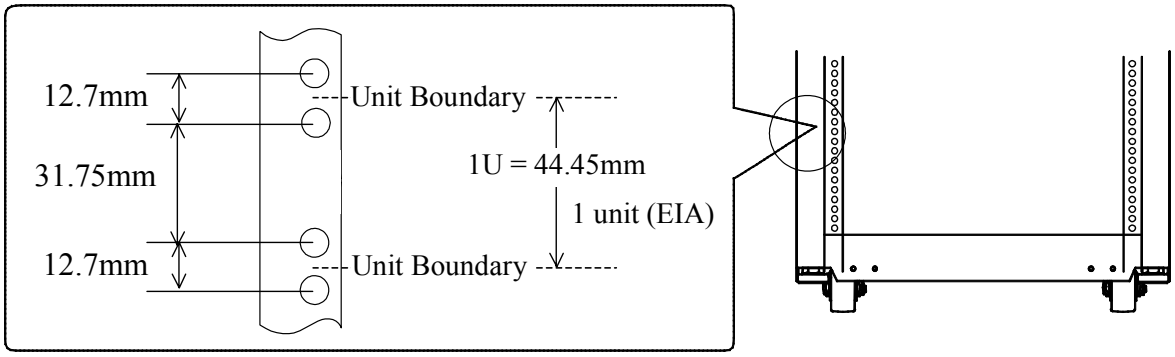


Fig. 3.4.2-1 Attachment Hole Size of Rack

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The addresses are given as 1, 2, 3, and so on counted from the bottom of the rack frame. In the case of the rack frame, you must count the holes to know the address because no number is marked on the rack frame.
The following figure illustrates the whole layout of addresses of installation positions in the rack frame.
There are 40 addresses, that is, the 1U to 40U counted in the vertical direction starting from the lower boundary of the 1U (the lowest unit).

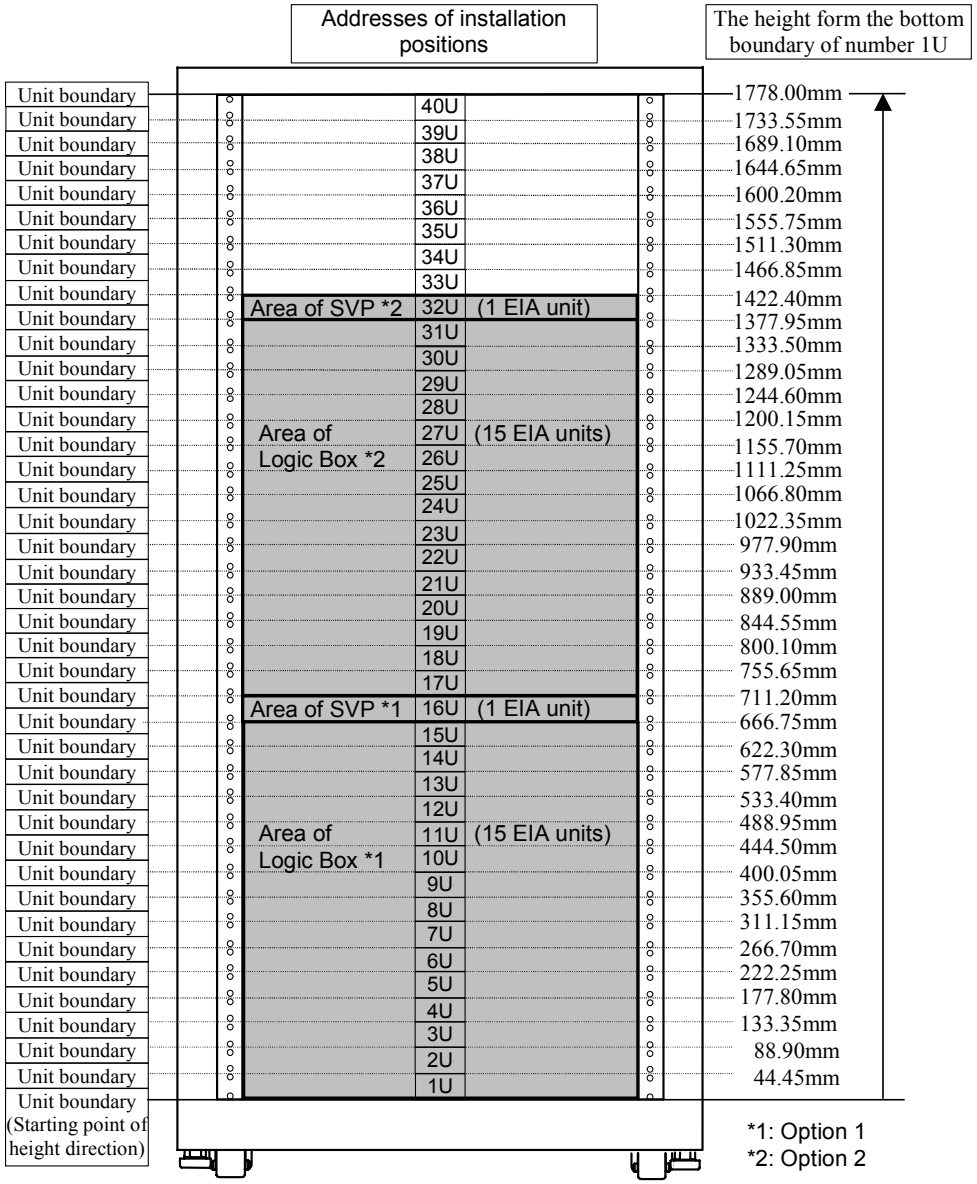


Fig. 3.4.2-2 Whole Layout of Installation Position Addresses

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a. On the right side of the installation location in the rack frame, align the round holes of the Rail (R) with those of the rack frame and insert the rack nuts (at four places in total in front and rear.).
b. Fasten the Rail (R) to the rack frame using the WA socket bolts (at two places each on the front and rear sides.).
c. Install the Rail (L) to the rack frame in the same way.

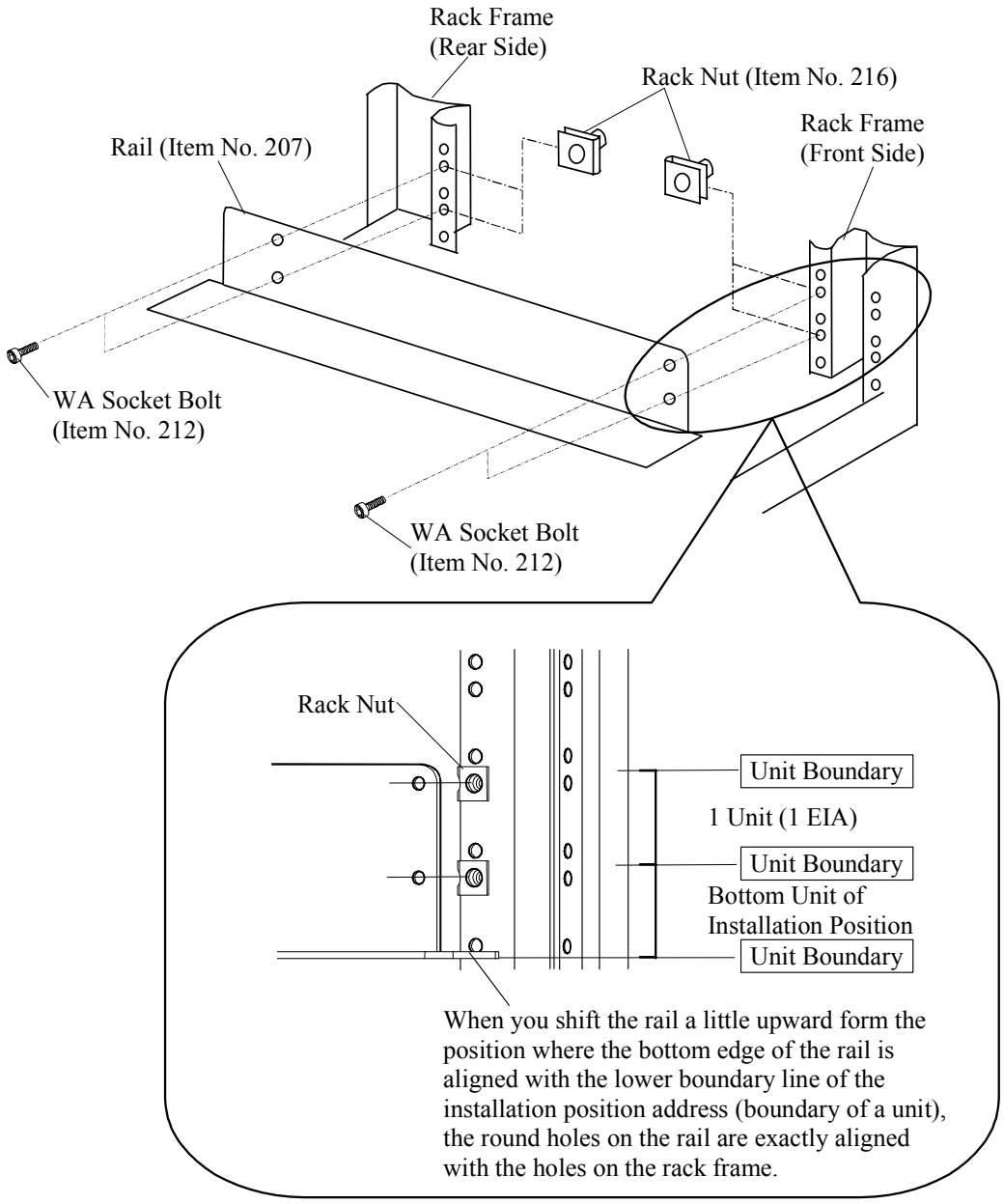


Fig. 3.4.2-5 Attachment of Rails

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d. On the right side of the installation location in the rack frame, align the round holes of the Rail (R) with those of the rack frame and insert the rack nuts (at four places in total in front and rear.).
e. Fasten the Rail (R) to the rack frame using the WA socket bolts (at two places each on the front and rear sides.).
f. Install the Rail (L) to the rack frame in the same way.

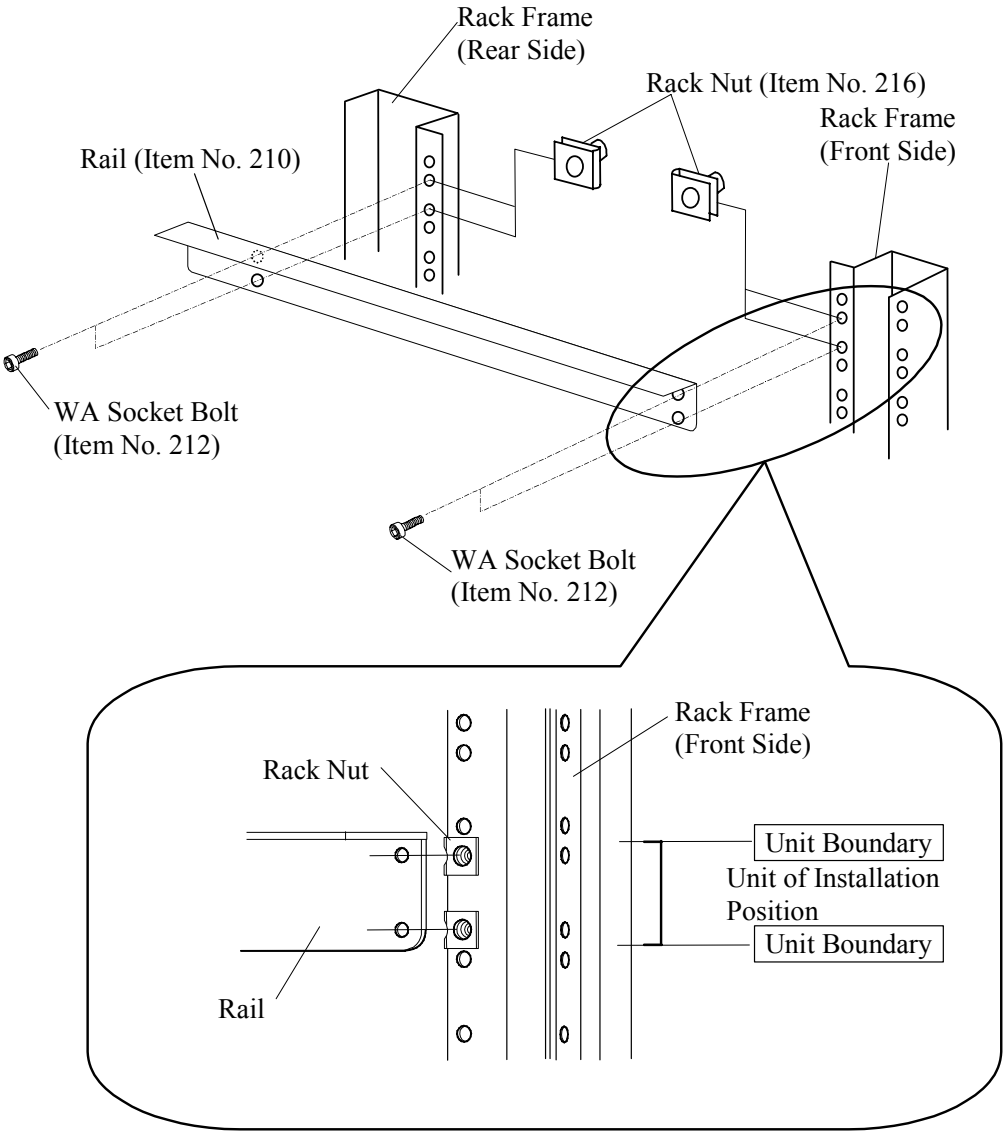
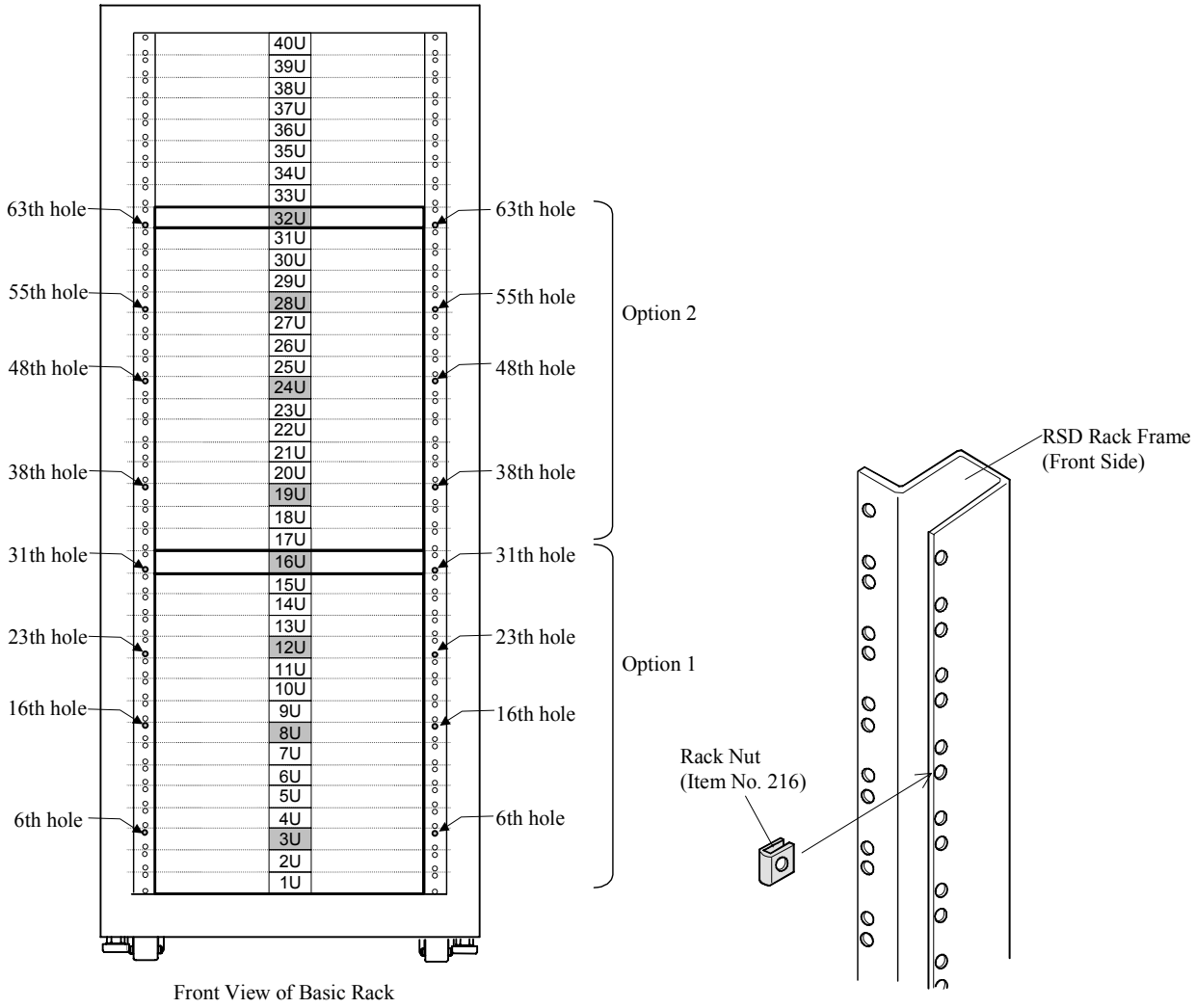


Fig. 3.4.2-6 Attachment of Rails

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2. Installing rack nuts on the front side of the rack frame
   Install the rack nuts on the front side of the rack frame in order to fasten the subsystems to be mounted on the rack frame.
   a. Fit the four rack nuts to each of the right and left beams on the front side of the rack frame.

RSD Rack Frame



Front View of Basic Rack

No.	Part	Location		Remark
Option 2	SVP	32U	Lower	63th hole
	Logic Box	28U	Lower	55th hole
		24U	Upper	48th hole
		19U	Upper	38th hole
Option 1	SVP	16U	Lower	31th hole
	Logic Box	12U	Lower	23th hole
		8U	Upper	16th hole
		3U	Upper	6th hole

Fig. 3.4.2-7 Attachment of Rack Nut

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3. Installing the Logic Box and SVP

⚠ CAUTION

Paying attention to falls:
Work carefully because the mass of the single Logic Box is about 70 kg and SVP is about 15 kg.

a. Install the Logic Box on the Rack frame referring to mounting procedure using the special lifter. (See INST03-13-10 through 40.)
b. Fix the Logic Box with the six screws.
c. Install the SVP on the Rack frame and fasten the two screws.

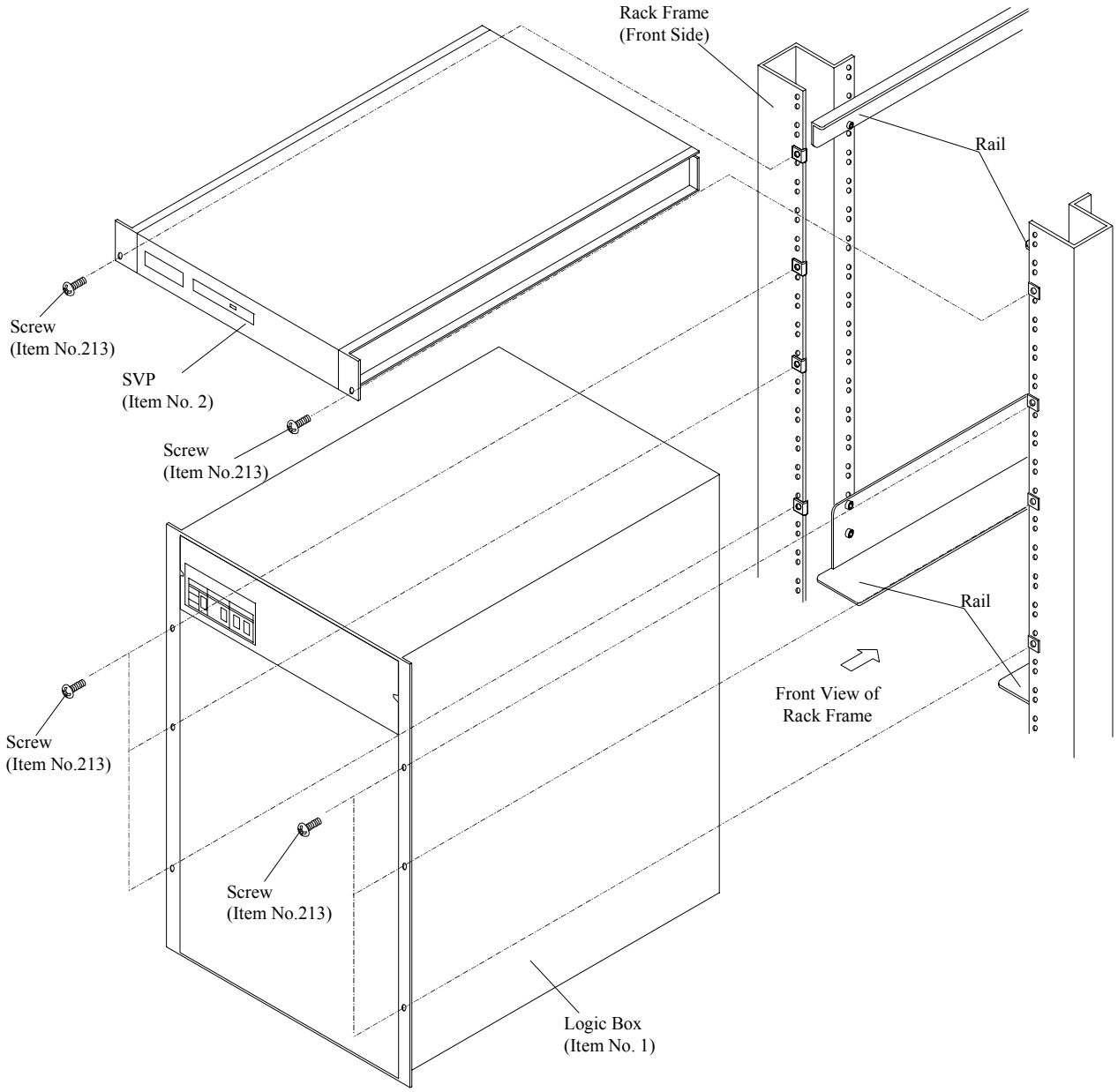


Fig. 3.4.2-8 Installing Logic Box and SVP

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d. Attach the stoppers on the rear side of Logic Box and fasten the screws.

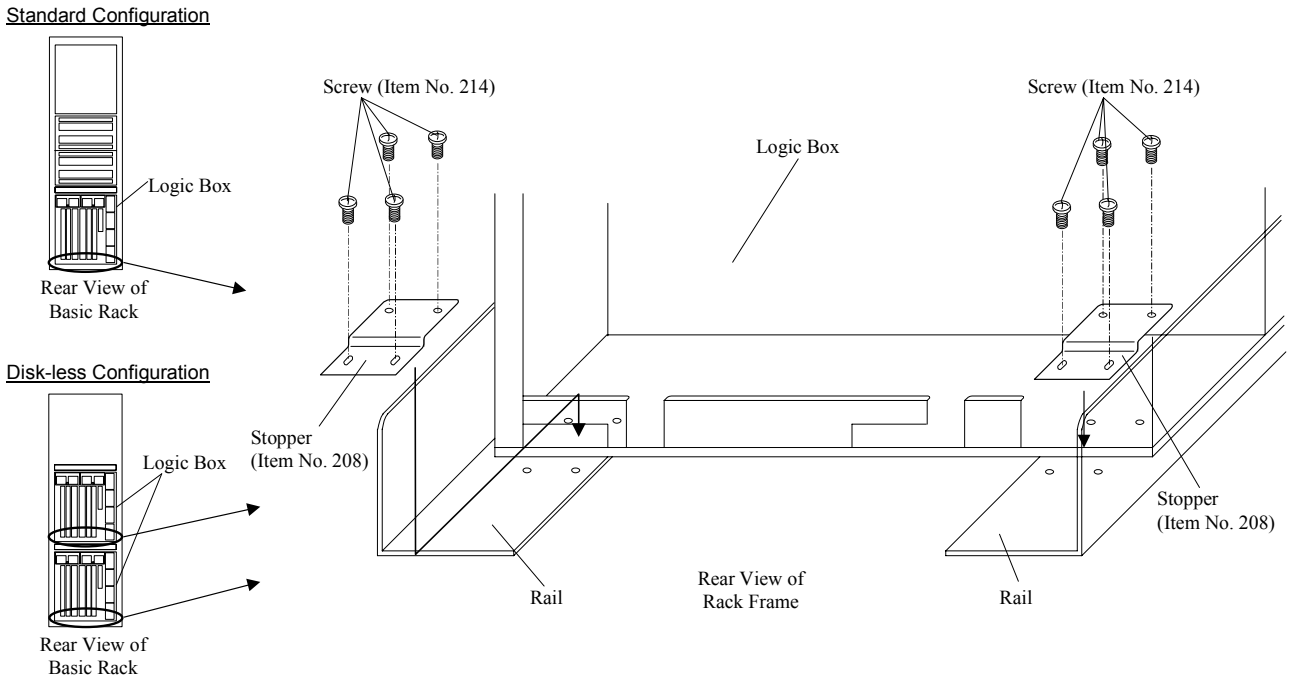


Fig. 3.4.2-9 Attachment of Stoppers

e. Attach the stoppers on the rear side of SVP and fasten the screws.

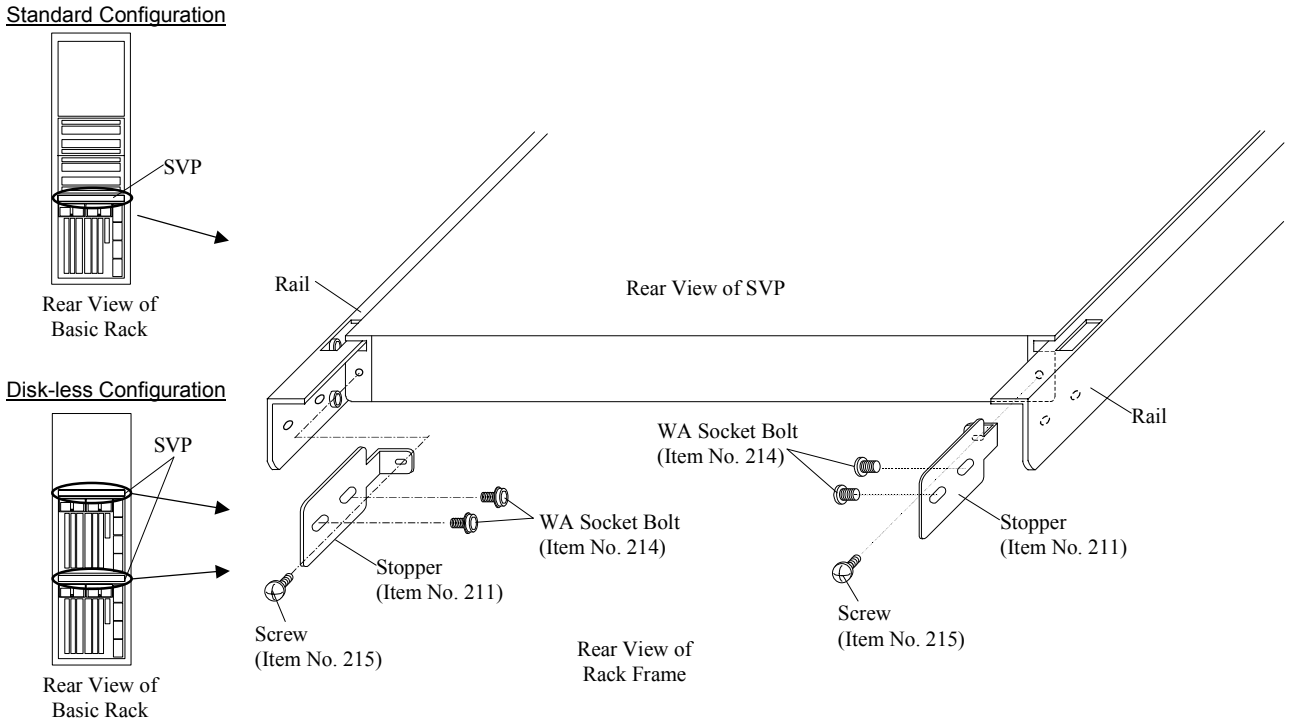
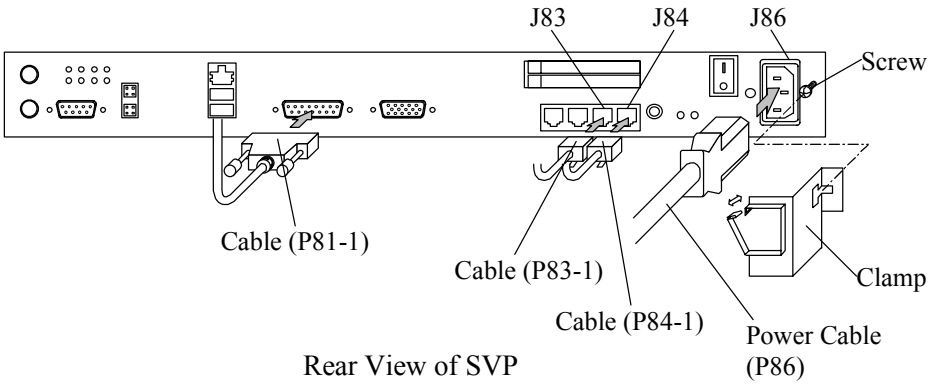


Fig. 3.4.2-10 Attachment of Stoppers

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4. Connect the cables.
   a. Connect the cables (P81-1, P83-1, P84-1) to the SVP.
   b. Loosen the screw and remove the clamp. Connect the cable (P86) to the SVP and fix it with the clamp.

When the SVP is SHM1036



When the SVP is SHM1040

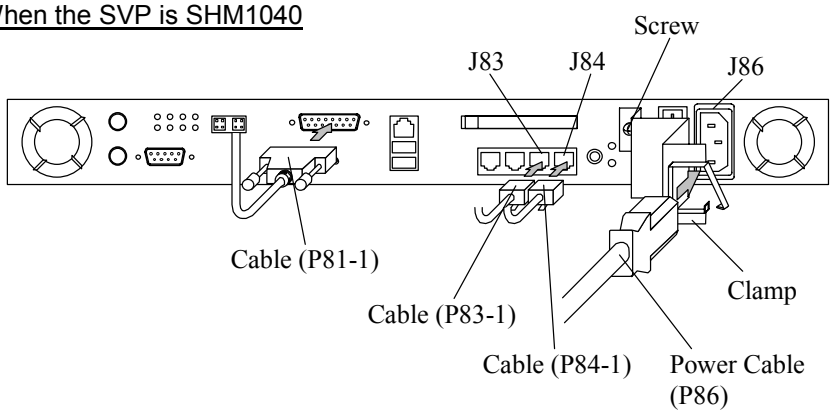


Fig. 3.4.2-11 Connection of Cables

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c. Fix the cable assemblies to the fibre cable (DKC-F515I-UC0R) with the repeat binders.

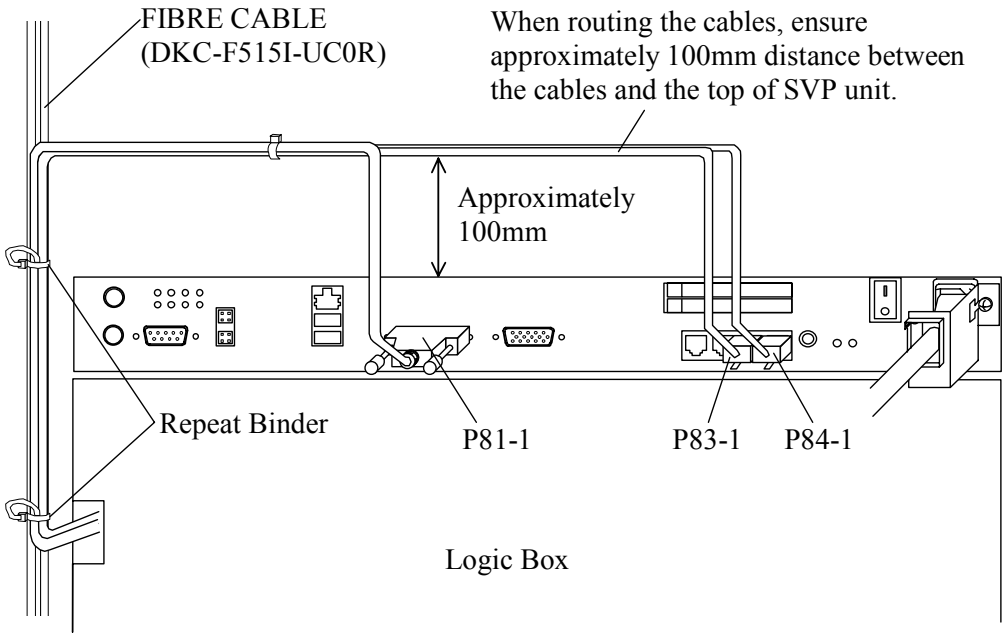


Fig. 3.4.2-12 Attachment of Cables

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d. Connect the power cables (PDU00-P101, PDU00-P102, PDU00-P103, PDU01-P101 and PDU01-P102) to the PDUs and fix them with the connector stopper. Refer to Fig. 3.4.2-13 or Fig.3.4.2-14.

Option 1

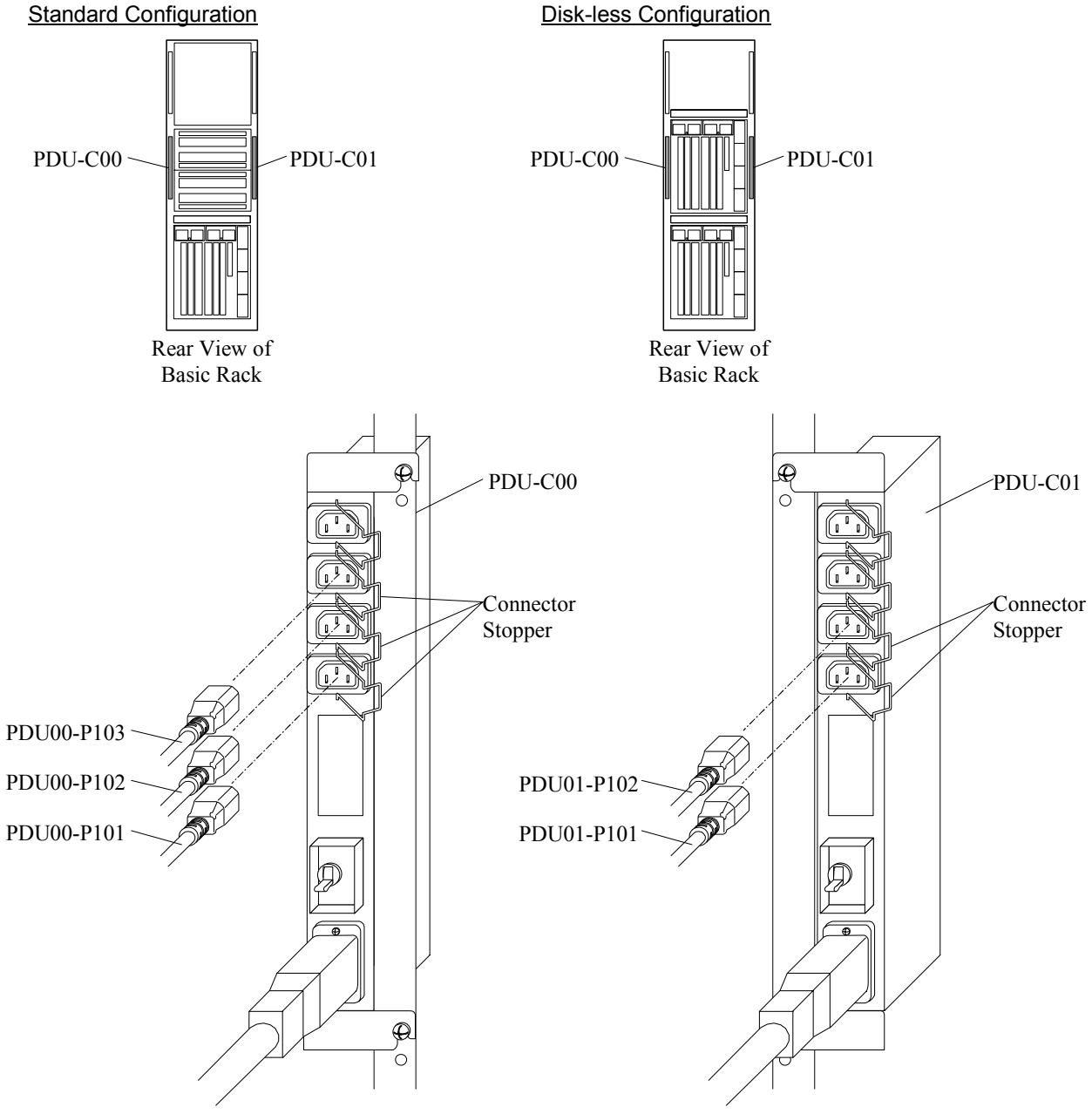
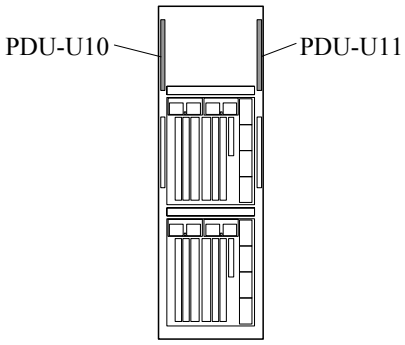


Fig. 3.4.2-13 Connection of Power Cables (Option 1)

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Option 2

Disk-less Configuration



Rear View of
Basic Rack

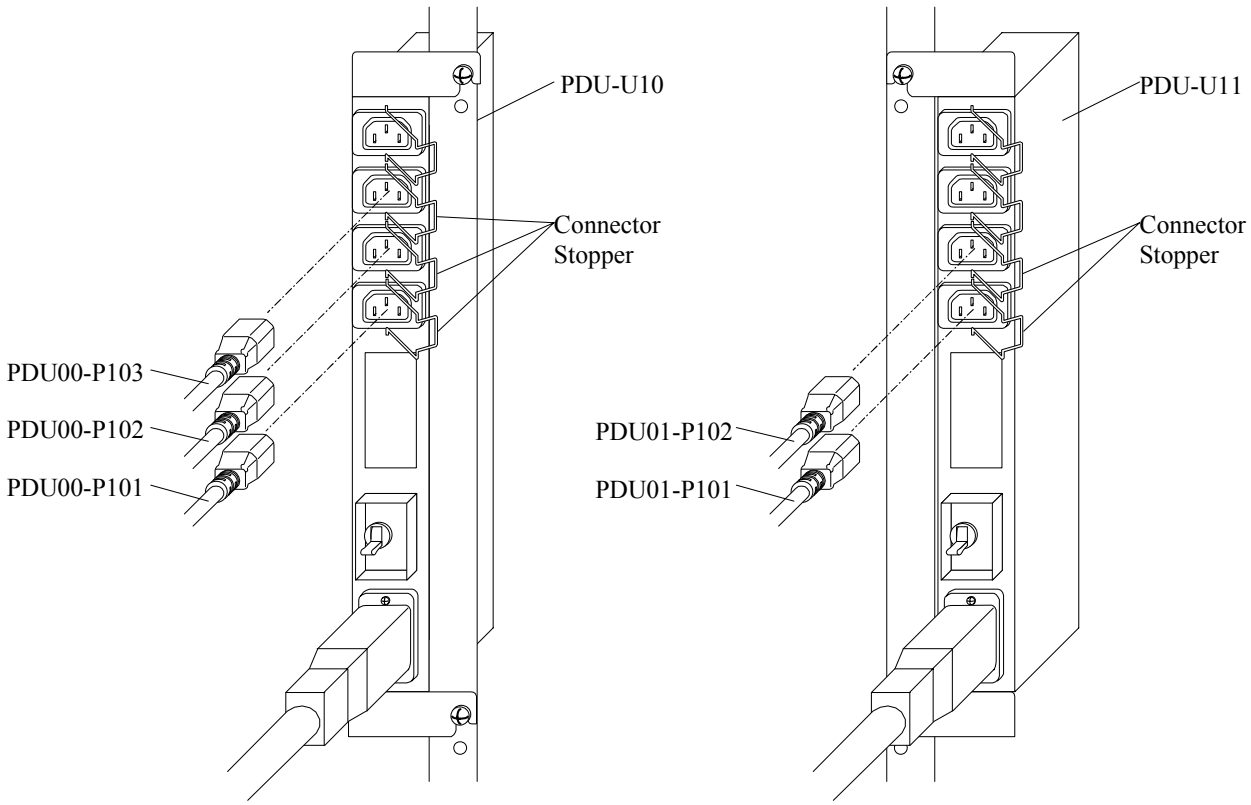


Fig. 3.4.2-14 Connection of Power Cables (Option 2)

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e. Fix the cable assemblies to the rack frame with the repeat binders. Refer to Fig. 3.4.2-15 or Fig.3.4.2-16.

Option 1

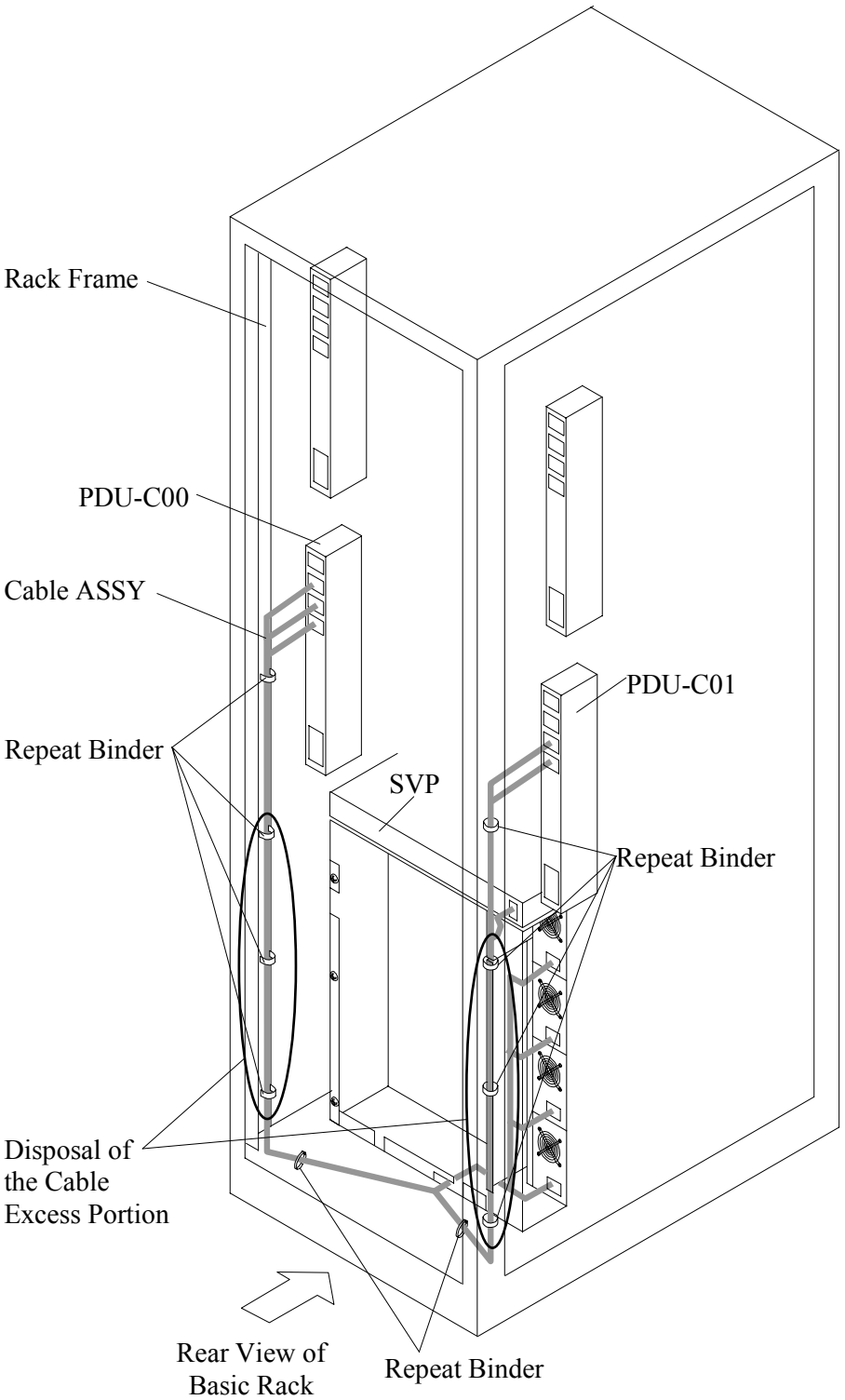


Fig. 3.4.2-15 Attachment of Power Cables (Option 1)

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Option 2

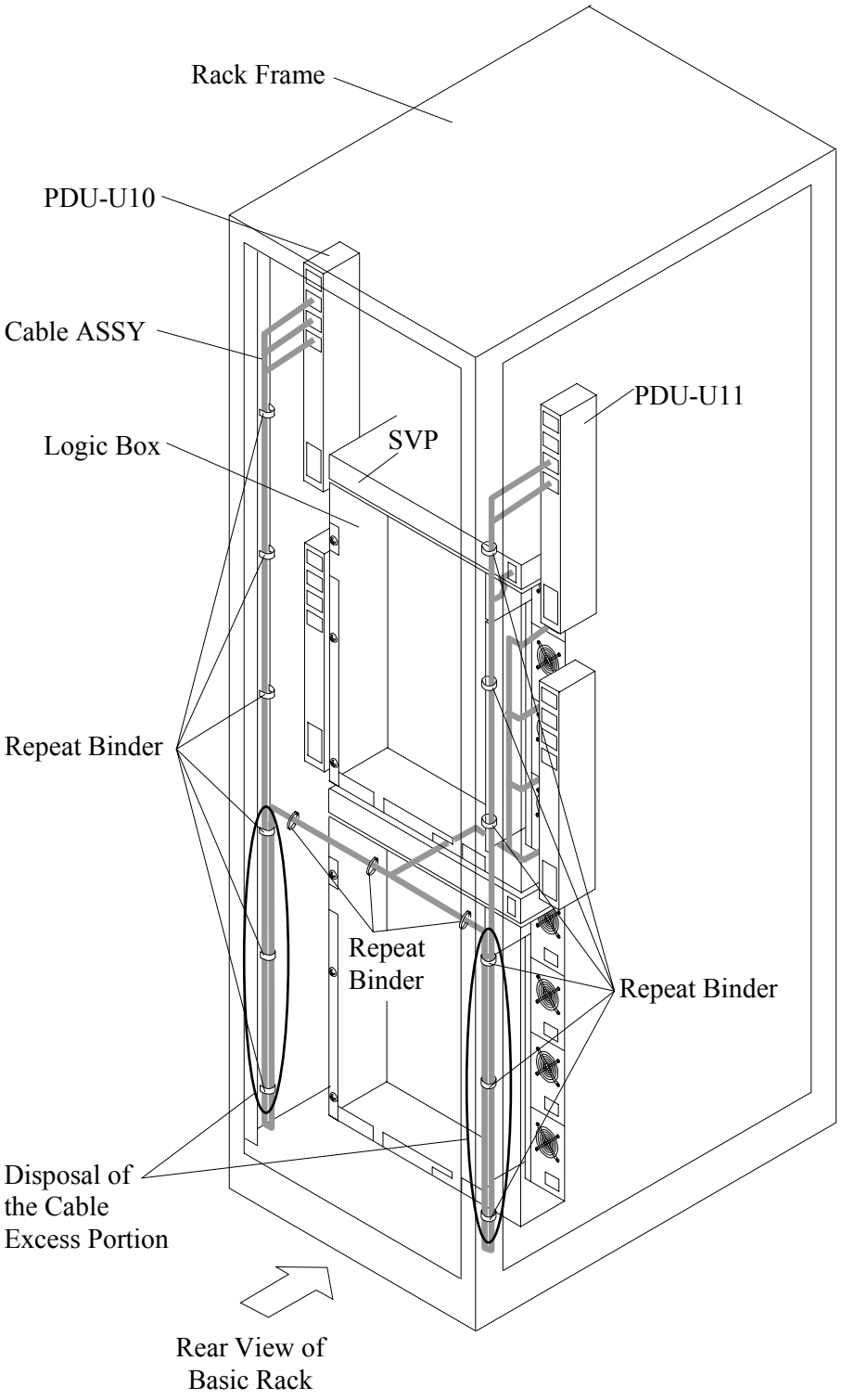


Fig. 3.4.2-16 Attachment of Power Cables (Option 2)

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f. Pull out AC power cables from the opening part on the bottom of the rack frame, and fix them with a cable clamp.
Use the Stubby Screwdriver when fix a cable clamp with screws.

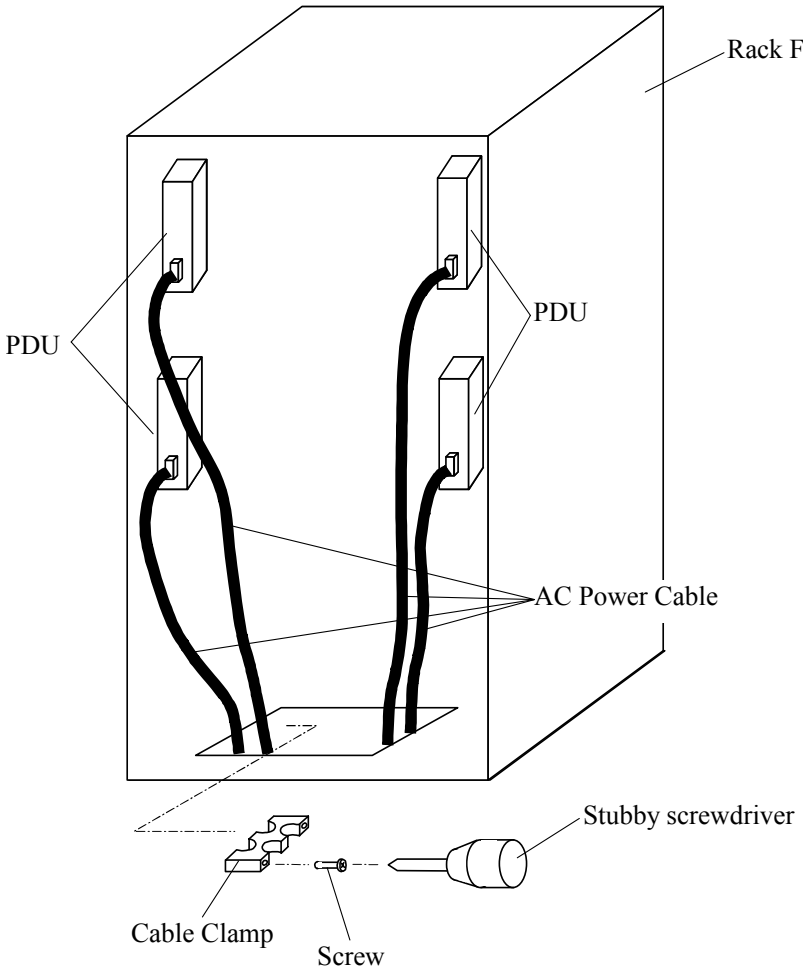


Fig. 3.4.2-17 Fixation of AC Power Cable

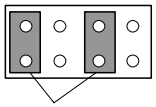
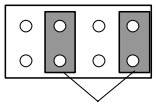
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5. Jumper Setting

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

a. Install the jumper plugs in the SSVP/MN as indicated in the Table 3.4.2-1 and Fig. 3.4.2-18.

Table 3.4.2-1 Installation of Jumper in SSVP/MN

Function Name	Jumper No.	Settings	Jumper setting
SSVP/MN	JP04 (AUTO PS-ON)	The subsystem is powered on automatically after the AC power is turned on.	JP04  Jumper
		The subsystem is powered on through on operation of the PS ON/PS OFF switch after the AC power is turned on. (When the unit is shipped from the factory.)	JP04  Jumper

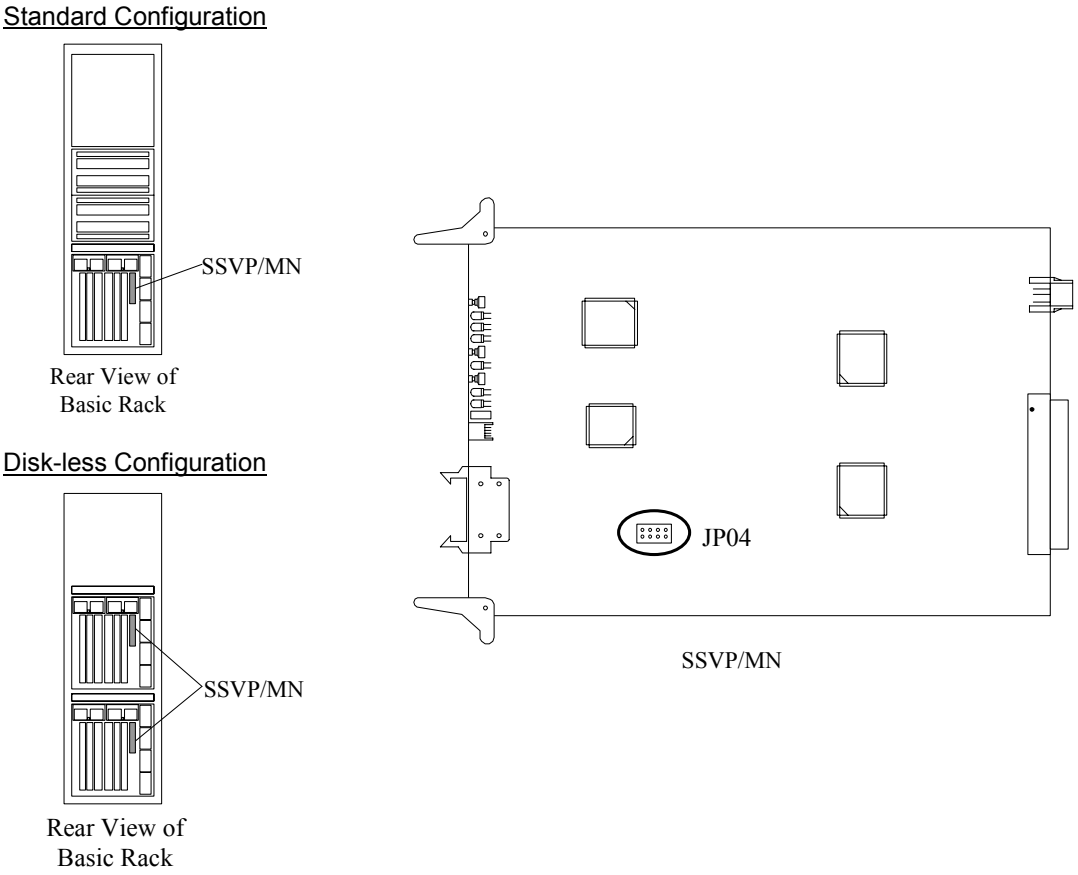


Fig. 3.4.2-18 Installation of Jumper in SSVP/MN

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6. Labeling

In case of AE102A

a. Attach the seven labels to the rear door.
b. Attach the four labels and the nameplate to the frame bottom base. Label (V/Hz/PH.) should be selected among the sheet of Label (V/Hz/PH.) corresponding to the operating voltage and frequency.

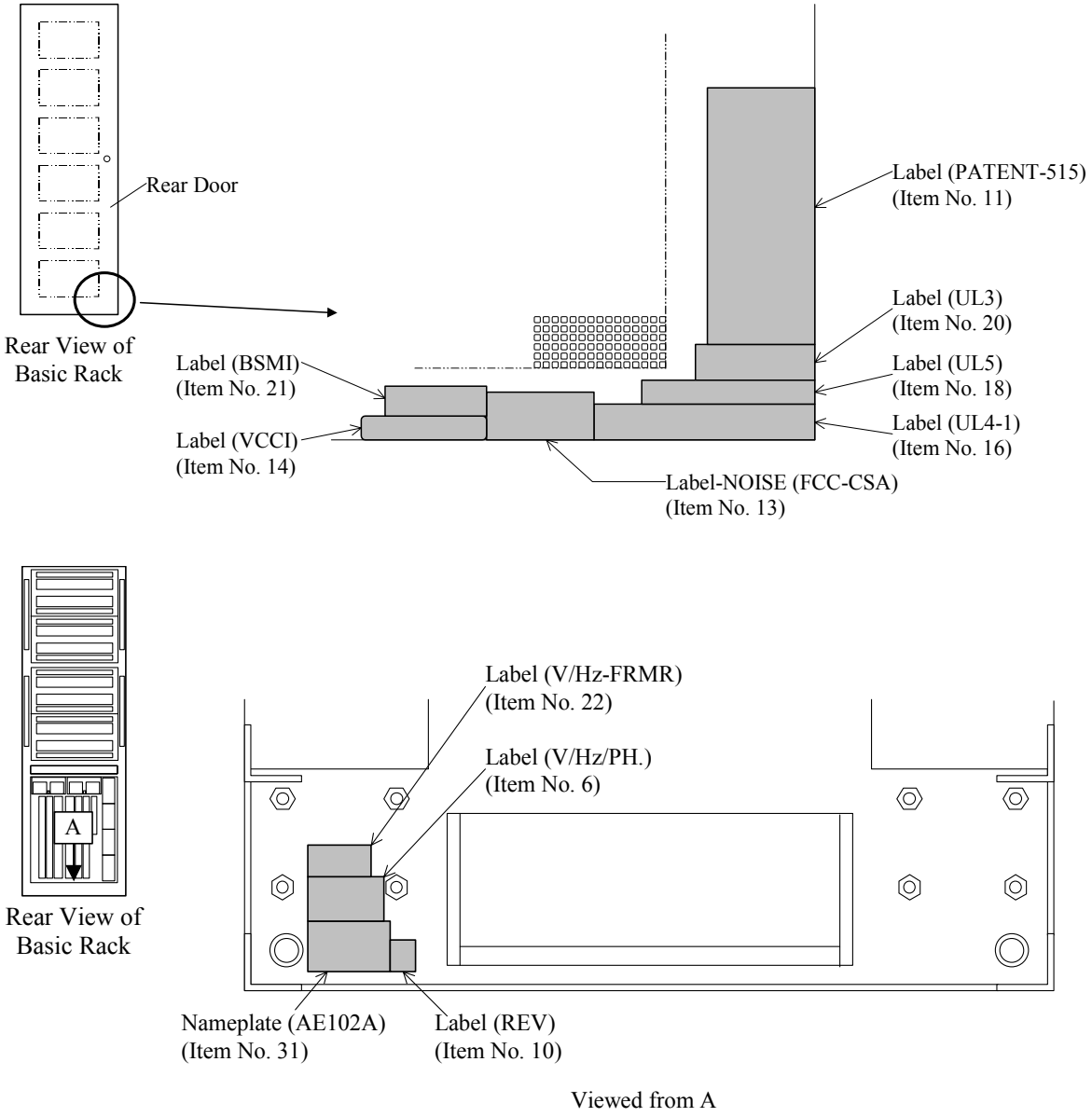


Fig. 3.4.2-19 Attachment of Labels

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In case of AE071-63001

a. When the Control Frame (AE071-63001) is option 1, attach the seven labels to the rear door.
   When the Control Frame is option 2, go to step d.
b. Attach the label (V/Hz/PH.) to the frame bottom base. Label (V/Hz/PH.) should be selected among the sheet of Label (V/Hz/PH.) corresponding to the operating voltage and frequency.
c. Attach the label (V/Hz-FRMR) to the frame bottom base.

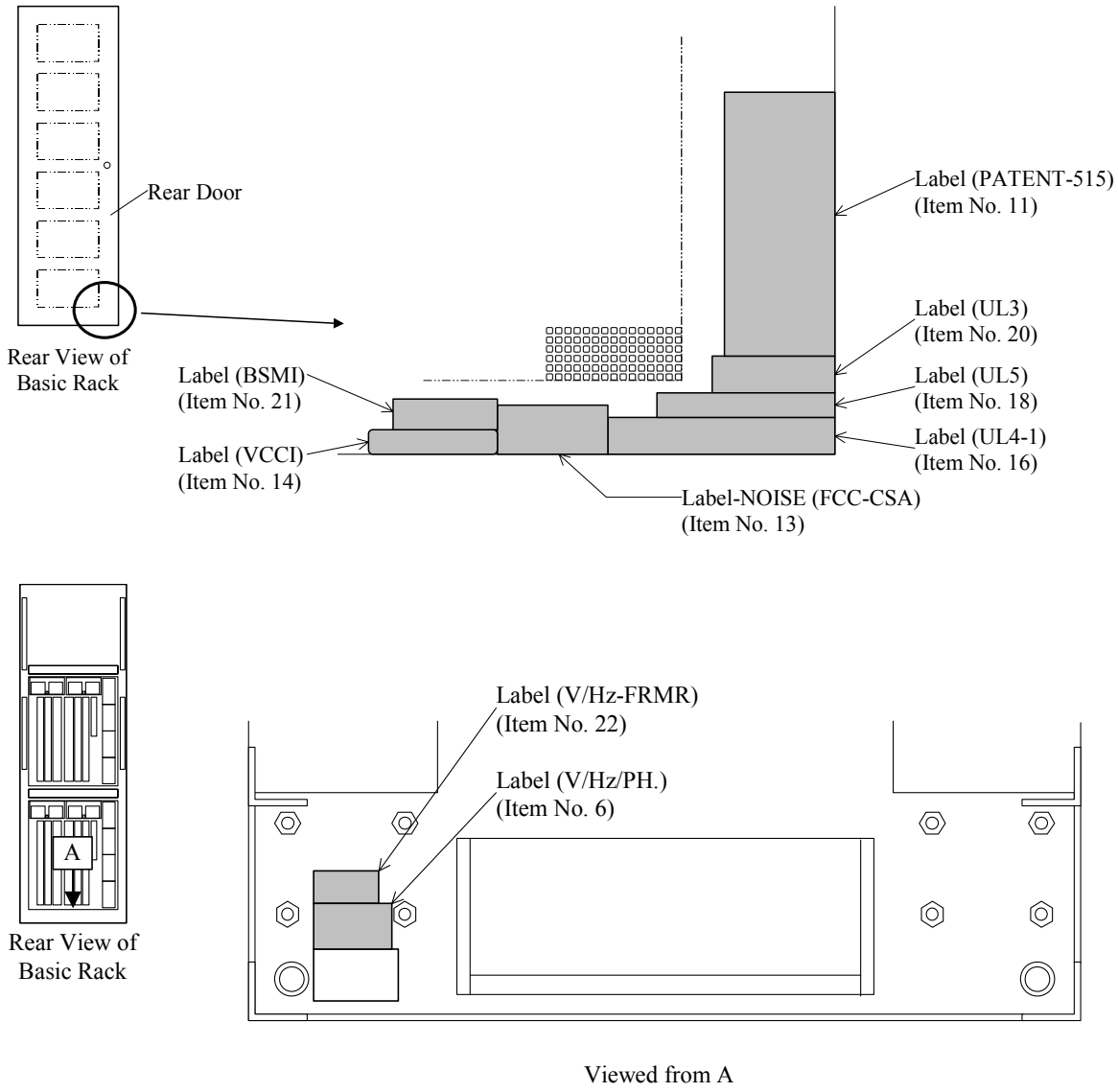


Fig. 3.4.2-20 Attachment of Labels (Option 1)

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d. Attach the three labels and the nameplate to the Rear Logic Box cover.

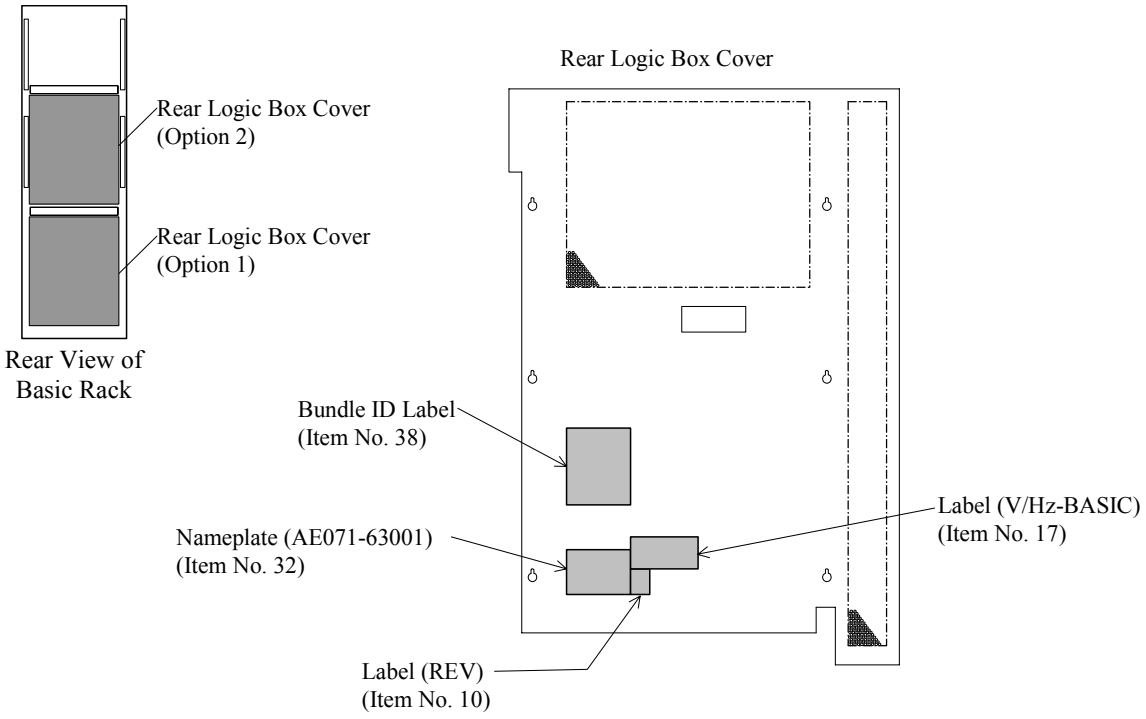


Fig. 3.4.2-21 Attachment of Labels (Option 1/Option 2)

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7. Attach the nameplate.
   a. Fit the rack nut to the right beam on the rear side of the rack frame.
   b. Attach the nameplates to the nameplate tags.
   c. Attach the nameplate tags with the screw.

RSD Rack Frame

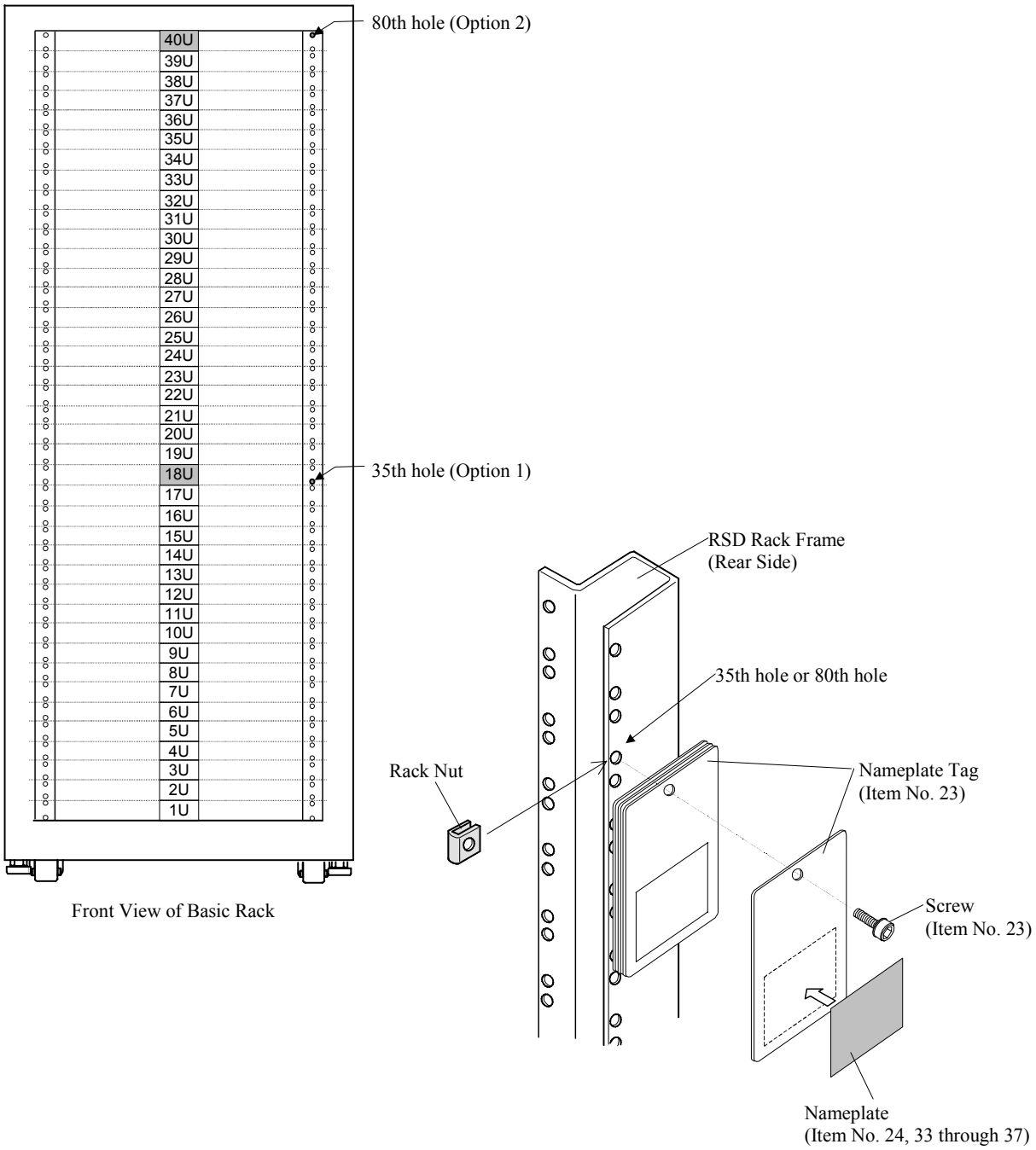


Fig. 3.4.2-22 Attachment of Nameplate

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Blank Sheet

Copyright © 2005, 2006, Hitachi, Ltd.

7. Insertion of MODEM Card
   a. Insert the MODEM Card in the port on the SVP.
   b. Doing MODEM cable to the core 1turn and fix the core and LAN cables with the repeat binder.
   c. Connect the cable to the modem cable coupler.

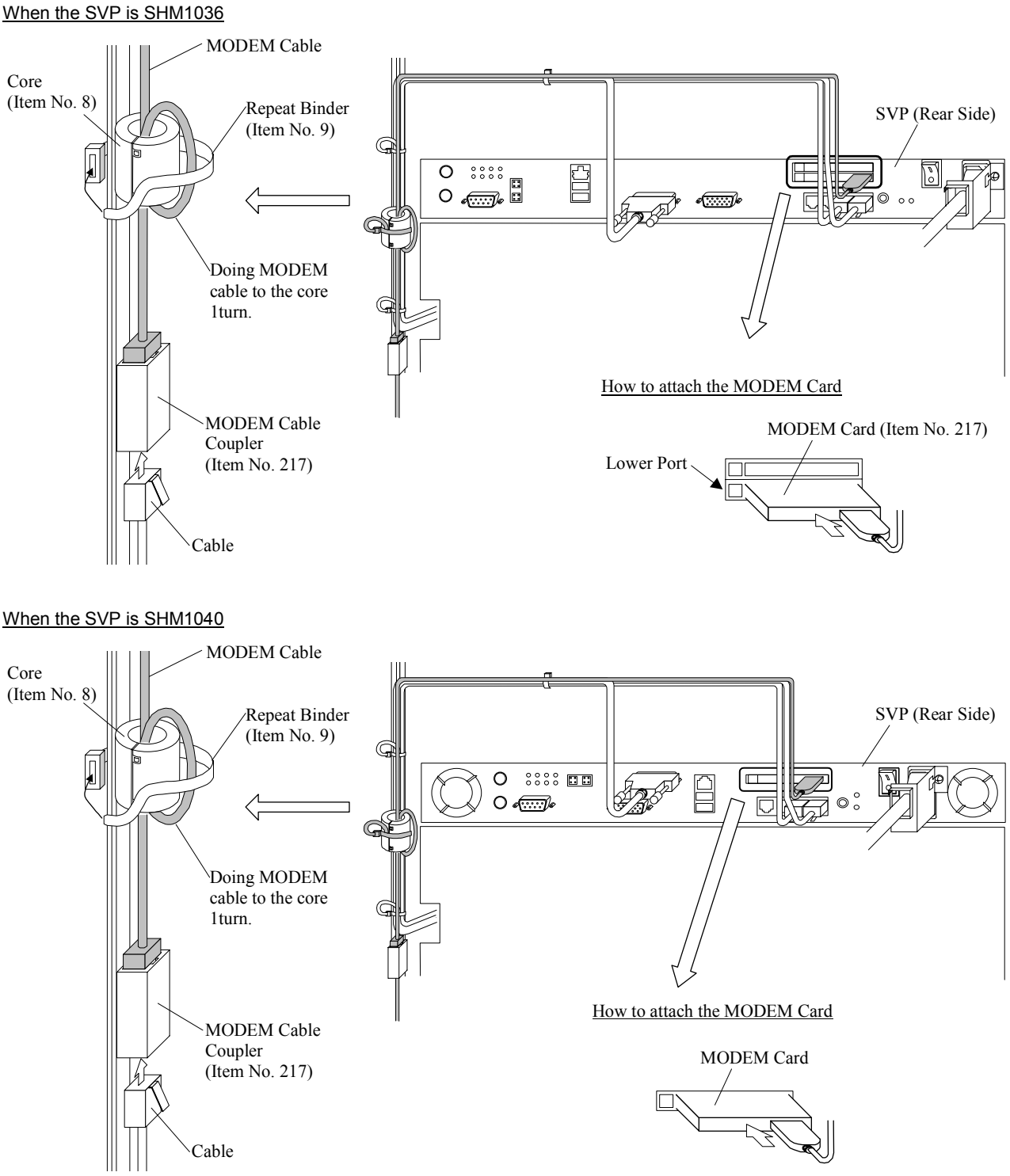


Fig. 3.4.2-23 Insertion of MODEM Card

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3.4.3 Installation Procedure of Control Frame (HDS Rack Frame)

1. Installing the rails (If the rails are already installed, this installation procedure is not required.)

HDS Rack Frame

EIA units and intervals of mounting holes of 19-inch rack frame conforming to EIA standard

- A unit (U) space conforming to EIA standard is 19 inches wide and 44.5 mm high as shown in the figure below.
- The boundary of the unit falls on the middle of the interval of 12.7 mm.
- Wide intervals: Repeat of 44.45 mm (15.875mm + 15.875 mm + 12.7 mm)
  Maximum number of mountable unit spaces: 42

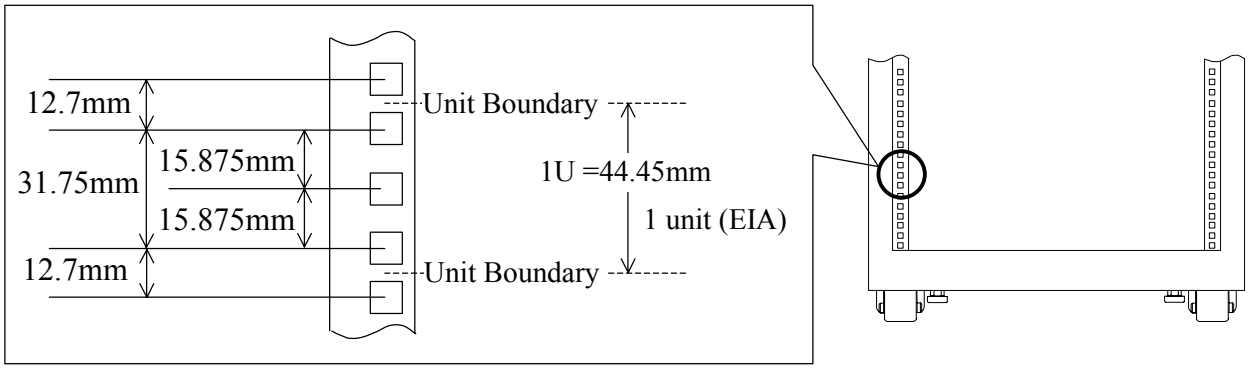


Fig. 3.4.3-1 Attachment Hole Size of Rack

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The addresses are given as 1, 2, 3, and so on counted from the bottom of the rack frame.
The following figure illustrates the whole layout of addresses of installation positions in the rack frame.
There are 42 addresses, that is, the 1U to 42U counted in the vertical direction starting from the lower boundary of the 1U (the lowest unit).

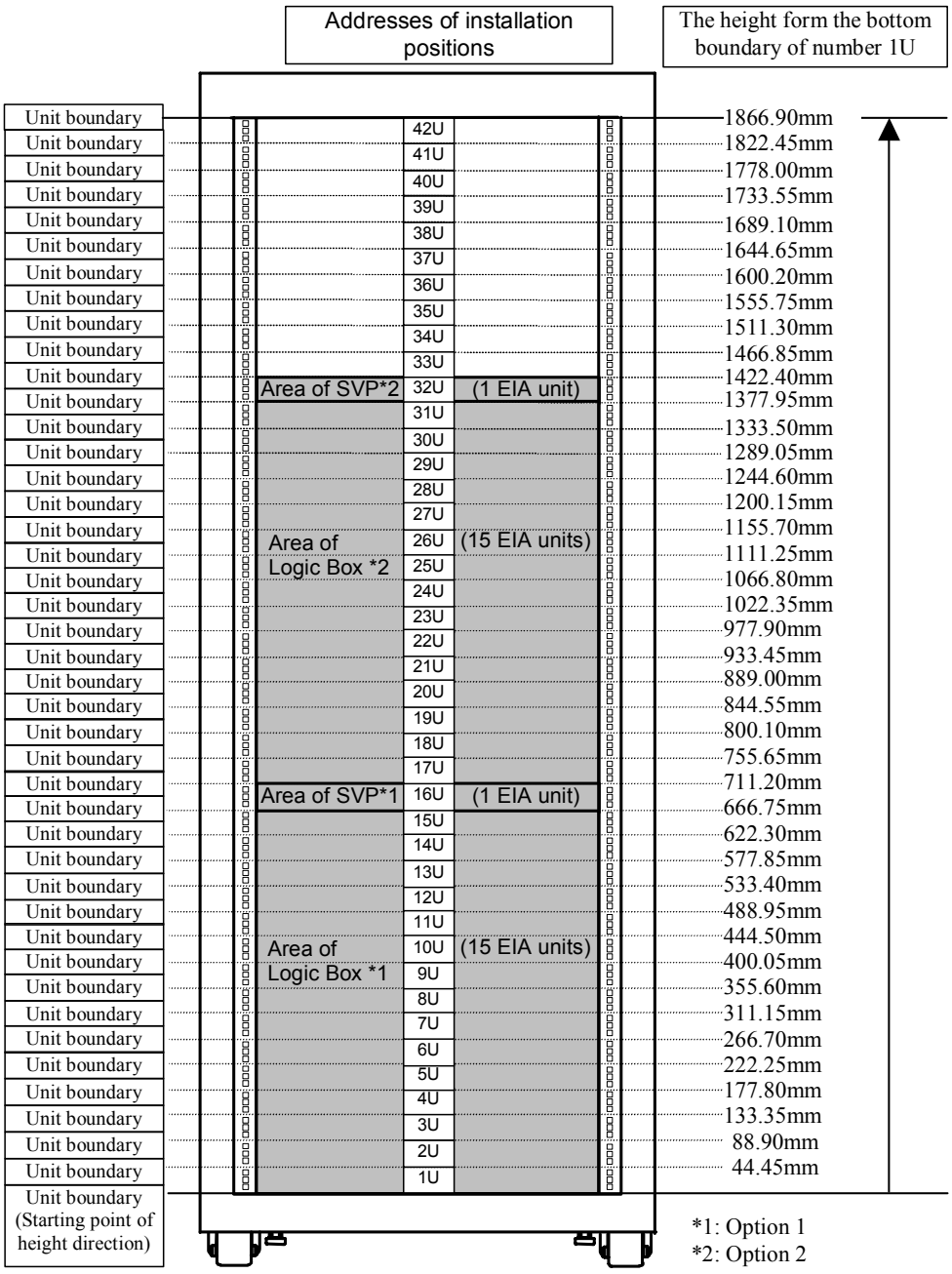


Fig. 3.4.3-2 Whole Layout of Installation Position Addresses

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a. Unscrew screws of rails from right side of the component and uninstall all rails.
Repeat same step described above for the left side of the component.
These unscrewed screws should be kept for the installment of exclusive use rails.

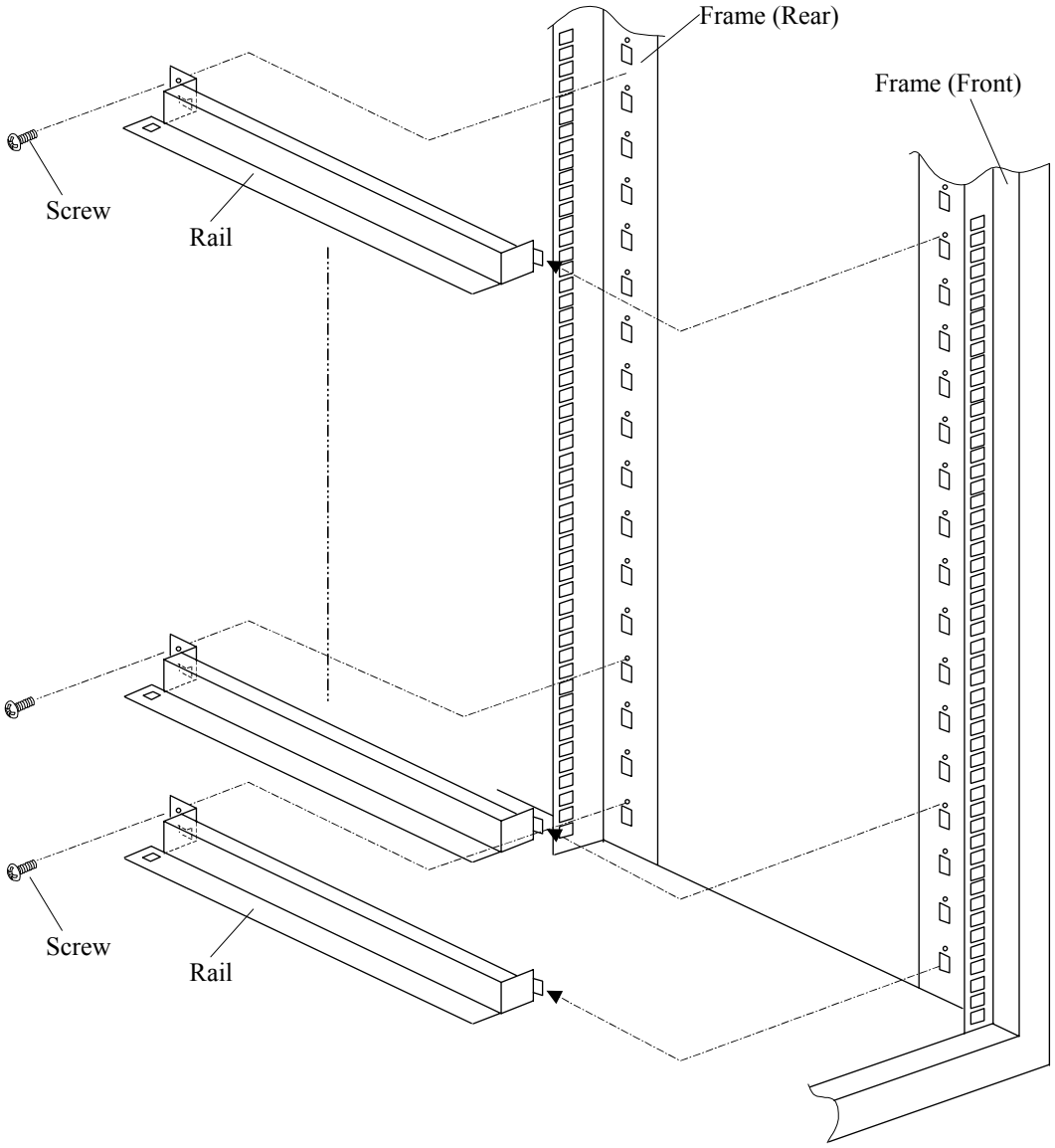


Fig. 3.4.3-3 Removal of Rails

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b. On the right side of the installation location in the rack frame, fasten the L/G Rail (R) to the rack frame using the screw (at a place on the rear side.).
c. Install the L/G Rail (L) to the rack frame in the same way.
d. On the right side of the installation location in the rack frame, fasten the SVP Rail (R) to the rack frame using the screw (at a place on the rear side.).
e. Install the SVP Rail (L) to the rack frame in the same way.

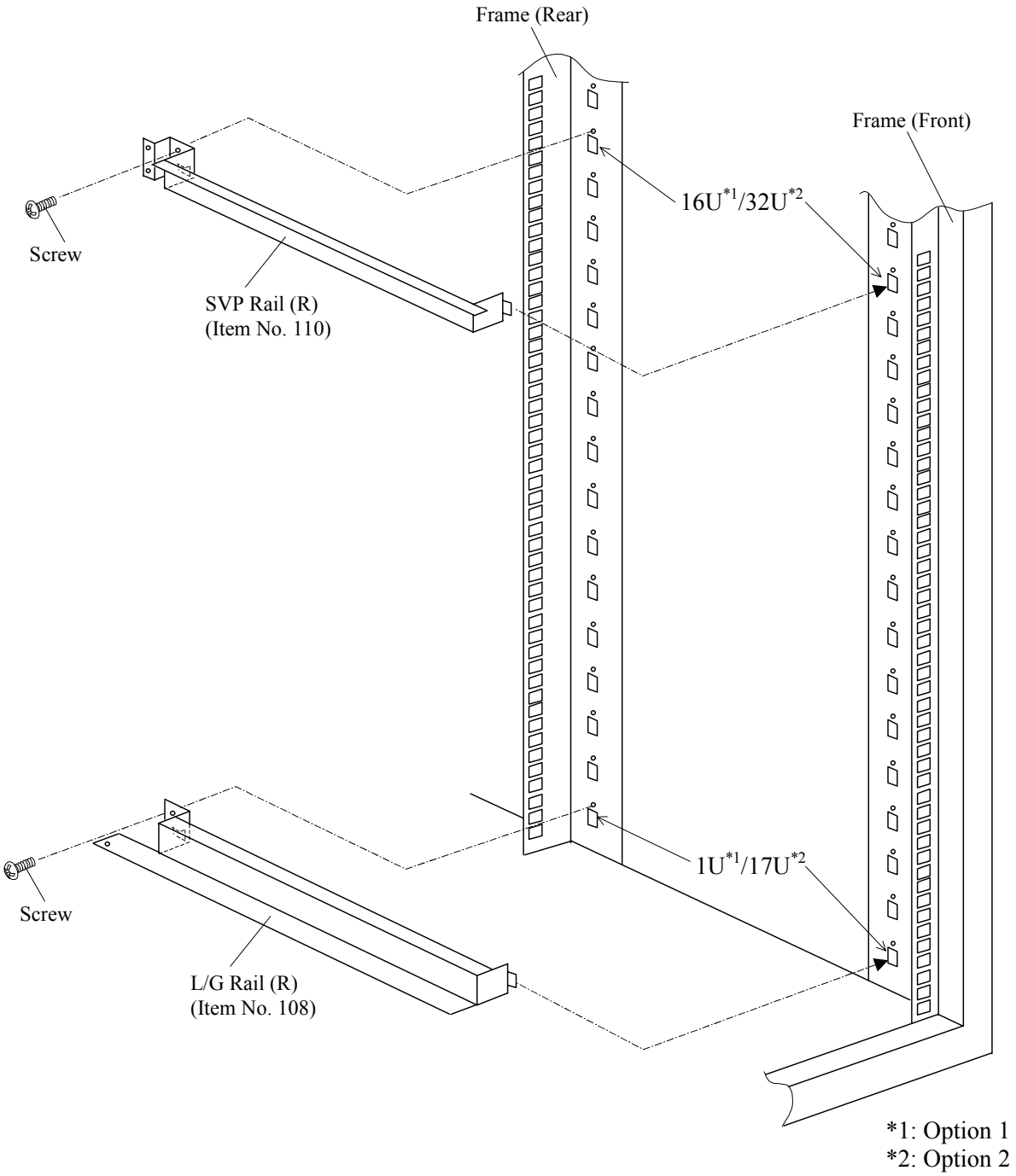
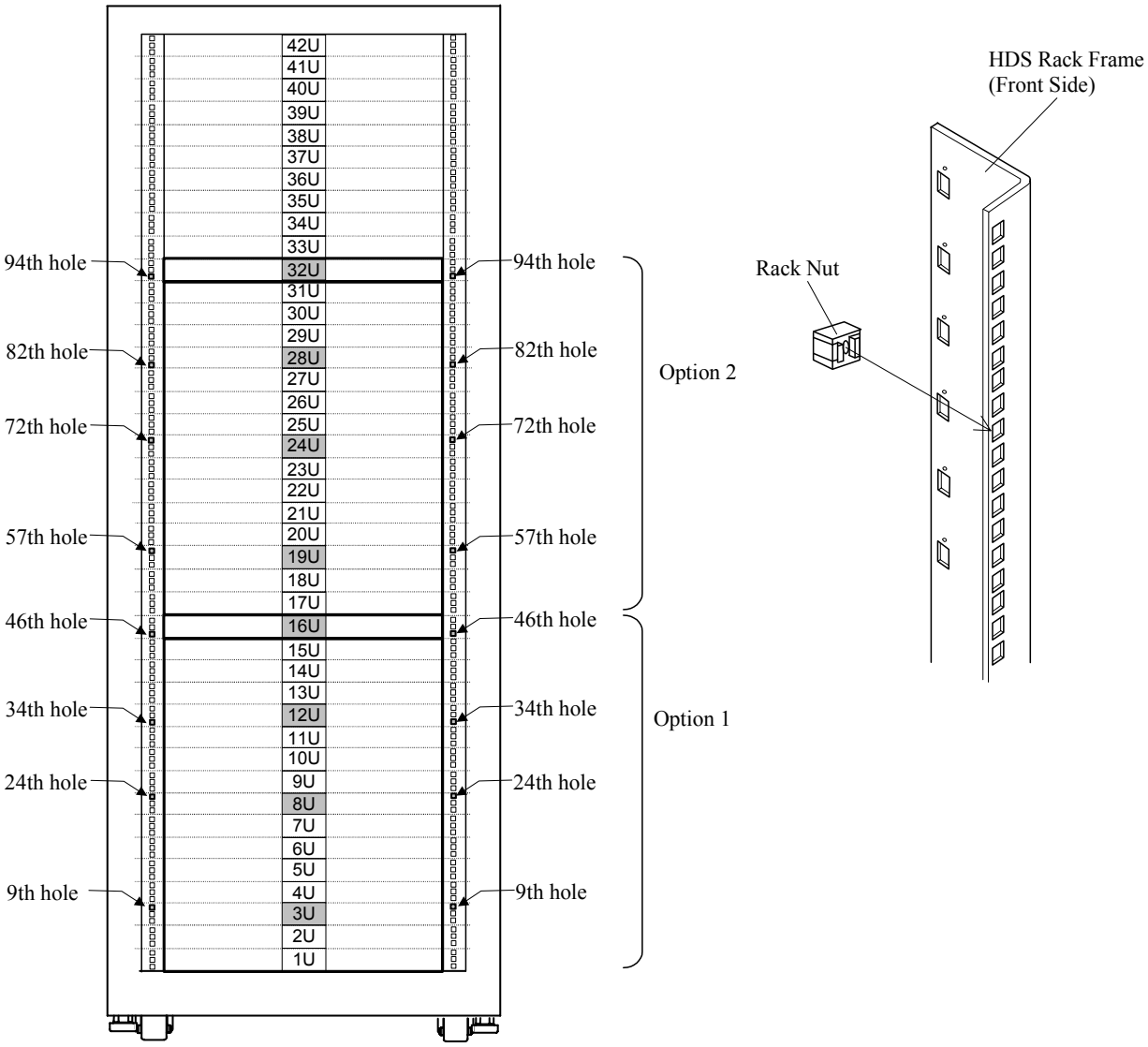


Fig. 3.4.3-4 Attachment of Rails

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2. Installing rack nuts on the front side of the rack frame
   Install the rack nuts on the front side of the rack frame in order to fasten the subsystems to be mounted on the rack frame.
   a. Fit the four rack nuts to each of the right and left beams on the front side of the rack frame.

HDS Rack Frame



Front View of Basic Rack

No.	Part	Location		Remark
Option 2	SVP	32U	Lower	94th hole
	Logic Box	28U	Lower	82th hole
		24U	Upper	72th hole
		19U	Upper	57th hole
Option 1	SVP	16U	Lower	46th hole
	Logic Box	12U	Lower	34th hole
		8U	Upper	24th hole
		3U	Upper	9th hole

Fig. 3.4.3-5 Attachment of Rack Nut

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3. Installing the Logic Box and SVP

⚠ CAUTION

Paying attention to falls:
Work carefully because the mass of the single Logic Box is about 70 kg and SVP is about 15 kg.

a. Install the Logic Box on the Rack frame referring to mounting procedure using the special lifter. (See INST03-13-10 through 40.)
b. Fix the Logic Box with the six screws.
c. Install the SVP on the Rack frame and fasten the two screws.

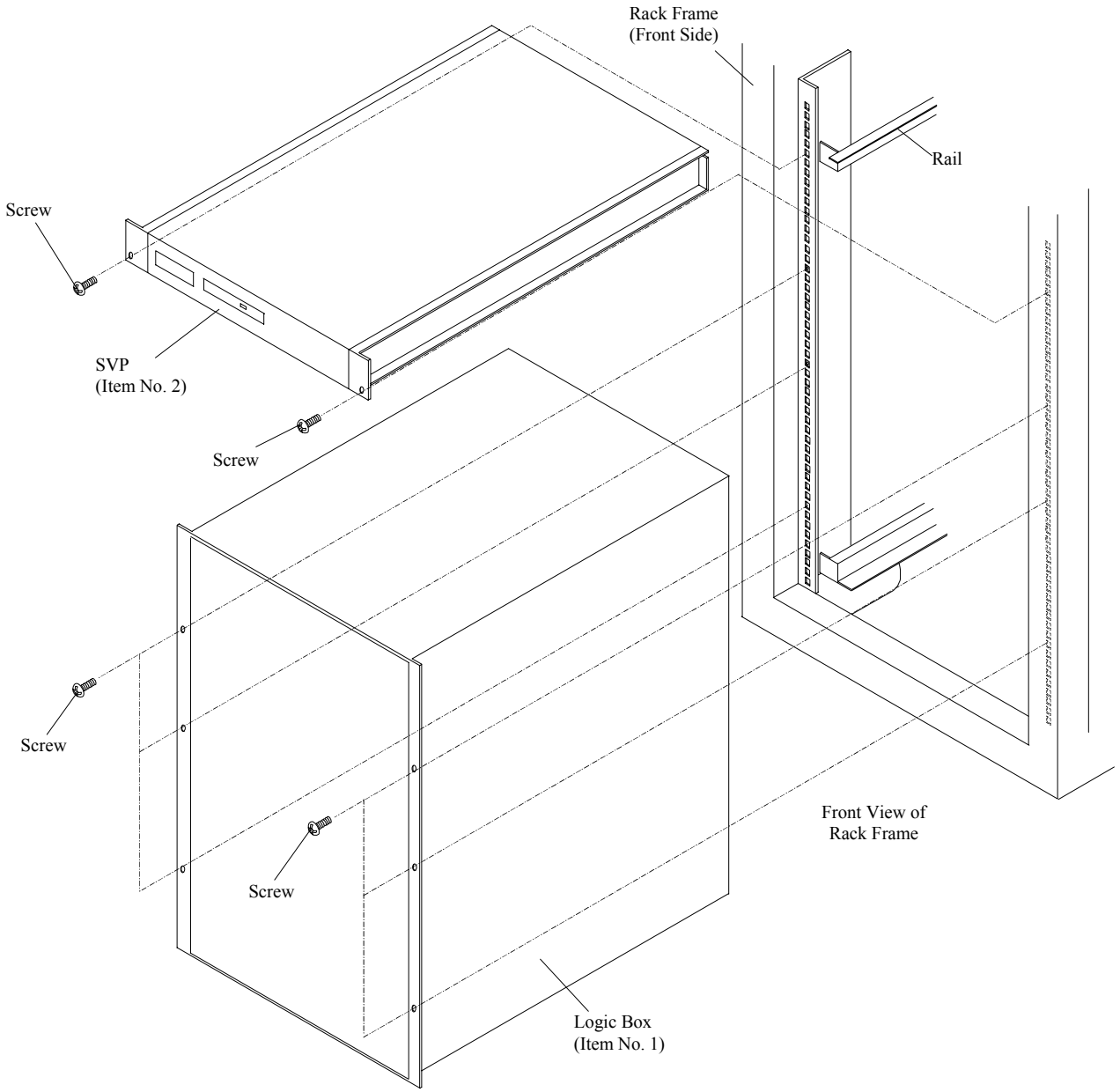


Fig. 3.4.3-6 Installing Logic Box and SVP

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d. Attach the stoppers on the rear side of Logic Box and fasten the screws.

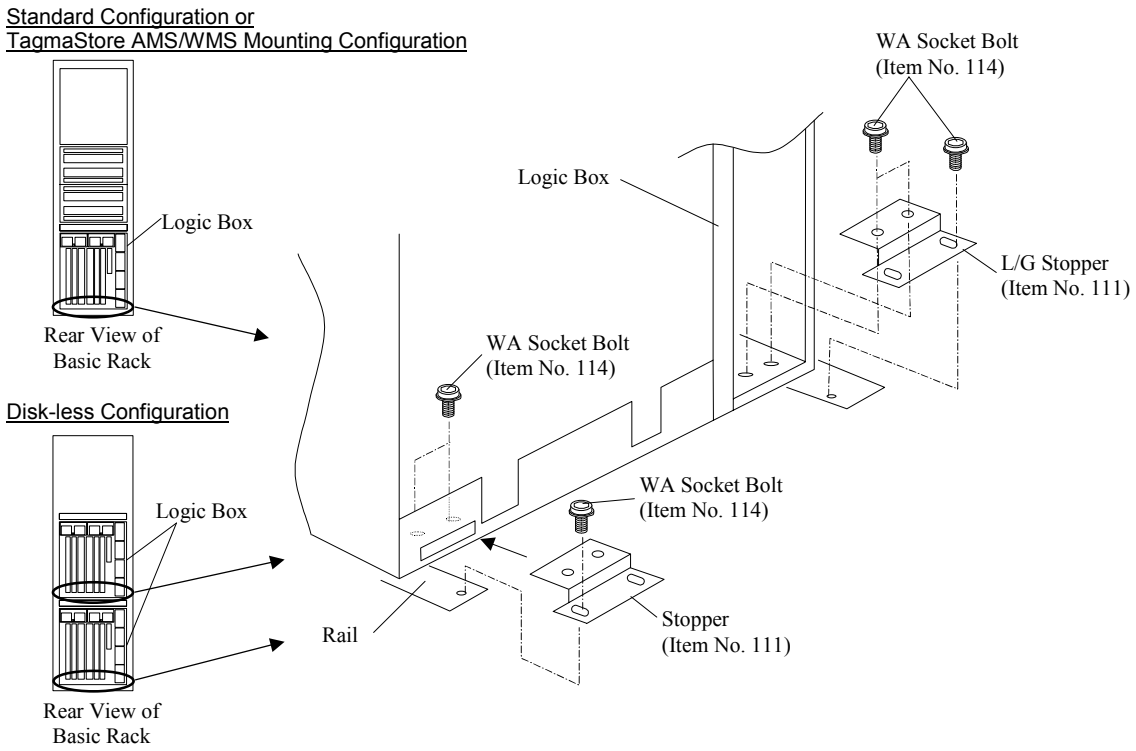


Fig. 3.4.3-7 Attachment of Stoppers

e. Attach the stoppers on the rear side of SVP and fasten the screws.

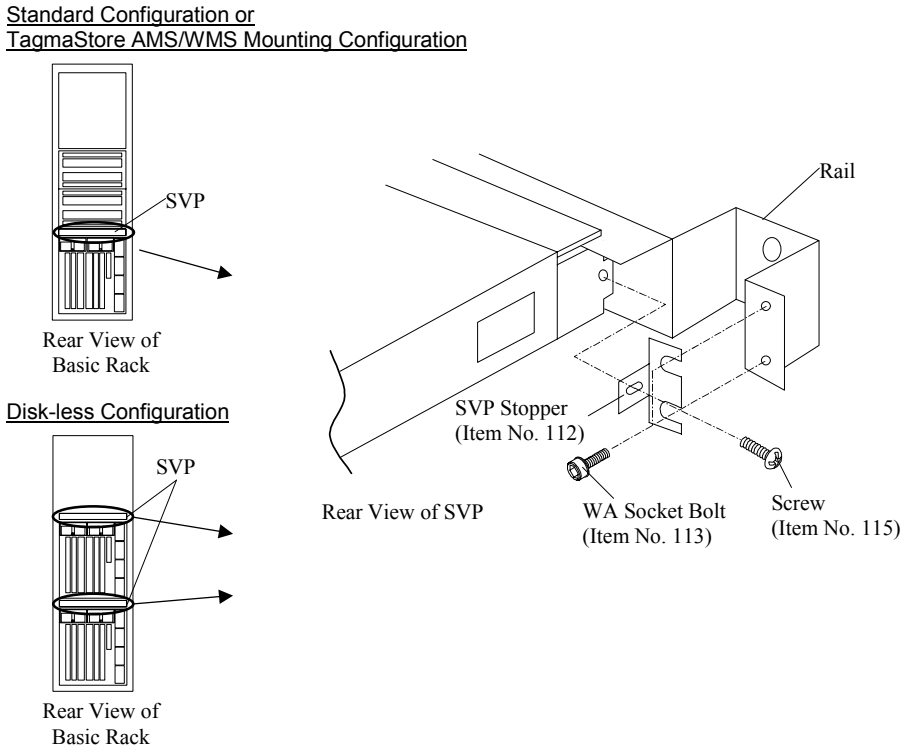
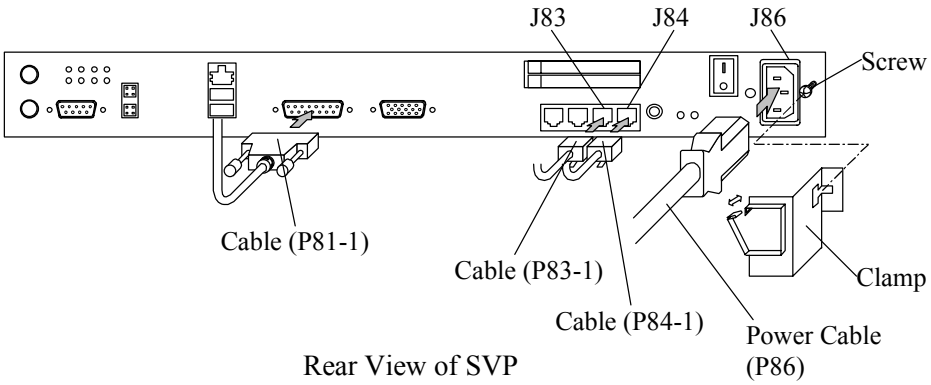


Fig. 3.4.3-8 Attachment of Stoppers

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4. Connect the cables.
   a. Connect the cables (P81-1, P83-1, P84-1) to the SVP.
   b. Loosen the screw and remove the clamp. Connect the cable (P86) to the SVP and fix it with the clamp.

When the SVP is SHM1036



When the SVP is SHM1040

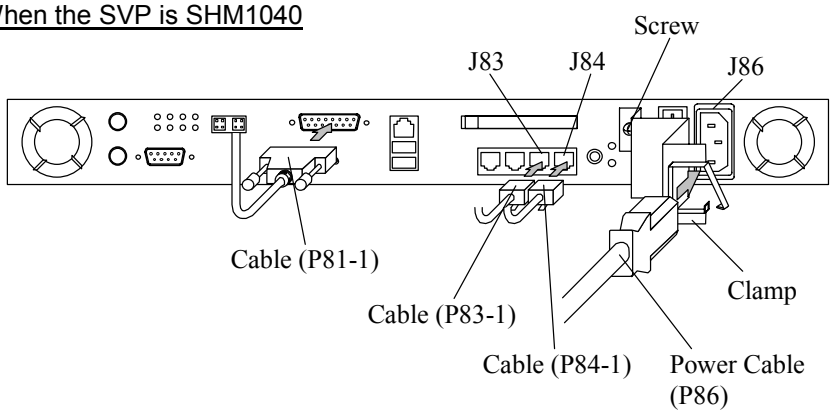


Fig. 3.4.3-9 Connection of Cables

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c. Fix the cable assemblies to the fibre cable (DKC-F515I-UC0R) with the repeat binders.

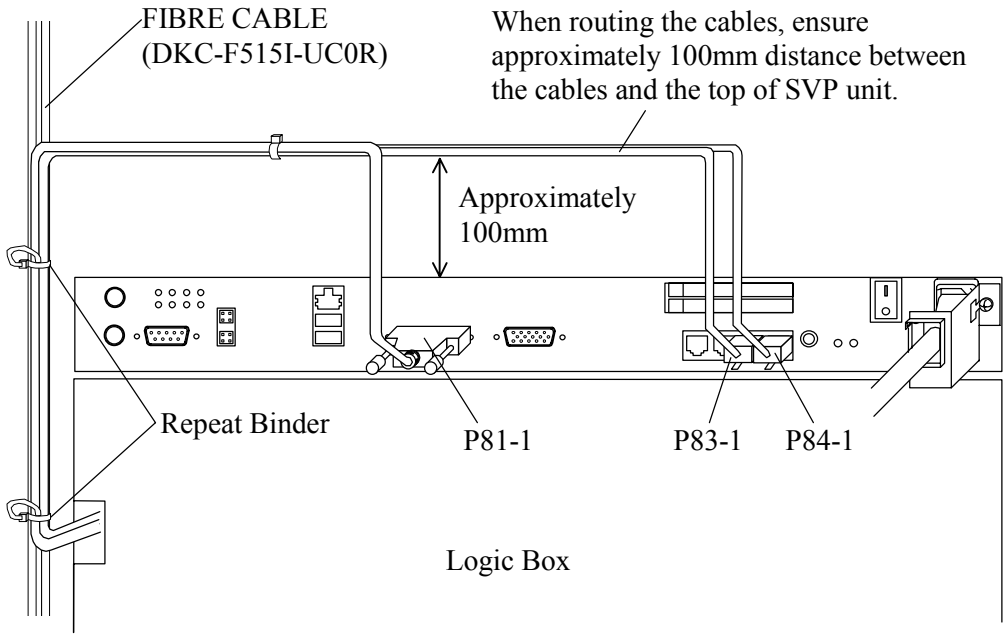


Fig. 3.4.3-10 Fixation of Cables

d. Connect the power cables (PDU00-P101, PDU00-P102, PDU00-P103, PDU01-P101 and PDU01-P102) to the PDUs. (Refer to HDS installation Manual.)

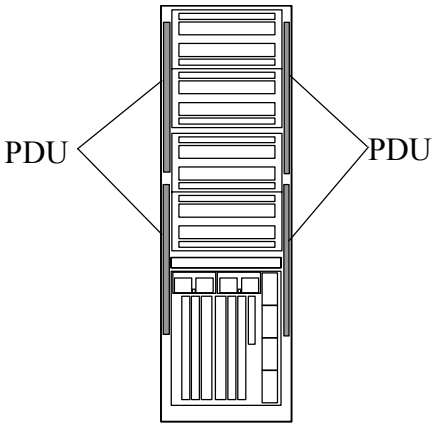


Fig. 3.4.3-11 Connection of Power Cables

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e. Fix the cable assemblies to the rack frame with the repeat binders. Refer to Fig.3.4.3-12 or Fig.3.4.3-13.

Option 1

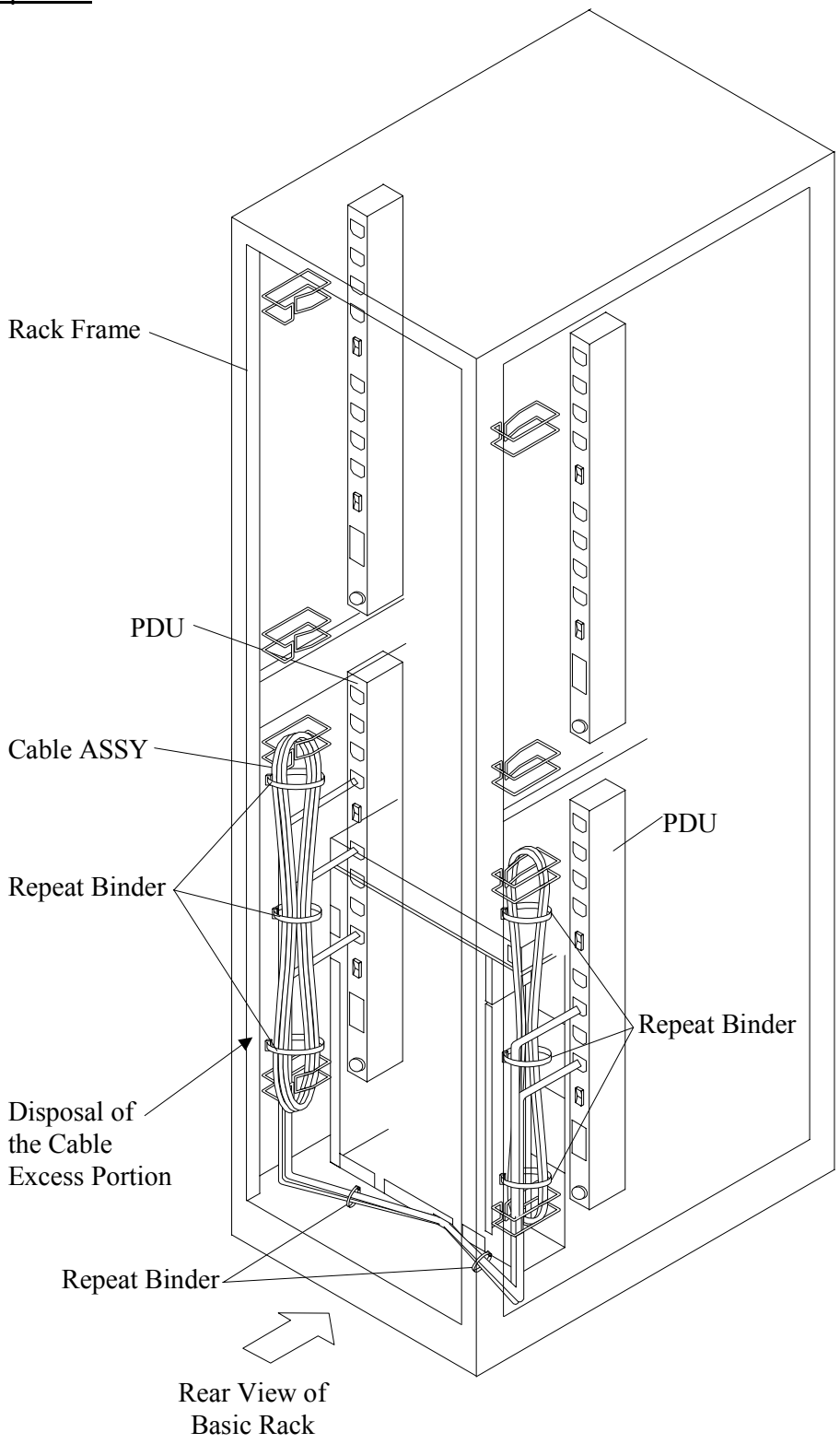


Fig. 3.4.3-12 Attachment of Power Cables (Option 1)

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Option 2

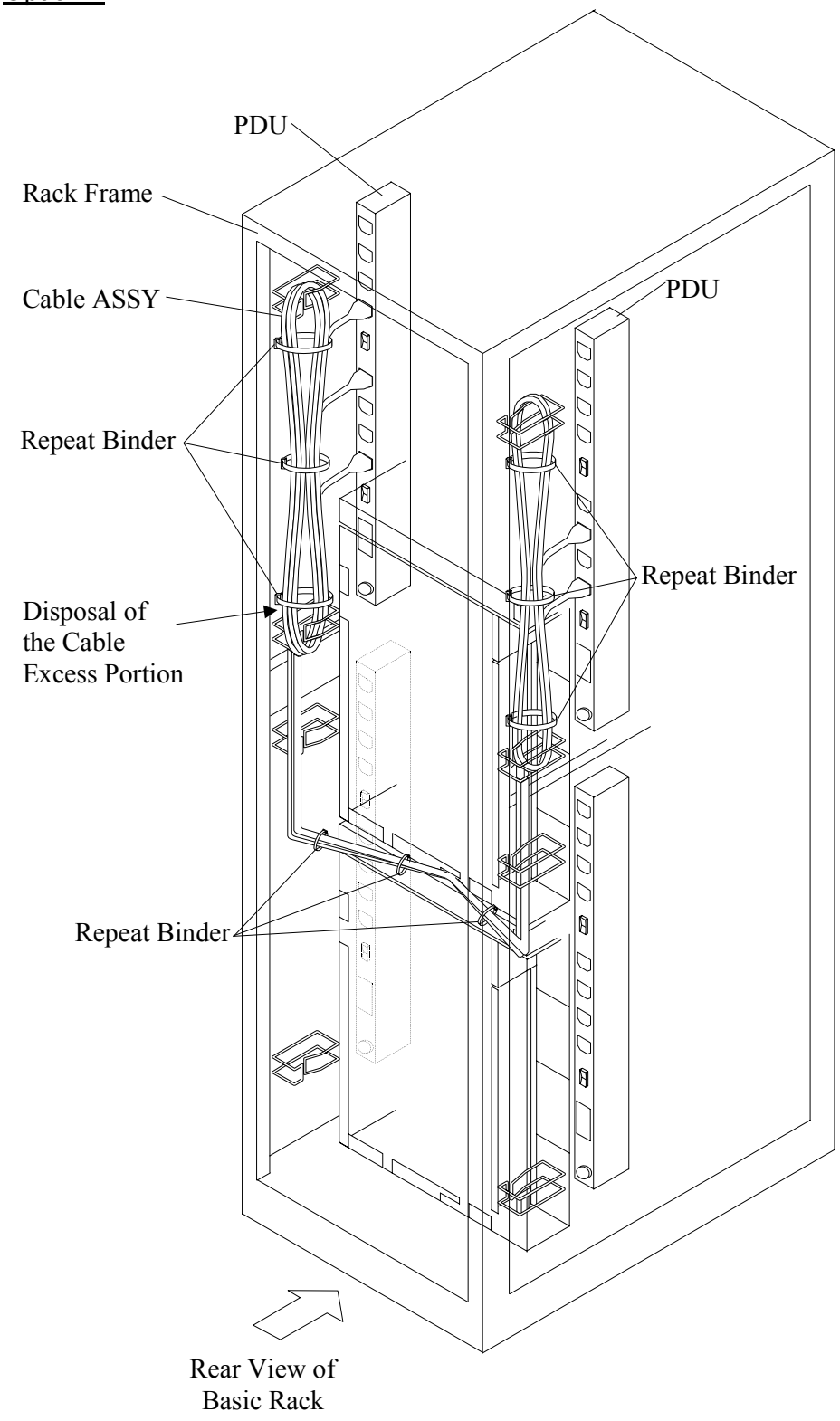


Fig. 3.4.3-13 Attachment of Power Cables (Option 2)

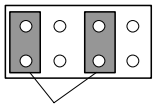
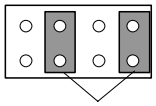
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5. Jumper Setting

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

a. Install the jumper plugs in the SSVP/MN as indicated in the Table 3.4.3-1 and Fig. 3.4.3-14.

Table 3.4.3-1 Installation of Jumper in SSVP/MN

Function Name	Jumper No.	Settings	Jumper setting
SSVP/MN	JP04 (AUTO PS-ON)	The subsystem is powered on automatically after the AC power is turned on.	JP04  Jumper
		The subsystem is powered on through on operation of the PS ON/PS OFF switch after the AC power is turned on. (When the unit is shipped from the factory)	JP04  Jumper

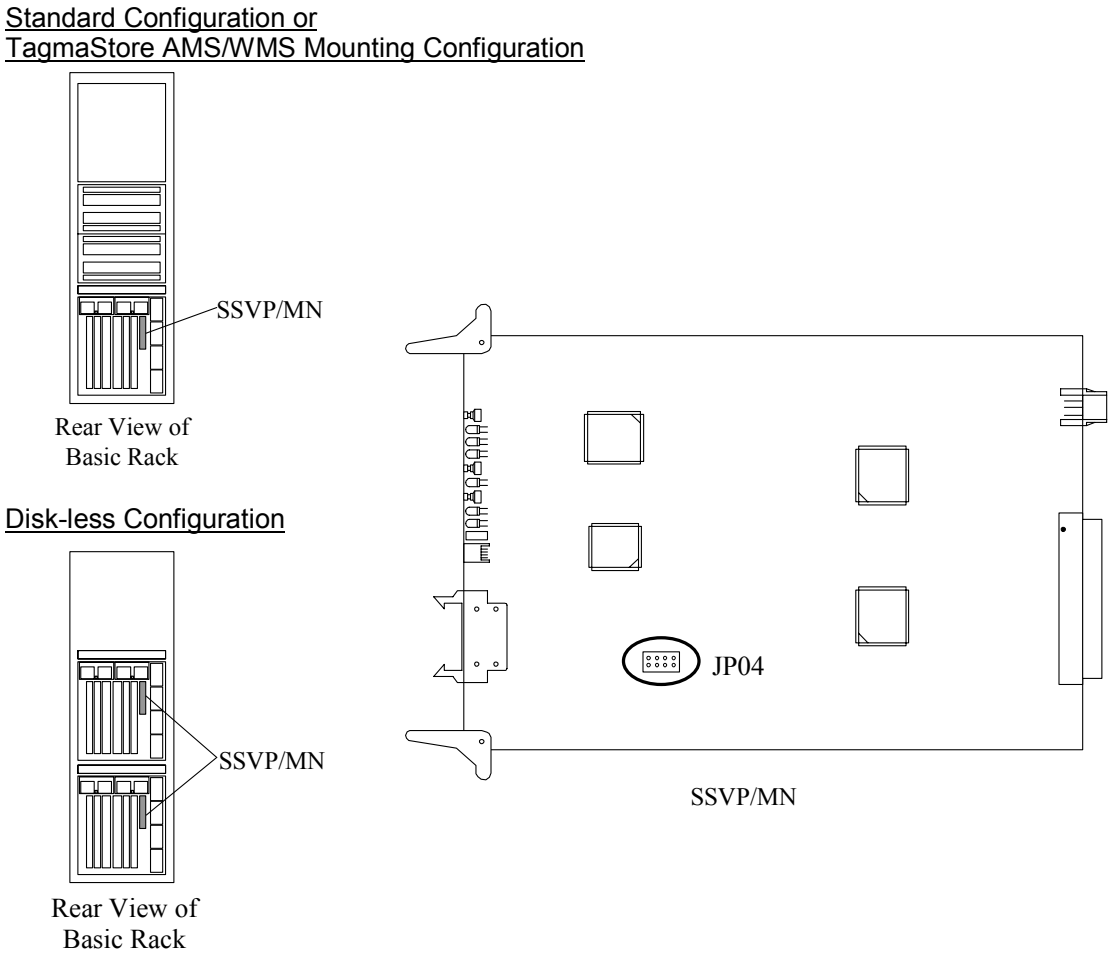


Fig. 3.4.3-14 Installation of Jumper in SSVP/MN

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6. Labeling
   a. When the Control Frame (DKC515I-5/5R) is option 1, attach the six labels to the rear door. When the Control Frame (DKC515I-5/5R) is option 2, go to step b.
   b. Attach the label (V/Hz/PH.) to the Rear Logic Box cover. Label (V/Hz/PH.) should be selected among the sheet of Label (V/Hz/PH.) corresponding to the operating voltage and frequency.
   c. Attach the four labels and the nameplate to the Rear Logic Box cover.

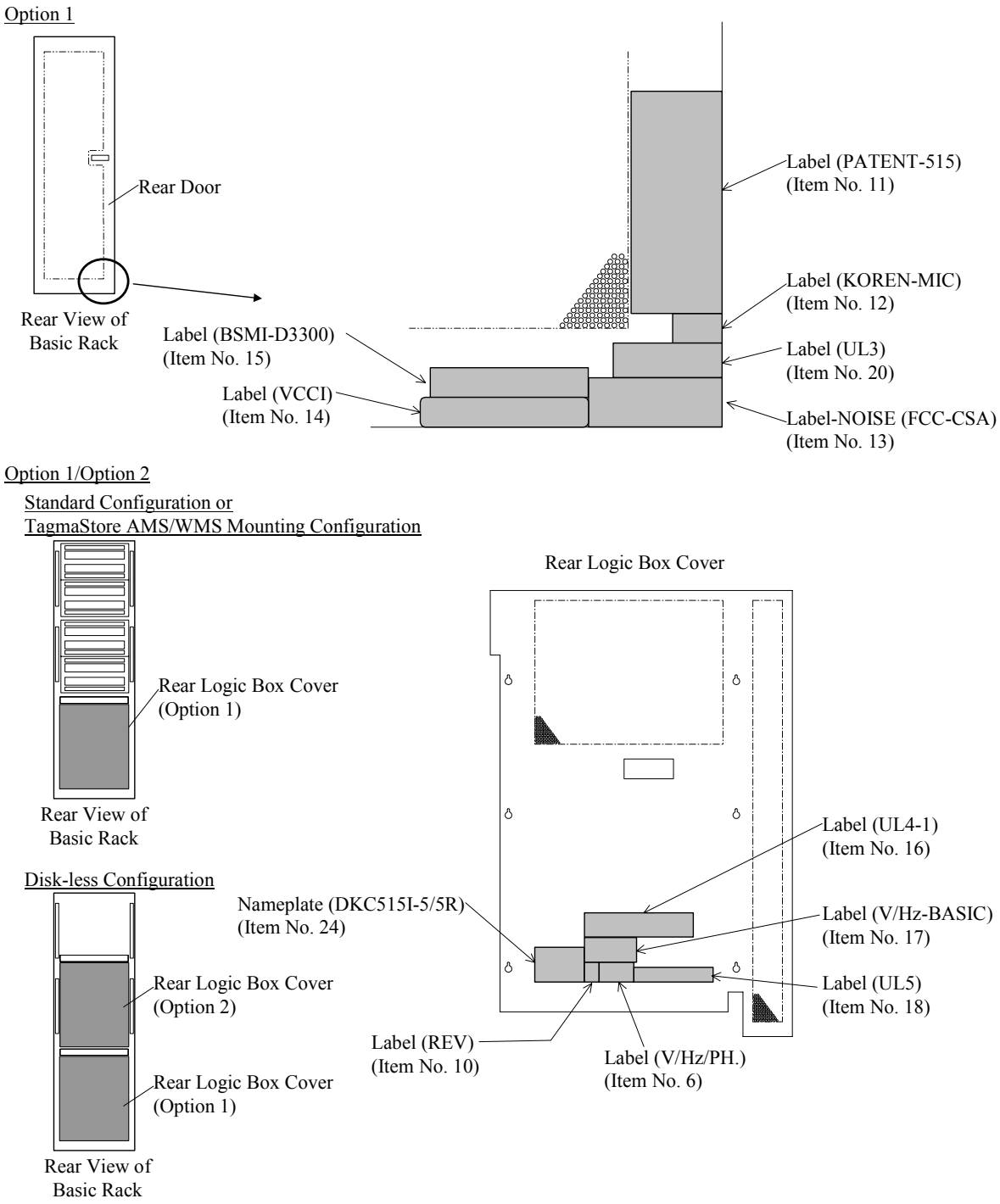


Fig. 3.4.3-15 Attachment of Labels

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7. Attach the nameplate.
   a. Fit the rack nut to the right beam on the rear side of the rack frame.
   b. Attach the nameplates to the nameplate tags.
   c. Attach the nameplate tags with the screw.

HDS Rack Frame

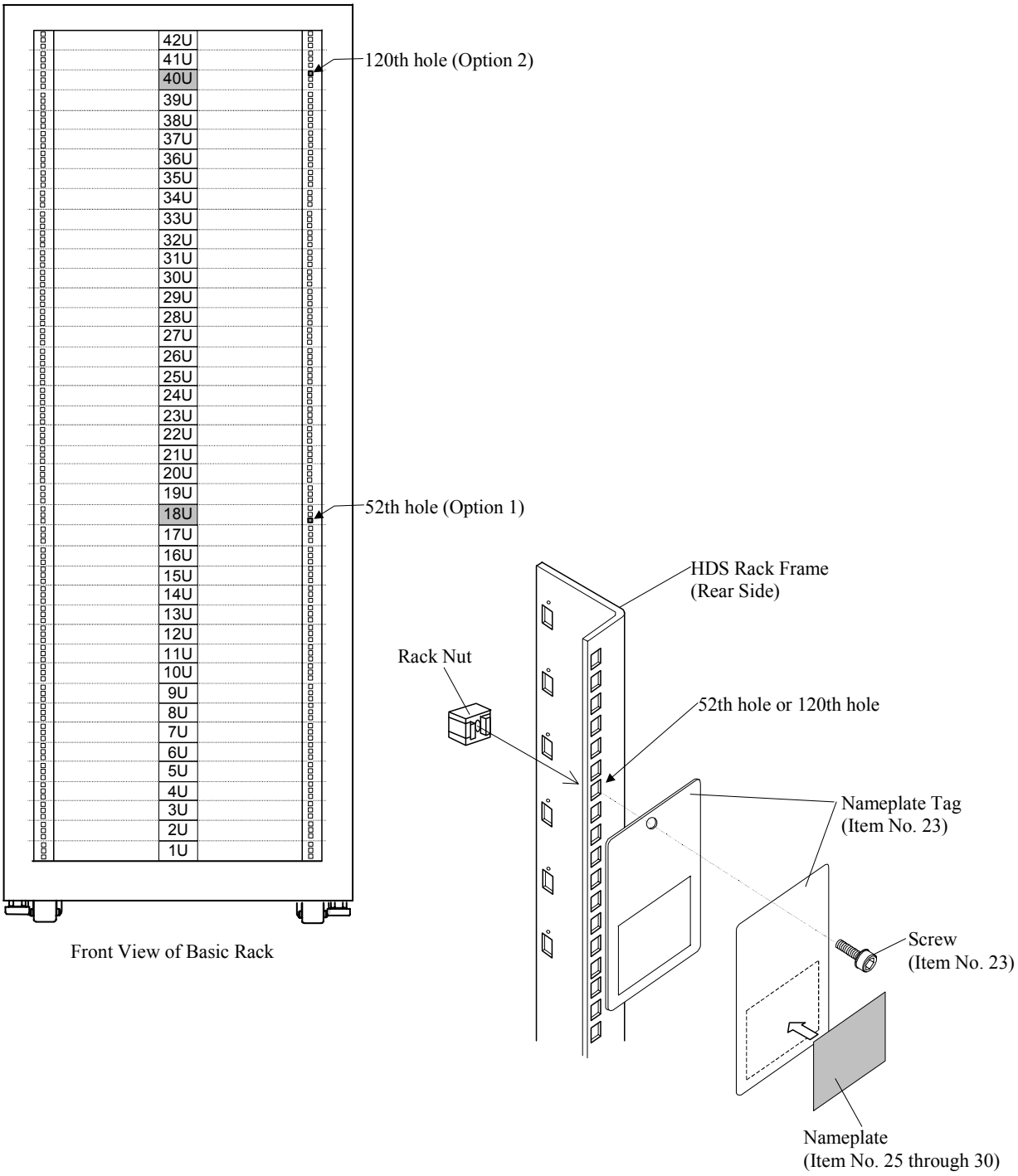


Fig. 3.4.3-16 Attachment of Nameplate

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3.4.4 Installation Procedure of Bezel

1. Attachment of Brackets
   a. Attach the four brackets (U) on the front side and fasten the screws.
   b. Attach the two brackets (L) on the front side and fasten the screws.

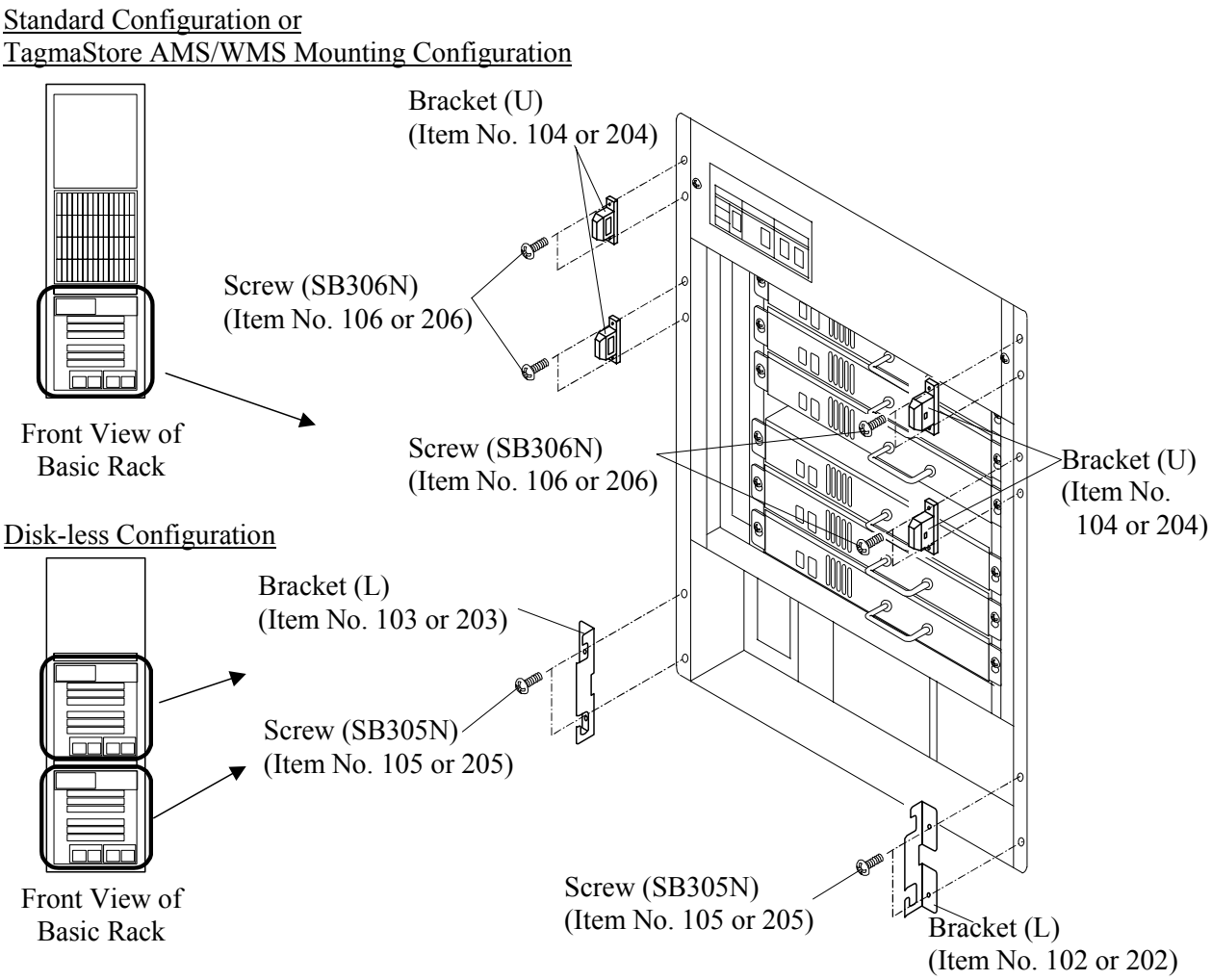


Fig. 3.4.4-1 Attachment of Brackets

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2. Attachment of Bezel (12U) and Bezel (4U)
   a. Put the pin of the Bezel in the ditch of Rack.
   b. Push the Bezel downward after it puts it in the ditch of Rack.
   c. Push the upper of Bezel.

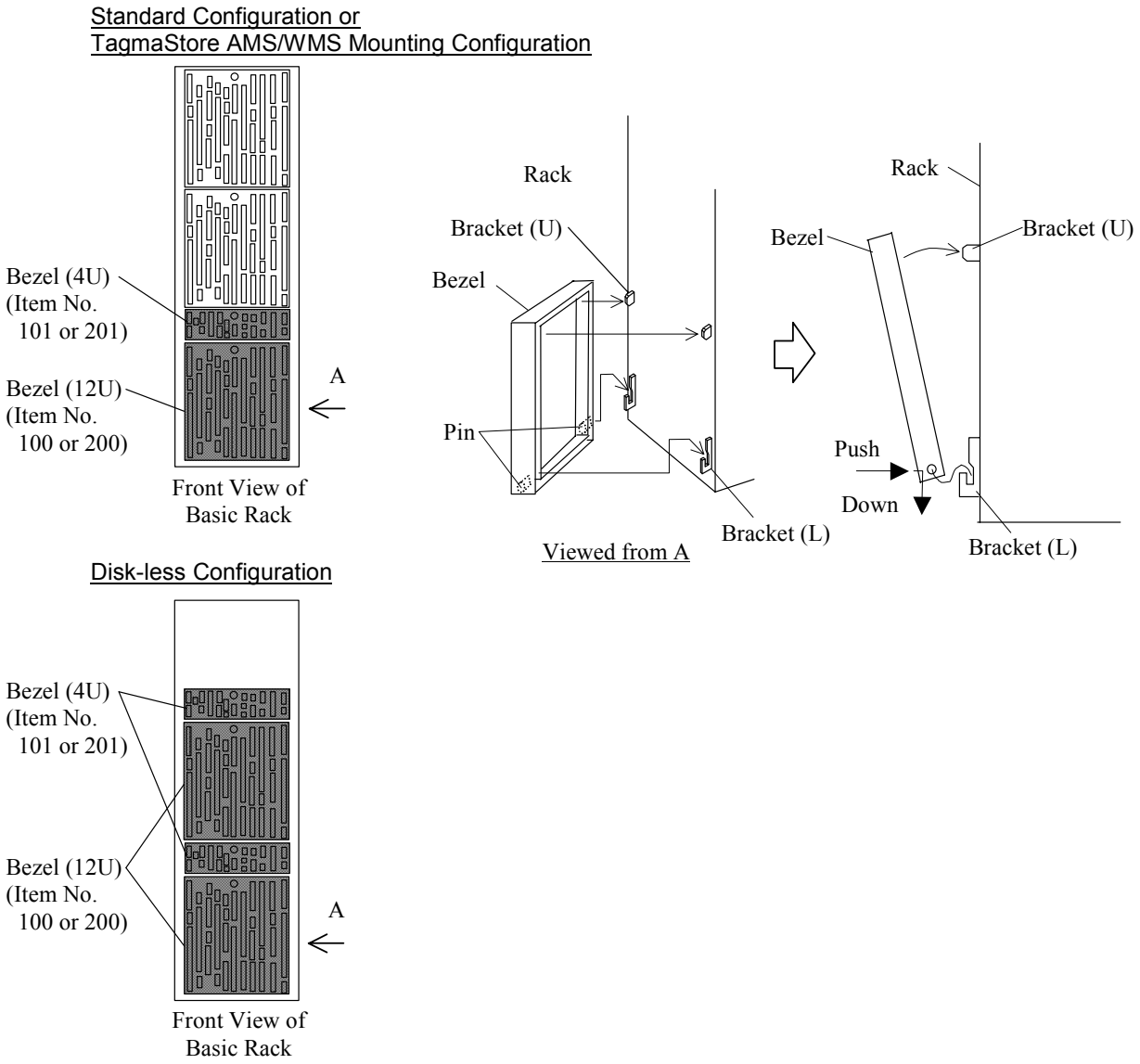


Fig. 3.4.4-2 Attachment of Bezels

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3. Attachment of Nameplate
   a. Remove the screw from the rack frame and remove the nameplates to be installed.
   b. Attach the nameplate to the nameplate tag.
   c. Attach all the nameplates with the screw.

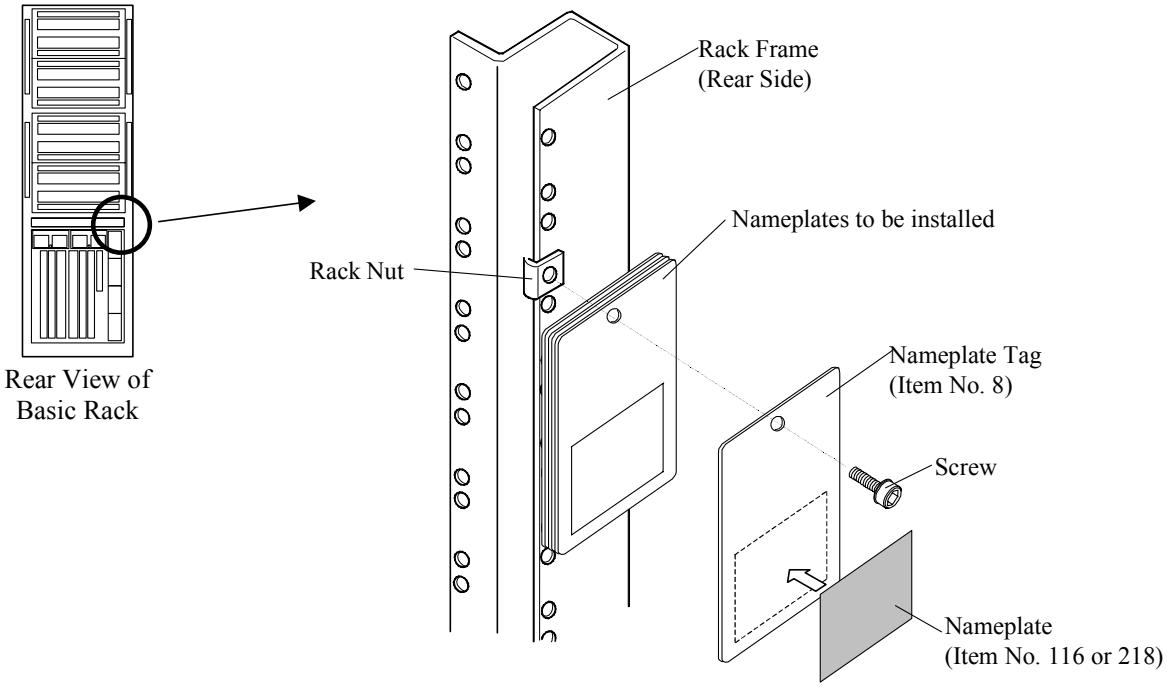


Fig. 3.4.4-3 Attachment of Nameplate

   d. Return to the working table and do the rest of the work.
   New Installation: INST02-10

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3.5 Installation of Disk Chassis (DKC-F515I-B2R)

Note 1: Confirm LOGIC BOX (DKC515I-5) is installed.

Note 2: Confirm HDD canister is not installed.
De-install HDD canister if HDD canister is installed.

Note 3: Mounted positions of DKC-F515I-B2Rs (DKU-RK1, RK2, and RK3) will be different between a standard configuration and TagmaStore AMS/ WMS mounting configuration. See Location Section (LOC02-10 through 21) for details.

Do this work after confirming the above-mentioned notes.

3.5.1 Parts List

Table 3.5.1-1 Parts List of DKC-F515I-B2R

Item No.	Part Name	Part No.	Quantity	Remarks
1	HDD BOX	3272859-A	2	
2	Cable ASSY (PS INLET)	3272976-C	2	White Label
3	Cable ASSY (PS INLET)	3272976-D	2	Yellow Label
4	Label (V/HZ-B2R)	3274139-1	1	
5	Label (UL4-1)	5529984-1	1	
6	Label (UL5)	3264272-1	1	
7	Repeat Binder	5409042-3	8	
8	Nameplate (HDS)	2751038-54	1	RSD
		2751040-54/254		HICAM/HICEF
9	Label	3275121-1	1	
10	Label	3275120-1	1	

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Table 3.5.1-2 Parts List of DKC-F515I-BUHR/BUSR

Item No.	Part Name	Part No.	Quantity	Remarks
100	Bezel (12U) ASSY	2751646-A	1	For DKC-F515I-BUHR
		2751191-B		For DKC-F515I-BUSR
101	Bracket (L)	3274066-1	1	
102	Bracket (L)	3274066-2	1	
103	Bracket (U)	3274067-1	2	
104	Screw	SB305N	4	
105	Screw	SB306N	4	
106	HDD BOX Rail (HDS)	2751617-1	2	
107	HDD BOX Rail (HDS)	2751617-2	2	
108	HDD BOX Stopper (HDS)	5529968-1	4	
109	WA Socket Bolt	3261959-408	12	
110	Nameplate (HDS)	2751038-70	1	RSD
	(DKC-F515I-BUHR)	2751040-70/270		HICAM/HICEF
	Nameplate (SUN)	2751038-72		RSD
	(DKC-F515I-BUSR)	2751040-72/272		HICAM/HICEF

Table 3.5.1-3 Parts List of DKC-F515I-BUPR

Item No.	Part Name	Part No.	Quantity	Remarks
200	Bezel (12U) ASSY	2751650-A	1	
201	Bracket (L)	3274066-1	1	
202	Bracket (L)	3274066-2	1	
203	Bracket (U)	3274067-1	2	
204	Screw	SB305N	4	
205	Screw	SB306N	4	
206	Screw	SB510N	8	
207	Rail (HDD BOX)	3269759-101	2	
208	Rail (HDD BOX)	3269759-102	2	
209	Stopper R	5529498-101	2	
210	Stopper R	5529498-102	2	
211	Rack Nut	5510146-1	24	
212	WA Socket Bolt	3261959-408	12	
213	WA Socket Bolt	3261959-516	16	
214	Nameplate (HDS)	2751038-68	1	RSD
		2751040-68/268		HICAM/HICEF

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3.5.2 Installation Procedure of Disk Chassis (RSD Rack Frame)

RSD Rack Frame (DKC-F515I-FRMR)

1. Installing the rails (If the rails are already installed, this installation procedure is not required.)
   EIA units and intervals of mounting holes of 19-inch rack frame conforming to EIA standard
   - A unit (U) space conforming to EIA standard is 19 inches wide and 44.5 mm high as shown in the figure below.
   - The boundary of the unit falls on the middle of the interval of 12.7 mm.
   - Wide intervals: Repeat of 44.45 mm (31.75 mm + 12.7 mm)
     Maximum number of mountable unit spaces: 40

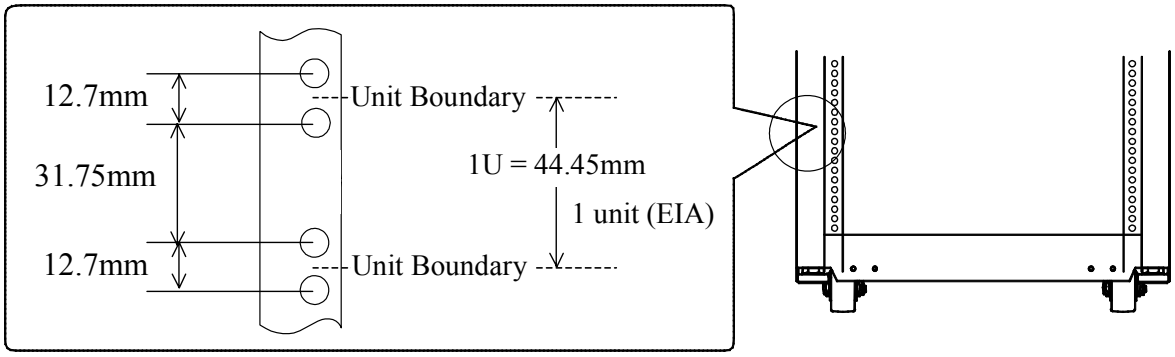


Fig. 3.5.2-1 Attachment Hole Size of Rack

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The addresses are given as 1, 2, 3, and so on counted from the bottom of the rack frame. In the case of the rack frame, you must count the holes to know the address because no number is marked on the rack frame.
The following figure illustrates the whole layout of addresses of installation positions in the rack frame.
There are 40 addresses, that is, the 1U to 40U counted in the vertical direction starting from the lower boundary of the 1U (the lowest unit).

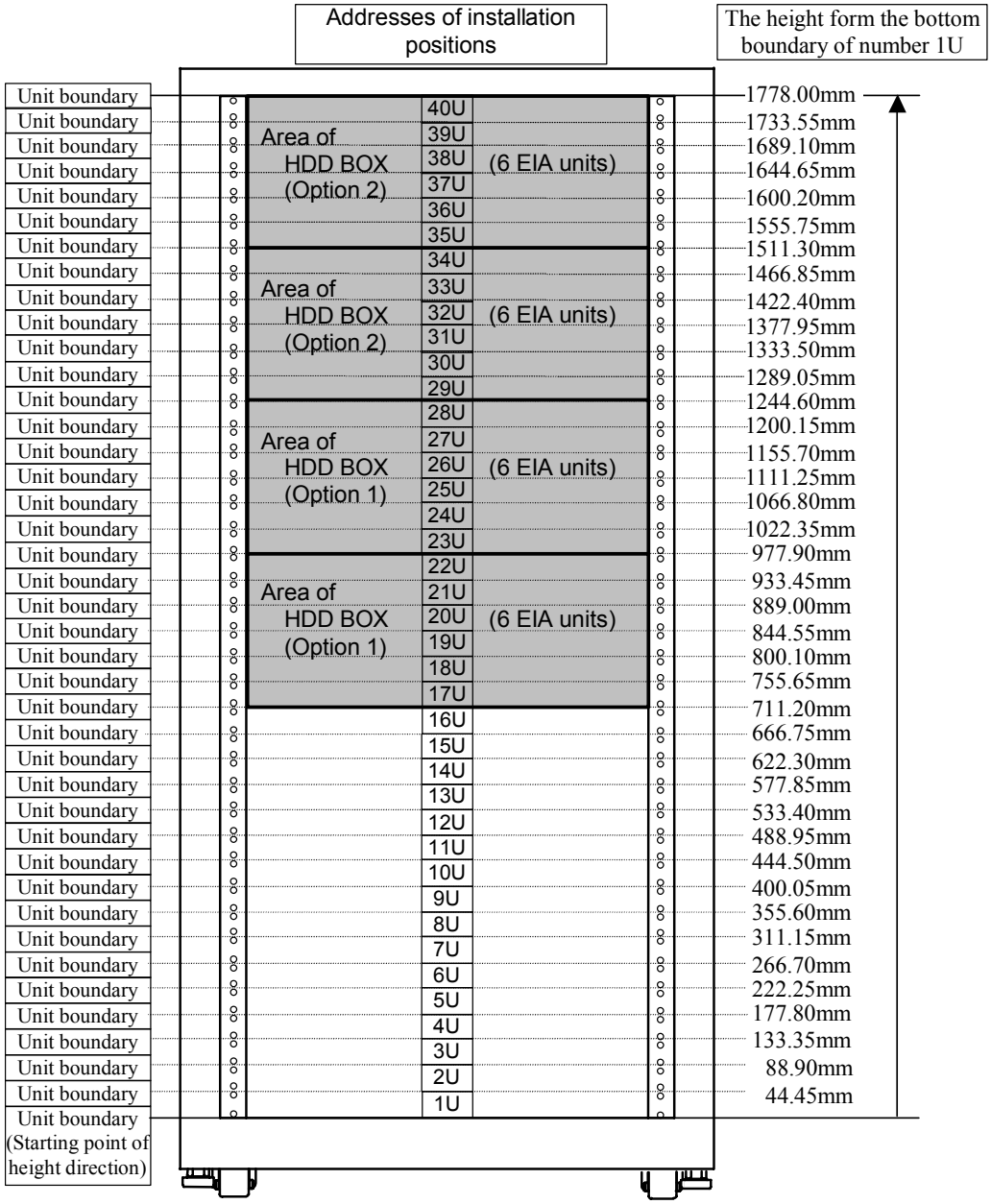


Fig. 3.5.2-2 Whole Layout of Installation Position Addresses (Basic Rack)

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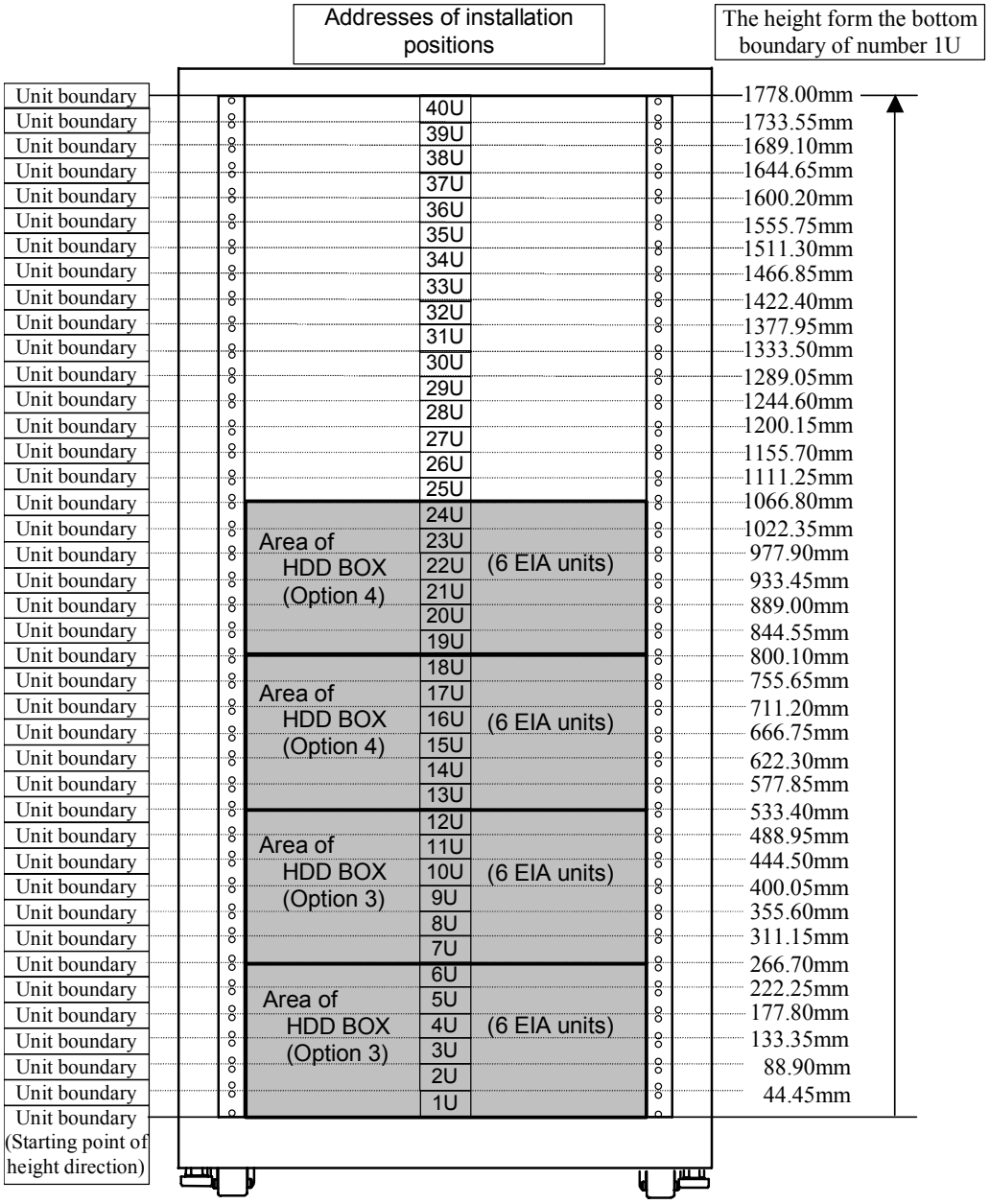


Fig. 3.5.2-3 Whole Layout of Installation Position Addresses (Extension Rack)

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a. On the right side of the installation location in the rack frame, align the round holes of the Rail (R) with those of the rack frame and insert the rack nuts (at four places in total in front and rear.).
b. Fasten the Rail (R) to the rack frame using the WA socket bolts (at two places each on the front and rear sides.).
c. Install the Rail (L) to the rack frame in the same way.

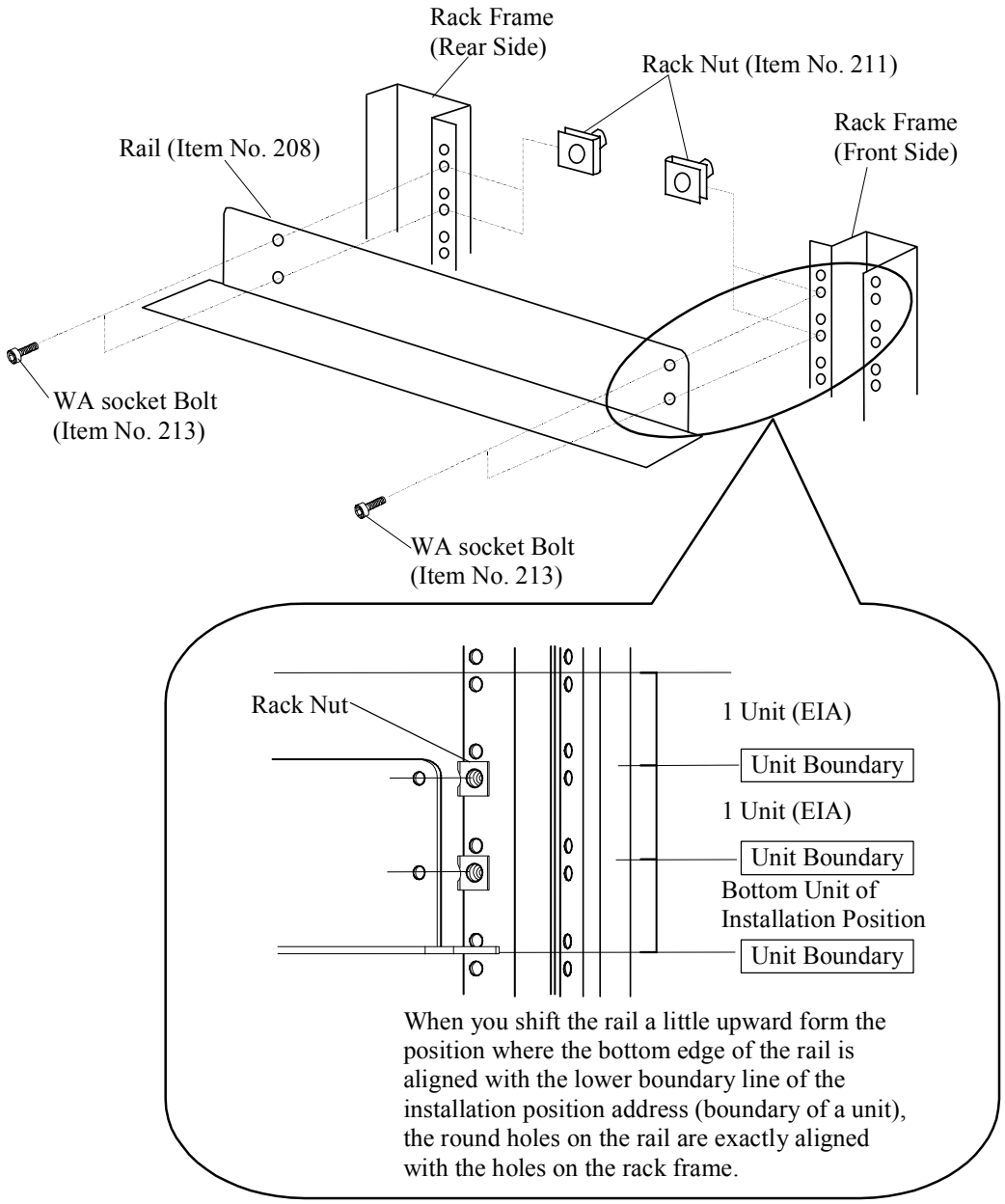
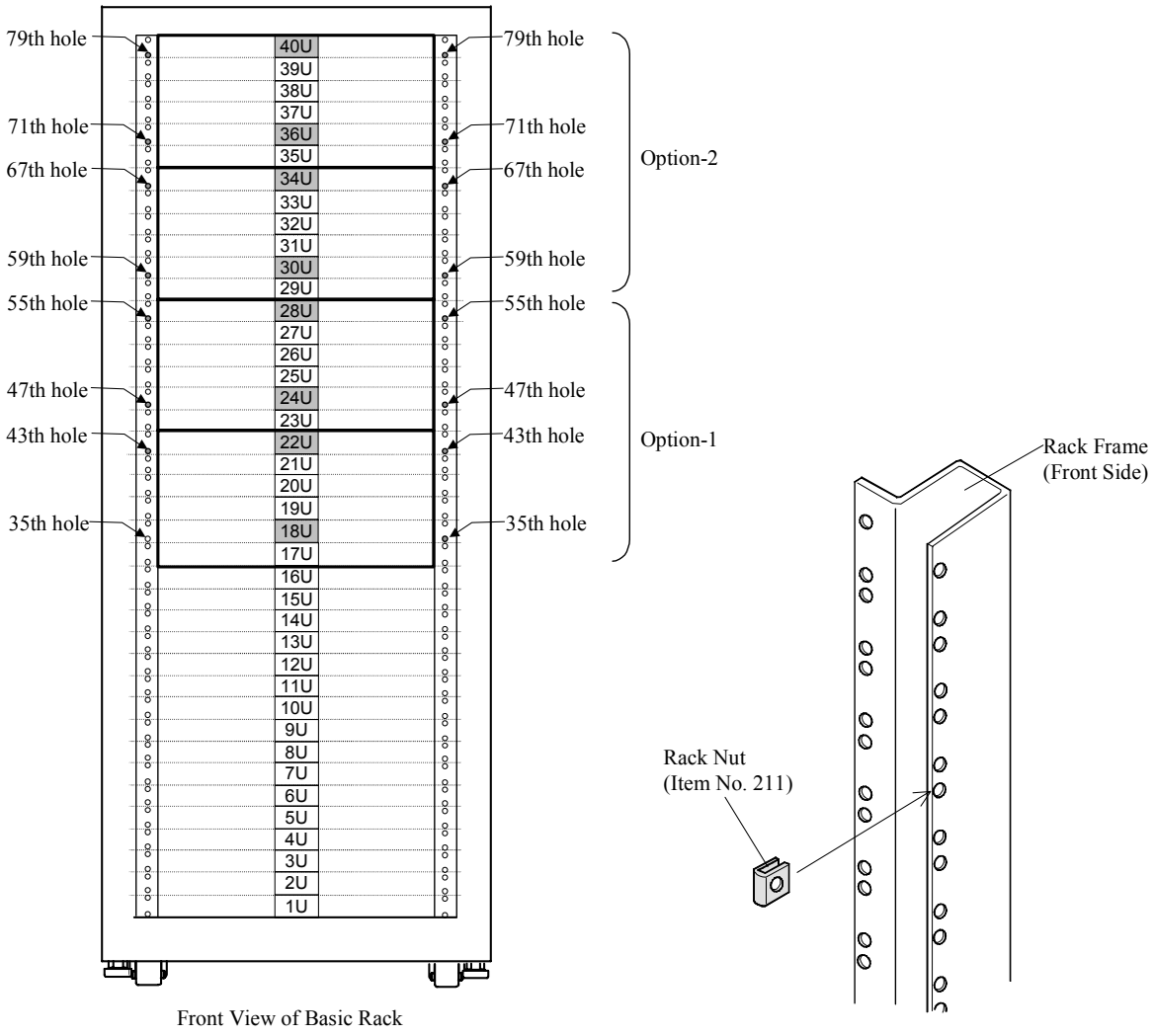


Fig. 3.5.2-7 Attachment of Rails

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2. Installing rack nuts on the front side of the rack frame
   Install the rack nuts on the front side of the rack frame in order to fasten the subsystems to be mounted on the rack frame.
   a. Fit the four rack nuts to each of the right and left beams on the front side of the rack frame. Count holes from top to bottom if unable to count them from the bottom. The hole number on the very top of the rack is the 80th hole.

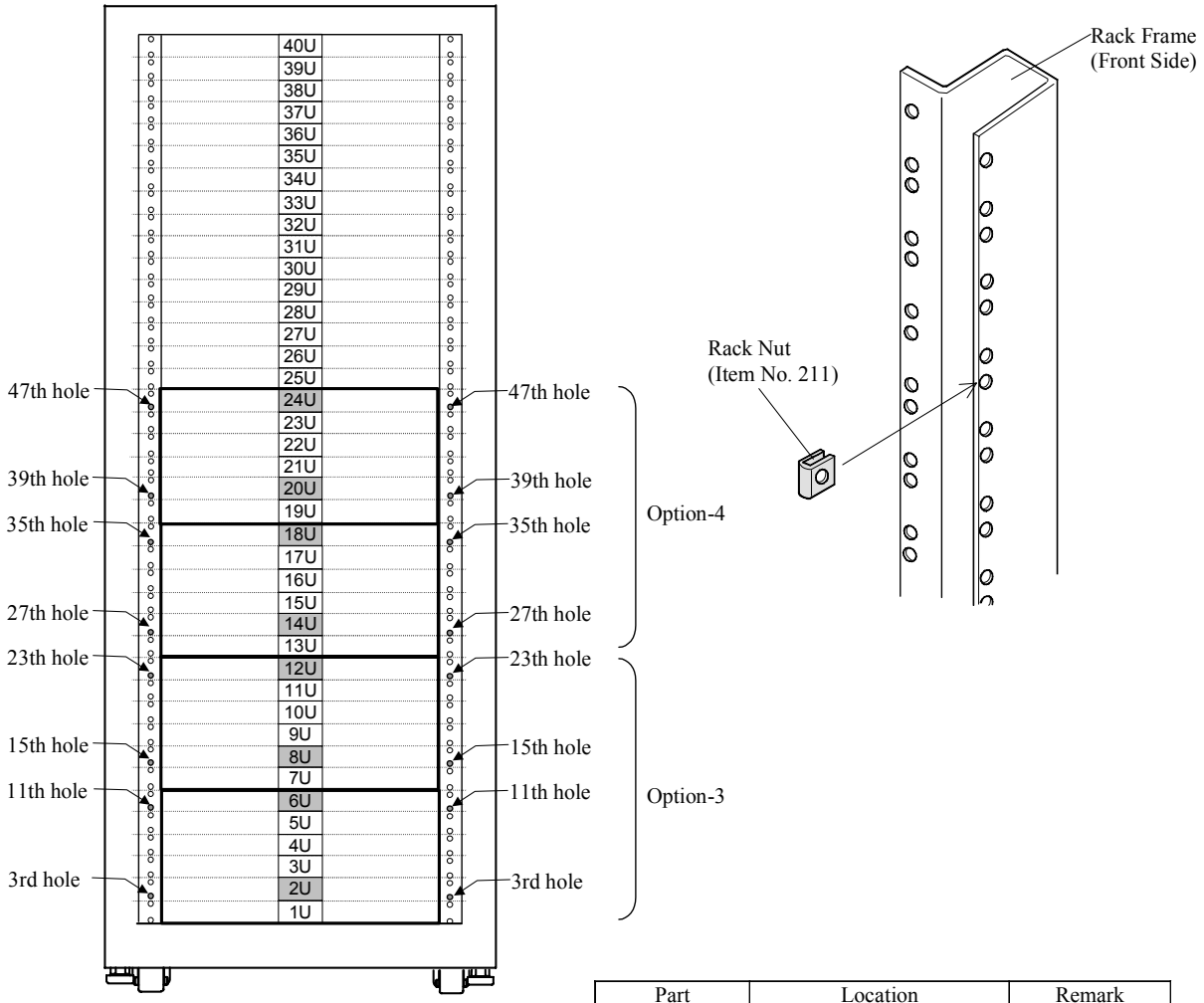


Front View of Basic Rack

Part	Location		Remark
HDD BOX	40U	Lower	79th hole
(Option 2)	36U	Lower	71th hole
HDD BOX	34U	Lower	67th hole
(Option 2)	30U	Lower	59th hole
HDD BOX	28U	Lower	55th hole
(Option 1)	24U	Lower	47th hole
HDD BOX	22U	Lower	43th hole
(Option 1)	18U	Lower	35th hole

Fig. 3.5.2-8 Installing Rack Nuts to Basic Rack

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Front View of Extension Rack

Part	Location		Remark
HDD BOX (Option 4)	24U	Lower	47th hole
	20U	Lower	39th hole
HDD BOX (Option 4)	18U	Lower	35th hole
	14U	Lower	27th hole
HDD BOX (Option 3)	12U	Lower	23th hole
	8U	Lower	15th hole
HDD BOX (Option 3)	6U	Lower	11th hole
	2U	Lower	3rd hole

Fig. 3.5.2-9 Installing Rack Nuts to Extension Rack

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3. Installing the HDD Boxes

⚠ CAUTION

Paying attention to falls:
Work carefully because the mass of the single HDD BOX is about 38 kg.

a. Install the HDD Box on the Rack frame referring to mounting procedure using the special lifter. (See INST03-13-10 through 40.)
b. Fix the HDD Box with the four screws.
c. Install the 2nd HDD Box to the rack frame in the same way.

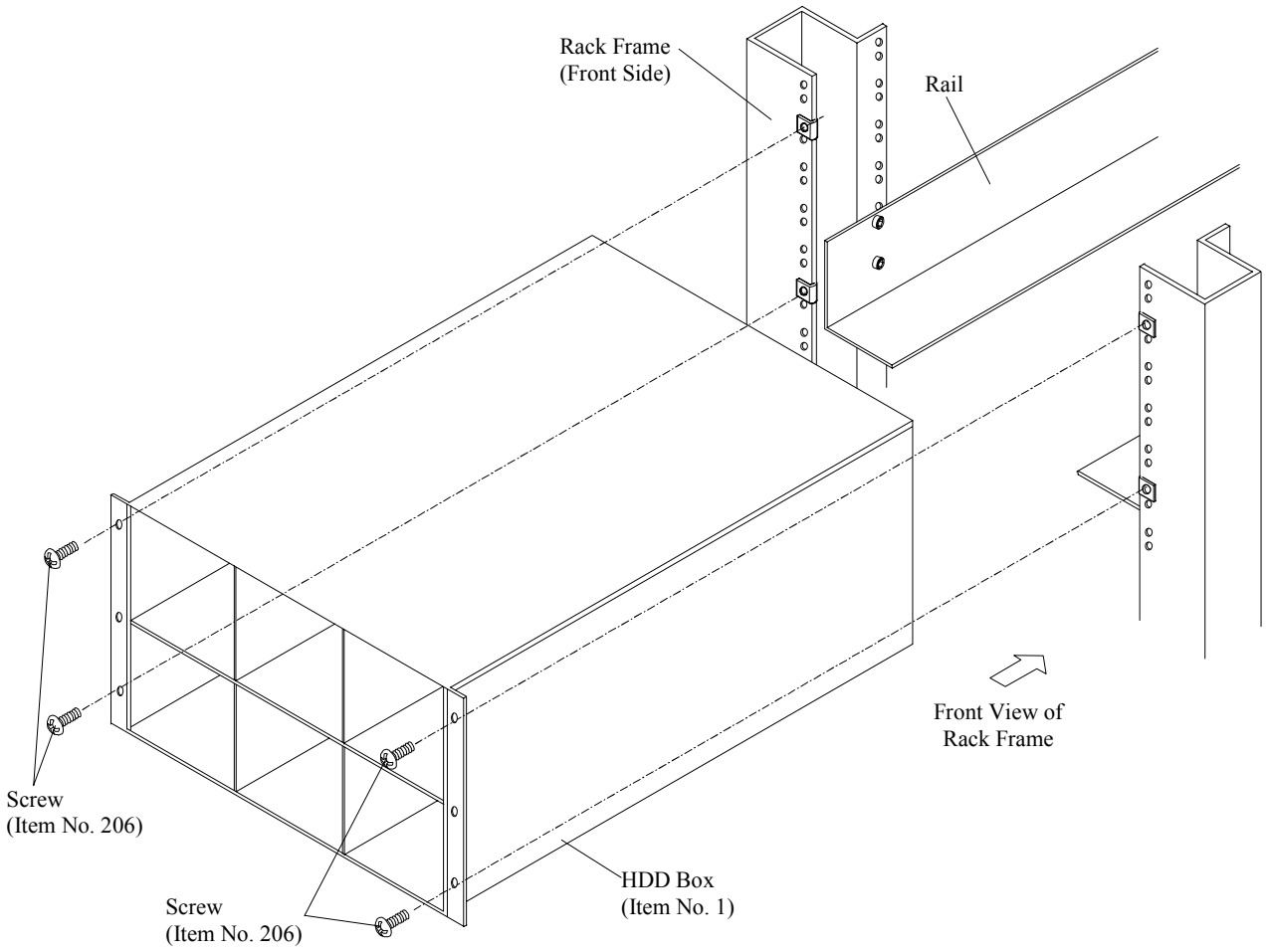


Fig. 3.5.2-10 Installing HDD Box

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c. Attach the stoppers on the rear side of HDD Boxes and fasten the bolts.

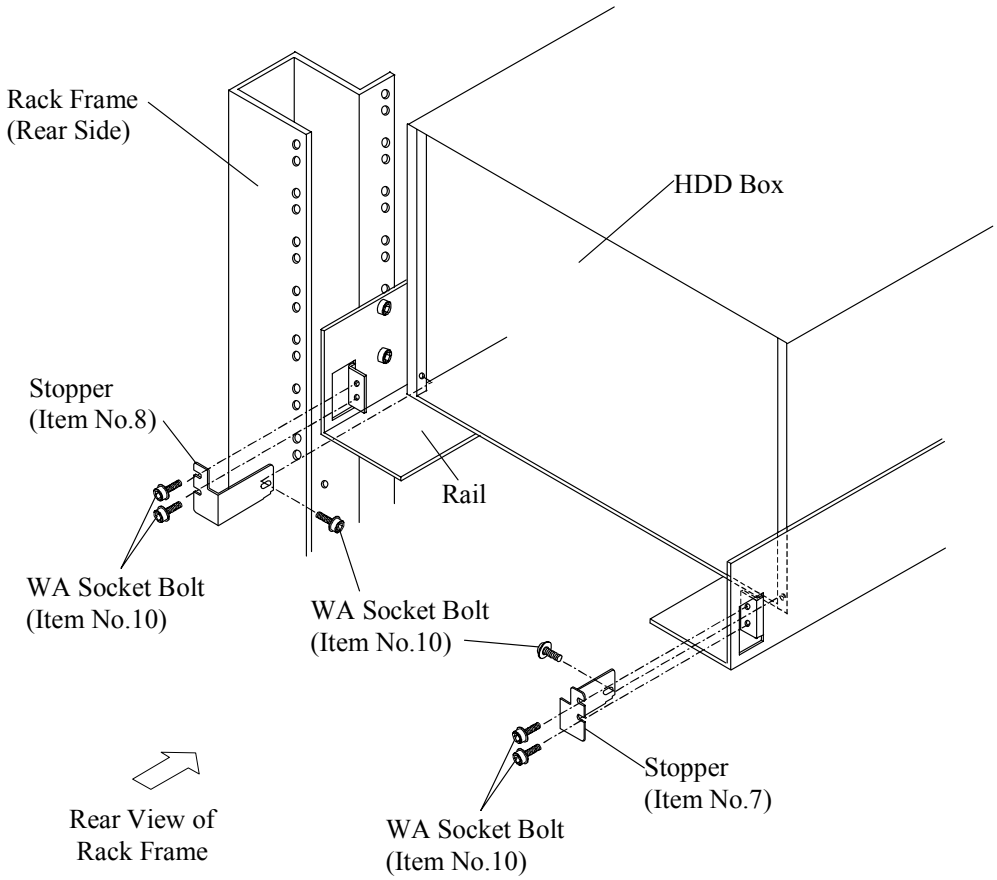


Fig. 3.5.2-11 Attachment of Stoppers

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4. Connect the Cable Assemblies.
   a. Paint out unnecessary numbers on cable assemblies by black oil felt pen.

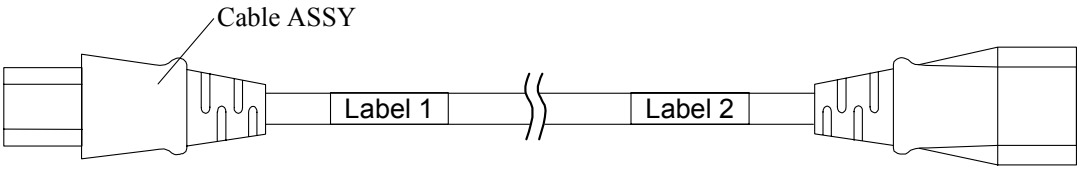


Fig. 3.5.2-12 Label Position on Cable ASSY

Table 3.5.2-1 Painting out of Labels (Option 1)

Item No.	Part Name	Painting out		Label Color
		Label 1	Label 2	
2	Cable ASSY (PS INLET)	PS 0 – 0	PDU 00 – P104	White
	Cable ASSY (PS INLET)	PS 0 – 2	PDU 10 – P101	White
3	Cable ASSY (PS INLET)	PS 0 – 1	PDU 01 – P104	Yellow
	Cable ASSY (PS INLET)	PS 0 – 3	PDU 11 – P101	Yellow

Table 3.5.2-2 Painting out of Labels (Option 2)

Item No.	Part Name	Painting out		Label Color
		Label 1	Label 2	
2	Cable ASSY (PS INLET)	PS 1 – 0	PDU 10 – P102	White
	Cable ASSY (PS INLET)	PS 1 – 2	PDU 10 – P103	White
3	Cable ASSY (PS INLET)	PS 1 – 1	PDU 11 – P102	Yellow
	Cable ASSY (PS INLET)	PS 1 – 3	PDU 11 – P103	Yellow

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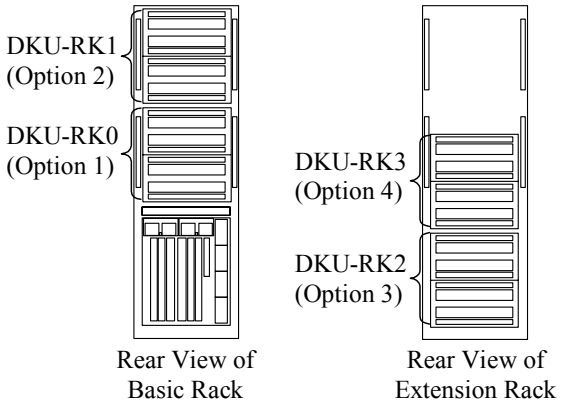
Table 3.5.2-3 Painting out of Labels (Option 3)

Item No.	Part Name	Painting out		Label Color
		Label 1	Label 2	
2	Cable ASSY (PS INLET)	PS [redacted] 2 [redacted] – 0 [redacted]	PDU [redacted] 20 [redacted] – P101 [redacted]	White
	Cable ASSY (PS INLET)	PS [redacted] 2 [redacted] – [redacted] 2	PDU [redacted] 20 [redacted] – [redacted] P102 [redacted]	White
3	Cable ASSY (PS INLET)	PS [redacted] 2 [redacted] – 1 [redacted]	PDU [redacted] 21 [redacted] – P101 [redacted]	Yellow
	Cable ASSY (PS INLET)	PS [redacted] 2 [redacted] – [redacted] 3	PDU [redacted] 21 [redacted] – [redacted] P102 [redacted]	Yellow

Table 3.5.2-4 Painting out of Labels (Option 4)

Item No.	Part Name	Painting out		Label Color
		Label 1	Label 2	
2	Cable ASSY (PS INLET)	PS [redacted] 3 – 0 [redacted]	PDU [redacted] 30 – P101 [redacted]	White
	Cable ASSY (PS INLET)	PS [redacted] 3 – [redacted] 2	PDU [redacted] 30 – [redacted] P102 [redacted]	White
3	Cable ASSY (PS INLET)	PS [redacted] 3 – 1 [redacted]	PDU [redacted] 31 – P101 [redacted]	Yellow
	Cable ASSY (PS INLET)	PS [redacted] 3 – [redacted] 3	PDU [redacted] 31 – [redacted] P102 [redacted]	Yellow

b. Connect the cables (PSx-0, PSx-1, PSx-2, PSx-3) to the DKUPSs in the HDD Boxes.



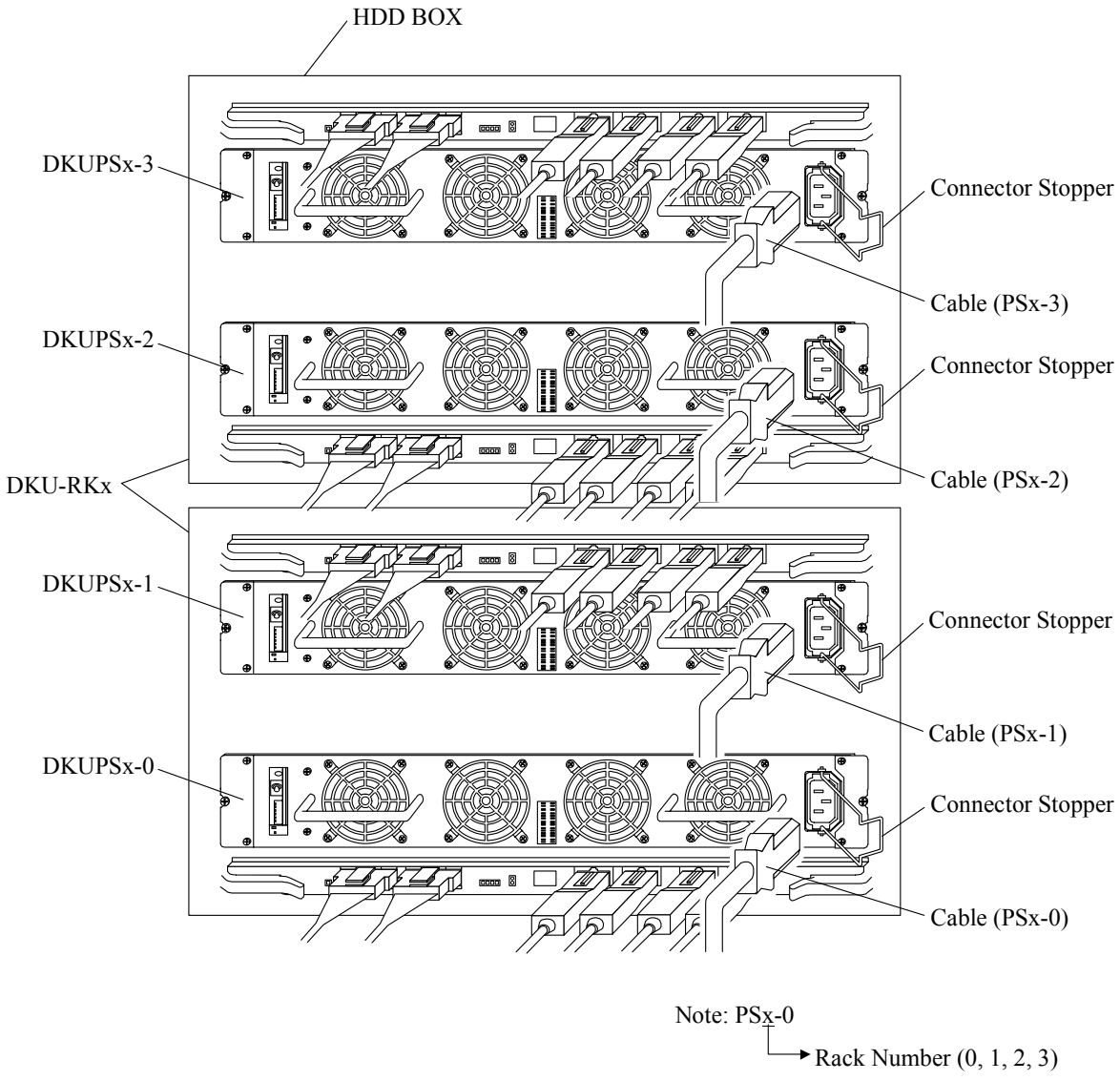


Fig. 3.5.2-13 Connection of Cables

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c. Connect the cables to the PDUs and fix them with the connector stopper. Refer to Fig. 3.5.2-14, Fig. 3.5.2-15, Fig. 3.5.2-16, or Fig. 3.5.2-17.

Option 1

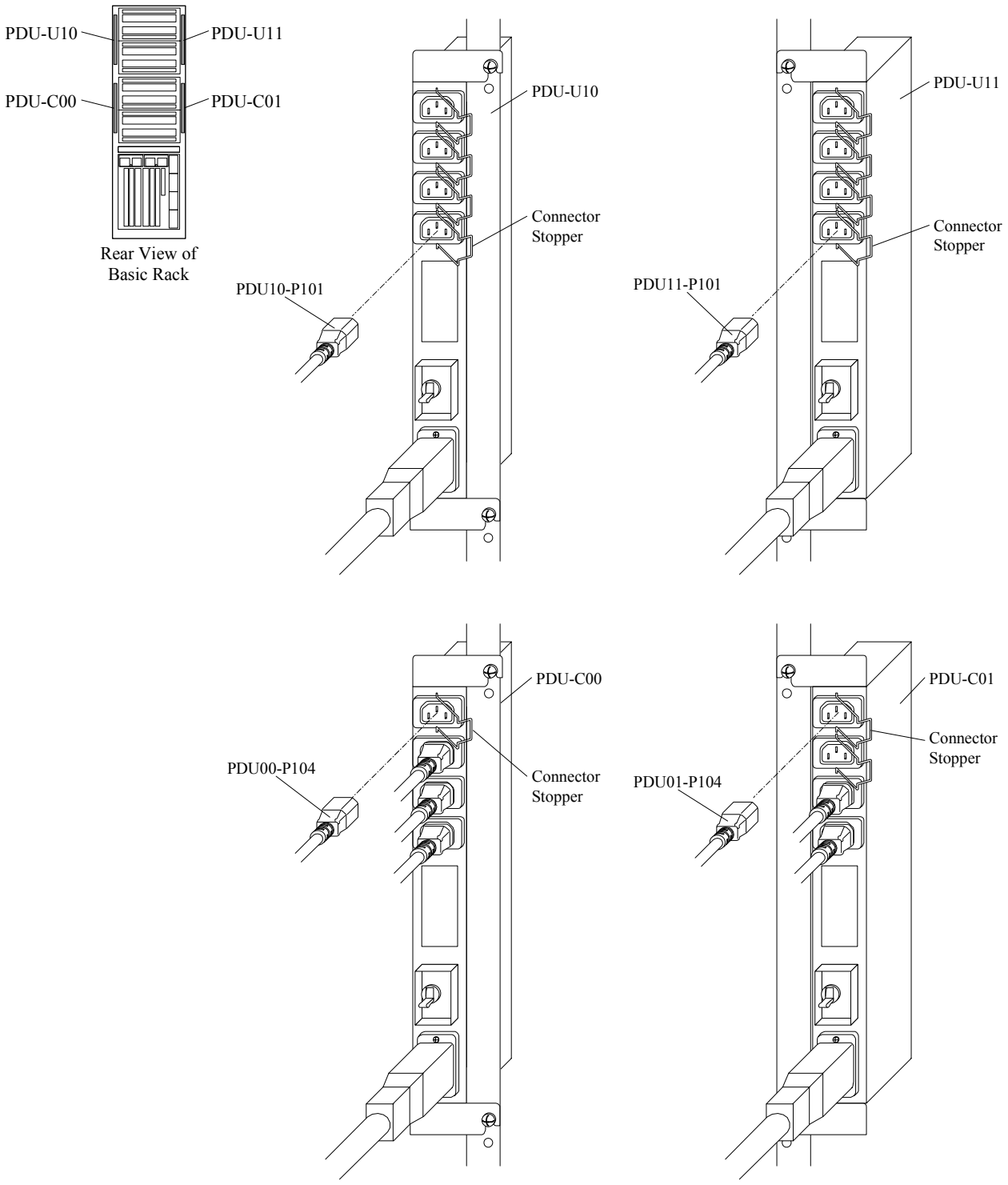


Fig. 3.5.2-14 Connection of Cables (Option 1)

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Option 2

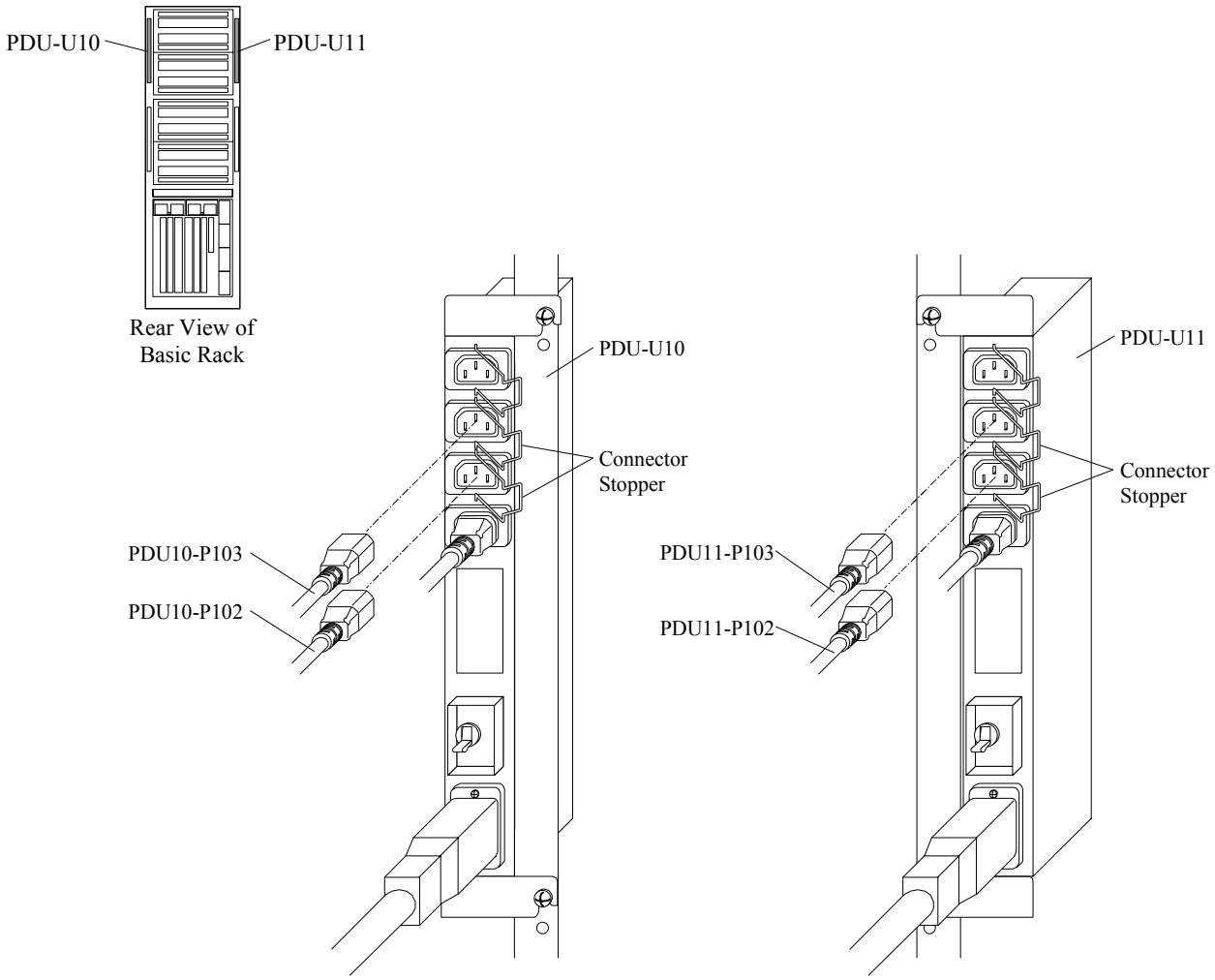


Fig. 3.5.2-15 Connection of Cables (Option 2)

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Option 3

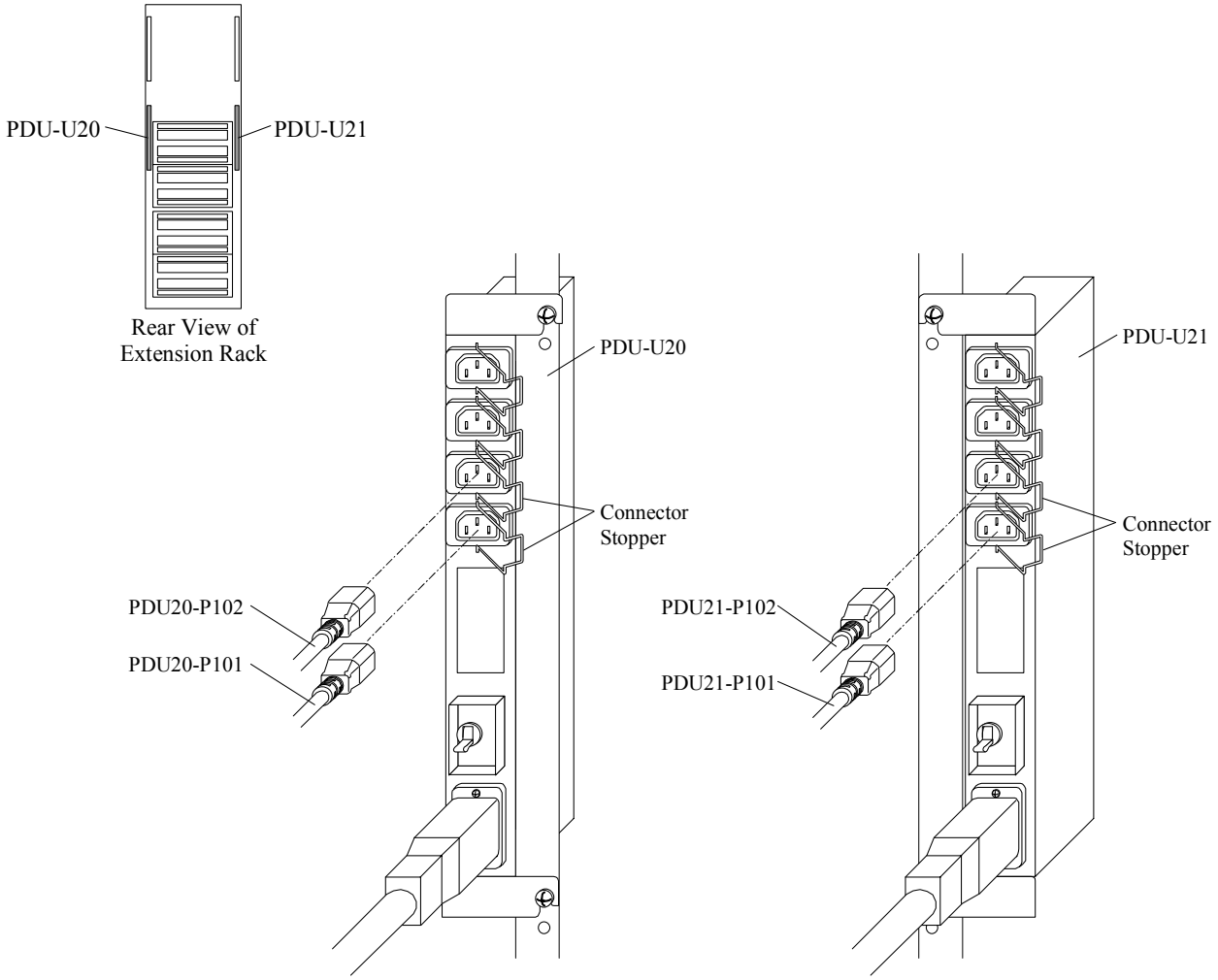


Fig. 3.5.2-16 Connection of Cables (Option 3)

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Option 4

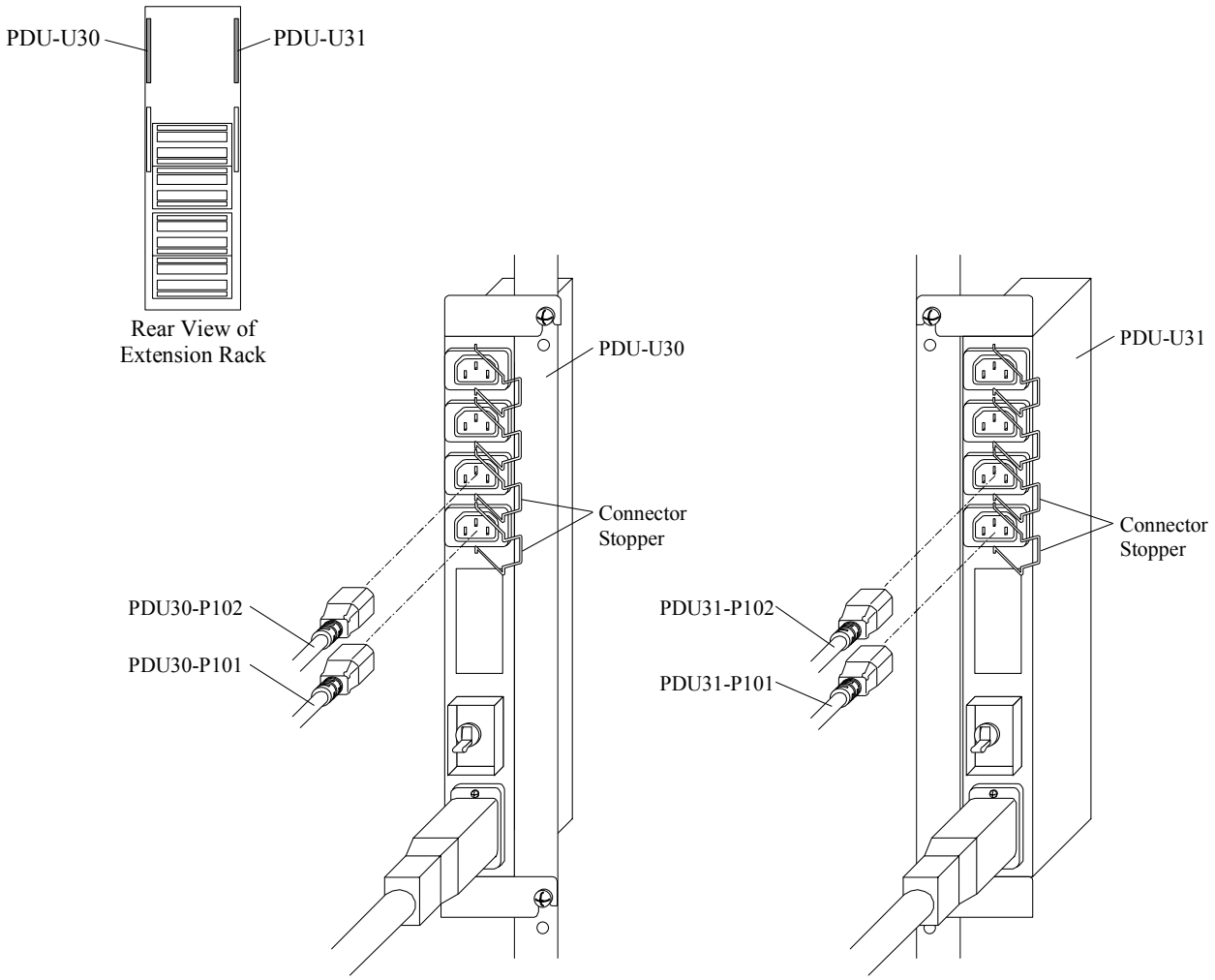


Fig. 3.5.2-17 Connection of Cables (Option 4)

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d. Fix the cable assemblies with the repeat binders and locking clamps. Refer to Fig. 3.5.2-18, Fig.3.5.2-19, Fig.3.5.2-20 or Fig. 3.5.2-21.

Option 1

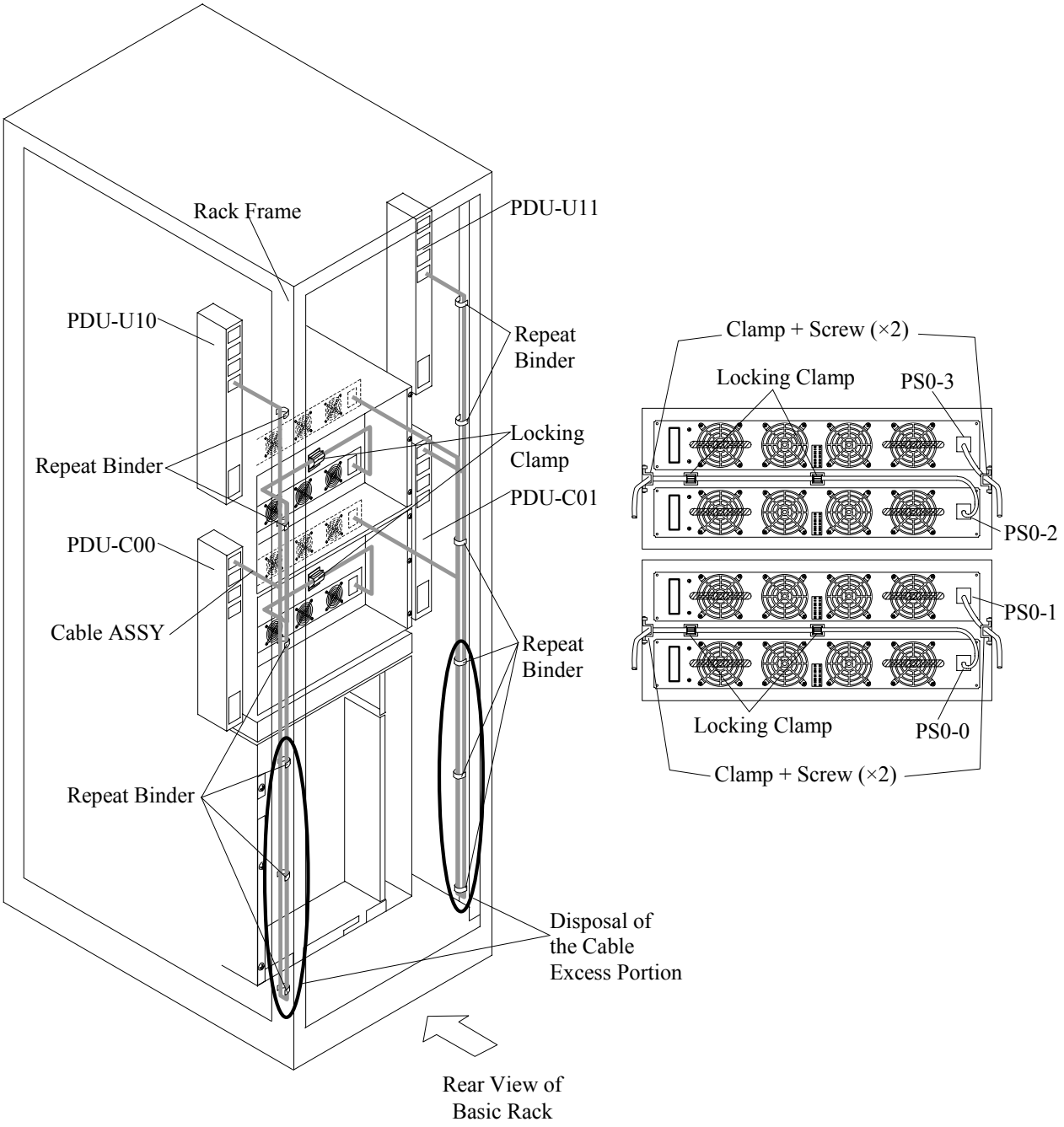


Fig. 3.5.2-18 Fixation of Cable Assemblies (Option 1)

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Option 2

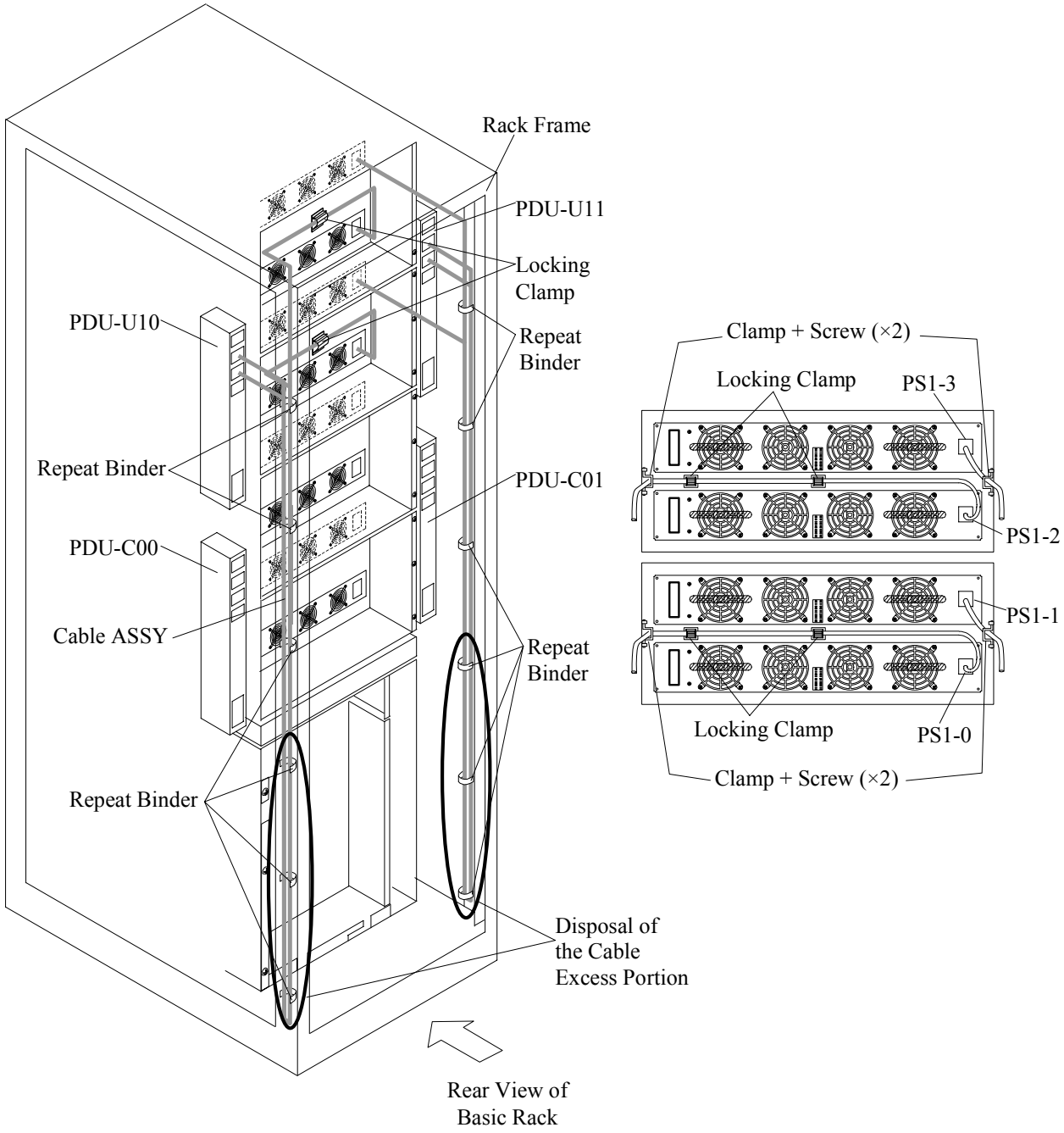


Fig. 3.5.2-19 Fixation of Cable Assemblies (Option 2)

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Option 3

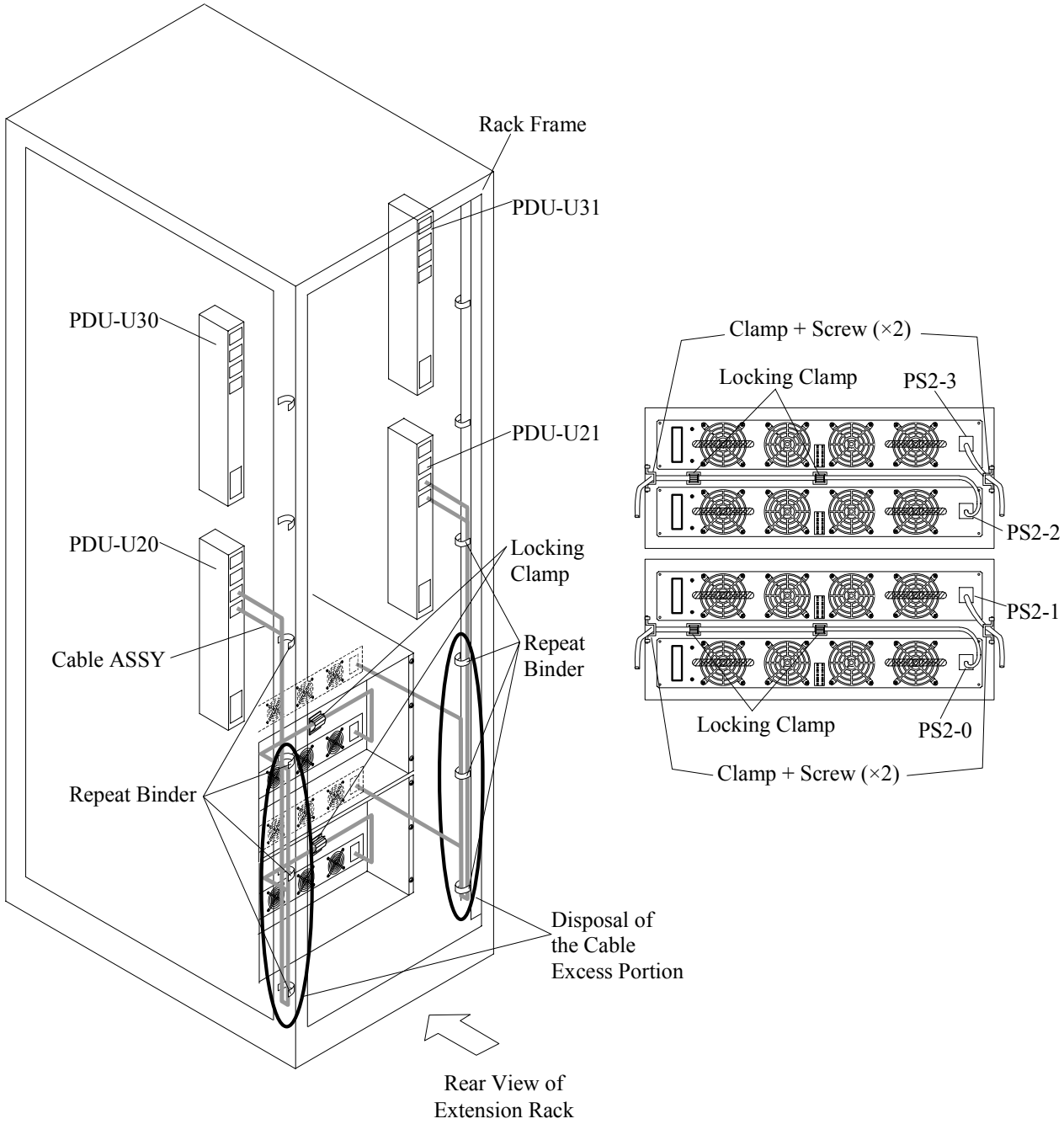


Fig. 3.5.2-20 Fixation of Cable Assemblies (Option 3)

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Option 4

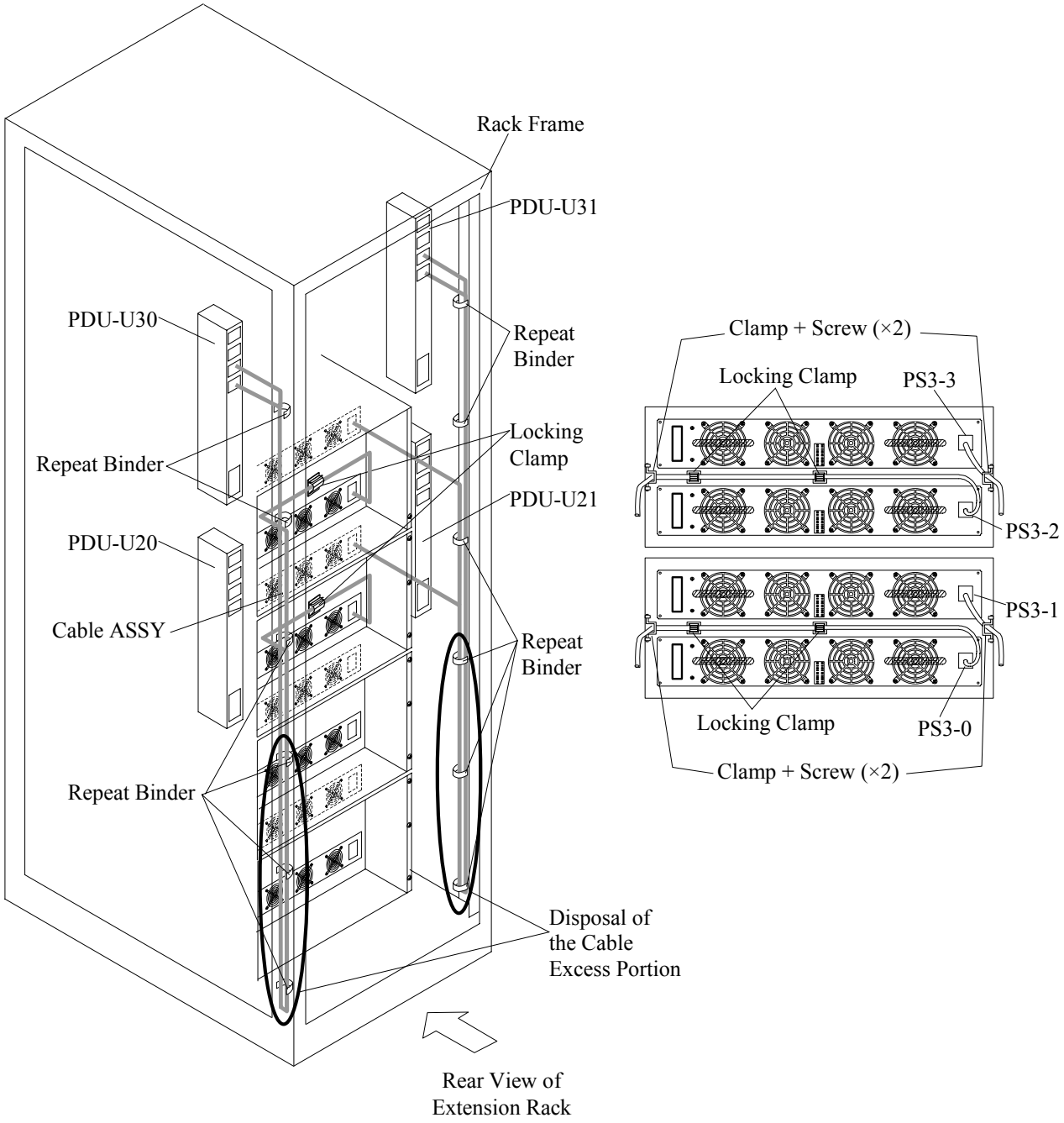


Fig. 3.5.2-21 Fixation of Cable Assemblies (Option 4)

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e. Pull out AC power cables from the opening part on the bottom of the rack frame, and fix them with a cable clamp.
Use the Stubby Screwdriver when fix a cable clamp with screws.

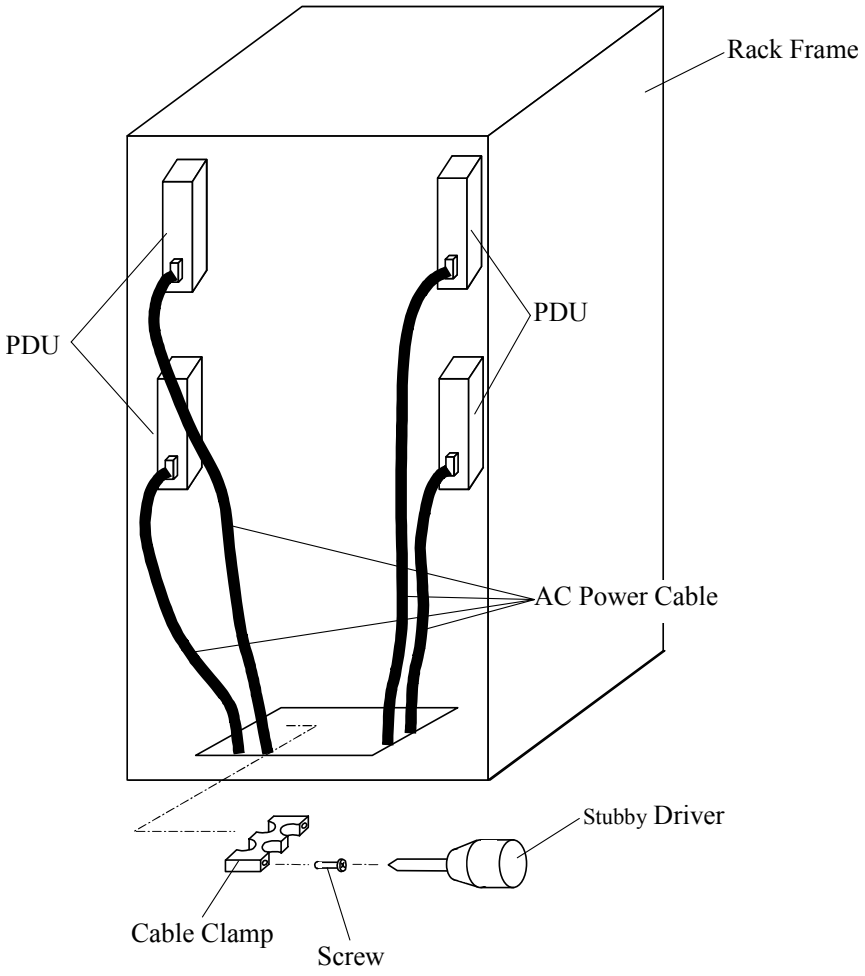


Fig. 3.5.2-22 Fixation of AC Power Cable

5. Switch and Jumper Plug Installation

⚠ CAUTION

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

a. Set the switch in the DKUPS as indicated in the Fig. 3.5.2-23 and Fig. 3.5.2-24. Switch settings must be made at 4 places in total per option.

Note: Use something sharp (ex. a pen or a mini screwdriver etc) when set the DKUPS switches.

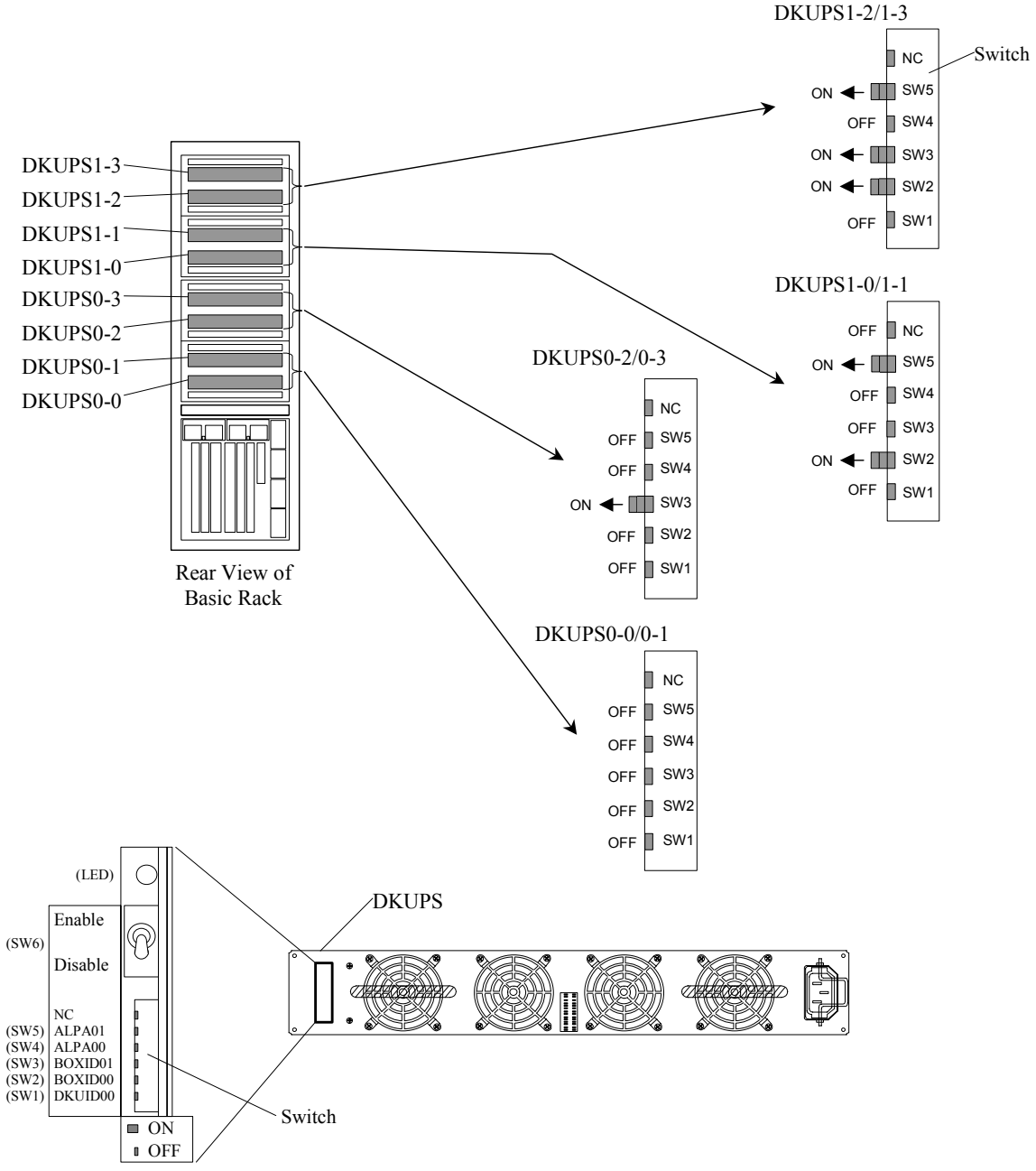


Fig. 3.5.2-23 Switch Setting of DKUPS

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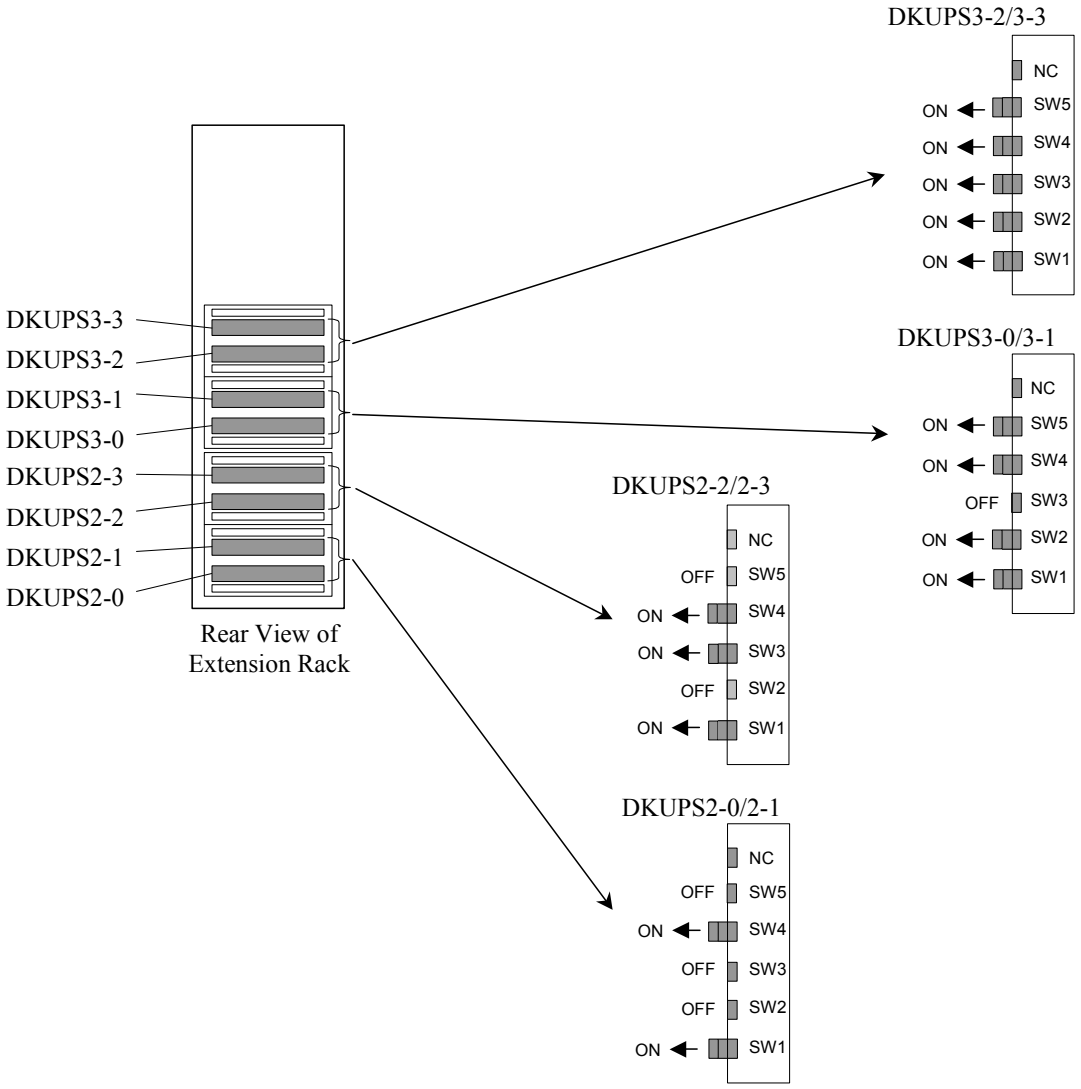


Fig. 3.5.2-24 Switch Setting of DKUPS

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⚠ CAUTION

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

b. Set the jumper in the FSW PCB as indicated in the Fig. 3.5.2-25.
Switch settings must be made at 4 places in total per option.

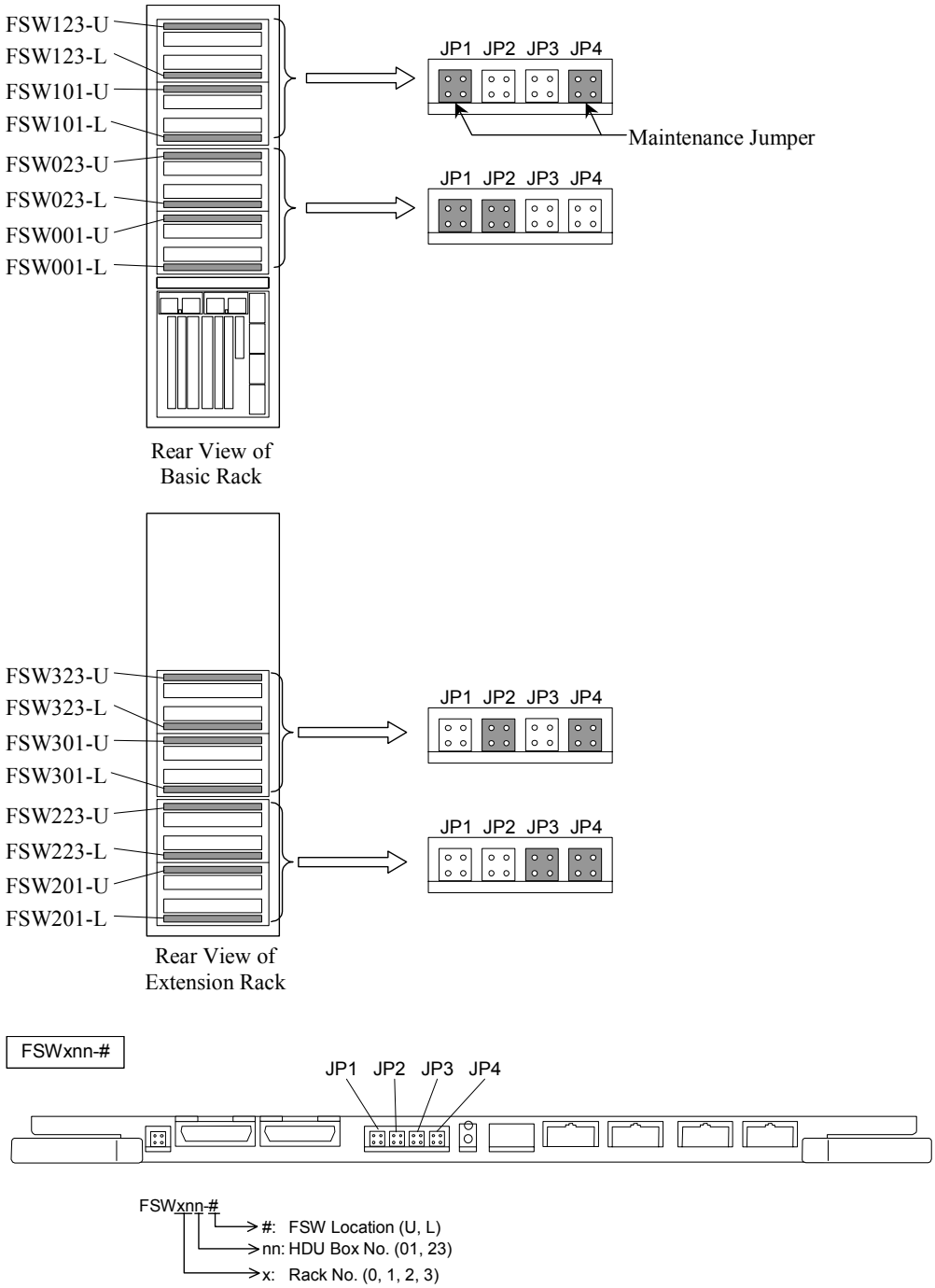


Fig. 3.5.2-25 Installation of Maintenance Jumper in FSW

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6. Attach the nameplate and labels.
   a. Attach the three labels to the lower HDD BOX cover.

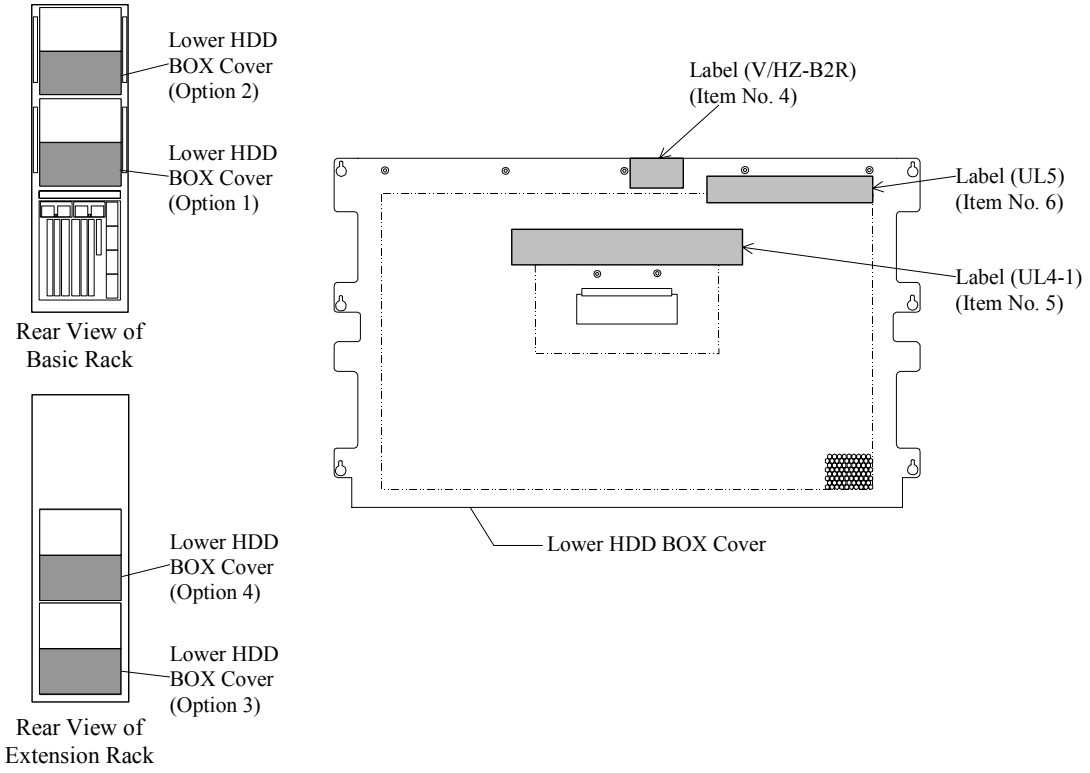


Fig. 3.5.2-26 Attachment of Labels

   b. Remove the screw from the rack frame and remove the nameplate tags to be installed.
   c. Attach the nameplate to the nameplate tag on the Rack frame.
   d. Attach all the nameplate tags with the screw.

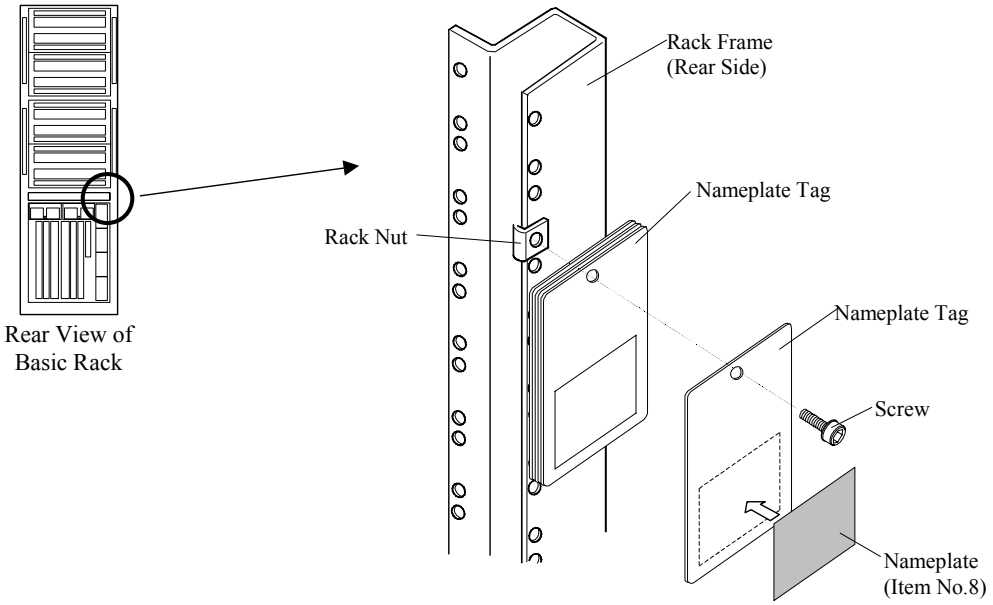


Fig. 3.5.2-27 Attachment of Nameplate

e. Attach six labels, showing corresponding locations to front side and rear side of HDD Box. Attach six labels describing above to the HDD Box, if no label is attached.

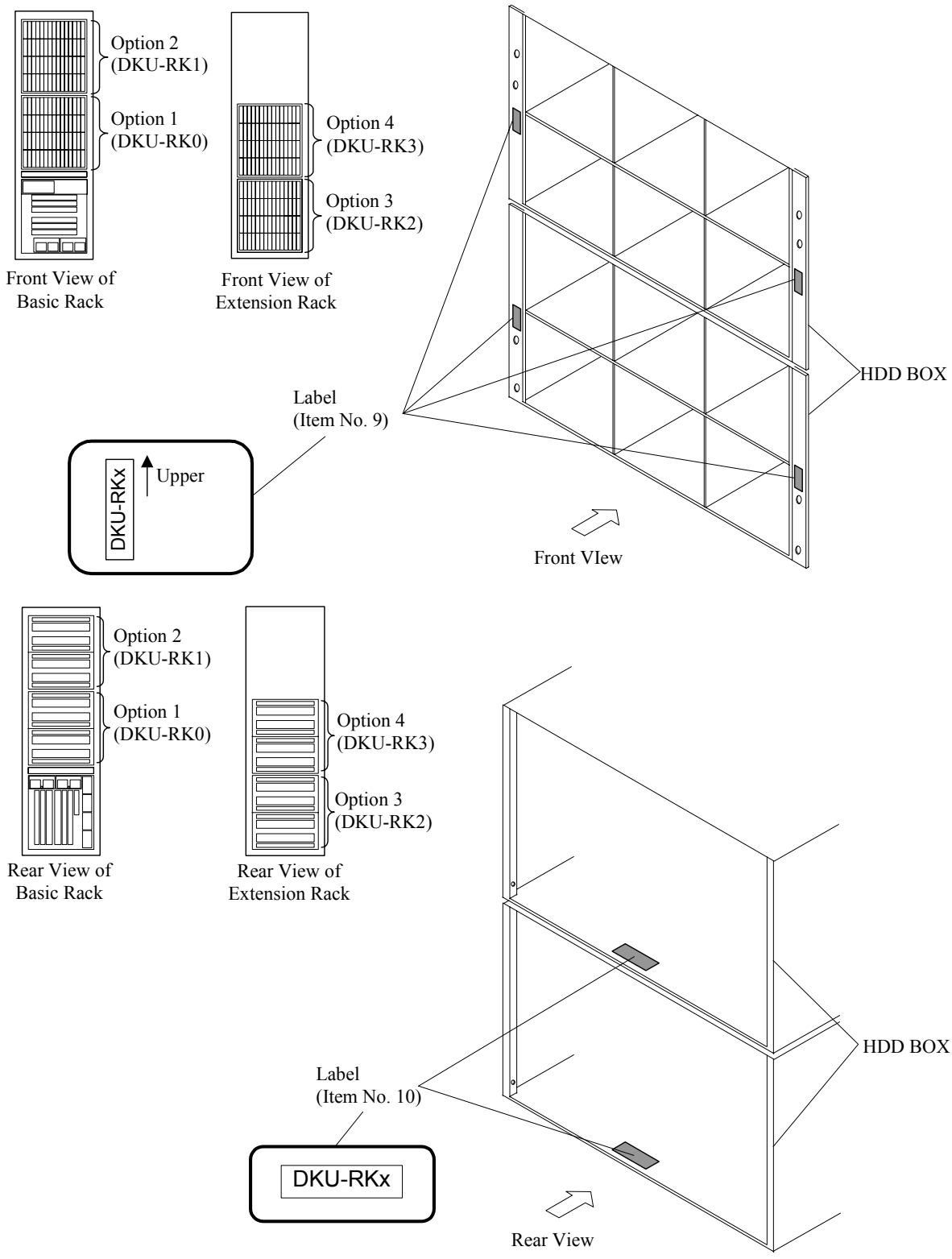


Fig. 3.5.2-28 Attachment of Labels

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3.5.3 Installation Procedure of Disk Chassis (HDS Rack Frame)

3.5.3.1 Standard Configuration

1. Installing the rails (If the rails are already installed, this installation procedure is not required.)

HDS Rack Frame

EIA units and intervals of mounting holes of 19-inch rack frame conforming to EIA standard

- A unit (U) space conforming to EIA standard is 19 inches wide and 44.5 mm high as shown in the figure below.
- The boundary of the unit falls on the middle of the interval of 12.7 mm.
- Wide intervals: Repeat of 44.45 mm (15.875mm + 15.875 mm + 12.7 mm)
  Maximum number of mountable unit spaces: 42

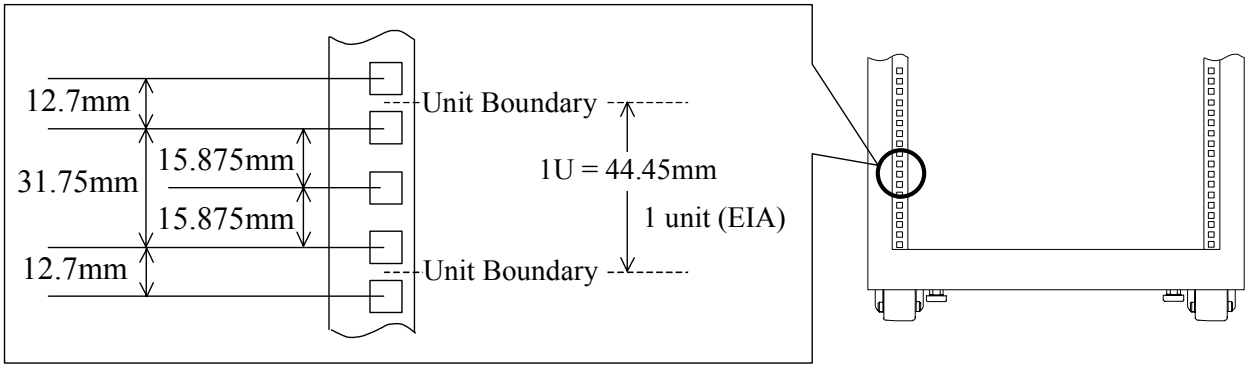


Fig. 3.5.3.1-1 Attachment Hole Size of Rack

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The addresses are given as 1, 2, 3, and so on counted from the bottom of the rack frame.
The following figure illustrates the whole layout of addresses of installation positions in the rack frame.
There are 42 addresses, that is, the 1U to 42U counted in the vertical direction starting from the lower boundary of the 1U (the lowest unit).

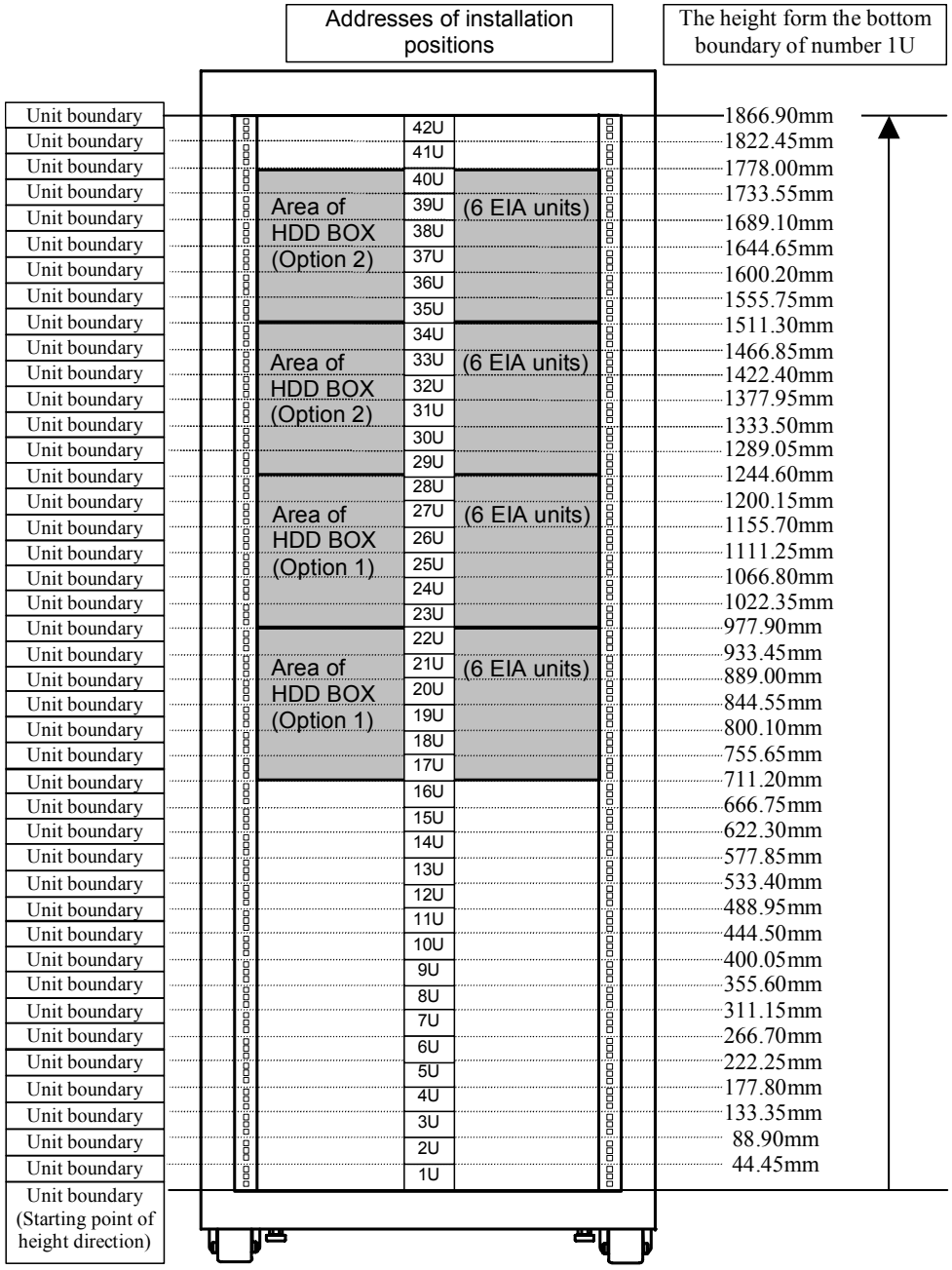


Fig. 3.5.3.1-2 Whole Layout of Installation Position Addresses (Basic Rack)

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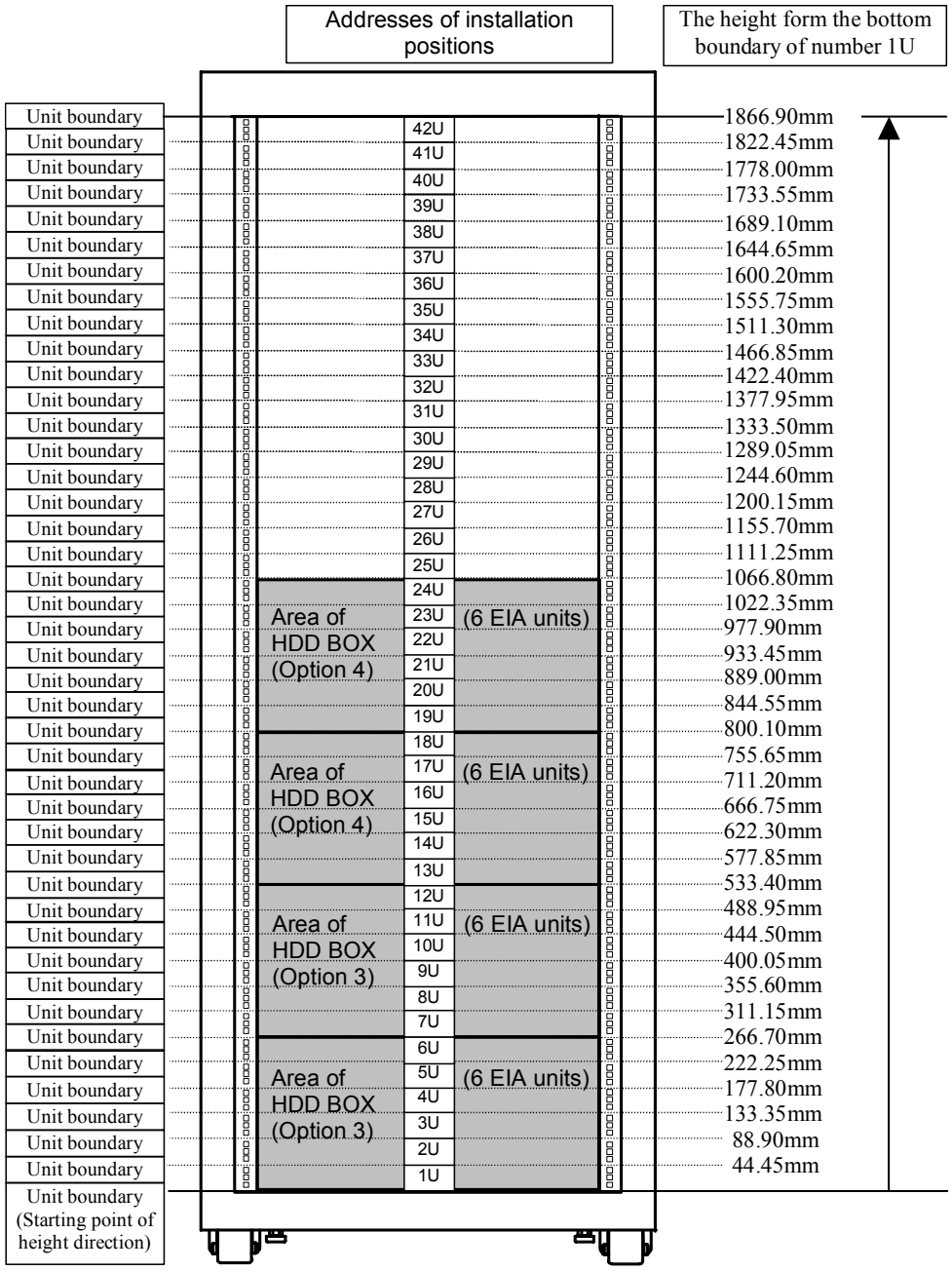


Fig. 3.5.3.1-3 Whole Layout of Installation Position Addresses (Extension Rack)

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a. Fasten the Rail (R) to the rack frame using the screw (at a place each on the rear sides.). Refer to Fig.3.5.3.1-4 or Fig.3.5.3.1-5.
b. Install the Rail (L) to the rack frame in the same way.

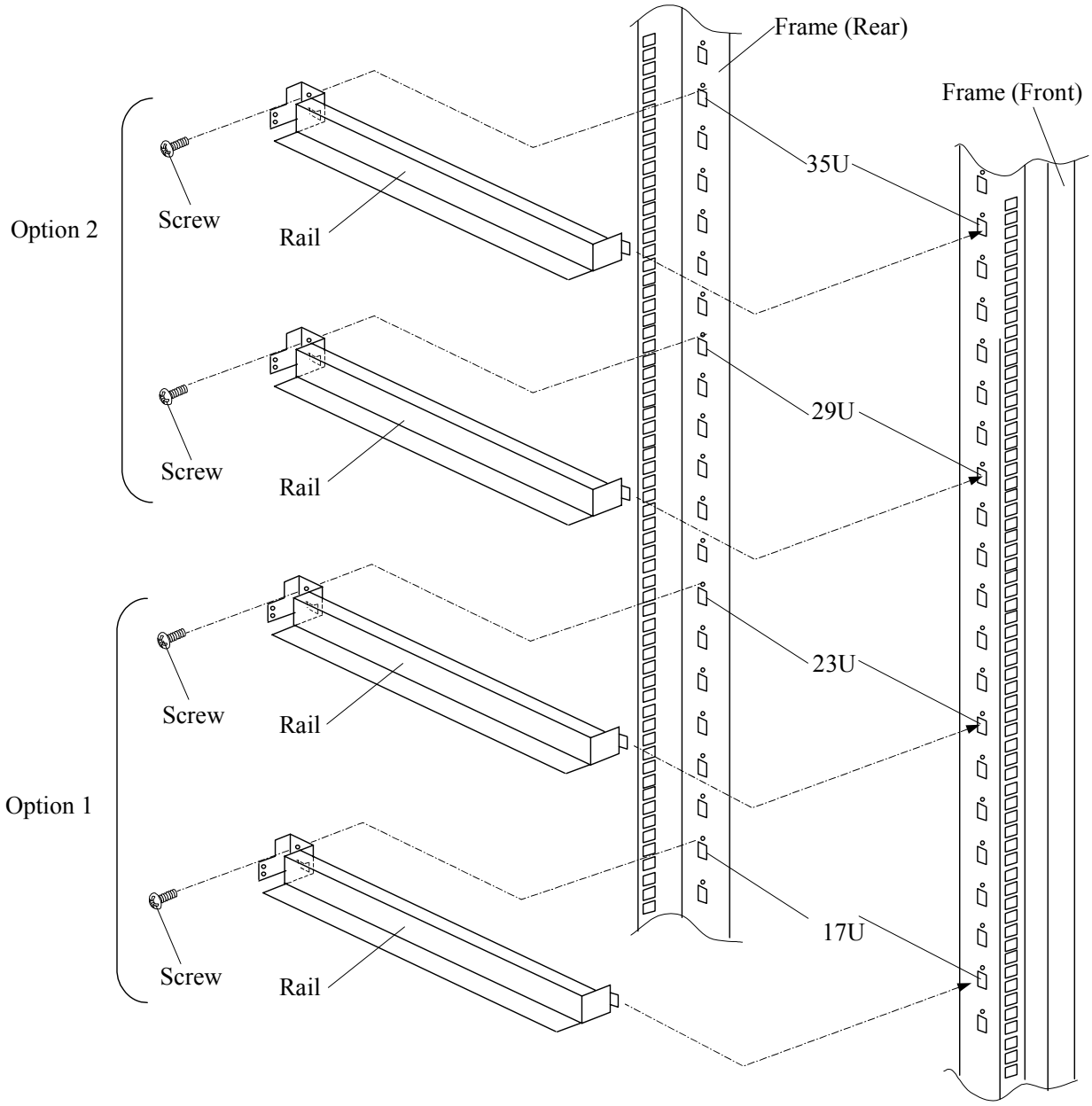


Fig. 3.5.3.1-4 Attachment of Rails (Basic Rack)

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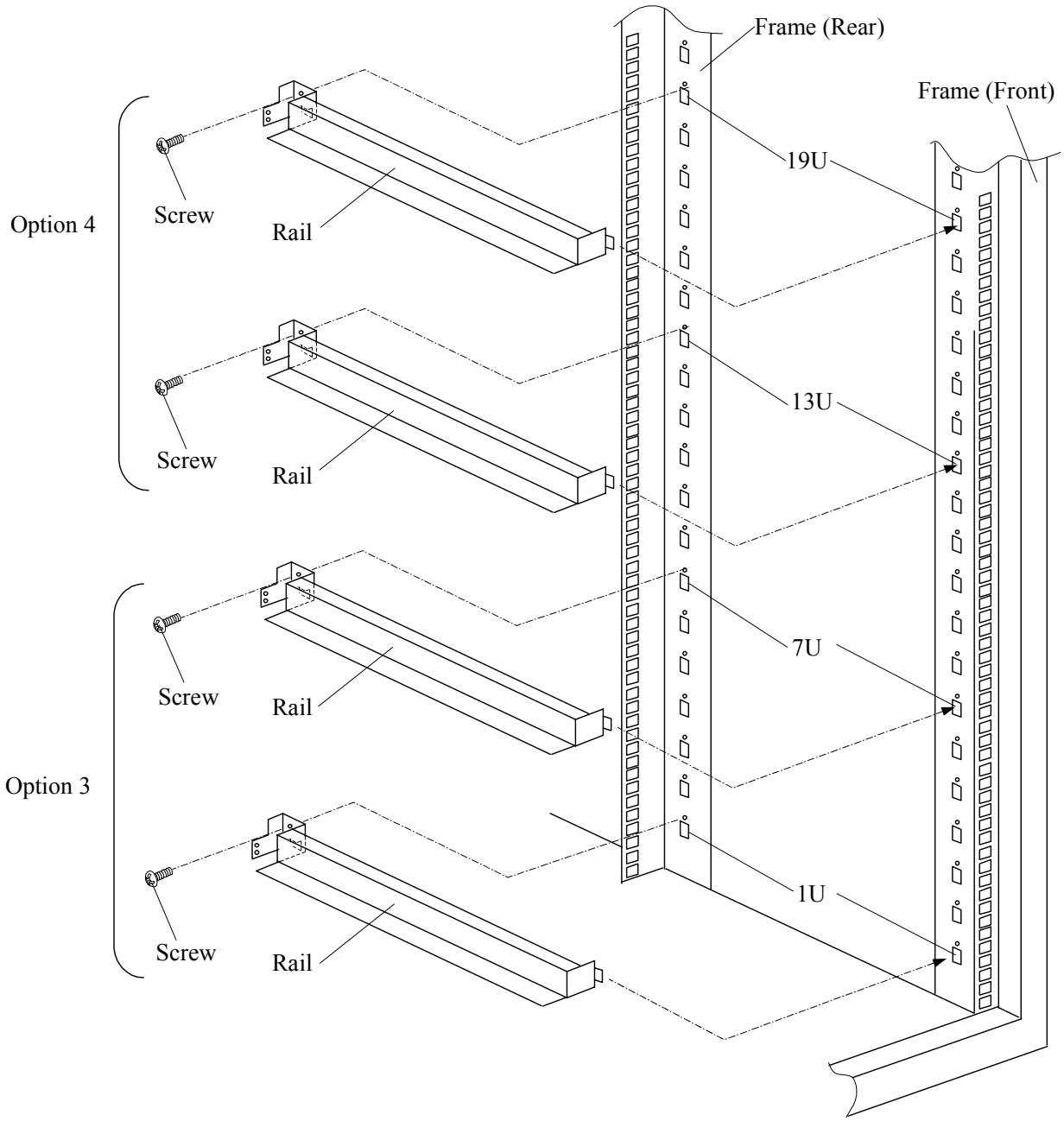
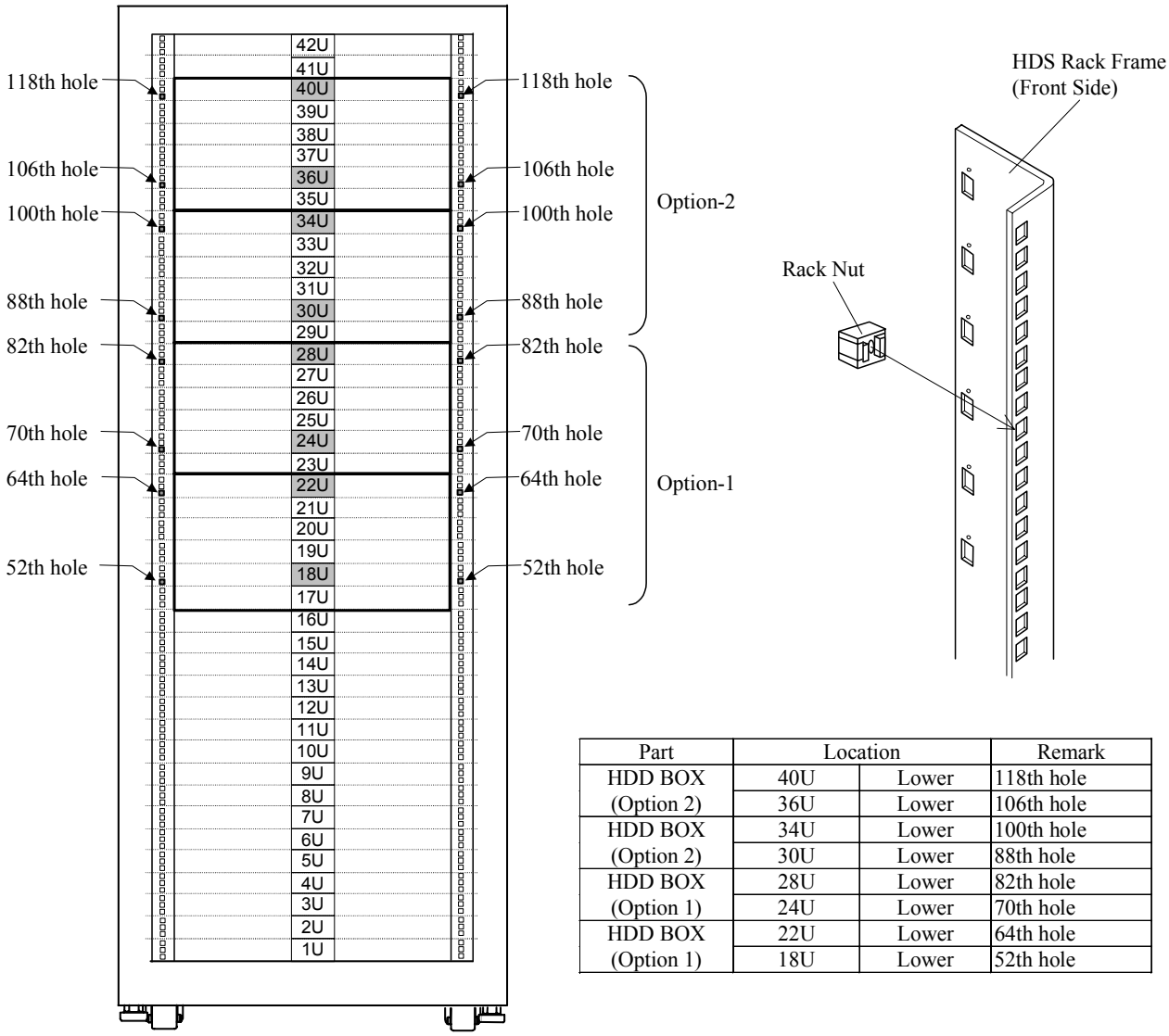


Fig. 3.5.3.1-5 Attachment of Rails (Extension Rack)

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2. Installing rack nuts on the front side of the rack frame
   Install the rack nuts on the front side of the rack frame in order to fasten the subsystems to be mounted on the rack frame.
   a. Fit the eight rack nuts to each of the right and left beams on the front side of the rack frame.

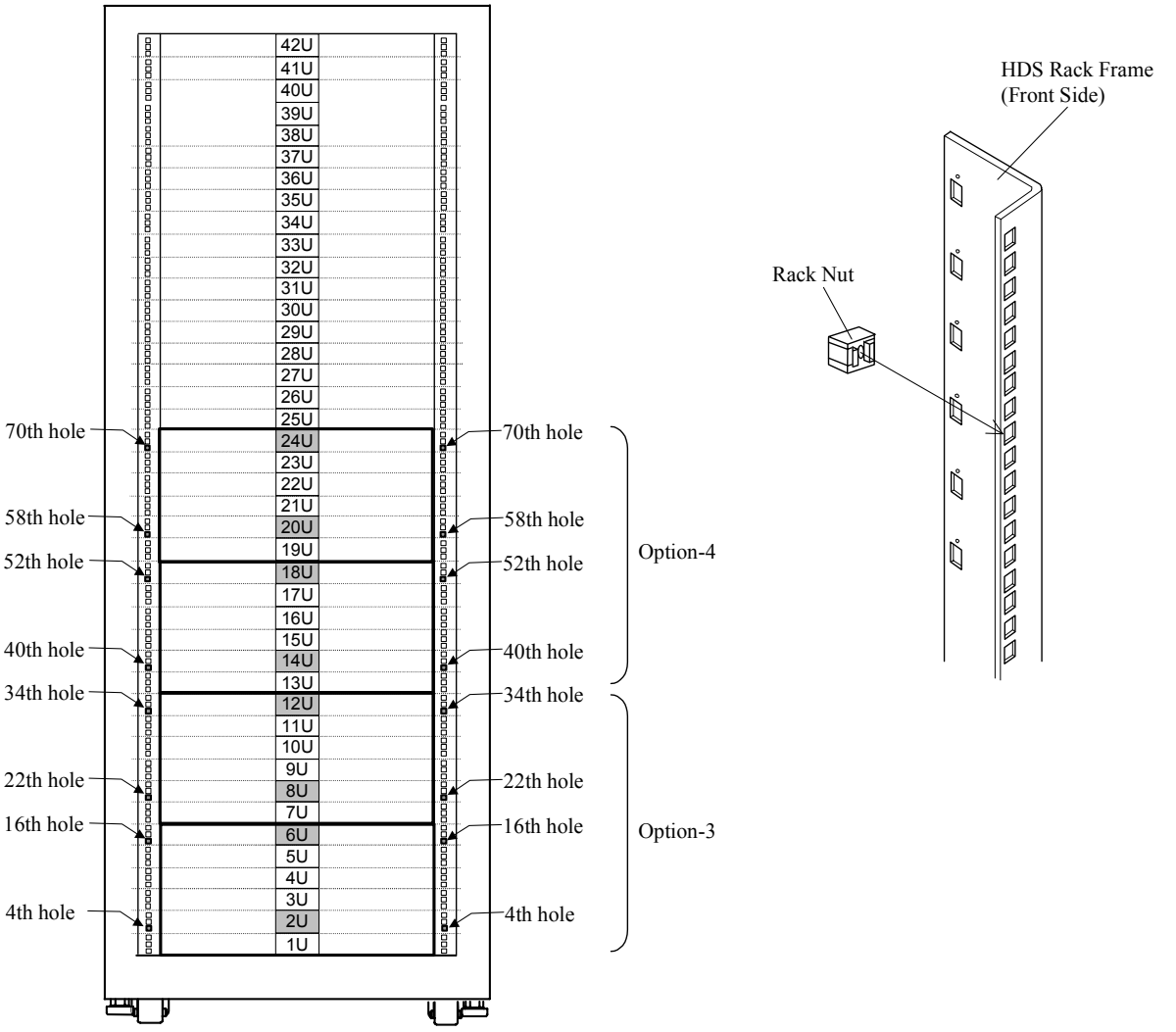


Front View of Basic Rack

Part	Location		Remark
HDD BOX (Option 2)	40U	Lower	118th hole
	36U	Lower	106th hole
HDD BOX (Option 2)	34U	Lower	100th hole
	30U	Lower	88th hole
HDD BOX (Option 1)	28U	Lower	82th hole
	24U	Lower	70th hole
HDD BOX (Option 1)	22U	Lower	64th hole
	18U	Lower	52th hole

Fig. 3.5.3.1-6 Installing Rack Nuts to Basic Rack

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Front View of Extension Rack

Part	Location		Remark
HDD BOX (Option 4)	24U	Lower	70th hole
	20U	Lower	58th hole
HDD BOX (Option 4)	18U	Lower	52th hole
	14U	Lower	40th hole
HDD BOX (Option 3)	12U	Lower	34th hole
	8U	Lower	22th hole
HDD BOX (Option 3)	6U	Lower	16th hole
	2U	Lower	4th hole

Fig. 3.5.3.1-7 Installing Rack Nuts to Extension Rack

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3. Installing the HDD Boxes

> **⚠ CAUTION**
>
> Paying attention to falls:
> Work carefully because the mass of the single HDD BOX is about 38 kg.

a. Install the HDD Box on the Rack frame referring to mounting procedure using the special lifter. (See INST03-13-10 through 40.)
b. Fix the HDD Box with the four screws.
c. Install the 2nd HDD Box to the rack frame in the same way.

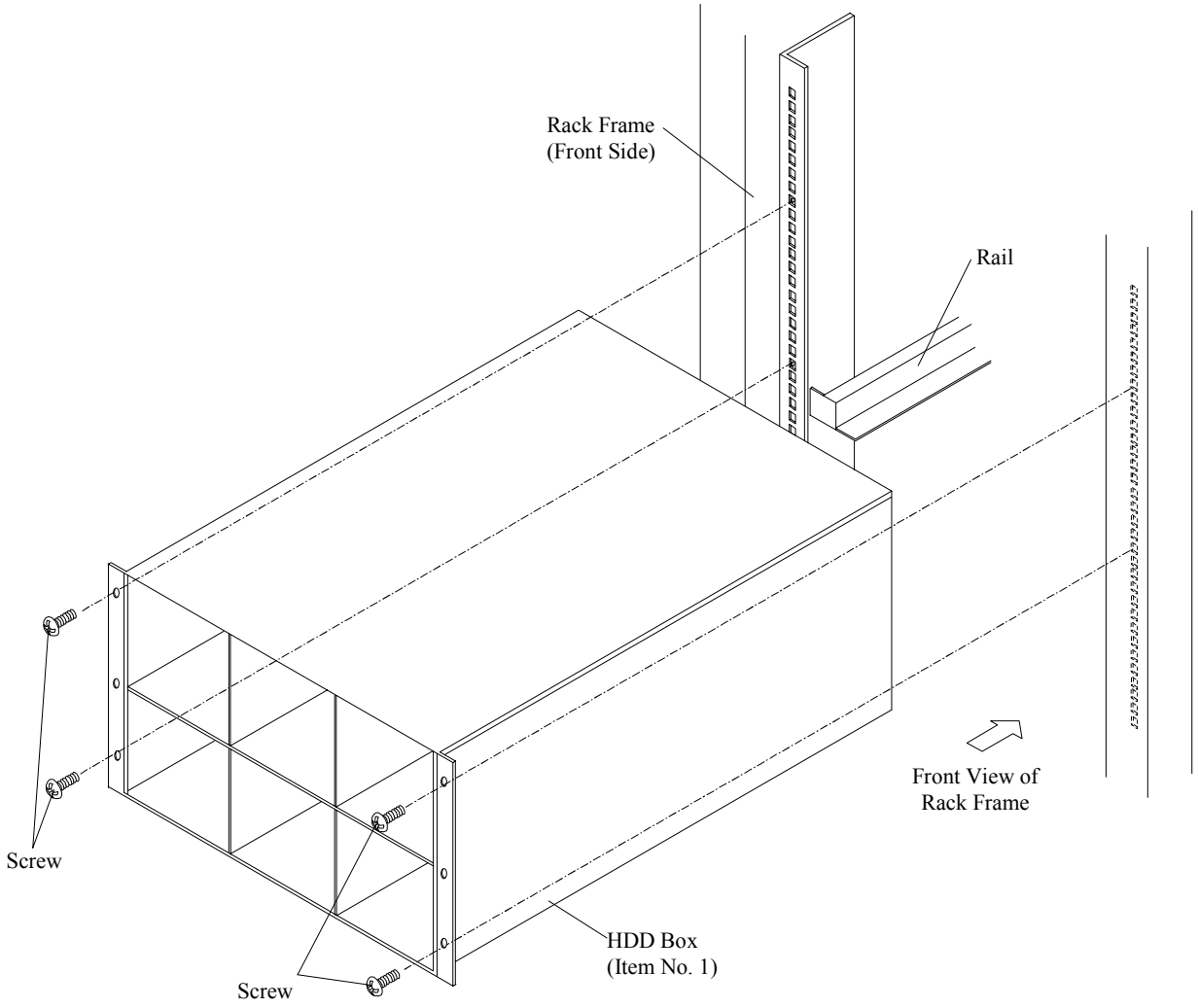


Fig. 3.5.3.1-8 Installing HDD Box

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d. Attach the stoppers on the rear side of HDD Boxes and fasten the bolts.

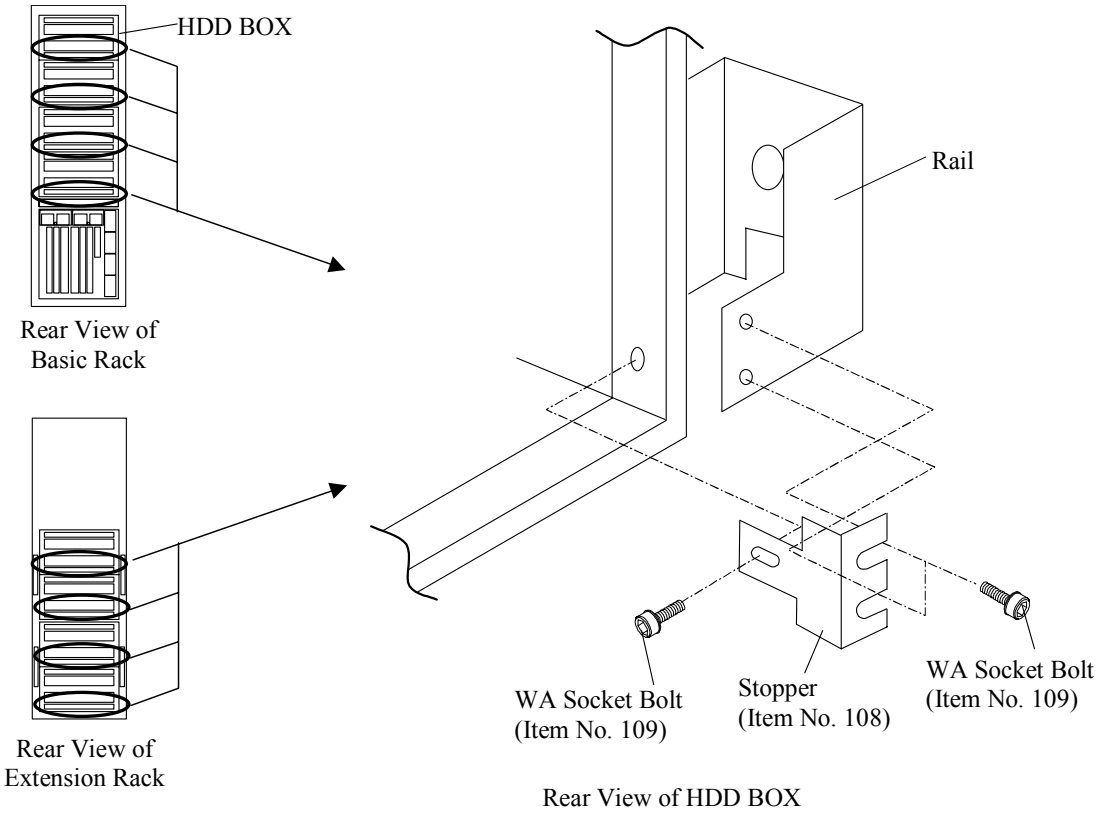


Fig. 3.5.3.1-9 Attachment of Stoppers

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4. Connect the Cable Assemblies.
   a. Paint out unnecessary numbers on cable assemblies by black oil felt pen. Refer to Fig. 3.5.3.1-10, Table 3.5.3.1-1, Table 3.5.3.1-2, Table 3.5.3.1-3 or Table 3.5.3.1-4.

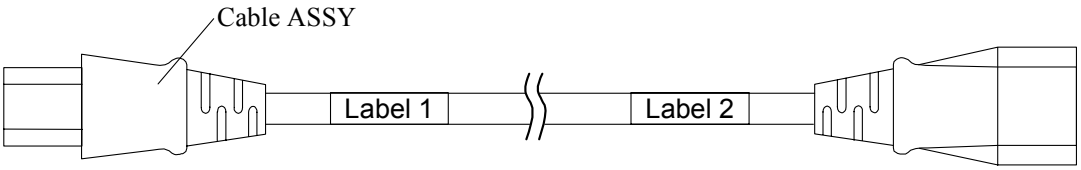


Fig. 3.5.3.1-10 Label Position on Cable ASSY

Table 3.5.3.1-1 Painting out of Labels (Option 1)

Item No.	Part Name	Painting out		Label Color
		Label 1	Label 2	
2	Cable ASSY (PS INLET)	PS 0 [redacted] – 0 [redacted]	PDU 00 [redacted] – [redacted] P104	White
	Cable ASSY (PS INLET)	PS 0 [redacted] – [redacted] 2	PDU [redacted] 10 [redacted] – P101 [redacted]	White
3	Cable ASSY (PS INLET)	PS 0 [redacted] – 1 [redacted]	PDU 01 [redacted] – [redacted] P104	Yellow
	Cable ASSY (PS INLET)	PS 0 [redacted] – [redacted] 3	PDU [redacted] 11 [redacted] – P101 [redacted]	Yellow

Table 3.5.3.1-2 Painting out of Labels (Option 2)

Item No.	Part Name	Painting out		Label Color
		Label 1	Label 2	
2	Cable ASSY (PS INLET)	PS [redacted] 1 [redacted] – 0 [redacted]	PDU [redacted] 10 [redacted] – [redacted] P102 [redacted]	White
	Cable ASSY (PS INLET)	PS [redacted] 1 [redacted] – [redacted] 2	PDU [redacted] 10 [redacted] – [redacted] P103 [redacted]	White
3	Cable ASSY (PS INLET)	PS [redacted] 1 [redacted] – 1 [redacted]	PDU [redacted] 11 [redacted] – [redacted] P102 [redacted]	Yellow
	Cable ASSY (PS INLET)	PS [redacted] 1 [redacted] – [redacted] 3	PDU [redacted] 11 [redacted] – [redacted] P103 [redacted]	Yellow

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Table 3.5.3.1-3 Painting out of Labels (Option 3)

Item No.	Part Name	Painting out		Label Color
		Label 1	Label 2	
2	Cable ASSY (PS INLET)	PS [redacted] 2 [redacted] – 0 [redacted]	PDU [redacted] 20 [redacted] – P101 [redacted]	White
	Cable ASSY (PS INLET)	PS [redacted] 2 [redacted] – [redacted] 2	PDU [redacted] 20 [redacted] – [redacted] P102 [redacted]	White
3	Cable ASSY (PS INLET)	PS [redacted] 2 [redacted] – 1 [redacted]	PDU [redacted] 21 [redacted] – P101 [redacted]	Yellow
	Cable ASSY (PS INLET)	PS [redacted] 2 [redacted] – [redacted] 3	PDU [redacted] 21 [redacted] – [redacted] P102 [redacted]	Yellow

Table 3.5.3.1-4 Painting out of Labels (Option 4)

Item No.	Part Name	Painting out		Label Color
		Label 1	Label 2	
2	Cable ASSY (PS INLET)	PS [redacted] 3 – 0 [redacted]	PDU [redacted] 30 – P101 [redacted]	White
	Cable ASSY (PS INLET)	PS [redacted] 3 – [redacted] 2	PDU [redacted] 30 – [redacted] P102 [redacted]	White
3	Cable ASSY (PS INLET)	PS [redacted] 3 – 1 [redacted]	PDU [redacted] 31 – P101 [redacted]	Yellow
	Cable ASSY (PS INLET)	PS [redacted] 3 – [redacted] 3	PDU [redacted] 31 – [redacted] P102 [redacted]	Yellow

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b. Connect the cables (PSx-0, PSx-1, PSx-2, PSx-3) to the DKUPSs in the HDD Boxes.

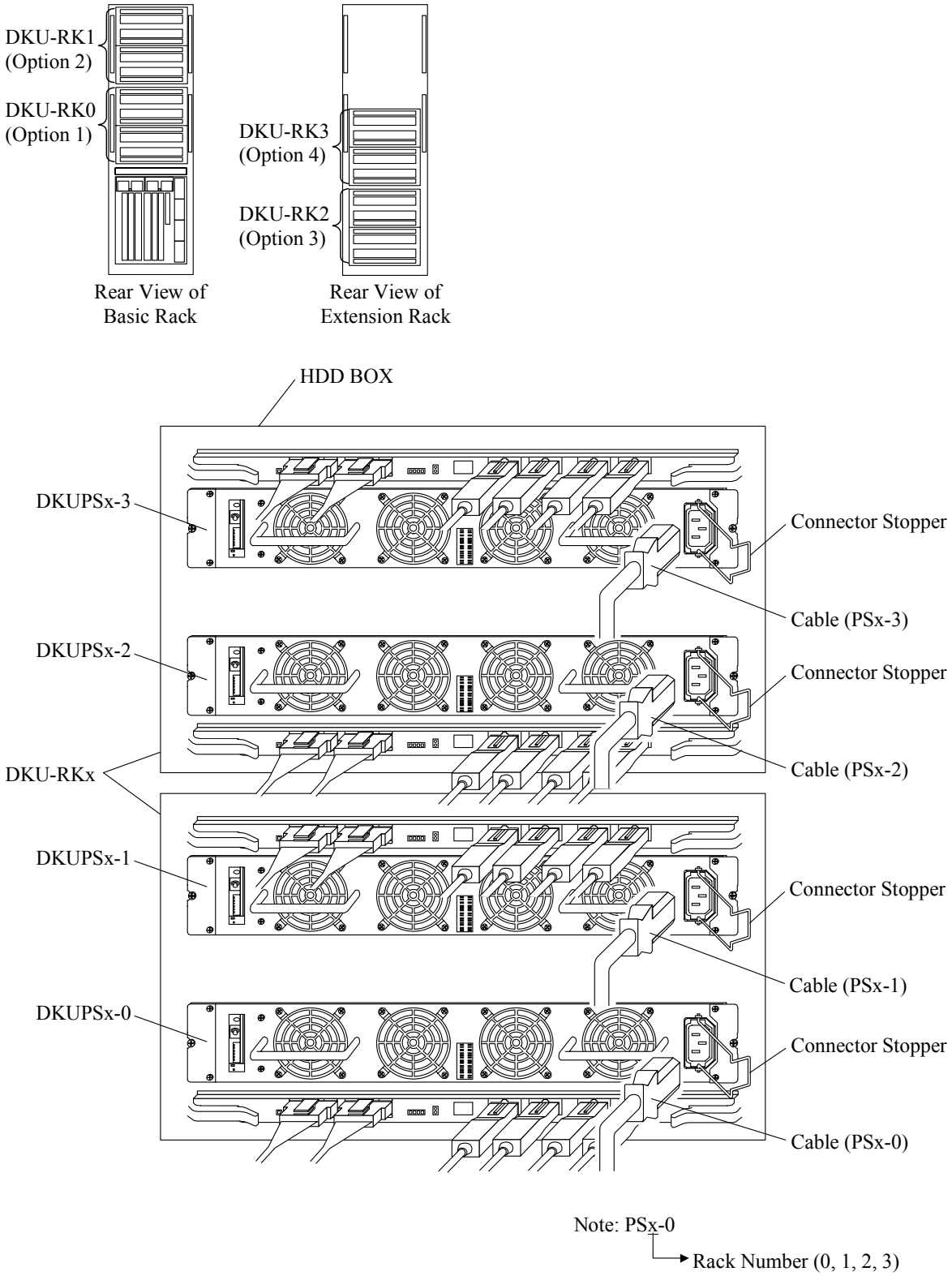


Fig. 3.5.3.1-11 Connection of Cables

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c. Connect the cables to the PDUs. (Refer to HDS installation Manual.)

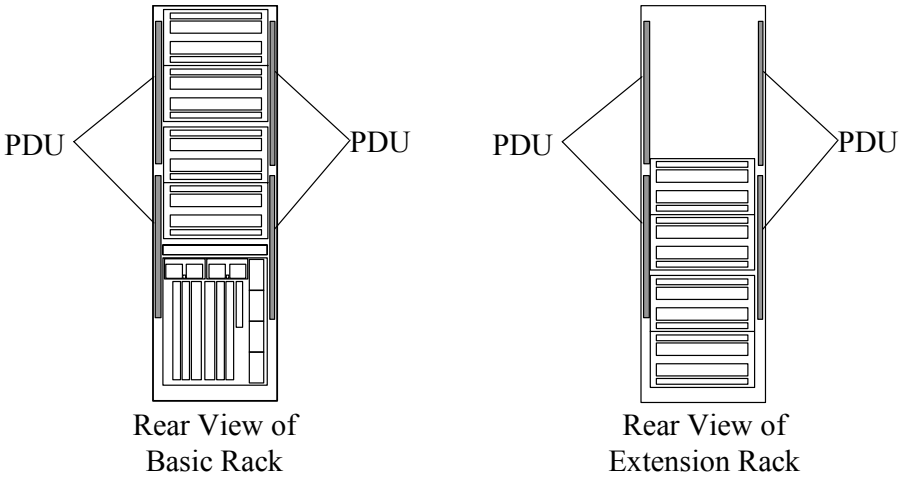


Fig. 3.5.3.1-12 Connection of Cables

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d. Fix the cable assemblies with the repeat binders and locking clamps. Refer to Fig. 3.5.3.1-13, Fig.3.5.3.1-14, Fig.3.5.3.1-15 or Fig. 3.5.3.1-16.

Option 1

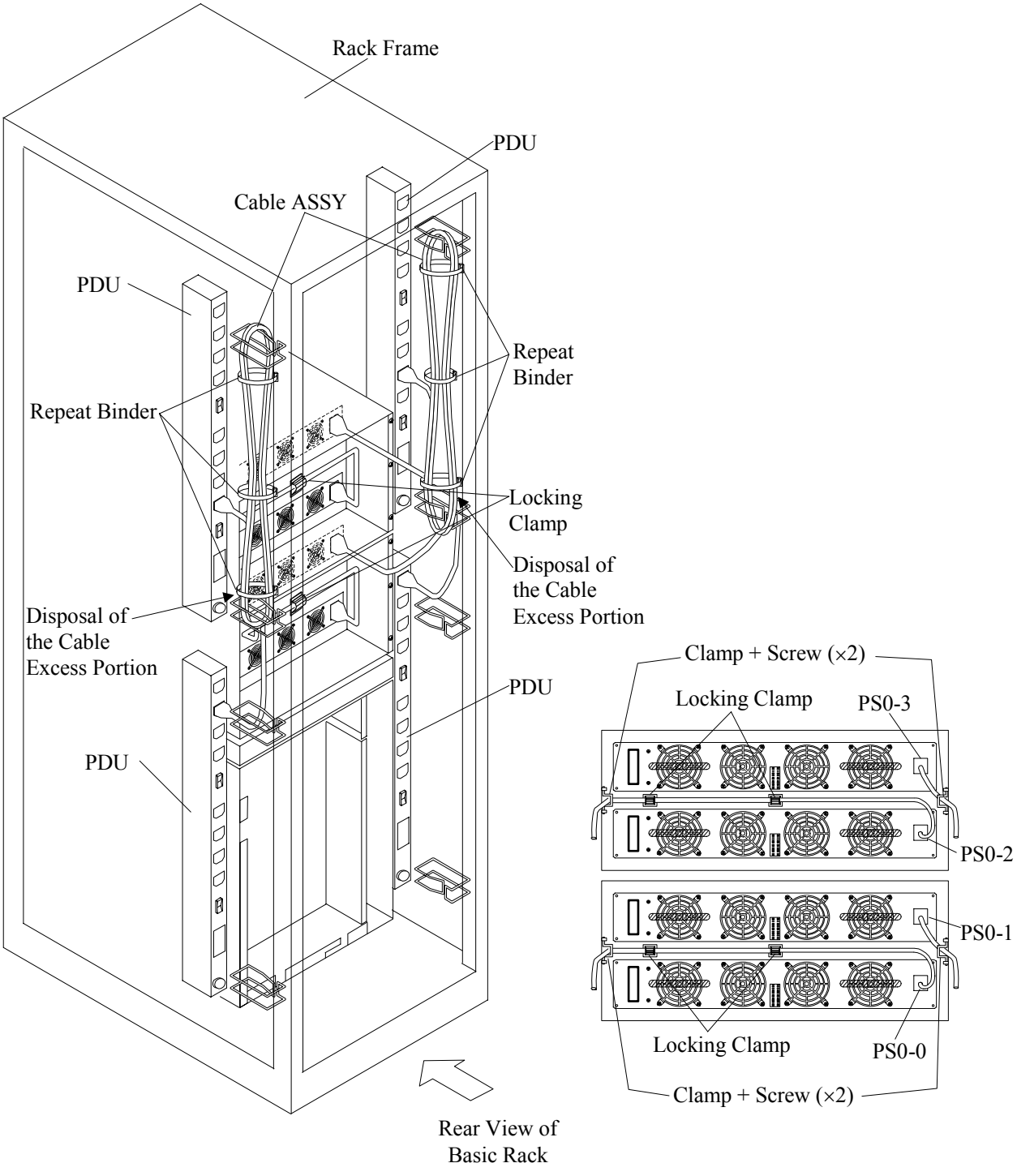


Fig. 3.5.3.1-13 Fixation of Cable Assemblies (Option 1)

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Option 2

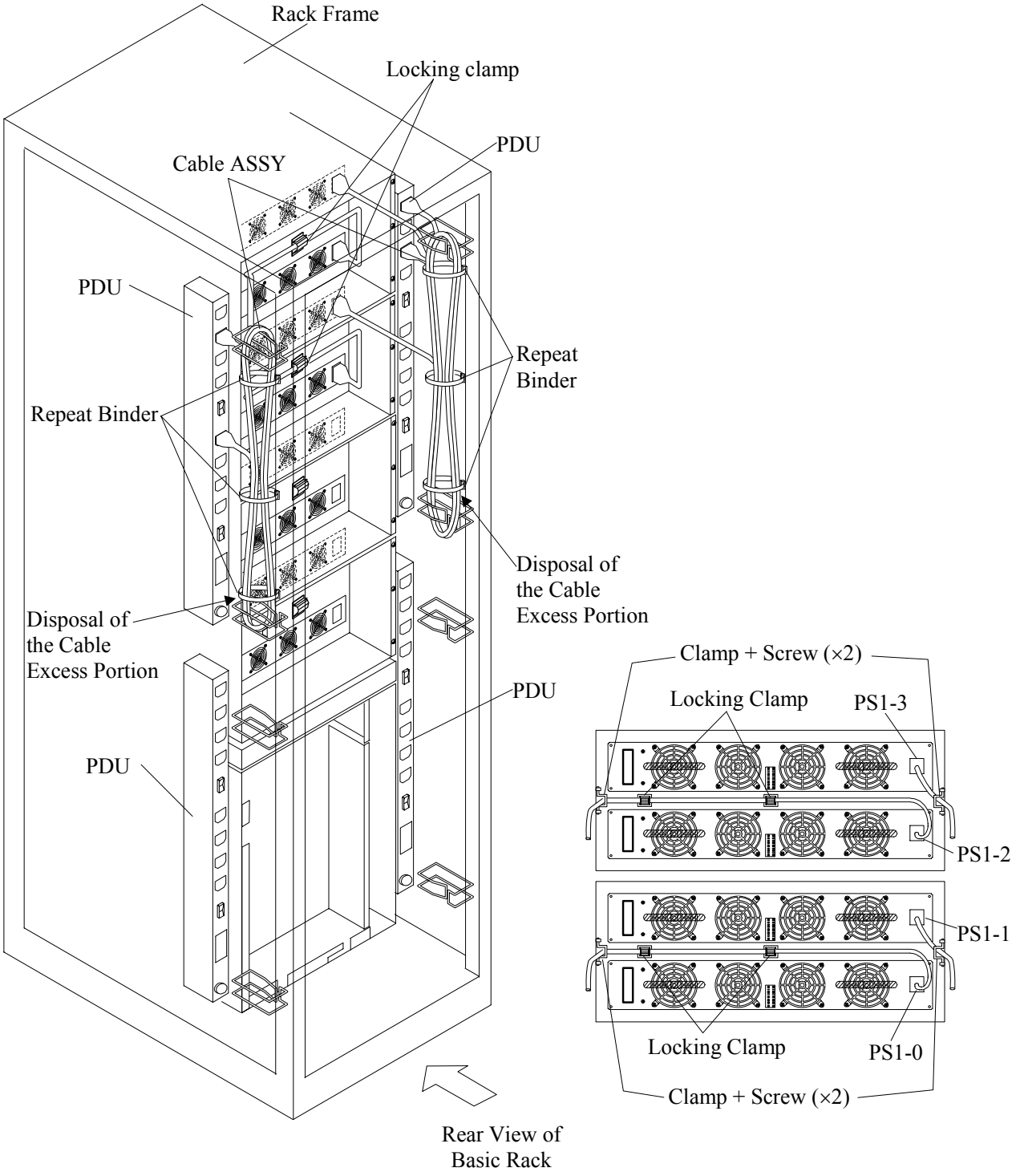


Fig. 3.5.3.1-14 Fixation of Cable Assemblies (Option 2)

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Option 3

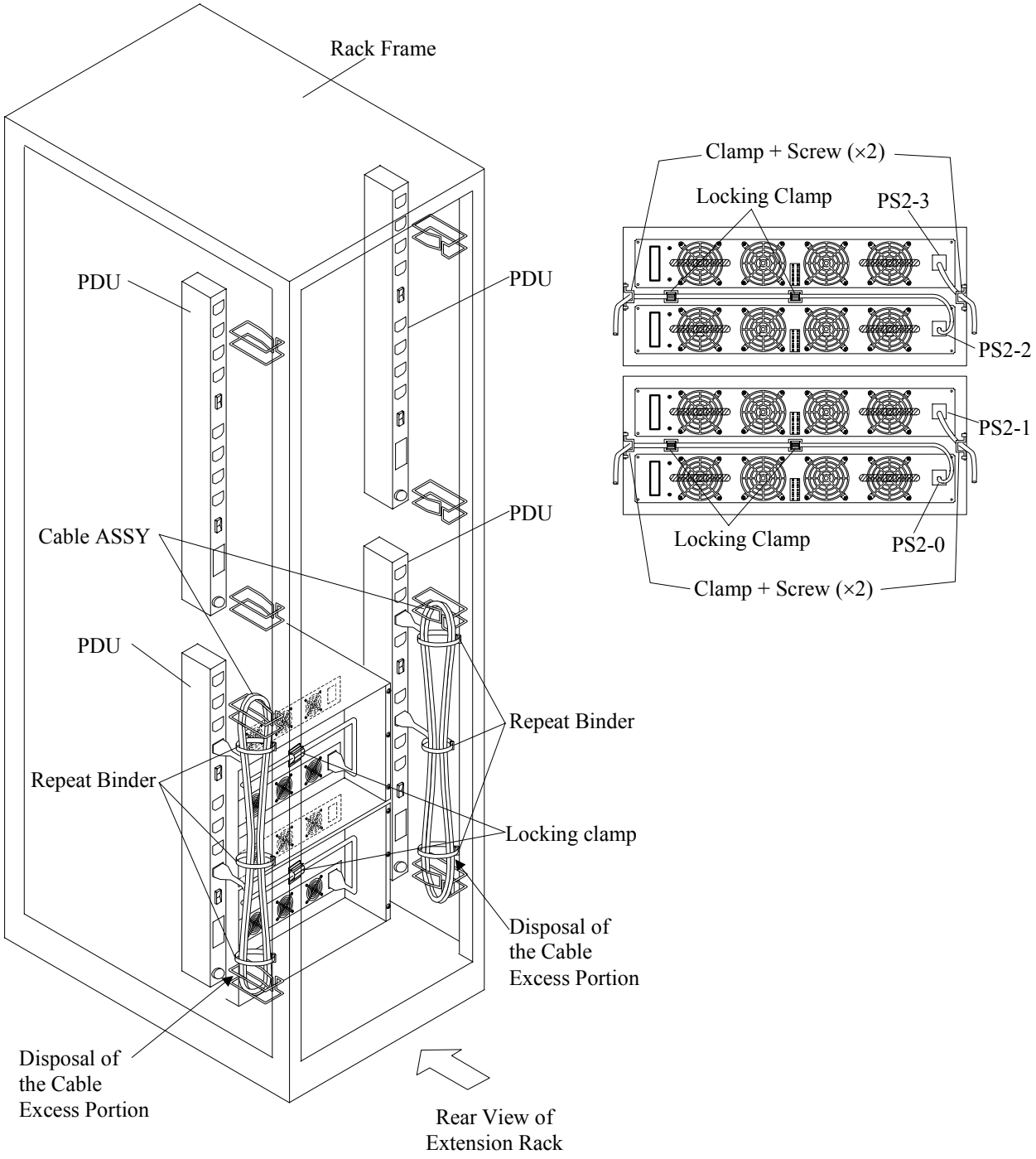


Fig. 3.5.3.1-15 Fixation of Cable Assemblies (Option 3)

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Option 4

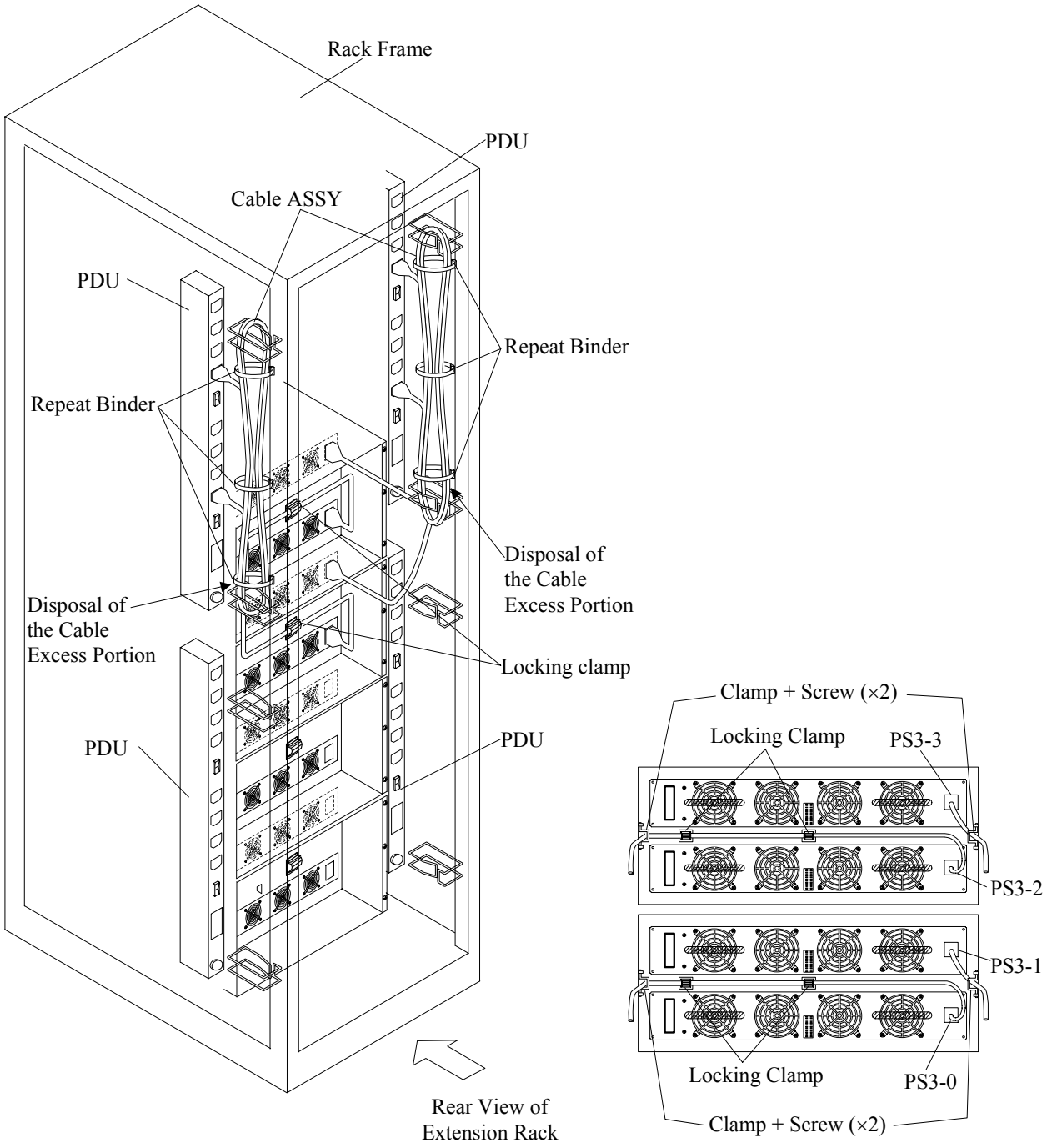


Fig. 3.5.3.1-16 Fixation of Cable Assemblies (Option 4)

5. Switch and Jumper Plug Installation

⚠ CAUTION

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

a. Set the switch in the DKUPS as indicated in the Fig. 3.5.3.1-17 and Fig. 3.5.3.1-18. Switch settings must be made at 4 places in total per option.

Note: Use something sharp (ex. a pen or a mini screwdriver etc) when set the DKUPS switches

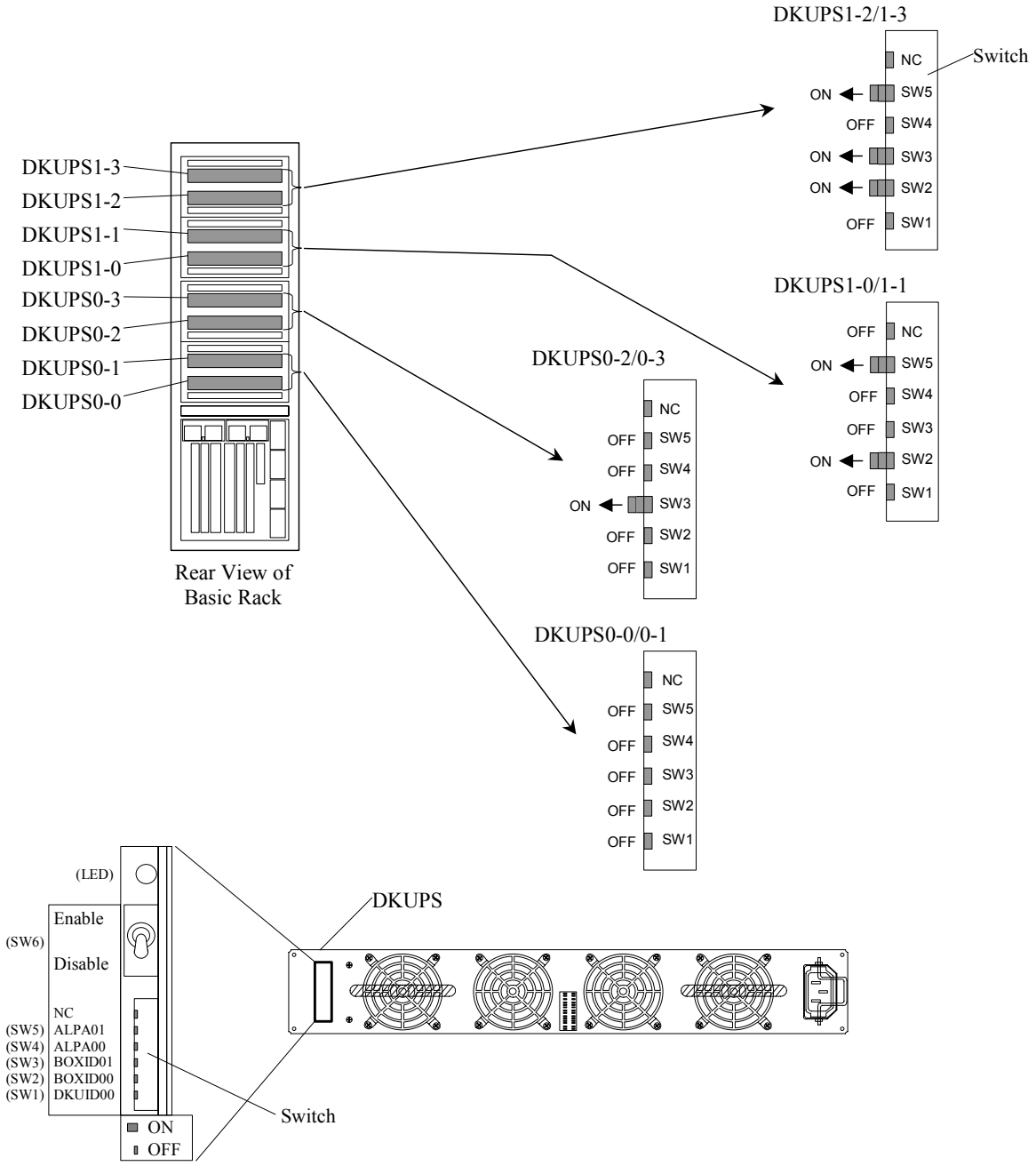


Fig. 3.5.3.1-17 Switch Setting of DKUPS

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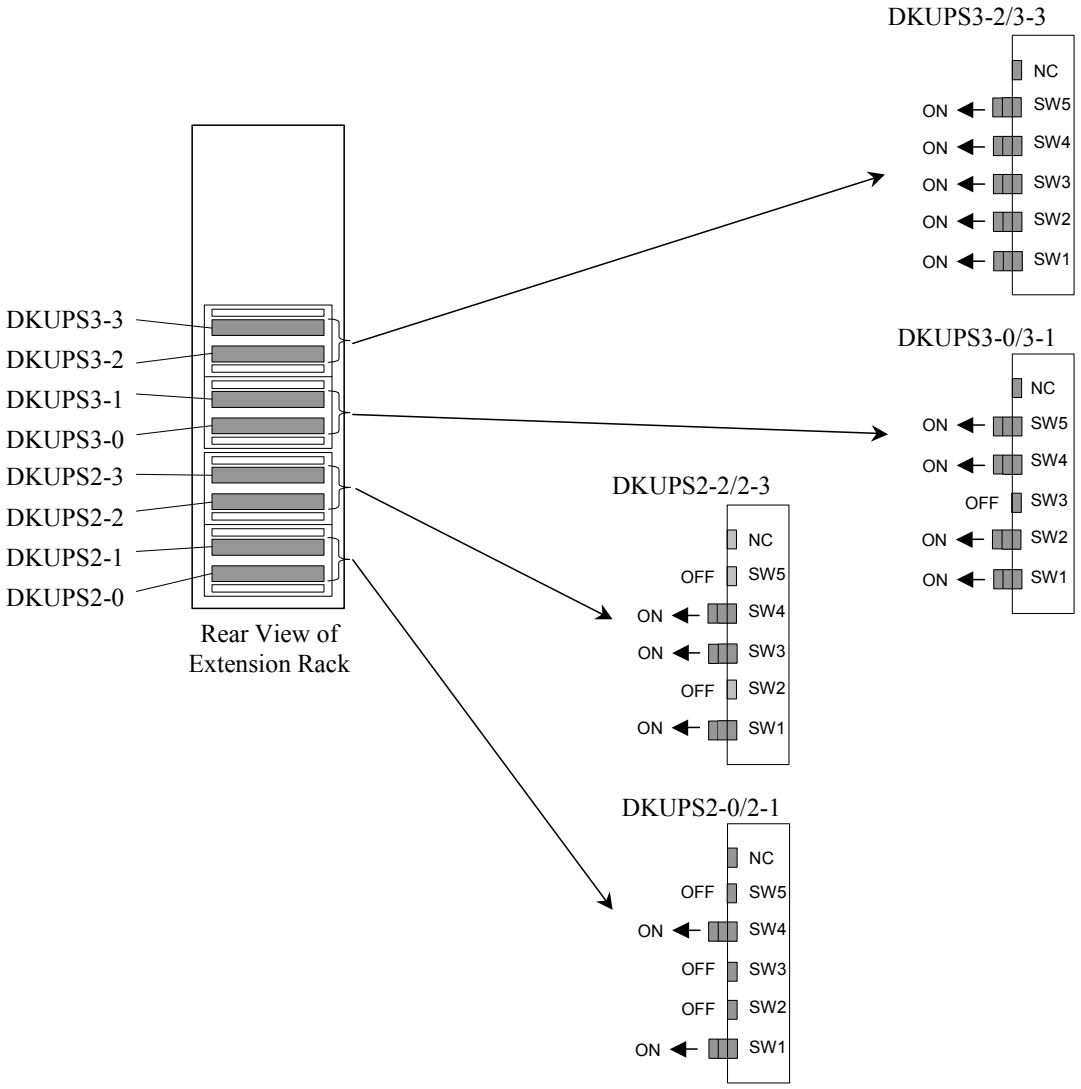


Fig. 3.5.3.1-18 Switch Setting of DKUPS

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⚠ CAUTION

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

b. Set the jumper in the FSW PCB as indicated in the Fig. 3.5.3.1-19.
Switch settings must be made at 4 places in total per option.

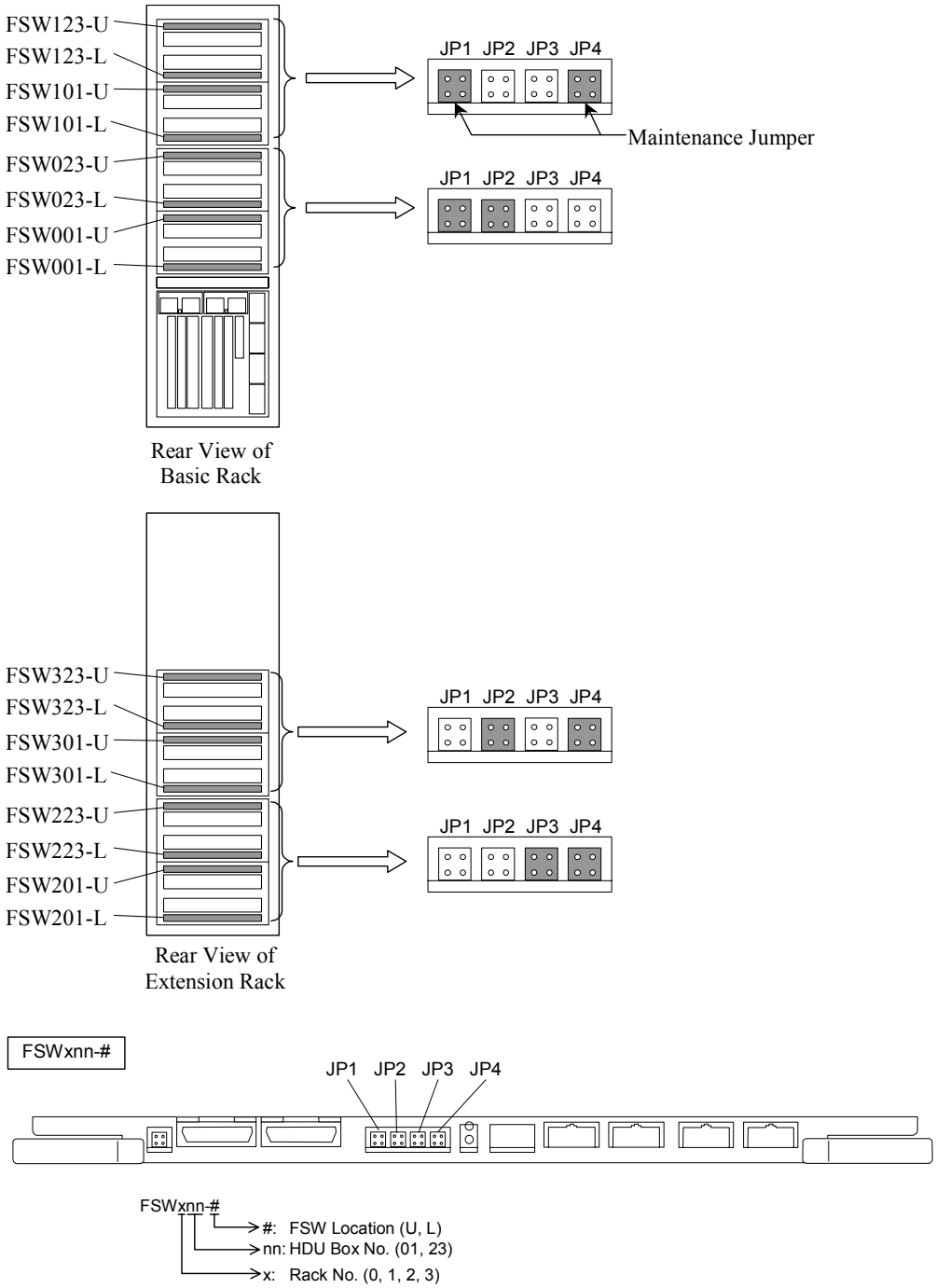


Fig. 3.5.3.1-19 Installation of Maintenance Jumper in FSW

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6. Attach the nameplate and labels.
   a. Attach the nameplate and three labels to the lower HDD BOX cover.

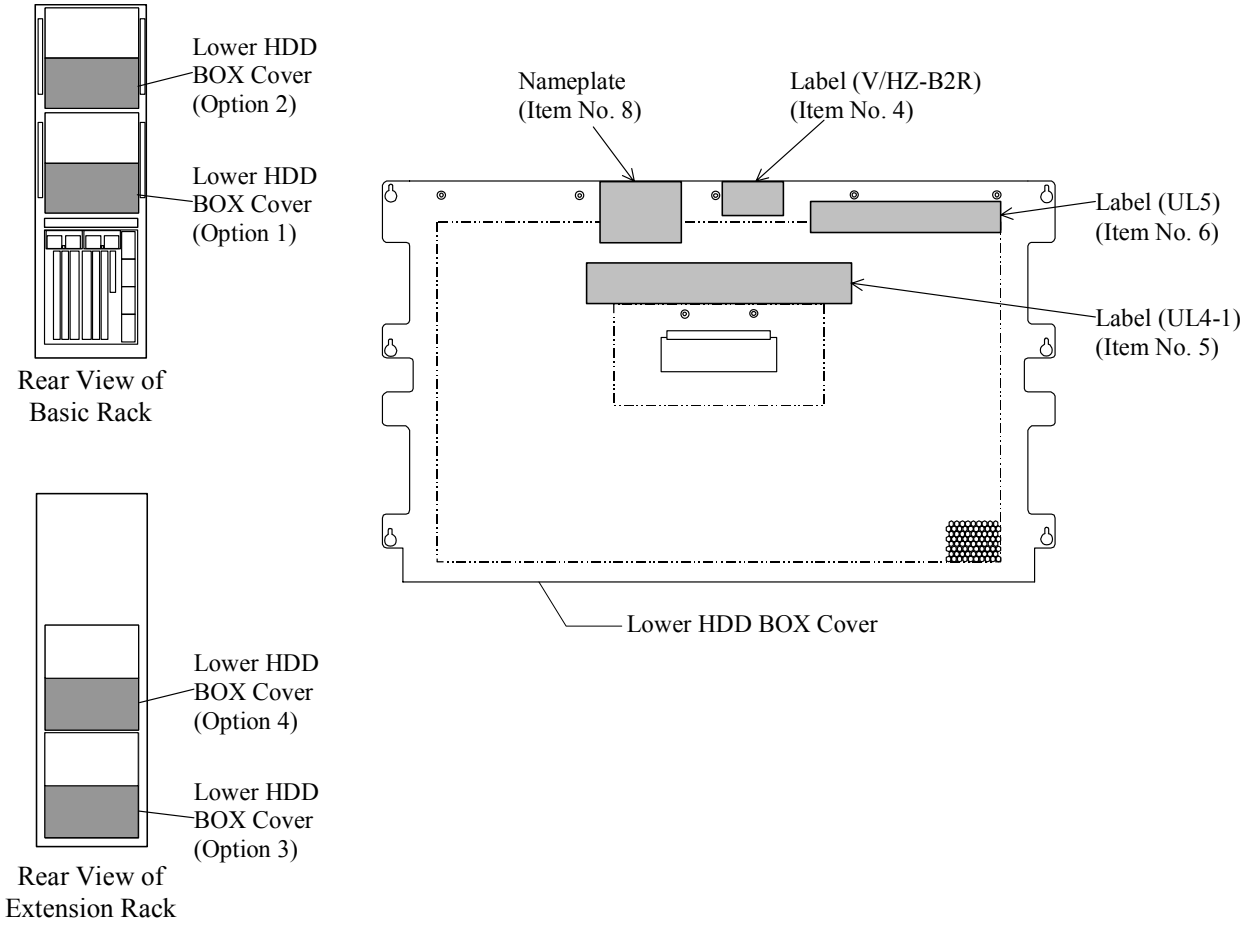


Fig. 3.5.3.1-20 Attachment of Nameplate and Labels

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b. Attach six labels, showing corresponding locations to front side and rear side of HDD Box. Attach six labels describing above to the HDD Box, if no label is attached.

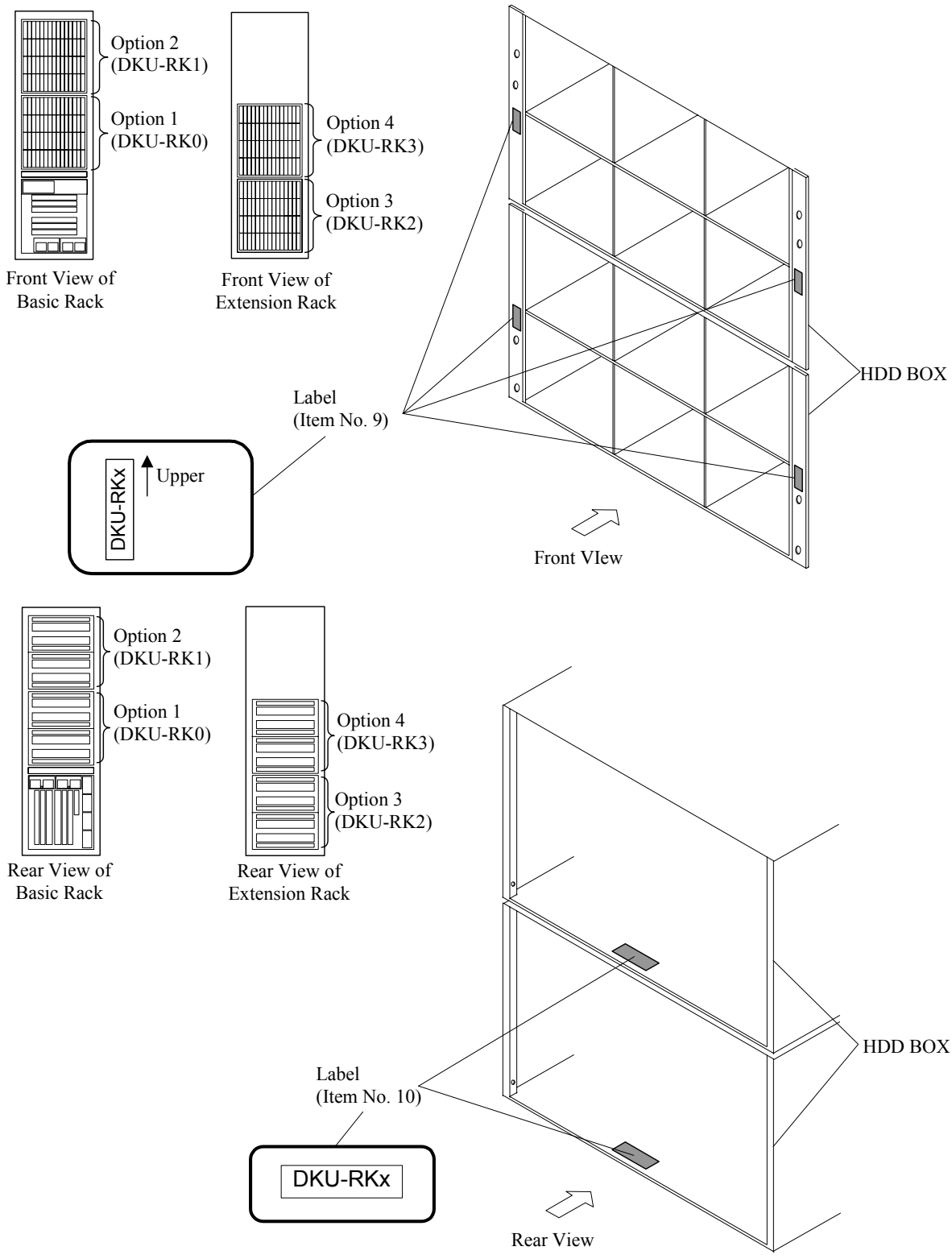


Fig. 3.5.3.1-21 Attachment of Labels

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3.5.3.2 In case of TagmaStore AMS/WMS installed configuration

1. Installing the rails (If the rails are already installed, this installation procedure is not required.)

HDS Rack Frame

EIA units and intervals of mounting holes of 19-inch rack frame conforming to EIA standard

- A unit (U) space conforming to EIA standard is 19 inches wide and 44.5 mm high as shown in the figure below.
- The boundary of the unit falls on the middle of the interval of 12.7 mm.
- Wide intervals: Repeat of 44.45 mm (15.875mm + 15.875 mm + 12.7 mm)
  Maximum number of mountable unit spaces: 42

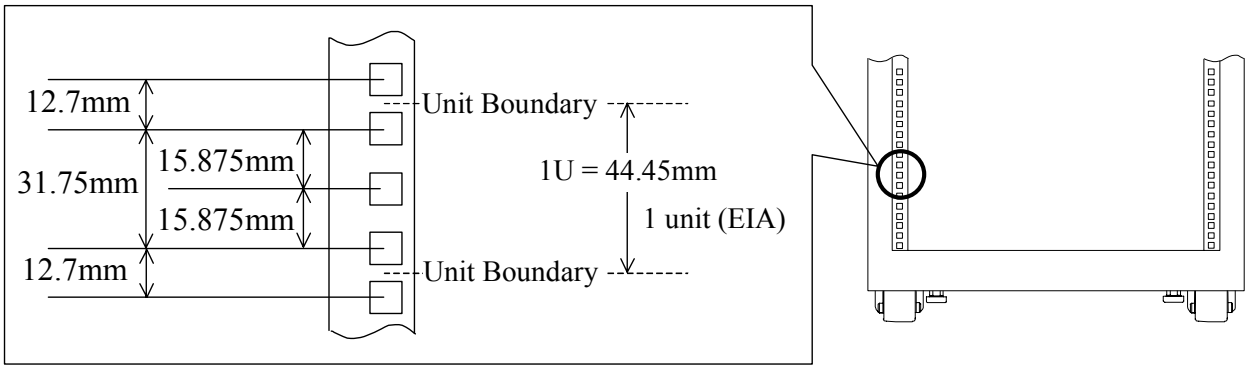


Fig. 3.5.3.2-1 Attachment Hole Size of Rack

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The addresses are given as 1, 2, 3, and so on counted from the bottom of the rack frame.
The following figure illustrates the whole layout of addresses of installation positions in the rack frame.
There are 42 addresses, that is, the 1U to 42U counted in the vertical direction starting from the lower boundary of the 1U (the lowest unit).

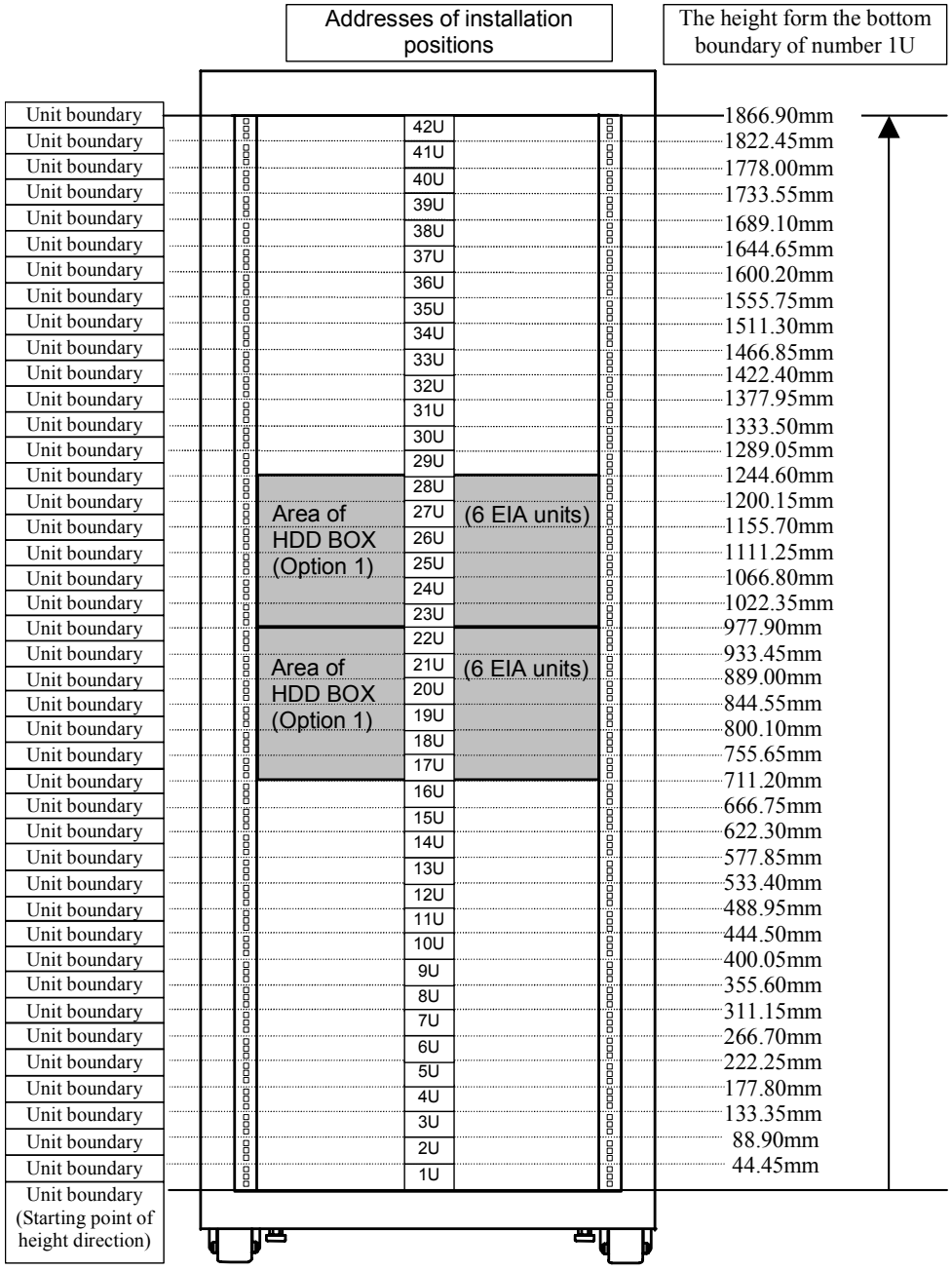


Fig. 3.5.3.2-2 Whole Layout of Installation Position Addresses (Basic Rack)

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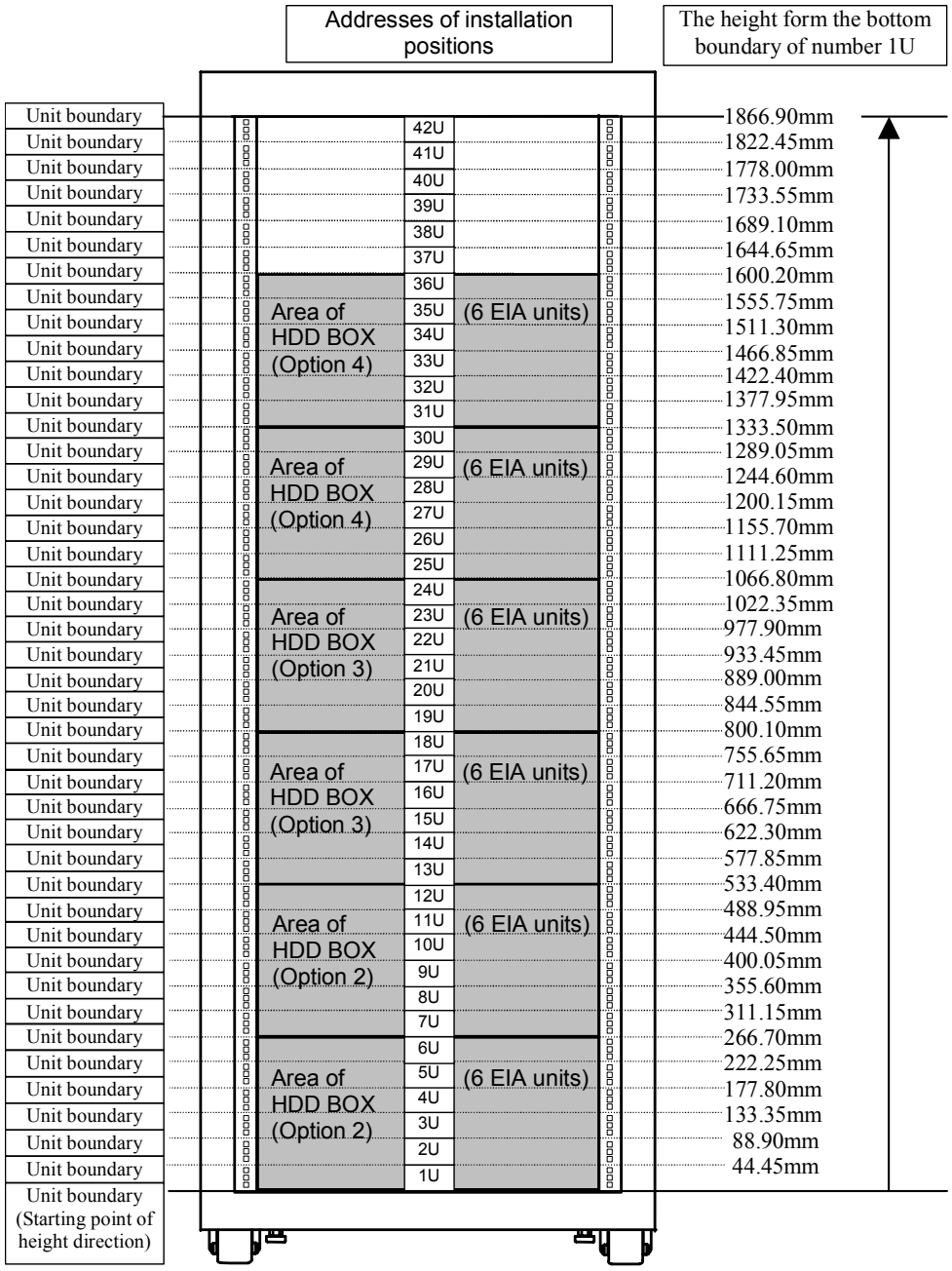


Fig. 3.5.3.2-3 Whole Layout of Installation Position Addresses (Extension Rack)

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a. Fasten the Rail (R) to the rack frame using the screw (at a place each on the rear sides.). Refer to Fig.3.5.3.2-4 or Fig.3.5.3.2-5.
b. Install the Rail (L) to the rack frame in the same way.

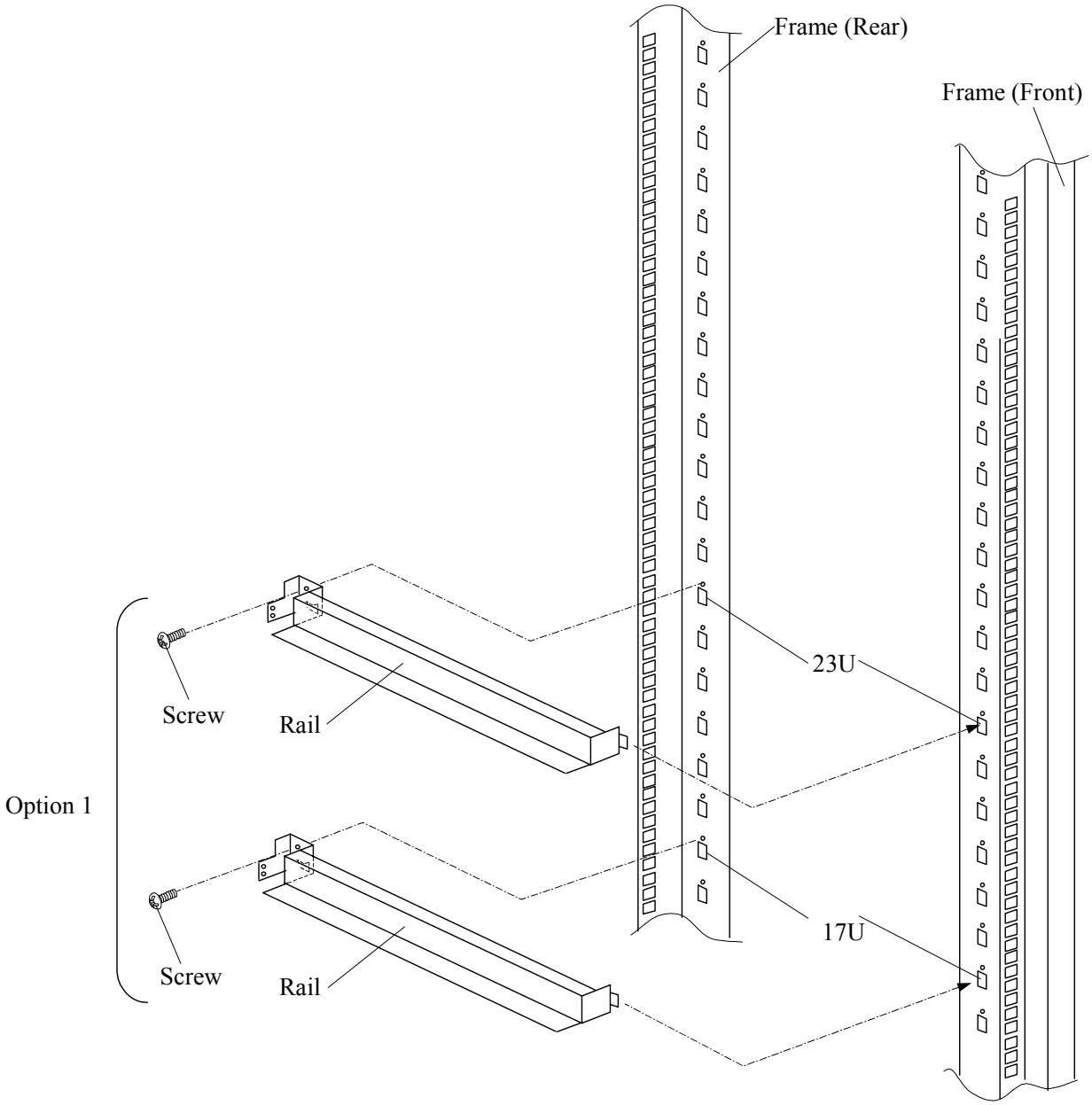


Fig. 3.5.3.2-4 Attachment of Rails (Basic Rack)

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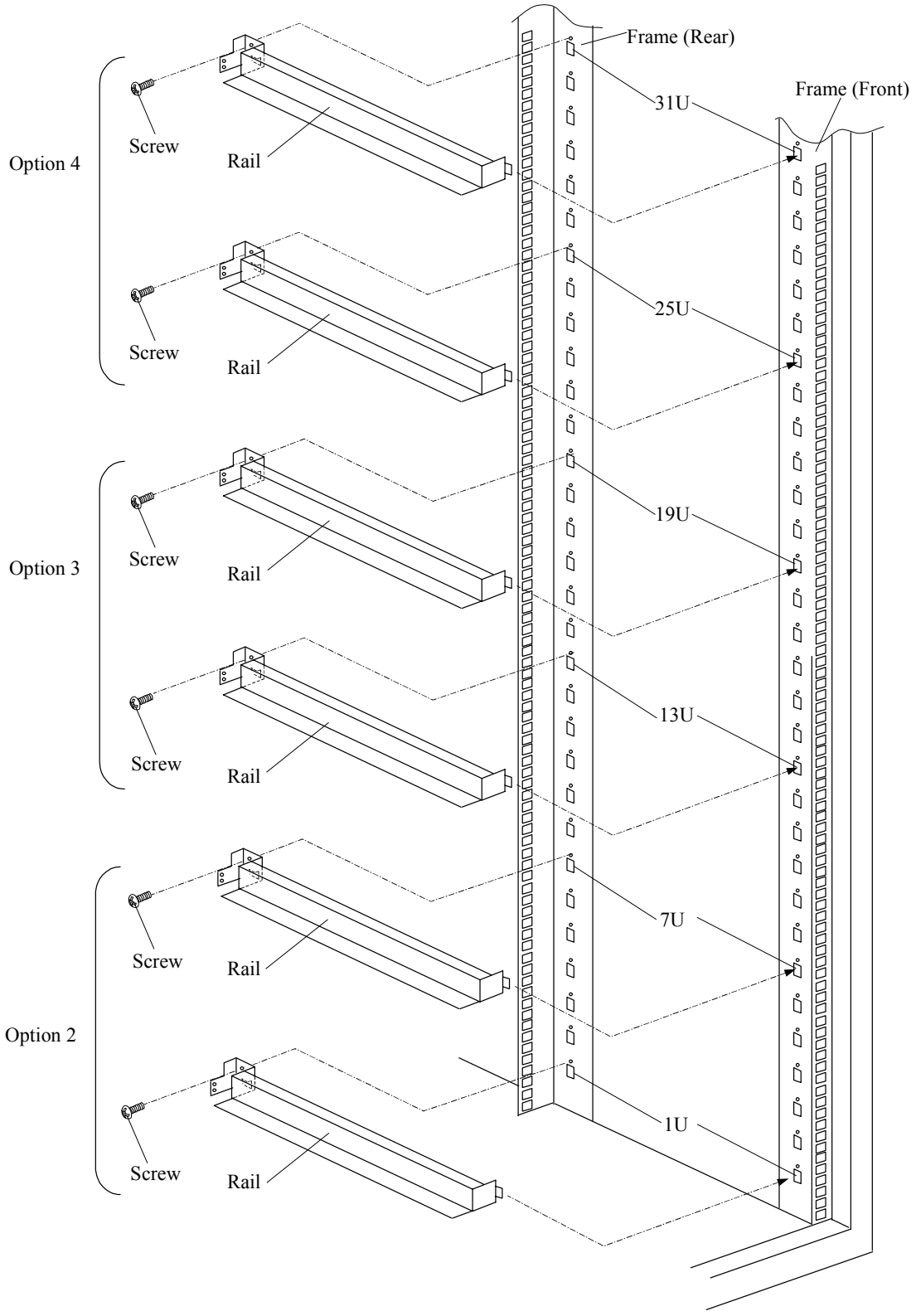
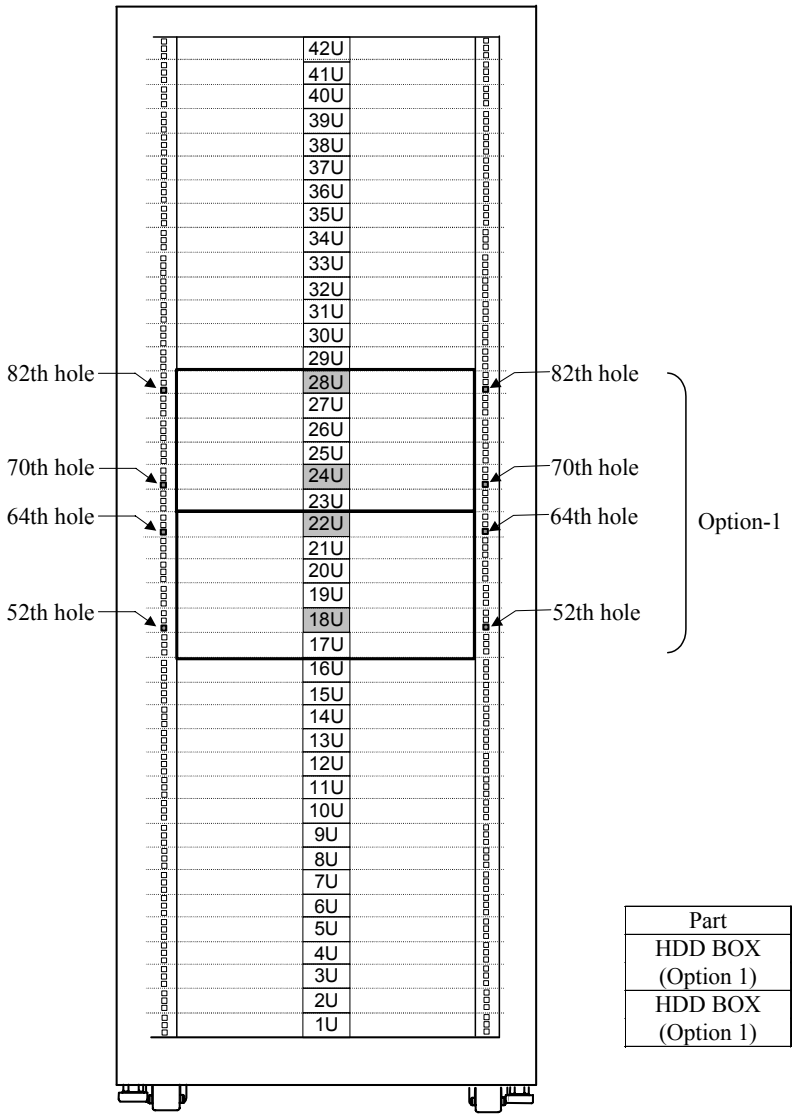


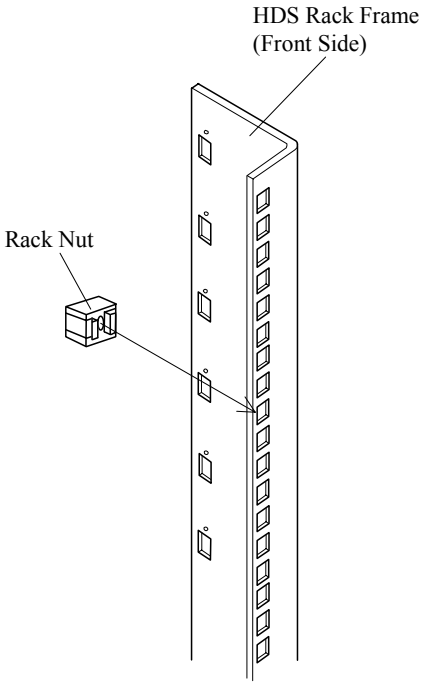
Fig. 3.5.3.2-5 Attachment of Rails (Extension Rack)

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2. Installing rack nuts on the front side of the rack frame
   Install the rack nuts on the front side of the rack frame in order to fasten the subsystems to be mounted on the rack frame.
   a. Fit the eight rack nuts to each of the right and left beams on the front side of the rack frame.



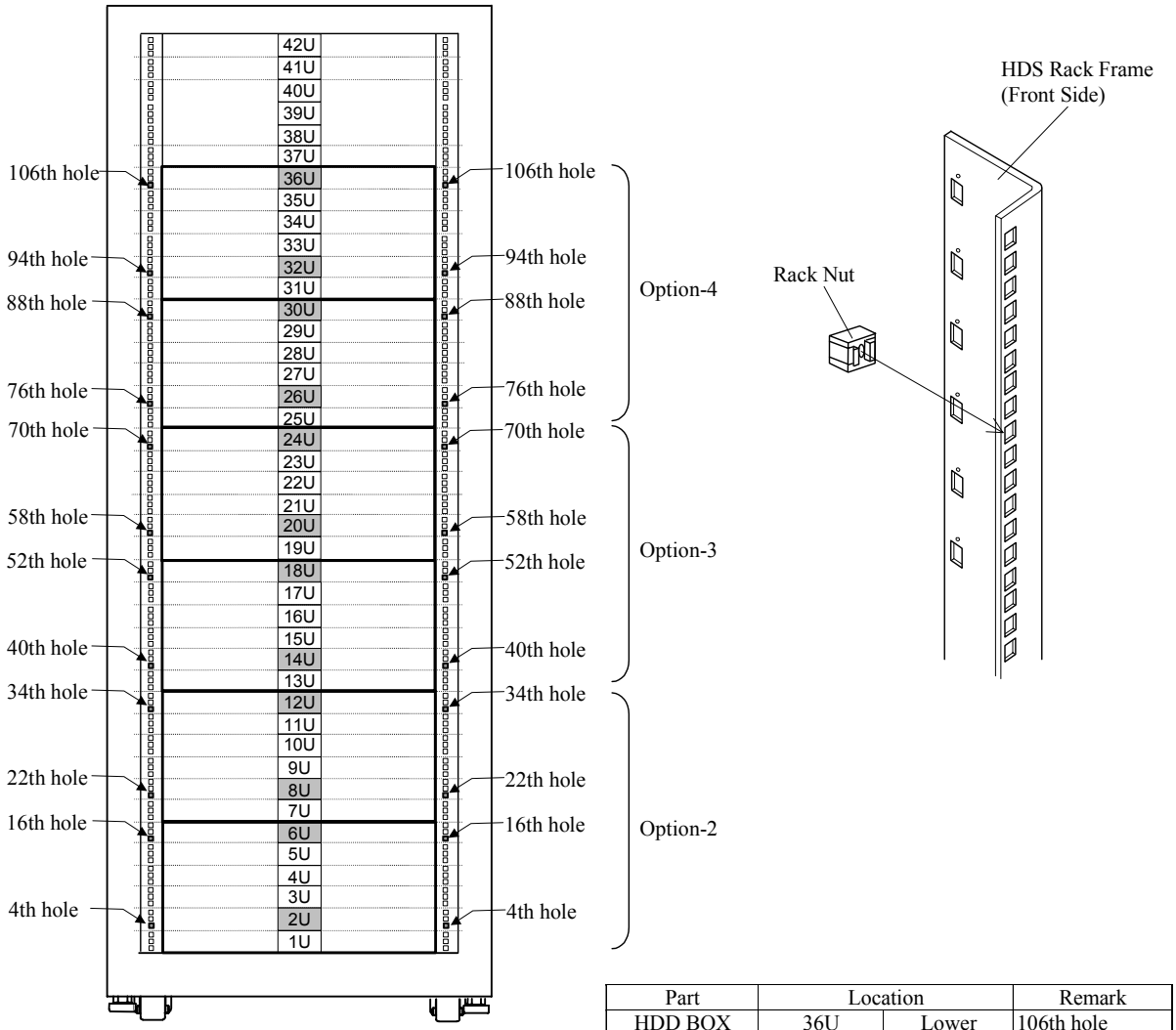
Front View of Basic Rack



Part	Location		Remark
HDD BOX (Option 1)	28U	Lower	82th hole
	24U	Lower	70th hole
HDD BOX (Option 1)	22U	Lower	64th hole
	18U	Lower	52th hole

Fig. 3.5.3.2-6 Installing Rack Nuts to Basic Rack

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Front View of Extension Rack

Part	Location		Remark
HDD BOX (Option 4)	36U	Lower	106th hole
	32U	Lower	94th hole
HDD BOX (Option 4)	30U	Lower	88th hole
	26U	Lower	76th hole
HDD BOX (Option 3)	24U	Lower	70th hole
	20U	Lower	58th hole
HDD BOX (Option 3)	18U	Lower	52th hole
	14U	Lower	40th hole
HDD BOX (Option 2)	12U	Lower	34th hole
	8U	Lower	22th hole
HDD BOX (Option 2)	6U	Lower	16th hole
	2U	Lower	4th hole

Fig. 3.5.3.2-7 Installing Rack Nuts to Extension Rack

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3. Installing the HDD Boxes

⚠ CAUTION

Paying attention to falls:
Work carefully because the mass of the single HDD BOX is about 38 kg.

a. Install the HDD Box on the Rack frame referring to mounting procedure using the special lifter. (See INST03-13-10 through 40.)
b. Fix the HDD Box with the four screws.
c. Install the 2nd HDD Box to the rack frame in the same way.

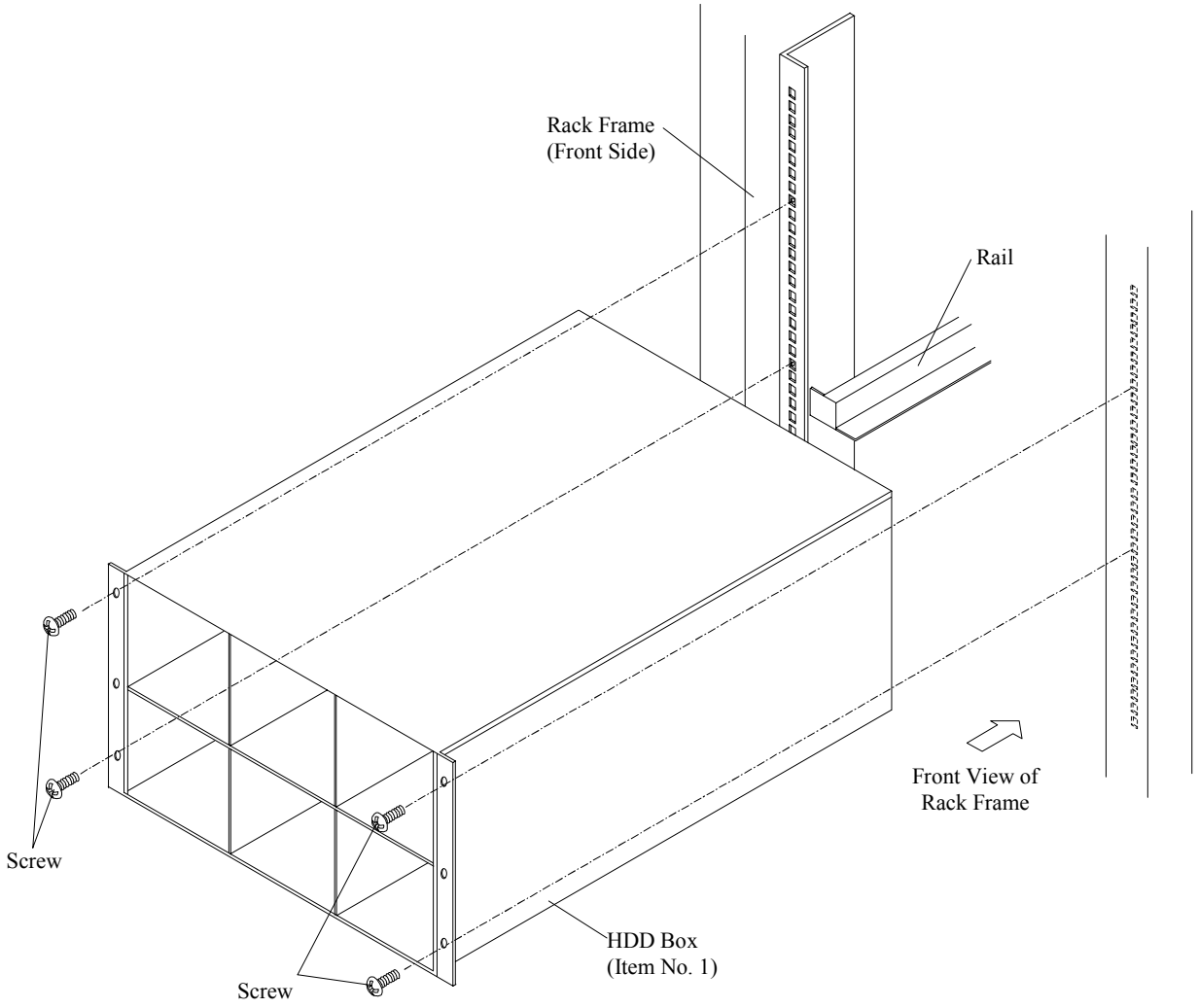


Fig. 3.5.3.2-8 Installing HDD Box

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d. Attach the stoppers on the rear side of HDD Boxes and fasten the bolts.

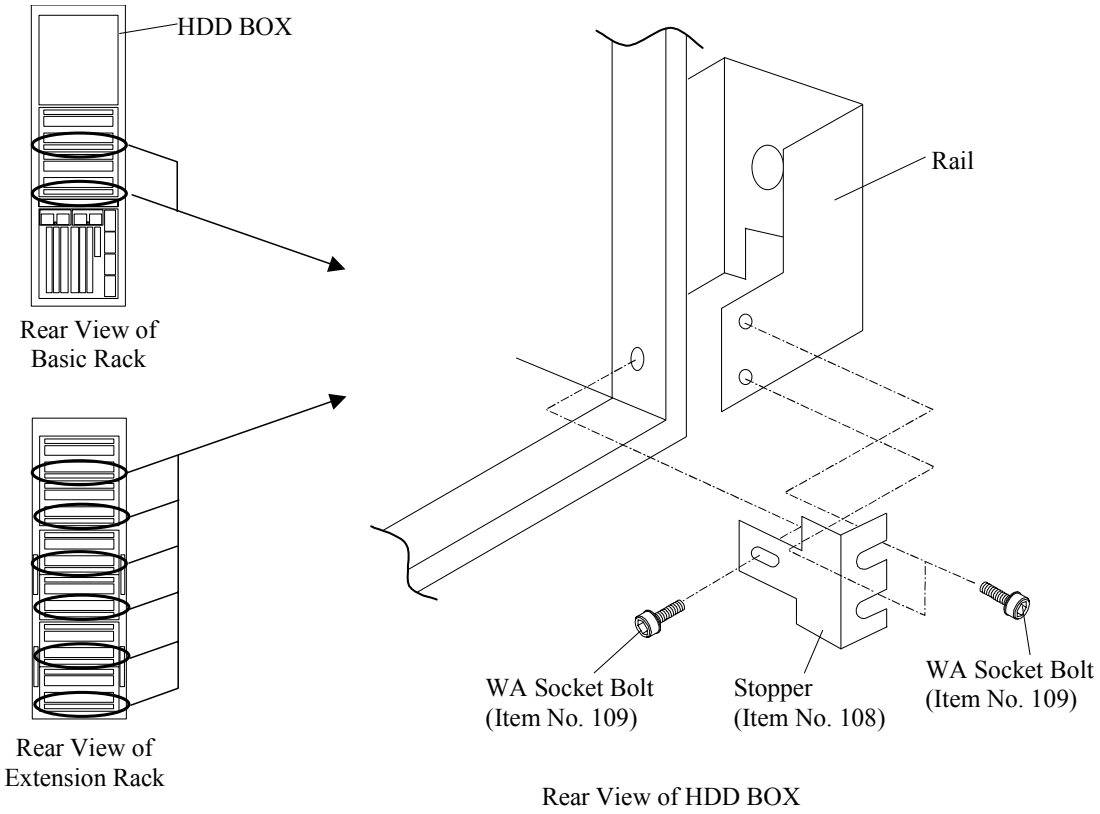


Fig. 3.5.3.2-9 Attachment of Stoppers

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4. Connect the Cable Assemblies.
   a. Paint out unnecessary numbers on cable assemblies by black oil felt pen. Refer to Fig. 3.5.3.2-10, Table 3.5.3.2-1, Table 3.5.3.2-2, Table 3.5.3.2-3 or Table 3.5.3.2-4.

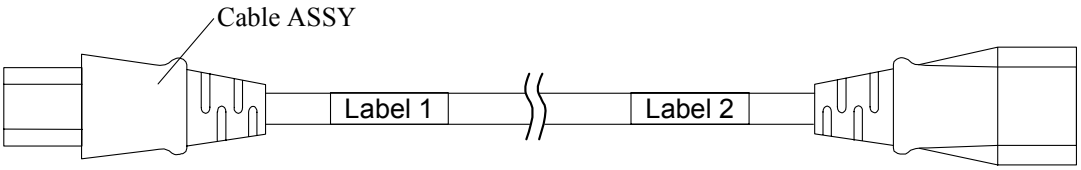


Fig. 3.5.3.2-10 Label Position on Cable ASSY

Table 3.5.3.2-1 Painting out of Labels (Option 1)

Item No.	Part Name	Painting out		Label Color
		Label 1	Label 2	
2	Cable ASSY (PS INLET)	PS 0 – 0	PDU 00 – P104	White
	Cable ASSY (PS INLET)	PS 0 – 2	PDU 10 – P101	White
3	Cable ASSY (PS INLET)	PS 0 – 1	PDU 01 – P104	Yellow
	Cable ASSY (PS INLET)	PS 0 – 3	PDU 11 – P101	Yellow

Table 3.5.3.2-2 Painting out of Labels (Option 2)

Item No.	Part Name	Painting out		Label Color
		Label 1	Label 2	
2	Cable ASSY (PS INLET)	PS 1 – 0	PDU 20 – P101	White
	Cable ASSY (PS INLET)	PS 1 – 2	PDU 20 – P102	White
3	Cable ASSY (PS INLET)	PS 1 – 1	PDU 21 – P101	Yellow
	Cable ASSY (PS INLET)	PS 1 – 3	PDU 21 – P102	Yellow

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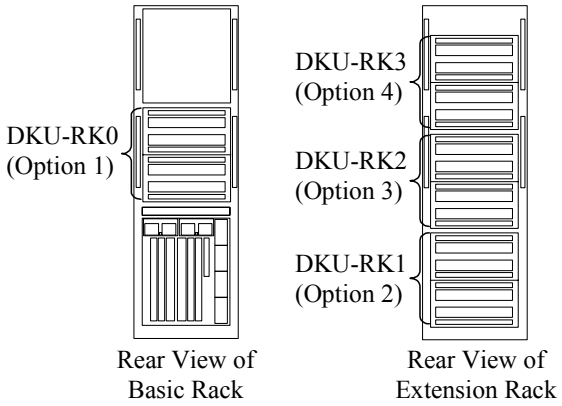
Table 3.5.3.2-3 Painting out of Labels (Option 3)

Item No.	Part Name	Painting out		Label Color
		Label 1	Label 2	
2	Cable ASSY (PS INLET)	PS [redacted] 2 [redacted] – 0 [redacted]	PDU [redacted] 20 [redacted] – [redacted] P103 [redacted]	White
	Cable ASSY (PS INLET)	PS [redacted] 2 [redacted] – [redacted] 2	PDU [redacted] 30 – P101 [redacted]	White
3	Cable ASSY (PS INLET)	PS [redacted] 2 [redacted] – 1 [redacted]	PDU [redacted] 21 [redacted] – [redacted] P103 [redacted]	Yellow
	Cable ASSY (PS INLET)	PS [redacted] 2 [redacted] – [redacted] 3	PDU [redacted] 31 – P101 [redacted]	Yellow

Table 3.5.3.2-4 Painting out of Labels (Option 4)

Item No.	Part Name	Painting out		Label Color
		Label 1	Label 2	
2	Cable ASSY (PS INLET)	PS [redacted] 3 – 0 [redacted]	PDU [redacted] 30 – [redacted] P102 [redacted]	White
	Cable ASSY (PS INLET)	PS [redacted] 3 – [redacted] 2	PDU [redacted] 30 – [redacted] P103 [redacted]	White
3	Cable ASSY (PS INLET)	PS [redacted] 3 – 1 [redacted]	PDU [redacted] 31 – [redacted] P102 [redacted]	Yellow
	Cable ASSY (PS INLET)	PS [redacted] 3 – [redacted] 3	PDU [redacted] 31 – [redacted] P103 [redacted]	Yellow

b. Connect the cables (PSx-0, PSx-1, PSx-2, PSx-3) to the DKUPSs in the HDD Boxes.



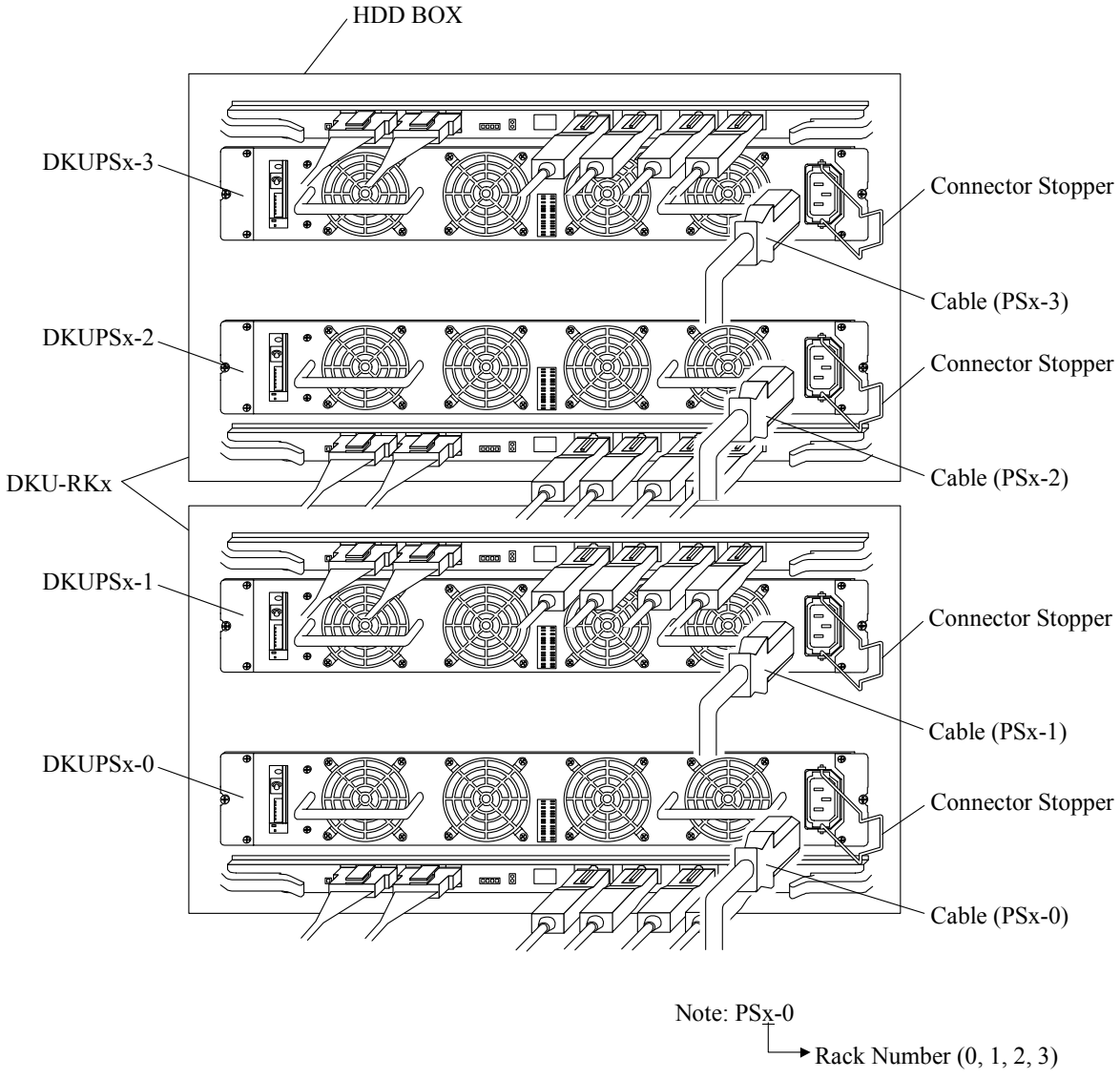


Fig. 3.5.3.2-11 Connection of Cables

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c. Connect the cables to the PDUs. (Refer to HDS installation Manual.)

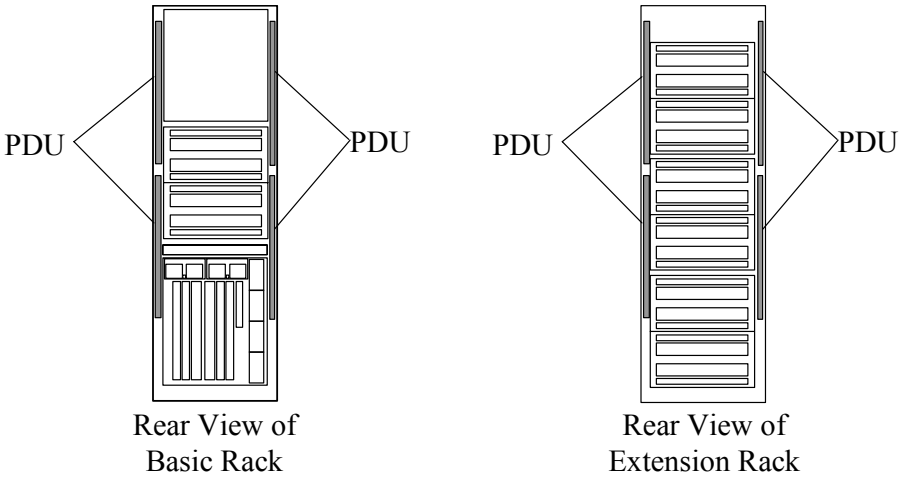


Fig. 3.5.3.2-12 Connection of Cables

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d. Fix the cable assemblies with the repeat binders and locking clamps. Refer to Fig. 3.5.3.2-13, Fig.3.5.3.2-14, Fig.3.5.3.2-15 or Fig. 3.5.3.2-16.

Option 1

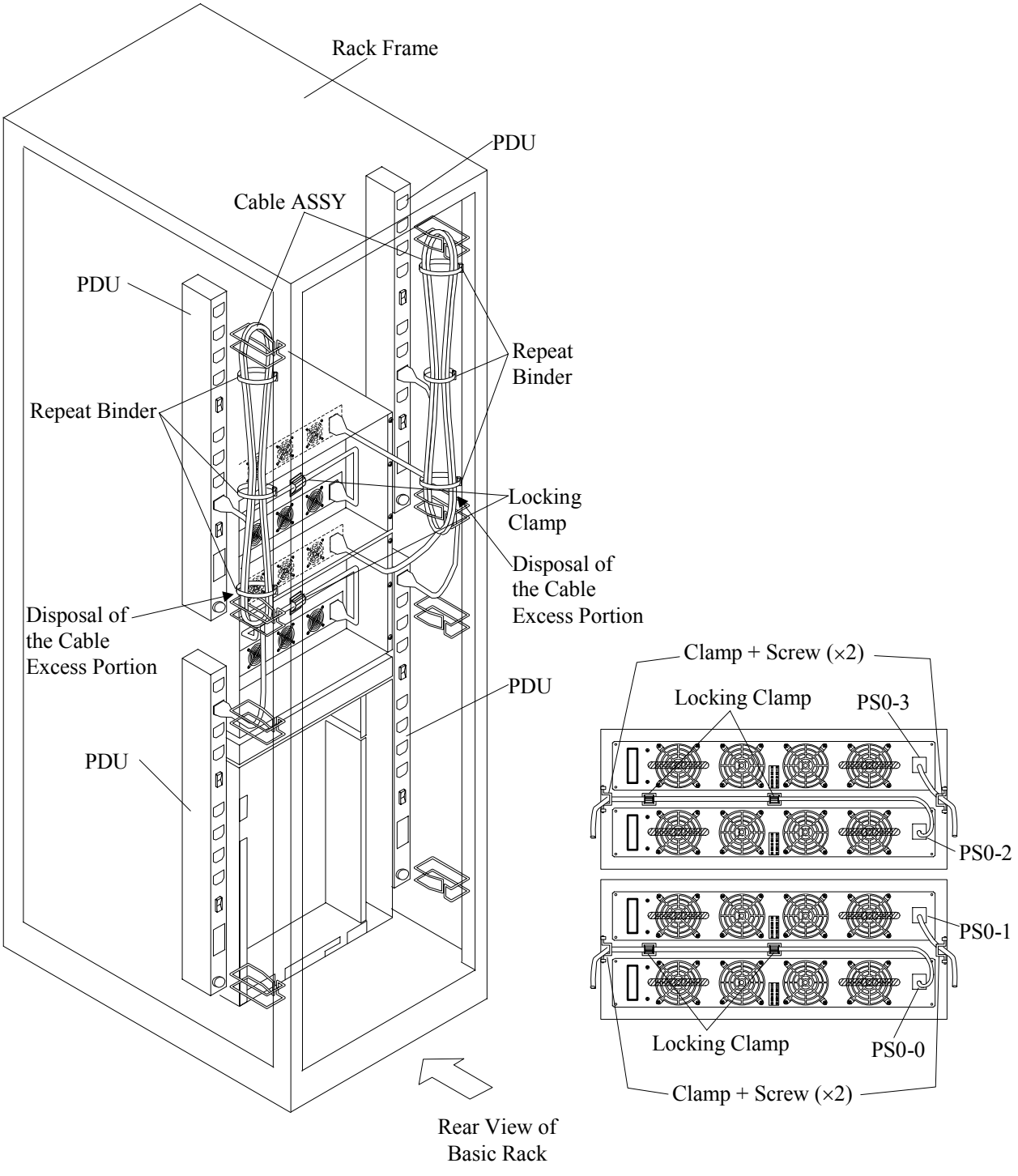


Fig. 3.5.3.2-13 Fixation of Cable Assemblies (Option 1)

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Option 2

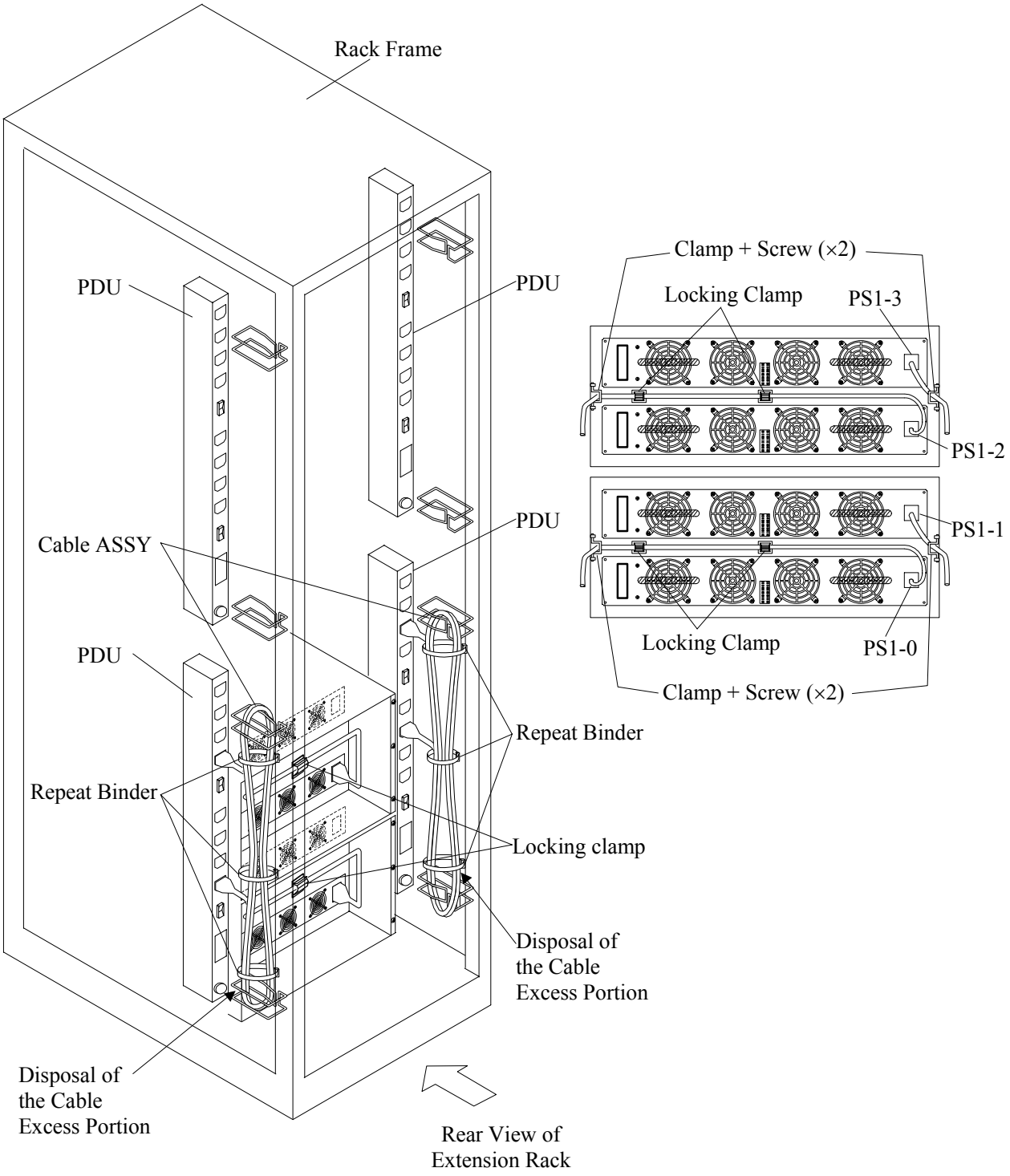


Fig. 3.5.3.2-14 Fixation of Cable Assemblies (Option 2)

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Option 3

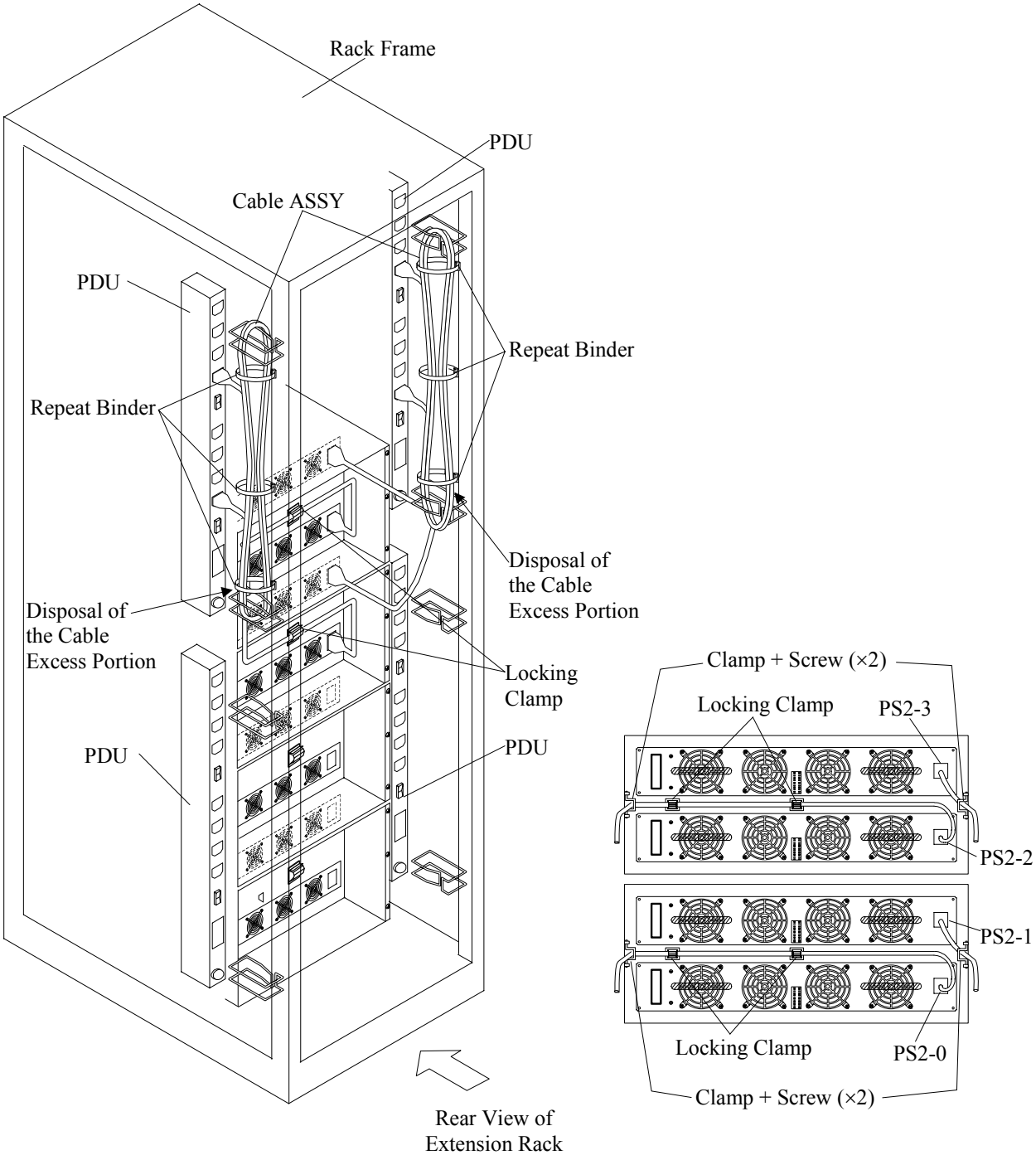


Fig. 3.5.3.2-15 Fixation of Cable Assemblies (Option 3)

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Option 4

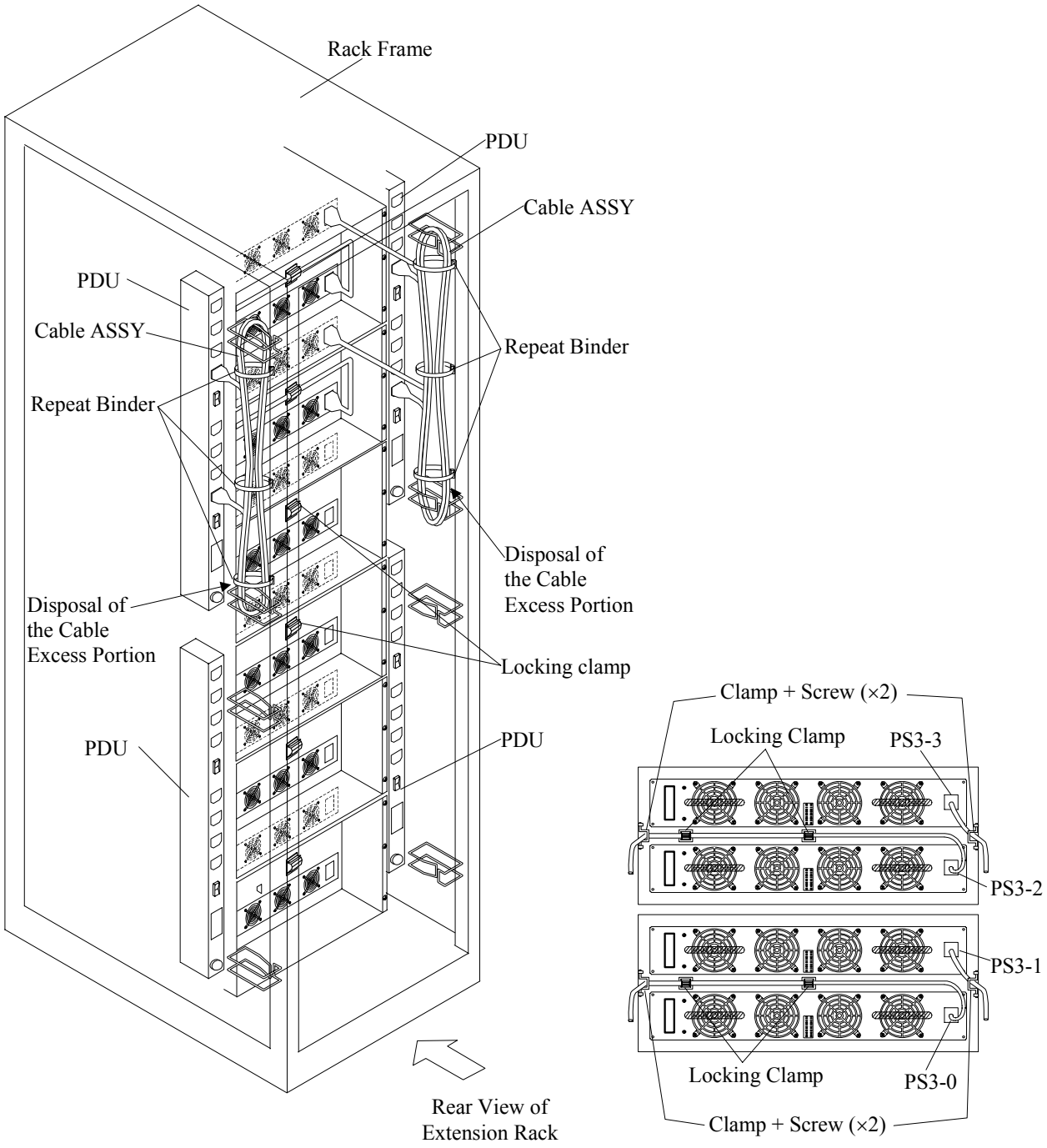


Fig. 3.5.3.2-16 Fixation of Cable Assemblies (Option 4)

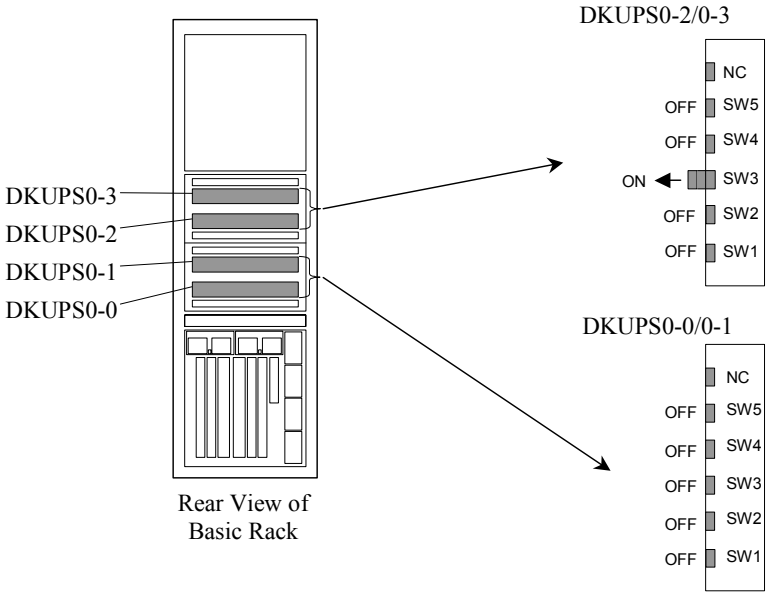
5. Switch and Jumper Plug Installation

⚠ CAUTION

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

a. Set the switch in the DKUPS as indicated in the Fig. 3.5.3.2-17 and Fig. 3.5.3.2-18. Switch settings must be made at 4 places in total per option.

Note: Use something sharp (ex. a pen or a mini screwdriver etc) when set the DKUPS switches



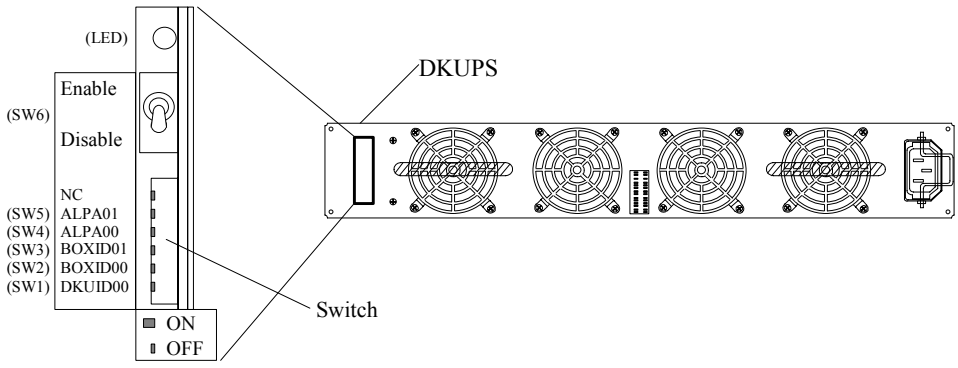


Fig. 3.5.3.2-17 Switch Setting of DKUPS

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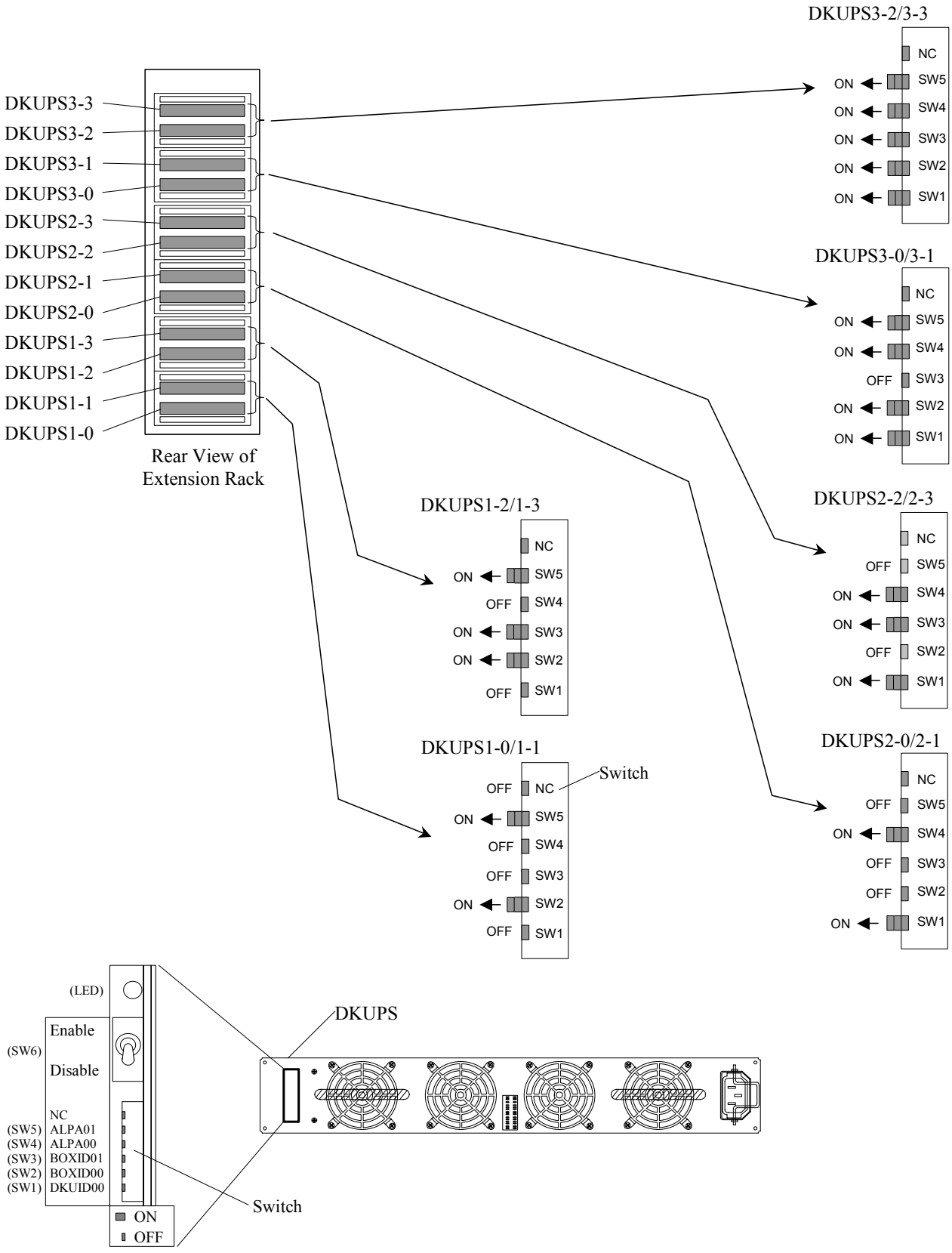


Fig. 3.5.3.2-18 Switch Setting of DKUPS

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⚠ CAUTION

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

b. Set the jumper in the FSW PCB as indicated in the Fig. 3.5.3.2-19.
Switch settings must be made at 4 places in total per option.

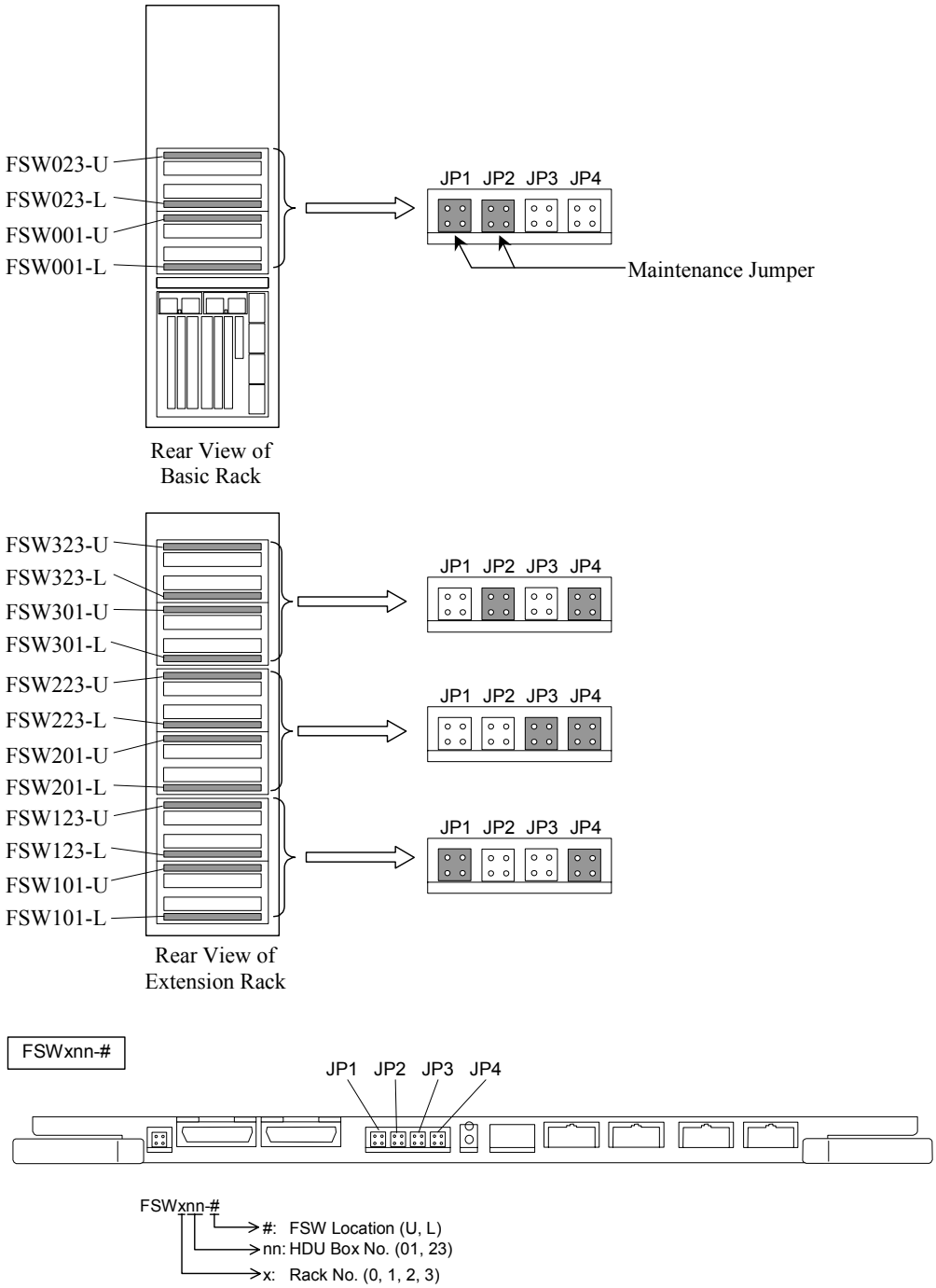


Fig. 3.5.3.2-19 Installation of Maintenance Jumper in FSW

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6. Attach the nameplate and labels.
   a. Attach the nameplate and three labels to the lower HDD BOX cover.

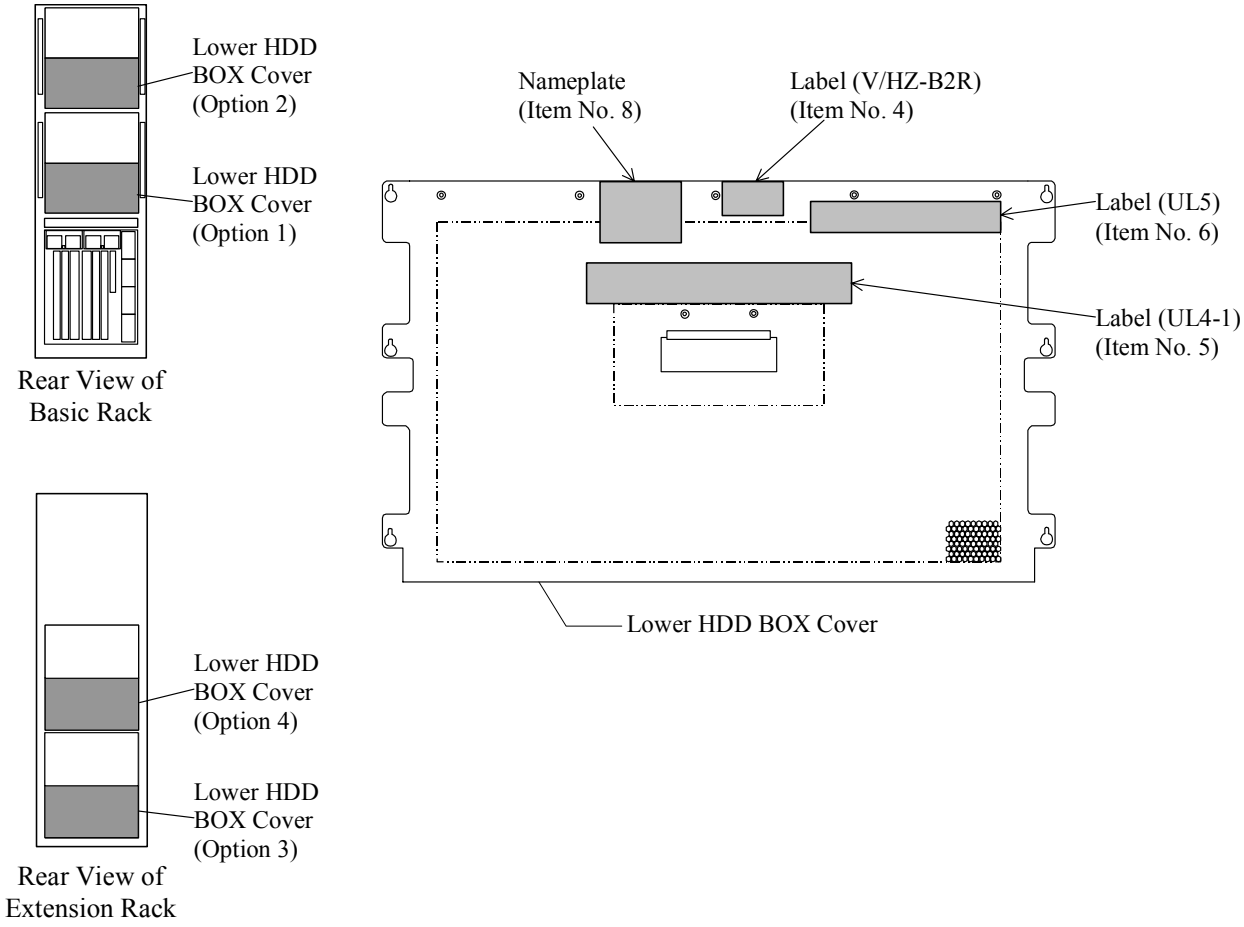


Fig. 3.5.3.2-20 Attachment of Nameplate and Labels

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b. Attach six labels, showing corresponding locations to front side and rear side of HDD Box. Attach six labels describing above to the HDD Box, if no label is attached.

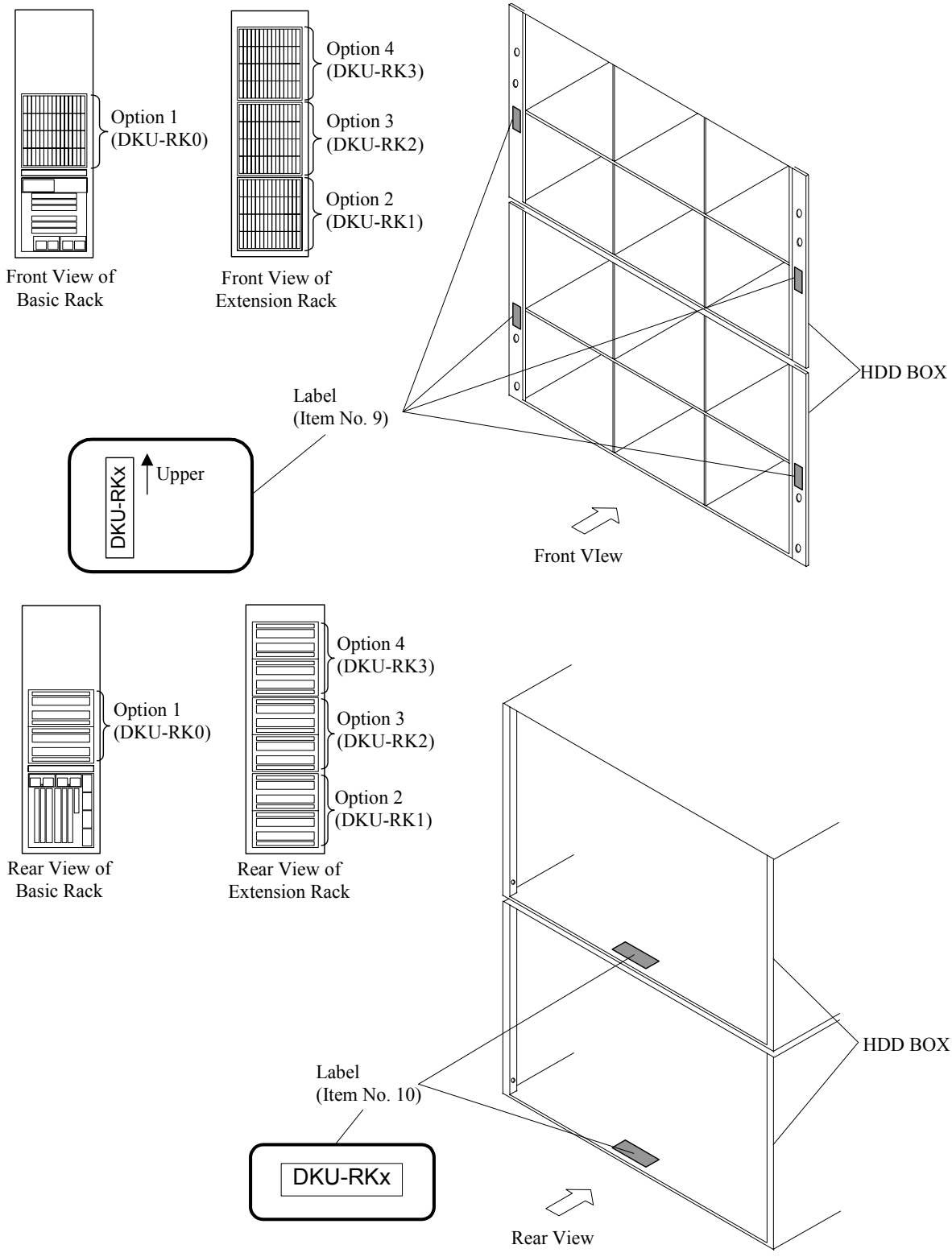


Fig. 3.5.3.2-21 Attachment of Labels

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3.5.4 Installation Procedure of Bezel

3.5.4.1 In case of Standard Configuration

1. Attachment of Brackets
   a. Attach the two brackets (U) on the front side and fasten the screws.
   b. Attach the two brackets (L) on the front side and fasten the screws.

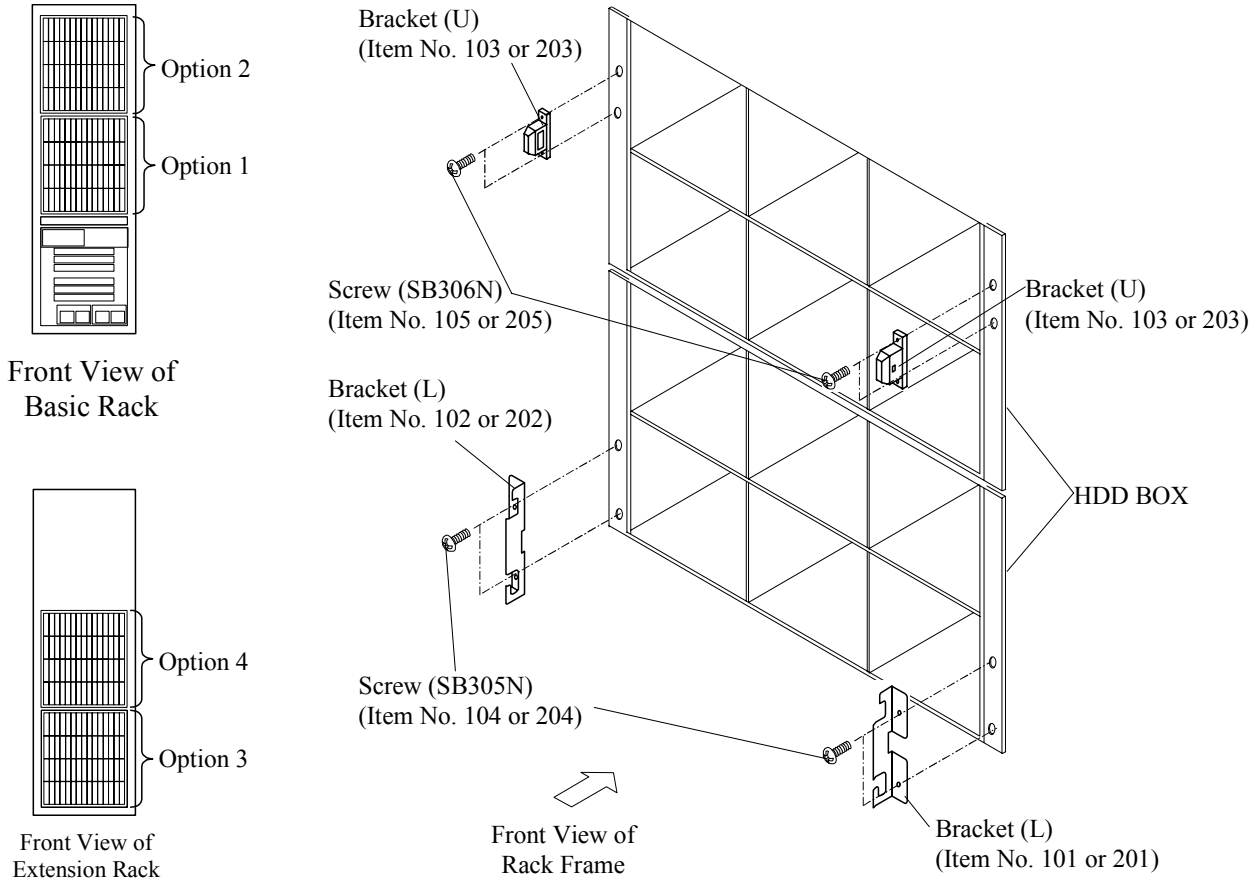


Fig. 3.5.4.1-1 Attachment of Brackets

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2. Attachment of Bezel (12U)
   a. Put the pin of the Bezel in the ditch of Rack.
   b. Push the Bezel downward after it puts it in the ditch of Rack.
   c. Push the upper of Bezel.

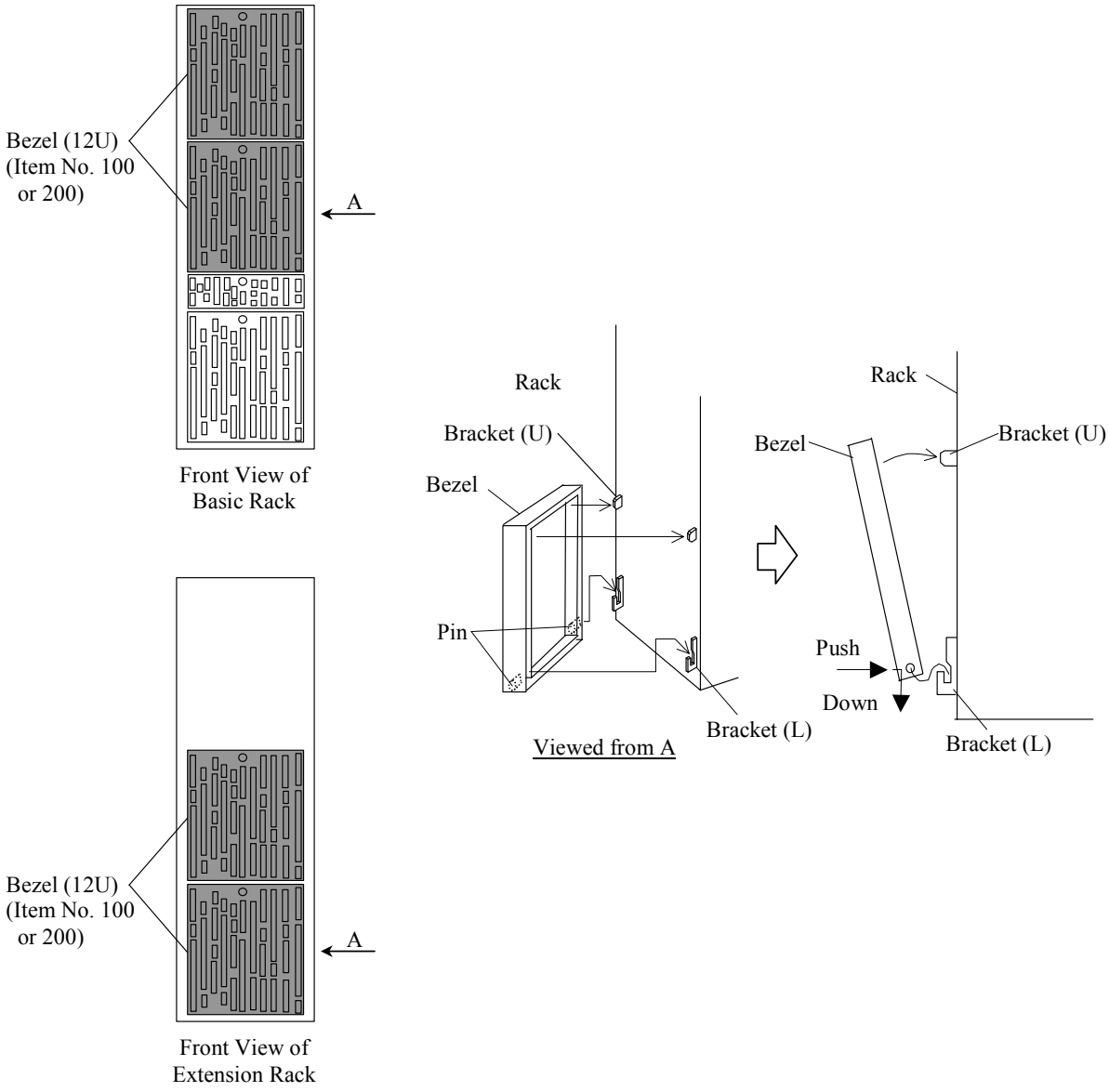


Fig. 3.5.4.1-2 Attachment of Bezel

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3. Attach the nameplate.
   a. Remove the screw from the rack frame and remove the nameplates to be installed.
   b. Attach the nameplate to the nameplate tag.
   c. Attach all the nameplates with the screw.

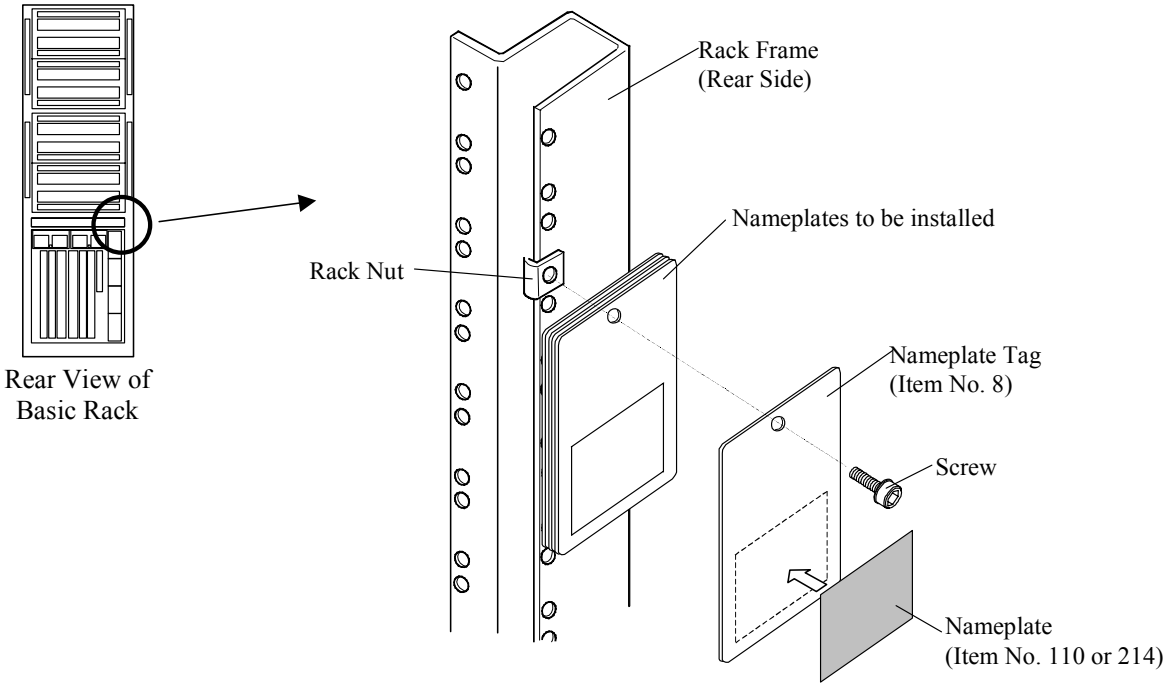


Fig. 3.5.4.1-3 Attachment of Nameplate

   d. Return to the working table and do the rest of the work.
   New Installation: INST02-10, Non-Disruptive Installation: INST02-50

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3.5.4.2 In case of TagmaStore AMS/WMS installed Configuration

1. Attachment of Brackets
   a. Attach the two brackets (U) on the front side and fasten the screws.
   b. Attach the two brackets (L) on the front side and fasten the screws.

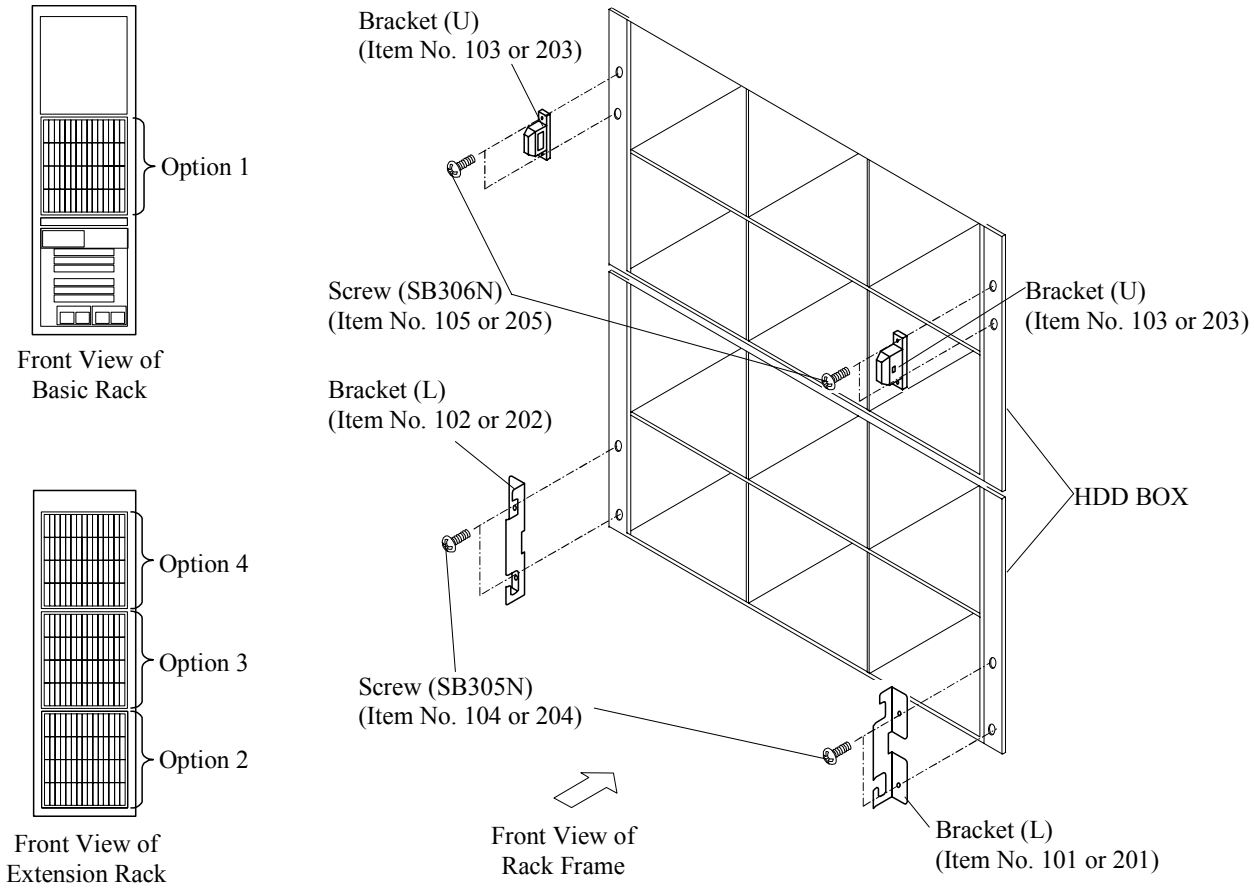


Fig. 3.5.4.2-1 Attachment of Brackets

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2. Attachment of Bezel (12U)
   a. Put the pin of the Bezel in the ditch of Rack.
   b. Push the Bezel downward after it puts it in the ditch of Rack.
   c. Push the upper of Bezel.

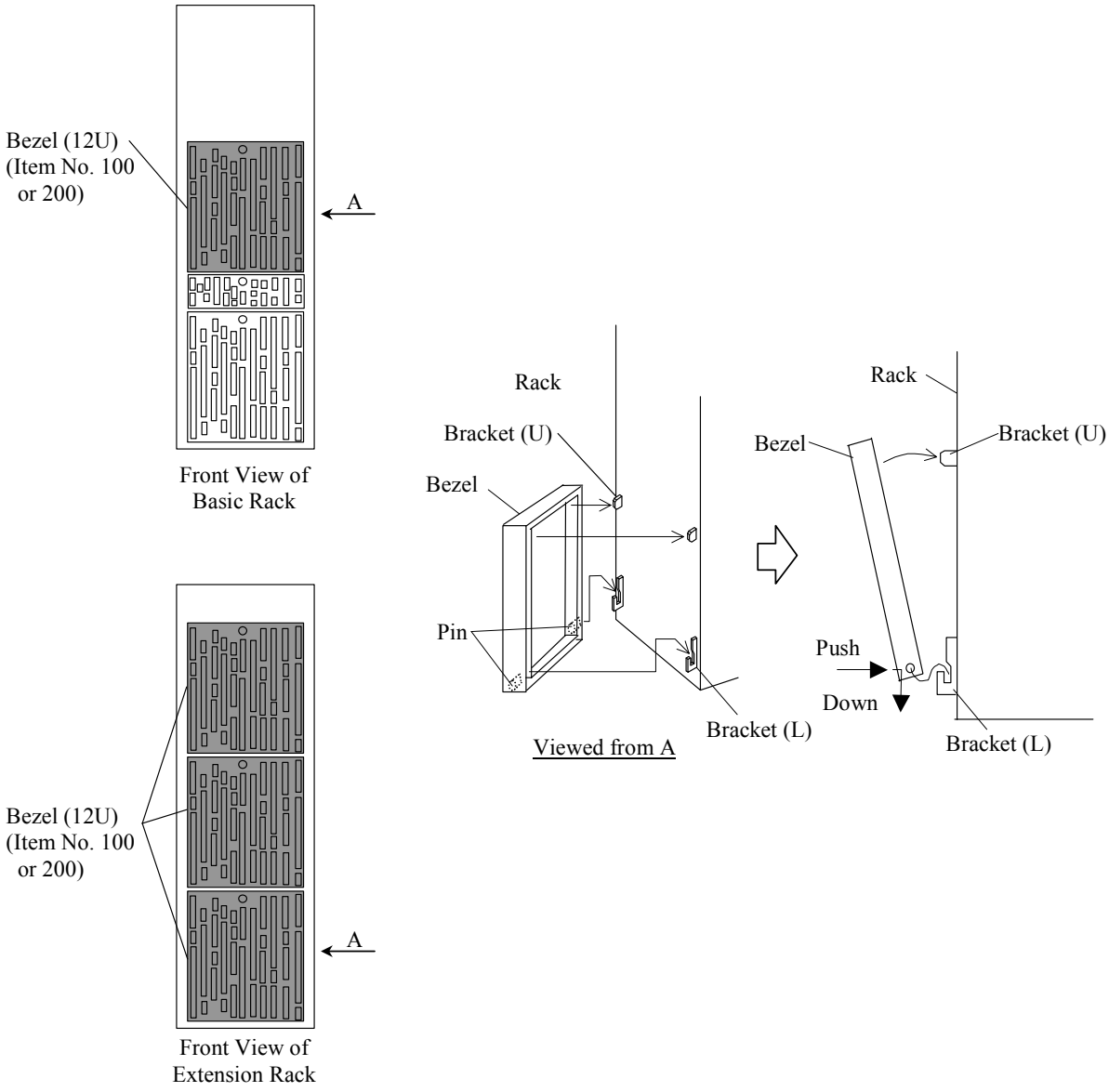


Fig. 3.5.4.2-2 Attachment of Bezel

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3. Attach the nameplate.
   a. Remove the screw from the rack frame and remove the nameplates to be installed.
   b. Attach the nameplate to the nameplate tag.
   c. Attach all the nameplates with the screw.

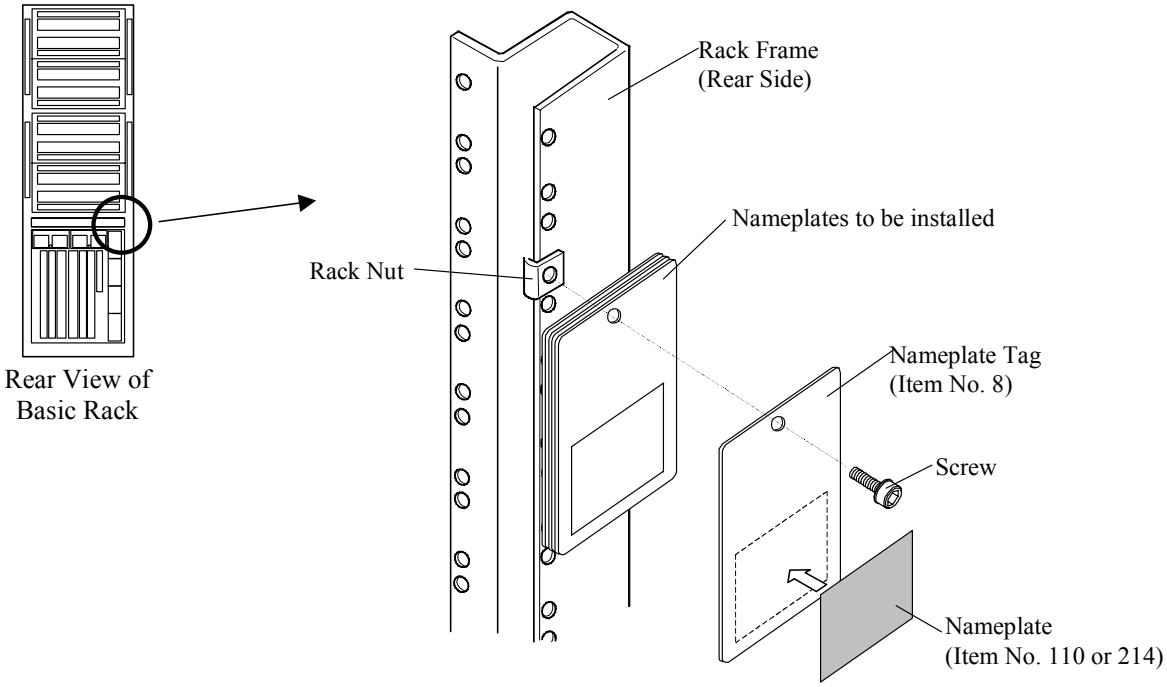


Fig. 3.5.4.2-3 Attachment of Nameplate

   d. Return to the working table and do the rest of the work.
   New Installation: INST02-10, Non-Disruptive Installation: INST02-50

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3.6 Installation of 1U Filler Panel (DKC-F515I-FIPR)

Table 3.6-1 Parts List of DKC-F515I-FIPR

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKC-F515I-FIPR	HP Filler (1U) ASSY	3274290-A	1	
		Nameplate (HP)	2751038-174	1	RSD
			2751040-174/374		HICAM/HICEF

Required Number of Options

Table 3.6-2 In case of Standard Configuration

No.	Required Number of Options								
	(DKC-F515I-FRMR)		DKC515I -5/5R	DKC-F515I-					
	Basic Rack	Extension Rack		MIX2R/ MIX4R	B2R	UC0R	UC1R	EXC0R	FIPR
1	1	—	1	1	1	1	0	0	12
2	1	—	1	1	2	1	1	0	0
3	1	1	1	1	3	1	1	1	28
4	1	1	1	1	4	1	2	1	16

Table 3.6-3 In case of Disk-less Configuration

No.	Required Number of Options			
	(DKC-F515I-FRMR) Basic Rack	DKC515I-5/5R	DKC-F515I-	
			MIX2R/MIX4R	FIPR
1	1	1	1	24
2	1	2	2	8

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3.6.1 Installation Procedure of 1U Filler Panel

1. Installation of Filler Panel
   a. Install the filler panel to the beams on the front side of the rack frame.

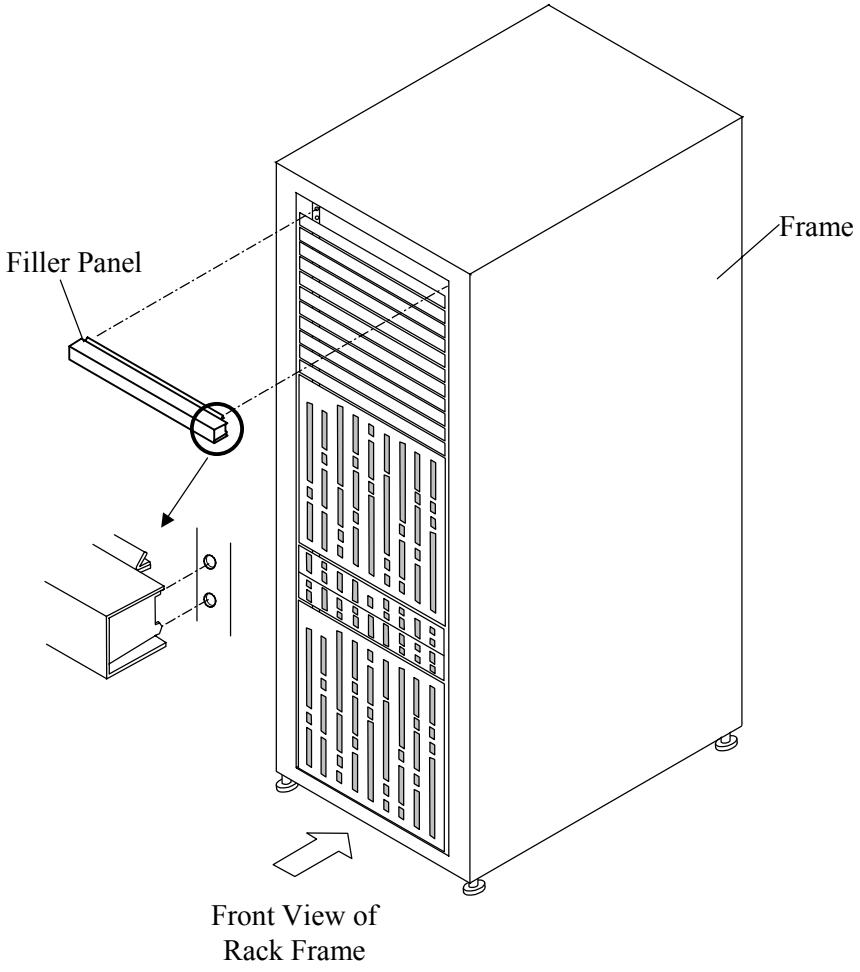


Fig. 3.6.1-1 Installation of Filler Panel

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2. Attach the nameplate.
   a. Remove the screw from the rack frame and remove the nameplate tags to be installed.
   b. When the DKC-F515I-FIPR nameplate is not attached, attach the nameplate to the nameplate tag on the Rack frame.
   c. Affix a necessary portion of the Label (QTY)(Accessory of Control Frame; DWG No.3268905-1) in layers on the nameplate and paint out numbers by black oil felt pen. However, when the nameplate is unused, do not affix the Label (QTY) in layers, and just paint it out.
   d. Attach all the nameplate tags with the screw.

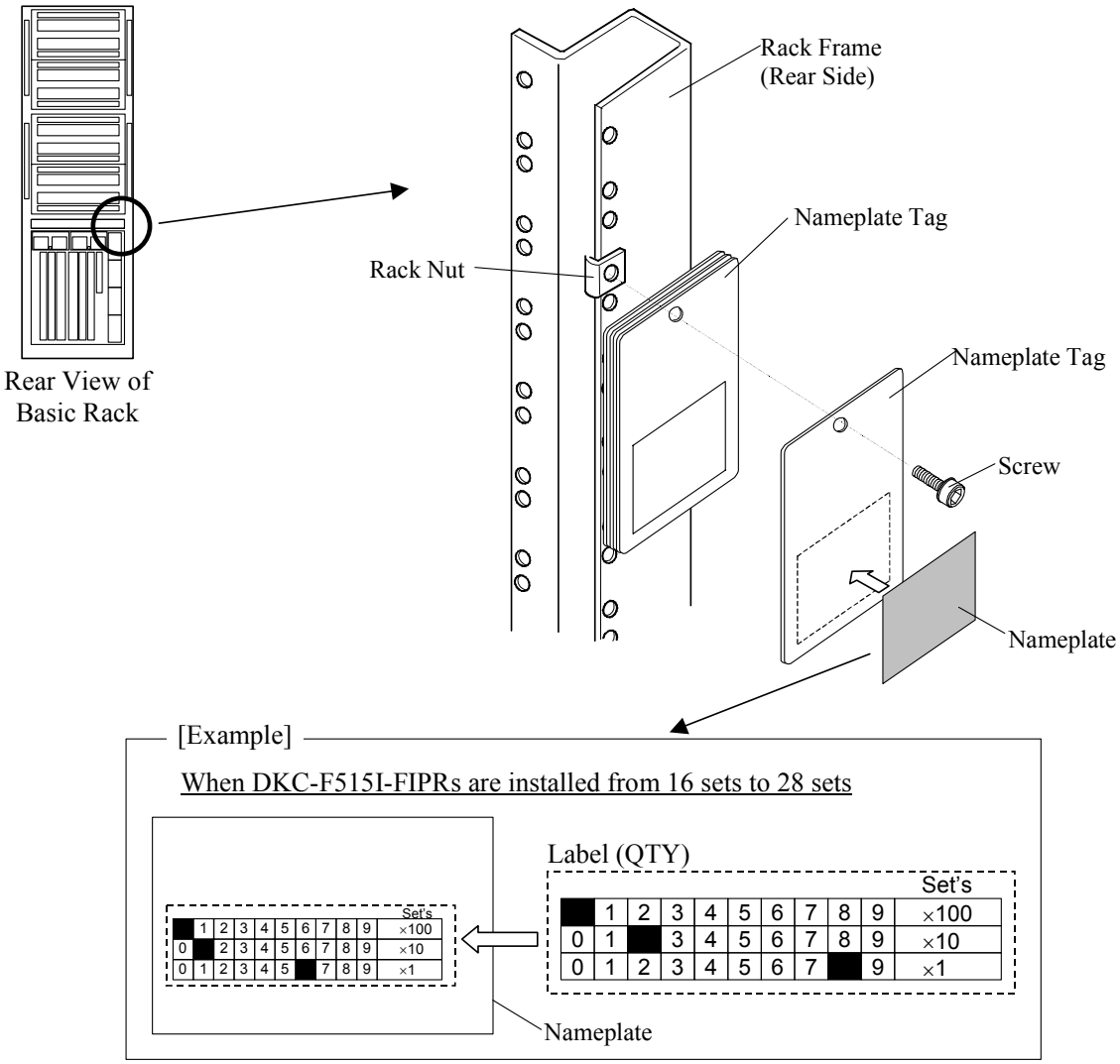


Fig. 3.6.1-2 Attachment of Nameplate

   e. Return to the working table and do the rest of the work.
   (New Installation: INST02-20, Non-Disruptive Installation: INST02-50)

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3.7 Installation of Channel Adapter

3.7.1 Installation of Serial 16-port Adapter (DKC-F510I-16S/16SR)

Note: When two control frames (DKCs) are installed in the Disk-less configuration, check the serial number of target DKC on the SVP screen and beware of a attachment position to prevent mistakes. (See “5.2.4 Refer Configuration 3. <DKC Configuration window>” [INST05-410].)

Table 3.7.1-1 Parts List

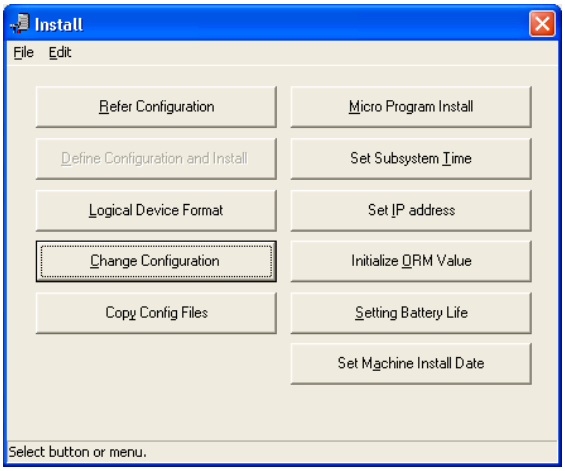
No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKC-F510I-16S	Serial 8-port Adapter PCB	5524263-A	2	
			5524263-C		
		Nameplate (HDS)	2106990-27	1	RSD
			2106992-27/227		HICAM/HICEF
		Nameplate (HP)	2106990-127	1	RSD
			2106992-127/327		HICAM/HICEF
2	DKC-F510I-16SR	Serial 8-port Adapter PCB	5524263-C	2	
		Nameplate (HDS)	2751038-27	1	RSD
			2751040-27/227		HICAM/HICEF
		Nameplate (HP)	2751038-127	1	RSD
			2751040-127/327		HICAM/HICEF

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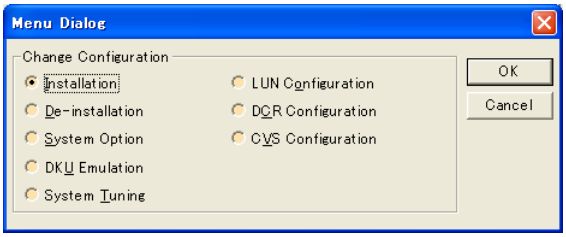
1. Setting up the New Device Structure Information

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

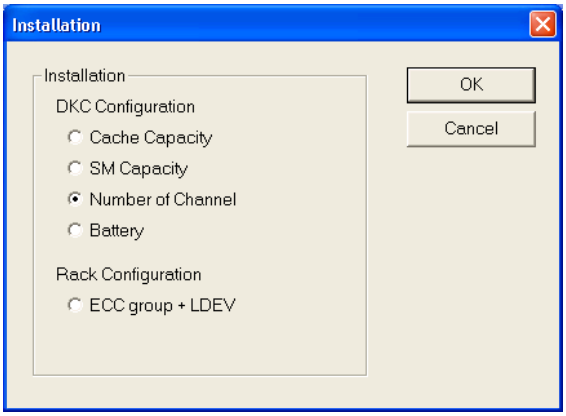
(2) <Start the 'Menu Dialog' screen>
Select (CL) [Change Configuration].



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

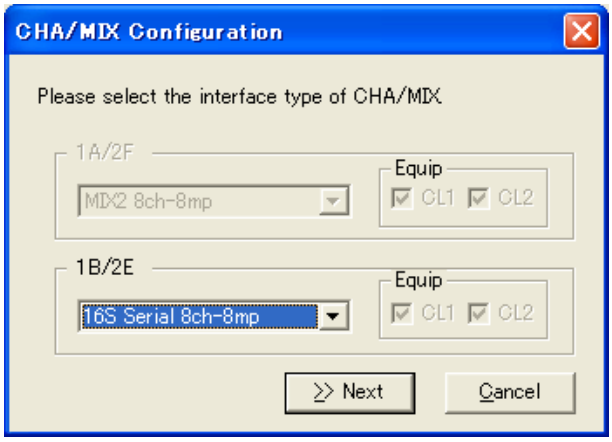


(4) <Select a part to be changed>
Select (CL) [Number of Channel], and select (CL) [OK].

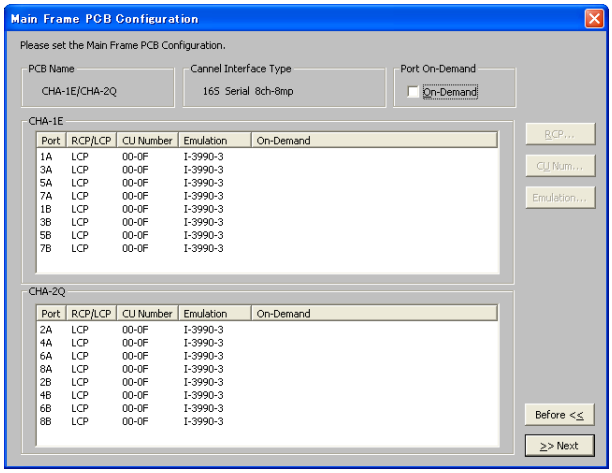


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(5) <Setting the CHA type>
In the 'CHA/MIX Configuration' window, select [Serial] for the location(s) to which the addition is to be made. Make sure that the entry that has been made is correct and select (CL) the [>>Next].



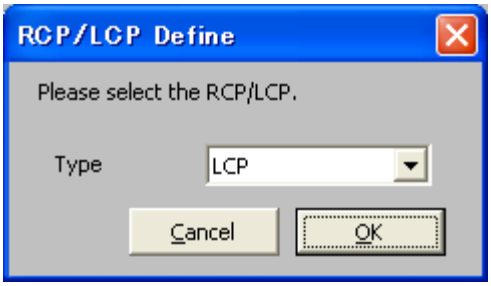
(6) <Setting details of the CHA>
Enter the necessary items in the 'Mainframe PCB Configuration' window. Repeat this operation as many times as the CHAs installed.



[RCP…]: Changes the RCP/LCP for the port selected when setting the HRC/HORC. Advances the routine to Step (7).
[CU Num…]: Sets the number of the CU to be connected to the port selected. Advances the routine to Step (8).
[Emulation...]: Set the DKC Emulation for the port selected. Advances the routine to Step (9).

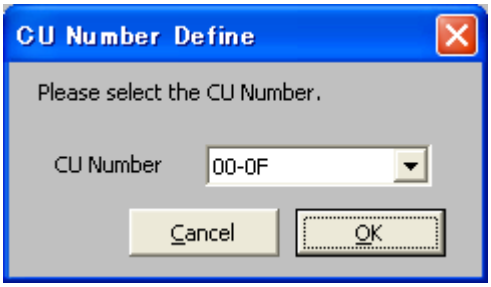
Make sure that the items that have been entered are correct and select (CL) the [>>Next].

(7) <Setting the RCP/LCP>
When setting the HRC/HORC, set the RCP/LCP. After the setting is completed, select (CL) the [OK]. The routine is returned to Step (6).

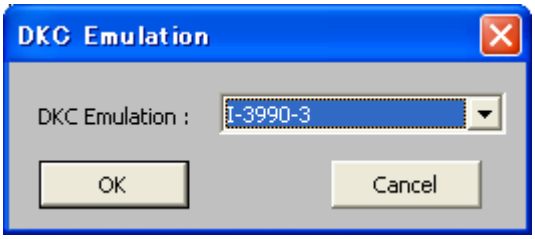


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(8) <Setting the CU number>
Set the number of the CU to be connected to the port specified.
After the setting is completed, select (CL) [OK].
The routine is returned to Step (6).



(9) <Setting the DKC Emulation>
Set the DKC Emulation.
After the setting is completed, select (CL) the [OK]. The routine is returned to Step (6).



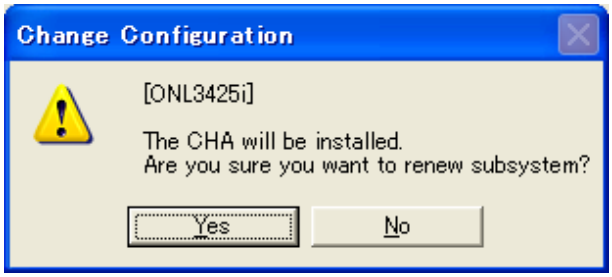
(10) <Display of the SVP message>
In response to the message, “A data destruction is caused if the interface cable is connected to a wrong port. Take care never to make a wrong cable connection”, select (CL) [OK].
The routine is returned to Step (6).

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2. SVP pre procedure

(1) <Starting the addition>

In response to a message, “The CHA will be installed. Are you sure you want to renew subsystem?”, select (CL) [Yes]. When [No] is selected (CL), the routine is returned to Step (2) on page INST03-07A-20.



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3. SVP pre procedure (Channel Adapter Addition)

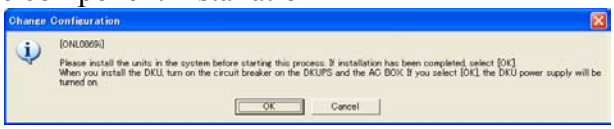
(1) <Downloading the microprogram>
The microprogram is downloaded to the SM.
The progress of the downloading is displayed.

---

(2)
"Changing the subsystem configuration data …" is displayed.

---

(3) <Making sure of completion of the hardware component installation>
A message, "Please install the units in the system before starting this process. If installation has been completed, select [OK]. When you install the DKU, turn on the circuit breaker on the DKUPS and the AC BOX. If you select [OK], the DKU power supply will be turned on." is displayed.



Note: Do not press the [OK] button by mistake before installing the part(s) to be added in the subsystem.

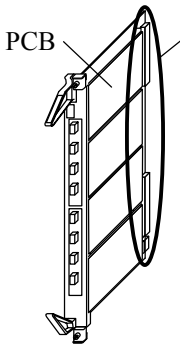
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4. Installation Procedure of Serial 16-port Adapter

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

4-1 Insertion of the PCBs

a. Remove the dummy plate installed in the installation location. Refer to Table 3.7.1-2 and Fig. 3.7.1-1.
b. Insert the PCBs to the correct locations in the Logic Box. Refer to Table 3.7.1-2 and Fig. 3.7.1-2.
c. Fasten the two screws.



Note: 1. Check that the main edge connector of the PCB has no deformation, damage or sticking of dust before installing the PCB.

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

Table 3.7.1-2 Inserting Location

No.	Option Name	Location No.		Remarks
		Cluster 1	Cluster 2	
1	Add.	CHA-1B	CHA-2E	

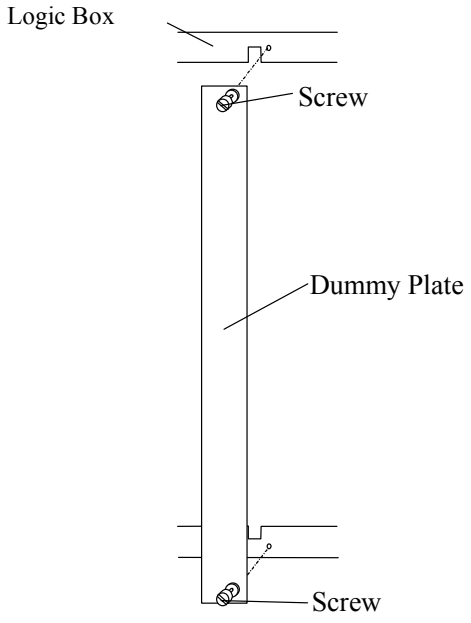


Fig. 3.7.1-1 Removal of Dummy Plate

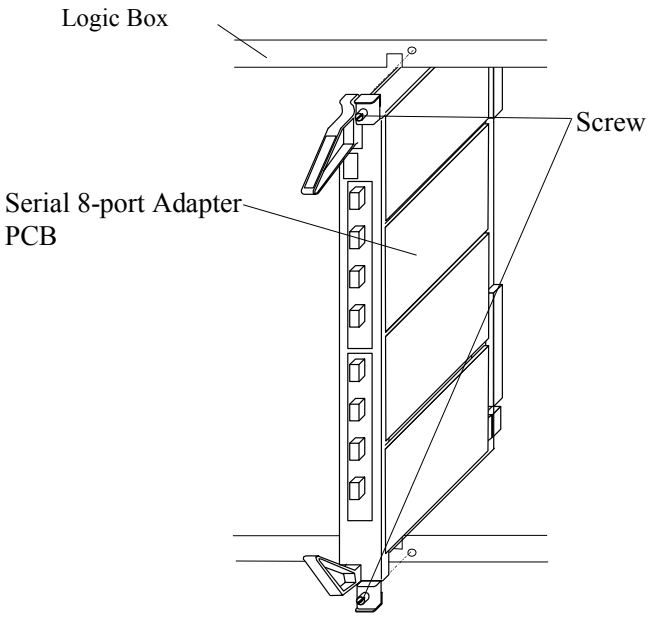


Fig. 3.7.1-2 Insertion of PCB

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d. When the 19-inch Rack (DKC-F515I-FRMR) is installed, attach the dummy plates to the rear door. (The dummy plates can be attached up to two.)
When the 19-inch Rack (DKC-F515I-FRMR) is not installed, store the dummy plates for future use in De-installation.

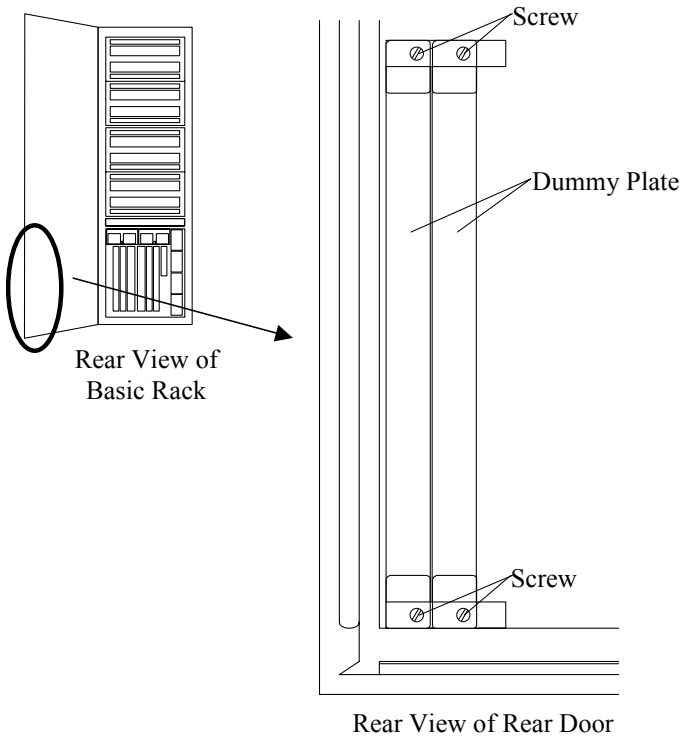


Fig. 3.7.1-2A Attachment of Dummy Plates

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4-2 Cable Routing

a. When wiring for Optical fibre cables from the floor, draw in the cables from the opening, and go to step e.
   When wiring for Optical fibre cables from the top cover, go to step b.
b. Loosen the two screws and open the slide cover.
c. Draw in the optical fibre cable from the cable insertion hole of top cover into the frame.
d. Fix the optical fibre cables with the three repeat binders.

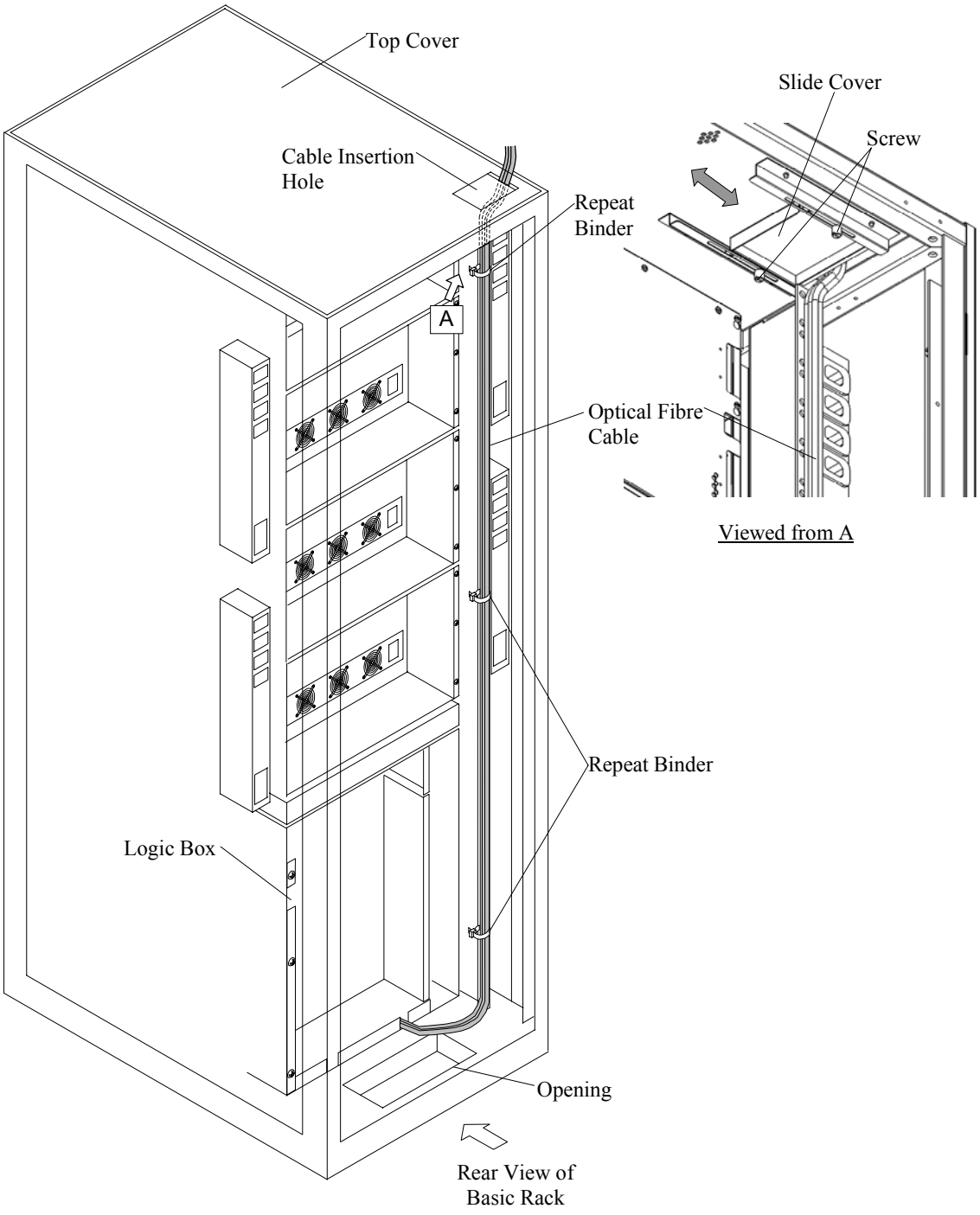


Fig. 3.7.1-3 Cable Routing

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e. Loosen the screw and remove the stopper.
f. Remove the two cores by pulling them toward you.
g. Place the optical fibre cables in the grooves on the each core and fasten them with the binder. When doing it, be sure to give the cables excess lengths so that they are not stretched too tightly. (Put the cables (two ports or more) in one groove of the core.)
h. Install the cores to which the optical fibre cables have been fixed and fasten them with the stopper and a screw.

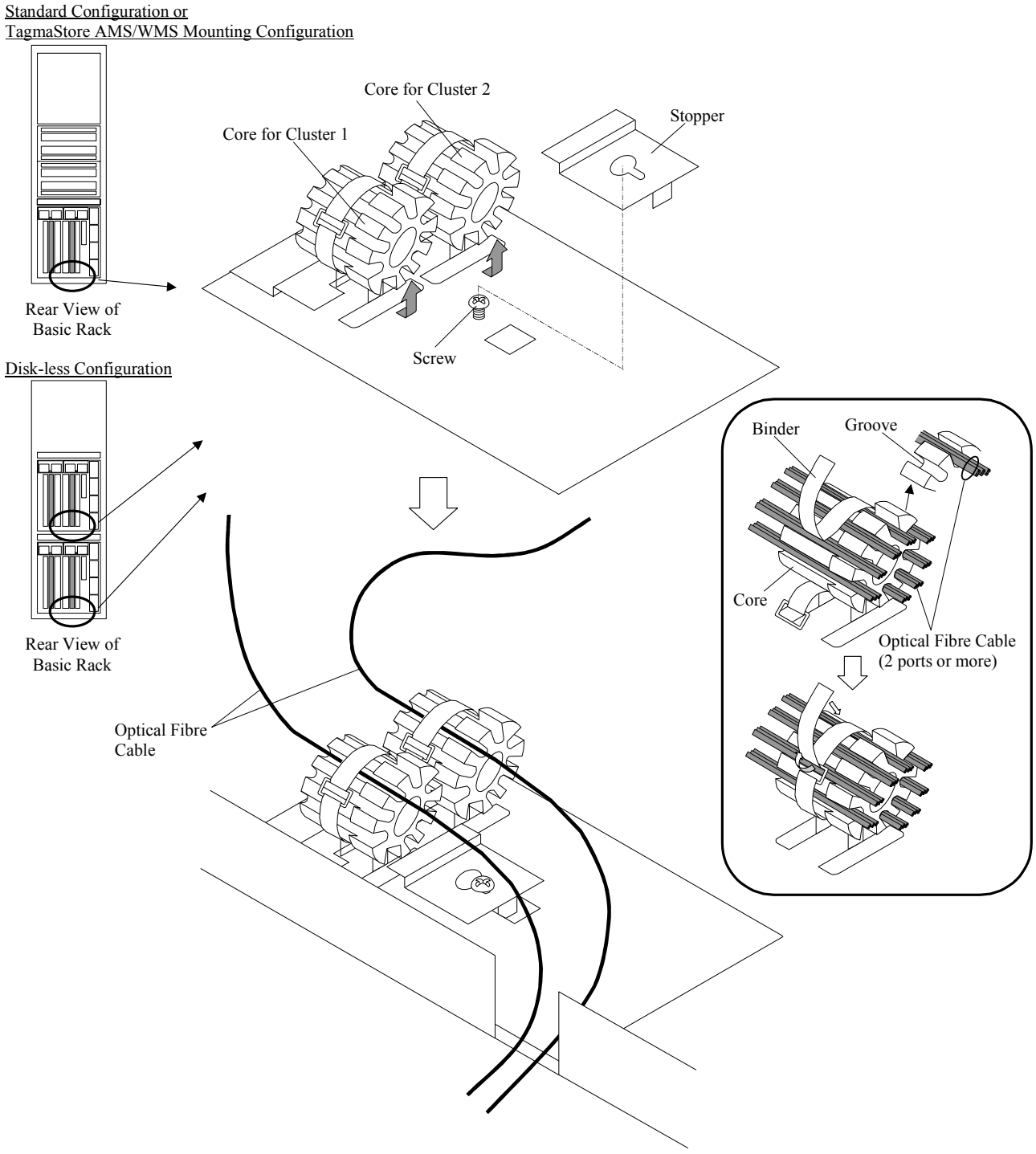


Fig. 3.7.1-4 Fixation of Optical Fibre Cables

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4-3 Cleaning the fibre cable connectors.
For the tools needed for the cleaning, refer to the tool list on page PARTS06-10.
a. Blow compressed gas against the connector using an air sprayer (for about five seconds).
b. Wipe the connector lightly with a piece of cut gauze wet with ethyl alcohol.
c. Blow compressed air again and check the result of the cleaning. (None of dust, sticking of foreign matter, and dirt must be observed.)

4-4 Connection of the optical fibre cables
a. Connect the optical fibre cables to the PCB.

CHA PCB (Logic Box)

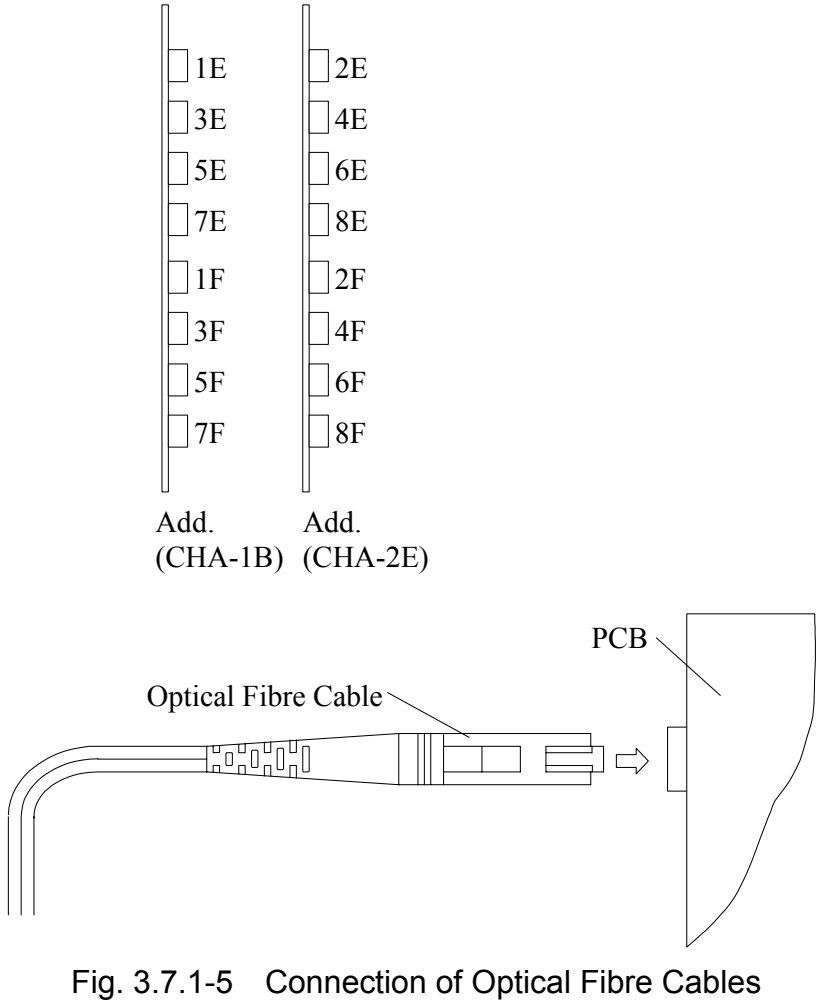


Fig. 3.7.1-5 Connection of Optical Fibre Cables

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4-5 Attachment of nameplate

a. Remove the screw from the rack frame and remove the nameplate tags to be installed.
b. Attach the nameplate to the nameplate tag on the Rack frame.
c. Attach all the nameplate tags with the screw.

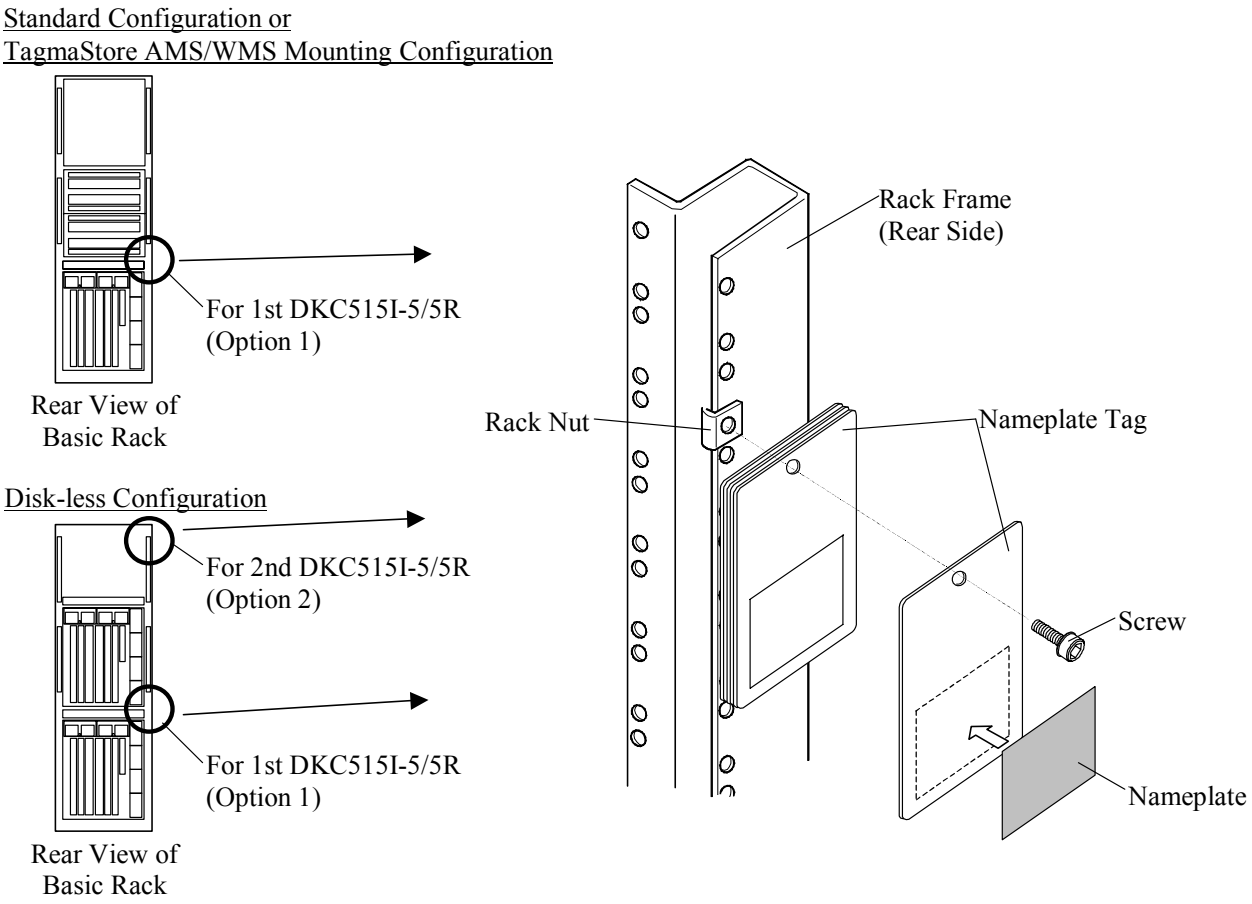
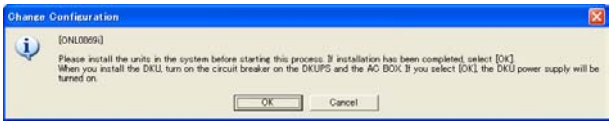


Fig. 3.7.1-6 Attachment of Nameplate

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5. SVP post procedure

(1) <Check that hardware components are installed>



Select (CL) [OK] after making sure that all hardware components are installed correctly in response to "Please install the units in the system before starting this process. If installation has been completed, select [OK]. When you install the DKU, turn on the circuit breaker on the DKUPS and the AC BOX. If you select [OK], the DKU power supply will be turned on.".

When [Cancel] is selected (CL), returns to INST03-07A-20 step (3).

---

(2)

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

If [ONL3437E] or [ONL3438E] is displayed, please refer 2.11.1. (INST02-410)

---

(3) <End of system update processing>

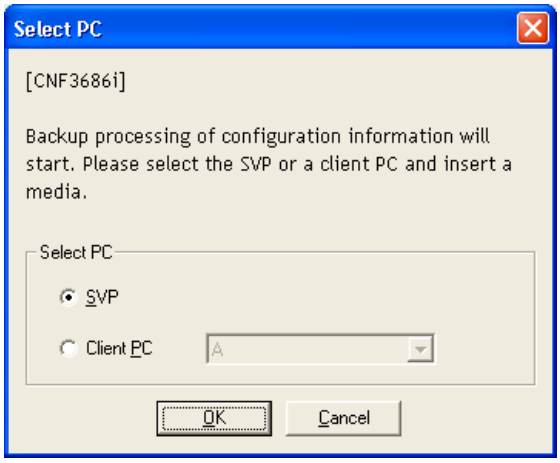
"Renewal process has completed. Please check the subsystem status." is displayed when recovery processing on all installed components is completed. Select (CL) [OK] in response to this message.



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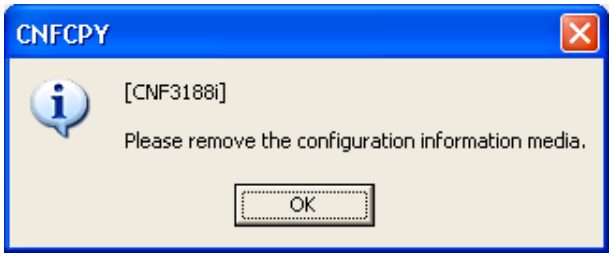
(4)

"Reading subsystem configuration data..." is displayed.
"Backup processing of configuration information will start. Please select the SVP or a client PC and insert a media." is displayed.
Insert the Config FD into FDD of selected PC, and select (CL) [OK].



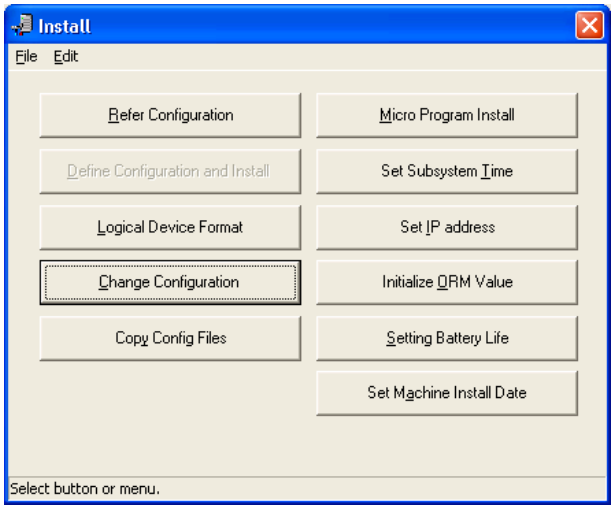
(5)

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



(6)

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



(7) <Mode Change>
Change the mode to View Mode.

Return to the working table and do the rest of the work.
(New Installation: INST02-10, Non-Disruptive Installation: INST02-40)

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3.7.2 Installation of Fibre 8/16/32-port High Performance Adapter (DKC-F510I-16HS/32HS/8HSR/16HSR/32HSR/32FSR/8FS2R/16FS2R/32FS2R)

Note: When two control frames (DKCs) are installed in the Disk-less configuration, check the serial number of target DKC on the SVP screen and beware of a attachment position to prevent mistakes. (See “5.2.4 Refer Configuration 3. <DKC Configuration window>” [INST05-410].)

Table 3.7.2-1 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKC-F510I-16HS	Fibre 8-port Adapter PCB	5524257-A	2	
			5524257-C		
		Nameplate (HDS)	2106990-32	1	RSD
			2106992-32/232		HICAM/HICEF
		Nameplate (HP)	2106990-132	1	RSD
			2106992-132/332		HICAM/HICEF
2	DKC-F510I-32HS	Fibre 16-port Adapter PCB	5524258-A	2	
			5524258-C		
		Nameplate (HDS)	2106990-33	1	RSD
			2106992-33/233		HICAM/HICEF
		Nameplate (HP)	2106990-133	1	RSD
			2106992-133/333		HICAM/HICEF
3	DKC-F510I-16HSR	Fibre 8-port Adapter PCB	5524257-C	2	
		Nameplate (HDS)	2751038-32	1	RSD
			2751040-32/232		HICAM/HICEF
		Nameplate (HP)	2751038-132	1	RSD
			2751040-132/332		HICAM/HICEF
4	DKC-F510I-32HSR	Fibre 16-port Adapter PCB	5524258-C	2	
		Nameplate (HDS)	2751038-33	1	RSD
			2751040-33/233		HICAM/HICEF
		Nameplate (HP)	2751038-133	1	RSD
			2751040-133/333		HICAM/HICEF
5	DKC-F510I-32FSR	Fibre 16-port Adapter PCB	5524268-C	2	
		Nameplate (HDS)	2751038-64	1	RSD
			2751040-64/264		HICAM/HICEF
		Nameplate (HP)	2751038-164	1	RSD
			2751040-164/364		HICAM/HICEF

(To be continued.)

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(Continued from preceding sheet.)

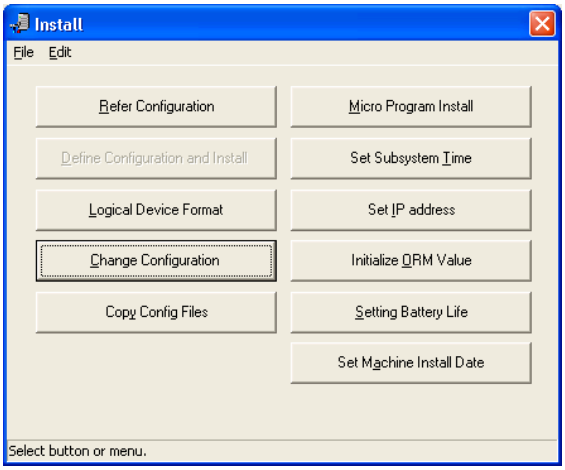
No.	Model Number	Part Name	Part No.	Quantity	Remarks
6	DKC-F510I-8HSR	Fibre 4-port Adapter PCB	5524281-C	2	
		Nameplate (HDS)	2751038-311	1	RSD
			2751040-411/611		HICAM/HICEF
		Nameplate (HP)	2751038-411	1	RSD
			2751040-511/711		HICAM/HICEF
7	DKC-F510I-8FS2R	Fibre 4-port Adapter PCB	5524282-C	2	
		Nameplate (HDS)	2751038-312	1	RSD
			2751040-412/612		HICAM/HICEF
		Nameplate (HP)	2751038-412	1	RSD
			2751040-512/712		HICAM/HICEF
8	DKC-F510I-16FS2R	Fibre 8-port Adapter PCB	5524222-C	2	
		Nameplate (HDS)	2751038-99	1	RSD
			2751040-99/299		HICAM/HICEF
		Nameplate (HP)	2751038-199	1	RSD
			2751040-199/399		HICAM/HICEF
9	DKC-F510I-32FS2R	Fibre 16-port Adapter PCB	5524228-C	2	
		Nameplate (HDS)	2751038-100	1	RSD
			2751040-100/300		HICAM/HICEF
		Nameplate (HP)	2751038-200	1	RSD
			2751040-200/400		HICAM/HICEF

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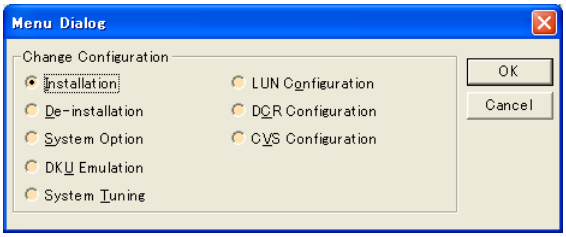
1. Setting up the New Device Structure Information

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

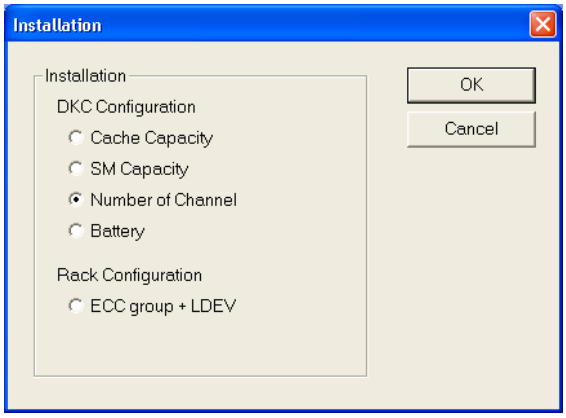
(2) <Start the 'Menu Dialog' screen>
Select (CL) [Change Configuration].



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

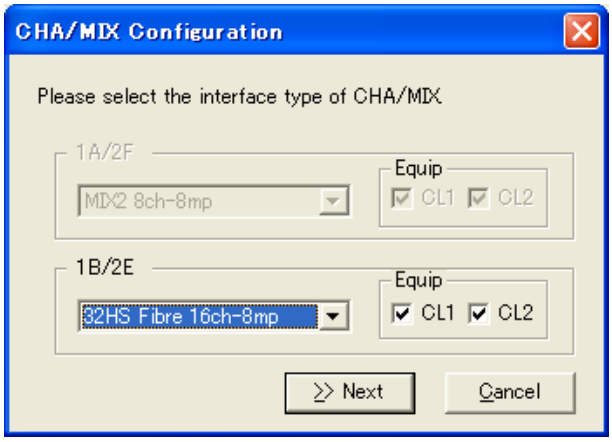


(4) <Select a part to be changed>
Select (CL) [Number of Channel], and select (CL) [OK].

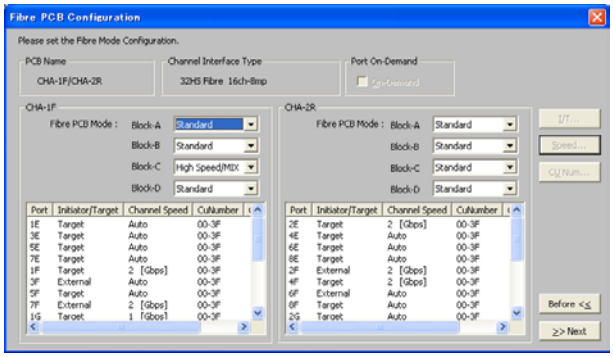


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(5) <Setting the CHA type>
In the 'CHA/MIX Configuration' window, select [Fibre *] for the location(s) to which the addition is to be made.
Make sure that the entry that has been made is correct and select (CL) the [>>Next].



(6) <Setting details of the CHA>
Enter the necessary items in the 'Fibre PCB Configuration' window. Repeat this operation as many times as the CHAs installed.



Fibre PCB Mode :
Set the Standard, High Speed/MIX for every Block.
(In 8HS/16HS/MIX 8MP, only Block-A/Block-B can be set.
In MIX 4MP, only Block-A can be set.)

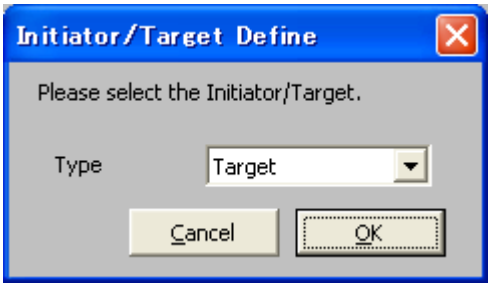
[I/T…]: Changes the Initiator / External / Target / RCU Target for the port selected. Advances the routine to Step (7).

[Speed…]: Changes the channel speed for the port selected. Advances the routine to Step (8).

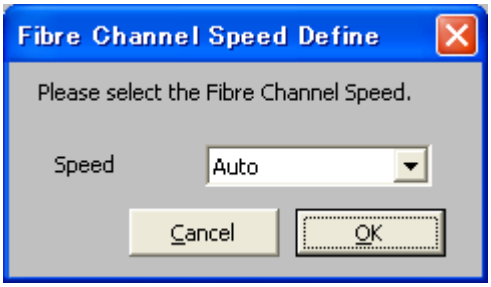
Make sure that the items that have been entered are correct and select (CL) the [>>Next].

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(7) <Setting the initiator/target>
Set the Initiator / External / Target / RCU Target.
After the setting is completed, select (CL) the [OK]. The routine is returned to Step (6).



(8) <Setting the channel speed>
Set the channel speed for the connection to the port specified.
After the setting is completed, select (CL) [OK].
The routine is returned to Step (6).

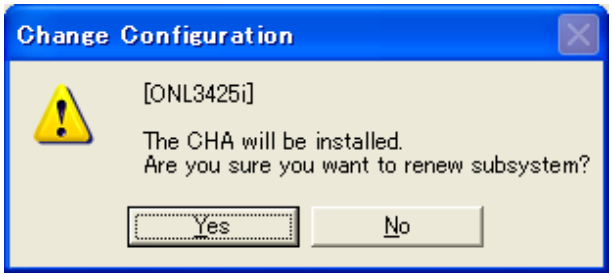


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2. SVP pre procedure

(1) <Starting the addition>

In response to a message, “The CHA will be installed. Are you sure you want to renew subsystem?”, select (CL) [Yes]. When [No] is selected (CL), the routine is returned to Step (2) on page INST03-07B-20.



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3. SVP pre procedure (Channel Adapter Addition)

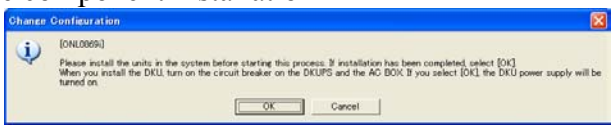
(1) <Downloading the microprogram>
The microprogram is downloaded to the SM.
The progress of the downloading is displayed.

---

(2)
"Changing the subsystem configuration data …" is displayed.

---

(3) <Making sure of completion of the hardware component installation>
A message, "Please install the units in the system before starting this process. If installation has been completed, select [OK]. When you install the DKU, turn on the circuit breaker on the DKUPS and the AC BOX. If you select [OK], the DKU power supply will be turned on." is displayed.



Note: Do not press the [OK] button by mistake before installing the part(s) to be added in the subsystem.

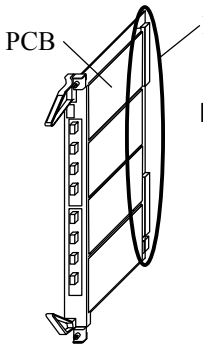
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4. Installation Procedure of Fibre 8/16/32-port High Performance Adapter

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

4-1 Insertion of the PCBs

a. Remove the dummy plate installed in the installation location. Refer to Table 3.7.2-2 and Fig. 3.7.2-1.
b. Insert the PCBs to the correct locations in the Logic Box. Refer to Table 3.7.2-2 and Fig. 3.7.2-2.
c. Fasten the two screws.



Note: 1. Check that the main edge connector of the PCB has no deformation, damage or sticking of dust before installing the PCB.

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

Table 3.7.2-2 Inserting Location

No.	Option Name	Location No.		Remarks
		Cluster 1	Cluster 2	
1	Add.	CHA-1B	CHA-2E	

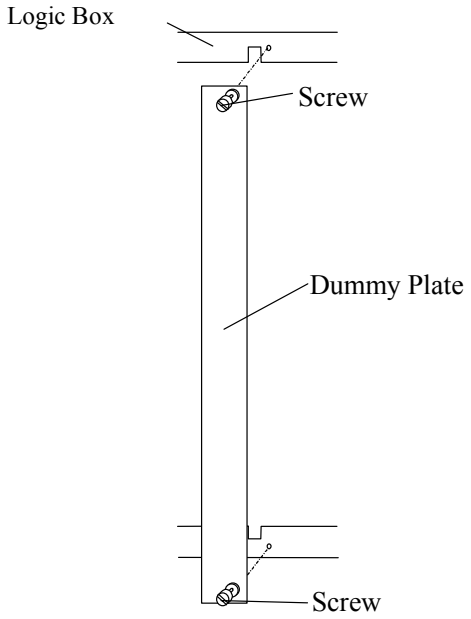


Fig. 3.7.2-1 Removal of Dummy Plate

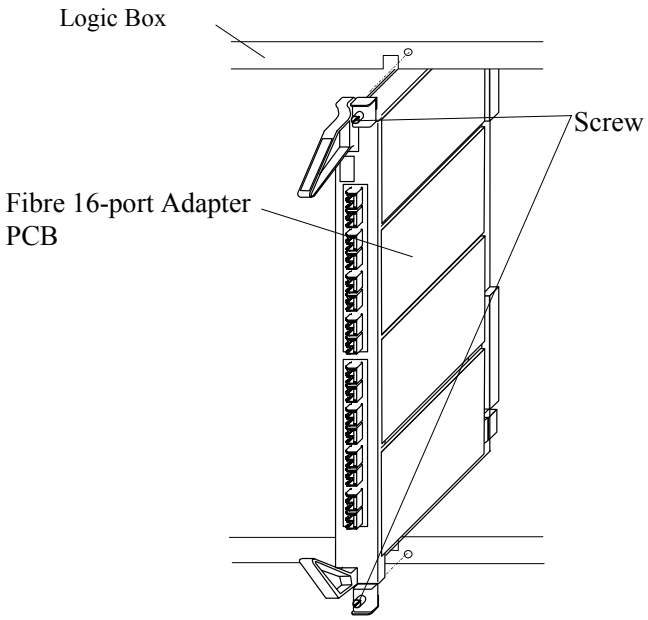


Fig. 3.7.2-2 Insertion of PCB

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d. When the 19-inch Rack (DKC-F515I-FRMR) is installed, attach the dummy plates to the rear door. (The dummy plates can be attached up to two.)
When the 19-inch Rack (DKC-F515I-FRMR) is not installed, store the dummy plates for future use in De-installation.

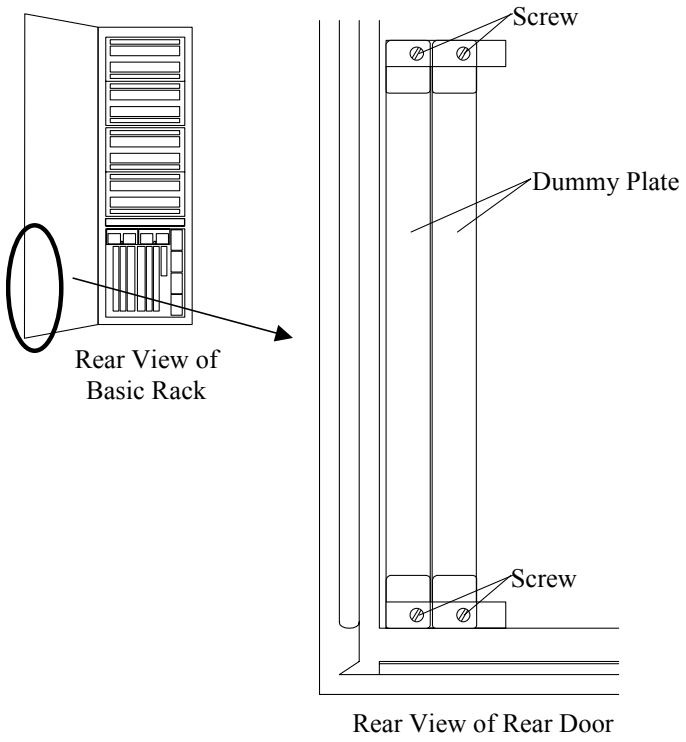


Fig. 3.7.2-2A Attachment of Dummy Plates

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4-2 Cable Routing

a. When wiring for Optical fibre cables from the floor, draw in the cables from the opening, and go to step e.
   When wiring for Optical fibre cables from the top cover, go to step b.
b. Loosen the two screws and open the slide cover.
c. Draw in the optical fibre cable from the cable insertion hole of top cover into the frame.
d. Fix the optical fibre cables with the three repeat binders.

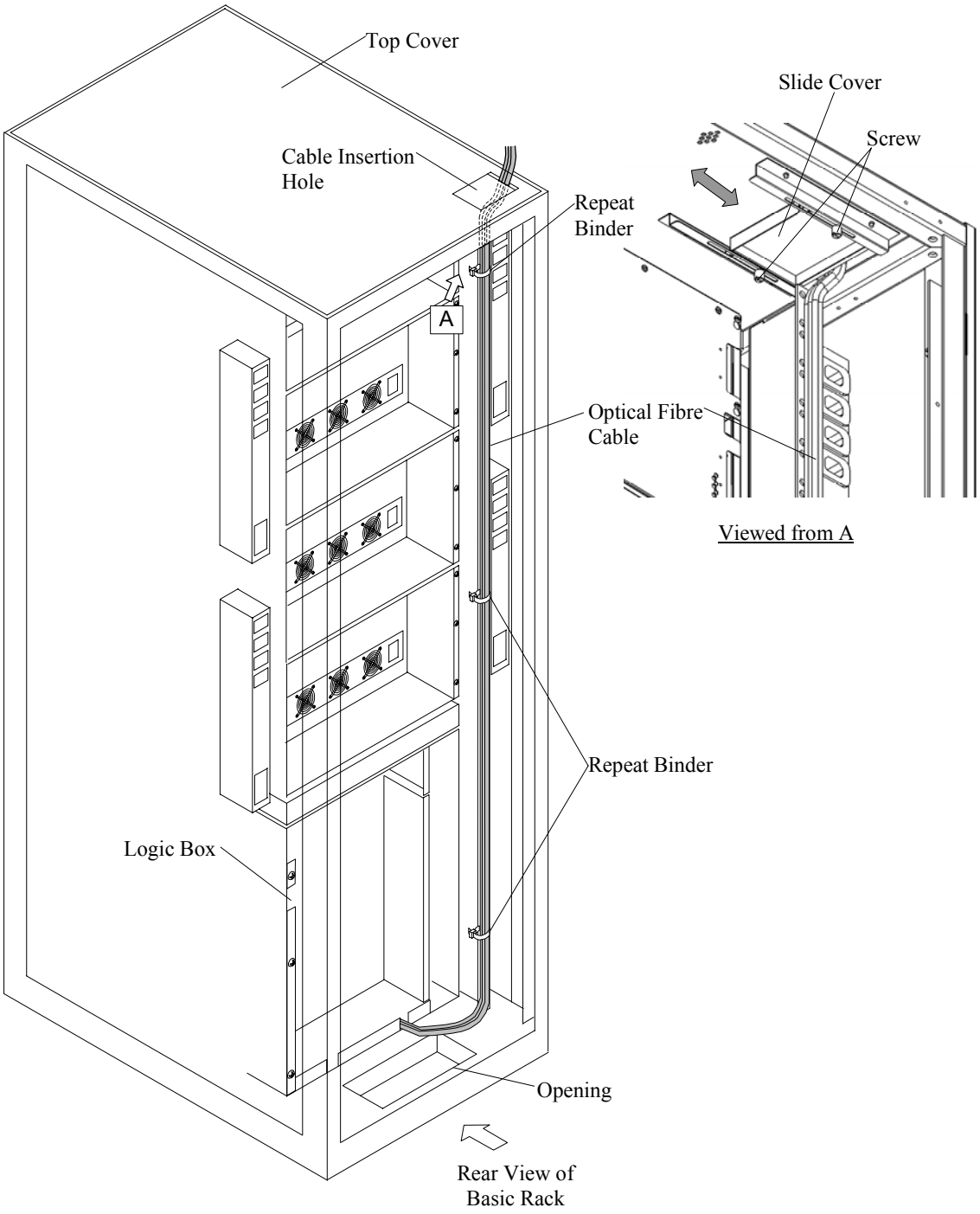


Fig. 3.7.2-3 Cable Routing

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e. Loosen the screw and remove the stopper.
f. Remove the two cores by pulling them toward you.
g. Place the optical fibre cables in the grooves on the each core and fasten them with the binder. When doing it, be sure to give the cables excess lengths so that they are not stretched too tightly. (Put the cables (two ports or more) in one groove of the core.)
h. Install the cores to which the optical fibre cables have been fixed and fasten them with the stopper and a screw.

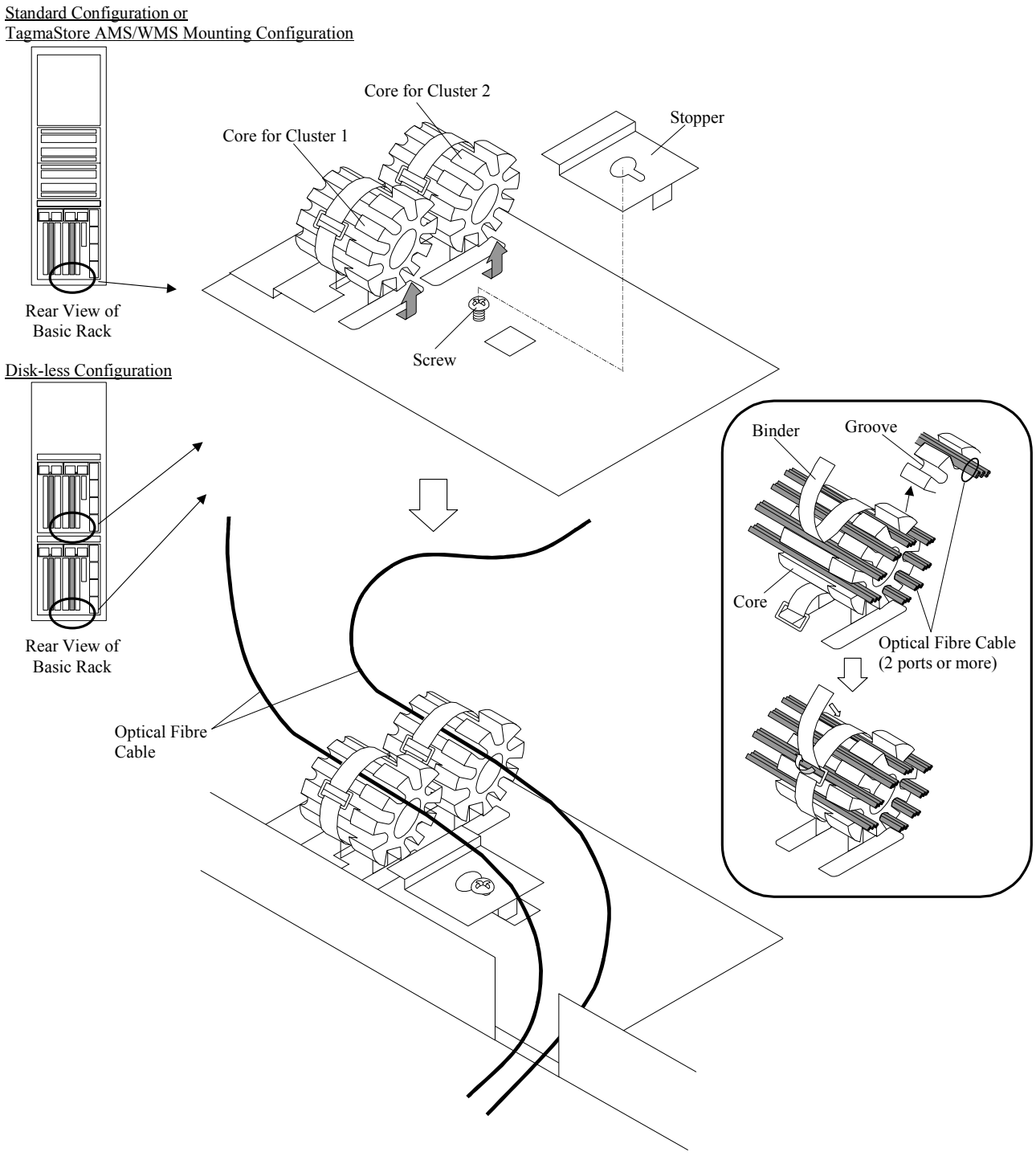


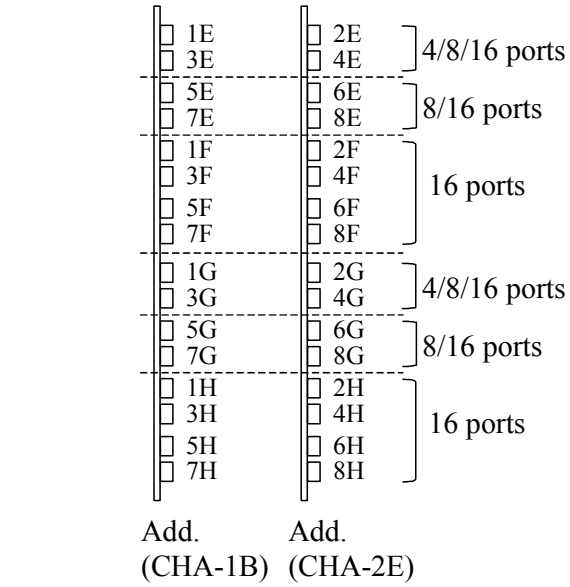
Fig. 3.7.2-4 Fixation of Optical Fibre Cables

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4-3 Cleaning the fibre cable connectors.
For the tools needed for the cleaning, refer to the tool list on page PARTS06-10.
a. Blow compressed gas against the connector using an air sprayer (for about five seconds).
b. Wipe the connector lightly with a piece of cut gauze wet with ethyl alcohol.
c. Blow compressed air again and check the result of the cleaning. (None of dust, sticking of foreign matter, and dirt must be observed.)

4-4 Connection of the optical fibre cables
a. Connect the optical fibre cables to the PCB.

CHA PCB (Logic Box)



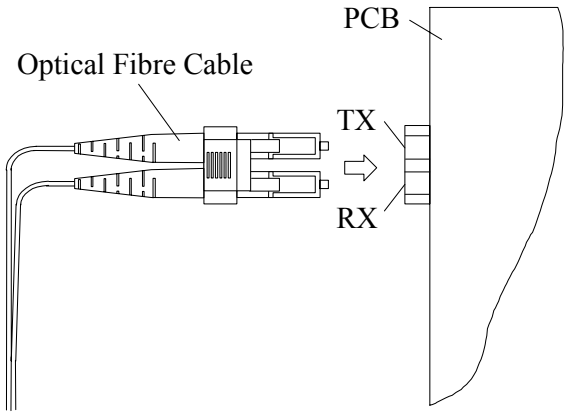


Fig. 3.7.2-5 Connection of Optical Fibre Cables

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4-5 Attachment of nameplate

a. Remove the screw from the rack frame and remove the nameplate tags to be installed.
b. Attach the nameplate to the nameplate tag on the Rack frame.
c. Attach all the nameplate tags with the screw.

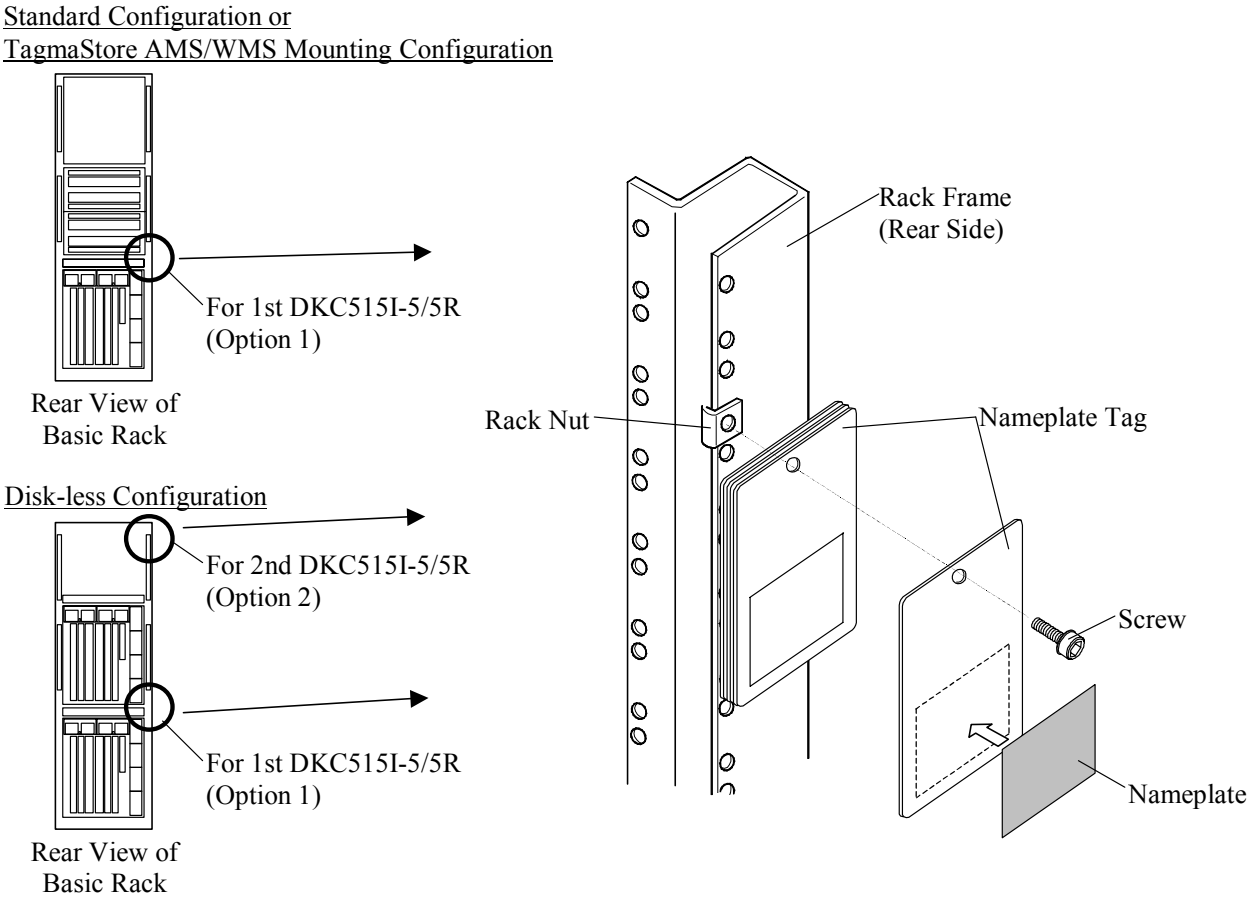
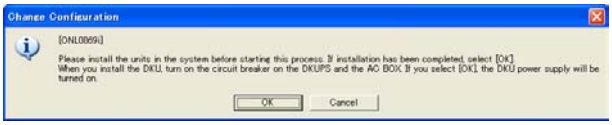


Fig. 3.7.2-6 Attachment of Nameplate

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5. SVP post procedure

(1) <Check that hardware components are installed>



Select (CL) [OK] after making sure that all hardware components are installed correctly in response to "Please install the units in the system before starting this process. If installation has been completed, select [OK]. When you install the DKU, turn on the circuit breaker on the DKUPS and the AC BOX. If you select [OK], the DKU power supply will be turned on.".

When [Cancel] is selected (CL), returns to INST03-07B-20 step (3).

---

(2)

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

If [ONL3437E] or [ONL3438E] is displayed, please refer 2.11.1. (INST02-410)

---

(3) <End of system update processing>

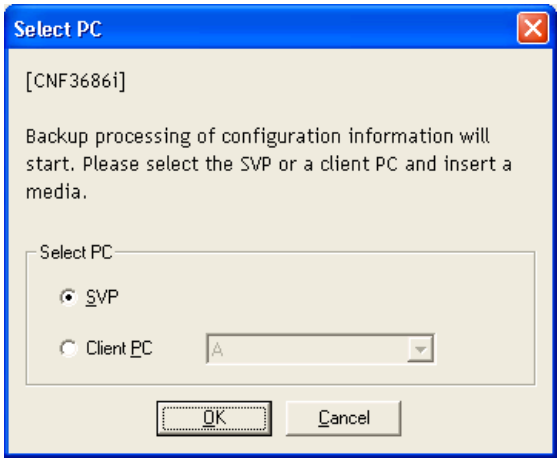
"Renewal process has completed. Please check the subsystem status." is displayed when recovery processing on all installed components is completed. Select (CL) [OK] in response to this message.



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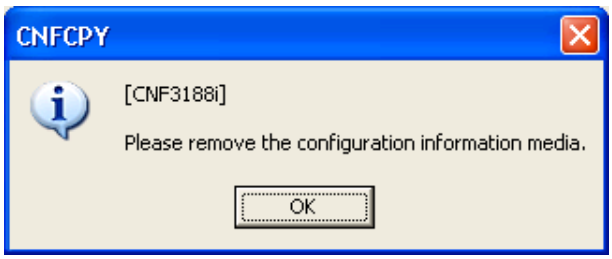
(4)

"Reading subsystem configuration data..." is displayed.
"Backup processing of configuration information will start. Please select the SVP or a client PC and insert a media." is displayed.
Insert the Config FD into FDD of selected PC, and select (CL) [OK].



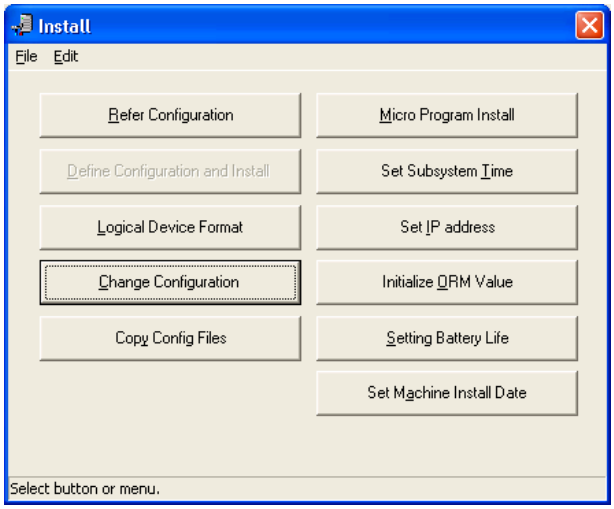
(5)

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



(6)

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



(7) <Mode Change>
Change the mode to View Mode.

Return to the working table and do the rest of the work.
(New Installation: INST02-10, Non-Disruptive Installation: INST02-40)

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3.7.3 Installation of Mainframe Fibre 8/16-port Adapter (DKC-F510I-8MS/8ML/8MSR/8MLR/16MSR/16MLR/16MFSR/16MFLR/16MFL4R)

Note: When two control frames (DKCs) are installed in the Disk-less configuration, check the serial number of target DKC on the SVP screen and beware of a attachment position to prevent mistakes. (See “5.2.4 Refer Configuration 3. <DKC Configuration window>” [INST05-410].)

Table 3.7.3-1 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKC-F510I-8MS	Fibre 4-port Adapter PCB	5524259-A	2	
			5524259-C		
		Nameplate (HDS)	2106990-28	1	RSD
			2106992-28/228		HICAM/HICEF
		Nameplate (HP)	2106990-128	1	RSD
			2106992-128/328		HICAM/HICEF
2	DKC-F510I-8ML	Fibre 4-port Adapter PCB	5524260-A	2	
			5524260-C		
		Nameplate (HDS)	2106990-29	1	RSD
			2106992-29/229		HICAM/HICEF
		Nameplate (HP)	2106990-129	1	RSD
			2106992-129/329		HICAM/HICEF
3	DKC-F510I-8MSR	Fibre 4-port Adapter PCB	5524259-C	2	
		Nameplate (HDS)	2751038-28	1	RSD
			2751040-28/228		HICAM/HICEF
		Nameplate (HP)	2751038-128	1	RSD
			2751040-128/328		HICAM/HICEF
4	DKC-F510I-8MLR	Fibre 4-port Adapter PCB	5524260-C	2	
		Nameplate (HDS)	2751038-29	1	RSD
			2751040-29/229		HICAM/HICEF
		Nameplate (HP)	2751038-129	1	RSD
			2751040-129/329		HICAM/HICEF
5	DKC-F510I-16MSR	Fibre 8-port Adapter PCB	5524261-C	2	
		Nameplate (HDS)	2751038-30	1	RSD
			2751040-30/230		HICAM/HICEF
		Nameplate (HP)	2751038-130	1	RSD
			2751040-130/330		HICAM/HICEF

(To be continued.)

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(Continued from preceding sheet.)

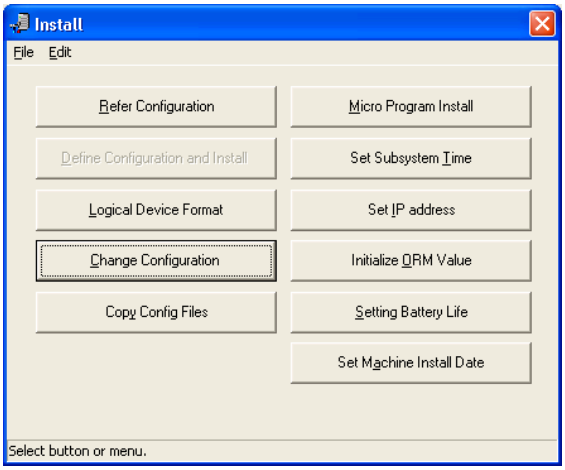
No.	Model Number	Part Name	Part No.	Quantity	Remarks
6	DKC-F510I-16MLR	Fibre 8-port Adapter PCB	5524262-C	2	
		Nameplate (HDS)	2751038-31	1	RSD
			2751040-31/231		HICAM/HICEF
		Nameplate (HP)	2751038-131	1	RSD
			2751040-131/331		HICAM/HICEF
7	DKC-F510I-16MFSR	Fibre 8-port Adapter PCB	5524248-C	2	
		Nameplate (HDS)	2751038-307	1	RSD
			2751040-407/607		HICAM/HICEF
		Nameplate (HP)	2751038-407	1	RSD
			2751040-507/707		HICAM/HICEF
8	DKC-F510I-16MFLR	Fibre 8-port Adapter PCB	5524250-C	2	
		Nameplate (HDS)	2751038-308	1	RSD
			2751040-408/608		HICAM/HICEF
		Nameplate (HP)	2751038-408	1	RSD
			2751040-508/708		HICAM/HICEF
9	DKC-F510I-16MFL4R	Fibre 8-port Adapter PCB	5535337-C	2	
		Nameplate (HDS)	2751038-331	1	RSD
			2751040-431/631		HICAM/HICEF
		Nameplate (HP)	2751038-431	1	RSD
			2751040-531/731		HICAM/HICEF

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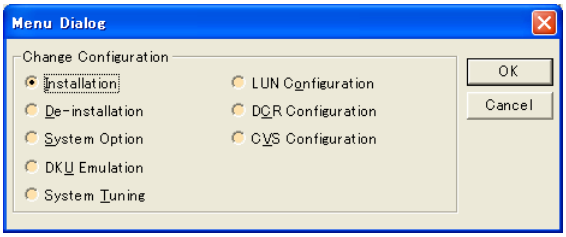
1. Setting up the New Device Structure Information

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

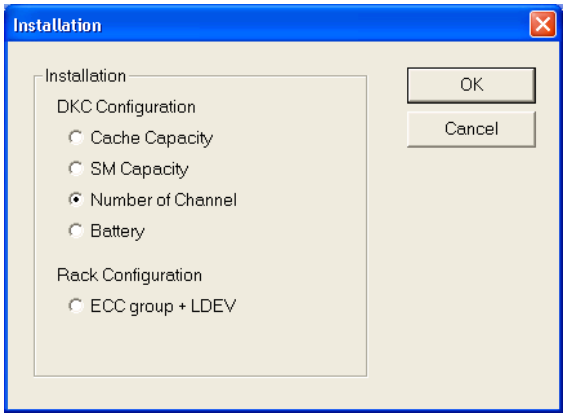
(2) <Start the 'Menu Dialog' screen>
Select (CL) [Change Configuration].



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

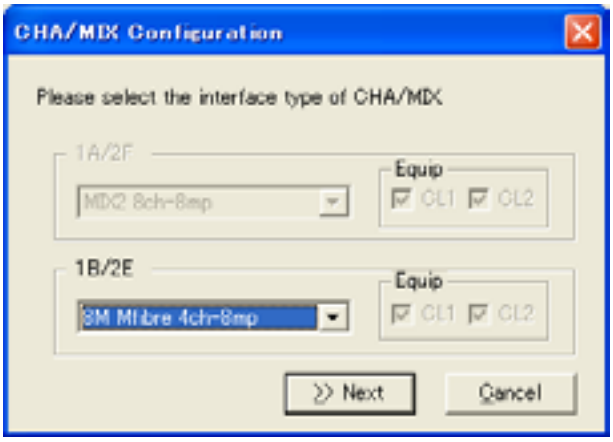


(4) <Select a part to be changed>
Select (CL) [Number of Channel], and select (CL) [OK].



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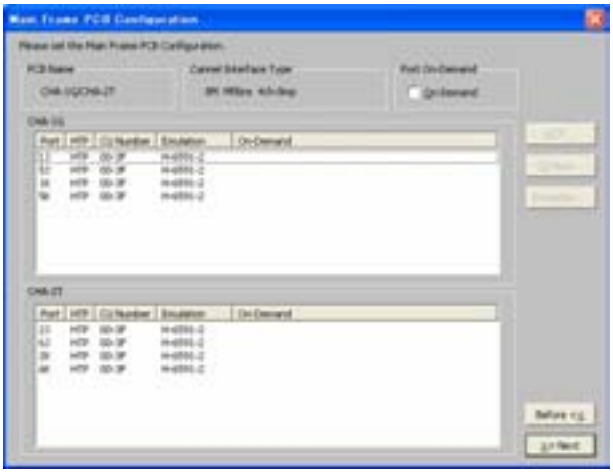
(5) <Setting the CHA type>
In the 'CHA/MIX Configuration' window, select [Mfibre *] for the location(s) to which the addition is to be made.
Make sure that the entry that has been made is correct and select (CL) the [>>Next].



(6) <Setting details of the CHA>
Enter the necessary items in the 'Mainframe PCB Configuration' window.
Repeat this operation as many times as the CHAs installed.

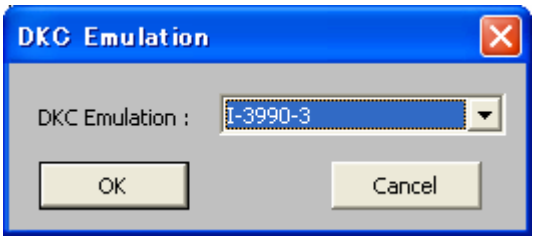
[Emulation...]: Set the DKC Emulation for the port selected. Advances the routine to Step (7).

Make sure that the items that have been entered are correct and select (CL) the [>>Next].



(7) <Setting the DKC Emulation>
Set the DKC Emulation.
After the setting is completed, select (CL) the [OK]. The routine is returned to Step (6).

Note: When you select 2107 DKC Emulation, power-on and POR (Power off/on) of SOM493 are required in advance.

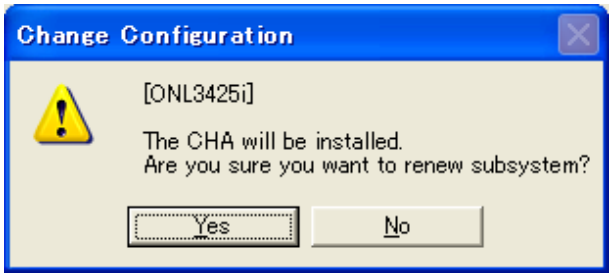


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2. SVP pre procedure

(1) <Starting the addition>

In response to a message, “The CHA will be installed. Are you sure you want to renew subsystem?”, select (CL) [Yes]. When [No] is selected (CL), the routine is returned to Step (2) on page INST03-07C-30.



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3. SVP pre procedure (Channel Adapter Addition)

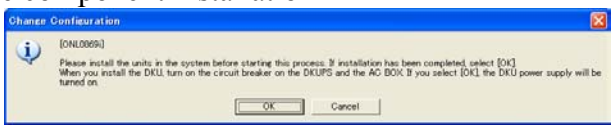
(1) <Downloading the microprogram>
The microprogram is downloaded to the SM.
The progress of the downloading is displayed.

---

(2)
"Changing the subsystem configuration data …" is displayed.

---

(3) <Making sure of completion of the hardware component installation>
A message, "Please install the units in the system before starting this process. If installation has been completed, select [OK]. When you install the DKU, turn on the circuit breaker on the DKUPS and the AC BOX. If you select [OK], the DKU power supply will be turned on." is displayed.



Note: Do not press the [OK] button by mistake before installing the part(s) to be added in the subsystem.

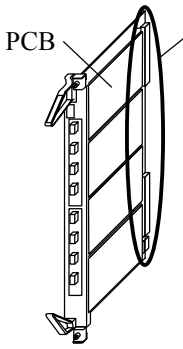
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4. Installation Procedure of Mainframe Fibre 8/16-port Adapter

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

4-1 Insertion of the PCBs

a. Remove the dummy plate installed in the installation location. Refer to Table 3.7.3-2 and Fig. 3.7.3-1.
b. Insert the PCBs to the correct locations in the Logic Box. Refer to Table 3.7.3-3 and Fig. 3.7.3-2.
c. Fasten the two screws.



Note: 1. Check that the main edge connector of the PCB has no deformation, damage or sticking of dust before installing the PCB.

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

Table 3.7.3-2 Inserting Location

No.	Option Name	Location No.		Remarks
		Cluster 1	Cluster 2	
1	Add.	CHA-1B	CHA-2E	

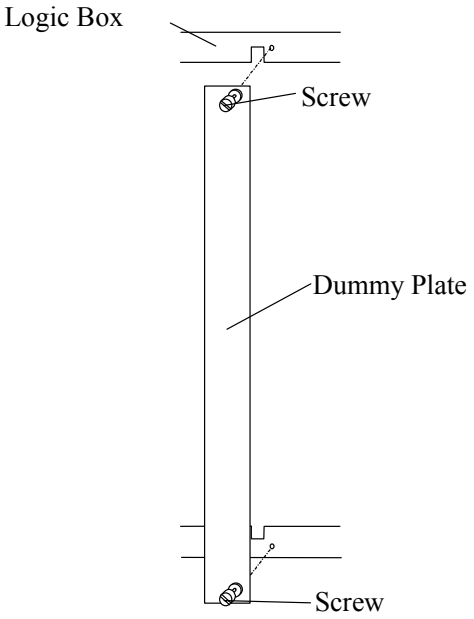


Fig. 3.7.3-1 Removal of Dummy Plate

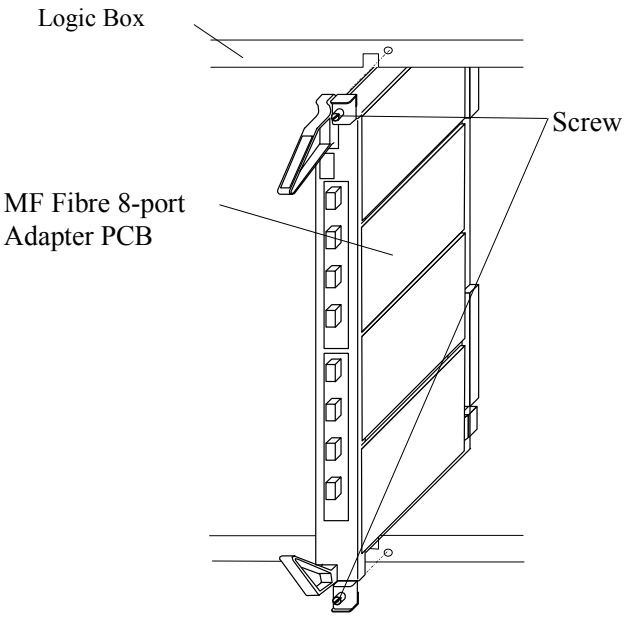


Fig. 3.7.3-2 Insertion of PCB

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d. When the 19-inch Rack (DKC-F515I-FRMR) is installed, attach the dummy plates to the rear door. (The dummy plates can be attached up to two.)
When the 19-inch Rack (DKC-F515I-FRMR) is not installed, store the dummy plates for future use in De-installation.

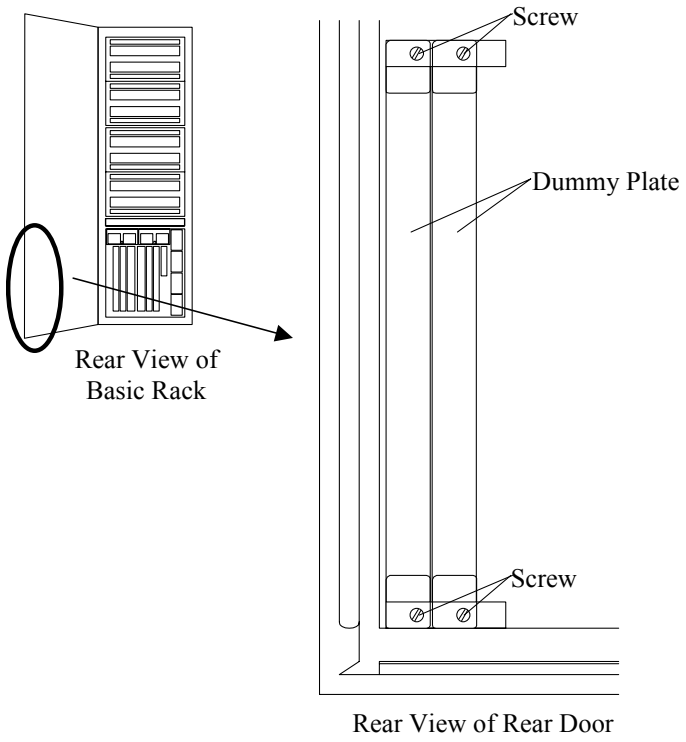


Fig. 3.7.3-2A Attachment of Dummy Plates

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4-2 Cable Routing

a. When wiring for Optical fibre cables from the floor, draw in the cables from the opening, and go to step e.
   When wiring for Optical fibre cables from the top cover, go to step b.
b. Loosen the two screws and open the slide cover.
c. Draw in the optical fibre cable from the cable insertion hole of top cover into the frame.
d. Fix the optical fibre cables with the three repeat binders.

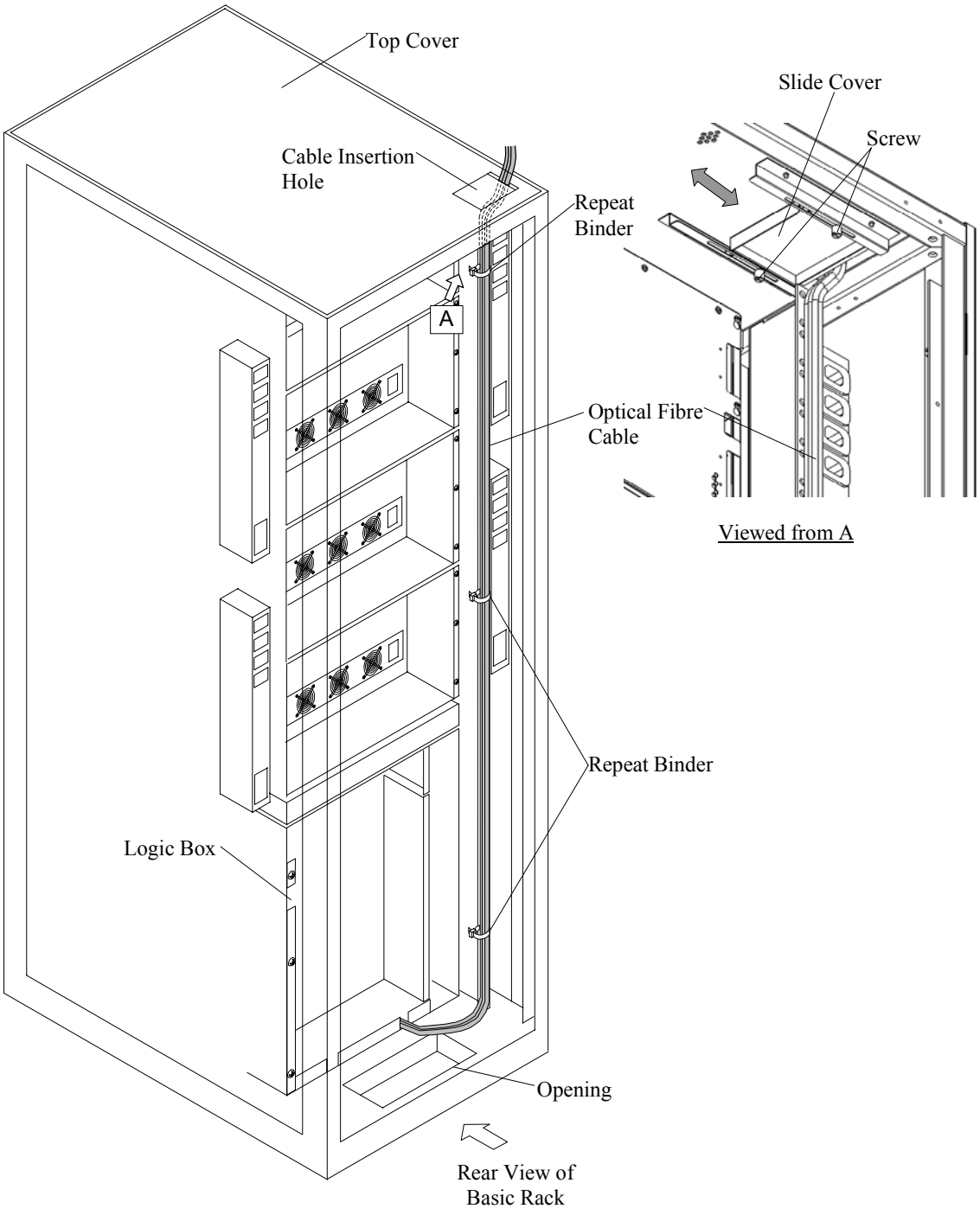


Fig. 3.7.3-3 Cable Routing

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e. Loosen the screw and remove the stopper.
f. Remove the two cores by pulling them toward you.
g. Place the optical fibre cables in the grooves on the each core and fasten them with the binder. When doing it, be sure to give the cables excess lengths so that they are not stretched too tightly. (Put the cables (two ports or more) in one groove of the core.)
h. Install the cores to which the optical fibre cables have been fixed and fasten them with the stopper and a screw.

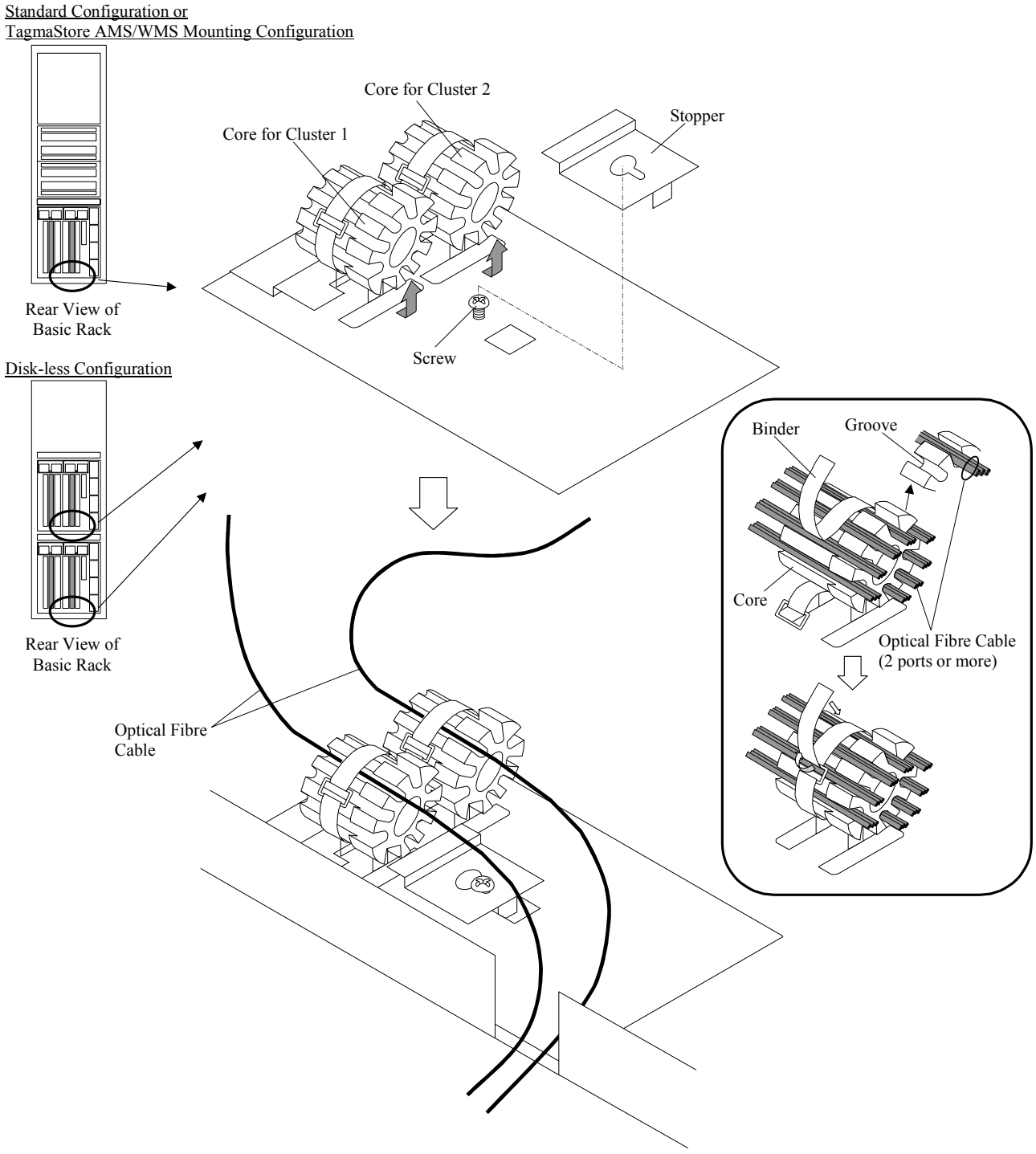


Fig. 3.7.3-4 Fixation of Optical Fibre Cables

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4-3 Cleaning the fibre cable connectors.

For the tools needed for the cleaning, refer to the tool list on page PARTS06-10.

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

4-4 Connection of the optical fibre cables

a. Connect the optical fibre cables to the PCB.

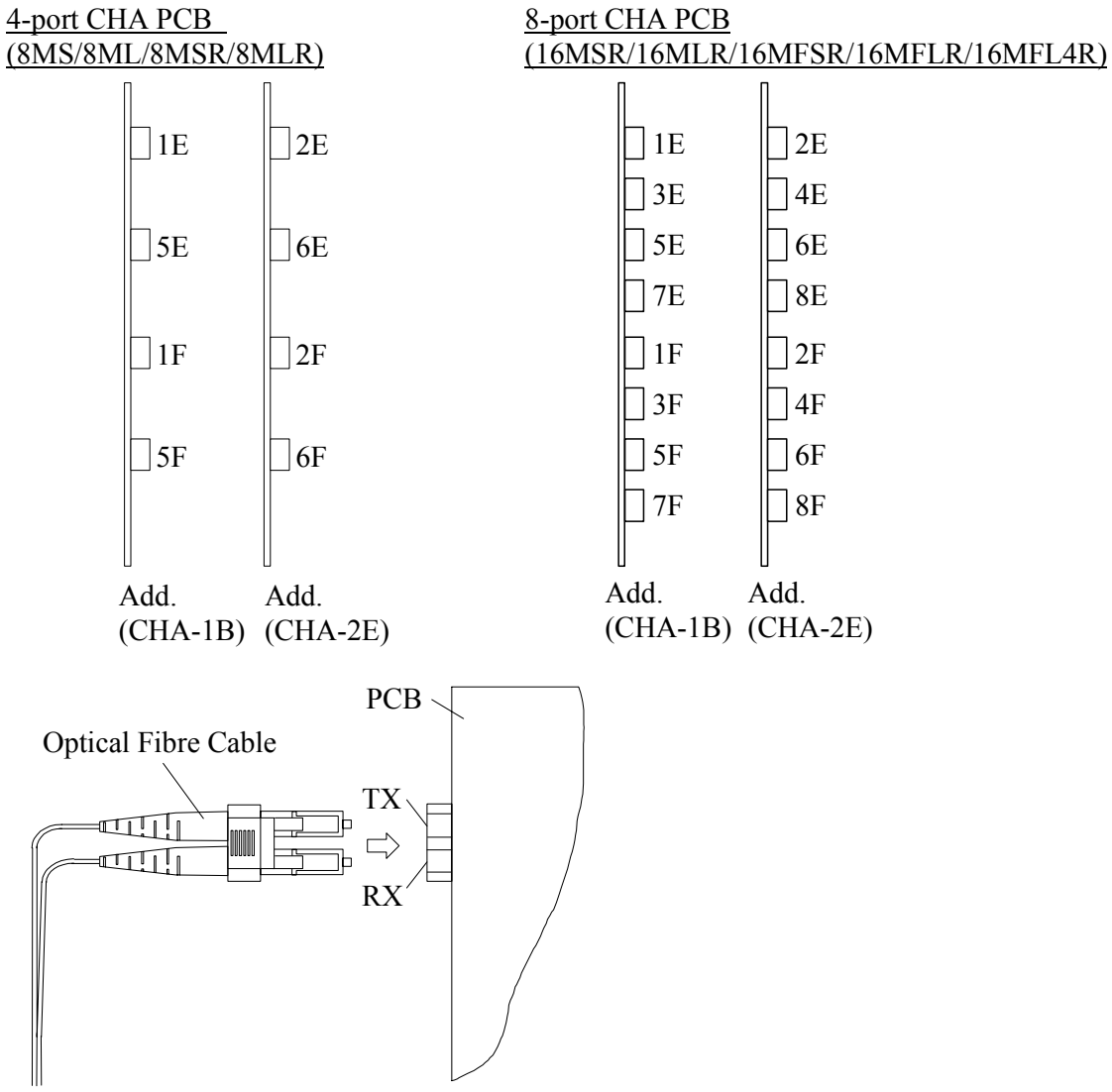


Fig. 3.7.3-5 Connection of Optical Fibre Cables

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4-5 Attachment of nameplate

a. Remove the screw from the rack frame and remove the nameplate tags to be installed.
b. Attach the nameplate to the nameplate tag on the Rack frame.
c. Attach all the nameplate tags with the screw.

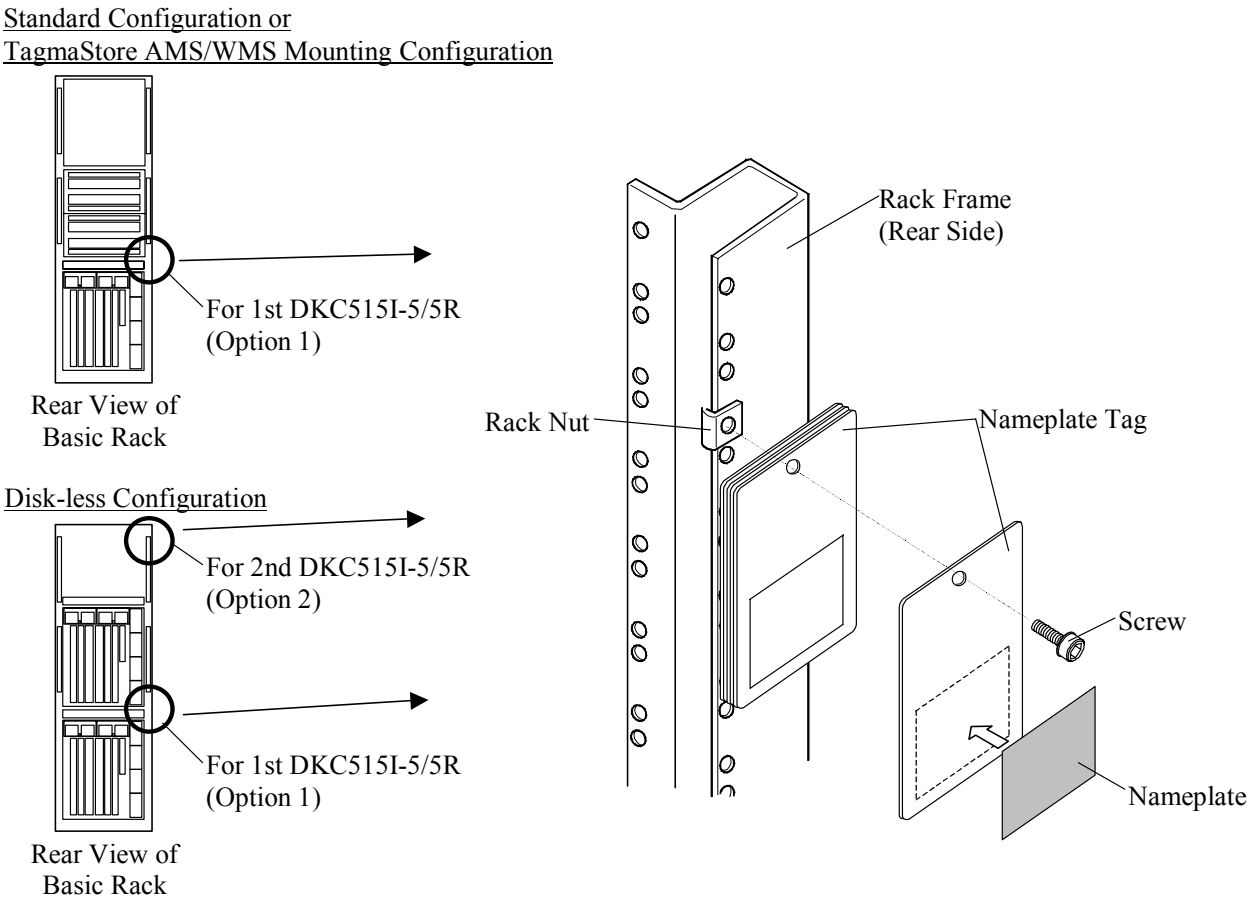
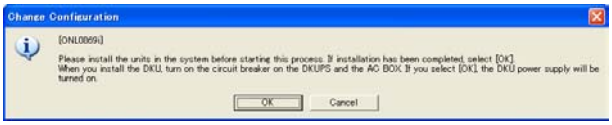


Fig. 3.7.3-6 Attachment of Nameplate

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5. SVP post procedure

(1) <Check that hardware components are installed>



Select (CL) [OK] after making sure that all hardware components are installed correctly in response to "Please install the units in the system before starting this process. If installation has been completed, select [OK]. When you install the DKU, turn on the circuit breaker on the DKUPS and the AC BOX. If you select [OK], the DKU power supply will be turned on.".

When [Cancel] is selected (CL), returns to INST03-07C-20 step (3).

---

(2)

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

If [ONL3437E] or [ONL3438E] is displayed, please refer 2.11.1. (INST02-410)

---

(3) <End of system update processing>

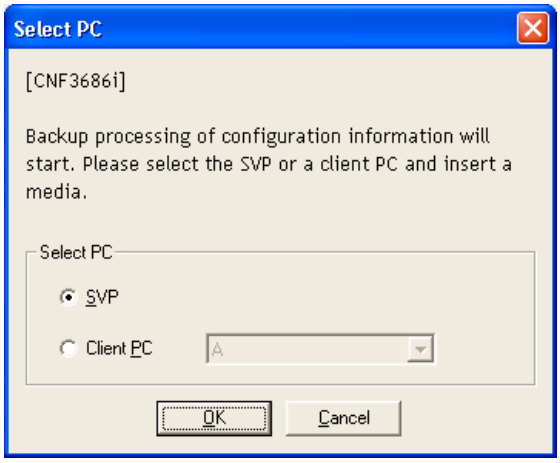
"Renewal process has completed. Please check the subsystem status." is displayed when recovery processing on all installed components is completed. Select (CL) [OK] in response to this message.



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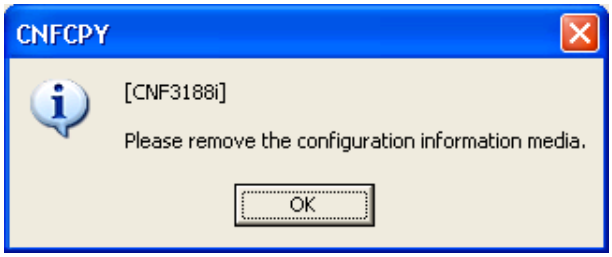
(4)

"Reading subsystem configuration data..." is displayed.
"Backup processing of configuration information will start. Please select the SVP or a client PC and insert a media." is displayed.
Insert the Config FD into FDD of selected PC, and select (CL) [OK].



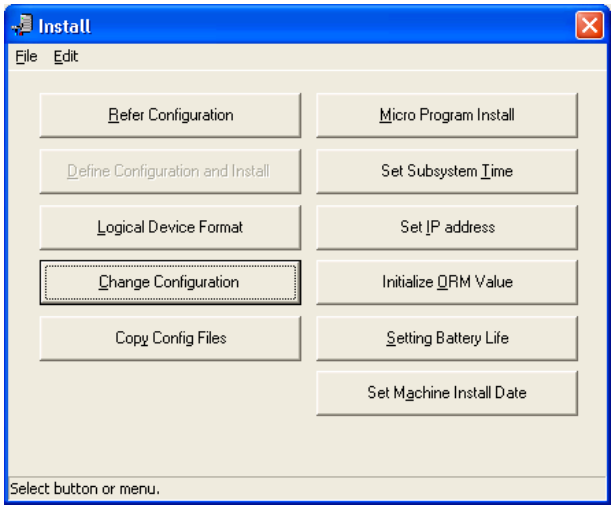
(5)

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



(6)

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



(7) <Mode Change>
Change the mode to View Mode.

Return to the working table and do the rest of the work.
(New Installation: INST02-10, Non-Disruptive Installation: INST02-40)

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3.7.4 Installation of NAS 8-port Adapter (DKC-F510I-8NS/8NSR)

Note: When two control frames (DKCs) are installed in the Disk-less configuration, check the serial number of target DKC on the SVP screen and beware of a attachment position to prevent mistakes. (See “5.2.4 Refer Configuration 3. <DKC Configuration window>” [INST05-410].)

Table 3.7.4-1 Parts List

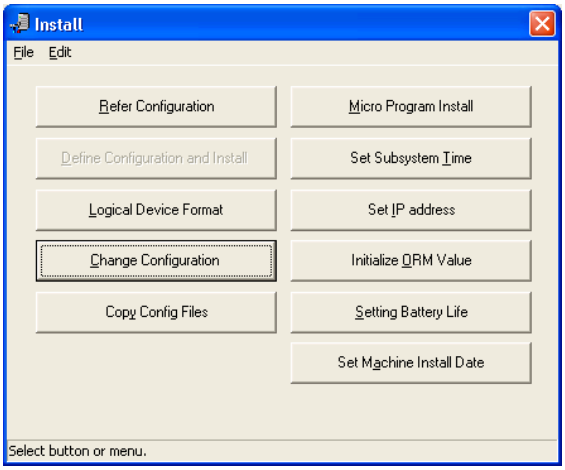
No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKC-F510I-8NS	NAS 4-port Adapter	5524264-A	2	
		PCB	5524264-C		
		NAS Dummy Plate	3269786-A	2	
		8NS COVER INST	3269851-1	1	Installation manual of NAS dummy plate
		Nameplate (HDS)	2106990-36	1	RSD
			2106992-36/236		HICAM/HICEF
		Nameplate (HP)	2106990-136	1	RSD
			2106992-136/336		HICAM/HICEF
2	DKC-F510I-8NSR	NAS 4-port Adapter PCB	5524264-C	2	
		NAS Dummy Plate	3269786-A	2	
		8NS COVER INST	3269851-1	1	Installation manual of NAS dummy plate
		Nameplate (HDS)	2751038-36	1	RSD
			2751040-36/236		HICAM/HICEF
		Nameplate (HP)	2751038-136	1	RSD
			2751040-136/336		HICAM/HICEF

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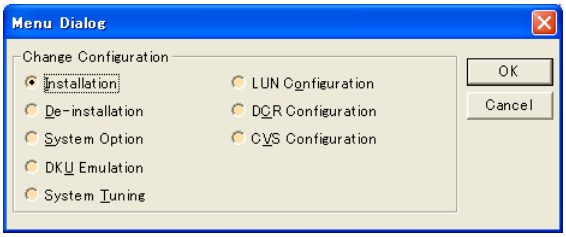
1. Setting up the New Device Structure Information

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

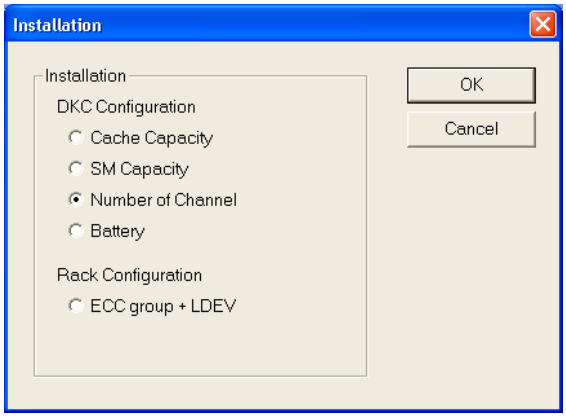
(2) <Start the 'Menu Dialog' screen>
Select (CL) [Change Configuration].



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

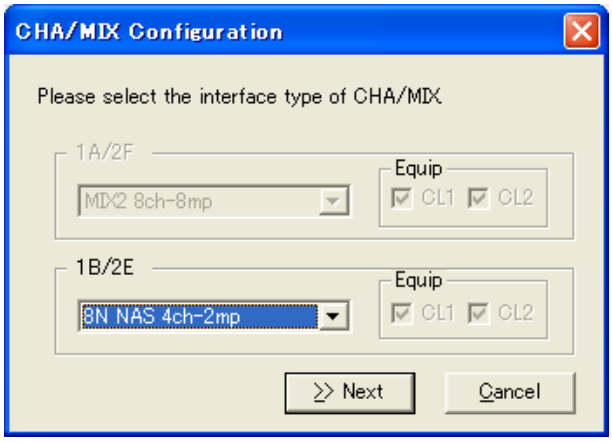


(4) <Select a part to be changed>
Select (CL) [Number of Channel], and select (CL) [OK].



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(5) <Setting the CHA type>
In the 'CHA/MIX Configuration' window, select [NAS *] for the location(s) to which the addition is to be made.
Make sure that the entry that has been made is correct and select (CL) the [>>Next].

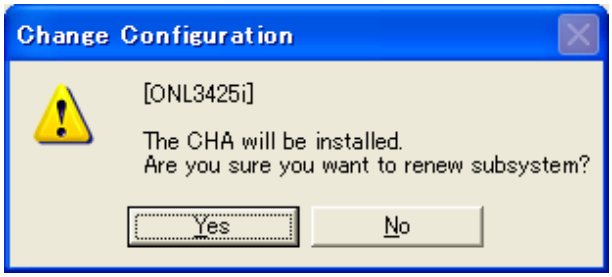


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2. SVP pre procedure

(1) <Starting the addition>

In response to a message, “The CHA will be installed. Are you sure you want to renew subsystem?”, select (CL) [Yes]. When [No] is selected (CL), the routine is returned to Step (2) on page INST03-07D-20.



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3. SVP pre procedure (Channel Adapter Addition)

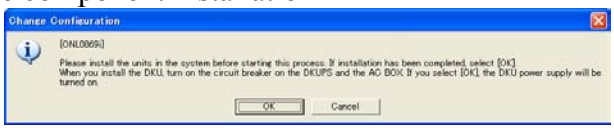
(1) <Downloading the microprogram>
The microprogram is downloaded to the SM.
The progress of the downloading is displayed.

---

(2)
"Changing the subsystem configuration data …" is displayed.

---

(3) <Making sure of completion of the hardware component installation>
A message, "Please install the units in the system before starting this process. If installation has been completed, select [OK]. When you install the DKU, turn on the circuit breaker on the DKUPS and the AC BOX. If you select [OK], the DKU power supply will be turned on." is displayed.



Note: Do not press the [OK] button by mistake before installing the part(s) to be added in the subsystem.

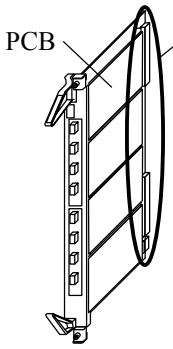
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4. Installation Procedure of NAS 8-port Adapter

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

4-1 Insertion of the PCBs

a. Remove the dummy plate installed in the installation location. Refer to Table 3.7.4-2 and Fig. 3.7.4-1.
b. Insert the PCBs to the correct locations in the Logic Box. Refer to Table 3.7.4-2 and Fig. 3.7.4-2.
c. Fasten the two screws.



Note: 1. Check that the main edge connector of the PCB has no deformation, damage or sticking of dust before installing the PCB.

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

Table 3.7.4-2 Inserting Location

No.	Option Name	Location No.		Remarks
		Cluster 1	Cluster 2	
1	Add.	CHA-1B	CHA-2E	

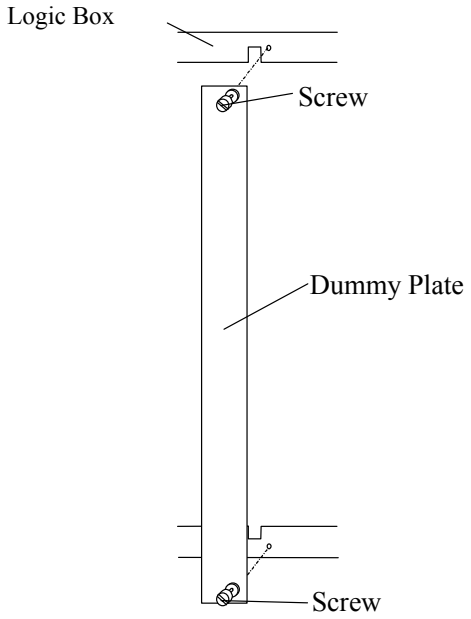


Fig. 3.7.4-1 Removal of Dummy Plate

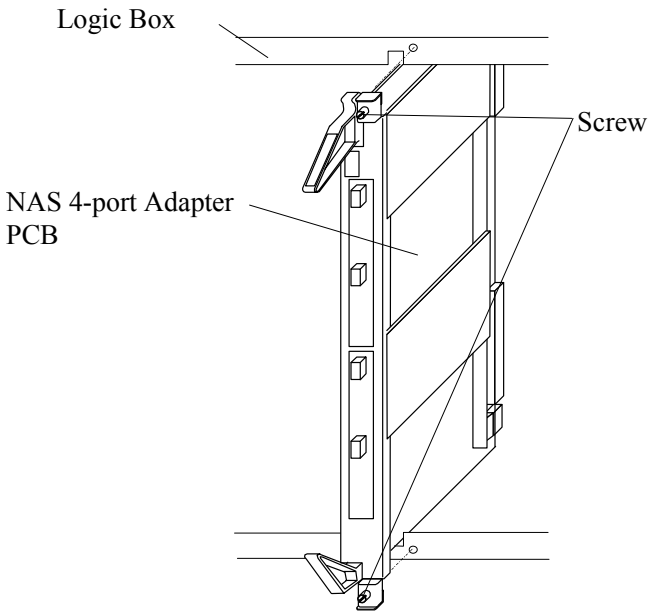


Fig. 3.7.4-2 Insertion of PCB

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d. When the 19-inch Rack (DKC-F515I-FRMR) is installed, attach the dummy plates to the rear door. (The dummy plates can be attached up to two.)
When the 19-inch Rack (DKC-F515I-FRMR) is not installed, store the dummy plates for future use in De-installation.

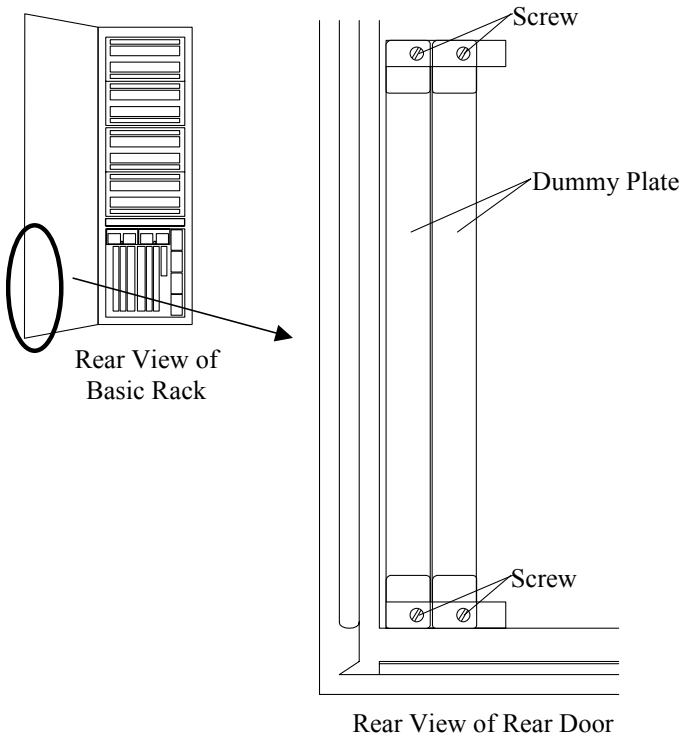


Fig. 3.7.4-2A Attachment of Dummy Plates

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4-2 Cable Routing

a. When wiring for Optical fibre cables from the floor, draw in the cables from the opening, and go to step e.
   When wiring for Optical fibre cables from the top cover, go to step b.
b. Loosen the two screws and open the slide cover.
c. Draw in the optical fibre cable from the cable insertion hole of top cover into the frame.
d. Fix the optical fibre cables with the three repeat binders.

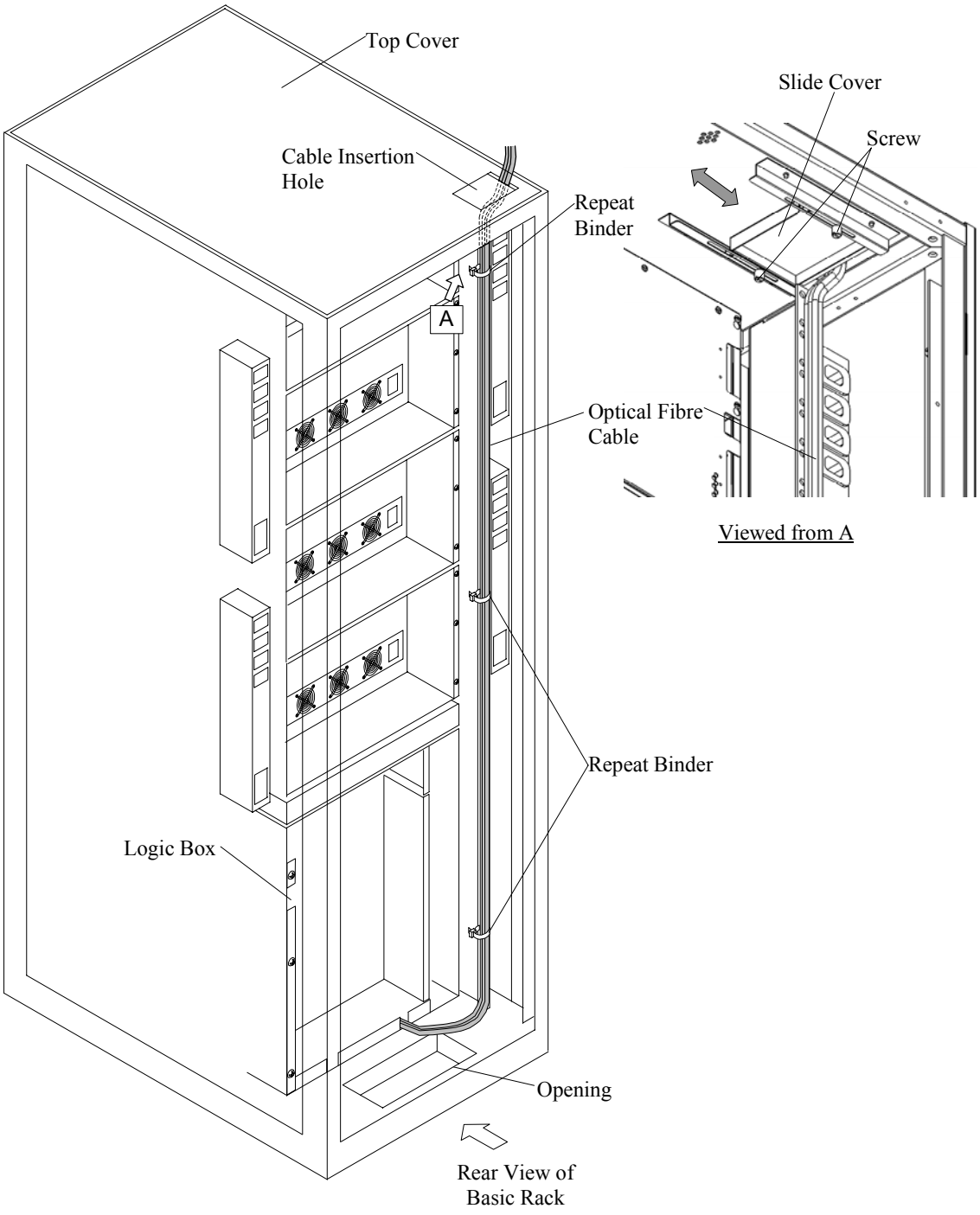


Fig. 3.7.4-3 Cable Routing

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e. Loosen the screw and remove the stopper.
f. Remove the two cores by pulling them toward you.
g. Place the optical fibre cables in the grooves on the each core and fasten them with the binder. When doing it, be sure to give the cables excess lengths so that they are not stretched too tightly. (Put the cables (two ports or more) in one groove of the core.)
h. Install the cores to which the optical fibre cables have been fixed and fasten them with the stopper and a screw.

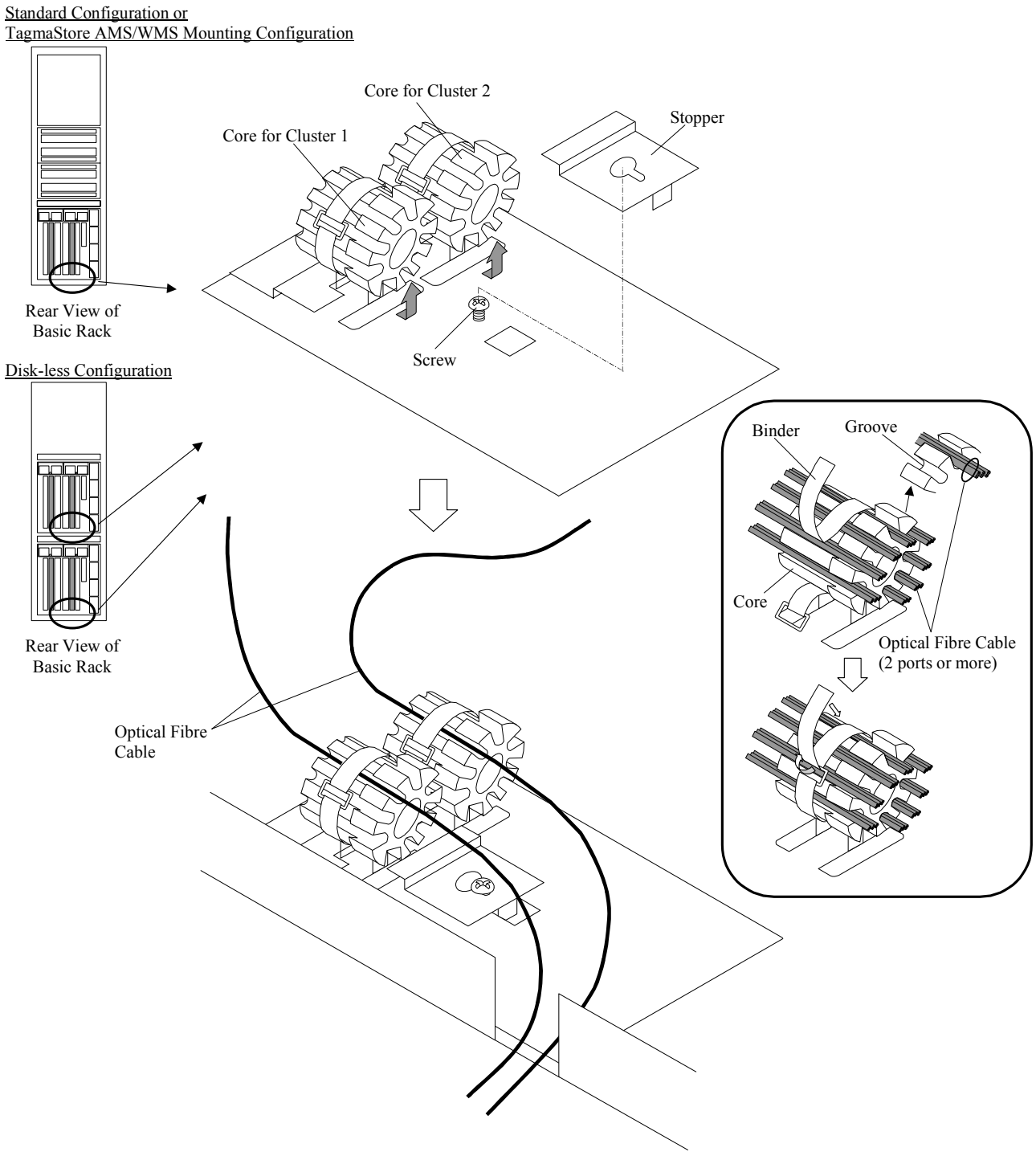


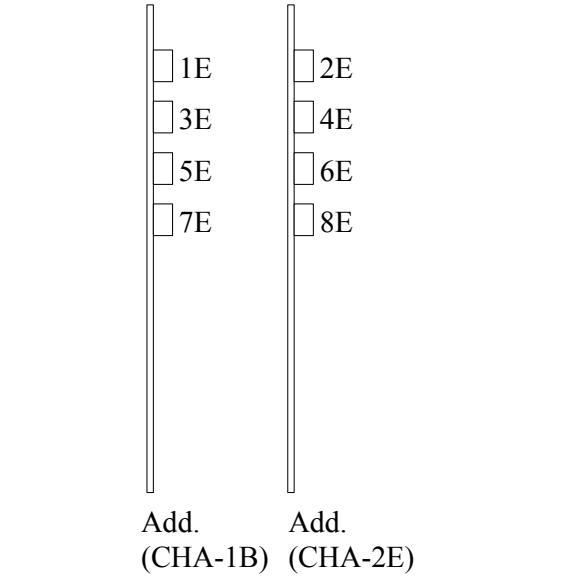
Fig. 3.7.4-4 Fixation of Optical Fibre Cables

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4-3 Cleaning the fibre cable connectors.
For the tools needed for the cleaning, refer to the tool list on page PARTS06-10.
a. Blow compressed gas against the connector using an air sprayer (for about five seconds).
b. Wipe the connector lightly with a piece of cut gauze wet with ethyl alcohol.
c. Blow compressed air again and check the result of the cleaning. (None of dust, sticking of foreign matter, and dirt must be observed.)

4-4 Connection of the optical fibre cables
a. Connect the optical fibre cables to the PCB.

CHA PCB (Logic Box)



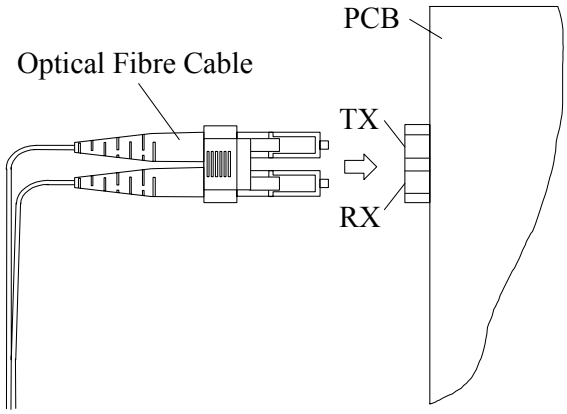


Fig. 3.7.4-5 Connection of Optical Fibre Cables

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4-5 Attachment of nameplate

a. Remove the screw from the rack frame and remove the nameplate tags to be installed.
b. Attach the nameplate to the nameplate tag on the Rack frame.
c. Attach all the nameplate tags with the screw.

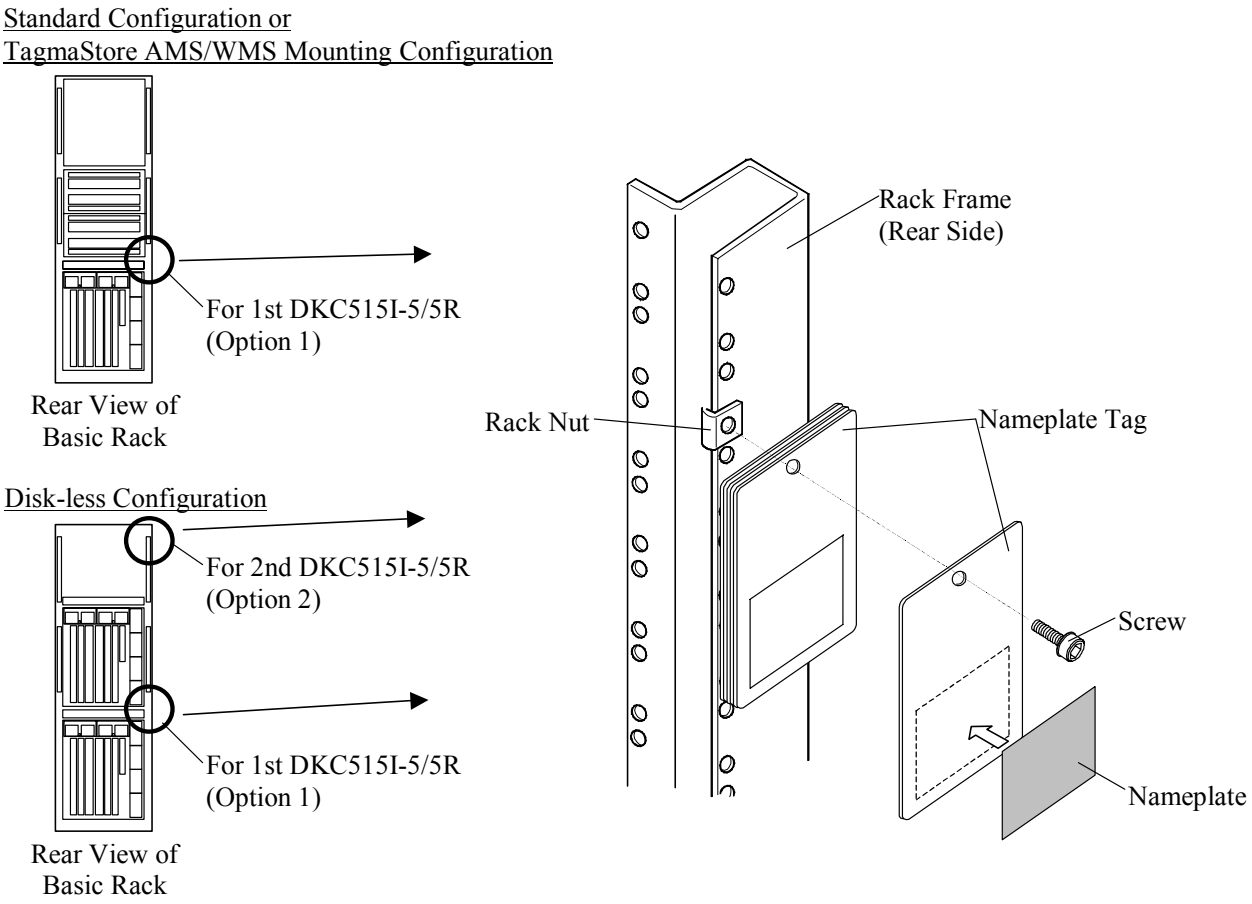
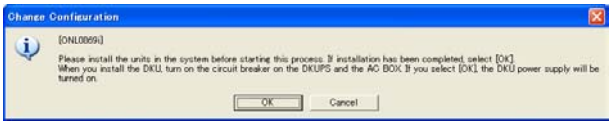


Fig. 3.7.4-6 Attachment of Nameplate

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5. SVP post procedure

(1) <Check that hardware components are installed>
Select (CL) [OK] after making sure that all hardware components are installed correctly in response to "Please install the units in the system before starting this process. If installation has been completed, select [OK]. When you install the DKU, turn on the circuit breaker on the DKUPS and the AC BOX. If you select [OK], the DKU power supply will be turned on.".



When [Cancel] is selected (CL), returns to INST03-07D-20 step (3).

---

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

If [ONL3437E] or [ONL3438E] is displayed, please refer 2.11.1. (INST02-410)

---

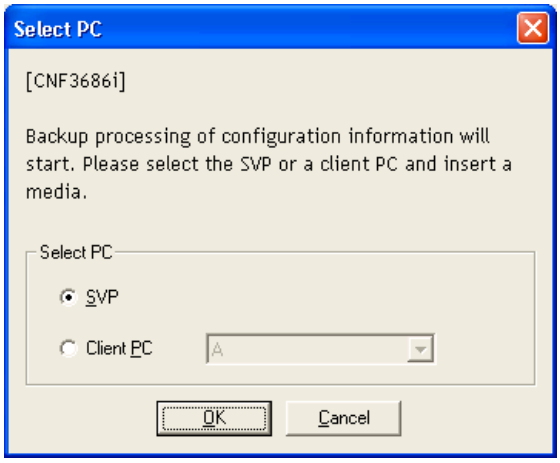
(3) <End of system update processing>
"Renewal process has completed. Please check the subsystem status." is displayed when recovery processing on all installed components is completed. Select (CL) [OK] in response to this message.



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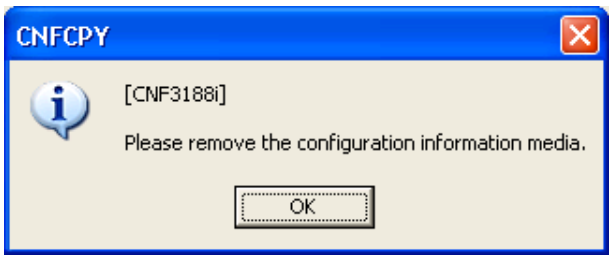
(4)

"Reading subsystem configuration data..." is displayed.
"Backup processing of configuration information will start. Please select the SVP or a client PC and insert a media." is displayed.
Insert the Config FD into FDD of selected PC, and select (CL) [OK].



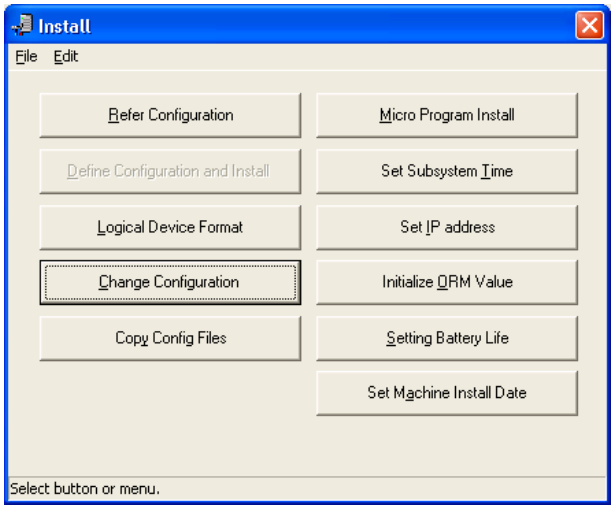
(5)

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



(6)

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



(7) <Mode Change>
Change the mode to View Mode.

Return to the working table and do the rest of the work.
(New Installation: INST02-10, Non-Disruptive Installation: INST02-40)

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3.7.5 Installation of iSCSI 8-port Adapter (DKC-F510I-8ISR)

Note: When two control frames (DKCs) are installed in the Disk-less configuration, check the serial number of target DKC on the SVP screen and beware of a attachment position to prevent mistakes. (See “5.2.4 Refer Configuration 3. <DKC Configuration window>” [INST05-410].)

Table 3.7.5-1 Parts List

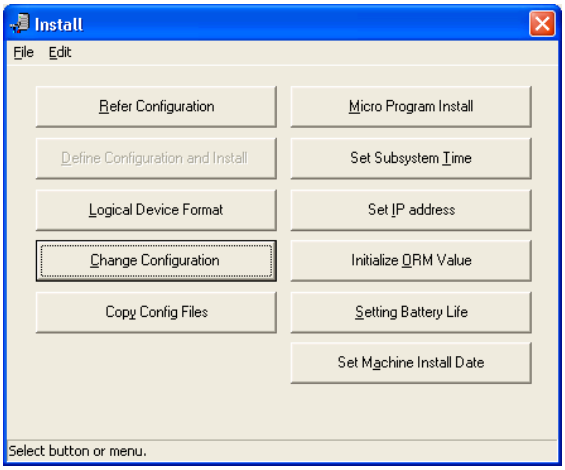
No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKC-F510I-8ISR	iSCSI 4-port Adapter PCB	5524265-C	2	
		Nameplate (HDS)	2751038-67	1	RSD
			2751040-67/267		HICAM/HICEF
		Nameplate (HP)	2751038-167	1	RSD
			2751040-167/367		HICAM/HICEF

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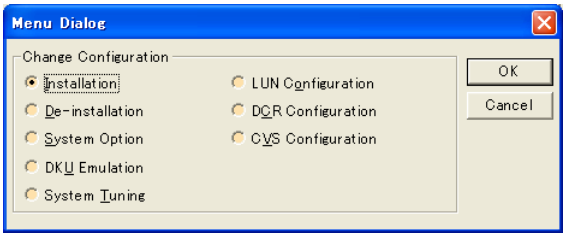
1. Setting up the New Device Structure Information

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

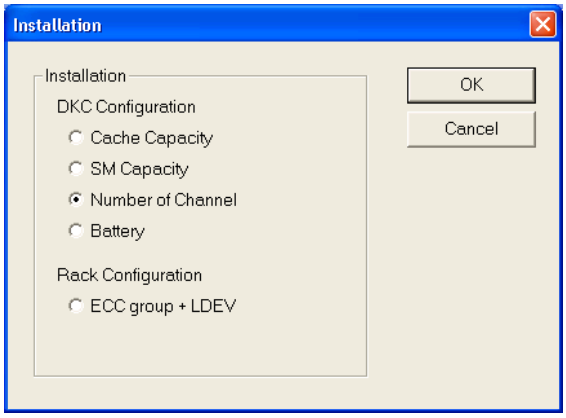
(2) <Start the 'Menu Dialog' screen>
Select (CL) [Change Configuration].



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

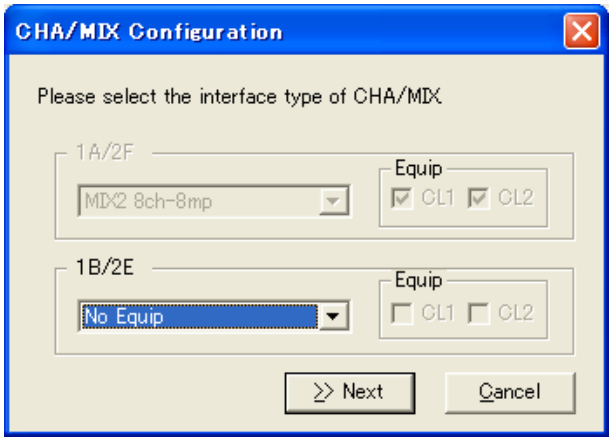


(4) <Select a part to be changed>
Select (CL) [Number of Channel], and select (CL) [OK].



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(5) <Setting the CHA type>
In the 'CHA/MIX Configuration' window, select [iSCSI *] for the locations to which the addition is to be made. Make sure that the entry that has been made is correct and select (CL) the [>>Next].

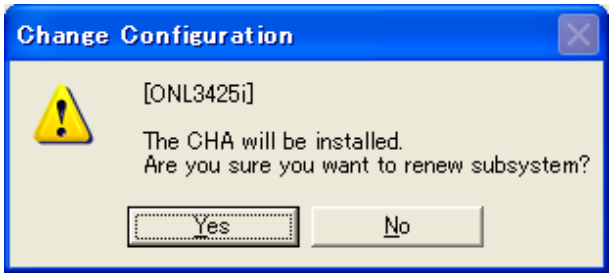


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2. SVP pre procedure

(1) <Starting the addition>

In response to a message, “The CHA will be installed. Are you sure you want to renew subsystem?”, select (CL) [Yes]. When [No] is selected (CL), the routine is returned to Step (2) on page INST03-07E-20.



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3. SVP pre procedure (Channel Adapter Addition)

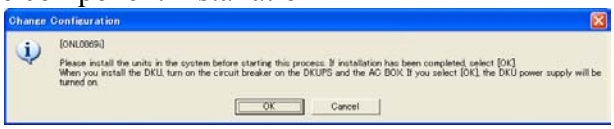
(1) <Downloading the microprogram>
The microprogram is downloaded to the SM.
The progress of the downloading is displayed.

---

(2)
"Changing the subsystem configuration data …" is displayed.

---

(3) <Making sure of completion of the hardware component installation>
A message, "Please install the units in the system before starting this process. If installation has been completed, select [OK]. When you install the DKU, turn on the circuit breaker on the DKUPS and the AC BOX. If you select [OK], the DKU power supply will be turned on." is displayed.



Note: Do not press the [OK] button by mistake before installing the part(s) to be added in the subsystem.

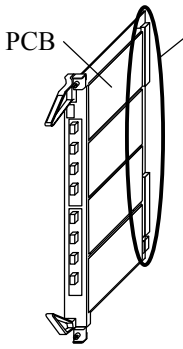
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4. Installation Procedure of iSCSI 8-port Adapter

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

4-1 Insertion of the PCBs

a. Remove the dummy plate installed in the installation location. Refer to Table 3.7.5-2 and Fig. 3.7.5-1.
b. Insert the PCBs to the correct locations in the Logic Box. Refer to Table 3.7.5-2 and Fig. 3.7.5-2.
c. Fasten the two screws.



Note: 1. Check that the main edge connector of the PCB has no deformation, damage or sticking of dust before installing the PCB.

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

Table 3.7.5-2 Inserting Location

No.	Option Name	Location No.		Remarks
		Cluster 1	Cluster 2	
1	Add.	CHA-1B	CHA-2E	

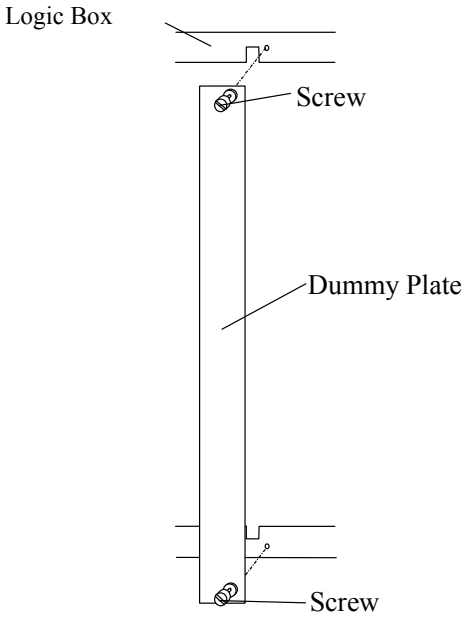


Fig. 3.7.5-1 Removal of Dummy Plate

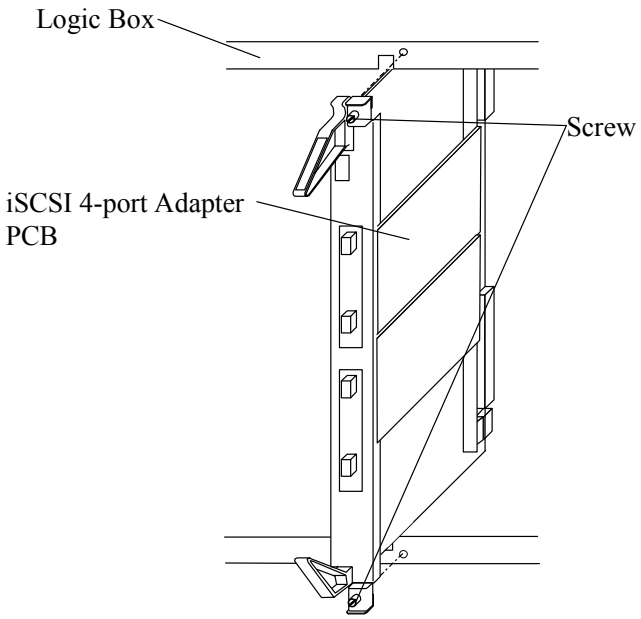


Fig. 3.7.5-2 Insertion of PCB

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d. When the 19-inch Rack (DKC-F515I-FRMR) is installed, attach the dummy plates to the rear door. (The dummy plates can be attached up to two.)
When the 19-inch Rack (DKC-F515I-FRMR) is not installed, store the dummy plates for future use in De-installation.

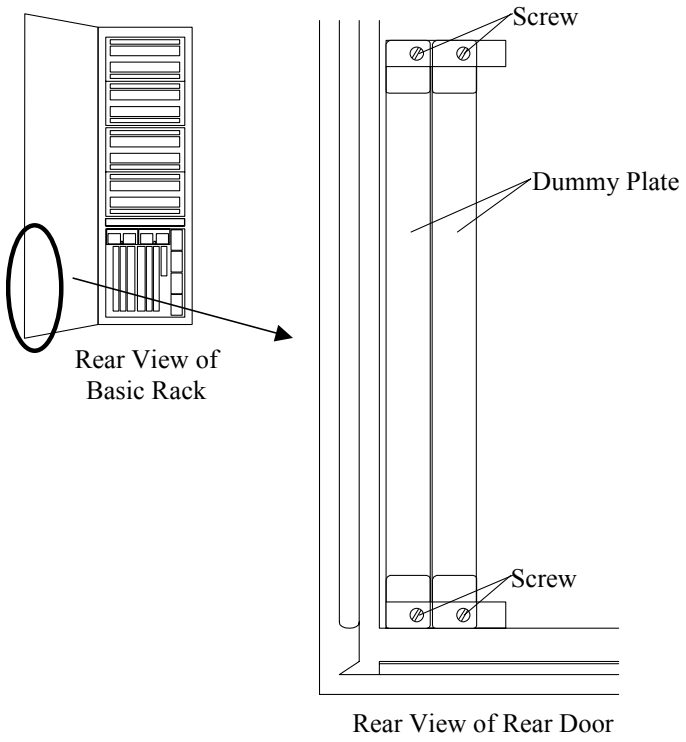


Fig. 3.7.5-2A Attachment of Dummy Plates

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4-2 Cable Routing

a. When wiring for Optical fibre cables from the floor, draw in the cables from the opening, and go to step e.
   When wiring for Optical fibre cables from the top cover, go to step b.
b. Loosen the two screws and open the slide cover.
c. Draw in the optical fibre cable from the cable insertion hole of top cover into the frame.
d. Fix the optical fibre cables with the three repeat binders.

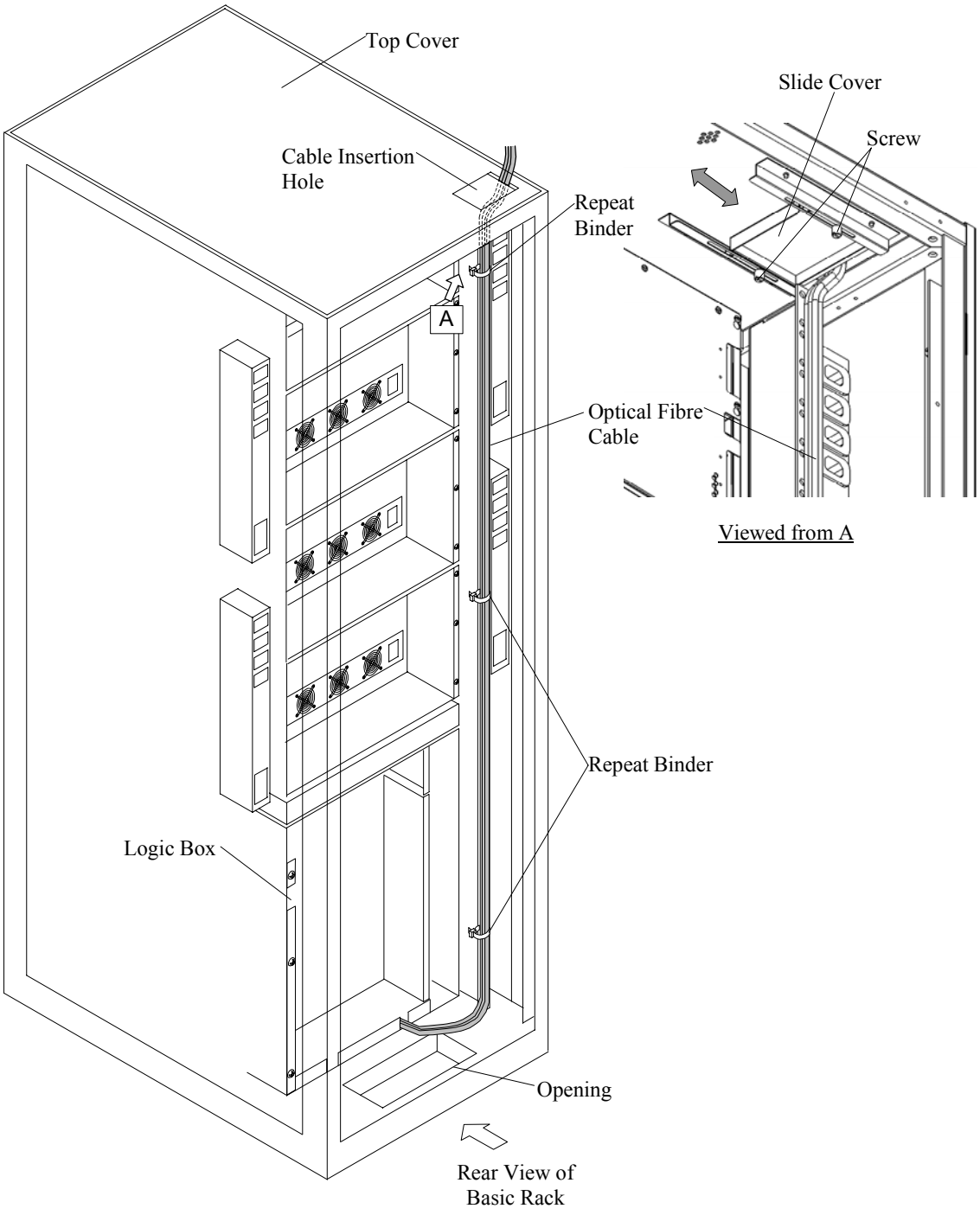


Fig. 3.7.5-3 Cable Routing

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e. Loosen the screw and remove the stopper.
f. Remove the two cores by pulling them toward you.
g. Place the optical fibre cables in the grooves on the each core and fasten them with the binder. When doing it, be sure to give the cables excess lengths so that they are not stretched too tightly. (Put the cables (two ports or more) in one groove of the core.)
h. Install the cores to which the optical fibre cables have been fixed and fasten them with the stopper and a screw.

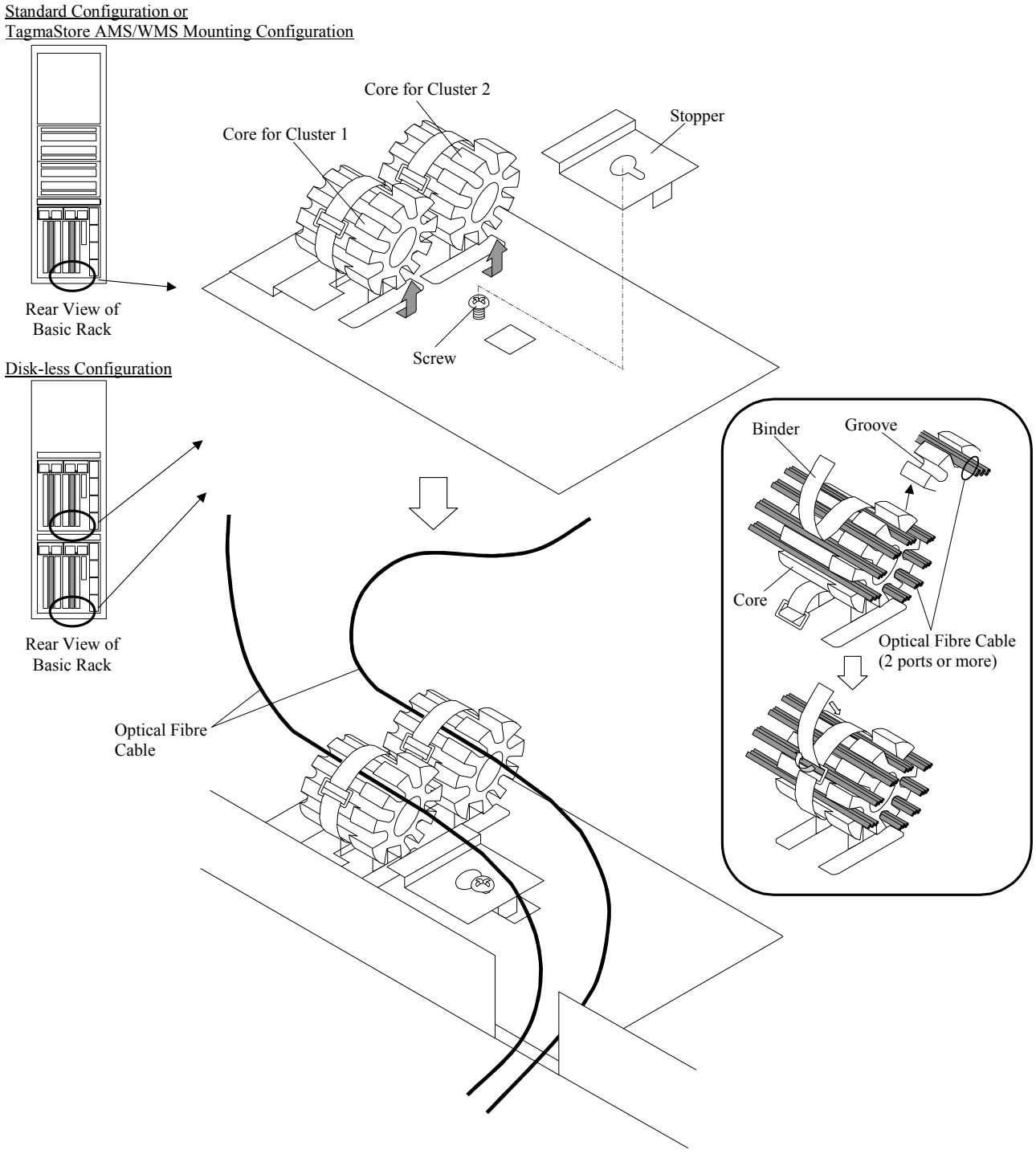


Fig. 3.7.5-4 Fixation of Optical Fibre Cables

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4-3 Cleaning the fibre cable connectors.
For the tools needed for the cleaning, refer to the tool list on page PARTS06-10.
a. Blow compressed gas against the connector using an air sprayer (for about five seconds).
b. Wipe the connector lightly with a piece of cut gauze wet with ethyl alcohol.
c. Blow compressed air again and check the result of the cleaning. (None of dust, sticking of foreign matter, and dirt must be observed.)

4-4 Connection of the optical fibre cables
a. Connect the optical fibre cables to the PCB.

CHA PCB (Logic Box)

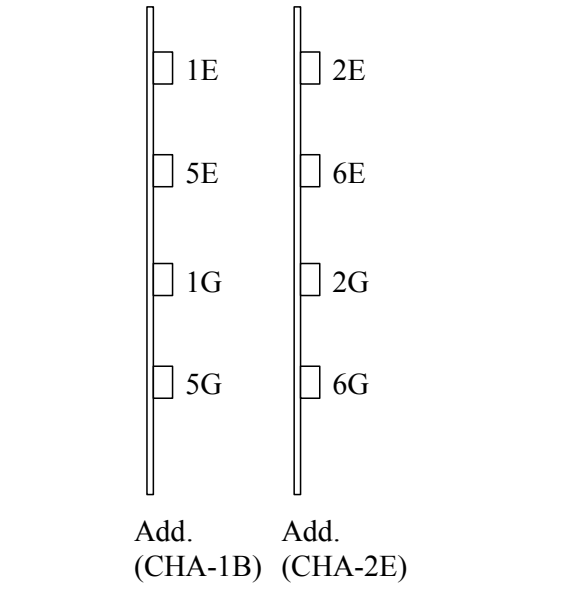


Fig. 3.7.5-5 Connection of Optical Fibre Cables

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4-5 Attachment of nameplate

a. Remove the screw from the rack frame and remove the nameplate tags to be installed.
b. Attach the nameplate to the nameplate tag on the Rack frame.
c. Attach all the nameplate tags with the screw.

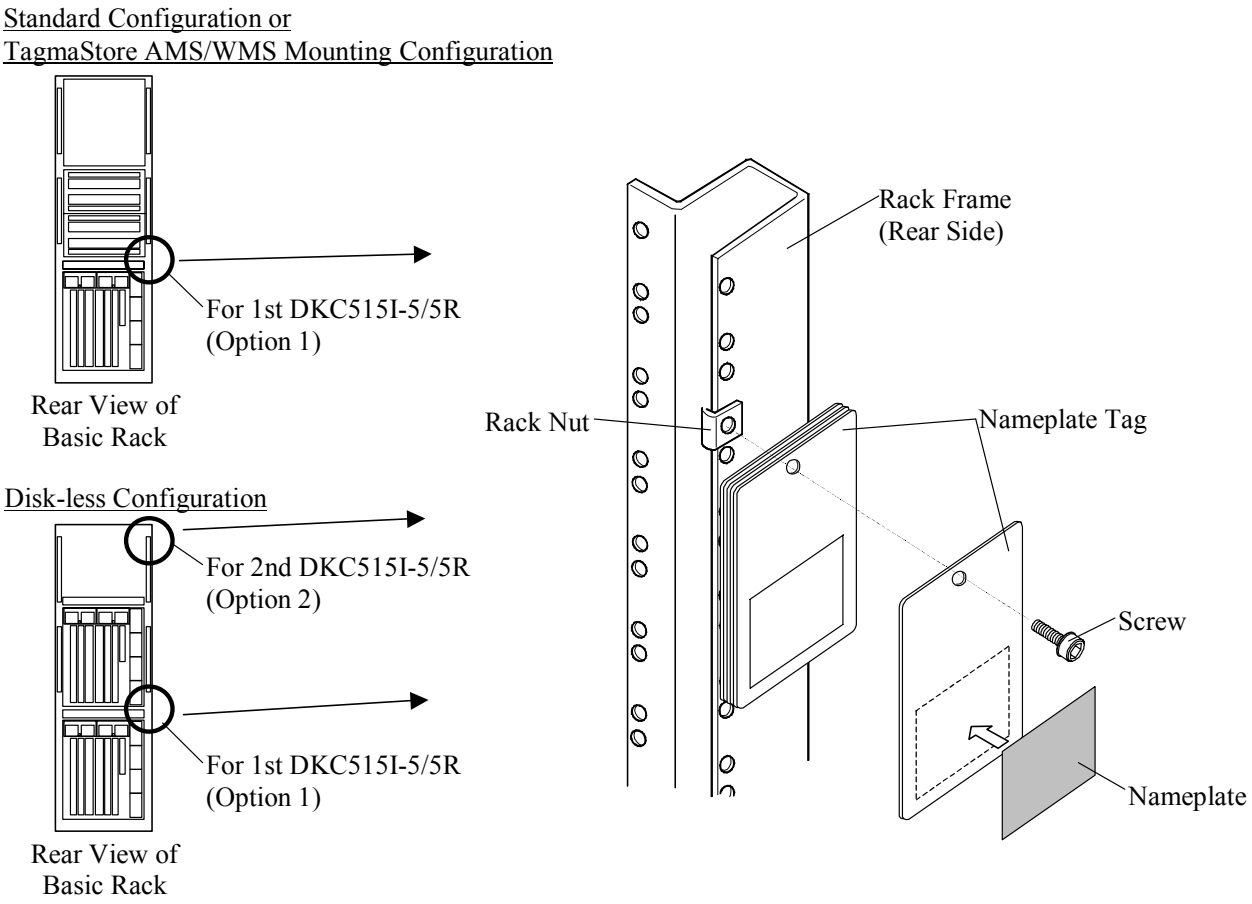
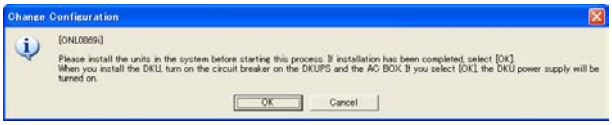


Fig. 3.7.5-6 Attachment of Nameplate

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5. SVP post procedure

(1) <Check that hardware components are installed>



Select (CL) [OK] after making sure that all hardware components are installed correctly in response to "Please install the units in the system before starting this process. If installation has been completed, select [OK]. When you install the DKU, turn on the circuit breaker on the DKUPS and the AC BOX. If you select [OK], the DKU power supply will be turned on.".

When [Cancel] is selected (CL), returns to INST03-07E-20 step (3).

---

(2)

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

If [ONL3437E] or [ONL3438E] is displayed, please refer 2.11.1. (INST02-410)

---

(3) <End of system update processing>

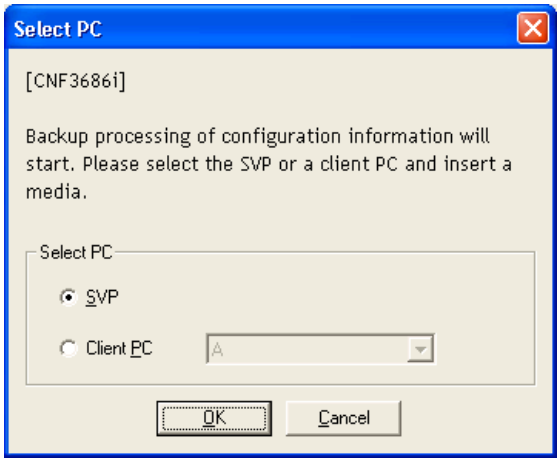
"Renewal process has completed. Please check the subsystem status." is displayed when recovery processing on all installed components is completed. Select (CL) [OK] in response to this message.



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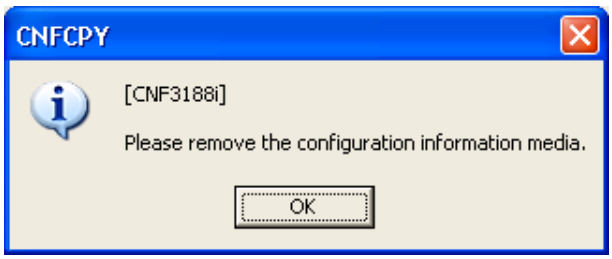
(4)

"Reading subsystem configuration data..." is displayed.
"Backup processing of configuration information will start. Please select the SVP or a client PC and insert a media." is displayed.
Insert the Config FD into FDD of selected PC, and select (CL) [OK].



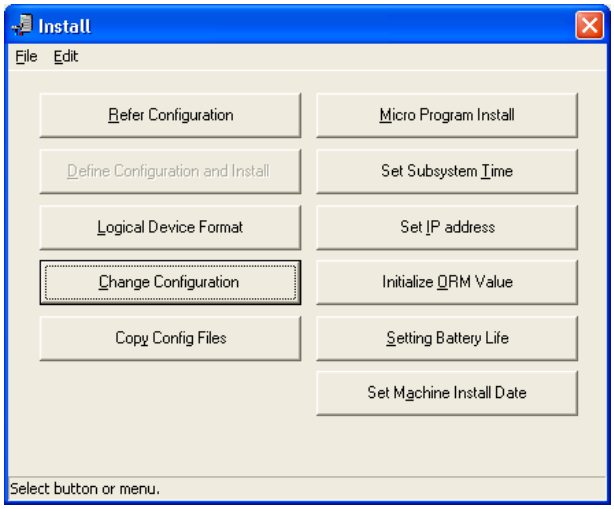
(5)

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



(6)

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



(7) <Mode Change>
Change the mode to View Mode.

Return to the working table and do the rest of the work.
(New Installation: INST02-10, Non-Disruptive Installation: INST02-40)

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3.8 Changing of Fibre SFP Transceiver (DKC-F510I-1HL/1HS/1HLR/1HSR/1FLR/1FSR/1FL4R)

⚠ CAUTION

1. The Fibre SFP Transceiver (DKC-F510I-1HL/1HS/1HLR/1HSR) is an option to change the transceiver installed in the package of the Fibre 16/32-port High Performance Adapter (DKC-F510I-16HS/32HS/8HSR/16HSR/32HSR), the Mainframe Fibre 8/16-port Adapter (DKC-F510I-8MS/8ML/8MSR/8MLR/16MSR/16MLR) and the MIX Adapter (DKC-F515I-MIX2R) to a port corresponding to Long Wave or Short-Wave. It cannot be installed in the other CHA (DKC-F510I-16S/8NS/16SR/8NSR/8ISR/ 32FSR/8FS2R/16FS2R/32FS2R/16MFSR/16MFLR/16MFL4R) and MIX (DKC-F515I-MIX4R).
   Mainframe Fibre 8/16-port Adapter (DKC-F510I-8MS/8ML/8MSR/8MLR/16MSR/ 16MLR) does not allow the Short-wave length and the Long-wave length to exist together.
2. The Fibre SFP Transceiver (DKC-F510I-1FLR/1FSR/1FL4R) is an option to change the transceiver installed in the package of the Fibre 8/16/32-port High Performance Adapter (DKC-F510I-32FSR/8FS2R/16FS2R/32FS2R), the Mainframe Fibre 16-port Adapter (DKC-F510I-16MFSR/16MFLR/16MFL4R) and MIX 4G-Adapter (DKC-F515I-MIX4R) to a port corresponding to Long Wave or Short-Wave. However, the Fibre SFP Transceiver (DKC-F510I-1FLR) cannot be installed in Mainframe Fibre 16-port Adapter (DKC-F510I-16MFL4R), and the Fibre SFP Transceiver (DKC-F510I-1FL4R) cannot be installed in Mainframe Fibre 16-port Adapter (DKC-F510I-16MFSR/ 16MFLR).
   The Fibre SFP Transceiver (DKC-F510I-1FLR/1FSR/1FL4R) cannot be installed in the other CHA (DKC-F510I-16S/8MS/8ML/16HS/32HS/8NS/16SR/8MSR/8MLR/ 16MSR/16MLR/16HSR/32HSR/8NSR/8ISR) and MIX (DKC-F515I-MIX2R).
   Mainframe Fibre 16-port Adapter (DKC-F510I-16MFSR/16MFLR/16MFL4R) does not allow the Short-wave length and the Long-wave length to exist together.
3. Note that you can not just change between long wave and shortwave SFP transceivers in an existing configuration without considering the cables.
   Long wave requires 9 micrometer diameter, single mode cable, and short wave requires 50/62.5 micrometer diameter, multimode cable. The Customer will encounter many CRC and Loss of Sync errors should they replace only transceivers and try to reuse the pre-existing cables that do not match the transceivers.
4. When two control frames (DKCs) are installed in the Disk-less configuration, check the serial number of target DKC on the SVP screen and beware of a attachment position to prevent mistakes. (See “5.2.4 Refer Configuration 3. <DKC Configuration window>” [INST05-410].)

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Table 3.8-1 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKC-F510I-1HL	SFP (LONG)	5524230-A	1	
			5524230-C		
2	DKC-F510I-1HS	SFP (SHORT)	5524229-A	1	
			5524229-C		
3	DKC-F510I-1HLR	SFP (LONG)	5524230-C	1	
		Nameplate (HDS)	2751038-34	1	RSD
			2751040-34/234		HICAM/HICEF
		Nameplate (HP)	2751038-134	1	RSD
			2751040-134/334		HICAM/HICEF
4	DKC-F510I-1HSR	SFP (SHORT)	5524229-C	1	
		Nameplate (HDS)	2751038-35	1	RSD
			2751040-35/235		HICAM/HICEF
		Nameplate (HP)	2751038-135	1	RSD
			2751040-135/335		HICAM/HICEF
5	DKC-F510I-1FLR	SFP (LONG)	5524234-C	1	
		Nameplate (HDS)	2751038-66	1	RSD
			2751040-66/266		HICAM/HICEF
		Nameplate (HP)	2751038-166	1	RSD
			2751040-166/366		HICAM/HICEF
6	DKC-F510I-1FSR	SFP (SHORT)	5524231-C	1	
		Nameplate (HDS)	2751038-65	1	RSD
			2751040-65/265		HICAM/HICEF
		Nameplate (HP)	2751038-165	1	RSD
			2751040-165/365		HICAM/HICEF
7	DKC-F510I-1FL4R	SFP (LONG)	5535335-C	1	
		Nameplate (HDS)	2751038-333	1	RSD
			2751040-433/633		HICAM/HICEF
		Nameplate (HP)	2751038-433	1	RSD
			2751040-533/733		HICAM/HICEF

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Notice: Before the replacement, make sure that a host device has been disconnected.

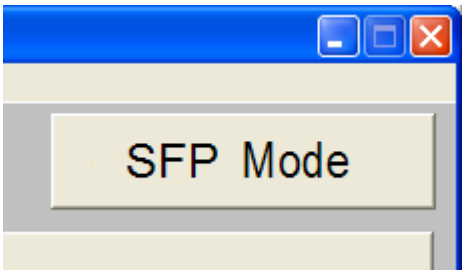
1. SFP type change

(1) <Preparation>
Close the all SVP menu.

(2) <Input password>
Select “Shift” + “Ctrl” + “F” on the SVP window.
Enter the password “RAID-SFP” and select (CL) [OK].



(3) <Check the mode>
The ‘SFP Mode’ is Displayed.



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2. Changing Procedure of Fibre SFP Transceiver

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

2-1 Replacement of SFP

a. Make sure of the CHA and Port Locations of the SFP to be replaced. (Refer to pages LOC04-10 and LOC04-20.)

⚠ CAUTION

If the SFP of a wrong port is removed, a system down may be caused. Make sure that the location of the SFP to be replaced is correct.

b. Disconnect the optical fibre cable or protector from the SFP to be replaced.

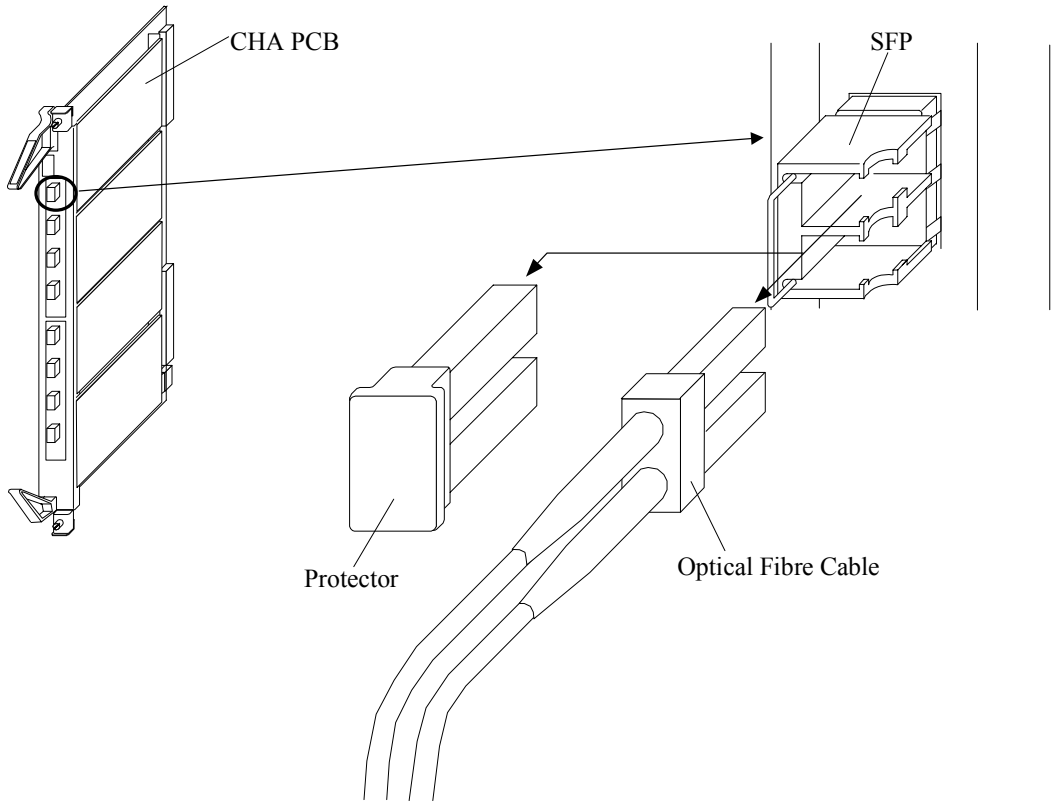


Fig. 3.8-1 Disconnection of Cable or Protector

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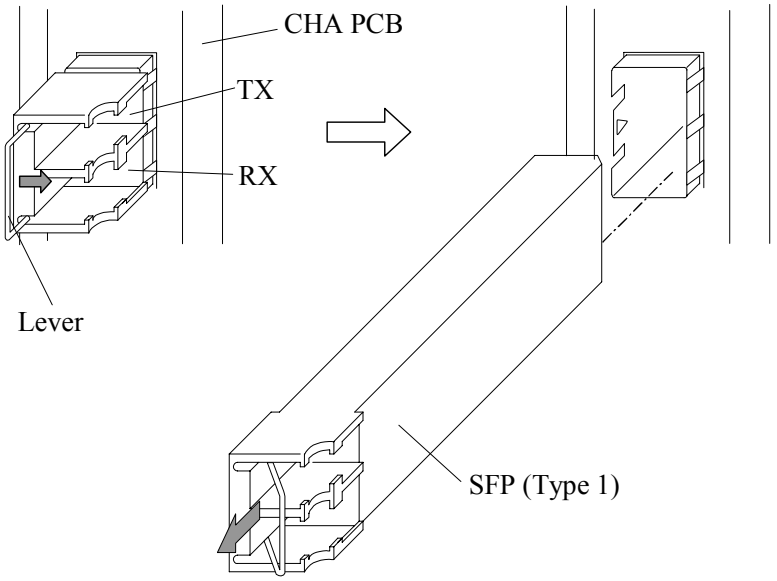
SFP (Type 1)

c. Remove the SFP pushing the lever on the right side.

SFP (Type 2)

c. Raise the lever forward and remove the SFP.

SFP (Type 1)



SFP (Type 2)

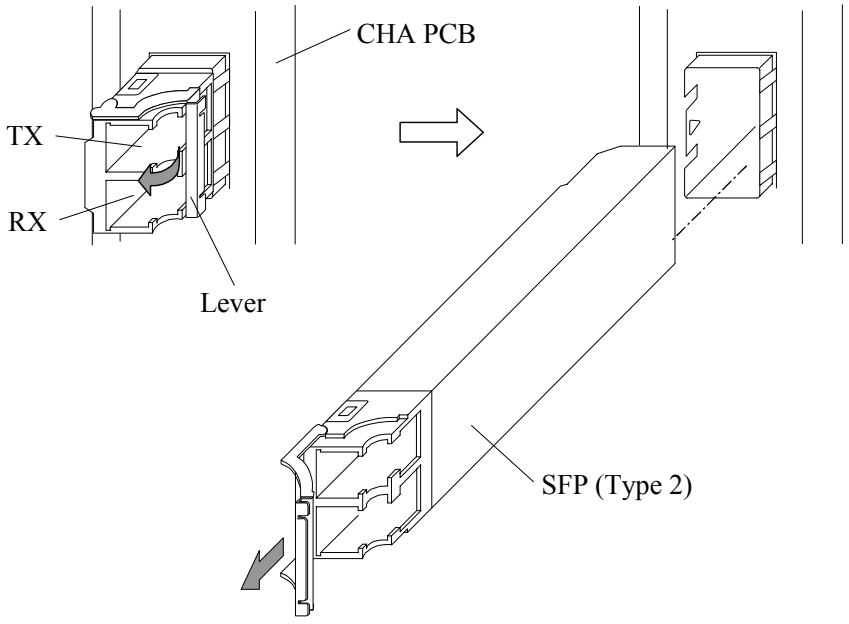


Fig. 3.8-2 Removal of SFP

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d. Insert the optional SFP to the CHA PCB.

Notice: Because the SFP that has been removed is a user's property, return it to and ask the user to keep it in custody.

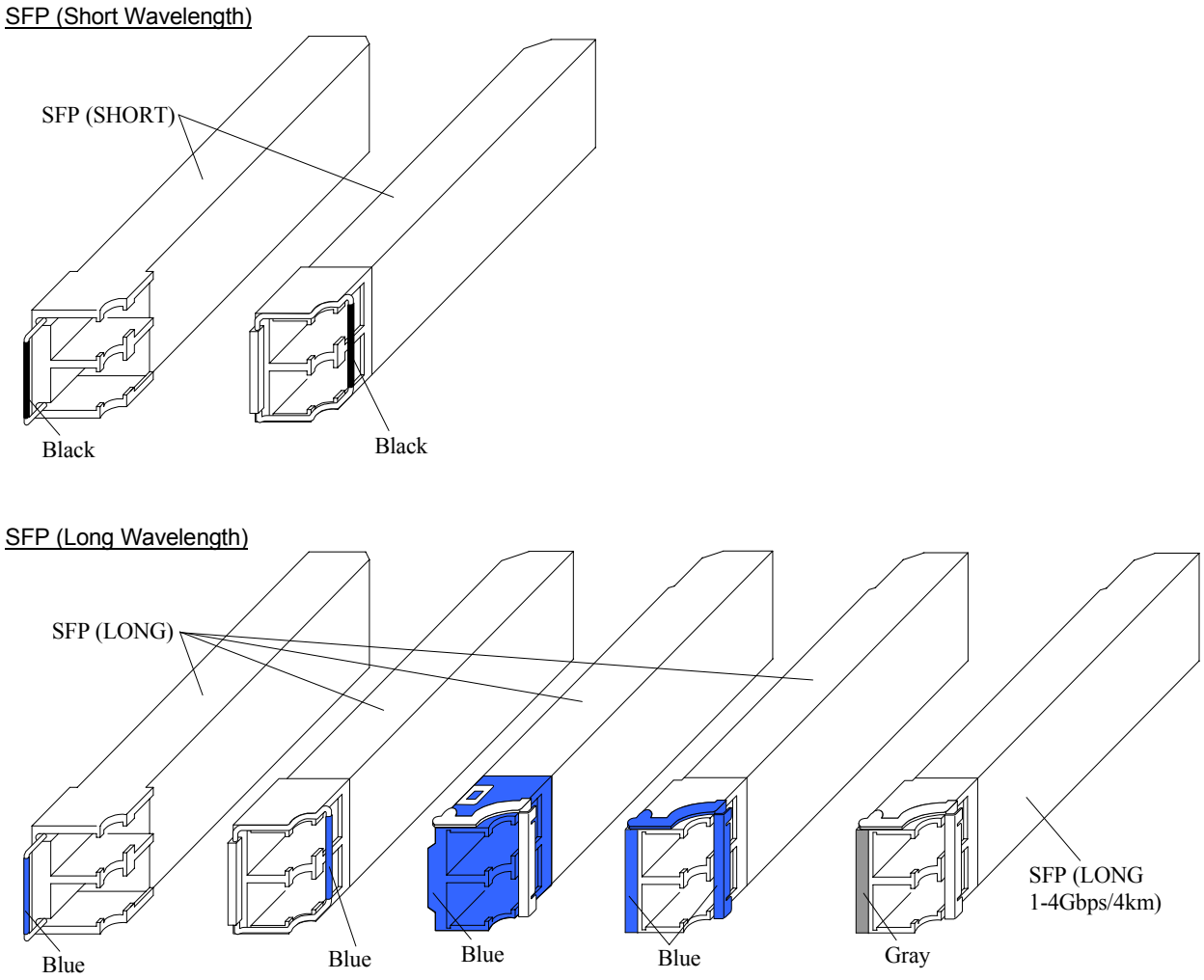


Fig. 3.8-3 How to distinguish SFP

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2-2 Change of Nameplate

a. Remove the screw from the rack frame and remove the nameplate tags to be installed.
b. When you need to install Fibre SFP Transceiver (DKC-F510I-1HL/1HS/1HLR/1HSR/ 1FLR/1FSR/1FL4R), affix a necessary portion of the Label (QTY)(Accessory of DKC; DWG No.3268905-1) in layers on the nameplate and paint out numbers by black oil felt pen. However, when the nameplate is unused, do not affix the Label (QTY) in layers, and just paint it out.
c. When you need to remove Fibre SFP Transceiver (DKC-F510I-1HL/1HS/1HLR/1HSR/ 1FLR/1FSR/1FL4R), affix a necessary portion of the Label (QTY)(Accessory of DKC; DWG No.3268905-1) in layers on the nameplate and paint out numbers by black oil felt pen.
d. Attach all the nameplate tags with the screw.

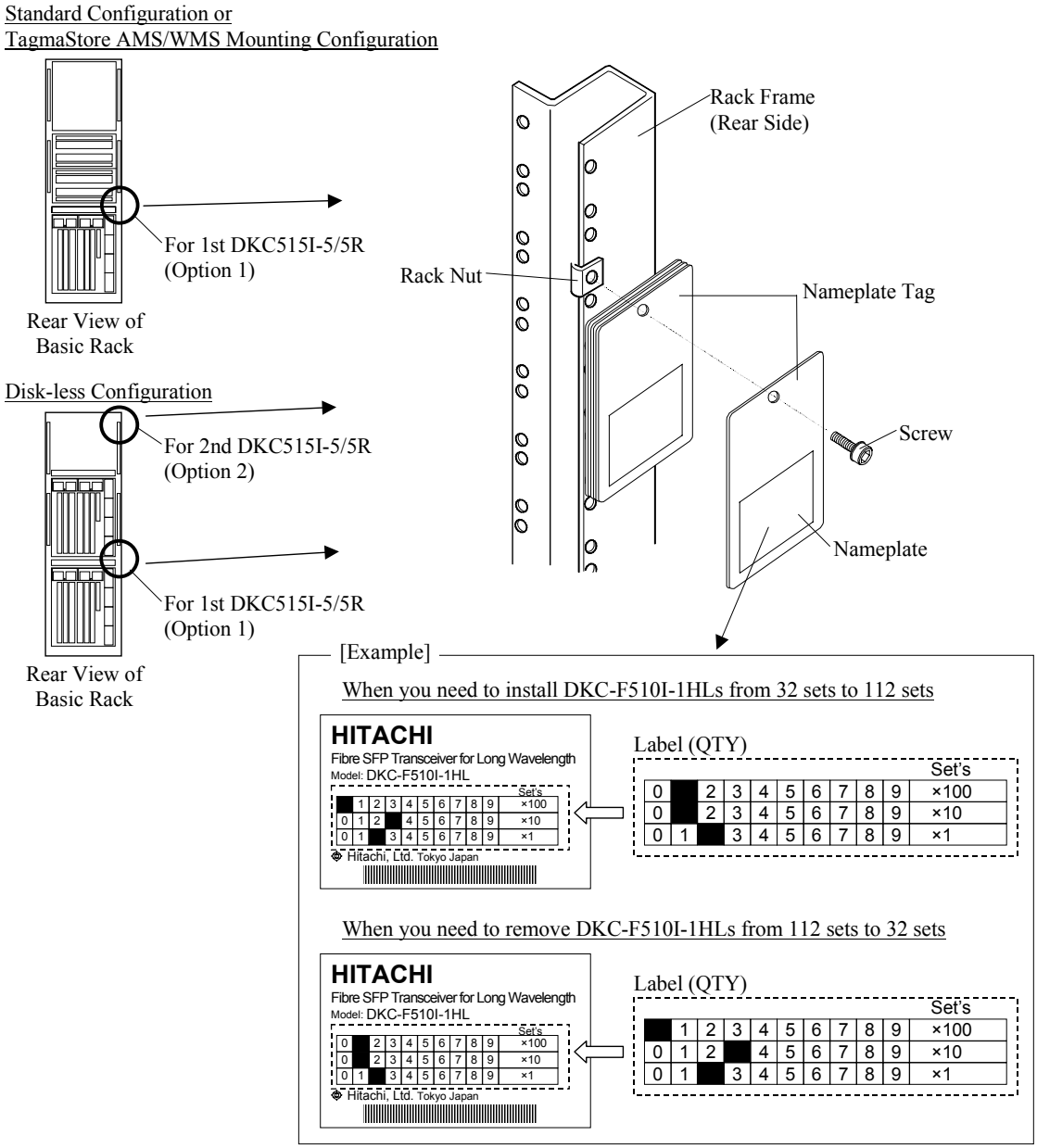
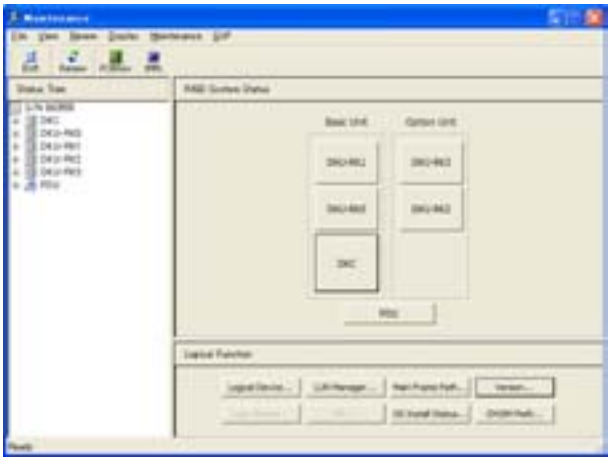


Fig. 3.8-4 Change of Nameplate

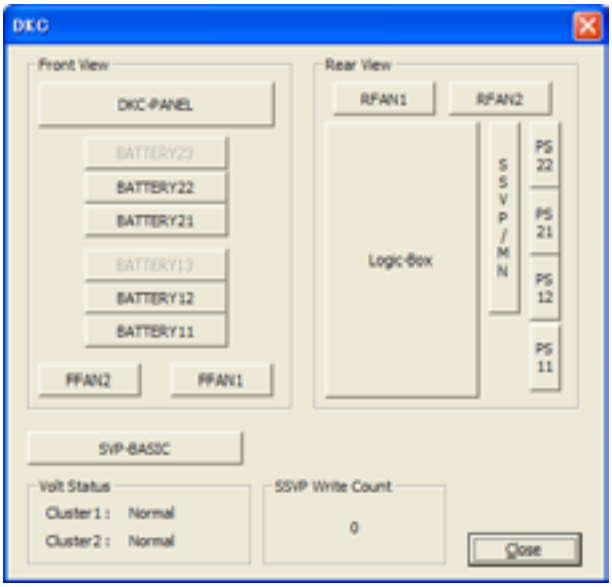
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3. Check port Wave information

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

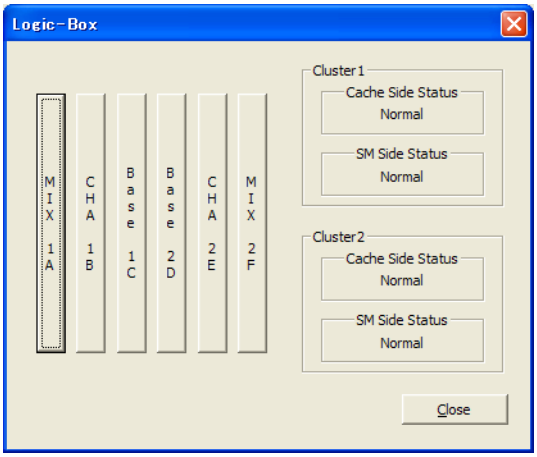


(2) <DKC window>
Select (CL) [Logic Box] in the 'DKC' window.

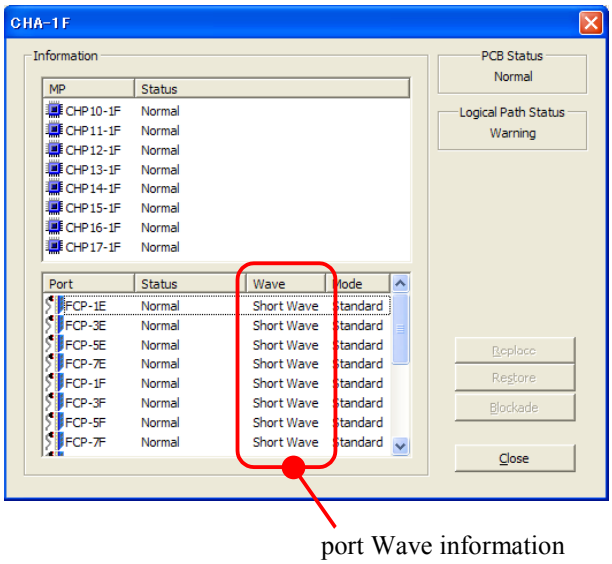


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(3) <Select CHA>
Select (CL) CHA.



(4) <Check port Wave information>
Make sure that information on the wavelength is displayed at the CHA location where the setting was changed and that the wavelength information on the port where the replacement was made is consistent with the specified setting. When the wavelength information is not displayed, check if the SFP is installed correctly. If the SFP is installed correctly, replace it with a part for maintenance.



Model Name	Port Wave Information
1HS 1HSR 1FS 1FSR	Short Wave
1HL 1HLR 1FL 1FLR	Long Wave
1FL4R	Long Wave-4

4. Return to the working table and do the rest of the work.
New Installation: INST02-20
Non-Disruptive Installation: INST02-50
Non-Disruptive De-Installation: INST02-70

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3.9 Installation of Shared Memory and Cache Memory

Notice:
1. When the number of CUs is added accompanying the HDD installation, there is a case that expansion of shared memory is required. For number of necessary shared memory options, see INST03-09A-130 through 200.
2. When two control frames (DKCs) are installed in the Disk-less configuration, check the serial number of target DKC on the SVP screen and beware of a attachment position to prevent mistakes. (See "5.2.4 Refer Configuration 3. <DKC Configuration window>" [INST05-410].)

3.9.1 Installation of Additional Shared Memory (DKC-F510I-S1G/S1GR/S2GR, DKC-F515I-LGABR)

Table 3.9.1-1 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKC-F510I-S1G	SH341-A	5524235-A	2	
		SH341-C	5524235-C		
2	DKC-F510I-S1GR	SH341-C	5524235-C	2	
		Nameplate (HDS)	2751038-17	1	RSD
			2751040-17/217		HICAM/HICEF
		Nameplate (HP)	2751038-117	1	RSD
			2751040-117/317		HICAM/HICEF
3	DKC-F510I-S2GR	SH341-D	5524237-C	2	
		Nameplate (HDS)	2751038-98	1	RSD
			2751040-98/298		HICAM/HICEF
		Nameplate (HP)	2751038-198	1	RSD
			2751040-198/398		HICAM/HICEF
4	DKC-F515I-LGABR	Battery Box	5527959-C	2	
		Screw	5513661-425	4	
		Nameplate (HDS)	2751038-44	1	RSD
			2751040-44/244		HICAM/HICEF
		Nameplate (HP)	2751038-144	1	RSD
			2751040-144/344		HICAM/HICEF

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■ Measure of maintenance time

Maintenance time changes with the Shared Memory capacity after maintenance.

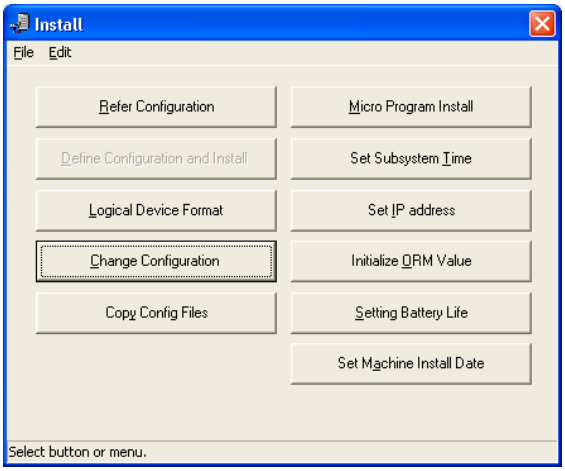
The number of shared memory module mounting after maintenance	Time	Destage time	Maintenance time
1 set	40 min	30 min ~ 120 min	70 min ~ 160 min
2 set	50 min	30 min ~ 120 min	80 min ~ 170 min
3 set	60 min	30 min ~ 120 min	90 min ~ 180 min
4 set	70 min	30 min ~ 120 min	100 min ~ 190 min
5 set	80 min	30 min ~ 120 min	110 min ~ 200 min
6 set	90 min	30 min ~ 120 min	120 min ~ 210 min

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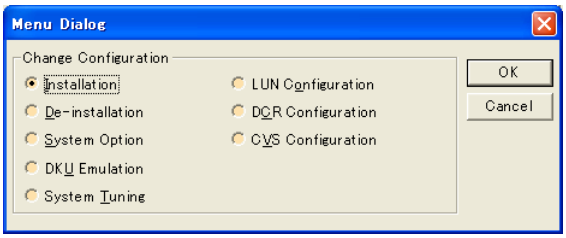
1. Setting up the New Device Structure Information

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

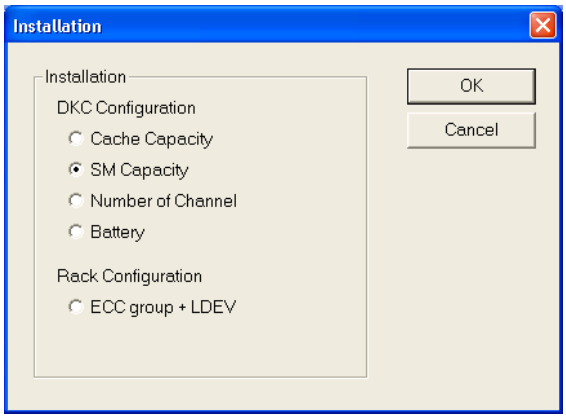
(2) <Start the 'Menu Dialog' screen>
Select (CL) [Change Configuration].



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



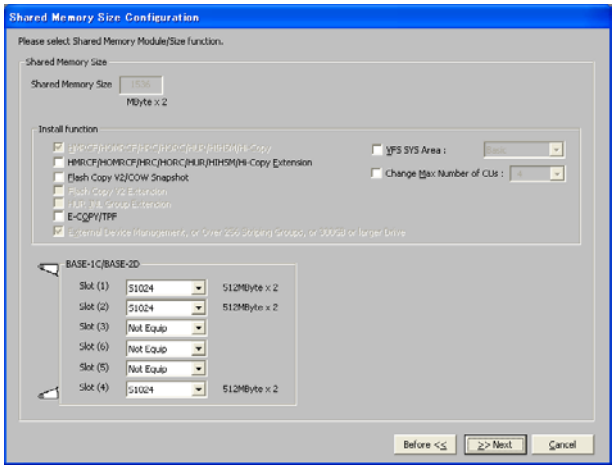
(4) <Select a part to be changed>
Select (CL) [SM Capacity], and select (CL) [OK].



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2. SVP pre procedure on the Cluster 1

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



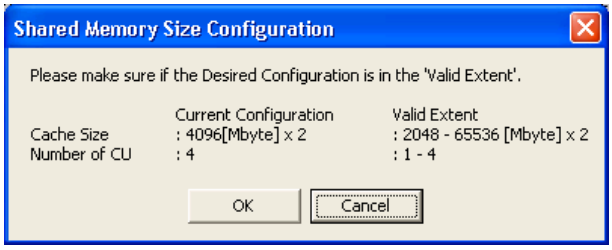
Check the function you want to add for
"HMRCF/HOMRCF/HRC/HORC/HUR/HIHSM/Hi-Copy",
"HMRCF/HOMRCF/HRC/HORC/HUR/HIHSM/Hi-Copy Extension",
"Flash Copy V2/COW Snapshot",
"Flash Copy V2 Extension",
"HUR JNL Group Extension" (not selectable),
"E-Copy/TPF",
"External Device Management, or Over 256 striping Group, or 300GB or larger Drive" or
"VFS SYS Area".

When adding the number of CUs, check "Change Max Number of CUs" and change the value.

If the installed SM after the addition conforms to installed pattern on the window, select (CL) the [>>Next] button.

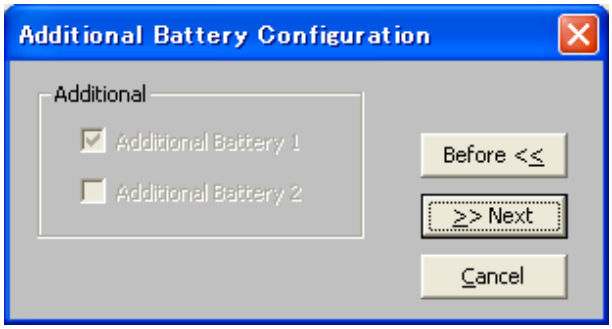
---

(2)
Make sure if the desired configuration (Current Configuration) is in the valid extent (Valid Extent).
In the valid extent: Select (CL) [OK].
Out of the valid extent: Select (CL) [Cancel].



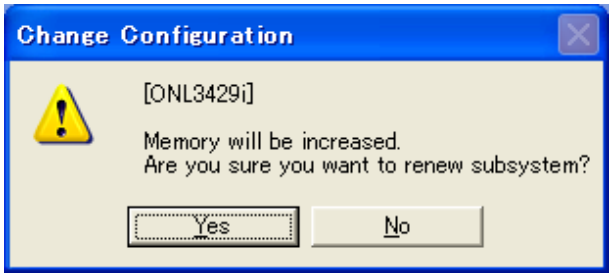
---

(3) <Display Battery>
The 'Additional Battery Configuration' dialog box is displayed.
Select (CL) [>>Next].



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



When [No] is selected (CL), returns to INST03-09A-20 step (2).

If there is change in SM capacity, go to INST03-09A-40 step (4).
If there is no change in SM capacity, go to INST03-09A-370 step (3).

(5) <Addition of the battery>
Do not press the [OK] button at this time yet.
When addition of the battery is required, a message, "Insert the battery assembly, and then select OK." is displayed.



When the message is displayed, install the hardware component following "3. Install the Additional Battery" on page INST03-09A-50.
When the message is not displayed, go to "4. SVP Pre-Procedure (for Cluster 1)" on page INST03-09A-80.

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3. Install the Additional Battery.

Installation Condition

Add one set of the Additional Battery (DKC-F515I-LGABR) when it corresponds to one of the following two conditions (BATTERY12, 22)

- Shared Memory (DKC-F510I-S1G/S1GR/S2GR) quantity are 4 sets or more
- Cache Memory (DKC-F510I-C4G/C4GR/C8GR) quantity are 4 sets or more

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3-1 Installation of Battery Boxes

a. Insert the battery boxes (BATTERY12 and BATTERY22) and fasten the screws.
b. Turn on the switches at the battery boxes.

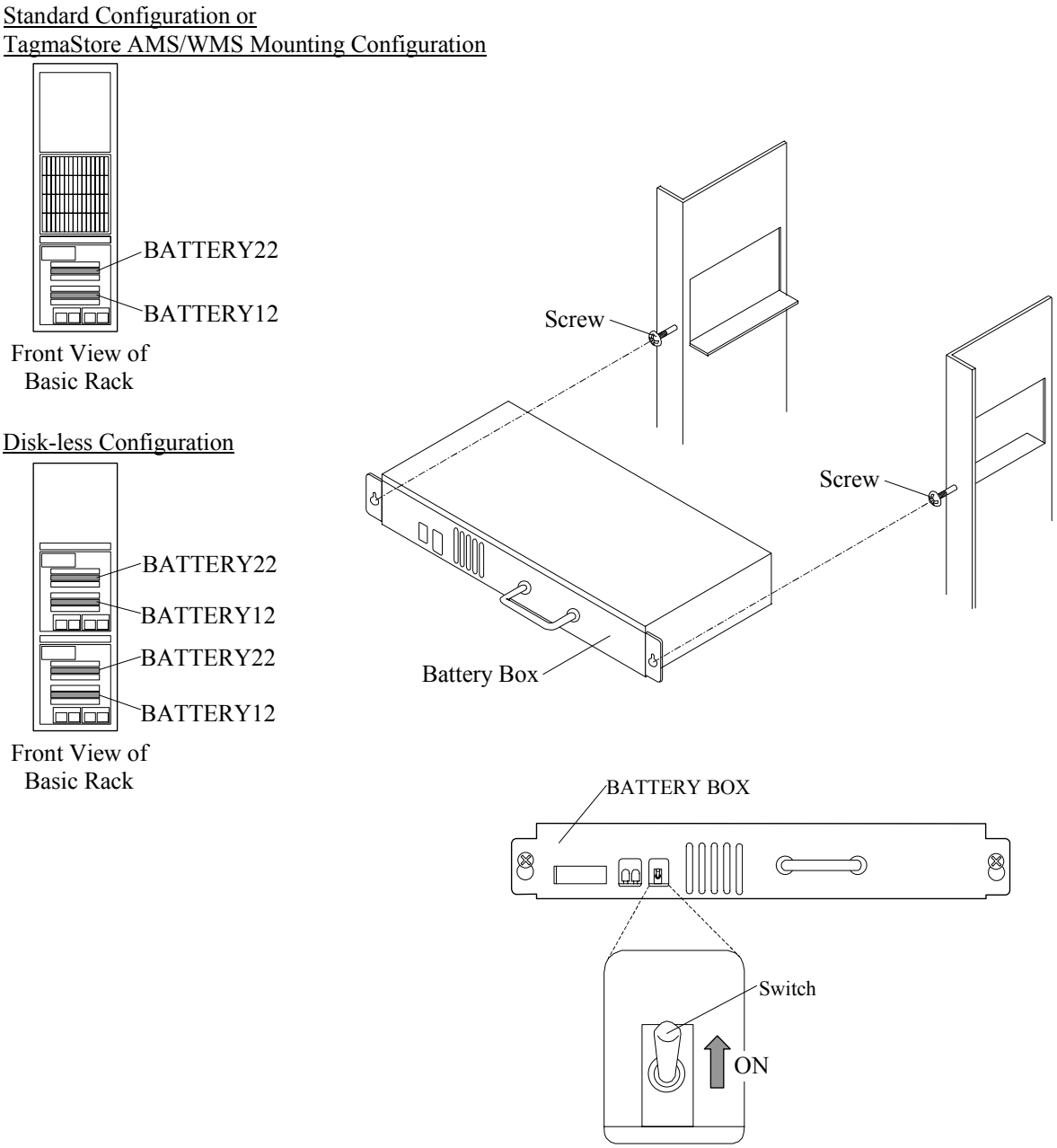


Fig.3.9.1-1 Insertion of Battery Boxes

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3-2 Attachment of nameplate

a. Remove the screw from the rack frame and remove the nameplate tags to be installed.
b. Attach the nameplate to the nameplate tag on the Rack frame.
c. Attach all the nameplate tags with the screw.

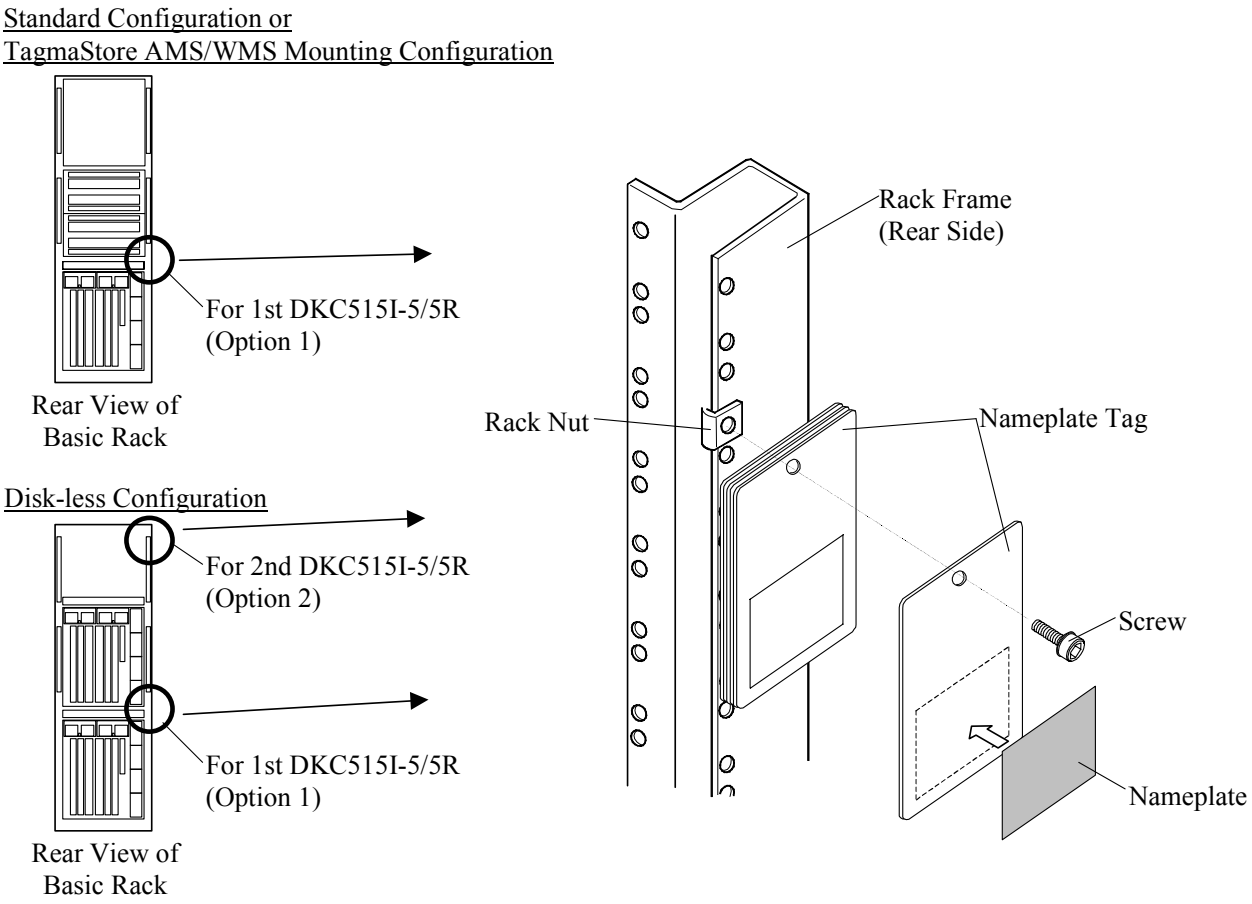


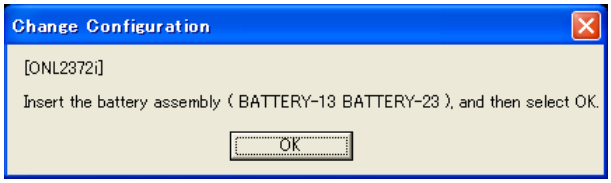
Fig. 3.9.1-2 Attachment of Nameplate

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4. SVP Pre-Procedure (for Cluster 1)

(1) <Making sure of completion of the hardware addition>

After the battery addition is completed, select (CL) [OK] in response to a message, "Insert the battery assembly (BATTERY-nn BATTERY-nn), and then select OK.".

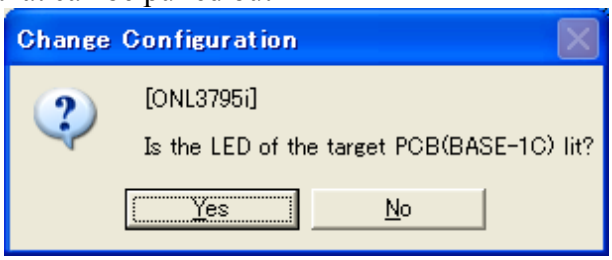


(Eg. BATTERY-13, BATTERY-23)

---

(2) <Checking a status of the LED on the PCB that can be pulled out>

In response to a message, "Is the LED of the target PCB(BASE-nn) lit?", select (CL)
[Yes] when the LED is on, or
[No] when the LED is off.



(Eg. BASE-1C)

<Forced lighting of the LED on the PCB that can be pulled out>

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

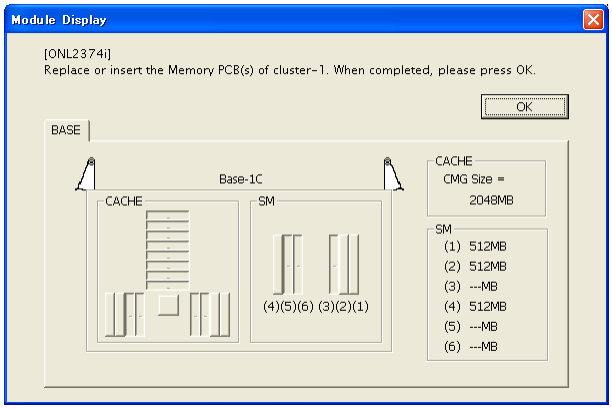
If [No] is selected:
Insert a jumper in response to "Please insert the jumper into the target PCB (BASE-nn), then pull out the PCB without considering the status of the LED".
(Refer INST03-09A-90)

---

(3) <Performing installation of hardware>

Do not press the [OK] button at this time yet.
A message, "Replace or insert the Memory PCB(s) of cluster-1. When completed, please press OK." is displayed.

Make sure of an installation location and size of the module and insert the module correctly.



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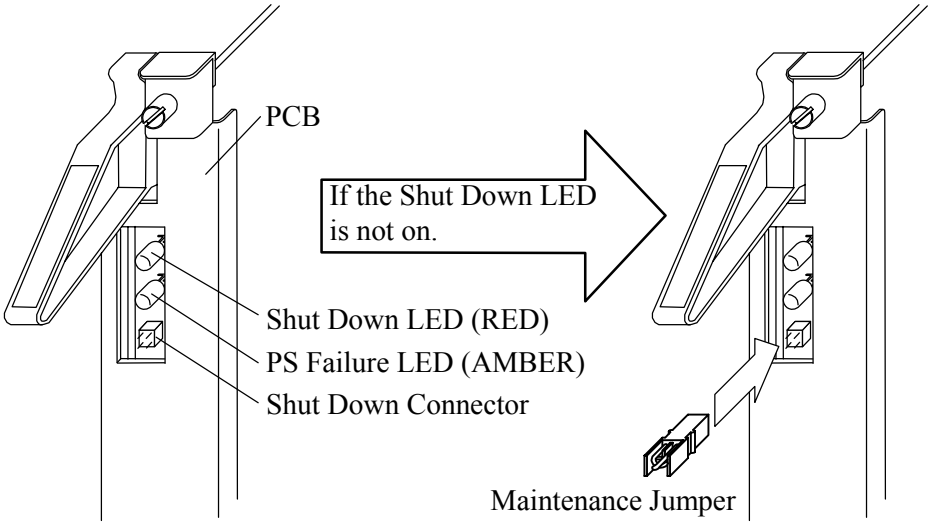
5. Install the Shared Memory on the Cluster 1.
   Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

5-1 Remove the PCB.

a. While referring to Fig. 3.9.1-3 and Table 3.9.1-2 check the Shut Down LED on the Base PCB in the Logic Box. Connect the Maintenance Jumper to the Shut Down Connector if the Shut Down LED is not on. (This procedure [5-1. a.] is not valid for a New Installation.)

⚠ CAUTION

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



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

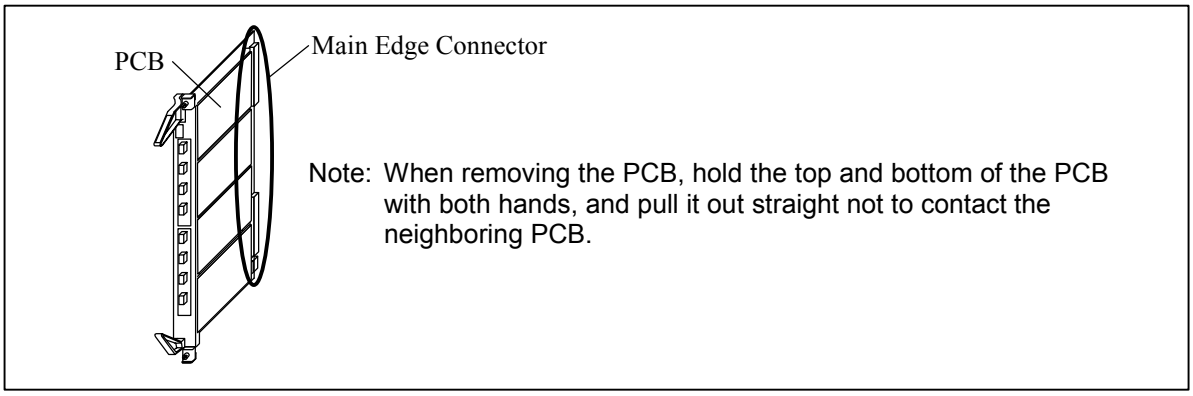
Fig. 3.9.1-3 Location of Shut Down LED

Table 3.9.1-2 Location of the Base PCB

Cluster	PCB Name	Box	Slot No.	Location No.	Remarks
1	WP535-A	Logic Box	1C	BASE-1C	

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b. Disconnect the cable from the Base PCB.
c. Remove the two screws and remove the Base PCB.



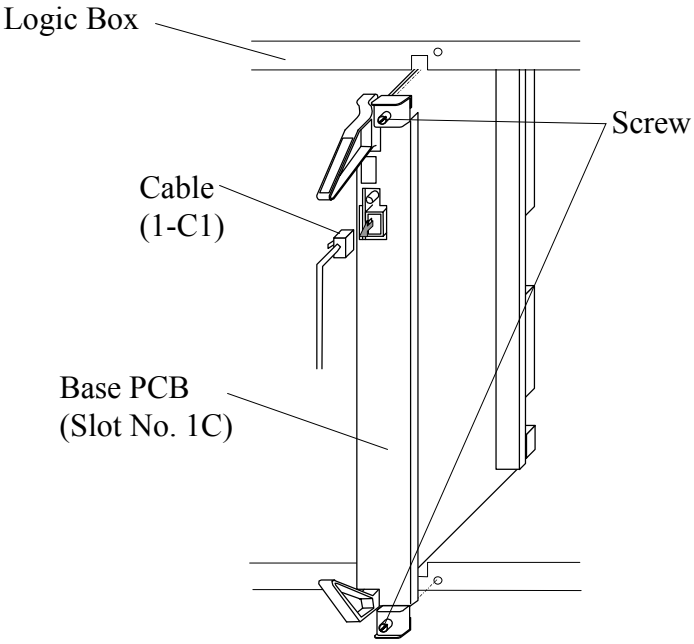


Fig. 3.9.1-4 Removal of the Base PCB

d. Remove the Maintenance Jumper if it is mounted.

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5-2 Insert the Shared Memory Modules.

a. Remove the dust covers that match the required Shared Memory capacity referring to Fig. 3.9.1-5, Fig. 3.9.1-6 and Table 3.9.1-3 to Table 3.9.1-10.

b. Insert the Shared Memory Modules that match the required Shared Memory capacity.

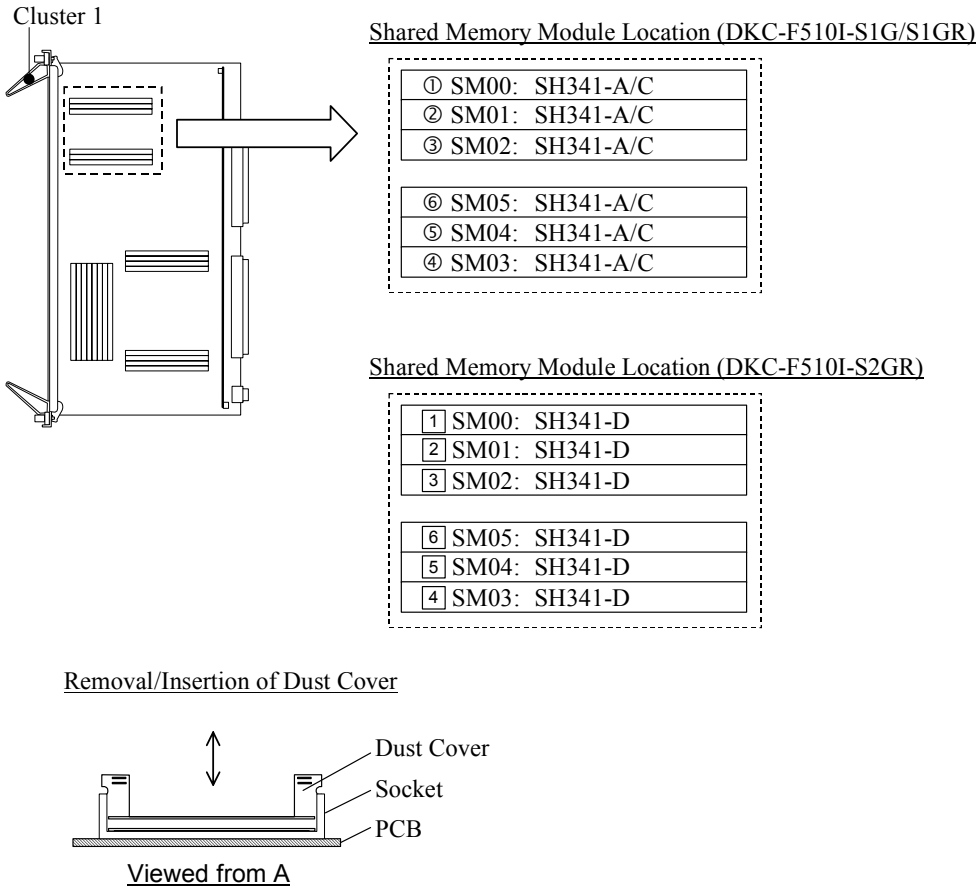
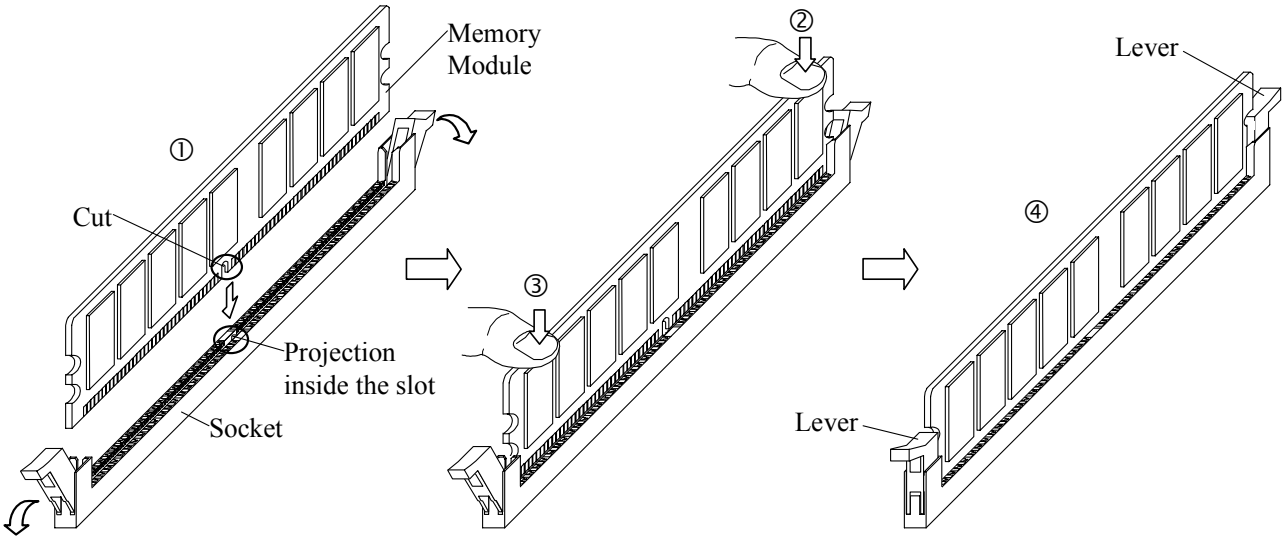
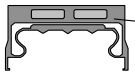


Fig.3.9.1-5 Inserting Location of the Shared Memory Module

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Prohibition of Use:



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

Installation

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

Removal

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

Fig.3.9.1-6 Insertion/Removal of Memory Module

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Table 3.9.1-3 Reference Table of Shared Memory Capacity

No.	Program Product application situation			Number of CU	Reference Table
	True Copy or Shadow Image or Universal Replicator or Volume Migration or Hi-Copy (*1)	TPF or E-Copy	Flash Copy Version2 or COW Snapshot (*1)		
1	Not Applied	Not Applied	Not Applied	1-4 (to 1,024LDEV)	Table 3.9.1-5
				5-64 (to 16,384LDEV)	
2	Applied	Not Applied	Not Applied	1-4 (to 1,024LDEV)	Table 3.9.1-6
				5-64 (to 16,384LDEV)	
3	Not Applied	Applied	Not Applied	1-4 (to 1,024LDEV)	Table 3.9.1-7
				5-64 (to 16,384LDEV)	
4	Applied	Applied	Not Applied	1-4 (to 1,024LDEV)	Table 3.9.1-8
				5-64 (to 16,384LDEV)	
5	Applied	Not Applied	Applied	1-4 (to 1,024LDEV)	Table 3.9.1-9
				5-64 (to 16,384LDEV)	
6	Applied	Applied	Applied	1-4 (to 1,024LDEV)	Table 3.9.1-10
				5-64 (to 16,384LDEV)	

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

Please note that location of shared memory module varies according to the purpose such as additional cache installation or additional LDEV installation.
In the case of Disk-less configuration, please refer to the description of “External Storage support”.

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The following table shows the correspondence of items shown in the SVP Window and those in the Reference Table. Set the SM in the SVP window based on the table below.

Table 3.9.1-4 Correspondence Table of items shown in the SVP Window

No.	SVP Window		Reference Table
	Item	Check box	
1	HMRCF/HOMRCF/HRC/HORC/HUR/HIHSM/ Hi-Copy	OFF	TC/SI/UR/VM/Hi-Copy function not applied
		ON	TC/SI/UR/VM/Hi-Copy function applied
2	HMRCF/HOMRCF/HRC/HORC/HUR/HIHSM/ Hi-Copy Extension	OFF	TC/SI/UR/VM/Hi-Copy Basic
		ON	TC/SI/UR/VM/Hi-Copy Extension
3	Flash Copy V2 / COW Snapshot	OFF	FCV2/COW function not applied
		ON	FCV2/COW function applied
4	Flash Copy V2 Extension	OFF	No description *2
		ON	
5	VFS SYS Area *3	OFF	VFS SYS Area not applied
		ON	VFS SYS Area applied
6	E-COPY/TPF	OFF	TPF/E-Copy function not applied
		ON	TPF/E-Copy function applied
7	External Device Management, or Over 256 Striping Group, or 300GB or larger Drive	OFF	External Storage not support, and 300GB or larger HDD not equipped
		ON	External Storage support, or/and 300GB or larger HDD equipped
8	Change Max Number of CUs	*1	Number of CU: 1-4 (to 1024LDEV)
			Number of CU: 5-64 (to 16384LDEV)

*1: The check boxes are active only when SM is installed/uninstalled.

*2: There is no description in the reference table because the SM capacity does not change with ON/OFF of this item.
However, when you use the Flash Copy V2 Extension function, turn it ON.
You can turn it ON if VFS SYS Area is OFF.

*3: In case of using the COW Snapshot function, the VFS SYS Area is required.
You can turn ON the VFS SYS Area if the Flash Copy V2 Extension is OFF.

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Table 3.9.1-5 SM Capacity and Installing Location of SM Module (TC / SI / UR / VM / Hi-Copy function not applied, TPF / E-Copy function not applied, FCV2 / COW function not applied)

Cache Memory Capacity	Number of CU: 1-4 (to 1,024LDEV)				Number of CU: 5-64 (to 16,384LDEV)
	VFS SYS Area not applied			VFS SYS Area applied	Common (VFS SYS Area not applied/applied)
	External Storage not support		External Storage support *2	Common (External Storage Not support/ Support) *2	
	300GB or larger HDD Not use	300GB or larger HDD Use	Common (300GB or larger HDD Not use / Use)		
	Install Loc. *1 (SM Cap)	Install Loc. *1 (SM Cap)	Install Loc. *1 (SM Cap)	Install Loc. *1 (SM Cap)	Install Loc. *1 (SM Cap)
4GB to 24GB	① (1GB)	①④ (2GB) or [1][2] (4GB)	①④ (2GB) or [1][2] (4GB)	①④⑤ (3GB) or ①④[5] (4GB) or [1][2][3] (6GB)	①④⑤ (3GB) or ①④[5] (4GB) or [1][2][3] (6GB)
28GB to 64GB	①④ (2GB) or [1][2] (4GB)	①④ (2GB) or [1][2] (4GB)	①④ (2GB) or [1][2] (4GB)	①④⑤⑥ (4GB) or ①④[5] (4GB) or [1][2][3] (6GB)	①④⑤⑥ (4GB) or ①④[5] (4GB) or [1][2][3] (6GB)

*1: Location ① - ⑥ and [1] - [6] represent the Shared Memory Module locations shown in Fig. 3.9.1-5.

*2: In the case of Disk-less configuration, refer to the description of “External Storage support”.

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Table 3.9.1-6 SM Capacity and Installing Location of SM Module (TC / SI / UR / VM / Hi-Copy function applied, TPF / E-Copy function not applied, FCV2 / COW function not applied)

Cache Memory Capacity	Number of CU: 1-4 (to 1,024LDEV)				Number of CU: 5-64 (to 16,384LDEV)	
	VFS SYS Area not applied		VFS SYS Area applied		Common (VFS SYS Area not applied/applied)	
	TC/SI/UR/VM/ Hi-Copy Basic	TC/SI/UR/VM/ Hi-Copy Extension	TC/SI/UR/VM/ Hi-Copy Basic	TC/SI/UR/VM/ Hi-Copy Extension	TC/SI/UR/VM/ Hi-Copy Basic	TC/SI/UR/VM/ Hi-Copy Extension
	Common (External Storage not support / External Storage support, 300GB or larger HDD Not use / Use) *2					
	Install Loc. *1 (SM Cap)	Install Loc. *1 (SM Cap)	Install Loc. *1 (SM Cap)	Install Loc. *1 (SM Cap)	Install Loc. *1 (SM Cap)	Install Loc. *1 (SM Cap)
4GB to 24GB	①②④ (3GB) or [1][2] (4GB)	①②③④ (4GB) or [1][2] (4GB)	①②④⑤ (4GB) or ①②④[5] (5GB) or [1][2][3] (6GB)	①②③④⑤ (5GB) or ①②③④[5] (6GB) or [1][2][3] (6GB)	①②④⑤ (4GB) or ①②④[5] (5GB) or [1][2][3] (6GB)	①②③④⑤ (5GB) or ①②③④[5] (6GB) or [1][2][3] (6GB)
28GB to 64GB	①②④ (3GB) or [1][2] (4GB)	①②③④ (4GB) or [1][2] (4GB)	①②④⑤⑥ (5GB) or ①②④[5] (5GB) or [1][2][3] (6GB)	①②③④⑤⑥ (6GB) or ①②③④[5] (6GB) or [1][2][3] (6GB)	①②④⑤⑥ (5GB) or ①②④[5] (5GB) or [1][2][3] (6GB)	①②③④⑤⑥ (6GB) or ①②③④[5] (6GB) or [1][2][3] (6GB)

*1: Location ① - ⑥ and [1] - [6] represent the Shared Memory Module locations shown in Fig. 3.9.1-5.

*2: In the case of Disk-less configuration, refer to the description of “External Storage support”.

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Table 3.9.1-7 SM Capacity and Installing Location of SM Module (TC / SI / UR / VM / Hi-Copy function not applied, TPF / E-Copy function applied, FCV2 / COW function not applied)

Cache Memory Capacity	Number of CU: 1-4 (to 1,024LDEV)		Number of CU: 5-64 (to 16,384LDEV)
	VFS SYS Area not applied	VFS SYS Area applied	Common (VFS SYS Area not applied/applied)
	Common (External Storage not support / External Storage support, 300GB or larger HDD Not use / Use) *2		
	Install Loc. *1 (SM Cap)		Install Loc. *1 (SM Cap)
4GB to 24GB	①④ (2GB) or [1][2] (4GB)	①④⑤ (3GB) or ①④[5] (4GB) or [1][2][3] (6GB)	①④⑤ (3GB) or ①④[5] (4GB) or [1][2][3] (6GB)
28GB to 64GB	①④ (2GB) or [1][2] (4GB)	①④⑤⑥ (4GB) or ①④[5] (4GB) or [1][2][3] (6GB)	①④⑤⑥ (4GB) or ①④[5] (4GB) or [1][2][3] (6GB)

*1: Location ① - ⑥ and [1] - [6] represent the Shared Memory Module locations shown in Fig. 3.9.1-5.

*2: In the case of Disk-less configuration, refer to the description of “External Storage support”.

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Table 3.9.1-8 SM Capacity and Installing Location of SM Module (TC / SI / UR / VM / Hi-Copy function applied, TPF / E-Copy function applied, FCV2 / COW function not applied)

Cache Memory Capacity	Number of CU: 1-4 (to 1,024LDEV)				Number of CU: 5-64 (to 16,384LDEV)	
	VFS SYS Area not applied		VFS SYS Area applied		Common (VFS SYS Area not applied/applied)	
	TC/SI/UR/VM/ Hi-Copy Basic	TC/SI/UR/VM/ Hi-Copy Extension	TC/SI/UR/VM/ Hi-Copy Basic	TC/SI/UR/VM/ Hi-Copy Extension	TC/SI/UR/VM/ Hi-Copy Basic	TC/SI/UR/VM/ Hi-Copy Extension
	Common (External Storage not support / External Storage support, 300GB or larger HDD Not use / Use) *2					
	Install Loc. *1 (SM Cap)	Install Loc. *1 (SM Cap)	Install Loc. *1 (SM Cap)	Install Loc. *1 (SM Cap)	Install Loc. *1 (SM Cap)	Install Loc. *1 (SM Cap)
4GB to 24GB	①②④ (3GB) or [1][2] (4GB)	①②③④ (4GB) or [1][2] (4GB)	①②④⑤ (4GB) or ①②④[5] (5GB) or [1][2][3] (6GB)	①②③④⑤ (5GB) or ①②③④[5] (6GB) or [1][2][3] (6GB)	①②④⑤ (4GB) or ①②④[5] (5GB) or [1][2][3] (6GB)	①②③④⑤ (5GB) or ①②③④[5] (6GB) or [1][2][3] (6GB)
28GB to 64GB	①②④ (3GB) or [1][2] (4GB)	①②③④ (4GB) or [1][2] (4GB)	①②④⑤⑥ (5GB) or ①②④[5] (5GB) or [1][2][3] (6GB)	①②③④⑤⑥ (6GB) or ①②③④[5] (6GB) or [1][2][3] (6GB)	①②④⑤⑥ (5GB) or ①②④[5] (5GB) or [1][2][3] (6GB)	①②③④⑤⑥ (6GB) or ①②③④[5] (6GB) or [1][2][3] (6GB)

*1: Location ① - ⑥ and [1] - [6] represent the Shared Memory Module locations shown in Fig. 3.9.1-5.

*2: In the case of Disk-less configuration, refer to the description of “External Storage support”.

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Table 3.9.1-9 SM Capacity and Installing Location of SM Module (TC / SI / UR / VM / Hi-Copy function applied, TPF / E-Copy function not applied, FCV2 / COW function applied)

Cache Memory Capacity	Number of CU: 1-4 (to 1,024LDEV)				Number of CU: 5-64 (to 16,384LDEV)	
	VFS SYS Area not applied		VFS SYS Area applied		Common (VFS SYS Area not applied/applied)	
	TC/SI/UR/VM/ Hi-Copy Basic	TC/SI/UR/VM/ Hi-Copy Extension	TC/SI/UR/VM/ Hi-Copy Basic	TC/SI/UR/VM/ Hi-Copy Extension	TC/SI/UR/VM/ Hi-Copy Basic	TC/SI/UR/VM/ Hi-Copy Extension
	Common (External Storage not support / External Storage support, 300GB or larger HDD Not use / Use) *2					
	Install Loc. *1 (SM Cap)	Install Loc. *1 (SM Cap)	Install Loc. *1 (SM Cap)	Install Loc. *1 (SM Cap)	Install Loc. *1 (SM Cap)	Install Loc. *1 (SM Cap)
4GB to 24GB	①②④⑤ (4GB) or ①②④[5] (5GB) or [1][2][3] (6GB)	①②③④⑤ (5GB) or ①②③④[5] (6GB) or [1][2][3] (6GB)	①②④⑤ (4GB) or ①②④[5] (5GB) or [1][2][3] (6GB)	①②③④⑤ (5GB) or ①②③④[5] (6GB) or [1][2][3] (6GB)	①②④⑤ (4GB) or ①②④[5] (5GB) or [1][2][3] (6GB)	①②③④⑤ (5GB) or ①②③④[5] (6GB) or [1][2][3] (6GB)
28GB to 64GB	①②④⑤ (4GB) or ①②④[5] (5GB) or [1][2][3] (6GB)	①②③④⑤ (5GB) or ①②③④[5] (6GB) or [1][2][3] (6GB)	①②④⑤⑥ (5GB) or ①②④[5] (5GB) or [1][2][3] (6GB)	①②③④⑤⑥ (6GB) or ①②③④[5] (6GB) or [1][2][3] (6GB)	①②④⑤⑥ (5GB) or ①②④[5] (5GB) or [1][2][3] (6GB)	①②③④⑤⑥ (6GB) or ①②③④[5] (6GB) or [1][2][3] (6GB)

*1: Location ① - ⑥ and [1] - [6] represent the Shared Memory Module locations shown in Fig. 3.9.1-5.

*2: In the case of Disk-less configuration, refer to the description of “External Storage support”.

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Table 3.9.1-10 SM Capacity and Installing Location of SM Module (TC / SI / UR / VM / Hi-Copy function applied, TPF / E-Copy function applied, FCV2 / COW function applied)

Cache Memory Capacity	Number of CU: 1-4 (to 1,024LDEV)				Number of CU: 5-64 (to 16,384LDEV)	
	VFS SYS Area not applied		VFS SYS Area applied		Common (VFS SYS Area not applied/applied)	
	TC/SI/UR/VM/ Hi-Copy Basic	TC/SI/UR/VM/ Hi-Copy Extension	TC/SI/UR/VM/ Hi-Copy Basic	TC/SI/UR/VM/ Hi-Copy Extension	TC/SI/UR/VM/ Hi-Copy Basic	TC/SI/UR/VM/ Hi-Copy Extension
	Common (External Storage not support / External Storage support, 300GB or larger HDD Not use / Use) *2					
	Install Loc. *1 (SM Cap)	Install Loc. *1 (SM Cap)	Install Loc. *1 (SM Cap)	Install Loc. *1 (SM Cap)	Install Loc. *1 (SM Cap)	Install Loc. *1 (SM Cap)
4GB to 24GB	①②④⑤ (4GB) or ①②④[5] (5GB) or [1][2][3] (6GB)	①②③④⑤ (5GB) or ①②③④[5] (6GB) or [1][2][3] (6GB)	①②④⑤ (4GB) or ①②④[5] (5GB) or [1][2][3] (6GB)	①②③④⑤ (5GB) or ①②③④[5] (6GB) or [1][2][3] (6GB)	①②④⑤ (4GB) or ①②④[5] (5GB) or [1][2][3] (6GB)	①②③④⑤ (5GB) or ①②③④[5] (6GB) or [1][2][3] (6GB)
28GB to 64GB	①②④⑤ (4GB) or ①②④[5] (5GB) or [1][2][3] (6GB)	①②③④⑤ (5GB) or ①②③④[5] (6GB) or [1][2][3] (6GB)	①②④⑤⑥ (5GB) or ①②④[5] (5GB) or [1][2][3] (6GB)	①②③④⑤⑥ (6GB) or ①②③④[5] (6GB) or [1][2][3] (6GB)	①②④⑤⑥ (5GB) or ①②④[5] (5GB) or [1][2][3] (6GB)	①②③④⑤⑥ (6GB) or ①②③④[5] (6GB) or [1][2][3] (6GB)

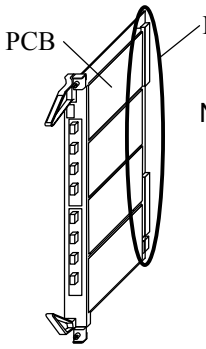
*1: Location ① - ⑥ and [1] - [6] represent the Shared Memory Module locations shown in Fig. 3.9.1-5.

*2: In the case of Disk-less configuration, refer to the description of “External Storage support”.

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5-3. Insert the PCB.

a. Insert the Base PCB into the Logic Box and fasten the two screws.



Note: 1. Check that the main edge connector of the PCB has no deformation, damage or sticking of dust before installing the PCB.

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

b. Connect the cable to the Base PCB.

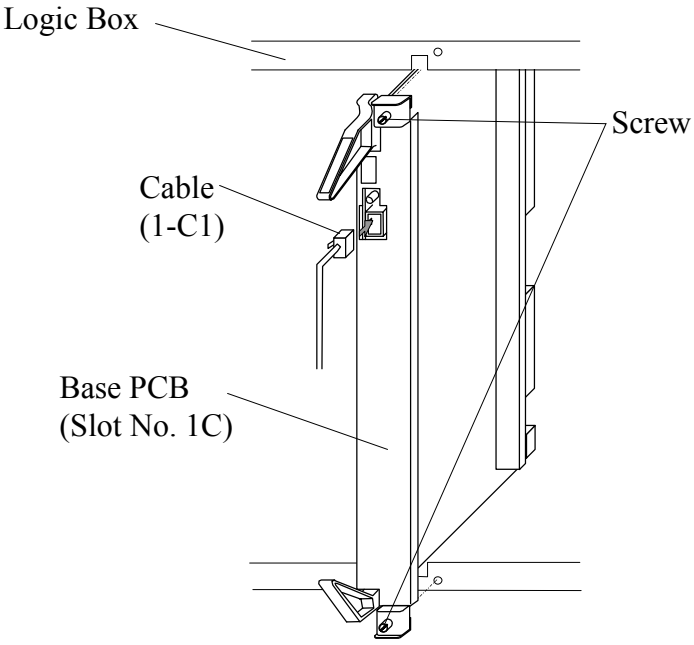


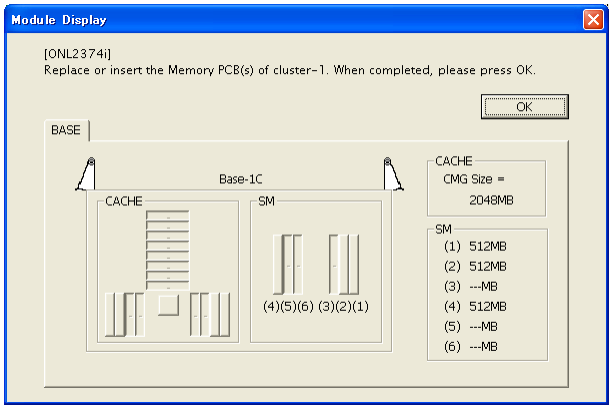
Fig.3.9.1-7 Insertion of Base PCB

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6. SVP post procedure on the Cluster 1.

(1)

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



(2)

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

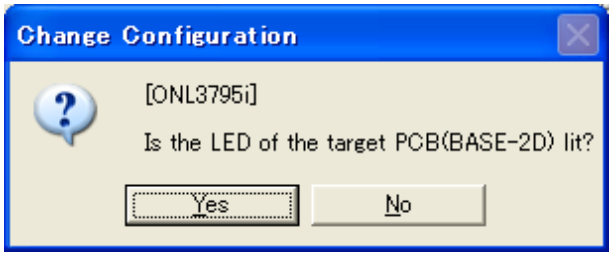
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7. SVP pre procedure on the Cluster 2.

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

---

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



(Eg. BASE-2D)

<Forcing shut down LED on>

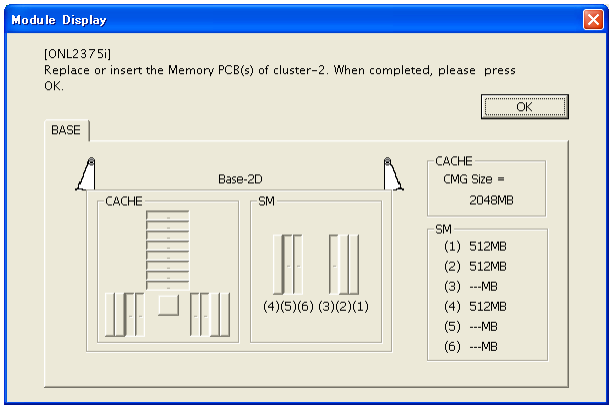
> **CAUTION**
> If the jumper is inserted in the wrong PCB, a system down may be caused.

If [No] is selected:
Insert a jumper in response to "Please insert the jumper into the target PCB (BASE-nn), then pull out the PCB without considering the status of the LED".
(Refer INST03-09A-240)

---

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

Make sure of the installation location and size of the module to be added and insert the correct module in the correct location.



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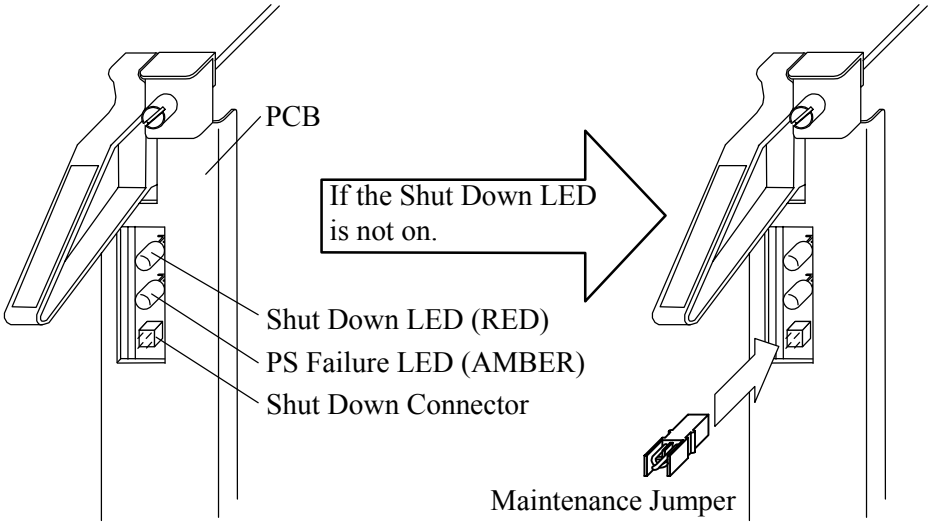
8. Install the Shared Memory on the Cluster 2.
   Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

8-1 Remove the PCB.

a. While referring to Fig. 3.9.1-8 and Table 3.9.1-11 check the Shut Down LED on the Base PCB in the Logic Box. Connect the Maintenance Jumper to the Shut Down Connector if the Shut Down LED is not on. (This procedure [8-1. a.] is not valid for a New Installation.)

⚠ CAUTION

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



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

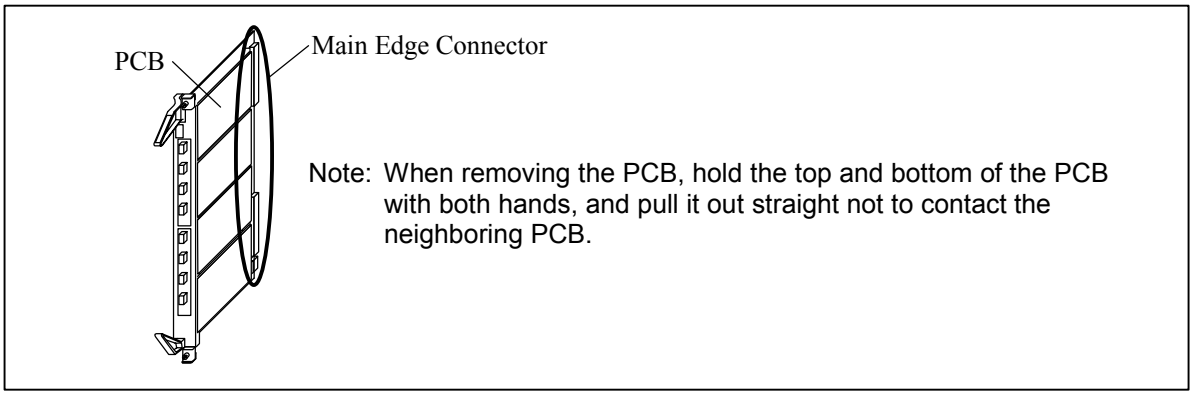
Fig.3.9.1-8 Location of Shut Down LED

Table 3.9.1-11 Location of the Base PCB

Cluster	PCB Name	Box	Slot No.	Location No.	Remarks
2	WP535-A	Logic Box	2D	BASE-2D	

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b. Disconnect the cable from the Base PCB.
c. Remove the two screws and remove the Base PCB.



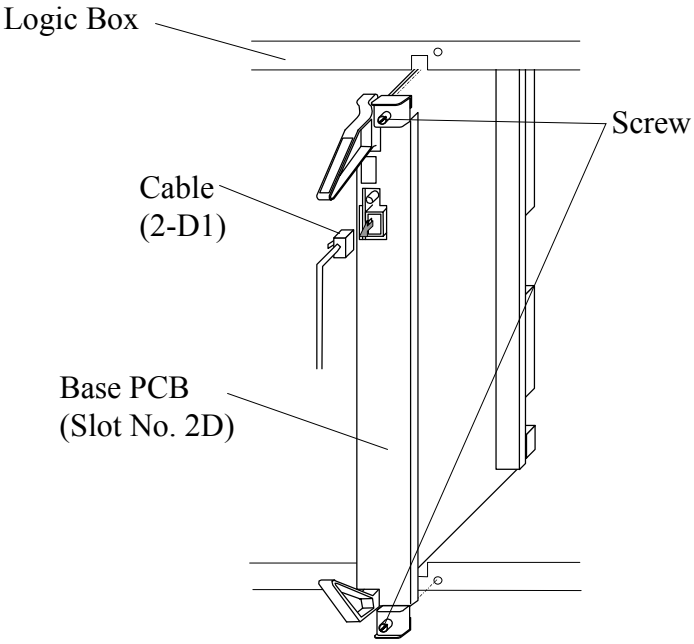


Fig. 3.9.1-9 Removal of the Base PCB

d. Remove the Maintenance Jumper if it is mounted.

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8-2 Insert the Shared Memory Modules.

a. Remove the dust covers that match the required Shared Memory capacity referring to Fig. 3.9.1-10, Fig. 3.9.1-11 and Table 3.9.1-12.

b. Insert the Shared Memory Modules that match the required Shared Memory capacity.

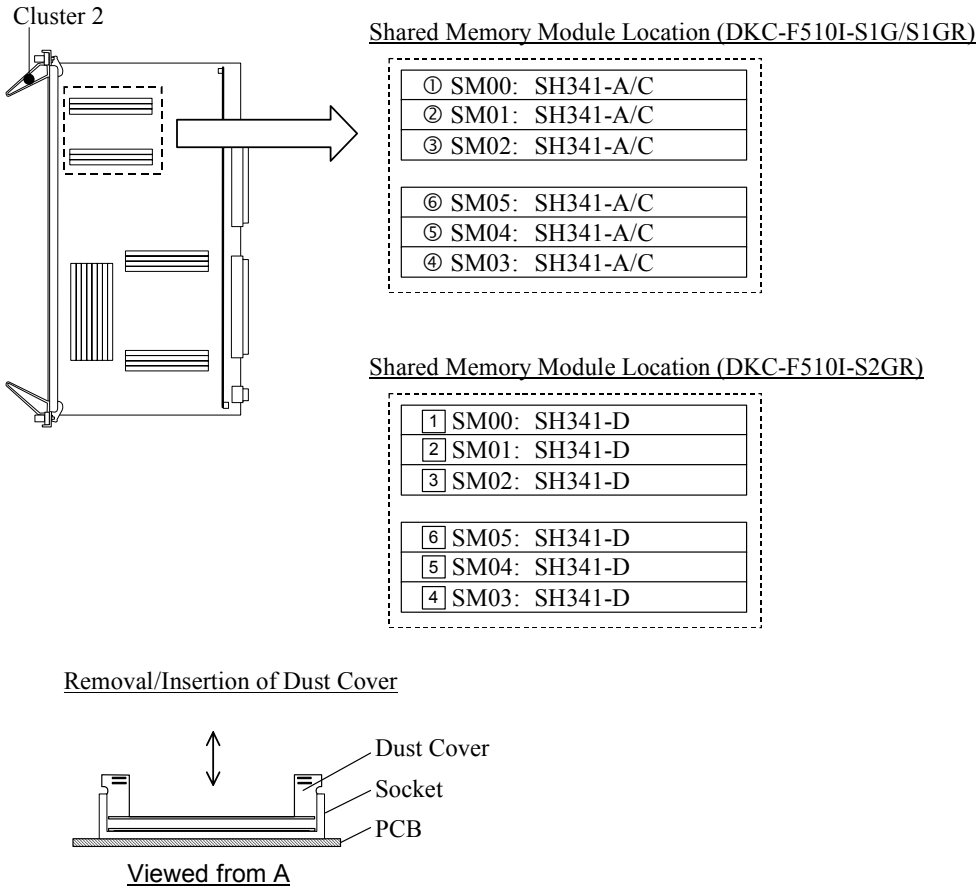
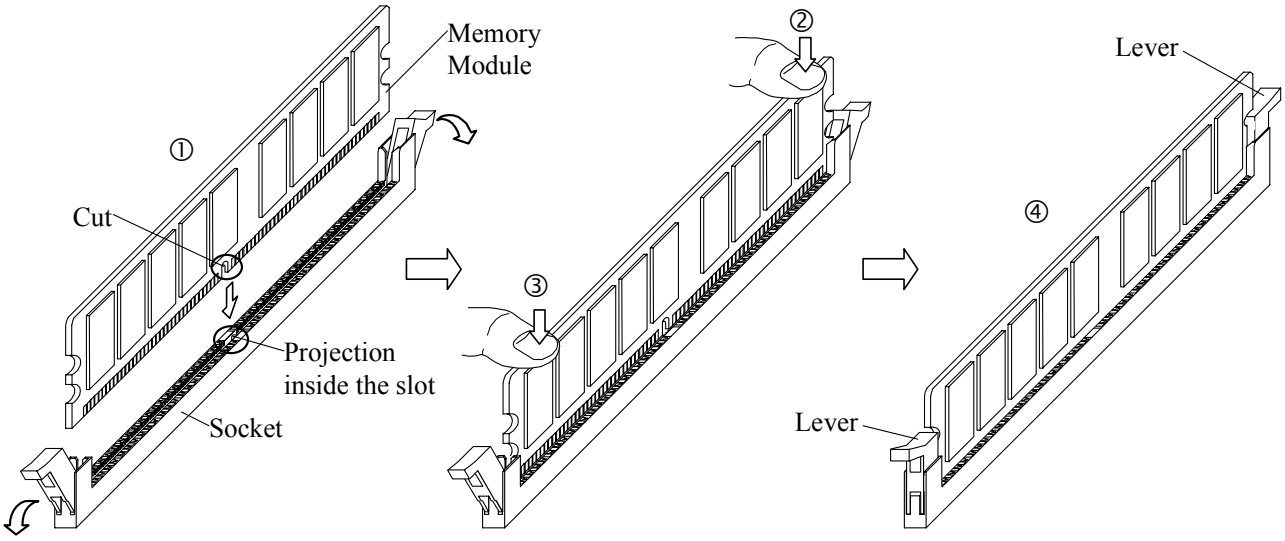
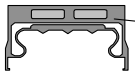


Fig.3.9.1-10 Inserting Location of the Shared Memory Module

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Prohibition of Use:



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

Installation

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

Removal

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

Fig.3.9.1-11 Insertion/Removal of Memory Module

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Table 3.9.1-12 Reference Table of Shared Memory Capacity

No.	Program Product application situation			Number of CU	Reference Table
	True Copy or Shadow Image or Universal Replicator or Volume Migration or Hi-Copy (*1)	TPF or E-Copy	Flash Copy Version2 or COW Snapshot (*1)		
1	Not Applied	Not Applied	Not Applied	1-4 (to 1,024LDEV)	Table 3.9.1-5
				5-64 (to 16,384LDEV)	
2	Applied	Not Applied	Not Applied	1-4 (to 1,024LDEV)	Table 3.9.1-6
				5-64 (to 16,384LDEV)	
3	Not Applied	Applied	Not Applied	1-4 (to 1,024LDEV)	Table 3.9.1-7
				5-64 (to 16,384LDEV)	
4	Applied	Applied	Not Applied	1-4 (to 1,024LDEV)	Table 3.9.1-8
				5-64 (to 16,384LDEV)	
5	Applied	Not Applied	Applied	1-4 (to 1,024LDEV)	Table 3.9.1-9
				5-64 (to 16,384LDEV)	
6	Applied	Applied	Applied	1-4 (to 1,024LDEV)	Table 3.9.1-10
				5-64 (to 16,384LDEV)	

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

Please note that location of shared memory module varies according to the purpose such as additional cache installation or additional LDEV installation.
In the case of Disk-less configuration, please refer to the description of “External Storage support”.

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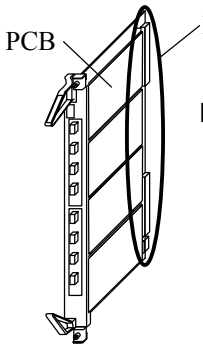
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Blank Sheet

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8-3 Insert the PCB.

a. Insert the Base PCB into the Logic Box and fasten the two screws.



Note: 1. Check that the main edge connector of the PCB has no deformation, damage or sticking of dust before installing the PCB.

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

b. Connect the cable to the Base PCB.

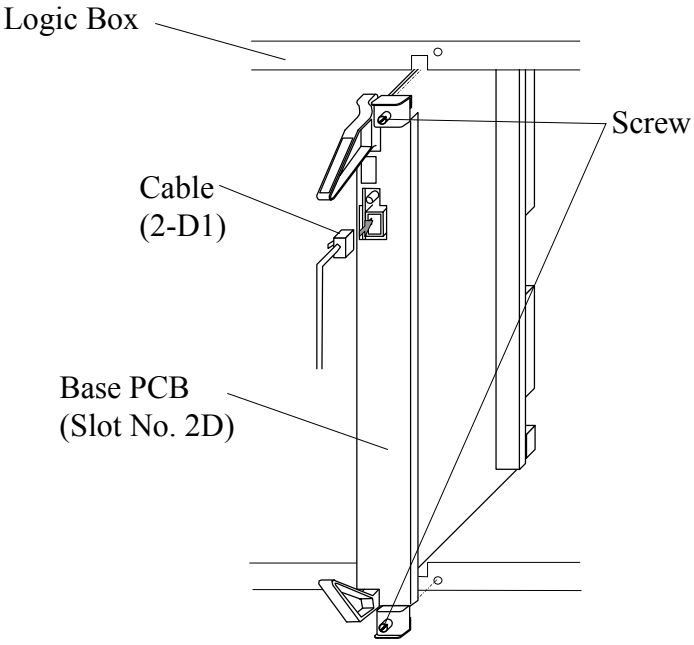


Fig.3.9.1-12 Insertion of Base PCB

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8-4 Change Painting out of nameplate

a. Remove the screw from the rack frame and remove the nameplate tags to be installed.
b. When you need to install Additional Shared Memory (DKC-F510I-S2GR) and the nameplate is not attached, attach the nameplate to the nameplate tag.
c. Paint out mounting numbers of the nameplate.
d. Attach all the nameplate tags with the screw.

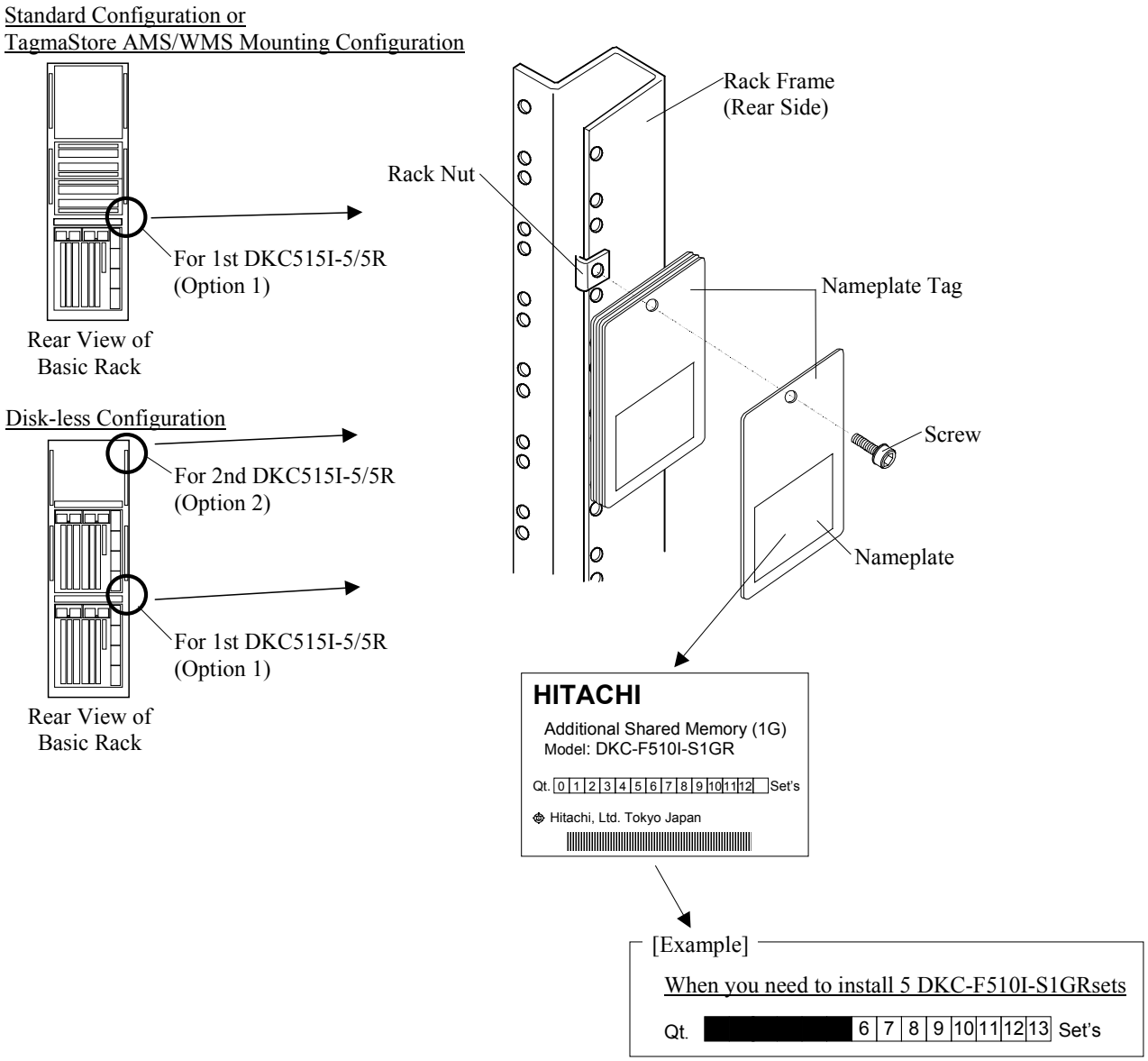


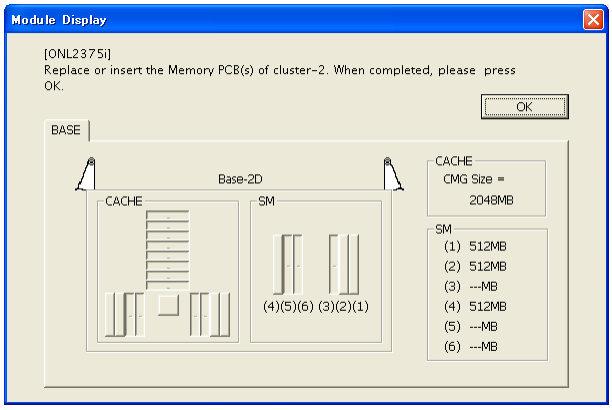
Fig.3.9.1-13 Change Painting out of Nameplate

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9. SVP post procedure on the Cluster 2.

(1)

After installation of shared memory on one side is completed, select (CL) [OK] in response to “Replace or insert the Memory PCB(s) of cluster-2. When completed, please press OK.”.



(2)

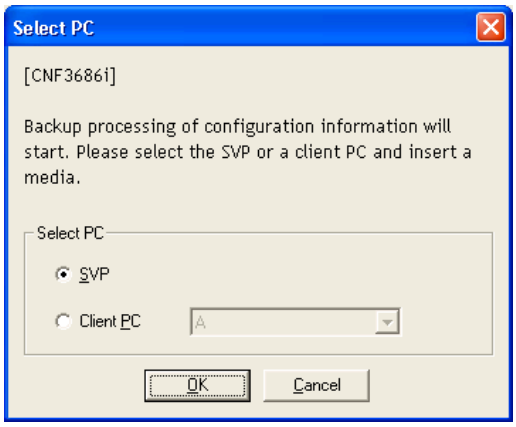
“Changing the configuration date, for equipment of shared/cache memory...” is displayed.
“INLINE CUDG is now running...” is displayed.
“Restoring the Shared Memory PCB...” is displayed.

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



(4)

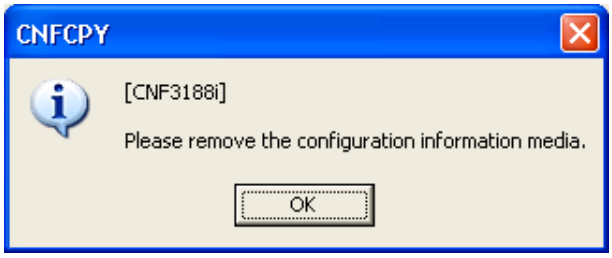
“Reading subsystem configuration data...” is displayed.
“Backup processing of configuration information will start. Please select the SVP or a client PC and insert a media.” is displayed.
Insert the Config FD into FDD of selected PC, and select (CL) [OK].



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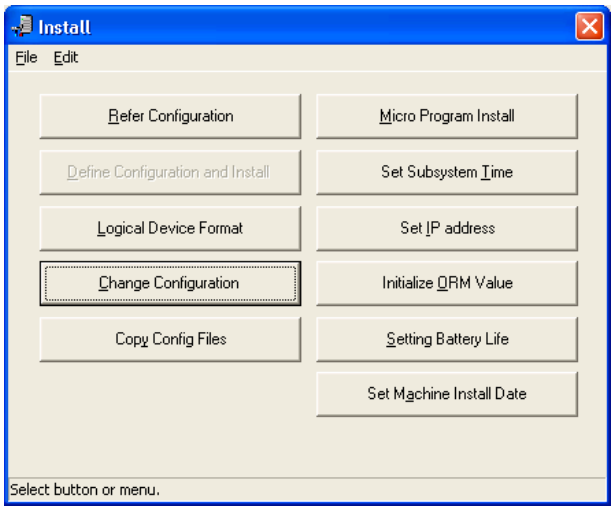
(5)

When this procedure is completed, the message “Please remove the configuration information media.” is displayed.
Remove the FD, and select (CL) [OK].



(6)

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



(7) <Mode Change>
Change the mode to View Mode.

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3.9.2 Installation of Additional Cache Memory (DKC-F510I-C4G/C4GR/C8GR, DKC-F515I-LGABR)

Matters to be checked before adding the cache memory

Before starting the addition of the cache memory, determine the necessary number of the shared memories by referring to “Relation between Shared Memory and Cache Memory” on pages INST07-20 to INST07-90.
When the shared memory or memories must be added, perform the addition of it (them) beforehand referring to “Installation of Additional Shared Memory (DKC-F510I-S1G/S1GR/S2GR, DKC-F515I-LGABR)” on page INST03-09A-10.

Note: When two control frames (DKCs) are installed in the Disk-less configuration, check the serial number of target DKC on the SVP screen and beware of a attachment position to prevent mistakes. (See “5.2.4 Refer Configuration 3. <DKC Configuration window>” [INST05-410].)

Table 3.9.2-1 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKC-F510I-C4G	SH342-A	5524236-A	4	
		SH342-C	5524236-C		
2	DKC-F510I-C4GR	SH342-C	5524236-C	4	
		Nameplate (HDS)	2751038-16	1	RSD
			2751040-16/216		HICAM/HICEF
		Nameplate (HP)	2751038-116	1	RSD
			2751040-116/316		HICAM/HICEF
3	DKC-F510I-C8GR	SH342-D	5524242-C	4	
		Nameplate (HDS)	2751038-97	1	RSD
			2751040-97/297		HICAM/HICEF
		Nameplate (HP)	2751038-197	1	RSD
			2751040-197/397		HICAM/HICEF
4	DKC-F515I-LGABR	Battery Box	5527959-C	2	
		Screw	5513661-425	4	
		Nameplate (HDS)	2751038-44	1	RSD
			2751040-44/244		HICAM/HICEF
		Nameplate (HP)	2751038-144	1	RSD
			2751040-144/344		HICAM/HICEF

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■ Measure of maintenance time

Maintenance time changes with the Shared Memory capacity.

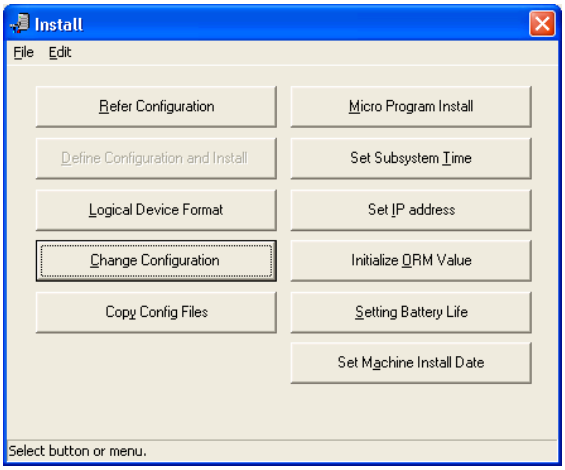
The number of shared memory module mounting	Time	Destage time	Maintenance time
1 set	40 min	30 min ~ 120 min	70 min ~ 160 min
2 set	50 min	30 min ~ 120 min	80 min ~ 170 min
3 set	60 min	30 min ~ 120 min	90 min ~ 180 min
4 set	70 min	30 min ~ 120 min	100 min ~ 190 min
5 set	80 min	30 min ~ 120 min	110 min ~ 200 min
6 set	90 min	30 min ~ 120 min	120 min ~ 210 min

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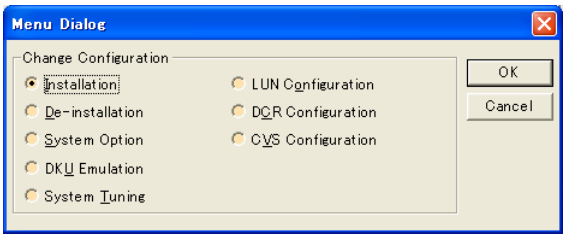
1. Setting up the New Device Structure Information

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

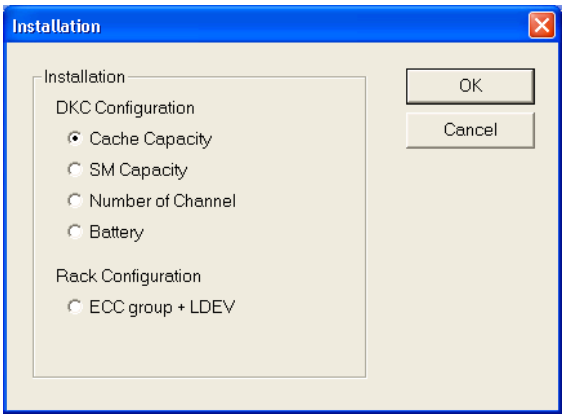
(2) <Start the 'Menu Dialog' screen>
Select (CL) [Change Configuration].



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



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

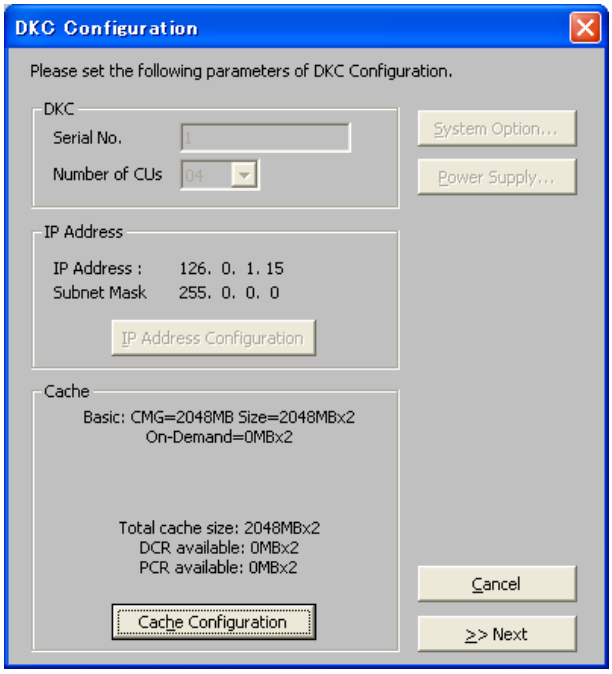


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(5) <Update Configuration Information>
Select (CL) [Cache Configuration] in the 'DKC Configuration' window. (Go to step (5)-1.)

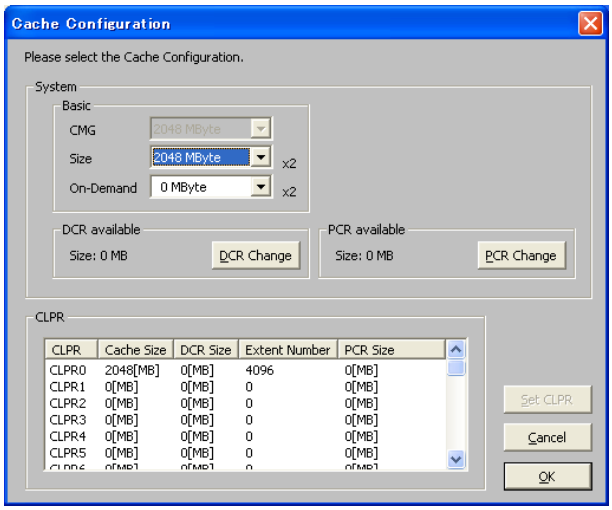
Note: It is not possible to install or de-install plural parts at the same time.

Make sure that all entered items are correct and select (CL) [>>Next].
Go to step (6).



(5)-1 <Define Cache>
Define each item in the 'Cache Configuration' windows.
When a change in the DCR setting is necessary, select (CL) [Change...] of DCR available.
(Go to step (5)-2.)
(See SSD Optional Function Section)
When a change in the PCR setting is necessary, select (CL) [Change...] of PCR available.
(Go to step (5)-3.)

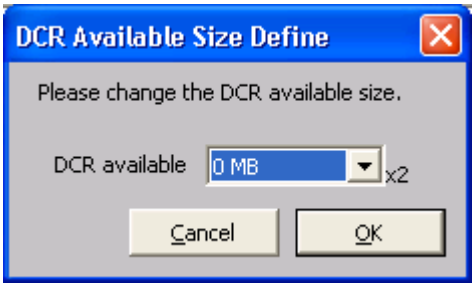
After setting up all items, select (CL) [OK].
Return to step (5).



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(5)-2 <Setting DCR size>

Set the DCR Available size in the 'DCR Available Size' dialog box and select (CL) the [OK] button. Return to Step (5)-1.

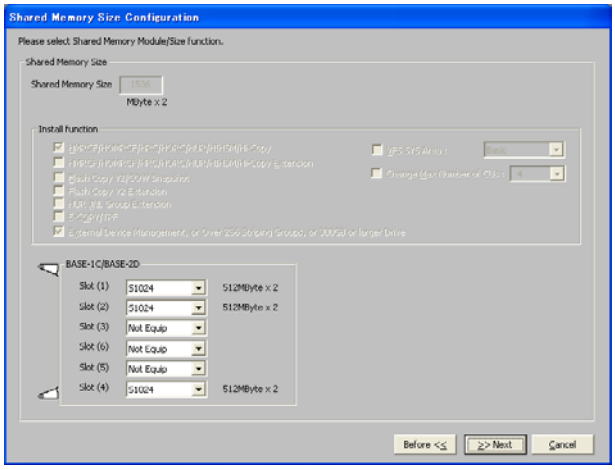


(5)-3 <Setting PCR size>

Set the PCR Available size in the 'PCR Available Size' dialog box and select (CL) the [OK] button. Return to Step (5)-1.

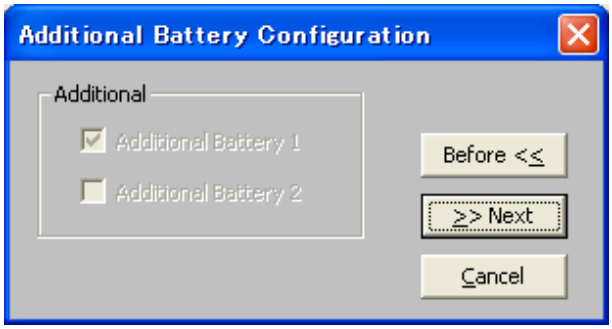
(6) <Display SM size>

The 'Shared Memory Size Configuration' dialog box is displayed.
Select (CL) [>>Next].



(7) <Display Battery>

The 'Additional Battery Configuration' dialog box is displayed.
Select (CL) [>>Next].

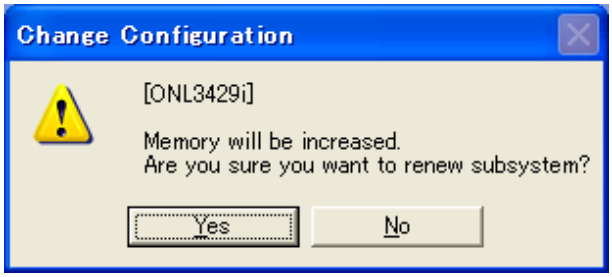


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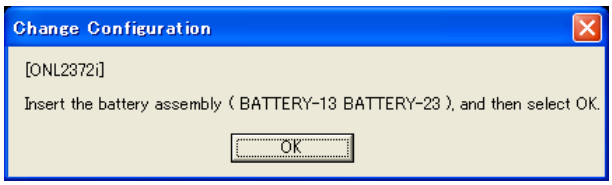
2. SVP pre procedure on the Cluster 1.

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

When [No] is selected (CL), returns to INST03-09B-20 step (3).



(2) <Perform Battery hardware installation>
"Insert the battery assembly, and then select OK." is displayed, when battery install is required.



When a message is displayed, perform the install hardware components according to the cache hardware installation procedure. When a message is not displayed, go to INST03-09B-90 step (2) procedure 4. SVP pre procedure on the Cluster1.

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3. Install the Additional Battery for Cache Memory

Installation Condition

The Additional Battery (DKC-F515I-LGABR) is an indispensable option that is to be installed when the subsystem configuration is one of the following.

(1) Add one set of this option when it corresponds to one of the following two conditions (BATTERY12, 22)
- Shared Memory (DKC-F510I-S1G/S1GR/S2GR) quantity are 4 sets or more
- Cache Memory (DKC-F510I-C4G/C4GR/C8GR) quantity are 4 sets or more

(2) Add one set of this option when it corresponds to one of the following condition (BATTERY13, 23)
- Cache memory (DKC-F510I-C4G/C4GR/C8GR) quantity are 8 sets

3-1 Installation of Battery Boxes

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a. Insert the battery boxes and fasten the screws.
b. Turn on the switches at the battery boxes.

Table 3.9.2-2 Installation Location of Additional Battery

No.	Model Name	Location No.		Remarks
1	DKC-F515I-LGABR × 1set	BATTERY12	BATTERY22	
2	DKC-F515I-LGABR × 1set	BATTERY13	BATTERY23	

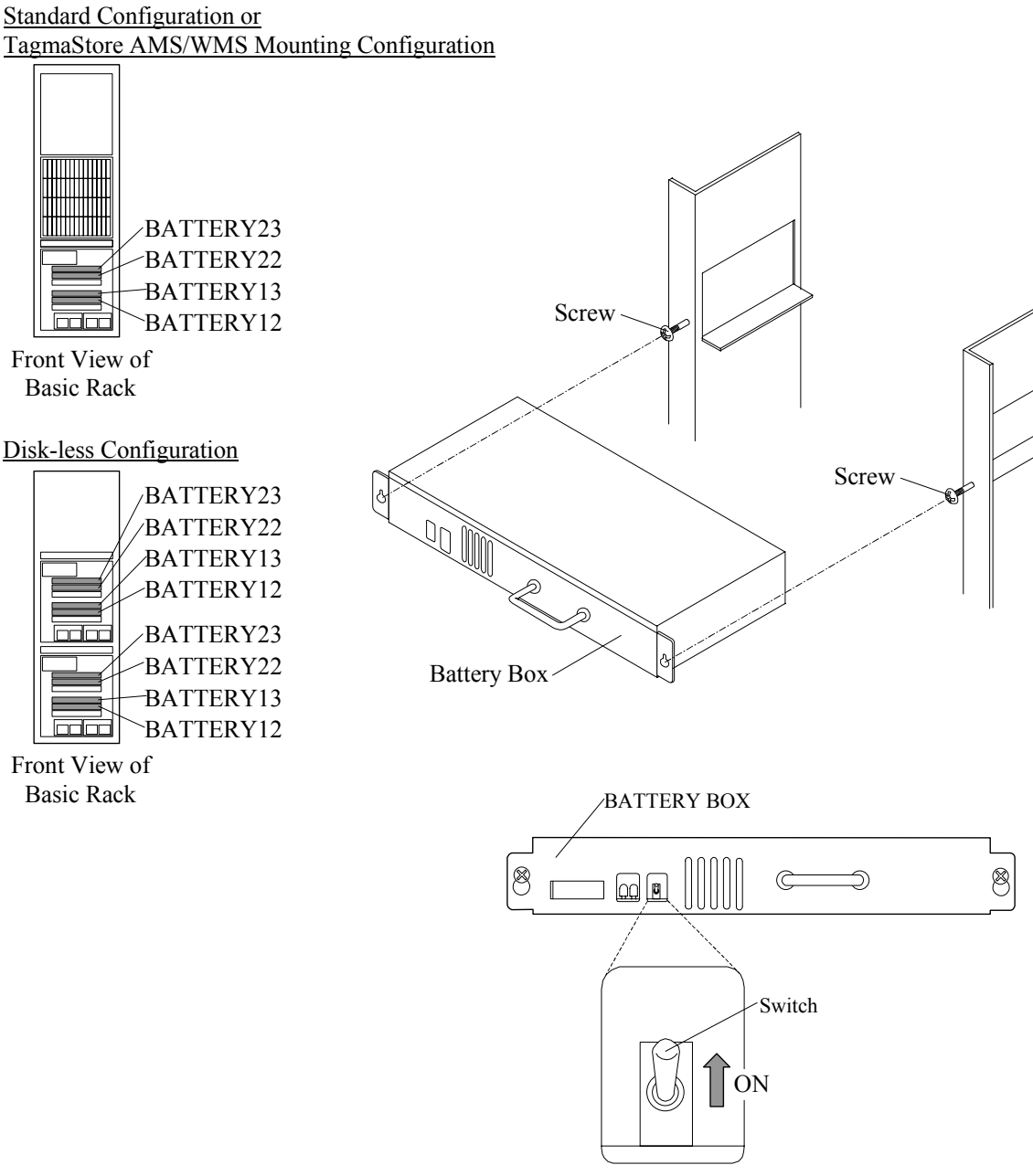


Fig.3.9.2-1 Insertion of Battery Boxes

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3-2 Attachment of nameplate

a. Remove the screw from the rack frame and remove the nameplate tags to be installed.
b. Attach the nameplate to the nameplate tag on the Rack frame.
c. Attach all the nameplate tags with the screw.

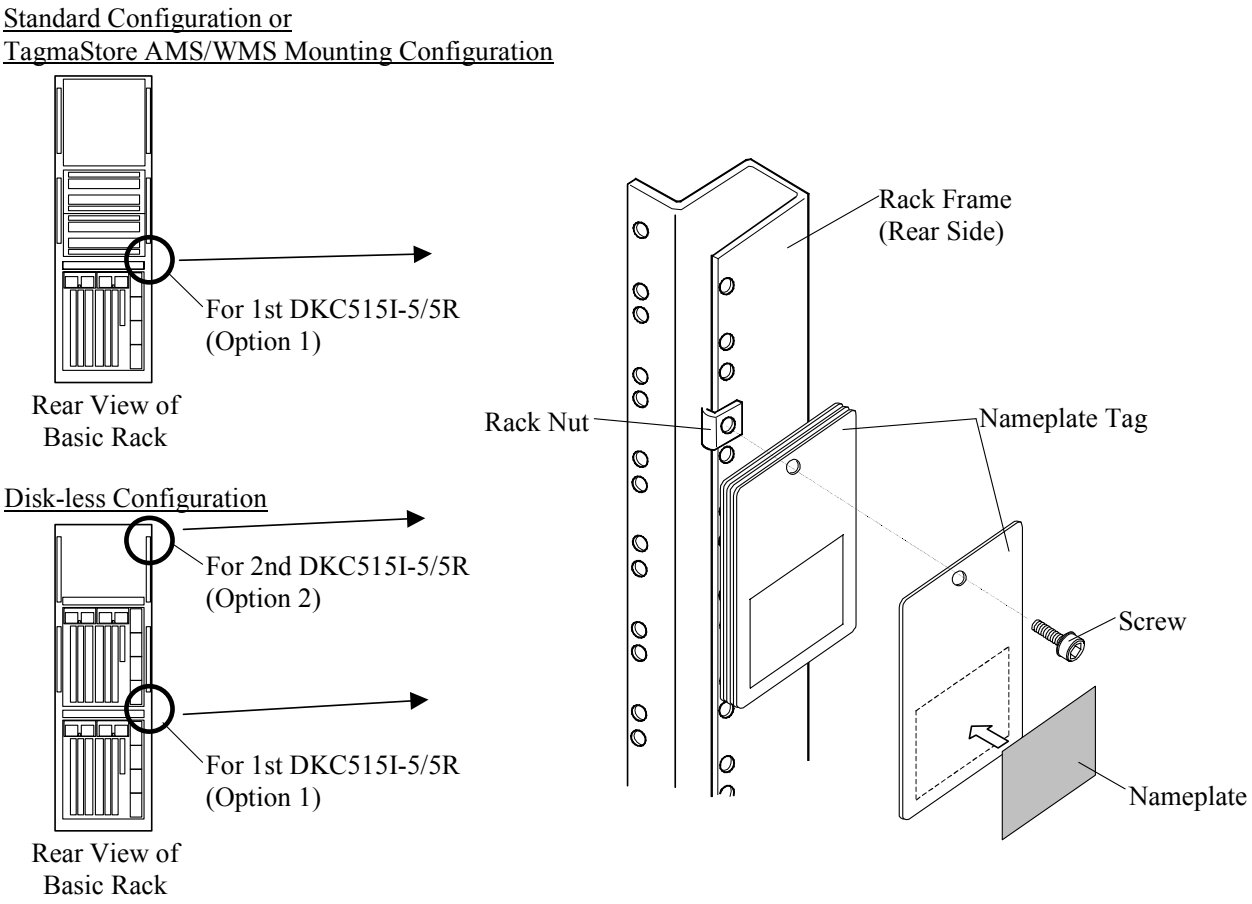


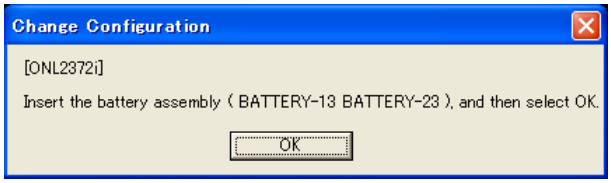
Fig. 3.9.2-2 Attachment of Nameplate

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4. SVP pre procedure on the Cluster 1

(1)

After installation of Battery is completed, select (CL) [OK] in response to “Insert the battery assembly (BATTERY-nn BATTERY-nn), and then select OK.”



(Eg. BATTERY-13, BATTERY-23)

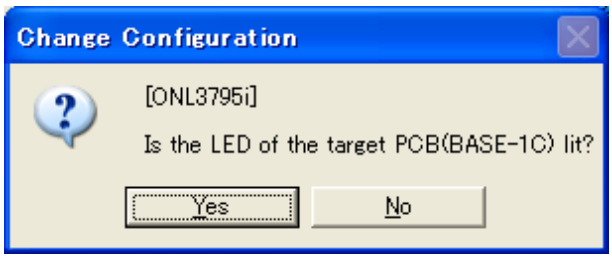
---

(2)

“The Shared Memory PCB is being blocked...”
“The Cache Memory PCB is being blocked...”
“Lighting LED of the PCB...” is displayed.

---

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



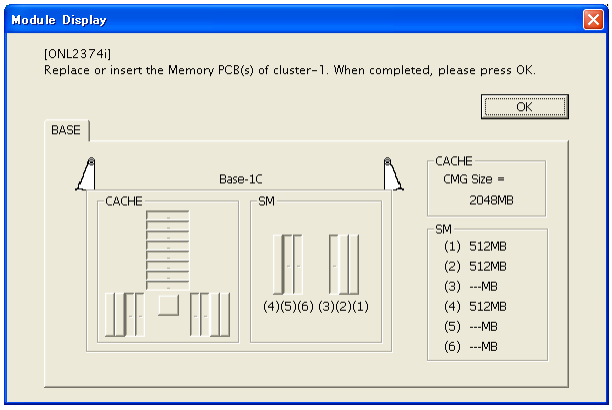
(Eg. BASE-1C)

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

If [No] is selected:
Insert a jumper in response to “Please insert the jumper into the target PCB(BASE-nn), then pull out the PCB without considering the status of the LED”.
(Refer INST03-09B-110)

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



Make sure of the installation location and size of the module to be added and insert the correct module in the correct location.
(The Shared Memory capacity may be changed at the same time, depending on the set Cache Memory capacity.)

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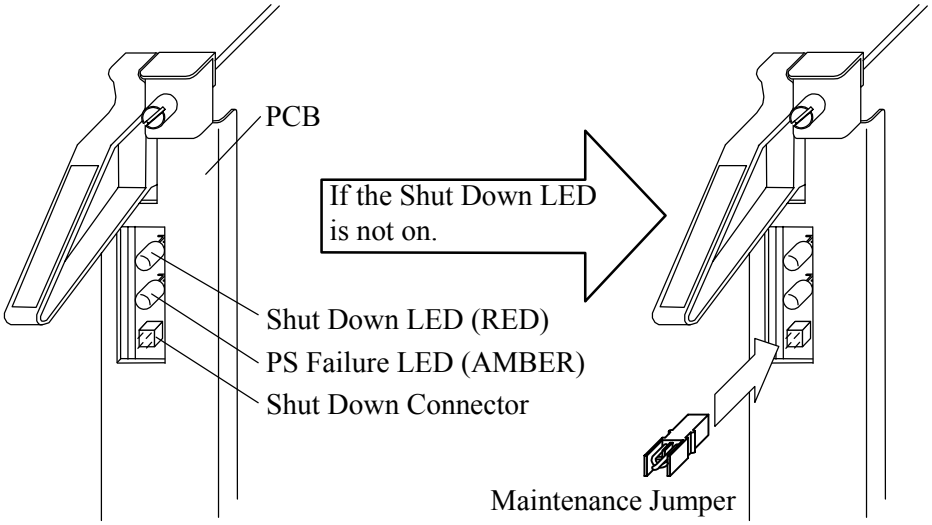
5. Install the Cache Memory on the cluster 1.
   Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

5-1. Remove the PCB.

a. While referring to Fig. 3.9.2-3 and Table 3.9.2-3 check the Shut Down LED on the Base PCB. Connect the Maintenance Jumper to the Shut Down Connector if the Shut Down LED is not on. (This procedure [5-1 a.] is not valid for a New Installation.)

⚠ CAUTION

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



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

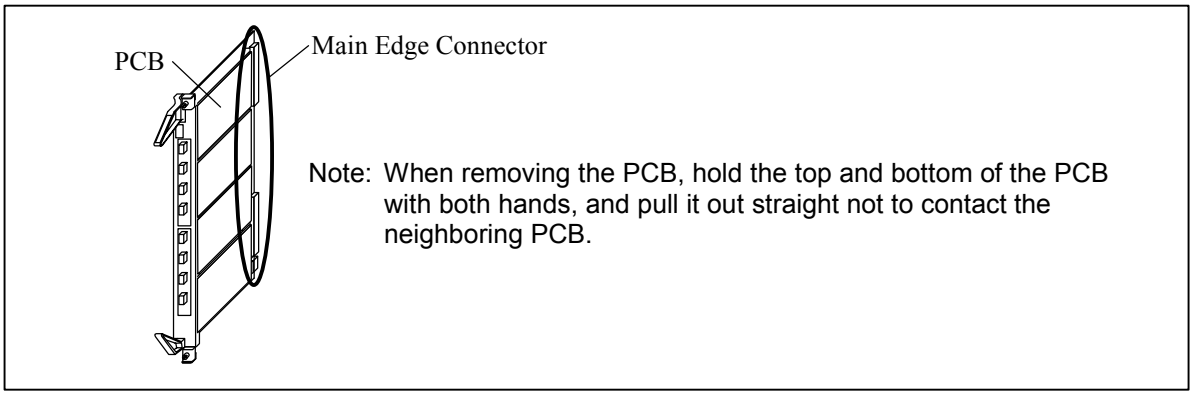
Fig. 3.9.2-3 Location of the Shut Down LED

Table 3.9.2-3 Location of the Base PCB

Cluster	PCB Name	Box	Slot No.	Location No.	Remarks
1	WP535-A	Logic Box	1C	BASE-1C	

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b. Disconnect the cable from the Base PCB.
c. Remove the two screws and remove the Base PCB.



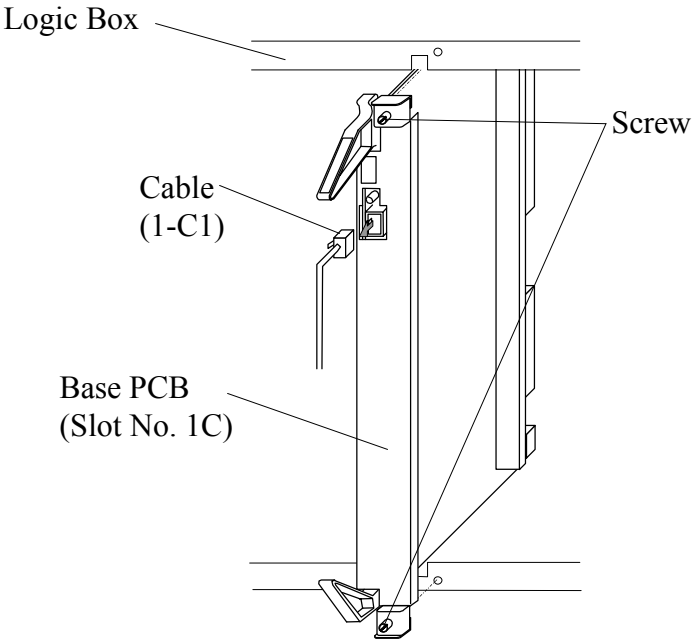


Fig. 3.9.2-4 Removal of the Base PCB

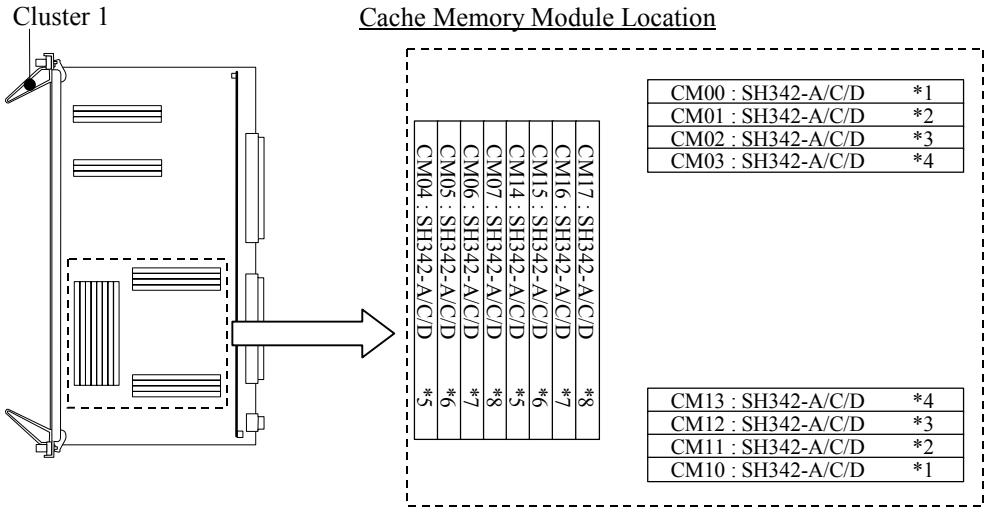
d. Remove the Maintenance Jumper if it is mounted.

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5-2 Insert the Cache Memory Modules.

a. Remove the dust covers that match the required Cache Memory capacity referring to Fig. 3.9.2-5, Fig. 3.9.2-6 and Table 3.9.2-4.

b. Insert the Cache Memory Modules that match the required Cache Memory capacity.



(Note) The cache memory module location *1 through *8 correspond to the CM Location listed in Table 3.9.2-4.

Removal of Dust Cover

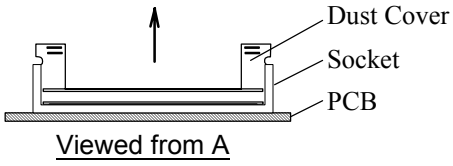
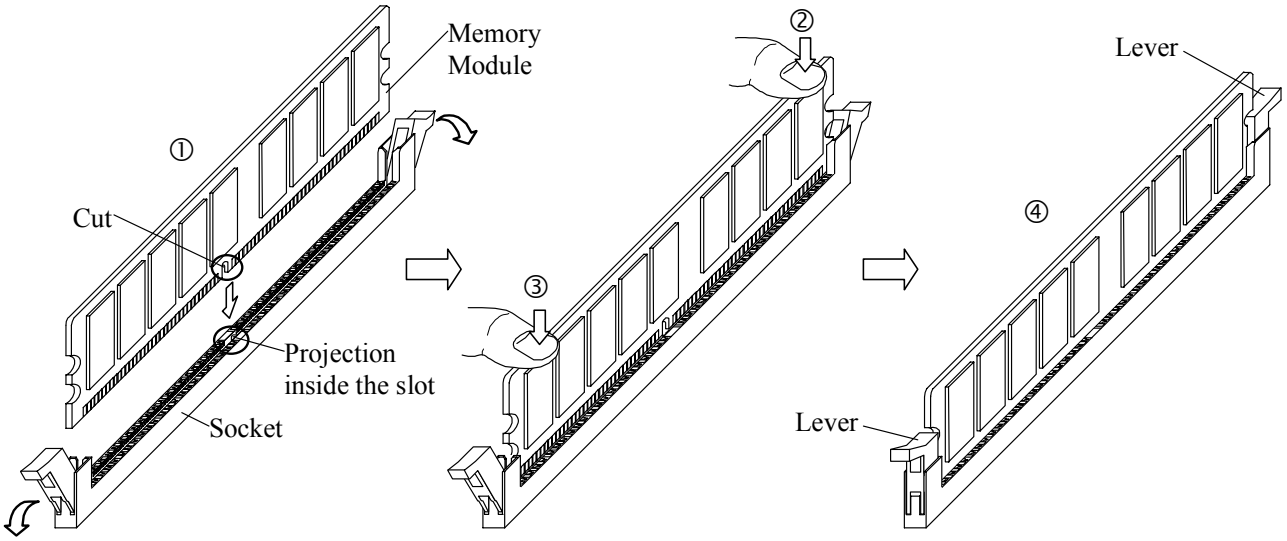
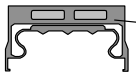


Fig. 3.9.2-5 Inserting Location of the Cache Memory Module

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Prohibition of Use:



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

Installation

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

Fig.3.9.2-6 Insertion of Memory Module

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Table 3.9.2-4 Cache memory capacity and number of necessary options

Cache Memory Capacity	DKC-F510I-C4G/C4GR		DKC-F510I-C8GR	
	Number of options	CM Location (Note)	Number of options	CM Location (Note)
4GB	1	*1	—	—
8GB	2	*2	1	*1
12GB	3	*3	—	—
16GB	4	*4	2	*2
20GB	5	*5	—	—
24GB	6	*6	3	*3
28GB	7	*7	—	—
32GB	8	*8	4	*4
40GB	—	—	5	*5
48GB	—	—	6	*6
56GB	—	—	7	*7
64GB	—	—	8	*8

Note 1: The above numbers (*1 through *8) represent the Cache Memory Module locations shown in Fig 3.9.2-5.

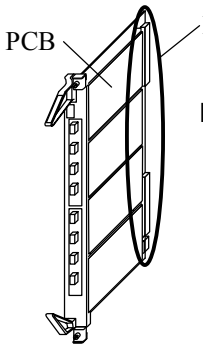
Note 2: A cache memory can’t be set up in the ‘—’ mark.

Note 3: DKC-F510I-C4G/C4GR (SH342-A/C) and DKC-F510I-C8GR (SH342-D) mixed mounting in the same PCB is inhibited.

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5-3 Insert the PCB.

a. Install the Base PCB and fasten the two screws.



Note: 1. Check that the main edge connector of the PCB has no deformation, damage or sticking of dust before installing the PCB.

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

b. Connect the cable to the Base PCB.

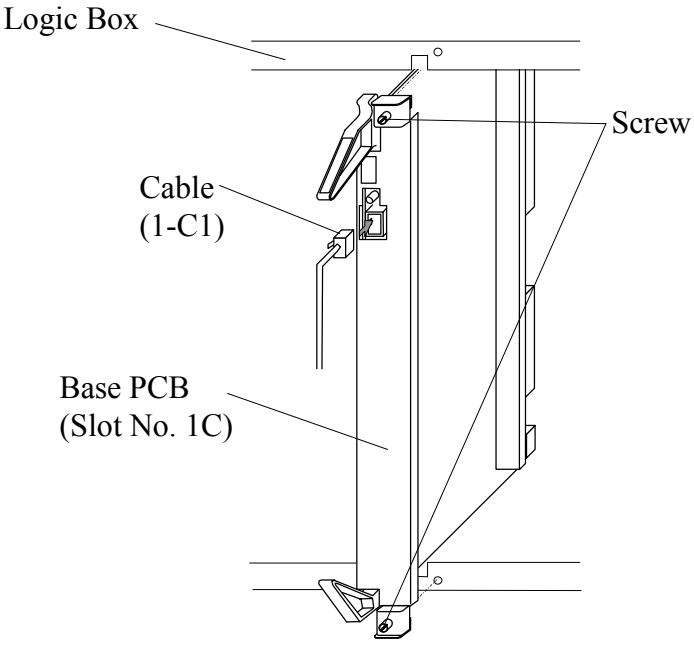


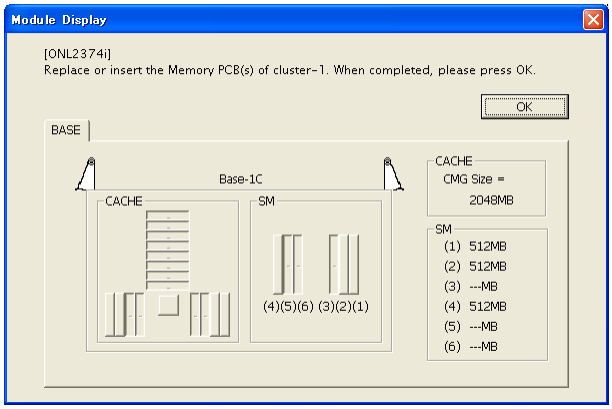
Fig.3.9.2-7 Insertion of Base PCB

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6. SVP post procedure on the Cluster 1.

(1)

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



(2) <Cache CUDG executes>
“INLINE CUDG is now running...” is displayed.

(3)

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

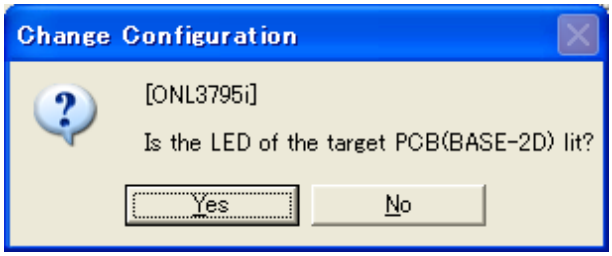
 Copyright © 2005, Hitachi, Ltd.

7. SVP pre procedure on the Cluster 2

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

---

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



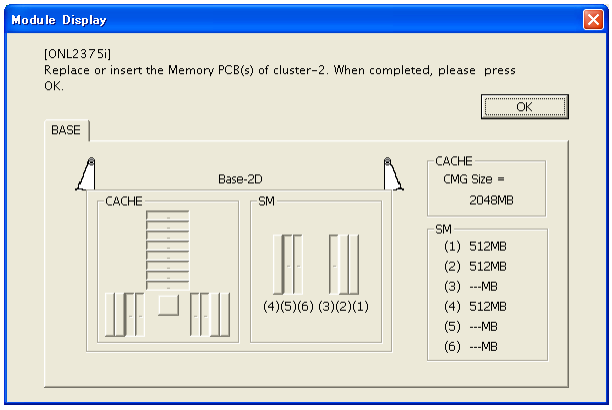
(Eg. BASE-2D)

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

If [No] is selected:
Insert a jumper in response to "Please insert the jumper into the target PCB(BASE-nn), then pull out the PCB without considering the status of the LED".
(Refer INST03-09B-200)

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



Make sure of the installation location and size of the module to be added and insert the correct module in the correct location.
(The Shared Memory capacity may be changed at the same time, depending on the set Cache Memory capacity.)

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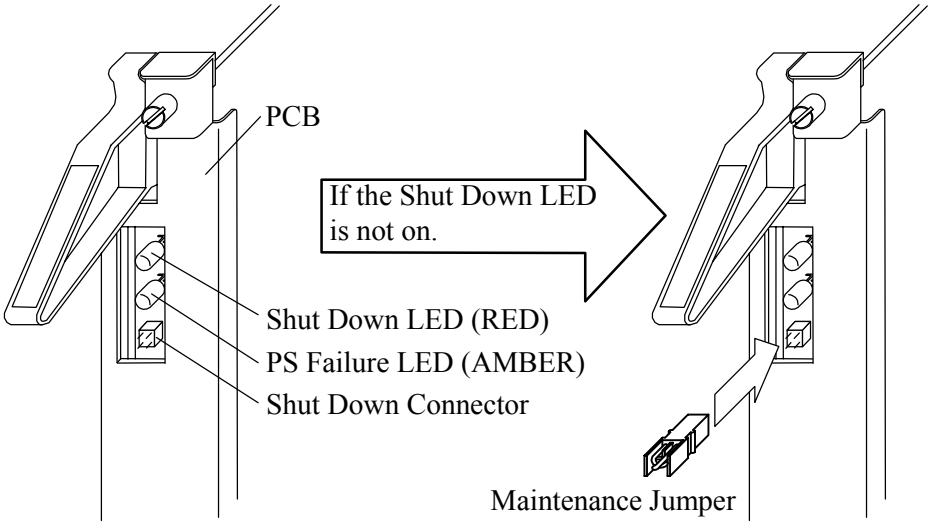
8. Install the Cache Memory on the cluster 2.
   Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

8-1. Remove the PCB.

a. While referring to Fig. 3.9.2-8 and Table 3.9.2-5 check the Shut Down LED on the Base PCB. Connect the Maintenance Jumper to the Shut Down Connector if the Shut Down LED is not on. (This procedure [8-1. a.] is not valid for a New Installation.)

⚠ CAUTION

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



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

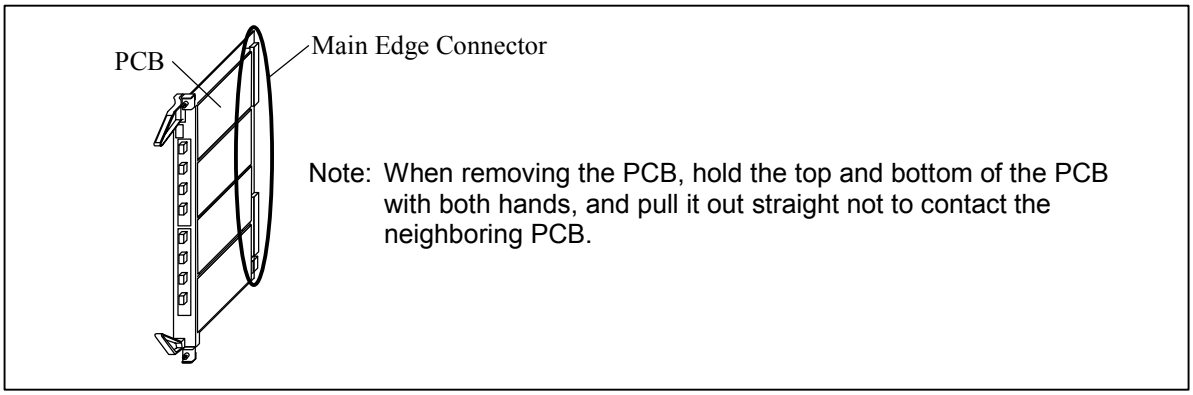
Fig. 3.9.2-8 Location of the Shut Down LED

Table 3.9.2-5 Location of the Cache Memory PCB

Cluster	PCB Name	Box	Slot No.	Location No.	Remarks
2	WP535-A	Logic Box	2D	BASE-2D	

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b. Disconnect the cable from the Base PCB.
c. Remove the two screws and remove the Base PCB.



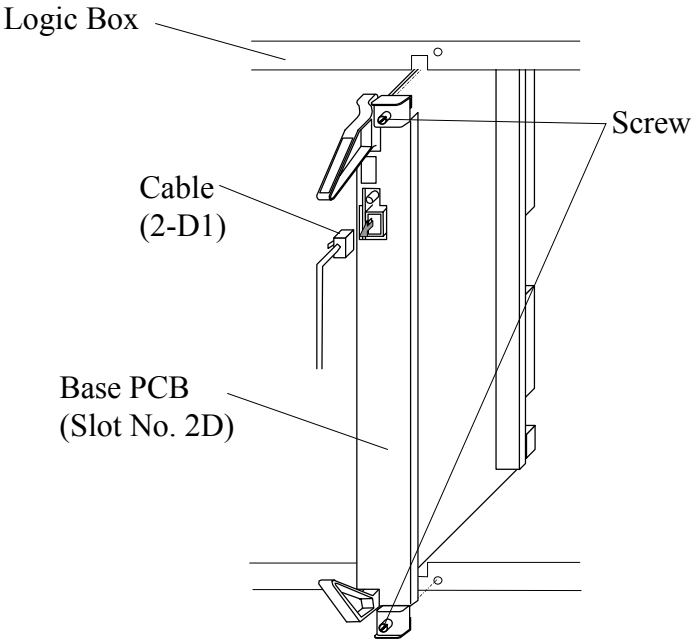


Fig. 3.9.2-9 Removal of the Base PCB

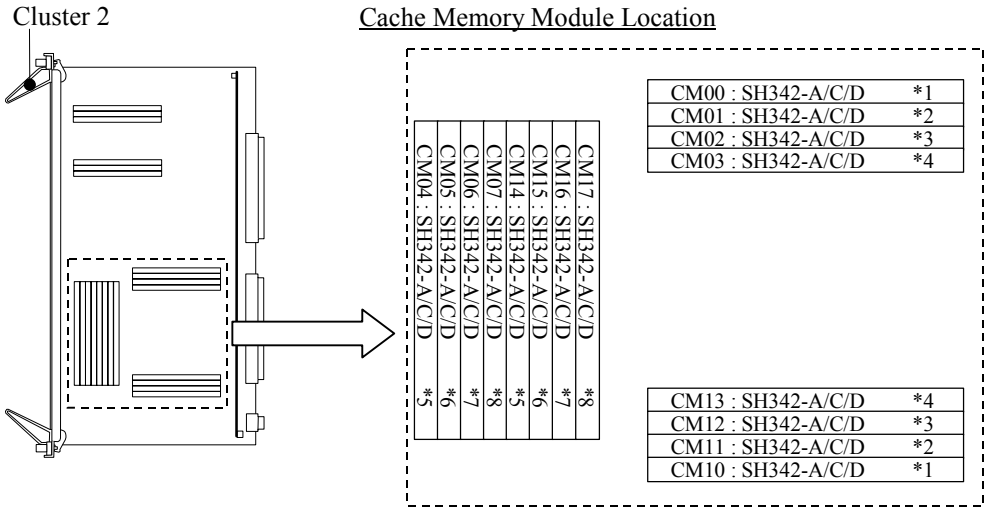
d. Remove the Maintenance Jumper if it is mounted.

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8-2. Insert the Cache Memory Modules.

a. Remove the dust covers that match the required Cache Memory capacity referring to Fig. 3.9.2-10, Fig. 3.9.2-11 and Table 3.9.2-6.

b. Insert the Cache Memory Modules that match the required Cache Memory capacity.



(Note) The cache memory module location
*1 through *8 correspond to the CM Location listed in Table 3.9.2-6.

Removal of Dust Cover

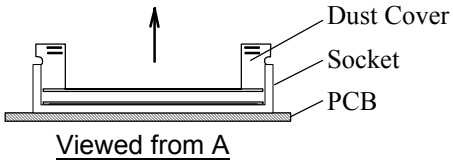
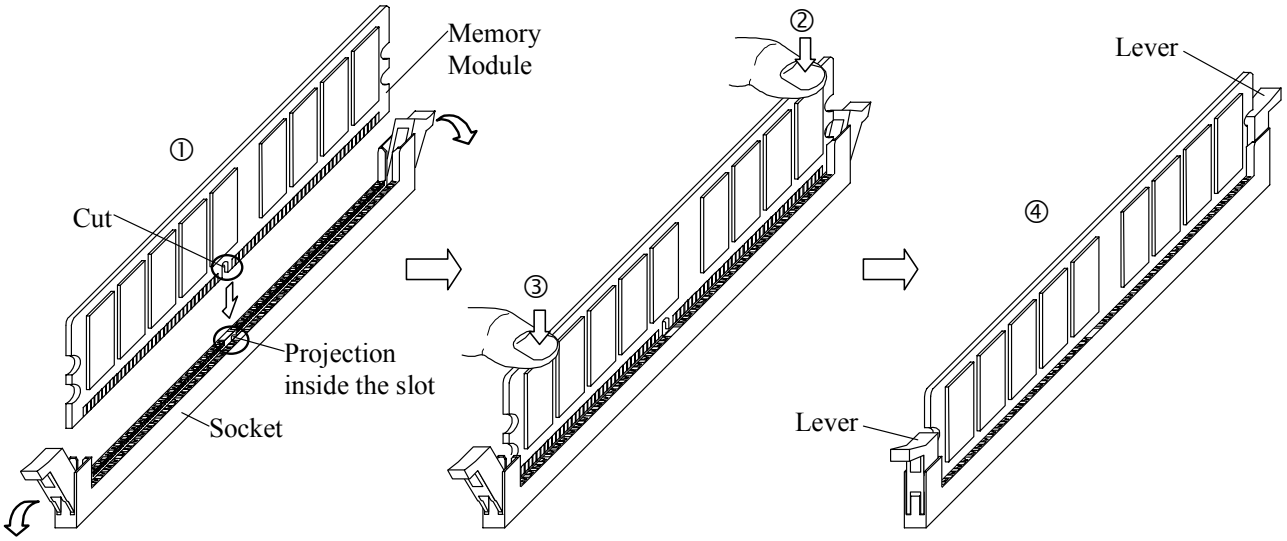
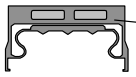


Fig. 3.9.2-10 Inserting Location of the Cache Memory Module

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Prohibition of Use:



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

Insertion

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

Fig.3.9.2-11 Insertion of Memory Module

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Table 3.9.2-6 Cache memory capacity and number of necessary options

Cache Memory Capacity	DKC-F510I-C4G/C4GR		DKC-F510I-C8GR	
	Number of options	CM Location (Note)	Number of options	CM Location (Note)
4GB	1	*1	—	—
8GB	2	*2	1	*1
12GB	3	*3	—	—
16GB	4	*4	2	*2
20GB	5	*5	—	—
24GB	6	*6	3	*3
28GB	7	*7	—	—
32GB	8	*8	4	*4
40GB	—	—	5	*5
48GB	—	—	6	*6
56GB	—	—	7	*7
64GB	—	—	8	*8

Note 1: The above numbers (*1 through *8) represent the Cache Memory Module locations shown in Fig 3.9.2-10.

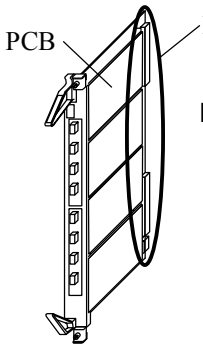
Note 2: A cache memory can’t be set up in the ‘—’ mark.

Note 3: DKC-F510I-C4G/C4GR (SH342-A/C) and DKC-F510I-C8GR (SH342-D) mixed mounting in the same PCB is inhibited.

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8-3. Insert the PCB.

a. Install the Base PCB and fasten the two screws.



Note: 1. Check that the main edge connector of the PCB has no deformation, damage or sticking of dust before installing the PCB.

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

b. Connect the cable to the Base PCB.

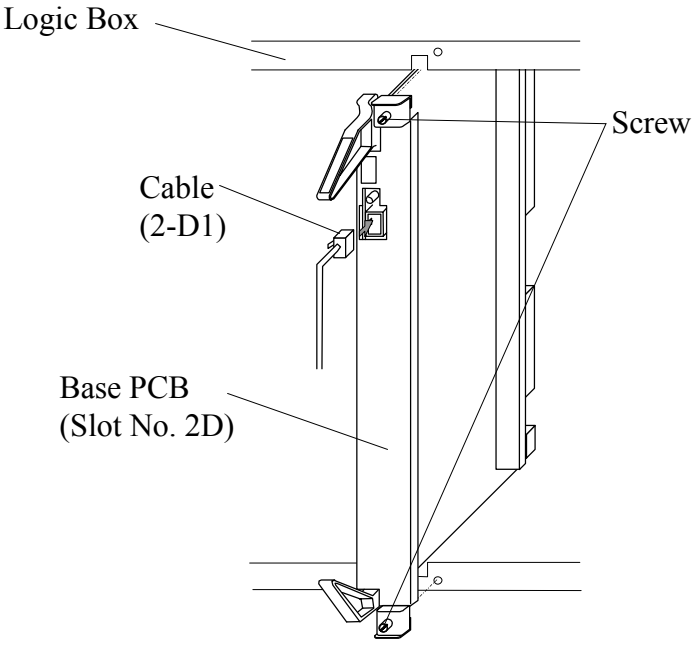


Fig.3.9.2-12 Insertion of Base PCB

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8-4 Change Painting of nameplate

a. Remove the screw from the rack frame and remove the nameplate tags to be installed.
b. When you need to install Additional Cache Memory (DKC-F510I-C8GR) and the nameplate is not attached, attach the nameplate to the nameplate tag.
c. Paint out mounting numbers of the nameplate.
d. Attach all the nameplate tags with the screw.

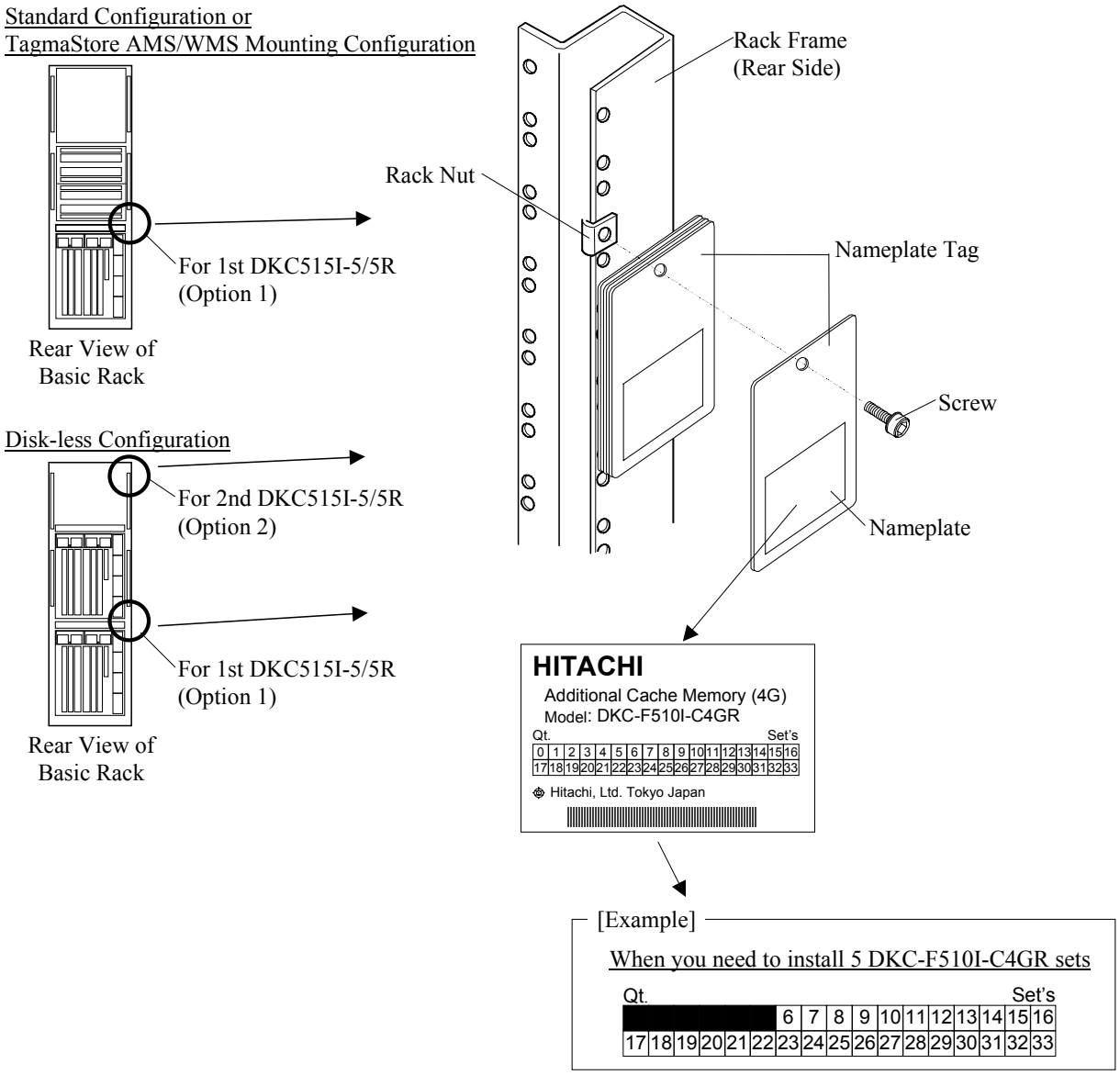


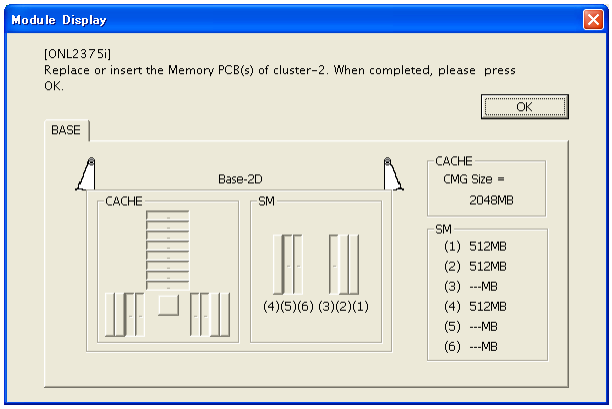
Fig. 3.9.2-13 Change Painting of Nameplate

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9. SVP post procedure on the Cluster 2.

(1)

After installation of cache memory on one side is completed, select (CL) [OK] in response to "Replace or insert the Memory PCBs of cluster-2. When completed, please press [OK].".



---

(2) <Cache CUDG executes>
"INLINE CUDG is now running..." is displayed.

---

(3)

"Changing the configuration date, for equipment of shared/cache memory..."
"Restoring the Cache Memory PCB..."
"Restoring the Shared Memory PCB..." is displayed.

---

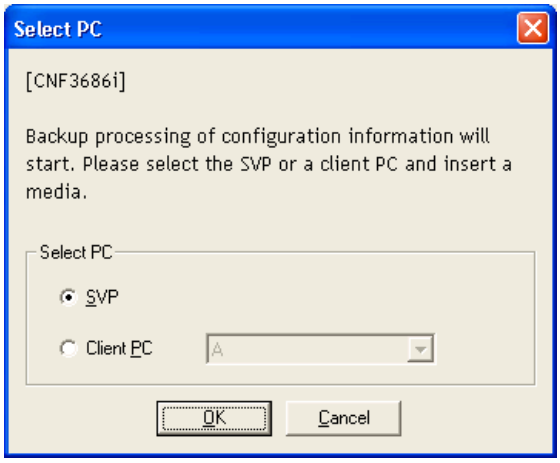
(4) <End of system update processing>
"Renewal process has completed. Please check subsystem status." is displayed when recovery processing on all installed components is completed. Select (CL) [OK] in response to this message.



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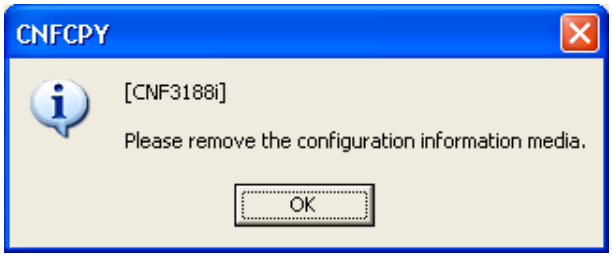
(5)

"Reading subsystem configuration data..." is displayed.
"Backup processing of configuration information will start. Please select the SVP or a client PC and insert a media." is displayed.
Insert the Config FD into FDD of selected PC, and select (CL) [OK].



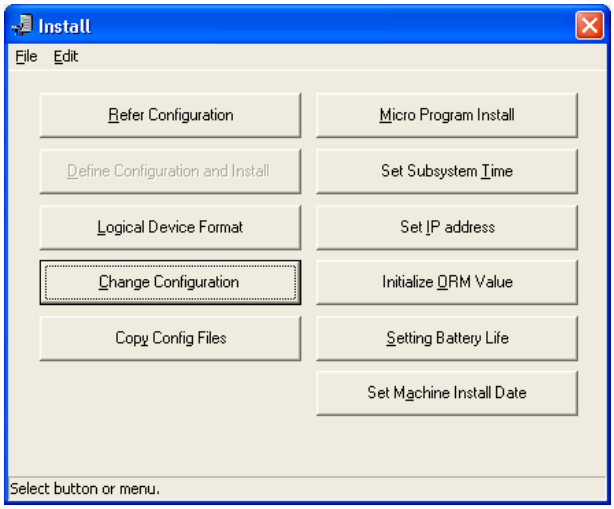
(6)

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



(7)

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



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

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3.9.3 Change CM Module group size

Note:

1. When the CM module group size is changed, it is required to make the CM capacity before the replacement and after the replacement the same.
2. When two control frames (DKCs) are installed in the Disk-less configuration, check the serial number of target DKC on the SVP screen and beware of a attachment position to prevent mistakes. (See “5.2.4 Refer Configuration 3. <DKC Configuration window>” [INST05-410].)

1. SVP pre procedure

(1)

Close the all SVP menu.

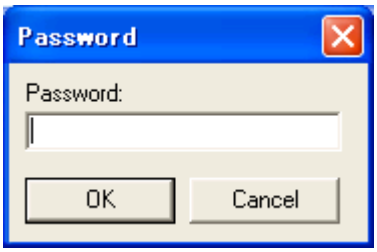
---

(2) <Enter the password>

CAUTION

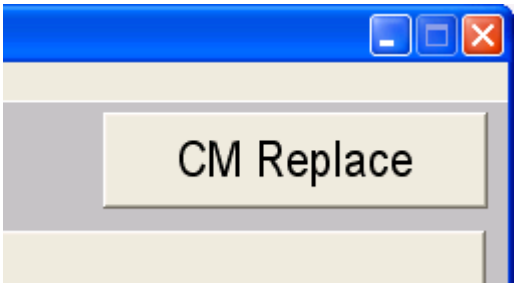
This is a special (exceptional) operation that requires an input of a password. Ask the technical support division and input the password.

Press [Shift] + [Ctrl] + [C] in the ‘SVP’ window.
Enter the password, and select (CL) [OK].
(Please call Technical Support Division for asking it.)



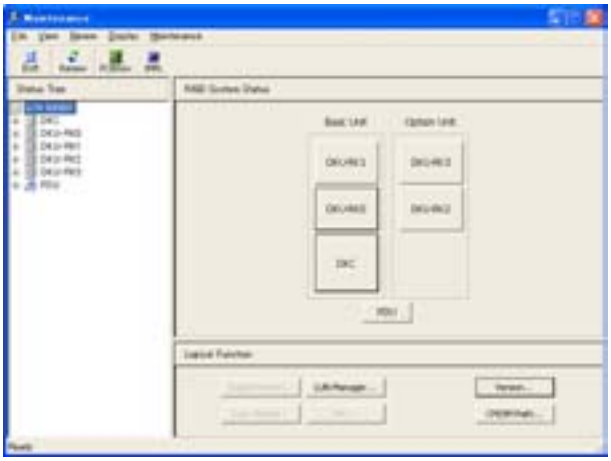
---

(3) <CM Replace Mode>
‘CM Replace’ is displayed.
Select (CL) [Maintenance].

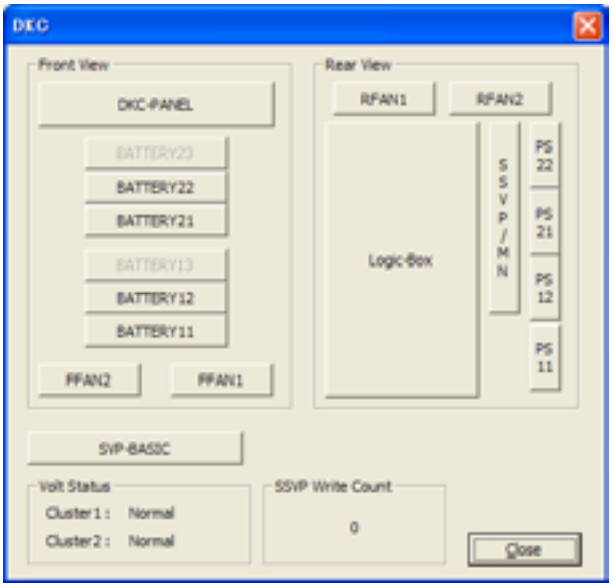


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(4) <Maintenance window>
'Maintenance' window is displayed.
In the 'Maintenance' window, check and select (CL) [DKC] to be replaced.



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



(6) <Select BASE PCB>
Select (CL) part.

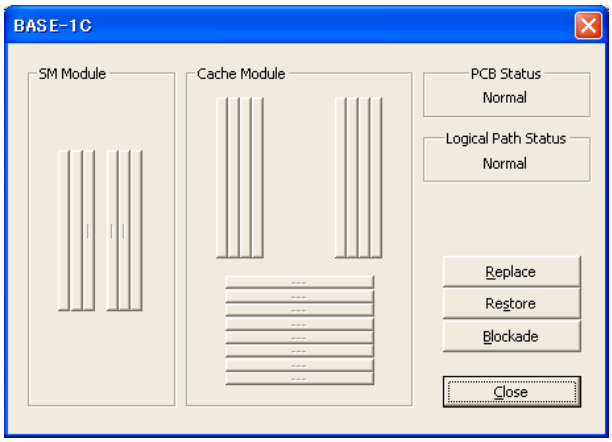


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(7) <Replace>

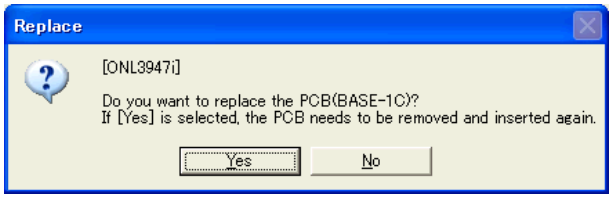
> **CAUTION**
> When the screen appears prompting the operator to input a password to prevent multiple maintenance or for executing a pin check, contact the technical support division to ask for instructions.

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



If any other message than the list is displayed, see the SVP Message Section (SVPMSG00-00).

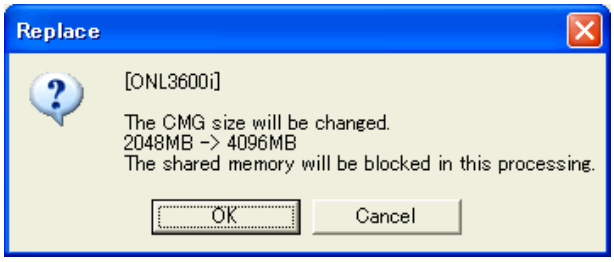
(8) <Check beginning of cache replacement>
Select (CL) [Yes] after making sure that the package to be replaced is correct in response to:



"Do you want to replace the PCB(BASE-nn)?
If [Yes] is selected, the PCB needs to be removed and inserted again."

---

(9) <Change the Cache Memory Module Size>
Check module size, and select (CL) [OK] in response to:

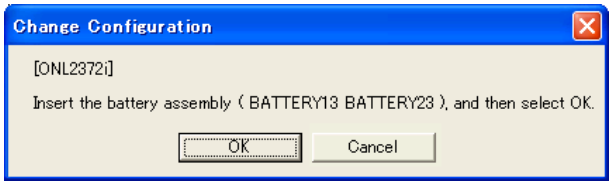


"The CMG size will be changed.
xxxxMB -> xxxxMB
The shared memory will be blocked in this processing."
(xxxx is CMG of before and after size.)

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(10) <Addition of the battery>

Do not press the [OK] button at this time yet. When addition of the battery is required, a message, “Insert the battery assembly (BATTERYnn BATTERYnn), and then select OK.” is displayed.



When the message is displayed, install the hardware component following “3. Install the Additional Battery” on page INST03-09B-60.
When the message is not displayed, go to step (11).

---

(11) <Cache blocking>

“The Shared Memory PCB(BASE-nn) is being blocked.” is displayed.
“The Cache Memory PCB(BASE-nn) is being blocked.” is displayed.

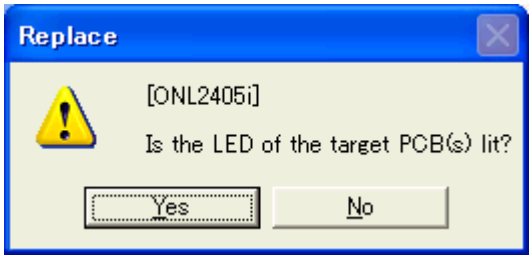
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(12) <Check shut down LED>

Select (CL)

* [Yes] if LED is on
* [No] if LED is off

in response to "Is the LED of the target PCB(s) lit?".



When [No] is selected, the same message is displayed again. Check the LED and then reply to a message.

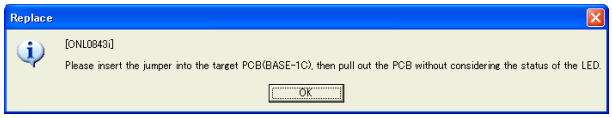
<Forcing shut down LED on>

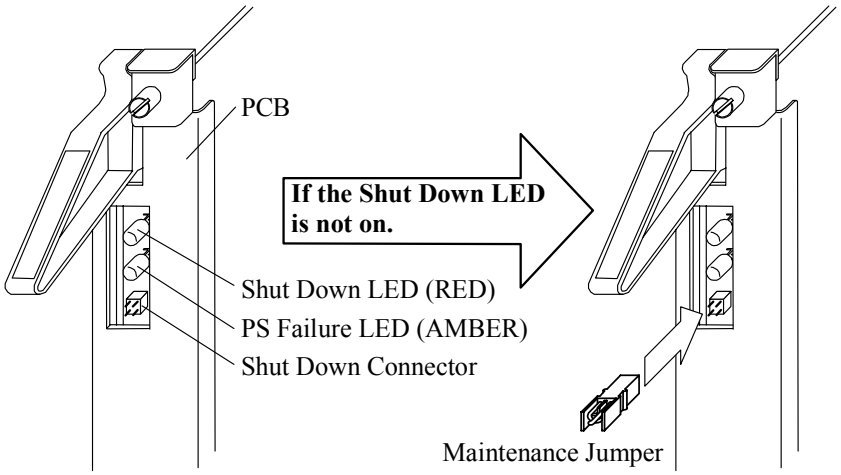
CAUTION

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

If [No] is selected:

Insert a jumper in response to "Please insert the jumper into target PCB(BASE -nn), then pull out the PCB without considering the status of the LED".





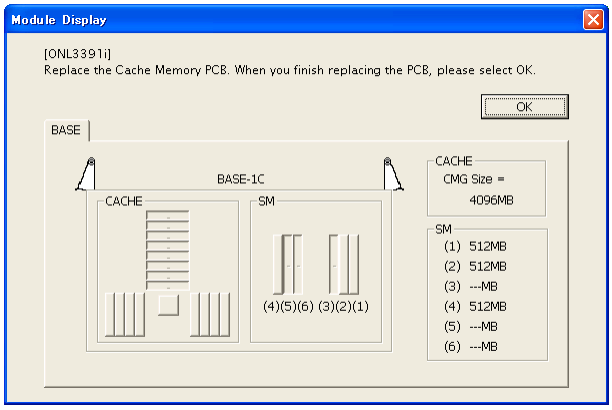
Note: When the Maintenance Jumper is inserted in the PCB, the Shut Down LED (RED) and the PS Failure LED (AMBER) light on, but it is not a problem if they do not light on.

Fig. 3.9.3-1 Location of Shut Down LED

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(13) <Cache Replacement>

At this point refrain from pressing the [OK] button.
"Replace the Cache Memory PCB. When you finish replacing the PCB, please select OK." is displayed.



Make sure of the installation location and size of the module to be added and insert the correct module in the correct location.

(Uninstalled module is displayed as looks depressed.)

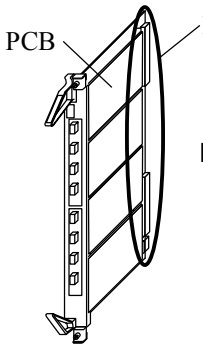
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2. Replacement of Cache Memory Module

2-1 Remove the Base PCB.

a. Disconnect the cable from the Base PCB.

b. Remove the two screws and remove the Base PCB.



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

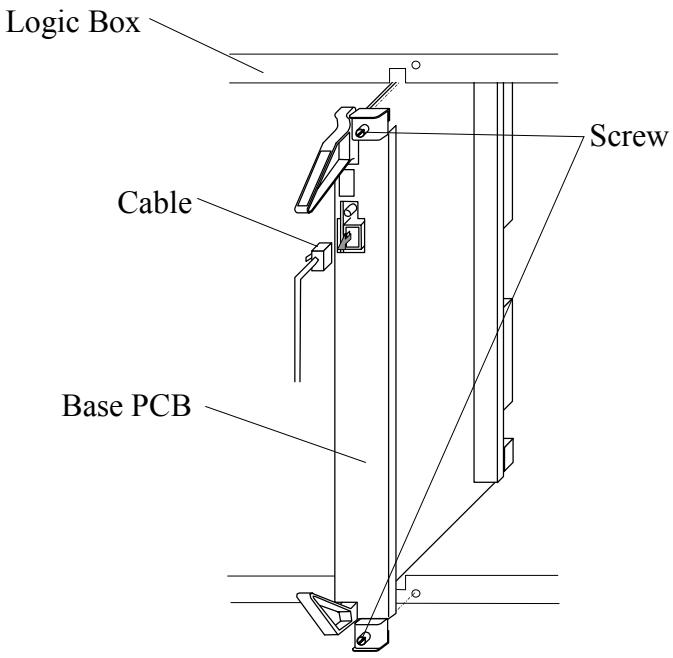
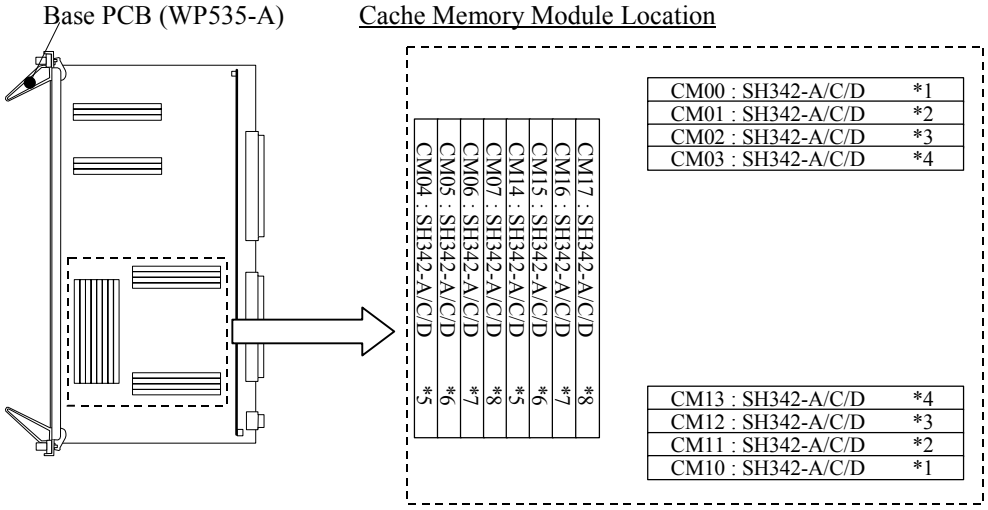


Fig. 3.9.3-2 Removal of the Base PCB

c. Remove the Maintenance Jumper if it is mounted.

2-2 Replace the Cache Memory Module.

a. Remove all the Cache Memory Module from the PCB. Refer to Fig.3.9.3-3 and Fig.3.9.3-4.
b. Insert the Cache Memory Modules to the PCB.
c. Insert the dust covers into the vacant sockets.



*1: DKC-F510I-C4G/C4GR/C8GR × 1 set
*2: DKC-F510I-C4G/C4GR/C8GR × 2 sets
*3: DKC-F510I-C4G/C4GR/C8GR × 3 sets
*4: DKC-F510I-C4G/C4GR/C8GR × 4 sets
*5: DKC-F510I-C4G/C4GR/C8GR × 5 sets
*6: DKC-F510I-C4G/C4GR/C8GR × 6 sets
*7: DKC-F510I-C4G/C4GR/C8GR × 7 sets
*8: DKC-F510I-C4G/C4GR/C8GR × 8 sets

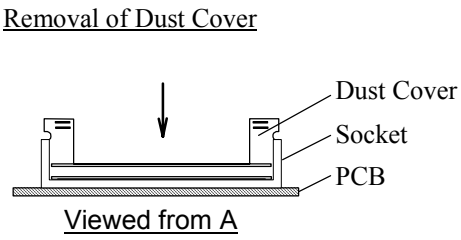
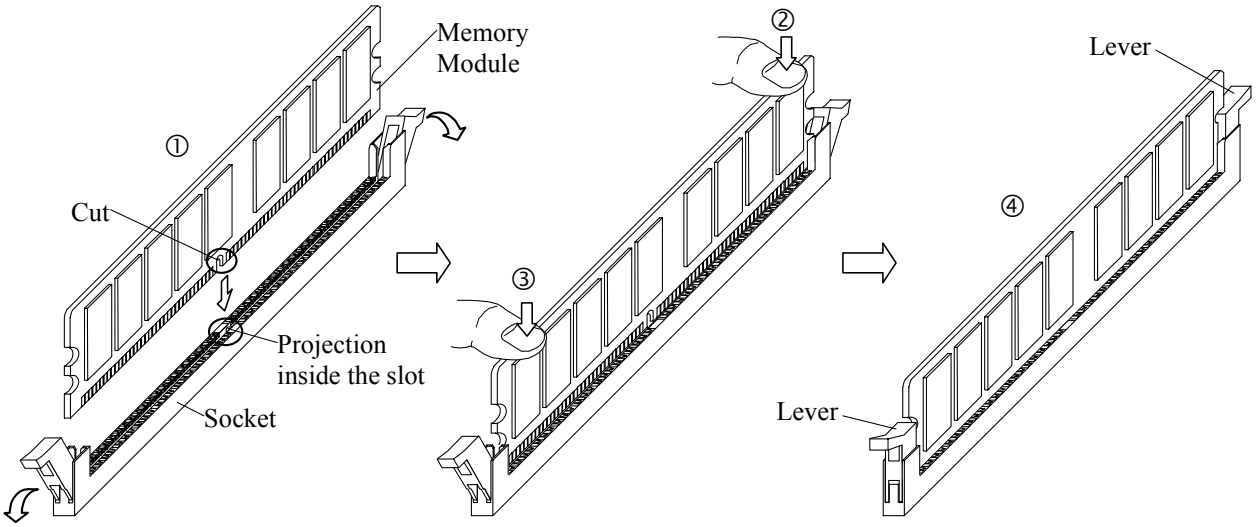
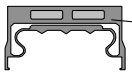


Fig. 3.9.3-3 Inserting Location of the Cache Memory Module

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Prohibition of Use:



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

Installation

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

Removal

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

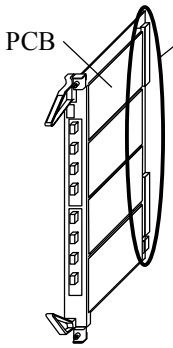
Fig.3.9.3-4 Insertion/Removal of Memory Module

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2-3 Insert the BASE PCB.

a. Insert the Base and fasten the two screws.

b. Connect the cable to the Base PCB.



Note: 1. Check that the main edge connector of the PCB has no deformation, damage or sticking of dust before installing the PCB.

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

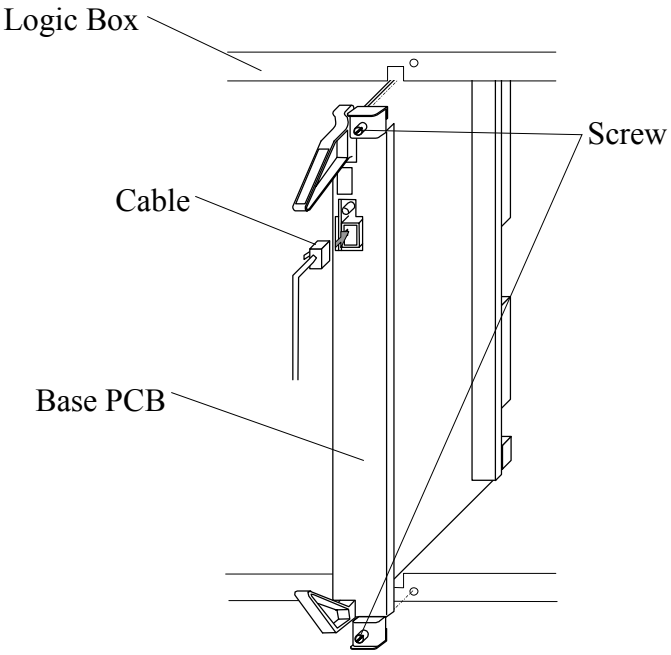


Fig.3.9.3-5 Insertion of Base PCB

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3. SVP post procedure

(1) <Replace Cache module>
Replace cache module.
And select (CL) [OK].

(2) <Restoring the Cache Memory>
"Restoring the Cache Memory PCB(BASE-nn)..." is displayed.

(3) <Restoring the Shared Memory>
"Restoring the Shared Memory PCB(BASE-nn)... " is displayed.

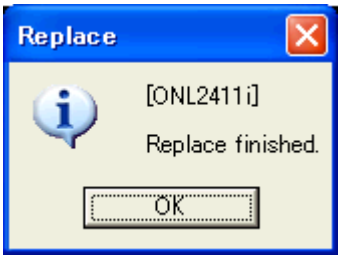
(4) <De-installation of the battery>
Do not press the [OK] button at this time yet.
When de-installation of the battery is required, a message, "Pull out the battery assembly (BATTERYnn BATTERYnn), and then select OK." is displayed.



When the message is displayed, remove the hardware component following "7. De-Installation procedure of the Additional Battery" on page INST04-03B-240.
When the message is not displayed, go to step (5).

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(5) <Check the end of Cache/Shared Memory recovery>
Select (CL) [OK] in response to “Replace finished.”.



(6)
Close ‘BASE-nn’ window.
If finishing in the Cluster-2 side, go to (8).

(7) <Change the Cache Memory module size in Cluster-2 side>
Perform steps 1-(5) to 3-(3).
Select [BASE-2D].

(8)
Close ‘DKC’ window.
Close ‘Maintenance’ window.
Change the mode to [View Mode].

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4. Change Painting of nameplate
   a. Remove the screw from the rack frame and remove the nameplate tags to be installed.
   b. Affix a necessary portion of the Label (QTY)(Accessory of DKC; DWG No.3268905-1) in layers on the de-installation option nameplate.
   c. When the Additional Cache Memory (DKC-F510I-C8GR) is installed and the nameplate is not attached, attach the nameplate to the nameplate tag.
   d. Paint out mounting numbers of the installation option nameplate.
   e. Attach all the nameplate tags with the screw.

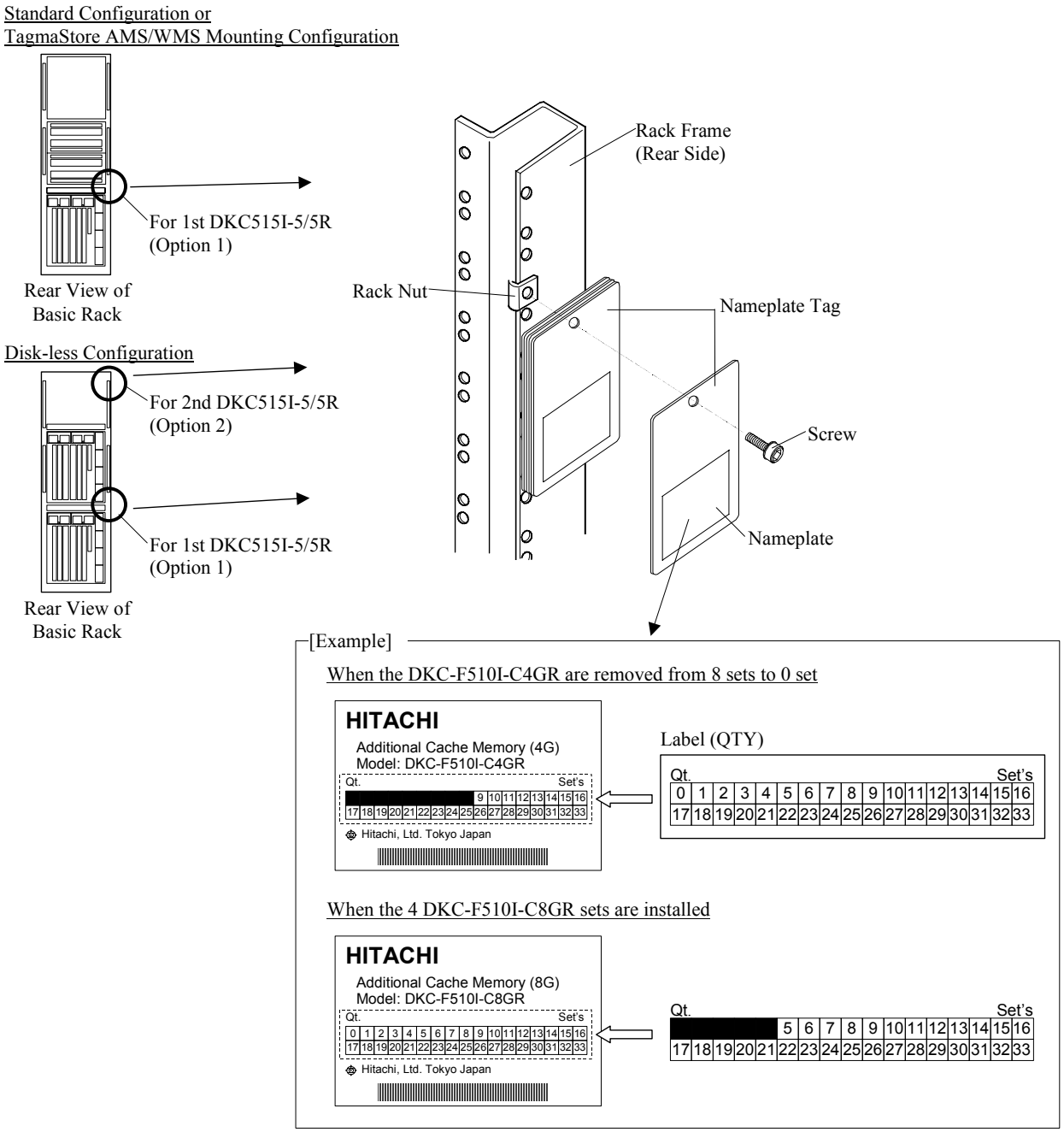


Fig. 3.9.3-6 Change Painting of Nameplate

f. Return to the working table and do the rest of the work. (INST02-50)

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3.10 Installation of MIX Adapter, DEV Interface Cable and HDD Canister (DKC-F515I-MIX2R/MIX4R/UC0R/UC1R/UC4R/EXC0R/EXC2R, DKU-F505I-72KS/72JSR/72KSR/146JS/146JSR/146KSR/300JSR/300KSR/400JSR/ 72K1R/146J1R/146K1R/300J1R)

Table 3.10-1 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKC-F515I-MIX2R	MIX PCB	5527991-C	2	
		Nameplate (HDS)	2751038-56	1	RSD
			2751040-56/256		HICAM/HICEF
		Nameplate (HP)	2751038-156	1	RSD
			2751040-156/356		HICAM/HICEF
2	DKC-F515I-MIX4R	MIX PCB (4Gbps)	5527992-C	2	
		Nameplate (HDS)	2751038-329	1	RSD
			2751040-429/629		HICAM/HICEF
		Nameplate (HP)	2751038-429	1	RSD
			2751040-529/729		HICAM/HICEF
3	DKC-F515I-UC0R	Fibre Cable Bundle	3272858-A	1	
		Repeat Binder	5409042-3	4	
		Nameplate (HDS)	2751038-45	1	RSD
			2751040-45/245		HICAM/HICEF
4	DKC-F515I-UC1R	Fibre Cable Bundle	3272858-B	1	
		Repeat Binder	5409042-3	4	
		Nameplate (HDS)	2751038-46	1	RSD
			2751040-46/246		HICAM/HICEF
		Nameplate (HP) (AE104B)	2751037-28	1	RSD
			2751039-28/128		HICAM/HICEF
5	DKC-F515I-UC4R (*1)	Fibre Cable Bundle	3272858-G	1	
		Repeat Binder	5409042-3	4	
		Nameplate (HDS)	2751038-321	1	RSD
			2751040-421/621		HICAM/HICEF
6	DKC-F515I-EXC0R	Fibre Cable Bundle	3272858-C	1	
		Binder	5532297-1	3	
		Cable Clamp	3274136-1	4	
		Screw	SB416N	8	
		Cable Stopper	3274130-1	4	
		Screw	SB306N	8	
		Tape	3274352-1	4	
		Label (V/Hz/PH.)	3264271-1	1	Label ①
		Label (REV)	3239458-1	1	Label ②

(To be continued.)

*1: Use when TagmaStore AMS/ WMS mounted configuration.

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(Continued from preceding sheet.)

No.	Model Number	Part Name	Part No.	Quantity	Remarks
6	DKC-F515I-EXC0R	Label (KOREN-MIC)	3274178-1	1	Label ③
		Label-NOISE (FCC-CSA)	3269890-1	1	Label ④
		Label (VCCI)	5409106-1	1	Label ⑤
		Label (BSMI-D3300)	3265644-2	1	Label ⑥
			3265644-4		
		Label (UL4-1)	5529984-1	1	Label ⑦
		Label (UL5)	3264272-1	1	Label ⑧
		Label (UL3)	5515795-1	1	Label ⑨
		Label (BSMI)	3269907-1	1	Label ⑩
		Label (V/Hz-FRMR)	3274155-1	1	Label ⑪
		Nameplate (HDS)	2751038-49	1	RSD
			2751040-49/249		HICAM/HICEF
		Nameplate (HP) (AE115B)	2751037-29	1	RSD
			2751039-29/129		HICAM/HICEF
7	DKC-F515I-EXC2R (*1)	Fibre Cable Bundle	3272858-H	1	
		Binder	5532297-1	3	
		Cable Clamp	3274136-1	4	
		Screw	SB416N	8	
		Cable Stopper	3274130-1	4	
		Screw	SB306N	8	
		Tape	3274352-1	4	
		Label (V/Hz/PH.)	3264271-1	1	Label ①
		Label (REV)	3239458-1	1	Label ②
		Label (KOREN-MIC)	3274178-1	1	Label ③
		Label-NOISE (FCC-CSA)	3269890-1	1	Label ④
		Label (VCCI)	5409106-1	1	Label ⑤
		Label (BSMI-D3300)	3265644-2	1	Label ⑥
			3265644-4		
		Label (UL4-1)	5529984-1	1	Label ⑦
		Label (UL5)	3264272-1	1	Label ⑧
		Label (UL3)	5515795-1	1	Label ⑨
		Label (BSMI)	3269907-1	1	Label ⑩
		Label (V/Hz-FRMR)	3274155-1	1	Label ⑪
		Nameplate (HDS)	2751038-322	1	RSD
			2751040-422/622		HICAM/HICEF

(To be continued.)

*1: Use when TagmaStore AMS/ WMS mounted configuration.

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(Continued from preceding sheet.)

No.	Model Number	Part Name	Part No.	Quantity	Remarks
8	DKU-F505I-72JSR	HDU500-72JSFC	5524274-D	1	
		Nameplate (HDS)	2751053-86/87/88	1	RSD/HICAM/HICEF
		Nameplate (HP)	2751053-92/93/94	1	RSD/HICAM/HICEF
9	DKU-F505I-72KS	HDU500-72KSFC	5524271-A	1	
			5524271-D		
		HDU500-72K1FC	5524271-E		
		HDU500-72K2FC	5524271-F		
		Nameplate (HDS)	2106998-18/19/20	1	RSD/HICAM/HICEF
		Nameplate (HP)	2106998-24/25/26	1	RSD/HICAM/HICEF
10	DKU-F505I-72KSR	HDU500-72KSFC	5524271-D	1	
		HDU500-72K1FC	5524271-E		
		HDU500-72K2FC	5524271-F		
		Nameplate (HDS)	2751053-18/19/20	1	RSD/HICAM/HICEF
		Nameplate (HP)	2751053-24/25/26	1	RSD/HICAM/HICEF
11	DKU-F505I-146JS	HDU500-146JSFC	5524269-A	1	
			5524269-D		
		HDU500-146J1FC	5524269-E		
		HDU500-146J2FC	5524269-F		
		Nameplate (HDS)	2106998-1/2/3	1	RSD/HICAM/HICEF
		Nameplate (HP)	2106998-7/8/9	1	RSD/HICAM/HICEF
12	DKU-F505I-146JSR	HDU500-146JSFC	5524269-D	1	
		HDU500-146J1FC	5524269-E		
		HDU500-146J2FC	5524269-F		
		Nameplate (HDS)	2751053-1/2/3	1	RSD/HICAM/HICEF
		Nameplate (HP)	2751053-7/8/9	1	RSD/HICAM/HICEF
13	DKU-F505I-146KSR	HDU500-146KSFC	5524272-D	1	
		HDU500-146K1FC	5524272-E		
		HDU500-146K2FC	5524272-F		
		Nameplate (HDS)	2751053-35/36/37	1	RSD/HICAM/HICEF
		Nameplate (HP)	2751053-41/42/43	1	RSD/HICAM/HICEF

(To be continued.)

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(Continued from preceding sheet.)

No.	Model Number	Part Name	Part No.	Quantity	Remarks
14	DKU-F505I-300JSR	HDU500-300JSFC	5524270-D	1	
		HDU500-300J1FC	5524270-E		
		HDU500-300J2FC	5524270-F		
		Nameplate (HDS)	2751053-52/53/54	1	RSD/HICAM/HICEF
		Nameplate (HP)	2751053-58/59/60	1	RSD/HICAM/HICEF
15	DKU-F505I-72K1R	HDU500-72K1FC	5524271-E	1	
		Nameplate (HP)	2751053-177/178/179	1	RSD/HICAM/HICEF
16	DKU-F505I-146J1R	HDU500-146J1FC	5524269-E	1	
		Nameplate (HP)	2751053-143/144/145	1	RSD/HICAM/HICEF
17	DKU-F505I-146K1R	HDU500-146K1FC	5524272-E	1	
		Nameplate (HP)	2751053-194/195/196	1	RSD/HICAM/HICEF
18	DKU-F505I-300J1R	HDU500-300J1FC	5524270-E	1	
		Nameplate (HP)	2751053-160/161/162	1	RSD/HICAM/HICEF
19	DKU-F505I-300KSR	HDU500-300K1FC	5524276-E	1	
		HDU500-300K2FC	5524276-F		
		Nameplate (HDS)	2751053-273/274/275	1	RSD/HICAM/HICEF
		Nameplate (HP)	2751053-279/280/281	1	RSD/HICAM/HICEF
20	DKU-F505I-400JSR	HDU500-400J1FC	5524277-E	1	
		Nameplate (HDS)	2751053-290/291/292	1	RSD/HICAM/HICEF
		Nameplate (HP)	2751053-296/297/298	1	RSD/HICAM/HICEF

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3.10.1 Flowchart

There are ten cases (① to ③) of these addition works as shown in the following table. Perform the work referring to the flowchart of each work.

Case	Option Installation Procedure	Page
①	When performing addition of the data/spare HDD canister (DKU-F505I-72KS/72JSR/72KSR/146JS/146JSR/146KSR/ 300JSR/300KSR/400JSR/72K1R/146J1R/146K1R/300J1R)	INST03-10-40
②	When performing addition of the data/spare HDD canister, MIX, and DEV interface cable that accompanies the addition of the HDD Boxes in case of Standard configuration (DKC-F515I-MIX2R/MIX4R/UC0R/UC1R/EXC0R, DKU-F505I-72KS/72JSR/72KSR/146JS/146JSR/146KSR/ 300JSR/300KSR/400JSR/72K1R/146J1R/146K1R/300J1R)	INST03-10-50
③	When performing addition of the data/spare HDD canister, MIX, and DEV interface cable that accompanies the addition of the HDD Boxes in case of TagmaStore AMS/WMS installed configuration (DKC-F515I-MIX2R/MIX4R/UC0R/UC1R/UC4R/EXC2R, DKU-F505I-72KS/72JSR/72KSR/146JS/146JSR/146KSR/ 300JSR/300KSR/400JSR/72K1R/146J1R/146K1R/300J1R)	INST03-10-60

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① When performing addition of the data/spare HDD canister

---------- [INST03-10A-10 through 250]

1. SVP pre procedure (Setting up the New Device Structure Information)

↓

2. Installation Procedure of HDD Canister

↓

3. SVP post procedure

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② When performing addition of the data/spare HDD canister, MIX and DEV interface cable that accompanies the addition of the HDD Boxes in case of Standard configuration
---------- [INST03-10C-10 through 520]

1. Installation Procedure of DEV Interface Cable (DKC-F515I-UC0R)
   Note: Connect the DEV interface cable only with installed HDD Box Kit (DKC-F515I-B2R).
   * In this step, do not connect the DEV interface cable with operating MIX PCB.

↓

2. Installation Procedure of DEV Interface Cable (DKC-F515I-UC1R)
   Note: Connect the DEV interface cable only with installed HDD Box Kit (DKC-F515I-B2R).
   * In this step, do not connect the DEV interface cable with operating HDD Box.

↓

3. Installation Procedure of DEV Interface Cable (DKC-F515I-EXC0R)
   Note: Connect the DEV interface cable only with installed HDD Box Kit (DKC-F515I-B2R).
   * In this step, do not connect the DEV interface cable with operating HDD Box.

↓

4. SVP pre procedure (Setting up the New Device Structure Information)

↓

5. Installation Procedure of MIX Adapter (DKC-F515I-MIX2R/MIX4R) (Only new installation)

↓

6. Installation Procedure of HDD Canister

↓

7. Connection of DEV Interface Cable (DKC-F515I-UC0R/UC1R/EXC0R)
   Note: Connect the DEV interface cable with operating HDD Box or MIX PCB.

↓

8. SVP post procedure

↓

9. Attachment of Covers (DKC-F515I-UC0R/UC1R/EXC0R)

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③ When performing addition of the data/spare HDD canister, MIX and DEV interface cable that accompanies the addition of the HDD Boxes in case of TagmaStore AMS/WMS installed configuration

---------- [INST03-10D-10 through 610]

1. Installation Procedure of DEV Interface Cable (DKC-F515I-UC0R)
   Note: Connect the DEV interface cable only with installed HDD Box Kit (DKC-F515I-B2R).
   * In this step, do not connect the DEV interface cable with operating MIX PCB.

↓

2. Installation Procedure of DEV Interface Cable (DKC-F515I-EXC2R)
   Note: Connect the DEV interface cable only with installed HDD Box Kit (DKC-F515I-B2R).
   * In this step, do not connect the DEV interface cable with operating HDD Box.

↓

3. Installation Procedure of DEV Interface Cable (DKC-F515I-UC4R)
   Note: Connect the DEV interface cable only with installed HDD Box Kit (DKC-F515I-B2R).
   * In this step, do not connect the DEV interface cable with operating HDD Box.

↓

4. Installation Procedure of DEV Interface Cable (DKC-F515I-UC1R)
   Note: Connect the DEV interface cable only with installed HDD Box Kit (DKC-F515I-B2R).
   * In this step, do not connect the DEV interface cable with operating HDD Box.

↓

5. SVP pre procedure (Setting up the New Device Structure Information)

↓

6. Installation Procedure of MIX Adapter (DKC-F515I-MIX2R/MIX4R) (Only new installation)

↓

7. Installation Procedure of HDD Canister

↓

8. Connection of DEV Interface Cable (DKC-F515I-UC1R/UC4R/EXC2R)
   Note: Connect the DEV interface cable with operating HDD Box or MIX PCB.

↓

9. SVP post procedure

↓

10. Attachment of Covers (DKC-F515I-UC0R/UC1R/UC4R/EXC2R)

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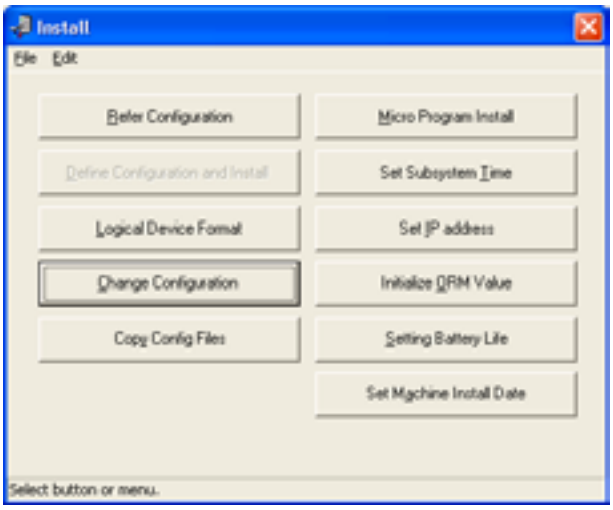
3.10.2 When performing addition of the data/spare HDD canister (DKU-F505I-72KS/72JSR/72KSR/146JS/146JSR/146KSR/300JSR/300KSR/400JSR/72K1R/146J1R/146K1R/300J1R)

1. SVP pre procedure (Setting up the New Device Structure Information)

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

---

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



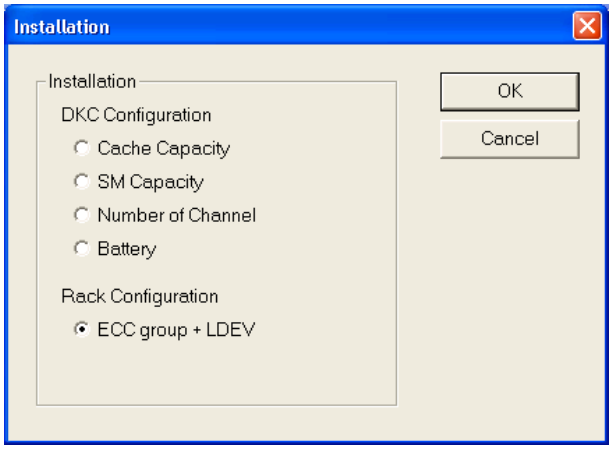
---

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



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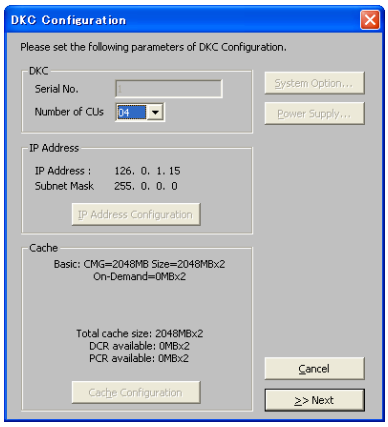
(4) <Select a part to be changed>
Select (CL) [ECC group + LDEV], and select (CL) [OK].



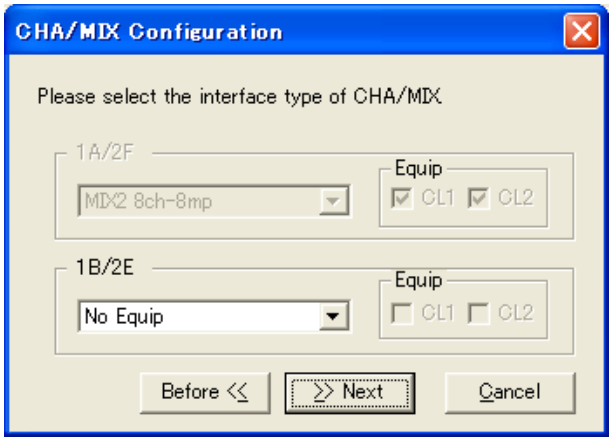
(5) <Update Configuration Information>
Define the number of CU in DKC in the 'DKC Configuration' window.

Make sure that the entered item is correct and select (CL) [>>Next].

Note: There may be a case where an addition of the SM is required to add the CU.
When adding the SM, refer to page INST03-09A-10.

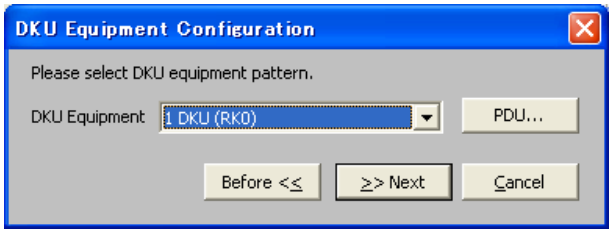


(6)-1 <Setting MIX>
Check the setting item in the 'CHA/MIX Configuration' window.
Select (CL) [>>Next].



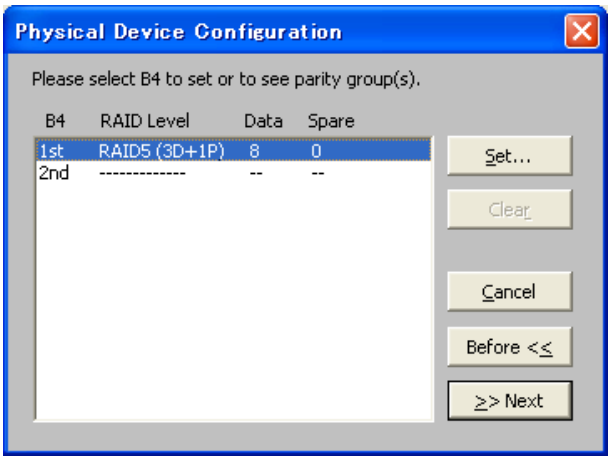
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(7) <DKU Equipment>
The DKU equipment pattern is displayed in the 'DKU Equipment configuration' window.
Select (CL) [>>Next].
However, if you want to set "Not Equip", select (CL) [>>Next]. Go to step (12).



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(8) <Change Drive Configuration Information>
Define drive configuration according to the 'Physical Device Configuration' screen.
Detailed procedure is shown below.
[Set...]: Defines the parity group or spare disk. The routine proceeds to Step (8)-1.
[Clear...]: Cancels the setting of the B4.
After setting up all items, select (CL) [>>Next]. Go to step (9).
However, if you don't want to set any parity group or spare disk, select (CL) [>>Next]. Go to Step (12).



Selecting (CL) [Before<<] returns you to the previous screen.

B4	Location	
	HDU	HDD
1st	HDU-00,01,02,03	HDD0X-00 ~ HDD0X-0E
2nd	HDU-10,11,12,13	HDD1X-00 ~ HDD1X-0E
3rd	HDU-20,21,22,23	HDD2X-00 ~ HDD2X-0E
4th	HDU-30,31,32,33	HDD3X-00 ~ HDD3X-0E

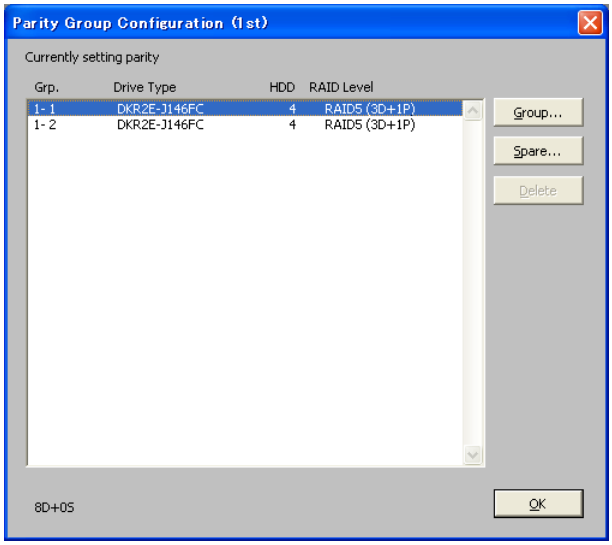
Copyright © 2005, Hitachi, Ltd.

(8)-1 <Define Parity Group>

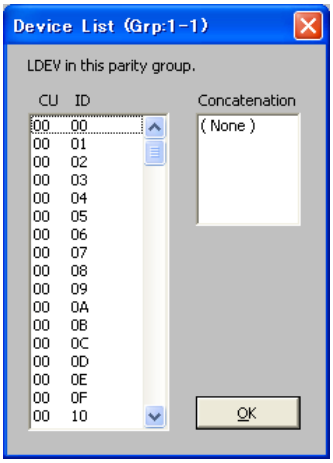
[Group...]: Defines the parity group. See Step (8)-1-1.
[Spare...]: Defines the spare drive. See Step (8)-1-2.
[Delete]: Deletes the added parity group or spare drive.
Grp*: A parity group where RAID Concatenation is installed.

Note: If you want to set any Spare Drive in B4, please define the Spare Drive first.

After setting up all items, select (CL) [OK]. Return to step (8).



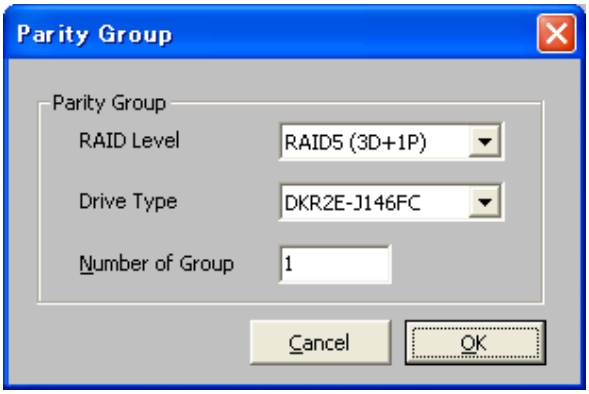
To display LDEV ID in Parity group, select an item to be displayed and select (DC) this item on list box. The 'Device List' dialog box will appear.
"(no LDEV)" is displayed for the added parity group.



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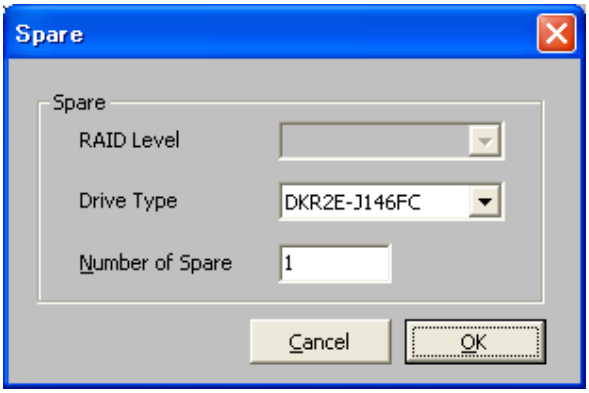
(8)-1-1

Define the RAID Level and the Drive Type and the Number of Group in the 'Parity Group' dialog box.
Then select (CL) [OK]. Return to step (8)-1.



(8)-1-2

Define the RAID Level and the Drive Type and the Number of Spare in the 'Spare' dialog box.
Then select (CL) [OK]. Return to step (8)-1.



(9) <Define Device Emulation>

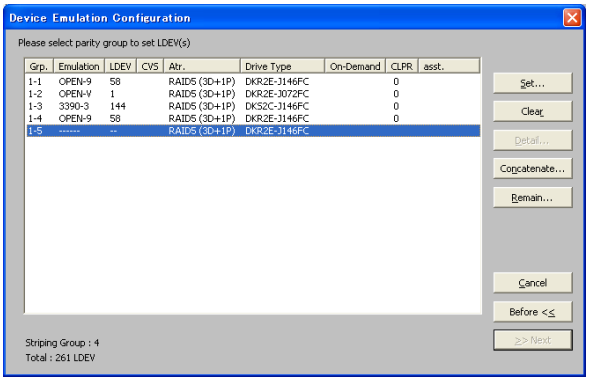
After setting up all items corresponding to (9)-1 to (9)-3 for definition of Device Emulation, select (CL) [>>Next].
Selecting (CL) [Before<<] returns you to the previous screen.
In the case of only spare drive installation, select (CL) [>>Next]. Go to step (10).

- If defining Device Emulation, go to step (9)-1.
- If setting RAID concatenation, go to step (9)-2.
- If defining of Customized Volume Size (CVS), go to step (9)-3.

(9)-1 <Define Device Emulation>

Select (CL) parity group and select (CL) [Set...].
Go to step (9)-1-1.

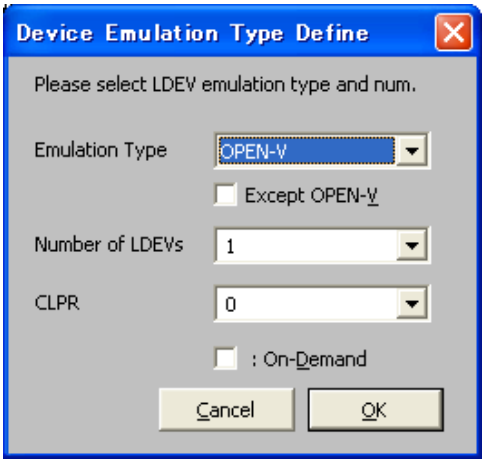
For detailed display:
Select (CL) parity group and select (CL) [Detail...].
The detailed information is displayed.
(CVS): A parity group where CVS is installed.
Grp*: A parity group where RAID Concatenation is installed.



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(9)-1-1

After setting up all items in the 'Device Emulation Type Define' dialog box, select (CL) [OK].



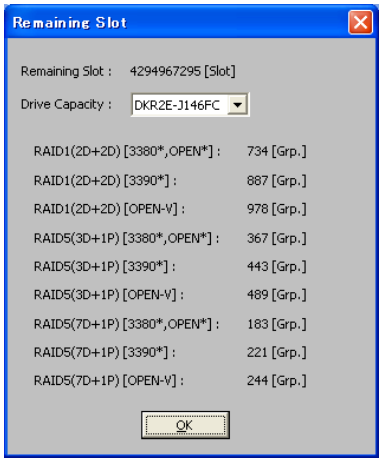
Selecting (CL) [Cancel] returns you to step (9).

Note: OPEN-V is a recommended OPEN volume. To set other than OPEN-V, please select "Except OPEN-V".

Note: "0" can be set to the value of Number of LDEVs for all the emulation types. If you don't know the LDEV size you will use, set "0". You can save time by setting "0" because LDEV format will not run. When you set "0", please make LDEVs later using the CVS function.

(9)-1-2

The Remaining Slot window is displayed. An allowable number of times of PDEV addition corresponding to the specified drive type is displayed.

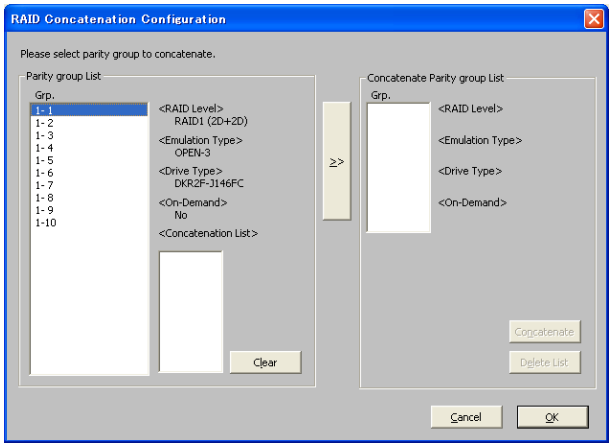


Select (CL) the [OK]. The routine returns to Step (9).

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(9)-2

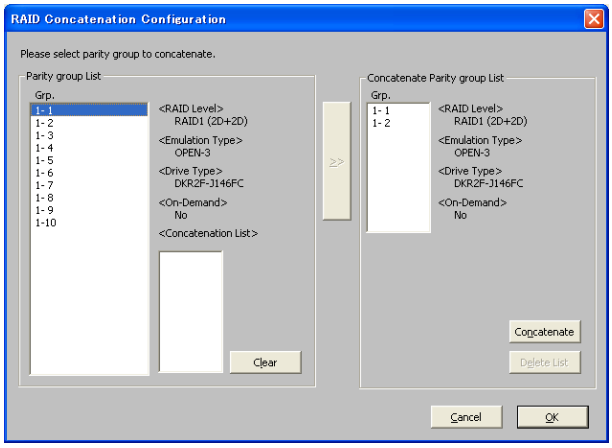
Parity groups to which the RAID concatenation can be applied are displayed in the Parity group List.
Select (CL) parity groups to which you want to apply the RAID concatenation and press (CL) the [>>] button.



Note: Only the parity groups, which have been added and to which the RAID concatenation can be applied are displayed in the Parity group List.

(9)-2-1

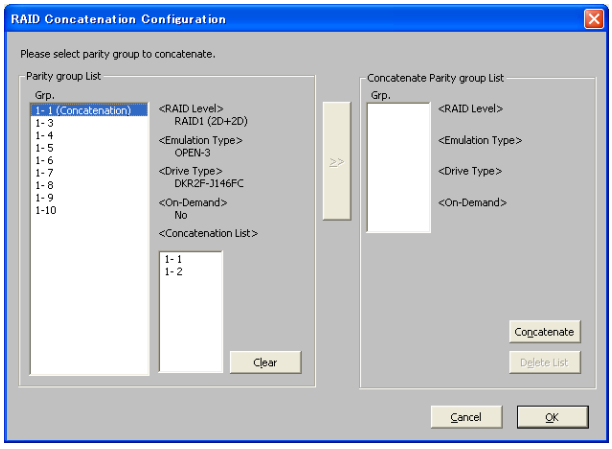
The selected parity groups are registered in the Concatenate Parity group List. Then press (CL) the [Concatenate] button.



Note: The [Concatenate] button cannot be pressed if the concatenation does not meet a condition of the RAID concatenation. Adjust the number of the parity groups in the Concatenate Parity group List.

(9)-2-2

When the RAID concatenation is completed, "(Concatenation)" is displayed in the Parity group List. Selecting the "(Concatenation)" displays the concatenated parity groups in the Concatenation List.
Pressing the [Clear] button cancels the RAID concatenation.

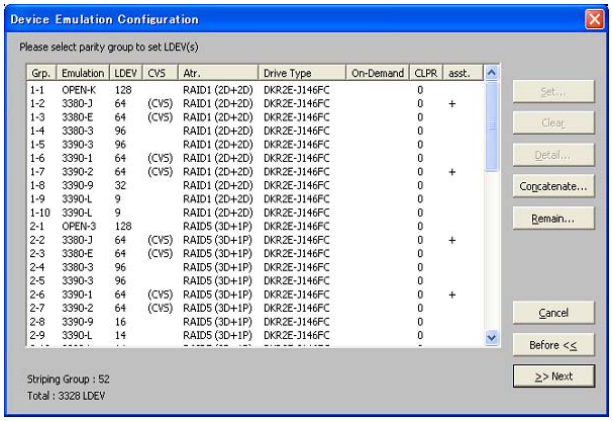


When all the settings of the RAID concatenation are completed, press (CL) the [OK] button.
Pressing (CL) the [Cancel] button returns the routine to Step (9).

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(9)-3 <Defining of Customized Volume Size (CVS)>

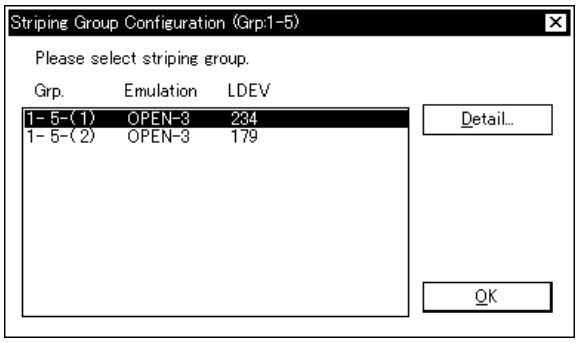
Select (CL) a parity group for which the LDEV emulation type and the number of LDEVs have been set on the "Device Emulation Configuration" screen and select (CL) [Detail…].
When you do not perform the CVS, return to Step (9).



(9)-3-1

When there are two or more striping groups, the Striping Group Configuration window is displayed. Select (CL) a striping group, and then select (CL) the [Detail…].

- When you select a striping group other than OPEN-V, the routine goes to Step (9)-3-2.
- When you select OPEN-V, the routine goes to Step (9)-3-4.



When you select (CL) the [OK], the preceding window returns. (The routine returns to Step (9).)

Note: When there is only one striping group, the Striping Group Configuration window is not displayed.

- When you select a striping group other than OPEN-V, the routine goes to Step (9)-3-2.
- When you select OPEN-V, the routine goes to Step (9)-3-4.

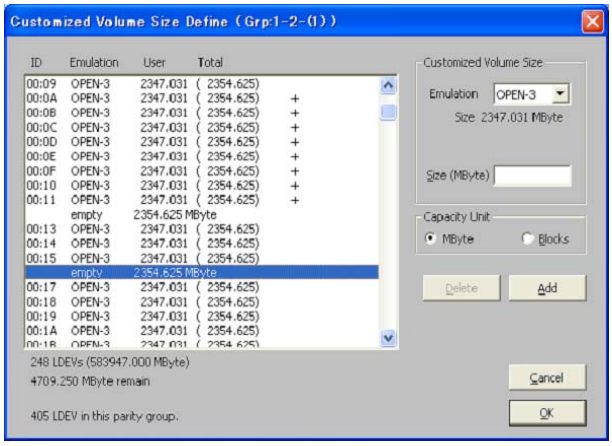
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(9)-3-2 <Definition other than OPEN-V>

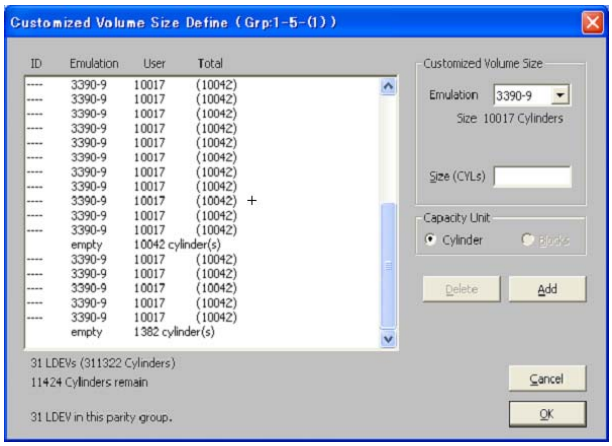
A volume other than OPEN-V can be added or deleted in the “Customized Volume Size Define” window.
A volume can be deleted by selecting (CL) the volume from the LDEV list box and selecting (CL) [Delete].
A volume can be added by entering the LDEV emulation type and the user size (Mbyte/Blocks or Cylinder) of the customized volume (CV) and selecting [Add].
(It can be added in the optional space “empty” by selecting (CL) “empty” from the LDEV list box.)

The routine returns to the preceding window by selecting (CL) [Cancel].
The routine returns to the preceding window and the change is reflected by selecting (CL) [OK].

(When the emulation type is Open System)



(When the emulation type is Mainframe System)



(9)-3-3

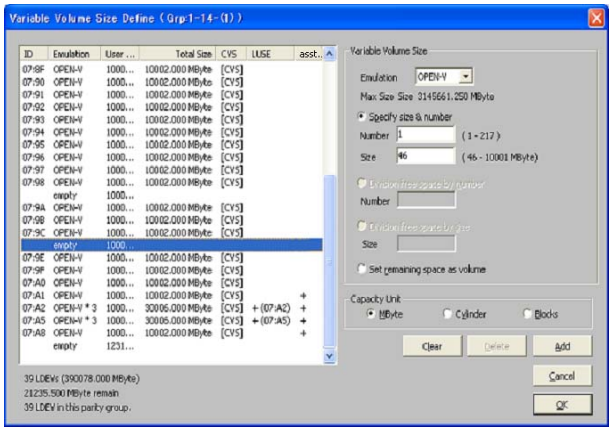
The CV registered by mistake can be deleted by selecting (CL) it from the LDEV list box and then selecting (CL) [Delete].

Note: One or more CVs can be selected.

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(9)-3-4 <Definition of OPEN-V>

Open-V can be defined in the 'Variable Volume Size Define' window.
All the volumes in the LDEV list box can be deleted by selecting (CL) [Clear].
The volume can be deleted by selecting (CL) [Delete] in the state (CL) of selecting (CL) the volume in the LDEV list box.
It can be added by selecting (CL) Variable Volume Size from the status "select (CL) 'empty'" or "no selection" in the LDEV list box and selecting (CL) [Add].



Adding or deleting operation can be done for any number of times. The last setting is reflected by selecting (CL) [OK].

- Variable Volume Size
  "Specify Size & number" : Defines the specified number of the specified user size.
  "Division free space by number" : Defines the volume divided by the specified number. However, this can be selected only when all the volumes have been deleted.
  "Division free space by size" : Defines the volumes whose user sizes are all specified. However, this can be selected only when all the volumes have been deleted.
  "Set remaining space as Volume" : Defines the volume in the remaining space (empty).
- Capacity Unit
  "MByte" : Makes data displayed or entered by [Mbyte].
  "Cylinder" : Makes data displayed or entered by the [Cylinder].
  "Blocks" : Makes data displayed or entered by the [Blocks].
- LUSE : When the LUSE is connected, "+" is displayed.
- asst. : When Path/LUSE/Pool-VOL is defined, "+" is displayed.

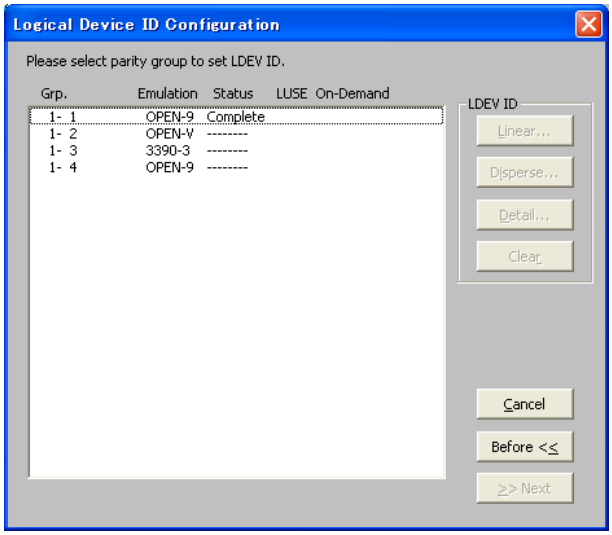
  Note: Even if the journal volume is defined, "+" is not displayed.

[Clear] : Deletes all the volumes.
[Delete] : Deletes all the selected volumes.
[Add] : Adds volumes.
[Cancel] : Invalidates the setting, and returns to the preceding window. The routine returns to Step (9).
[OK] : Confirms the setting, and returns to the preceding window. The routine returns to Step (9).

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(10) <Define LDEV ID>

(10)-1 Definition Screen for LDEV ID



Select (CL) the parity group to be defined and select (CL) a function from the [LDEV ID] list box.

[Linear...]: LDEV ID is assigned to LDEV in the order of parity groups. See step (10)-3.

[Disperse...]: LDEV is assigned discretely in the order of parity groups. See step (10)-3.

[Detail...]: A screen to define LDEV in detail is displayed. See step (10)-2. (When plural groups are selected (CL), it is invalid.)

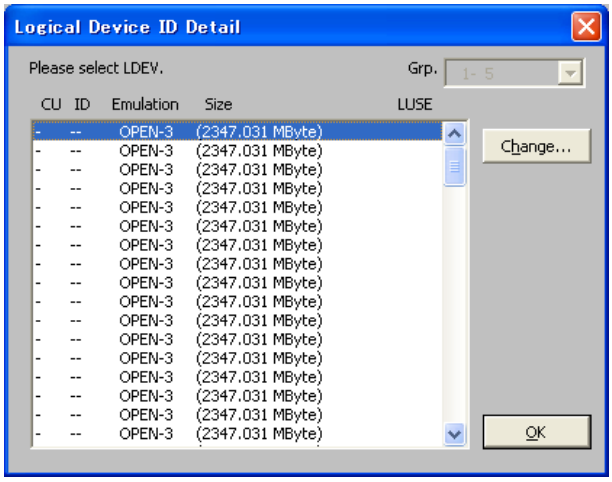
[Clear]: Select (CL) [Clear] to delete.

Grp*: The top parity group where RAID Concatenation is installed.

• '-----' is displayed in the Status area for the parity group to which LDEV ID is not assigned.

After setting up all items, select [Detail...] to confirm the items that have been set up, and select (CL) [>>Next]. Go to Step (11).

(10)-2 Detailed Definition Screen for LDEV ID



LDEV ID is defined in detail for each LDEV in the parity group.

Select (CL) LDEV from the list box and select (CL) [Change...].

The screen for LDEV ID input is displayed. After setting, select (CL) [OK]. Return to step (10)-1.

• '-----' is displayed in the CU area and the ID area for the LDEV to which LDEV ID is not assigned.

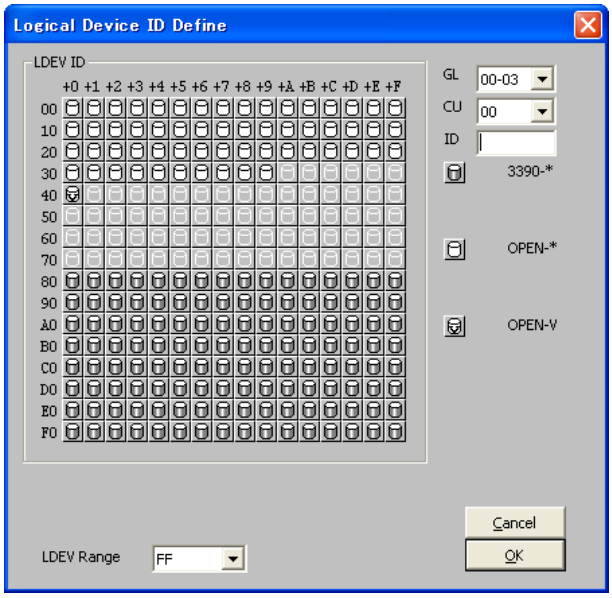
Note: In the case of a RAID Concatenation Group, LDEV of the parity group selected by the "Grp List" is displayed.

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(10)-3 Input LDEV ID

Select CU ID in the CU combo box.
The status of usage of ID in the CU is displayed in the LDEV ID panel.
White disk of panel: not used
Patterned disk of panel: using
Input LDEV ID you want to set or the head LDEV ID in the ID Edit box.
After setting, select (CL) [OK]. Return to step (10)-1

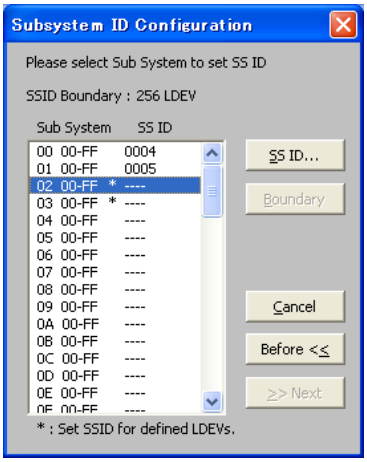
Note: The definition range (terminal) is decided with LDEV Range.
For example, if LEDV Range is defined as 7F, LDEV ID is assigned only within the range of 00 to 7F.



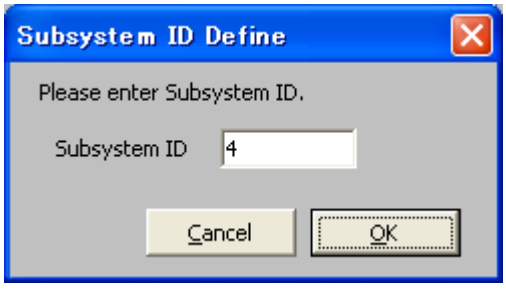
(11) <Define Subsystem ID>

To define Subsystem ID, select (CL) the item from the list box and select (CL) [SSID]. See step (11)-1.

After setting, select (CL) [>>Next].



(11)-1 Define Subsystem ID and select (CL) [OK].
Return to step (11).

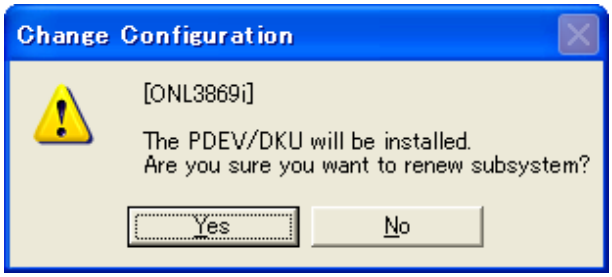


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(12) <Start installation>

Select (CL) [Yes] in response to “The PDEV/DKU will be installed. Are you sure you want to renew subsystem?”.

When [No] is selected (CL), returns to INST03-10A-10 step (3).



---

(13) <Download microprogram>

Microprograms are automatically downloaded for each processor.

---

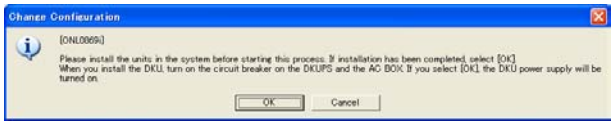
(14) <Install DKA>

“Upgrading of the DKA...”

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2. SVP pre procedure

(1) <Check that hardware components are installed>
At this point refrain from pressing the [OK] button.



"Please install the units in the system before starting this process. If installation has been completed, select [OK]. When you install the DKU, turn on the circuit breaker on the DKUPS and the AC BOX. If you select [OK], the DKU power supply will be turned on." is displayed.

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3. Installation Procedure of HDD Canister

3-1 Confirmation of position to install HDD canister

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

Relations between the installation locations of the RAID groups and the RAID group numbers set through the SVP are shown in Table 3.10.2-1.

Table 3.10.2-1 Relation between HDDs installation order and RAID group number (3D+1P/2D+2D)

DKU-RK0		DKU-RK1		DKU-RK2		DKU-RK3	
Installation Order	RAID Group No.	Installation Order	RAID Group No.	Installation Order	RAID Group No.	Installation Order	RAID Group No.
001	1-01	016	2-01	031	3-01	046	4-01
002	1-02	017	2-02	032	3-02	047	4-02
003	1-03	018	2-03	033	3-03	048	4-03
004	1-04	019	2-04	034	3-04	049	4-04
005	1-05	020	2-05	035	3-05	050	4-05
006	1-06	021	2-06	036	3-06	051	4-06
007	1-07	022	2-07	037	3-07	052	4-07
008	1-08	023	2-08	038	3-08	053	4-08
009	1-09	024	2-09	039	3-09	054	4-09
010	1-10	025	2-10	040	3-10	055	4-10
011	1-11	026	2-11	041	3-11	056	4-11
012	1-12	027	2-12	042	3-12	057	4-12
013	1-13	028	2-13	043	3-13	058	4-13
014	1-14	029	2-14	044	3-14	059	4-14
015 *1 (Spare)	1-15/ Spare	030 *1 (Spare)	2-15/ Spare	045 *1 (Spare)	3-15/ Spare	060 *1 (Spare)	4-15/ Spare

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

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	

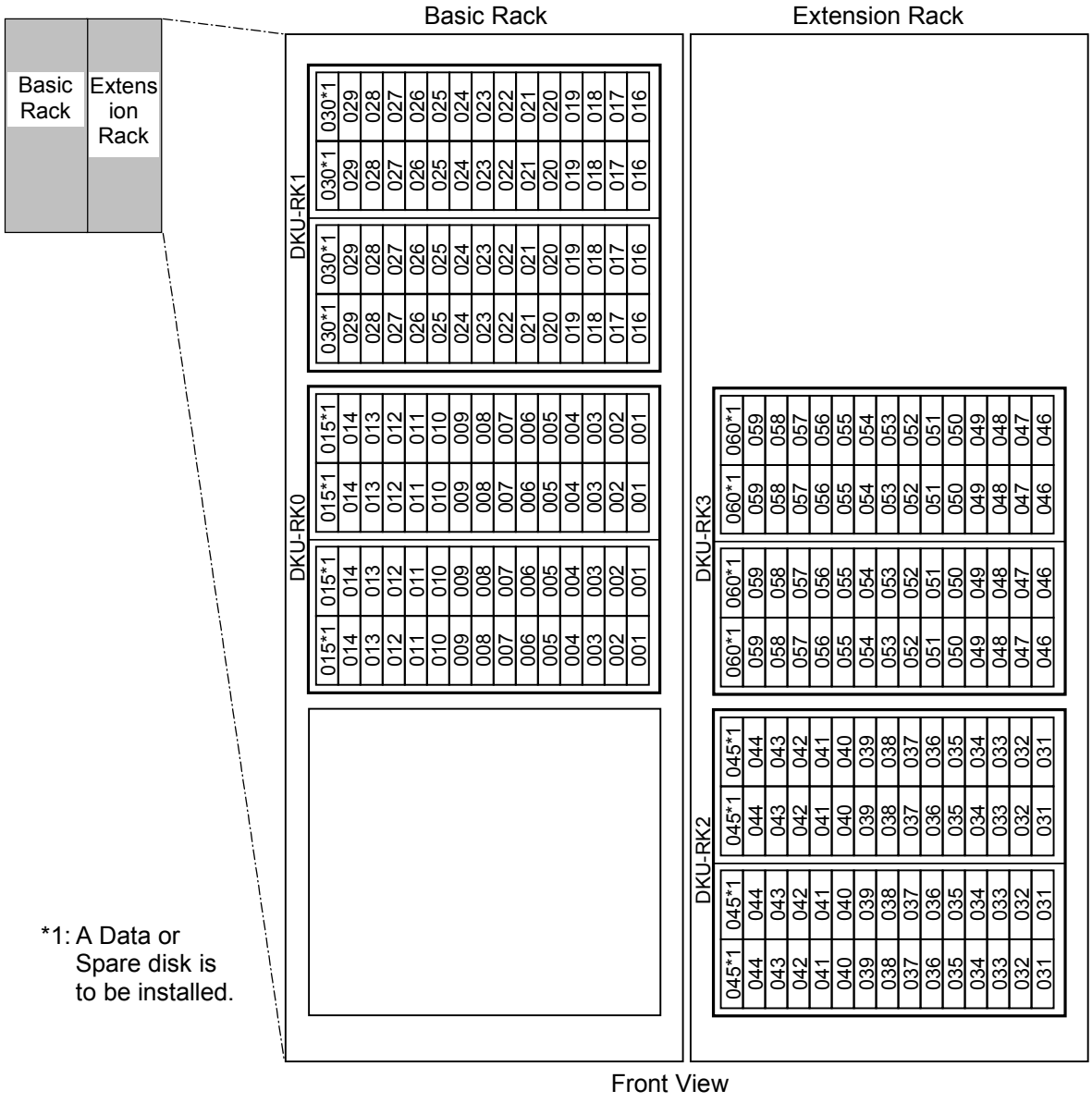


Fig. 3.10.2-1 (3D+1P/2D+2D) Data Drive/Parity Drive Expansion Sequence

The relationship between HDDs installation order and RAID group number is shown in the Table 3.10.2-1.

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(ii) RAID6(6D+2P)/RAID5(7D+1P)

Relations between the installation locations of the RAID groups and the RAID group numbers set through the SVP are shown in Table 3.10.2-2.

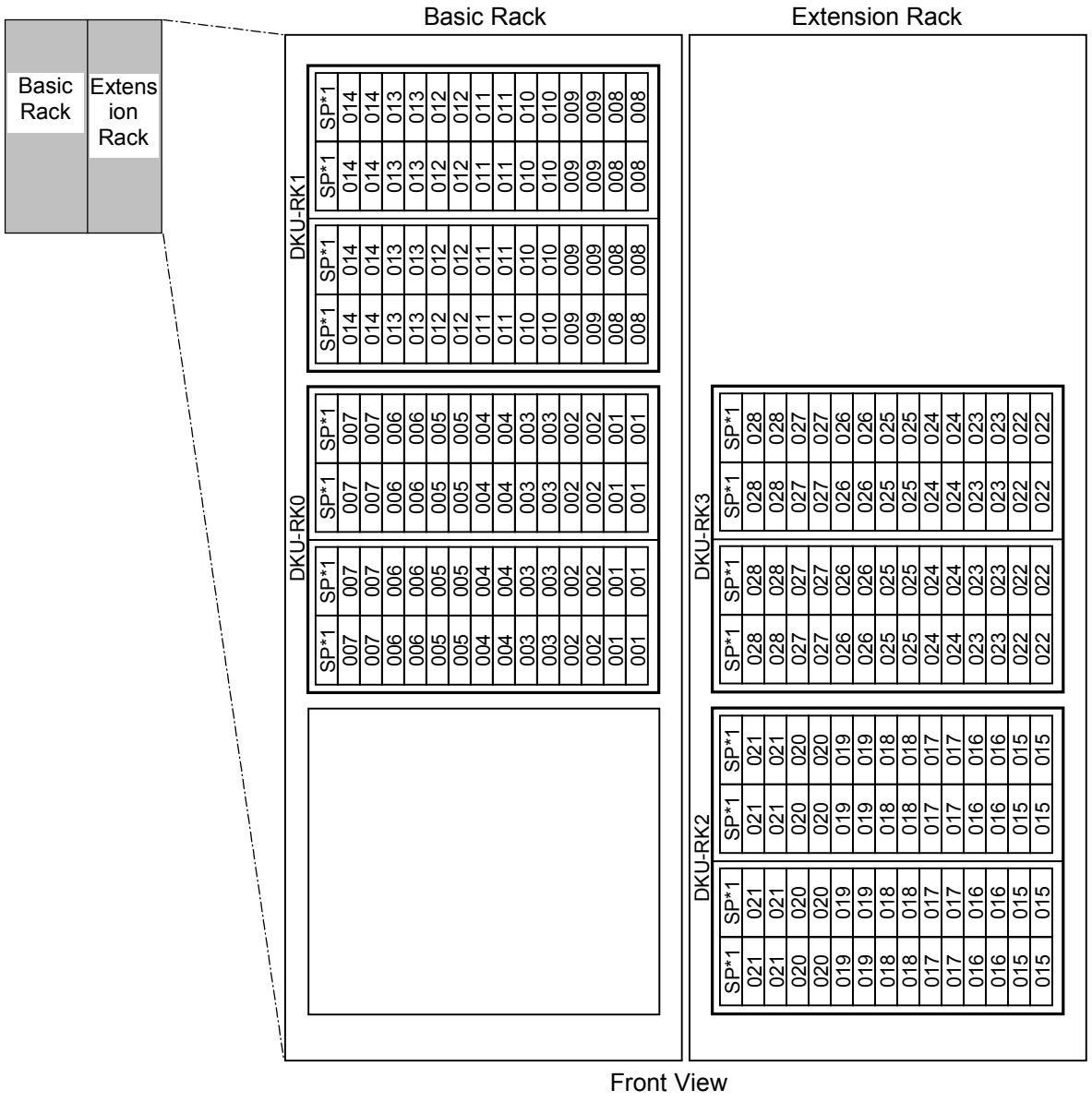
Table 3.10.2-2 Relation between HDDs installation order and RAID group number (6D+2P/7D+1P)

DKU-RK0		DKU-RK1		DKU-RK2		DKU-RK3	
Installation Order	RAID Group No.	Installation Order	RAID Group No.	Installation Order	RAID Group No.	Installation Order	RAID Group No.
001	1-01	008	2-01	015	3-01	022	4-01
002	1-03	009	2-03	016	3-03	023	4-03
003	1-05	010	2-05	017	3-05	024	4-05
004	1-07	011	2-07	018	3-07	025	4-07
005	1-09	012	2-09	019	3-09	026	4-09
006	1-11	013	2-11	020	3-11	027	4-11
007	1-13	014	2-13	021	3-13	028	4-13
Spare *1	Spare	Spare *1	Spare	Spare *1	Spare	Spare *1	Spare

*1: To be left vacant 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	



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

Fig. 3.10.2-2 (6D+2P/7D+1P) Data Drive/Parity Drive Expansion Sequence

The relationship between HDDs installation order and RAID group number is shown in The Table 3.10.2-2.

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(iii) Spare HDD

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

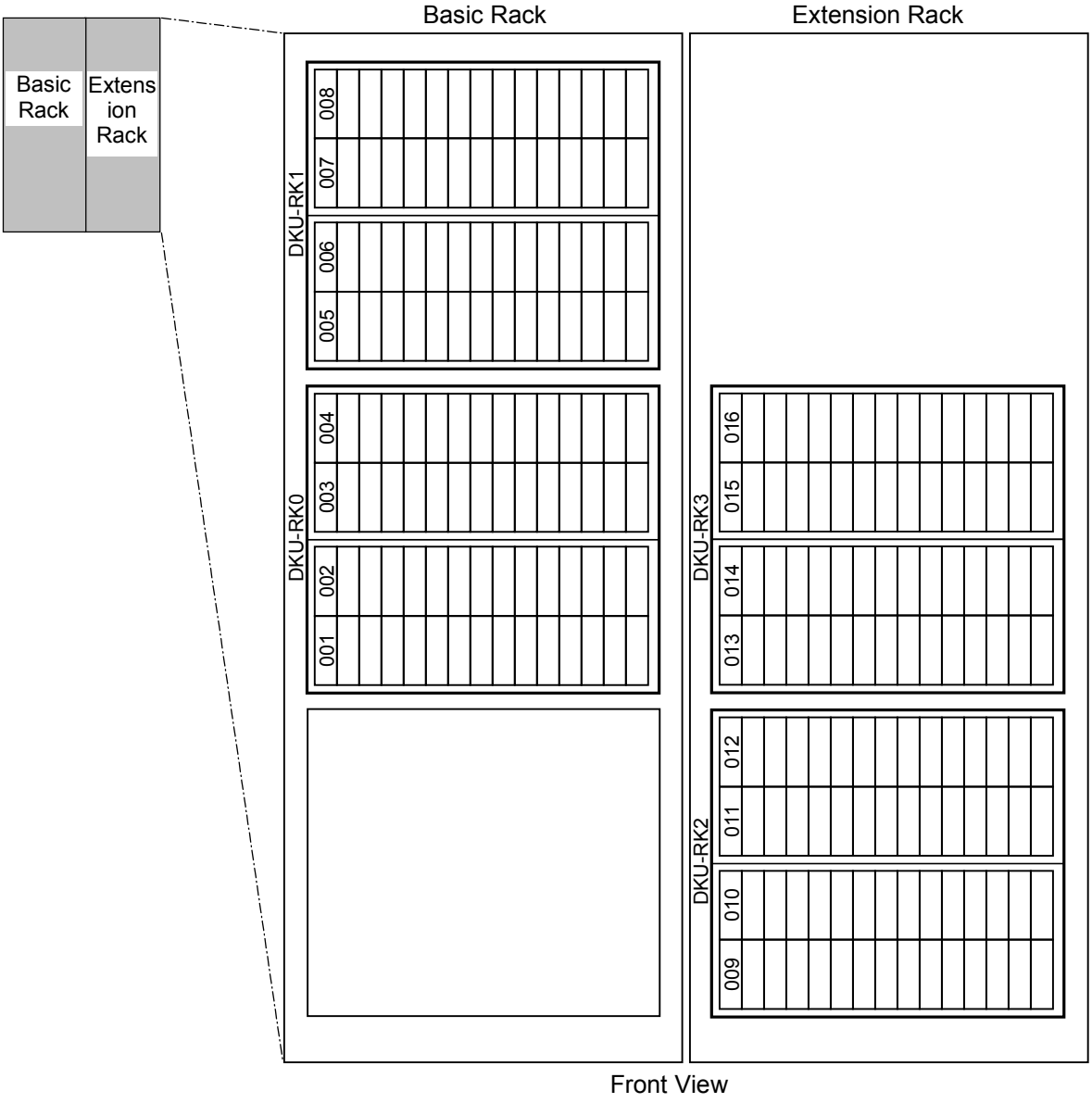


Fig. 3.10.2-3 Spare Drive Expansion Sequence

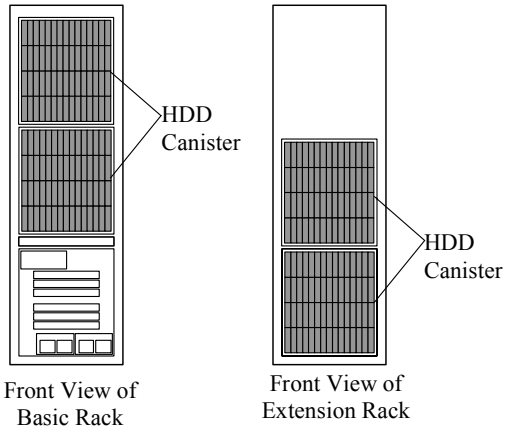
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3-2 Installation of the HDD Canister

Notice: (1) Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

(2) Since the HDD is a precision component, handle it very carefully not to apply a vibration or shock to it.

a. Remove the dummy canister from the HDU Box.
When the dummy canister cannot be removed by pulling of it only, remove it referring to page INST03-10A-200.



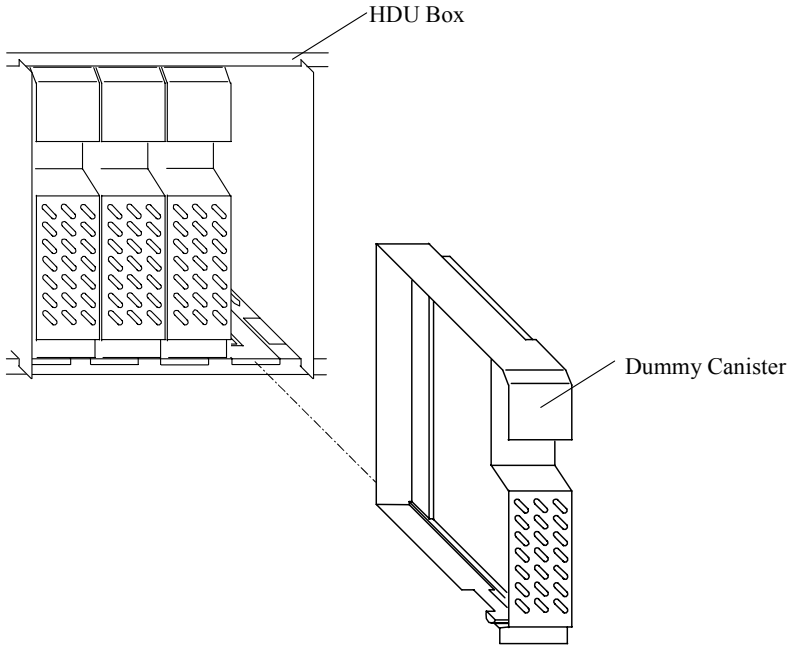


Fig. 3.10.2-4 Removal of HDD Canister

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Procedure for removing the dummy canisters when they cannot be removed by pulling only.

a. While pulling the dummy canister by hand, insert a screwdriver (whose maximum shaft diameter is 5mm) into the gap of the canisters.
b. Release the hook using the screwdriver and remove the dummy canister.

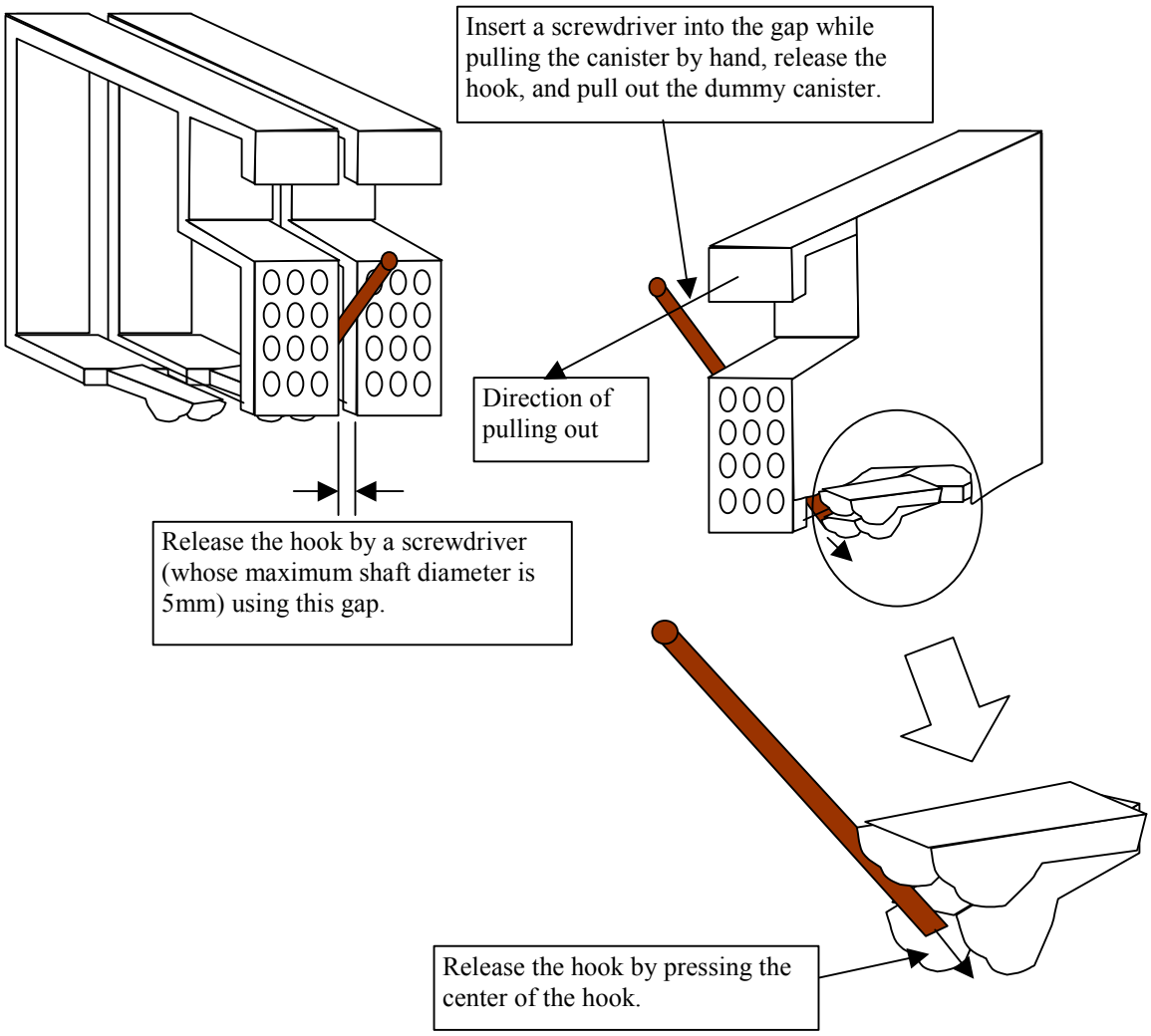
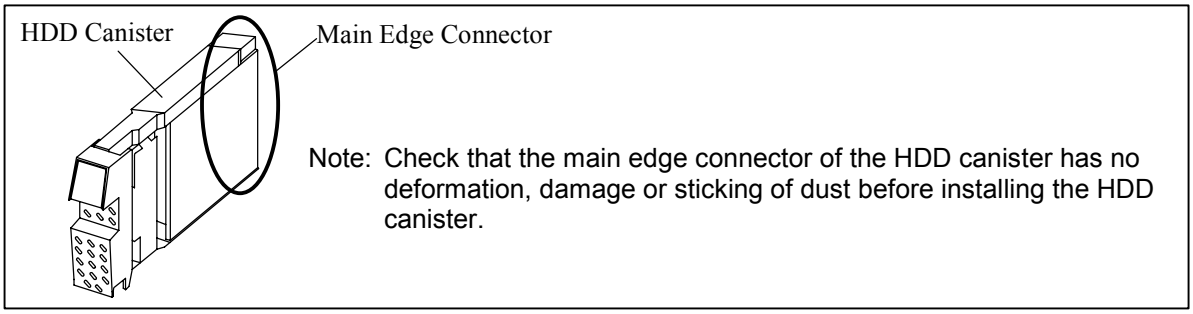


Fig. 3.10.2-5 Removal of Dummy Canister

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b. Check the condition of the HDD canister before installing it.



b-1 Check that the DC/DC connector is movable up and down, and a gap exists under the DC/DC connector.

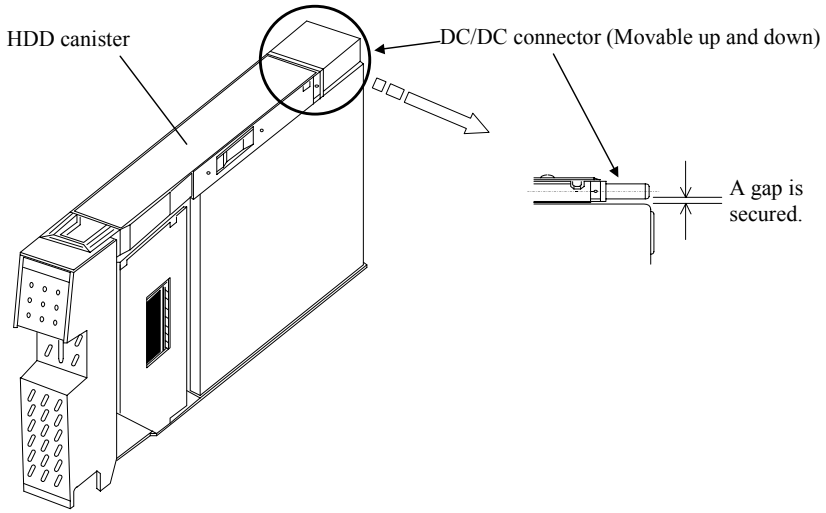


Fig. 3.10.2-6 Adjustment of DC/DC Connector Condition

b-2 Make sure that no cable is protruding from the rectangular opening on the side of the HDD canister. If it is protruding, put it back inside the opening.

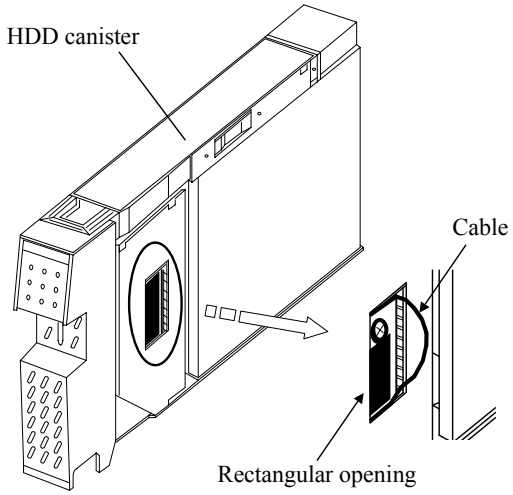


Fig. 3.10.2-7 Checking Protrusion of Cable

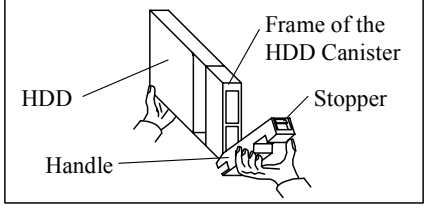
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c. HDD canister install procedure (See Fig. 3.10.2-8)

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

c-1 Insert the HDD canister into the HDU Box holding its handle.
(Insert the canister until the claws that are located at the bottom of the handle come in contact with the front side of the HDU Box.)

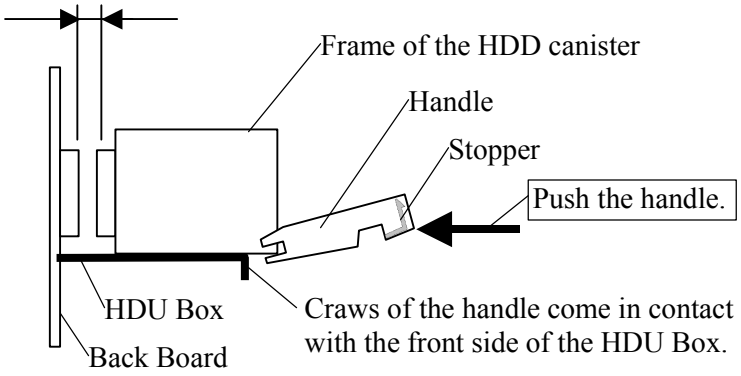
Handling of the HDD canister



c-2 Turn the handle at a stroke by pushing its top with your thumb.
(Turn the handle until it latches with the stopper. Do not stop the handle on its way of turning.)

c-1 Insert the HDD canister into the HDU Box holding its handle.

A gap exists between the connectors.



c-2 Turn the handle at a stroke by pushing its top with your thumb.
(Do not stop the handle on its way of turning.)

The connectors have been coupled.

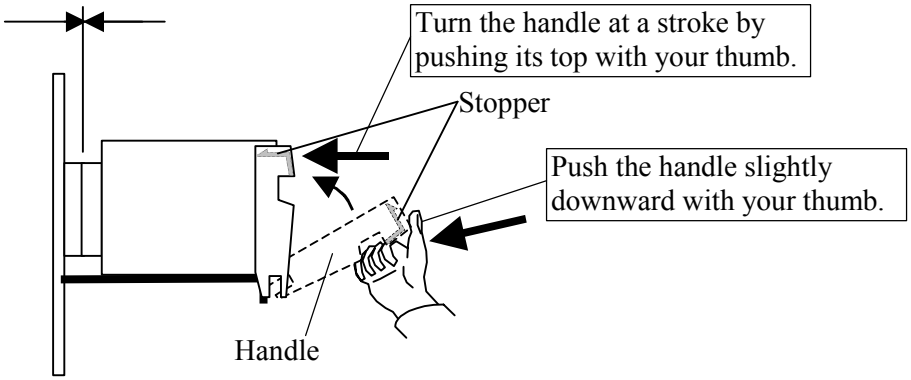


Fig. 3.10.2-8 Method of Installing HDD Canister

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3-3 Attachment of nameplate

a. Remove the screw from the rack frame and remove the nameplate tags to be installed.
b. When the nameplate is not attached, attach the nameplate to the nameplate tag.
c. Affix a necessary portion of the Label (QTY)(Accessory of DKC; DWG No.3268905-1) in layers on the nameplate and paint out numbers by black oil felt pen. However, when the nameplate is unused, do not affix the Label (QTY) in layers, and just paint it out.
d. Attach all the nameplate tags with the screw.

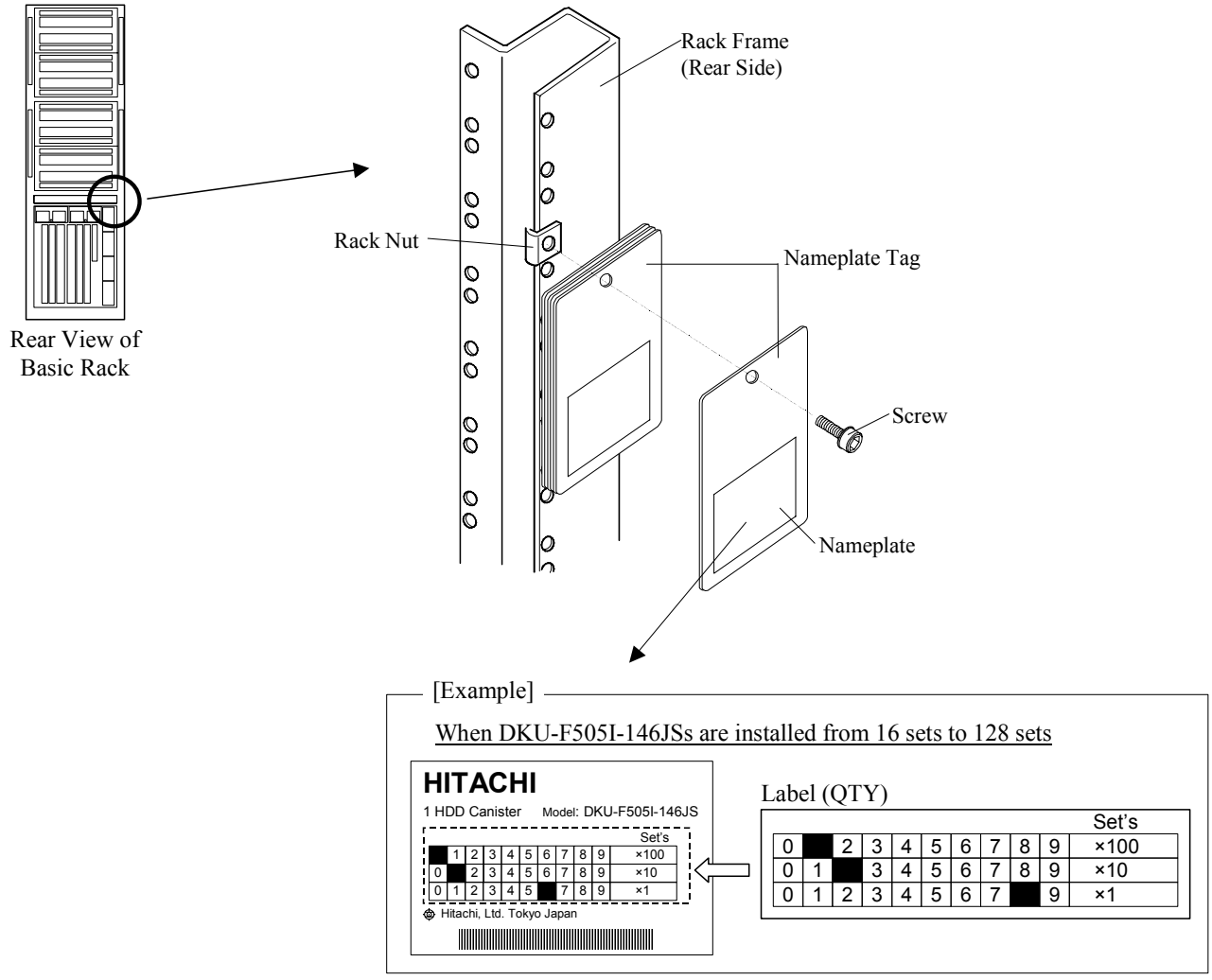
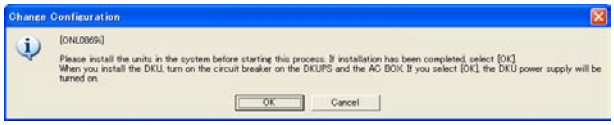


Fig. 3.10.2-9 Attachment of Nameplate

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4. SVP post procedure

(1) <Check that hardware components are installed>
Select (CL) [OK] after making sure that all hardware components are installed correctly in response to "Please install the units in the system before starting this process. If installation has been completed, select [OK]. When you install the DKU, turn on the circuit breaker on the DKUPS and the AC BOX. If you select [OK], the DKU power supply will be turned on.".



(2) <DKU PATH INLINE>
When DKA is installed, "DKU PATH INLINE is now running..." is displayed.

(3) <LDEV FORMAT>
"Formatting logical devices..." is displayed when Parity Group is defined.

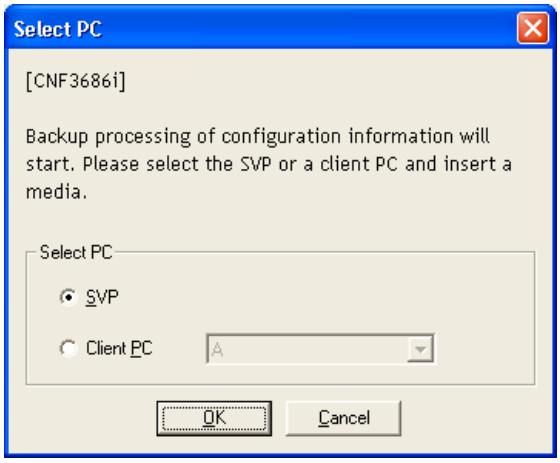
(4) <End of system update processing>
"Renewal process has completed. Please check the subsystem status." is displayed when recovery processing on all installed components is completed. Select (CL) [OK] in response to this message.



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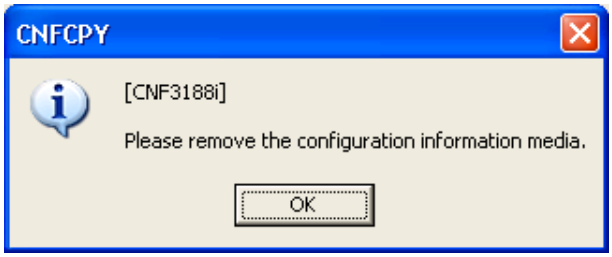
(5)

"Reading subsystem configuration data..." is displayed.
"Backup processing of configuration information will start. Please select the SVP or a client PC and insert a media." is displayed.
Insert the Config FD into FDD of selected PC, and select (CL) [OK].



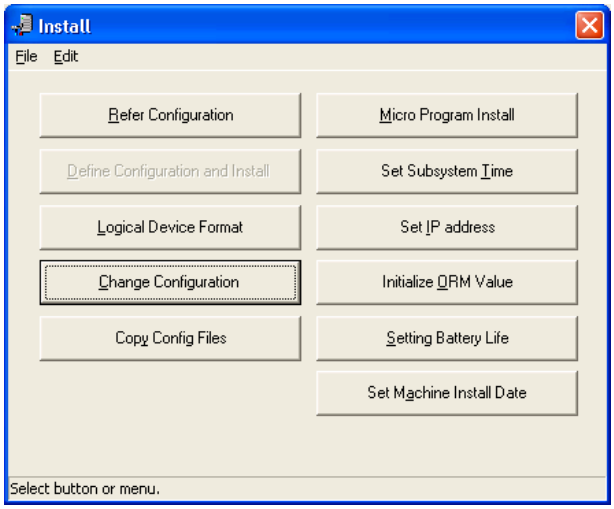
(6)

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



(7)

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



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

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

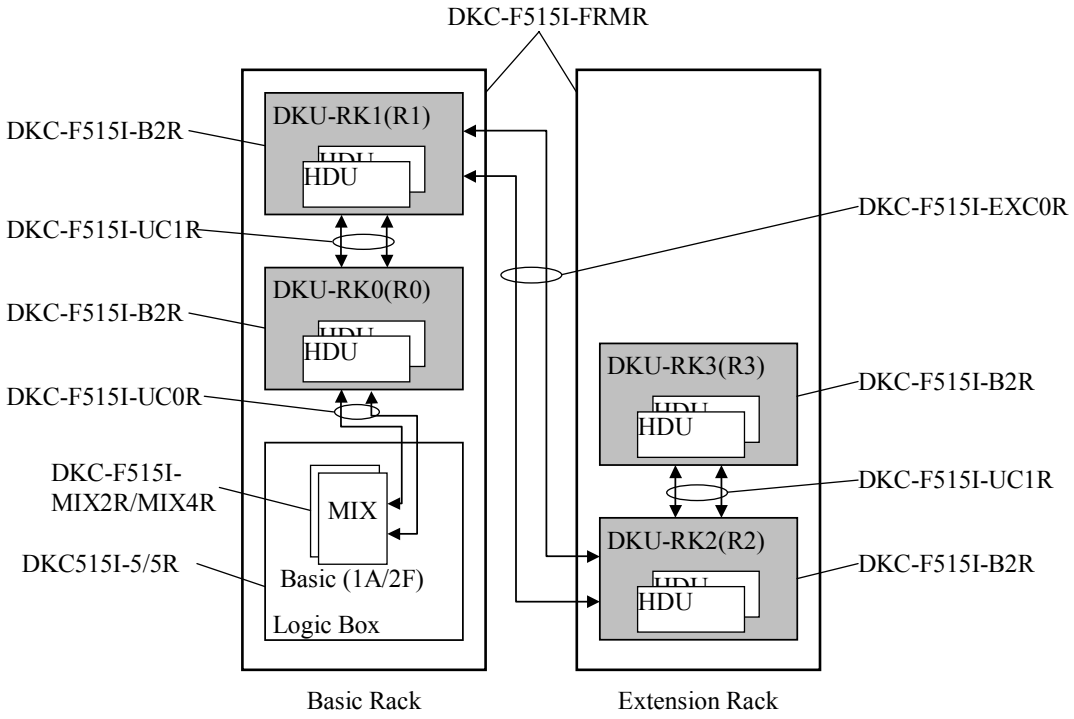
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3.10.3 (Blank)

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3.10.4 When performing addition of the data/spare HDD canister, MIX and DEV interface cable that accompanies the addition of the HDD Box in case of Standard Configuration (DKC-F515I-MIX2R/MIX4R/UC0R/UC1R/EXC0R, DKU-F505I-72KS/72JSR/72KSR/ 146JS/146JSR/146KSR/300JSR/300KSR/400JSR/72K1R/146J1R/146K1R/300J1R)

The subsystem configuration and number of required options for each model are shown below.



No.	Required Number of Options								
	(DKC-F515I-FRMR)		DKC515I -5/5R	DKC-F515I-					HDD *1
	Basic Rack	Extension Rack		MIX2R/ MIX4R	B2R	UC0R	UC1R	EXC0R	
1	1	—	1	1	1	1	0	0	60
2	1	—	1	1	2	1	1	0	120
3	1	1	1	1	3	1	1	1	180
4	1	1	1	1	4	1	2	1	240

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

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3.10.4.1 Installation Procedure of DEV Interface Cable connects DKC and DKU-R0 (DKC-F515I-UC0R)

Installation Condition

DKC-F515I-UC0R is the cable option to connect the DKC and the DKU-RK0. This option is required when adding the DKU-RK0 (1st DKC-F515I-B2R).
Decide if the DEV Interface Cable (DKC-F515I-UC0R) needs to be installed, and go to the page to meet the condition. (Refer to Table 3.10.4.1-1.)

Table 3.10.4.1-1 Work Procedure Table

No.	Condition of Work Procedure	Page
1	When you need to install DEV Interface Cable (DKC-F515I-UC0R)	INST03-10C-30
2	When you do not need to install DEV Interface Cable (DKC-F515I-UC0R)	INST03-10C-60

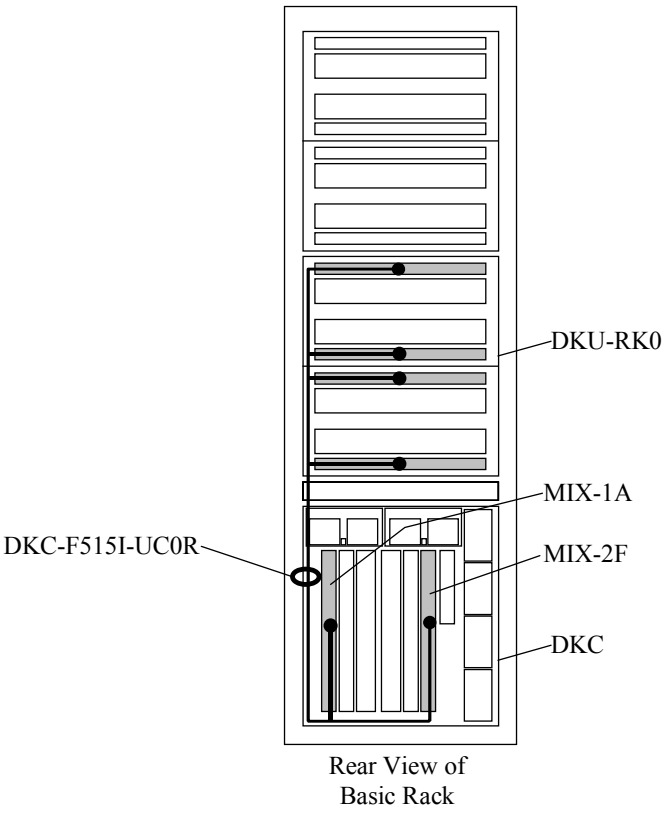


Fig. 3.10.4.1-1 Mounting Position of DEV Interface Cable

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1. Adjust positions of Repeat Binders that are binding the DEV Interface Cable so that they fit the heights of the cable clamps for fastening the cable. (Refer to Table 3.10.4.1-2, Fig. 3.10.4.1-2, and Fig. 3.10.4.1-3.)
2. Fasten the DEV Interface Cable to the column of the rack with Repeat Binders (at four places). (Route the cable on the inside of the column.)
3. Connect the cable to the FSW PCB in the HDD Box (DKU-RK0) and fasten it with the cable clamps.
4. Bind the DEV Interface Cable at the position near the cable exit of the logic box.
   However, when executing this procedure, do not connect the cable to the MIX PCB.

Table 3.10.4.1-2 DEV interface Cable List

No.	Parts No.	Name	Quantity	Connector No.			Cable Color
				A	B	C	
1	3272858-A	DEV Interface Cable	1	RK0-0-A1 RK0-0-A3 RK0-0-B1	RK0-2-A1 RK0-2-A3 RK0-2-B1	1-A1 to1-A6	Black
			1	RK0-1-A1 RK0-1-A3 RK0-1-B1	RK0-3-A1 RK0-3-A3 RK0-3-B1	2-F1 to2-F6	Blue
2	5409042-3	Repeat Binder	5	—	—	—	—

Parts List No.1

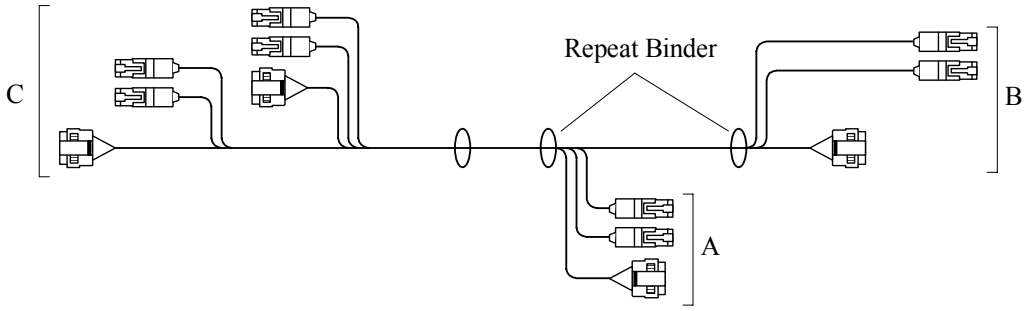


Fig. 3.10.4.1-2 Connector Number of DEV Interface Cable

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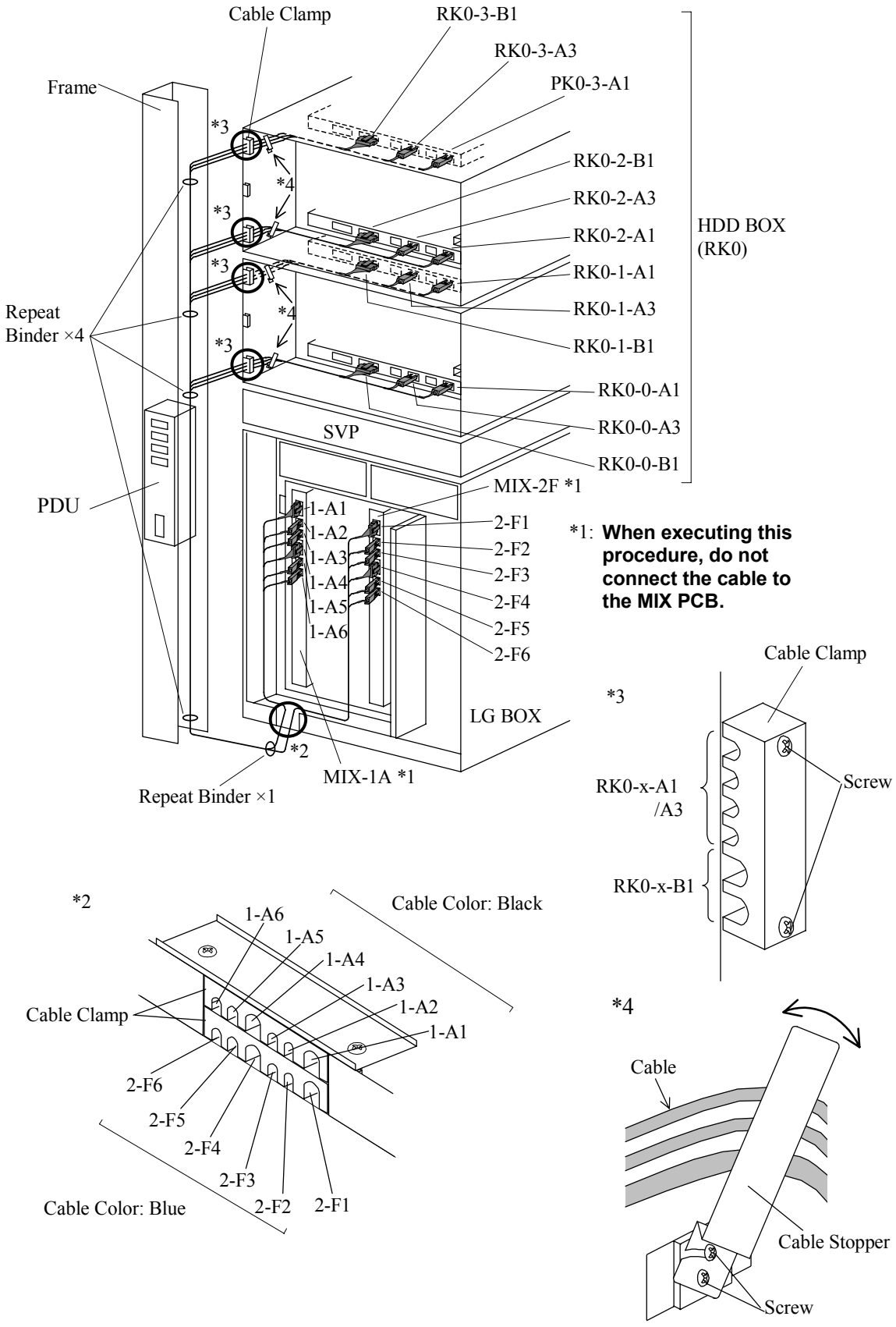


Fig. 3.10.4.1-3 Attachment of DEV Interface Cable

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5. Attachment of nameplate
   a. Remove the screw from the rack frame and remove the nameplate tags to be installed.
   b. Attach the nameplate to the nameplate tag on the Rack frame. Attach the HDS nameplate even if the HP model number is installed.
   c. Attach all the nameplate tags with the screw.

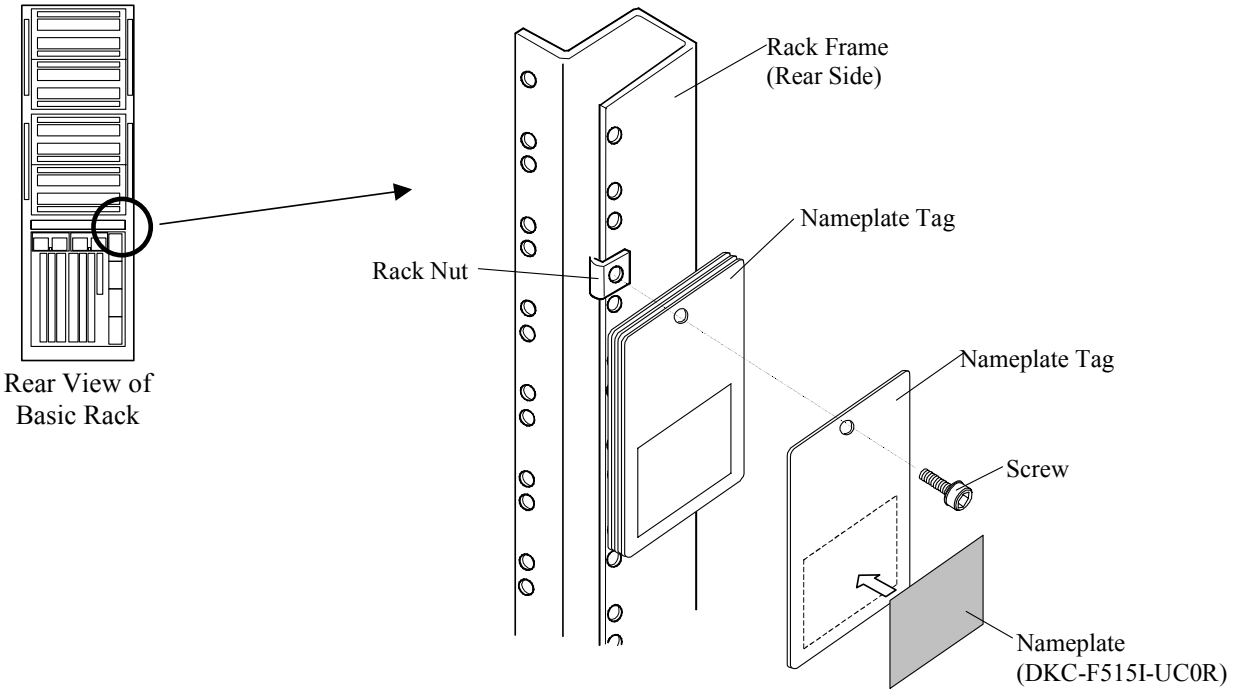


Fig. 3.10.4.1-4 Attachment of Nameplate

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3.10.4.2 Installation Procedure of DEV Interface Cable connects DKU-RK0 and DKU-RK1 (DKC-F515I-UC1R)

Installation Condition

1st DKC-F515I-UC1R is the cable option to connect the DKU-RK0 and the DKU-RK1.
2nd DKC-F515I-UC1R is the cable option to connect the DKU-RK2 and the DKU-RK3.
This option is required when adding the DKU-RK1 (2nd DKC-F515I-B2R) or DKU-RK3 (4th DKC-F515I-B2R).
Decide if the DEV Interface Cable (DKC-F515I-UC1R) needs to be installed, and go to the page to meet the condition. (Refer to Table 3.10.4.2-1.)

Table 3.10.4.2-1 Work Procedure Table

No.	Condition of Work Procedure	Page
1	When you need to install DEV Interface Cable (DKC-F515I-UC1R)	INST03-10C-70
2	When you do not need to install DEV Interface Cable (DKC-F515I-UC1R)	INST03-10C-130

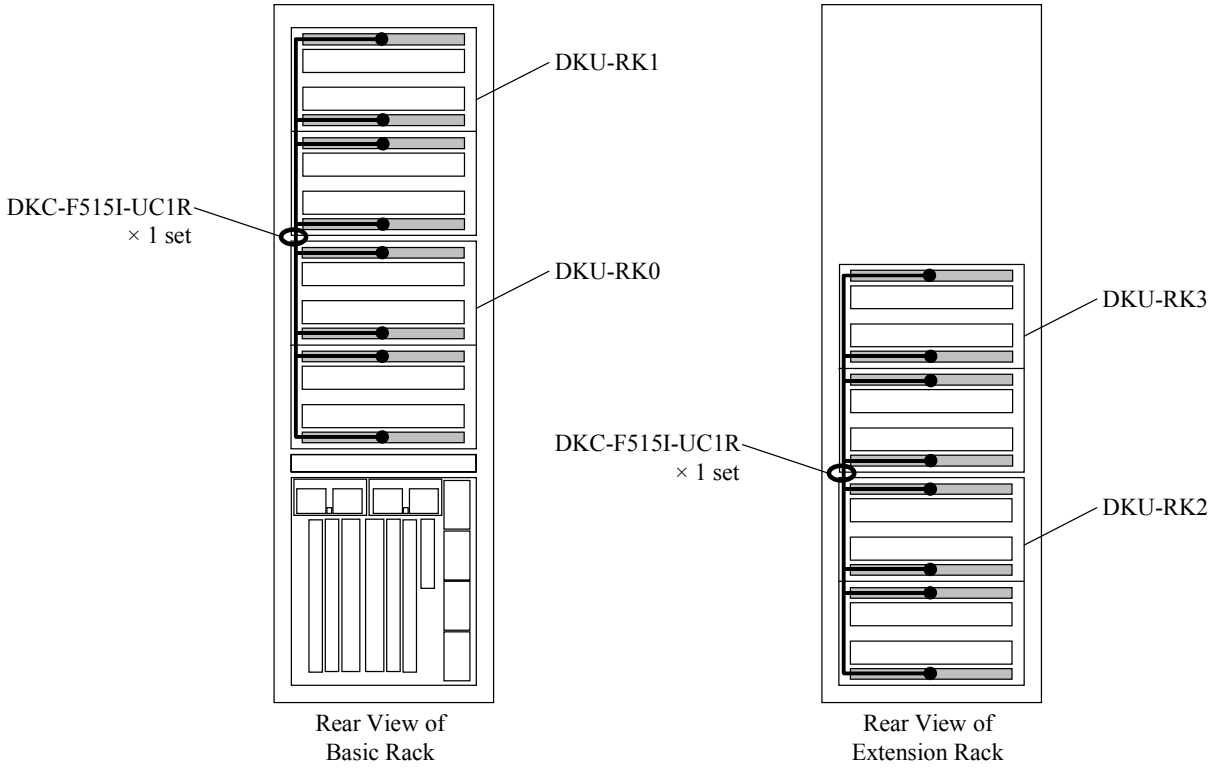


Fig. 3.10.4.2-1 Mounting Position of DEV Interface Cable

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When adding the cable to the Basic Rack (between the DKU-RK0 and DKU-RK1)

1. Adjust positions of Repeat Binders that are binding the DEV Interface Cable so that they fit the heights of the cable clamps for fastening the cable.
2. Fasten the upper part of the DEV Interface Cable to the rack column with two Repeat Binders and bind the lower part of it together with the UC0R cable, which has been installed in advance, with two Repeat Binders.
3. Connect the cable to the FSW PCB in the DKU-RK1 and fasten it with the cable clamps. **However, when executing this procedure, do not connect the cable to the FSW PCB in the DKU-RK0.**

Table 3.10.4.2-2 DEV Interface Cable List

No.	Parts No.	Name	Quantity	Connector No.				Cable Color
				A	B	C	D	
1	3272858-B	DEV Interface Cable	1	RK1-0-A1 RK1-0-A3 RK1-0-B1	RK1-2-A1 RK1-2-A3 RK1-2-B1	RK0-2-A2 RK0-2-A4 RK0-2-B2	RK0-0-A2 RK0-0-A4 RK0-0-B2	Black
			1	RK1-1-A1 RK1-1-A3 RK1-1-B1	RK1-3-A1 RK1-3-A3 RK1-3-B1	RK0-3-A2 RK0-3-A4 RK0-3-B2	RK0-1-A2 RK0-1-A4 RK0-1-B2	Blue
2	5409042-3	Repeat Binder	4	—	—	—	—	—

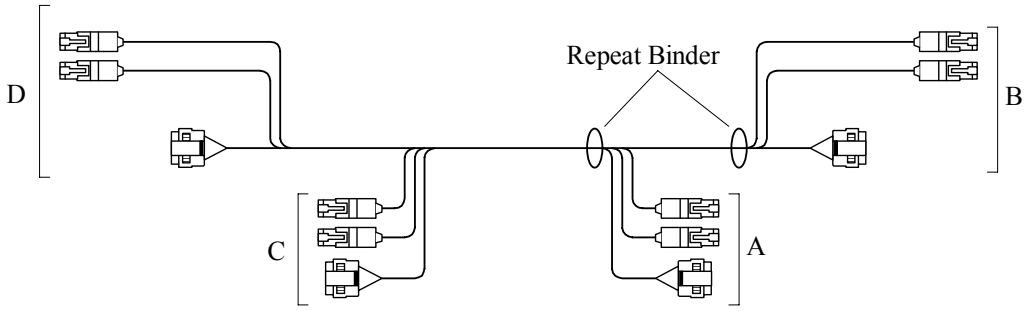


Fig. 3.10.4.2-2 Connector Number of DEV Interface Cable

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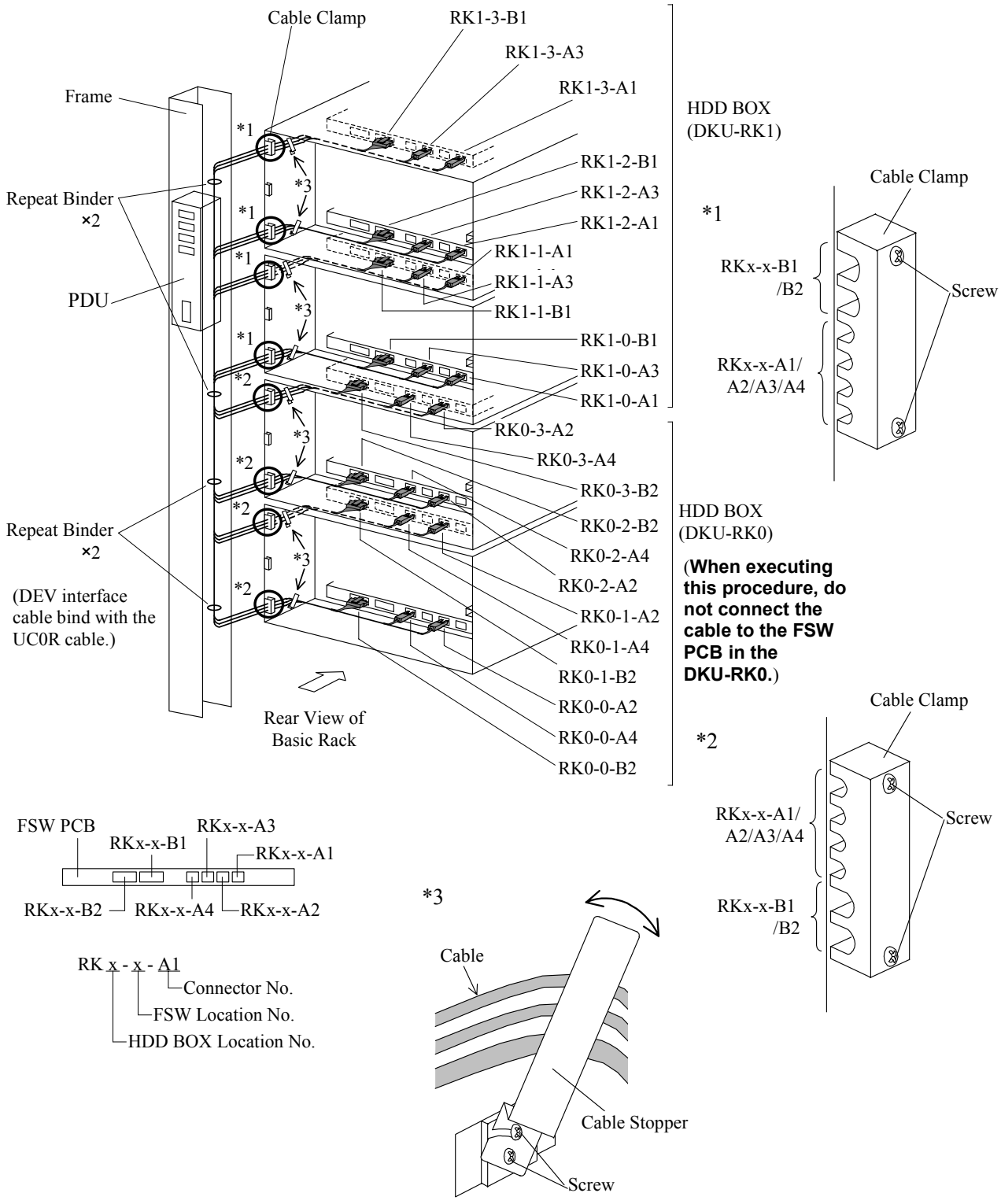


Fig. 3.10.4.2-3 Attachment of DEV Interface Cable

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4. Attachment of nameplate
   a. Remove the screw from the rack frame and remove the nameplate tags to be installed.
   b. Attach the nameplate to the nameplate tag on the Rack frame. Attach the HDS nameplate even if the HP model number is installed.
   c. Attach all the nameplate tags with the screw.

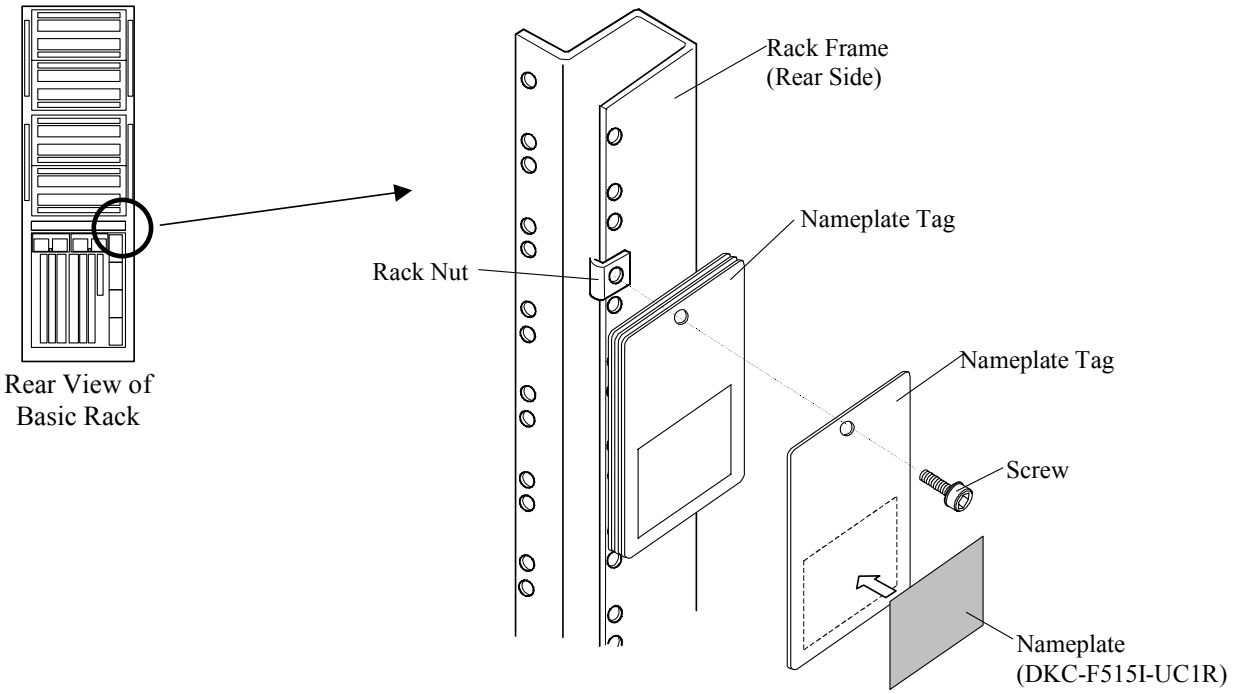


Fig. 3.10.4.2-4 Attachment of Nameplate

   d. Attach the nameplate to the lower HDD BOX cover. (only HP)

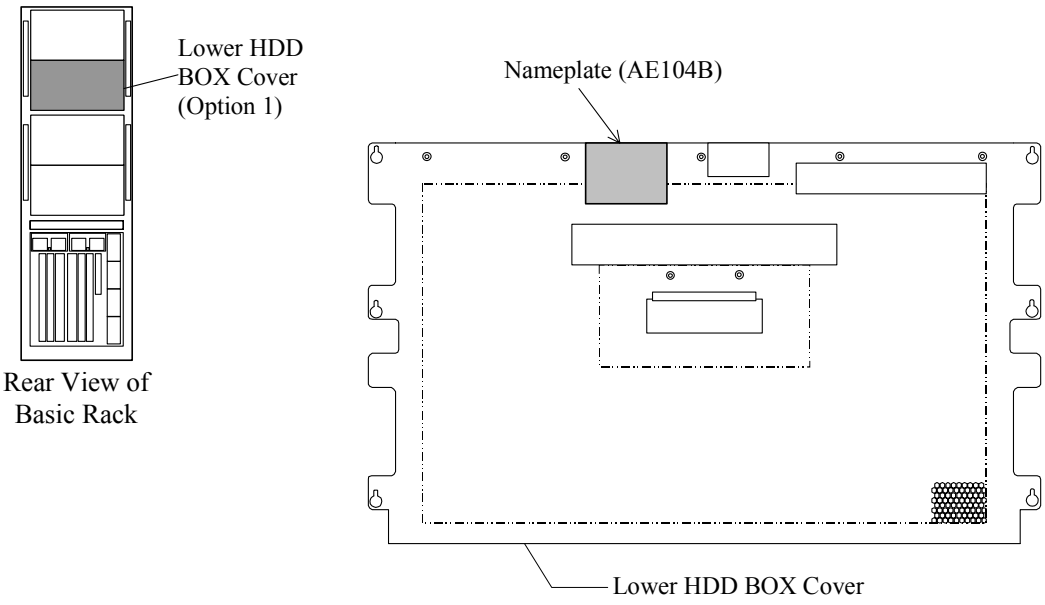


Fig. 3.10.4.2-4A Attachment of Nameplate for HP

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When adding the cable to the Basic Rack (between the DKU-RK2 and DKU-RK3)

1. Adjust positions of Repeat Binders that are binding the DEV Interface Cable so that they fit the heights of the cable clamps for fastening the cable.
2. Fasten the upper part of the DEV Interface Cable to the rack column with four Repeat Binders.
3. Connect the cable to the FSW PCB in the DKU-RK3 and fasten it with the cable clamps.
   However, when executing this procedure, do not connect the cable to the FSW PCB in the DKU-RK2.

Table 3.10.4.2-3 DEV Interface Cable List

No.	Parts No.	Name	Quantity	Connector No.				Cable Color
				A	B	C	D	
1	3272858-B	Fibre Cable	1	RK3-0-A1 RK3-0-A3 RK3-0-B1	RK3-2-A1 RK3-2-A3 RK3-2-B1	RK2-2-A2 RK2-2-A4 RK2-2-B2	RK2-0-A2 RK2-0-A4 RK2-0-B2	Black
			1	RK3-1-A1 RK3-1-A3 RK3-1-B1	RK3-3-A1 RK3-3-A3 RK3-3-B1	RK2-3-A2 RK2-3-A4 RK2-3-B2	RK2-1-A2 RK2-1-A4 RK2-1-B2	Blue
2	5409042-3	Repeat Binder	4	—	—	—	—	—

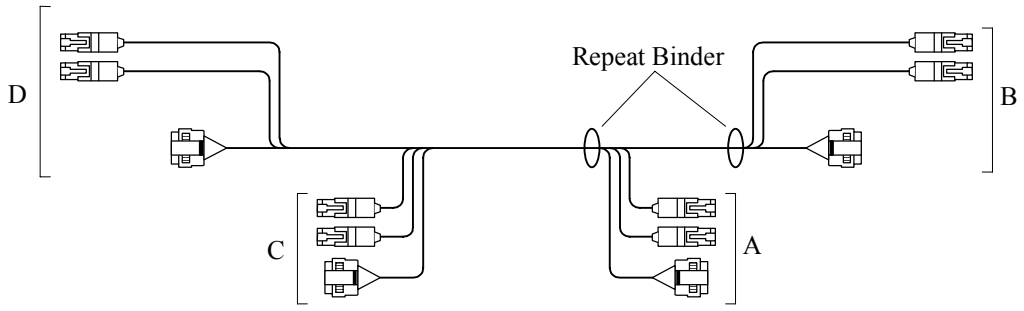


Fig. 3.10.4.2-5 Connector Number of DEV Interface Cable

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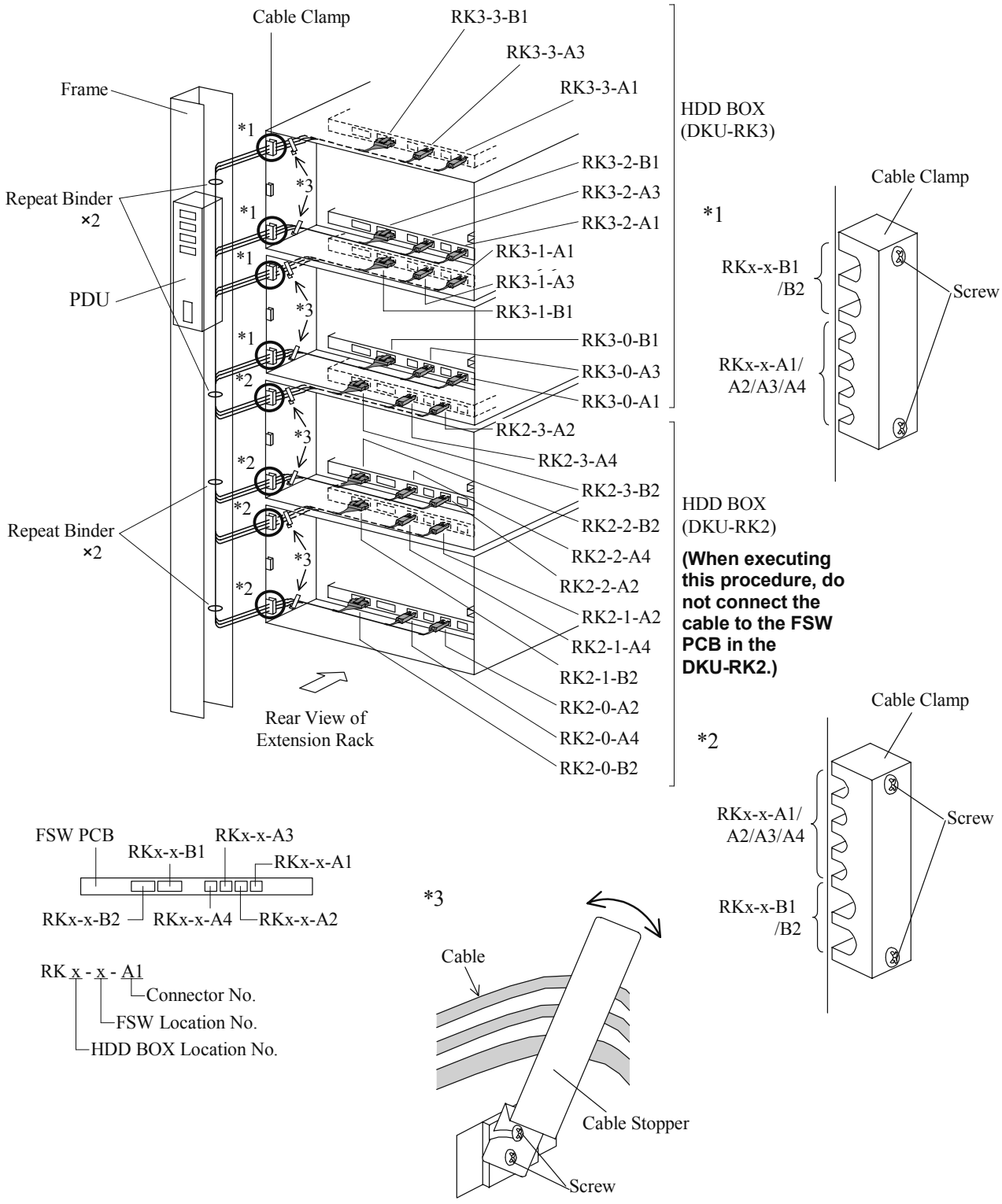


Fig. 3.10.4.2-6 Attachment of DEV Interface Cable

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5. Attachment of nameplate
   a. Remove the screw from the rack frame and remove the nameplate tags to be installed.
   b. Attach the nameplate to the nameplate tag on the Rack frame. Attach the HDS nameplate even if the HP model number is installed.
   c. Attach all the nameplate tags with the screw.

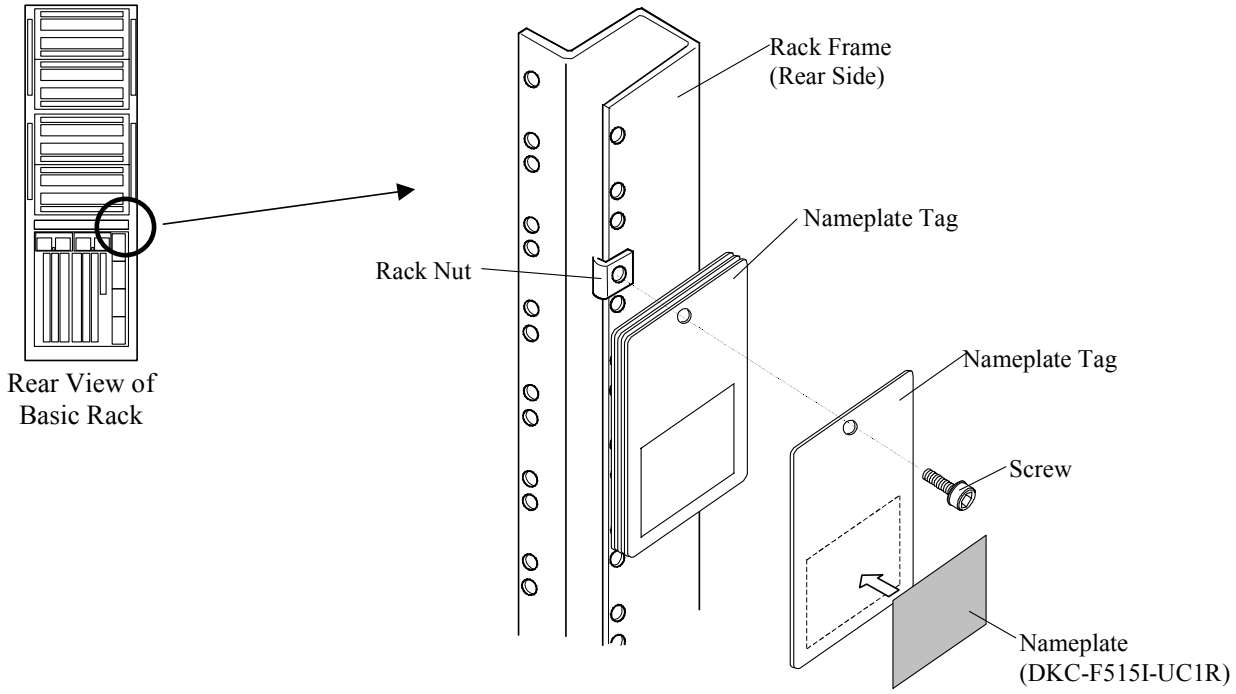


Fig. 3.10.4.2-7 Attachment of Nameplate

   d. Attach the nameplate and to the lower HDD BOX cover. (only HP)

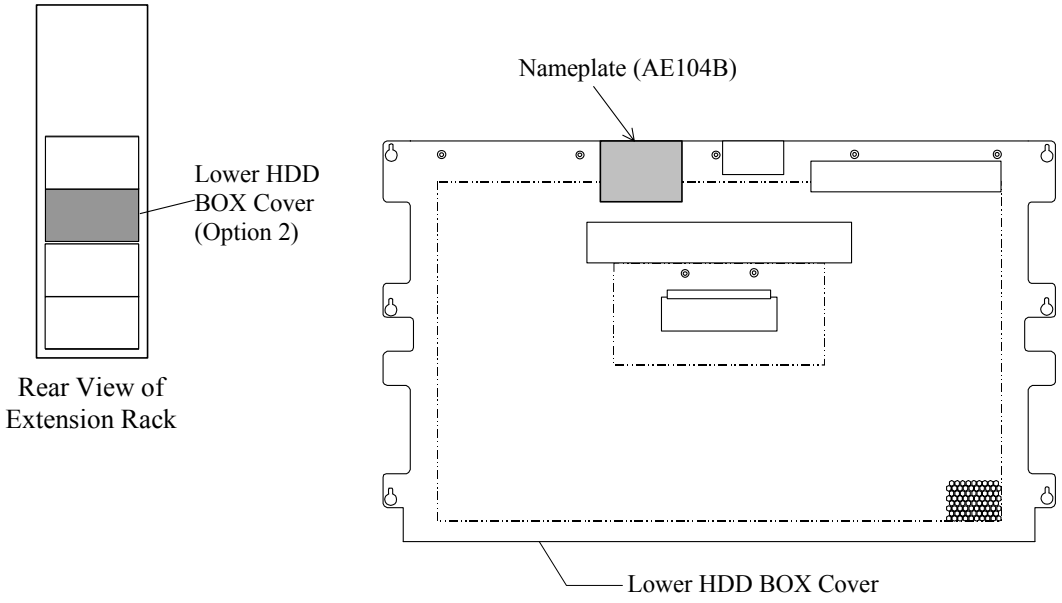


Fig. 3.10.4.2-8 Attachment of Nameplate for HP

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3.10.4.3 Installation Procedure of DEV Interface Cable connects DKU-R1 and DKU-R2 (DKC-F515I-EXC0R)

Installation Condition

DKC-F515I-EXC0R is the cable option to connect the DKU-RK1 and the DKU-RK2. This option is required when adding the extension rack.
Decide if the DEV Interface Cable (DKC-F515I-EXC0R) needs to be installed, and go to the page to meet the condition. (Refer to Table 3.10.4.3-1.)

Table 3.10.4.3-1 Work Procedure Table

No.	Condition of Work Procedure	Page
1	When you need to install DEV Interface Cable (DKC-F515I-EXC0R)	INST03-10C-150
2	When you do not need to install DEV Interface Cable (DKC-F515I-EXC0R)	INST03-10C-190

When installing the Extension Rack on the right of the Basic Rack

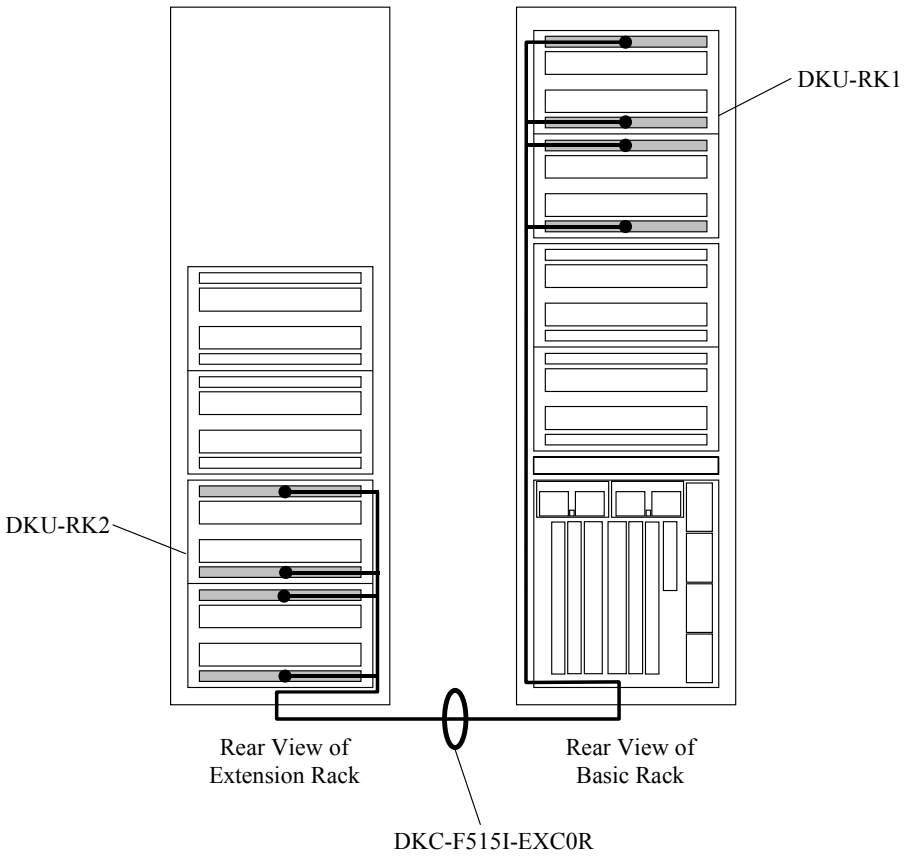


Fig. 3.10.4.3-1 Mounting Position of DEV Interface Cable

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When installing the Extension Rack on the left of the Basic Rack

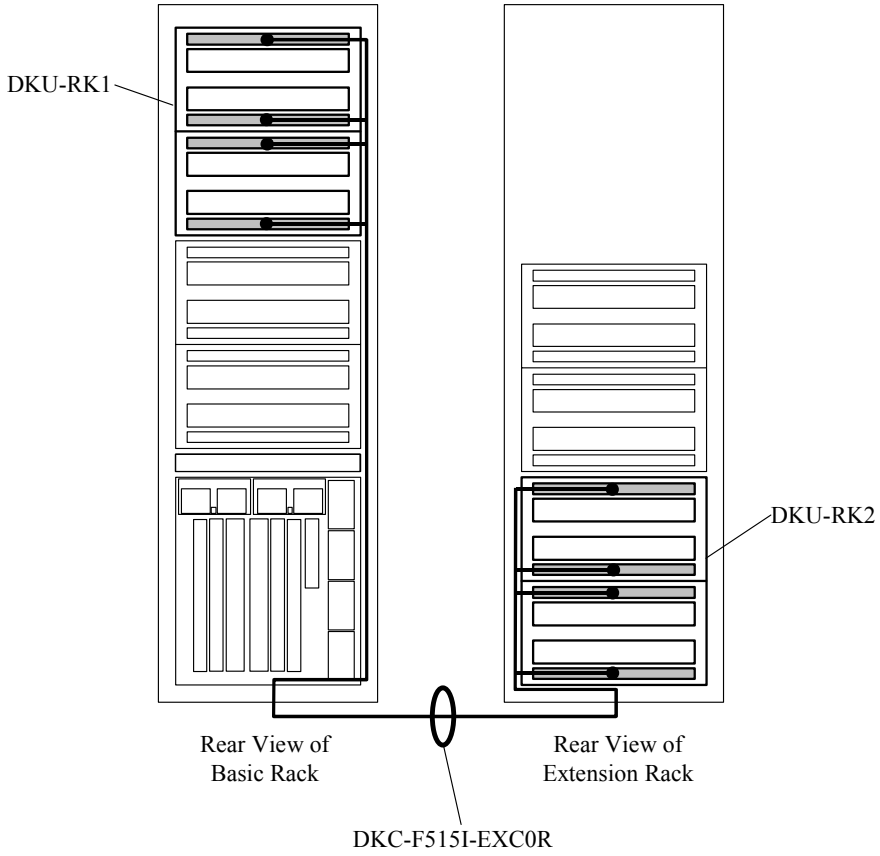


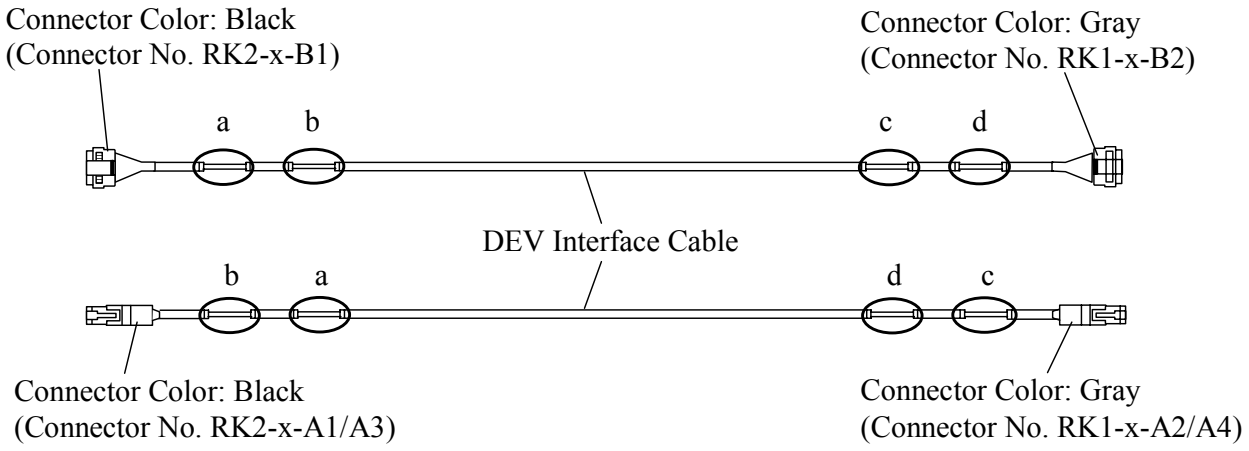
Fig. 3.10.4.3-2 Mounting Position of DEV Interface Cable

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1. Check to see the installation site of Extension Rack is on the right side or left side of Basic Rack.
2. Wind the tape around a and c from Fig. 3.10.4.3-3 when Extension Rack is installed on the right side of Basic Rack, otherwise wind the tape around b and d.

Table 3.10.4.3-2 DEV Interface Cable List

No.	Parts No.	Name	Quantity	Connector No.		Remarks
				A	B	
1	3272858-C	DEV Interface Cable	1	RK2-0-A1 RK2-0-A3	RK1-0-A2 RK1-0-A4	
				RK2-0-B1	RK1-0-B2	
			1	RK2-1-A1 RK2-1-A3	RK1-1-A2 RK1-1-A4	
				RK2-1-B1	RK1-1-B2	
			1	RK2-2-A1 RK2-2-A3	RK1-2-A2 RK1-2-A4	
				RK2-2-B1	RK1-2-B2	
			1	RK2-3-A1 RK2-3-A3	RK1-3-A2 RK1-3-A4	
				RK2-3-B1	RK1-3-B2	
2	5532297-1	Binder	3	—	—	
3	3274136-1	Cable Clamp	4	—	—	
4	SB416N	Screw	8	—	—	
5	3274130-1	Cable Stopper	4	—	—	
6	SB306N	Screw	8	—	—	
7	3274352-1	Tape	4	—	—	



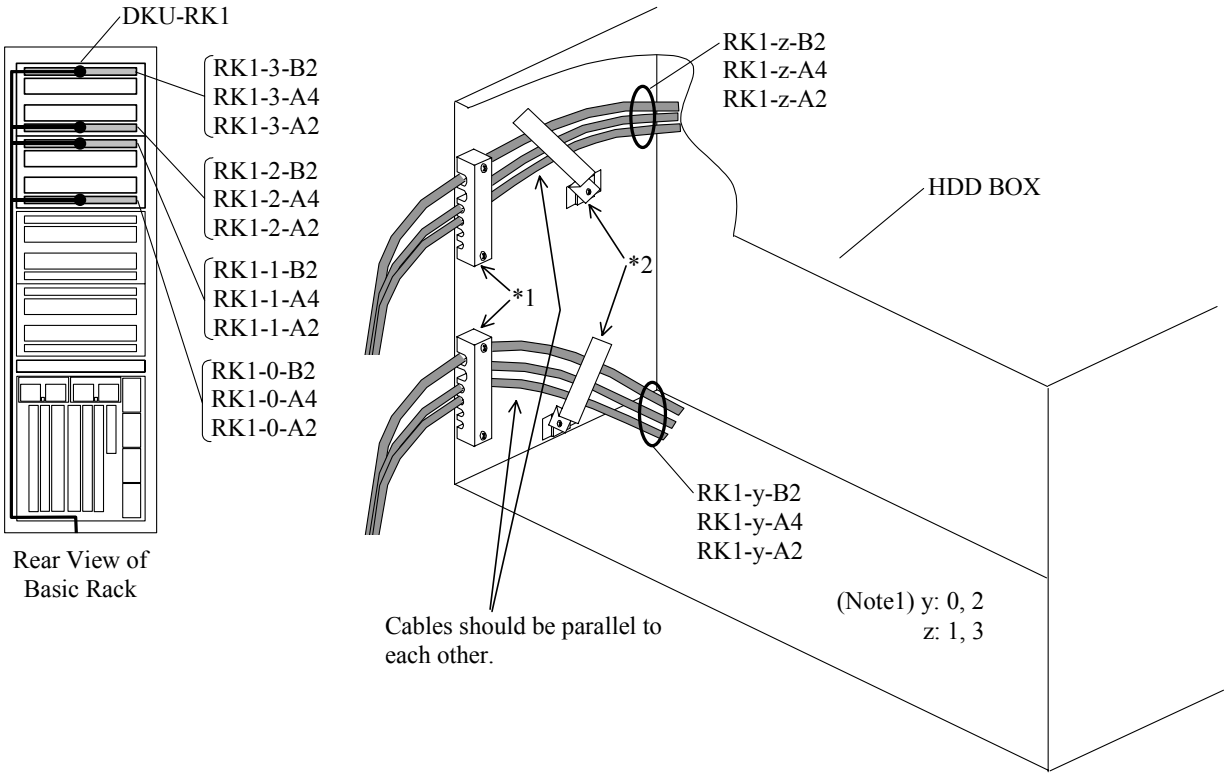
(Note) x: 0, 1, 2, 3

Fig. 3.10.4.3-3 Attachment position of Tapes

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3. Secure cables for DKU-RK1 with a cable clamp and a cable stopper. (Refer to Fig. 3.10.4.3-4 or Fig. 3.10.4.3-5.)
   Use the cable clamp listed in Table 3.10.4.3-2 when wiring cables on the right side of HDD BOX.
   Wire for the cable without installing the cable stopper along box when there is no base to install the cable stopper on the right side of HDD BOX.
   However, when executing this procedure, do not connect the cable to the FSW PCB in the DKU-RK1. Be aware of damaging cables when installing cable clamps.
4. Remove the repeat binders from installed cables. (Refer to Fig. 3.10.4.3-6.)

When installing the Extension Rack on the right of the Basic Rack



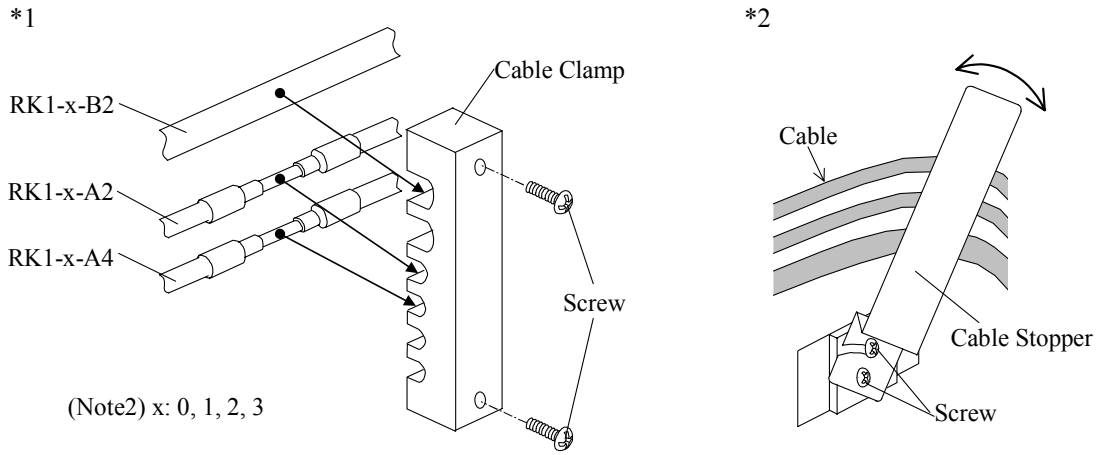


Fig. 3.10.4.3-4 Fixation of DEV Interface Cables

When installing the Extension Rack on the left of the Basic Rack

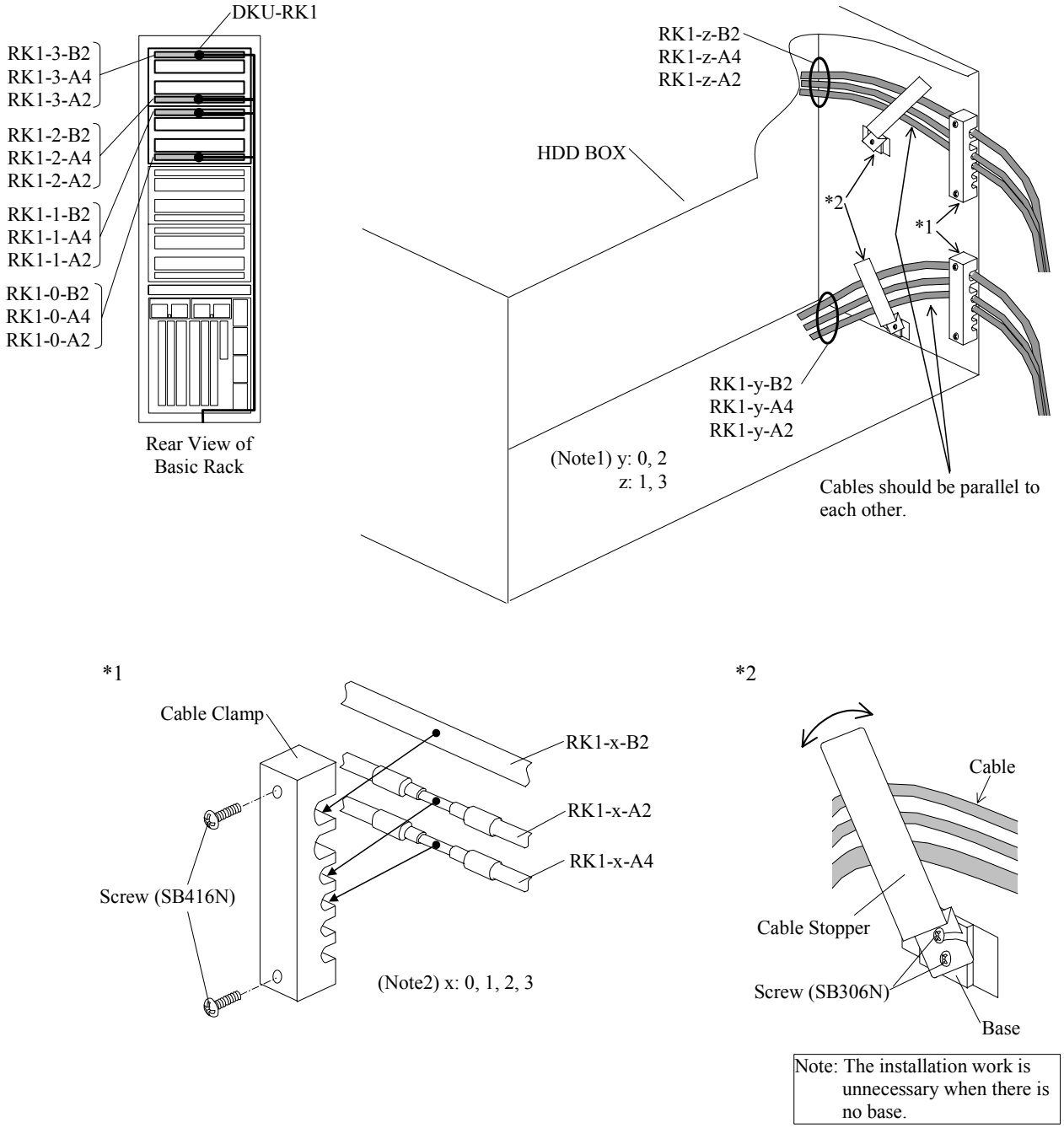


Fig. 3.10.4.3-5 Fixation of DEV Interface Cables

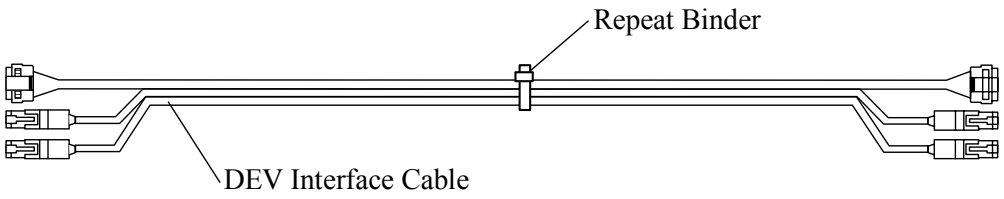


Fig. 3.10.4.3-6 Removal of Repeat Binders

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5. Wire the cable to the frame and pass cables form the bottom of the Basic Rack through Extension Rack. Fix the cables with three binders. (Refer to Fig. 3.10.4.3-7 or Fig. 3.10.4.3-8.)

When installing the Extension Rack on the right of the Basic Rack

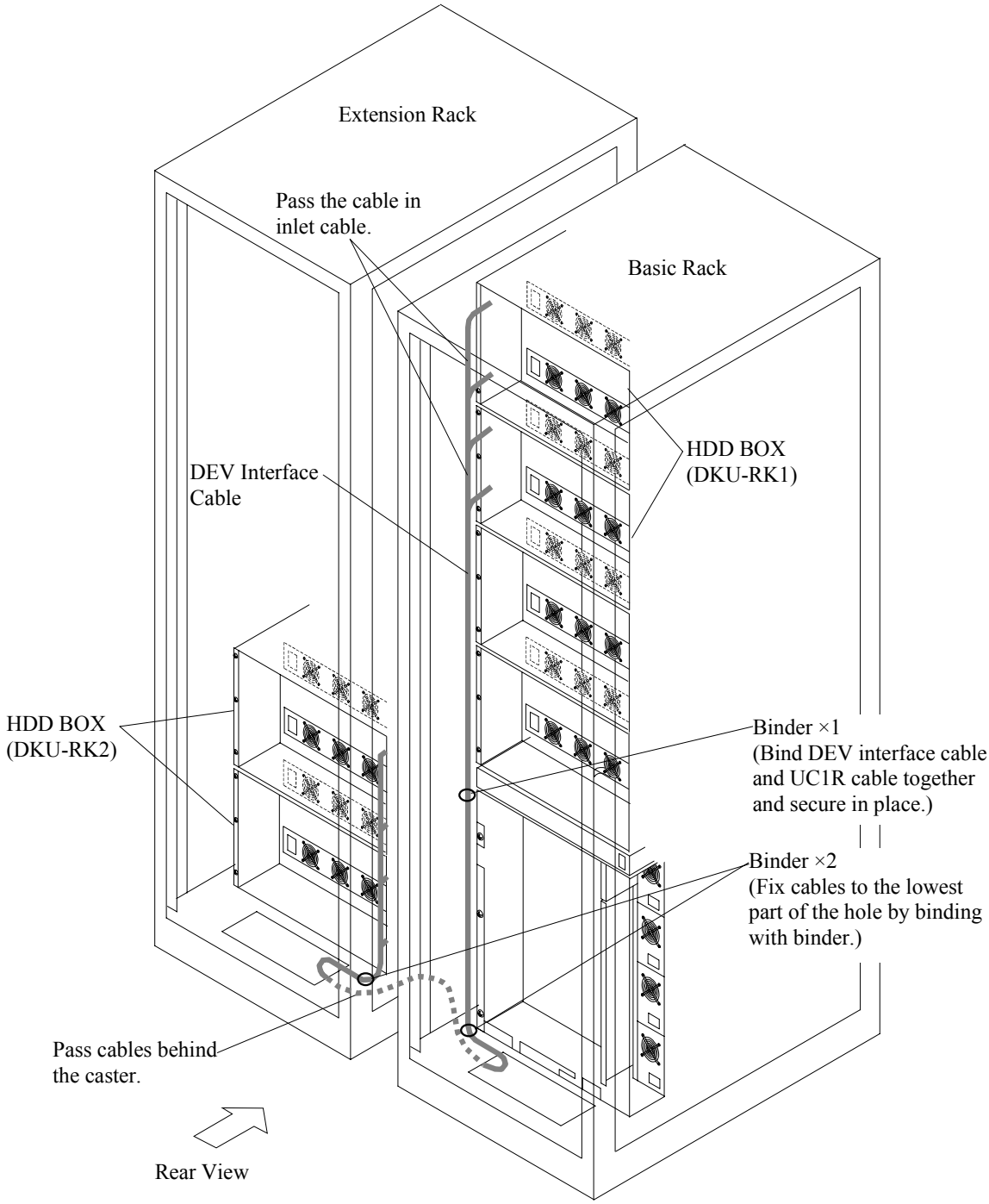


Fig. 3.10.4.3-7 Attachment of DEV Interface Cables

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When installing the Extension Rack on the left of the Basic Rack

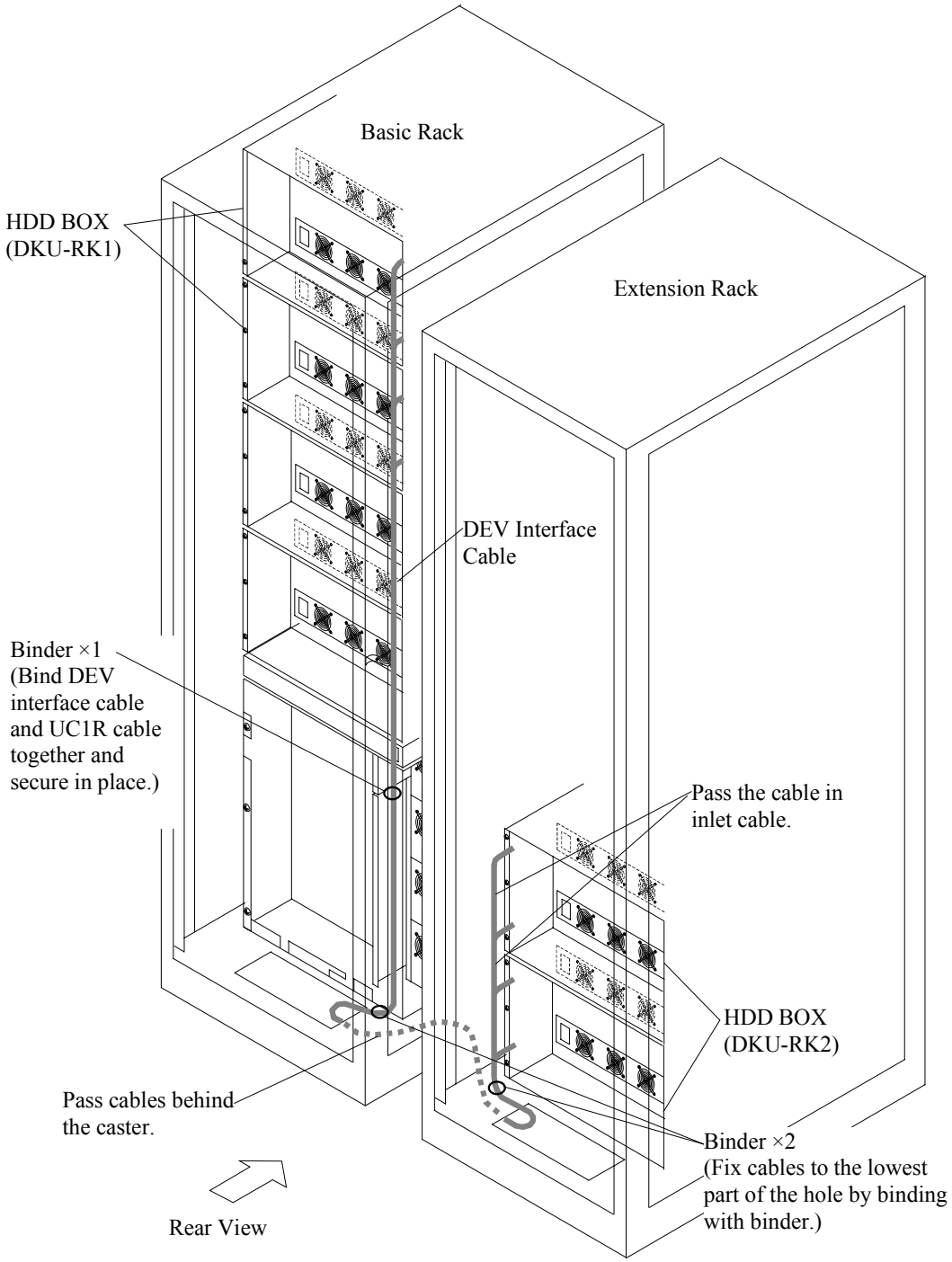


Fig. 3.10.4.3-8 Attachment of DEV Interface Cables

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6. Connect the cable to the FSW PCB in the HDD Box (DKU-RK2).

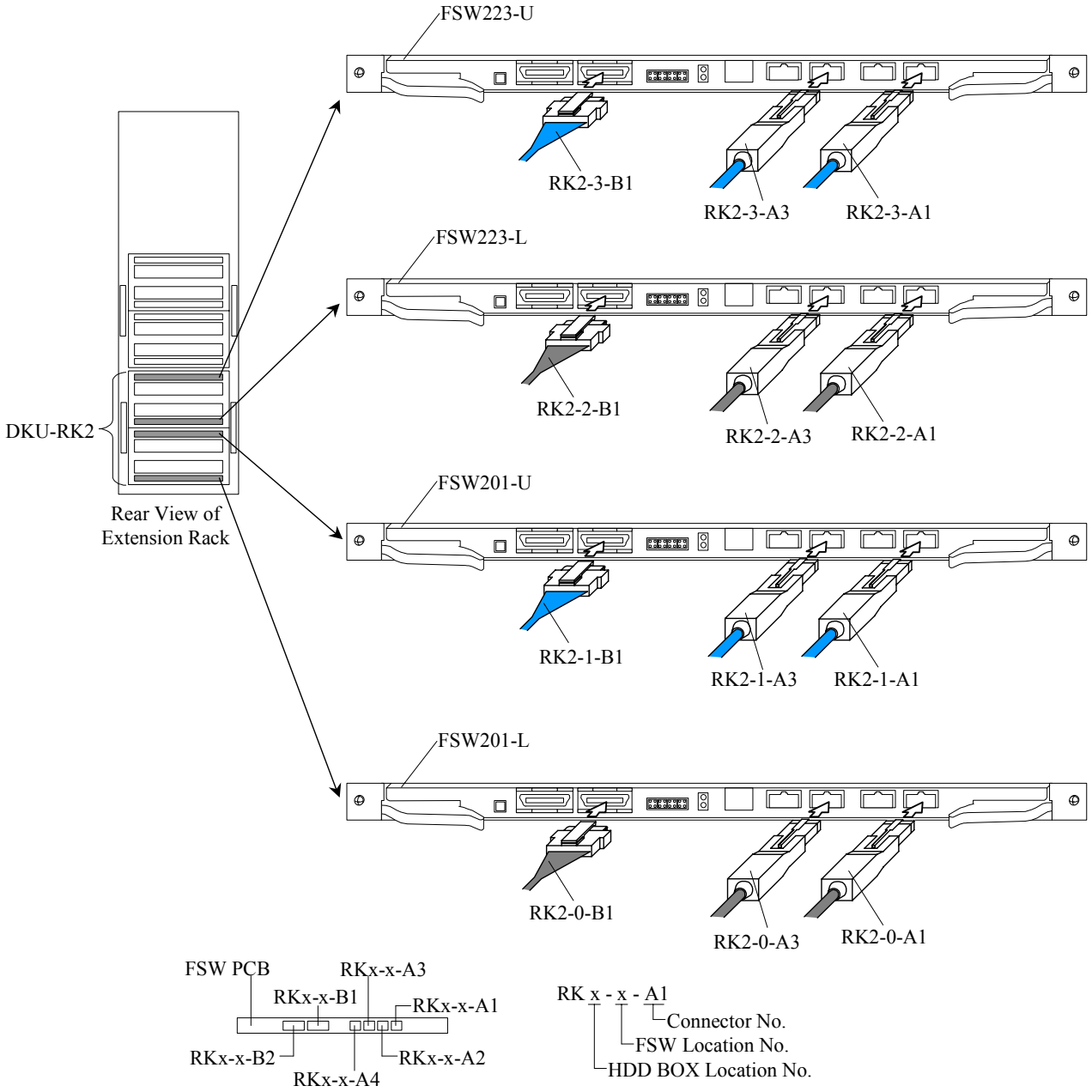


Fig. 3.10.4.3-9 Connection of DEV Interface Cables

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7. Secure cables for DKU-RK2 with a cable clamp and a cable stopper. (Refer to Fig. 3.10.4.3-10 or Fig. 3.10.4.3-11.)
   Use the cable clamp listed in Table 3.10.4.3-2 when wiring cables on the right side of HDD BOX.
   Wire for the cable without installing the cable stopper along box when there is no base to install the cable stopper on the right side of HDD BOX.
   Be aware of damaging cables when installing cable clamps.

When installing the Extension Rack on the right of the Basic Rack

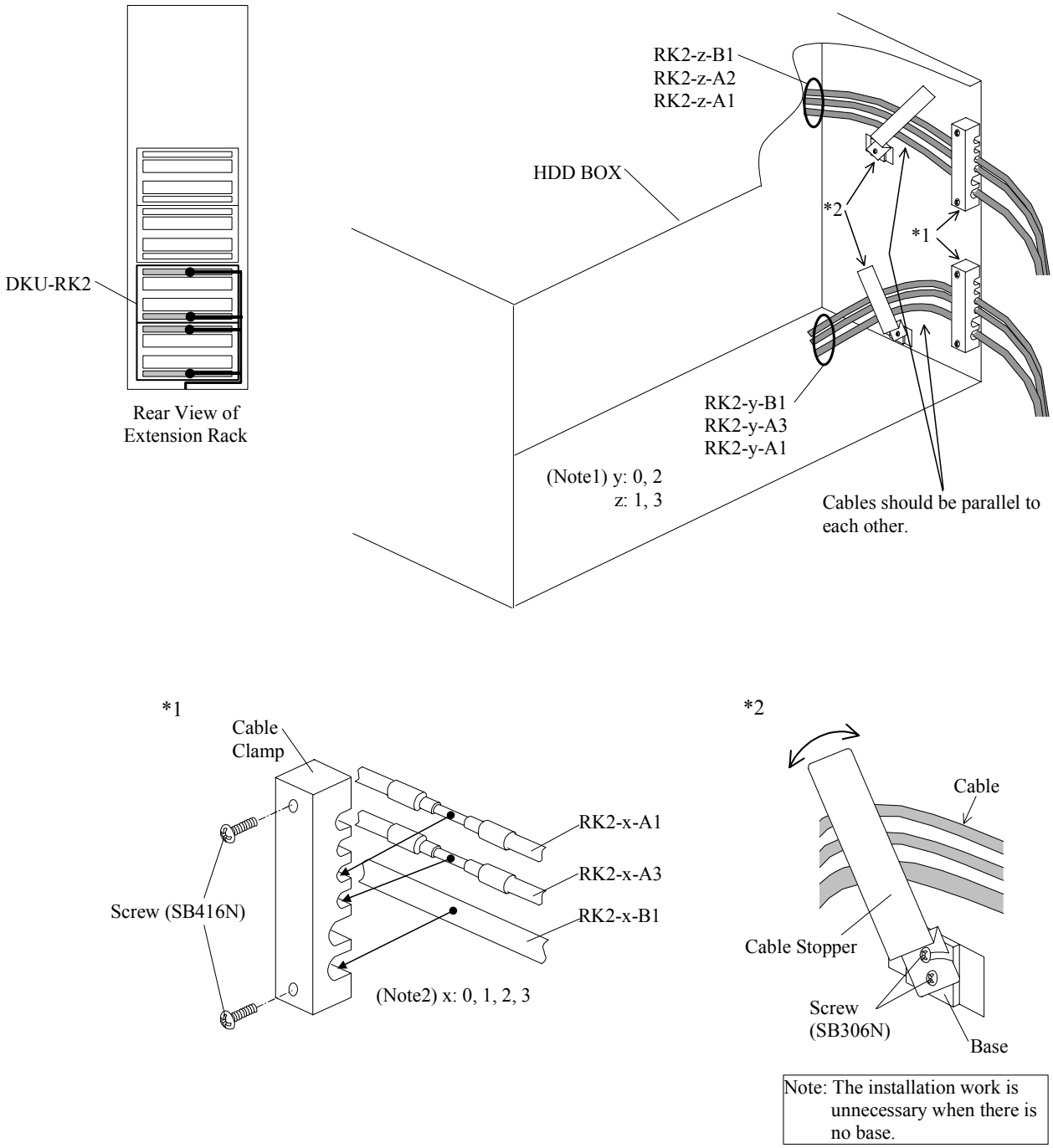


Fig. 3.10.4.3-10 Attachment of DEV Interface Cable

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When installing the Extension Rack on the left of the Basic Rack

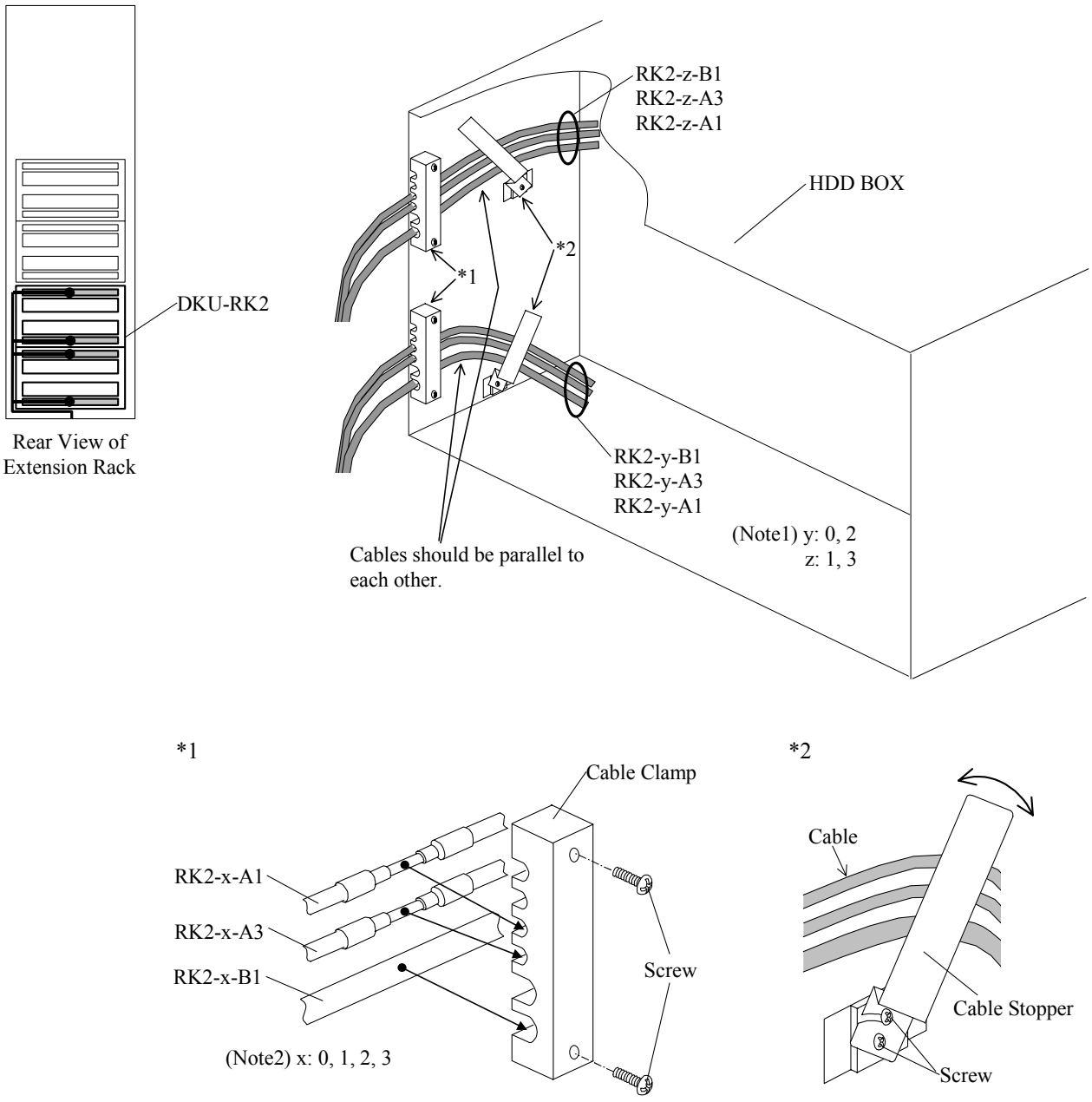


Fig. 3.10.4.3-11 Attachment of DEV Interface Cables

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8. Attachment of nameplate
   a. Remove the screw from the rack frame and remove the nameplate tags to be installed.
   b. Attach the nameplate to the nameplate tag on the Rack frame.
   c. Attach all the nameplate tags with the screw.

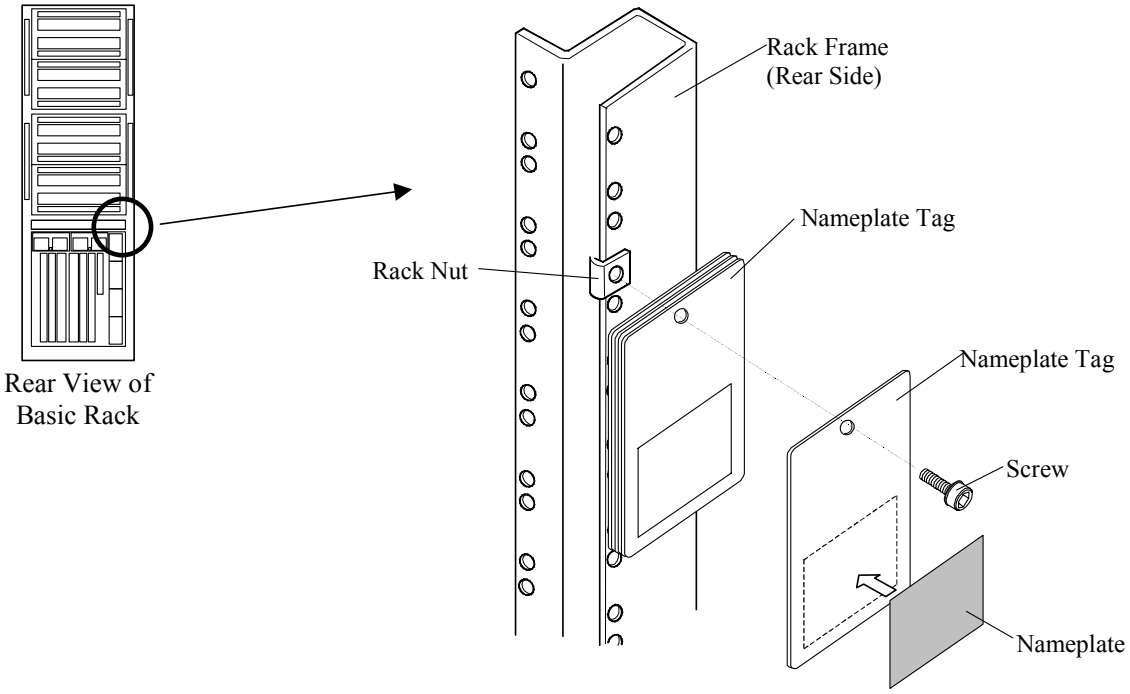


Fig. 3.10.4.3-12 Attachment of Nameplate

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9. Labeling

RSD Rack Frame

a. Attach the six labels to the rear door.
b. Attach the nameplate and three labels to the frame bottom base. Label (V/Hz/PH.) should be selected among the sheet of Label (V/Hz/PH.) corresponding to the operating voltage and frequency.

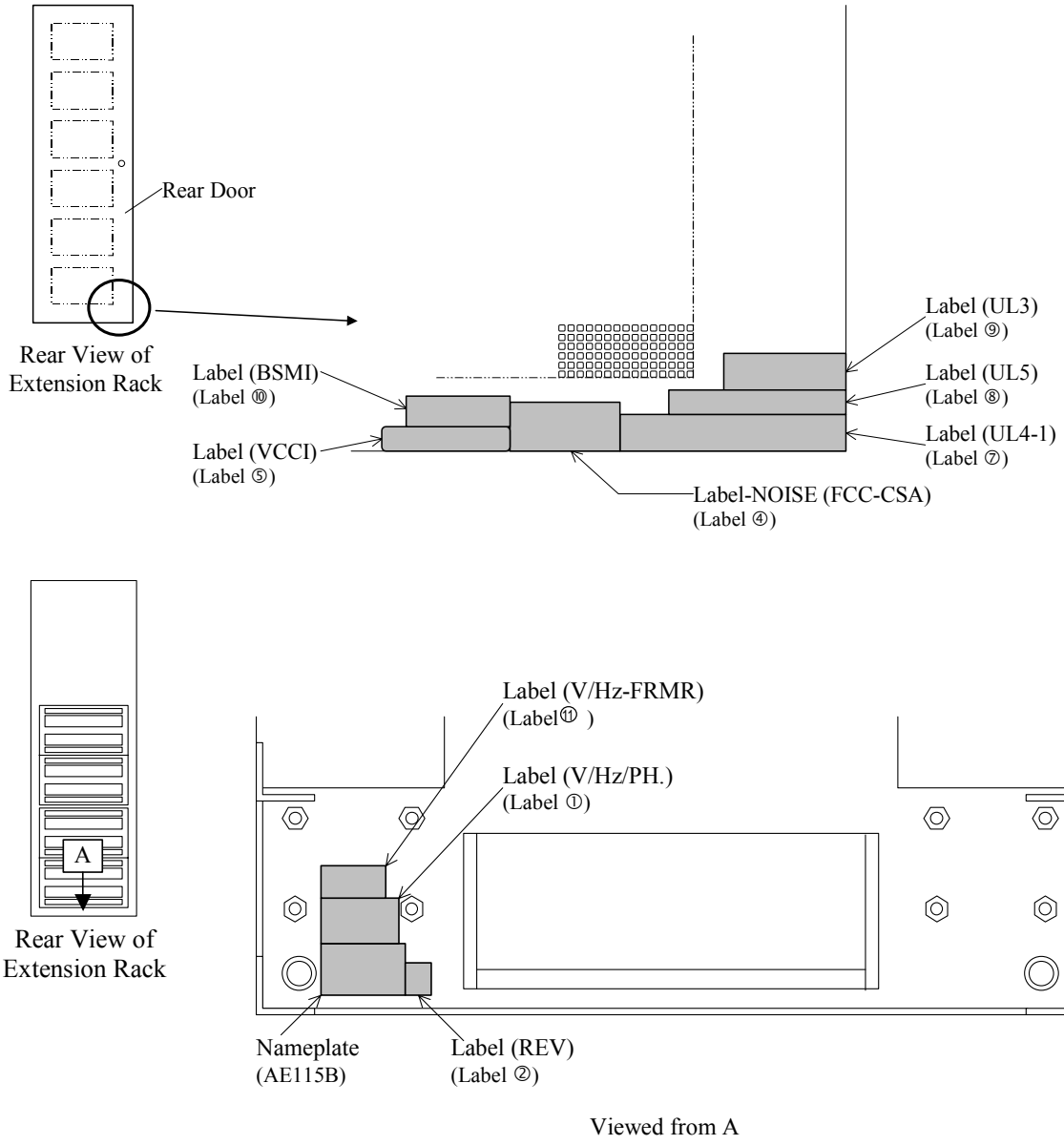


Fig. 3.10.4.3-13 Attachment of Labels

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HDS Rack Frame

a. Attach the five labels to the rear door.

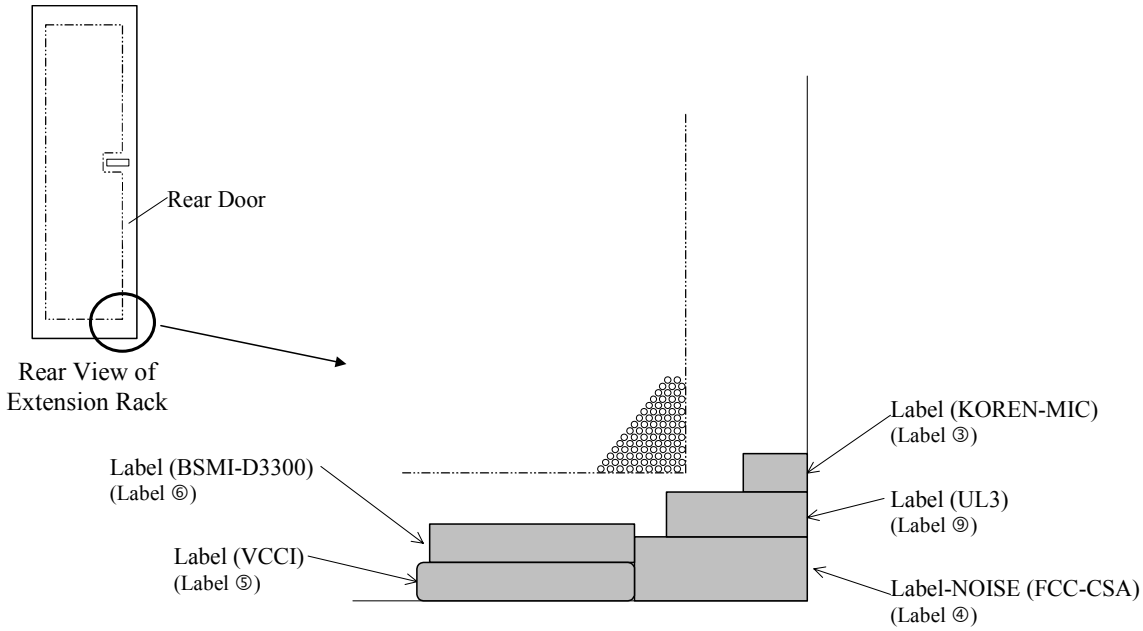


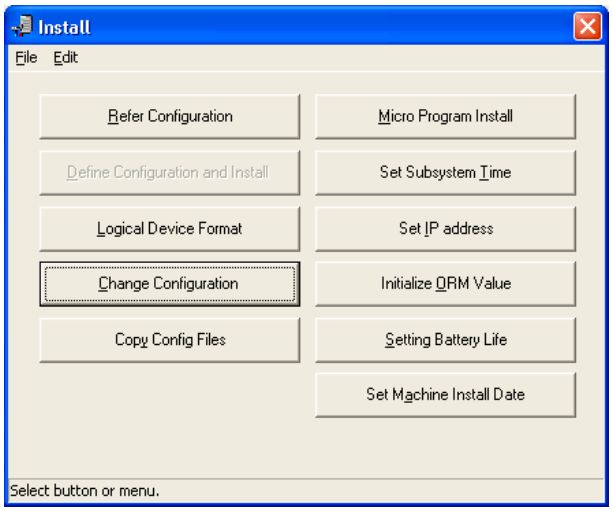
Fig. 3.10.4.3-14 Attachment of Labels

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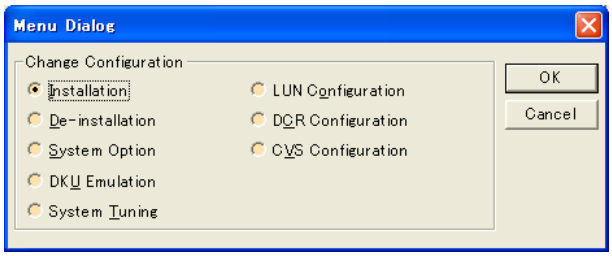
3.10.4.4 SVP pre procedure (Setting up the New Device Structure Information)

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

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

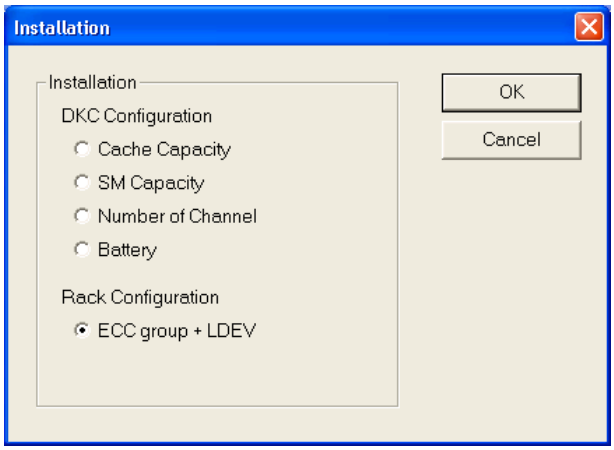


(3) <Start Device Structure Setup screen>
Select (CL) [Installation] in the "Menu Dialog" dialog box and select (CL) [OK].



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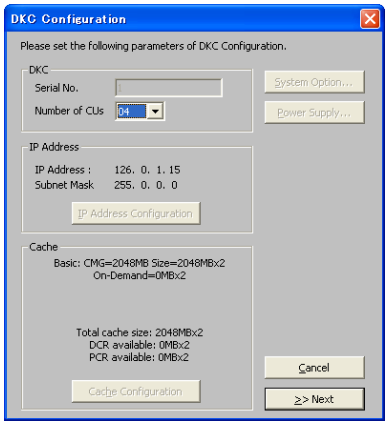
(4) <Select a part to be changed>
Select (CL) [ECC group + LDEV], and select (CL) [OK].



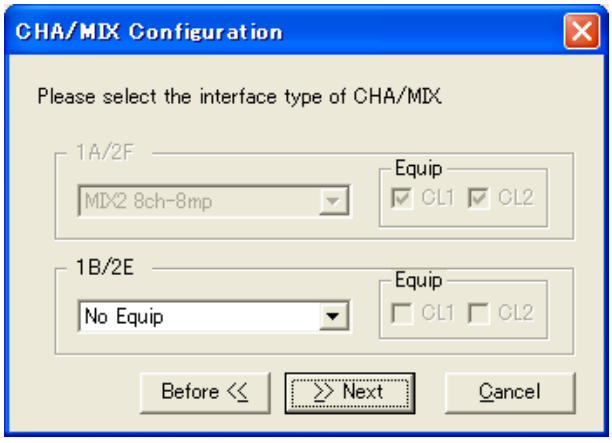
(5) <Update Configuration Information>
Define the number of CU in DKC in the 'DKC Configuration' window.

Make sure that the entered item is correct and select (CL) [>>Next].

Note: There may be a case where an addition of the SM is required to add the CU.
When adding the SM, refer to page INST03-09A-10.

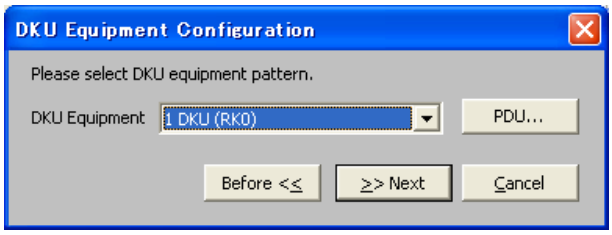


(6)-1 <Setting MIX>
Check the setting item in the 'CHA/MIX Configuration' window.
Select (CL) [>>Next].



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(7) <DKU Equipment>
The DKU equipment pattern is displayed in the 'DKU Equipment Configuration' window. Select (CL) [>>Next].
However, if you want to set "Not Equip", select (CL) [>>Next]. Go to step (12).



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(8) <Change Drive Configuration Information>
Define drive configuration according to the 'Physical Device Configuration' screen.
Detailed procedure is shown below.
[Set...]: Defines the parity group or spare disk. The routine proceeds to Step (8)-1.
[Clear...]: Cancels the setting of the B4.
After setting up all items, select (CL) [>>Next]. Go to step (9).
However, if you don't want to set any parity group or spare disk, select (CL) [>>Next]. Go to Step (12).



Selecting (CL) [Before<<] returns you to the previous screen.

B4	Location	
	HDU	HDD
1st	HDU-00,01,02,03	HDD0X-00 ~ HDD0X-0E
2nd	HDU-10,11,12,13	HDD1X-00 ~ HDD1X-0E
3rd	HDU-20,21,22,23	HDD2X-00 ~ HDD2X-0E
4th	HDU-30,31,32,33	HDD3X-00 ~ HDD3X-0E

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(8)-1 <Define Parity Group>

[Group...]: Defines the parity group. See Step (8)-1-1.

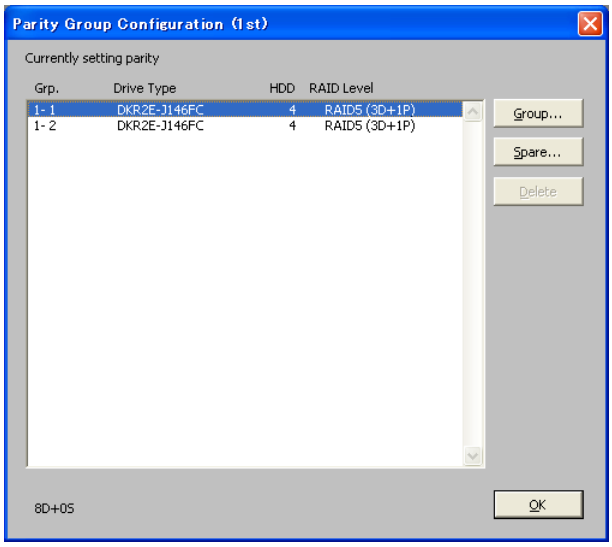
[Spare...]: Defines the spare drive. See Step (8)-1-2.

[Delete]: Deletes the added parity group or spare drive.

Grp*: A parity group where RAID Concatenation is installed.

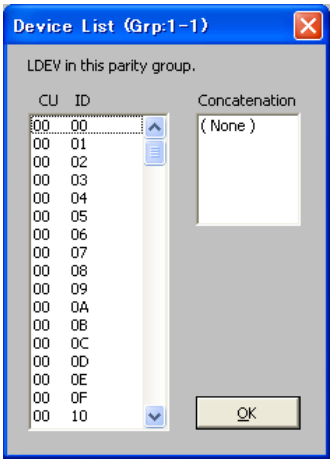
Note: If you want to set any Spare Drive in B4, please define the Spare Drive first.

After setting up all items, select (CL) [OK]. Return to step (8).



To display LDEV ID in Parity group, select an item to be displayed and select (DC) this item on list box. The 'Device List' dialog box will appear.

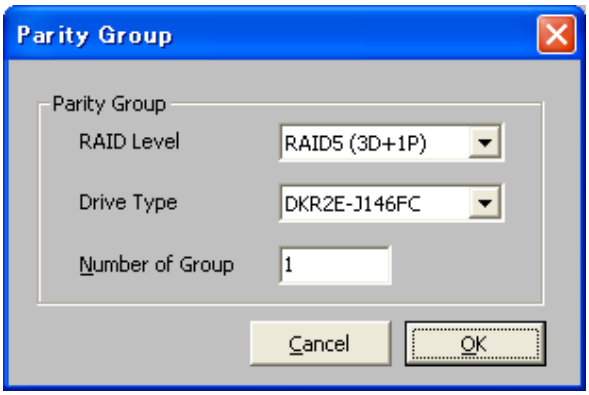
"(no LDEV)" is displayed for the added parity group.



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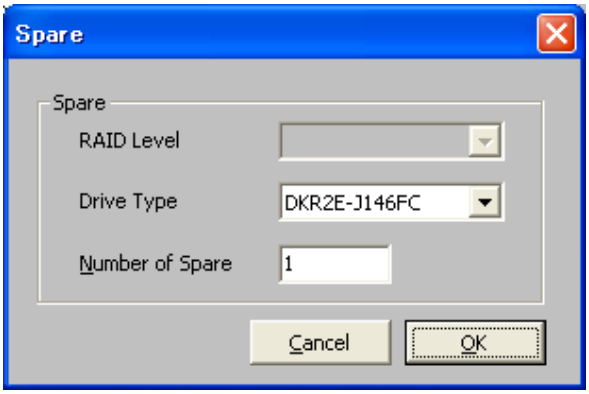
(8)-1-1

Define the RAID Level and the Drive Type and the Number of Group in the 'Parity Group' dialog box.
Then select (CL) [OK]. Return to step (8)-1.



(8)-1-2

Define the RAID Level and the Drive Type and the Number of Spare in the 'Spare' dialog box.
Then select (CL) [OK]. Return to step (8)-1.



(9) <Define Device Emulation>

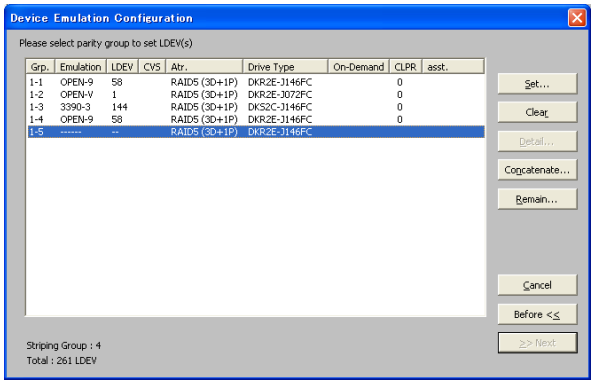
After setting up all items corresponding to (9)-1 to (9)-3 for definition of Device Emulation, select (CL) [>>Next].
Selecting (CL) [Before<<] returns you to the previous screen.
In the case of only spare drive installation, select (CL) [>>Next]. Go to step (10).

- If defining Device Emulation, go to step (9)-1.
- If setting RAID concatenation, go to step (9)-2.
- If defining of Customized Volume Size (CVS), go to step (9)-3.

(9)-1 <Define Device Emulation>

Select (CL) parity group and select (CL) [Set...].
Go to step (9)-1-1.

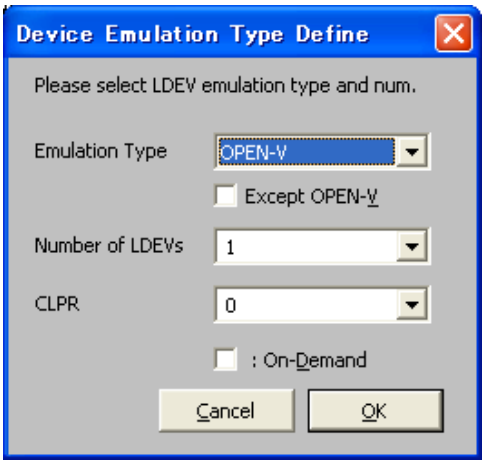
For detailed display:
Select (CL) parity group and select (CL) [Detail...].
The detailed information is displayed.
(CVS): A parity group where CVS is installed.
Grp*: A parity group where RAID Concatenation is installed.



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(9)-1-1

After setting up all items in the 'Device Emulation Type Define' dialog box, select (CL) [OK].



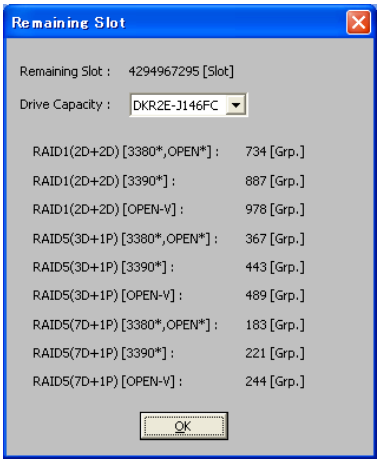
Selecting (CL) [Cancel] returns you to step (9).

Note: OPEN-V is a recommended OPEN volume.
To set other than OPEN-V, please select "Except OPEN-V".

Note: "0" can be set to the value of Number of LDEVs for all the emulation types.
If you don't know the LDEV size you will use, set "0". You can save time by setting "0" because LDEV format will not run.
When you set "0", please make LDEVs later using the CVS function.

(9)-1-2

The Remaining Slot window is displayed.
An allowable number of times of PDEV addition corresponding to the specified drive type is displayed.

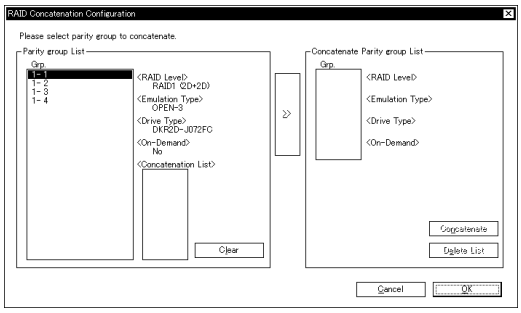


Select (CL) the [OK]. The routine returns to Step (9).

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(9)-2

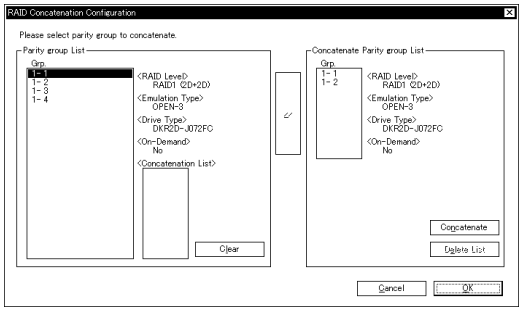
Parity groups to which the RAID concatenation can be applied are displayed in the Parity group List. Select (CL) parity groups to which you want to apply the RAID concatenation and press (CL) the [>>] button.



Note: Only the parity groups, which have been added and to which the RAID concatenation can be applied are displayed in the Parity group List.

(9)-2-1

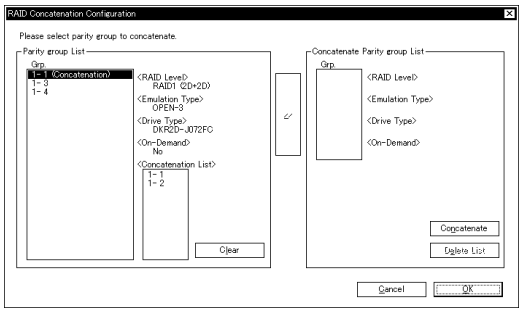
The selected parity groups are registered in the Concatenate Parity group List. Then press (CL) the [Concatenate] button.



Note: The [Concatenate] button cannot be pressed if the concatenation does not meet a condition of the RAID concatenation. Adjust the number of the parity groups in the Concatenate Parity group List.

(9)-2-2

When the RAID concatenation is completed, "(Concatenation)" is displayed in the Parity group List. Selecting the "(Concatenation)" displays the concatenated parity groups in the Concatenation List. Pressing the [Clear] button cancels the RAID concatenation.

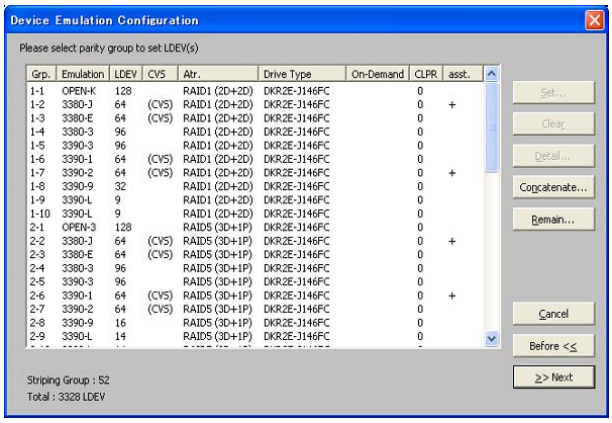


When all the settings of the RAID concatenation are completed, press (CL) the [OK] button.
Pressing (CL) the [Cancel] button returns the routine to Step (9).

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(9)-3 <Defining of Customized Volume Size (CVS)>

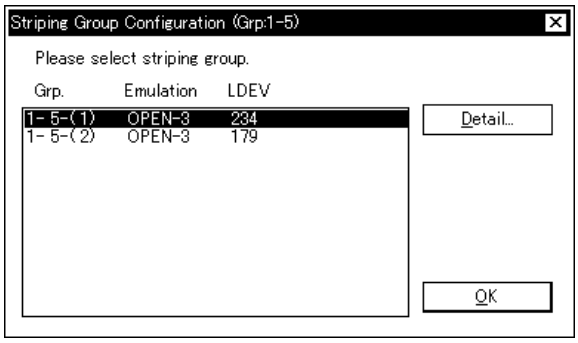
Select (CL) a parity group for which the LDEV emulation type and the number of LDEVs have been set on the "Device Emulation Configuration" screen and select (CL) [Detail…].
When you do not perform the CVS, return to Step (9).



(9)-3-1

When there are two or more striping groups, the Striping Group Configuration window is displayed. Select (CL) a striping group, and then select (CL) the [Detail…].

- When you select a striping group other than OPEN-V, the routine goes to Step (9)-3-2.
- When you select OPEN-V, the routine goes to Step (9)-3-4.



When you select (CL) the [OK], the preceding window returns. (The routine returns to Step (9).)

Note: When there is only one striping group, the Striping Group Configuration window is not displayed.

- When you select a striping group other than OPEN-V, the routine goes to Step (9)-3-2.
- When you select OPEN-V, the routine goes to Step (9)-3-4.

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(9)-3-2 <Definition other than OPEN-V>

A volume other than OPEN-V can be added or deleted in the "Customized Volume Size Define" window.

A volume can be deleted by selecting (CL) the volume from the LDEV list box and selecting (CL) [Delete].

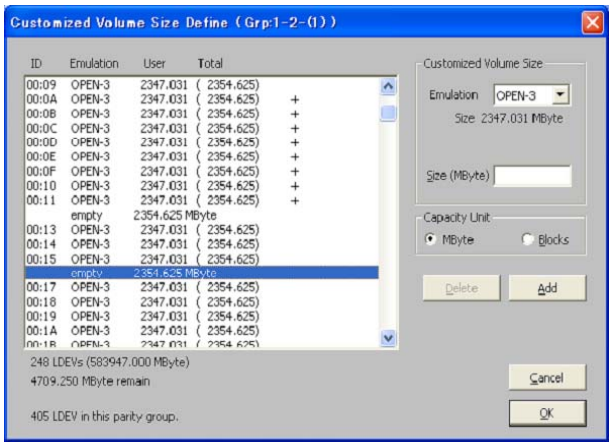
A volume can be added by entering the LDEV emulation type and the user size (Mbyte/Blocks or Cylinder) of the customized volume (CV) and selecting [Add].

(It can be added in the optional space "empty" by selecting (CL) "empty" from the LDEV list box.)

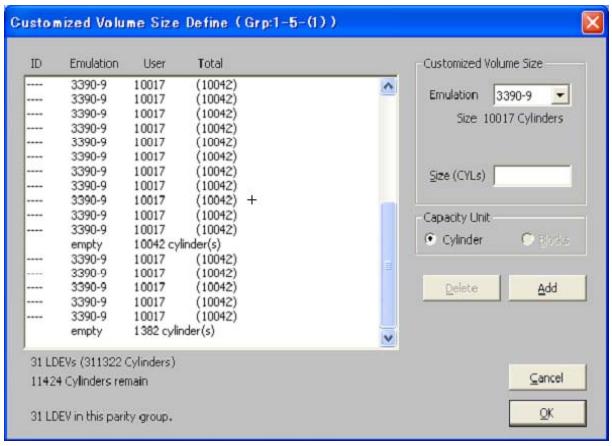
The routine returns to the preceding window by selecting (CL) [Cancel].

The routine returns to the preceding window and the change is reflected by selecting (CL) [OK].

(When the emulation type is Open System)



(When the emulation type is Mainframe System)



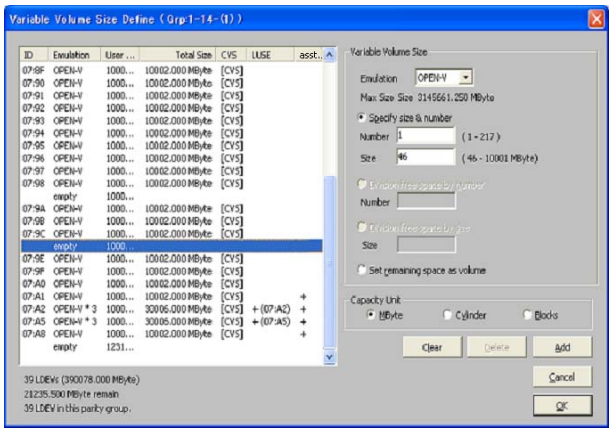
(9)-3-3

The CV registered by mistake can be deleted by selecting (CL) it from the LDEV list box and then selecting (CL) [Delete].

Note: One or more CVs can be selected.

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(9)-3-4 <Definition of OPEN-V>



Open-V can be defined in the "Variable Volume Size Define" window.
All the volumes in the LDEV list box can be deleted by selecting (CL) [Clear].
The volume can be deleted by selecting (CL) [Delete] in the state (CL) of selecting (CL) the volume in the LDEV list box.
It can be added by selecting (CL) Variable Volume Size from the status "select (CL) 'empty'" or "no selection" in the LDEV list box and selecting (CL) [Add].
Adding or deleting operation can be done for any number of times. The last setting is reflected by selecting (CL) [OK].

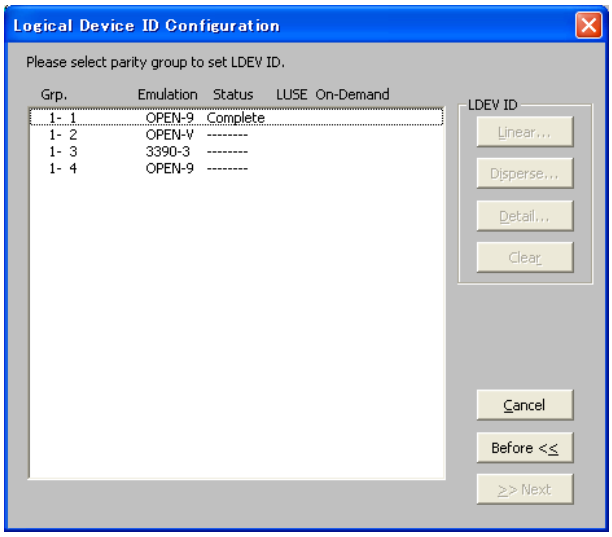
- Variable Volume Size
  "Specify Size & number" : Defines the specified number of the specified user size.
  "Division free space by number" : Defines the volume divided by the specified number. However, this can be selected only when all the volumes have been deleted.
  "Division free space by size" : Defines the volumes whose user sizes are all specified. However, this can be selected only when all the volumes have been deleted.
  "Set remaining space as Volume" : Defines the volume in the remaining space (empty).
- Capacity Unit
  "MByte" : Makes data displayed or entered by [Mbyte].
  "Cylinder" : Makes data displayed or entered by the [Cylinder].
  "Blocks" : Makes data displayed or entered by the [Blocks].
- LUSE : When the LUSE is connected, "+" is displayed.
- asst. : When Path/LUSE/Pool-VOL is defined, "+" is displayed.

[Clear] : Deletes all the volumes.
[Delete] : Deletes all the selected volumes.
[Add] : Adds volumes.
[Cancel] : Invalidates the setting, and returns to the preceding window. The routine returns to Step (9).
[OK] : Confirms the setting, and returns to the preceding window. The routine returns to Step (9).

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(10) <Define LDEV ID>

(10)-1 Definition Screen for LDEV ID



Select (CL) the parity group to be defined and select (CL) a function from the [LDEV ID] list box.

[Linear...]: LDEV ID is assigned to LDEV in the order of parity groups. See step (10)-3.

[Disperse...]: LDEV is assigned discretely in the order of parity groups. See step (10)-3.

[Detail...]: A screen to define LDEV in detail is displayed. See step (10)-2. (When plural groups are selected (CL), it is invalid.)

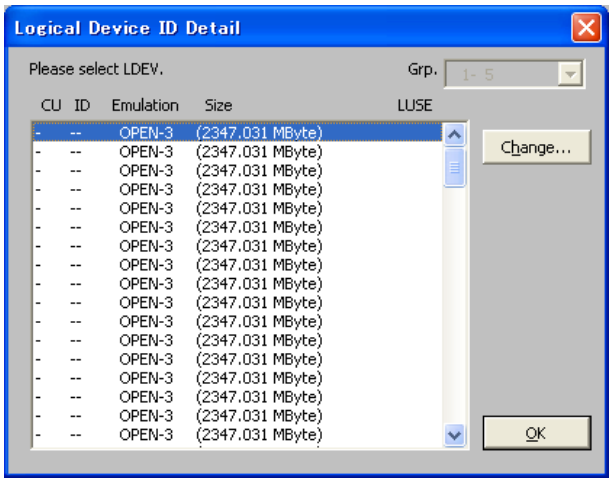
[Clear]: Select (CL) [Clear] to delete.

Grp*: The top parity group where RAID Concatenation is installed.

• '-----' is displayed in the Status area for the parity group to which LDEV ID is not assigned.

After setting up all items, select (CL) [Detail...] to confirm the items that have been set up, and select (CL) [>>Next]. Go to Step (11).

(10)-2 Detailed Definition Screen for LDEV ID



LDEV ID is defined in detail for each LDEV in the parity group.

Select (CL) LDEV from the list box and select (CL) [Change...].

The screen for LDEV ID input is displayed. After setting, select (CL) [OK]. Return to step (10)-1.

• '-----' is displayed in the CU area and the ID area for the LDEV to which LDEV ID is not assigned.

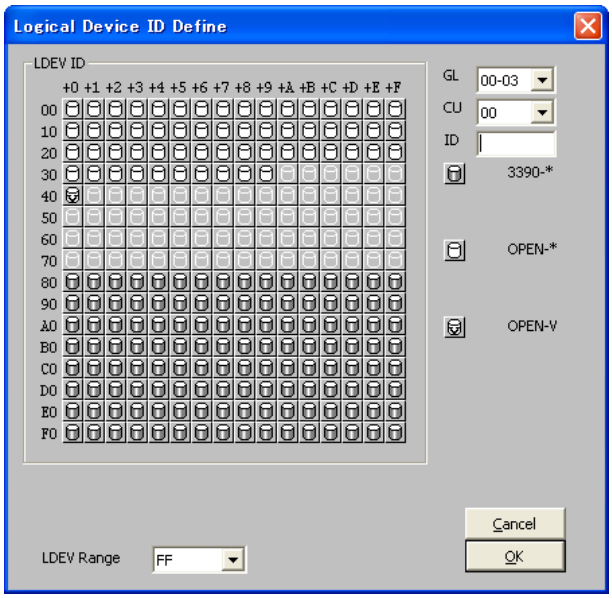
Note: In the case of a RAID Concatenation Group, LDEV of the parity group selected by the "Grp List" is displayed.

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(10)-3 Input LDEV ID

Select CU Group in the GL combo box.
Select CU ID in the CU combo box.
The status of usage of ID in the CU is displayed in the LDEV ID panel.
White disk of panel: not used
Patterned disk of panel: using
Input LDEV ID you want to set or the head LDEV ID in the ID Edit box.
After setting, select (CL) [OK]. Return to step (10)-1.

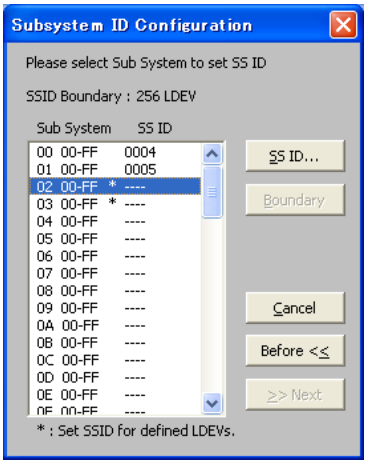
Note: The definition range (terminal) is decided with LDEV Range.
For example, if LEDV Range is defined as 7F, LDEV ID is assigned only within the range of 00 to 7F.



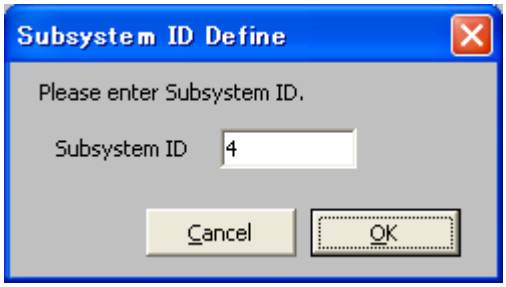
(11) <Define Subsystem ID>

To define Subsystem ID, select (CL) the item from the list box and select (CL) [SSID]. See step (11)-1.

After setting, select (CL) [>>Next].



(11)-1 Define Subsystem ID and select (CL) [OK].
Return to step (11).

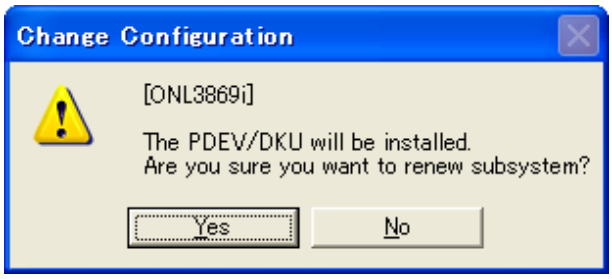


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(12) <Start installation>

Select (CL) [Yes] in response to "The PDEV/DKU will be installed. Are you sure you want to renew subsystem?".

When [No] is selected (CL), returns to INST03-10C-190 step (3).



---

(13) <Download microprogram>

Microprograms are automatically downloaded for each processor.

---

(14) <Install DKA>

"Upgrading of the DKA..."

(14)-1 <Perform Battery hardware installation>

"Insert the battery assembly, and then OK." is displayed, when battery install is required.



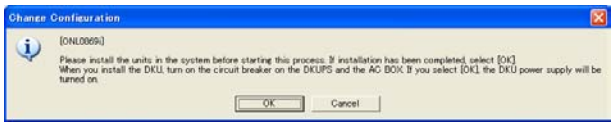
- When a message is displayed, perform the install hardware components according to the Battery hardware installation procedure. After installed, select (CL) [OK].

- When a message is not displayed, go to step (15).

---

(15) <Check that hardware components are installed>

At this point refrain from pressing the [OK] button.



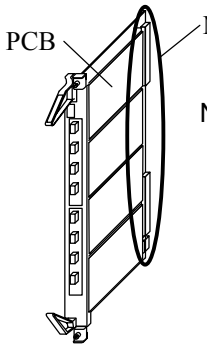
"Please install the units in the system before starting this process. If installation has been completed, select [OK]. When you install the DKU, turn on the circuit breaker on the DKUPS and the AC BOX. If you select [OK], the DKU power supply will be turned on." is displayed.

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3.10.4.5 Installation Procedure of MIX Adapter (DKC-F515I-MIX2R/MIX4R) (Only new installation)

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

1. Insertion of the PCBs
   a. Insert the MIX PCBs to the correct locations in the Logic Box and fasten the two screws. Refer to the Table 3.10.4.5-1 and Fig. 3.10.4.5-1.



Note: 1. Check that the main edge connector of the PCB has no deformation, damage or sticking of dust before installing the PCB.

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

Table 3.10.4.5-1 Inserting Location

No.	Option Name	Location No.		Remarks
		Cluster 1	Cluster 2	
1	Add.	MIX-1A	MIX-2F	

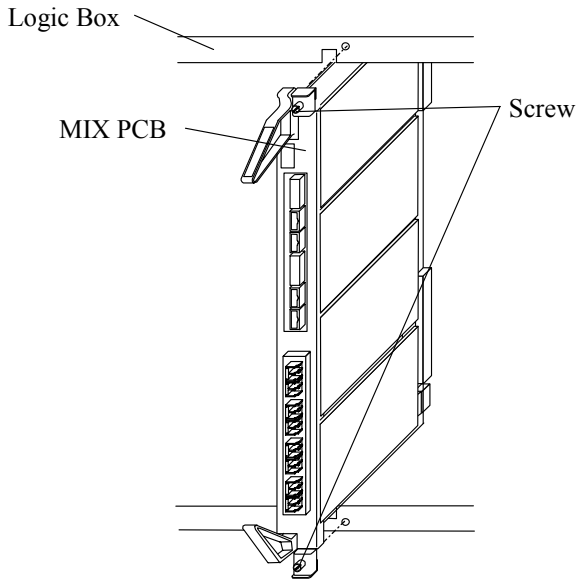


Fig. 3.10.4.5-1 Insertion of PCB

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2. Cable Routing
   a. When wiring for Optical fibre cables from the floor, draw in the cables from the opening, and go to step e.
      When wiring for Optical fibre cables from the top cover, go to step b.
   b. Loosen the two screws and open the slide cover.
   c. Draw in the optical fibre cable from the cable insertion hole of top cover into the frame.
   d. Fix the optical fibre cables with the three repeat binders.

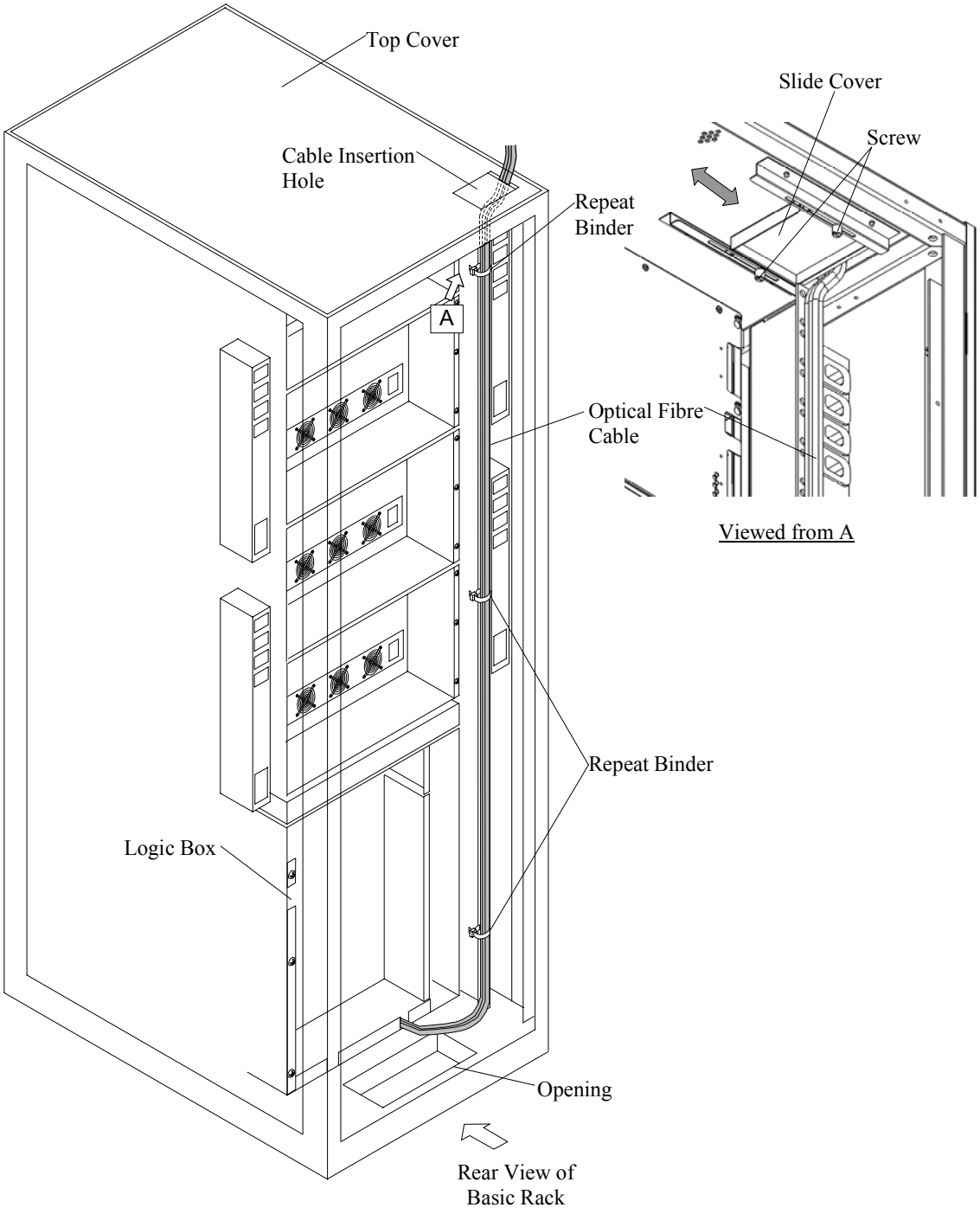


Fig. 3.10.4.5-2 Cable Routing

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e. Loosen the screw and remove the stopper.
f. Remove the two cores by pulling them toward you.
g. Place the optical fibre cables in the grooves on the each core and fasten them with the binder. When doing it, be sure to give the cables excess lengths so that they are not stretched too tightly. (Put the cables (two ports or more) in one groove of the core.)
h. Install the cores to which the optical fibre cables have been fixed and fasten them with the stopper and a screw.

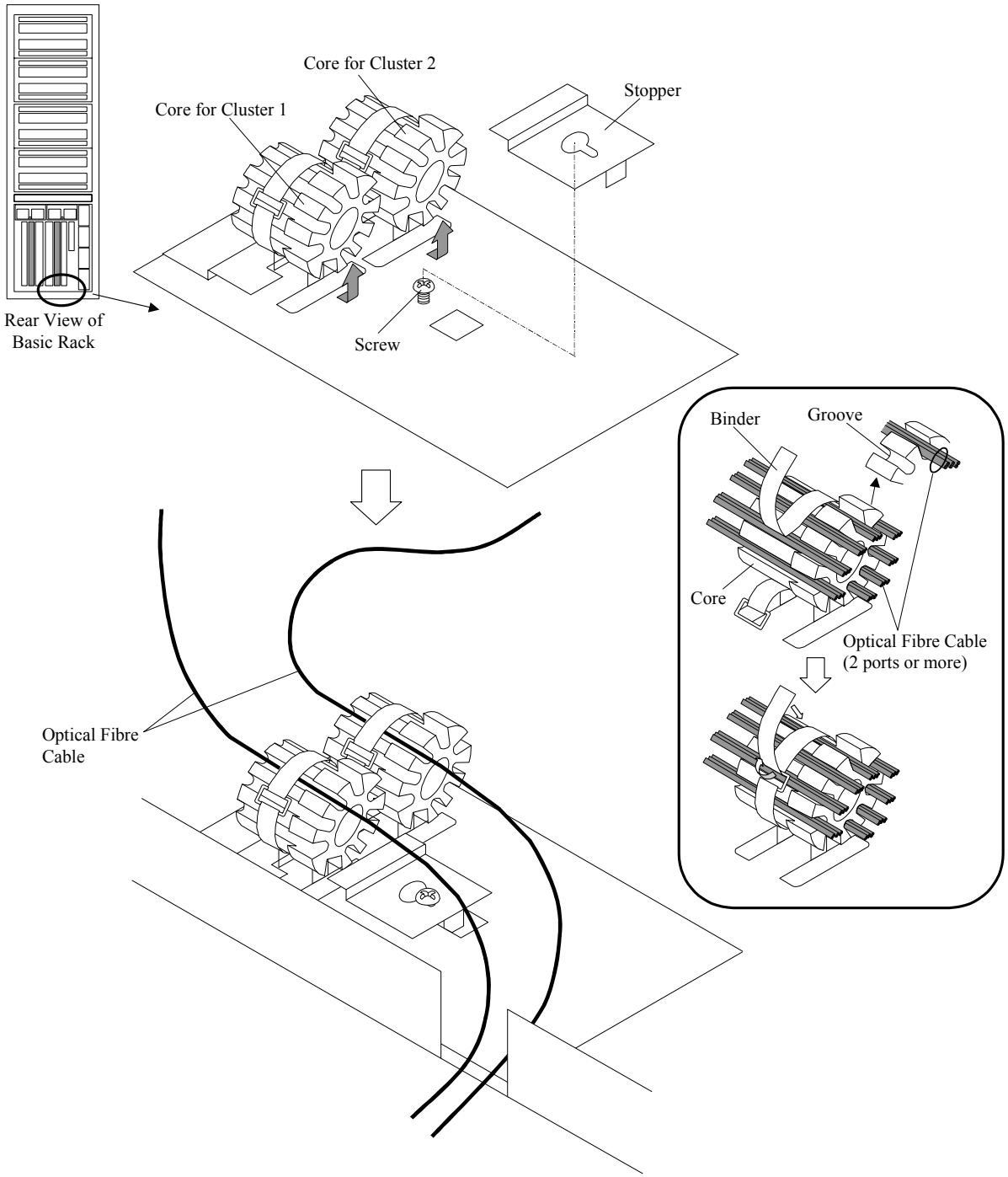


Fig. 3.10.4.5-3 Fixation of Optical Fibre Cables

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3. Cleaning the fibre cable connectors.
   For the tools needed for the cleaning, refer to the tool list on page PARTS06-10.
   a. Blow compressed gas against the connector using an air sprayer (for about five seconds).
   b. Wipe the connector lightly with a piece of cut gauze wet with ethyl alcohol.
   c. Blow compressed air again and check the result of the cleaning. (None of dust, sticking of foreign matter, and dirt must be observed.)

4. Connection of cables

Note: A serious failure occurs if any of cables/connectors is wrongly connected. Since a label bearing a connection destination is affixed on each cable/connector, work very carefully referring to it and the wiring diagram.

   a. Remove the caps from the cables and connect the DEV interface cables to the MIX PCBs.

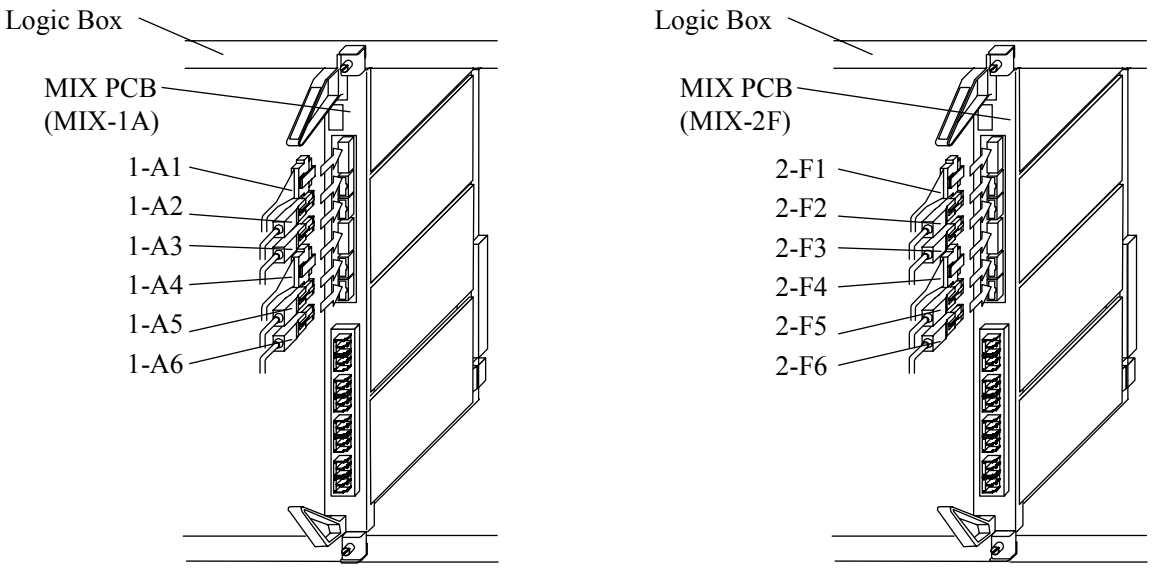
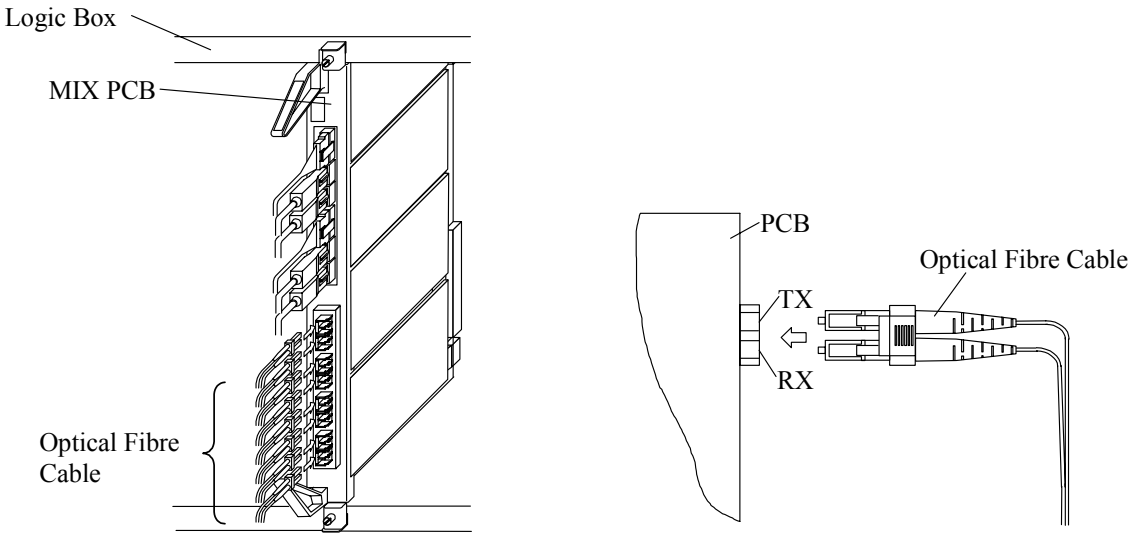


Fig.3.10.4.5-4 Connection of DEV Interface cables

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b. Connect the optical fibre cables to the MIX PCBs.



MIX PCB (Port Number)

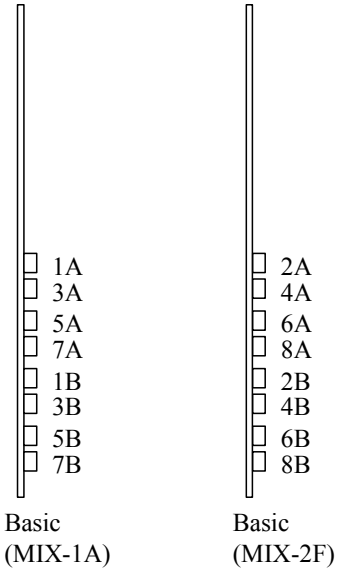


Fig.3.10.4.5-5 Connection of Optical Fibre cables

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5. Attachment of nameplate
   a. Remove the screw from the rack frame and remove the nameplate tags to be installed.
   b. Attach the nameplate to the nameplate tag on the Rack frame.
   c. Attach all the nameplate tags with the screw.

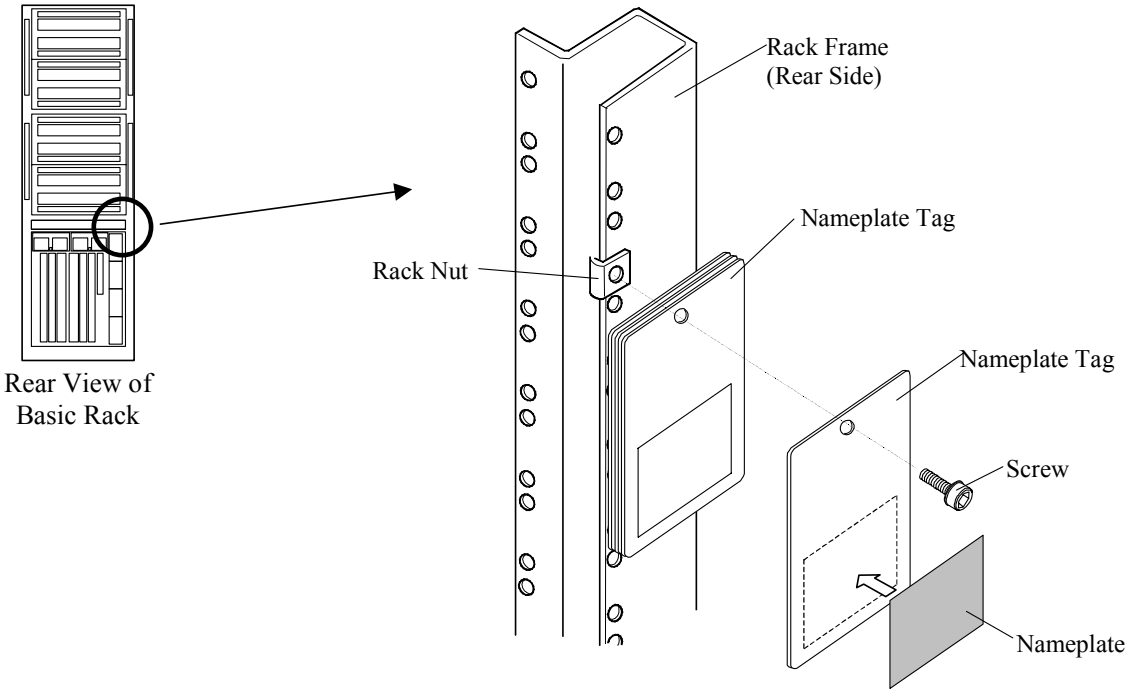


Fig.3.10.4.5-6 Attachment of Nameplate

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3.10.4.6 Installation Procedure of HDD Canister (DKU-F505I-72KS/72JSR/72KSR/146JS/146JSR/146KSR/300JSR/300KSR/400JSR/72K1R/146J1R/146K1R/300J1R)

1. Confirmation of position to install HDD canister
   (i) RAID5(3D+1P)/RAID1(2D+2D)
   Relations between the installation locations of the RAID groups and the RAID group numbers set through the SVP are shown in Table 3.10.4.6-1.

Table 3.10.4.6-1 Relation between HDDs installation order and RAID group number (3D+1P/2D+2D)

DKU-RK0		DKU-RK1		DKU-RK2		DKU-RK3	
Installation Order	RAID Group No.	Installation Order	RAID Group No.	Installation Order	RAID Group No.	Installation Order	RAID Group No.
001	1-01	016	2-01	031	3-01	046	4-01
002	1-02	017	2-02	032	3-02	047	4-02
003	1-03	018	2-03	033	3-03	048	4-03
004	1-04	019	2-04	034	3-04	049	4-04
005	1-05	020	2-05	035	3-05	050	4-05
006	1-06	021	2-06	036	3-06	051	4-06
007	1-07	022	2-07	037	3-07	052	4-07
008	1-08	023	2-08	038	3-08	053	4-08
009	1-09	024	2-09	039	3-09	054	4-09
010	1-10	025	2-10	040	3-10	055	4-10
011	1-11	026	2-11	041	3-11	056	4-11
012	1-12	027	2-12	042	3-12	057	4-12
013	1-13	028	2-13	043	3-13	058	4-13
014	1-14	029	2-14	044	3-14	059	4-14
015 *1 (Spare)	1-15/ Spare	030 *1 (Spare)	2-15/ Spare	045 *1 (Spare)	3-15/ Spare	060 *1 (Spare)	4-15/ Spare

*1: 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	

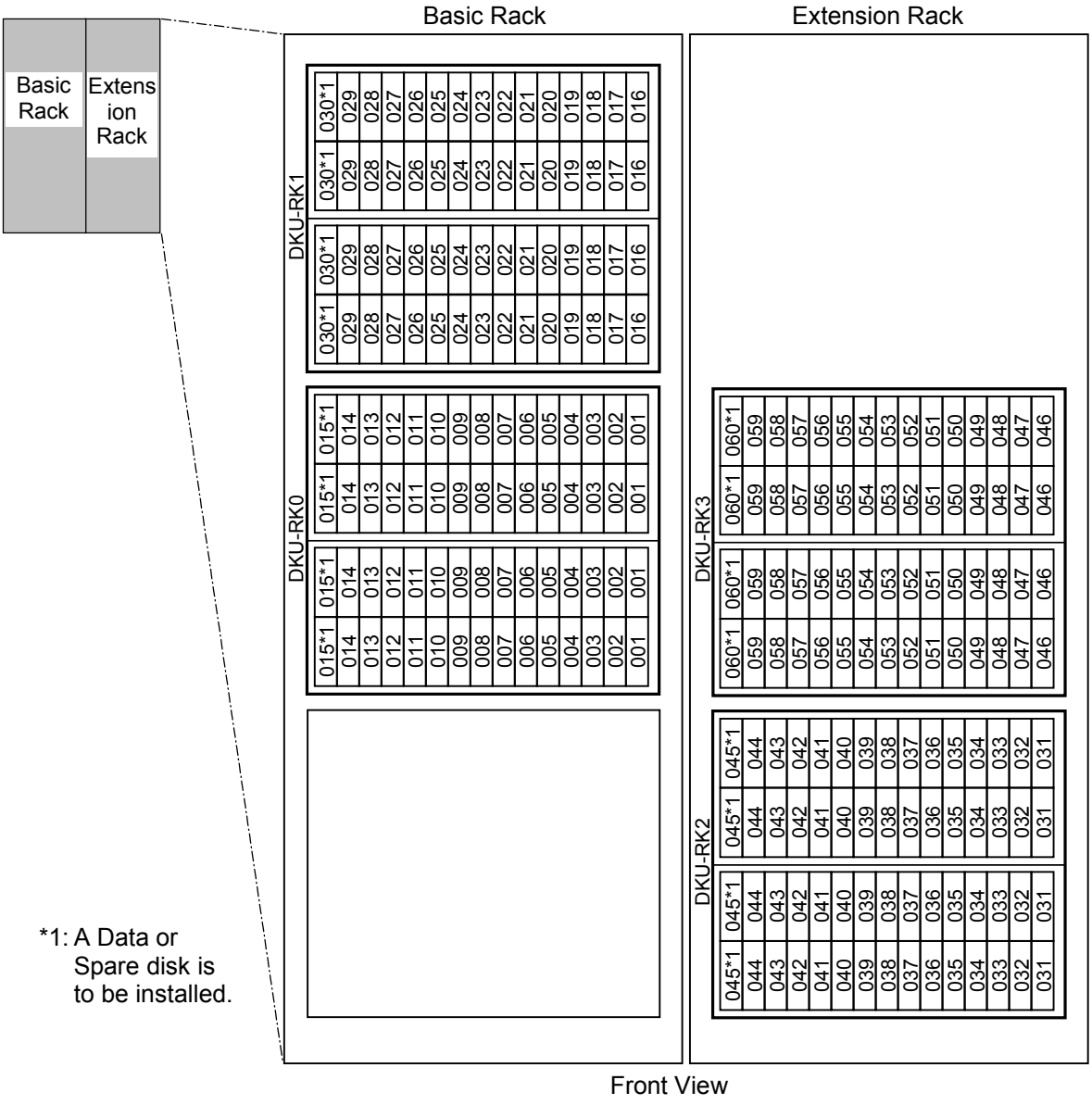


Fig. 3.10.4.6-1 (3D+1P/2D+2D) Data Drive/Parity Drive Expansion Sequence

The relationship between HDDs installation order and RAID group number is shown in the Table 3.10.4.6-1.

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(ii) RAID6(6D+2P)/RAID5(7D+1P)

Relations between the installation locations of the RAID groups and the RAID group numbers set through the SVP are shown in Table 3.10.4.6-2.

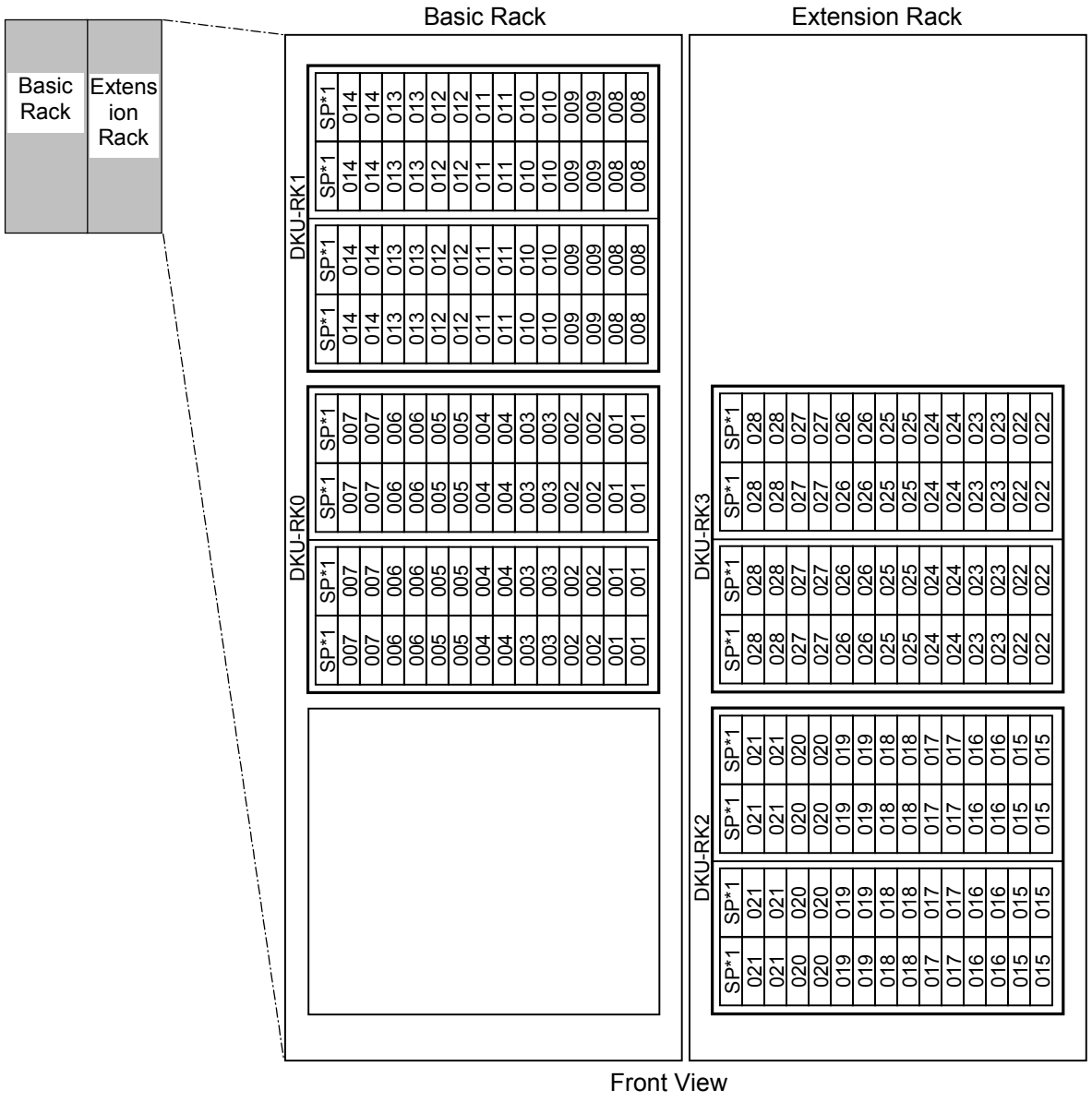
Table 3.10.4.6-2 Relation between HDDs installation order and RAID group number (6D+2P/7D+1P)

DKU-RK0		DKU-RK1		DKU-RK2		DKU-RK3	
Installation Order	RAID Group No.	Installation Order	RAID Group No.	Installation Order	RAID Group No.	Installation Order	RAID Group No.
001	1-01	008	2-01	015	3-01	022	4-01
002	1-03	009	2-03	016	3-03	023	4-03
003	1-05	010	2-05	017	3-05	024	4-05
004	1-07	011	2-07	018	3-07	025	4-07
005	1-09	012	2-09	019	3-09	026	4-09
006	1-11	013	2-11	020	3-11	027	4-11
007	1-13	014	2-13	021	3-13	028	4-13
Spare *1	Spare	Spare *1	Spare	Spare *1	Spare	Spare *1	Spare

*1: To be left vacant 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	



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

Fig. 3.10.4.6-2 (6D+2P/7D+1P) Data Drive/Parity Drive Expansion Sequence

The relationship between HDDs installation order and RAID group number is shown in The Table 3.10.4.6-2.

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(iii) Spare HDD

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

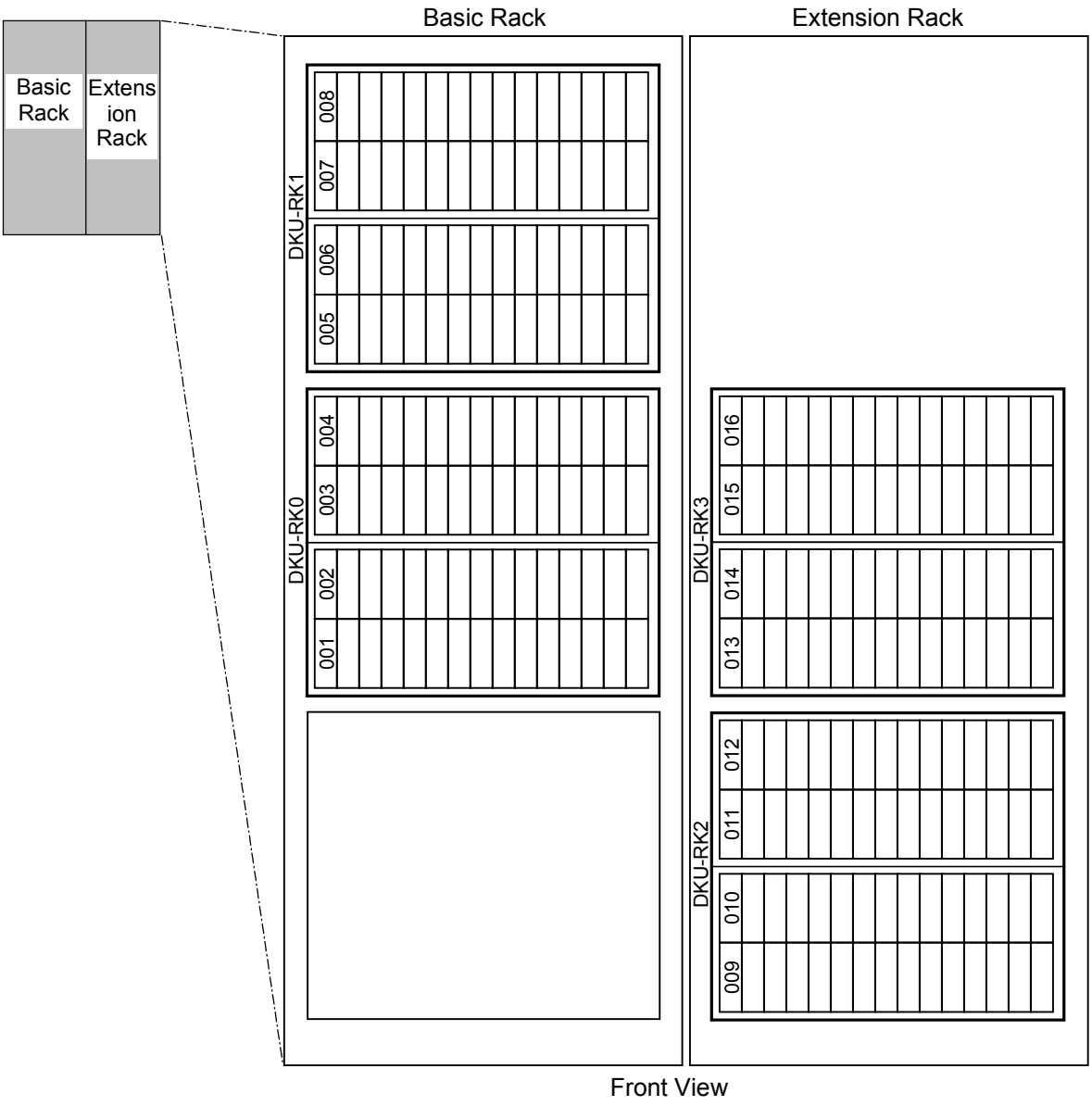


Fig. 3.10.4.6-3 Spare Drive Expansion Sequence

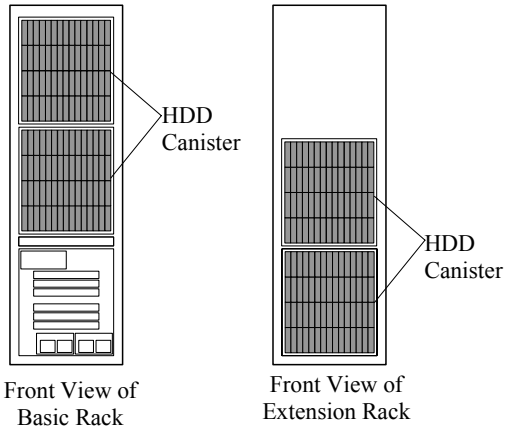
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2. Installation of the HDD Canister

Notice: (1) Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

(2) Since the HDD is a precision component, handle it very carefully not to apply a vibration or shock to it.

a. Remove the dummy canister from the HDU Box.
When the dummy canister cannot be removed by pulling of it only, remove it referring to page INST03-10C-410.



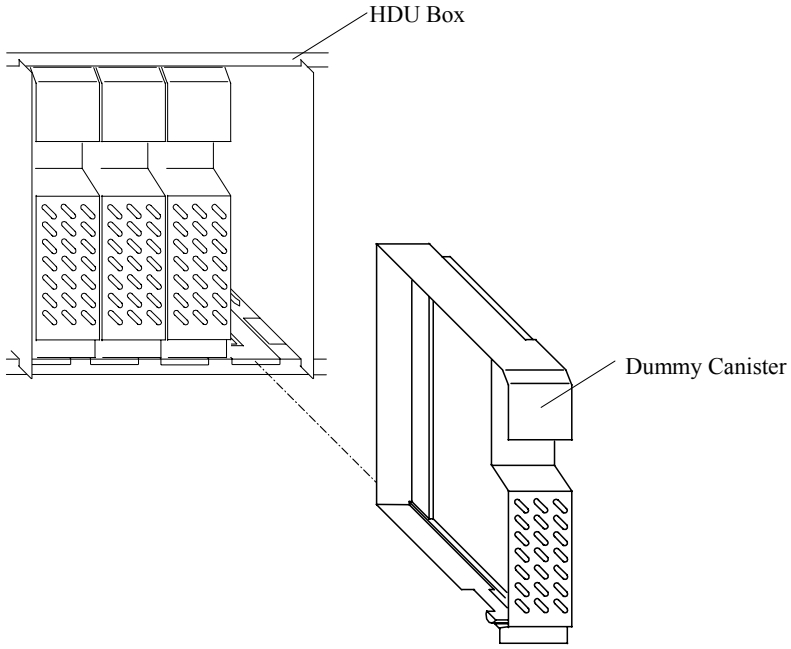


Fig. 3.10.4.6-4 Removal of Dummy Canister

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Procedure for removing the dummy canisters when they cannot be removed by pulling only.

a. While pulling the dummy canister by hand, insert a screwdriver (whose maximum shaft diameter is 5mm) into the gap of the canisters.
b. Release the hook using the screwdriver and remove the dummy canister.

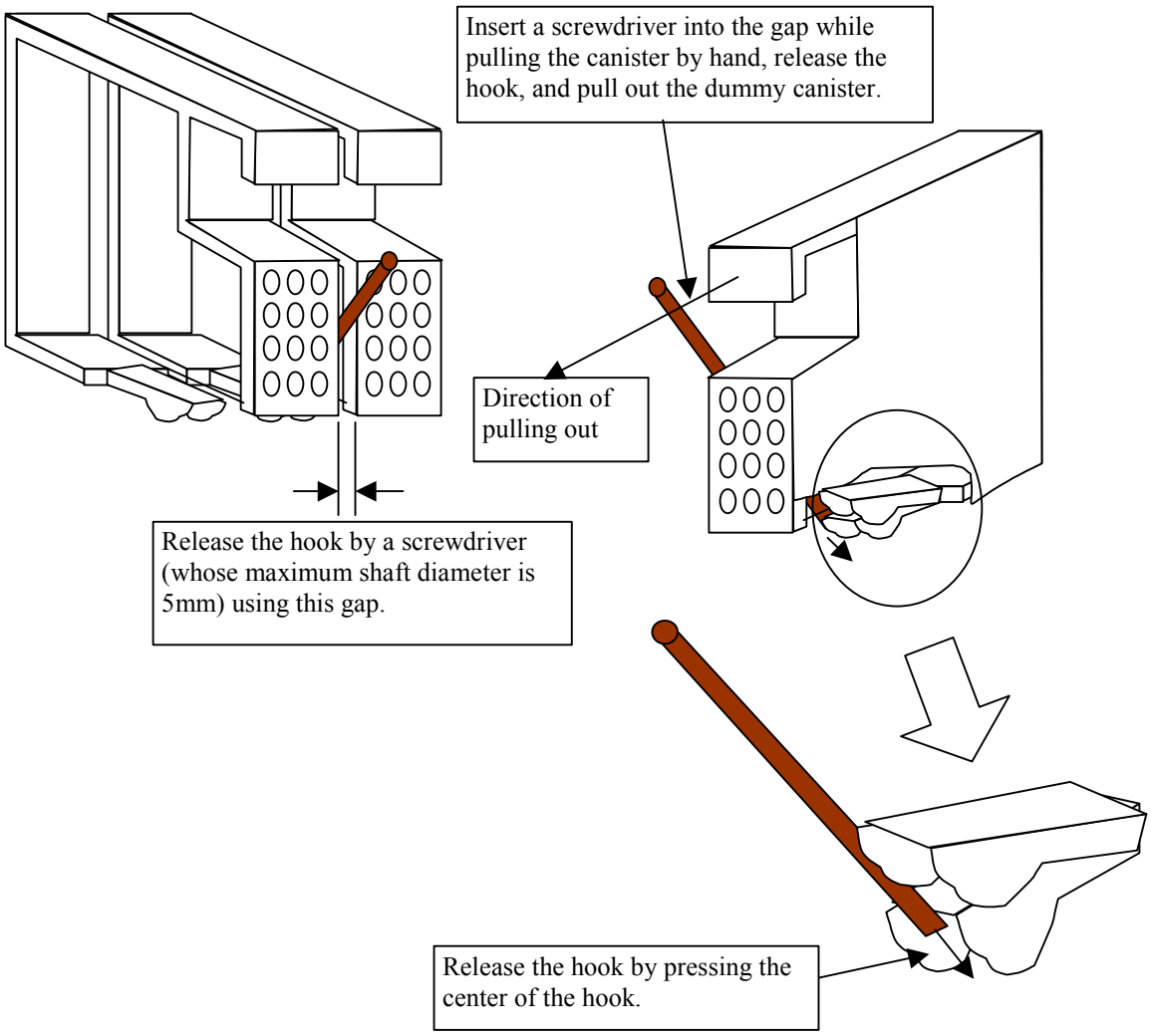
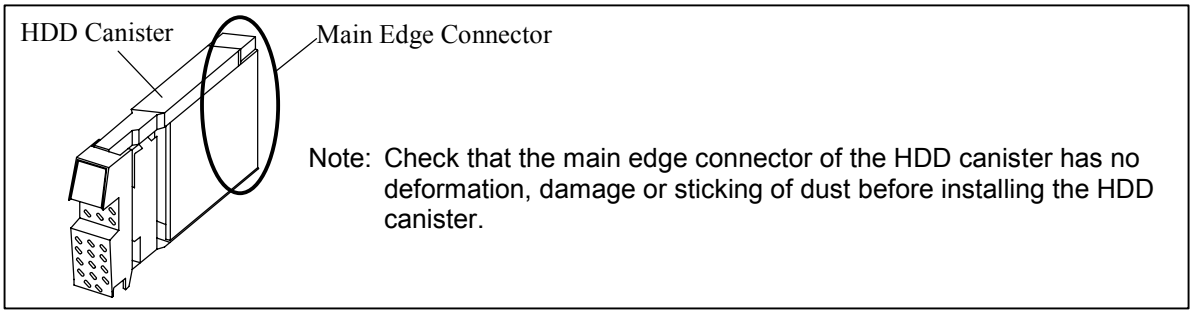


Fig. 3.10.4.6-5 Removal of Dummy Canister

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b. Check the condition of the HDD canister before installing it.



b-1 Check that the DC/DC connector is movable up and down, and a gap exists under the DC/DC connector.

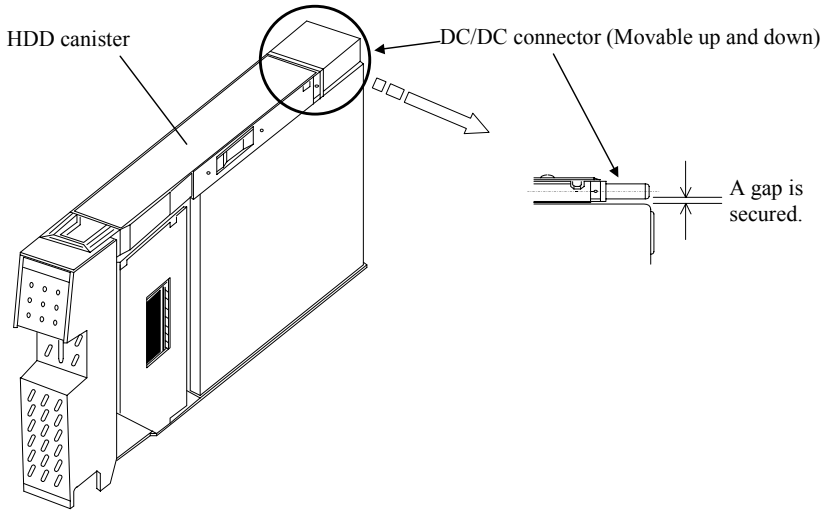


Fig. 3.10.4.6-6 Adjustment of DC/DC Connector Condition

b-2 Make sure that no cable is protruding from the rectangular opening on the side of the HDD canister. If it is protruding, put it back inside the opening.

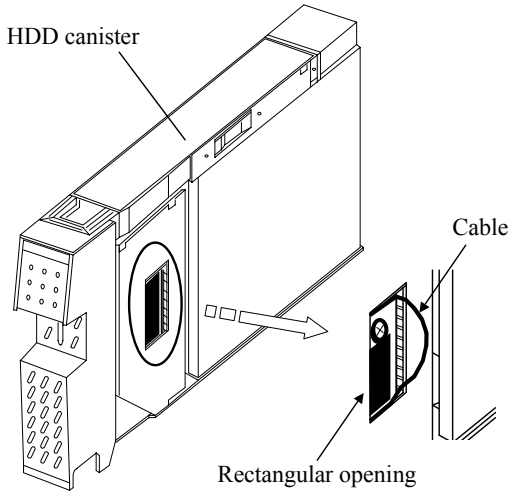


Fig. 3.10.4.6-7 Checking Protrusion of Cable

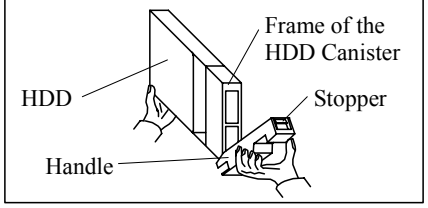
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c. HDD canister install procedure

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

c-1 Insert the HDD canister into the HDU Box holding its handle.
(Insert the canister until the claws that are located at the bottom of the handle come in contact with the front side of the HDU Box.)

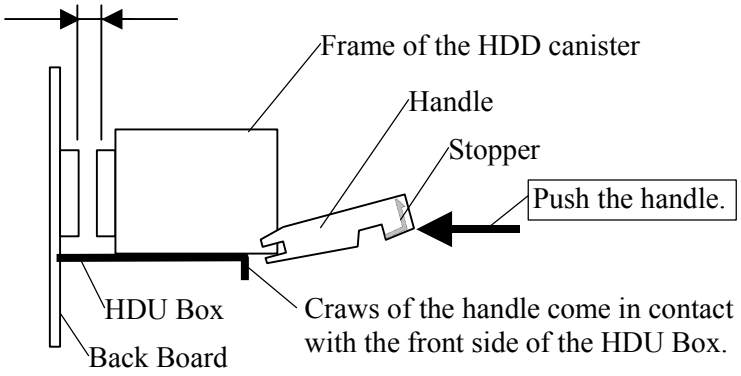
Handling of the HDD canister



c-2 Turn the handle at a stroke by pushing its top with your thumb.
(Turn the handle until it latches with the stopper. Do not stop the handle on its way of turning.)

c-1 Insert the HDD canister into the HDU Box holding its handle.

A gap exists between the connectors.



c-2 Turn the handle at a stroke by pushing its top with your thumb.
(Do not stop the handle on its way of turning.)

The connectors have been coupled.

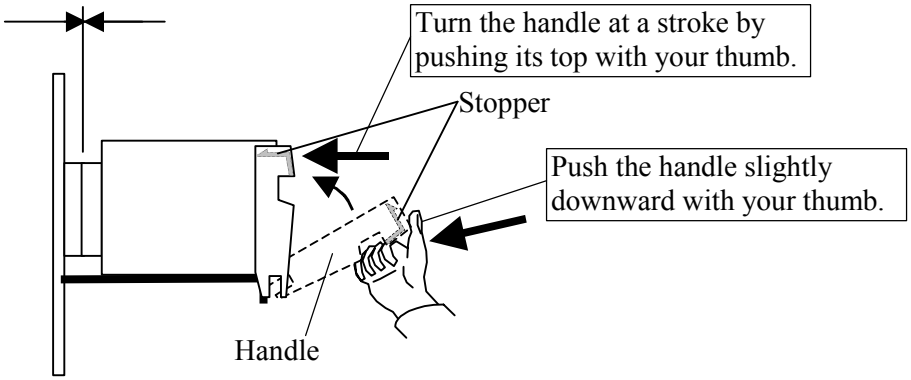


Fig. 3.10.4.6-8 Method of Installing HDD Canister

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3. Attachment of nameplate
   a. Remove the screw from the rack frame and remove the nameplate tags to be installed.
   b. When the nameplate is not attached, attach the nameplate to the nameplate tag.
   c. Affix a necessary portion of the Label (QTY)(Accessory of DKC; DWG No.3268905-1) in layers on the nameplate and paint out numbers by black oil felt pen. However, when the nameplate is unused, do not affix the Label (QTY) in layers, and just paint it out.
   d. Attach all the nameplate tags with the screw.

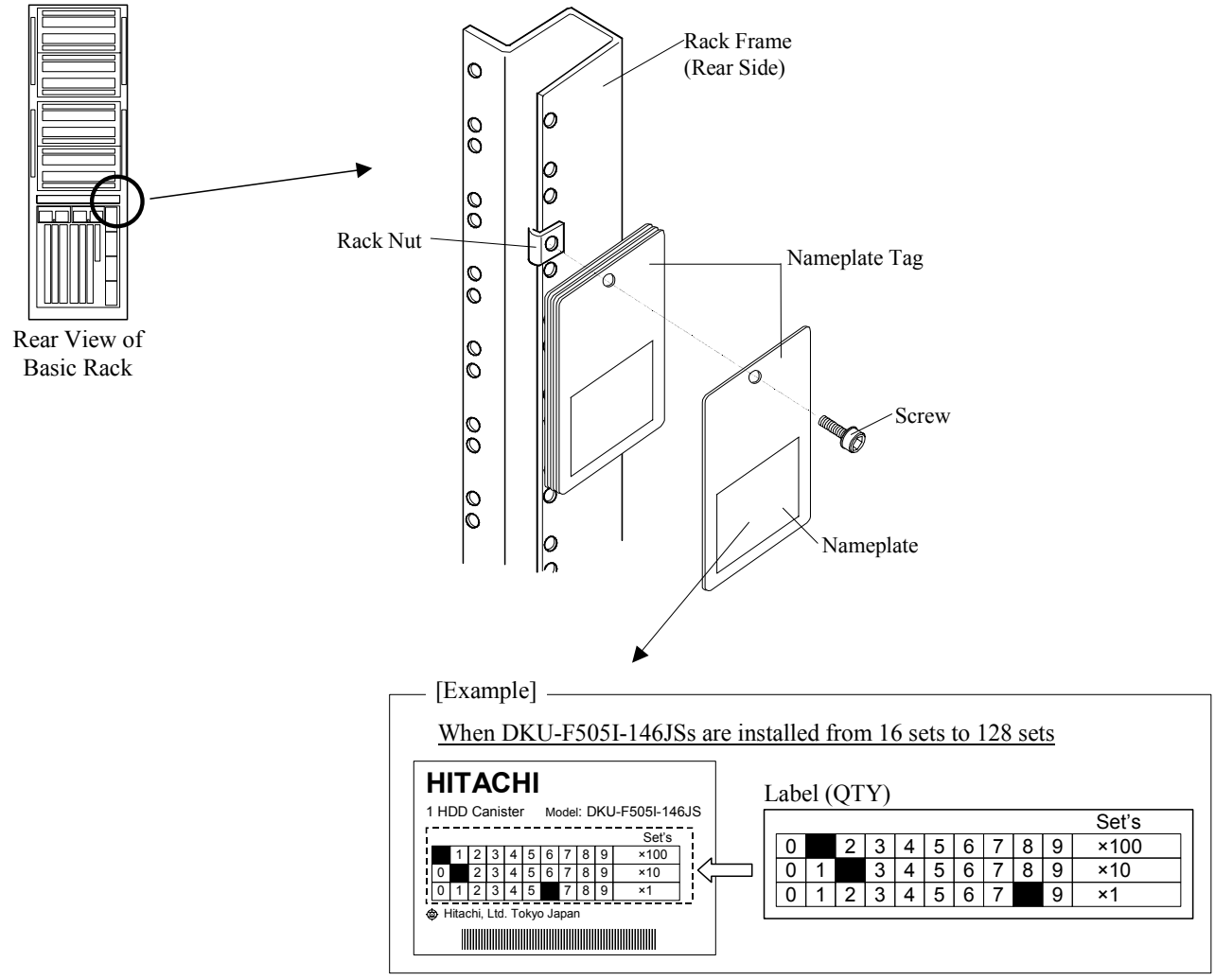


Fig. 3.10.4.6-9 Attachment of Nameplate

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3.10.4.7 Connection of DEV Interface Cable (DKC-F515I-UC1R/EXC0R)

1. When you need to install DKC-F515I-UC1R in the Basic Rack, connect the DEV interface cables.
   When you do not need to install DKC-F515I-UC1R in the Basic Rack, go to step 2.
   a. Remove the caps from the DEV interface cables and connect the DEV interface cables to the FSW PCB in the DKU-RK0.

> **CAUTION**
> A serious failure occurs if any of cables/connectors is wrongly connected.
> Since a label bearing a connection destination is affixed on each cable/connector, work very carefully referring to it and the wiring diagram.

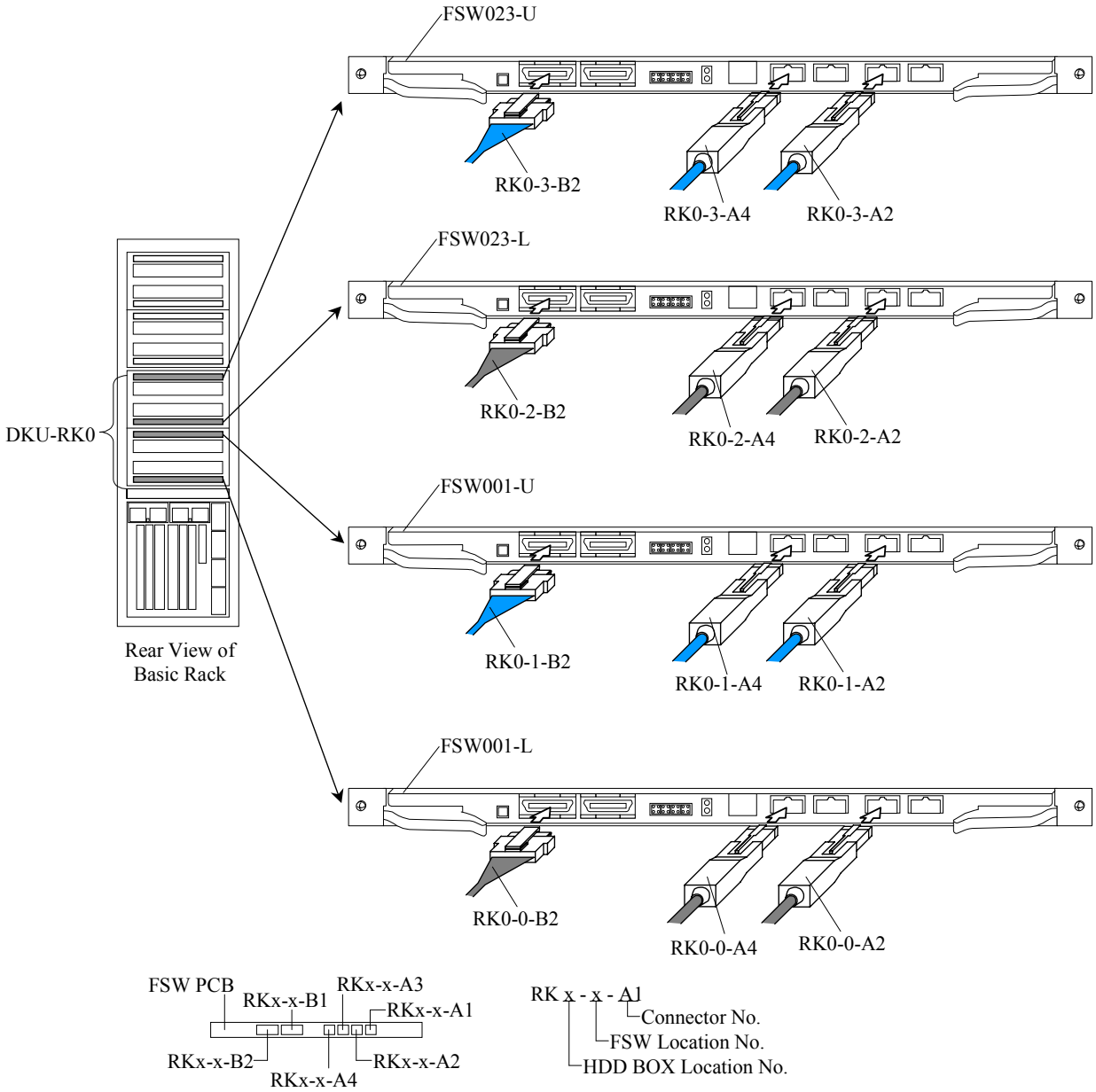


Fig. 3.10.4.7-1 Connection of DEV Interface Cables

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2. When you need to install DKC-F515I-UC1R in the Extension Rack, connect the DEV interface cables.
   When you do not need to install DKC-F515I- UC1R in the Extension Rack, go to step 3.
   a. Remove the caps from the DEV interface cables and connect the DEV interface cables to the FSW PCB in the DKU-RK2.

CAUTION

A serious failure occurs if any of cables/connectors is wrongly connected.
Since a label bearing a connection destination is affixed on each cable/connector, work very carefully referring to it and the wiring diagram.

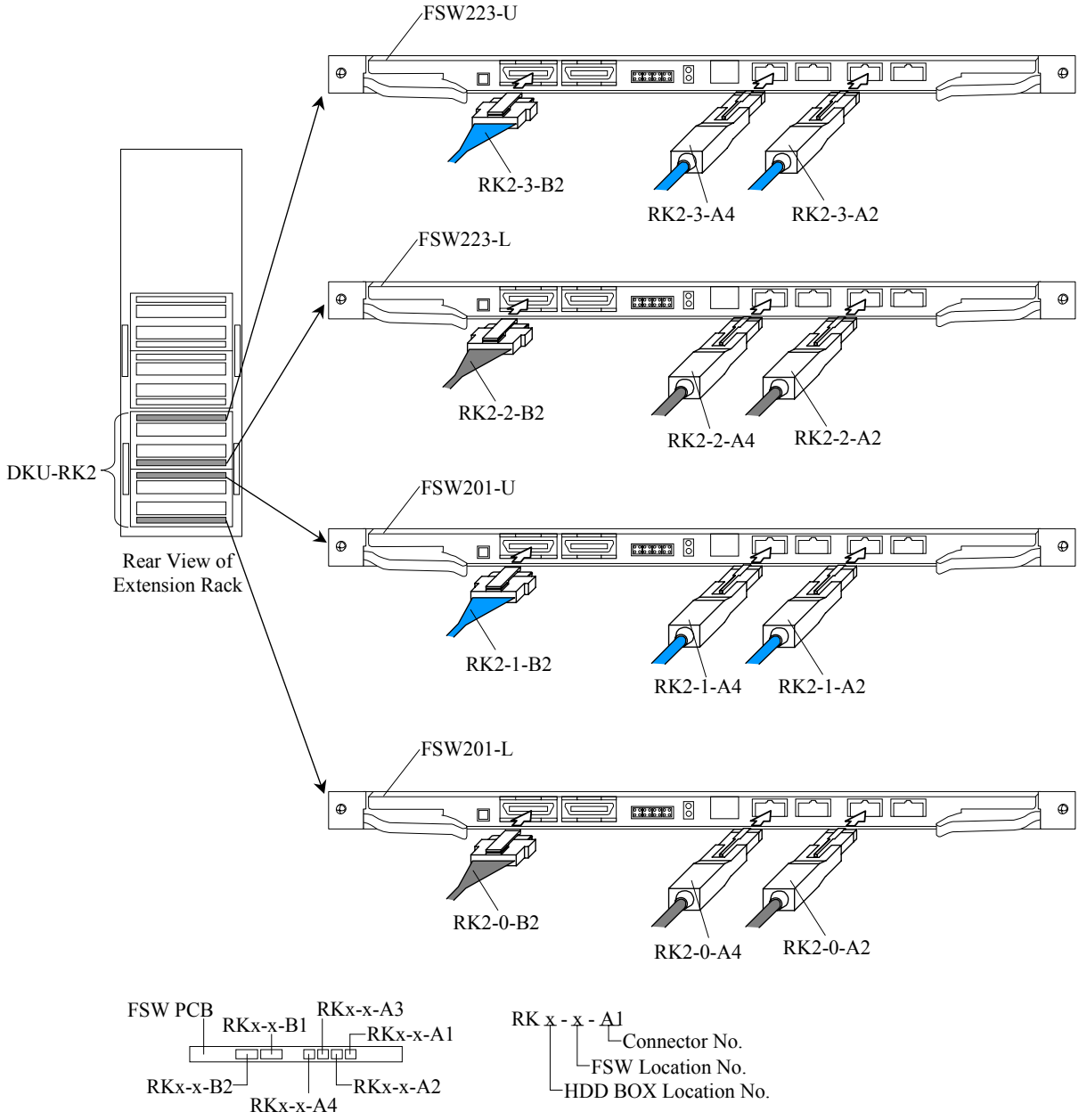


Fig. 3.10.4.7-2 Connection of DEV Interface Cables

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4. When you need to install DKC-F515I-EXC0R, connect the DEV interface cables.
   When you do not need to install DKC-F515I-EXC0R, go to section "3.10.4.8 SVP post procedure".
   a. Remove the caps from the DEV interface cables and connect the DEV interface cables to the FSW PCB in the DKU-RK1.

⚠ CAUTION

A serious failure occurs if any of cables/connectors is wrongly connected.
Since a label bearing a connection destination is affixed on each cable/connector, work very carefully referring to it and the wiring diagram.

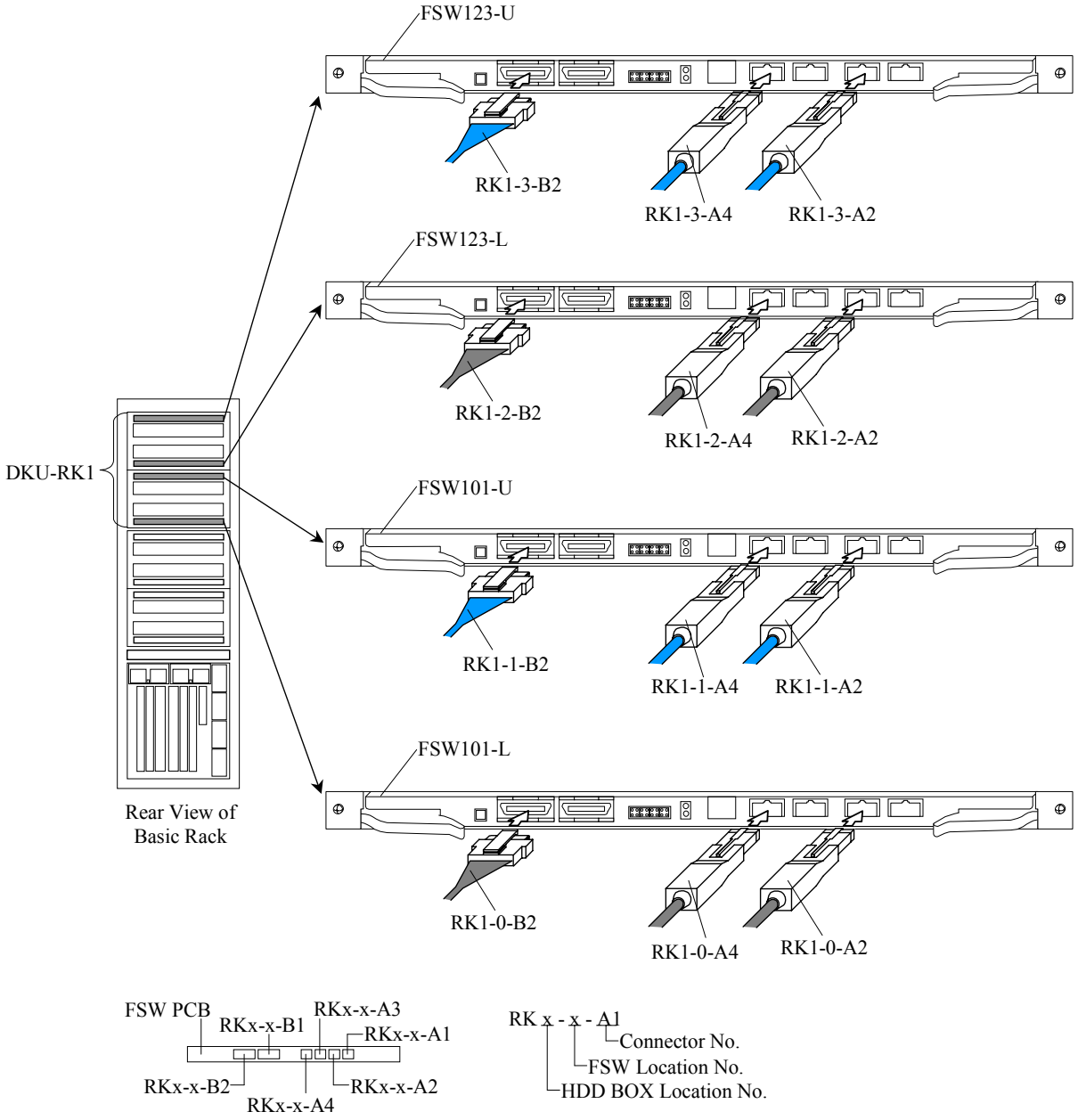


Fig. 3.10.4.7-3 Connection of DEV Interface Cables

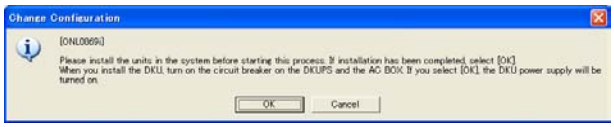
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Blank Sheet

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3.10.4.8 SVP post procedure

(1) <Check that hardware components are installed>
Select (CL) [OK] after making sure that all hardware components are installed correctly in response to “Please install the units in the system before starting this process. If installation has been completed, select [OK]. When you install the DKU, turn on the circuit breaker on the DKUPS and the AC BOX. If you select [OK], the DKU power supply will be turned on.”.



---

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

---

(3) <LDEV FORMAT>
“Formatting logical devices...” is displayed when Parity Group is defined.

---

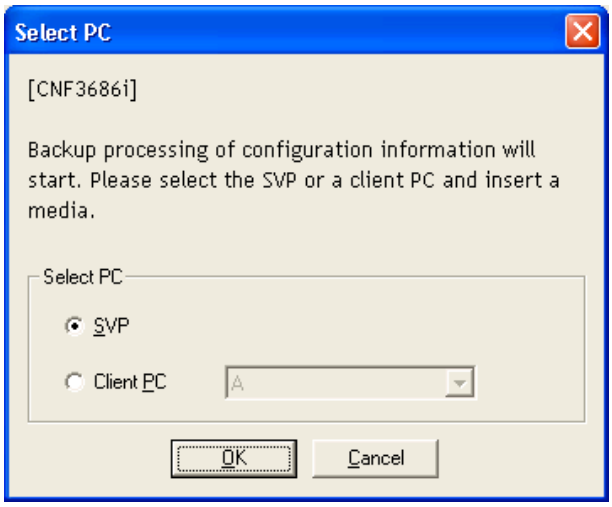
(4) <End of system update processing>
“Renewal process has completed. Please check subsystem status.” is displayed when recovery processing on all installed components is completed. Select (CL) [OK] in response to this message.



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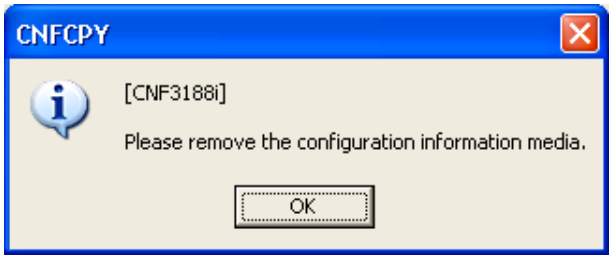
(5)

"Reading subsystem configuration data..." is displayed.
"Backup processing of configuration information will start. Please select the SVP or a client PC and insert a media." is displayed.
Insert the Config FD into FDD of selected PC, and select (CL) [OK].



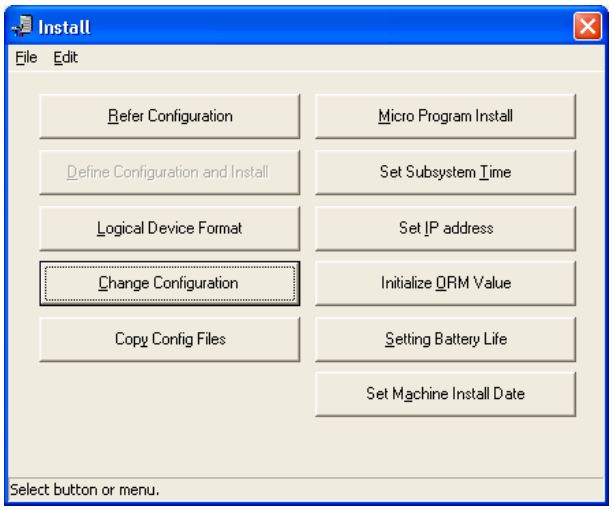
(6)

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



(7)

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



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

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

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3.10.4.9 Attachment of Covers (DKC-F515I-UC0R/UC1R/EXC0R)

1. Attach the Logic Box cover and HDD Box covers. Refer to Fig. 3.10.4.9-1 and Fig. 3.10.4.9-2.

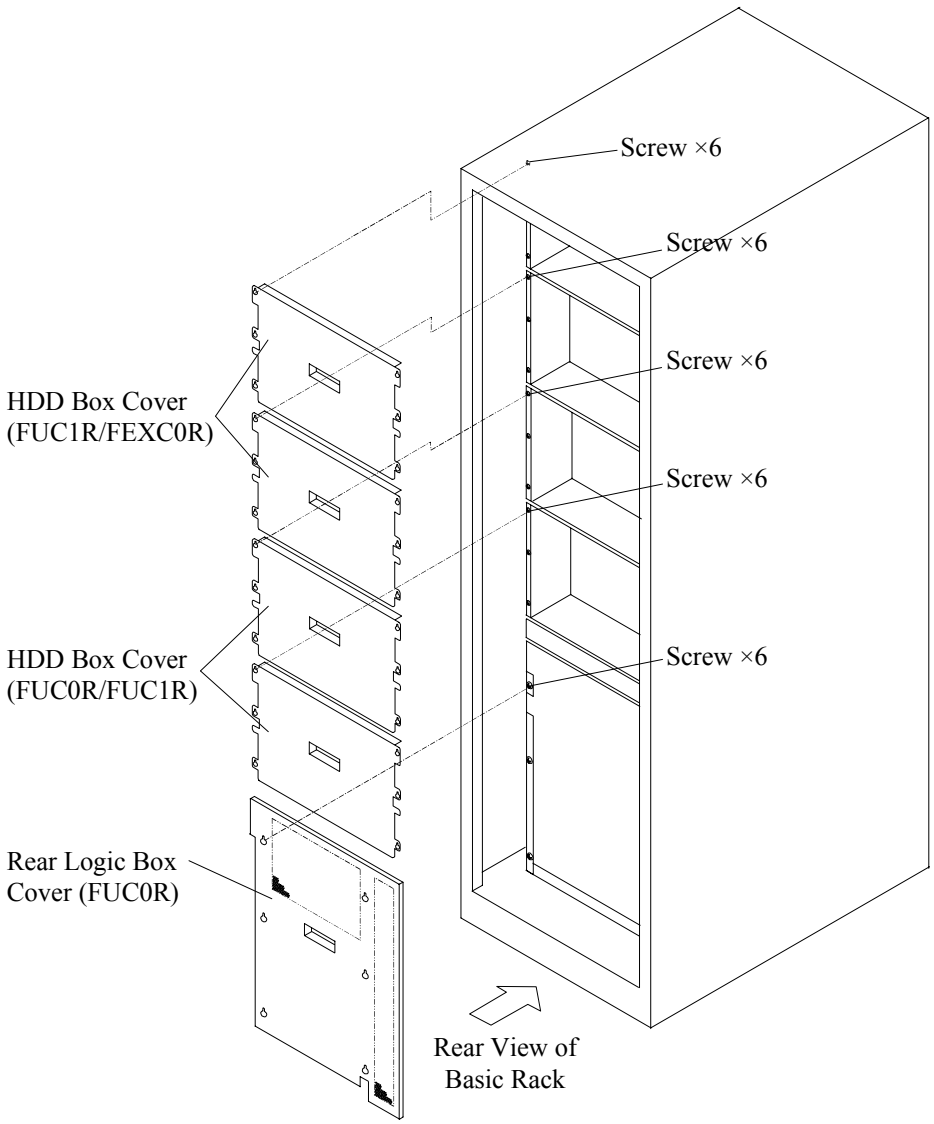


Fig. 3.10.4.9-1 Attachment of Covers

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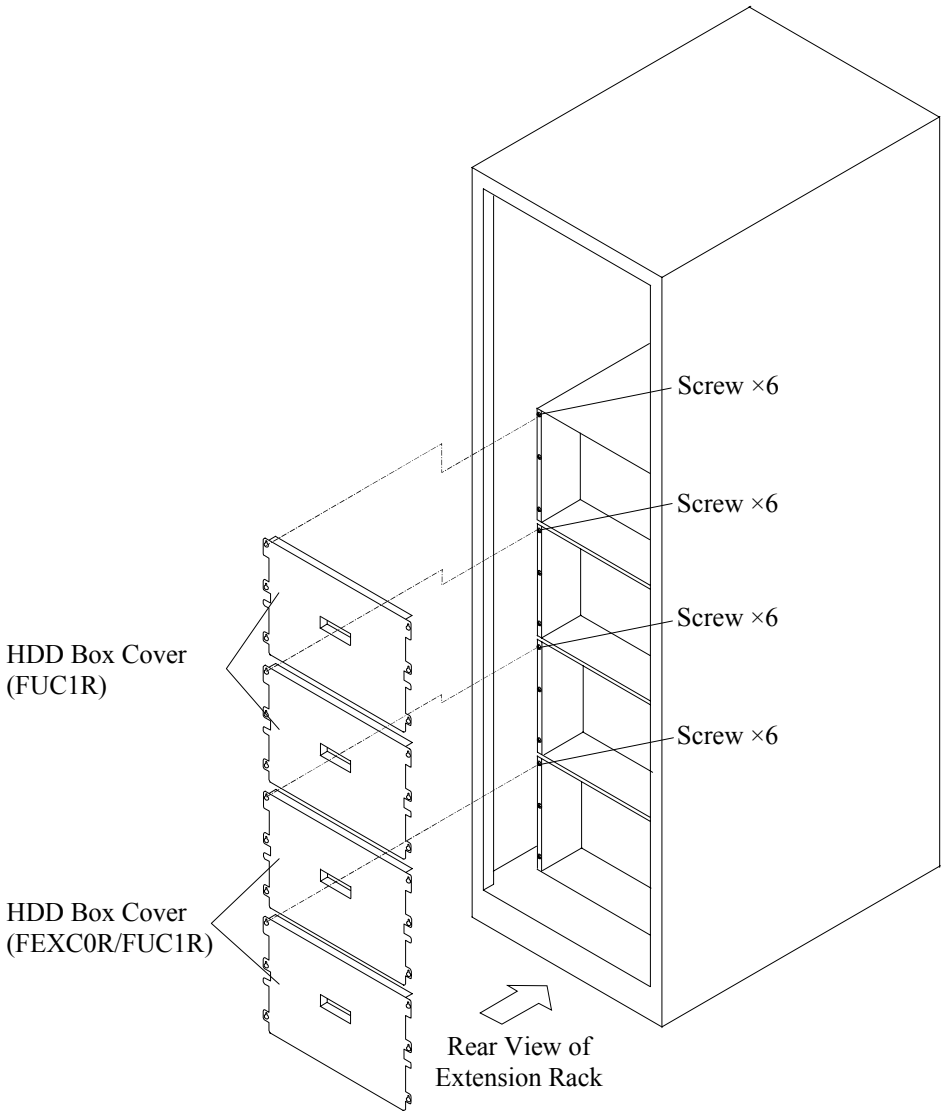


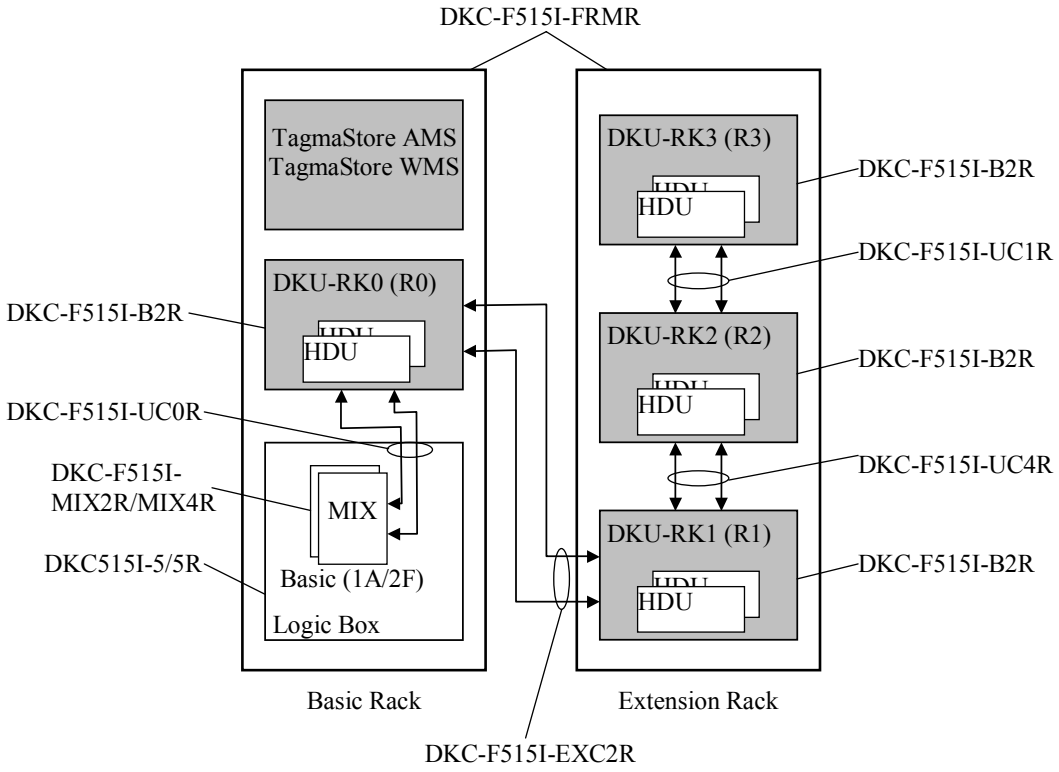
Fig. 3.10.4.9-2 Attachment of Covers

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

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3.10.5 When performing addition of the data/spare HDD canister, MIX and DEV interface cable that accompanies the addition of the HDD Box in case of TagmaStore AMS/WMS installed configuration (DKC-F515I-MIX2R/MIX4R/UC0R/UC1R/UC4R/EXC2R, DKU-F505I-72KS/72JSR/72KSR/146JS/146JSR/146KSR/300JSR/300KSR/400JSR/ 72K1R/146J1R/146K1R/300J1R)

TagmaStore AMS/ WMS can be mounted to only basic racks, not to extension racks.
The subsystem configuration and number of required options for each model are shown below.



No.	Required Number of Options									
	(DKC-F515I-FRMR)		DKC515I -5/5R	DKC-F515I-						HDD *1
	Basic Rack	Extension Rack		MIX2R/ MIX4R	B2R	UC0R	UC1R	UC4R	EXC2R	
1	1	—	1	1	1	1	0	0	0	60
2	1	1	1	1	2	1	0	0	1	120
3	1	1	1	1	3	1	0	1	1	180
4	1	1	1	1	4	1	1	1	1	240

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

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3.10.5.1 Installation Procedure of DEV Interface Cable connects DKC and DKU-R0 (DKC-F515I-UC0R)

Installation Condition

DKC-F515I-UC0R is the cable option to connect the DKC and the DKU-RK0. This option is required when adding the DKU-RK0 (1st DKC-F515I-B2R).
Decide if the DEV Interface Cable (DKC-F515I-UC0R) needs to be installed, and go to the page to meet the condition. (Refer to Table 3.10.5.1-1.)

Table 3.10.5.1-1 Work Procedure Table

No.	Condition of Work Procedure	Page
1	When you need to install DEV Interface Cable (DKC-F515I-UC0R)	INST03-10D-30
2	When you do not need to install DEV Interface Cable (DKC-F515I-UC0R)	INST03-10D-60

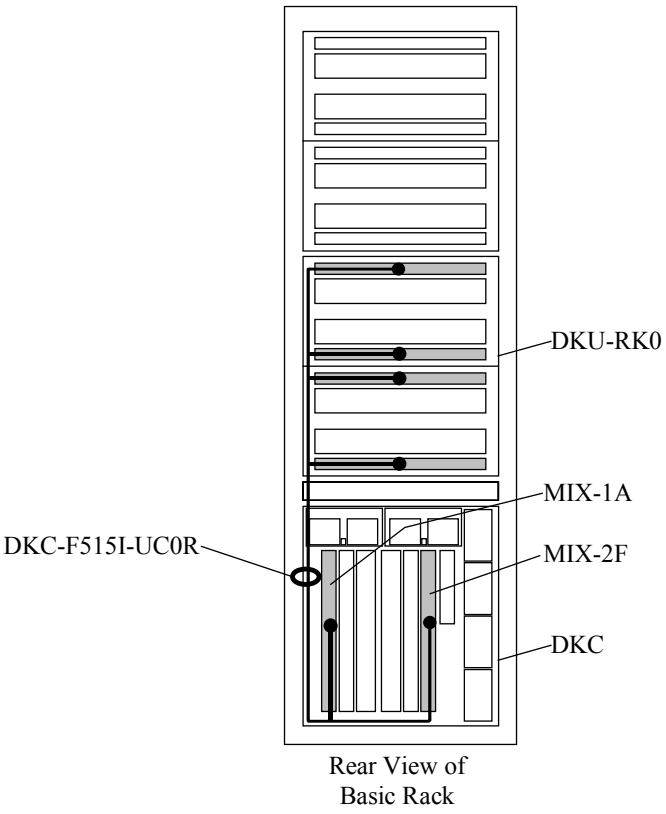


Fig. 3.10.5.1-1 Mounting Position of DEV Interface Cable

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1. Adjust positions of Repeat Binders that are binding the DEV Interface Cable so that they fit the heights of the cable clamps for fastening the cable. (Refer to Table 3.10.5.1-2, Fig. 3.10.5.1-2, and Fig. 3.10.5.1-3.)
2. Fasten the DEV Interface Cable to the column of the rack with Repeat Binders (at four places). (Route the cable on the inside of the column.)
3. Connect the cable to the FSW PCB in the HDD Box (DKU-RK0) and fasten it with the cable clamps.
4. Bind the DEV Interface Cable at the position near the cable exit of the logic box.
   However, when executing this procedure, do not connect the cable to the MIX PCB.

Table 3.10.5.1-2 DEV interface Cable List

No.	Parts No.	Name	Quantity	Connector No.			Cable Color
				A	B	C	
1	3272858-A	DEV Interface Cable	1	RK0-0-A1 RK0-0-A3 RK0-0-B1	RK0-2-A1 RK0-2-A3 RK0-2-B1	1-A1 to1-A6	Black
			1	RK0-1-A1 RK0-1-A3 RK0-1-B1	RK0-3-A1 RK0-3-A3 RK0-3-B1	2-F1 to2-F6	Blue
2	5409042-3	Repeat Binder	5	—	—	—	—

Parts List No.1

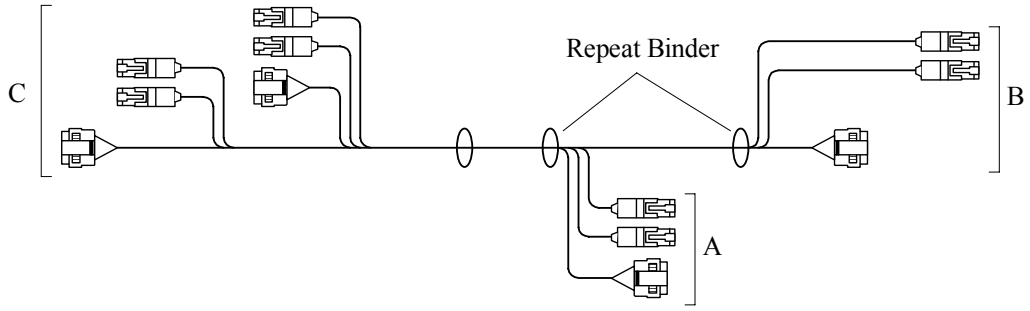


Fig. 3.10.5.1-2 Connector Number of DEV Interface Cable

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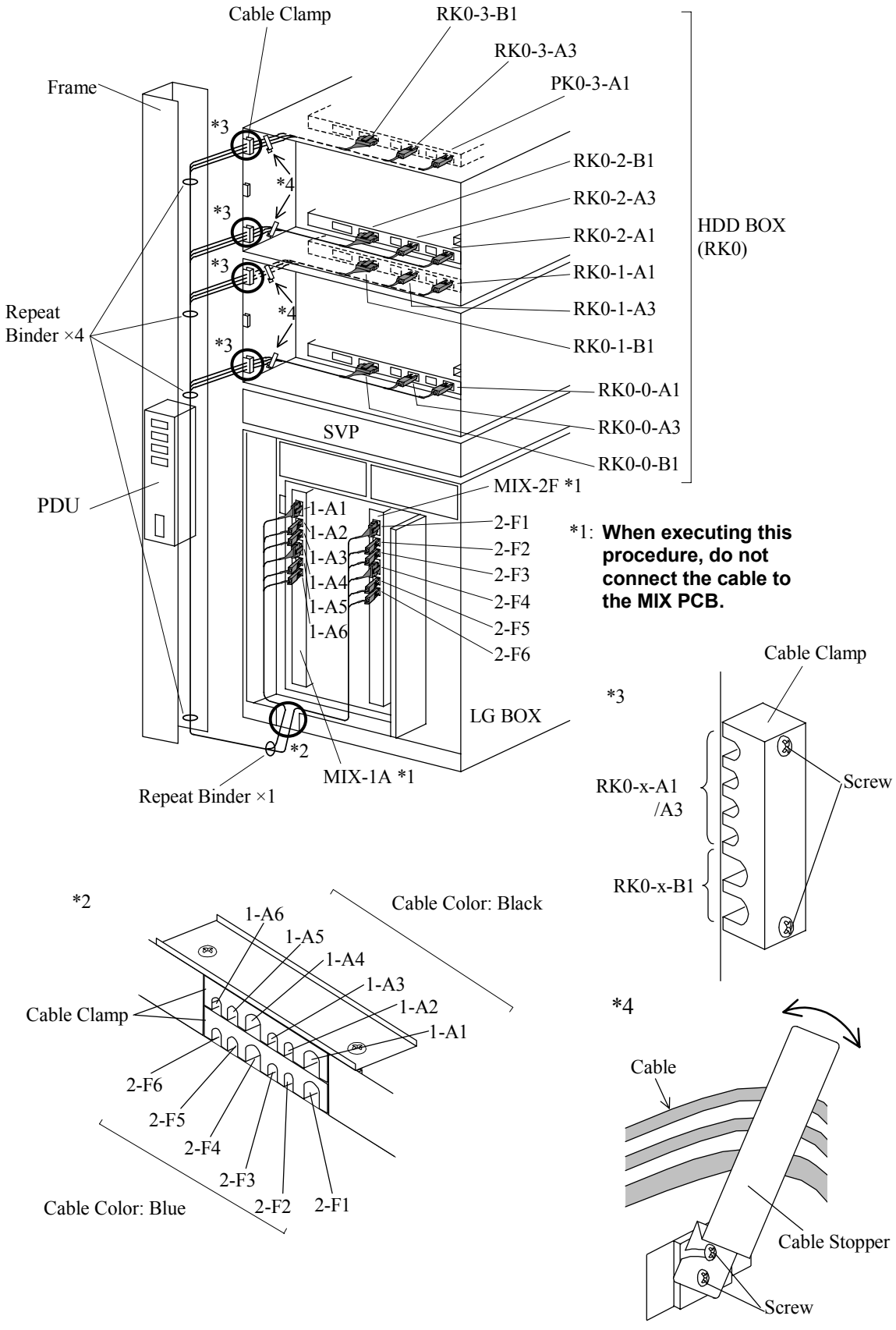


Fig. 3.10.5.1-3 Attachment of DEV Interface Cable

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5. Attachment of nameplate
   a. Remove the screw from the rack frame and remove the nameplate tags to be installed.
   b. Attach the nameplate to the nameplate tag on the Rack frame.
   c. Attach all the nameplate tags with the screw.

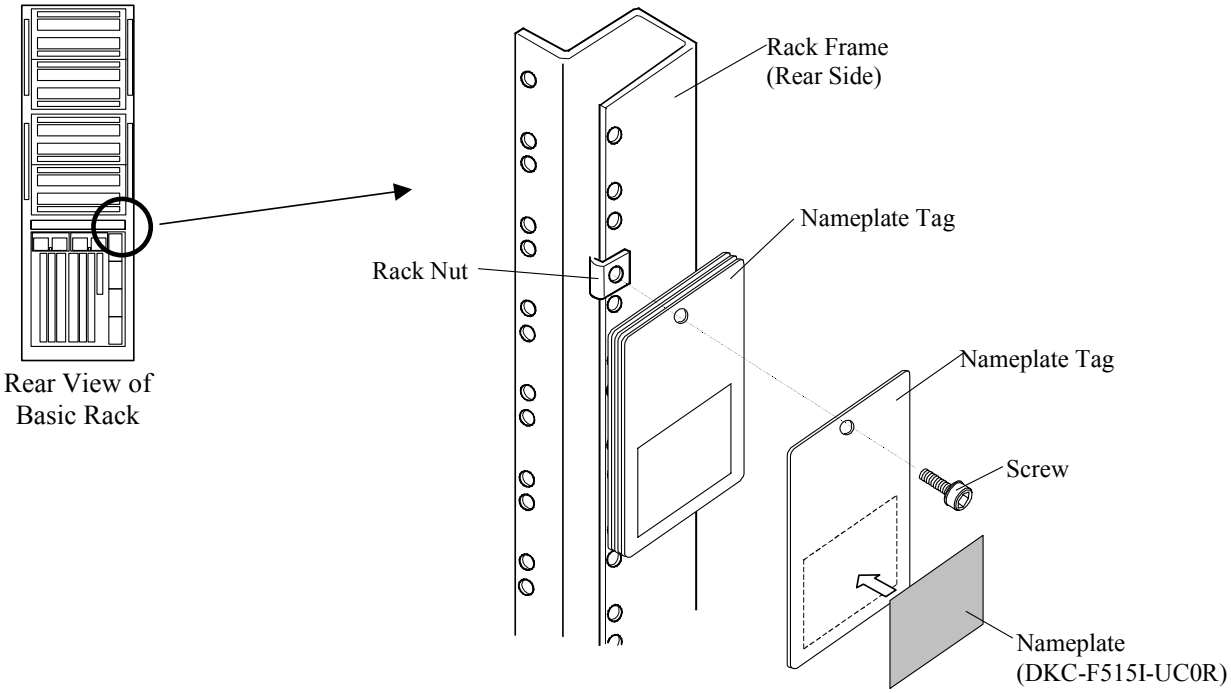


Fig. 3.10.5.1-4 Attachment of Nameplate

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3.10.5.2 Installation Procedure of DEV Interface Cable (DKC-F515I-EXC2R)

Installation Condition

DKC-F515I-EXC2R is the cable option to connect the DKU-RK0 and the DKU-RK1 when the Tagmastore AMS/WMS is installed. This option is required when adding the extension rack. Decide if the DEV Interface Cable (DKC-F515I-EXC2R) needs to be installed, and go to the page to meet the condition. (Refer to Table 3.10.5.2-1.)

Table 3.10.5.2-1 Work Procedure Table

No.	Condition of Work Procedure	Page
1	When you need to install DEV Interface Cable (DKC-F515I-EXC2R)	INST03-10D-70
2	When you do not need to install DEV Interface Cable (DKC-F515I-EXC2R)	INST03-10D-180

When installing the Extension Rack on the right of the Basic Rack

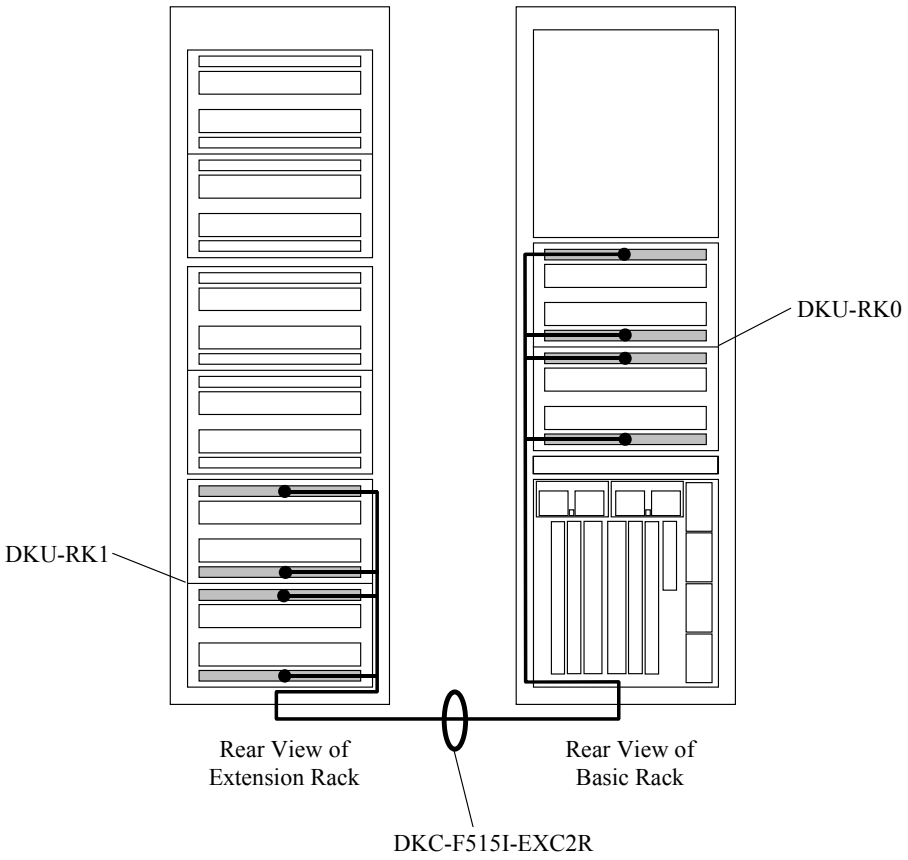


Fig. 3.10.5.2-1 Mounting Position of DEV Interface Cable

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When installing the Extension Rack on the left of the Basic Rack

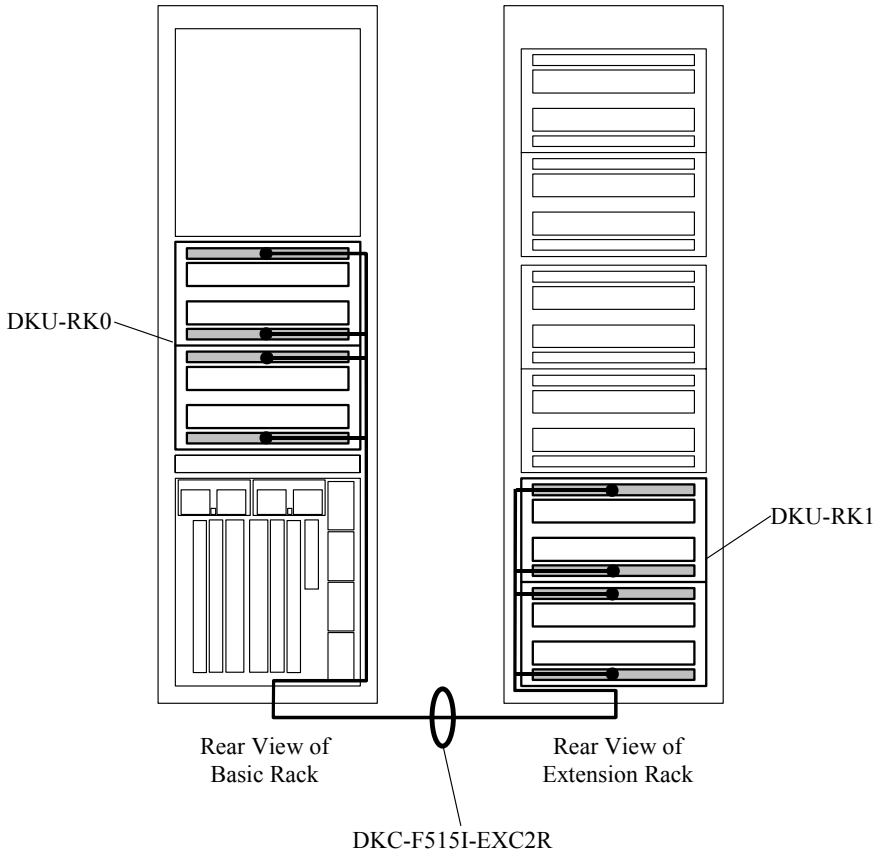


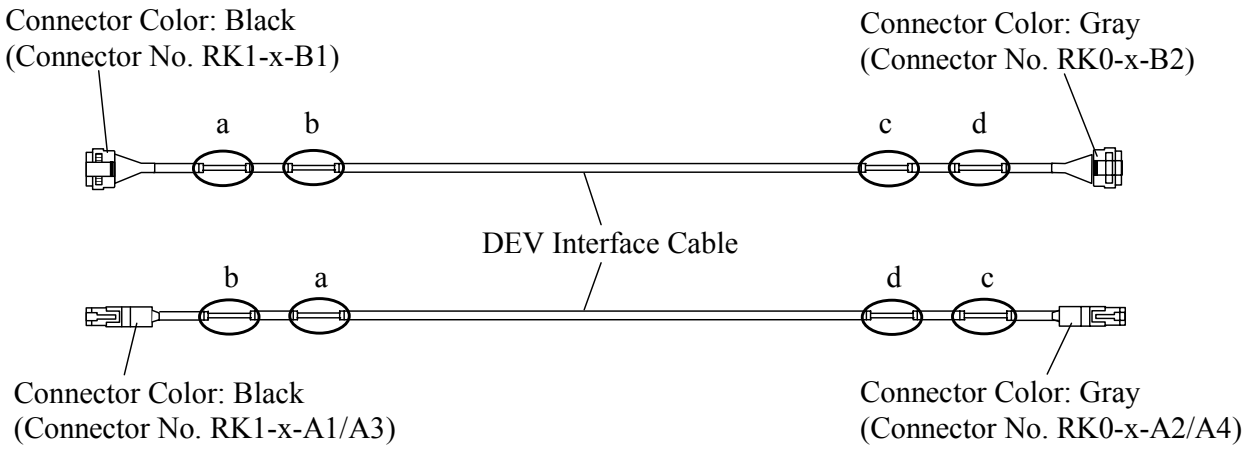
Fig. 3.10.5.2-2 Mounting Position of DEV Interface Cable

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1. Check to see the installation site of Extension Rack is on the right side or left side of Basic Rack.
2. Wind the tape around a and c from Fig. 3.10.5.2-3 when Extension Rack is installed on the right side of Basic Rack, otherwise wind the tape around b and d.

Table 3.10.5.2-2 DEV Interface Cable List

No.	Parts No.	Name	Quantity	Connector No.		Remarks
				A	B	
1	3272858-H	DEV Interface Cable	1	RK1-0-A1 RK1-0-A3	RK0-0-A2 RK0-0-A4	
				RK1-0-B1	RK0-0-B2	
			1	RK1-1-A1 RK1-1-A3	RK0-1-A2 RK0-1-A4	
				RK1-1-B1	RK0-1-B2	
			1	RK1-2-A1 RK1-2-A3	RK0-2-A2 RK0-2-A4	
				RK1-2-B1	RK0-2-B2	
			1	RK1-3-A1 RK1-3-A3	RK0-3-A2 RK0-3-A4	
				RK1-3-B1	RK0-3-B2	
2	5532297-1	Binder	3	—	—	
3	3274136-1	Cable Clamp	4	—	—	
4	SB416N	Screw	8	—	—	
5	3274130-1	Cable Stopper	4	—	—	
6	SB306N	Screw	8	—	—	
7	3274352-1	Tape	4	—	—	



(Note) x: 0, 1, 2, 3

Fig. 3.10.5.2-3 Attachment position of Tapes

3. Secure cables for DKU-RK0 with a cable clamp and a cable stopper. (Refer to Fig. 3.10.5.2-4 or Fig. 3.10.5.2-5.)
   Use the cable clamp listed in Table 3.10.5.2-2 when wiring cables on the right side of HDD BOX.
   Wire for the cable without installing the cable stopper along box when there is no base to install the cable stopper on the right side of HDD BOX.
   However, when executing this procedure, do not connect the cable to the FSW PCB in the DKU-RK0. Be aware of damaging cables when installing cable clamps.
4. Remove the repeat binders from installed cables. (Refer to Fig. 3.10.5.2-6.)

When installing the Extension Rack on the right of the Basic Rack

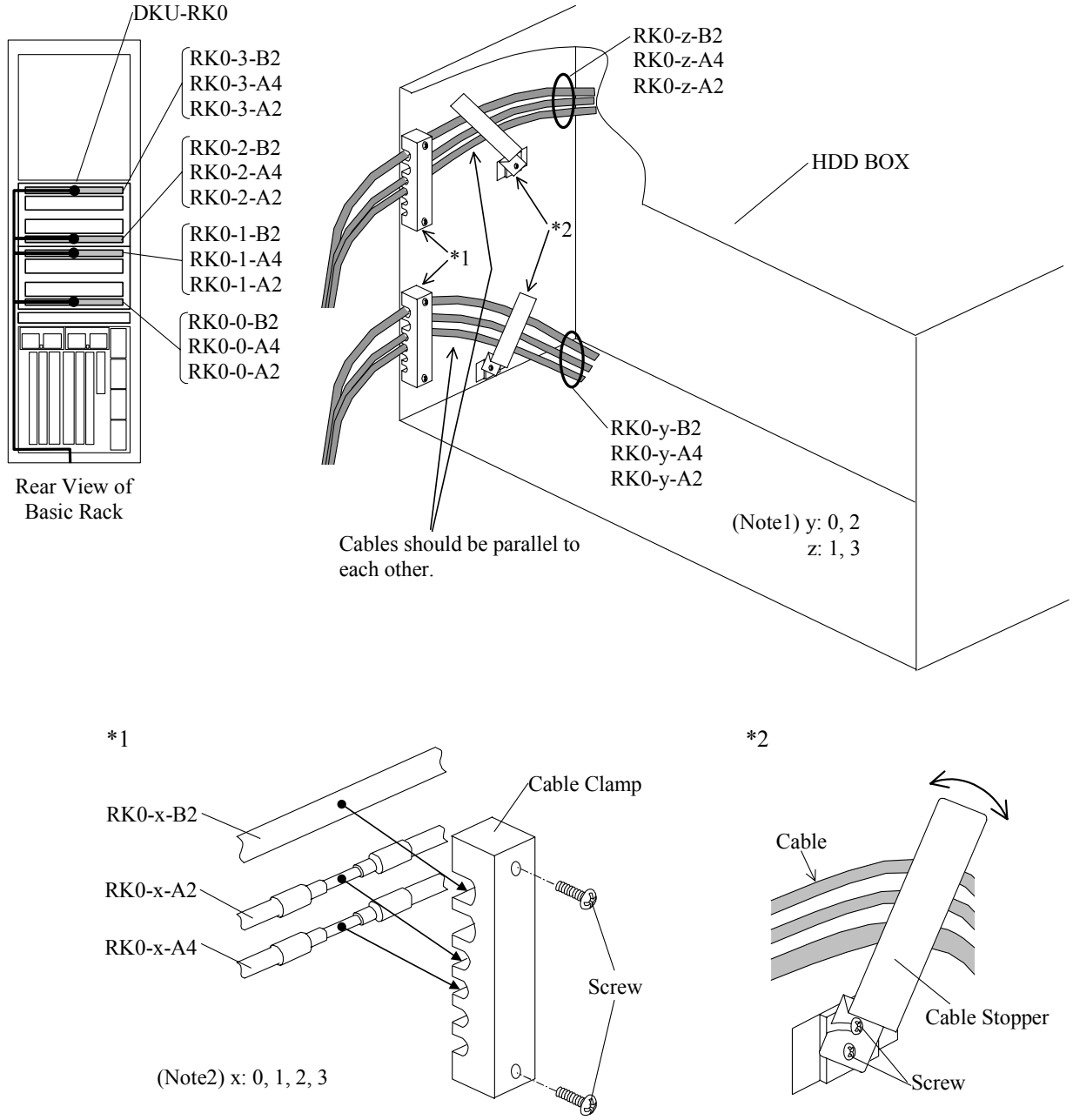


Fig. 3.10.5.2-4 Fixation of DEV Interface Cables

When installing the Extension Rack on the left of the Basic Rack

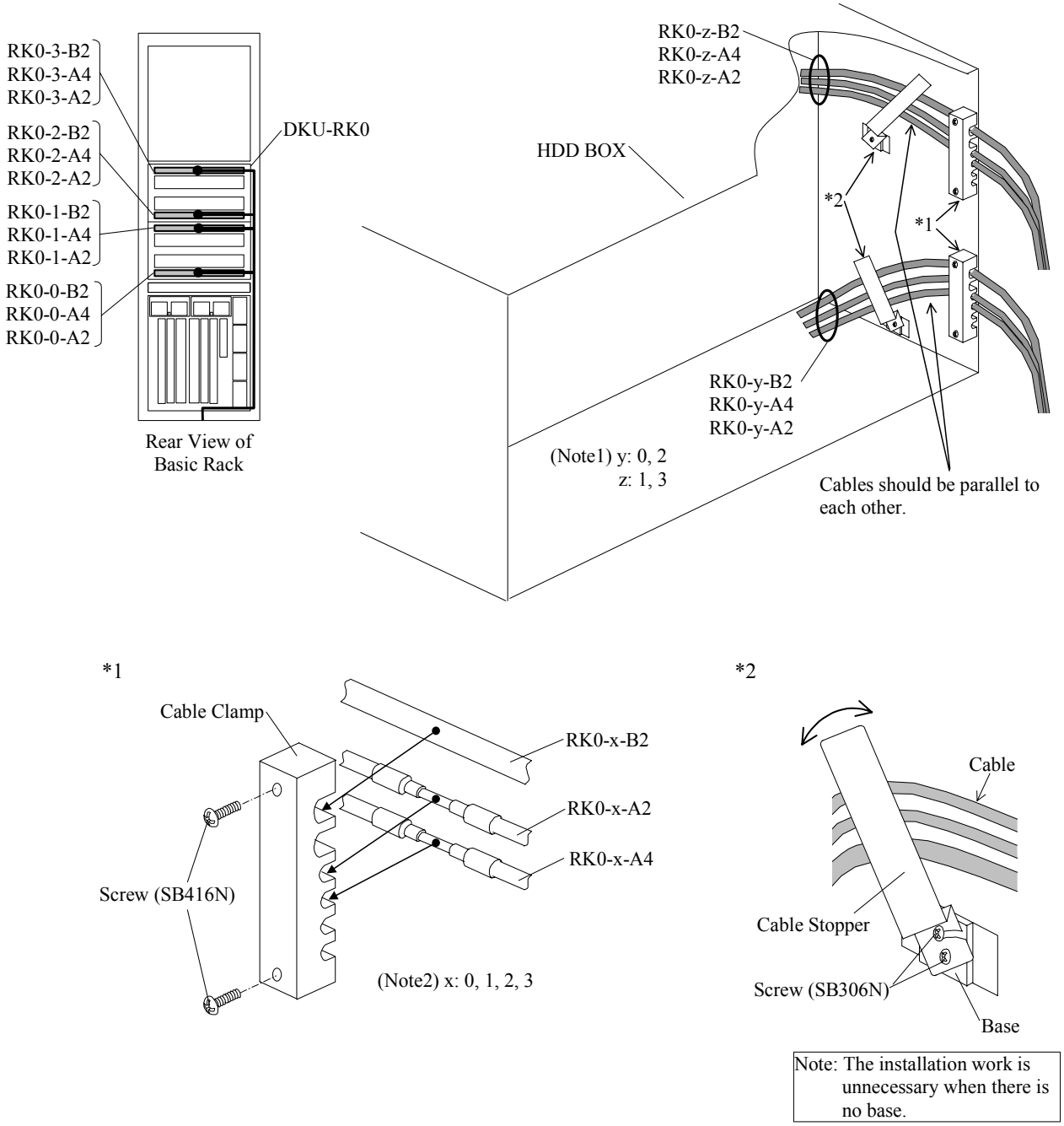


Fig. 3.10.5.2-5 Fixation of DEV Interface Cables

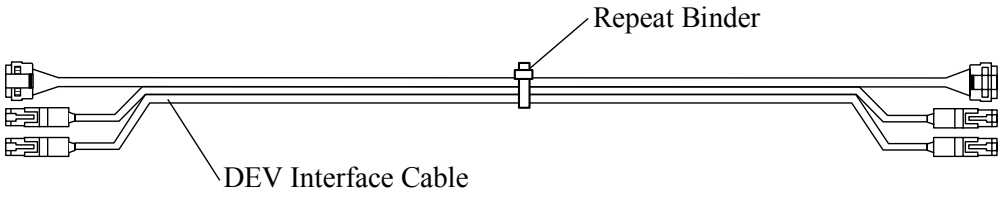


Fig. 3.10.5.2-6 Removal of Repeat Binders

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5. Wire the cable to the frame and pass cables form the bottom of the Basic Rack through Extension Rack. Fix the cables with three binders. (Refer to Fig. 3.10.5.2-7 or Fig. 3.10.5.2-8.)

When installing the Extension Rack on the right of the Basic Rack

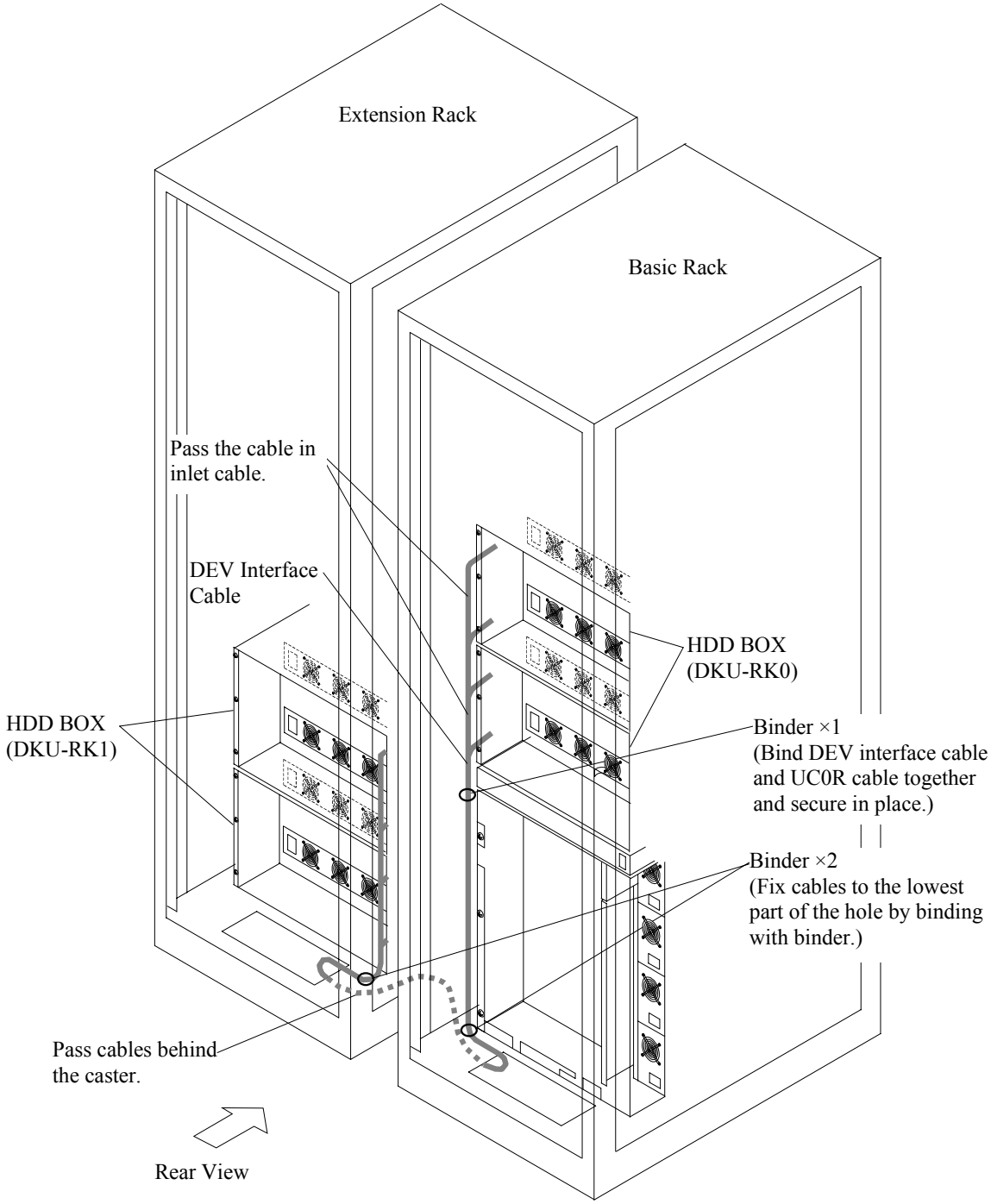


Fig. 3.10.5.2-7 Attachment of DEV Interface Cables

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When installing the Extension Rack on the left of the Basic Rack

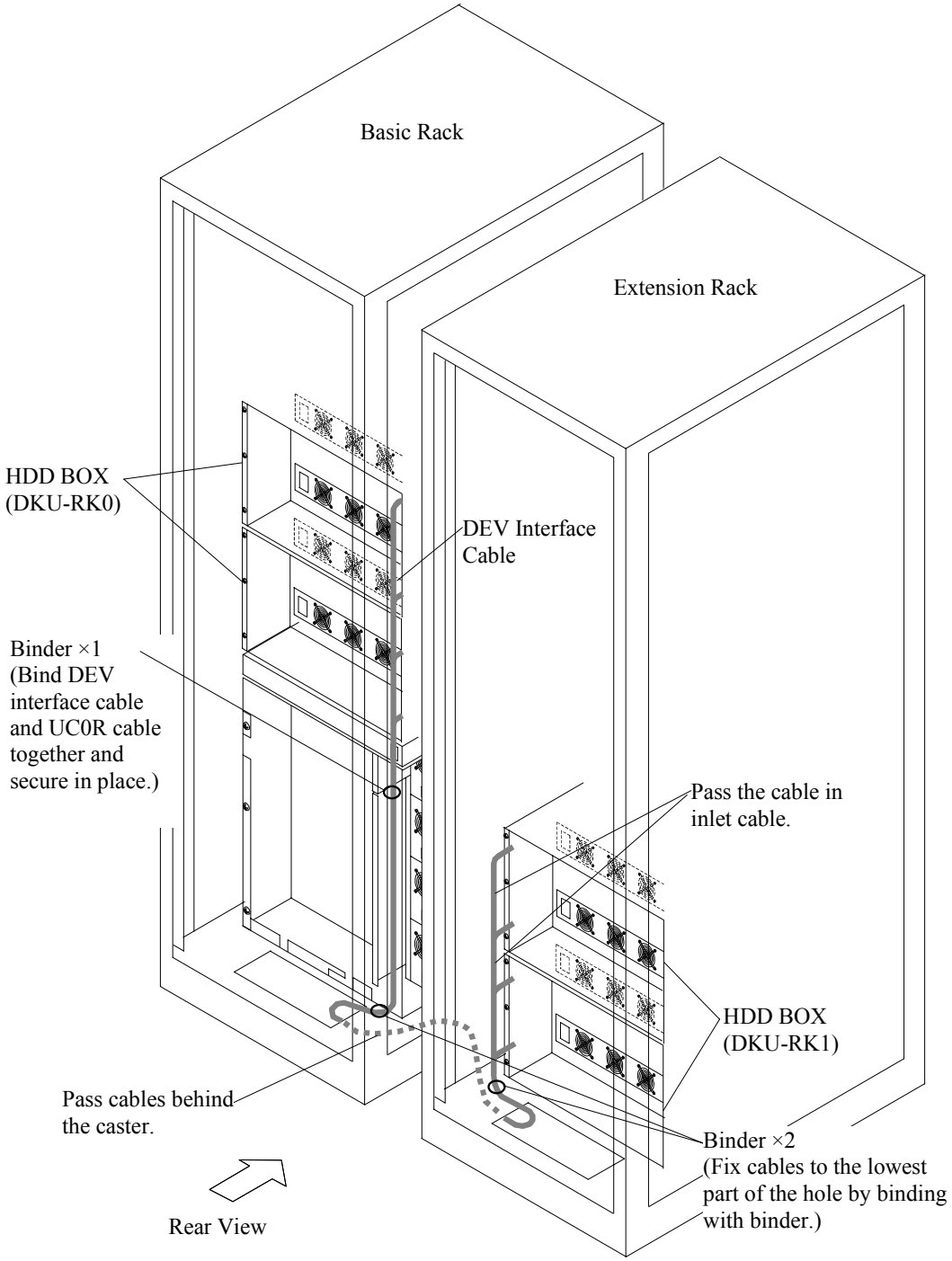


Fig. 3.10.5.2-8 Attachment of DEV Interface Cables

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6. Connect the cable to the FSW PCB in the HDD Box (DKU-RK1).

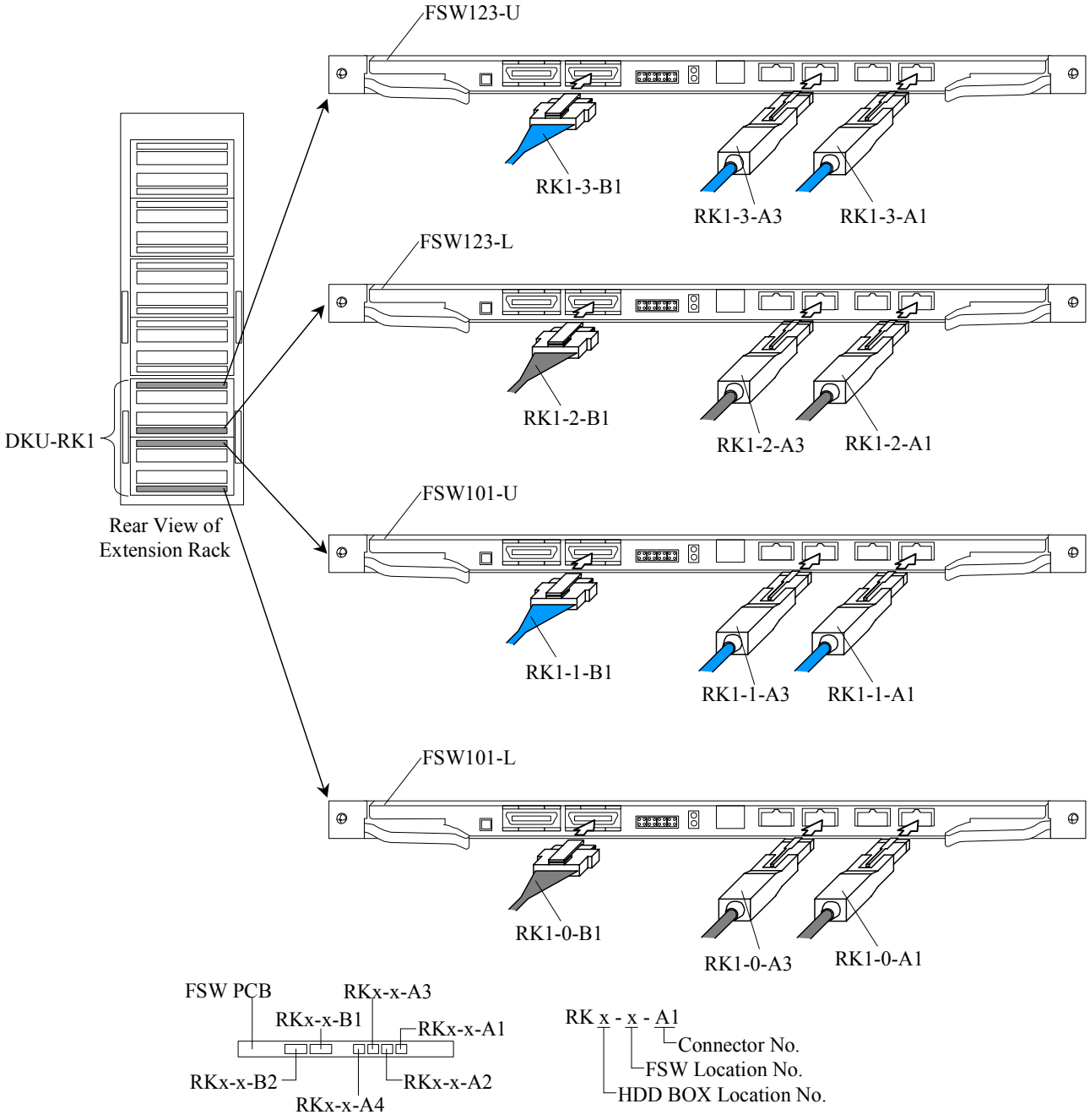


Fig. 3.10.5.2-9 Connection of DEV Interface Cables

7. Secure cables for DKU-RK1 with a cable clamp and a cable stopper. (Refer to Fig. 3.10.5.2-10 or Fig. 3.10.5.2-11.)
   Use the cable clamp listed in Table 3.10.5.2-2 when wiring cables on the right side of HDD BOX.
   Wire for the cable without installing the cable stopper along box when there is no base to install the cable stopper on the right side of HDD BOX.
   Be aware of damaging cables when installing cable clamps.

When installing the Extension Rack on the right of the Basic Rack

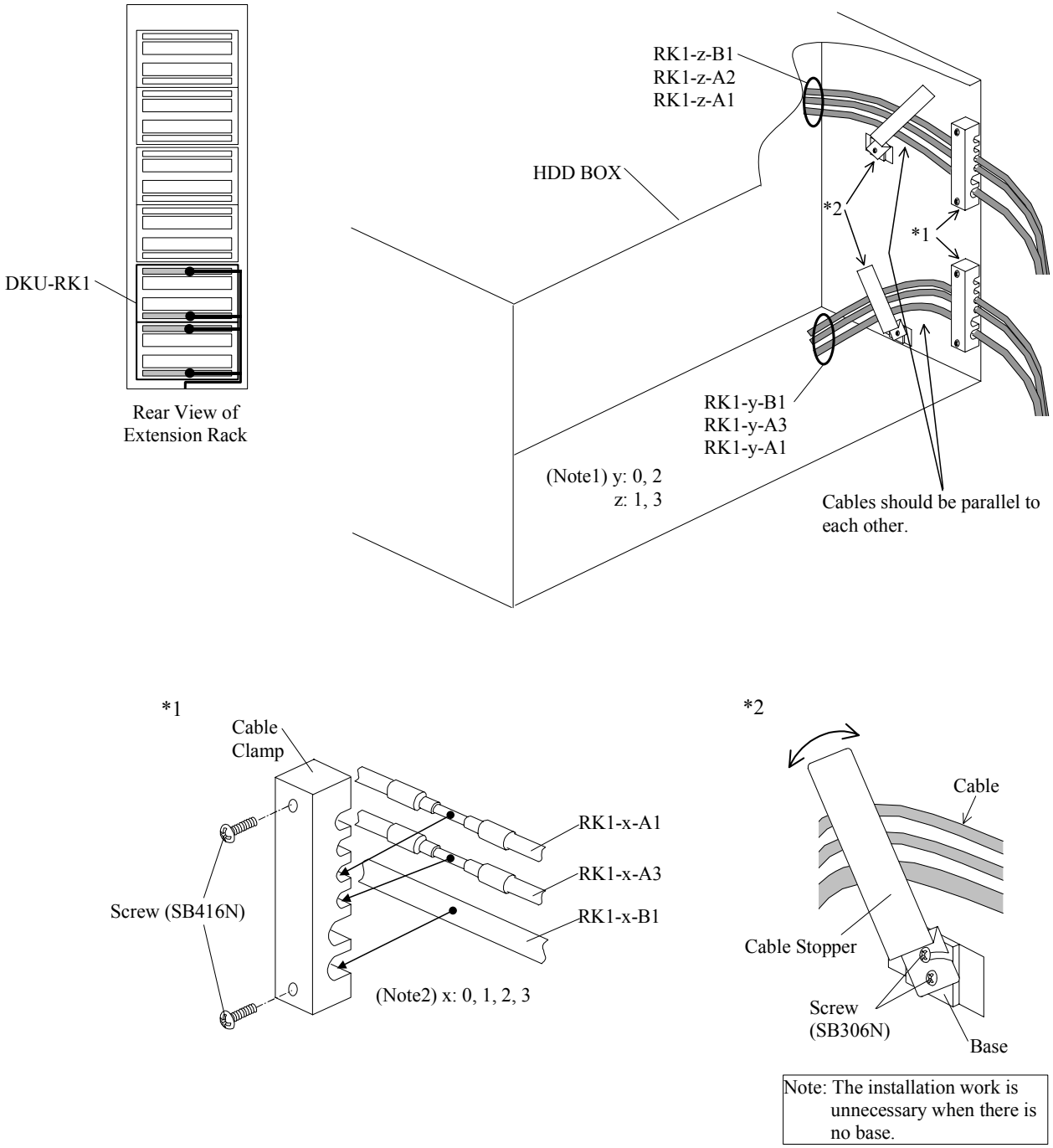


Fig. 3.10.5.2-10 Attachment of DEV Interface Cable

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When installing the Extension Rack on the left of the Basic Rack

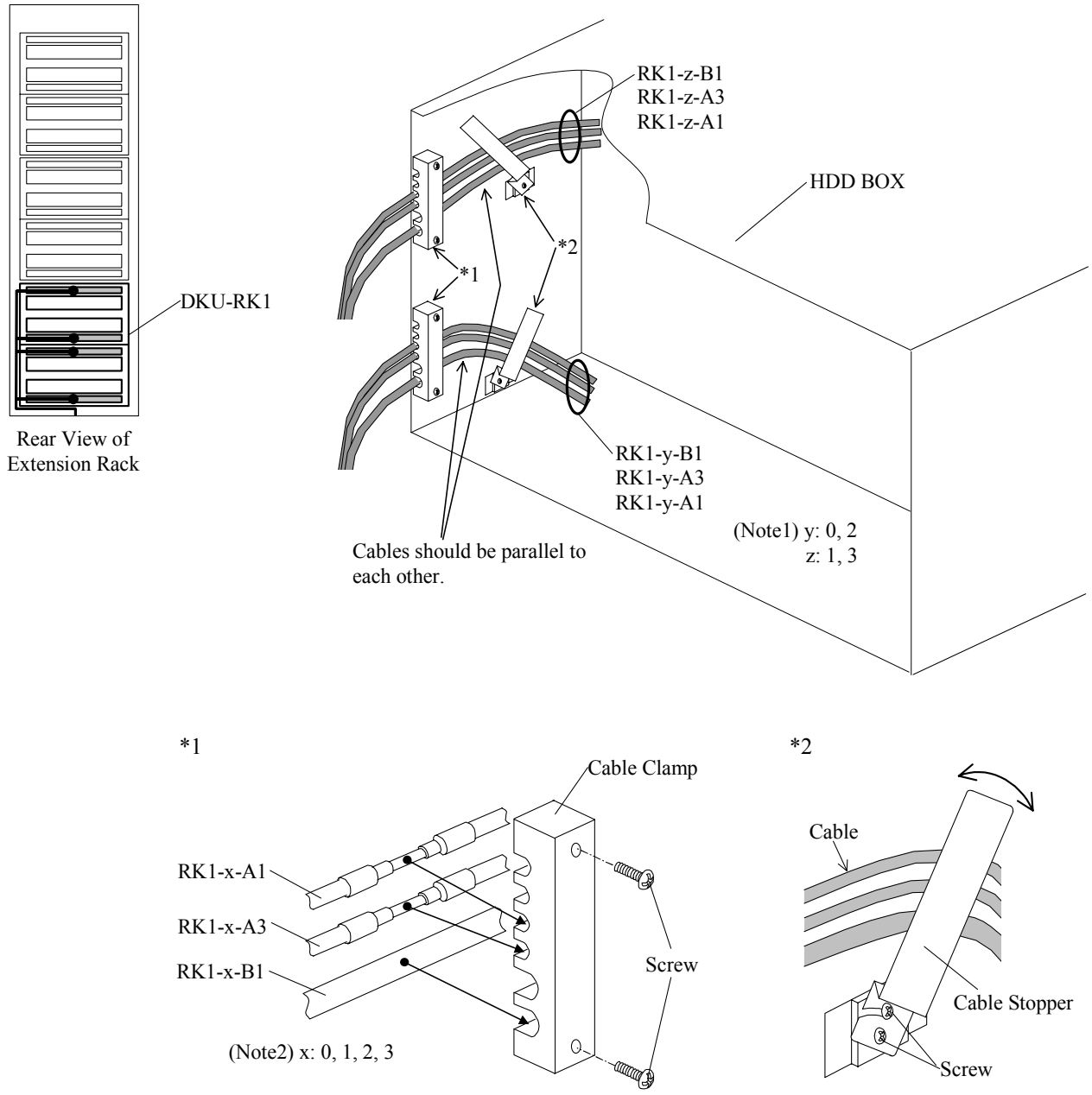


Fig. 3.10.5.2-11 Attachment of DEV Interface Cables

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8. Attachment of nameplate
   a. Remove the screw from the rack frame and remove the nameplate tags to be installed.
   b. Attach the nameplate to the nameplate tag on the Rack frame.
   c. Attach all the nameplate tags with the screw.

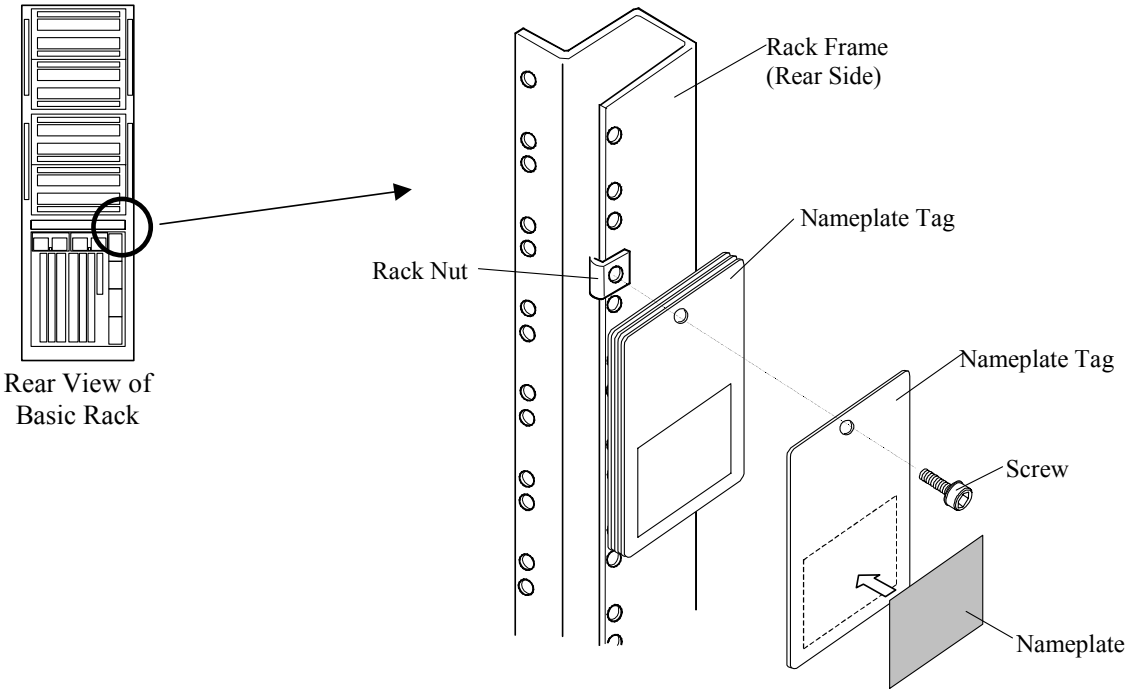


Fig. 3.10.5.2-12 Attachment of Nameplate

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9. Labeling

HDS Rack Frame

a. Attach the five labels to the rear door.

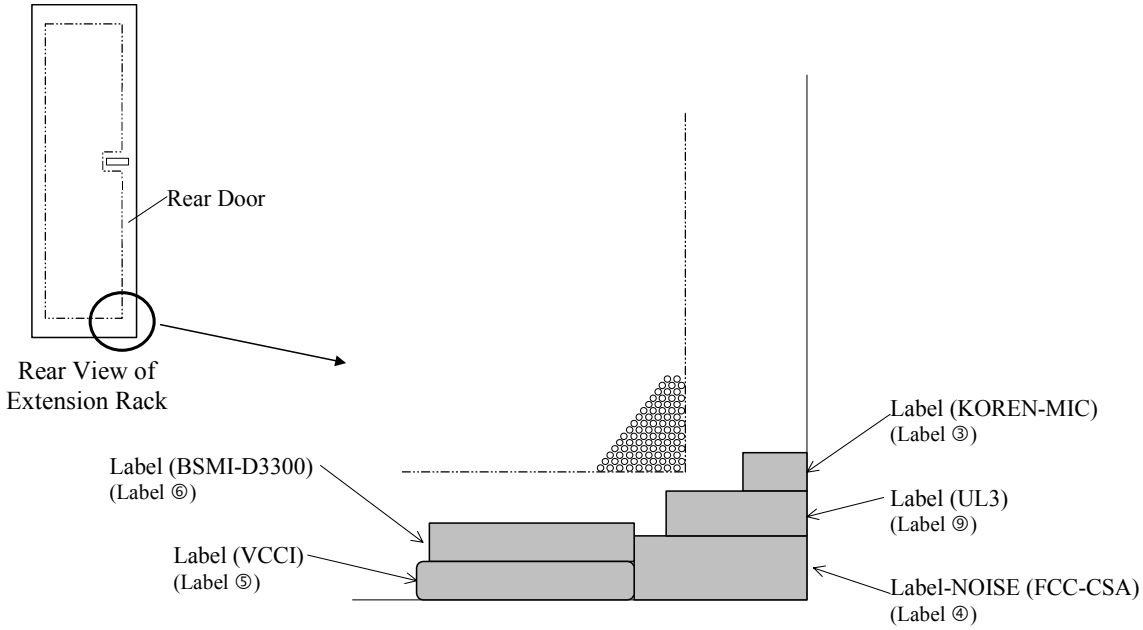


Fig. 3.10.5.2-13 Attachment of Labels

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3.10.5.3 Installation Procedure of DEV Interface Cable (DKC-F515I-UC4R)

Installation Condition

DKC-F515I-UC4R is the cable option to connect the DKU-RK1 and the DKU-RK2 when the Tagmastore AMS/WMS is installed. This option is required when adding the DKU-RK2 (3rd DKC-F515I-B2R).

Decide if the DEV Interface Cable (DKC-F515I-UC4R) needs to be installed, and go to the page to meet the condition. (Refer to Table 3.10.5.3-1.)

Table 3.10.5.3-1 Work Procedure Table

No.	Condition of Work Procedure	Page
1	When you need to install DEV Interface Cable (DKC-F515I-UC4R)	INST03-10D-190
2	When you do not need to install DEV Interface Cable (DKC-F515I-UC4R)	INST03-10D-220

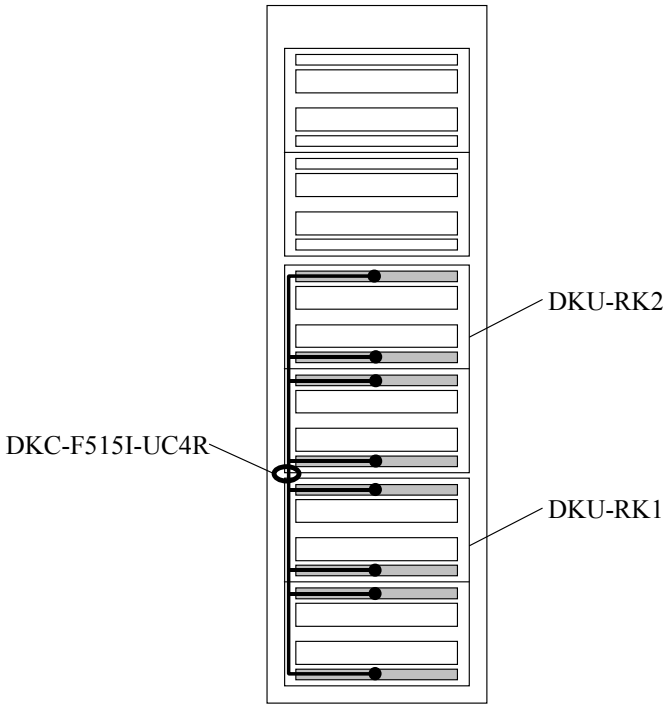


Fig. 3.10.5.3-1 Mounting Position of DEV Interface Cable

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1. Adjust positions of Repeat Binders that are binding the DEV Interface Cable so that they fit the heights of the cable clamps for fastening the cable.
2. Fasten the upper part of the DEV Interface Cable to the rack column with four Repeat Binders.
3. Connect the cable to the FSW PCB in the DKU-RK2 and fasten it with the cable clamps.
   However, when executing this procedure, do not connect the cable to the FSW PCB in the DKU-RK1.

Table 3.10.5.3-2 DEV Interface Cable List

No.	Parts No.	Name	Quantity	Connector No.				Cable Color
				A	B	C	D	
1	3272858-G	Fibre Cable	1	RK2-0-A1 RK2-0-A3 RK2-0-B1	RK2-2-A1 RK2-2-A3 RK2-2-B1	RK1-2-A2 RK1-2-A4 RK1-2-B2	RK1-0-A2 RK1-0-A4 RK1-0-B2	Black
			1	RK2-1-A1 RK2-1-A3 RK2-1-B1	RK2-3-A1 RK2-3-A3 RK2-3-B1	RK1-3-A2 RK1-3-A4 RK1-3-B2	RK1-1-A2 RK1-1-A4 RK1-1-B2	Blue
2	5409042-3	Repeat Binder	4	—	—	—	—	—

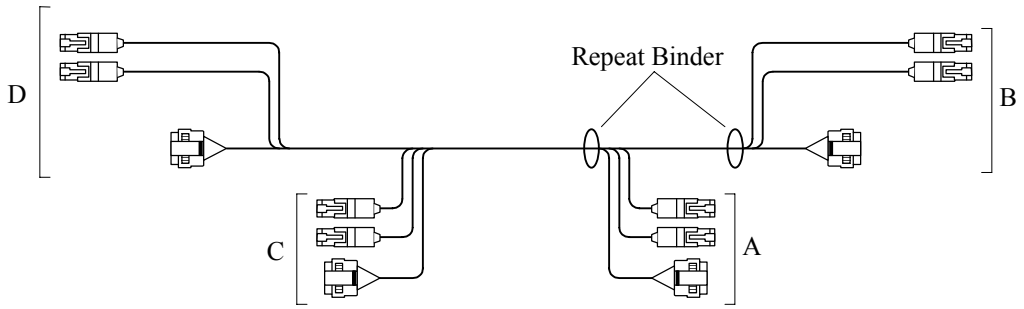


Fig. 3.10.5.3-2 Connector Number of DEV Interface Cable

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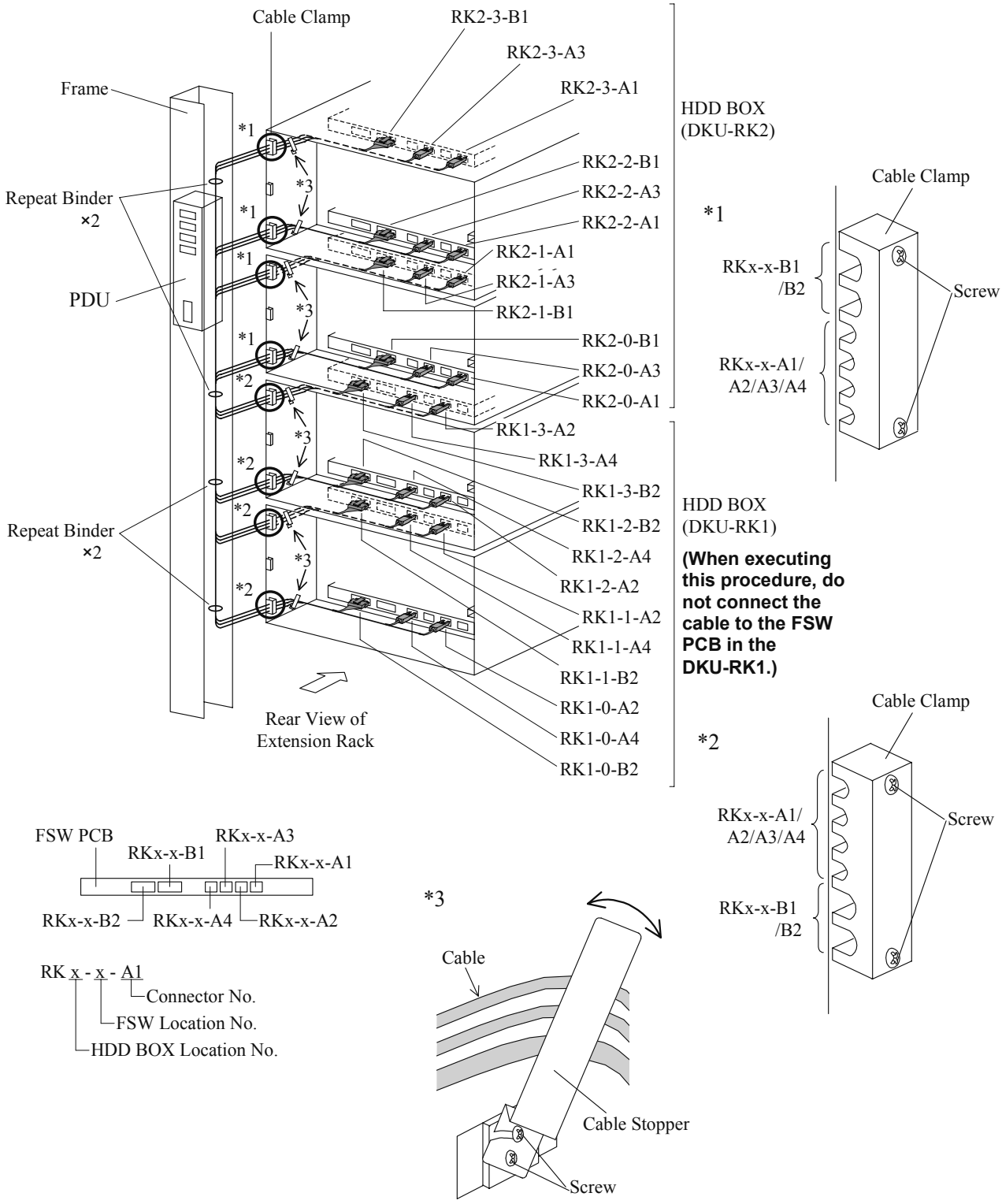


Fig. 3.10.5.3-3 Attachment of DEV Interface Cable

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4. Attachment of nameplate
   a. Remove the screw from the rack frame and remove the nameplate tags to be installed.
   b. Attach the nameplate to the nameplate tag on the Rack frame. Attach the HDS nameplate even if the HP model number is installed.
   c. Attach all the nameplate tags with the screw.

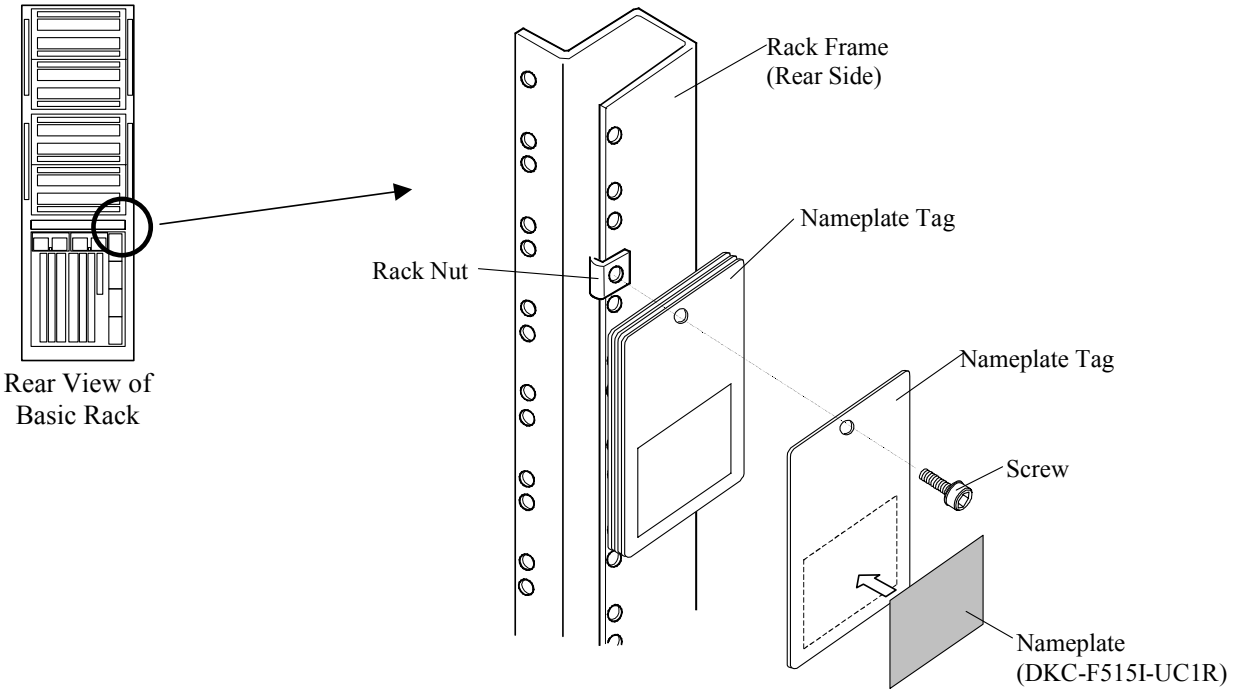


Fig. 3.10.5.3-4 Attachment of Nameplate

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3.10.5.4 Installation Procedure of DEV Interface Cable (DKC-F515I-UC1R)

Installation Condition

DKC-F515I-UC1R is the cable option to connect the DKU-RK2 and the DKU-RK3 when the Tagmastore AMS/WMS is installed. This option is required when adding the DKU-RK3 (4th DKC-F515I-B2R).

Decide if the DEV Interface Cable (DKC-F515I-UC1R) needs to be installed, and go to the page to meet the condition. (Refer to Table 3.10.5.4-1.)

Table 3.10.5.4-1 Work Procedure Table

No.	Condition of Work Procedure	Page
1	When you need to install DEV Interface Cable (DKC-F515I-UC1R)	INST03-10D-230
2	When you do not need to install DEV Interface Cable (DKC-F515I-UC1R)	INST03-10D-260

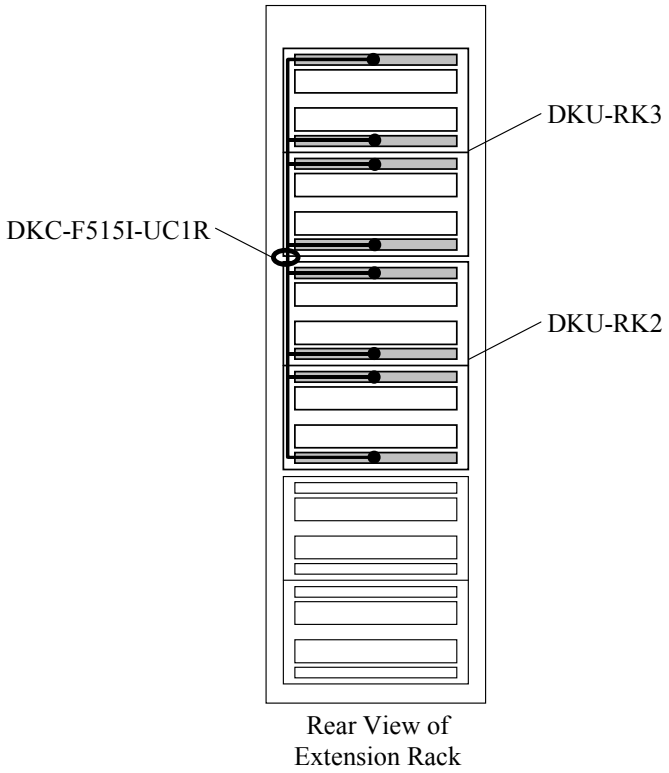


Fig. 3.10.5.4-1 Mounting Position of DEV Interface Cable

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1. Adjust positions of Repeat Binders that are binding the DEV Interface Cable so that they fit the heights of the cable clamps for fastening the cable.
2. Fasten the upper part of the DEV Interface Cable to the rack column with four Repeat Binders.
3. Connect the cable to the FSW PCB in the DKU-RK3 and fasten it with the cable clamps.
   However, when executing this procedure, do not connect the cable to the FSW PCB in the DKU-RK2.

Table 3.10.5.4-2 DEV Interface Cable List

No.	Parts No.	Name	Quantity	Connector No.				Cable Color
				A	B	C	D	
1	3272858-B	Fibre Cable	1	RK3-0-A1 RK3-0-A3 RK3-0-B1	RK3-2-A1 RK3-2-A3 RK3-2-B1	RK2-2-A2 RK2-2-A4 RK2-2-B2	RK2-0-A2 RK2-0-A4 RK2-0-B2	Black
			1	RK3-1-A1 RK3-1-A3 RK3-1-B1	RK3-3-A1 RK3-3-A3 RK3-3-B1	RK2-3-A2 RK2-3-A4 RK2-3-B2	RK2-1-A2 RK2-1-A4 RK2-1-B2	Blue
2	5409042-3	Repeat Binder	4	—	—	—	—	—

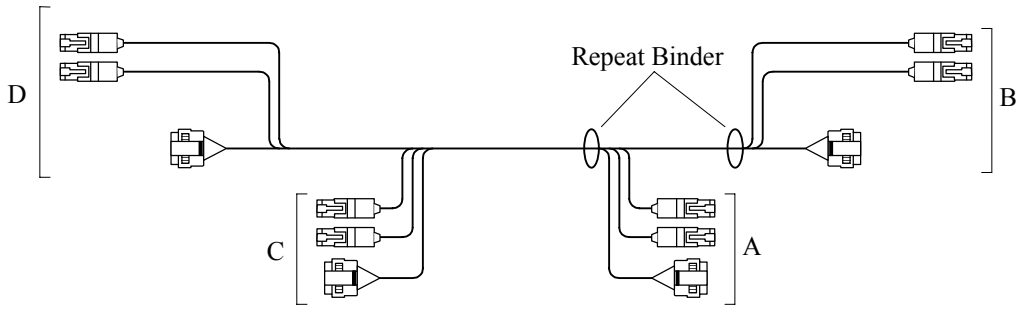


Fig. 3.10.5.4-2 Connector Number of DEV Interface Cable

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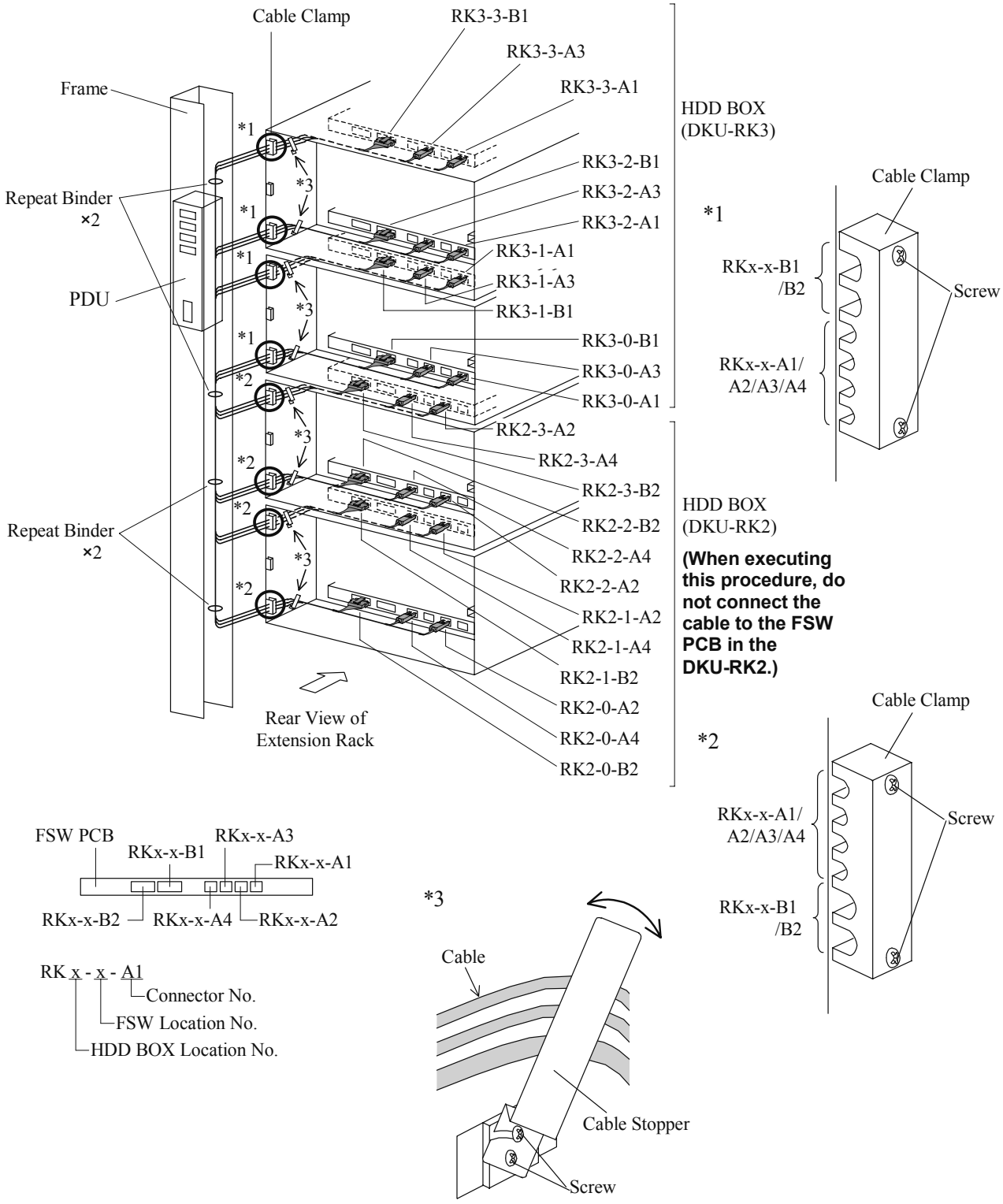


Fig. 3.10.5.4-3 Attachment of DEV Interface Cable

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4. Attachment of nameplate
   a. Remove the screw from the rack frame and remove the nameplate tags to be installed.
   b. Attach the nameplate to the nameplate tag on the Rack frame. Attach the HDS nameplate even if the HP model number is installed.
   c. Attach all the nameplate tags with the screw.

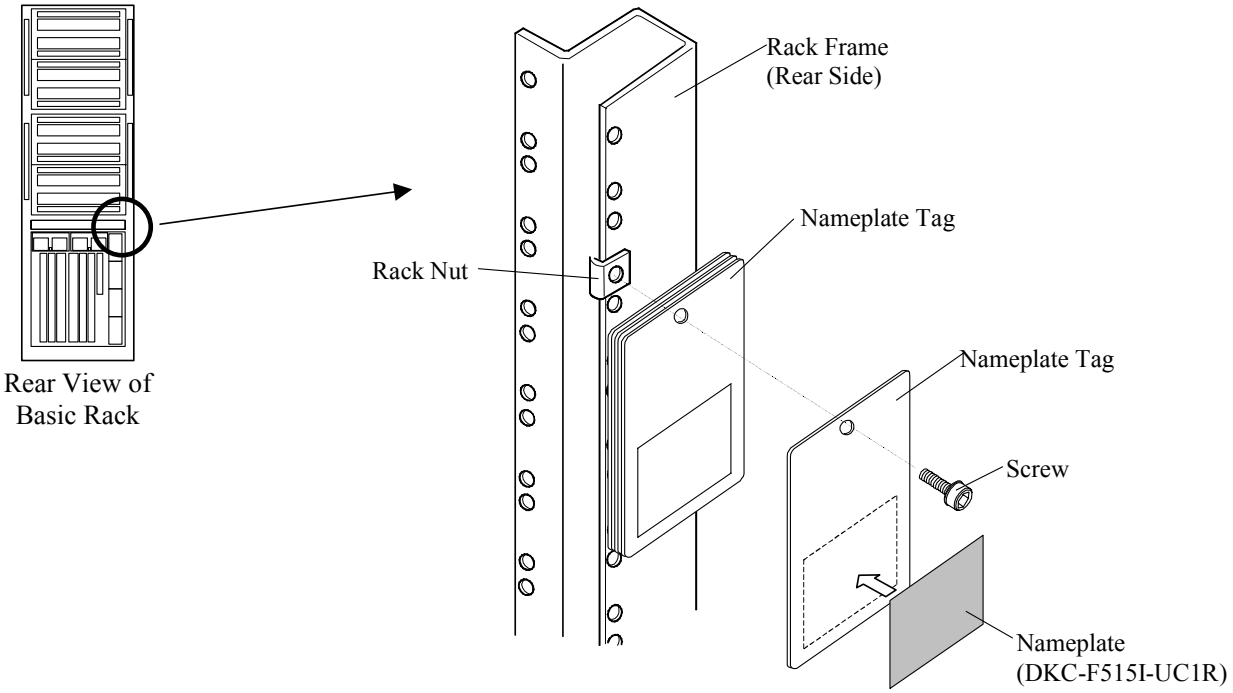


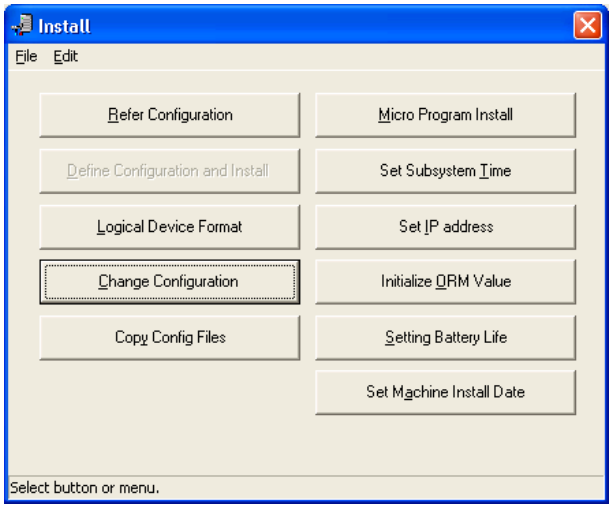
Fig. 3.10.5.4-4 Attachment of Nameplate

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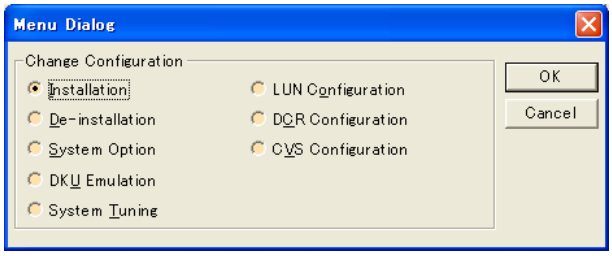
3.10.5.5 SVP pre procedure (Setting up the New Device Structure Information)

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

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

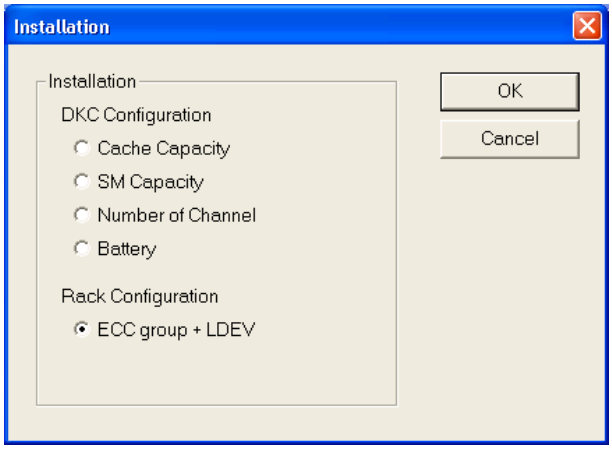


(3) <Start Device Structure Setup screen>
Select (CL) [Installation] in the "Menu Dialog" dialog box and select (CL) [OK].



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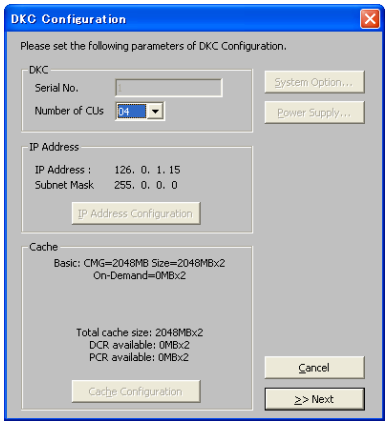
(4) <Select a part to be changed>
Select (CL) [ECC group + LDEV], and select (CL) [OK].



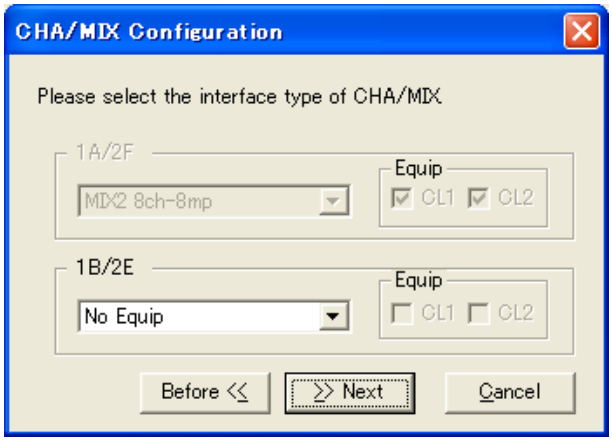
(5) <Update Configuration Information>
Define the number of CU in DKC in the 'DKC Configuration' window.

Make sure that the entered item is correct and select (CL) [>>Next].

Note: There may be a case where an addition of the SM is required to add the CU.
When adding the SM, refer to page INST03-09A-10.

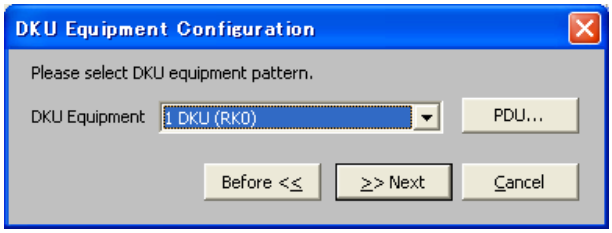


(6)-1 <Setting MIX>
Check the setting item in the 'CHA/MIX Configuration' window.
Select (CL) [>>Next].



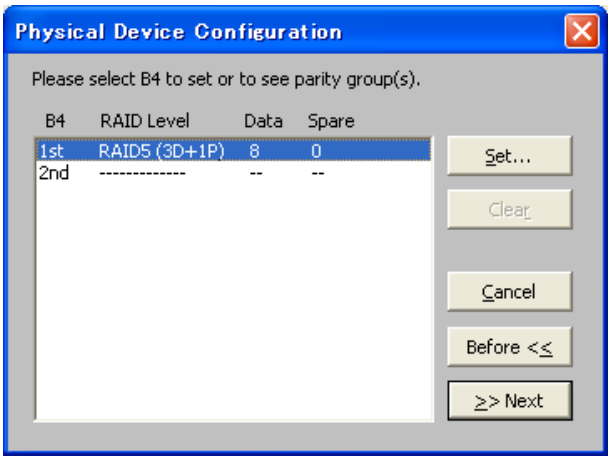
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(7) <DKU Equipment>
The DKU equipment pattern is displayed in the 'DKU Equipment Configuration' window. Select (CL) [>>Next].
However, if you want to set "Not Equip", select (CL) [>>Next]. Go to step (12).



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(8) <Change Drive Configuration Information>
Define drive configuration according to the 'Physical Device Configuration' screen.
Detailed procedure is shown below.
[Set...]: Defines the parity group or spare disk. The routine proceeds to Step (8)-1.
[Clear...]: Cancels the setting of the B4.
After setting up all items, select (CL) [>>Next]. Go to step (9).
However, if you don't want to set any parity group or spare disk, select (CL) [>>Next]. Go to Step (12).



Selecting (CL) [Before<<] returns you to the previous screen.

B4	Location	
	HDU	HDD
1st	HDU-00,01,02,03	HDD0X-00 ~ HDD0X-0E
2nd	HDU-10,11,12,13	HDD1X-00 ~ HDD1X-0E
3rd	HDU-20,21,22,23	HDD2X-00 ~ HDD2X-0E
4th	HDU-30,31,32,33	HDD3X-00 ~ HDD3X-0E

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(8)-1 <Define Parity Group>

[Group...]: Defines the parity group. See Step (8)-1-1.

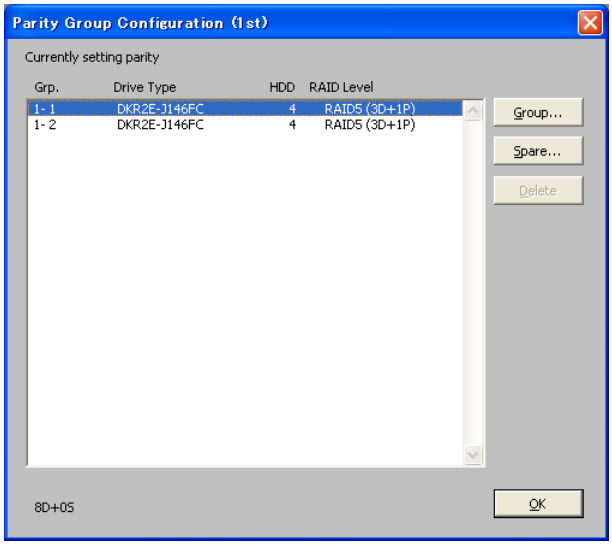
[Spare...]: Defines the spare drive. See Step (8)-1-2.

[Delete]: Deletes the added parity group or spare drive.

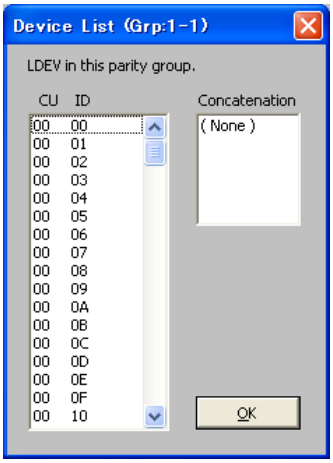
Grp*: A parity group where RAID Concatenation is installed.

Note: If you want to set any Spare Drive in B4, please define the Spare Drive first.

After setting up all items, select (CL) [OK]. Return to step (8).



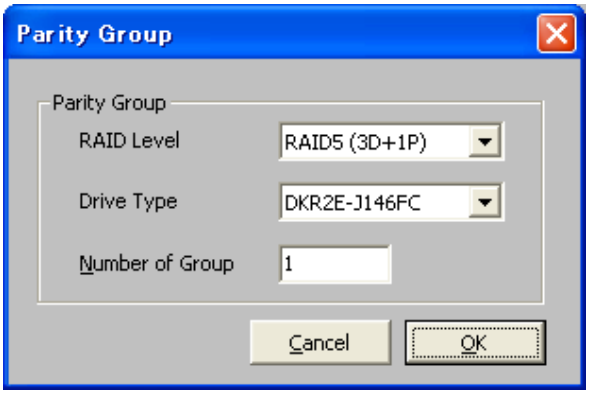
To display LDEV ID in Parity group, select an item to be displayed and select (DC) this item on list box. The 'Device List' dialog box will appear.
"(no LDEV)" is displayed for the added parity group.



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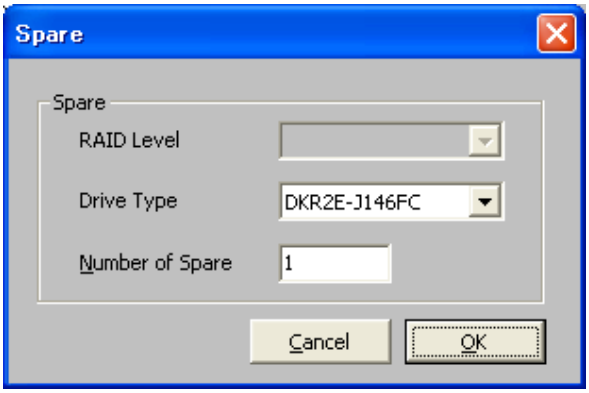
(8)-1-1

Define the RAID Level and the Drive Type and the Number of Group in the 'Parity Group' dialog box.
Then select (CL) [OK]. Return to step (8)-1.



(8)-1-2

Define the RAID Level and the Drive Type and the Number of Spare in the 'Spare' dialog box.
Then select (CL) [OK]. Return to step (8)-1.



(9) <Define Device Emulation>

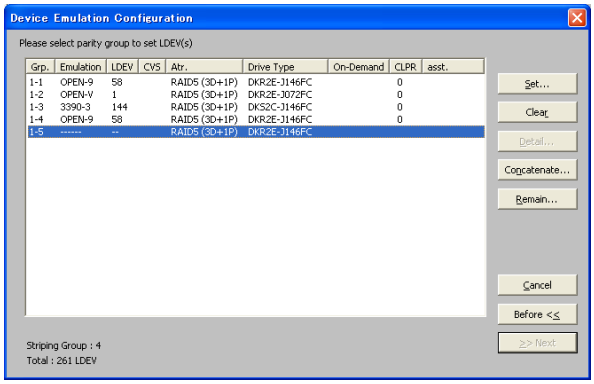
After setting up all items corresponding to (9)-1 to (9)-3 for definition of Device Emulation, select (CL) [>>Next].
Selecting (CL) [Before<<] returns you to the previous screen.
In the case of only spare drive installation, select (CL) [>>Next]. Go to step (10).

- If defining Device Emulation, go to step (9)-1.
- If setting RAID concatenation, go to step (9)-2.
- If defining of Customized Volume Size (CVS), go to step (9)-3.

(9)-1 <Define Device Emulation>

Select (CL) parity group and select (CL) [Set...].
Go to step (9)-1-1.

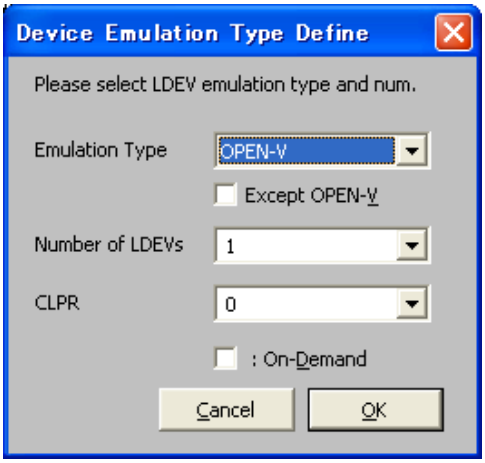
For detailed display:
Select (CL) parity group and select (CL) [Detail...].
The detailed information is displayed.
(CVS): A parity group where CVS is installed.
Grp*: A parity group where RAID Concatenation is installed.



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(9)-1-1

After setting up all items in the 'Device Emulation Type Define' dialog box, select (CL) [OK].



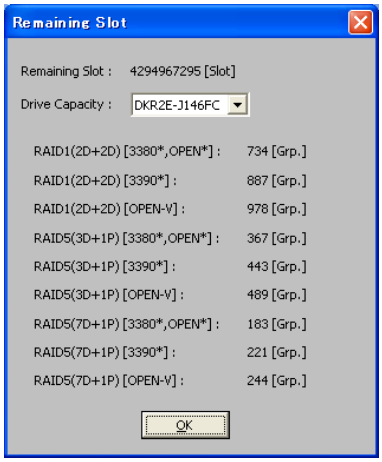
Selecting (CL) [Cancel] returns you to step (9).

Note: OPEN-V is a recommended OPEN volume. To set other than OPEN-V, please select "Except OPEN-V".

Note: "0" can be set to the value of Number of LDEVs for all the emulation types. If you don't know the LDEV size you will use, set "0". You can save time by setting "0" because LDEV format will not run. When you set "0", please make LDEVs later using the CVS function.

(9)-1-2

The Remaining Slot window is displayed. An allowable number of times of PDEV addition corresponding to the specified drive type is displayed.

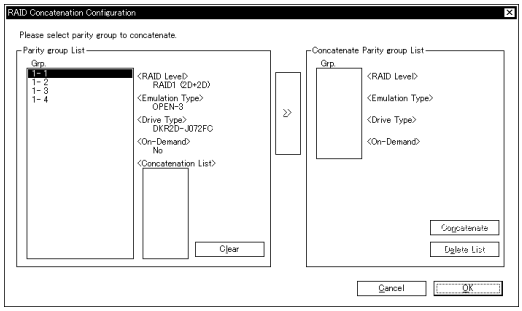


Select (CL) the [OK]. The routine returns to Step (9).

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(9)-2

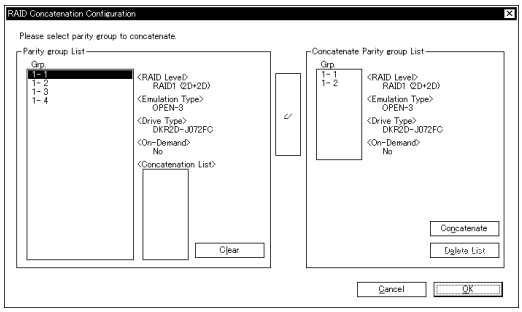
Parity groups to which the RAID concatenation can be applied are displayed in the Parity group List. Select (CL) parity groups to which you want to apply the RAID concatenation and press (CL) the [>>] button.



Note: Only the parity groups, which have been added and to which the RAID concatenation can be applied are displayed in the Parity group List.

(9)-2-1

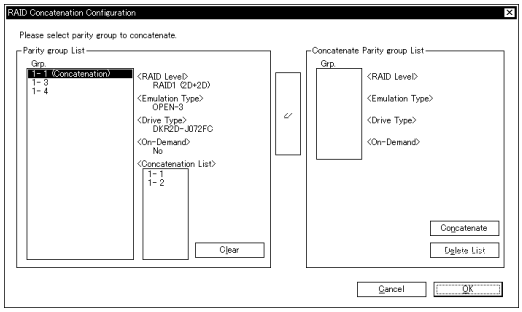
The selected parity groups are registered in the Concatenate Parity group List. Then press (CL) the [Concatenate] button.



Note: The [Concatenate] button cannot be pressed if the concatenation does not meet a condition of the RAID concatenation. Adjust the number of the parity groups in the Concatenate Parity group List.

(9)-2-2

When the RAID concatenation is completed, "(Concatenation)" is displayed in the Parity group List. Selecting the "(Concatenation)" displays the concatenated parity groups in the Concatenation List. Pressing the [Clear] button cancels the RAID concatenation.



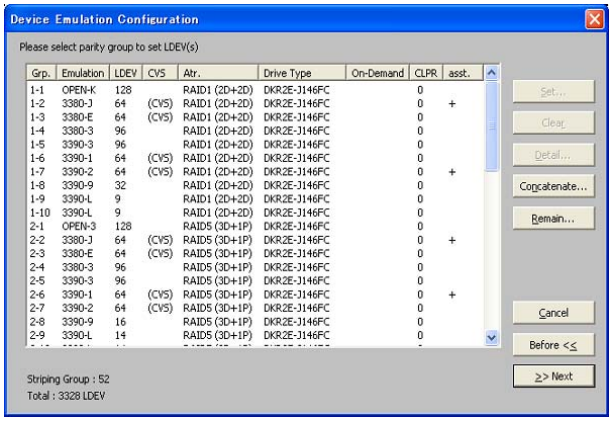
When all the settings of the RAID concatenation are completed, press (CL) the [OK] button.
Pressing (CL) the [Cancel] button returns the routine to Step (9).

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(9)-3 <Defining of Customized Volume Size (CVS)>

Select (CL) a parity group for which the LDEV emulation type and the number of LDEVs have been set on the "Device Emulation Configuration" screen and select (CL) [Detail…].

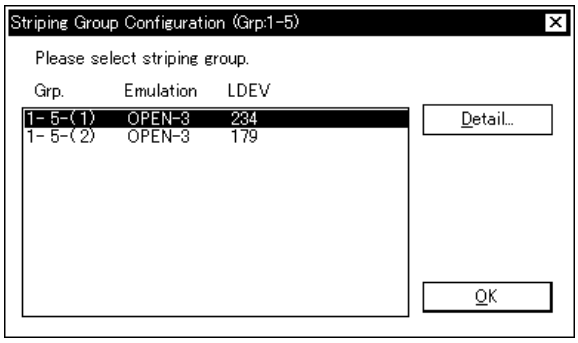
When you do not perform the CVS, return to Step (9).



(9)-3-1

When there are two or more striping groups, the Striping Group Configuration window is displayed. Select (CL) a striping group, and then select (CL) the [Detail…].

- When you select a striping group other than OPEN-V, the routine goes to Step (9)-3-2.
- When you select OPEN-V, the routine goes to Step (9)-3-4.



When you select (CL) the [OK], the preceding window returns. (The routine returns to Step (9).)

Note: When there is only one striping group, the Striping Group Configuration window is not displayed.

- When you select a striping group other than OPEN-V, the routine goes to Step (9)-3-2.
- When you select OPEN-V, the routine goes to Step (9)-3-4.

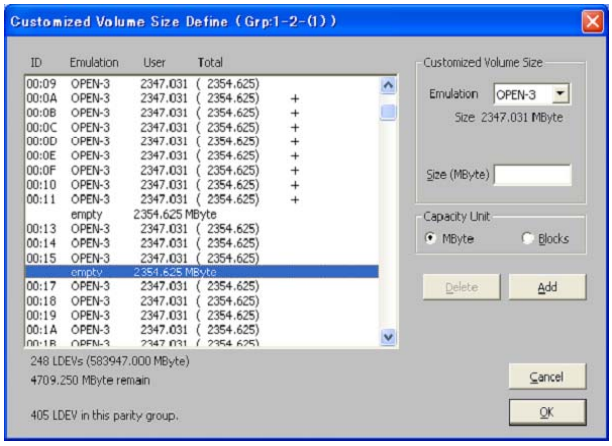
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(9)-3-2 <Definition other than OPEN-V>

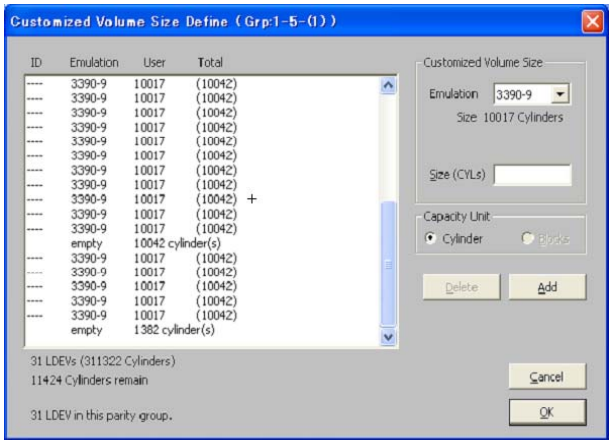
A volume other than OPEN-V can be added or deleted in the “Customized Volume Size Define” window.
A volume can be deleted by selecting (CL) the volume from the LDEV list box and selecting (CL) [Delete].
A volume can be added by entering the LDEV emulation type and the user size (Mbyte/Blocks or Cylinder) of the customized volume (CV) and selecting [Add].
(It can be added in the optional space “empty” by selecting (CL) “empty” from the LDEV list box.)

The routine returns to the preceding window by selecting (CL) [Cancel].
The routine returns to the preceding window and the change is reflected by selecting (CL) [OK].

(When the emulation type is Open System)



(When the emulation type is Mainframe System)



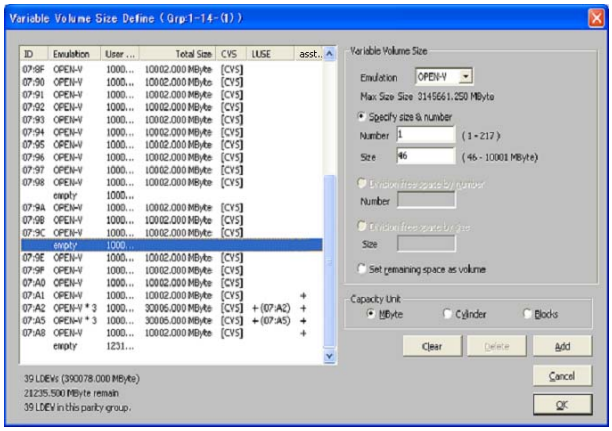
(9)-3-3

The CV registered by mistake can be deleted by selecting (CL) it from the LDEV list box and then selecting (CL) [Delete].

Note: One or more CVs can be selected.

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(9)-3-4 <Definition of OPEN-V>



Open-V can be defined in the “Variable Volume Size Define” window.
All the volumes in the LDEV list box can be deleted by selecting (CL) [Clear].
The volume can be deleted by selecting (CL) [Delete] in the state (CL) of selecting (CL) the volume in the LDEV list box.
It can be added by selecting (CL) Variable Volume Size from the status “select (CL) ‘empty’” or “no selection” in the LDEV list box and selecting (CL) [Add].
Adding or deleting operation can be done for any number of times. The last setting is reflected by selecting (CL) [OK].

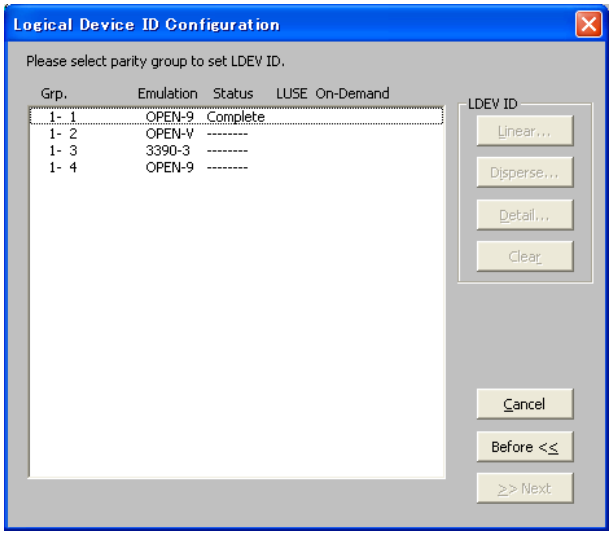
- Variable Volume Size
  “Specify Size & number” : Defines the specified number of the specified user size.
  “Division free space by number” : Defines the volume divided by the specified number. However, this can be selected only when all the volumes have been deleted.
  “Division free space by size” : Defines the volumes whose user sizes are all specified. However, this can be selected only when all the volumes have been deleted.
  “Set remaining space as Volume” : Defines the volume in the remaining space (empty).
- Capacity Unit
  “MByte” : Makes data displayed or entered by [Mbyte].
  “Cylinder” : Makes data displayed or entered by the [Cylinder].
  “Blocks” : Makes data displayed or entered by the [Blocks].
- LUSE : When the LUSE is connected, “+” is displayed.
- asst. : When Path/LUSE/Pool-VOL is defined, “+” is displayed.

[Clear] : Deletes all the volumes.
[Delete] : Deletes all the selected volumes.
[Add] : Adds volumes.
[Cancel] : Invalidates the setting, and returns to the preceding window. The routine returns to Step (9).
[OK] : Confirms the setting, and returns to the preceding window. The routine returns to Step (9).

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(10) <Define LDEV ID>

(10)-1 Definition Screen for LDEV ID



Select (CL) the parity group to be defined and select (CL) a function from the [LDEV ID] list box.

[Linear...]: LDEV ID is assigned to LDEV in the order of parity groups. See step (10)-3.

[Disperse...]: LDEV is assigned discretely in the order of parity groups. See step (10)-3.

[Detail...]: A screen to define LDEV in detail is displayed. See step (10)-2. (When plural groups are selected (CL), it is invalid.)

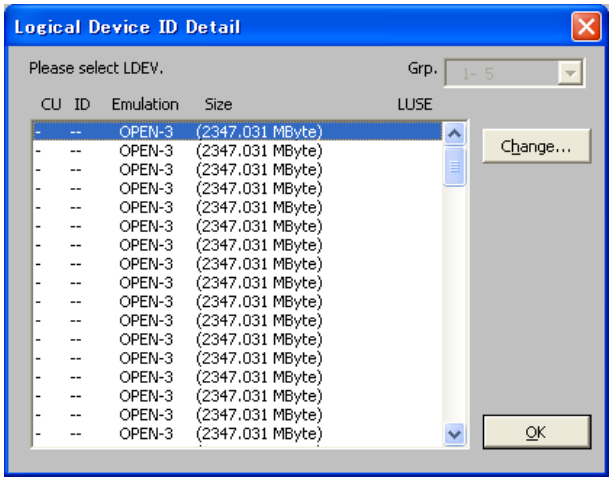
[Clear]: Select (CL) [Clear] to delete.

Grp*: The top parity group where RAID Concatenation is installed.

• '-----' is displayed in the Status area for the parity group to which LDEV ID is not assigned.

After setting up all items, select (CL) [Detail...] to confirm the items that have been set up, and select (CL) [>>Next]. Go to Step (11).

(10)-2 Detailed Definition Screen for LDEV ID



LDEV ID is defined in detail for each LDEV in the parity group.

Select (CL) LDEV from the list box and select (CL) [Change...].

The screen for LDEV ID input is displayed. After setting, select (CL) [OK]. Return to step (10)-1.

• '-----' is displayed in the CU area and the ID area for the LDEV to which LDEV ID is not assigned.

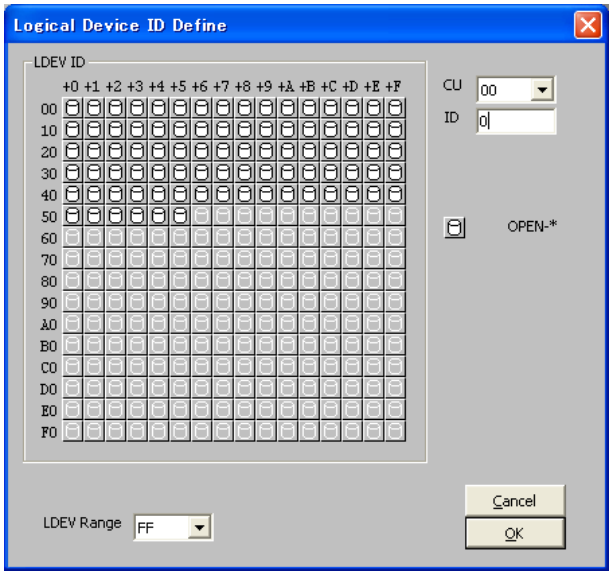
Note: In the case of a RAID Concatenation Group, LDEV of the parity group selected by the "Grp List" is displayed.

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(10)-3 Input LDEV ID

Select CU ID in the CU combo box.
The status of usage of ID in the CU is displayed in the LDEV ID panel.
White disk of panel: not used
Patterned disk of panel: using
Input LDEV ID you want to set or the head LDEV ID in the ID Edit box.
After setting, select (CL) [OK]. Return to step (10)-1.

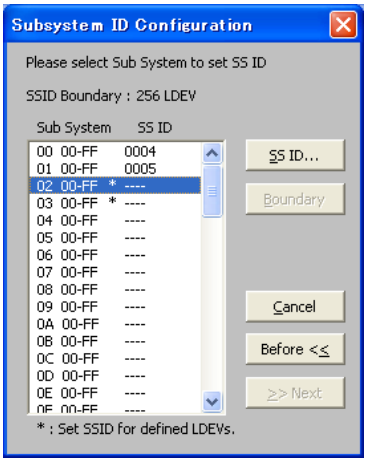
Note: The definition range (terminal) is decided with LDEV Range.
For example, if LEDV Range is defined as 7F, LDEV ID is assigned only within the range of 00 to 7F.



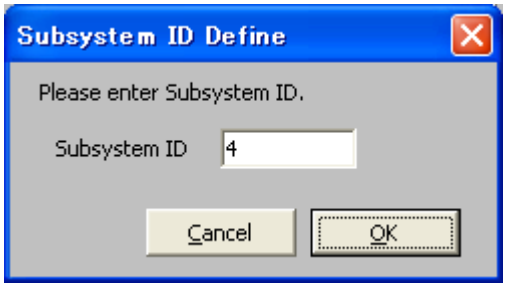
(11) <Define Subsystem ID>

To define Subsystem ID, select (CL) the item from the list box and select (CL) [SSID]. See step (11)-1.

After setting, select (CL) [>>Next].



(11)-1 Define Subsystem ID and select (CL) [OK].
Return to step (11).

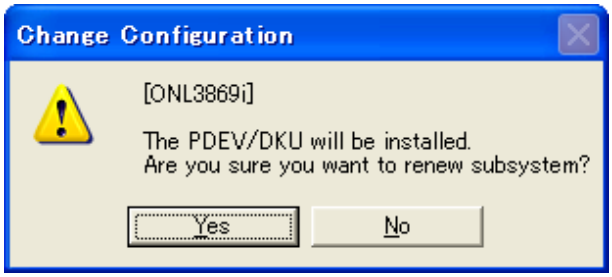


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(12) <Start installation>

Select (CL) [Yes] in response to "The PDEV/DKU will be installed. Are you sure you want to renew subsystem?".

When [No] is selected (CL), returns to INST03-10D-260 step (3).



---

(13) <Download microprogram>

Microprograms are automatically downloaded for each processor.

---

(14) <Install DKA>

"Upgrading of the DKA..."

(14)-1 <Perform Battery hardware installation>

"Insert the battery assembly, and then OK." is displayed, when battery install is required.

- When a message is displayed, perform the install hardware components according to the Battery hardware installation procedure. After installed, select (CL) [OK].

- When a message is not displayed, go to step (15).

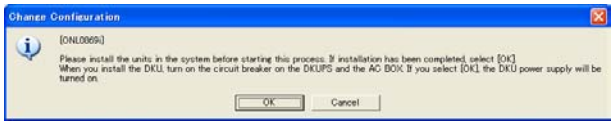


---

(15) <Check that hardware components are installed>

At this point refrain from pressing the [OK] button.

"Please install the units in the system before starting this process. If installation has been completed, select [OK]. When you install the DKU, turn on the circuit breaker on the DKUPS and the AC BOX. If you select [OK], the DKU power supply will be turned on." is displayed.

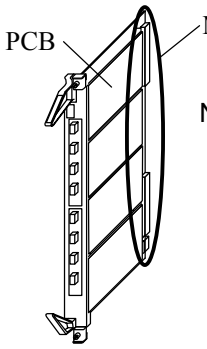


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3.10.5.6 Installation Procedure of MIX Adapter (DKC-F515I-MIX2R/MIX4R) (Only new installation)

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

1. Insertion of the PCBs
   a. Insert the MIX PCBs to the correct locations in the Logic Box and fasten the two screws. Refer to the Table 3.10.5.6-1 and Fig. 3.10.5.6-1.



Note: 1. Check that the main edge connector of the PCB has no deformation, damage or sticking of dust before installing the PCB.
2. When installing the PCB, hold the top and bottom of the PCB with both hands, and insert it straight not to contact the neighboring PCB.

Table 3.10.5.6-1 Inserting Location

No.	Option Name	Location No.		Remarks
		Cluster 1	Cluster 2	
1	Add.	MIX-1A	MIX-2F	

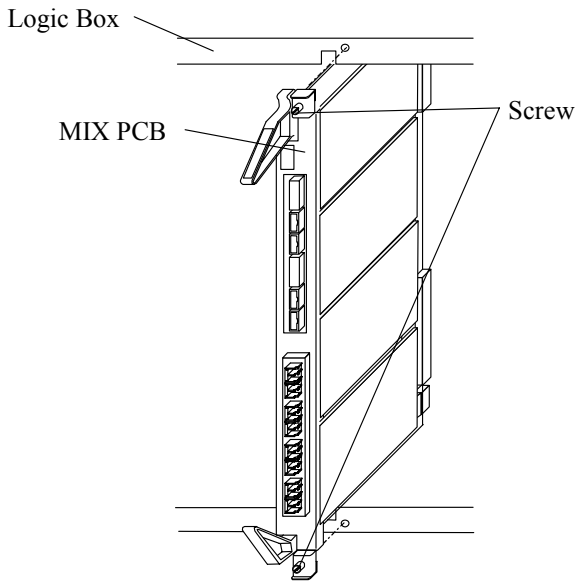


Fig. 3.10.5.6-1 Insertion of PCB

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2. Cable Routing
   a. When wiring for Optical fibre cables from the floor, draw in the cables from the opening, and go to step e.
      When wiring for Optical fibre cables from the top cover, go to step b.
   b. Loosen the two screws and open the slide cover.
   c. Draw in the optical fibre cable from the cable insertion hole of top cover into the frame.
   d. Fix the optical fibre cables with the three repeat binders.

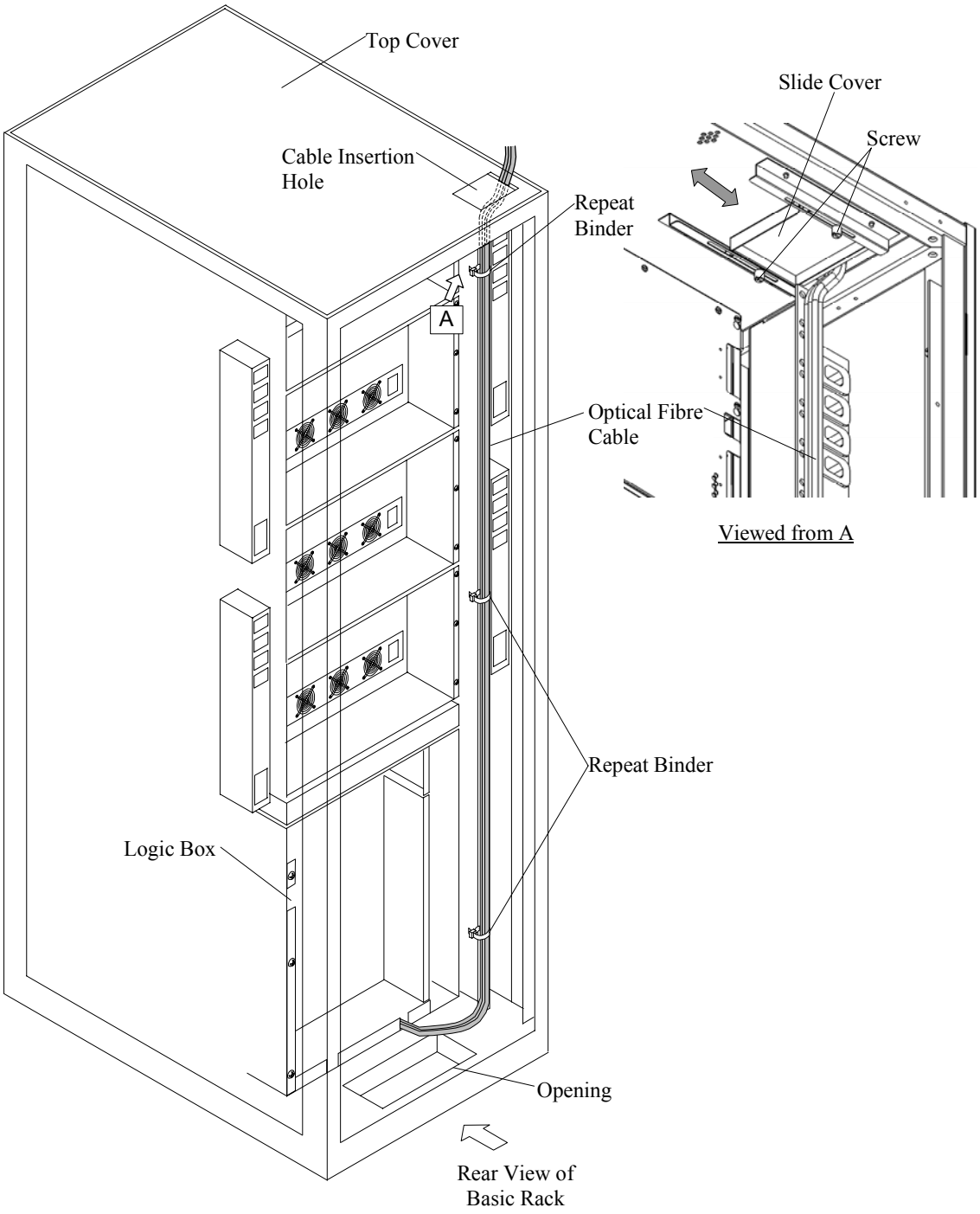


Fig. 3.10.5.6-2 Cable Routing

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e. Loosen the screw and remove the stopper.
f. Remove the two cores by pulling them toward you.
g. Place the optical fibre cables in the grooves on the each core and fasten them with the binder. When doing it, be sure to give the cables excess lengths so that they are not stretched too tightly. (Put the cables (two ports or more) in one groove of the core.)
h. Install the cores to which the optical fibre cables have been fixed and fasten them with the stopper and a screw.

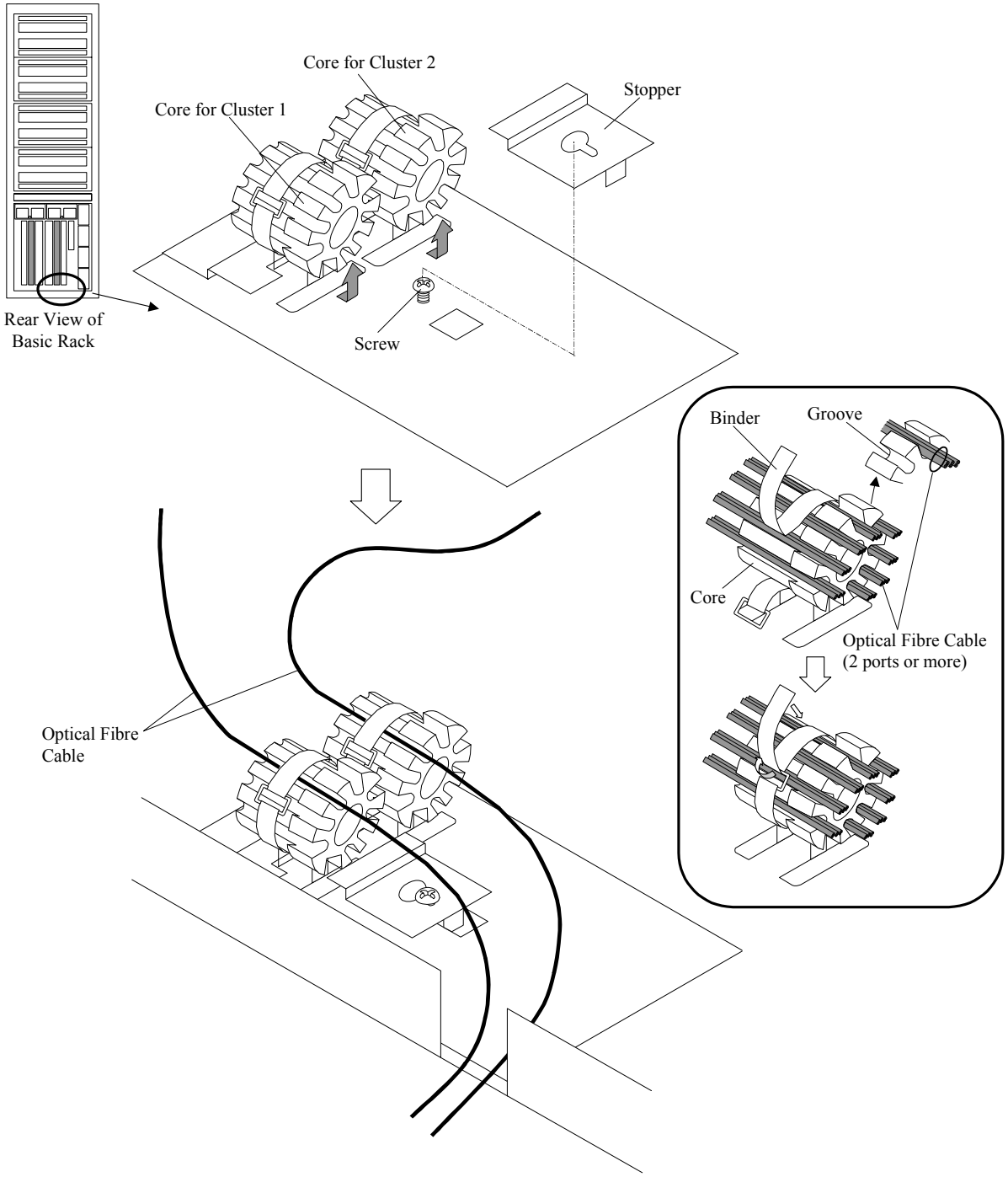


Fig. 3.10.5.6-3 Fixation of Optical Fibre Cables

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3. Cleaning the fibre cable connectors.
   For the tools needed for the cleaning, refer to the tool list on page PARTS06-10.
   a. Blow compressed gas against the connector using an air sprayer (for about five seconds).
   b. Wipe the connector lightly with a piece of cut gauze wet with ethyl alcohol.
   c. Blow compressed air again and check the result of the cleaning. (None of dust, sticking of foreign matter, and dirt must be observed.)

4. Connection of cables

Note: A serious failure occurs if any of cables/connectors is wrongly connected. Since a label bearing a connection destination is affixed on each cable/connector, work very carefully referring to it and the wiring diagram.

   a. Remove the caps from the cables and connect the DEV interface cables to the MIX PCBs.

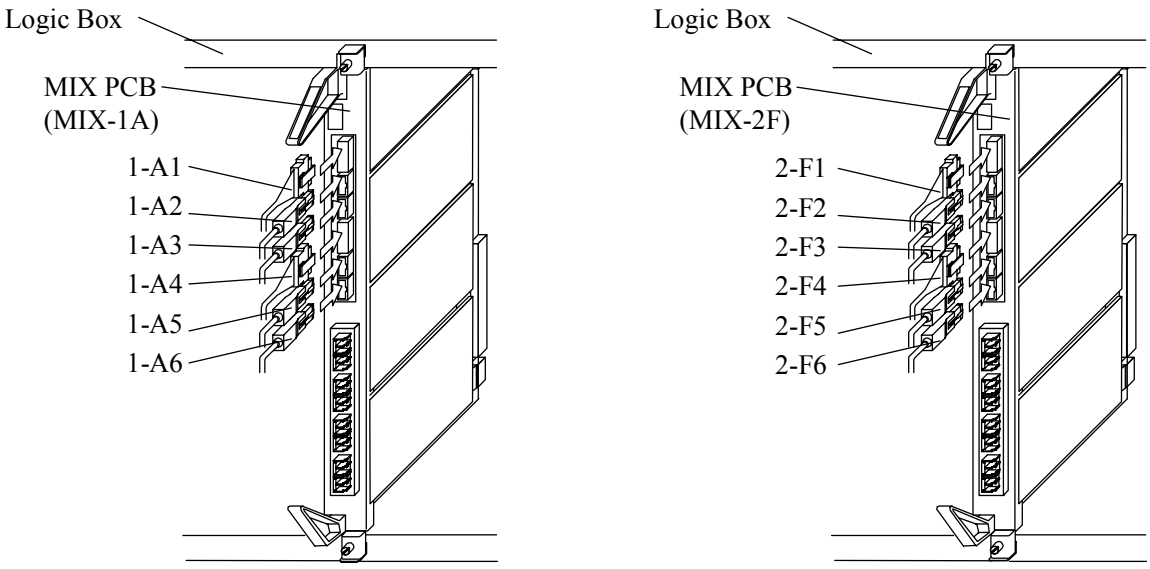
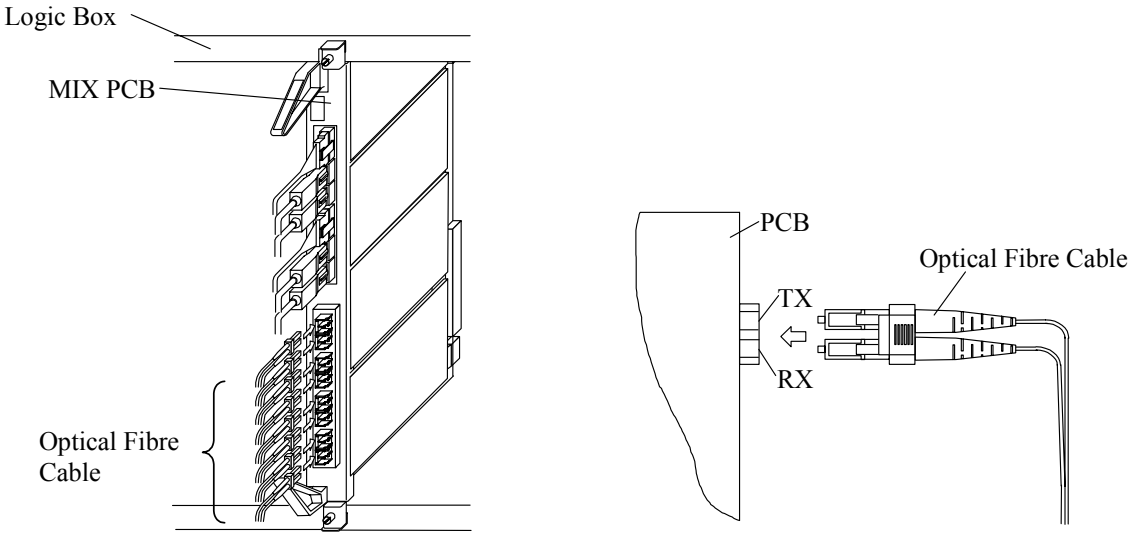


Fig.3.10.5.6-4 Connection of DEV Interface cables

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b. Connect the optical fibre cables to the MIX PCBs.



MIX PCB (Port Number)

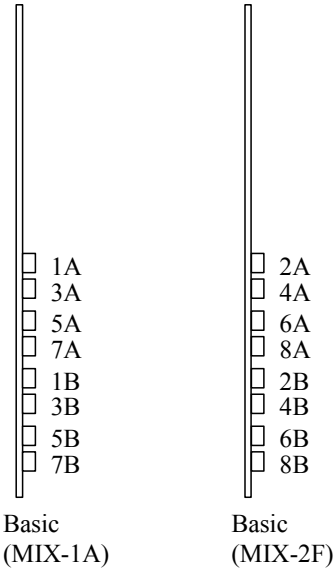


Fig.3.10.5.6-5 Connection of Optical Fibre cables

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5. Attachment of nameplate
   a. Remove the screw from the rack frame and remove the nameplate tags to be installed.
   b. Attach the nameplate to the nameplate tag on the Rack frame.
   c. Attach all the nameplate tags with the screw.

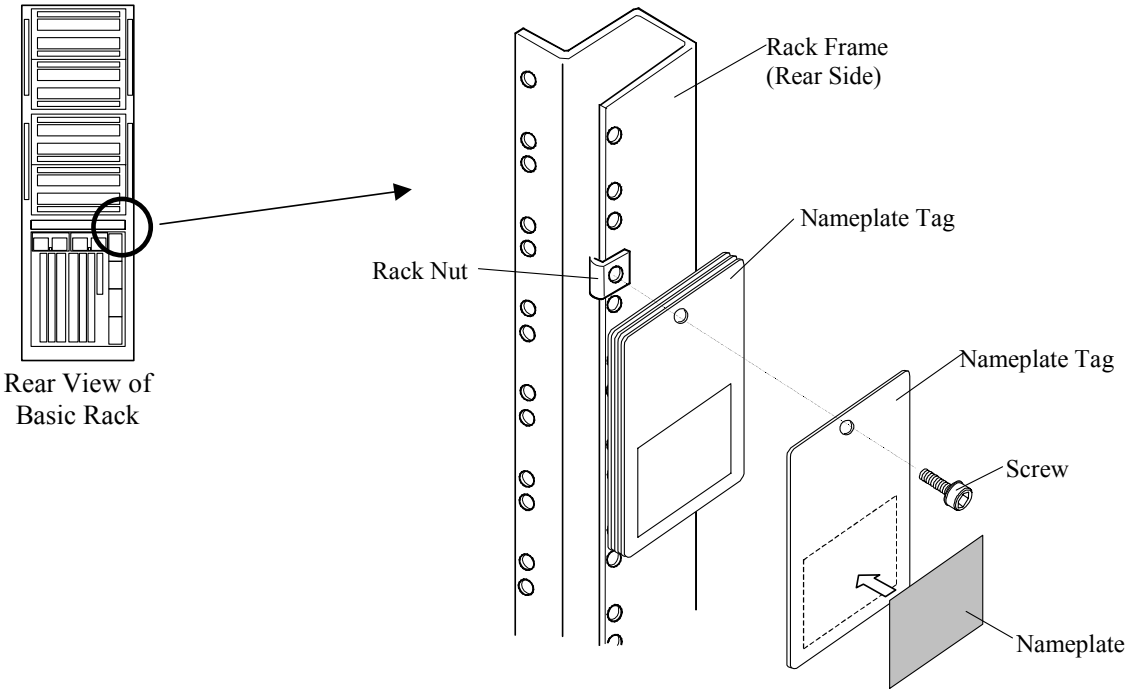


Fig.3.10.5.6-6 Attachment of Nameplate

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3.10.5.7 Installation Procedure of HDD Canister (DKU-F505I-72KS/72JSR/72KSR/146JS/146JSR/146KSR/300JSR/300KSR/400JSR/72K1R/146J1R/146K1R/300J1R)

1. Confirmation of position to install HDD canister
   (i) RAID5(3D+1P)/RAID1(2D+2D)
   Relations between the installation locations of the RAID groups and the RAID group numbers set through the SVP are shown in Table 3.10.5.7-1.

Table 3.10.5.7-1 Relation between HDDs installation order and RAID group number (3D+1P/2D+2D)

DKU-RK0		DKU-RK1		DKU-RK2		DKU-RK3	
Installation Order	RAID Group No.	Installation Order	RAID Group No.	Installation Order	RAID Group No.	Installation Order	RAID Group No.
001	1-01	016	2-01	031	3-01	046	4-01
002	1-02	017	2-02	032	3-02	047	4-02
003	1-03	018	2-03	033	3-03	048	4-03
004	1-04	019	2-04	034	3-04	049	4-04
005	1-05	020	2-05	035	3-05	050	4-05
006	1-06	021	2-06	036	3-06	051	4-06
007	1-07	022	2-07	037	3-07	052	4-07
008	1-08	023	2-08	038	3-08	053	4-08
009	1-09	024	2-09	039	3-09	054	4-09
010	1-10	025	2-10	040	3-10	055	4-10
011	1-11	026	2-11	041	3-11	056	4-11
012	1-12	027	2-12	042	3-12	057	4-12
013	1-13	028	2-13	043	3-13	058	4-13
014	1-14	029	2-14	044	3-14	059	4-14
015 *1 (Spare)	1-15/ Spare	030 *1 (Spare)	2-15/ Spare	045 *1 (Spare)	3-15/ Spare	060 *1 (Spare)	4-15/ Spare

*1: 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	

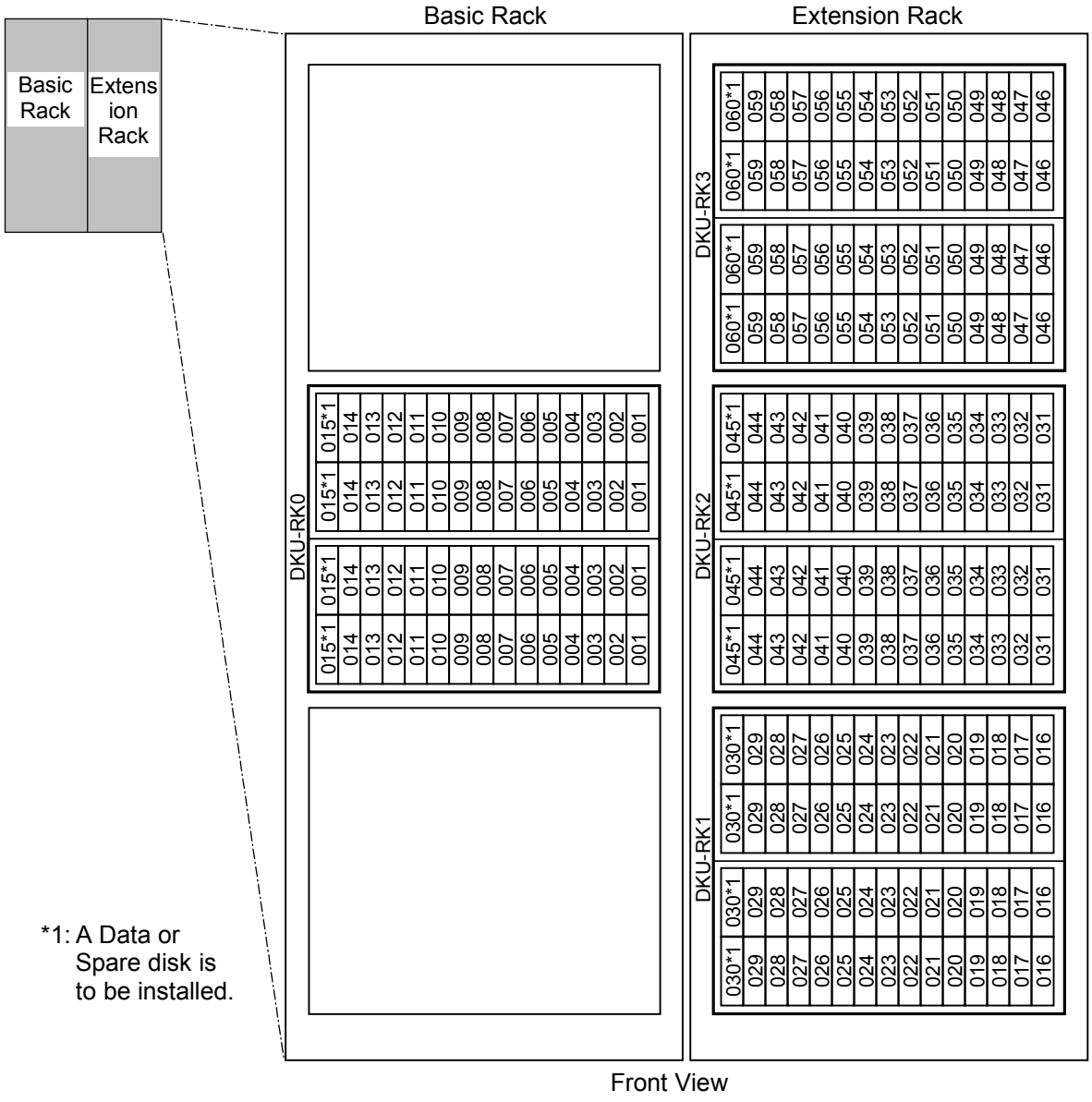


Fig. 3.10.5.7-1 (3D+1P/2D+2D) Data Drive/Parity Drive Expansion Sequence

The relationship between HDDs installation order and RAID group number is shown in the Table 3.10.5.7-1.

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(ii) RAID6(6D+2P)/RAID5(7D+1P)

Relations between the installation locations of the RAID groups and the RAID group numbers set through the SVP are shown in Table 3.10.5.7-2.

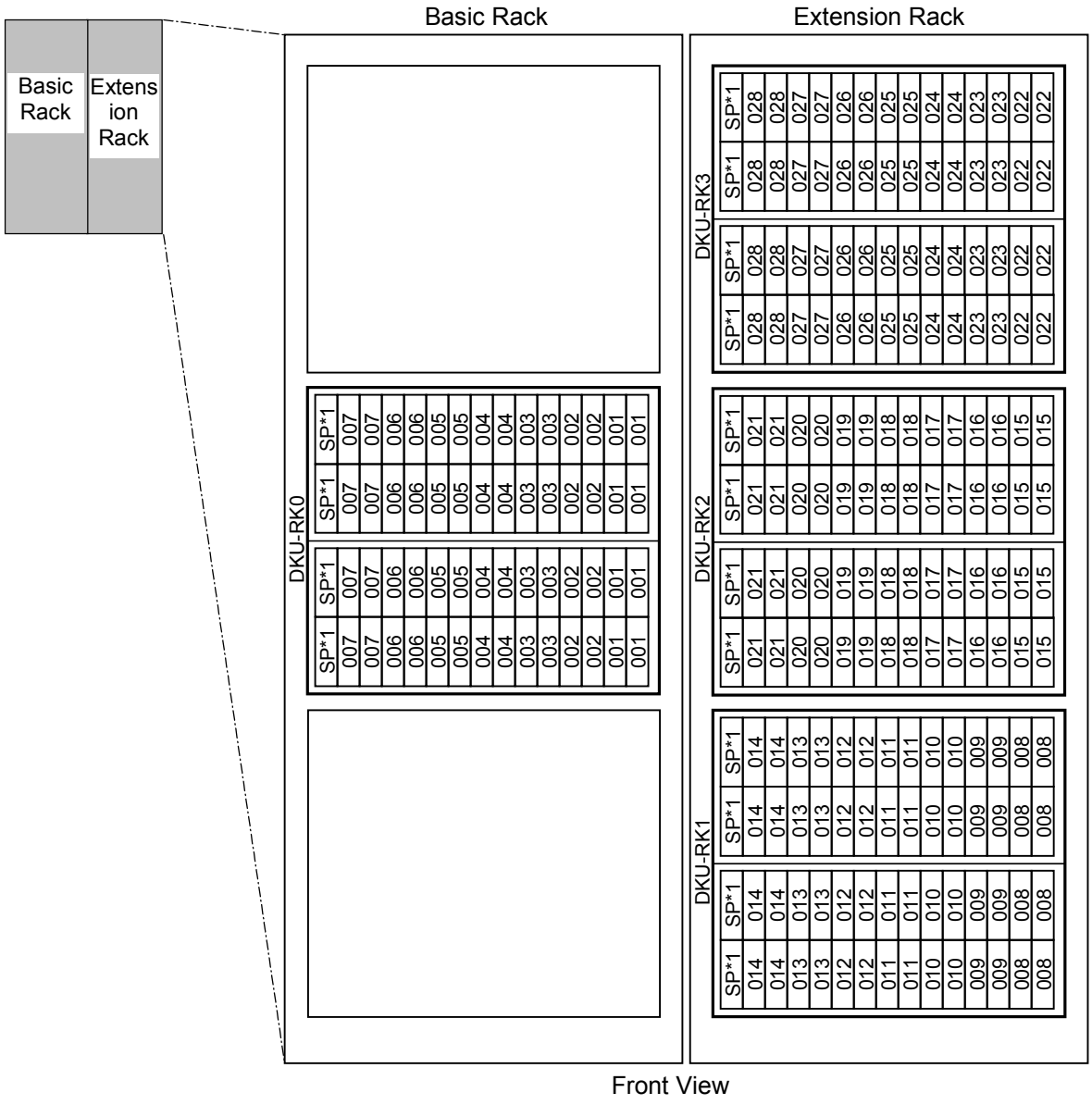
Table 3.10.5.7-2 Relation between HDDs installation order and RAID group number (6D+2P/7D+1P)

DKU-RK0		DKU-RK1		DKU-RK2		DKU-RK3	
Installation Order	RAID Group No.	Installation Order	RAID Group No.	Installation Order	RAID Group No.	Installation Order	RAID Group No.
001	1-01	008	2-01	015	3-01	022	4-01
002	1-03	009	2-03	016	3-03	023	4-03
003	1-05	010	2-05	017	3-05	024	4-05
004	1-07	011	2-07	018	3-07	025	4-07
005	1-09	012	2-09	019	3-09	026	4-09
006	1-11	013	2-11	020	3-11	027	4-11
007	1-13	014	2-13	021	3-13	028	4-13
Spare *1	Spare	Spare *1	Spare	Spare *1	Spare	Spare *1	Spare

*1: To be left vacant 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	



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

Fig. 3.10.5.7-2 (6D+2P/7D+1P) Data Drive/Parity Drive Expansion Sequence

The relationship between HDDs installation order and RAID group number is shown in The Table 3.10.5.7-2.

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(iii) Spare HDD

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

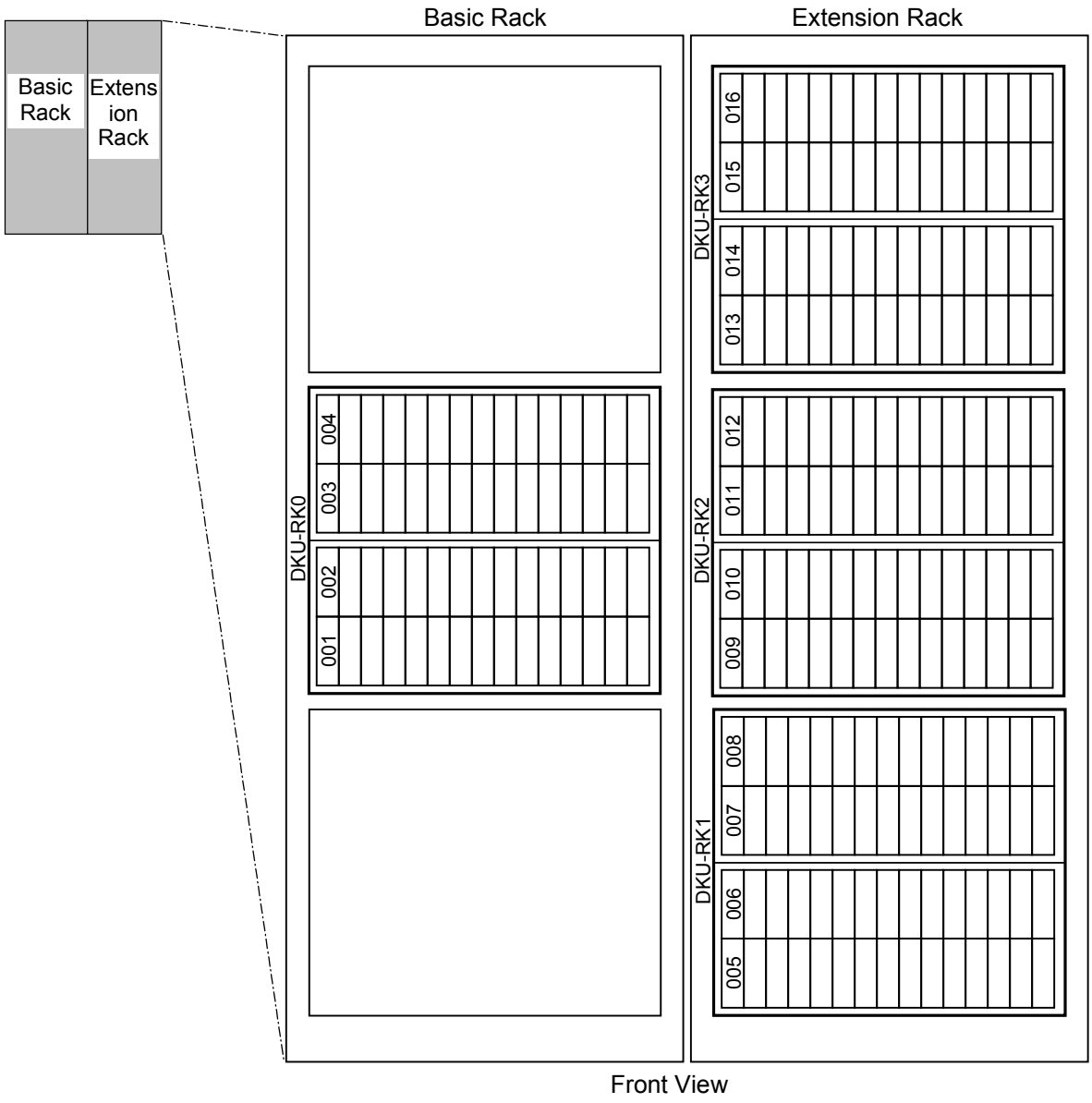


Fig. 3.10.5.7-3 Spare Drive Expansion Sequence

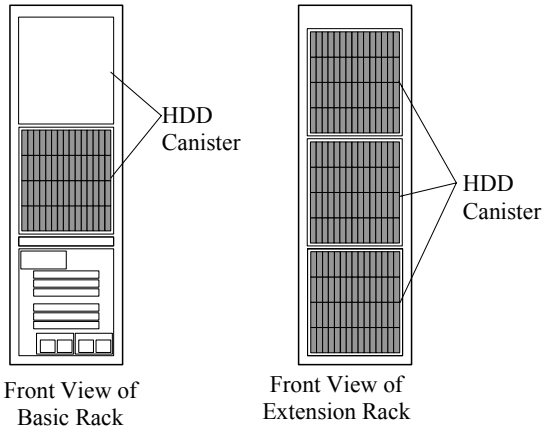
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2. Installation of the HDD Canister

Notice: (1) Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

(2) Since the HDD is a precision component, handle it very carefully not to apply a vibration or shock to it.

a. Remove the dummy canister from the HDU Box.
When the dummy canister cannot be removed by pulling of it only, remove it referring to page INST03-10D-510.



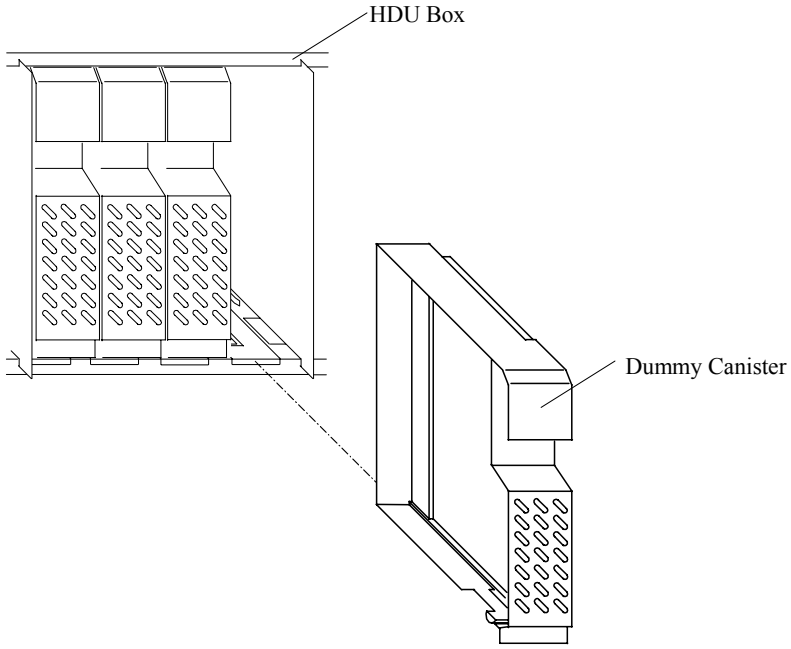


Fig. 3.10.5.7-4 Removal of Dummy Canister

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Procedure for removing the dummy canisters when they cannot be removed by pulling only.

a. While pulling the dummy canister by hand, insert a screwdriver (whose maximum shaft diameter is 5mm) into the gap of the canisters.
b. Release the hook using the screwdriver and remove the dummy canister.

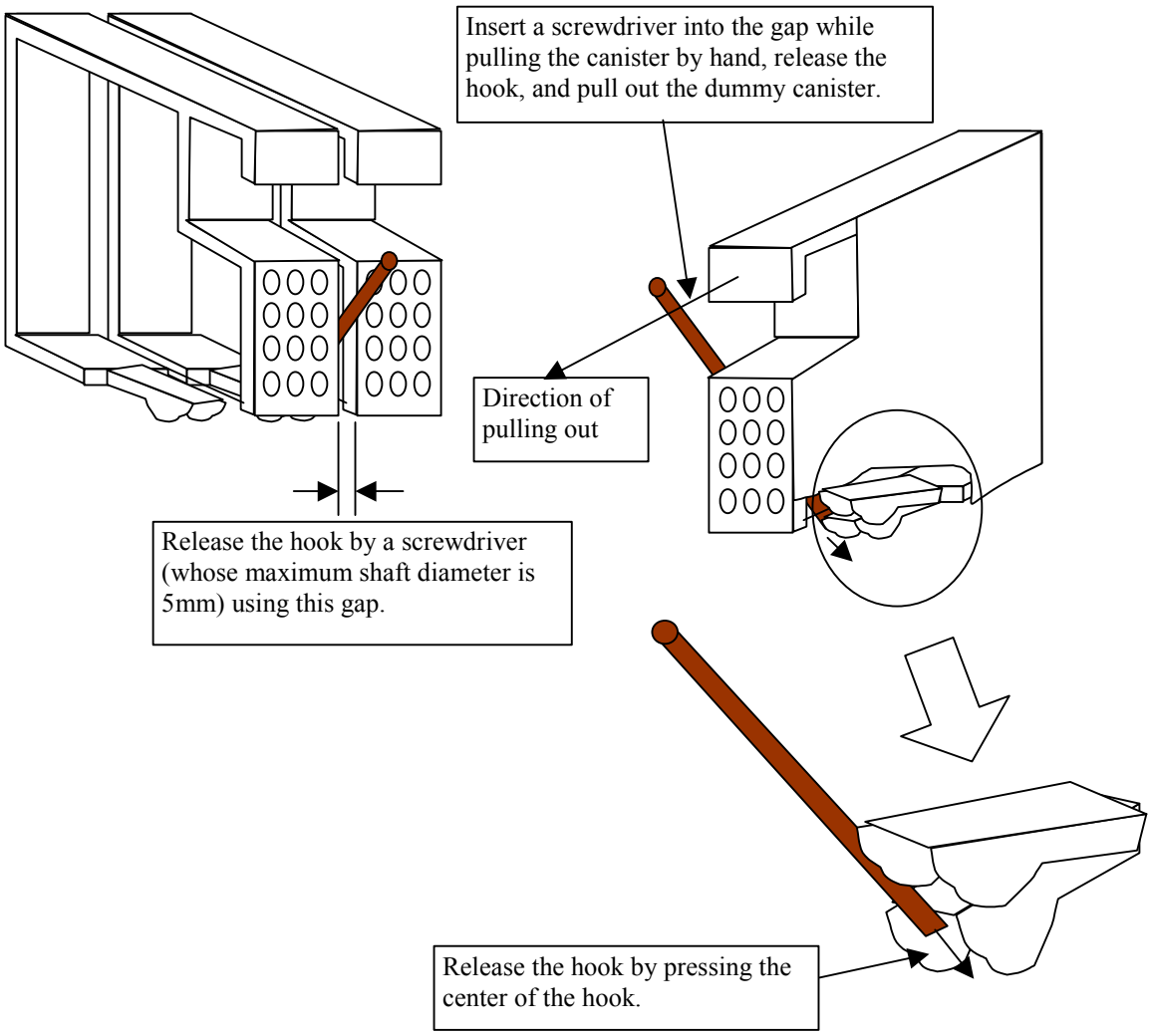
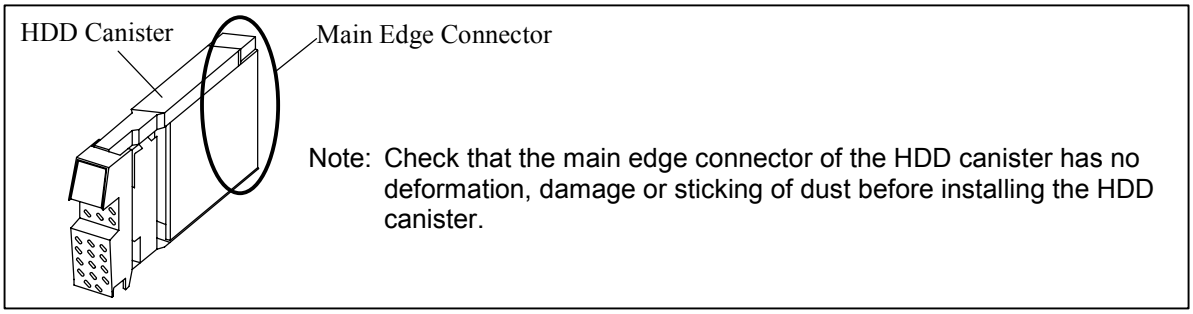


Fig. 3.10.5.7-5 Removal of Dummy Canister

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b. Check the condition of the HDD canister before installing it.



b-1 Check that the DC/DC connector is movable up and down, and a gap exists under the DC/DC connector.

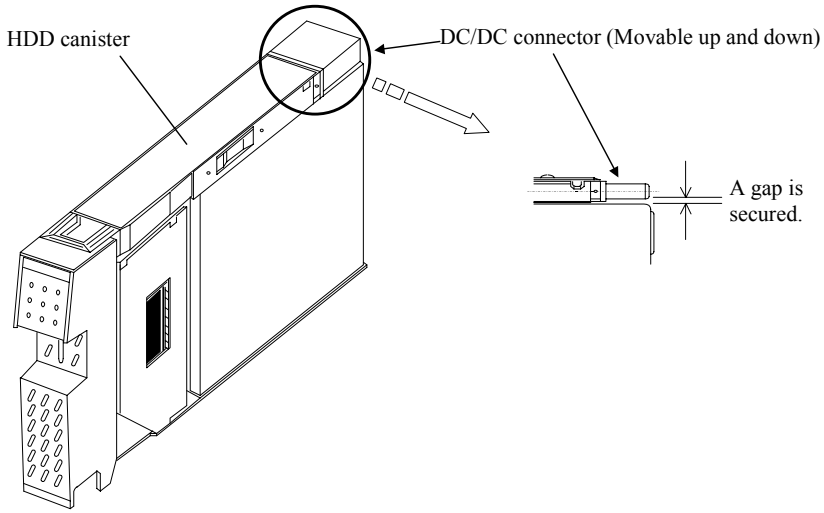


Fig. 3.10.5.7-6 Adjustment of DC/DC Connector Condition

b-2 Make sure that no cable is protruding from the rectangular opening on the side of the HDD canister. If it is protruding, put it back inside the opening.

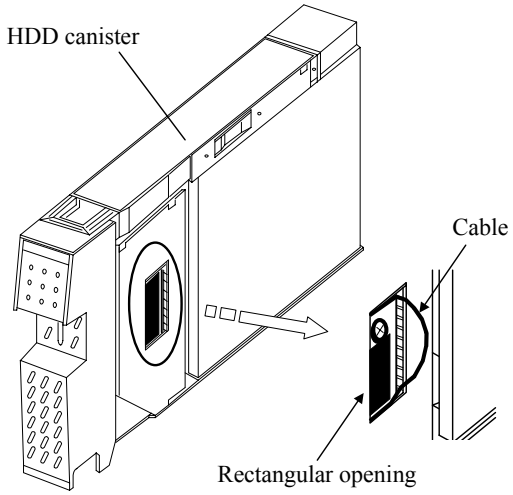


Fig. 3.10.5.7-7 Checking Protrusion of Cable

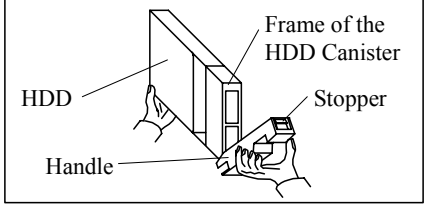
 Copyright © 2006, Hitachi, Ltd.

c. HDD canister install procedure

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

c-1 Insert the HDD canister into the HDU Box holding its handle.
(Insert the canister until the claws that are located at the bottom of the handle come in contact with the front side of the HDU Box.)

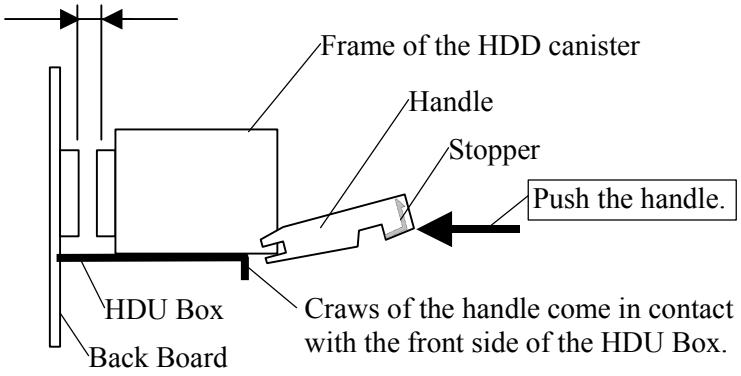
Handling of the HDD canister



c-2 Turn the handle at a stroke by pushing its top with your thumb.
(Turn the handle until it latches with the stopper. Do not stop the handle on its way of turning.)

c-1 Insert the HDD canister into the HDU Box holding its handle.

A gap exists between the connectors.



c-2 Turn the handle at a stroke by pushing its top with your thumb.
(Do not stop the handle on its way of turning.)

The connectors have been coupled.

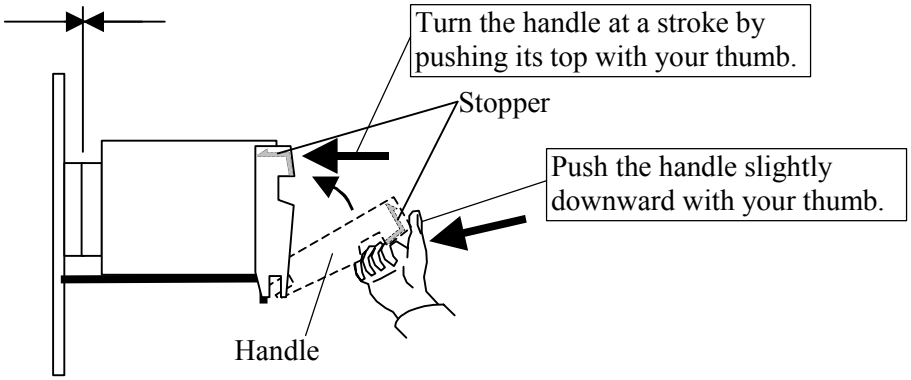


Fig. 3.10.5.7-8 Method of Installing HDD Canister

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3. Attachment of nameplate
   a. Remove the screw from the rack frame and remove the nameplate tags to be installed.
   b. When the nameplate is not attached, attach the nameplate to the nameplate tag.
   c. Affix a necessary portion of the Label (QTY)(Accessory of DKC; DWG No.3268905-1) in layers on the nameplate and paint out numbers by black oil felt pen. However, when the nameplate is unused, do not affix the Label (QTY) in layers, and just paint it out.
   d. Attach all the nameplate tags with the screw.

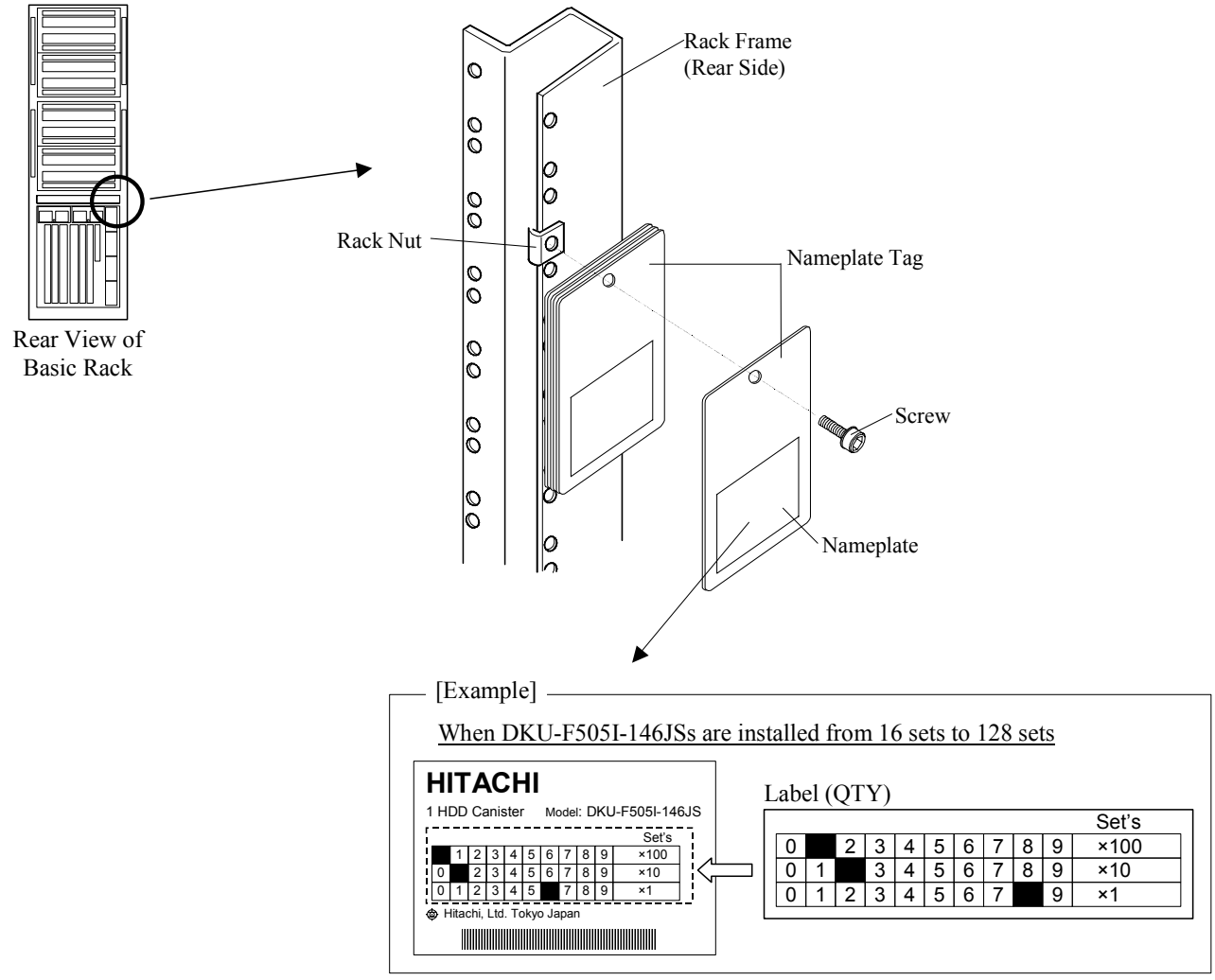


Fig. 3.10.5.7-9 Attachment of Nameplate

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3.10.5.8 Connection of DEV Interface Cable (DKC-F515I-UC1R/UC4R/EXC2R)

1. When you need to install DKC-F515I-EXC2R in the Basic Rack, connect the DEV interface cables.
   When you do not need to install DKC-F515I- EXC2R in the Basic Rack, go to step 2.
   a. Remove the caps from the DEV interface cables and connect the DEV interface cables to the FSW PCB in the DKU-RK0.

⚠ CAUTION

A serious failure occurs if any of cables/connectors is wrongly connected.
Since a label bearing a connection destination is affixed on each cable/connector, work very carefully referring to it and the wiring diagram.

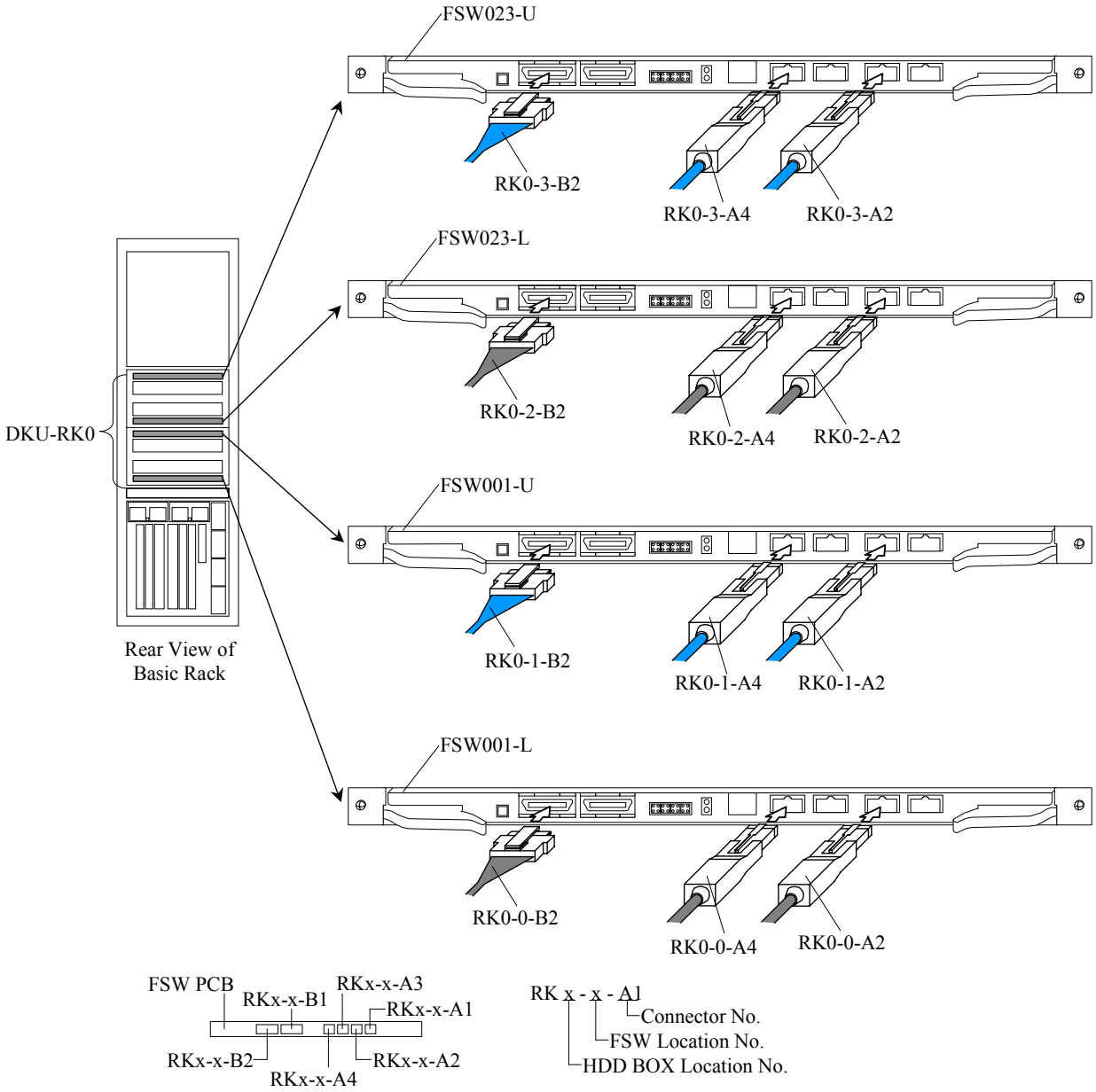


Fig. 3.10.5.8-1 Connection of DEV Interface Cables

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2. When you need to install DKC-F515I-UC4R in the Extension Rack, connect the DEV interface cables.
   When you do not need to install DKC-F515I-UC4R in the Extension Rack, go to step 3.
   a. Remove the caps from the DEV interface cables and connect the DEV interface cables to the FSW PCB in the DKU-RK1.

⚠ CAUTION

A serious failure occurs if any of cables/connectors is wrongly connected.
Since a label bearing a connection destination is affixed on each cable/connector, work very carefully referring to it and the wiring diagram.

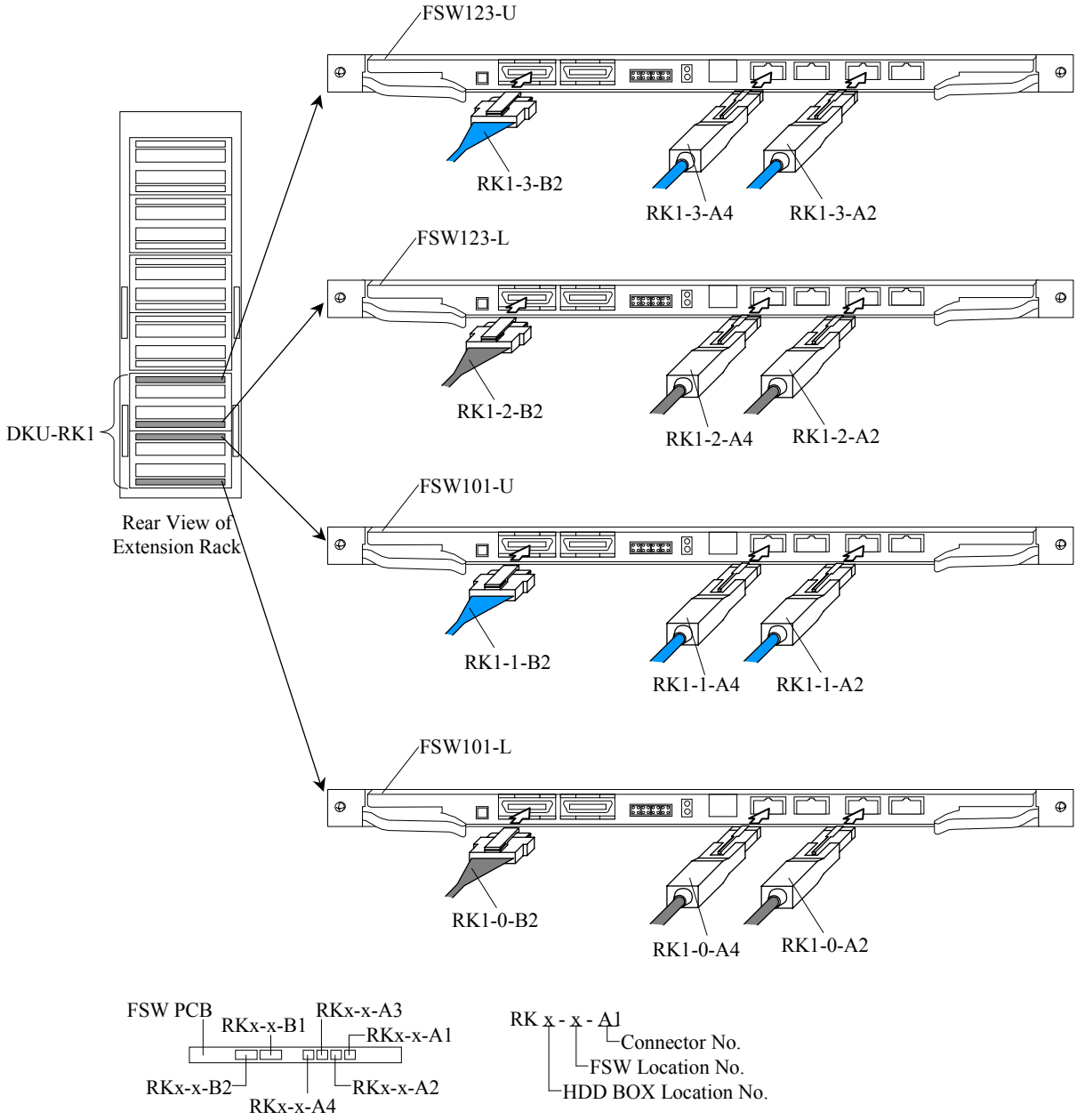


Fig. 3.10.5.8-2 Connection of DEV Interface Cables

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3. When you need to install DKC-F515I-UC1R, connect the DEV interface cables.
   When you do not need to install DKC-F515I-UC1R, go to section "3.10.5.9 SVP post procedure".
   a. Remove the caps from the DEV interface cables and connect the DEV interface cables to the FSW PCB in the DKU-RK2.

⚠ CAUTION

A serious failure occurs if any of cables/connectors is wrongly connected.
Since a label bearing a connection destination is affixed on each cable/connector, work very carefully referring to it and the wiring diagram.

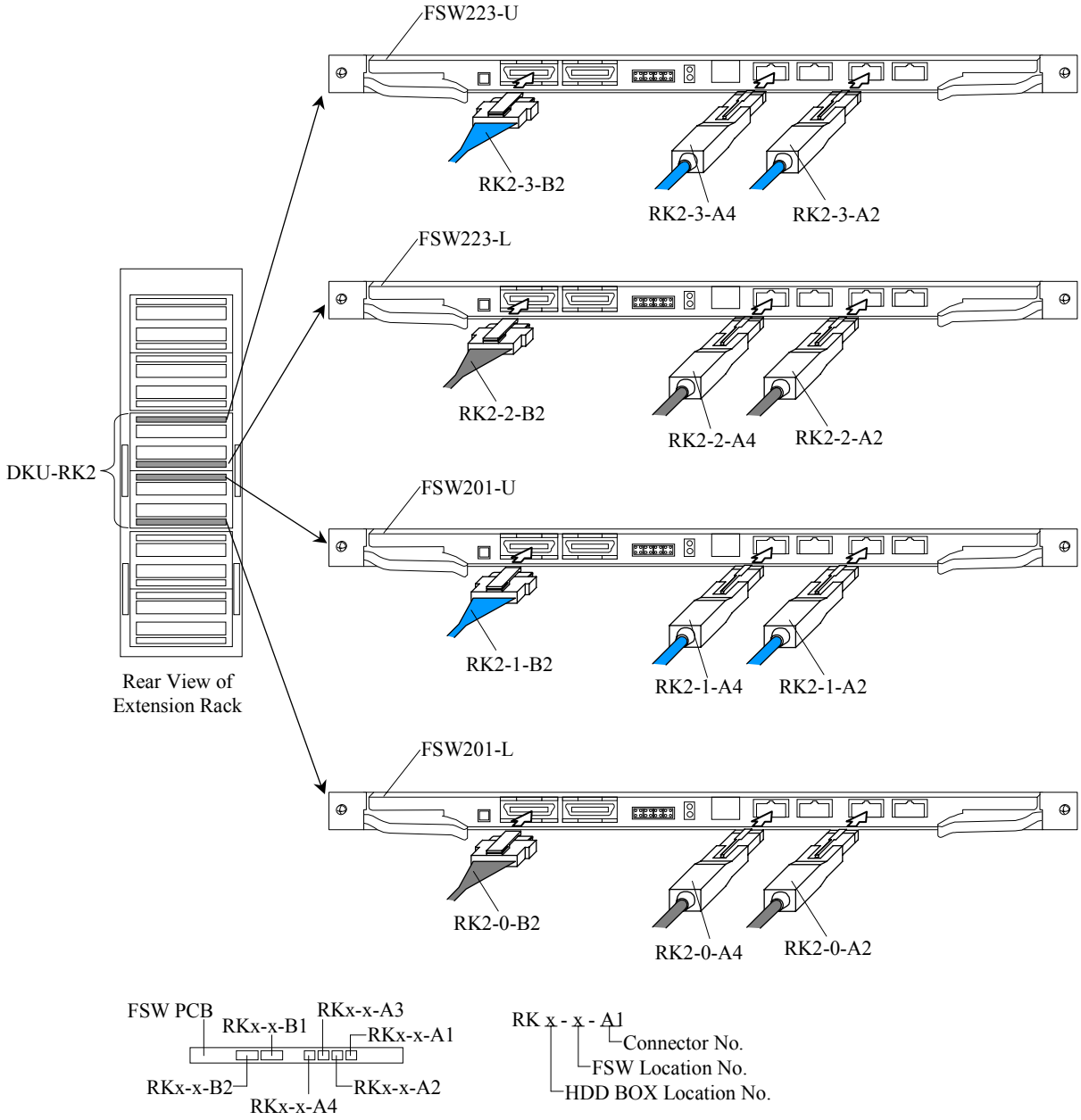
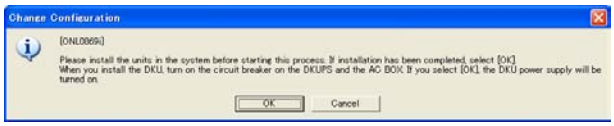


Fig. 3.10.5.8-3 Connection of DEV Interface Cables

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3.10.5.9 SVP post procedure

(1) <Check that hardware components are installed>
Select (CL) [OK] after making sure that all hardware components are installed correctly in response to “Please install the units in the system before starting this process. If installation has been completed, select [OK]. When you install the DKU, turn on the circuit breaker on the DKUPS and the AC BOX. If you select [OK], the DKU power supply will be turned on.”.



---

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

---

(3) <LDEV FORMAT>
“Formatting logical devices...” is displayed when Parity Group is defined.

---

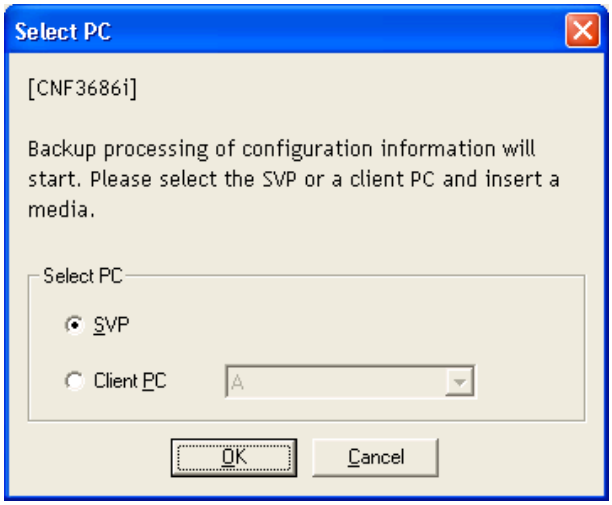
(4) <End of system update processing>
“Renewal process has completed. Please check subsystem status.” is displayed when recovery processing on all installed components is completed. Select (CL) [OK] in response to this message.



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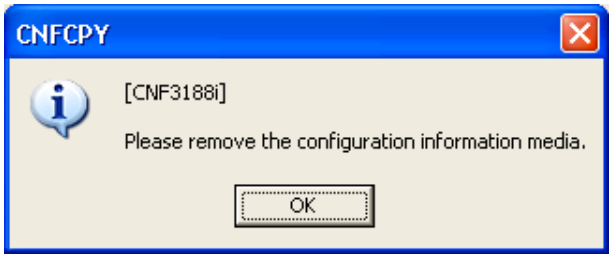
(5)

"Reading subsystem configuration data..." is displayed.
"Backup processing of configuration information will start. Please select the SVP or a client PC and insert a media." is displayed.
Insert the Config FD into FDD of selected PC, and select (CL) [OK].



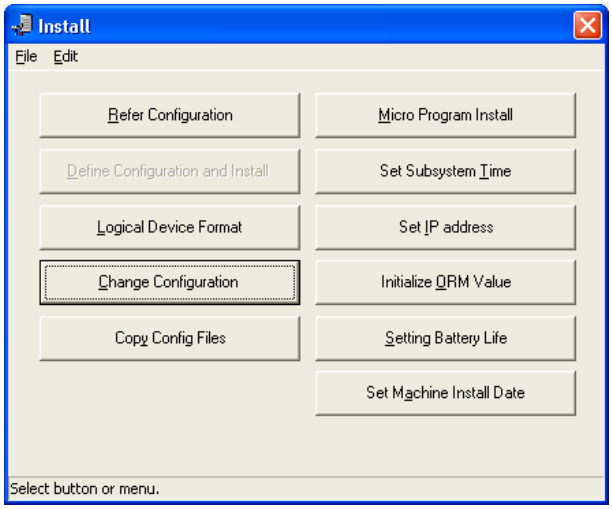
(6)

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



(7)

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



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

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3.10.5.10 Attachment of Covers (DKC-F515I-UC0R/UC1R/UC4R/EXC2R)

1. Attach the Logic Box cover and HDD Box covers. Refer to Fig. 3.10.5.10-1 and Fig. 3.10.5.10-2.

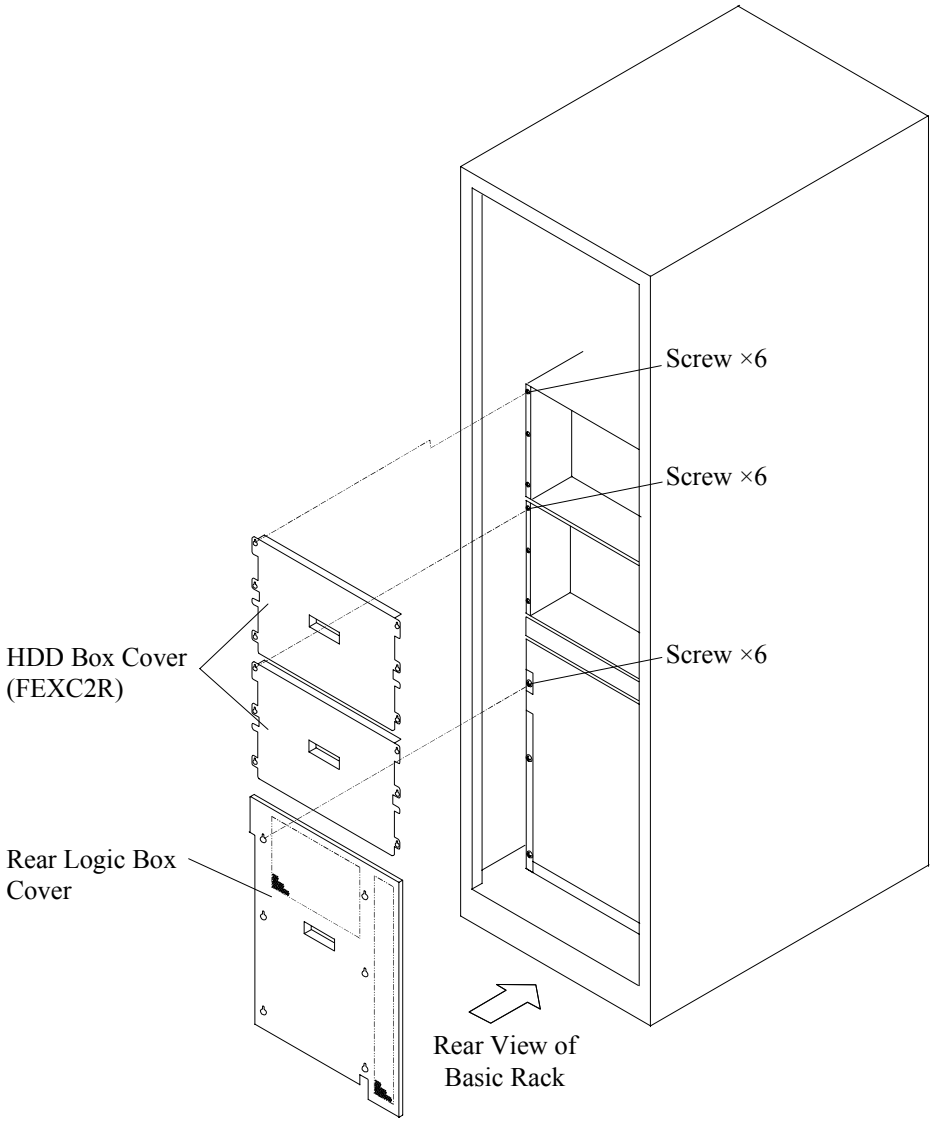


Fig. 3.10.5.10-1 Attachment of Covers

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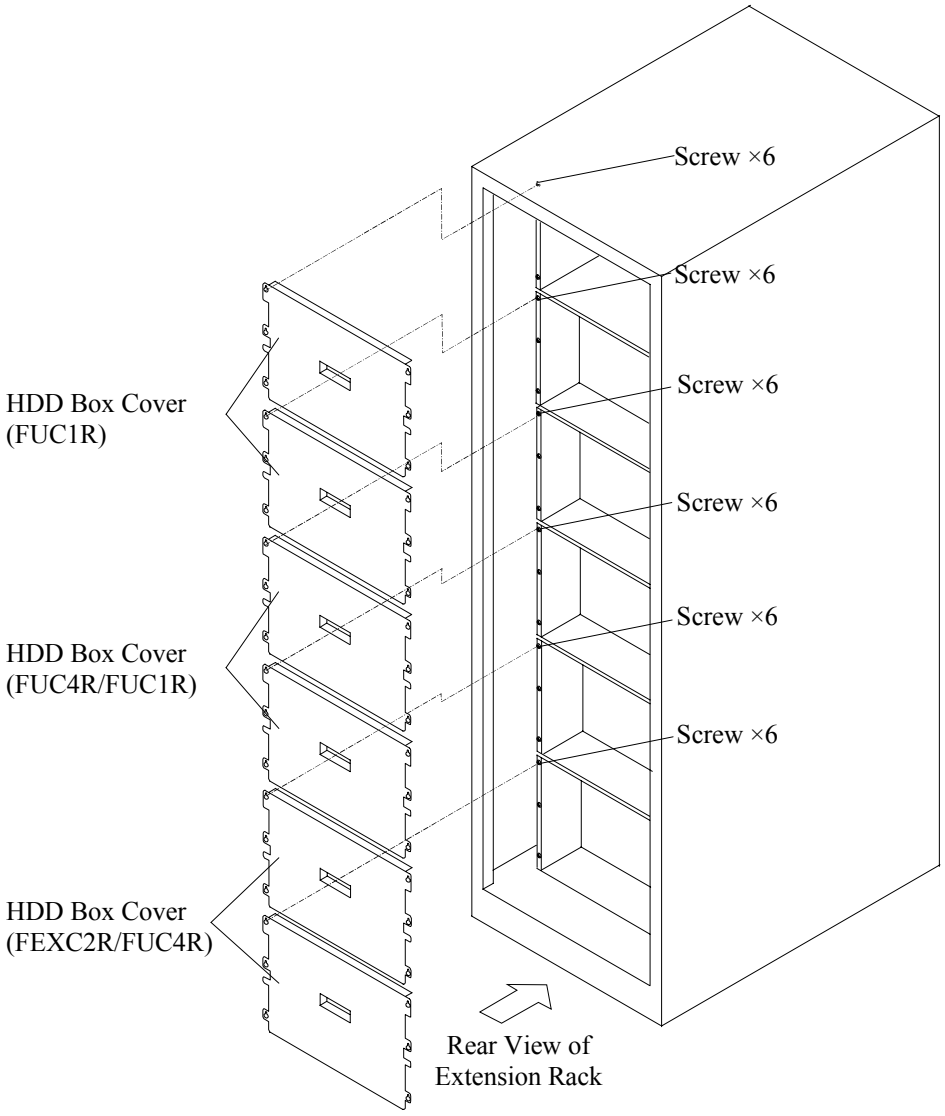


Fig. 3.10.5.10-2 Attachment of Covers

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

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3.11 Installation of Modem Card for Remote Maintenance (DKC-F510I-MDMR)

Note: When two control frames (DKCs) are installed in the Disk-less configuration, check the serial number of target DKC on the SVP screen and beware of a attachment position to prevent mistakes. (See “5.2.4 Refer Configuration 3. <DKC Configuration window>” [INST05-410].)

3.11.1 Parts List

Table 3.11.1-1 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKC-F510I- MDMR	MODEM Card	5524212-C	1	
		Nameplate (HDS)	2751038-39	1	RSD
			2751040-39/239		HICAM/HICEF
		Nameplate (HP)	2751038-139	1	RSD
			2751040-139/339		HICAM/HICEF

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3.11.2 Installation Procedure of Modem Card for Remote Maintenance

1. SVP Power OFF
   a. Loosen the screw and swing the plate by a right angle.
   b. Insert the maintenance jumper into JP1 on the SVP.

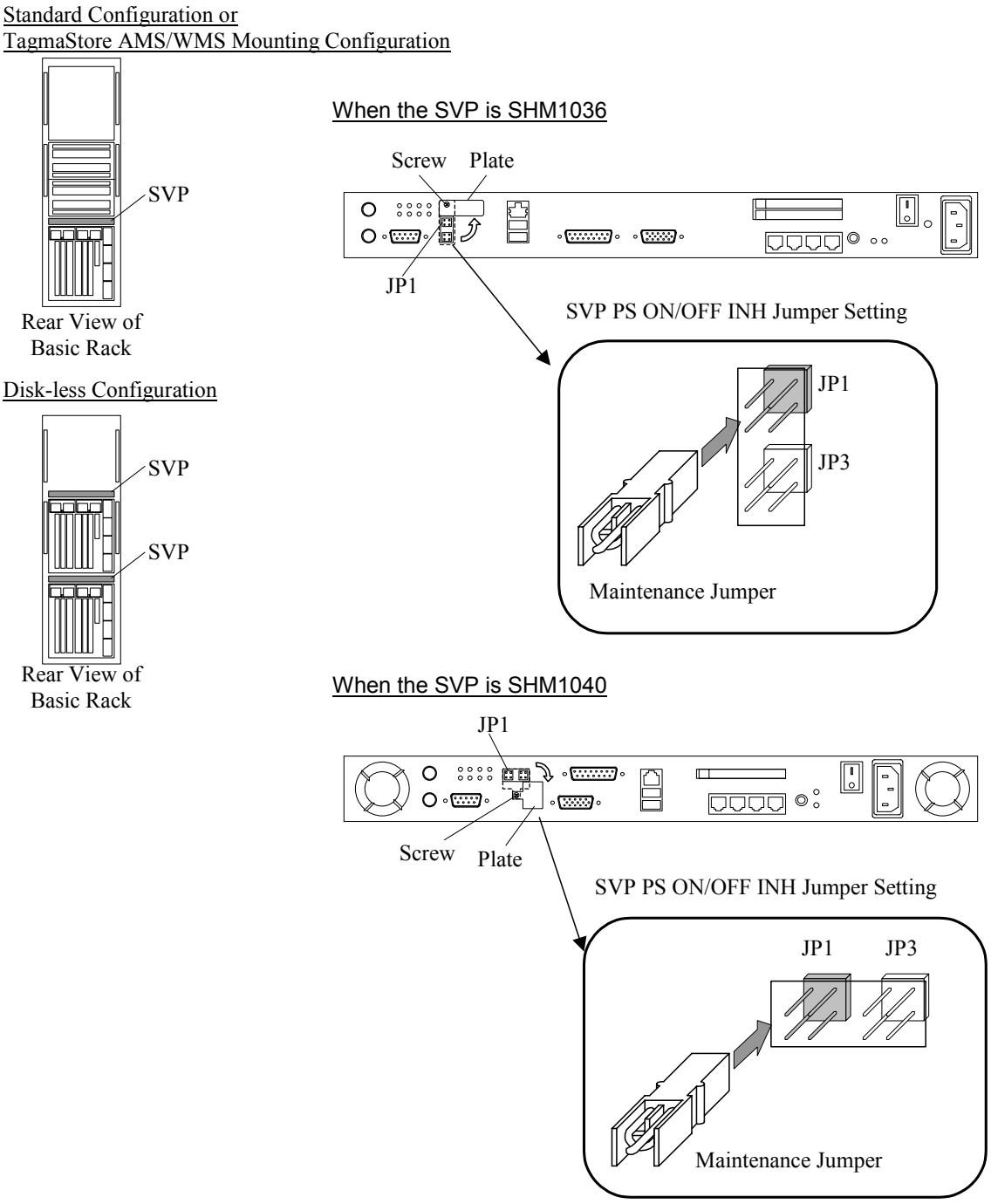
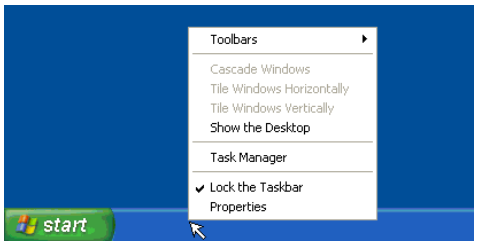


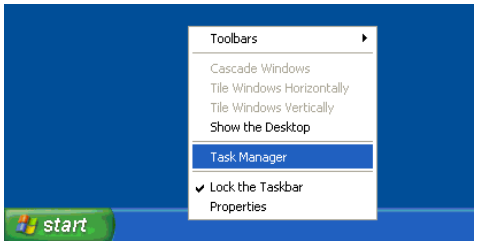
Fig. 3.11.2-1 Insertion of Maintenance Jumper

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c. Click the right button of a mouse on a taskbar.

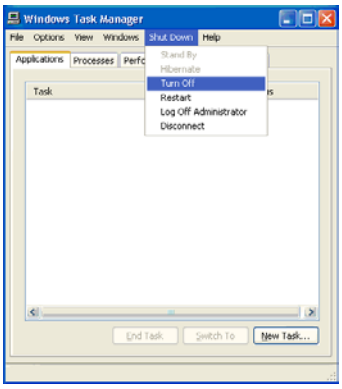


d. Select (CL) the [Task Manager].

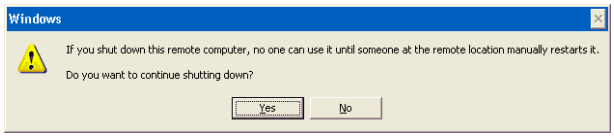


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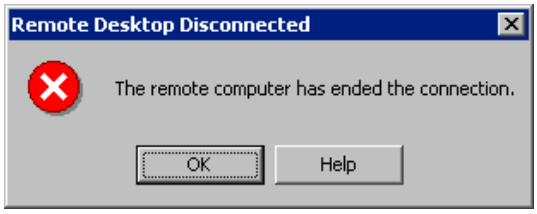
e. Select (CL) [Shut Down], and then select (CL) the [Turn Off].



f. Select (CL) the [Yes] button.

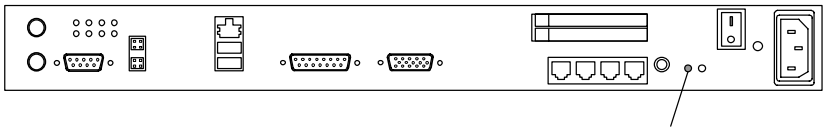


g. Select (CL) the [OK] button.



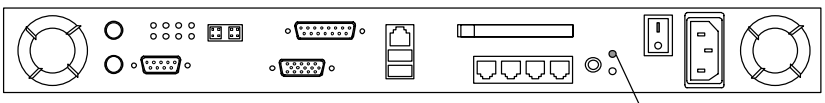
h. It waits until SVP POWER LED puts out the light.

When the SVP is SHM1036



Rear View of SVP

When the SVP is SHM1040



Rear View of SVP

Fig. 3.11.2-2 Location of SVP POWER LED

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2. Insertion of MODEM Card
   a. Insert the MODEM Card in the port on the SVP.
   b. Doing MODEM cable to the core 1turn and fix the core and LAN cables with the repeat binder.
   c. Connect the cable to the modem cable coupler.

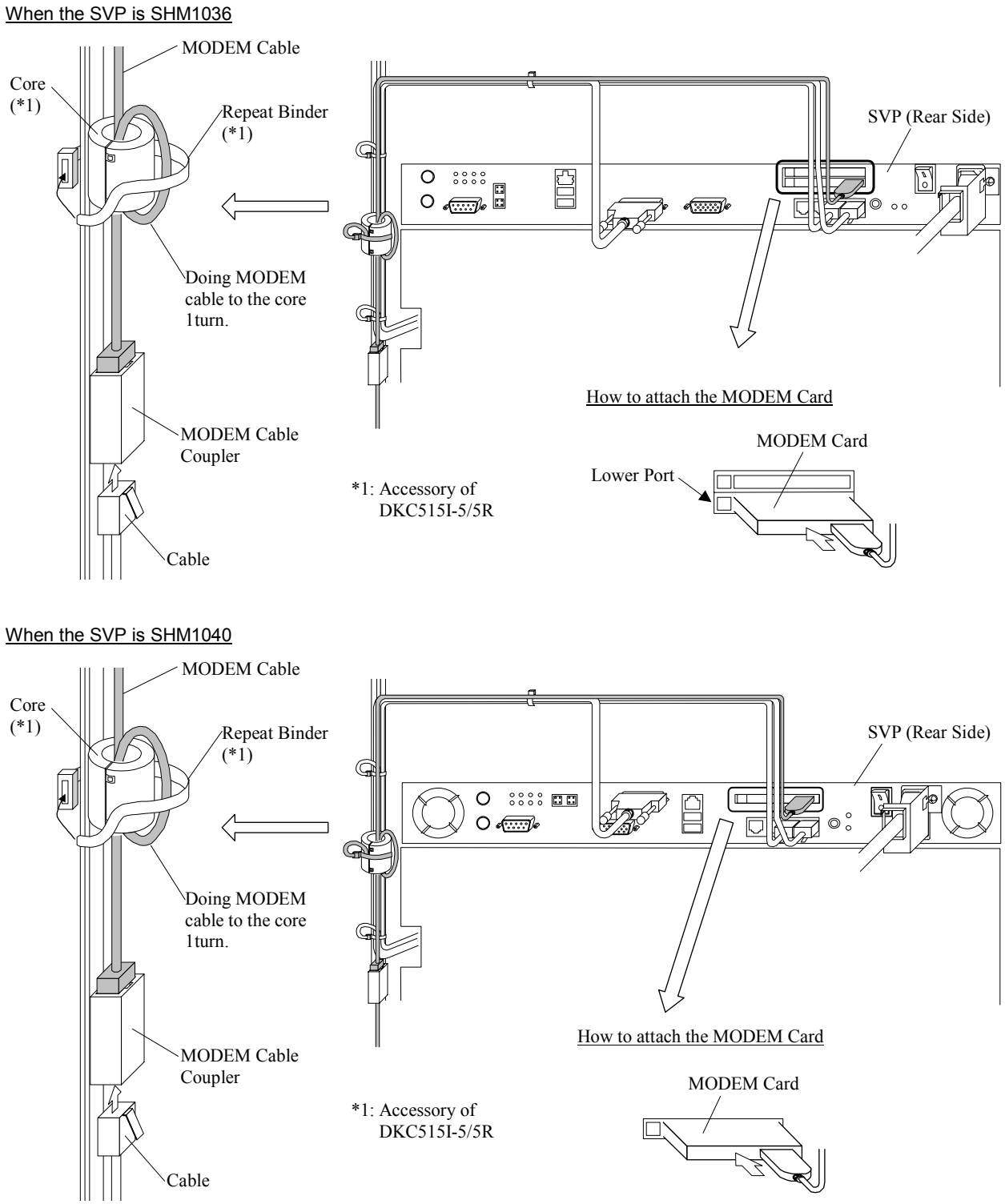
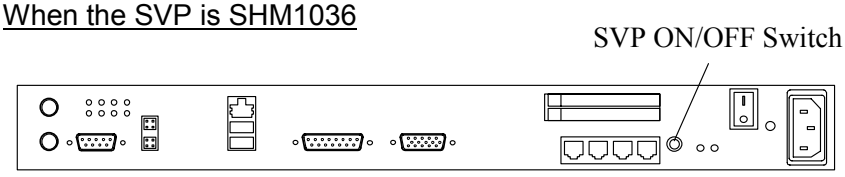


Fig. 3.11.2-3 Insertion of MODEM Card

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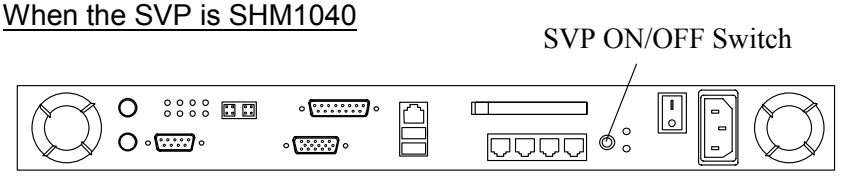
3. SVP Power ON.
   a. Press the SVP PS ON/OFF Switch on the SVP.

When the SVP is SHM1036



Rear View of SVP

When the SVP is SHM1040



Rear View of SVP

Fig. 3.11.2-4 SVP ON/OFF Switch

   b. Wait for a few minutes until the Windows system starts up.

   c. Select (CL) [Search] of the SVP Connect Utility through the Console PC.
   Make sure that the SVP concerned is displayed in the list. (See SVP01-60.)
   [Connection destination]
   xxx.xxx.xxx.15

   d. Remove the maintenance jumper of the JP1 on the SVP. Return the plate to original position and fasten the screw. Refer to Fig. 3.11.2-1.

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4. Attachment of the nameplate
   a. Remove the screw from the rack frame and remove the nameplate tags to be installed.
   b. Attach the nameplate to the nameplate tag on the Rack frame.
   c. Attach all the nameplate tags with the screw.

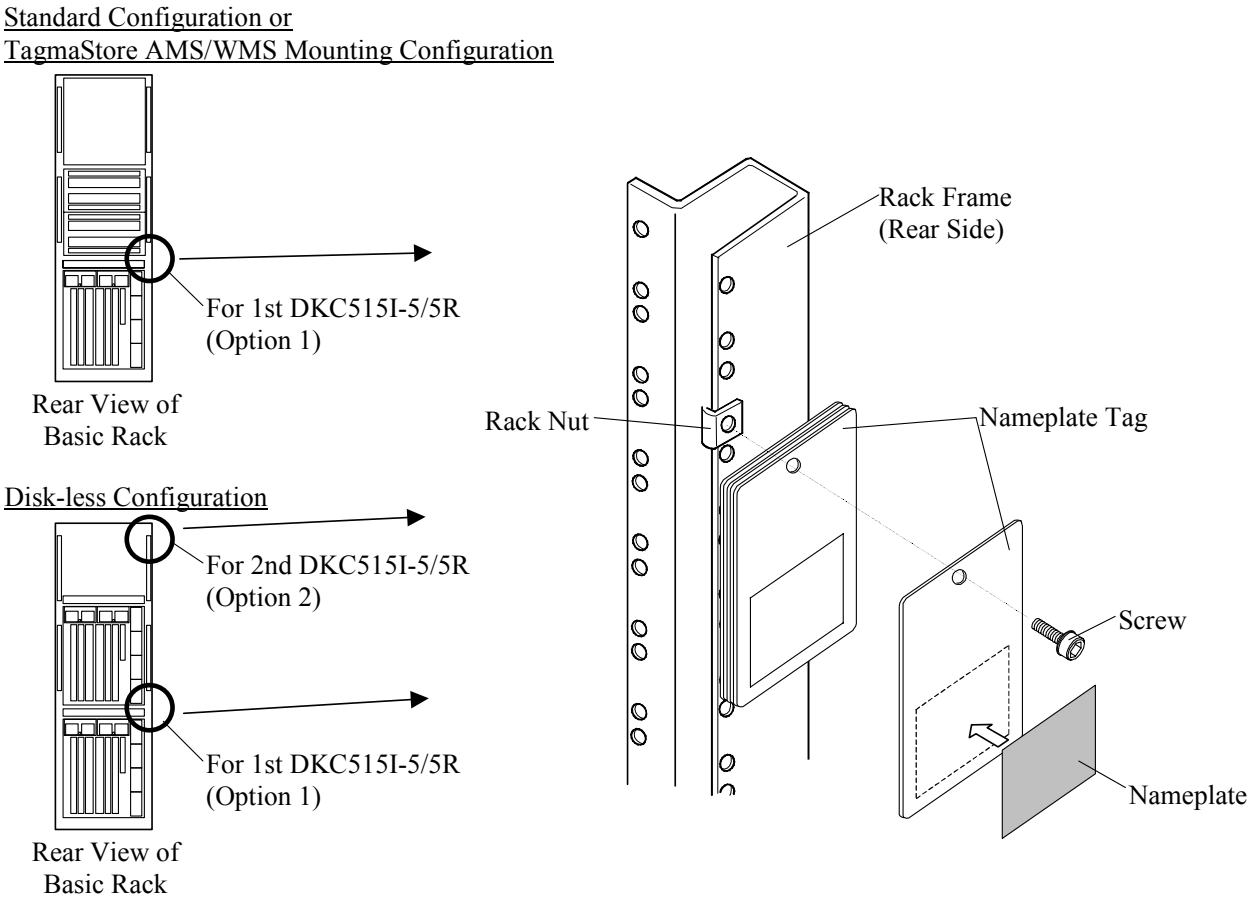


Fig. 3.11.2-5 Attachment of Nameplate

   c. Return to the working table and do the rest of the work.
   (New Installation: INST02-20, Non-Disruptive Installation: INST02-50)

3.12 Power ON/OFF Procedure

Note: When two control frames (DKCs) are installed in the Disk-less configuration, check the serial number of target DKC on the SVP screen and beware of a attachment position to prevent mistakes. (See “5.2.4 Refer Configuration 3. <DKC Configuration window>” [INST05-410].)

3.12.1 Power ON Procedure

1. Power ON Procedure of Disk Subsystem
   a. Turn on the switch at the Battery Box.

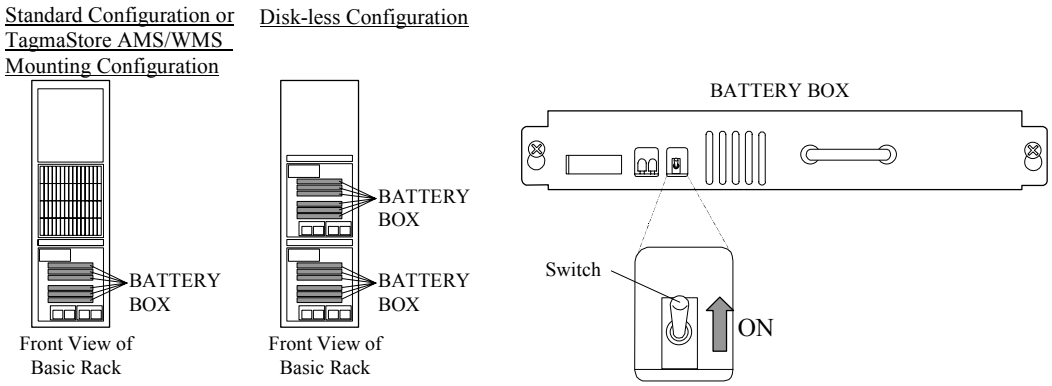


Fig. 3.12.1-1 Switch on Battery Box

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b. Turn the PS Enable/Disable switches to enable at the DKCPS and DKUPS.

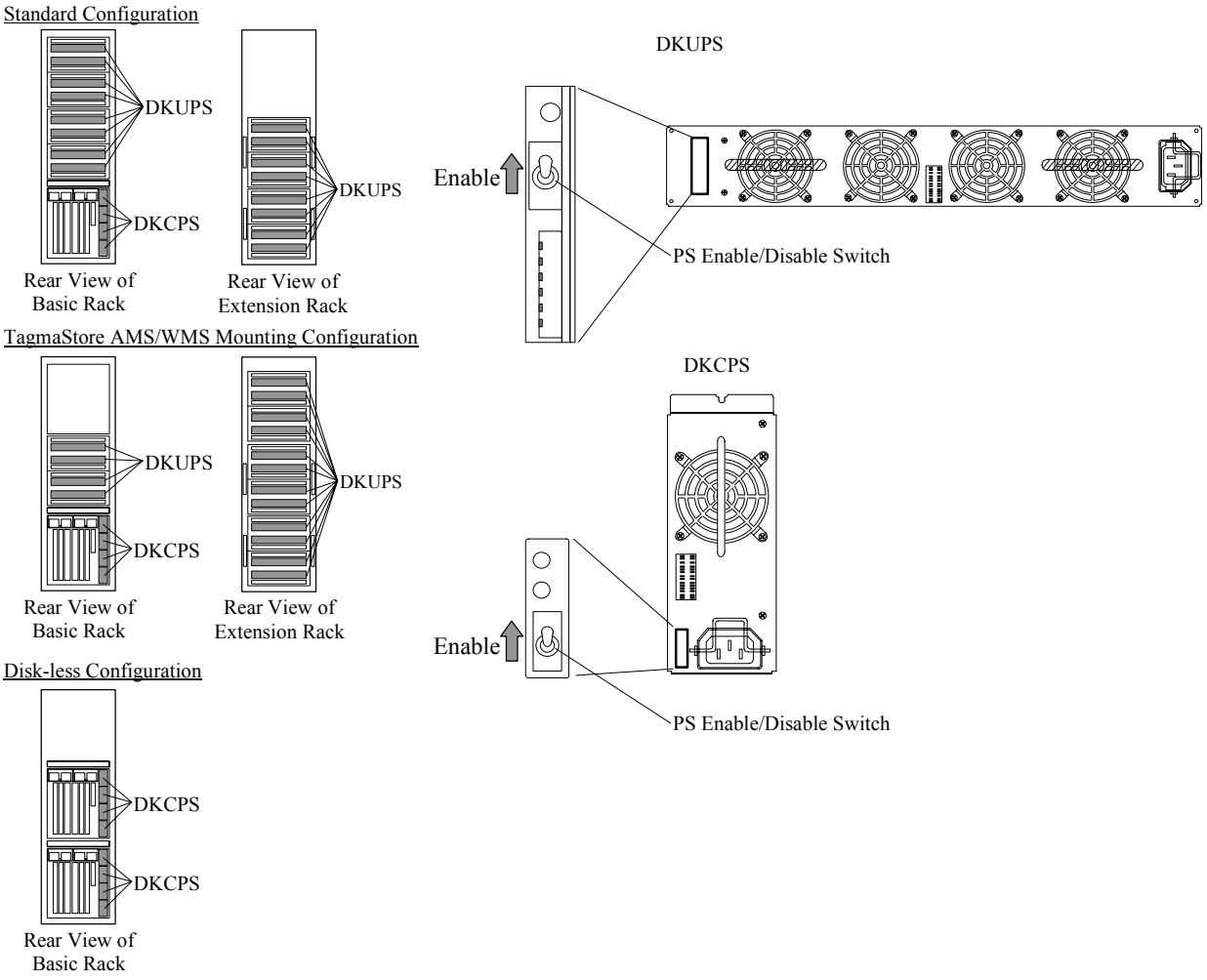


Fig. 3.12.1-2 Switches on DKCPS and DKUPS

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c. Turn on the main circuit breaker at the PDU on the Basic Rack and Extension Rack.

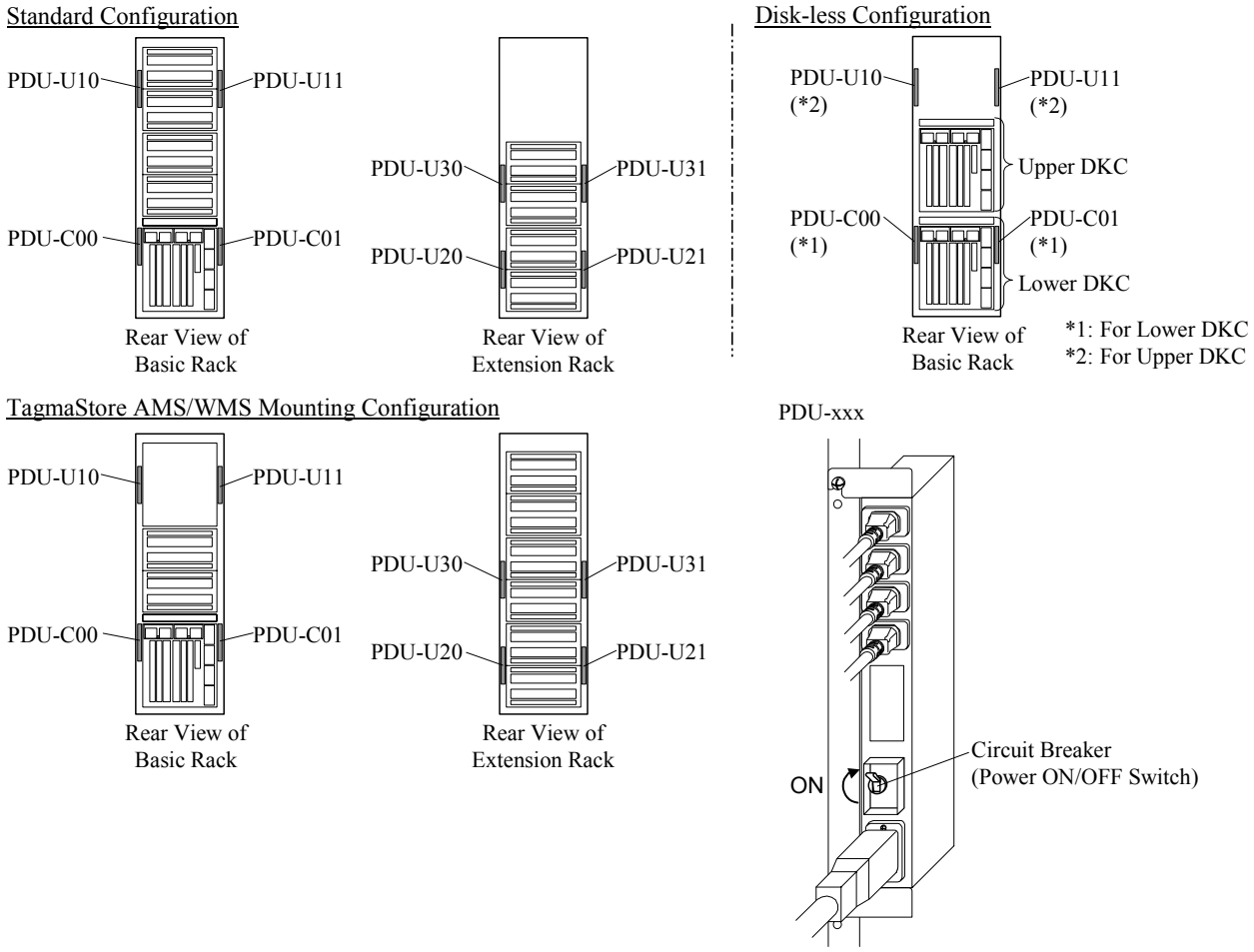


Fig. 3.12.1-3 Circuit Breaker on PDU

d. Turn the "POWER ON/OFF" switch to "ON", while turning the POWER ON/OFF ENABLE switch to the ENABLE position.

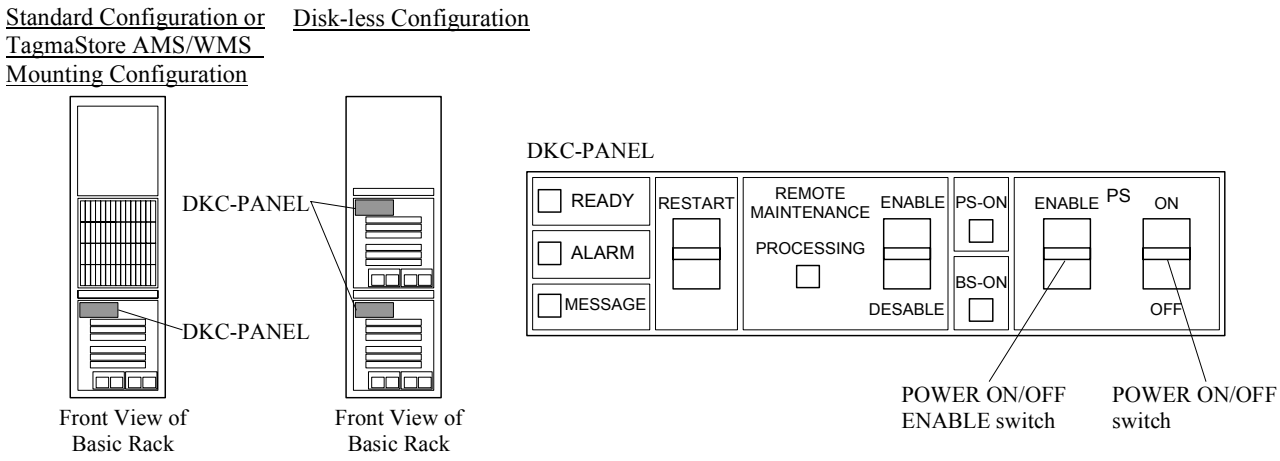


Fig. 3.12.1-4 Switch on DKC-PANEL

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2. Power ON Procedure of Extension Rack
   a. Turn on the circuit breaker at the PDU on the Extension Rack.

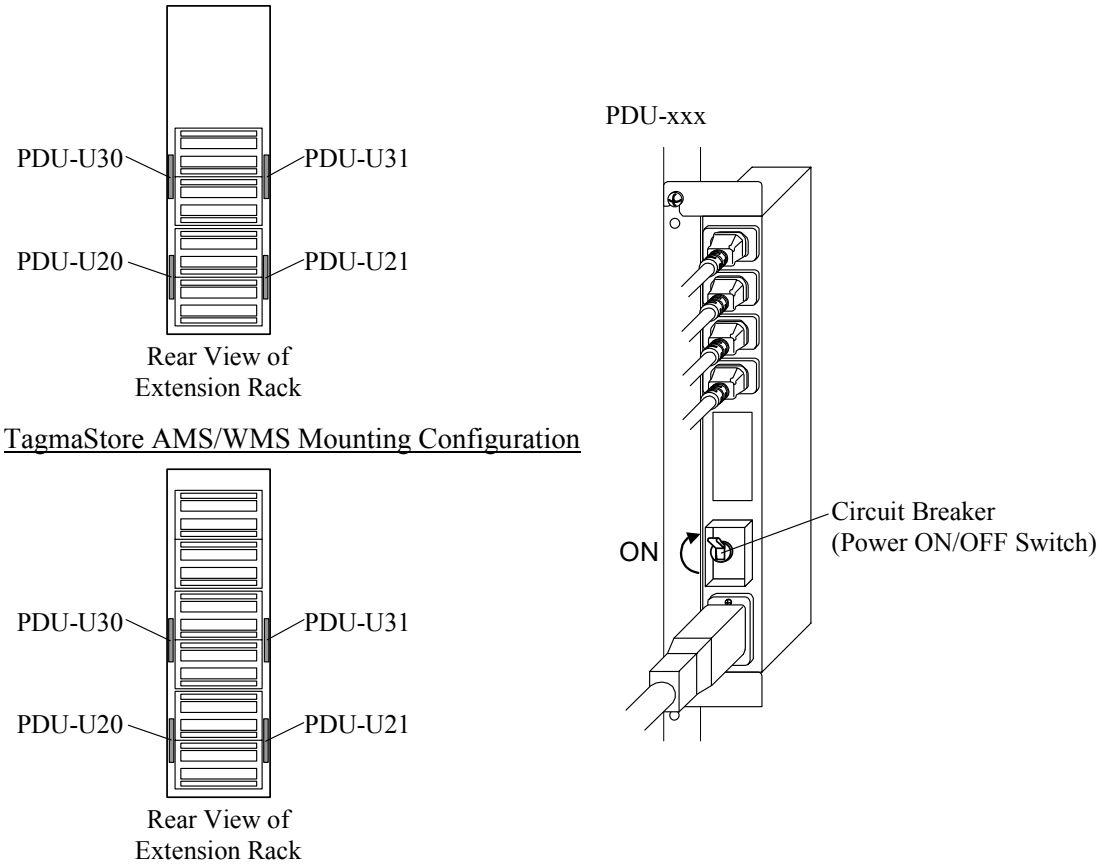


Fig. 3.12.1-5 Circuit Breaker on PDU

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3.12.2 Power OFF Procedure

1. Power OFF Procedure of Disk Subsystem

> **⚠ CAUTION**
>
> Please confirm that maintenance operations (except for configuration information setting) has been completed before powering OFF DKC.
> If the breaker OFF and the battery OFF are performed before turning off the power completely, it may cause the customer's data loss or the abnormality of the device. Therefore, confirm that the power is turned off completely according to the following procedure.

a. Turn the "POWER ON/OFF" switch to "OFF", while turning the POWER ON/OFF ENABLE switch to the ENABLE position.
b. Procedure for checking the power OFF of Disk Subsystem
   Perform all checks of the following (i) (ii) and (iii), and confirm the power OFF status of Disk Subsystem.
   (i) Checking the PS-ON LED OFF
   Move to the position where you can see the DKC-Panel from the front to be able to check that the BS-ON LED on the DKC-Panel is on.
   Check that the BS-ON LED is on and the PS-ON LED is off. When the BS-ON LED is off, turn on the power of Disk Subsystem again and perform the power OFF procedure from Step 1.

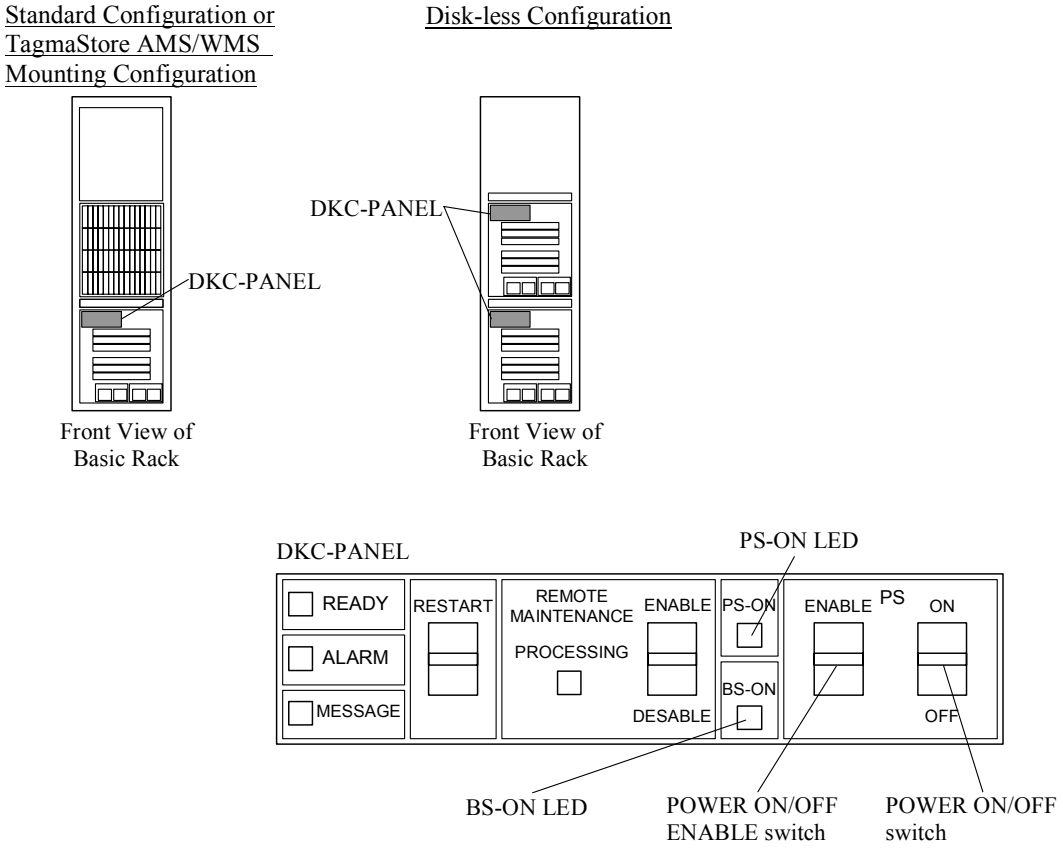


Fig. 3.12.2-1 Switch on DKC Panel

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(ii) Checking the DC power LED OFF

Check that the upper PS-Enable LED of the DC power supply (DKCPS) installed in the Logic Box and the PS-Enable LED of the DC power supply (DKUPS) installed in the HDU Box are all off.

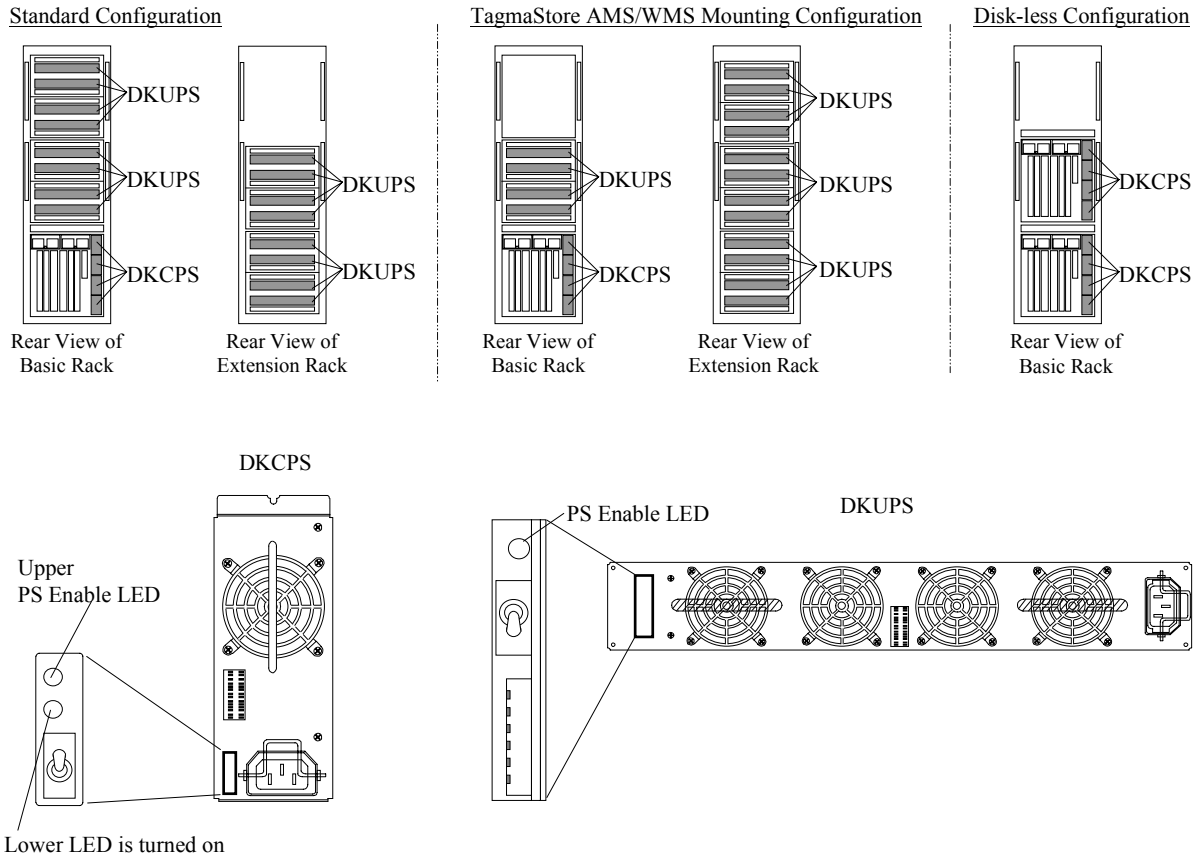


Fig. 3.12.2-2 PS-Enable LED location of DC power supply

(iii) Checking the SVP Power Off Event Log

Check that there are the logs of "System OFF" of the date or later which the power OFF operation in Step 1 is operated to the Power Event Log for 1MP or more referring to the log display in the SVP Section (SVP02-100).

c. Turn off the power of the SVP referring to the SVP Section (SVP01-110).

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d. Turn off the main circuit breaker at the PDU on the Basic Rack and Extension Rack.

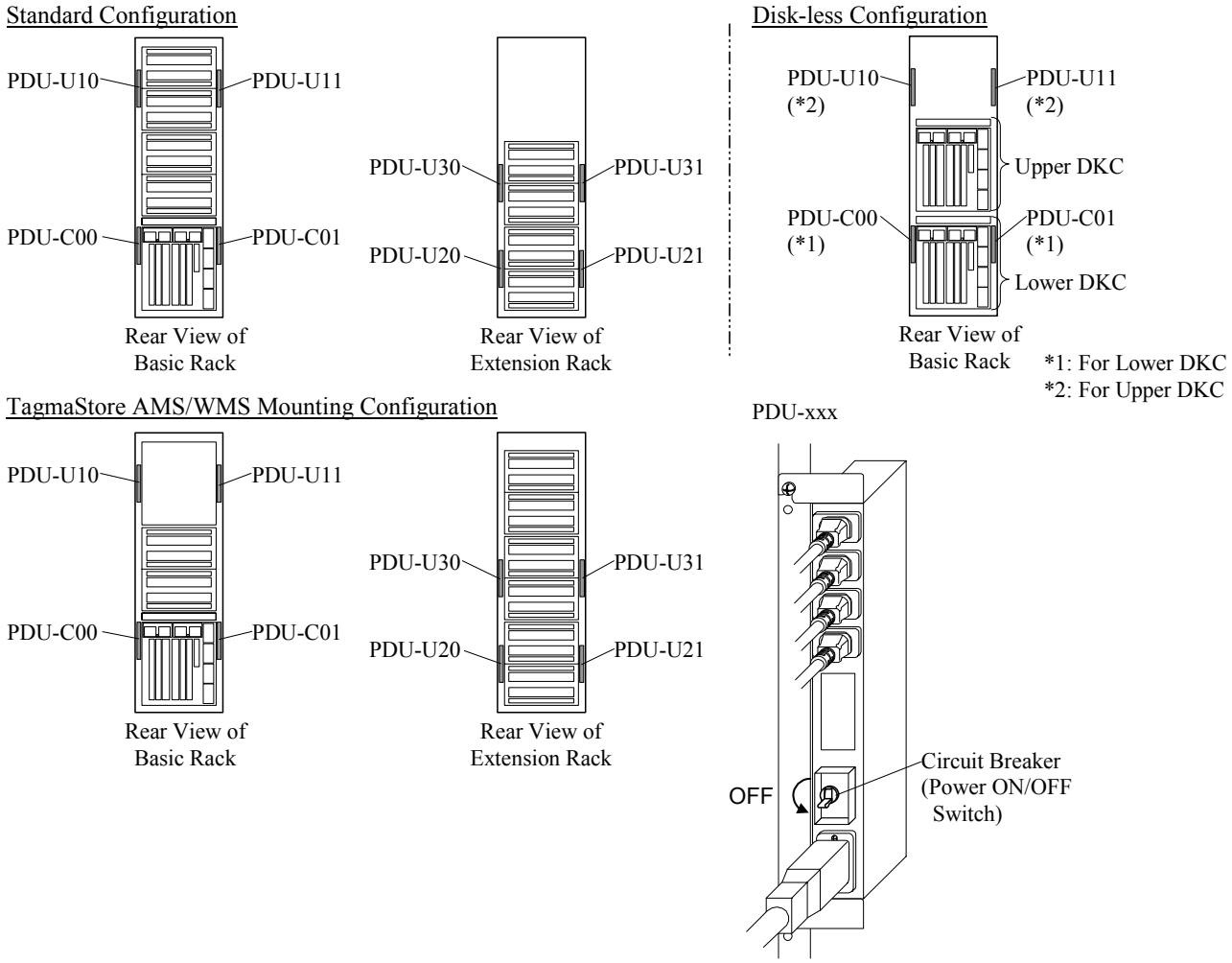


Fig. 3.12.2-3 Circuit Breaker on PDU

e. Turn off the switch at the Battery Box.

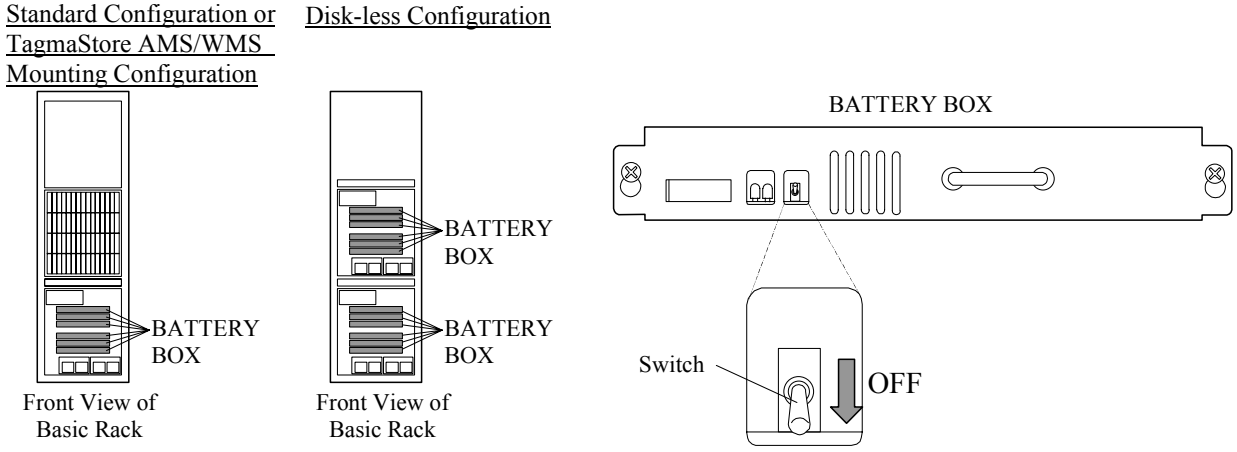


Fig. 3.12.2-4 Switch on Battery Box

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2. Power OFF Procedure of Extension Rack
   a. Turn off the main circuit breaker at the PDU on the Extension Rack.

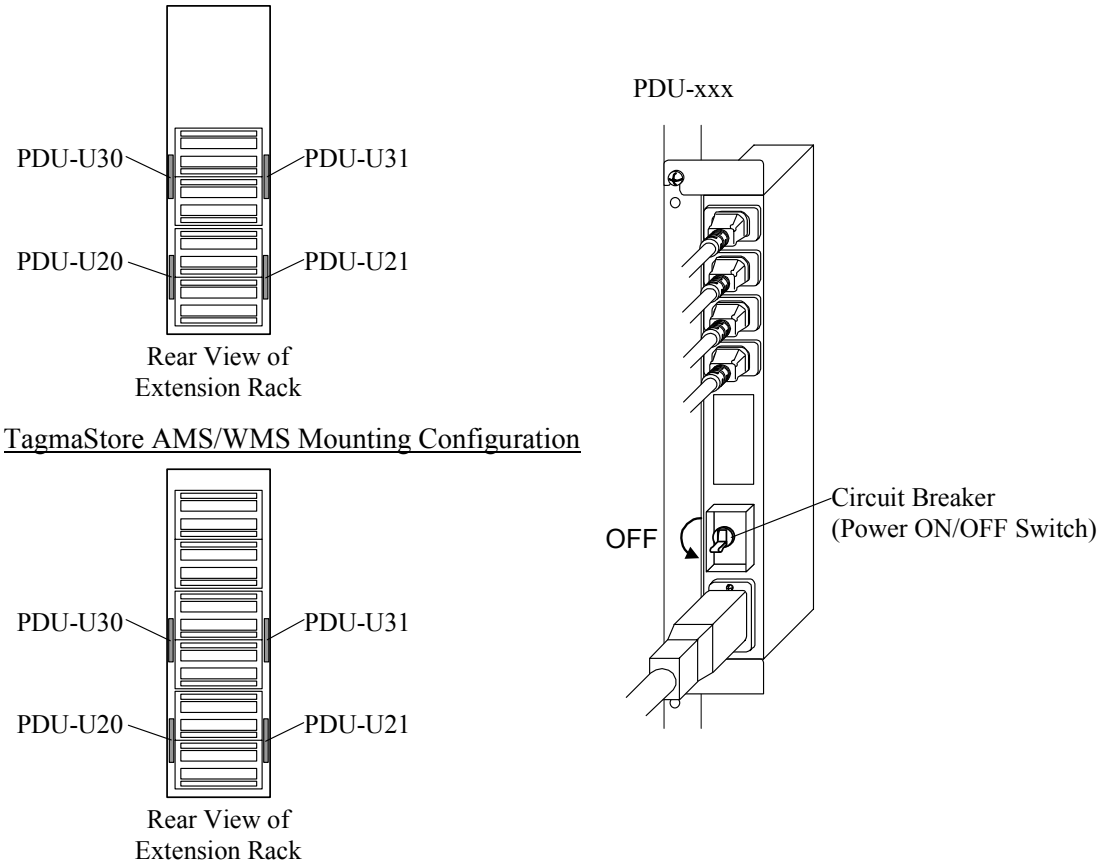


Fig. 3.12.2-5 Circuit Breaker on PDU

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3.13 Mounting on Rack Frame

You can use a special lifter to mount the subsystem on the rack frame.
This section explains a procedure for the mounting using the special lifter.
If you do not use the lifter, you must follow another procedure.

CAUTION

Rack mounting and lifter operation should only be conducted by a person who has been trained and qualified since the subsystem could turn over or a worker could be caught under the subsystem.

(1) External appearance of the special lifter
Fig. 3.13-1 shows external appearance of the special lifter.

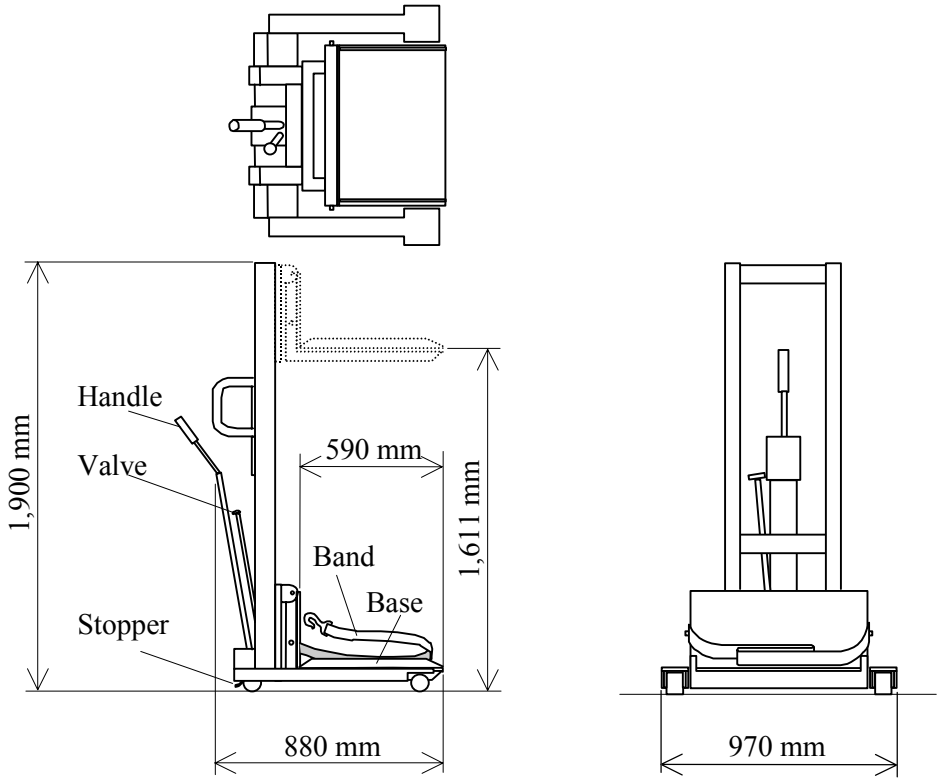


Fig. 3.13-1 External lifter

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3.13.1 Mounting lifter on rack frame

⚠ CAUTION

- Rack mounting and lifter operation should only be conducted by a person who has been trained and qualified since the subsystem could turn over or a worker could be caught under the subsystem.
- Be sure to perform the operation with two or more workers.
- Work carefully because the mass of the single Logic Box is about 70 kg and HDD BOX is about 38 kg.

(1) Bring the special lifter close to the subsystem to be mounted and apply the brake to the lifter.
(2) Put the subsystem on the special lifter.
(3) Secure the subsystem to the lifter with a band of the lifter.
Bind the subsystem with the band tightly by fitting the length of the belt to the subsystem.

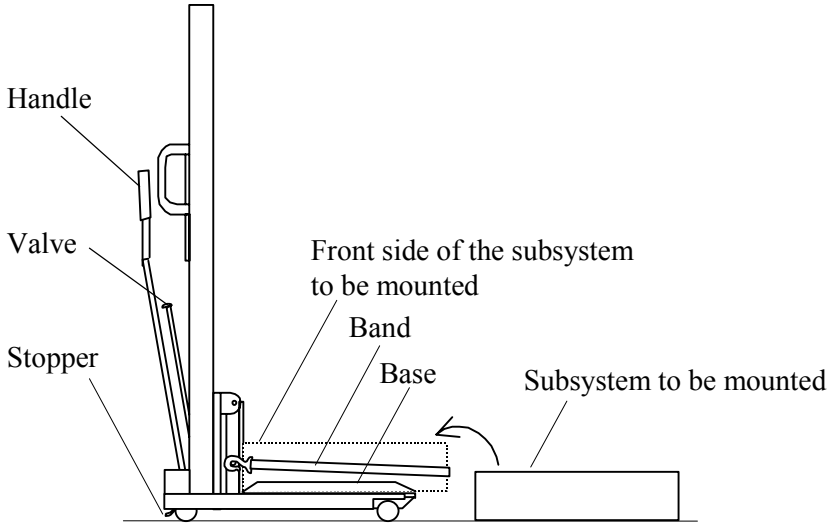


Fig. 3.13.1-1 Putting the Subsystems on Special Lifter

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3.13.2 Mounting subsystem on rack frame

⚠ WARNING

If the Subsystem falls when the elevator of the lifter is at a high position, a personal injury will be caused.

Perform the positioning, fastening, or other handlings very carefully.

⚠ CAUTION

- Rack mounting and lifter operation should only be conducted by a person who has been trained and qualified since the subsystem could turn over or a worker could be caught under the subsystem.
- Operate the valve slowly when opening it. If it is opened quickly, the elevator of the lifter descends rapidly and may cause personal injury.
- Be sure to perform the operation with two or more workers.
- Work carefully because the mass of the single Logic Box is about 70 kg and HDD BOX is about 38 kg.
- Please be cautious of your safety and use a stepladder as you need while assembling or removing parts on top of the RACK frame.

(1) Take off the brake of the special lifter on which the subsystem has been put, and move the lifter close to the rack frame.
(2) Adjust the position of the subsystem so that it is seated in the center of the rack frame.
(3) Move the pumping handle of the special lifter to the right and left repeatedly to lift the subsystem up to the height suitable for the mounting.
Be careful not to lift the elevating base too high. If you lift it too high, lower it by opening the up/down valve gently.
(4) Remove the band and adjust the position of the subsystem so that the subsystem comes in the center in front of the rack frame. If the subsystem is positioned off-centered, a screw contacts the front bezel preventing the bezel from being opened or closed.
(5) Shift the subsystem onto the rails in the rack frame. When shifting the subsystem, push it in to the end gently.

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(6) After mounting the subsystem on the rack frame, lower the elevating base to the lowermost position by gently opening the up/down valve of the special lifter and take off the brake of the lifter.

(7) Move the special lifter to the place where the lifter does not disturb the following works.

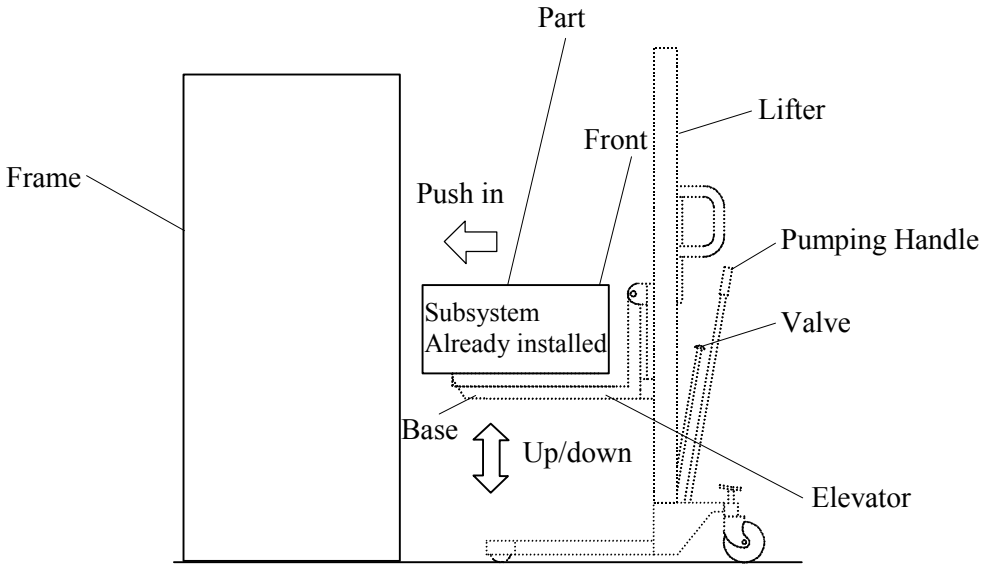


Fig. 3.13.2-1 Mounting Subsystem on Rack Frame

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3.14 Installation of Additional Battery (DKC-F515I-LGABR)

Table 3.14-1 Parts List

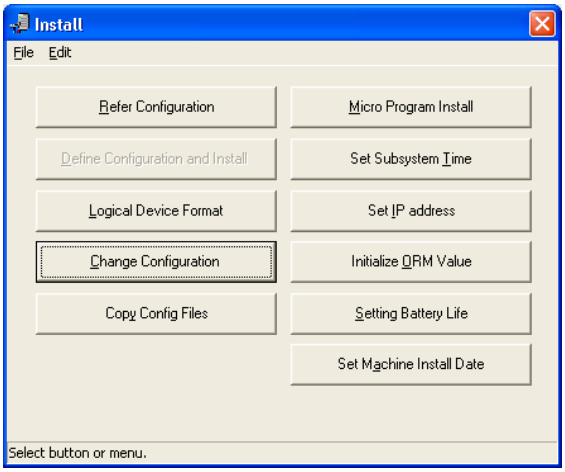
No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKC-F515I-LGABR	Battery Box	5527959-C	2	
		Screw	5513661-425	4	
		Nameplate (HDS)	2751038-44	1	RSD
			2751040-44/244		HICAM/HICEF
		Nameplate (HP)	2751038-144	1	RSD
			2751040-144/344		HICAM/HICEF

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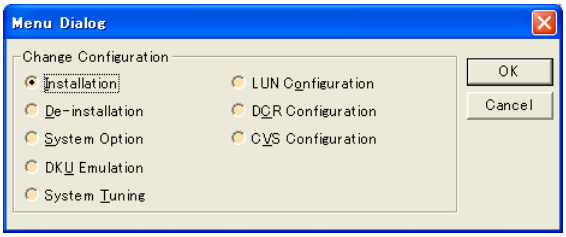
1. Setting up the New Device Structure Information

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

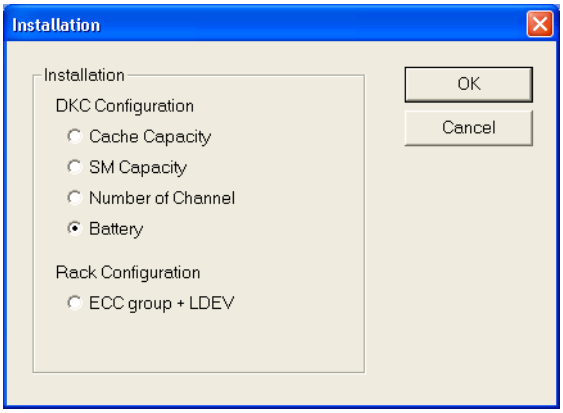
(2) <Start the 'Menu Dialog' screen>
Select (CL) [Change Configuration].



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

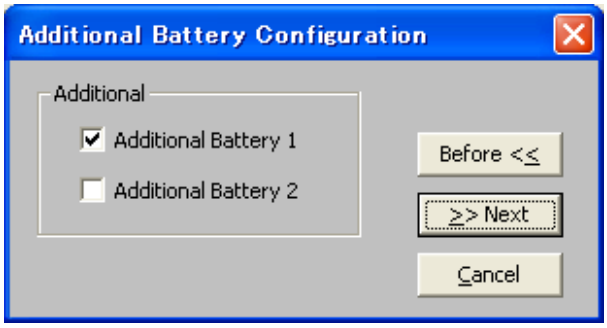


(4) <Select a part to be changed>
Select (CL) [Battery], and select (CL) [OK].



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(5) <Define Battery>
Define the Battery equipment in the 'Additional Battery Configuration' dialog box.
After the setting is made, select (CL) the [>>Next].

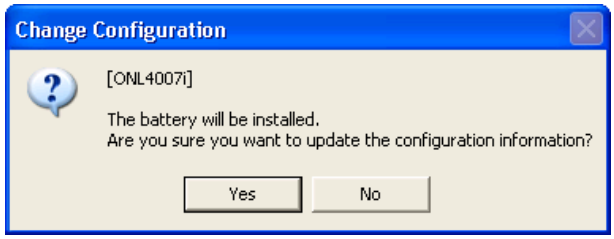


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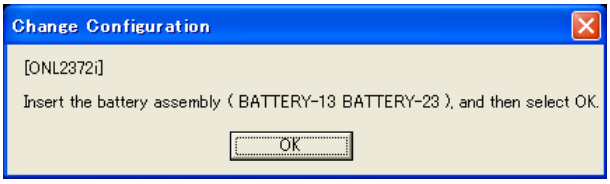
2. SVP pre procedure

(1) <Start installation>
Select (CL) [Yes] in response to "The battery will be installed. Are you sure you want to update the configuration information?".

When [No] is selected (CL), returns to INST03-14-20 step (2).



(2) <Perform Battery hardware installation>
At this point refrain from pressing the [OK] button.
When "Insert the battery assembly (BATTERY-nn BATTERY-nn), and then select OK." is displayed, perform the install hardware components according to the battery hardware installation procedure.



(Eg. BATTERY-13, BATTERY-23)

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3. Installation Procedure of the Additional Battery

3-1 Installation of Battery Boxes

a. Insert the battery boxes and fasten the screws.
b. Turn on the switches at the battery boxes.

Table 3.14-2 Installation Location of Additional Battery

No.	Model Name	Location No.		Remarks
1	DKC-F515I-LGABR × 1set	BATTERY12	BATTERY22	
2	DKC-F515I-LGABR × 1set	BATTERY13	BATTERY23	

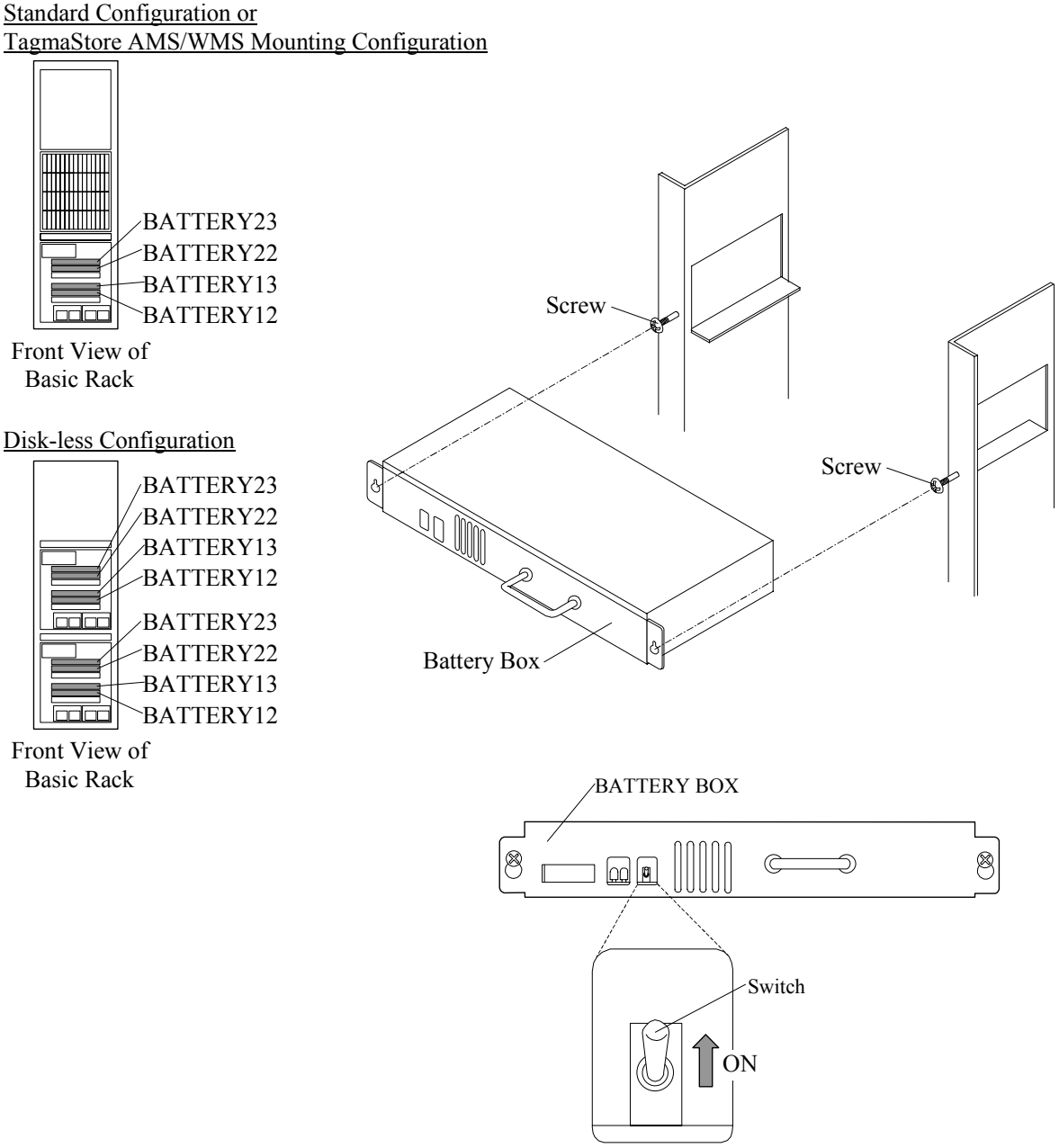


Fig.3.14-1 Insertion of Battery Boxes

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3-2 Attachment of nameplate

a. Remove the screw from the rack frame and remove the nameplate tags to be installed.
b. Attach the nameplate to the nameplate tag on the Rack frame.
c. Attach all the nameplate tags with the screw.

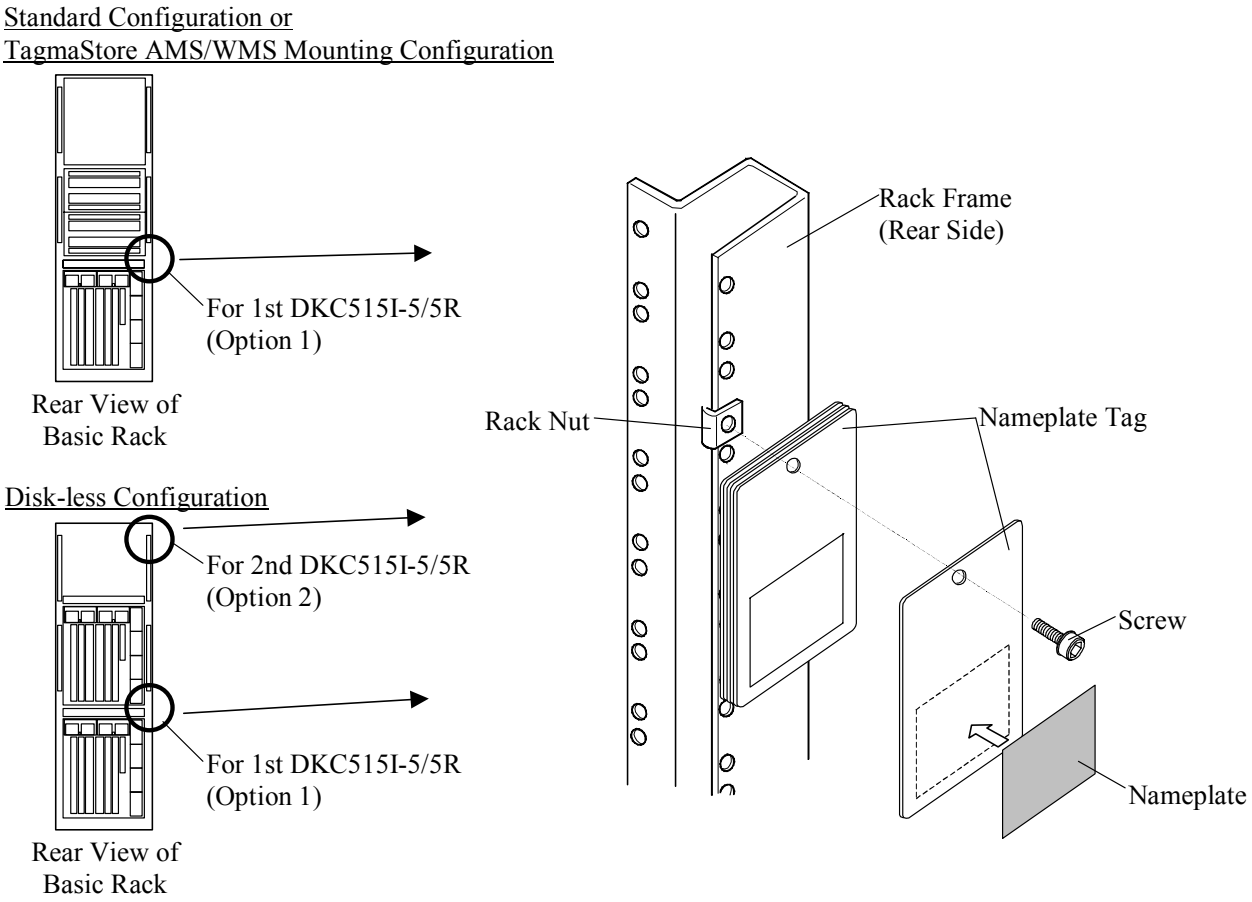


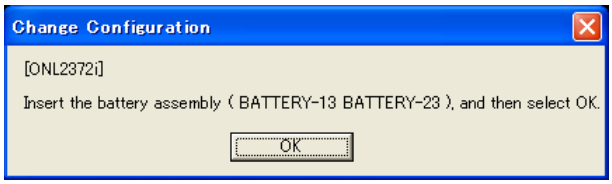
Fig. 3.14-2 Attachment of Nameplate

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4. SVP post procedure

(1)

After installation of Battery is completed, select (CL) [OK] in response to "Insert the battery assembly (BATTERY-nn BATTERY-nn), and then select OK."



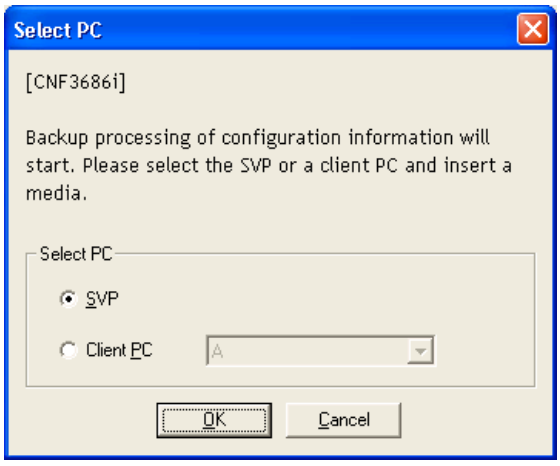
(Eg. BATTERY-13, BATTERY-23)

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



(3)

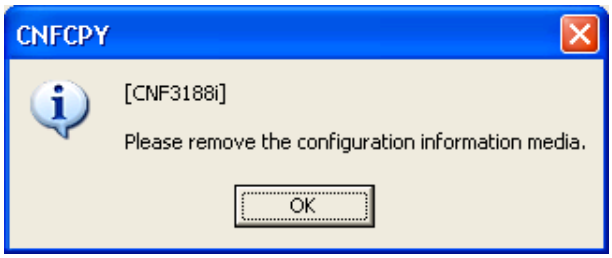
"Reading subsystem configuration data..." is displayed.
"Backup processing of configuration information will start. Please select the SVP or a client PC and insert a media." is displayed.
Insert the Config FD into FDD of selected PC, and select (CL) [OK].



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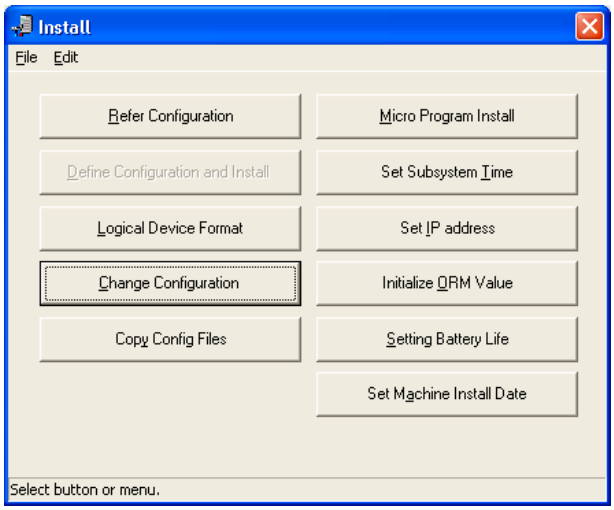
(4)

When this procedure is completed, the message “Please remove the configuration information media.” is displayed.
Remove the FD, and select (CL) [OK].



(5)

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



(6) <Mode Change>
Change the mode to View Mode.

Return to the working table and do the rest of the work.
New Installation: INST02-20
Non-Disruptive Installation: INST02-50

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3.15 CHA/MIX PCB type change procedure

Note: When two control frames (DKCs) are installed in the Disk-less configuration, check the serial number of target DKC on the SVP screen and beware of a attachment position to prevent mistakes. (See “5.2.4 Refer Configuration 3. <DKC Configuration window>” [INST05-410].)

Combination of options whose types can be changed

When the types of CHA and MIX PCB are changed, the combination of the options which can be changed is shown in the table blow.

Table 3.15-1 Combination of Options Whose Types Can Be Changed

Function Name	No.	Type Change (DKC-F510I-xxxx, DKC-F515I-xxxx)			Remarks
CHA	1	8HSR	↔	8FS2R	
	2	16HSR	↔	16FS2R	
	3	32HSR	↔	32FSR/32FS2R	
	4	8MSR	↔	16MSR/16MLR/16MFSR/16MFLR/16MFL4R	*1
	5	8MLR	↔	16MSR/16MLR/16MFSR/16MFLR/16MFL4R	*1
	6	16MSR	↔	16MFSR/16MFLR/16MFL4R	
	7	16MLR	↔	16MFSR/16MFLR/16MFL4R	
MIX	8	MIX2R	↔	MIX4R	

*1: When two emulation types are mixed in the PCB with the type change replacement from 16Mxxx to 8Mxxx, the options cannot be changed.

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For parts list other than following, refer to pages INST03-07B-10, INST03-07B-11 and INST03-07C-10.

Table 3.7.2-1 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKC-F515I-MIX2R	MIX PCB	5527991-C	2	
		Nameplate (HDS)	2751038-56	1	RSD
			2751040-56/256		HICAM/HICEF
		Nameplate (HP)	2751038-156	1	RSD
			2751040-156/356		HICAM/HICEF
2	DKC-F515I-MIX4R	MIX PCB (4Gbps)	5527992-C	2	
		Nameplate (HDS)	2751038-329	1	RSD
			2751040-429/629		HICAM/HICEF
		Nameplate (HP)	2751038-429	1	RSD
			2751040-529/729		HICAM/HICEF

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1. SVP pre procedure

(1) <Check PCB>

> **CAUTION**
> Check whether the CHA/MIX PCB is blockaded. When the CHA/MIX PCB is blockaded, refer to replace section and recover the CHA.

(2) <Set path offline>

> **CAUTION**
> The path to be placed offline is that connected with the CHA/MIX PCB concerned.

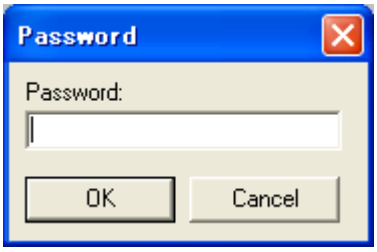
(3)

Close the all SVP menu.

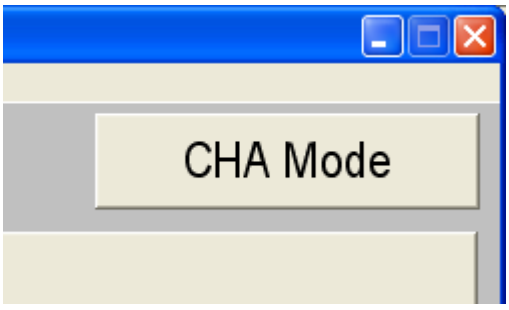
(4) <Input password>

> **CAUTION**
> This is a special (exceptional) operation that requires an input of a password. Ask the technical support division and input the password.

Select [Shift] + [Ctrl] + [B] on the 'SVP' window.
Enter the password and select (CL) [OK].

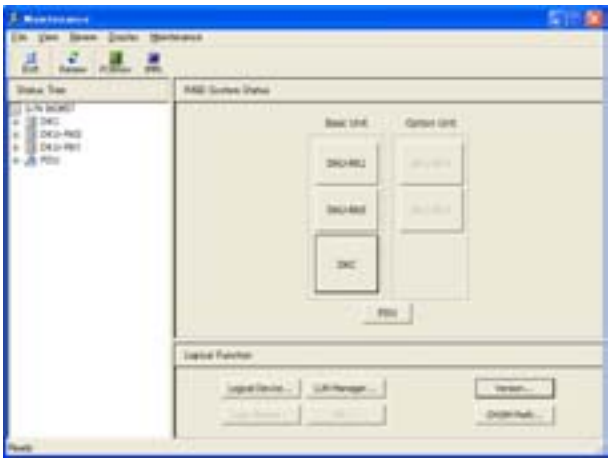


(5) <CHA Replace Mode>
The 'CHA Mode' is displayed.
And select (CL) [Maintenance].

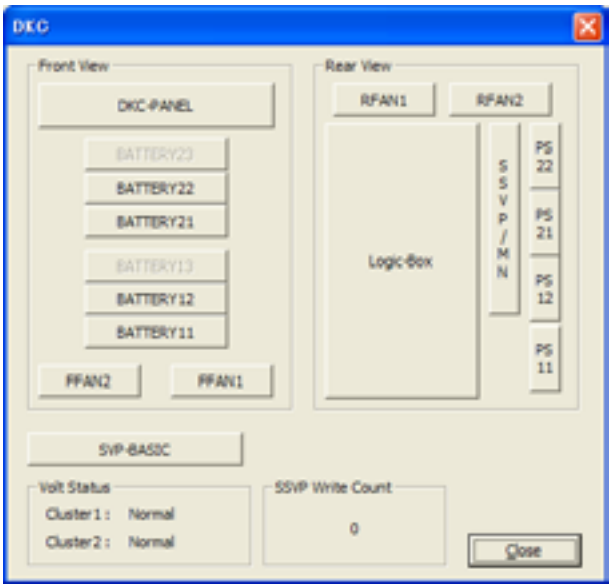


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(6) <Maintenance window>
The 'Maintenance' window is displayed.
In the 'Maintenance' window, check and select (CL) [DKC] to be replaced.



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



(8) <Select CHA/MIX>

⚠ CAUTION
Please execute both Clusters to the CHA/MIX PCB type change without omission.

Select (CL) the target CHA/MIX in Cluster 1 side.
Select (CL) [Close] returns you to step (6).



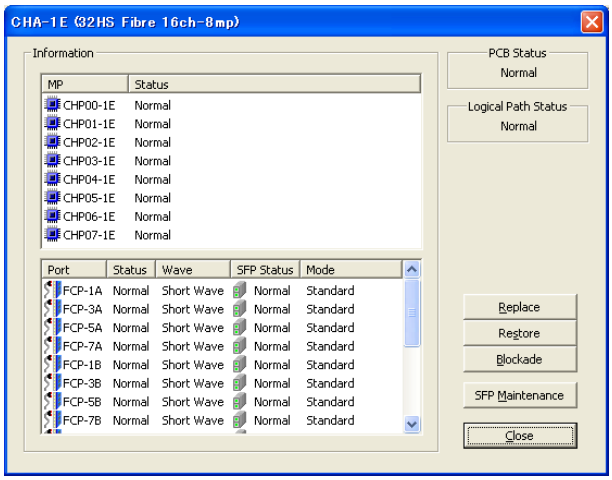
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(9) <Specify Replacement of CHA/MIX PCB>

CAUTION

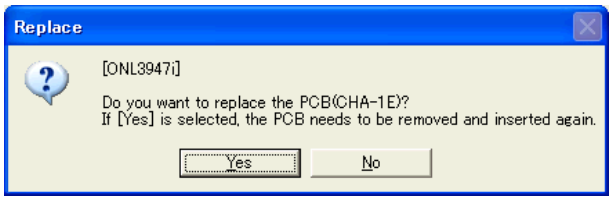
- When the path to the PCB to be replaced is online, ask the customer to place it offline.
- When the screen requests an operator to input a password in order to prevent multiple maintenance contact the technical support division to ask for instructions.

Select (CL) [Replace].



(10) <CHA/MIX PCB replace>

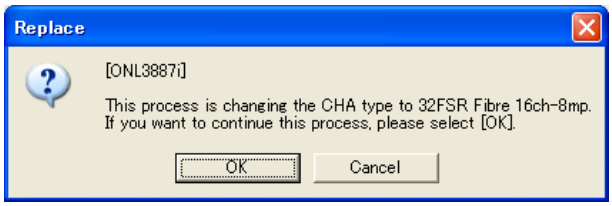
Select (CL) [Yes] in response to:
"Do you want to replace the PCB(xxx-nn)?
If [Yes] is selected, the PCB needs to be removed and inserted again."



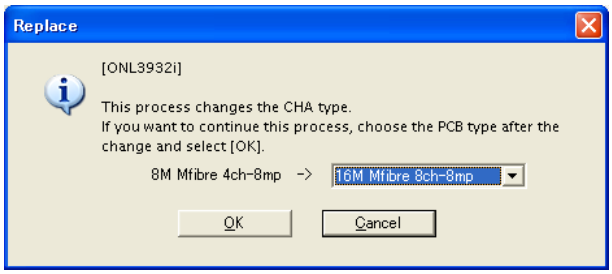
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(11) <The check of CHA/MIX PCB type change>
Select (CL) [OK] in response to:

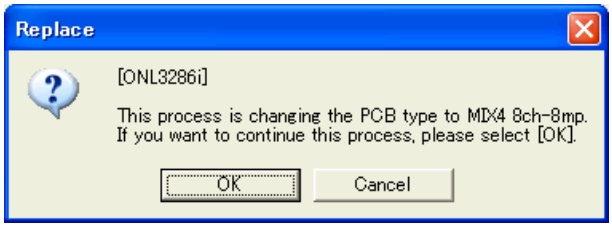
For Fibre CHA:
"This process is changing the CHA type to xxx. If you want to continue this process, please select [OK]."
(xxx is the CHA type after change.)



For MF Fibre CHA:
"This process changes the CHA type. If you want to continue this process, choose the PCB type after the change and select [OK]."

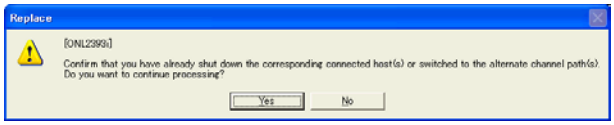


For MIX PCB:
"This process is changing the PCB type to xxx. If you want to continue this process, please select [OK]."
(xxx is the MIX PCB type after change.)

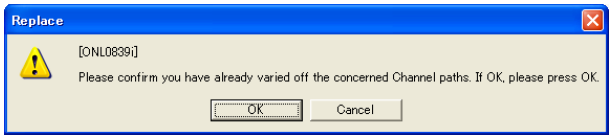


(12) <Confirm Channel Path offline>
Select (CL) [Yes] or [OK] in response to:

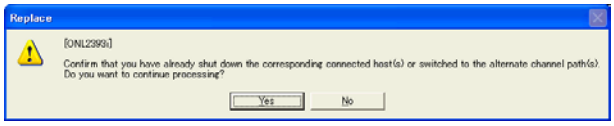
For Fibre CHA:
"Confirm that you have already shut down the corresponding connected host(s) or switched to the alternate channel path(s).
Do you want to continue processing?"



For MF Fibre CHA:
"Please confirm you have already varied off the concerned Channel paths. If OK, please press OK."



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

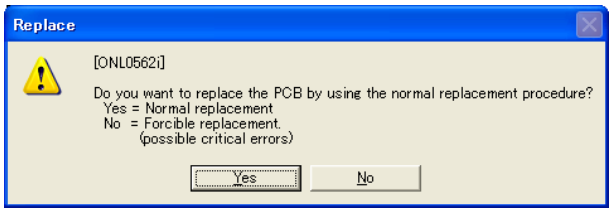


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(13) <Caution message for system down>

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

Select (CL) [Yes] in response to “Do you want to replace the PCB by using the normal replacement procedure?
Yes = Normal replacement
No = Forcible replacement.
(Possible critical errors)”

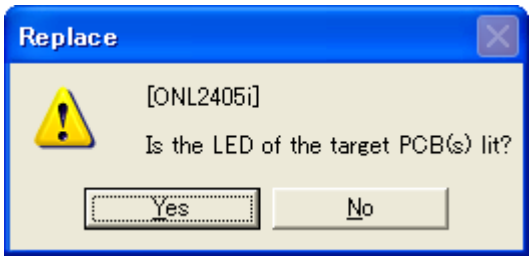


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(14) <Check to see if the shut down LED is lit>

Select (CL)
* [Yes] if LED is on
* [No] if LED is off

in response to "Is the LED of the target PCB(s) lit?".
If [No] is selected:
Select in response to "Is the LED of the target PCB(s) lit?" again.

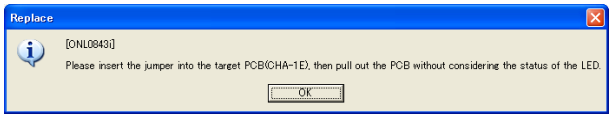


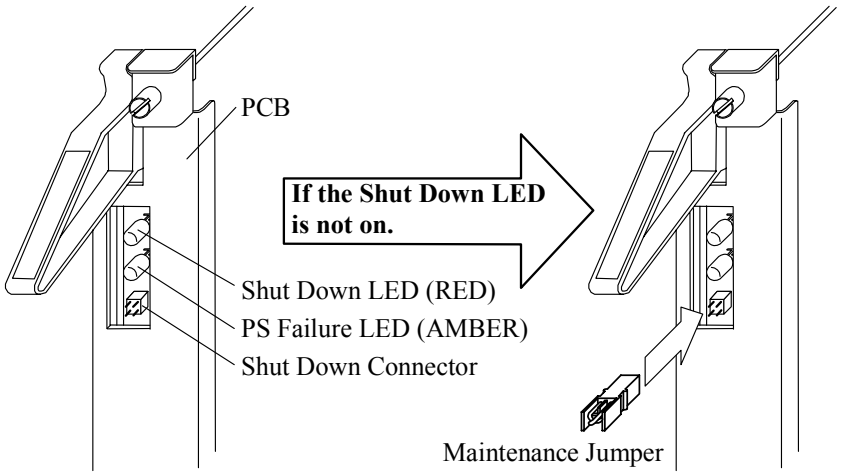
<Forcing shut down LED on>

CAUTION

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

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



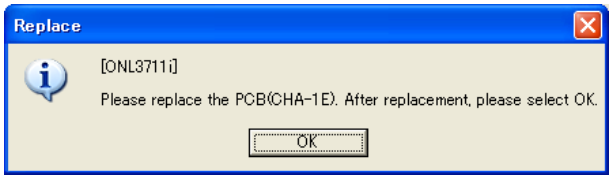


Note: When the Maintenance Jumper is inserted in the PCB, the Shut Down LED (RED) and the PS Failure LED (AMBER) light on, but it is not a problem if they do not light on.

Fig. 3.15-1 Location of Shut Down LED

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(15) <Beginning of CHA/MIX PCB Replacement>
At this point refrain from pressing the [OK] button.
"Please replace the PCB(xxx-nn). After replacement, please select OK." is displayed.



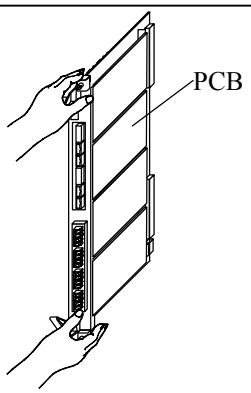
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2. Replacement of PCB

2-1 Remove the PCB.

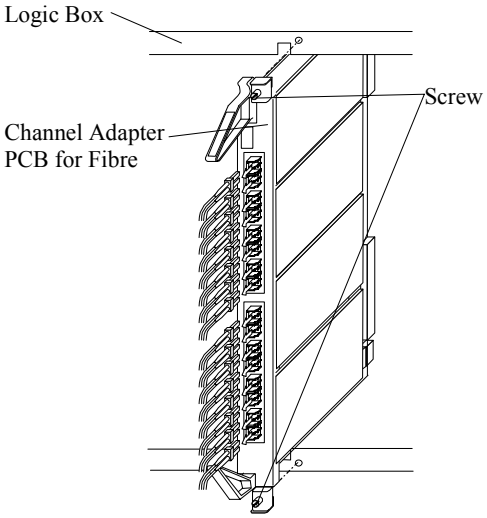
a. Disconnect the cables from the PCB.

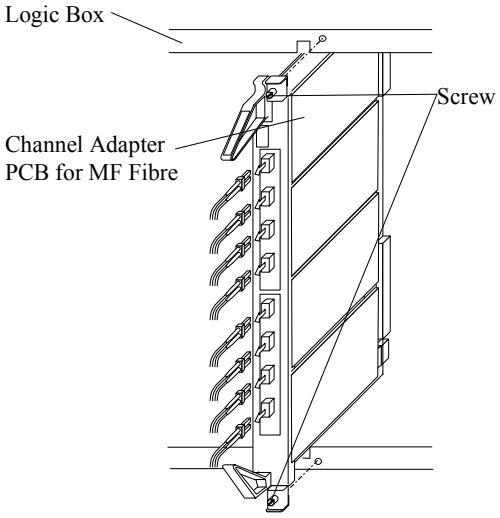
b. Remove the two screws and remove the PCB.

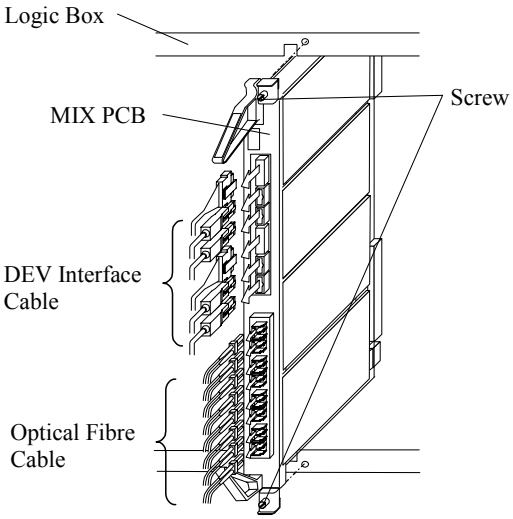


Note: When removing the PCB, hold the top and bottom of the PCB with both hands, and pull it out straight not to contact the neighboring PCB.

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







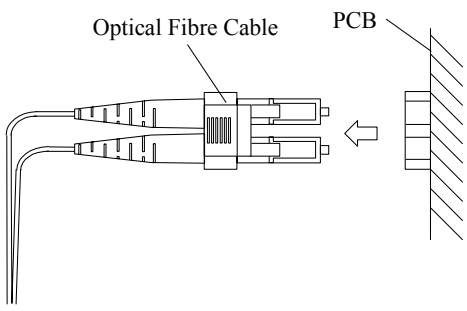
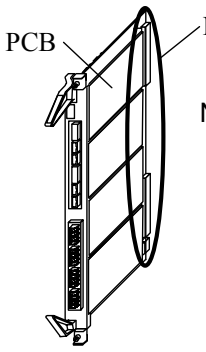


Fig. 3.15-2 Removal of PCB

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2-2 Insert the PCB.

a. Insert the PCB to the correct location and fasten the two screws.



Note: 1. Check that the main edge connector of the PCB has no deformation, damage or sticking of dust before installing the PCB.

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

2-3 Cleaning the fibre cable connectors.
For the tools needed for the cleaning, refer to the tool list on page PARTS06-10.

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

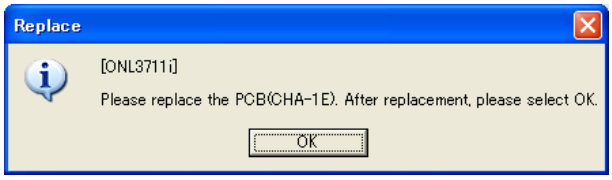
2-4 Connect the cables to the PCB.

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3. SVP post Procedure

(1)

After replacing the PCBs, select (CL) [OK] in response to “Please replace the PCB(xxx-nn). After replacement, please select OK.”

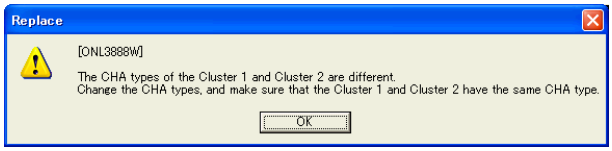


(2) <Waiting for Power Event>
“Waiting for Power Event...
Usually several minutes (maximum 15 minutes).” is displayed.

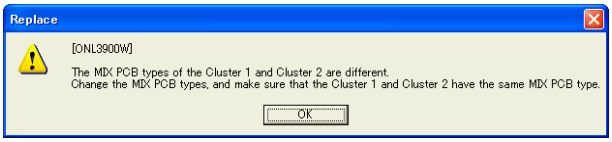
CAUTION

When the type change operation of both clusters is not completed, a warning message is displayed, so that perform the type change operation of the other PCB.

For CHA:
“The CHA types the Cluster 1 and Cluster 2 are different. Change the CHA types, and make sure that the Cluster 1 and Cluster 2 have the same CHA type.”

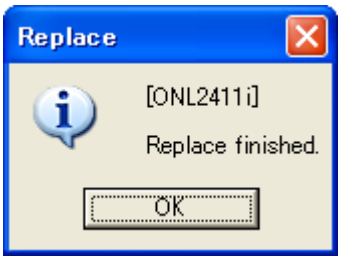


For MIX PCB:
“The MIX PCB types of the Cluster 1 and Cluster 2 are different. Change the MIX PCB types, and make sure that the Cluster 1 and Cluster 2 have the same MIX PCB type.”

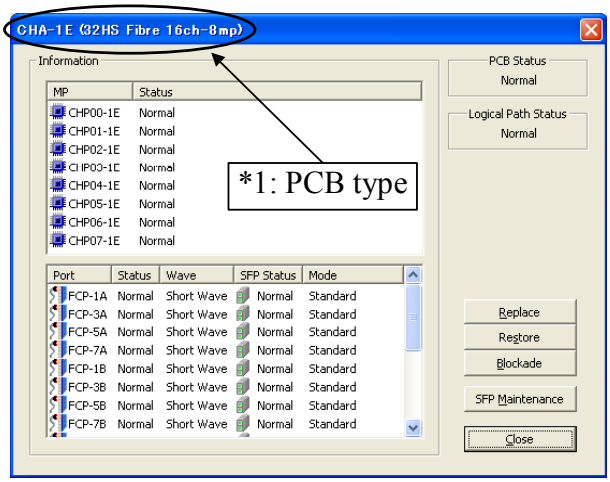


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(3) <Check the end of CHA/MIX PCB recovery>
Select (CL) [OK] in response to “Replace finished.”.



(4)
Select (CL) [Close].

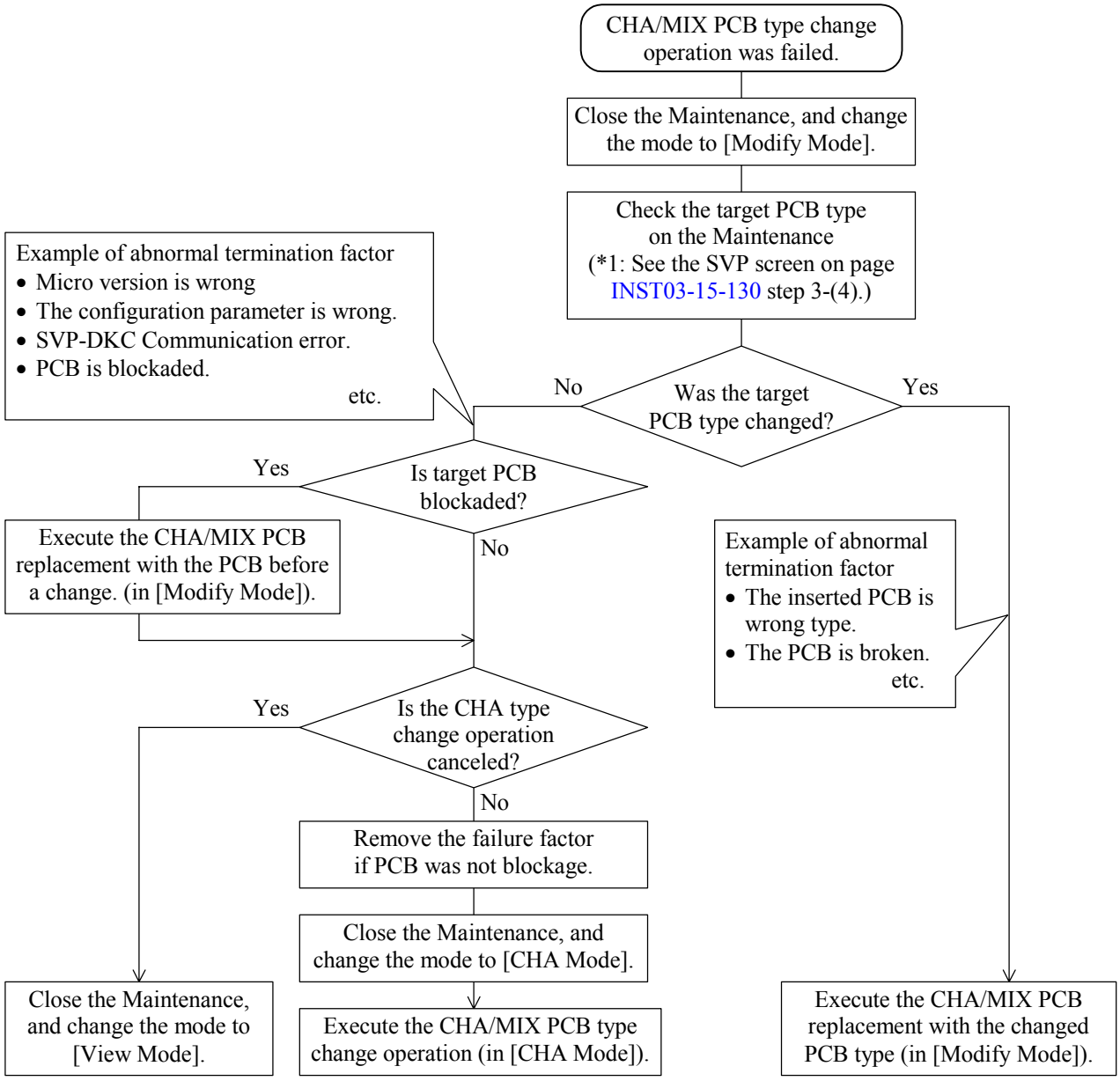


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CAUTION

Confirm the version of the exchanged CHA/MIX PCB microprogram on the “STATUS” screen.

Recover according to the following flow when failing in the CHA/MIX PCB type change operation.



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(5) <Type change operation in Cluster-2 side>
Perform steps 1-(8) to 3-(4).

---

(6) <Path on-line when CHA/MIX PCB is replaced>
Whenever a CHA/MIX PCB is replaced, set the path (from the host) on the replaced CHA/MIX PCB to ONLINE by your customer.

---

(7)

Close the 'CHA/MIX-xx' window.
Close the 'Logic Box' window.
Close the 'DKC' window.
Close the 'Maintenance' window.

---

(8) <Mode change>
Change the mode to "Modify".

---

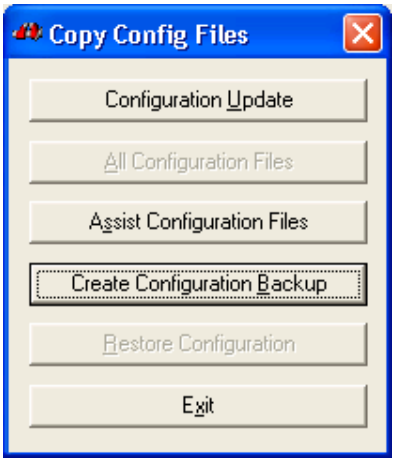
(9)

Select (CL) [Install] in the 'SVP' window and select (CL) [Copy Config Files] in the 'Install'.

---

(10)

Select (CL) [Create Configuration Backup] in the 'Copy Config Files'.

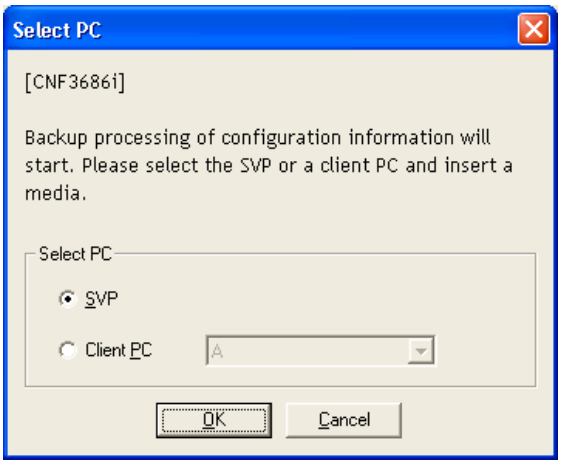


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(11)

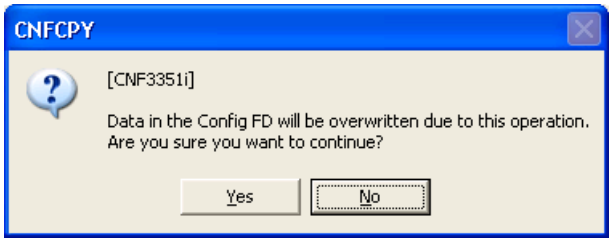
Execute an operation for backing up the configuration information.
Prepare the floppy disk containing the configuration information for backup and select (CL) the PC in which the medium is to be inserted. After the medium is inserted, select (CL) the [OK] button.

When the formatted floppy disk is used, go to Step (13).



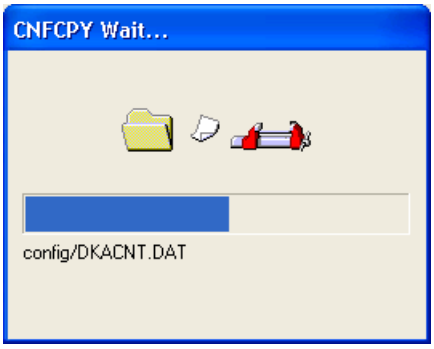
(12)

Select the [Yes] button.



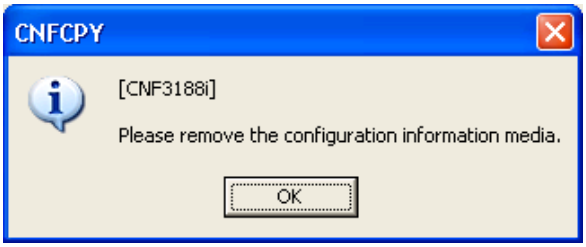
(13)

Config Backup is running.



(14)

After the Config medium is pulled out, select (CL) the [OK] to the message “Please remove the configuration information media.”.



(15)

Select (CL) [Exit] of the ‘Copy Config Files’.
Close the ‘Install’ window.
Change the mode to [View Mode].

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4. Removal/Attachment of nameplate
   a. Remove the screw from the rack frame and remove the nameplate tags to be installed.
   b. Remove the de-installed option nameplate from the nameplate tag.
   c. Attach the installed option nameplate to the nameplate tag.
   d. Attach all the nameplate tags with the screw.

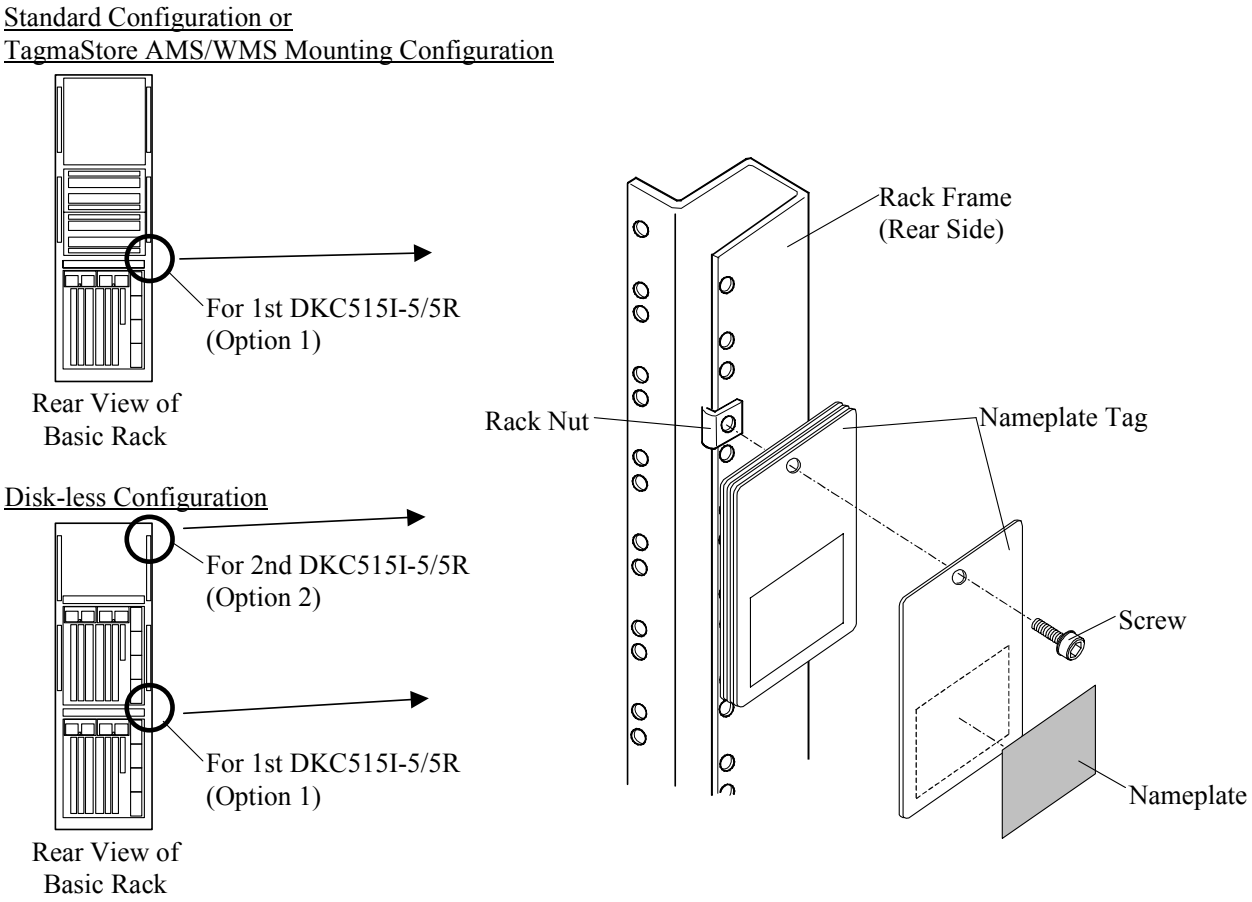


Fig. 3.15-3 Removal/Attachment of Nameplate

   e. Return to the working table and do the rest of the work. (INST02-50)

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4. Hardware De-Installation

4.1 De-Installation of DEV Interface Cable and HDD Canister (DKC-F515I-UC1R/UC4R/EXC0R/EXC2R, DKU-F505I-72KS/72JSR/72KSR/146JS/146JSR/146KSR/300JSR/300KSR/400JSR/72K1R/146J1R/146K1R/300J1R)

Table 4.1-1 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKC-F515I-UC1R	Fibre Cable Bundle	3272858-B	1	
		Repeat Binder	5409042-3	4	
		Nameplate (HDS)	2751038-46	1	RSD
			2751040-46/246		HICAM/HICEF
		Nameplate (HP) (AE104B)	2751037-28	1	RSD
			2751039-28/128		HICAM/HICEF
2	DKC-F515I-UC4R	Fibre Cable Bundle	3272858-G	1	
		Repeat Binder	5409042-3	4	
		Nameplate (HDS)	2751038-321	1	RSD
			2751040-421/621		HICAM/HICEF
3	DKC-F515I-EXC0R	Fibre Cable Bundle	3272858-C	1	
		Binder	5532297-1	3	
		Cable Clamp	3274136-1	4	
		Screw	SB416N	8	
		Cable Stopper	3274130-1	4	
		Screw	SB306N	8	
		Tape	3274352-1	4	
		Label (V/Hz/PH.)	3264271-1	1	Label ①
		Label (REV)	3239458-1	1	Label ②
		Label (KOREN-MIC)	3274178-1	1	Label ③
		Label-NOISE (FCC-CSA)	3269890-1	1	Label ④
		Label (VCCI)	5409106-1	1	Label ⑤
		Label (BSMI-D3300)	3265644-2	1	Label ⑥
			3265644-4		
		Label (UL4-1)	5529984-1	1	Label ⑦
		Label (UL5)	3264272-1	1	Label ⑧
		Label (UL3)	5515795-1	1	Label ⑨
		Label (BSMI)	3269907-1	1	Label ⑩
		Label (V/Hz-FRMR)	3274155-1	1	Label ⑪
		Nameplate (HDS)	2751038-49	1	RSD
			2751040-49/249		HICAM/HICEF
		Nameplate (HP) (AE115B)	2751037-29	1	RSD
			2751039-29/129		HICAM/HICEF

(To be continued.)

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(Continued from preceding sheet.)

No.	Model Number	Part Name	Part No.	Quantity	Remarks
4	DKC-F515I-EXC2R	Fibre Cable Bundle	3272858-H	1	
		Binder	5532297-1	3	
		Cable Clamp	3274136-1	4	
		Screw	SB416N	8	
		Cable Stopper	3274130-1	4	
		Screw	SB306N	8	
		Tape	3274352-1	4	
		Label (V/Hz/PH.)	3264271-1	1	Label ①
		Label (REV)	3239458-1	1	Label ②
		Label (KOREN-MIC)	3274178-1	1	Label ③
		Label-NOISE (FCC-CSA)	3269890-1	1	Label ④
		Label (VCCI)	5409106-1	1	Label ⑤
		Label (BSMI-D3300)	3265644-2	1	Label ⑥
			3265644-4		
		Label (UL4-1)	5529984-1	1	Label ⑦
		Label (UL5)	3264272-1	1	Label ⑧
		Label (UL3)	5515795-1	1	Label ⑨
		Label (BSMI)	3269907-1	1	Label ⑩
		Label (V/Hz-FRMR)	3274155-1	1	Label ⑪
		Nameplate (HDS)	2751038-322	1	RSD
			2751040-422/622		HICAM/HICEF
5	DKU-F505I-72JSR	HDU500-72JSFC	5524274-D	1	
		Nameplate (HDS)	2751053-86/87/88	1	RSD/HICAM/HICEF
		Nameplate (HP)	2751053-92/93/94	1	RSD/HICAM/HICEF
6	DKU-F505I-72KS	HDU500-72KSFC	5524271-A	1	
			5524271-D		
		HDU500-72K1FC	5524271-E		
		HDU500-72K2FC	5524271-F		
		Nameplate (HDS)	2106998-18/19/20	1	RSD/HICAM/HICEF
		Nameplate (HP)	2106998-24/25/26	1	RSD/HICAM/HICEF

(To be continued.)

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(Continued from preceding sheet.)

No.	Model Number	Part Name	Part No.	Quantity	Remarks
7	DKU-F505I-72KSR	HDU500-72KSFC	5524271-D	1	
		HDU500-72K1FC	5524271-E		
		HDU500-72K2FC	5524271-F		
		Nameplate (HDS)	2751053-18/19/20	1	RSD/HICAM/HICEF
		Nameplate (HP)	2751053-24/25/26	1	RSD/HICAM/HICEF
8	DKU-F505I-146JS	HDU500-146JSFC	5524269-A	1	
			5524269-D		
		HDU500-146J1FC	5524269-E		
		HDU500-146J2FC	5524269-F		
		Nameplate (HDS)	2106998-1/2/3	1	RSD/HICAM/HICEF
		Nameplate (HP)	2106998-7/8/9	1	RSD/HICAM/HICEF
9	DKU-F505I-146JSR	HDU500-146JSFC	5524269-D	1	
		HDU500-146J1FC	5524269-E		
		HDU500-146J2FC	5524269-F		
		Nameplate (HDS)	2751053-1/2/3	1	RSD/HICAM/HICEF
		Nameplate (HP)	2751053-7/8/9	1	RSD/HICAM/HICEF
10	DKU-F505I-146KSR	HDU500-146KSFC	5524272-D	1	
		HDU500-146K1FC	5524272-E		
		HDU500-146K2FC	5524272-F		
		Nameplate (HDS)	2751053-35/36/37	1	RSD/HICAM/HICEF
		Nameplate (HP)	2751053-41/42/43	1	RSD/HICAM/HICEF
11	DKU-F505I-300JSR	HDU500-300JSFC	5524270-D	1	
		HDU500-300J1FC	5524270-E		
		HDU500-300J2FC	5524270-F		
		Nameplate (HDS)	2751053-52/53/54	1	RSD/HICAM/HICEF
		Nameplate (HP)	2751053-58/59/60	1	RSD/HICAM/HICEF
12	DKU-F505I-72K1R	HDU500-72K1FC	5524271-E	1	
		Nameplate (HP)	2751053-177/178/179	1	RSD/HICAM/HICEF
13	DKU-F505I-146J1R	HDU500-146J1FC	5524269-E	1	
		Nameplate (HP)	2751053-143/144/145	1	RSD/HICAM/HICEF

(To be continued.)

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(Continued from preceding sheet.)

No.	Model Number	Part Name	Part No.	Quantity	Remarks
14	DKU-F505I-146K1R	HDU500-146K1FC	5524272-E	1	
		Nameplate (HP)	2751053-194/195/196	1	RSD/HICAM/HICEF
15	DKU-F505I-300J1R	HDU500-300J1FC	5524270-E	1	
		Nameplate (HP)	2751053-160/161/162	1	RSD/HICAM/HICEF
16	DKU-F505I-300KSR	HDU500-300K1FC	5524276-E	1	
		HDU500-300K2FC	5524276-F		
		Nameplate (HDS)	2751053-273/274/275	1	RSD/HICAM/HICEF
		Nameplate (HP)	2751053-279/280/281	1	RSD/HICAM/HICEF
17	DKU-F505I-400JSR	HDU500-400J1FC	5524277-E	1	
		Nameplate (HDS)	2751053-290/291/292	1	RSD/HICAM/HICEF
		Nameplate (HP)	2751053-296/297/298	1	RSD/HICAM/HICEF

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4.1.1 Flowchart

There are three cases (① to ③) of these removal works as shown in the following table. Perform the work referring to the flowchart of each work.

Case	Option De-Installation Procedure	Page
①	When performing removal of the data/spare HDD canister (DKU-F505I-72KS/72JSR/72KSR/146JS/146JSR/146KSR/ 300JSR/300KSR/400JSR/72K1R/146J1R/146K1R/300J1R)	INST04-01-40
②	When performing removal of the data/spare HDD canister and DEV interface cable that accompanies the removal of the HDD Boxes in case of Standard configuration (DKC-F515I-UC1R/EXC0R, DKU-F505I-72KS/72JSR/72KSR/146JS/146JSR/146KSR/ 300JSR/300KSR/400JSR/72K1R/146J1R/146K1R/300J1R)	INST04-01-50
③	When performing removal of the data/spare HDD canister and DEV interface cable that accompanies the removal of the HDD Boxes in case of TagmaStore AMS/WMS installed configuration (DKC-F515I-UC1R/UC4R/EXC2R, DKU-F505I-72KS/72JSR/72KSR/146JS/146JSR/146KSR/ 300JSR/300KSR/400JSR/72K1R/146J1R/146K1R/300J1R)	INST04-01-60

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① When performing removal of the data/spare HDD canister

---------- [INST04-01A-10 through 140]

1. SVP pre procedure (Setting up the New Device Structure Information)

↓

2. De-Installation Procedure of HDD Canister

↓

3. SVP post procedure

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② When performing removal of the data/spare HDD canister and DEV interface cable that accompanies the removal of the HDD Boxes in case of Standard configuration
---------- [INST04-01C-10 through 370]

1. Removal of Covers (DKC-F515I-UC0R/UC1R/EXC0R)
↓
2. SVP pre procedure (Setting up the New Device Structure Information)
↓
3. De-Installation Procedure of HDD Canister
↓
4. De-Installation Procedure of DEV Interface Cable (DKC-F515I-UC0R)
↓
5. De-Installation Procedure of DEV Interface Cable (DKC-F515I-UC1R)
↓
6. De-Installation Procedure of DEV Interface Cable (DKC-F515I-EXC0R)
↓
7. SVP post procedure
↓
8. Attachment of Covers (DKC-F515I-UC0R/UC1R/EXC0R)

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③ When performing removal of the data/spare HDD canister and DEV interface cable that accompanies the removal of the HDD Boxes in case of TagmaStore AMS/WMS installed configuration

---------- [INST04-01D-10 through 390]

1. Removal of Covers (DKC-F515I-UC0R/UC1R/UC4R/EXC2R)
↓
2. SVP pre procedure (Setting up the New Device Structure Information)
↓
3. De-Installation Procedure of HDD Canister
↓
4. De-Installation Procedure of DEV Interface Cable (DKC-F515I-UC0R)
↓
5. De-Installation Procedure of DEV Interface Cable (DKC-F515I-UC1R)
↓
6. De-Installation Procedure of DEV Interface Cable (DKC-F515I-EXC2R)
↓
7. SVP post procedure
↓
8. Attachment of Covers (DKC-F515I-UC0R/UC1R/UC4R/EXC2R)

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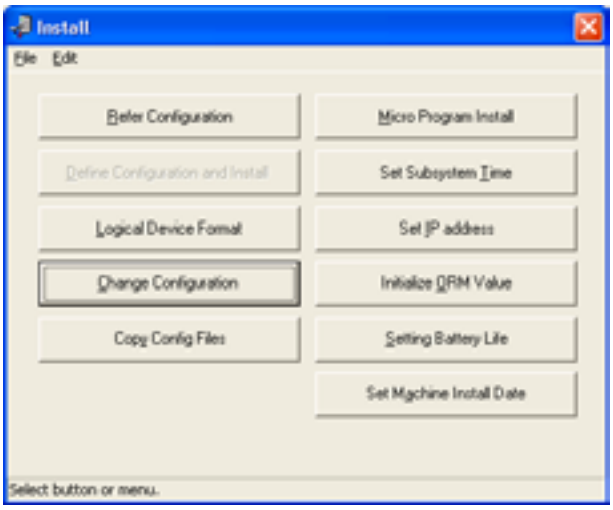
4.1.2 When performing removal of the data/spare HDD canister (DKU-F505I-72KS/72JSR/72KSR/146JS/146JSR/146KSR/300JSR/300KSR/400JSR/72K1R/146J1R/146K1R/300J1R)

1. SVP pre procedure (Setting up the New Device Structure Information)

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

---

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



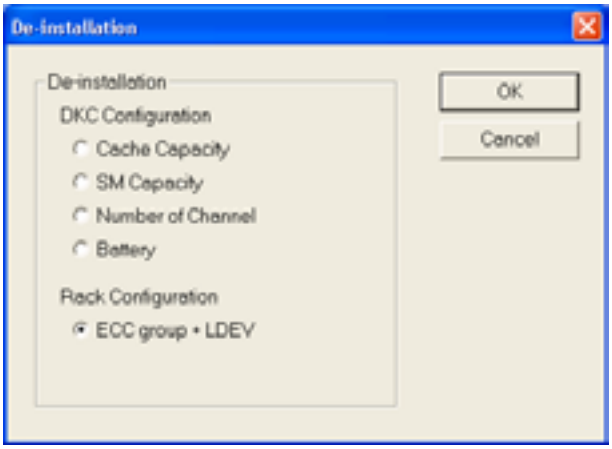
---

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

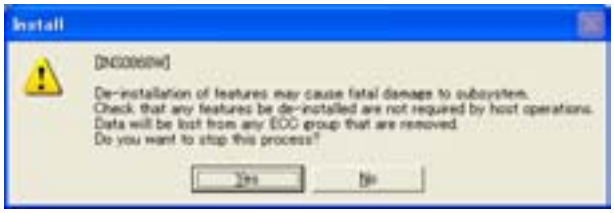


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(4) <Selecting a part to be changed>
Select (CL) [ECC group + LDEV] and select (CL) the [OK].

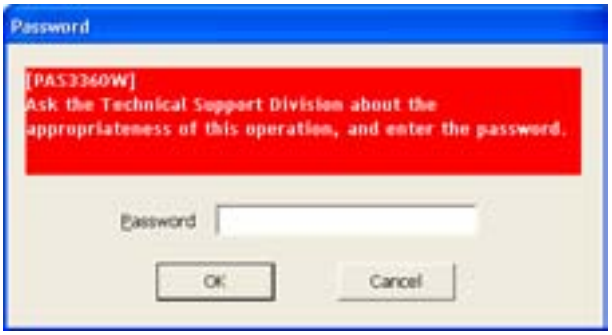


(5)
Select (CL) [No] in response to "De-installation of features may cause fatal damage to subsystem. Check that any features be de-installed are not required by host operations. Data will be lost from any ECC group that are removed. Do you want to stop this process?".



Note: The Alias information which is set to the LDEV included in the ECC to de-install is also deleted at the same time.
When the Alias is set, migrate the Alias information to another LDEV before de-installation or reset it after de-installation.

(6) <Input password>
Enter the password and select (CL) [OK].

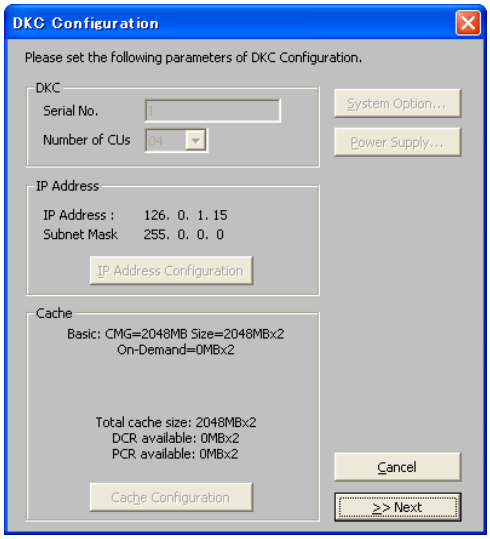


⚠ CAUTION

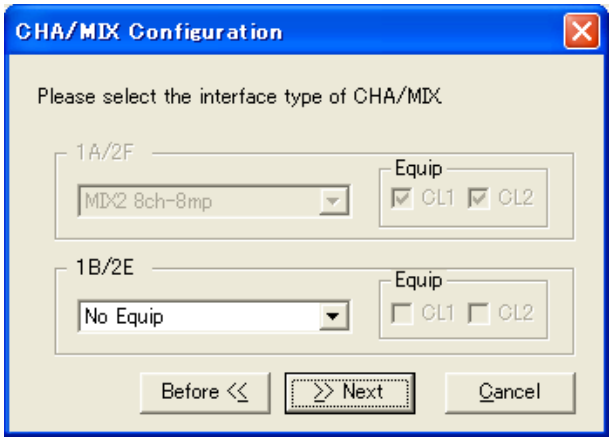
This is a special (exceptional) operation that can cause a serious failure such as a system down or a data loss if a wrong part to be removed is selected, and requires an input of a password. Ask the technical support division about the appropriateness of the operation, and input the password after getting an approval of executing the operation.

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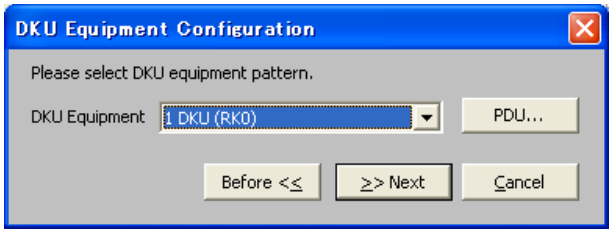
(7) <Updating the configuration information>
Select (CL) the [>>Next] in the 'DKC Configuration' window.



(7)-1 <Setting the MIX>
Check the setting item in the 'CHA/MIX Configuration' window.
Select (CL) [>>Next].

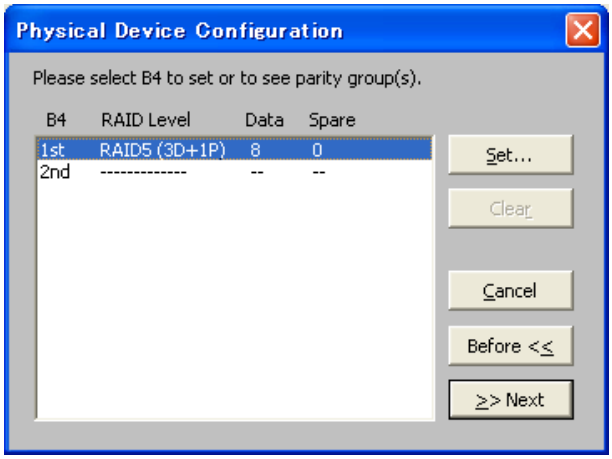


(8) <Setting the DKU frame>
Define the pattern of the DKU frame in the 'DKU Equipment Configuration' window.
After the setting is made, select (CL) the [>>Next].
However, if you want to set "Not Equip", select (CL) [>>Next]. Go to step (10).



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(9) <Changing the drive configuration information>
Define the drive configuration according to the 'Physical Drive Configuration' window. The detailed procedure is explained below.
[Set...]: Defines a parity group or a spare disk. The routine goes to Step (9)-1.
[Clear...]: Clears the setting of the B4.



After all the settings are made, select (CL) the [>>Next].
However, if you don't want to set any parity group or spare disk, select (CL) [>>Next].
Go to Step (10).

When the [Before<<] is selected (CL), the window is returned to the preceding one.

B4	Location	
	HDU	HDD
1st	HDU-00,01,02,03	HDD0X-00 ~ HDD0X-0E
2nd	HDU-10,11,12,13	HDD1X-00 ~ HDD1X-0E
3rd	HDU-20,21,22,23	HDD2X-00 ~ HDD2X-0E
4th	HDU-30,31,32,33	HDD3X-00 ~ HDD3X-0E

(9)-1 <Defining the parity group>

Select (CL) the group to be removed, and then select (CL) the [Delete] in the 'Parity Group Configuration' dialog box.

After the setting is made, select (CL) the [OK]. The routine is returned to Step (9).

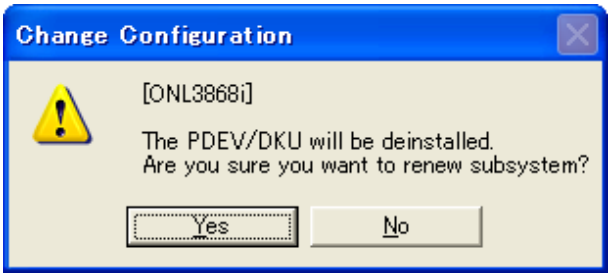
Grp*: A parity group for which the RAID concatenation is set.



(10) <Starting the removal>

In response to a message, "The PDEV/DKU will be deinstalled. Are you sure you want to renew subsystem?" select (CL) [Yes].

When the [No] is selected, the routine is returned to Step (2).



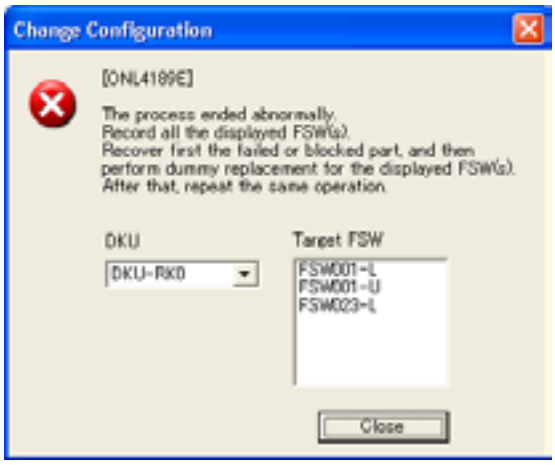
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(11) <Removing the hardware>

Do not push the [OK] button at this time yet. A message, “Please uninstall the desired hardware such as:
- FSW whose LED is on
- Hard disk drives
If you want to uninstall a PCB whose LED is off, please insert a jumper onto the PCB and then uninstall the PCB. After uninstallation is complete, select OK.” is displayed.



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



Refer to the subsystem configurations. (Refer to INST05-410)
And retry the operation after completing the dummy replacement of the FSW(s) if uninstallation was not completed.

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2. De-Installation Procedure of HDD Canister

2-1 Confirmation of position to de-install HDD canister

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

Relations between the installation locations of the RAID groups and the RAID group numbers set through the SVP are shown in Table 4.1.2-1

Table 4.1.2-1 Relation between HDDs installation order and RAID group number (3D+1P/2D+2D)

DKU-RK0		DKU-RK1		DKU-RK2		DKU-RK3	
Installation Order	RAID Group No.	Installation Order	RAID Group No.	Installation Order	RAID Group No.	Installation Order	RAID Group No.
001	1-01	016	2-01	031	3-01	046	4-01
002	1-02	017	2-02	032	3-02	047	4-02
003	1-03	018	2-03	033	3-03	048	4-03
004	1-04	019	2-04	034	3-04	049	4-04
005	1-05	020	2-05	035	3-05	050	4-05
006	1-06	021	2-06	036	3-06	051	4-06
007	1-07	022	2-07	037	3-07	052	4-07
008	1-08	023	2-08	038	3-08	053	4-08
009	1-09	024	2-09	039	3-09	054	4-09
010	1-10	025	2-10	040	3-10	055	4-10
011	1-11	026	2-11	041	3-11	056	4-11
012	1-12	027	2-12	042	3-12	057	4-12
013	1-13	028	2-13	043	3-13	058	4-13
014	1-14	029	2-14	044	3-14	059	4-14
015 *1 (Spare)	1-15/ Spare	030 *1 (Spare)	2-15/ Spare	045 *1 (Spare)	3-15/ Spare	060 *1 (Spare)	4-15/ Spare

*1: 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	

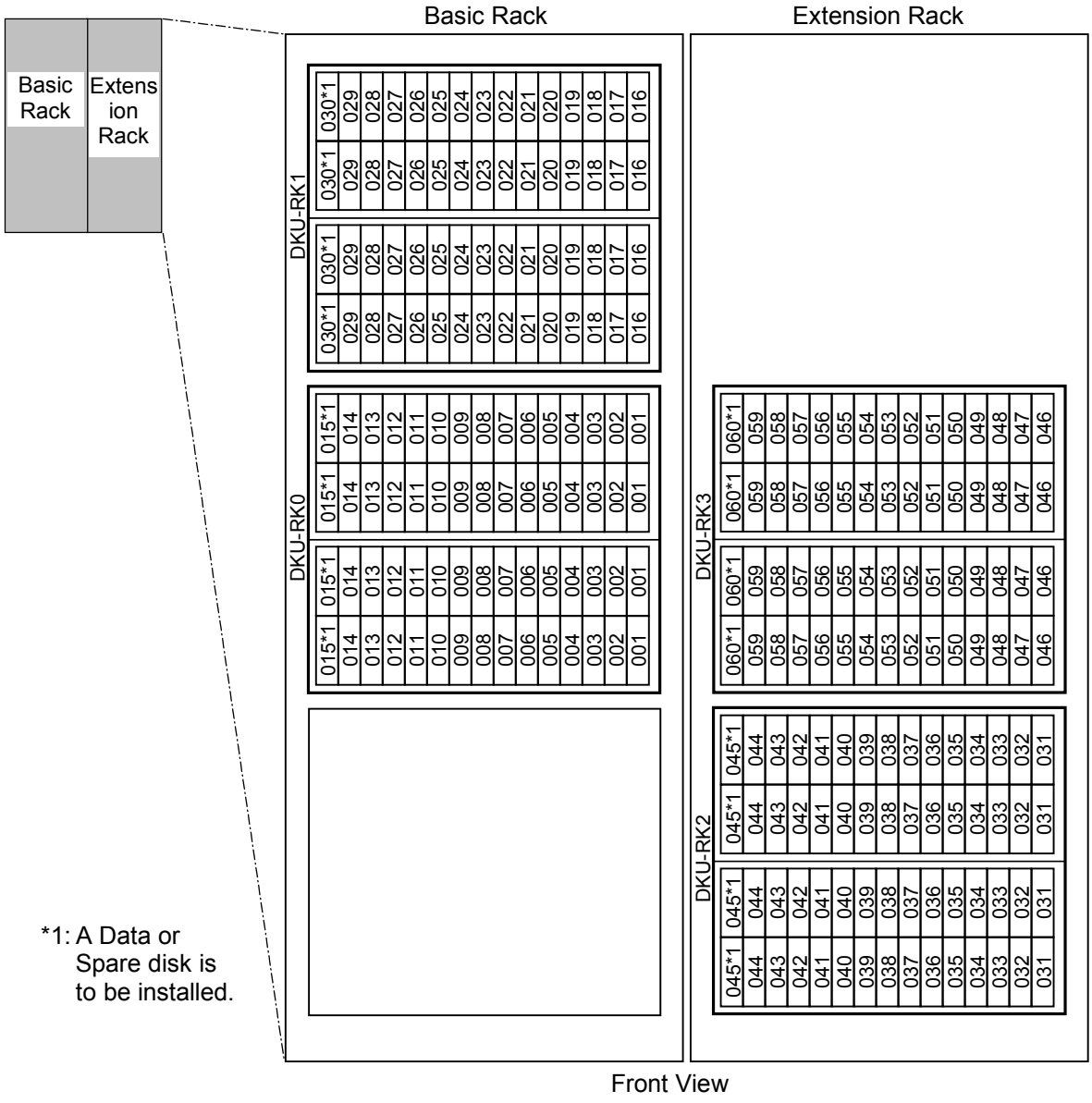


Fig. 4.1.2-1 (3D+1P/2D+2D) Data Drive/Parity Drive Expansion Sequence

The relationship between HDDs installation order and RAID group number is shown in the Table 4.1.2-1.

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(ii) RAID6(6D+2P)/RAID5(7D+1P)

Relations between the installation locations of the RAID groups and the RAID group numbers set through the SVP are shown in Table 4.1.2-2.

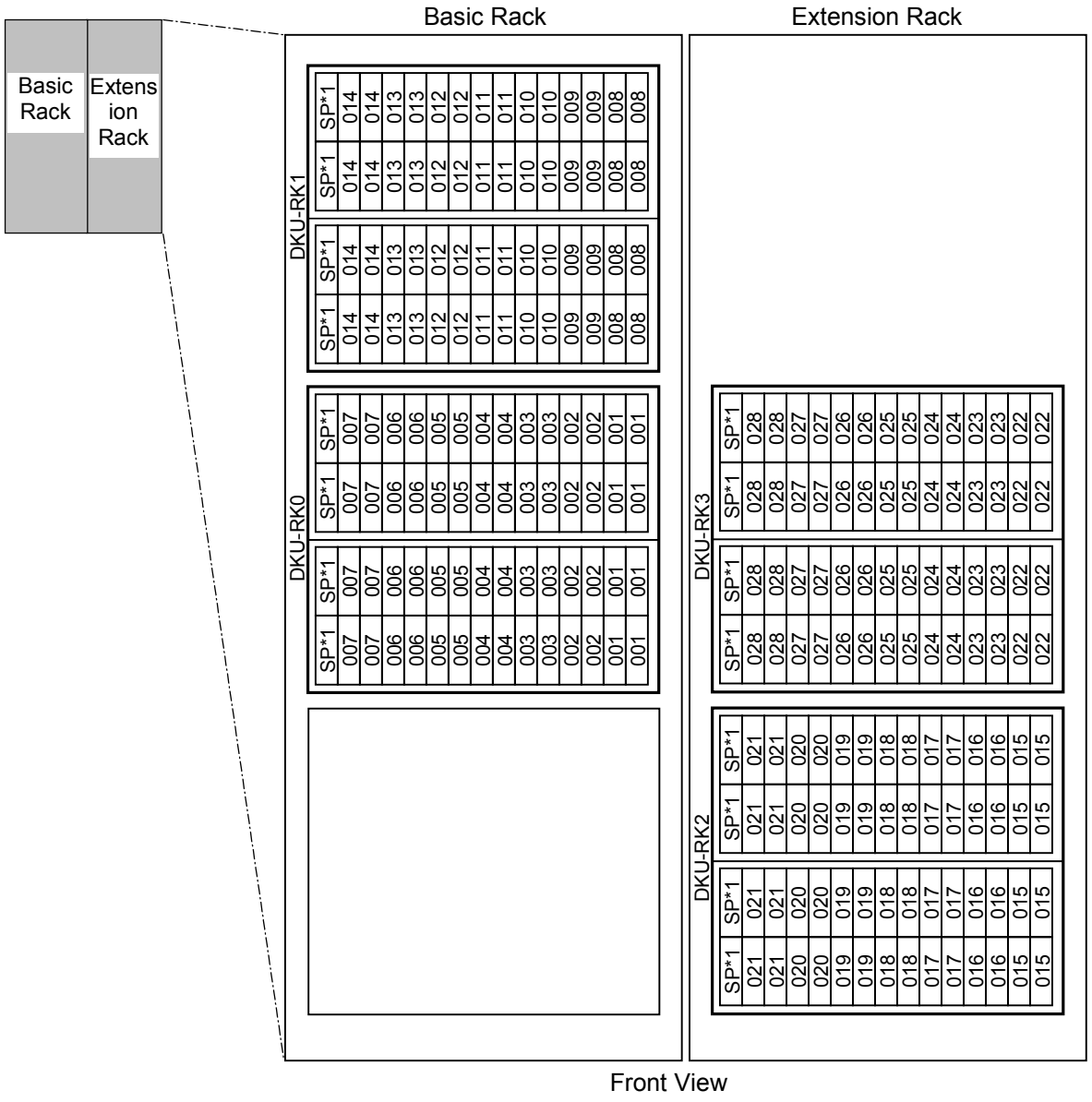
Table 4.1.2-2 Relation between HDDs installation order and RAID group number (6D+2P/7D+1P)

DKU-RK0		DKU-RK1		DKU-RK2		DKU-RK3	
Installation Order	RAID Group No.	Installation Order	RAID Group No.	Installation Order	RAID Group No.	Installation Order	RAID Group No.
001	1-01	008	2-01	015	3-01	022	4-01
002	1-03	009	2-03	016	3-03	023	4-03
003	1-05	010	2-05	017	3-05	024	4-05
004	1-07	011	2-07	018	3-07	025	4-07
005	1-09	012	2-09	019	3-09	026	4-09
006	1-11	013	2-11	020	3-11	027	4-11
007	1-13	014	2-13	021	3-13	028	4-13
Spare *1	Spare	Spare *1	Spare	Spare *1	Spare	Spare *1	Spare

*1: To be left vacant 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	



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

Fig. 4.1.2-2 (6D+2P/7D+1P) Data Drive/Parity Drive Expansion Sequence

The relationship between HDDs installation order and RAID group number is shown in The Table 4.1.2-2.

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(iii) Spare HDD

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

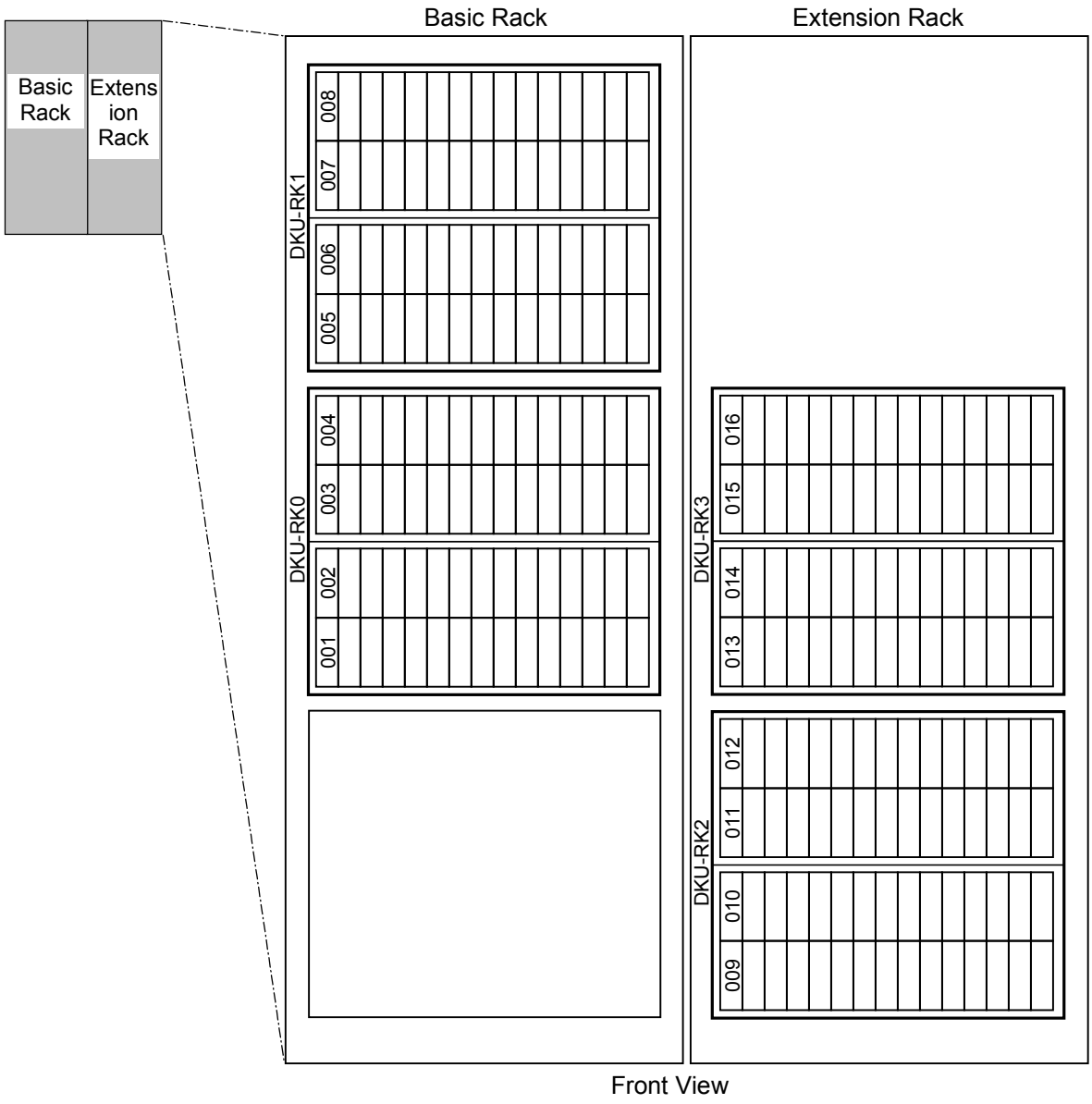
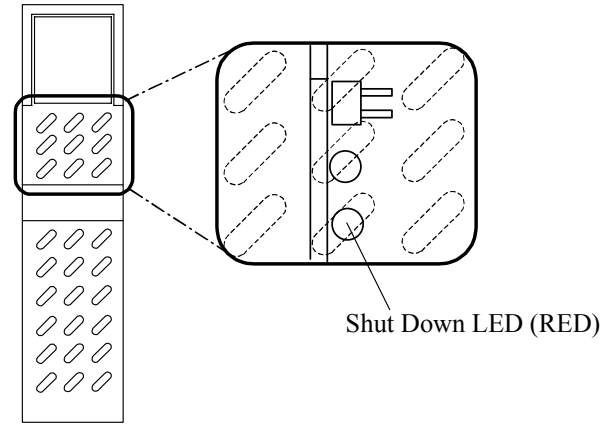


Fig. 4.1.2-3 Spare Drive Expansion Sequence

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2-2 De-Installation of the HDD Canister

a. Confirm the Shut Down LED on the HDD canister. (It should be RED.)



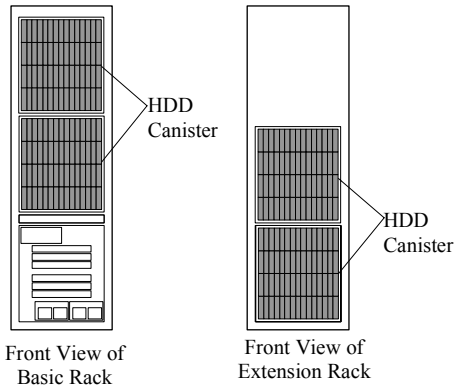
Front View of
HDD Canister

Fig. 4.1.2-4 Checking of Shut Down LED

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Notice: (1) Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.
(2) Since the HDD is a precision component, handle it very carefully not to apply a vibration or shock to it.

b. After pushing up the stopper on the front side of the HDD canister, pull the handle toward you to remove the HDD canister.
c. Insert the dummy canister to the HDU Box.



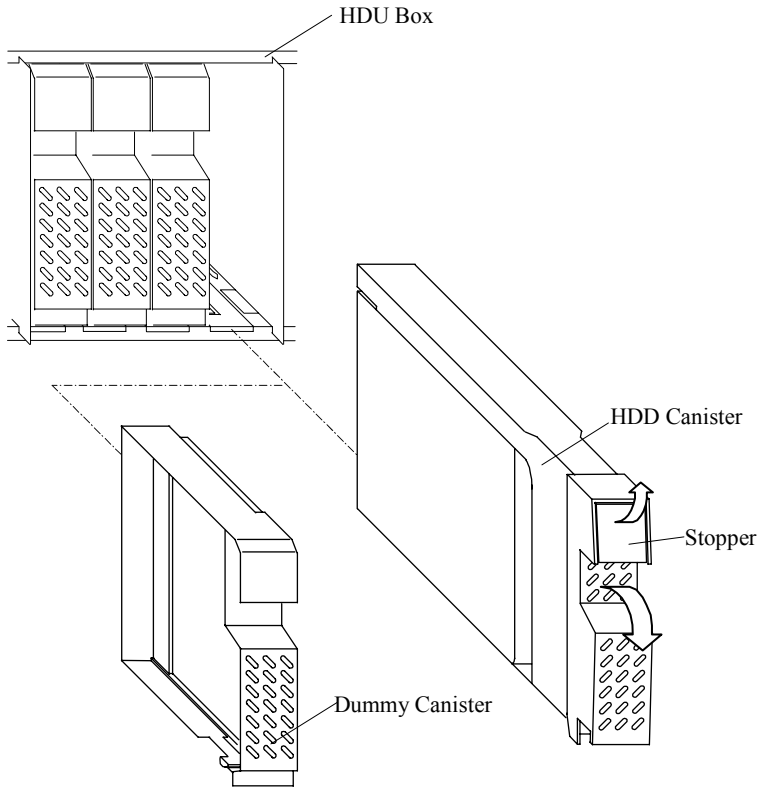


Fig. 4.1.2-5 Removal of HDD Canister

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2-3 Change of nameplate

a. Remove the screw from the rack frame and remove the nameplate tags to be installed.
b. Affix a necessary portion of the Label (QTY)(Accessory of DKC; DWG No.3268905-1) in layers on the nameplate and paint out numbers by black oil felt pen.
c. Attach all the nameplate tags with the screw.

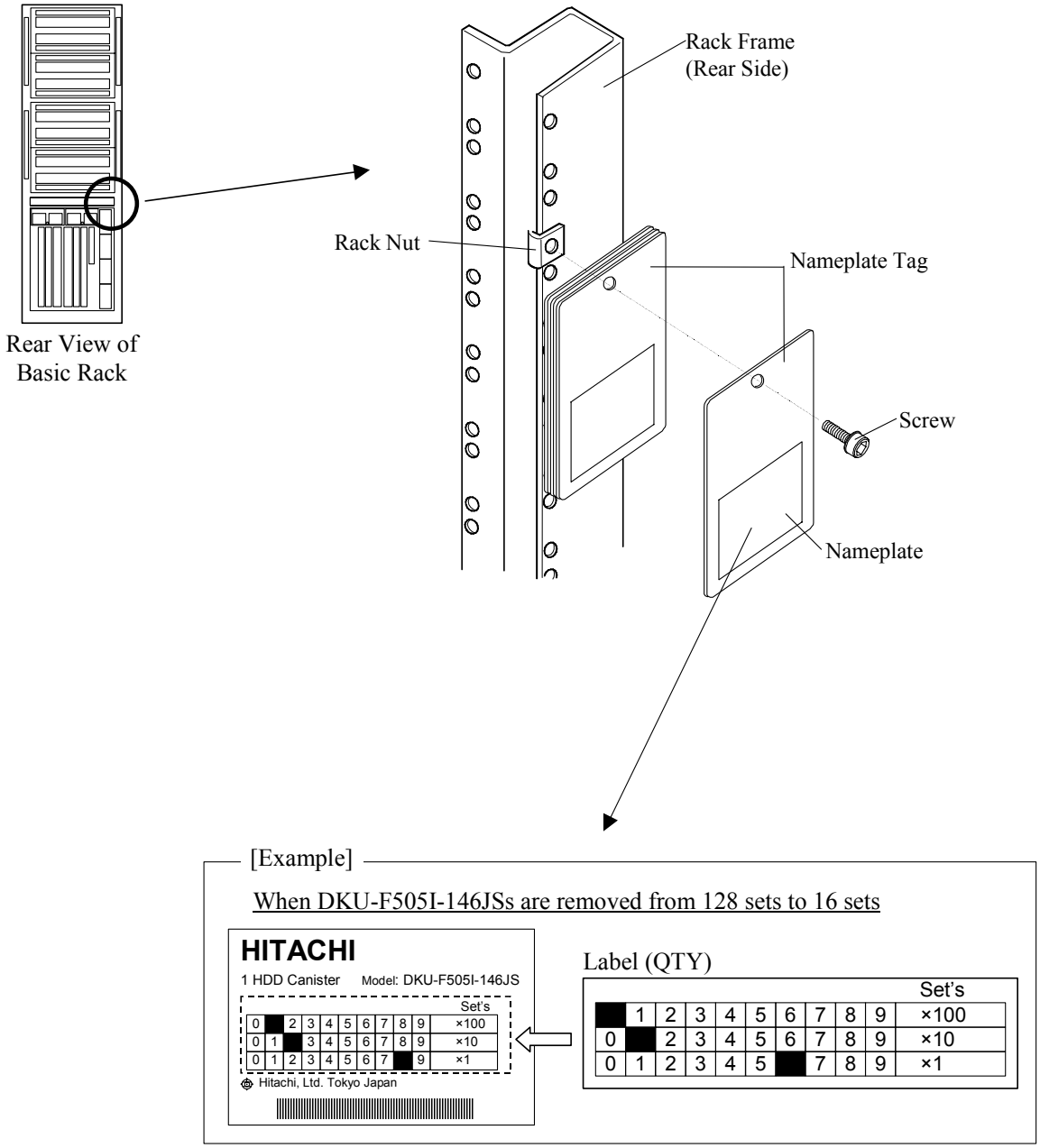
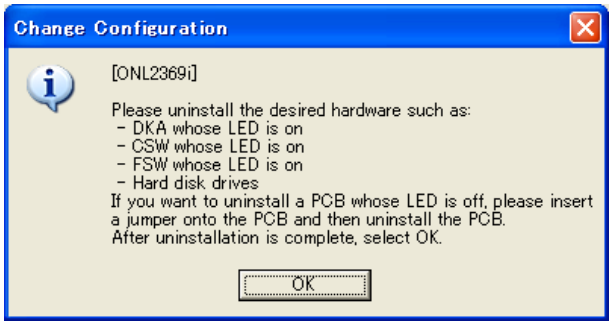


Fig. 4.1.2-6 Change of Nameplate

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3. SVP post procedure (Removal of added Battery)

(1)



In response to a message, “Please uninstall the desired hardware such as:
- DKA whose LED is on
- CSW whose LED is on
- FSW whose LED is on
- Hard disk drives

If you want to uninstall a PCB whose LED is off, please insert a jumper onto the PCB and then uninstall the PCB. After uninstallation is complete, select OK.” select (CL) [OK].

(2) <De-installation of battery>



Do not press the [OK] button at this time yet. When de-installation of the battery is required, a message, “Pull out the battery assembly, and then select OK.” is displayed.

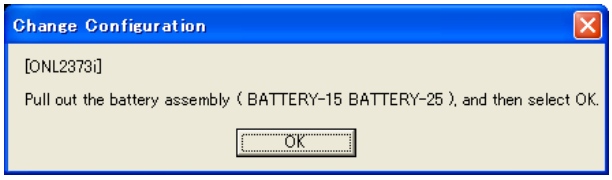
- When the message is displayed, remove the hardware component(s) following the procedure for de-installing the battery.
- When the message is not displayed, go to Step (2) of the SVP post-procedure (Making sure of completion of the removal).

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4. SVP post procedure (Making sure of completion of the removal)

(1)

In response to a message, “Pull out the battery assembly, and then select OK.” select (CL) [OK].



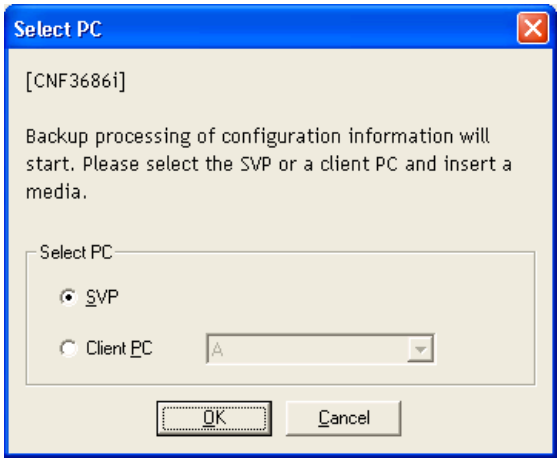
(2) <Making sure of completion of the removal>
A message, “Renewal process has completed. Please check subsystem status.” is displayed. In response to the message, select (CL) [OK].



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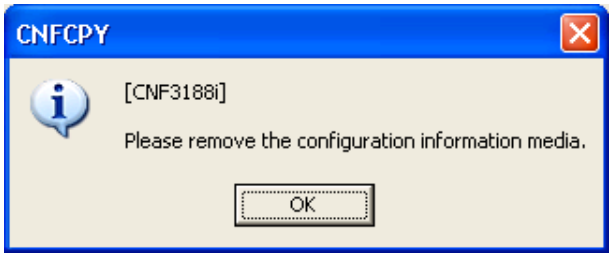
(3)

"Reading subsystem configuration data..." is displayed.
"Backup processing of configuration information will start. Please select the SVP or a client PC and insert a media." is displayed.
Insert the Config FD into FDD of selected PC, and select (CL) [OK].



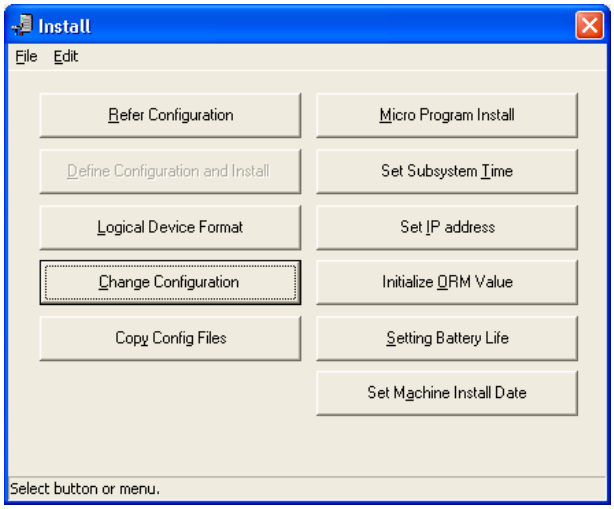
(4)

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



(5)

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



(6) <Mode Change>
Change the mode to View Mode.

Return to the work table (INST02-60) and perform rest of the works.

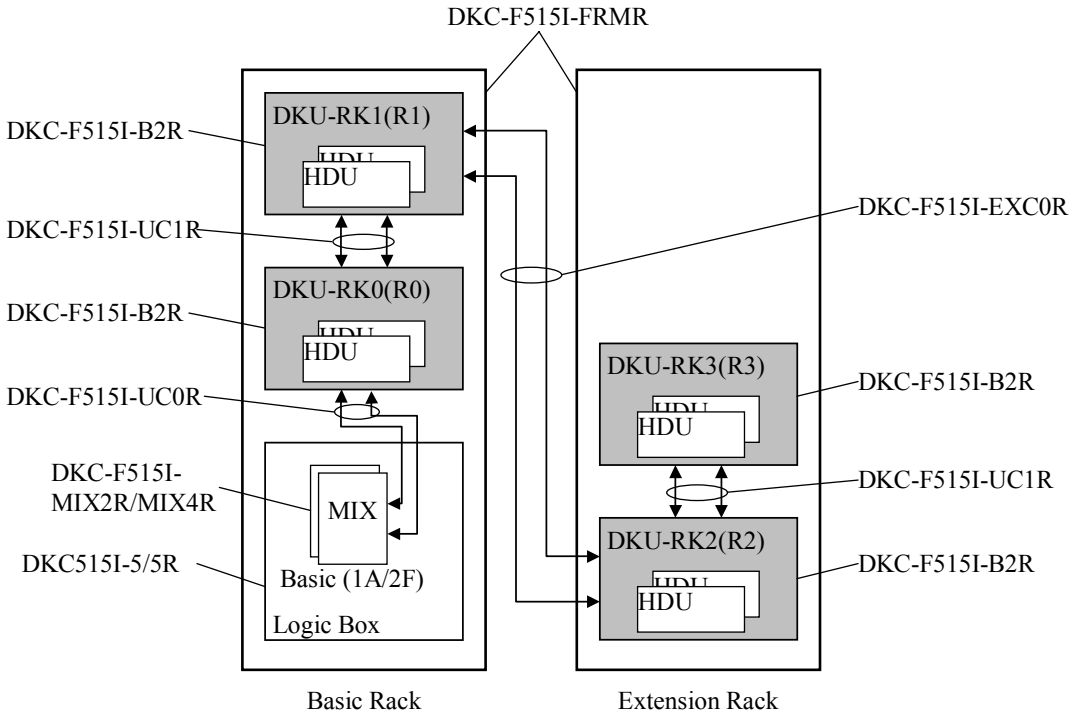
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4.1.3 (Blank)

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4.1.4 When performing removal of the data/spare HDD canister and DEV interface cable that accompanies the Removal of the HDD Box in case of Standard Configuration (DKC-F515I-UC1R/EXC0R, DKU-F505I-72KS/72JSR/72KSR/146JS/146JSR/146KSR/ 300JSR/300KSR/400JSR/72K1R/146J1R/146K1R/300J1R)

The subsystem configuration and number of required options for each model are shown below.



No.	Required Number of Options								
	(DKC-F515I-FRMR)		DKC515I -5/5R	DKC-F515I-					HDD *1
	Basic Rack	Extension Rack		MIX2R/ MIX4R	B2R	UC0R	UC1R	EXC0R	
1	1	—	1	1	1	1	0	0	60
2	1	—	1	1	2	1	1	0	120
3	1	1	1	1	3	1	1	1	180
4	1	1	1	1	4	1	2	1	240

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

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4.1.4.1 Removal of Covers (DKC-F515I-UC1R/EXC0R)

1. Remove the Rear Logic Box cover and HDD BOX covers. Refer to Fig. 4.1.4.1-1 and Fig. 4.1.4.1-2.

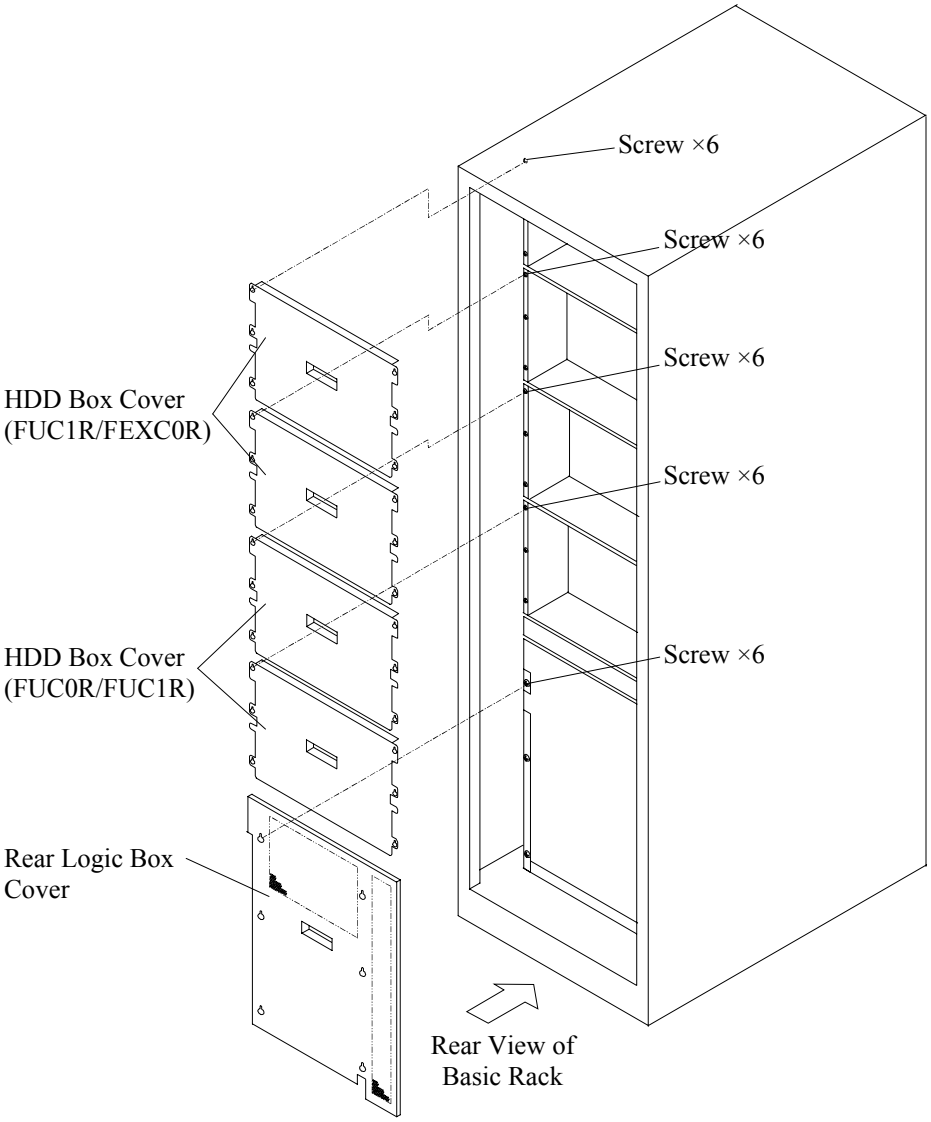


Fig. 4.1.4.1-1 Removal of Covers

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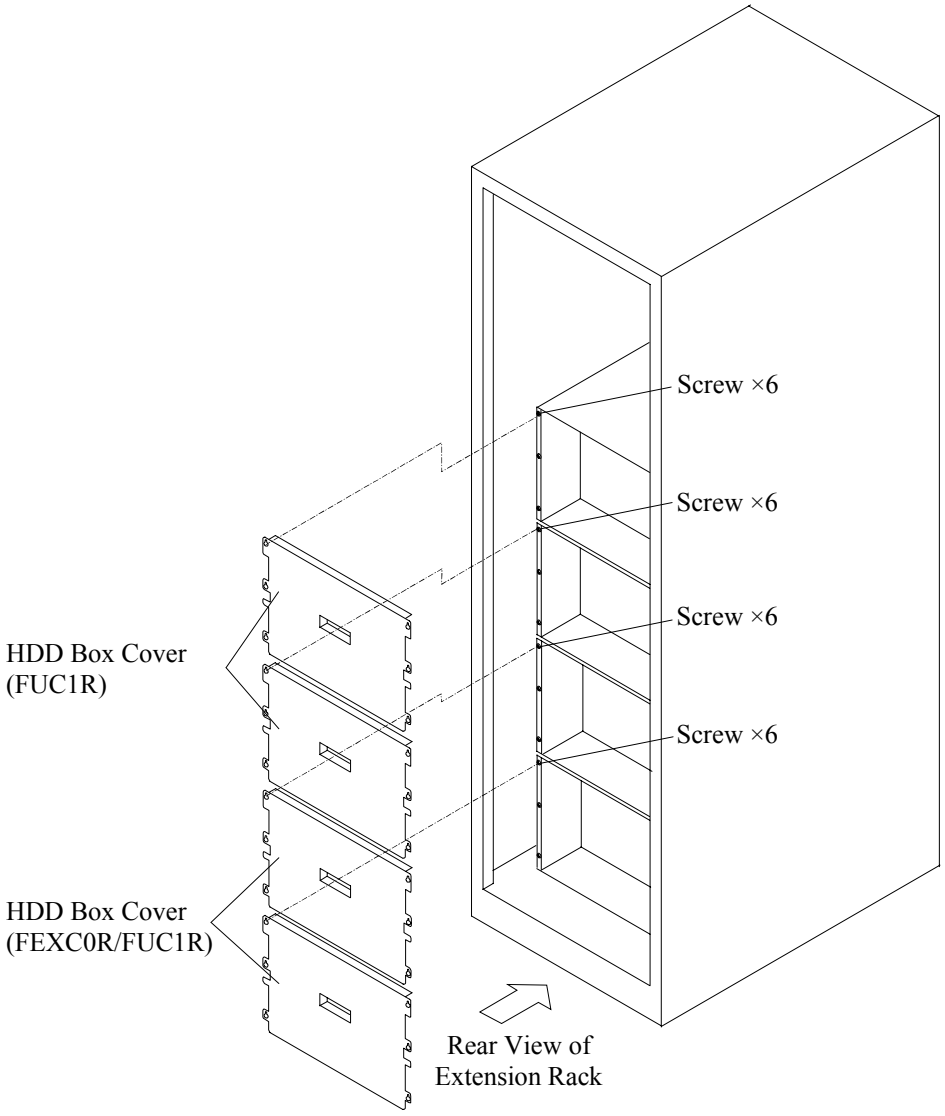


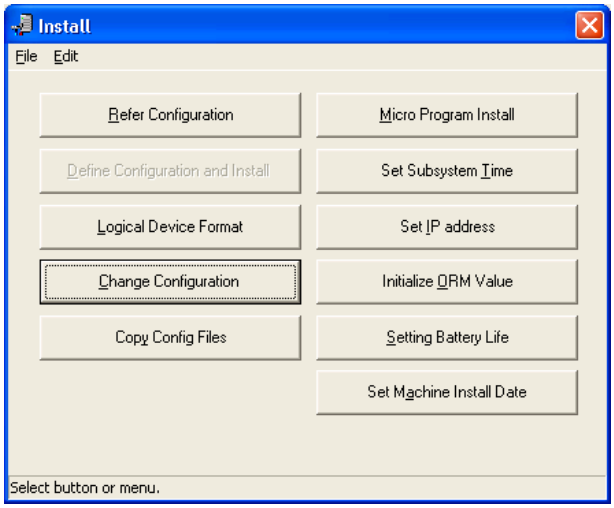
Fig. 4.1.4.1-2 Removal of Covers

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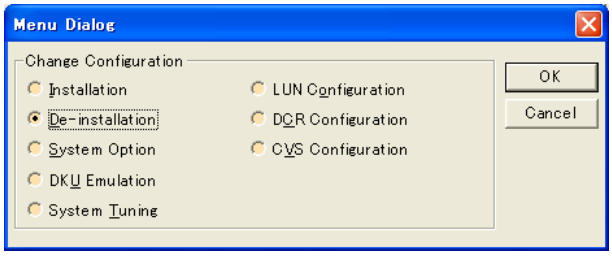
4.1.4.2 Setting up the New Device Structure Information

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

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

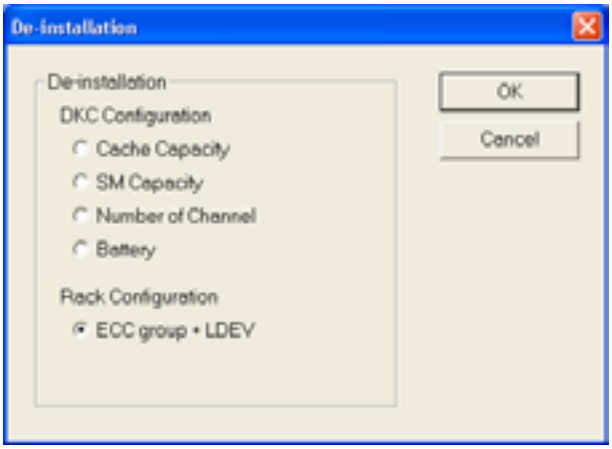


(3) <Start Device Structure Setup screen>
Select (CL) [De-installation] in the "Menu Dialog" dialog box and select (CL) [OK].

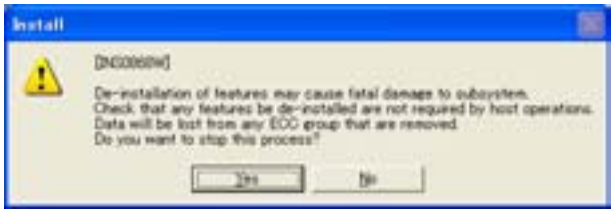


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(4) <Selecting a part to be changed>
Select (CL) [ECC group + LDEV] and select (CL) the [OK].

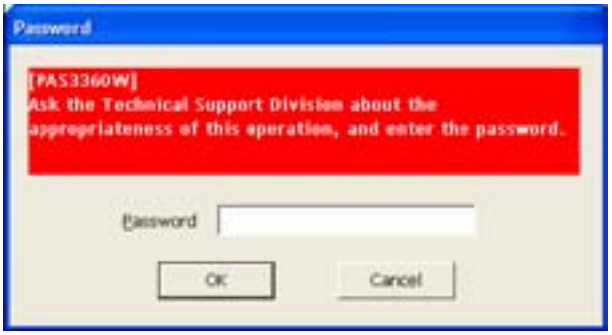


(5)
Select (CL) [No] in response to "De-installation of features may cause fatal damage to subsystem. Check that any features be de-installed are not required by host operations. Data will be lost from any ECC group that are removed. Do you want to stop this process?".



Note: The Alias information which is set to the LDEV included in the ECC to de-install is also deleted at the same time.
When the Alias is set, migrate the Alias information to another LDEV before de-installation or reset it after de-installation.

(6) <Input password>
Enter a password and select (CL) the [OK].

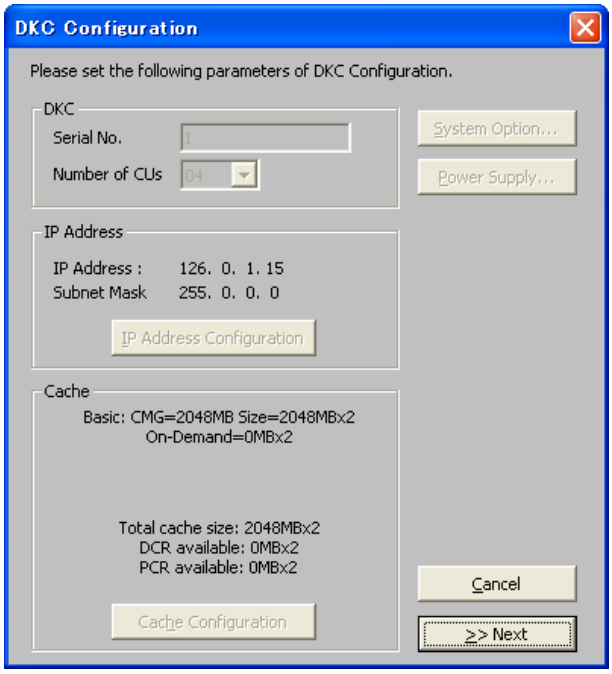


⚠ CAUTION

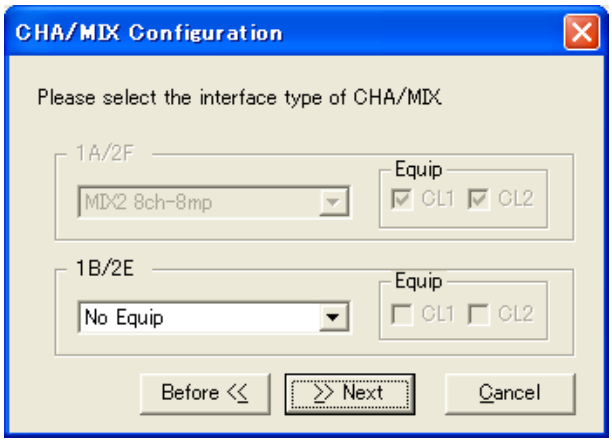
This is a special (exceptional) operation that can cause a serious failure such as a system down or a data loss if a wrong part to be removed is selected, and requires an input of a password. Ask the technical support division about the appropriateness of the operation, and input the password after getting an approval of executing the operation.

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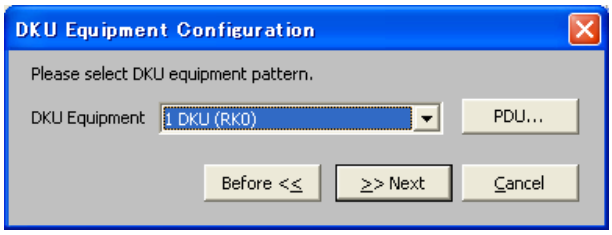
(7) <Updating the configuration information>
Select (CL) the [>>Next] in the 'DKC Configuration' window.



(7)-1 <Setting the MIX>
Check the setting item in the 'CHA/MIX Configuration' window.
Select (CL) [>>Next].

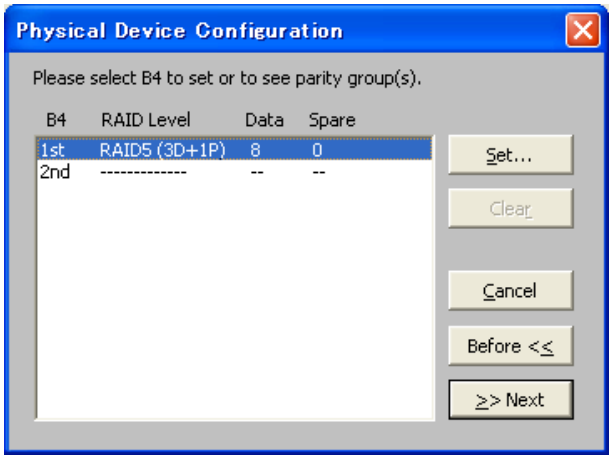


(8) <Setting the DKU frame>
Define the pattern of the DKU frame in the 'DKU Equipment Configuration' window.
After the setting is made, select (CL) the [>>Next].
However, if you want to set "Not Equip", select (CL) [>>Next]. Go to step (10).



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(9) <Changing the drive configuration information>
Define the drive configuration according to the 'Physical Drive Configuration' window. The detailed procedure is explained below.
[Set...]: Defines a parity group or a spare disk. The routine goes to Step (9)-1.
[Clear...]: Clears the setting of the B4.



After all the settings are made, select (CL) the [>>Next].
However, if you don't want to set any parity group or spare disk, select (CL) [>>Next].
Go to Step (10).

When the [Before<<] is selected (CL), the window is returned to the preceding one.

B4	Location	
	HDU	HDD
1st	HDU-00,01,02,03	HDD0X-00 ~ HDD0X-0E
2nd	HDU-10,11,12,13	HDD1X-00 ~ HDD1X-0E
3rd	HDU-20,21,22,23	HDD2X-00 ~ HDD2X-0E
4th	HDU-30,31,32,33	HDD3X-00 ~ HDD3X-0E

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(9)-1 <Defining the parity group>

Select (CL) the group to be removed, and then select (CL) the [Delete] in the 'Parity Group Configuration' dialog box.

After the setting is made, select (CL) the [OK]. The routine is returned to Step (9).

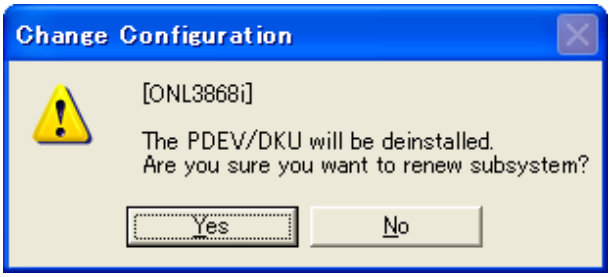
Grp*: A parity group for which the RAID concatenation is set.



(10) <Starting the removal>

In response to a message, "The PDEV/DKU will be deinstalled. Are you sure you want to renew subsystem?" select (CL) [Yes].

When the [No] is selected, the routine is returned to Step (2).

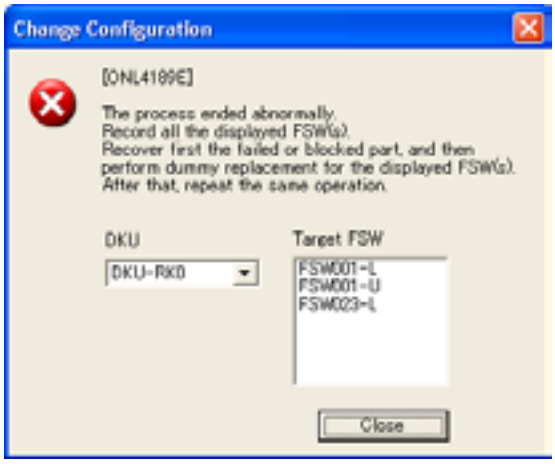


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(11) <Removing the hardware>



Do not push the [OK] button at this time yet. A message, “Please uninstall the desired hardware such as:
- FSW whose LED is on
- Hard disk drives
If you want to uninstall a PCB whose LED is off, please insert a jumper onto the PCB and then uninstall the PCB. After uninstallation is complete, select OK.” is displayed.



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

Refer to the subsystem configurations.
(Refer to INST05-410)
And follow the recovery procedure #1 if DKU uninstallation was not completed, or follow #2 if it was completed.

Note: If closing the (CL) [Close] button without recording the FSW(s) to be replaced, set all the FSW connected to the HDD to be uninstalled to the recorded status when performing either of the following recovery procedures.

<Recovery procedure #1>
(1) Refer to the Maintenance window, and if any part is found to fail, recover it by replacement.
(2) Perform dummy replacement of all the recorded FSW(s).
(3) Uninstall again the DKU frame.

<Recovery procedure #2>
(1) Refer to the Maintenance window, and if any part is found to fail, recover it by replacement.
(2) To perform the dummy replacement of the recorded FSW, first remove the cable connected with the DKU to be replaced, when the FSW remained removed, and then mount the FSW.
(3) If any cable still remained connected to the DKU to be uninstalled and also connected to the FSW not recorded, remove the cable without performing FSW replacement.

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4.1.4.3 De-Installation Procedure of HDD Canister

1. Confirmation of position to de-install HDD canister
   (i) RAID5(3D+1P)/RAID1(2D+2D)
   Relations between the installation locations of the RAID groups and the RAID group numbers set through the SVP are shown in Table 4.1.4.3-1.

Table 4.1.4.3-1 Relation between HDDs installation order and RAID group number (3D+1P/2D+2D)

DKU-RK0		DKU-RK1		DKU-RK2		DKU-RK3	
Installation Order	RAID Group No.	Installation Order	RAID Group No.	Installation Order	RAID Group No.	Installation Order	RAID Group No.
001	1-01	016	2-01	031	3-01	046	4-01
002	1-02	017	2-02	032	3-02	047	4-02
003	1-03	018	2-03	033	3-03	048	4-03
004	1-04	019	2-04	034	3-04	049	4-04
005	1-05	020	2-05	035	3-05	050	4-05
006	1-06	021	2-06	036	3-06	051	4-06
007	1-07	022	2-07	037	3-07	052	4-07
008	1-08	023	2-08	038	3-08	053	4-08
009	1-09	024	2-09	039	3-09	054	4-09
010	1-10	025	2-10	040	3-10	055	4-10
011	1-11	026	2-11	041	3-11	056	4-11
012	1-12	027	2-12	042	3-12	057	4-12
013	1-13	028	2-13	043	3-13	058	4-13
014	1-14	029	2-14	044	3-14	059	4-14
015 *1 (Spare)	1-15/ Spare	030 *1 (Spare)	2-15/ Spare	045 *1 (Spare)	3-15/ Spare	060 *1 (Spare)	4-15/ Spare

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

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	

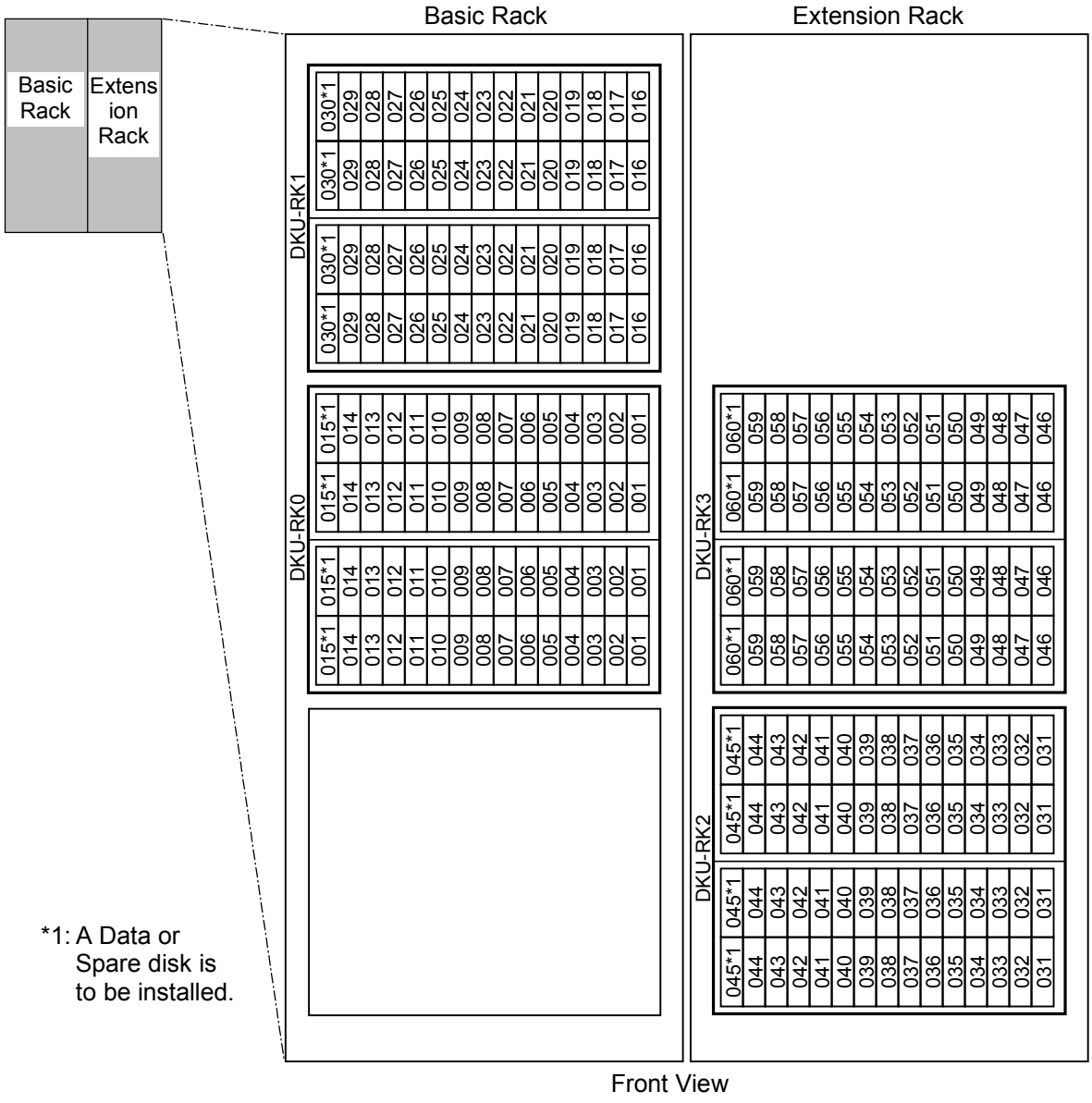


Fig. 4.1.4.3-1 (3D+1P/2D+2D) Data Drive/Parity Drive Expansion Sequence

The relationship between HDDs installation order and RAID group number is shown in the Table 4.1.4.3-1.

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(ii) RAID6(6D+2P)/RAID5(7D+1P)

Relations between the installation locations of the RAID groups and the RAID group numbers set through the SVP are shown in Table 4.1.4.3-2.

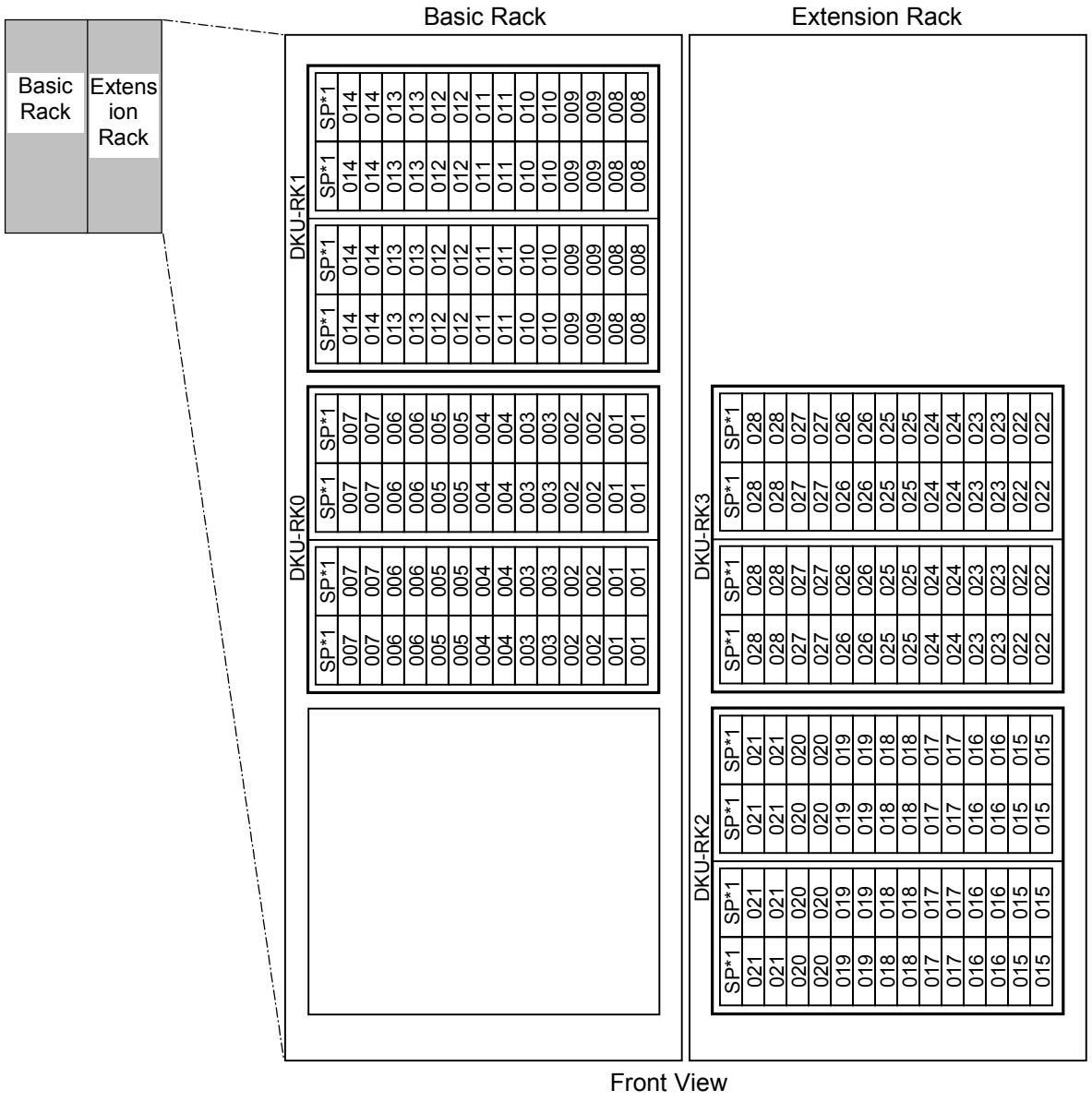
Table 4.1.4.3-2 Relation between HDDs installation order and RAID group number (6D+2P/7D+1P)

DKU-RK0		DKU-RK1		DKU-RK2		DKU-RK3	
Installation Order	RAID Group No.	Installation Order	RAID Group No.	Installation Order	RAID Group No.	Installation Order	RAID Group No.
001	1-01	008	2-01	015	3-01	022	4-01
002	1-03	009	2-03	016	3-03	023	4-03
003	1-05	010	2-05	017	3-05	024	4-05
004	1-07	011	2-07	018	3-07	025	4-07
005	1-09	012	2-09	019	3-09	026	4-09
006	1-11	013	2-11	020	3-11	027	4-11
007	1-13	014	2-13	021	3-13	028	4-13
Spare *1	Spare	Spare *1	Spare	Spare *1	Spare	Spare *1	Spare

*1: To be left vacant 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	



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

Fig. 4.1.4.3-2 (6D+2P/7D+1P) Data Drive/Parity Drive Expansion Sequence

The relationship between HDDs installation order and RAID group number is shown in The Table 4.1.4.3-2.

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(iii) Spare HDD

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

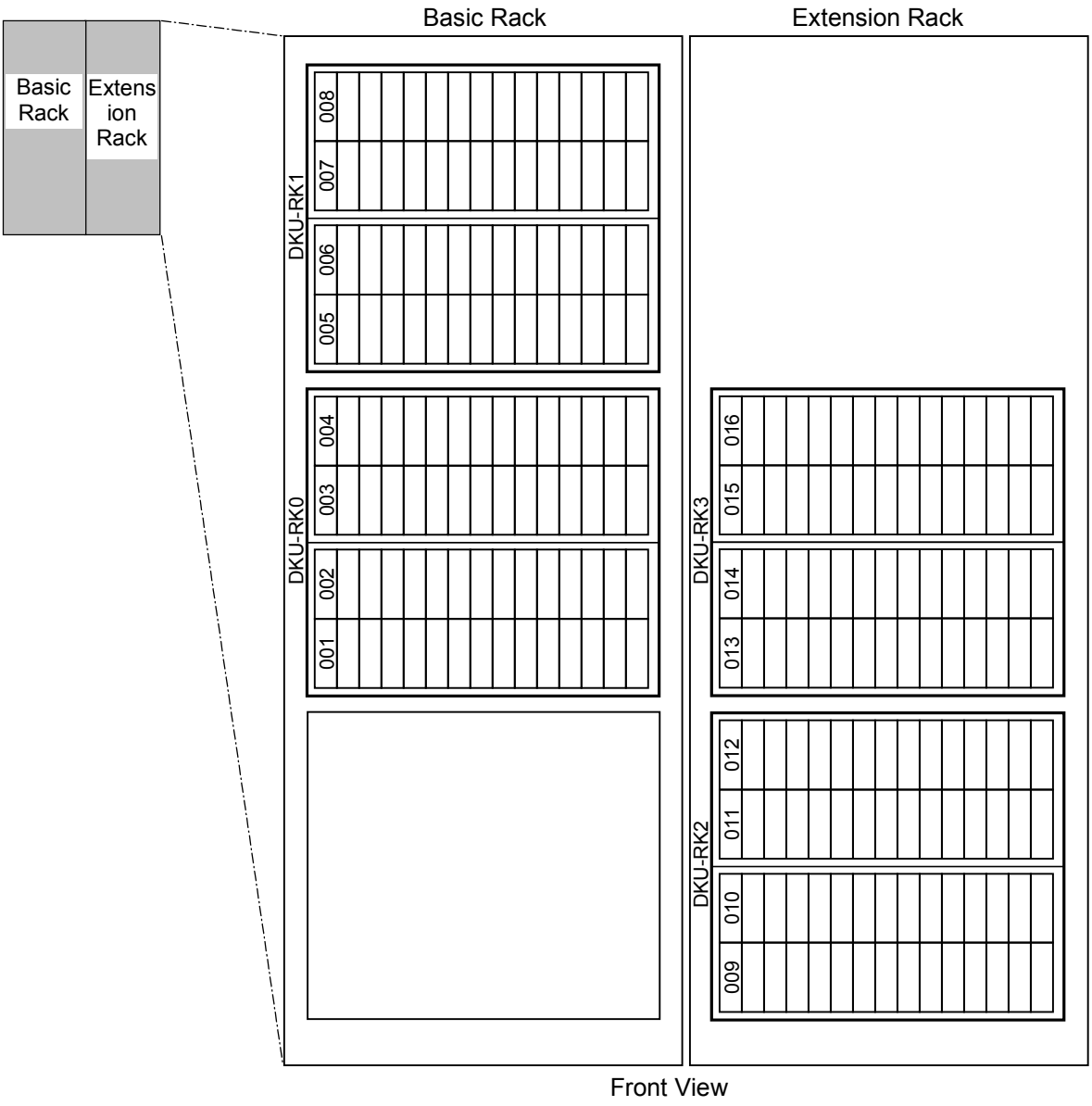
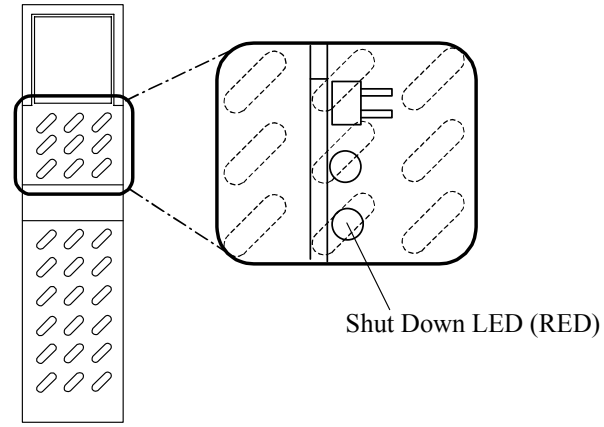


Fig. 4.1.4.3-3 Spare Drive Expansion Sequence

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2. De-Installation of the HDD Canister
   a. Confirm the Shut Down LED on the HDD canister. (It should be RED.)



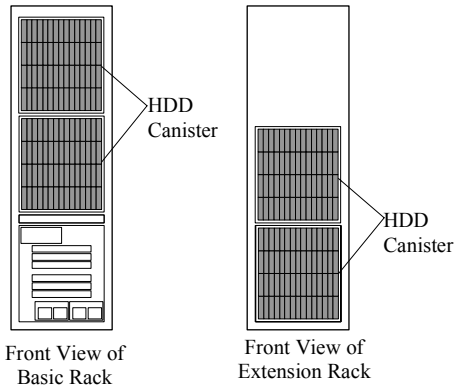
Front View of
HDD Canister

Fig. 4.1.4.3-4 Checking of Shut Down LED

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Notice: (1) Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.
(2) Since the HDD is a precision component, handle it very carefully not to apply a vibration or shock to it.

b. After pushing up the stopper on the front side of the HDD canister, pull the handle toward you to remove the HDD canister.
c. Insert the dummy canister to the HDU Box.



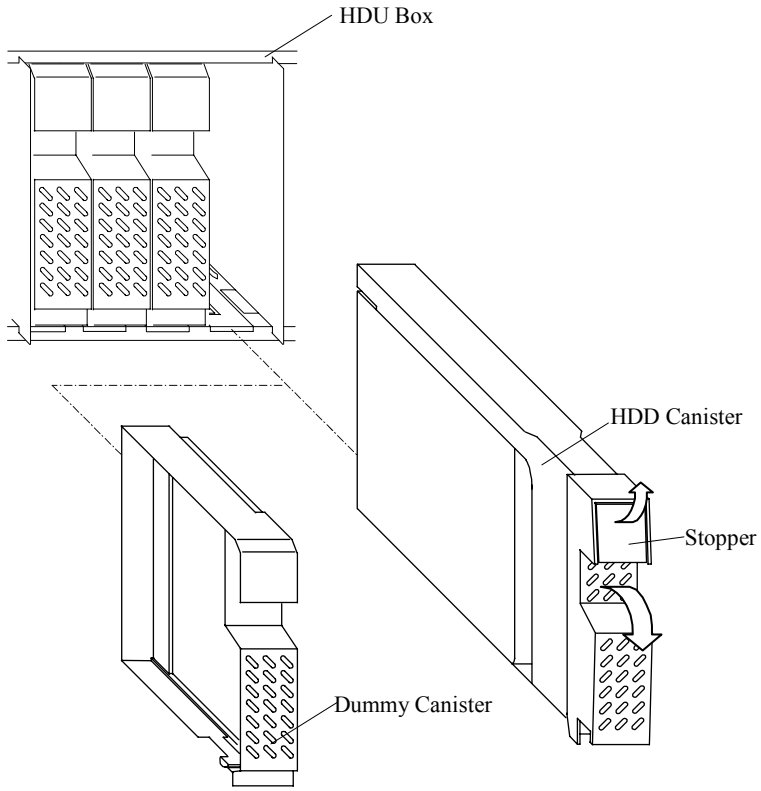


Fig. 4.1.4.3-5 Removal of HDD Canister

3. Change of nameplate
   a. Remove the screw from the rack frame and remove the nameplate tags to be installed.
   b. Affix a necessary portion of the Label (QTY)(Accessory of DKC; DWG No.3268905-1) in layers on the nameplate and paint out numbers by black oil felt pen.
   c. Attach all the nameplate tags with the screw.

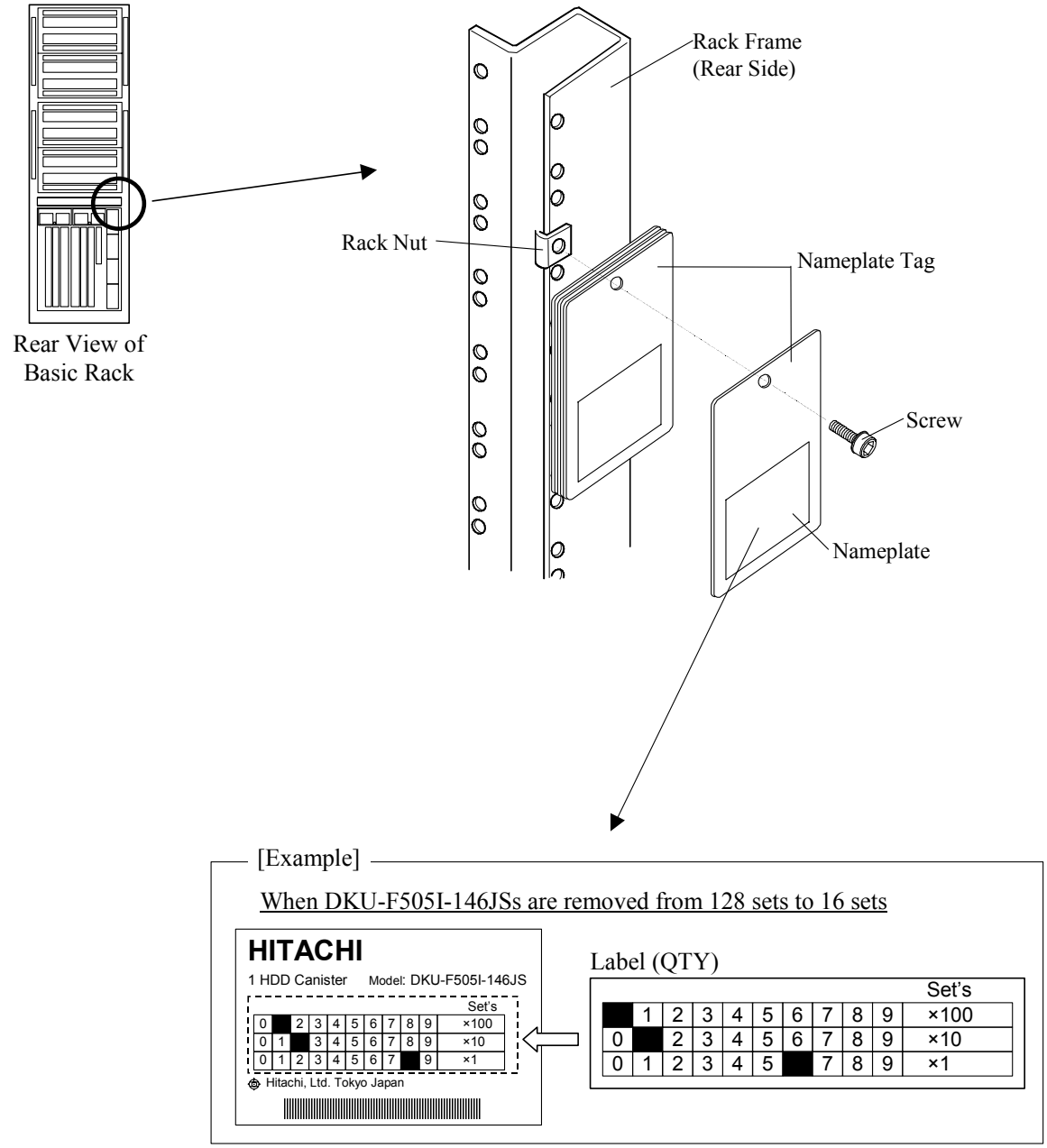


Fig. 4.1.4.3-6 Change of Nameplate

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4.1.4.4 (Blank)

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4.1.4.6 De-Installation Procedure of DEV Interface Cable connects DKU-R0 and DKU-R1 (DKC-F515I-UC1R)

De-Installation Condition

1st DKC-F515I-UC1R is the cable option to connect the DKU-RK0 and the DKU-RK1.
2nd DKC-F515I-UC1R is the cable option to connect the DKU-RK2 and the DKU-RK3.
This option becomes unnecessary when de-installing the DKU-RK1(2nd DKC-F515I-B2R) or DKU-RK3(4th DKC-F515I-B2R).
Decide if the DEV Interface Cable (DKC-F515I-UC1R) needs to be removed, and go to the page to meet the condition. (Refer to Table 4.1.4.6-1.)

Table 4.1.4.6-1 Work Procedure Table

No.	Condition of Work Procedure	Page
1	When you need to remove DEV Interface Cable (DKC-F515I-UC1R)	INST04-01C-240
2	When you do not need to remove DEV Interface Cable (DKC-F515I-UC1R)	INST04-01C-280

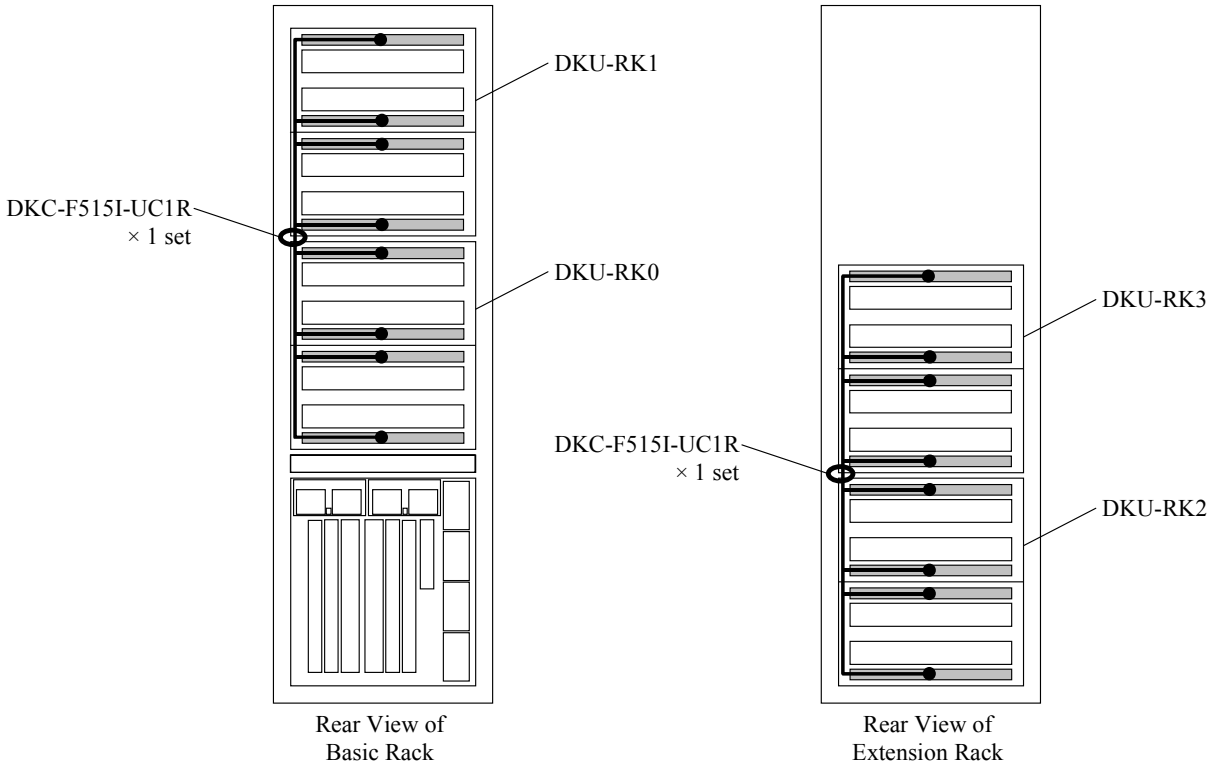


Fig. 4.1.4.6-1 Mounting Position of DEV Interface Cable

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When de-installation the cable from the Basic Rack (between the DKU-RK0 and DKU-RK1)

1. Disconnect the DEV interface cables from the FSW PCBs in the DKU-RK0 and DKU-RK1.
2. Remove the eight cable clamps and four repeat binders and remove the DEV interface cables from the Rack frame.

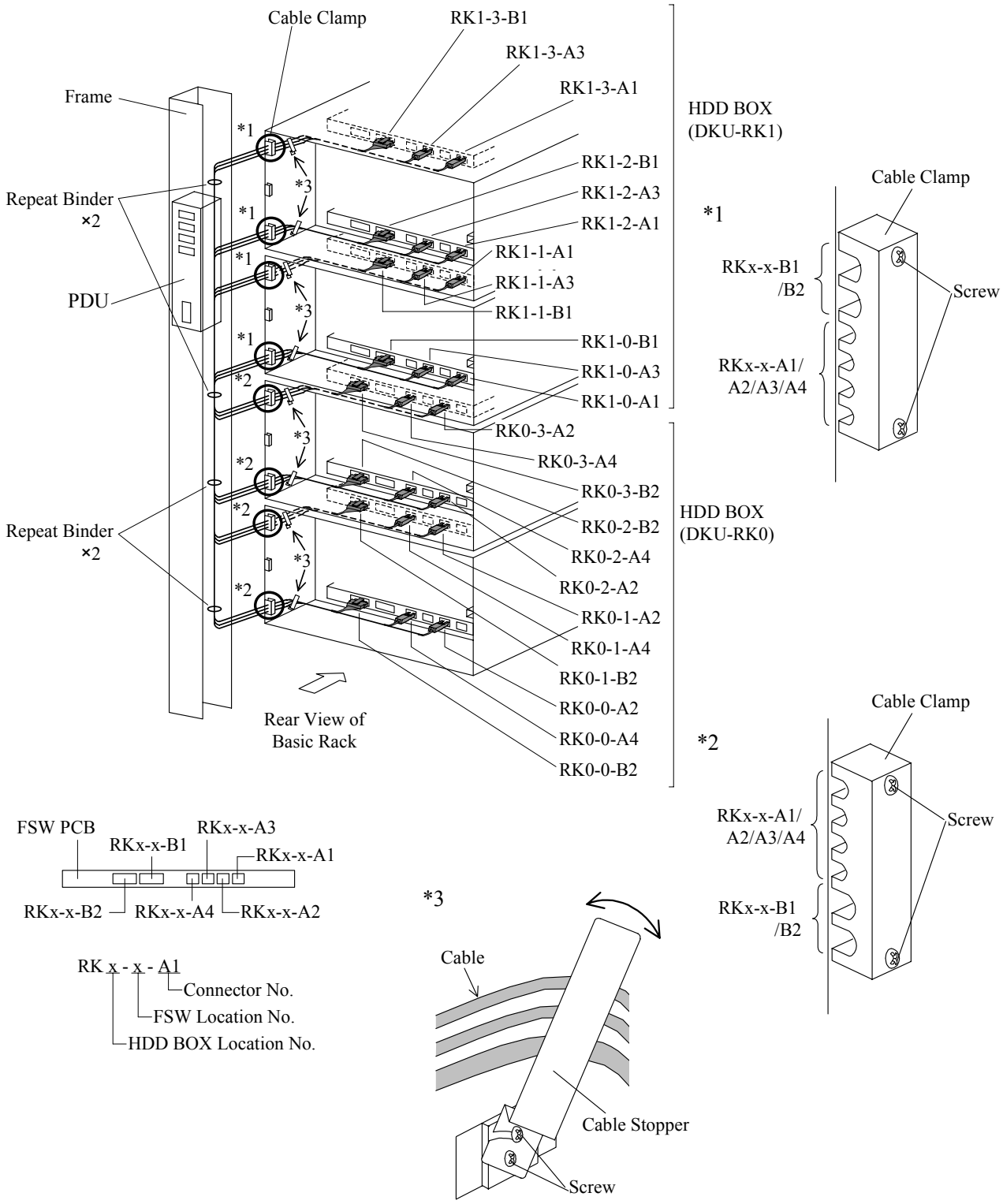


Fig. 4.1.4.6-2 Removal of DEV Interface Cable

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3. Removal of nameplate
   a. Remove the screw from the rack frame and remove the nameplate tags to be installed.
   b. Remove the DKC-F515I-UC1R nameplate from the nameplate tag. Remove the HDS nameplate even if the HP model number is de-installed.
   c. Attach the remaining nameplate tags with the screw.

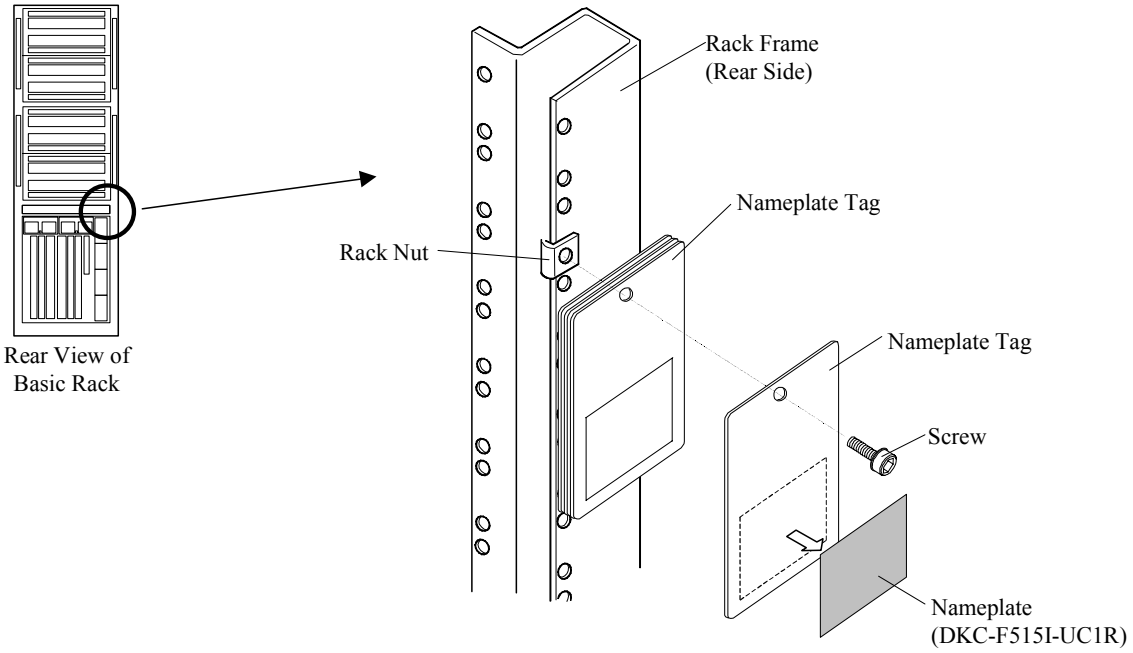


Fig. 4.1.4.6-3 Removal of Nameplate

   d. Remove the nameplate from the lower HDD BOX cover. (only HP)

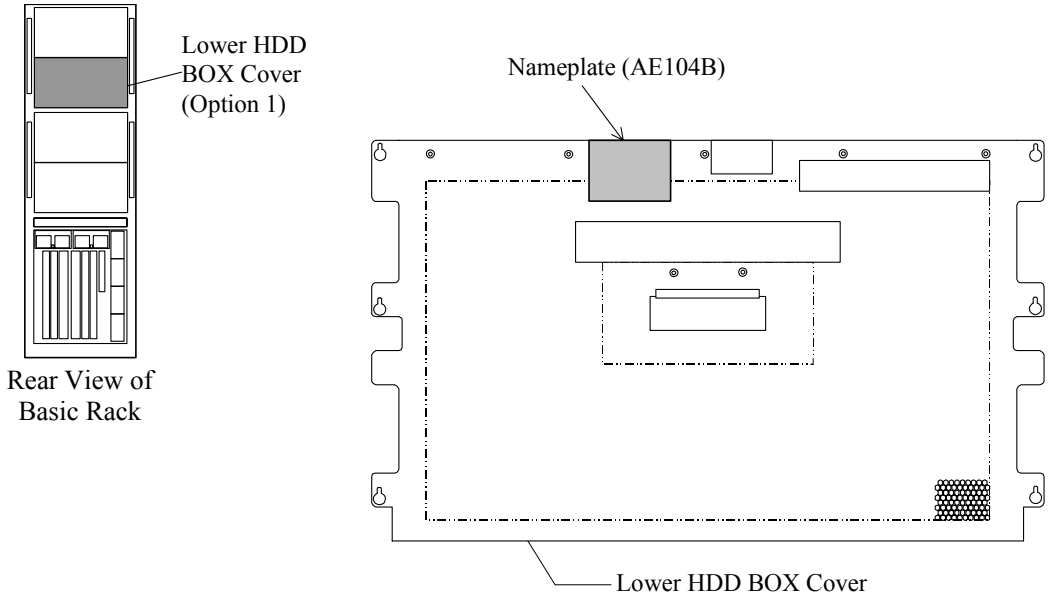


Fig. 4.1.4.6-3A Removal of Nameplate for HP

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When de-installation the cable from the Extension Rack (between the DKU-RK2 and DKU-RK3)

1. Disconnect the DEV interface cables from the FSW PCBs in the DKU-RK2 and DKU-RK3.
2. Remove the eight cable clamps and four repeat binders and remove the DEV interface cables from the Rack frame.

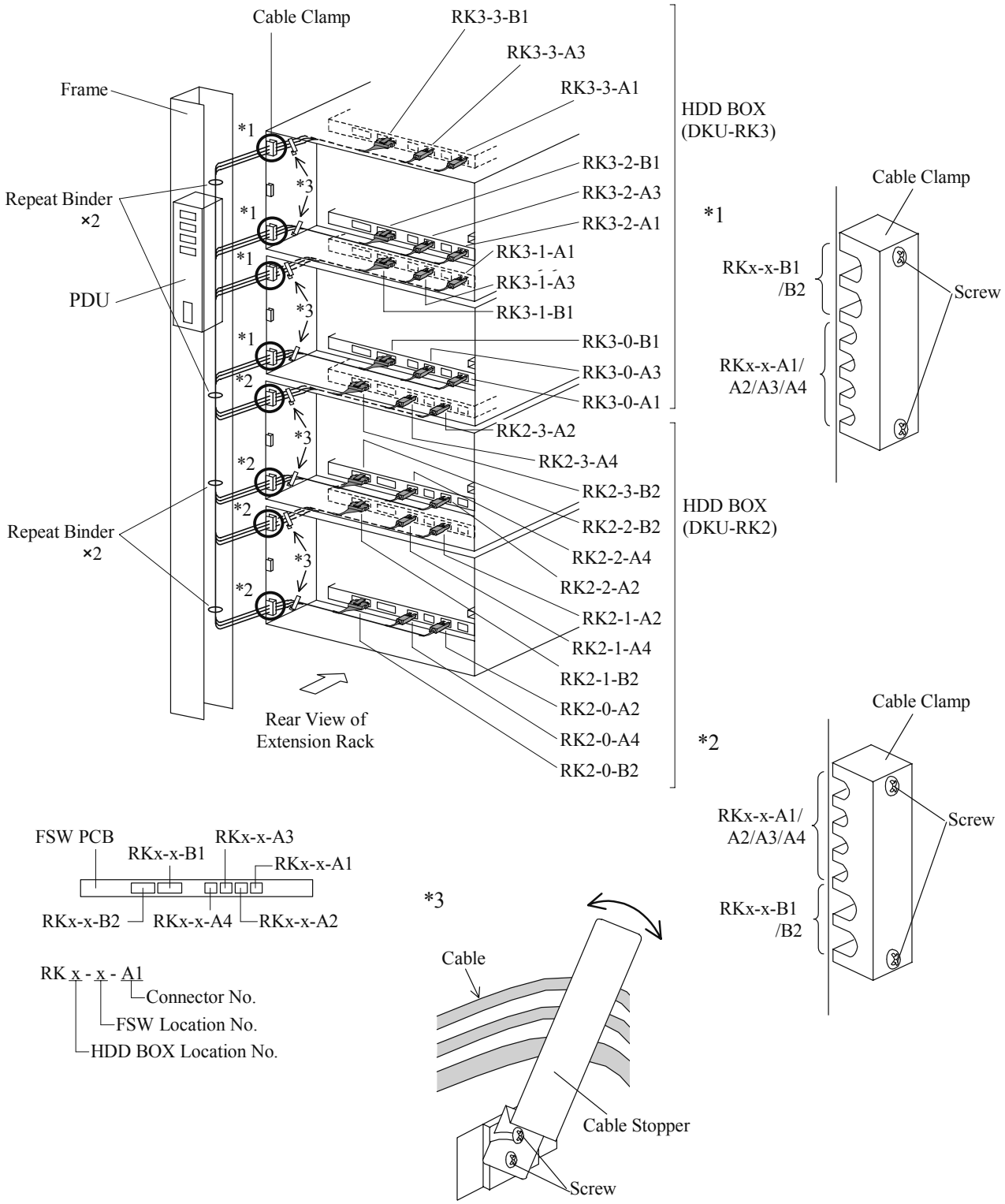


Fig. 4.1.4.6-4 Removal of DEV Interface Cable

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3. Removal of nameplate
   a. Remove the screw from the rack frame and remove the nameplate tags to be installed.
   b. Remove the DKC-F515I-UC1R nameplate from the nameplate tag. Remove the HDS nameplate even if the HP model number is de-installed.
   c. Attach the remaining nameplate tags with the screw.

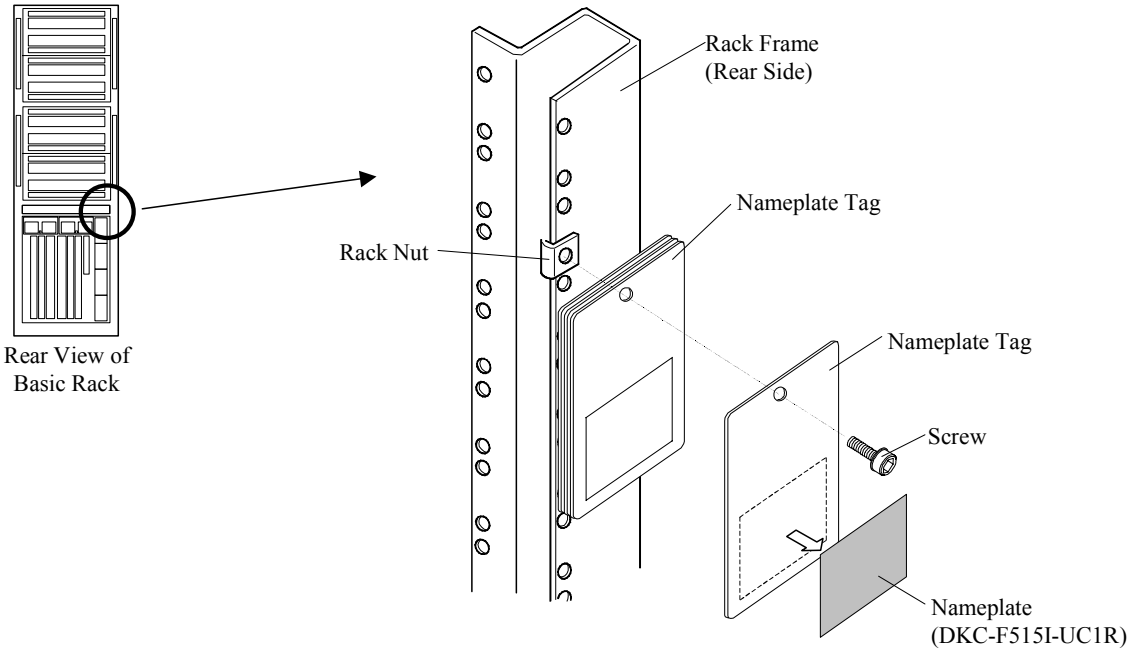


Fig. 4.1.4.6-5 Removal of Nameplate

   d. Remove the nameplate from the lower HDD BOX cover. (only HP)

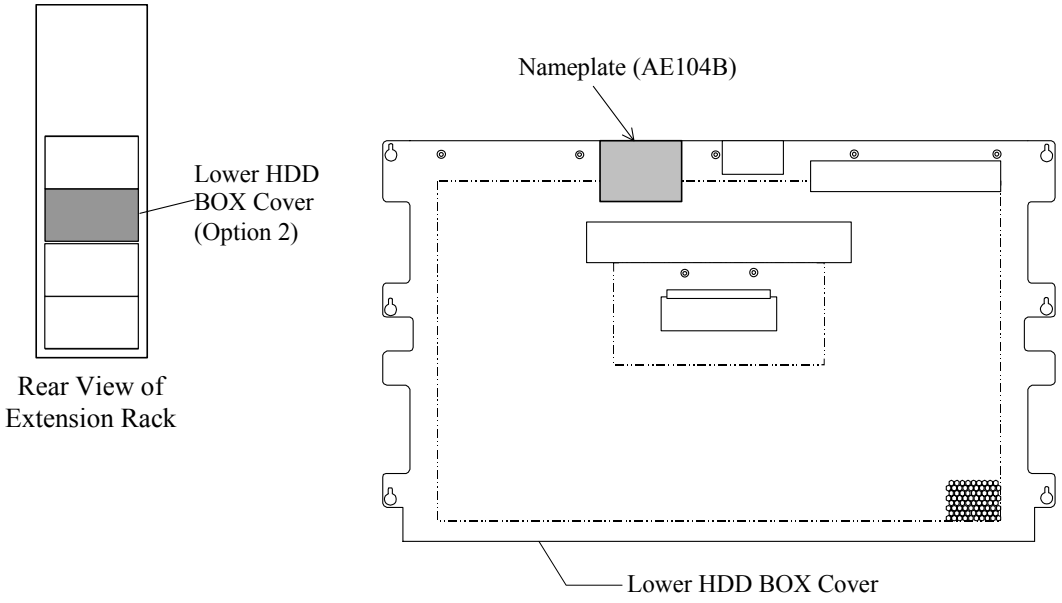


Fig. 4.1.4.6-6 Removal of Nameplate for HP

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4.1.4.7 De-Installation Procedure of DEV Interface Cable connects DKU-R1 and DKU-R2 (DKC-F515I-EXC0R)

De-Installation Condition

DKC-F515I-EXC0R is the cable option to connect the DKU-RK1 and the DKU-RK2. This option becomes unnecessary when de-installing the DKU-RK2 (3rd DKC-F515I-B2R). Decide if the DEV Interface Cable (DKC-F515I-EXC0R) needs to be removed, and go to the page to meet the condition. (Refer to Table 4.1.4.7-1.)

Table 4.1.4.7-1 Work Procedure Table

No.	Condition of Work Procedure	Page
1	When you need to remove DEV Interface Cable (DKC-F515I-EXC0R)	INST04-01C-290
2	When you do not need to remove DEV Interface Cable (DKC-F515I-EXC0R)	INST04-01C-330

When installing the Extension Rack on the right of the Basic Rack

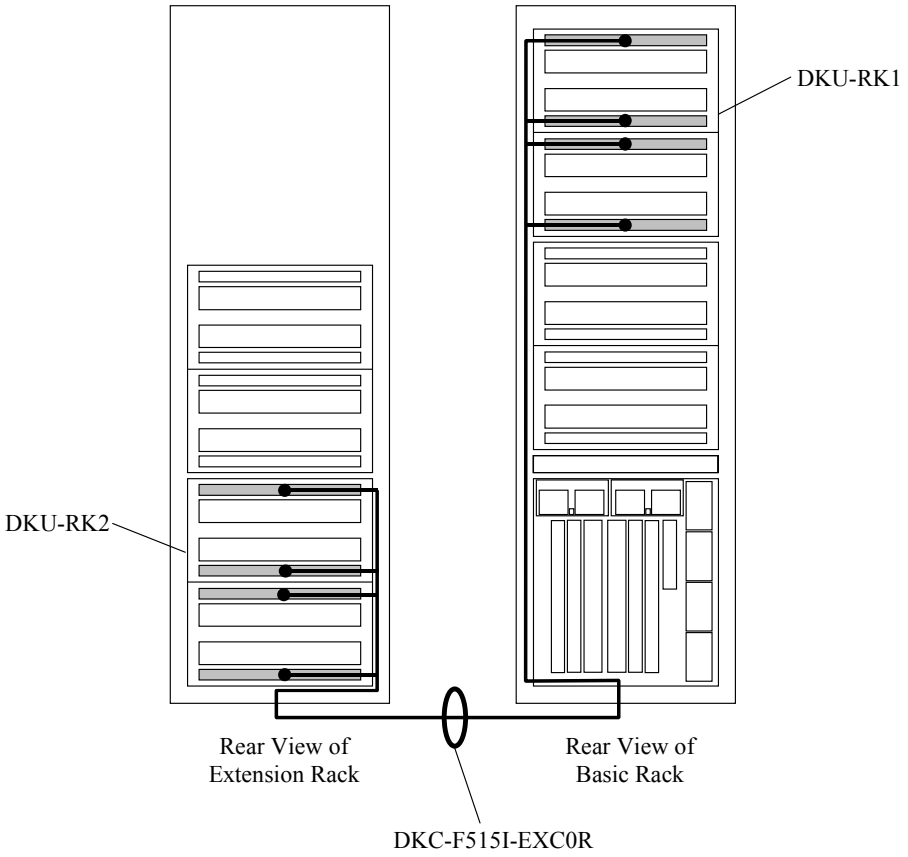


Fig. 4.1.4.7-1 Mounting Position of DEV Interface Cable

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When installing the Extension Rack on the left of the Basic Rack

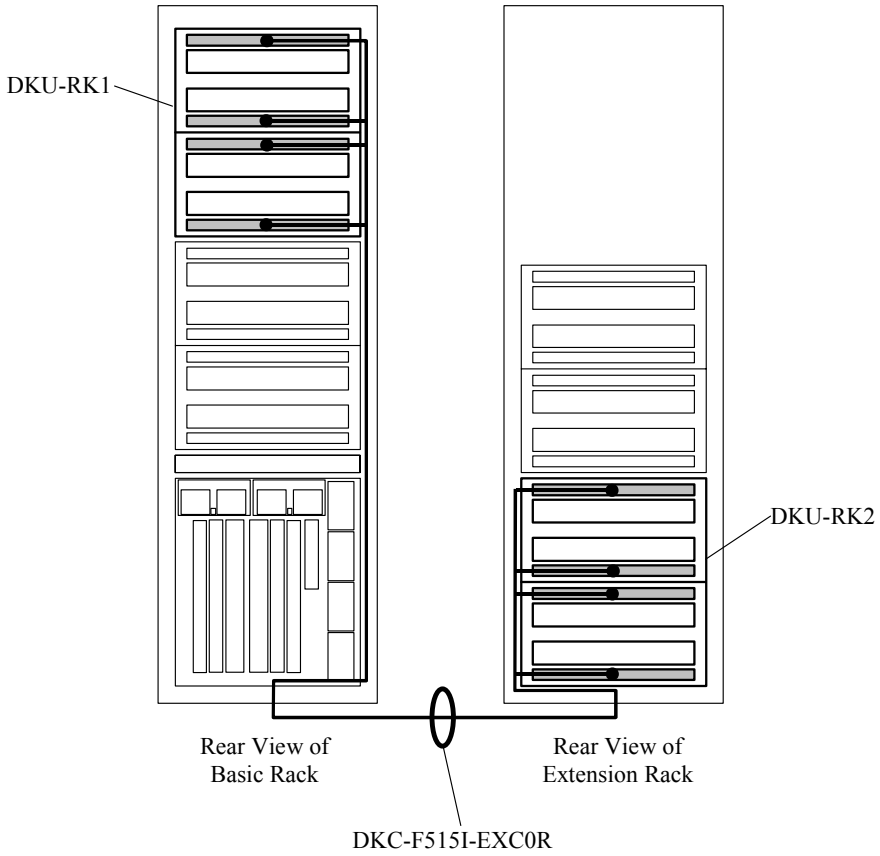


Fig. 4.1.4.7-2 Mounting Position of DEV Interface Cable

1. Disconnect the DEV interface cables from the FSW PCBs in the DKU-RK1 and DKU-RK2. Refer to Fig. 4.1.4.7-3 and Fig. 4.1.4.7-4.

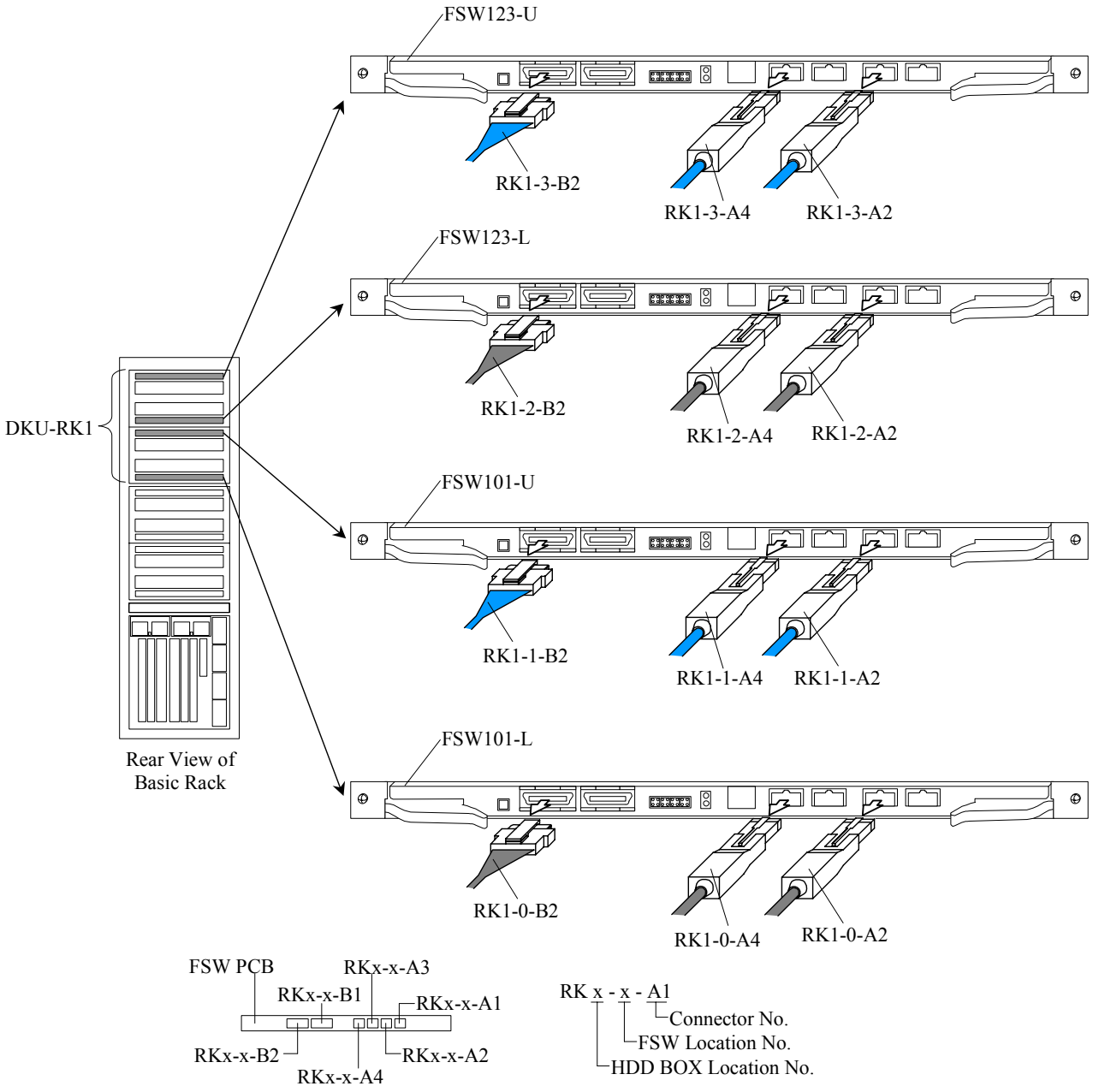


Fig. 4.1.4.7-3 Disconnection of DEV Interface Cables

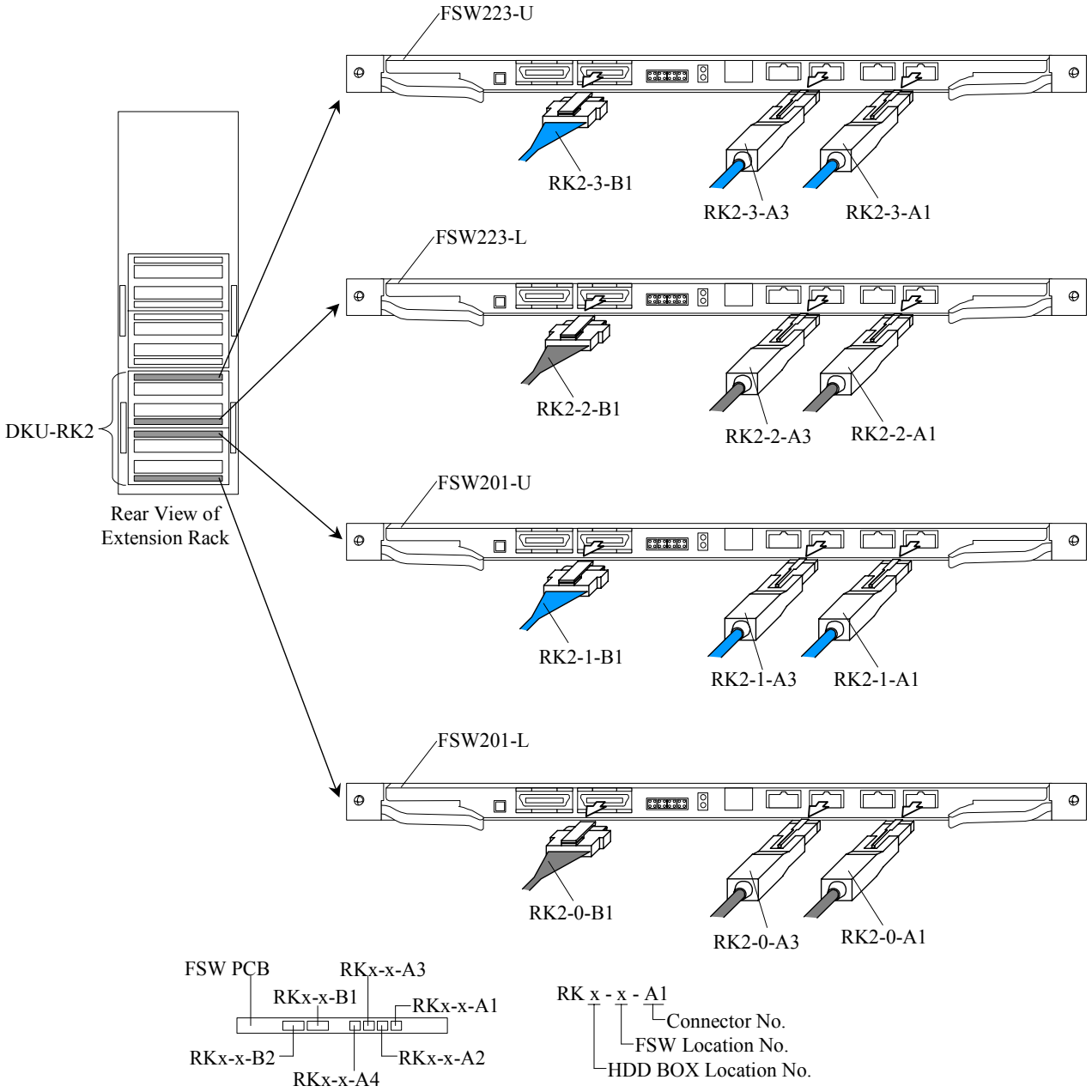


Fig. 4.1.4.7-4 Disconnection of DEV Interface Cables

2. Uninstall the DEV interface cables in DKU-RK1 by removing cable clamps and cables stoppers. (Refer to Fig. 4.1.4.7-5 or Fig. 4.1.4.7-6.)

When the Extension Rack was installed on the right of the Basic Rack

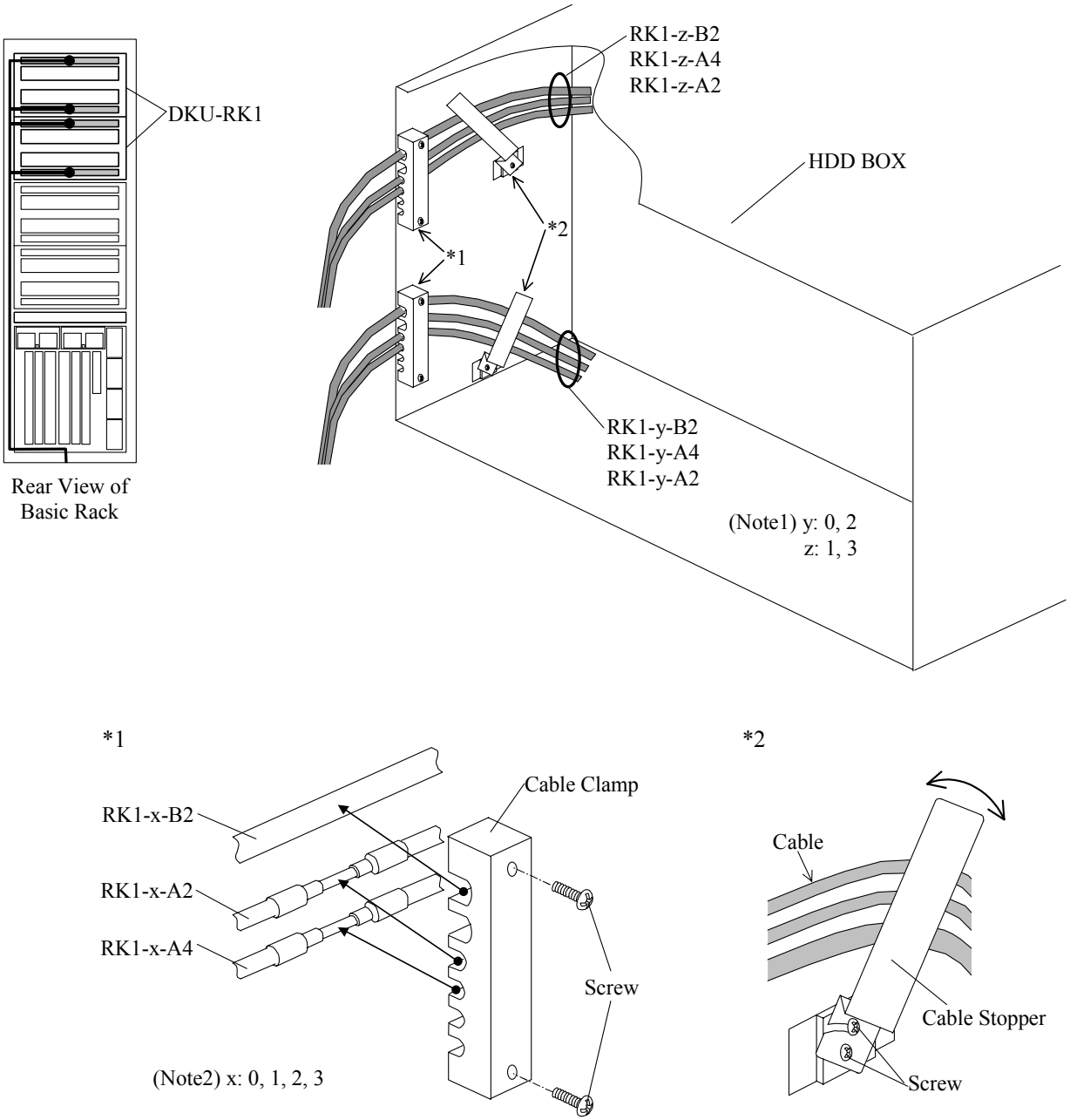


Fig. 4.1.4.7-5 Removal of DEV Interface Cable

When the Extension Rack was installed on the left of the Basic Rack

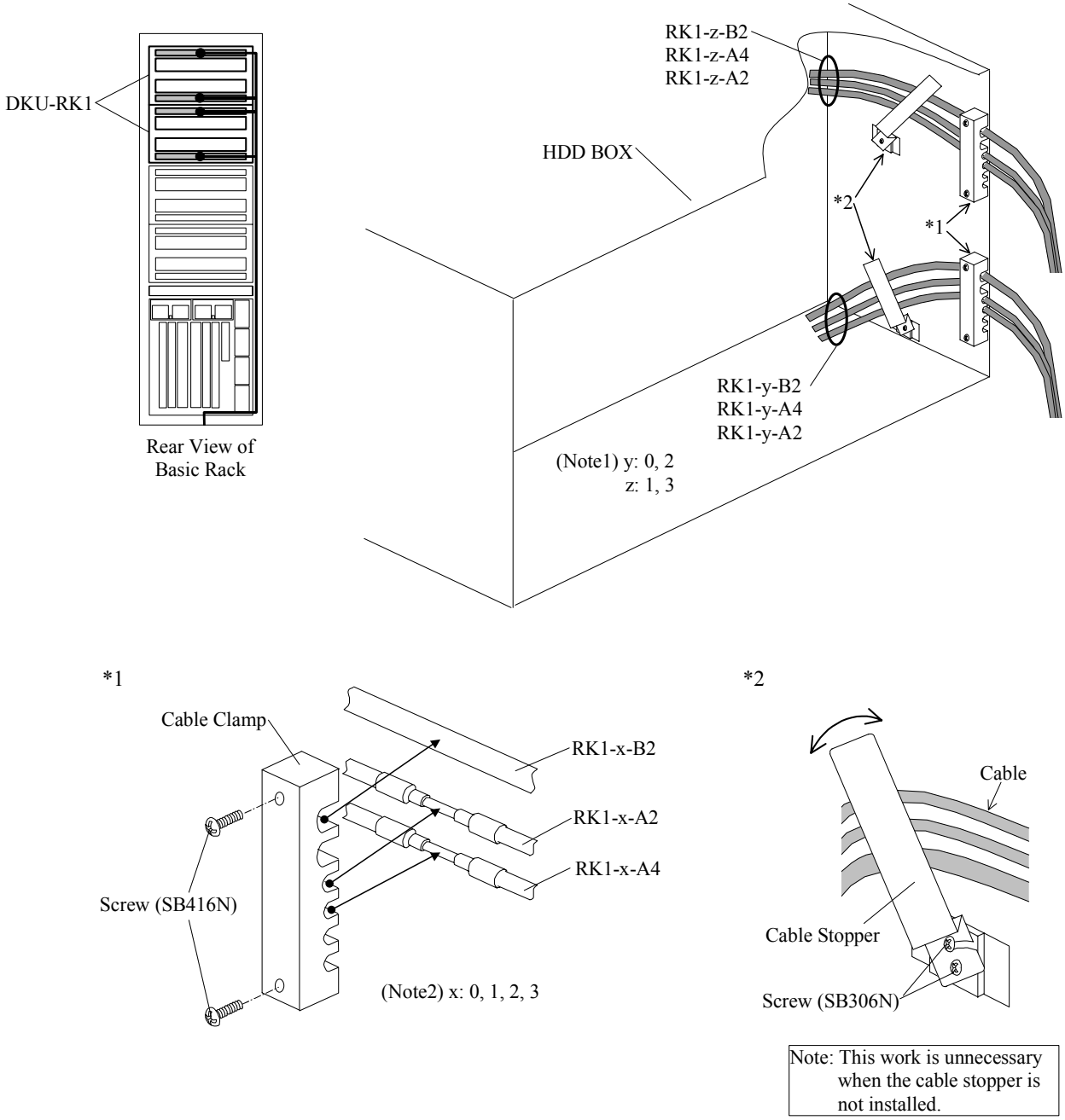


Fig. 4.1.4.7-6 Removal of DEV Interface Cable

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3. Uninstall the DEV interface cables in DKU-RK2 by removing cable clamps and cables stoppers. (Refer to Fig. 4.1.4.7-7 or Fig. 4.1.4.7-8.)

When the Extension Rack was installed on the right of the Basic Rack

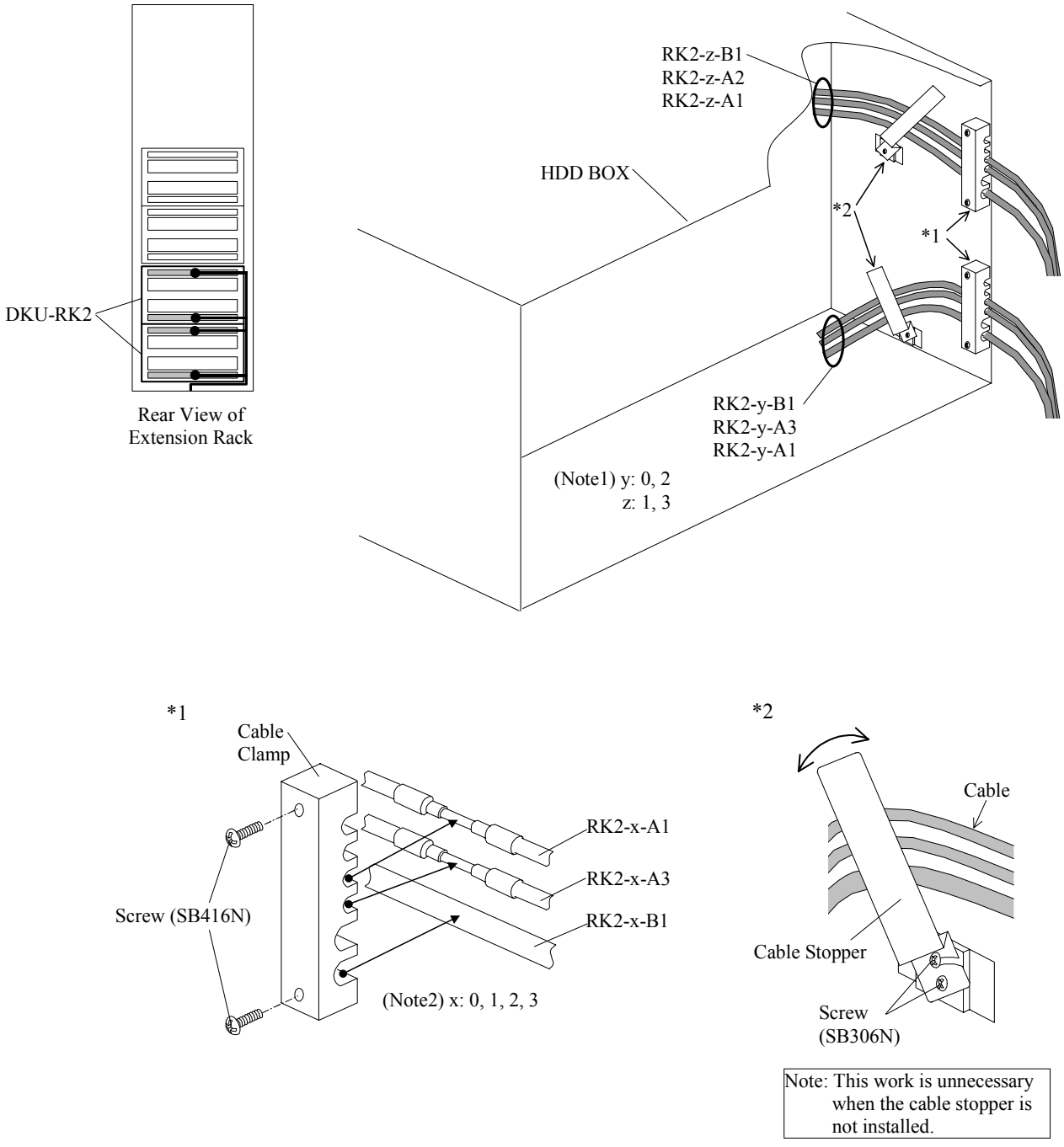


Fig. 4.1.4.7-7 Removal of DEV Interface Cable

When the Extension Rack was installed on the left of the Basic Rack

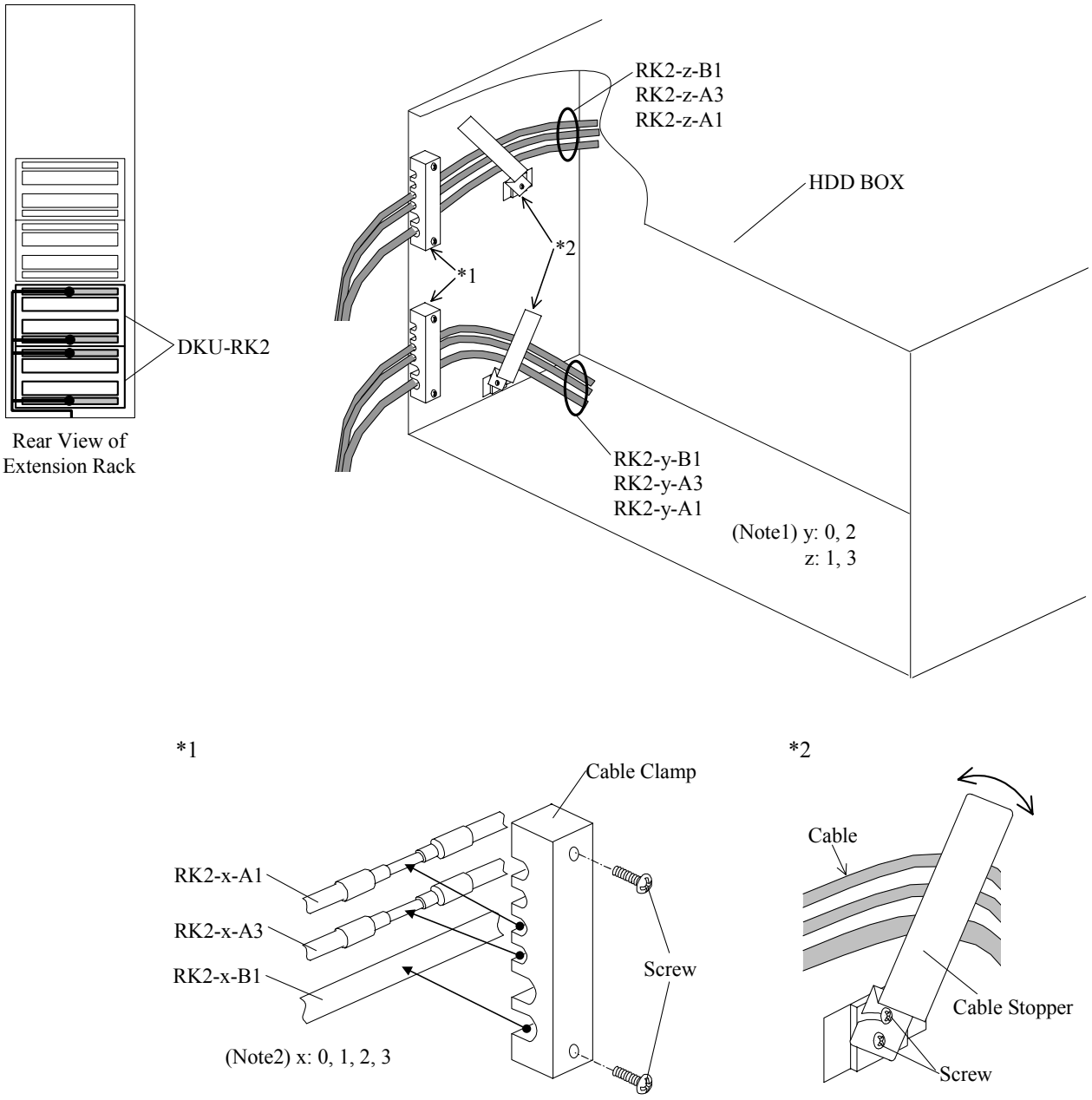


Fig. 4.1.4.7-8 Removal of DEV Interface Cable

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4. Open the three binders and remove the DEV interface cable from the frame. (Refer to Fig. 4.1.4.7-9 or Fig. 4.1.4.7-10.)

When the Extension Rack was installed on the right of the Basic Rack

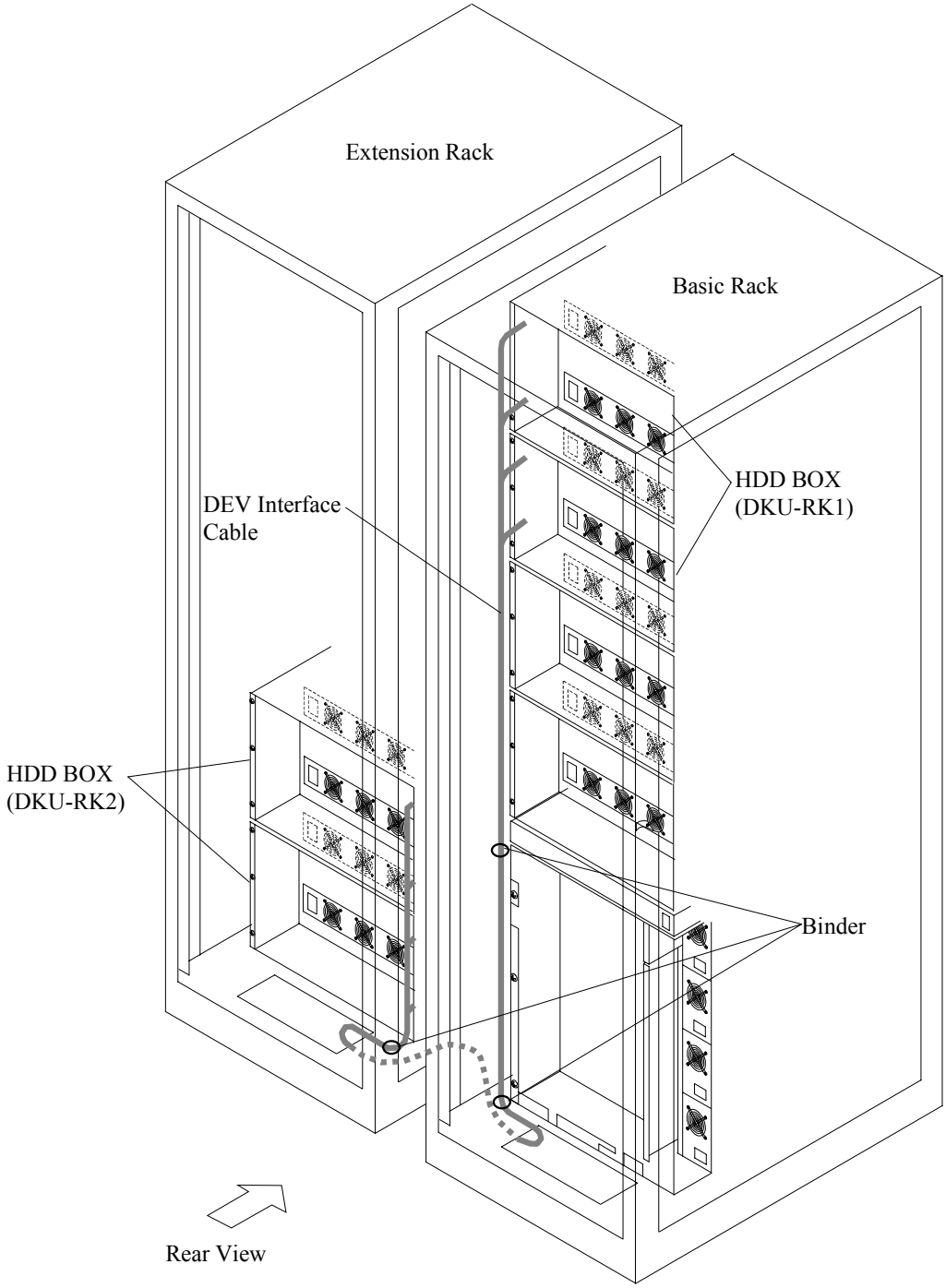


Fig. 4.1.4.7-9 Removal of DEV Interface Cable

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When the Extension Rack was installed on the left of the Basic Rack

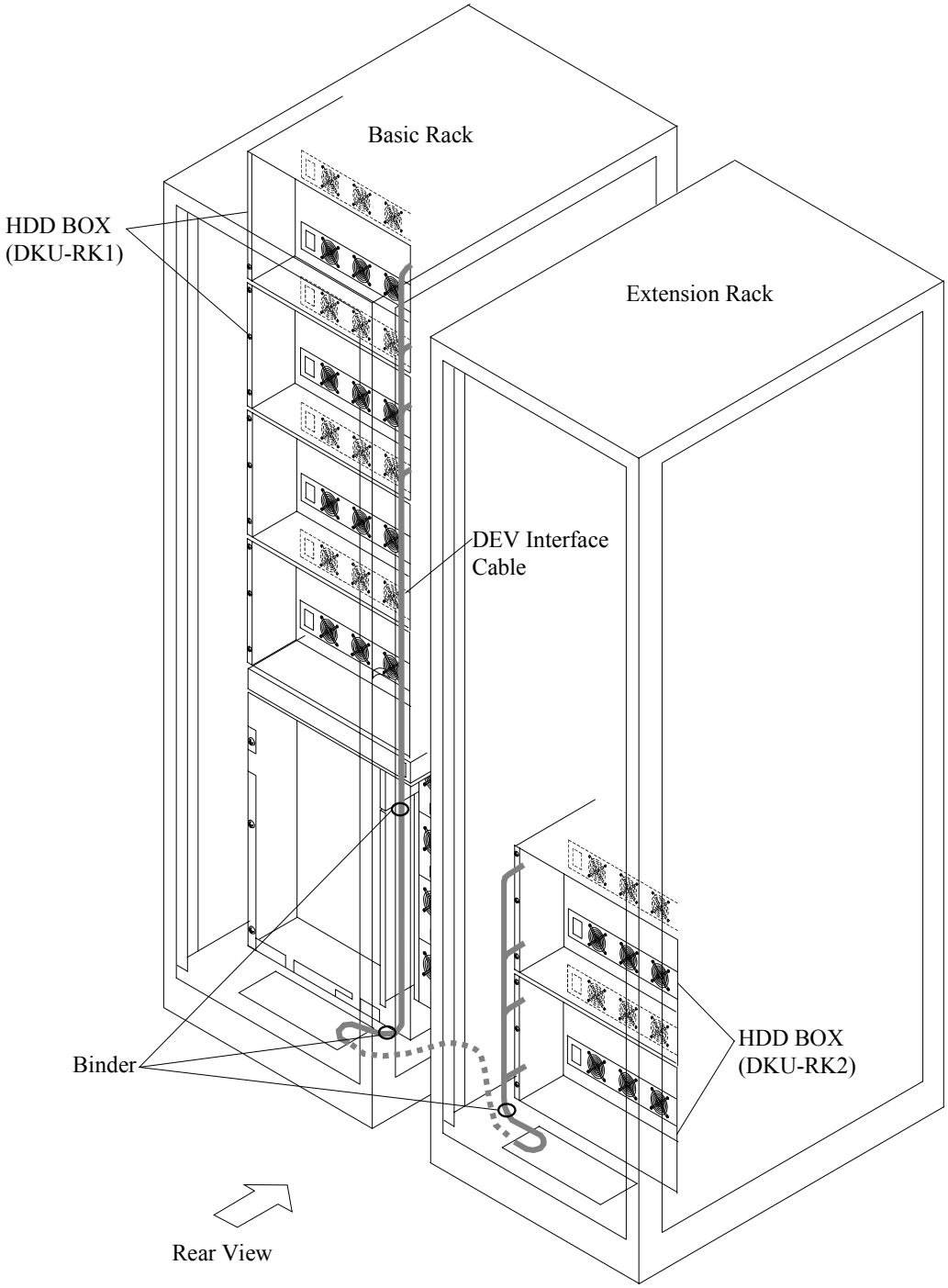


Fig. 4.1.4.7-10 Removal of DEV Interface Cable

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5. Removal of nameplate
   a. Remove the screw from the rack frame and remove the nameplate tags to be installed.
   b. Remove the DKC-F515I-EXC0R nameplate from the nameplate tag.
   c. Attach the remaining nameplate tags with the screw.

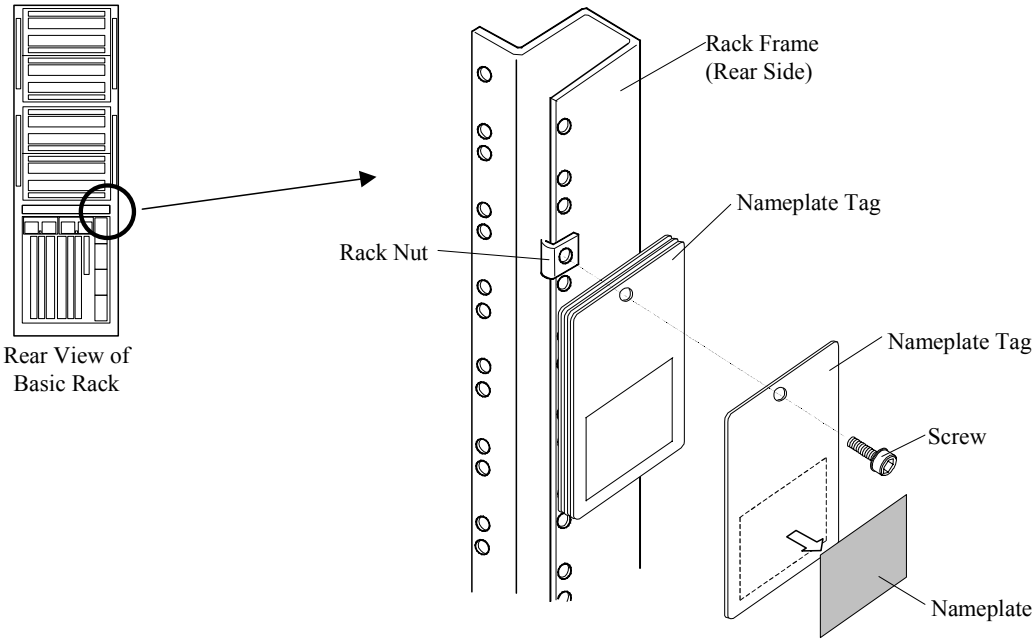


Fig. 4.1.4.7-11 Removal of Nameplate

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6. Removal of Labels

RSD Rack Frame

a. Remove the six labels from the rear door.
b. Remove the nameplate and three labels from the frame bottom base.

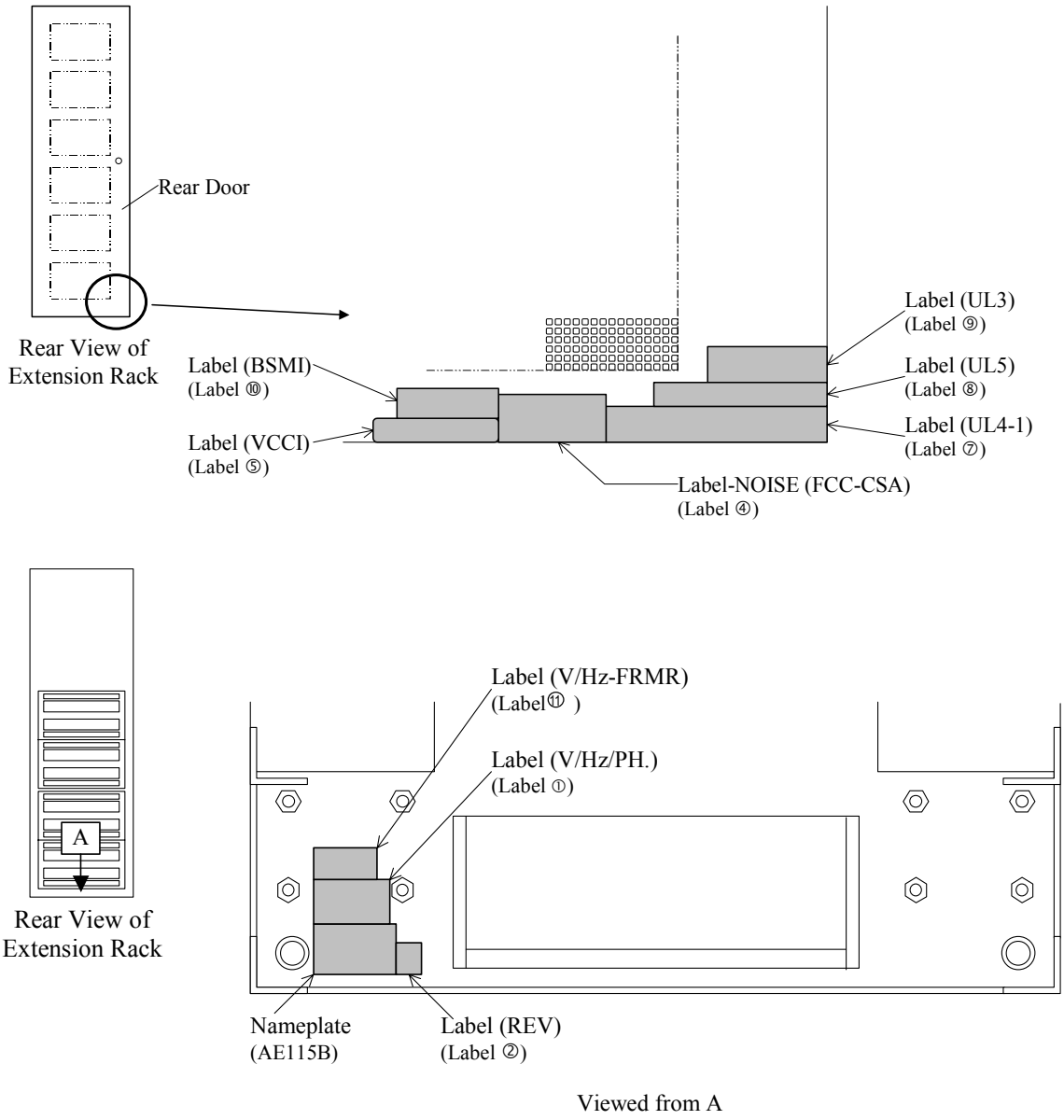


Fig. 4.1.4.7-12 Removal of Labels

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HDS Rack Frame

a. Remove the five labels from the rear door.

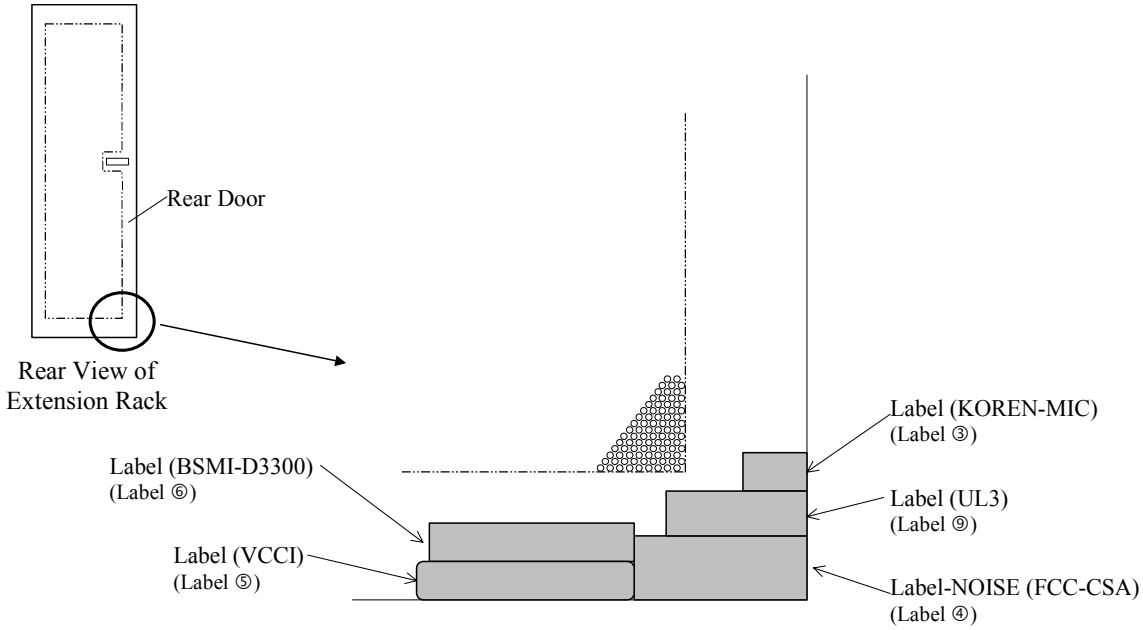
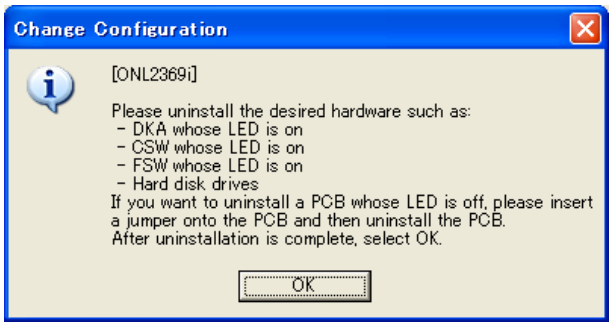


Fig. 4.1.4.7-13 Removal of Labels

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4.1.4.8 SVP post procedure (Making sure of completion of the removal)

(1)



In response to a message, “Please uninstall the desired hardware such as:
- DKA whose LED is on
- CSW whose LED is on
- FSW whose LED is on
- Hard disk drives

If you want to uninstall a PCB whose LED is off, please insert a jumper onto the PCB and then uninstall the PCB. After uninstallation is complete, select OK.” select (CL) [OK].

---

(2) <Removal of Battery>



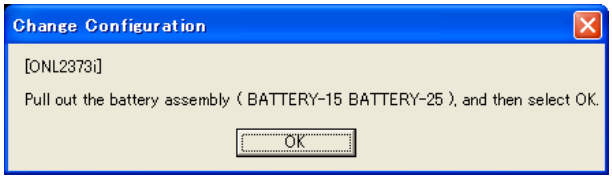
Do not press the [OK] button at this time yet. When de-installation of the battery is required, a message, “Pull out the battery assembly, and then select OK.” is displayed.

- When the message is displayed, remove the hardware component(s) following the procedure for de-installing the battery.
- When the message is not displayed, go to Step (2) of the SVP post procedure (Making sure of completion of the removal).

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(3)

In response to a message, “Pull out the battery assembly, and then select OK.” select (CL) [OK].



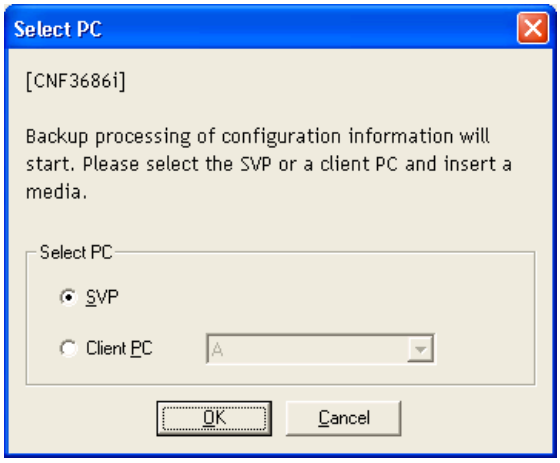
(4) <Making sure of completion of the removal>
A message, “Renewal process has completed. Please check subsystem status.” is displayed. In response to the message, select (CL) [OK].



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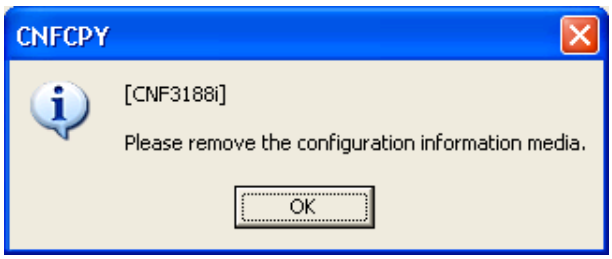
(5)

"Reading subsystem configuration data..." is displayed.
"Backup processing of configuration information will start. Please select the SVP or a client PC and insert a media." is displayed.
Insert the Config FD into FDD of selected PC, and select (CL) [OK].



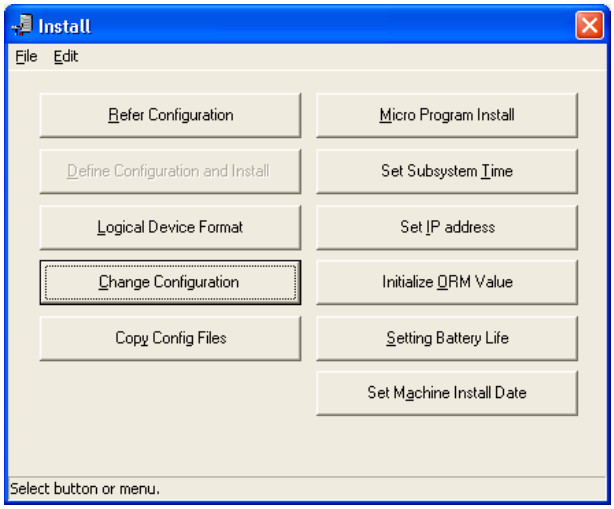
(6)

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



(7)

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



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

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4.1.4.9 Attachment of Covers (DKC-F515I-UC1R/EXC0R)

1. Attach the Rear Logic Box cover and HDD Box covers. Refer to Fig. 4.1.4.9-1 and Fig. 4.1.4.9-2.

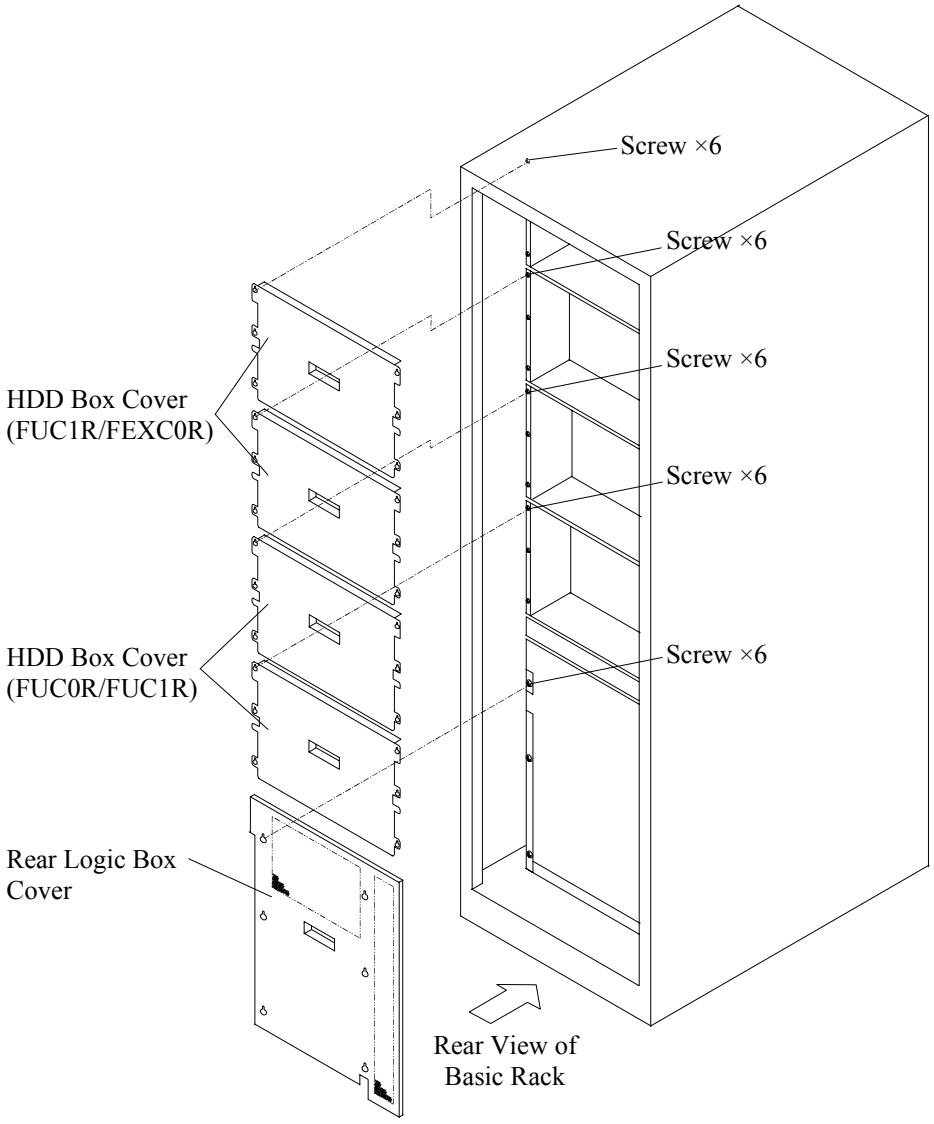


Fig. 4.1.4.9-1 Attachment of Covers

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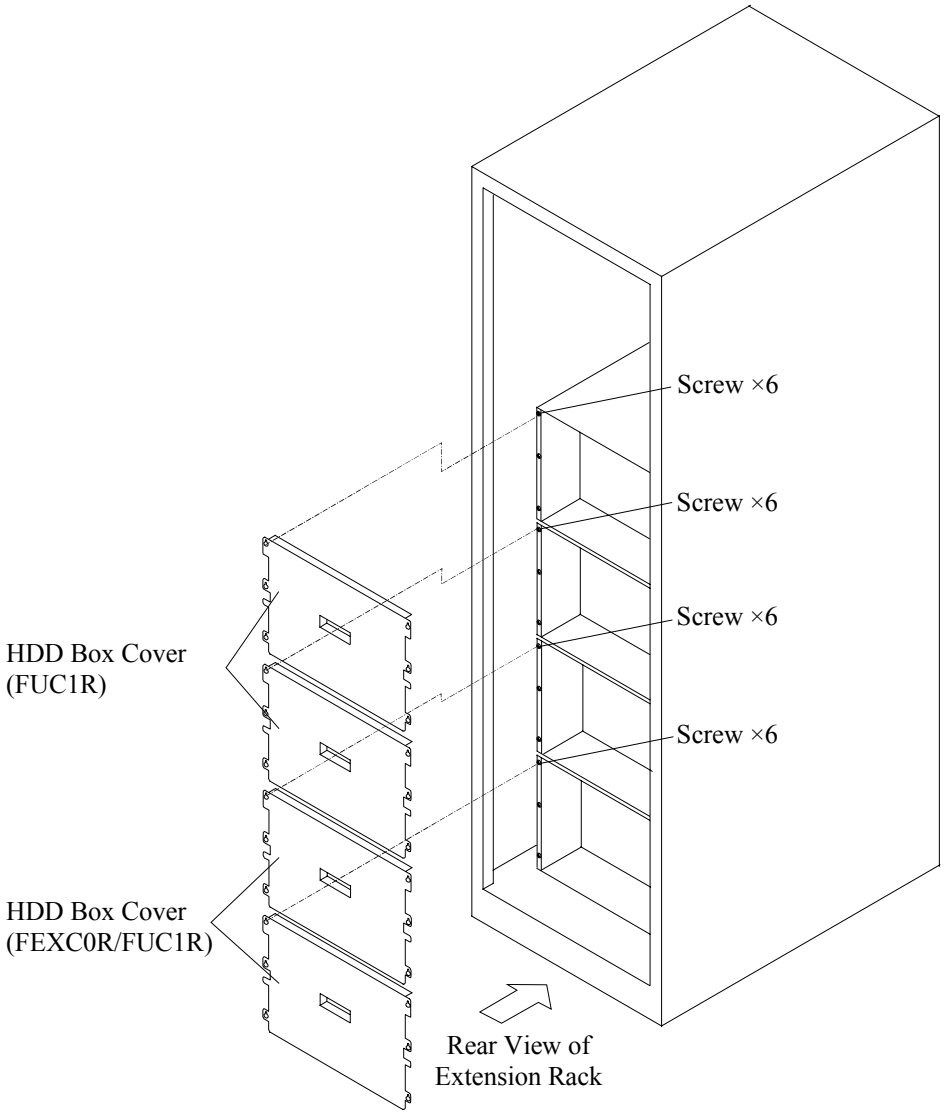
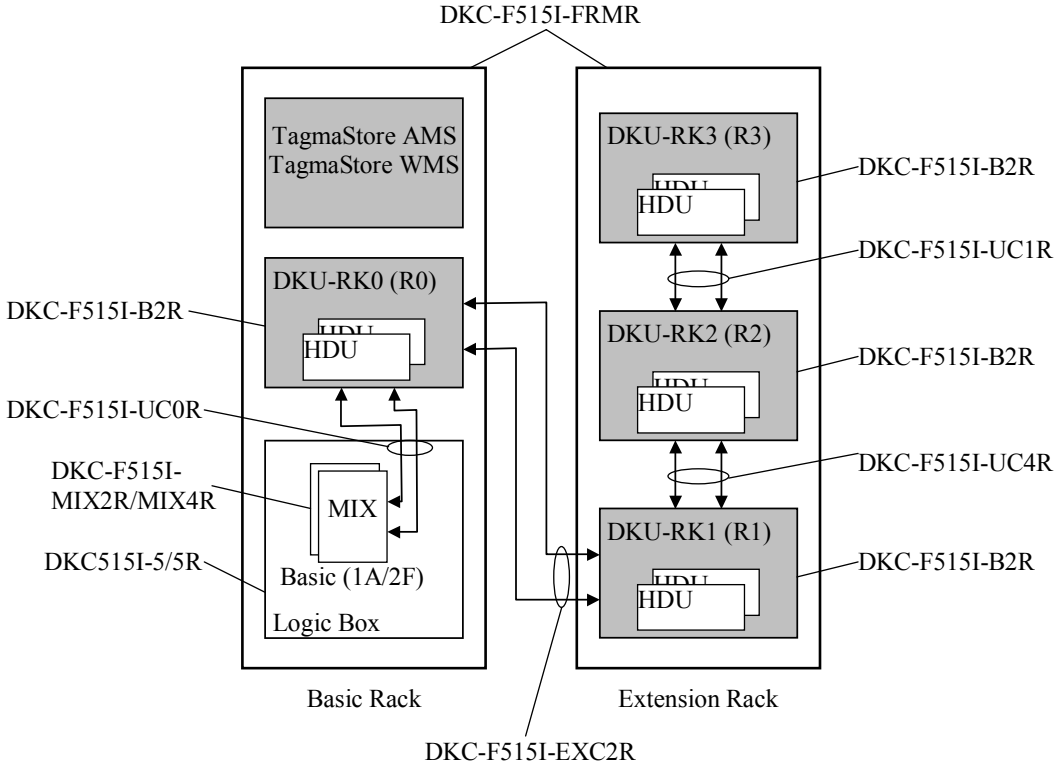


Fig. 4.1.4.9-2 Attachment of Covers

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4.1.5 When performing removal of the data/spare HDD canister and DEV interface cable that accompanies the Removal of the HDD Box in case of TagmaStore AMS/WMS installed configuration (DKC-F515I-UC1R/UC4R/EXC2R, DKU-F505I-72KS/72JSR/72KSR/ 146JS/146JSR/146KSR/300JSR/300KSR/400JSR/72K1R/146J1R/146K1R/300J1R)

The subsystem configuration and number of required options for each model are shown below.



No.	Required Number of Options									
	(DKC-F515I-FRMR)		DKC515I -5/5R	DKC-F515I-						HDD *1
	Basic Rack	Extension Rack		MIX2R/ MIX4R	B2R	UC0R	UC1R	UC4R	EXC2R	
1	1	—	1	1	1	1	0	0	0	60
2	1	1	1	1	2	1	0	0	1	120
3	1	1	1	1	3	1	0	1	1	180
4	1	1	1	1	4	1	1	1	1	240

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

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4.1.5.1 Removal of Covers (DKC-F515I-UC1R/UC4R/EXC2R)

1. Remove the Rear Logic Box cover and HDD BOX covers. Refer to Fig. 4.1.5.1-1 and Fig. 4.1.5.1-2.

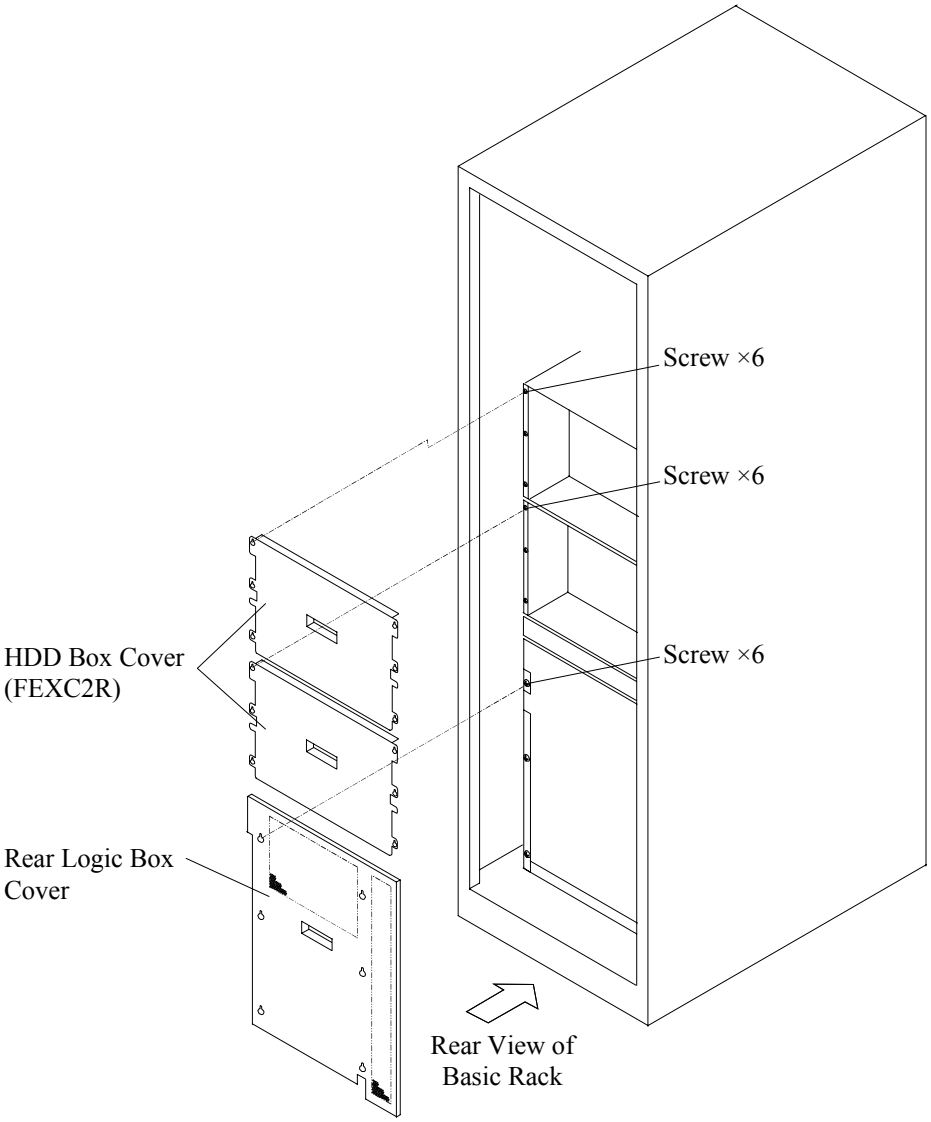


Fig. 4.1.5.1-1 Removal of Covers

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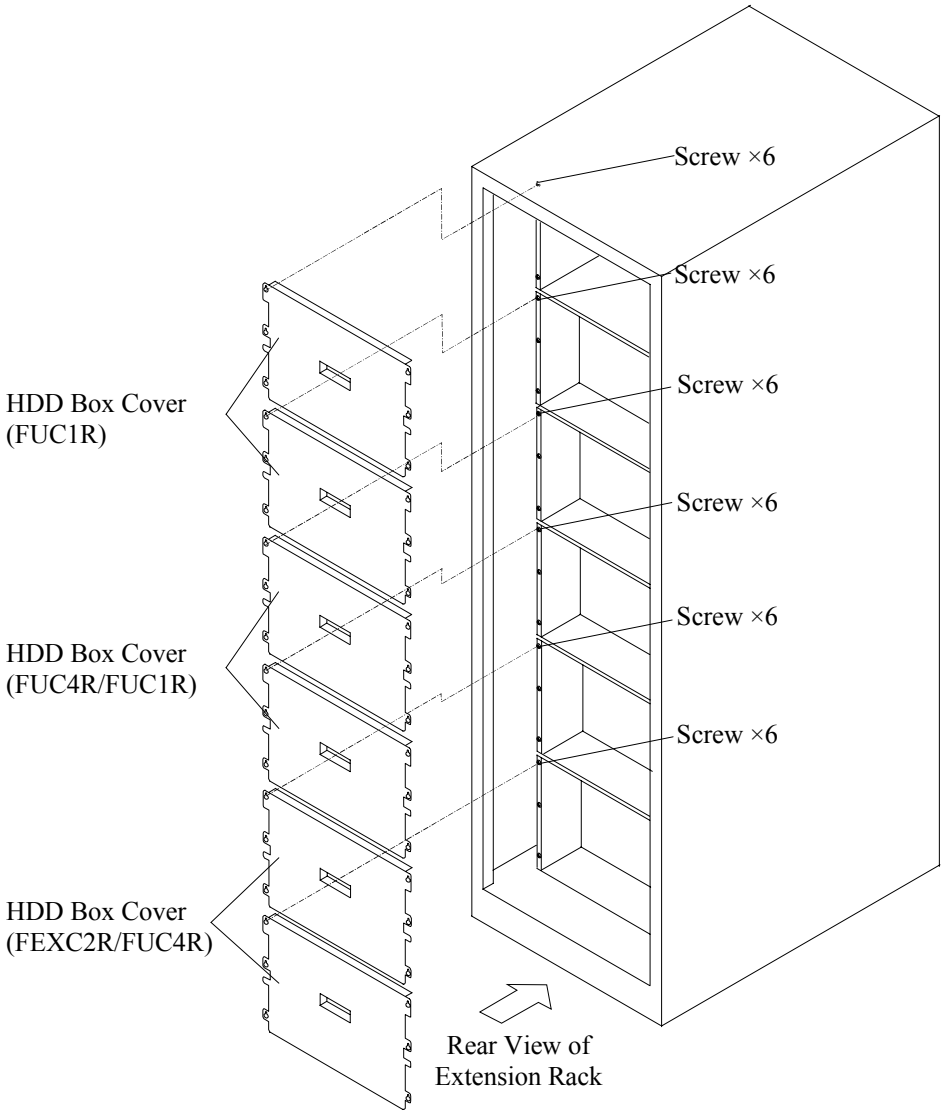


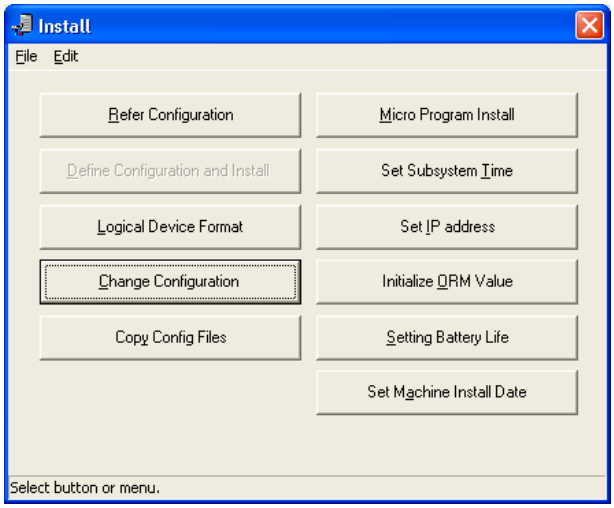
Fig. 4.1.5.1-2 Removal of Covers

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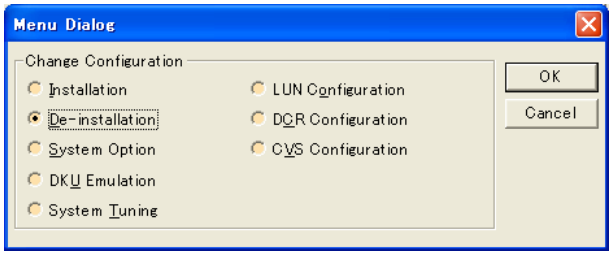
4.1.5.2 Setting up the New Device Structure Information

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

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

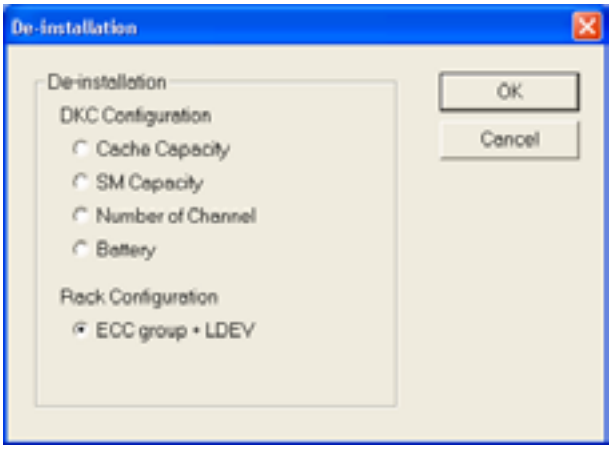


(3) <Start Device Structure Setup screen>
Select (CL) [De-installation] in the "Menu Dialog" dialog box and select (CL) [OK].

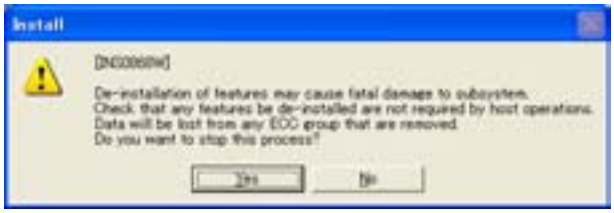


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(4) <Selecting a part to be changed>
Select (CL) [ECC group + LDEV] and select (CL) the [OK].

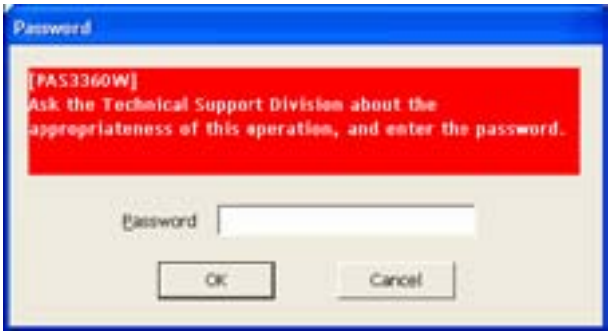


(5)
Select (CL) [No] in response to "De-installation of features may cause fatal damage to subsystem. Check that any features be de-installed are not required by host operations. Data will be lost from any ECC group that are removed. Do you want to stop this process?".



Note: The Alias information which is set to the LDEV included in the ECC to de-install is also deleted at the same time.
When the Alias is set, migrate the Alias information to another LDEV before de-installation or reset it after de-installation.

(6) <Input password>
Enter a password and select (CL) the [OK].

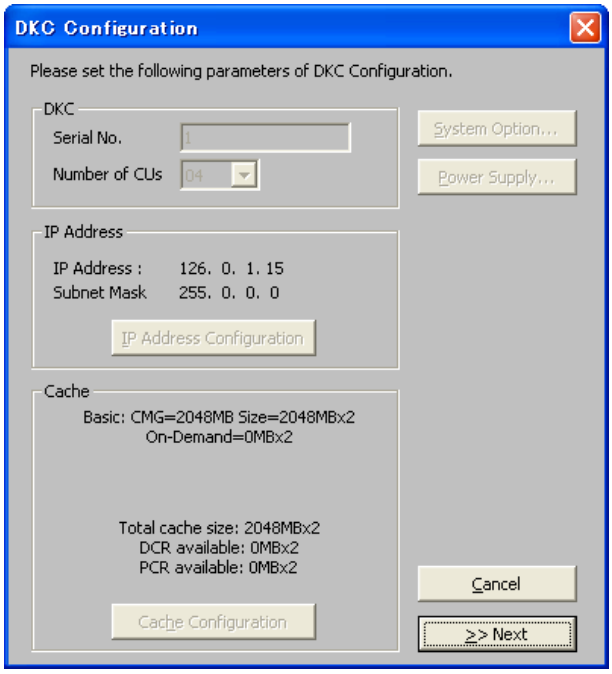


⚠ CAUTION

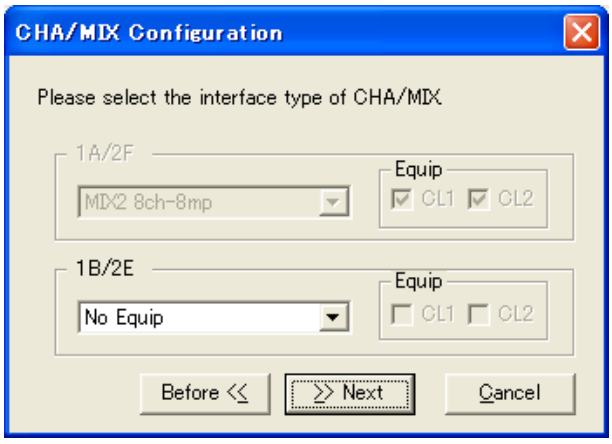
This is a special (exceptional) operation that can cause a serious failure such as a system down or a data loss if a wrong part to be removed is selected, and requires an input of a password. Ask the technical support division about the appropriateness of the operation, and input the password after getting an approval of executing the operation.

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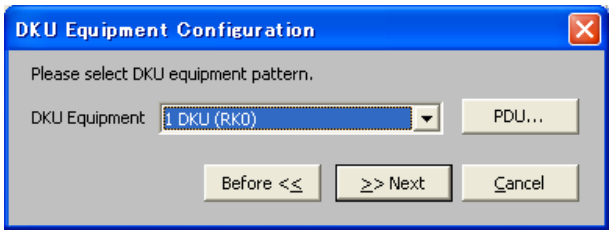
(7) <Updating the configuration information>
Select (CL) the [>>Next] in the 'DKC Configuration' window.



(7)-1 <Setting the MIX>
Check the setting item in the 'CHA/MIX Configuration' window.
Select (CL) [>>Next].

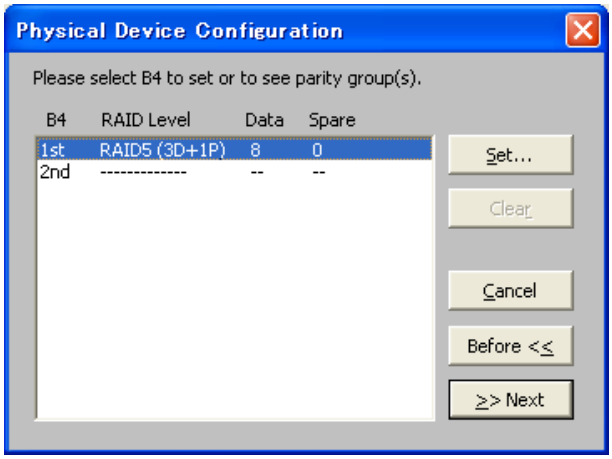


(8) <Setting the DKU frame>
Define the pattern of the DKU frame in the 'DKU Equipment Configuration' window.
After the setting is made, select (CL) the [>>Next].
However, if you want to set "Not Equip", select (CL) [>>Next]. Go to step (10).



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(9) <Changing the drive configuration information>
Define the drive configuration according to the 'Physical Drive Configuration' window. The detailed procedure is explained below.
[Set...]: Defines a parity group or a spare disk. The routine goes to Step (9)-1.
[Clear...]: Clears the setting of the B4.



After all the settings are made, select (CL) the [>>Next].
However, if you don't want to set any parity group or spare disk, select (CL) [>>Next].
Go to Step (10).

When the [Before<<] is selected (CL), the window is returned to the preceding one.

B4	Location	
	HDU	HDD
1st	HDU-00,01,02,03	HDD0X-00 ~ HDD0X-0E
2nd	HDU-10,11,12,13	HDD1X-00 ~ HDD1X-0E
3rd	HDU-20,21,22,23	HDD2X-00 ~ HDD2X-0E
4th	HDU-30,31,32,33	HDD3X-00 ~ HDD3X-0E

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(9)-1 <Defining the parity group>

Select (CL) the group to be removed, and then select (CL) the [Delete] in the 'Parity Group Configuration' dialog box.

After the setting is made, select (CL) the [OK]. The routine is returned to Step (9).

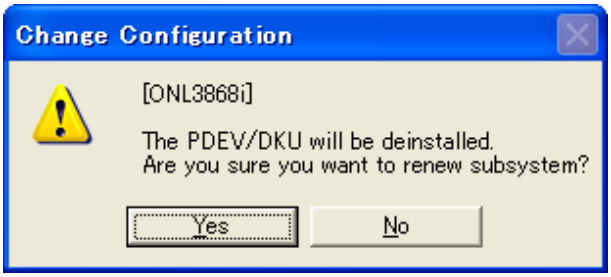
Grp*: A parity group for which the RAID concatenation is set.



(10) <Starting the removal>

In response to a message, "The PDEV/DKU will be deinstalled. Are you sure you want to renew subsystem?" select (CL) [Yes].

When the [No] is selected, the routine is returned to Step (2).

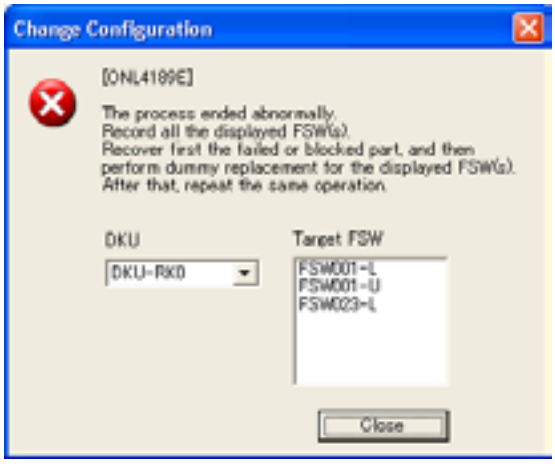


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(11) <Removing the hardware>



Do not push the [OK] button at this time yet. A message, “Please uninstall the desired hardware such as:
- FSW whose LED is on
- Hard disk drives
If you want to uninstall a PCB whose LED is off, please insert a jumper onto the PCB and then uninstall the PCB. After uninstallation is complete, select OK.” is displayed.



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

Refer to the subsystem configurations.
(Refer to INST05-410)
And follow the recovery procedure #1 if DKU uninstallation was not completed, or follow #2 if it was completed.

Note: If closing the (CL) [Close] button without recording the FSW(s) to be replaced, set all the FSW connected to the HDD to be uninstalled to the recorded status when performing either of the following recovery procedures.

<Recovery procedure #1>
(1) Refer to the Maintenance window, and if any part is found to fail, recover it by replacement.
(2) Perform dummy replacement of all the recorded FSW(s).
(3) Uninstall again the DKU frame.

<Recovery procedure #2>
(1) Refer to the Maintenance window, and if any part is found to fail, recover it by replacement.
(2) To perform the dummy replacement of the recorded FSW, first remove the cable connected with the DKU to be replaced, when the FSW remained removed, and then mount the FSW.
(3) If any cable still remained connected to the DKU to be uninstalled and also connected to the FSW not recorded, remove the cable without performing FSW replacement.

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4.1.5.3 De-Installation Procedure of HDD Canister

1. Confirmation of position to de-install HDD canister
   (i) RAID5(3D+1P)/RAID1(2D+2D)
   Relations between the installation locations of the RAID groups and the RAID group numbers set through the SVP are shown in Table 4.1.5.3-1.

Table 4.1.5.3-1 Relation between HDDs installation order and RAID group number (3D+1P/2D+2D)

DKU-RK0		DKU-RK1		DKU-RK2		DKU-RK3	
Installation Order	RAID Group No.	Installation Order	RAID Group No.	Installation Order	RAID Group No.	Installation Order	RAID Group No.
001	1-01	016	2-01	031	3-01	046	4-01
002	1-02	017	2-02	032	3-02	047	4-02
003	1-03	018	2-03	033	3-03	048	4-03
004	1-04	019	2-04	034	3-04	049	4-04
005	1-05	020	2-05	035	3-05	050	4-05
006	1-06	021	2-06	036	3-06	051	4-06
007	1-07	022	2-07	037	3-07	052	4-07
008	1-08	023	2-08	038	3-08	053	4-08
009	1-09	024	2-09	039	3-09	054	4-09
010	1-10	025	2-10	040	3-10	055	4-10
011	1-11	026	2-11	041	3-11	056	4-11
012	1-12	027	2-12	042	3-12	057	4-12
013	1-13	028	2-13	043	3-13	058	4-13
014	1-14	029	2-14	044	3-14	059	4-14
015 *1 (Spare)	1-15/ Spare	030 *1 (Spare)	2-15/ Spare	045 *1 (Spare)	3-15/ Spare	060 *1 (Spare)	4-15/ Spare

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

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	

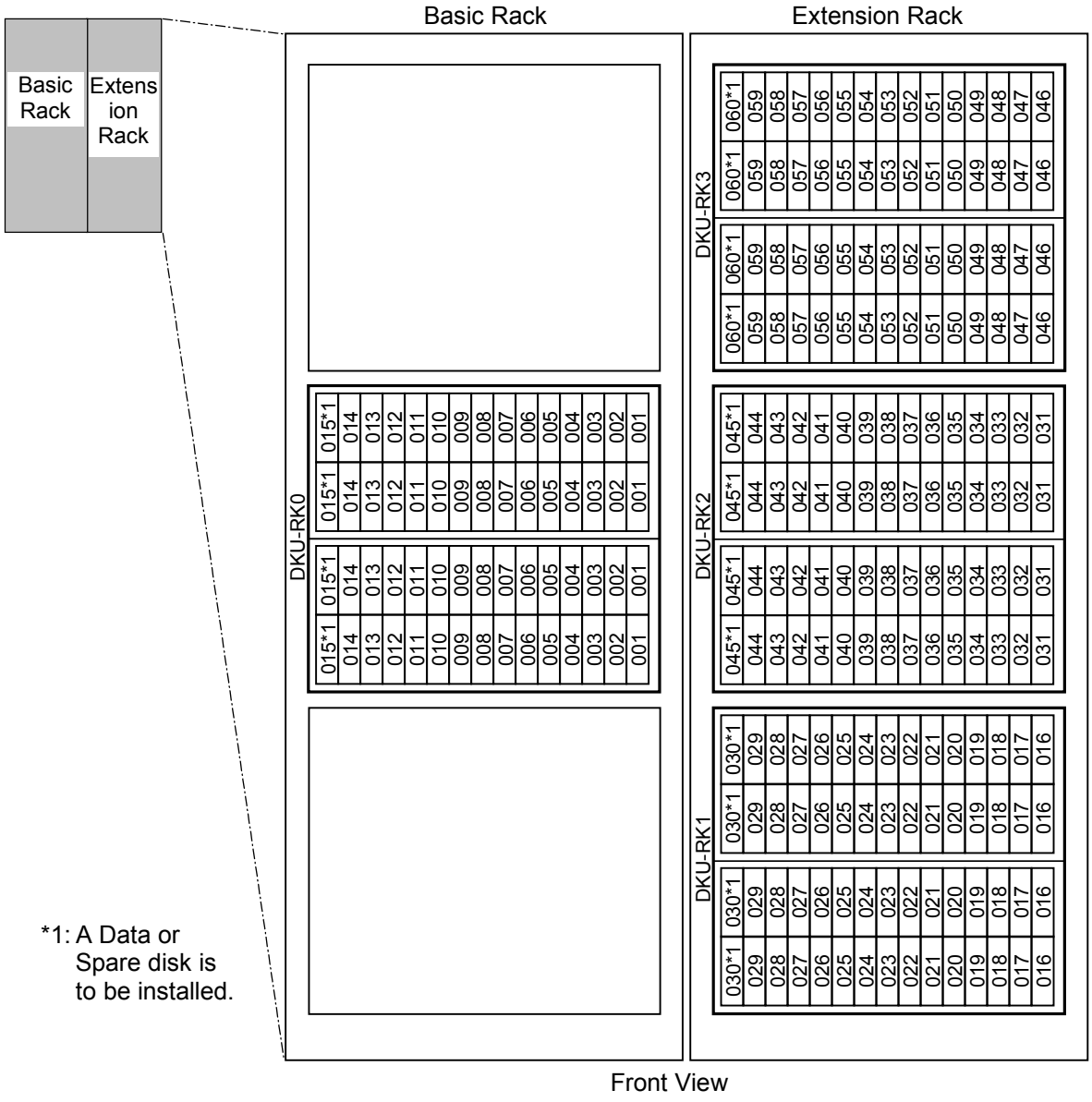


Fig. 4.1.5.3-1 (3D+1P/2D+2D) Data Drive/Parity Drive Expansion Sequence

The relationship between HDDs installation order and RAID group number is shown in the Table 4.1.5.3-1.

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(ii) RAID6(6D+2P)/RAID5(7D+1P)

Relations between the installation locations of the RAID groups and the RAID group numbers set through the SVP are shown in Table 4.1.5.3-2.

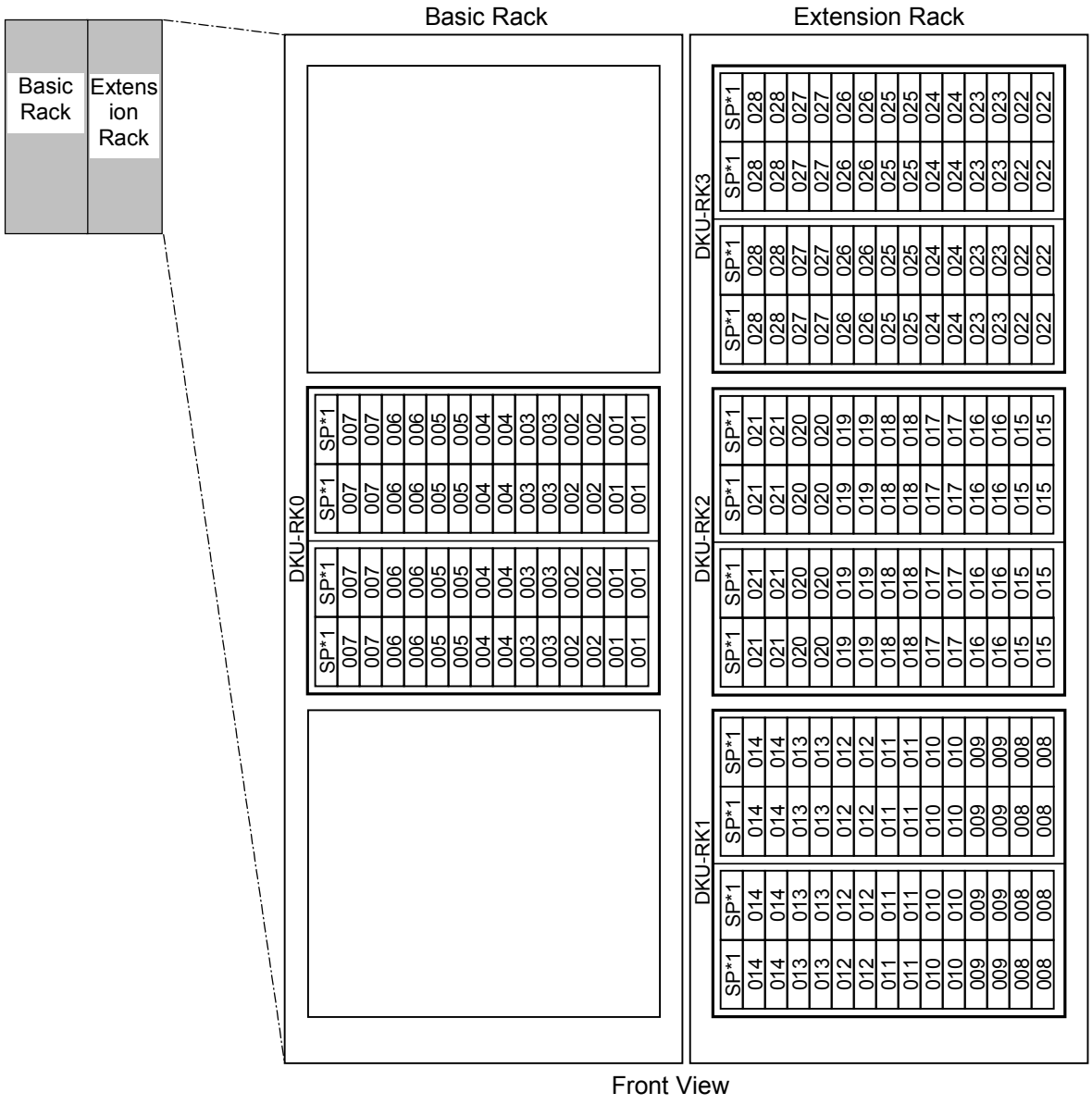
Table 4.1.5.3-2 Relation between HDDs installation order and RAID group number (6D+2P/7D+1P)

DKU-RK0		DKU-RK1		DKU-RK2		DKU-RK3	
Installation Order	RAID Group No.	Installation Order	RAID Group No.	Installation Order	RAID Group No.	Installation Order	RAID Group No.
001	1-01	008	2-01	015	3-01	022	4-01
002	1-03	009	2-03	016	3-03	023	4-03
003	1-05	010	2-05	017	3-05	024	4-05
004	1-07	011	2-07	018	3-07	025	4-07
005	1-09	012	2-09	019	3-09	026	4-09
006	1-11	013	2-11	020	3-11	027	4-11
007	1-13	014	2-13	021	3-13	028	4-13
Spare *1	Spare	Spare *1	Spare	Spare *1	Spare	Spare *1	Spare

*1: To be left vacant 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	



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

Fig. 4.1.5.3-2 (6D+2P/7D+1P) Data Drive/Parity Drive Expansion Sequence

The relationship between HDDs installation order and RAID group number is shown in The Table 4.1.5.3-2.

(iii) Spare HDD

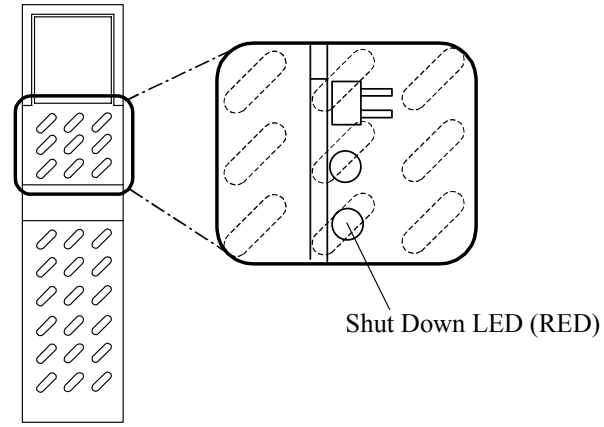
No.	Model Number	Model Name	Data and Parity
1	DKU-F505I-72KS/72JSR/72KSR/146JS/146JSR/146KSR/ 300JSR/300KSR/400JSR/72K1R/146J1R/146K1R/300J1R × 1	1 HDD Canister	Spare Drive



Fig. 4.1.5.3-3 Spare Drive Expansion Sequence

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2. De-Installation of the HDD Canister
   a. Confirm the Shut Down LED on the HDD canister. (It should be RED.)



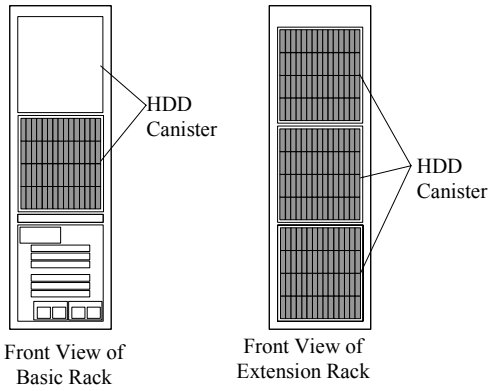
Front View of
HDD Canister

Fig. 4.1.5.3-4 Checking of Shut Down LED

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Notice: (1) Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.
(2) Since the HDD is a precision component, handle it very carefully not to apply a vibration or shock to it.

b. After pushing up the stopper on the front side of the HDD canister, pull the handle toward you to remove the HDD canister.
c. Insert the dummy canister to the HDU Box.



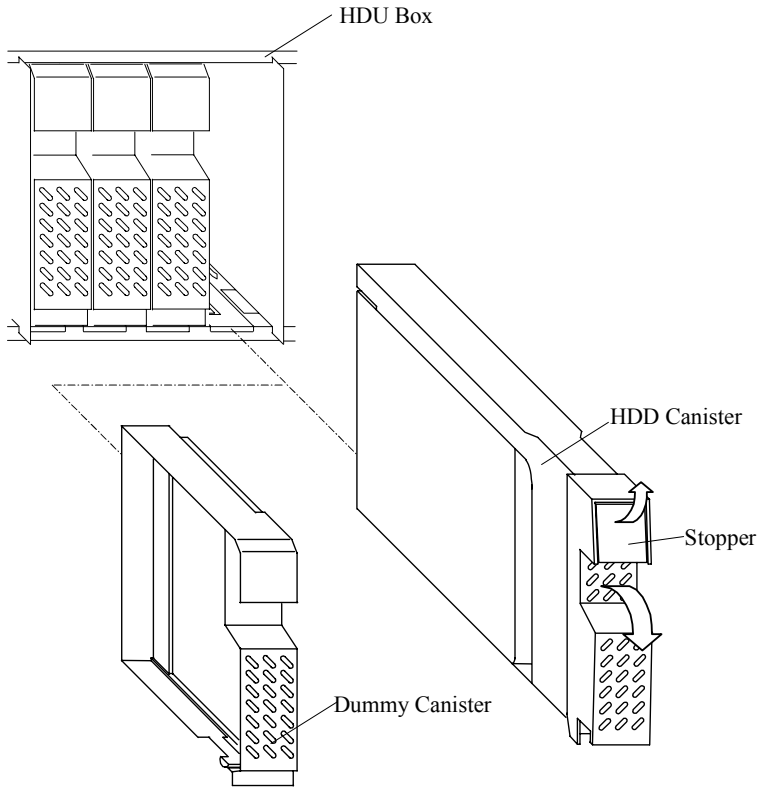


Fig. 4.1.5.3-5 Removal of HDD Canister

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3. Change of nameplate
   a. Remove the screw from the rack frame and remove the nameplate tags to be installed.
   b. Affix a necessary portion of the Label (QTY)(Accessory of DKC; DWG No.3268905-1) in layers on the nameplate and paint out numbers by black oil felt pen.
   c. Attach all the nameplate tags with the screw.

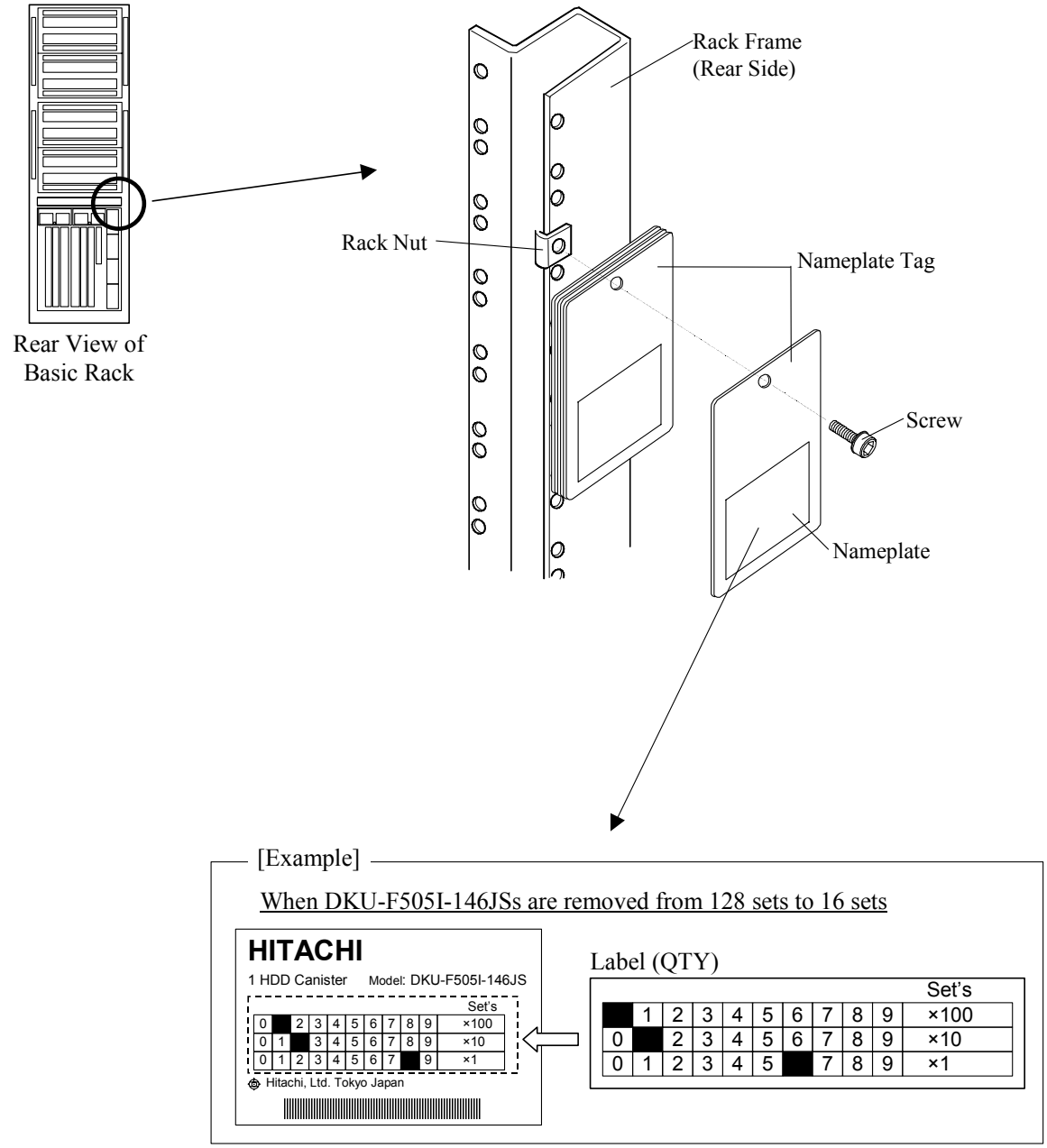


Fig. 4.1.5.3-6 Change of Nameplate

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4.1.5.4 De-Installation Procedure of DEV Interface Cable (DKC-F515I-EXC2R)

De-Installation Condition

DKC-F515I-EXC2R is the cable option to connect the DKU-RK0 and the DKU-RK1 when the TagmaStore AMS/WMS is installed.
This option becomes unnecessary when de-installing the DKU-RK1 (2nd DKC-F515I-B2R).
Decide if the DEV Interface Cable (DKC-F515I-EXC2R) needs to be removed, and go to the page to meet the condition. (Refer to Table 4.1.5.4-1.)

Table 4.1.5.4-1 Work Procedure Table

No.	Condition of Work Procedure	Page
1	When you need to remove DEV Interface Cable (DKC-F515I-EXC2R)	INST04-01D-180
2	When you do not need to remove DEV Interface Cable (DKC-F515I-EXC2R)	INST04-01D-290

When installing the Extension Rack on the right of the Basic Rack

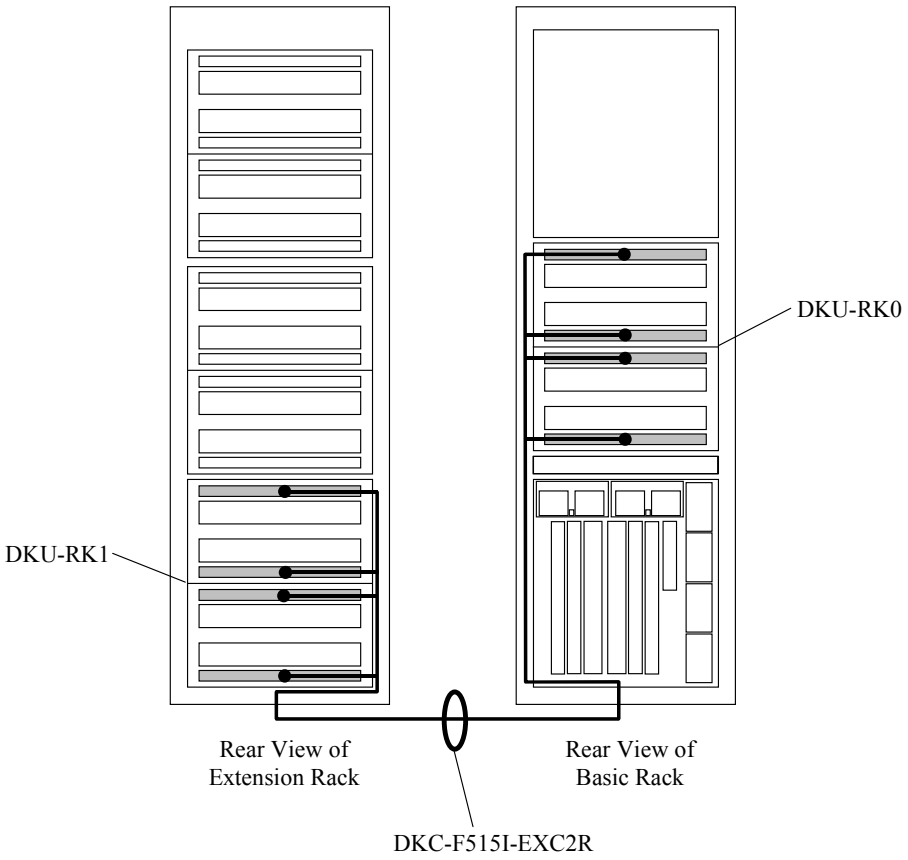


Fig. 4.1.5.4-1 Mounting Position of DEV Interface Cable

When installing the Extension Rack on the left of the Basic Rack

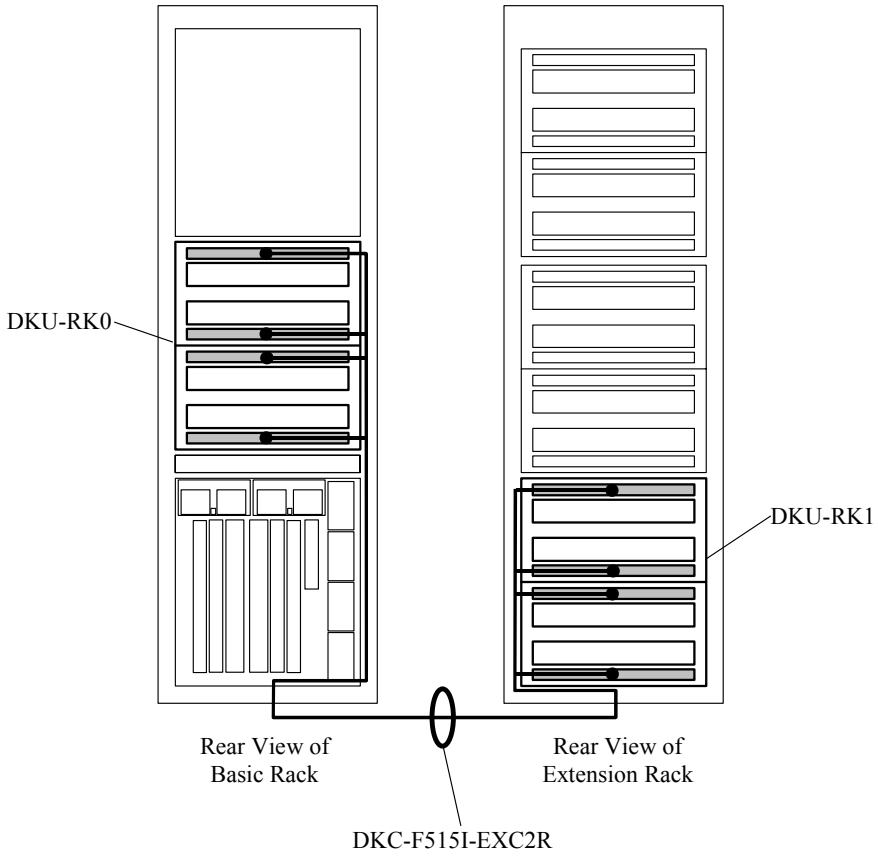


Fig. 4.1.5.4-2 Mounting Position of DEV Interface Cable

1. Disconnect the DEV interface cables from the FSW PCBs in the DKU-RK0 and DKU-RK1. Refer to Fig. 4.1.5.4-3 and Fig. 4.1.5.4-4.

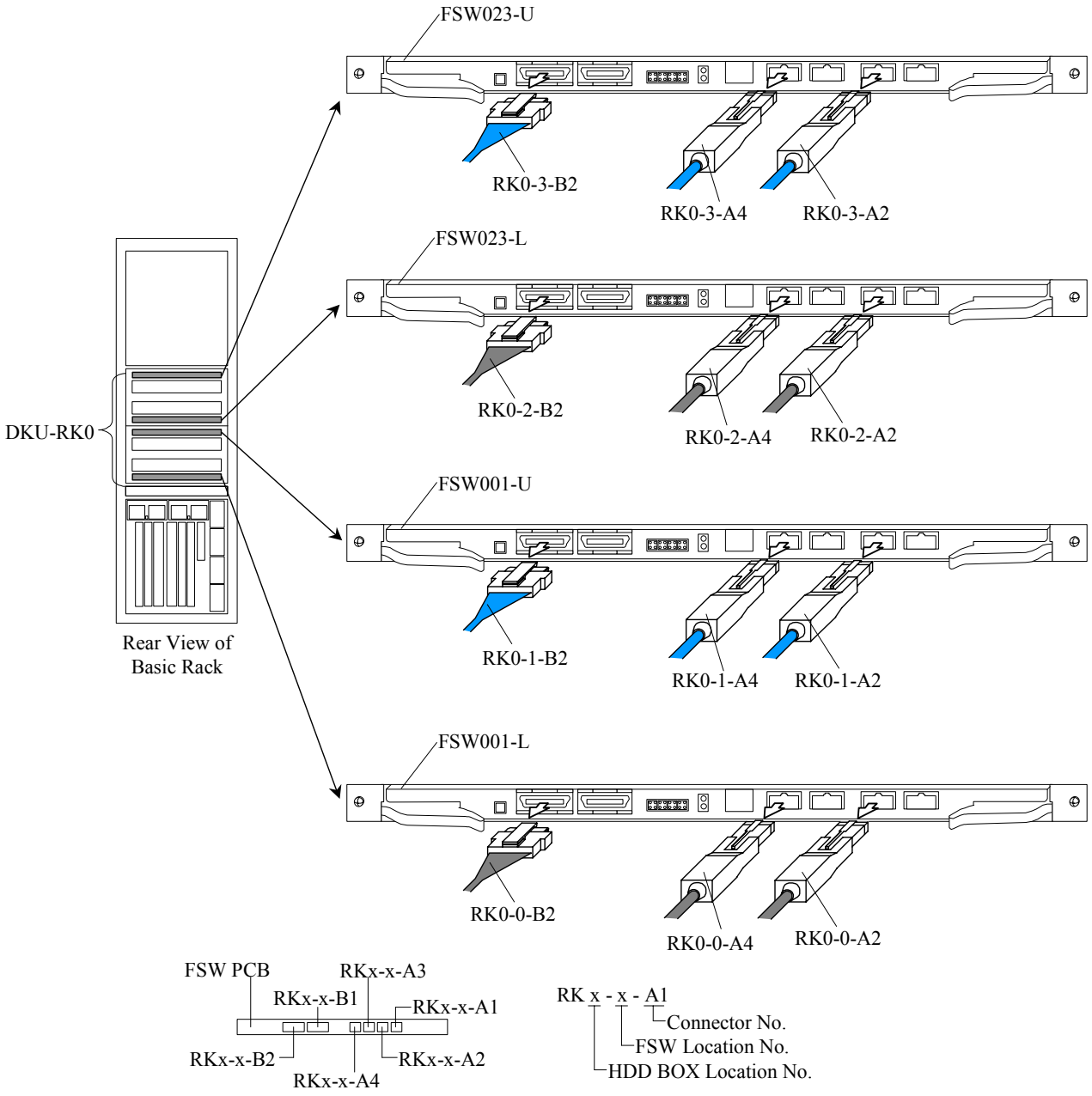


Fig. 4.1.5.4-3 Disconnection of DEV Interface Cables

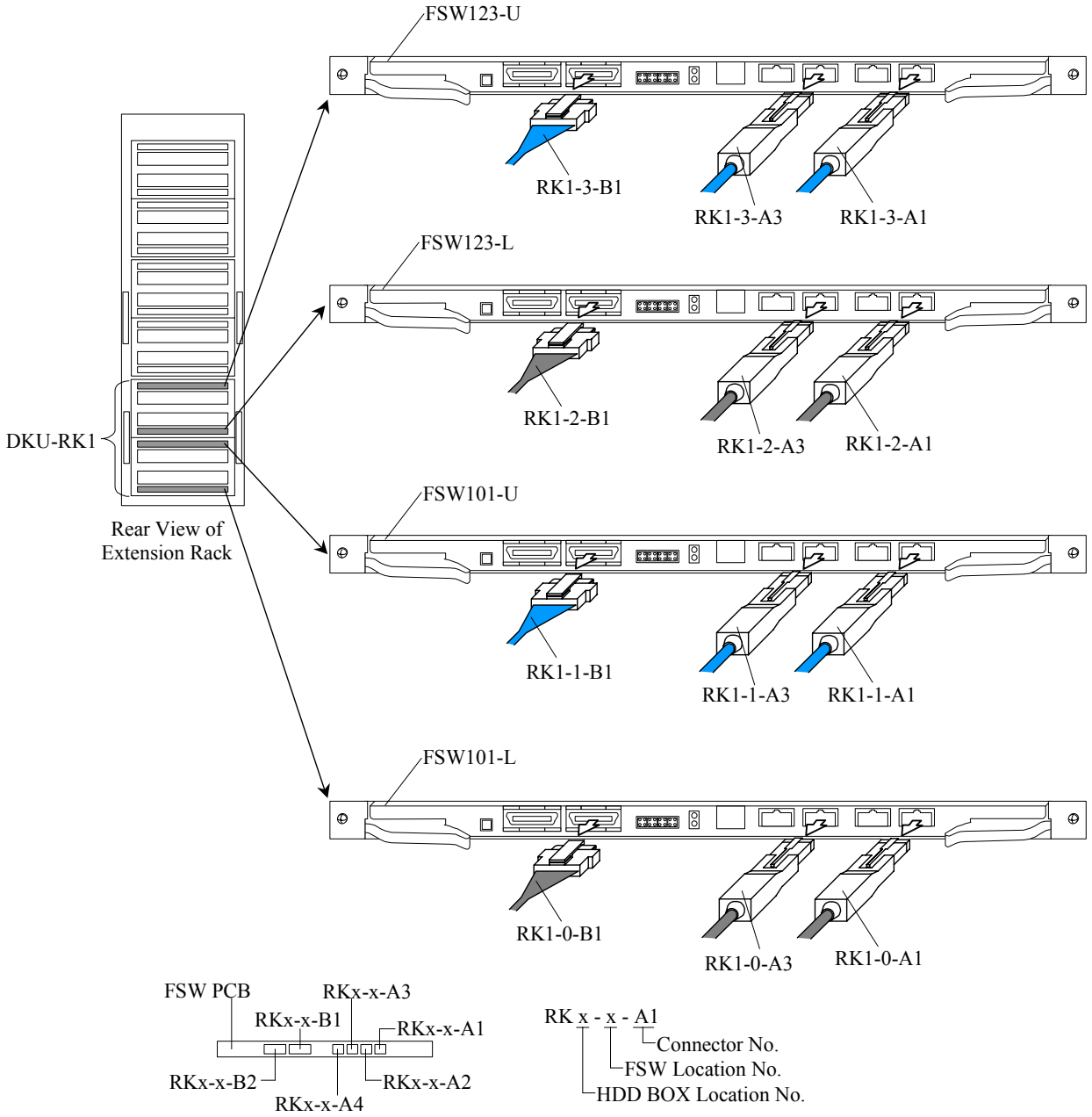


Fig. 4.1.5.4-4 Disconnection of DEV Interface Cables

2. Uninstall the DEV interface cables in DKU-RK1 by removing cable clamps and cables stoppers. (Refer to Fig. 4.1.5.4-5 or Fig. 4.1.5.4-6.)

When the Extension Rack was installed on the right of the Basic Rack

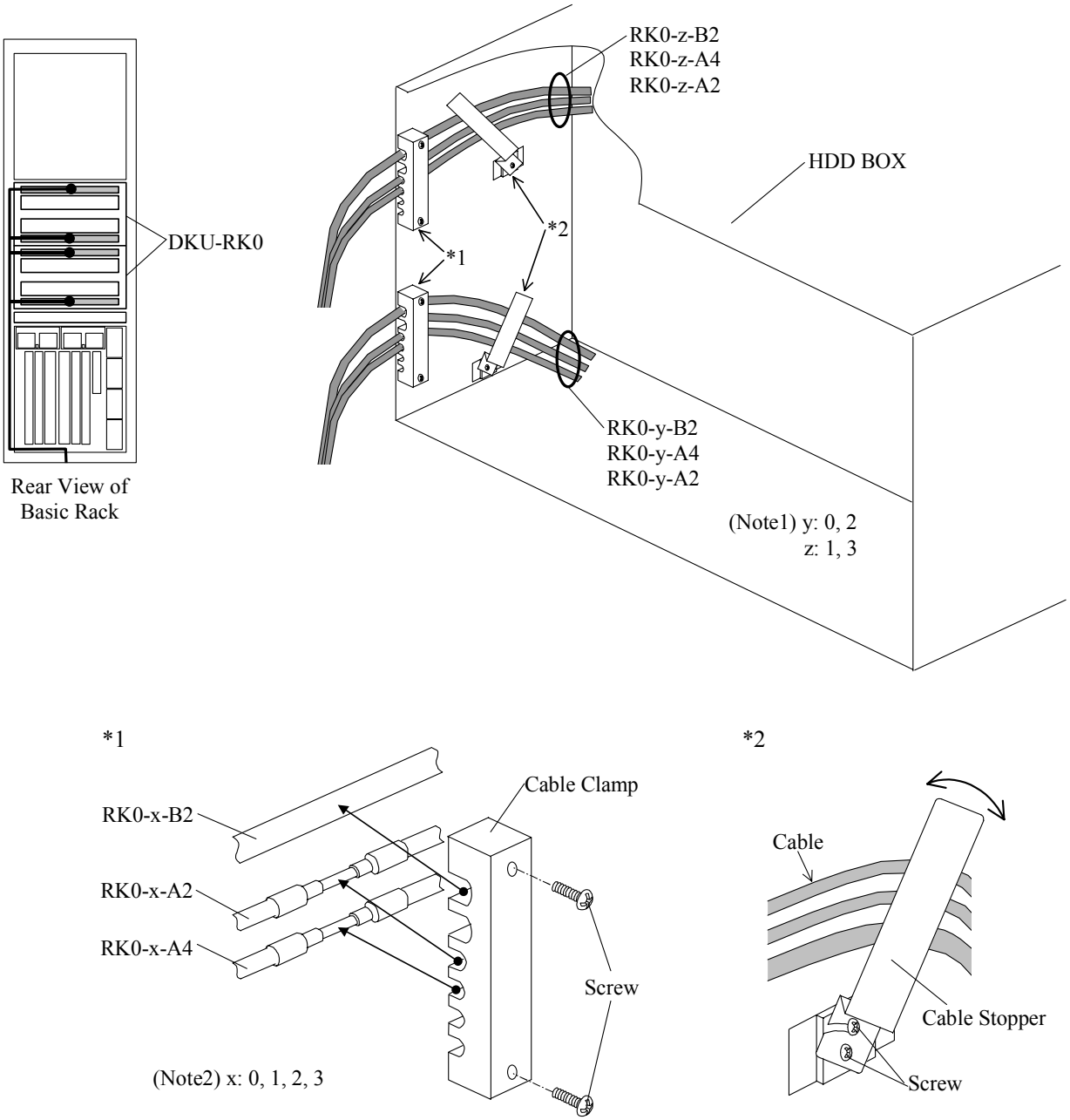


Fig. 4.1.5.4-5 Removal of DEV Interface Cable

When the Extension Rack was installed on the left of the Basic Rack

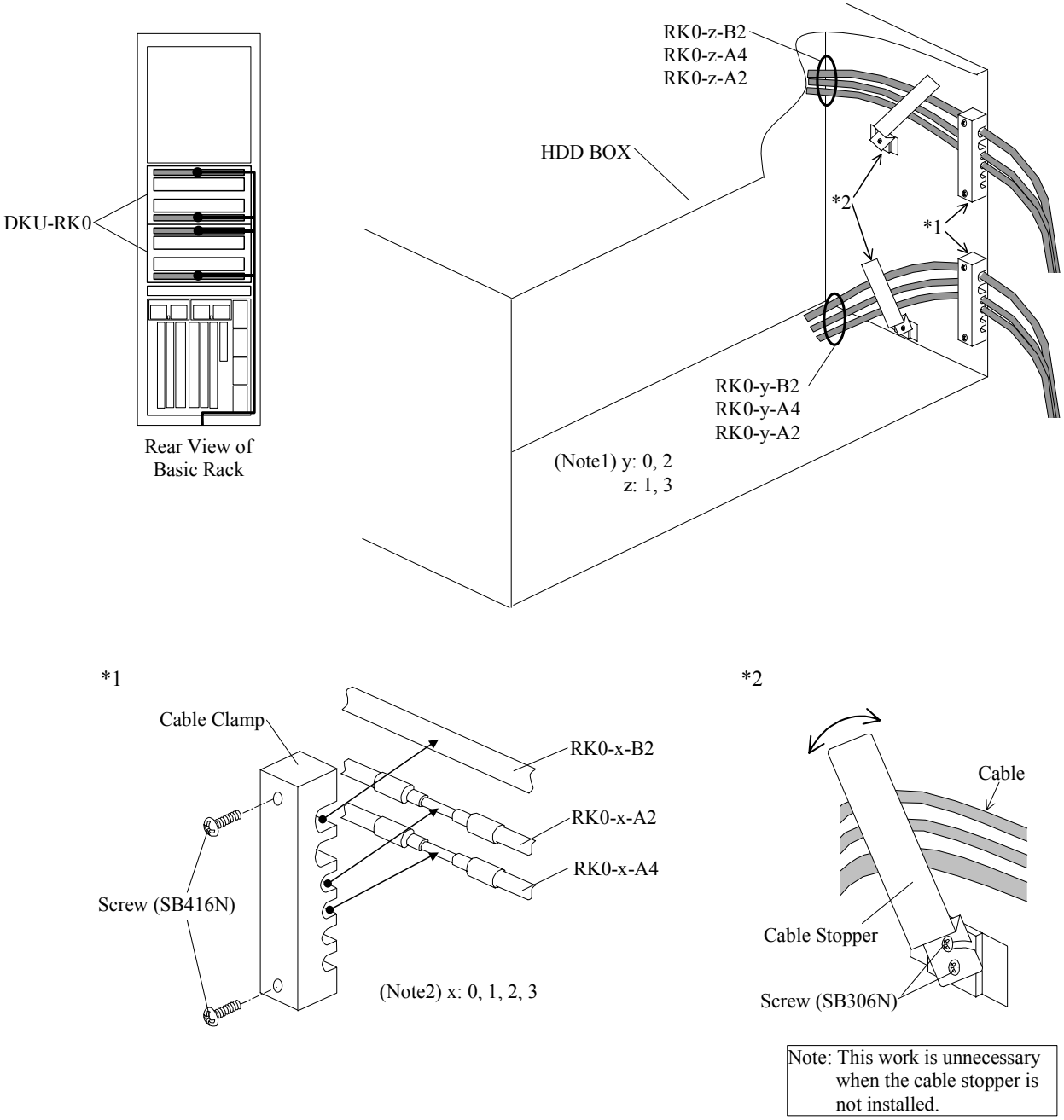


Fig. 4.1.5.4-6 Removal of DEV Interface Cable

3. Uninstall the DEV interface cables in DKU-RK2 by removing cable clamps and cables stoppers. (Refer to Fig. 4.1.5.4-7 or Fig. 4.1.5.4-8.)

When the Extension Rack was installed on the right of the Basic Rack

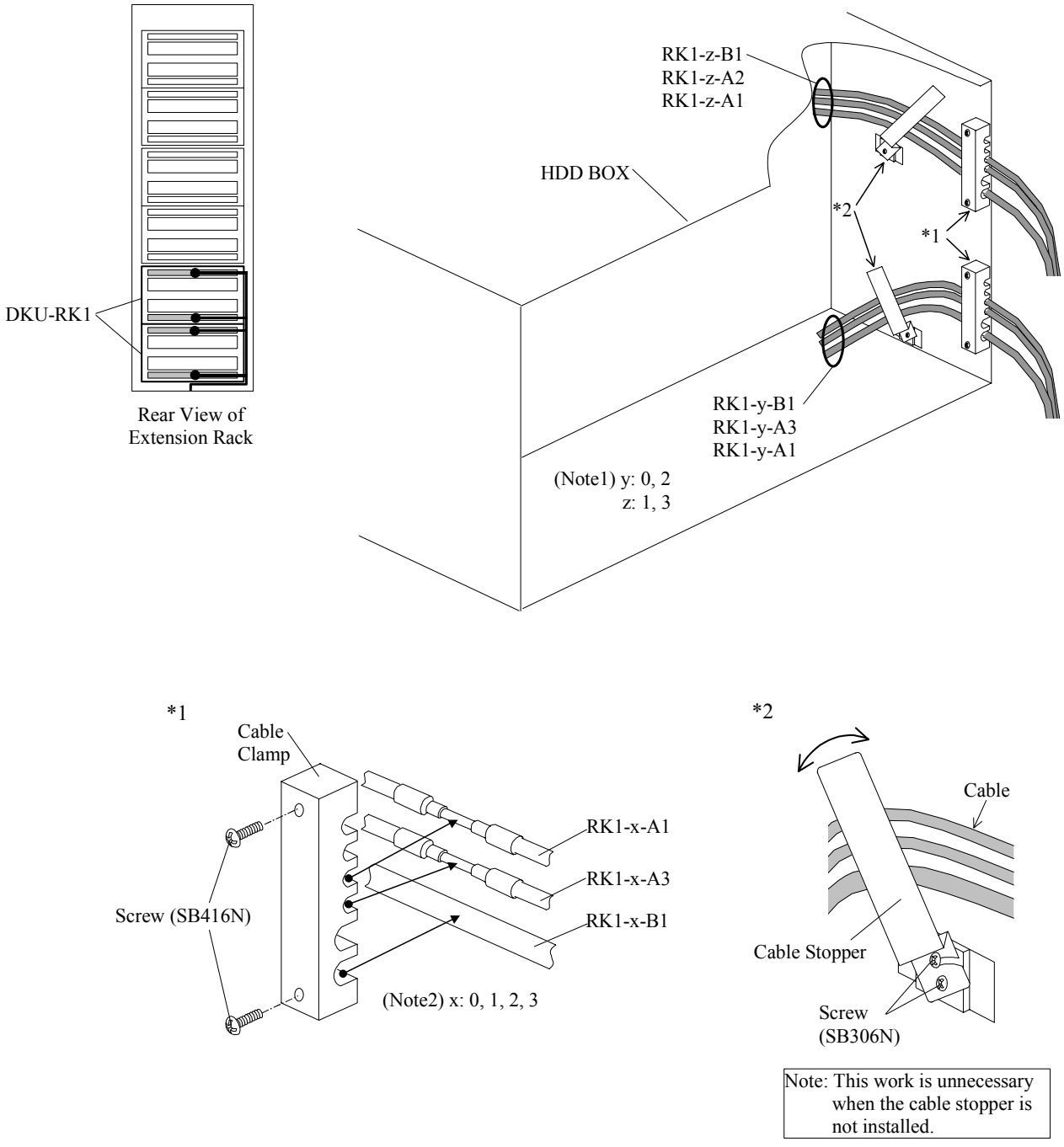


Fig. 4.1.5.4-7 Removal of DEV Interface Cable

When the Extension Rack was installed on the left of the Basic Rack

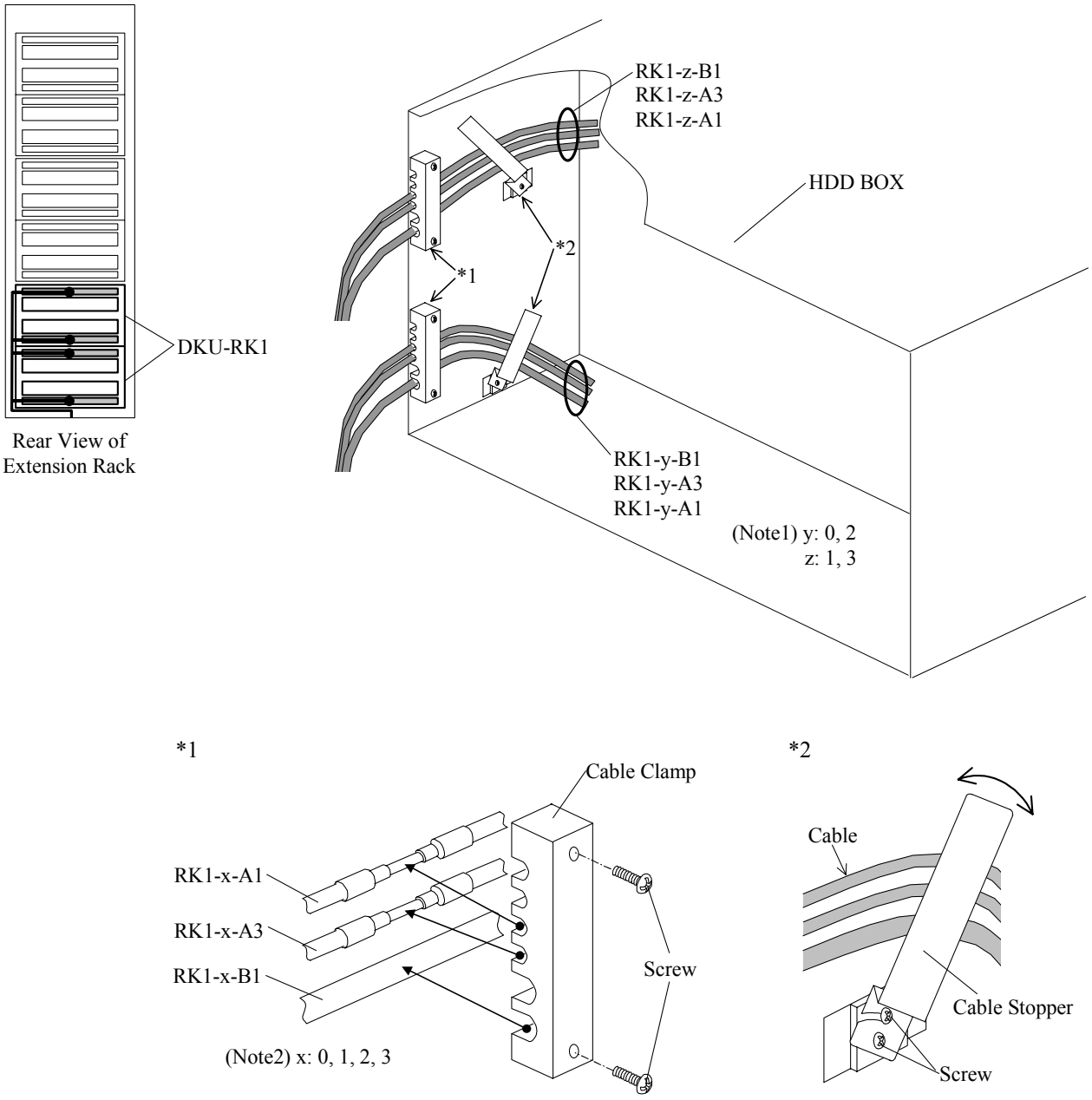


Fig. 4.1.5.4-8 Removal of DEV Interface Cable

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4. Open the three binders and remove the DEV interface cable from the frame. (Refer to Fig. 4.1.5.4-9 or Fig. 4.1.5.4-10.)

When the Extension Rack was installed on the right of the Basic Rack

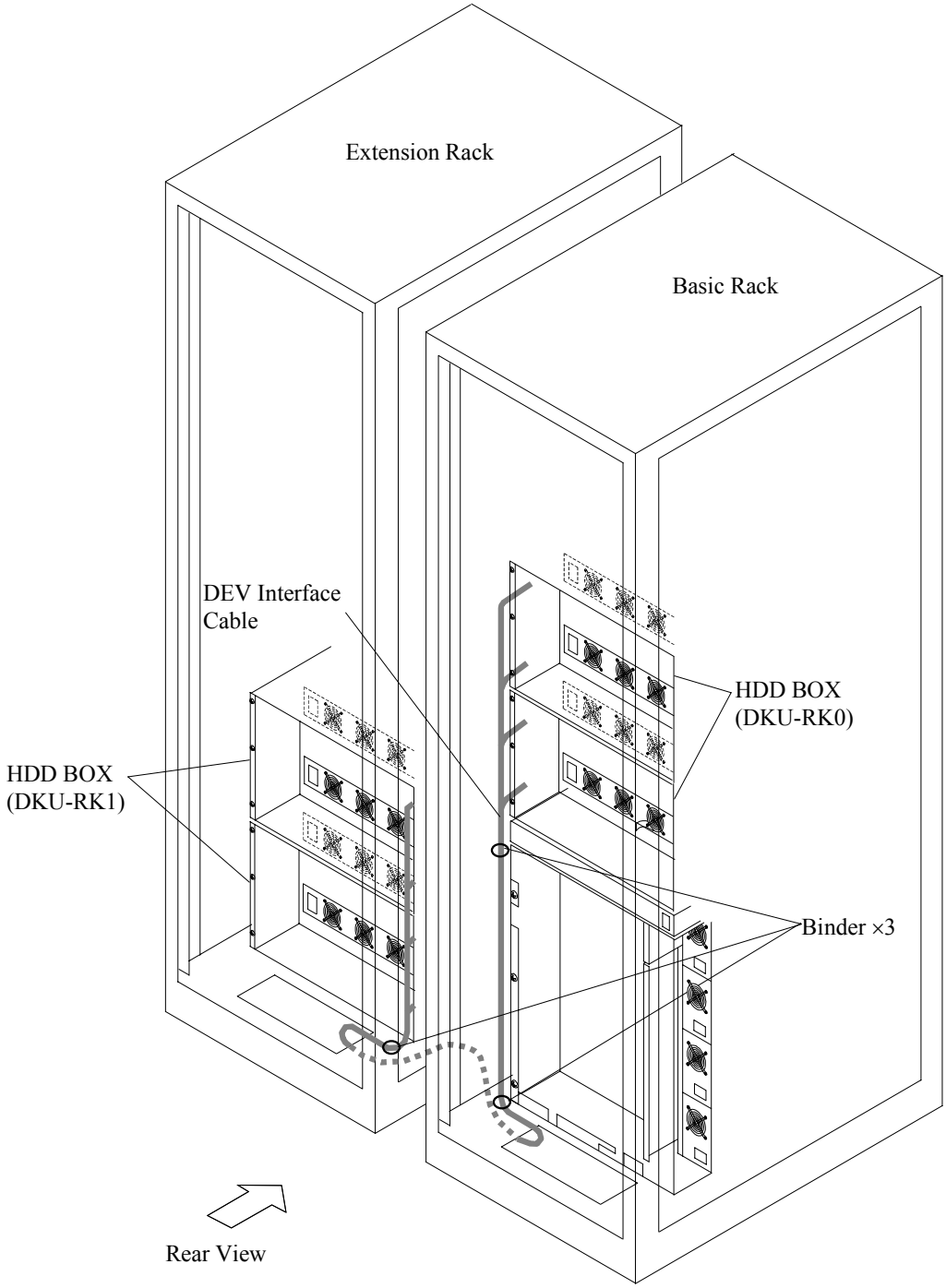


Fig. 4.1.5.4-9 Removal of DEV Interface Cable

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When the Extension Rack was installed on the left of the Basic Rack

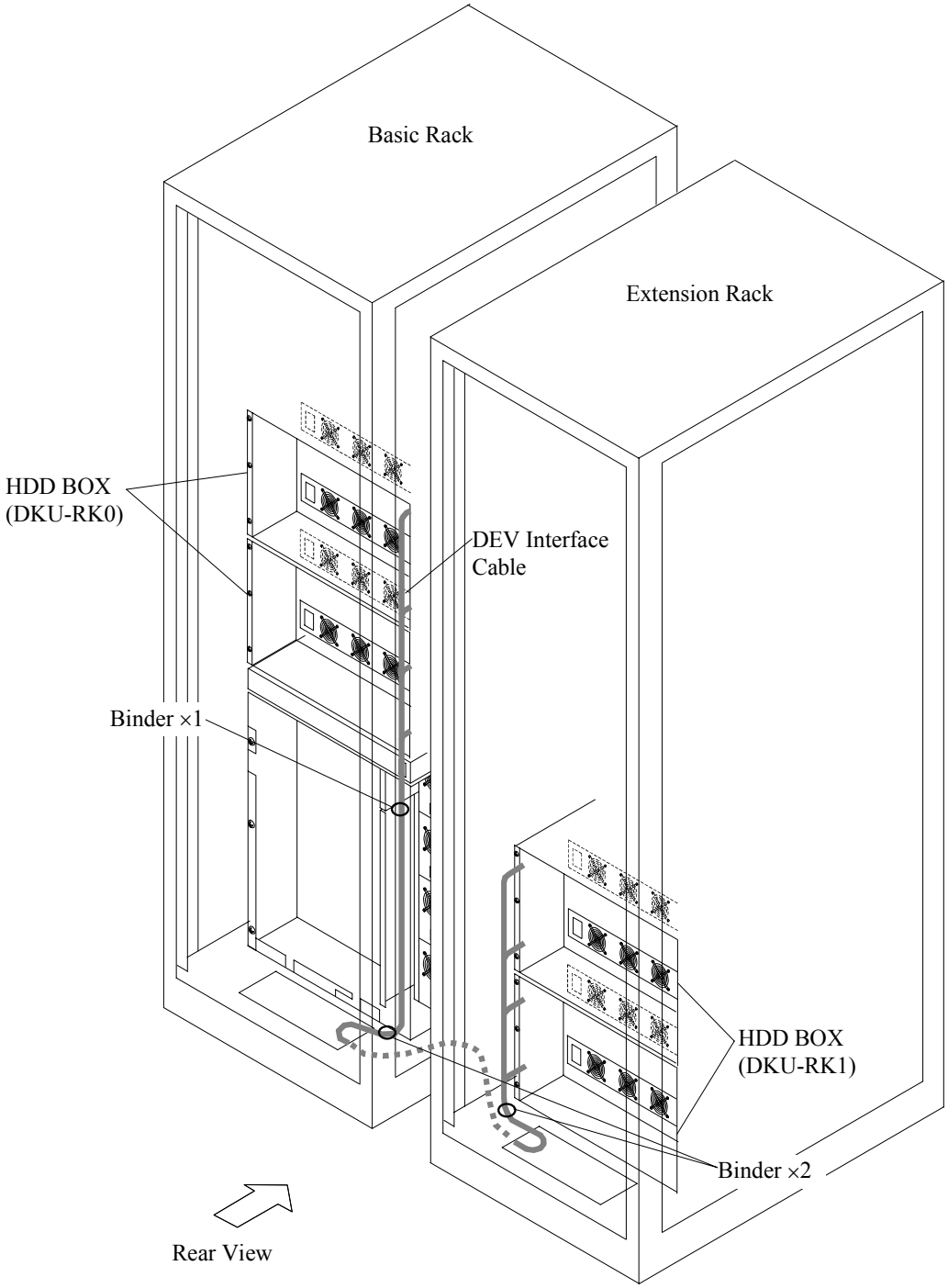


Fig. 4.1.5.4-10 Removal of DEV Interface Cable

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5. Removal of nameplate
   a. Remove the screw from the rack frame and remove the nameplate tags to be installed.
   b. Remove the DKC-F515I-EXC2R nameplate from the nameplate tag.
   c. Attach the remaining nameplate tags with the screw.

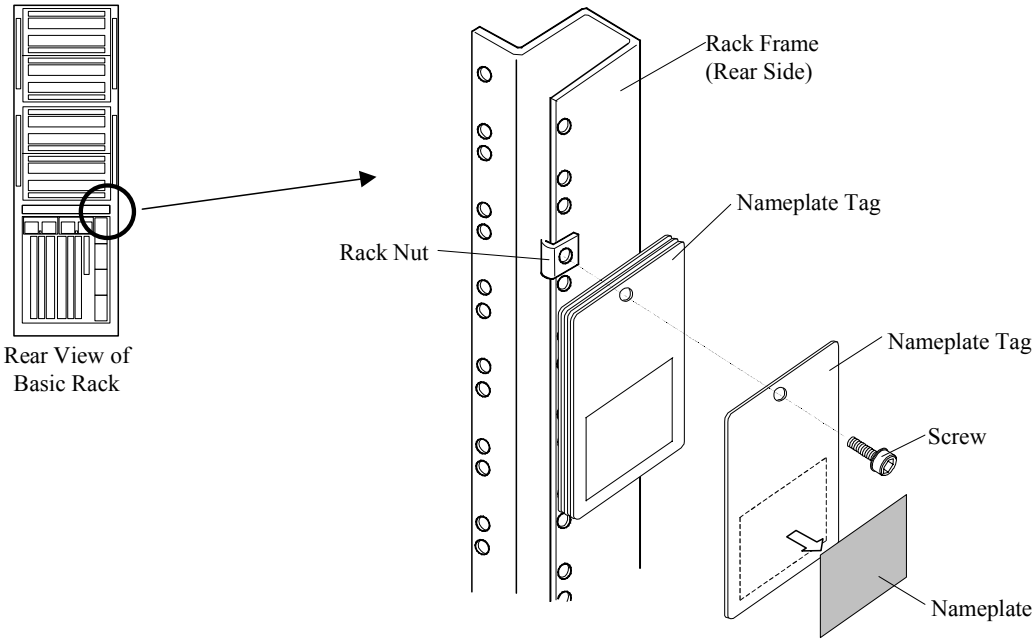


Fig. 4.1.5.4-11 Removal of Nameplate

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6. Removal of Labels

HDS Rack Frame

a. Remove the five labels from the rear door.

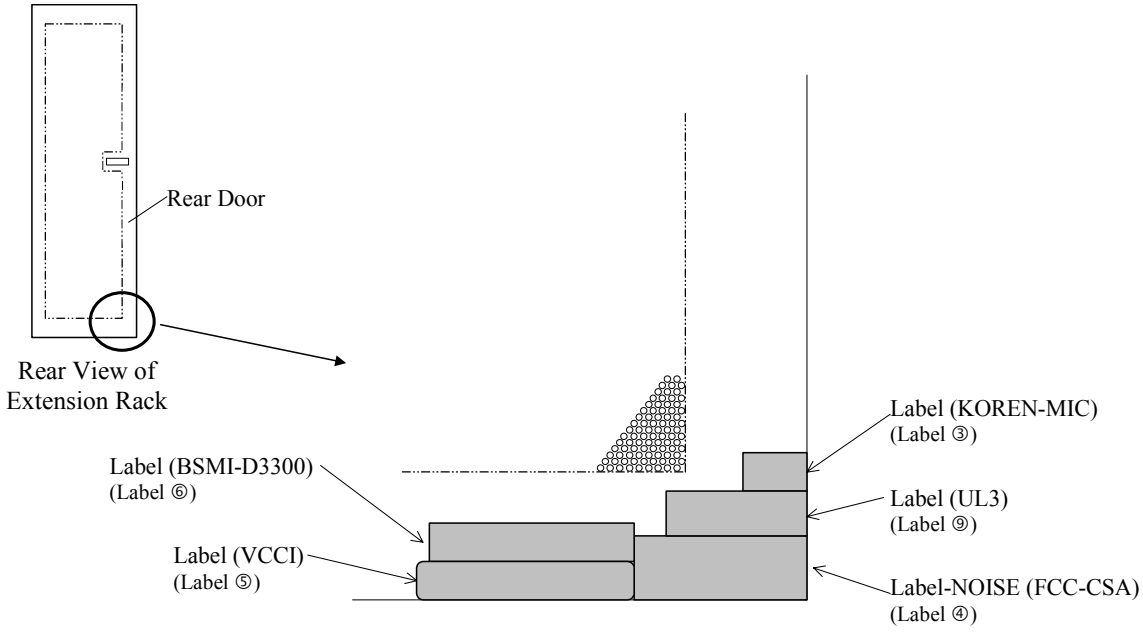


Fig. 4.1.5.4-12 Removal of Labels

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4.1.5.5 De-Installation Procedure of DEV Interface Cable (DKC-F515I-UC4R)

De-Installation Condition

DKC-F515I-UC4R is the cable option to connect the DKU-RK1 and the DKU-RK2 when the TagmaStore AMS/WMS is installed.
This option becomes unnecessary when de-installing the DKU-RK2 (3rd DKC-F515I-B2R).
Decide if the DEV Interface Cable (DKC-F515I-UC4R) needs to be removed, and go to the page to meet the condition. (Refer to Table 4.1.5.5-1.)

Table 4.1.5.5-1 Work Procedure Table

No.	Condition of Work Procedure	Page
1	When you need to remove DEV Interface Cable (DKC-F515I-UC4R)	INST04-01D-300
2	When you do not need to remove DEV Interface Cable (DKC-F515I-UC4R)	INST04-01D-320

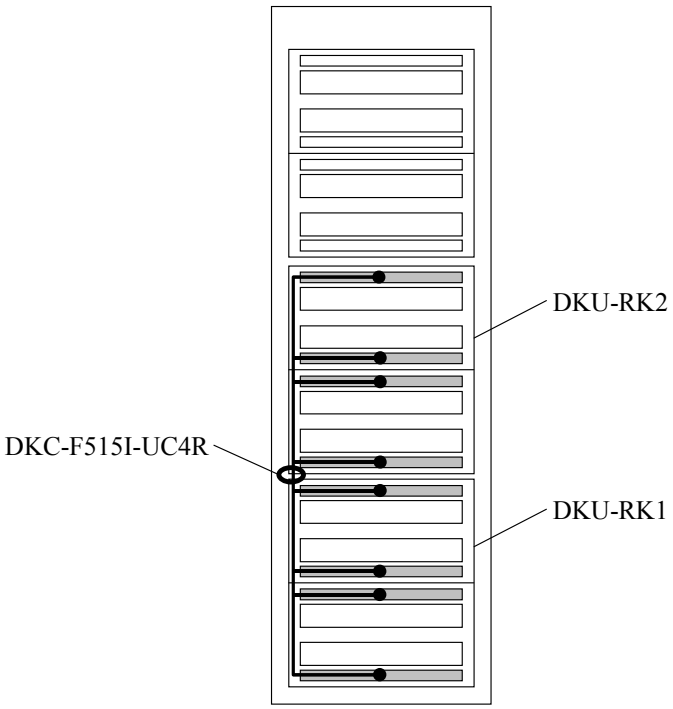


Fig. 4.1.5.5-1 Mounting Position of DEV Interface Cable

1. Disconnect the DEV interface cables from the FSW PCBs in the DKU-RK1 and DKU-RK2.
2. Remove the eight cable clamps and four repeat binders and remove the DEV interface cables from the Rack frame.

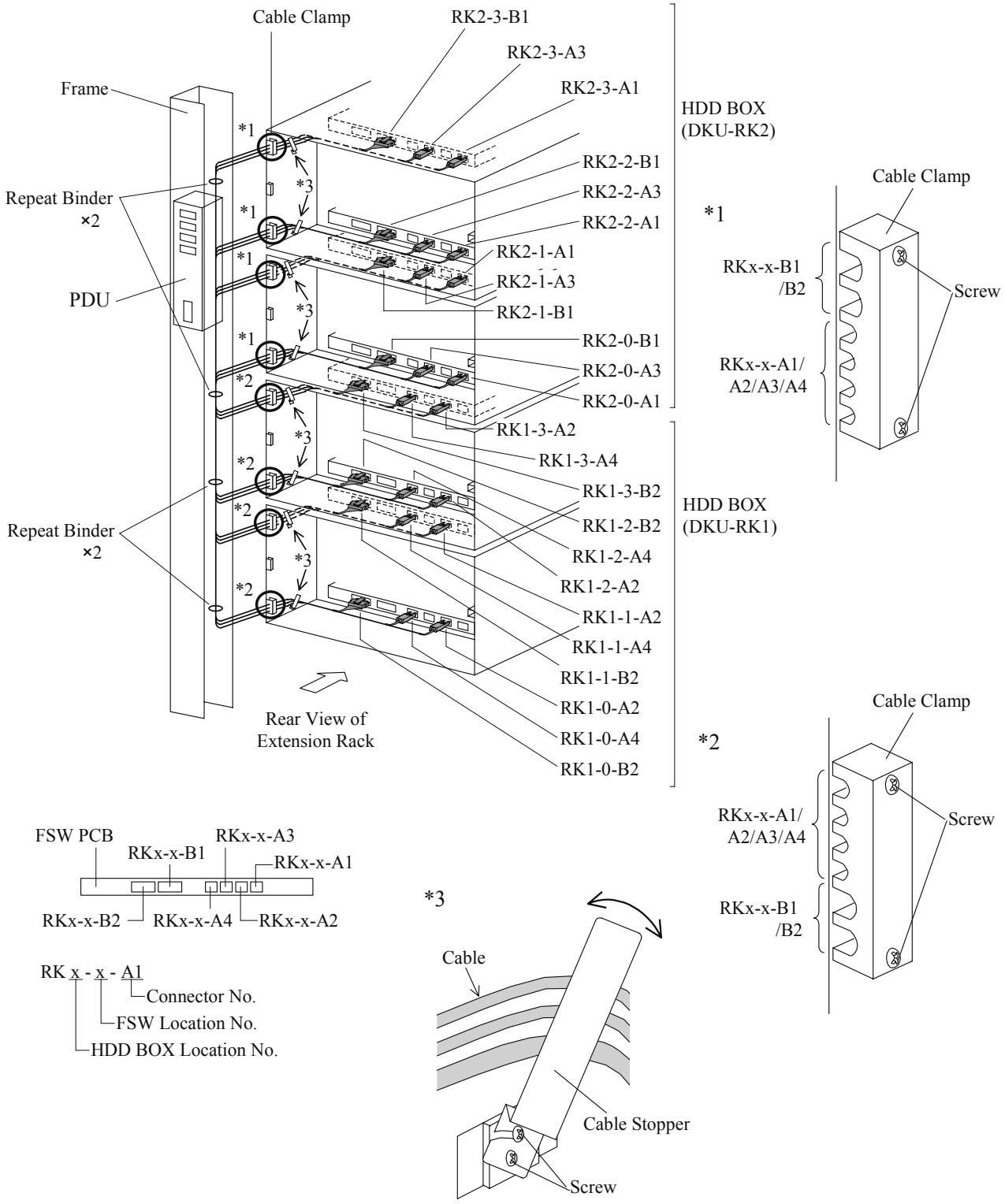


Fig. 4.1.5.5-2 Removal of DEV Interface Cable

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3. Removal of nameplate
   a. Remove the screw from the rack frame and remove the nameplate tags to be installed.
   b. Remove the DKC-F515I-UC4R nameplate from the nameplate tag.
   c. Attach the remaining nameplate tags with the screw.

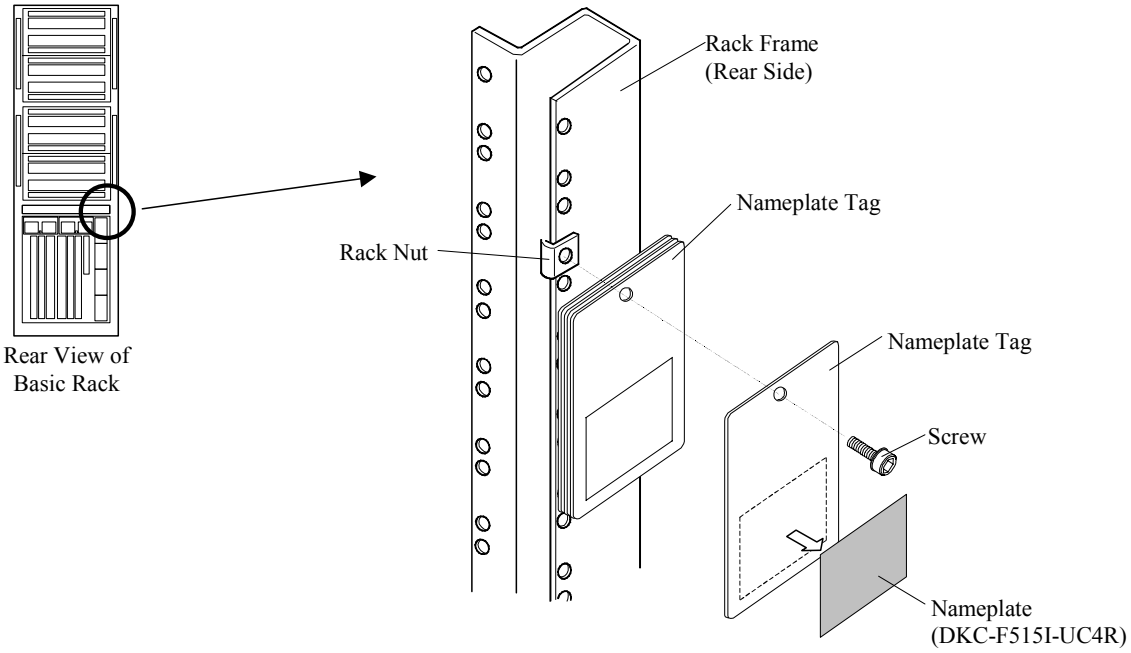


Fig. 4.1.5.5-3 Removal of Nameplate

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4.1.5.6 De-Installation Procedure of DEV Interface Cable (DKC-F515I-UC1R)

De-Installation Condition

DKC-F515I-UC1R is the cable option to connect the DKU-RK2 and the DKU-RK3 when the TagmaStore AMS/WMS is installed.
This option becomes unnecessary when de-installing the DKU-RK3 (4th DKC-F515I-B2R).
Decide if the DEV Interface Cable (DKC-F515I-UC1R) needs to be removed, and go to the page to meet the condition. (Refer to Table 4.1.5.6-1.)

Table 4.1.5.6-1 Work Procedure Table

No.	Condition of Work Procedure	Page
1	When you need to remove DEV Interface Cable (DKC-F515I-UC1R)	INST04-01D-330
2	When you do not need to remove DEV Interface Cable (DKC-F515I-UC1R)	INST04-01D-350

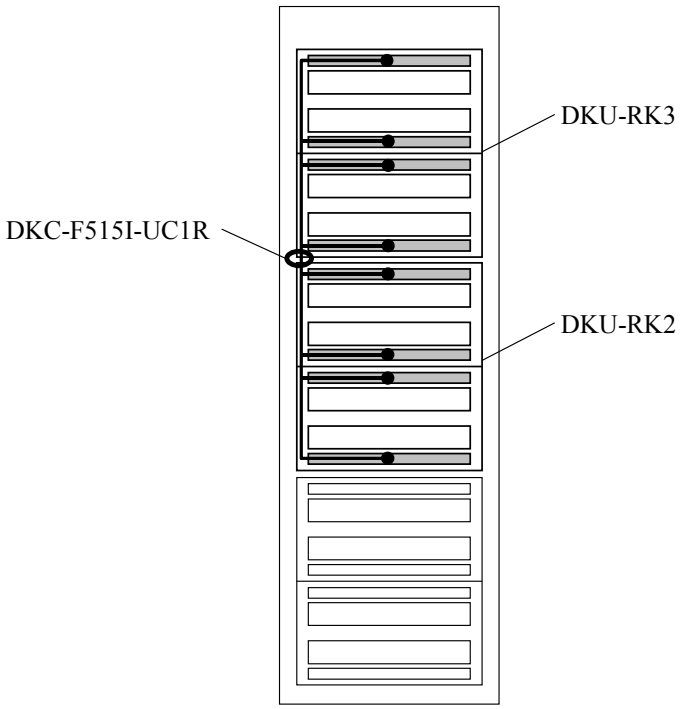


Fig. 4.1.5.6-1 Mounting Position of DEV Interface Cable

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1. Disconnect the DEV interface cables from the FSW PCBs in the DKU-RK2 and DKU-RK3.
2. Remove the eight cable clamps and four repeat binders and remove the DEV interface cables from the Rack frame.

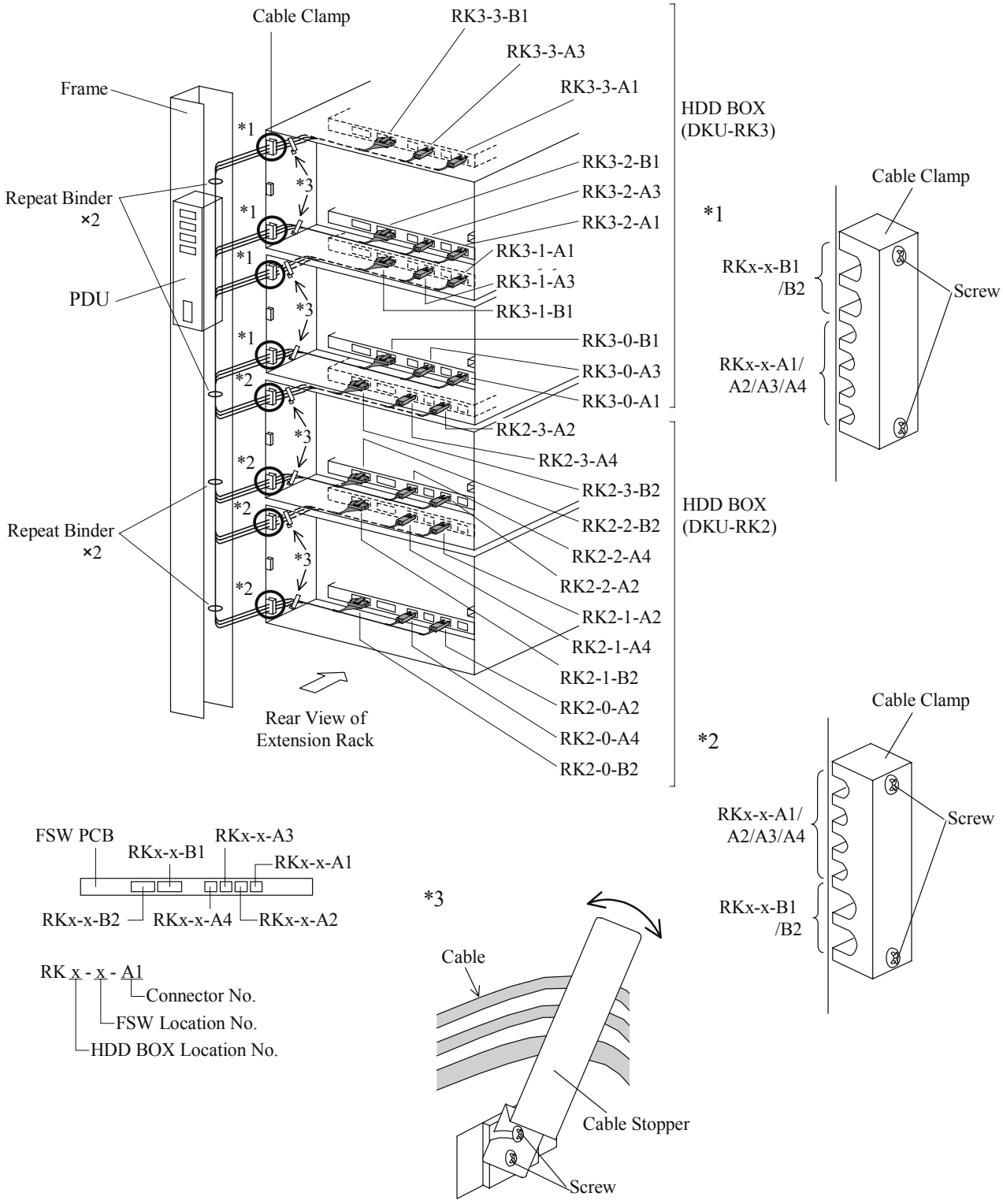


Fig. 4.1.5.6-2 Removal of DEV Interface Cable

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3. Removal of nameplate
   a. Remove the screw from the rack frame and remove the nameplate tags to be installed.
   b. Remove the DKC-F515I-UC1R nameplate from the nameplate tag.
   c. Attach the remaining nameplate tags with the screw.

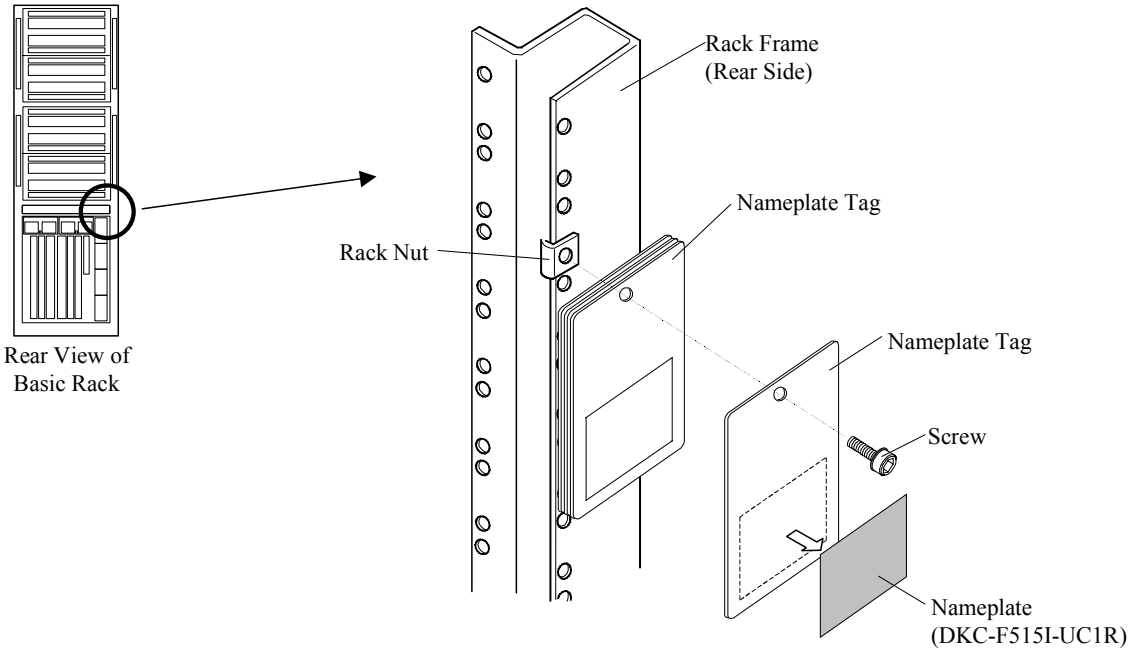
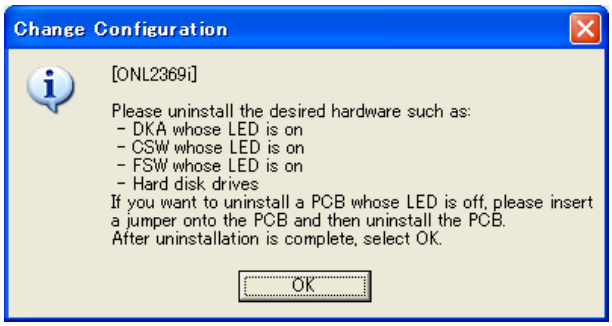


Fig. 4.1.5.6-3 Removal of Nameplate

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4.1.5.7 SVP post procedure (Making sure of completion of the removal)

(1)



In response to a message, “Please uninstall the desired hardware such as:
- DKA whose LED is on
- CSW whose LED is on
- FSW whose LED is on
- Hard disk drives

If you want to uninstall a PCB whose LED is off, please insert a jumper onto the PCB and then uninstall the PCB. After uninstallation is complete, select OK.” select (CL) [OK].

---

(2) <Removal of Battery>



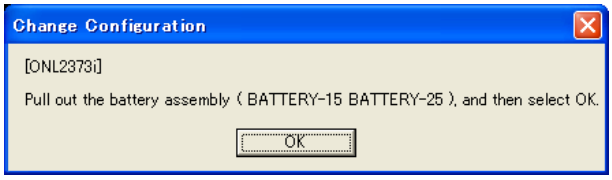
Do not press the [OK] button at this time yet. When de-installation of the battery is required, a message, “Pull out the battery assembly, and then select OK.” is displayed.

- When the message is displayed, remove the hardware component(s) following the procedure for de-installing the battery.
- When the message is not displayed, go to Step (2) of the SVP post procedure (Making sure of completion of the removal).

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(3)

In response to a message, “Pull out the battery assembly, and then select OK.” select (CL) [OK].



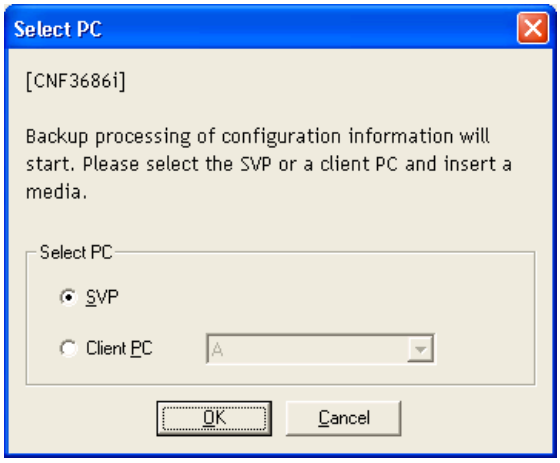
(4) <Making sure of completion of the removal>
A message, “Renewal process has completed. Please check subsystem status.” is displayed. In response to the message, select (CL) [OK].



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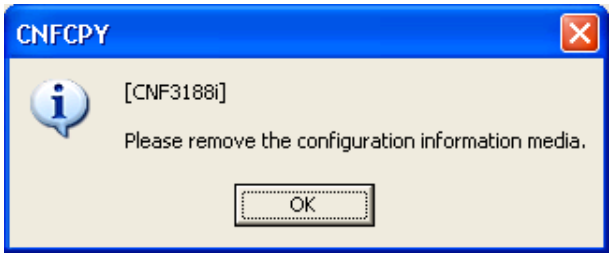
(5)

"Reading subsystem configuration data..." is displayed.
"Backup processing of configuration information will start. Please select the SVP or a client PC and insert a media." is displayed.
Insert the Config FD into FDD of selected PC, and select (CL) [OK].



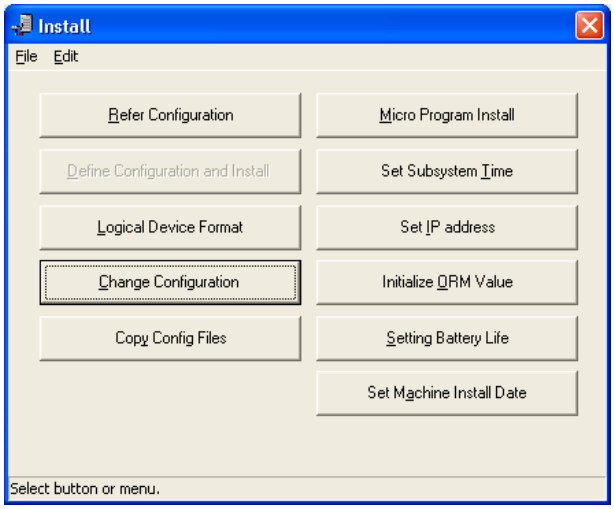
(6)

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



(7)

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



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

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4.1.5.8 Attachment of Covers (DKC-F515I-UC1R/UC4R/EXC0R)

1. Attach the Rear Logic Box cover and HDD Box covers. Refer to Fig. 4.1.5.8-1 and Fig. 4.1.5.8-2.

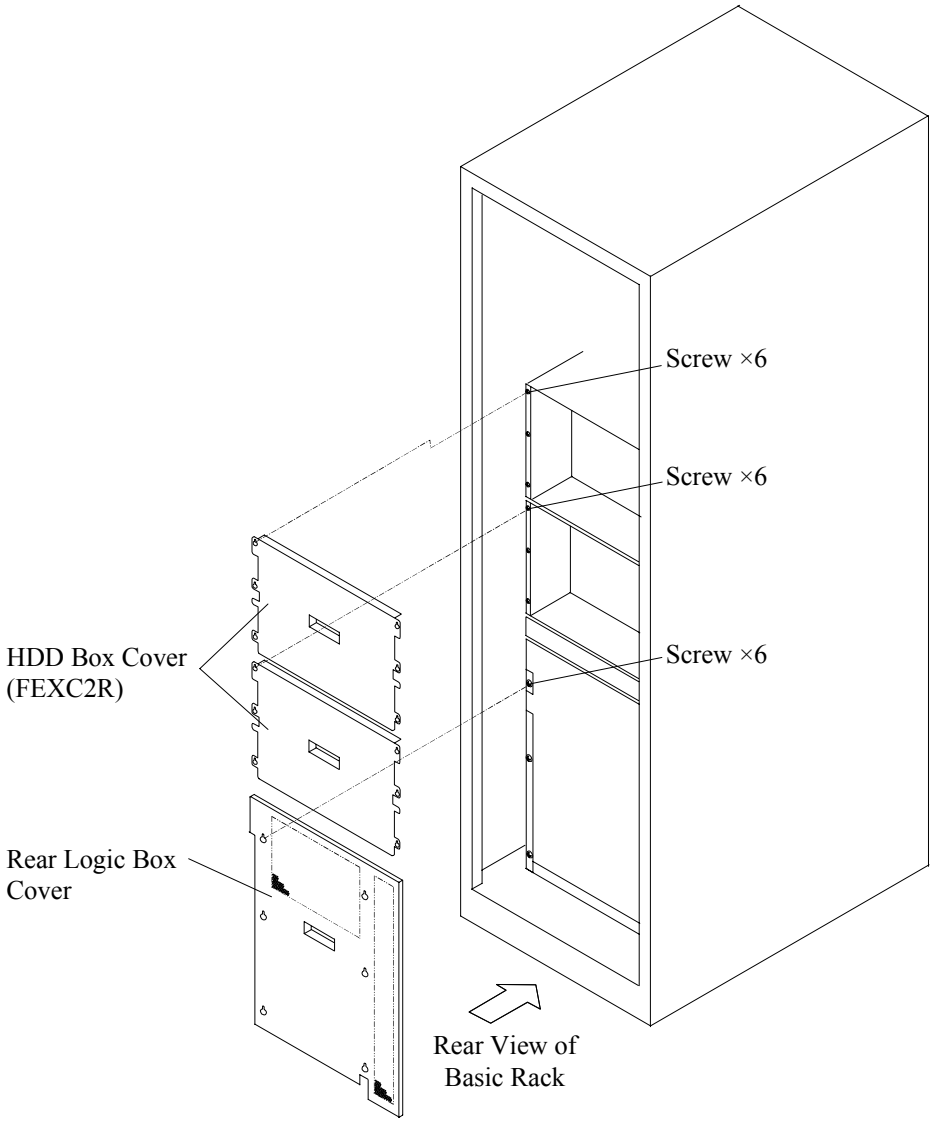


Fig. 4.1.5.8-1 Attachment of Covers

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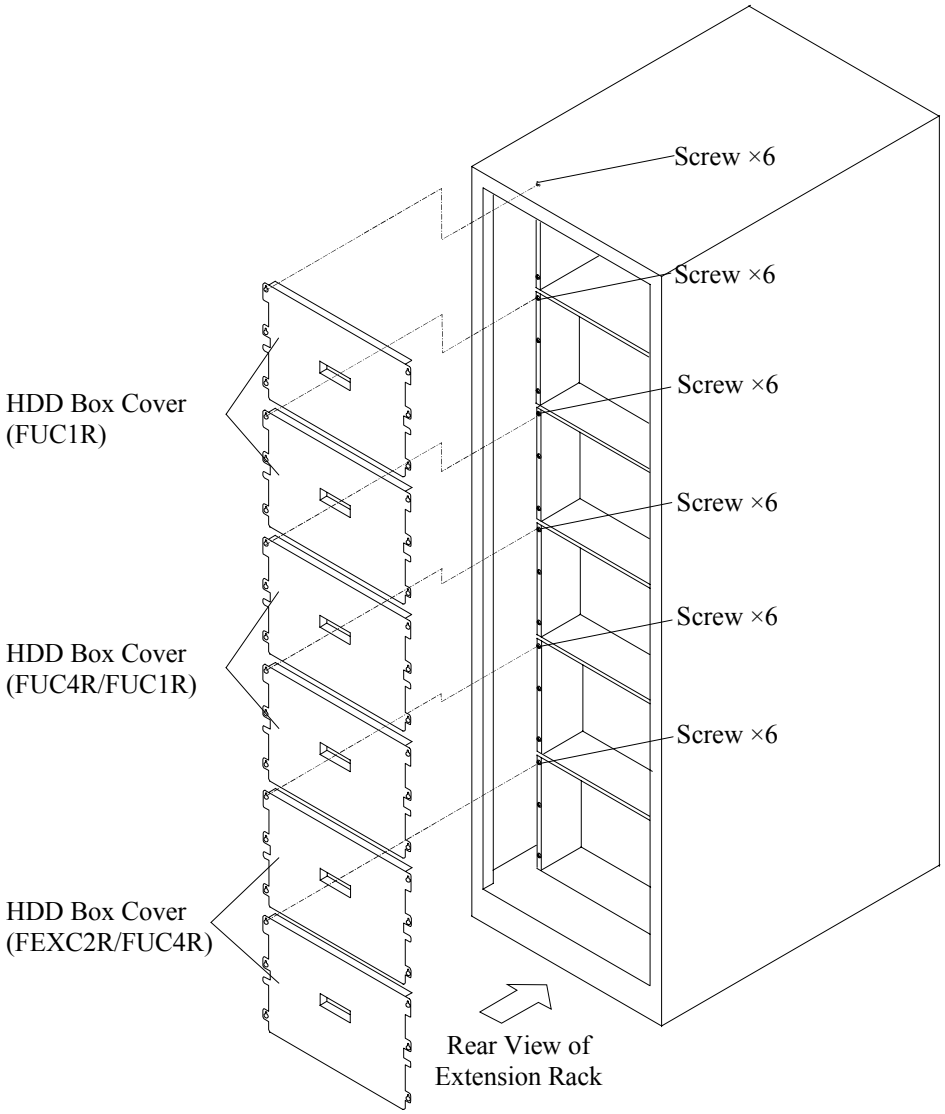


Fig. 4.1.5.8-2 Attachment of Covers

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4.2 De-Installation of Disk Chassis (DKC-F515I-B2R)

4.2.1 Parts List

Table 4.2.1-1 Parts List of DKC-F515I-B2R

Item No.	Part Name	Part No.	Quantity	Remarks
1	HDD BOX	3272859-A	2	
2	Cable ASSY (PS INLET)	3272976-C	2	White Label
3	Cable ASSY (PS INLET)	3272976-D	2	Yellow Label
4	Label (V/HZ-B2R)	3274139-1	1	
5	Label (UL4-1)	5529984-1	1	
6	Label (UL5)	3264272-1	1	
7	Repeat Binder	5409042-3	8	
8	Nameplate (HDS)	2751038-54	1	RSD
		2751040-54/254		HICAM/HICEF
9	Label	3275121-1	1	
10	Label	3275120-1	1	

Table 4.2.1-2 Parts List of DKC-F515I-BUHR/BUSR

Item No.	Part Name	Part No.	Quantity	Remarks
100	Bezel (12U) ASSY	2751646-A	1	For DKC-F515I-BUHR
		2751191-B		For DKC-F515I-BUSR
101	Bracket (L)	3274066-1	1	
102	Bracket (L)	3274066-2	1	
103	Bracket (U)	3274067-1	2	
104	Screw	SB305N	4	
105	Screw	SB306N	4	
106	HDD BOX Rail (HDS)	2751617-1	2	
107	HDD BOX Rail (HDS)	2751617-2	2	
108	HDD BOX Stopper (HDS)	5529968-1	4	
109	WA Socket Bolt	3261959-408	12	
110	Nameplate (HDS)	2751038-70	1	RSD
	(DKC-F515I-BUHR)	2751040-70/270		HICAM/HICEF
	Nameplate (SUN)	2751038-72		RSD
	(DKC-F515I-BUSR)	2751040-72/272		HICAM/HICEF

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Table 4.2.1-3 Parts List of DKC-F515I-BUPR

Item No.	Part Name	Part No.	Quantity	Remarks
200	Bezel (12U) ASSY	2751650-A	1	
201	Bracket (L)	3274066-1	1	
202	Bracket (L)	3274066-2	1	
203	Bracket (U)	3274067-1	2	
204	Screw	SB305N	4	
205	Screw	SB306N	4	
206	Screw	SB510N	8	
207	Rail (HDD BOX)	3269759-101	2	
208	Rail (HDD BOX)	3269759-102	2	
209	Stopper R	5529498-101	2	
210	Stopper R	5529498-102	2	
211	Rack Nut	5510146-1	24	
212	WA Socket Bolt	3261959-408	12	
213	WA Socket Bolt	3261959-516	16	
214	Nameplate (HDS)	2751038-68	1	RSD
		2751040-68/268		HICAM/HICEF

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4.2.2 De-Installation Procedure of Disk Chassis

4.2.2.1 In case of Standard Configuration

1. Removal of Bezel (12U)

⚠ CAUTION

The stopper of Bezel is unlocked and released easily at the 60 degree rotation, stop point, of the hexagon socket head screw Latch toward clockwise, and Bezel can remove by pull in to front.
Over force/torque to the Latch might become the cause of Latch damage.

a. Put the wrench in the access hole of the Bezel.
b. Swing the wrench clockwise and remove Bezel from the HDD BOX.

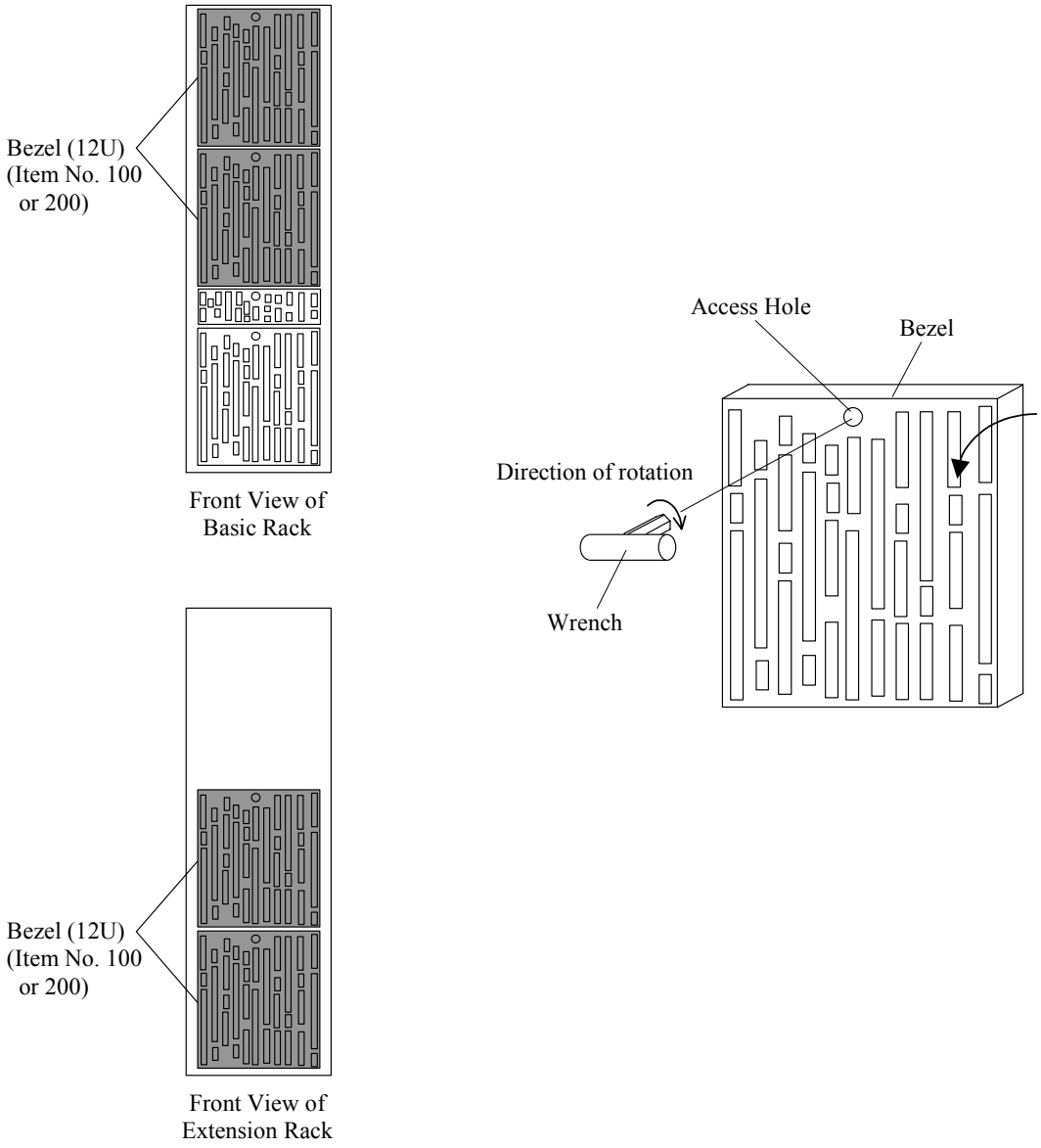


Fig. 4.2.2.1-1 Removal of Bezel

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2. Removal of Brackets
   a. Remove the screws and remove the two brackets (U) from the front side of the HDD BOX.
   b. Remove the screws and remove the two brackets (L) from the front side of the HDD BOX.

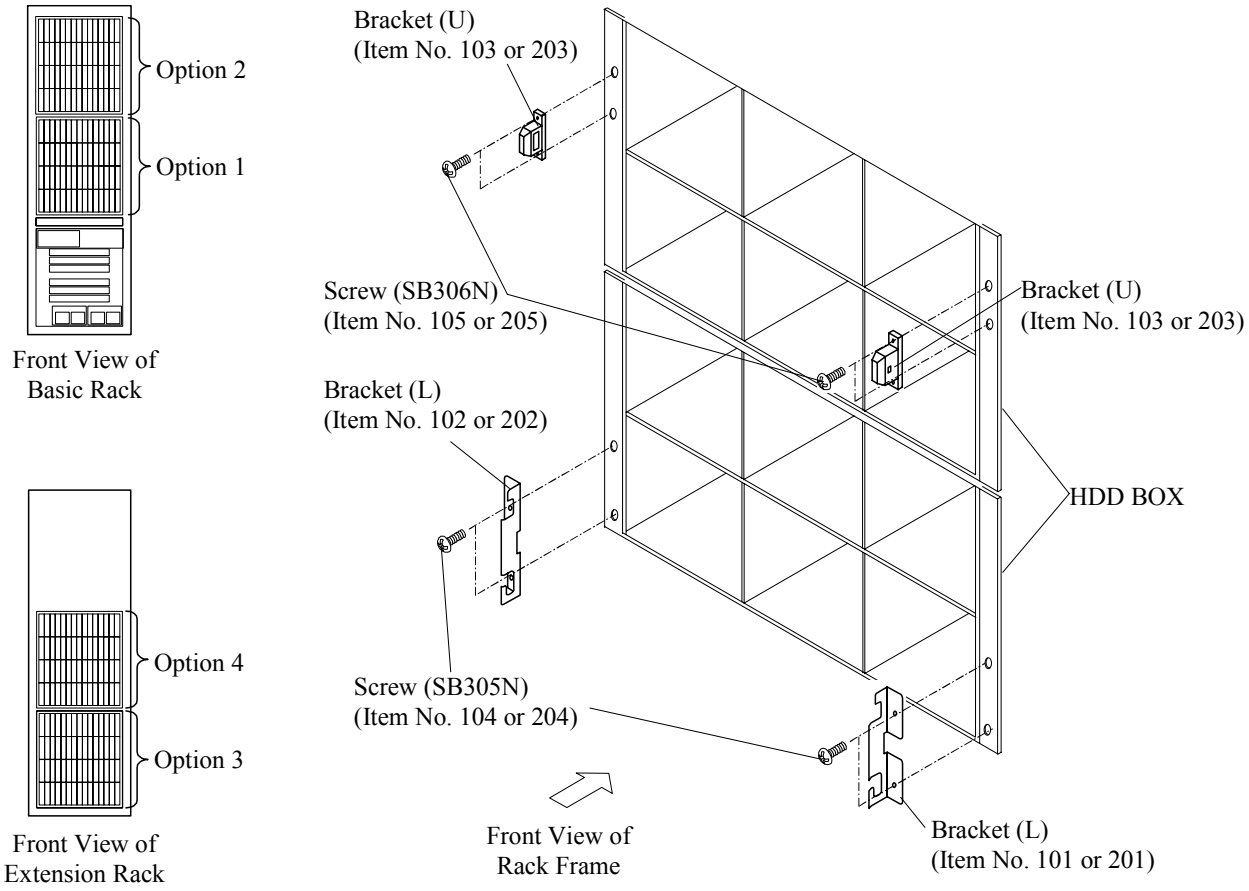


Fig. 4.2.2.1-2 Removal of Brackets

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3. Removal of Nameplate
   a. Remove the screw from the rack frame and remove the nameplate tags to be installed.
   b. Remove the nameplate from the nameplate tag.
   c. Attach the nameplate tags with the screw.

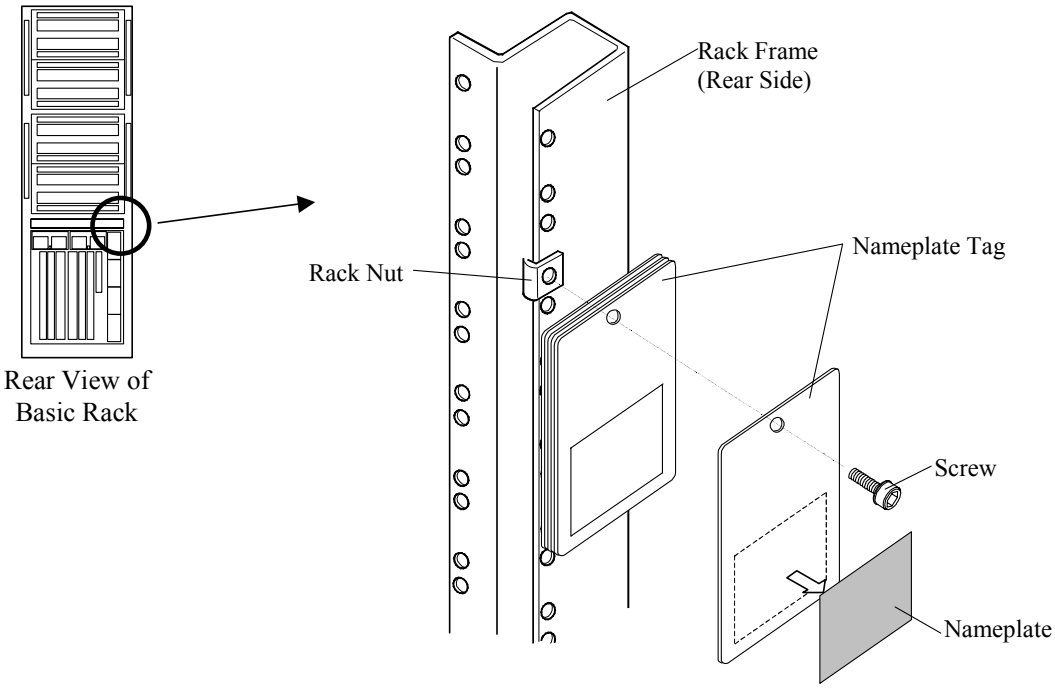


Fig. 4.2.2.1-3 Removal of Nameplate

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4.2.2.2 In case of TagmaStore AMS/AWS installed configuration

1. Removal of Bezel (12U)

> **⚠ CAUTION**
>
> The stopper of Bezel is unlocked and released easily at the 60 degree rotation, stop point, of the hexagon socket head screw Latch toward clockwise, and Bezel can remove by pull in to front.
> Over force/torque to the Latch might become the cause of Latch damage.

a. Put the wrench in the access hole of the Bezel.
b. Swing the wrench clockwise and remove Bezel from the HDD BOX.

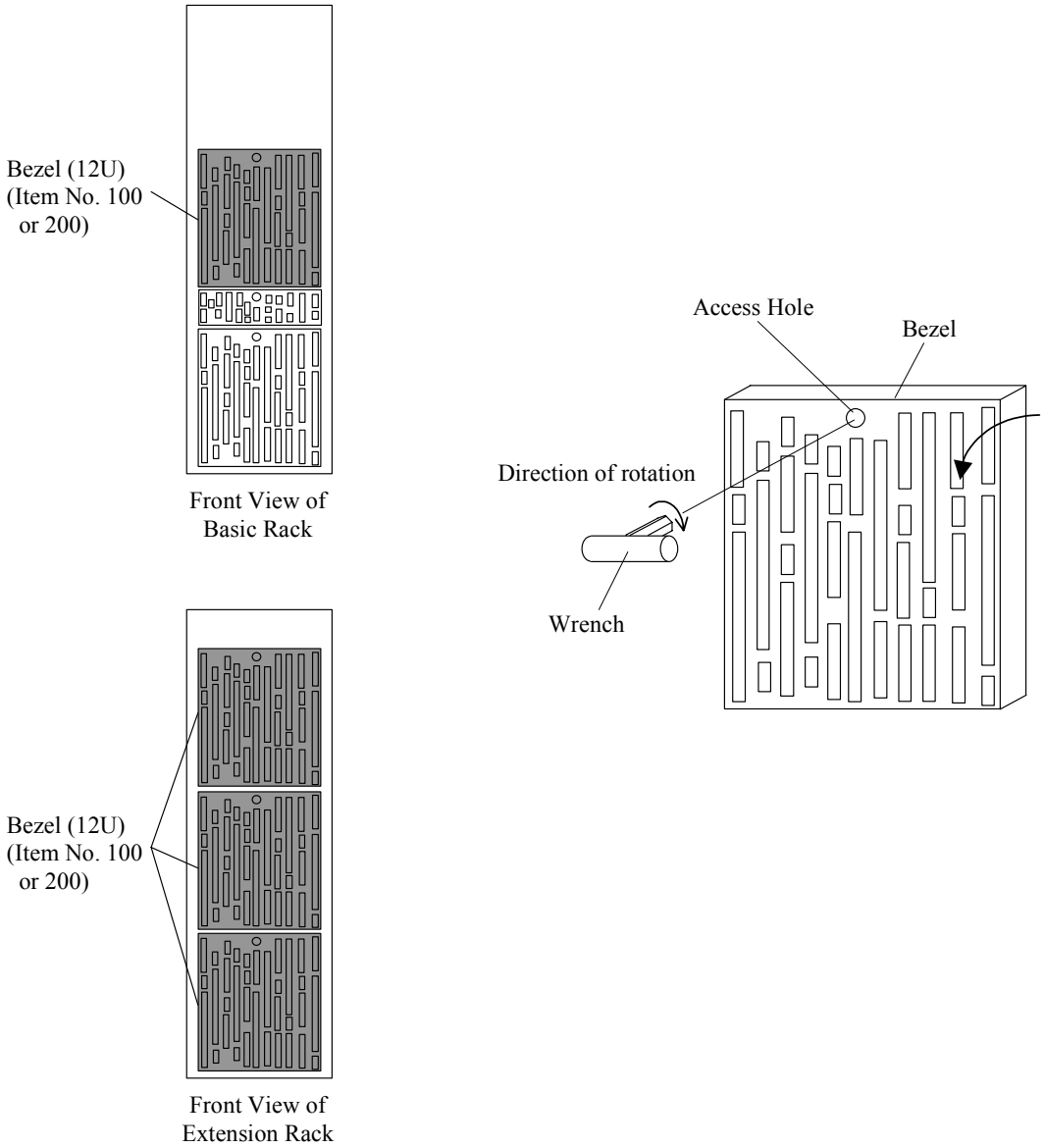


Fig. 4.2.2.2-1 Removal of Bezel

 Copyright © 2006, Hitachi, Ltd.

2. Removal of Brackets
   a. Remove the screws and remove the two brackets (U) from the front side of the HDD BOX.
   b. Remove the screws and remove the two brackets (L) from the front side of the HDD BOX.

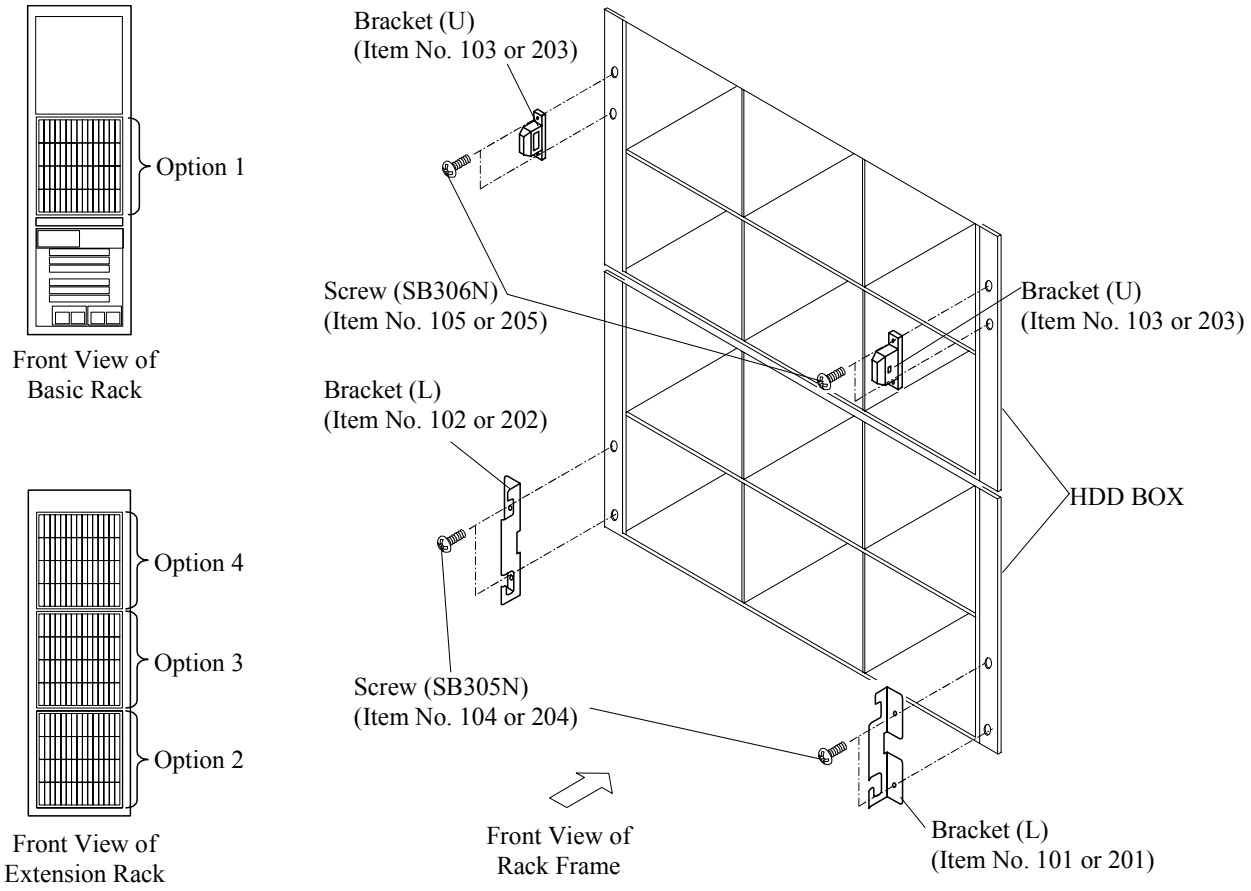


Fig. 4.2.2.2-2 Removal of Brackets

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3. Removal of Nameplate
   a. Remove the screw from the rack frame and remove the nameplate tags to be installed.
   b. Remove the nameplate from the nameplate tag.
   c. Attach the nameplate tags with the screw.

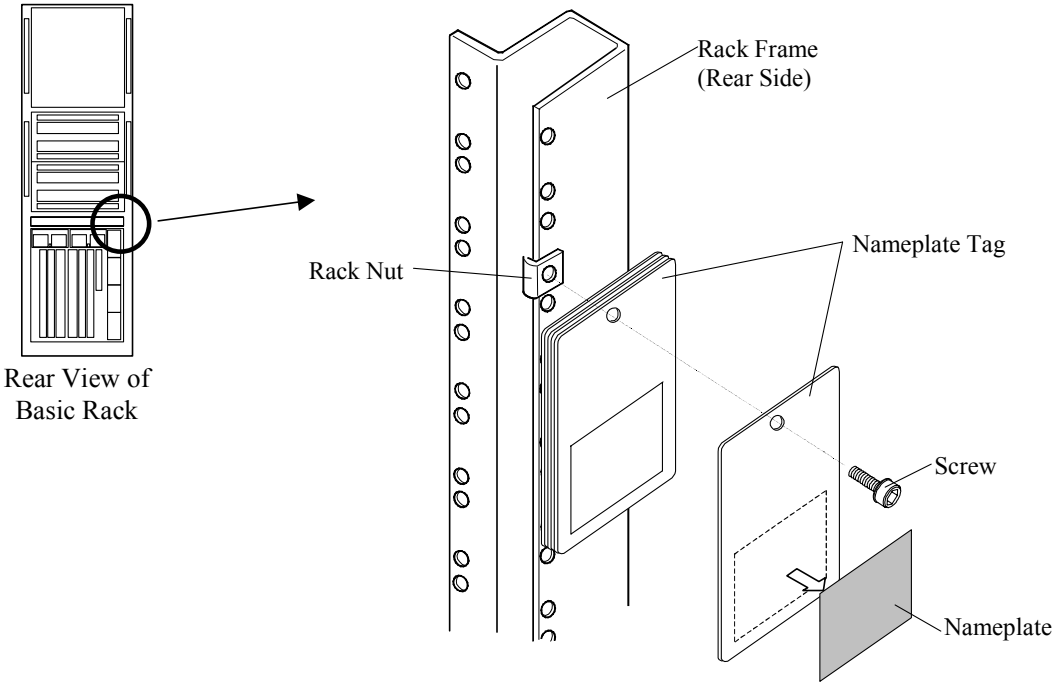


Fig. 4.2.2.2-3 Removal of Nameplate

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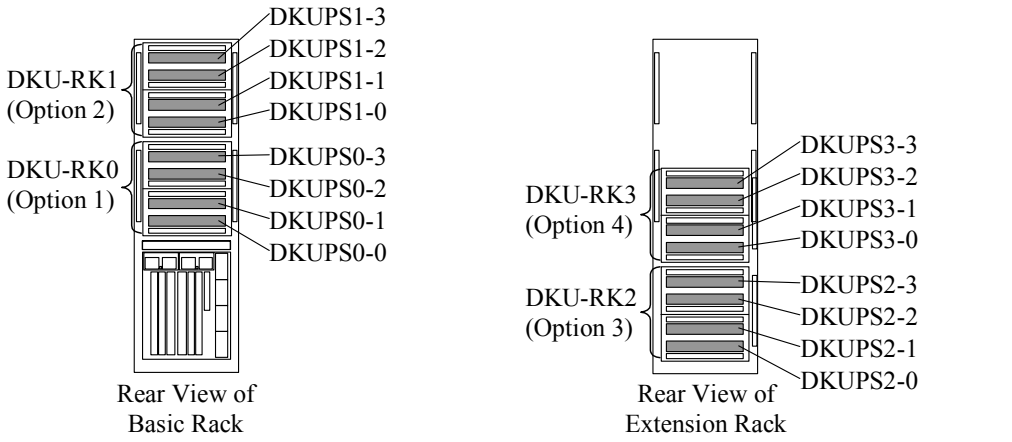
4.2.3 De-Installation Procedure of Disk Chassis (RSD Rack Frame)

> Caution:
> Perform this removal work in the state in which the Disk Chassis and all the parts in the Disk Chassis have been removed from the rack configuration after the work No.3 explained on page INST02-60 has been done. The system goes down if the Disk Chassis that should have been removed is left in the rack configuration.

1. Power OFF of HDD Boxes being De-Installed
   a. Turn the PS Enable/Disable switches to disable on the DKUPSs.

Table 4.2.3-1 De-Installed HDD Boxes

No.	De-Installed HDD Boxes	DKUPS	Remarks
1	DKU-RK0	DKUPS0-0, DKUPS0-1, DKUPS0-2, DKUPS0-3	
2	DKU-RK1	DKUPS1-0, DKUPS1-1, DKUPS1-2, DKUPS1-3	
3	DKU-RK2	DKUPS2-0, DKUPS2-1, DKUPS2-2, DKUPS2-3	
4	DKU-RK3	DKUPS3-0, DKUPS3-1, DKUPS3-2, DKUPS3-3	



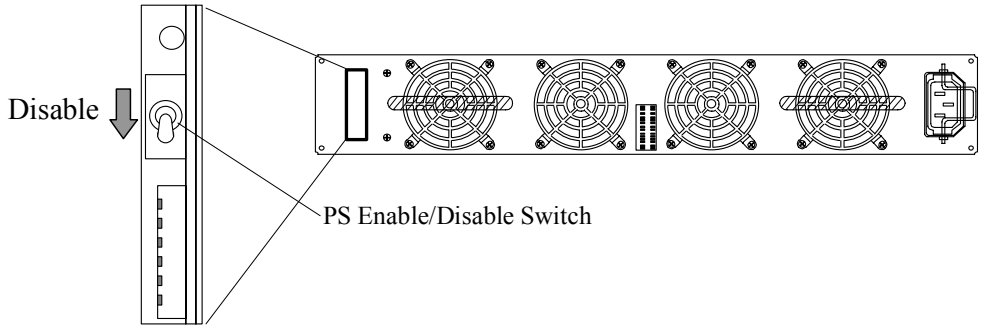


Fig. 4.2.3-1 PS Enable/Disable Switch on DKUPS

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2. Removal of Cable assemblies
   a. Open the connector stopper and disconnect the cables from the PDUs. Refer to Fig. 4.2.3-2, Fig. 4.2.3-3, Fig. 4.2.3-4 or Fig. 4.2.3-5.

Option 1

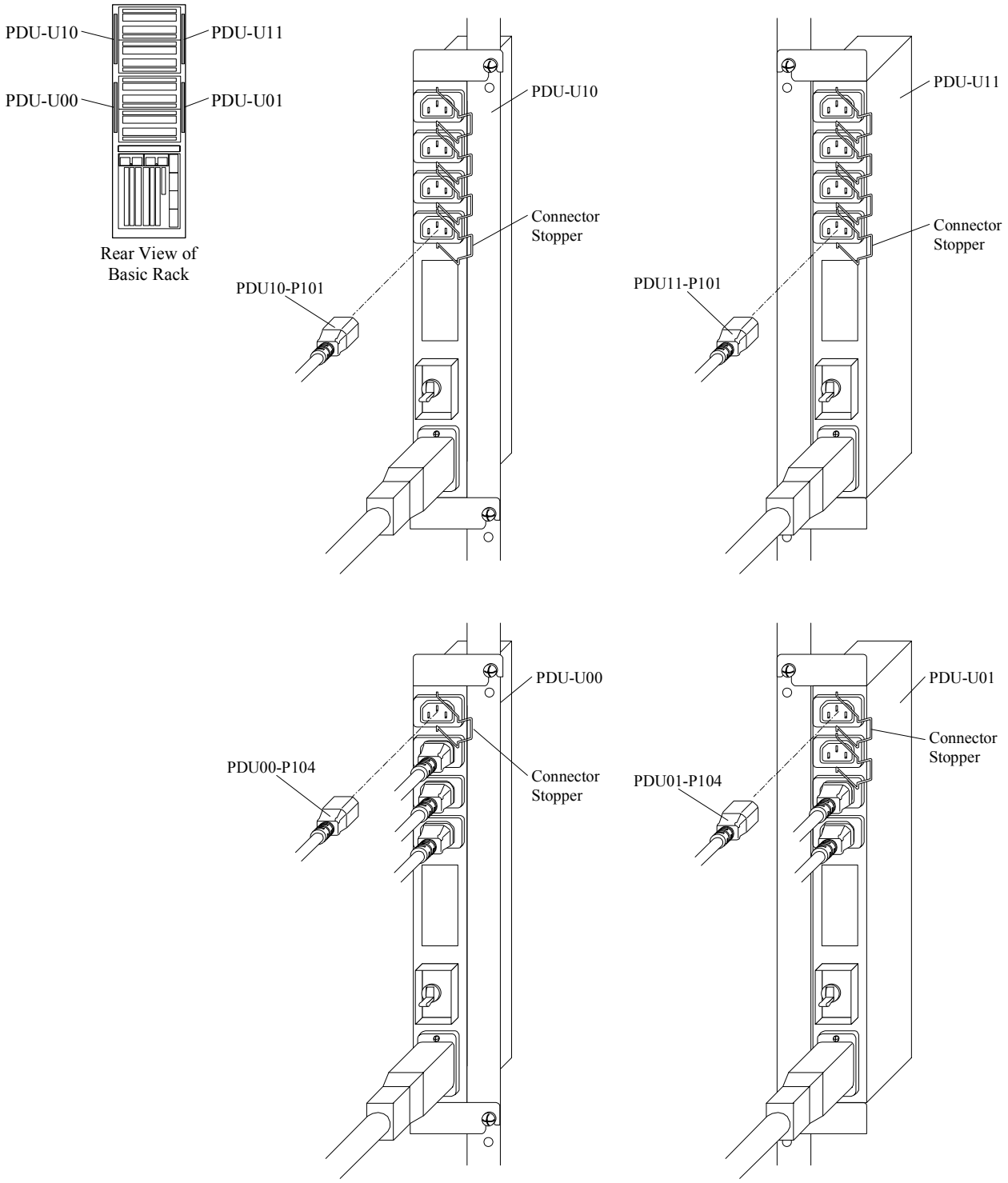


Fig. 4.2.3-2 Disconnection of Cables (Option 1)

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Option 2

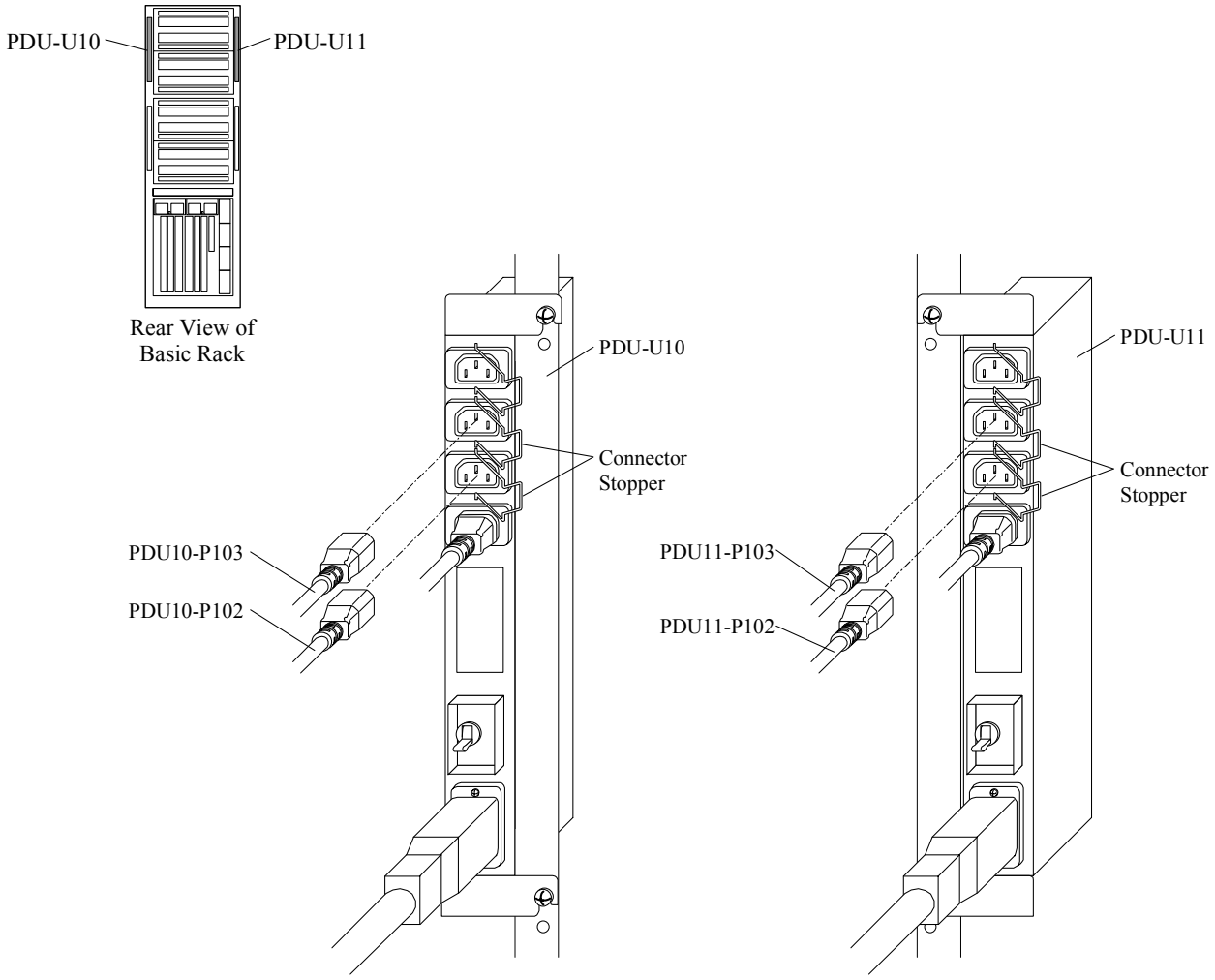


Fig. 4.2.3-3 Disconnection of Cables (Option 2)

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Option 3

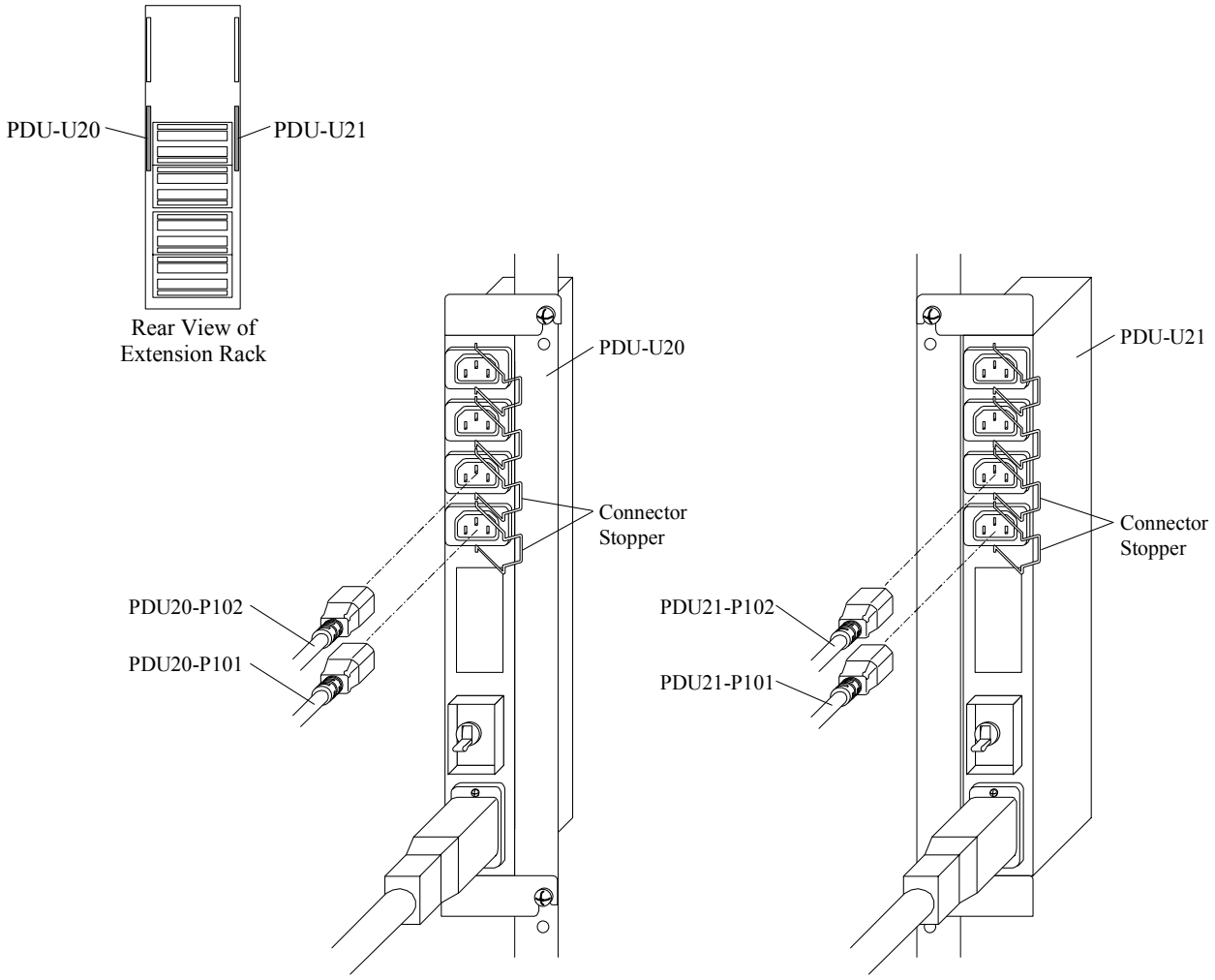


Fig. 4.2.3-4 Disconnection of Cables (Option 3)

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Option 4

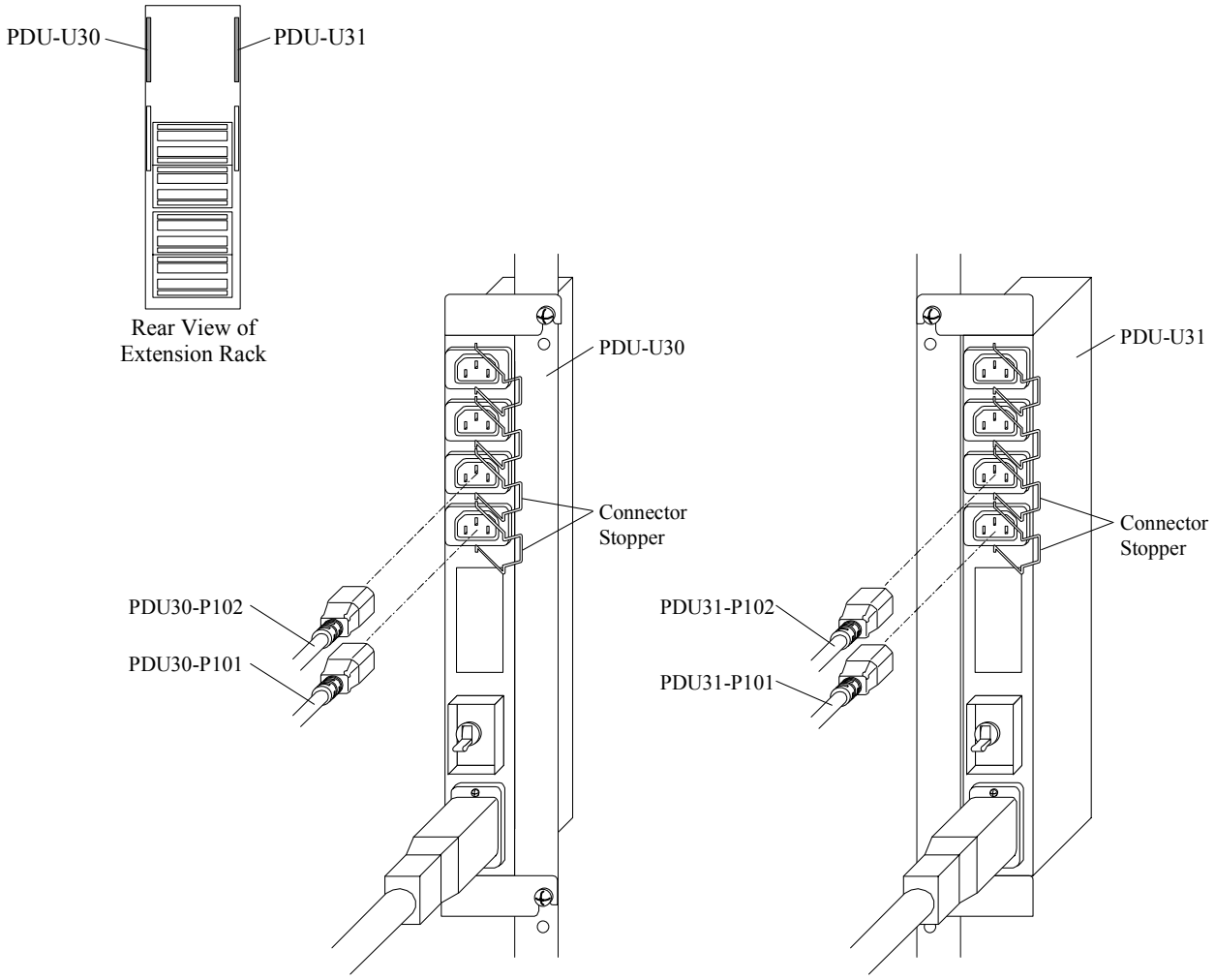
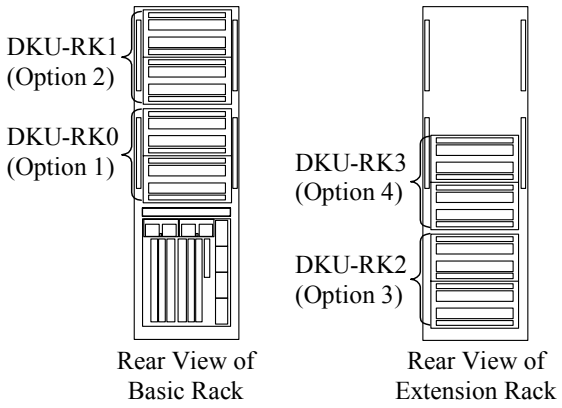


Fig. 4.2.3-5 Disconnection of Cables (Option 4)

b. Disconnect the cables (PSx-0, PSx-1, PSx-2, PSx-3) from the DKUPSs in the HDD Boxes.



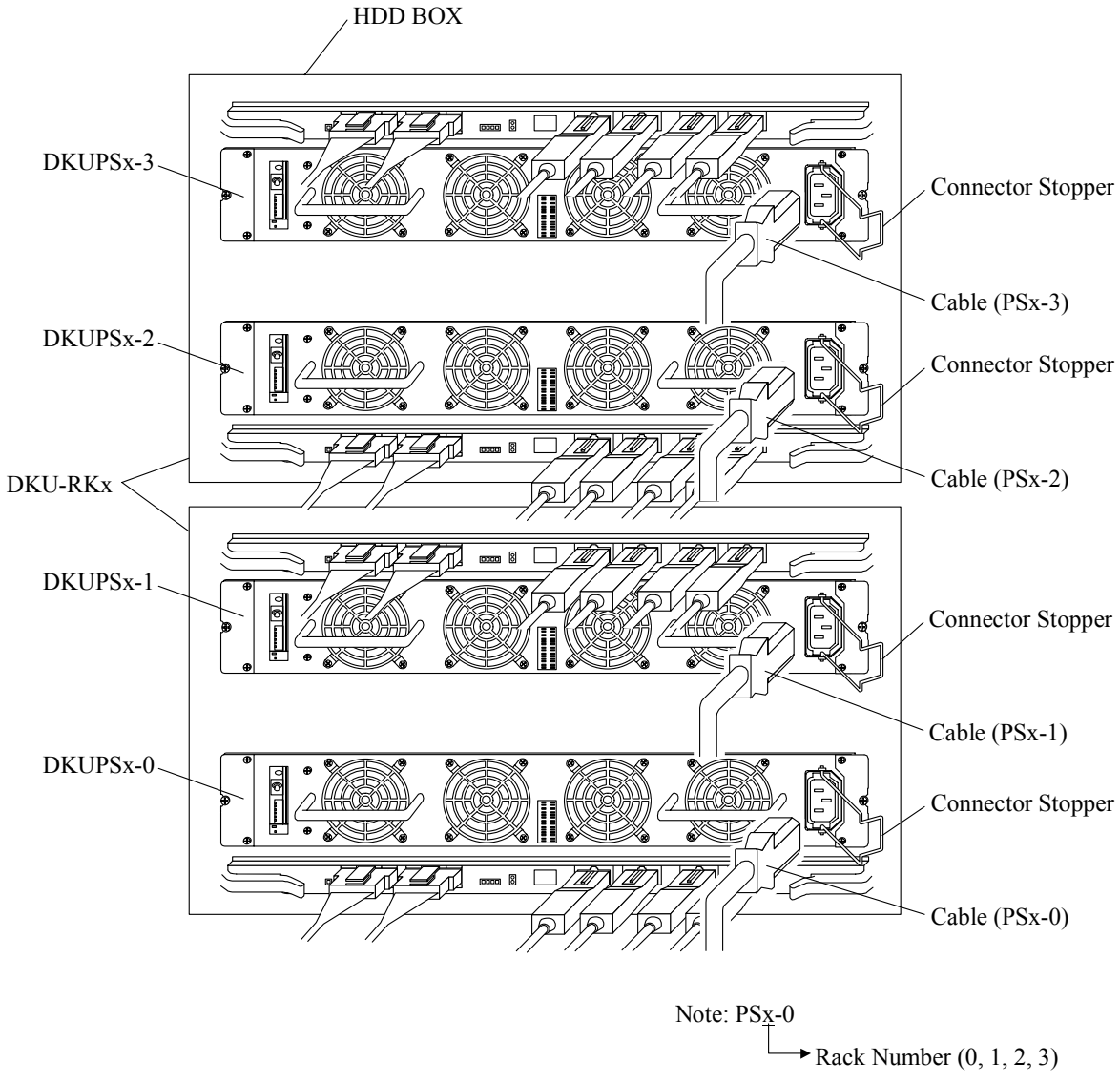


Fig. 4.2.3-6 Disconnection of Cables

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c. Open the repeat binders and locking clamps and remove the cable assemblies. Refer to Fig. 4.2.3-7, Fig.4.2.3-8, Fig.4.2.3-9 or Fig. 4.2.3-10.

Option 1

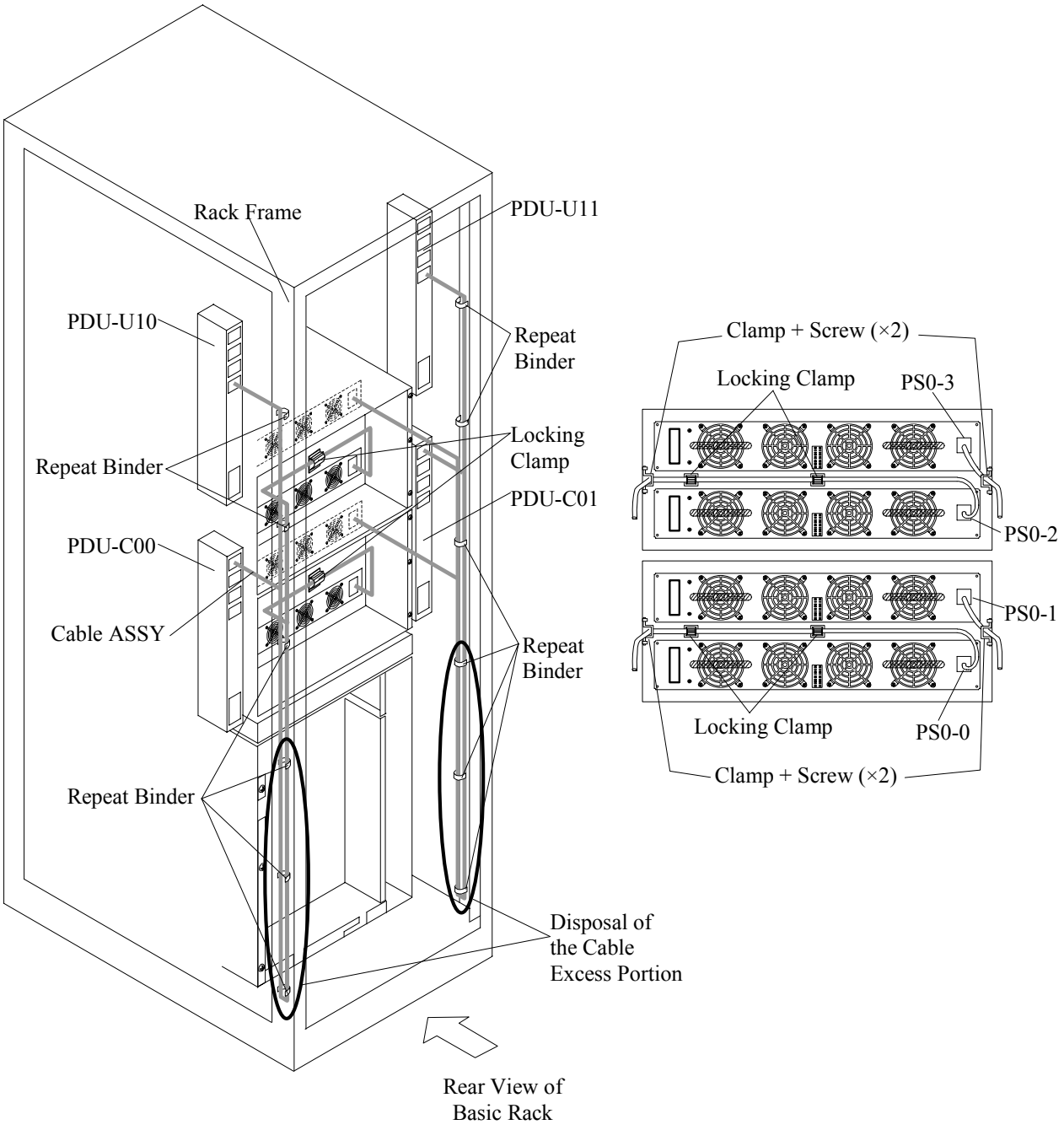


Fig. 4.2.3-7 Removal of Cable Assemblies (Option 1)

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Option 2

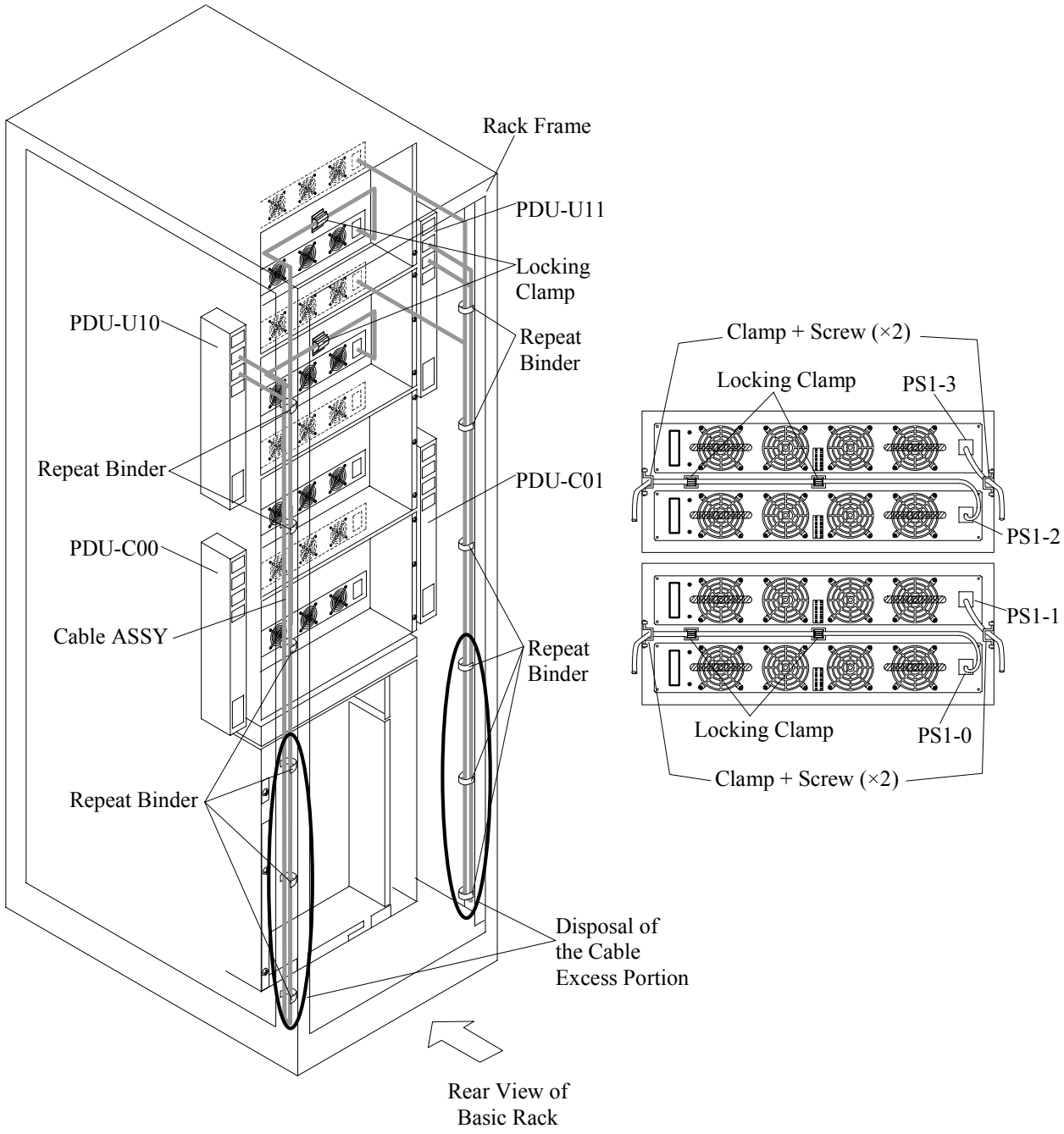


Fig. 4.2.3-8 Removal of Cable Assemblies (Option 2)

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Option 3

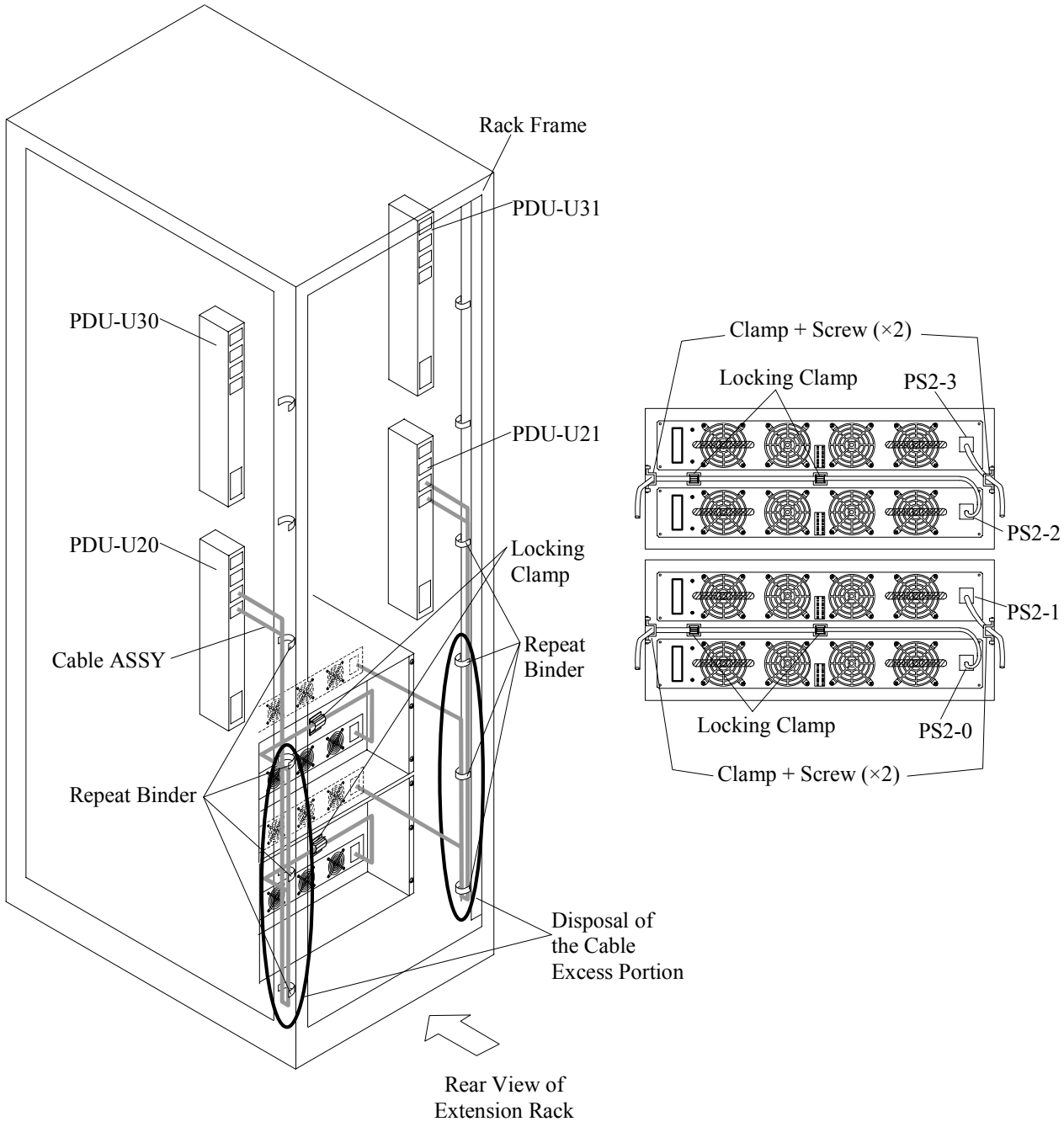


Fig. 4.2.3-9 Removal of Cable Assemblies (Option 3)

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Option 4

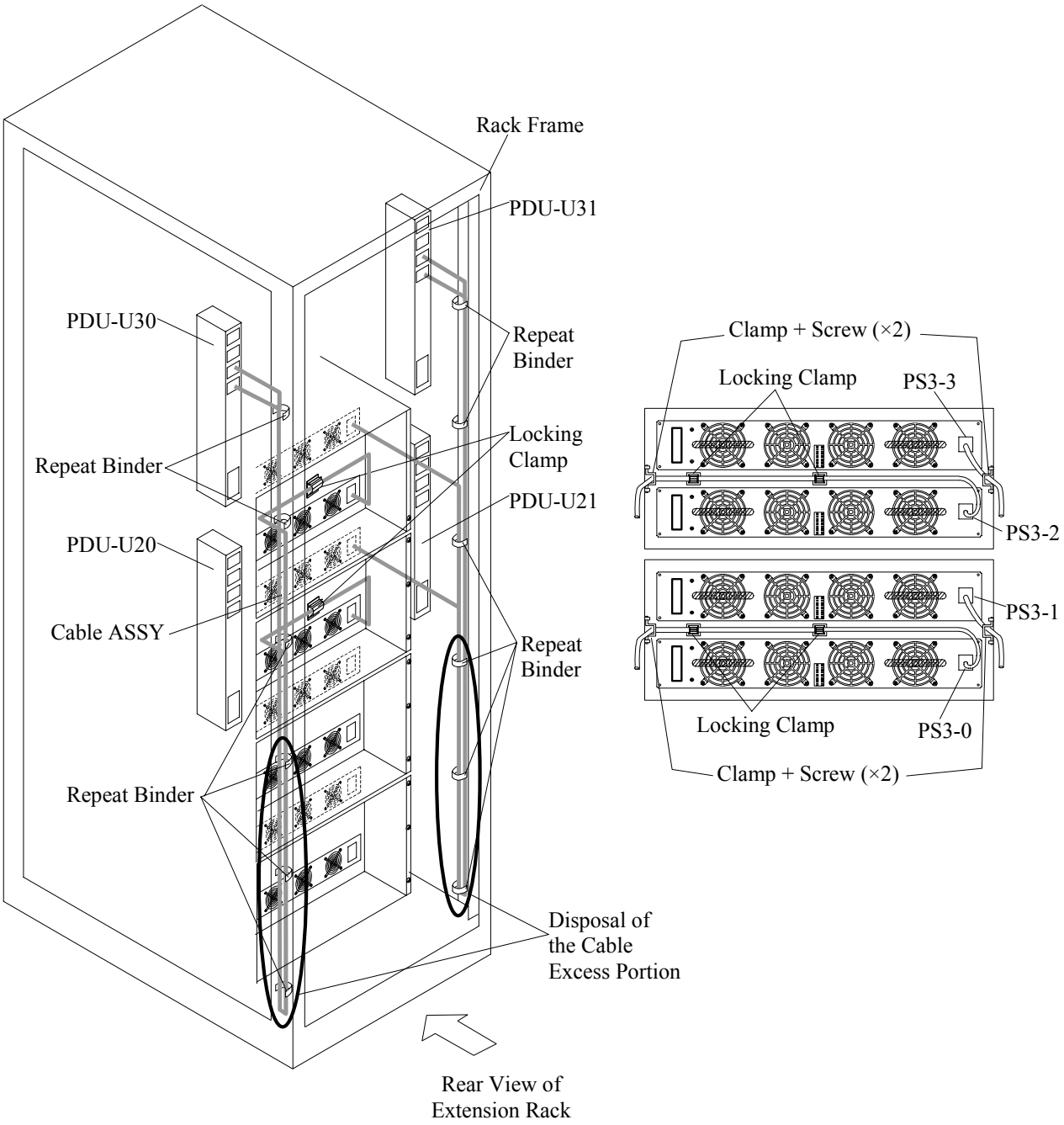


Fig. 4.2.3-10 Removal of Cable Assemblies (Option 4)

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3. Removal of the HDD Boxes
   a. Remove the bolts and stoppers on the rear side of HDD Boxes.

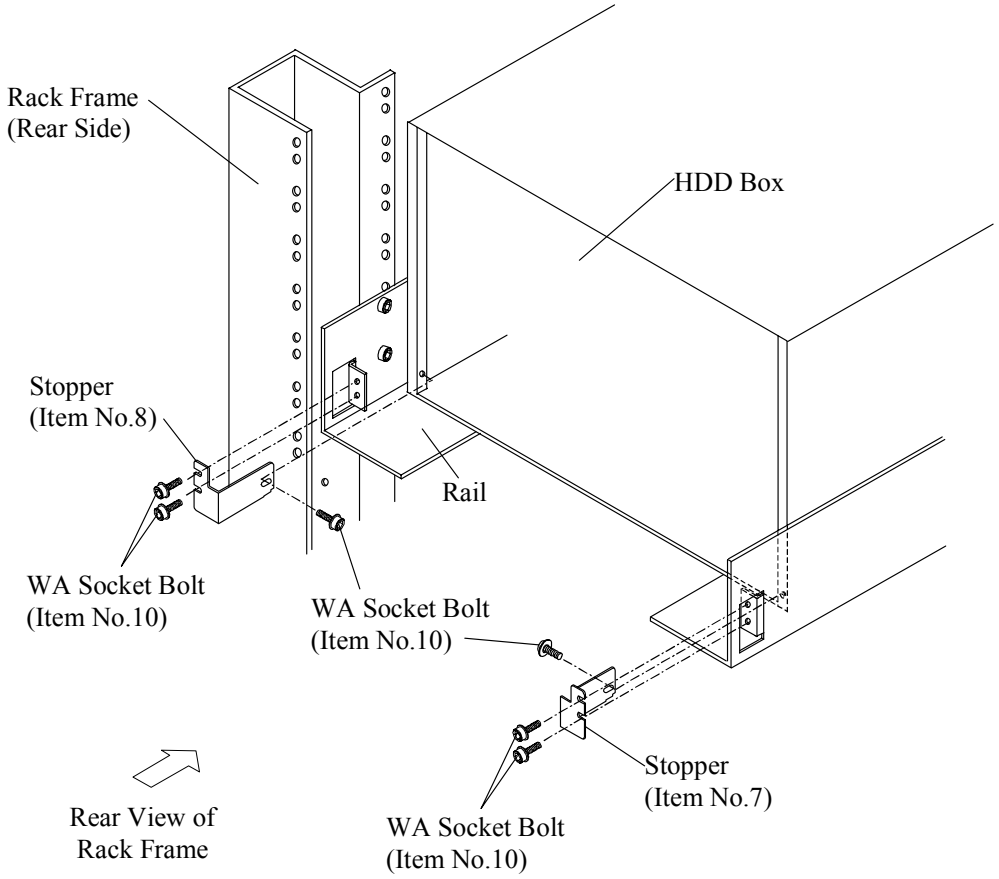


Fig. 4.2.3-11 Removal of Stoppers

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⚠ CAUTION

Paying attention to falls:
Work carefully because the mass of the single HDD BOX is about 38 kg.

b. Remove the four screws and remove the HDD Box on the Rack frame referring to mounting procedure using the special lifter. (See INST03-13-10 through 40.)
c. Remove the 2nd HDD Box to the rack frame in the same way.

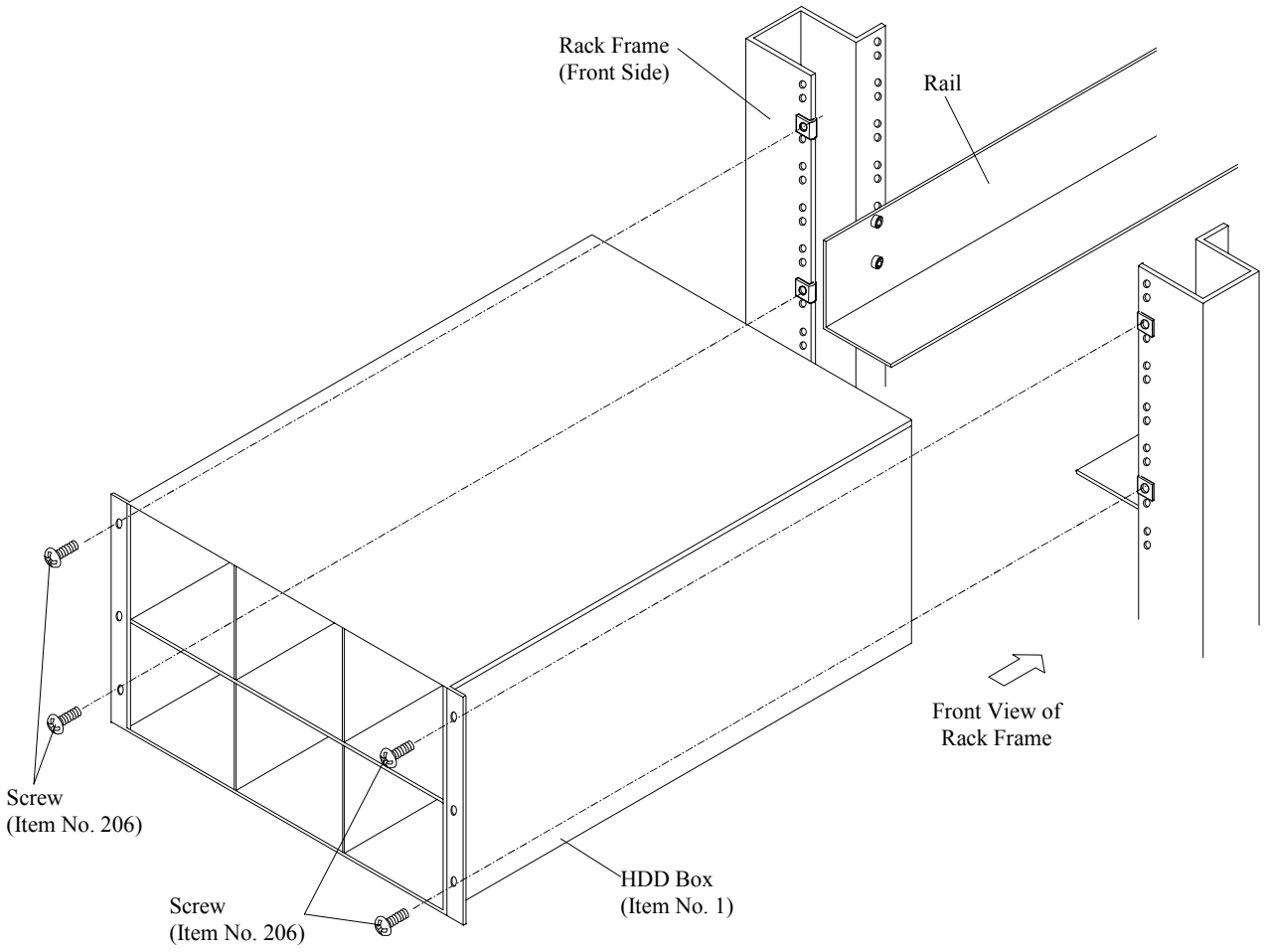
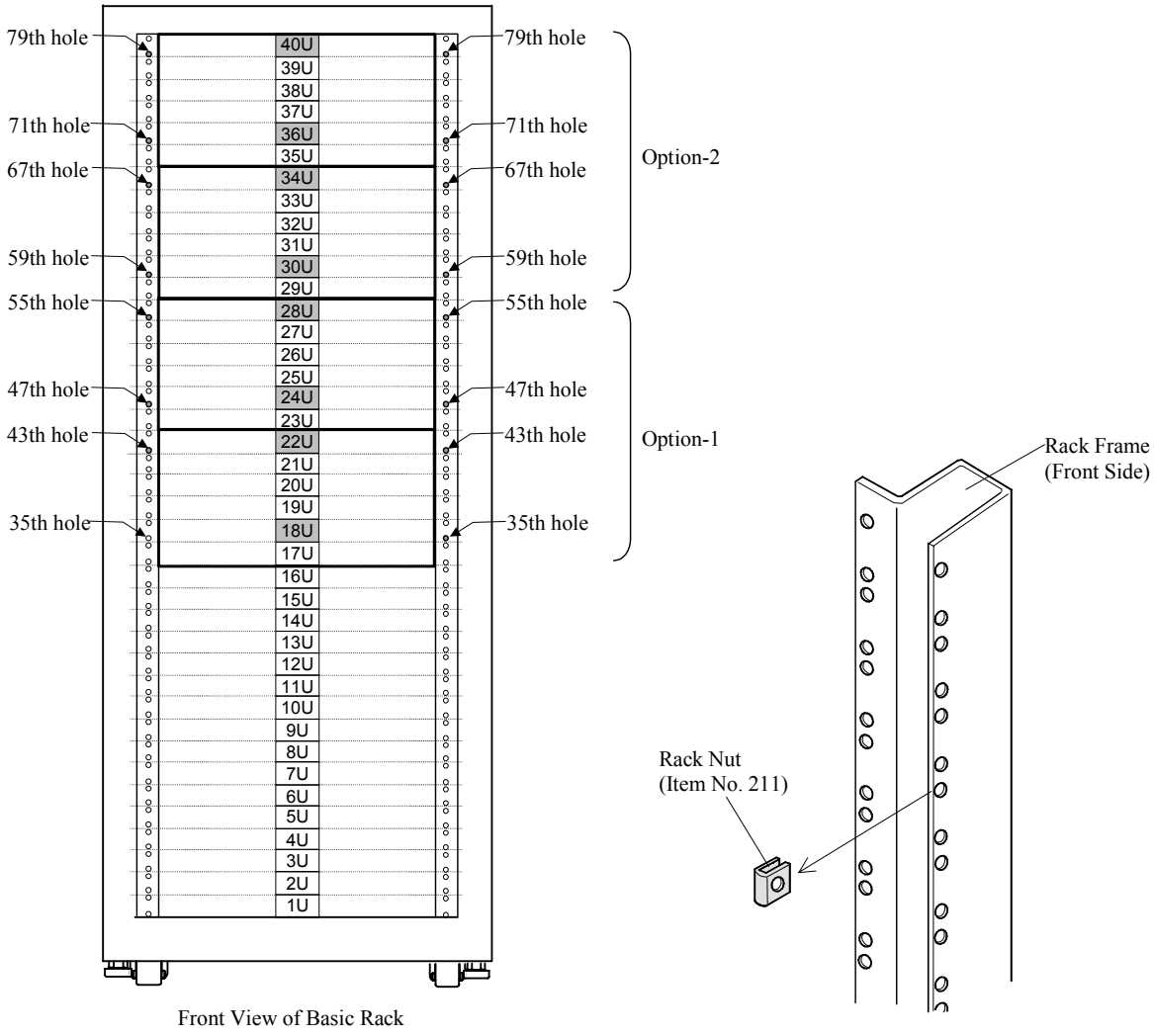


Fig. 4.2.3-12 Removal of HDD Box

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4. De-installing rack nuts on the front side of the rack frame
   a. De-install the four rack nuts from each of the right and left beams on the front side of the rack frame.

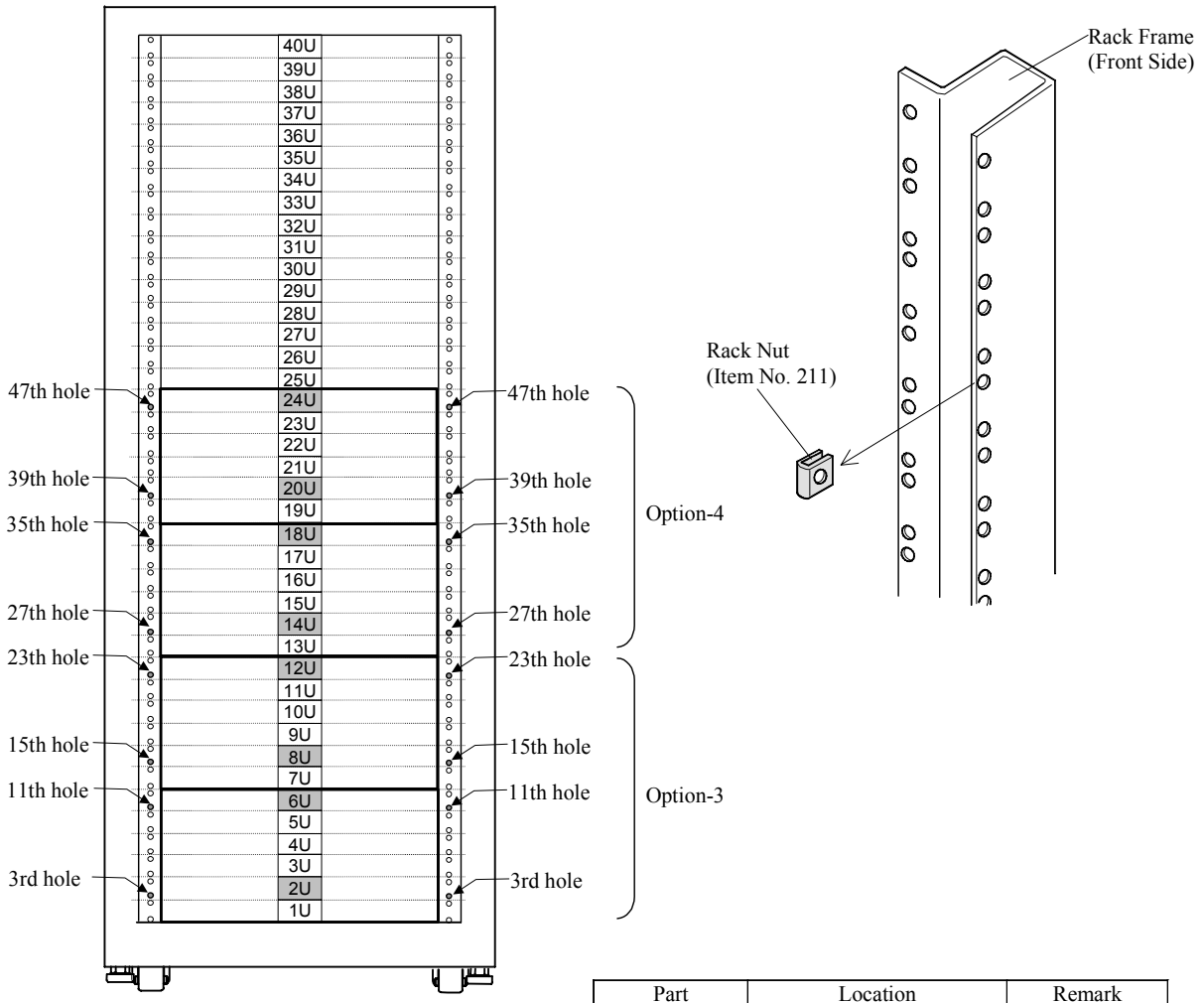


Front View of Basic Rack

Part	Location		Remark
HDD BOX	40U	Lower	79th hole
(Option 2)	36U	Lower	71th hole
HDD BOX	34U	Lower	67th hole
(Option 2)	30U	Lower	59th hole
HDD BOX	28U	Lower	55th hole
(Option 1)	24U	Lower	47th hole
HDD BOX	22U	Lower	43th hole
(Option 1)	18U	Lower	35th hole

Fig. 4.2.3-13 De-installing Rack Nuts to Basic Rack

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Front View of Extension Rack

Part	Location		Remark
HDD BOX (Option 4)	24U	Lower	47th hole
	20U	Lower	39th hole
HDD BOX (Option 4)	18U	Lower	35th hole
	14U	Lower	27th hole
HDD BOX (Option 3)	12U	Lower	23th hole
	8U	Lower	15th hole
HDD BOX (Option 3)	6U	Lower	11th hole
	2U	Lower	3rd hole

Fig. 4.2.3-14 De-installing Rack Nuts to Extension Rack

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5. Removal of Rails
   a. Remove the four WA socket bolts and remove the Rail(R).
   b. Remove the four rack nuts from the rack frame.
   c. Remove the Rail (L) from the rack frame in the same way.

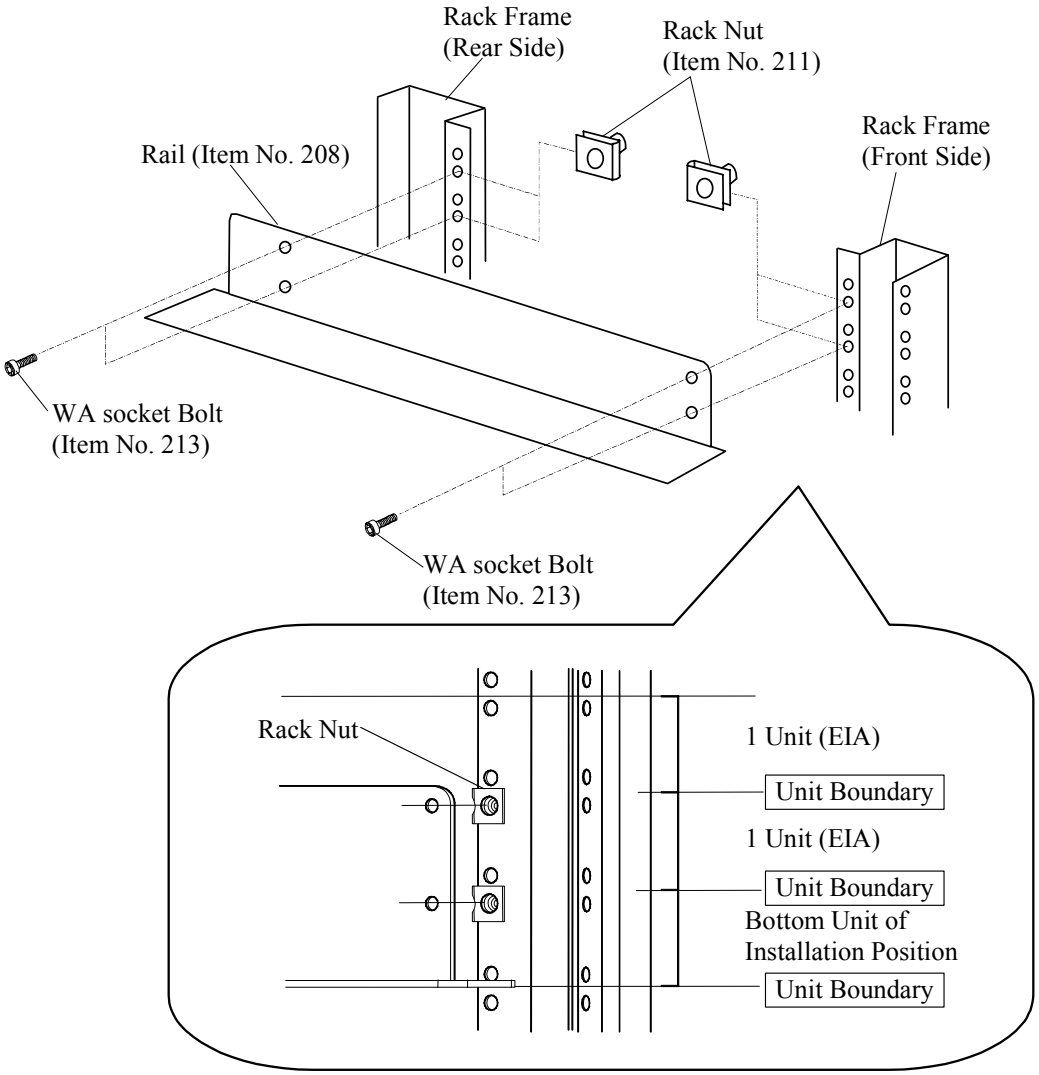


Fig. 4.2.3-15 Removal of Rail

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6. Removal of Nameplate and Labels
   a. Remove the three labels from the lower HDD BOX cover.

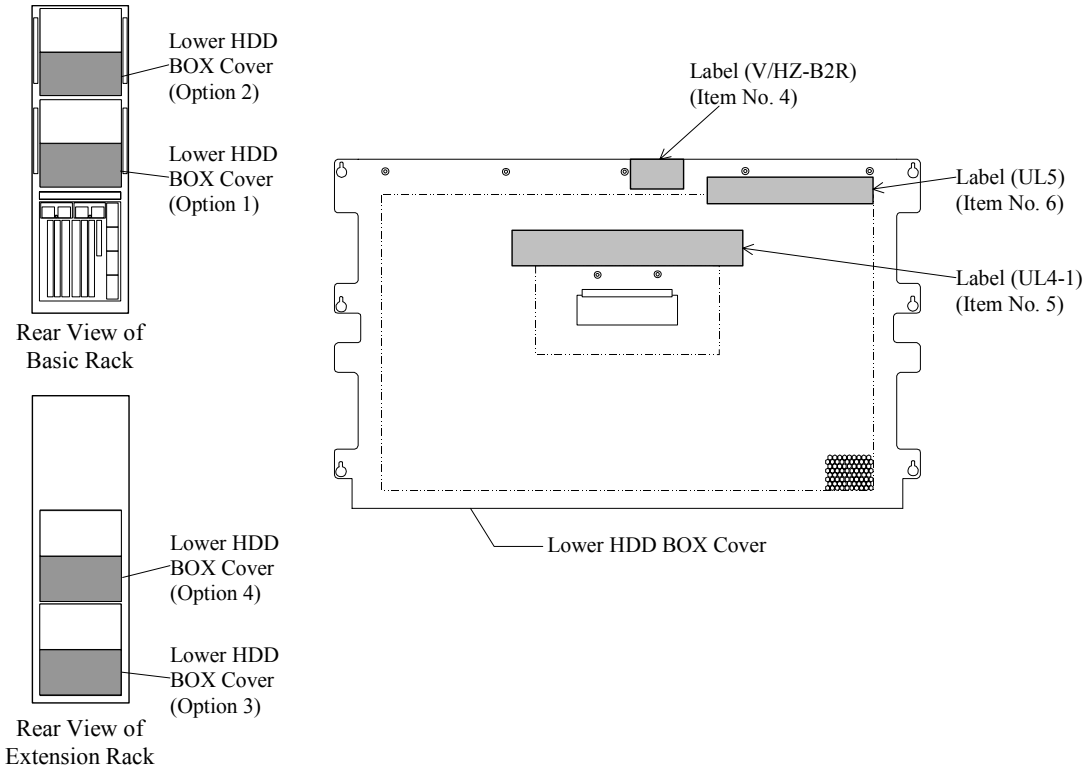


Fig. 4.2.3-16 Removal of Labels

   b. Remove the screw from the rack frame and remove the nameplate tags to be installed.
   c. Remove the nameplate from the nameplate tag.
   d. Attach the remaining nameplate tags with the screw.

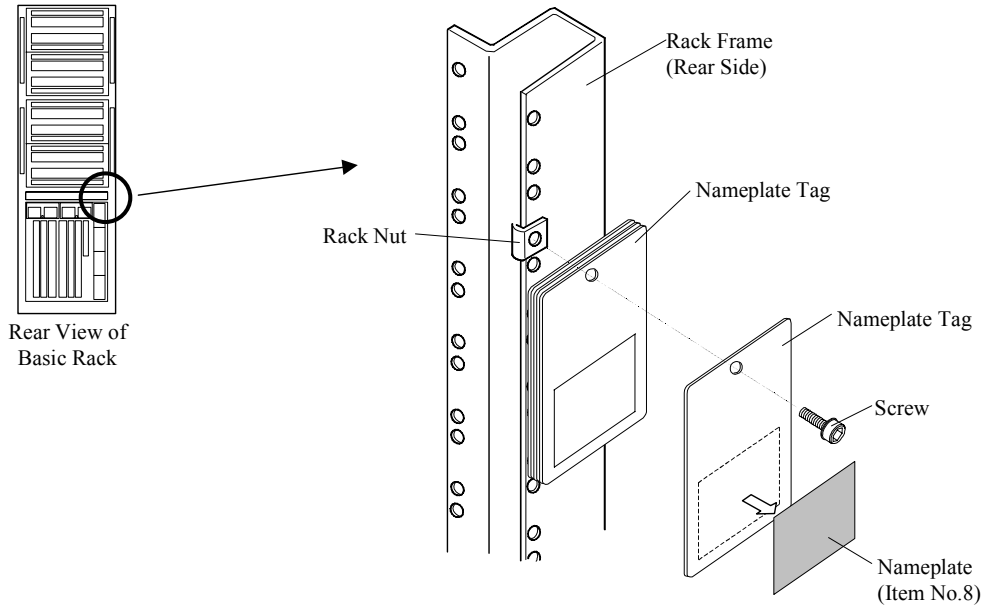


Fig. 4.2.3-17 Removal of Nameplate

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4.2.4 De-Installation Procedure of Disk Chassis (HDS Rack Frame)

4.2.4.1 Standard Configuration

> Caution:
> Perform this removal work in the state in which the Disk Chassis and all the parts in the Disk Chassis have been removed from the rack configuration after the work No.3 explained on page INST02-60 has been done. The system goes down if the Disk Chassis that should have been removed is left in the rack configuration.

1. Power OFF of HDD Boxes being De-Installed
   a. Turn the PS Enable/Disable switches to disable on the DKUPSs.

Table 4.2.4.1-1 De-Installed HDD Boxes

No.	De-Installed HDD Boxes	DKUPS	Remarks
1	DKU-RK0	DKUPS0-0, DKUPS0-1, DKUPS0-2, DKUPS0-3	
2	DKU-RK1	DKUPS1-0, DKUPS1-1, DKUPS1-2, DKUPS1-3	
3	DKU-RK2	DKUPS2-0, DKUPS2-1, DKUPS2-2, DKUPS2-3	
4	DKU-RK3	DKUPS3-0, DKUPS3-1, DKUPS3-2, DKUPS3-3	

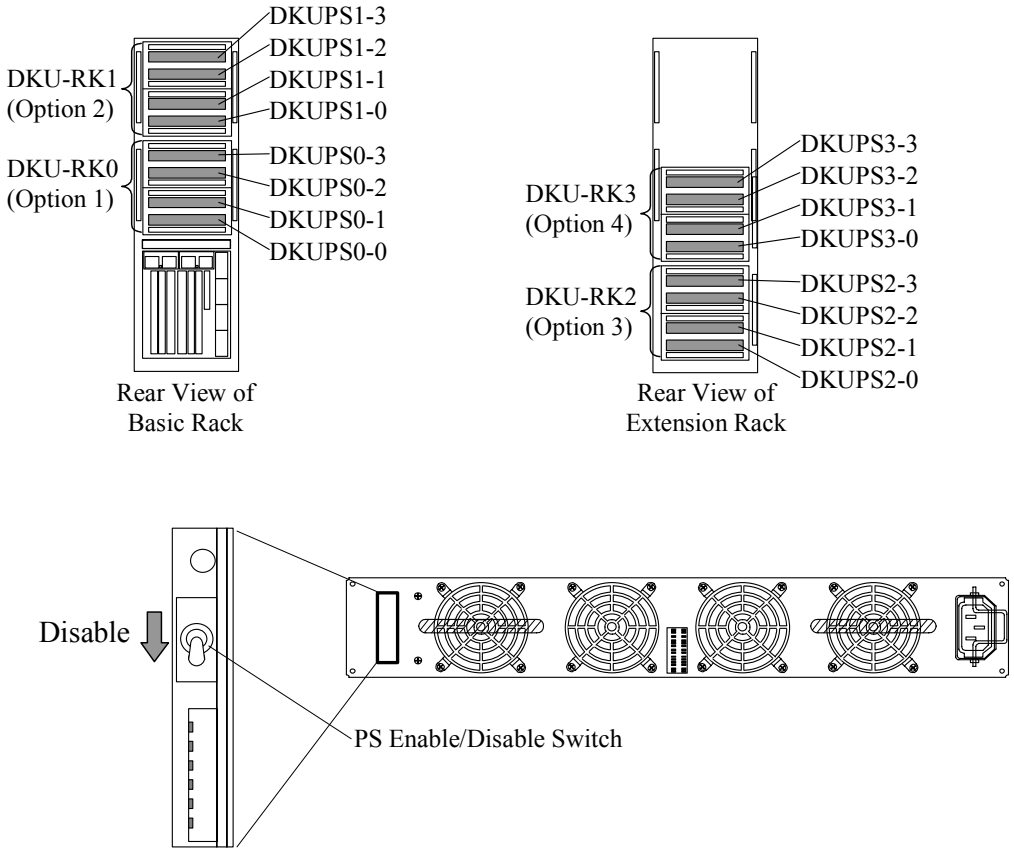


Fig. 4.2.4.1-1 PS Enable/Disable Switch on DKUPS

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2. Removal of Cable assemblies
   a. Disconnect the cables from the PDUs. (Refer to HDS installation Manual.)

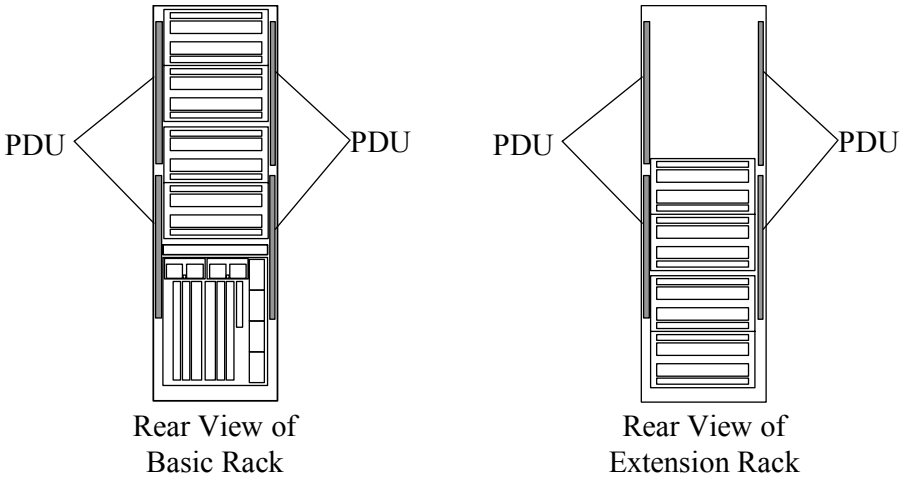


Fig. 4.2.4.1-2 Disconnection of Cables

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b. Disconnect the cables (PSx-0, PSx-1, PSx-2, PSx-3) from the DKUPSs in the HDD Boxes.

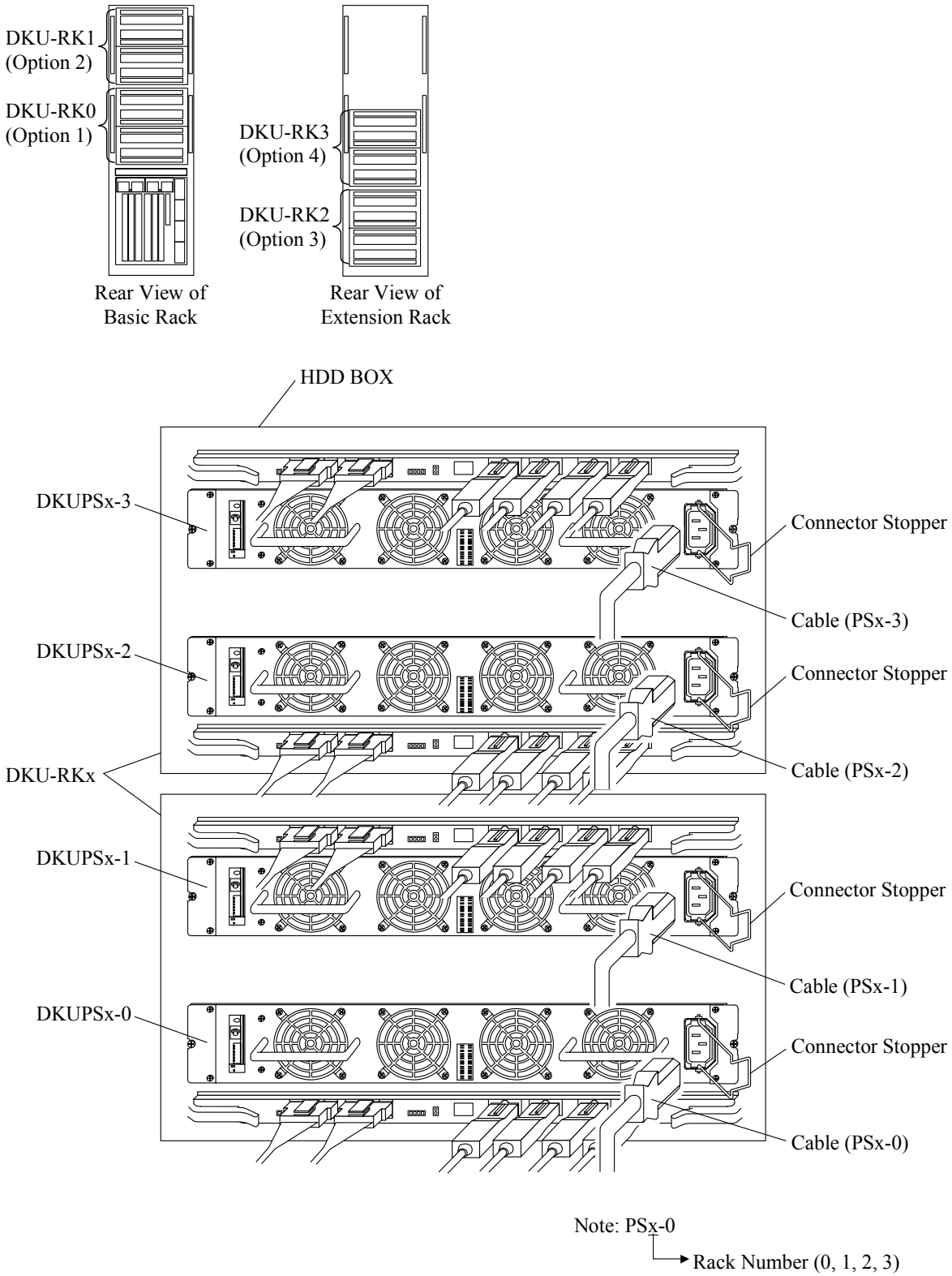


Fig. 4.2.4.1-3 Disconnection of Cables

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c. Open the repeat binders and locking clamps and remove the cable assemblies. Refer to Fig. 4.2.4.1-4, Fig.4.2.4.1-5, Fig.4.2.4.1-6 or Fig. 4.2.4.1-7.

Option 1

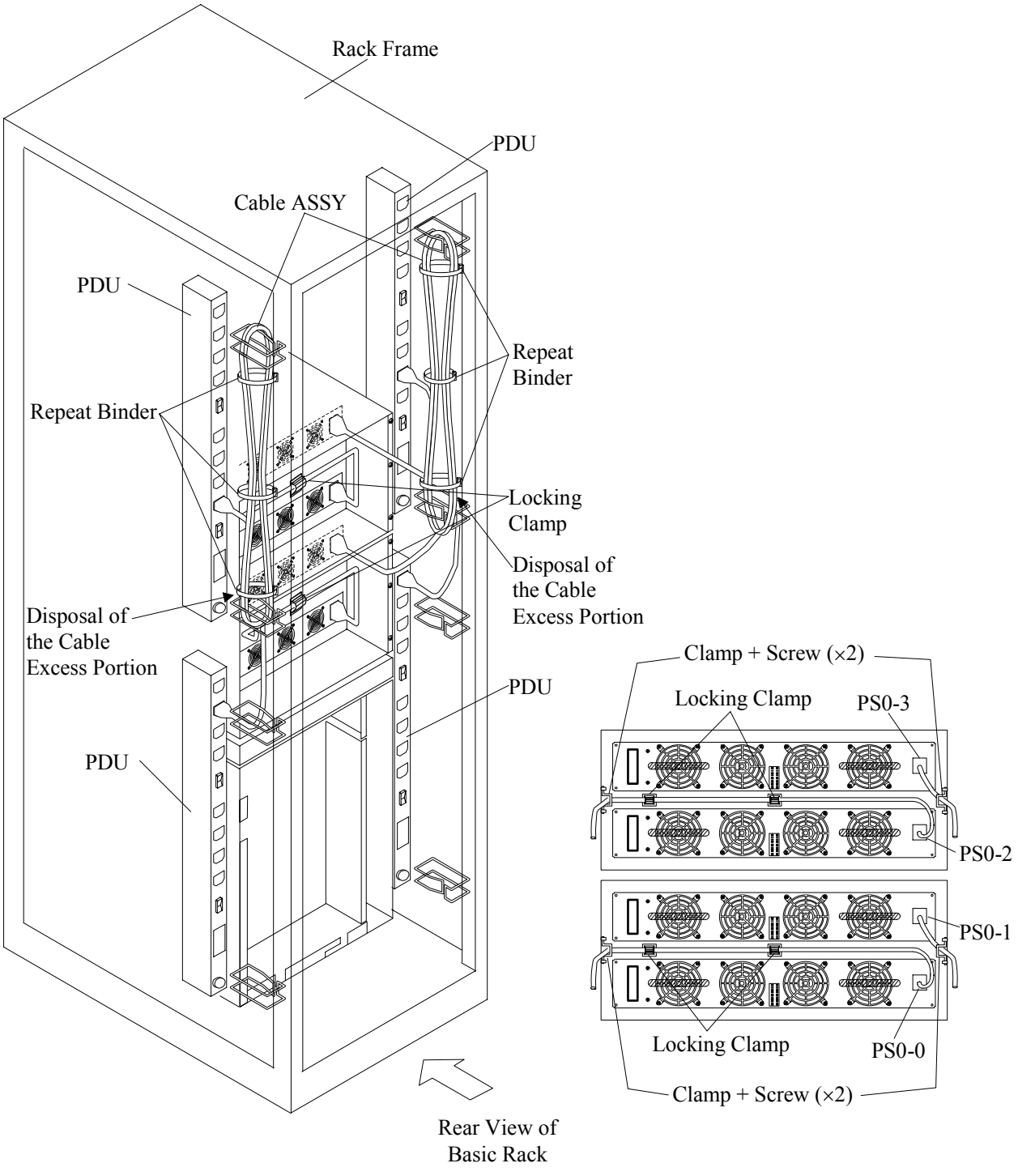


Fig. 4.2.4.1-4 Removal of Cable Assemblies (Option 1)

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Option 2

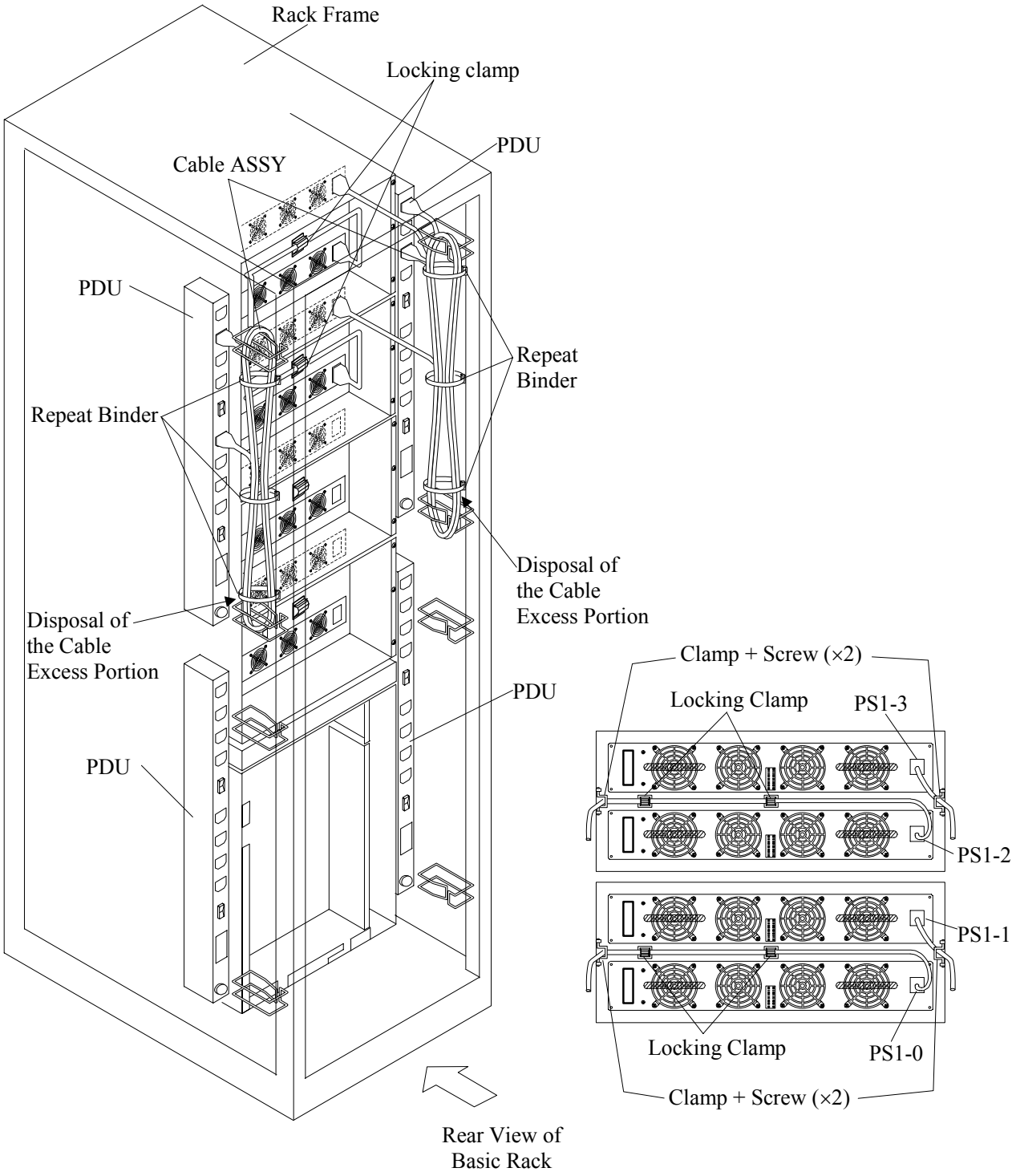


Fig. 4.2.4.1-5 Removal of Cable Assemblies (Option 2)

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Option 3

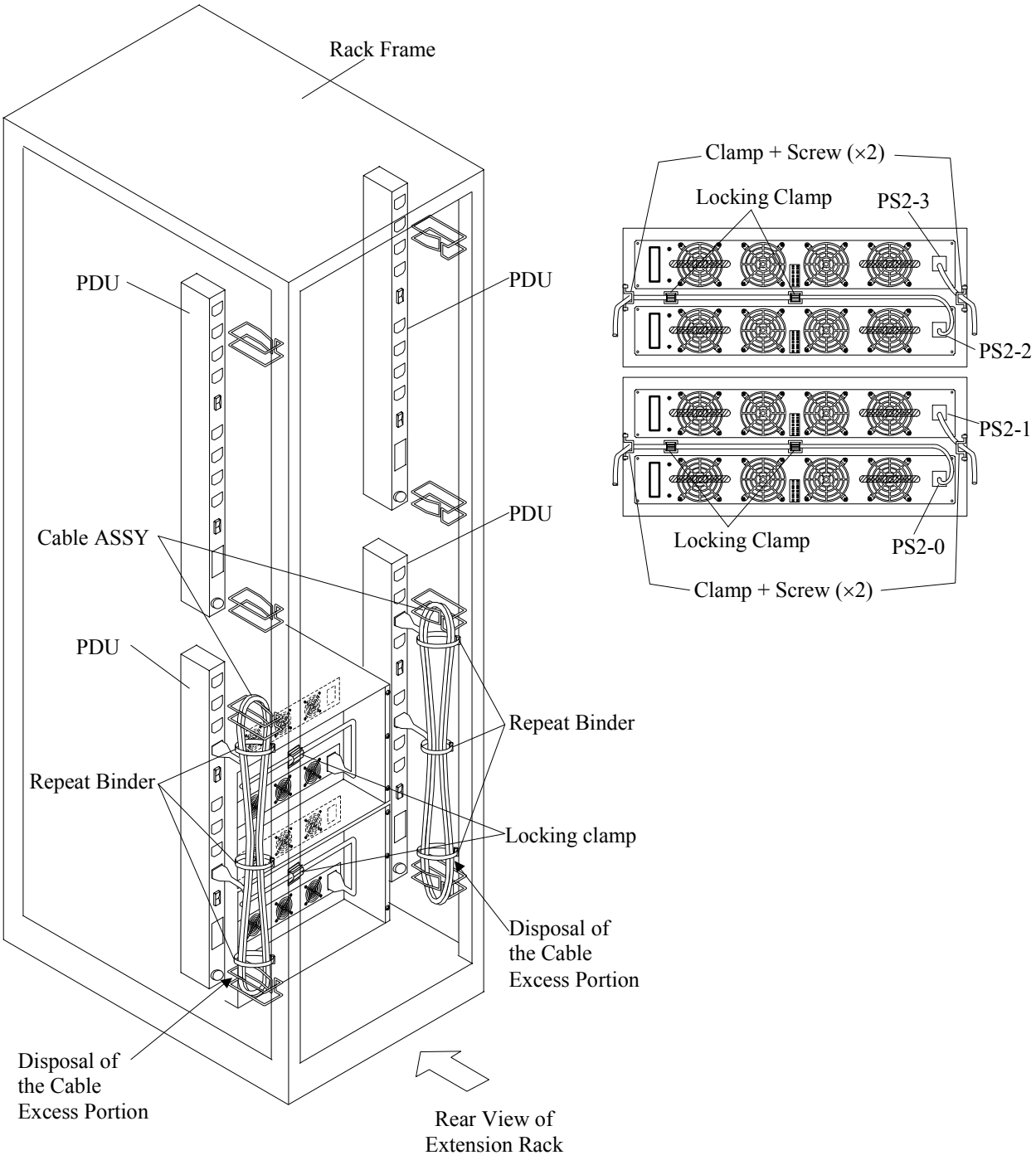


Fig. 4.2.4.1-6 Removal of Cable Assemblies (Option 3)

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Option 4

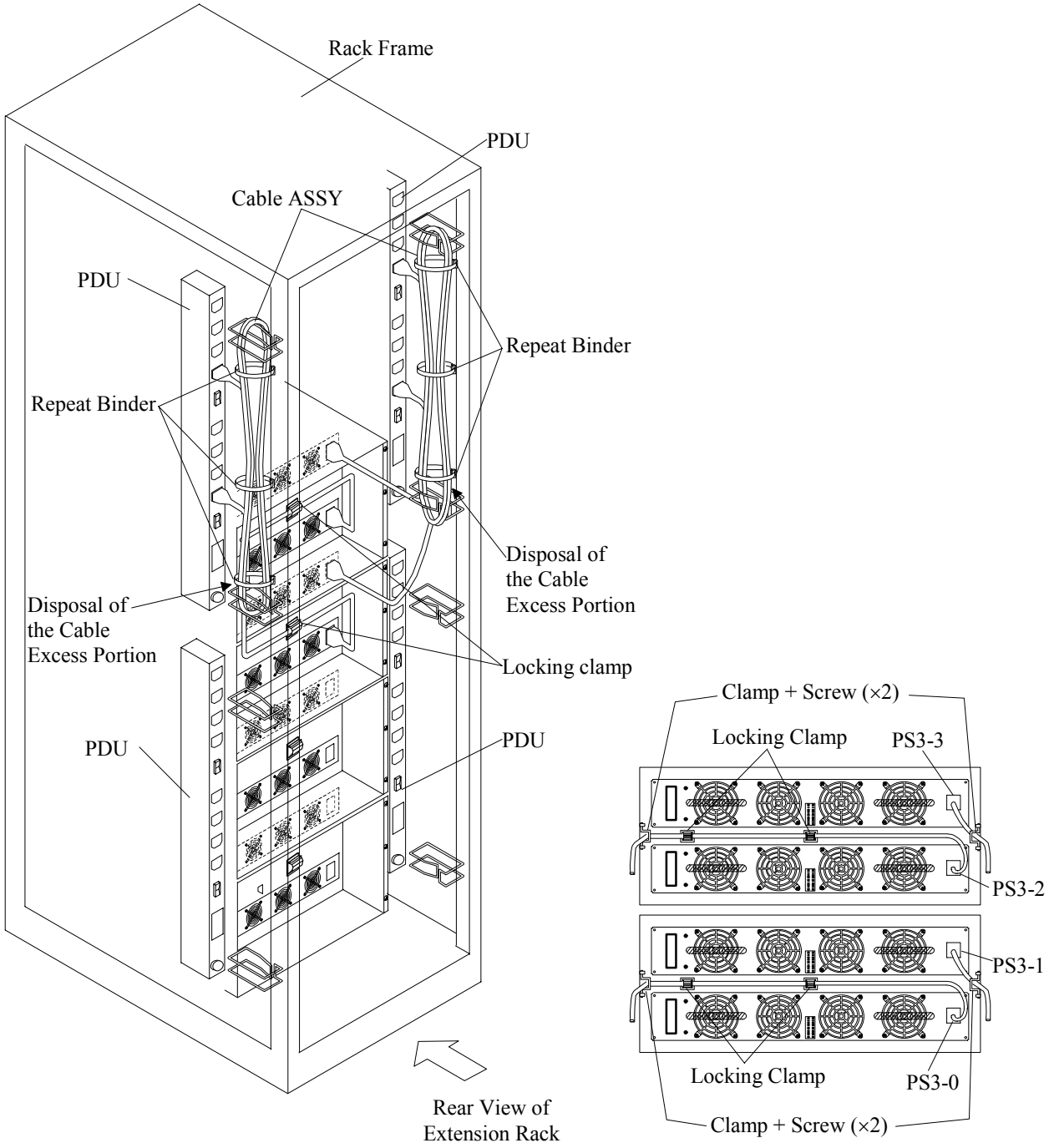


Fig. 4.2.4.1-7 Removal of Cable Assemblies (Option 4)

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3. Removal of the HDD Boxes
   a. Remove the bolts and stoppers on the rear side of HDD Boxes.

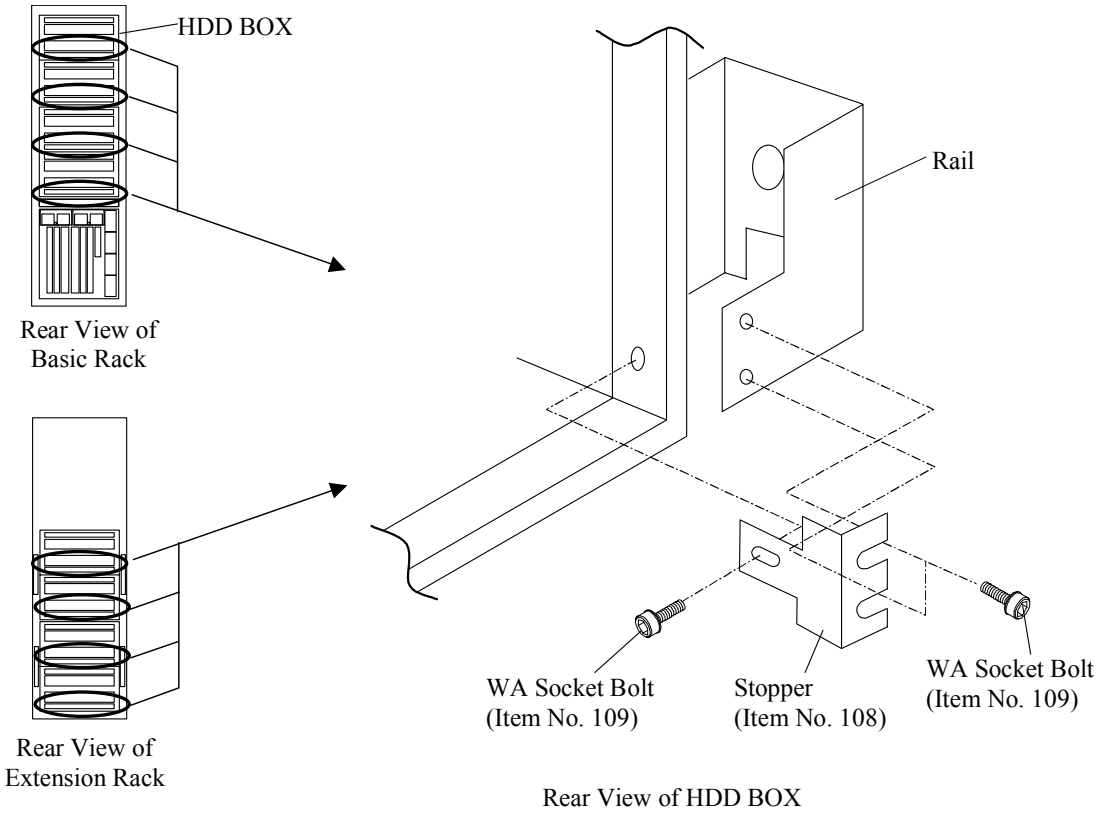


Fig. 4.2.4.1-8 Removal of Stoppers

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⚠ CAUTION

Paying attention to falls:
Work carefully because the mass of the single HDD BOX is about 38 kg.

b. Remove the four screws and remove the HDD Box on the Rack frame referring to mounting procedure using the special lifter. (See INST03-13-10 through 40.)
c. Remove the 2nd HDD Box to the rack frame in the same way.

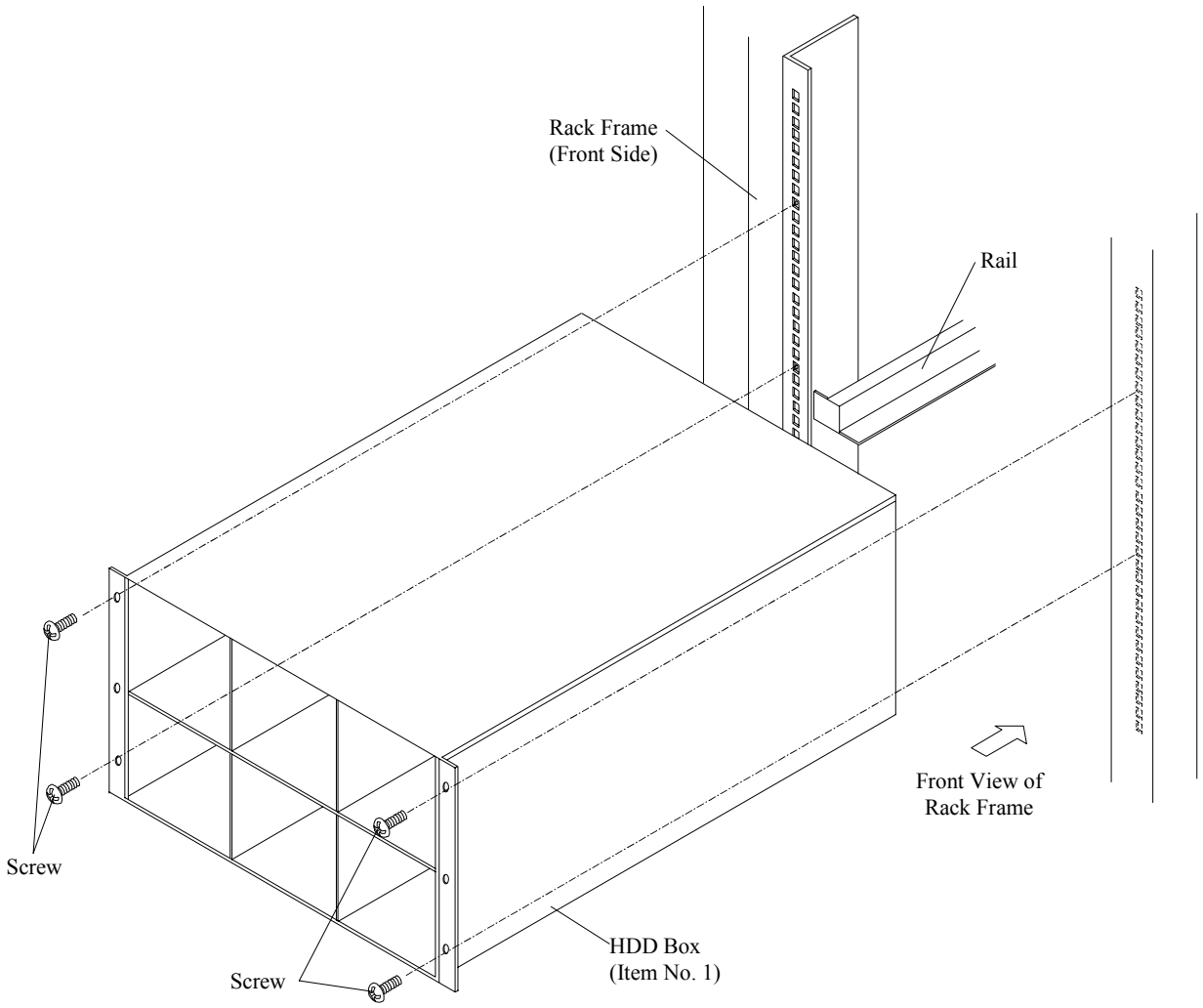
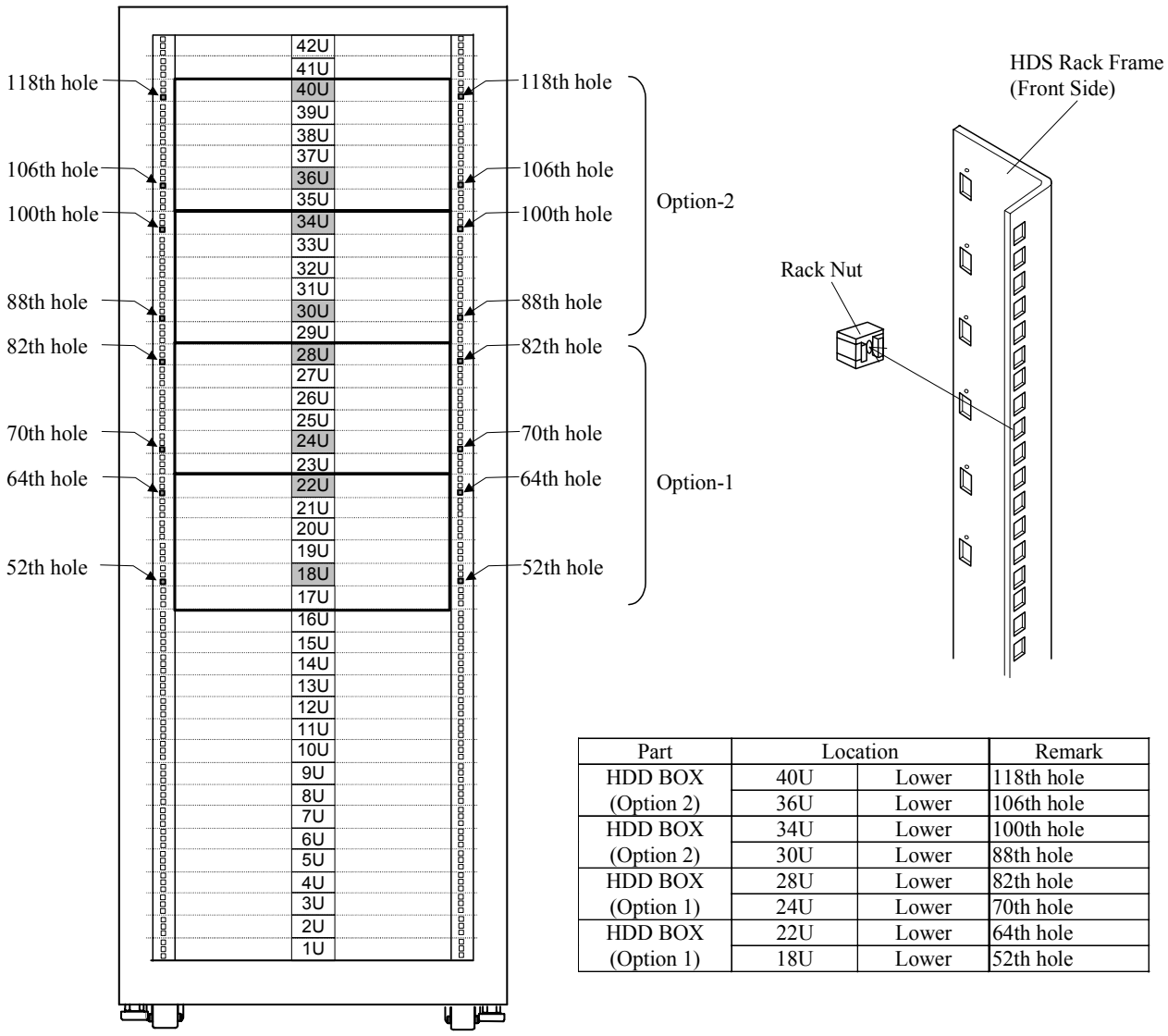


Fig. 4.2.4.1-9 Removal of HDD Box

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4. De-installing rack nuts on the front side of the rack frame
   a. De-install the four rack nuts from each of the right and left beams on the front side of the rack frame. Refer to Fig. 4.2.4.1-10 and Fig. 4.2.4.1-11.

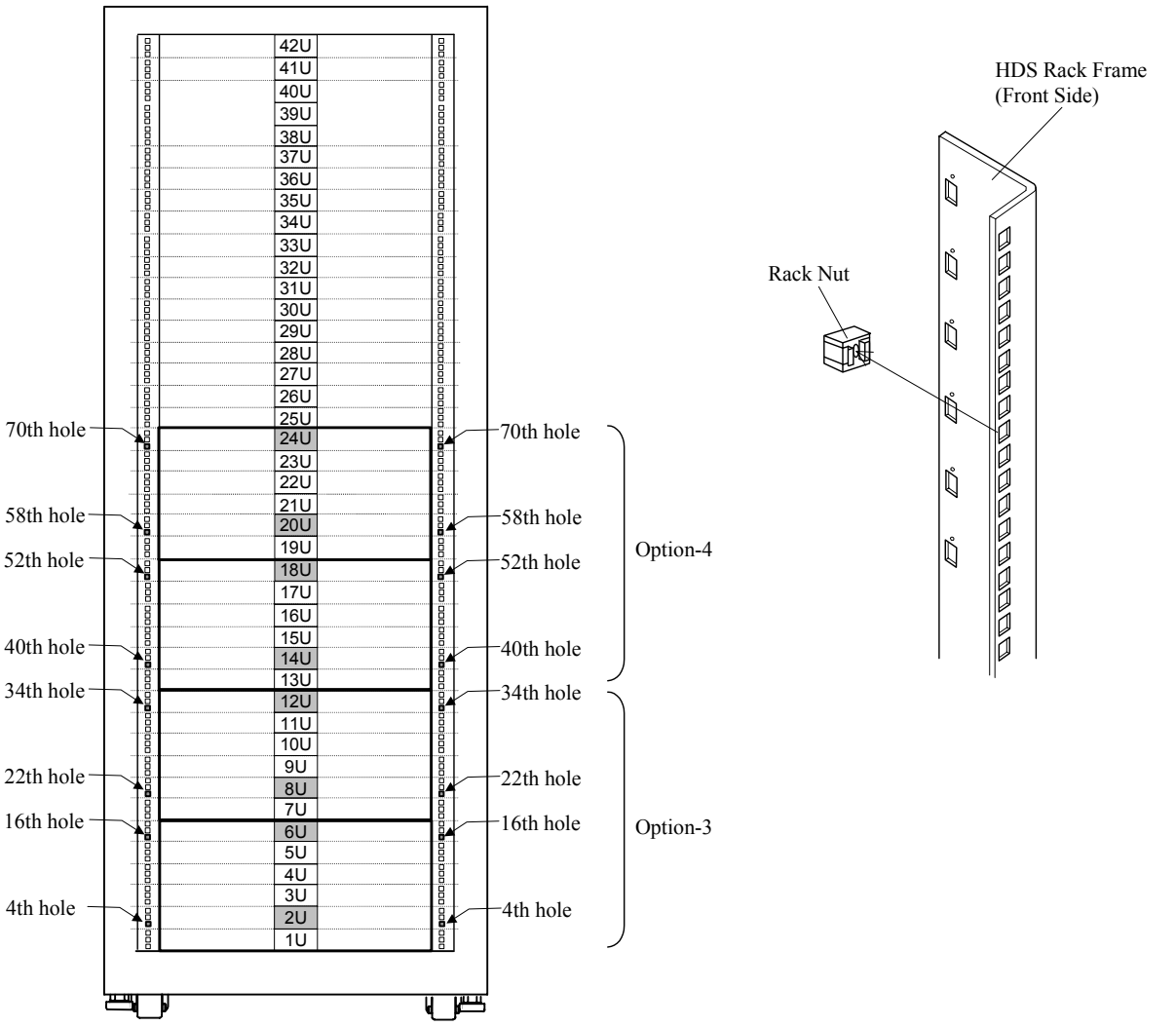


Part	Location		Remark
HDD BOX (Option 2)	40U	Lower	118th hole
	36U	Lower	106th hole
HDD BOX (Option 2)	34U	Lower	100th hole
	30U	Lower	88th hole
HDD BOX (Option 1)	28U	Lower	82th hole
	24U	Lower	70th hole
HDD BOX (Option 1)	22U	Lower	64th hole
	18U	Lower	52th hole

Front View of Basic Rack

Fig. 4.2.4.1-10 De-installing Rack Nuts to Basic Rack

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Front View of Extension Rack

Part	Location		Remark
HDD BOX (Option 4)	24U	Lower	70th hole
	20U	Lower	58th hole
HDD BOX (Option 4)	18U	Lower	52th hole
	14U	Lower	40th hole
HDD BOX (Option 3)	12U	Lower	34th hole
	8U	Lower	22th hole
HDD BOX (Option 3)	6U	Lower	16th hole
	2U	Lower	4th hole

Fig. 4.2.4.1-11 De-installing Rack Nuts to Extension Rack

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5. Removal of Rails
   a. Remove the screw and remove the Rail(R) from the frame.
   b. Remove the Rail (L) from the rack frame in the same way.

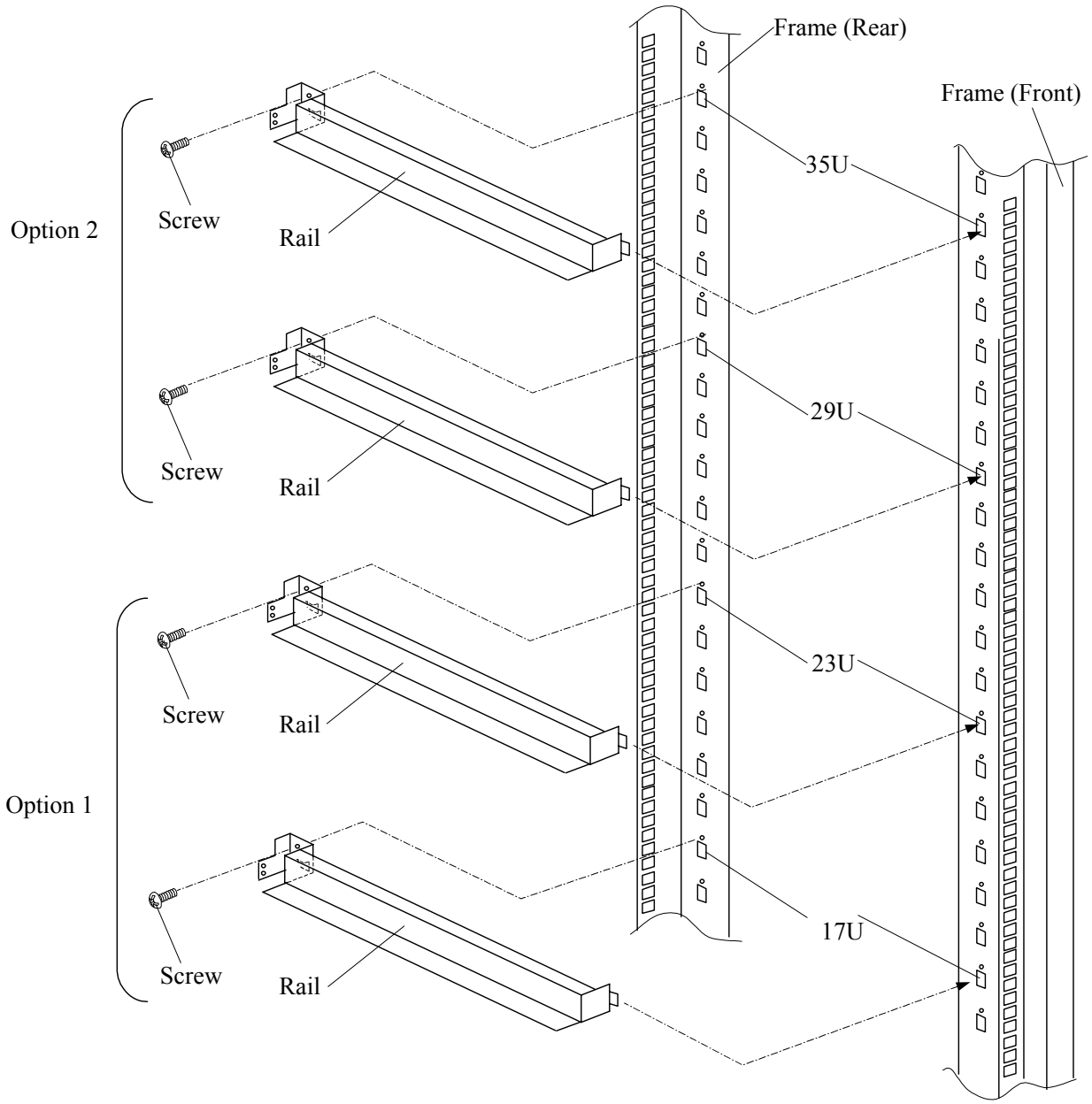


Fig. 4.2.4.1-12 Removal of Rails (Basic Rack)

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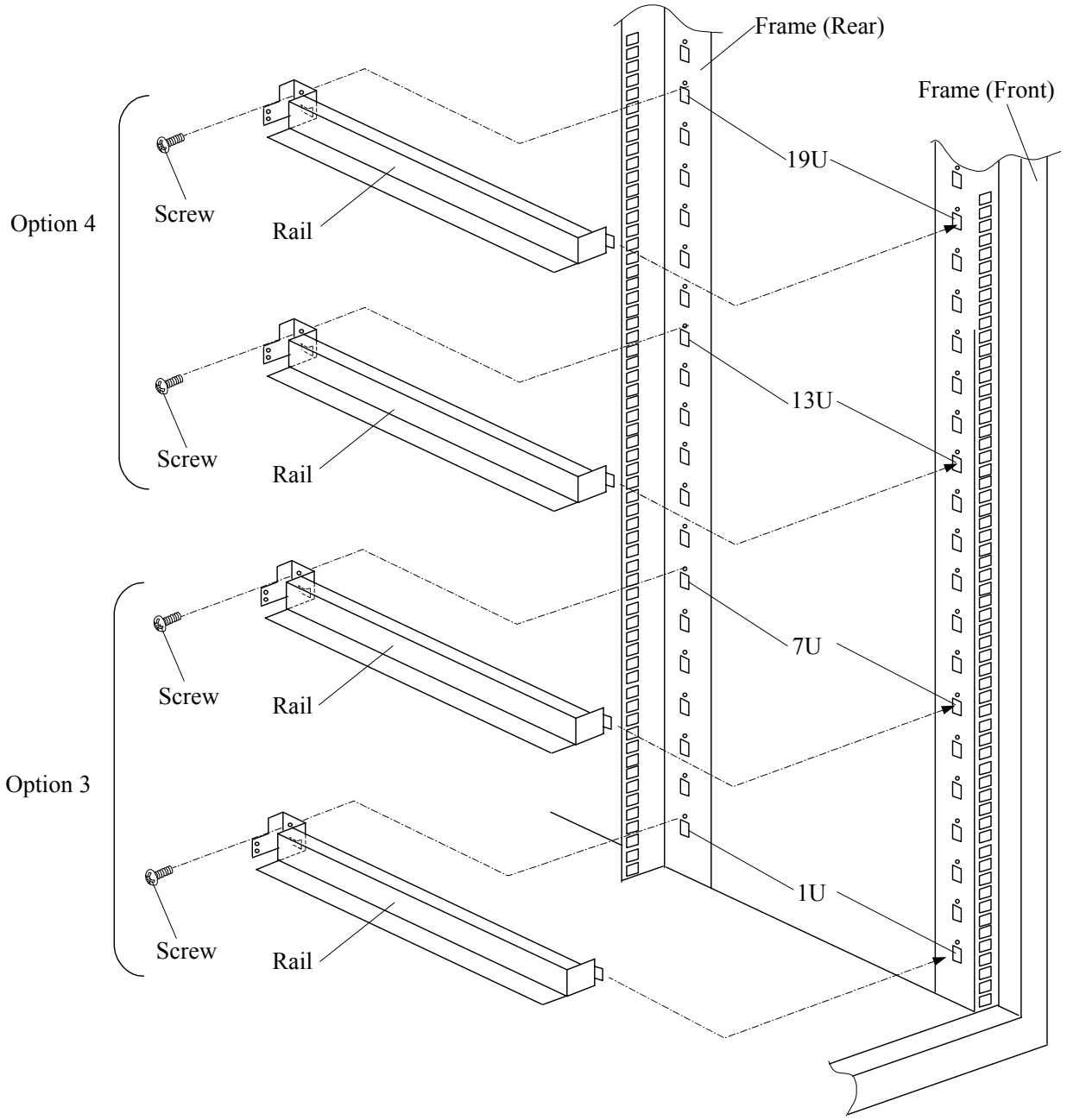


Fig. 4.2.4.1-13 Removal of Rails (Extension Rack)

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6. Removal of Nameplate and labels
   a. Remove the nameplate and three labels from the lower HDD BOX cover.

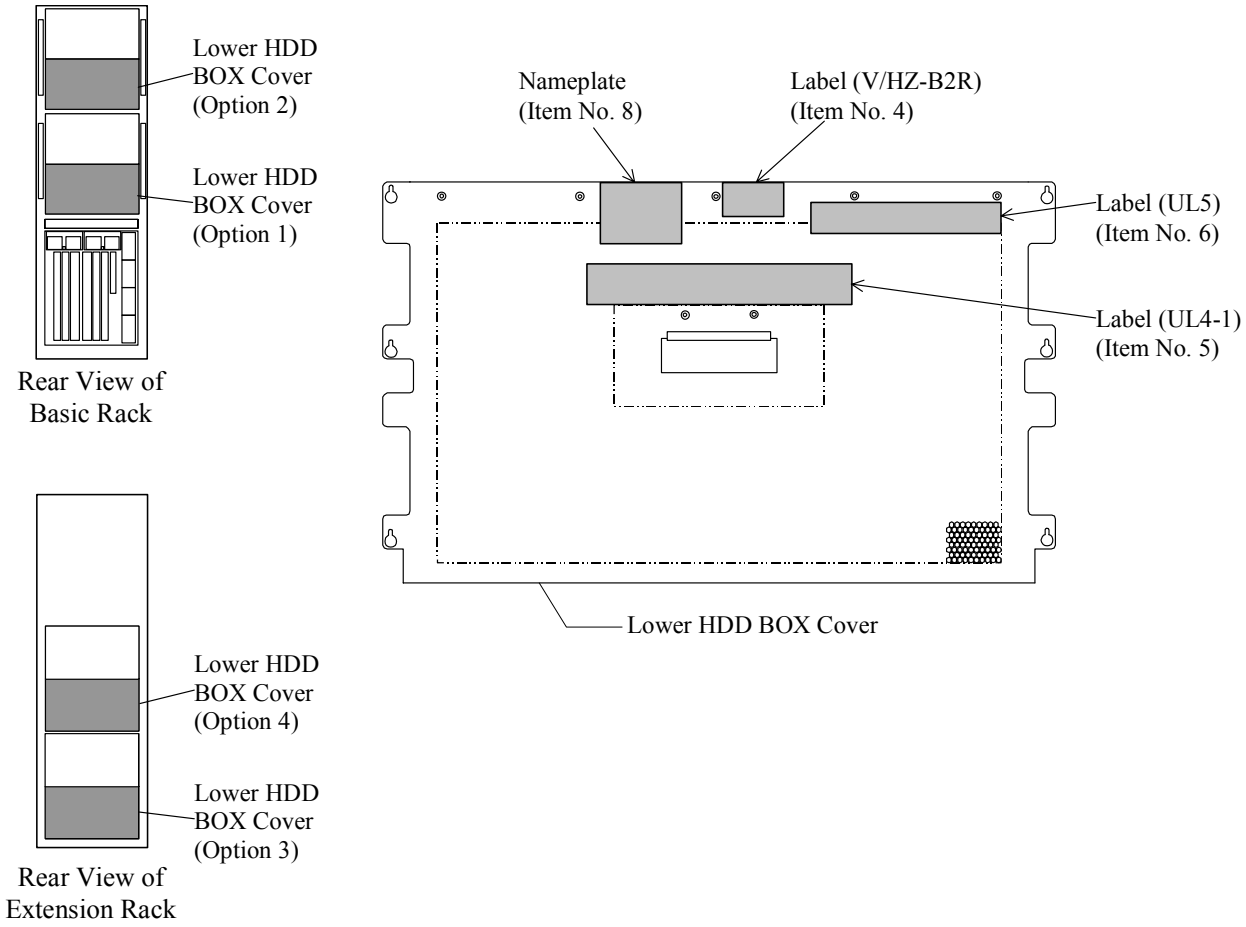


Fig. 4.2.4.1-14 Removal of Nameplate and Labels

   b. Return to the working table and do the rest of the work. (INST02-60)

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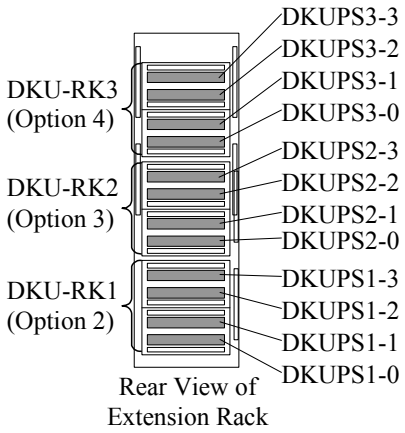
4.2.4.2 In case of TagmaStore AMS/AWS installed configuration

Caution:
Perform this removal work in the state in which the Disk Chassis and all the parts in the Disk Chassis have been removed from the rack configuration after the work No.3 explained on page INST02-60 has been done. The system goes down if the Disk Chassis that should have been removed is left in the rack configuration.

1. Power OFF of HDD Boxes being De-Installed
   a. Turn the PS Enable/Disable switches to disable on the DKUPSs.

Table 4.2.4.2-1 De-Installed HDD Boxes

No.	De-Installed HDD Boxes	DKUPS	Remarks
1	DKU-RK0	DKUPS0-0, DKUPS0-1, DKUPS0-2, DKUPS0-3	
2	DKU-RK1	DKUPS1-0, DKUPS1-1, DKUPS1-2, DKUPS1-3	
3	DKU-RK2	DKUPS2-0, DKUPS2-1, DKUPS2-2, DKUPS2-3	
4	DKU-RK3	DKUPS3-0, DKUPS3-1, DKUPS3-2, DKUPS3-3	



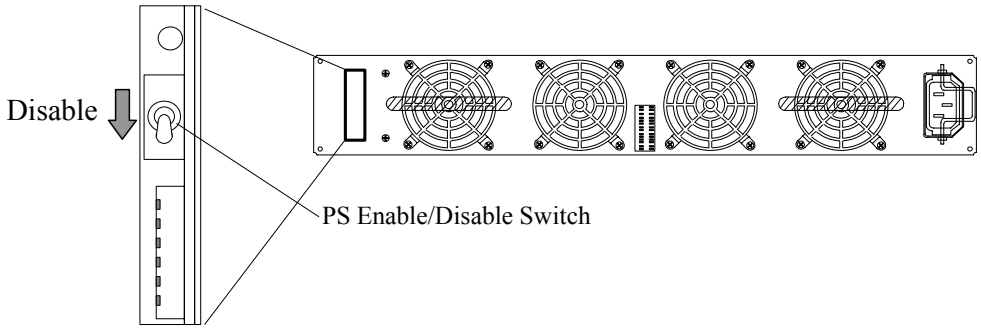


Fig. 4.2.4.2-1 PS Enable/Disable Switch on DKUPS

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2. Removal of Cable assemblies
   a. Disconnect the cables from the PDUs. (Refer to HDS installation Manual.)

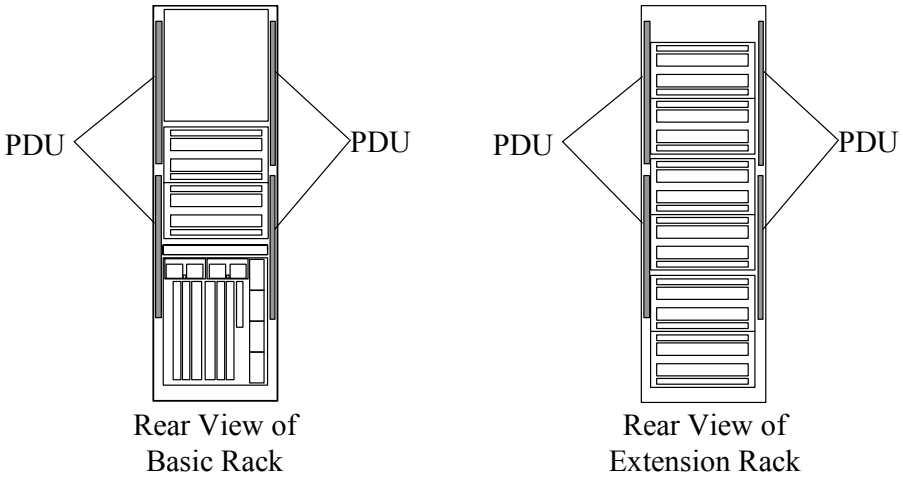


Fig. 4.2.4.2-2 Disconnection of Cables

b. Disconnect the cables (PSx-0, PSx-1, PSx-2, PSx-3) from the DKUPSs in the HDD Boxes.

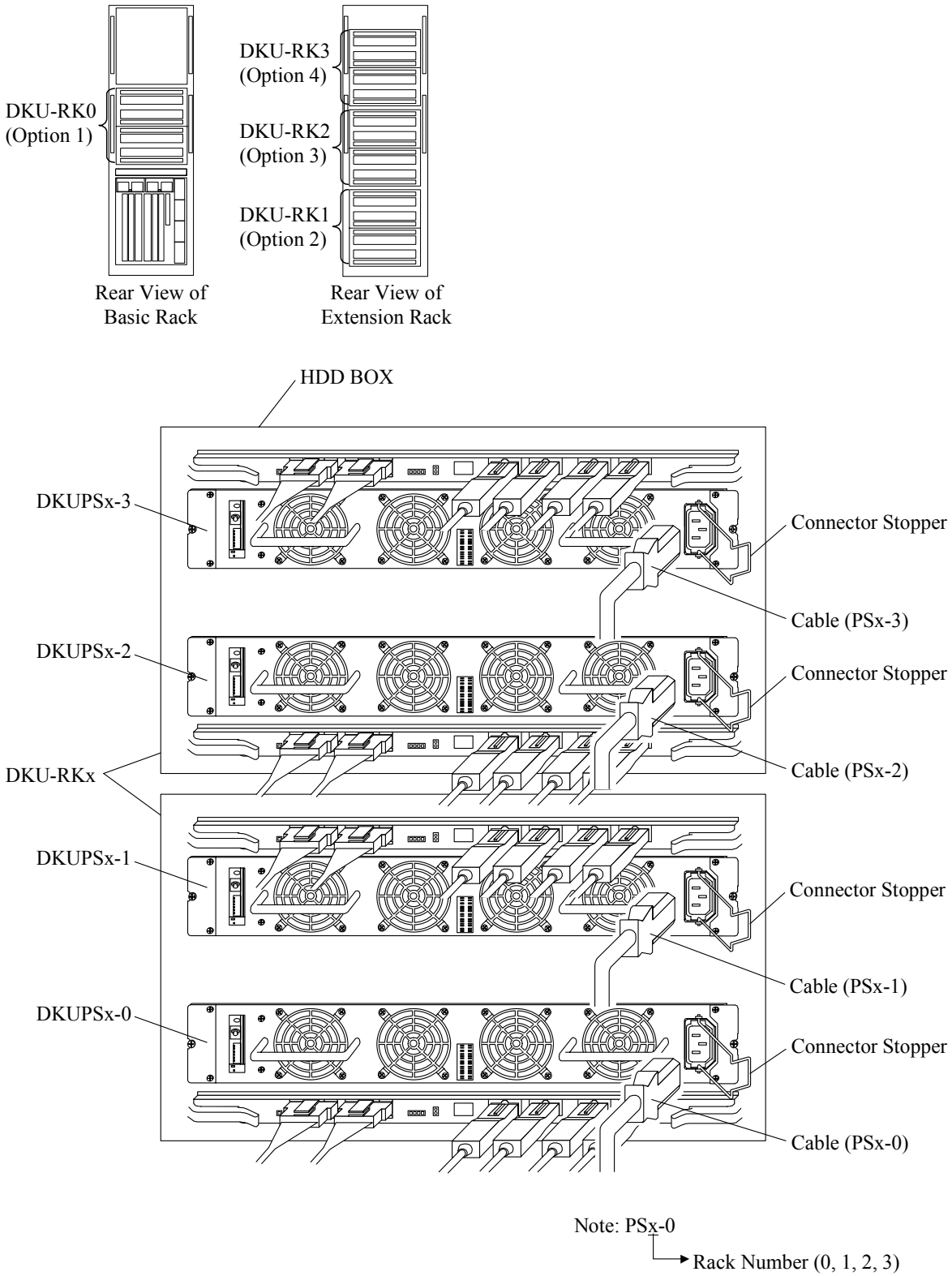


Fig. 4.2.4.2-3 Disconnection of Cables

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c. Open the repeat binders and locking clamps and remove the cable assemblies. Refer to Fig. 4.2.4.2-4, Fig.4.2.4.2-5, Fig.4.2.4.2-6 or Fig. 4.2.4.2-7.

Option 1

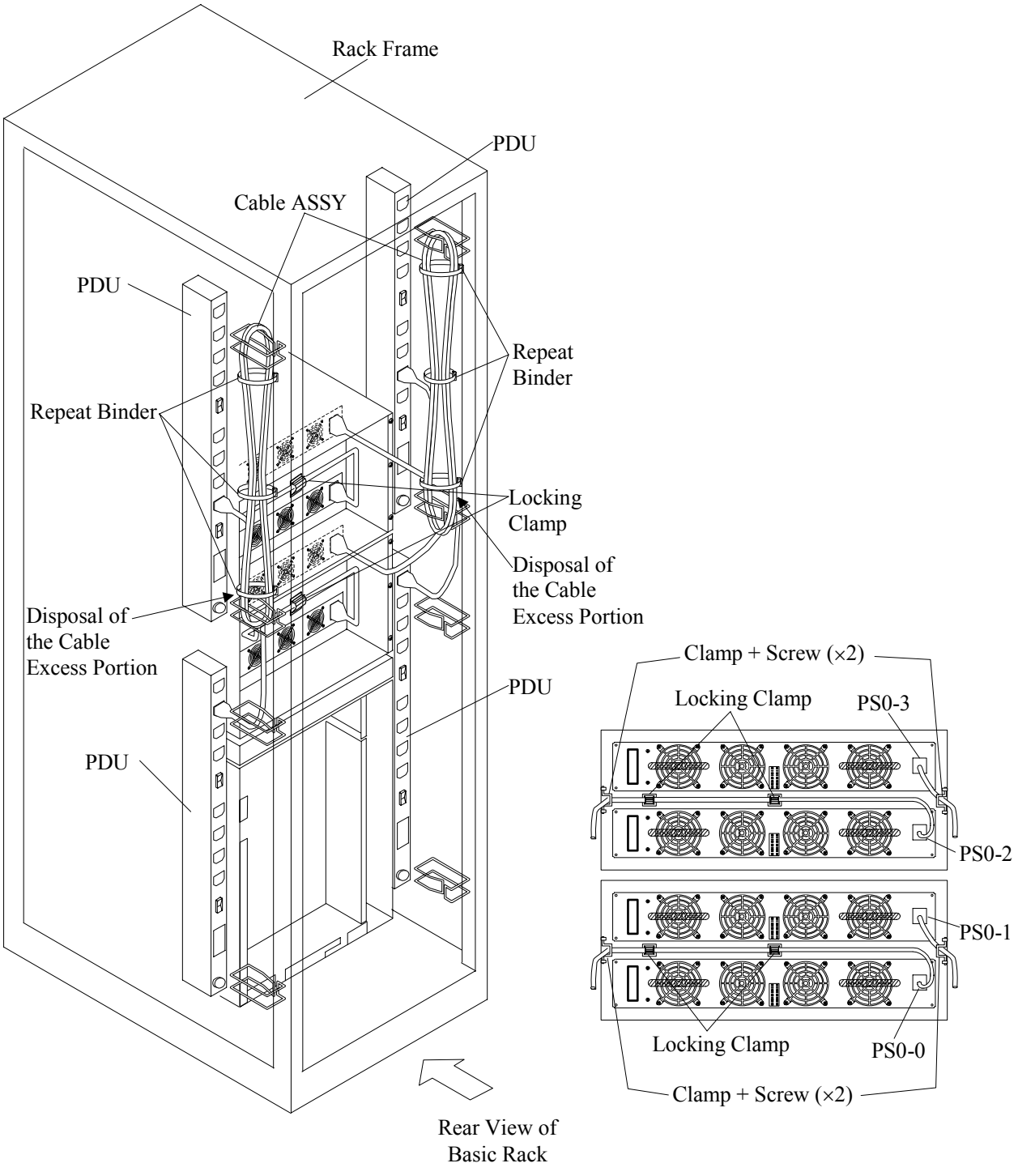


Fig. 4.2.4.2-4 Removal of Cable Assemblies (Option 1)

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Option 2

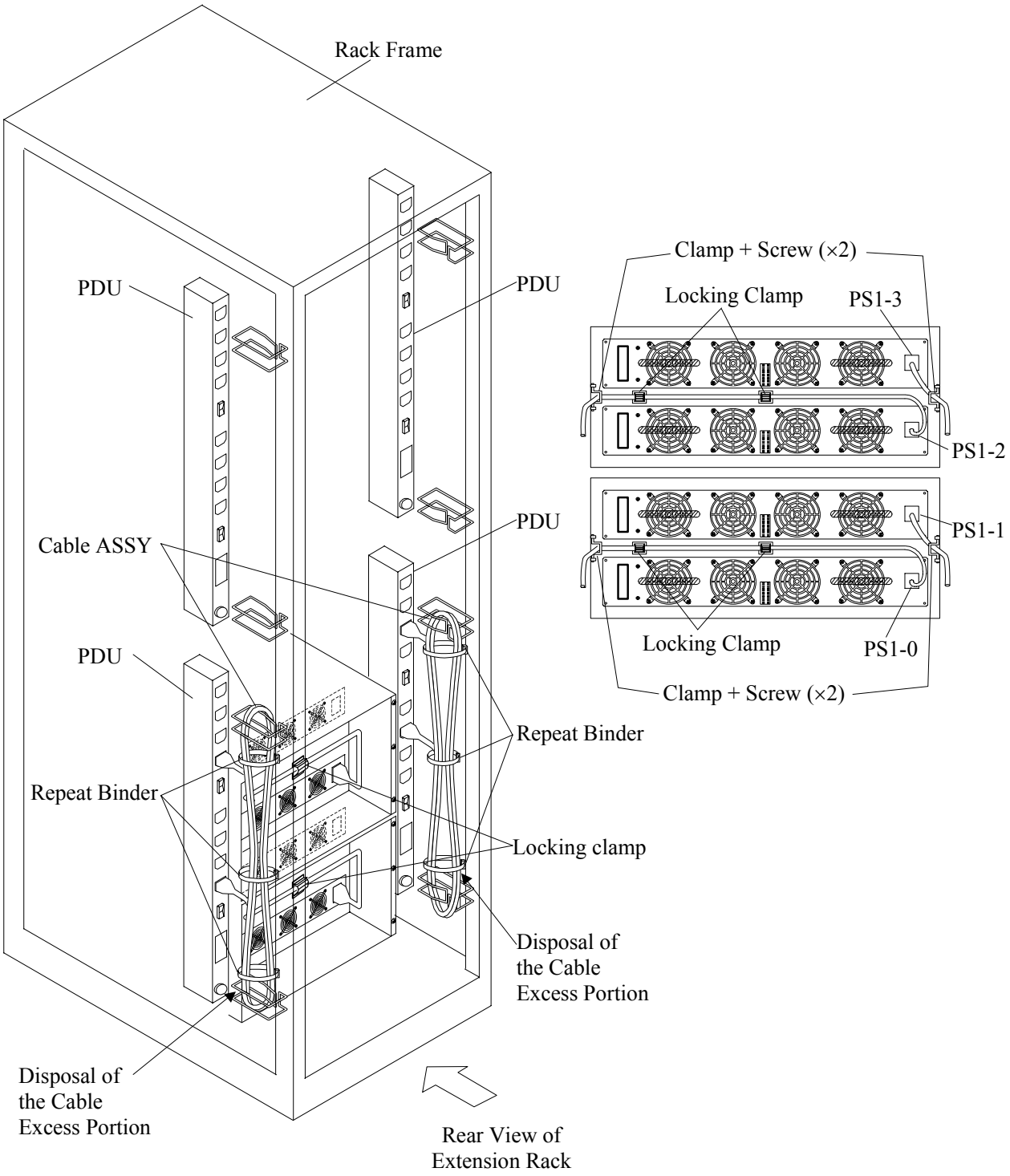


Fig. 4.2.4.2-5 Removal of Cable Assemblies (Option 2)

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Option 3

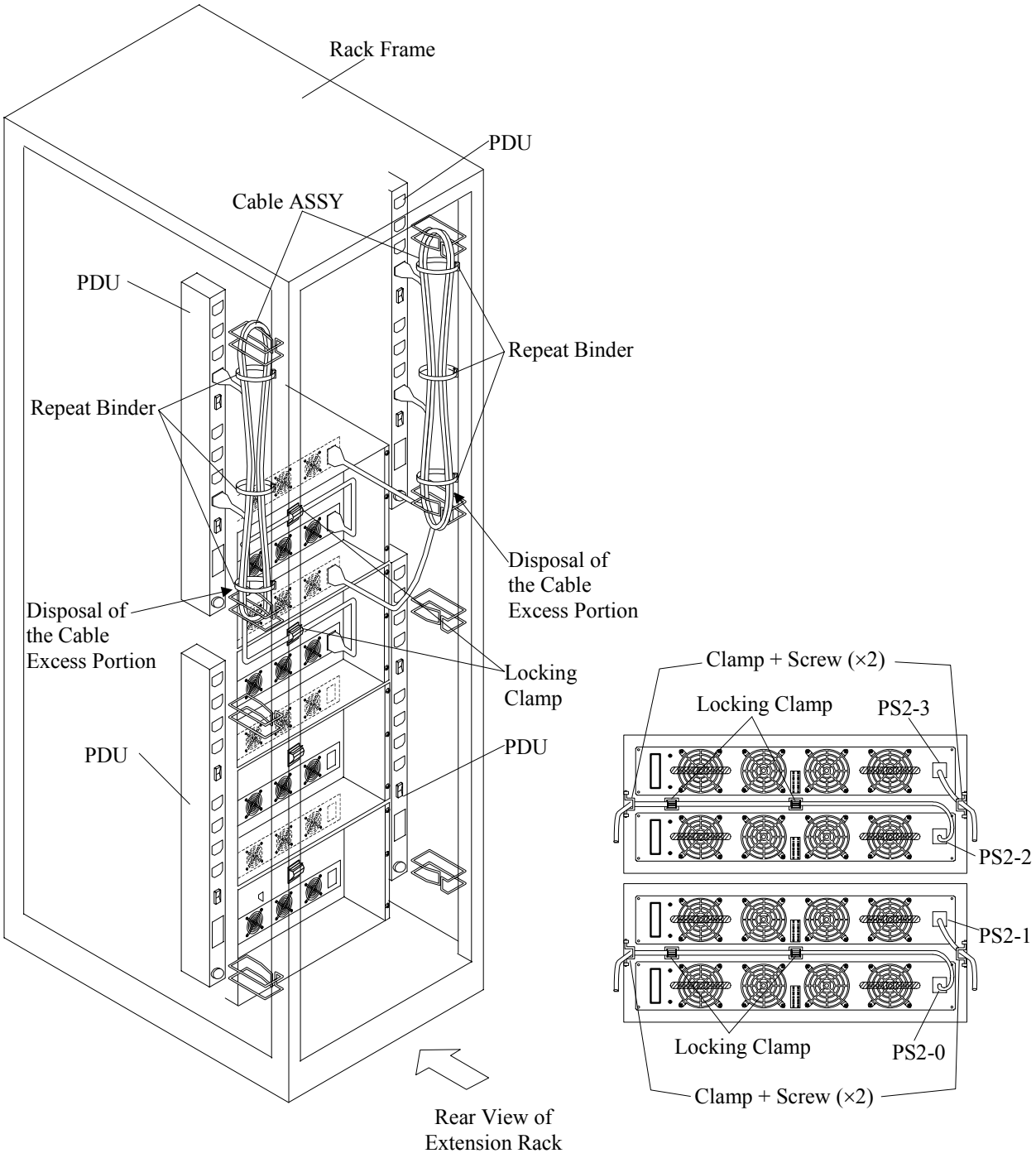


Fig. 4.2.4.2-6 Removal of Cable Assemblies (Option 3)

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Option 4

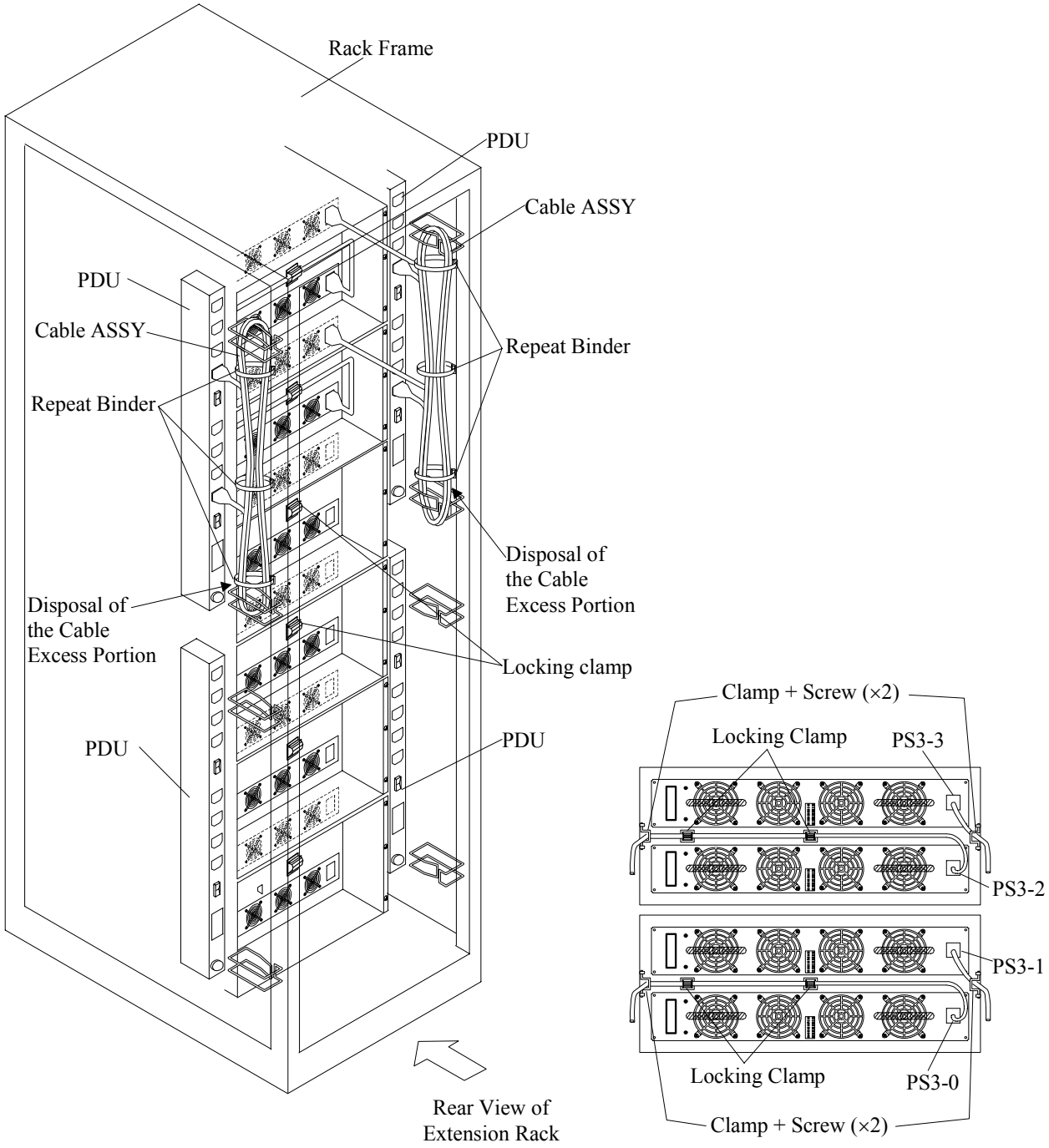


Fig. 4.2.4.2-7 Removal of Cable Assemblies (Option 4)

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3. Removal of the HDD Boxes
   a. Remove the bolts and stoppers on the rear side of HDD Boxes.

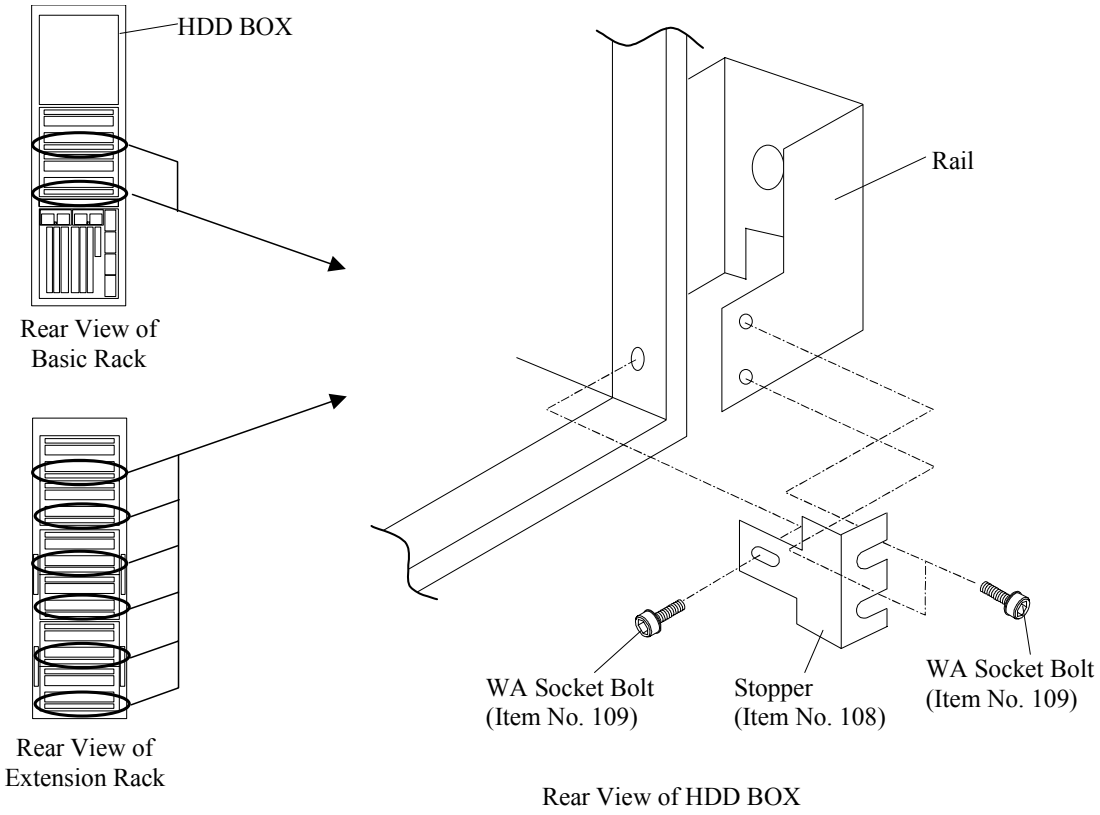


Fig. 4.2.4.2-8 Removal of Stoppers

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⚠ CAUTION

Paying attention to falls:
Work carefully because the mass of the single HDD BOX is about 38 kg.

b. Remove the four screws and remove the HDD Box on the Rack frame referring to mounting procedure using the special lifter. (See INST03-13-10 through 40.)
c. Remove the 2nd HDD Box to the rack frame in the same way.

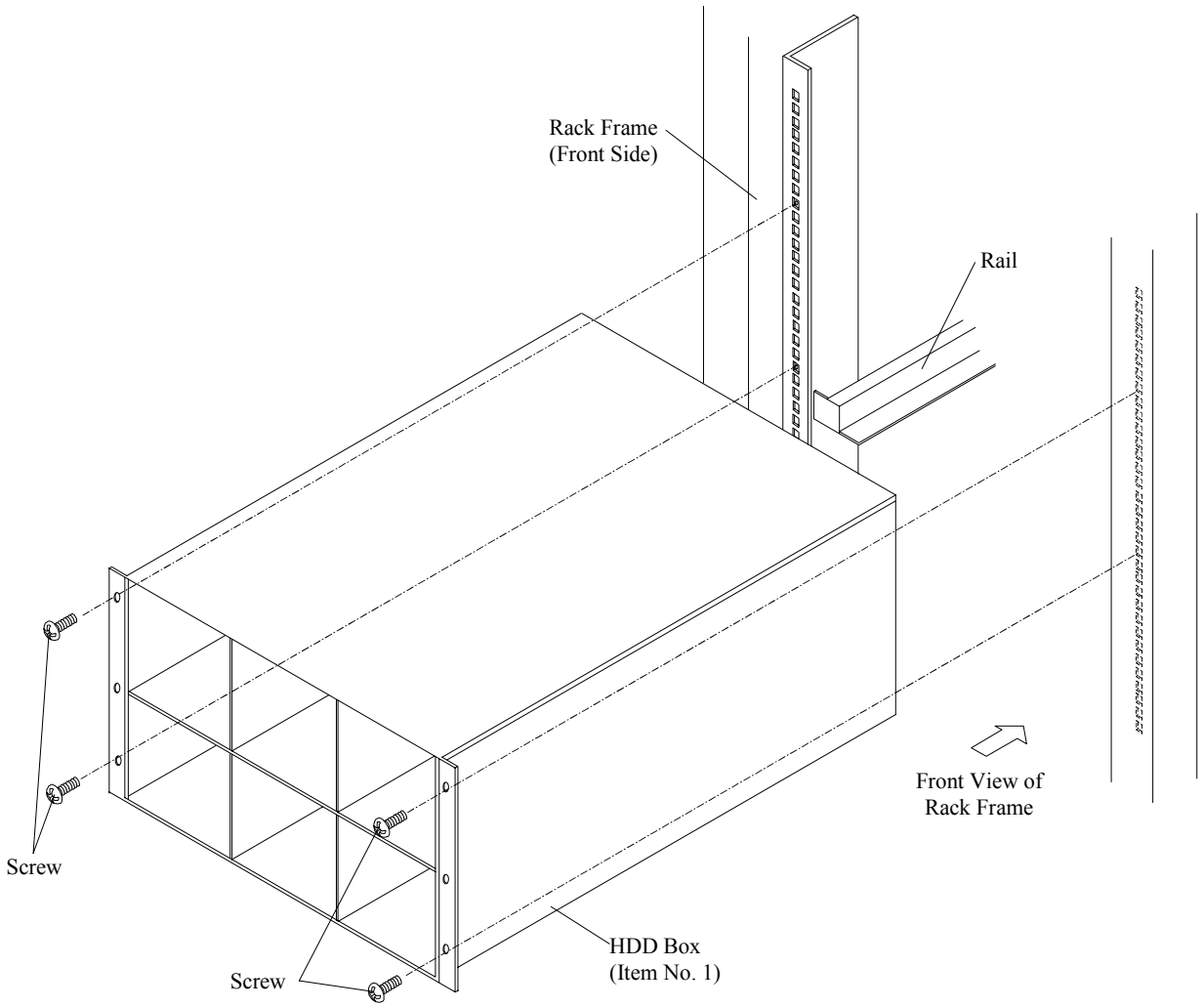
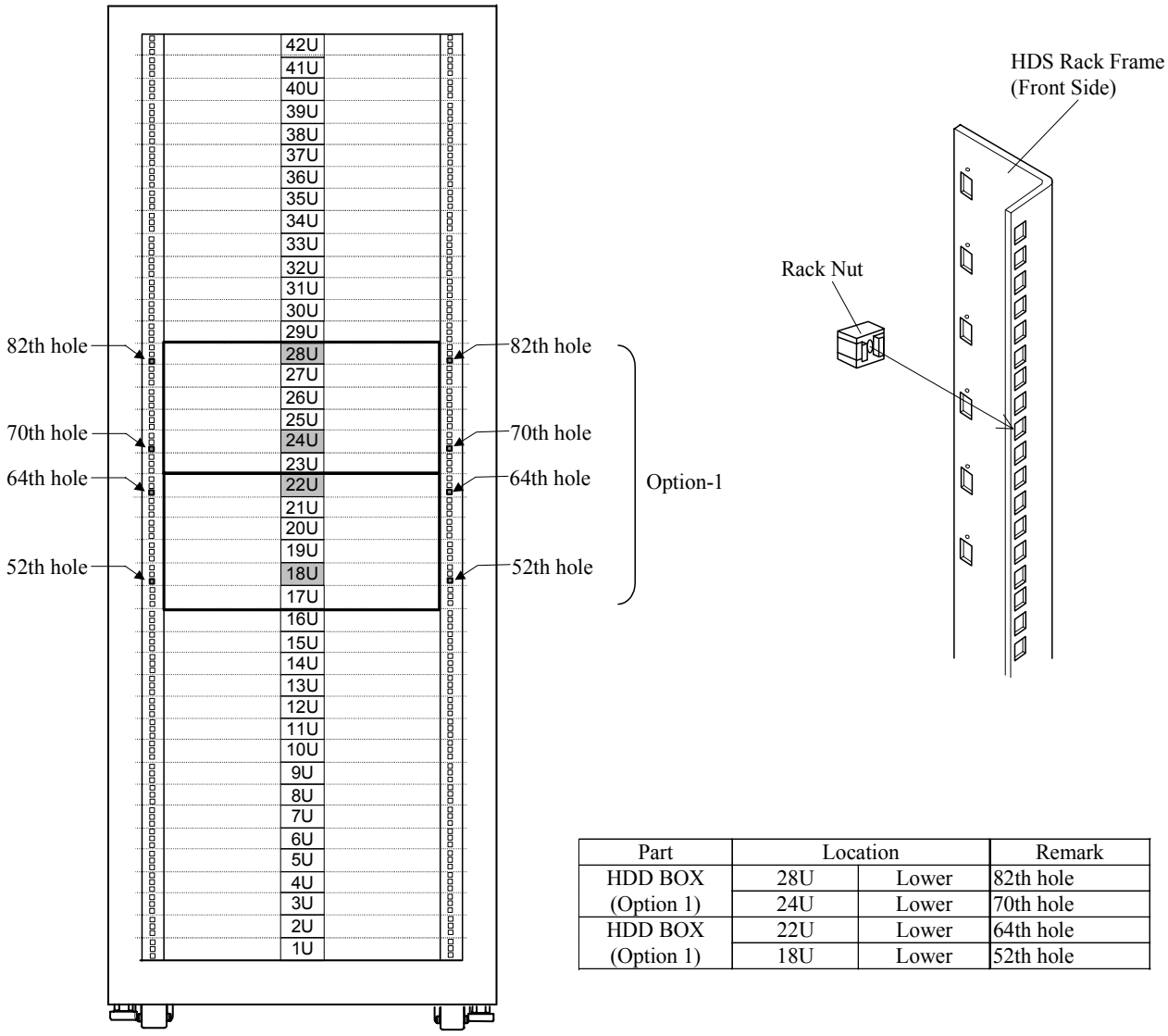


Fig. 4.2.4.2-9 Removal of HDD Box

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4. De-installing rack nuts on the front side of the rack frame
   a. De-install the four rack nuts from each of the right and left beams on the front side of the rack frame. Refer to Fig. 4.2.4.2-10 and Fig. 4.2.4.2-11.

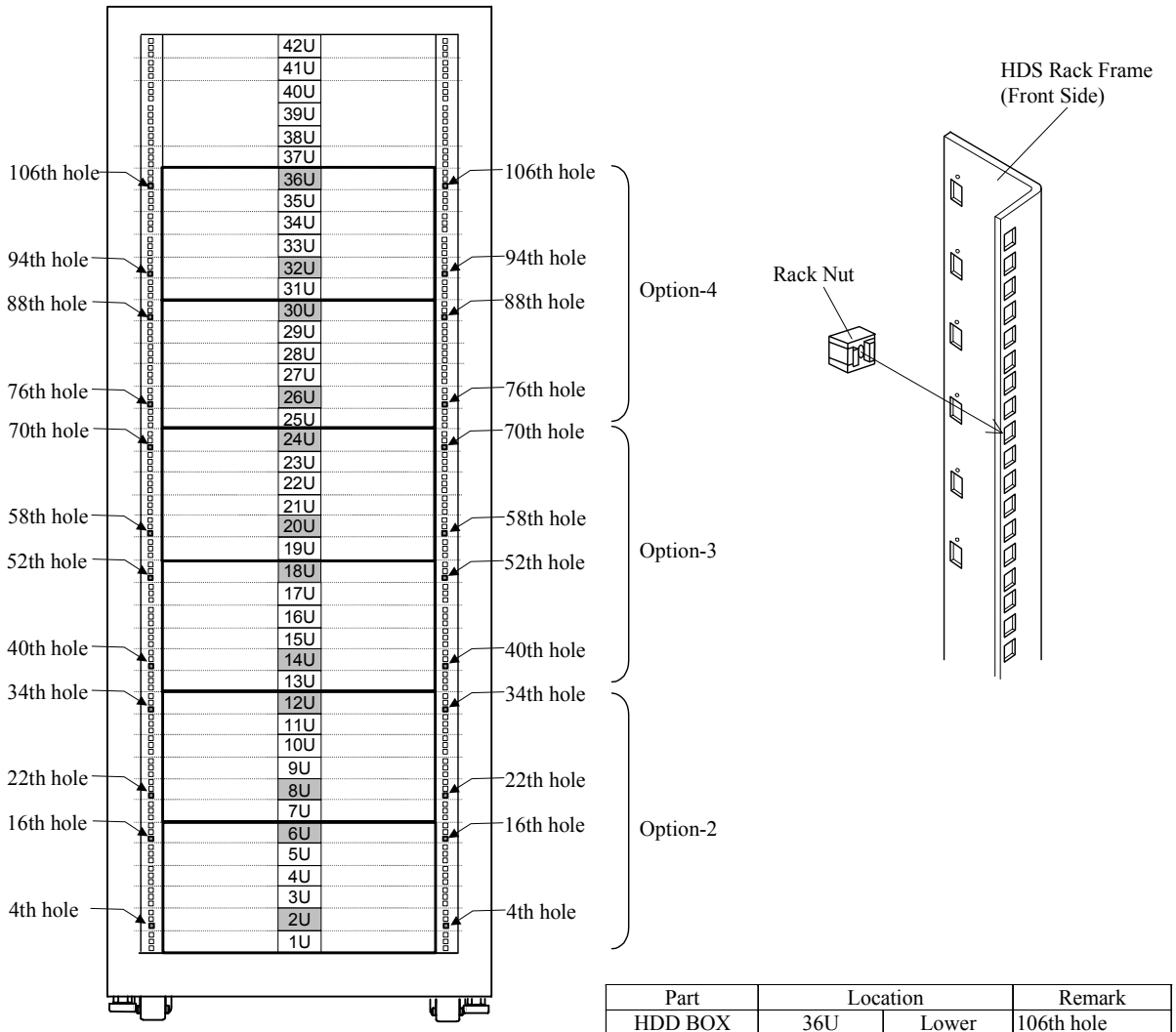


Front View of Basic Rack

Part	Location		Remark
HDD BOX (Option 1)	28U	Lower	82th hole
	24U	Lower	70th hole
HDD BOX (Option 1)	22U	Lower	64th hole
	18U	Lower	52th hole

Fig. 4.2.4.2-10 De-installing Rack Nuts to Basic Rack

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Front View of Extension Rack

Part	Location		Remark
HDD BOX (Option 4)	36U	Lower	106th hole
	32U	Lower	94th hole
HDD BOX (Option 4)	30U	Lower	88th hole
	26U	Lower	76th hole
HDD BOX (Option 3)	24U	Lower	70th hole
	20U	Lower	58th hole
HDD BOX (Option 3)	18U	Lower	52th hole
	14U	Lower	40th hole
HDD BOX (Option 2)	12U	Lower	34th hole
	8U	Lower	22th hole
HDD BOX (Option 2)	6U	Lower	16th hole
	2U	Lower	4th hole

Fig. 4.2.4.2-11 De-installing Rack Nuts to Extension Rack

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5. Removal of Rails
   a. Remove the screw and remove the Rail(R) from the frame.
   b. Remove the Rail (L) from the rack frame in the same way.

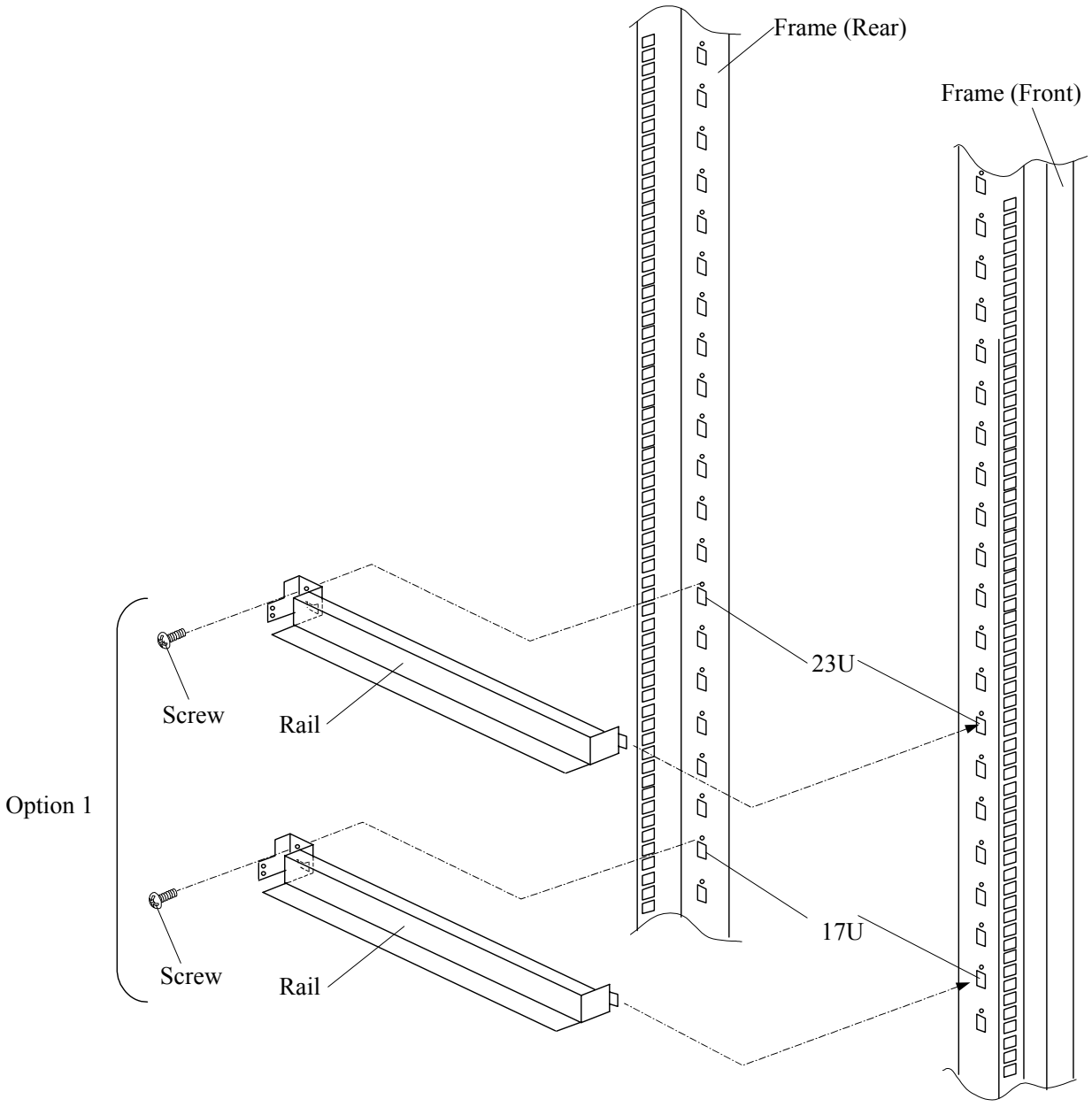


Fig. 4.2.4.2-12 Removal of Rails (Basic Rack)

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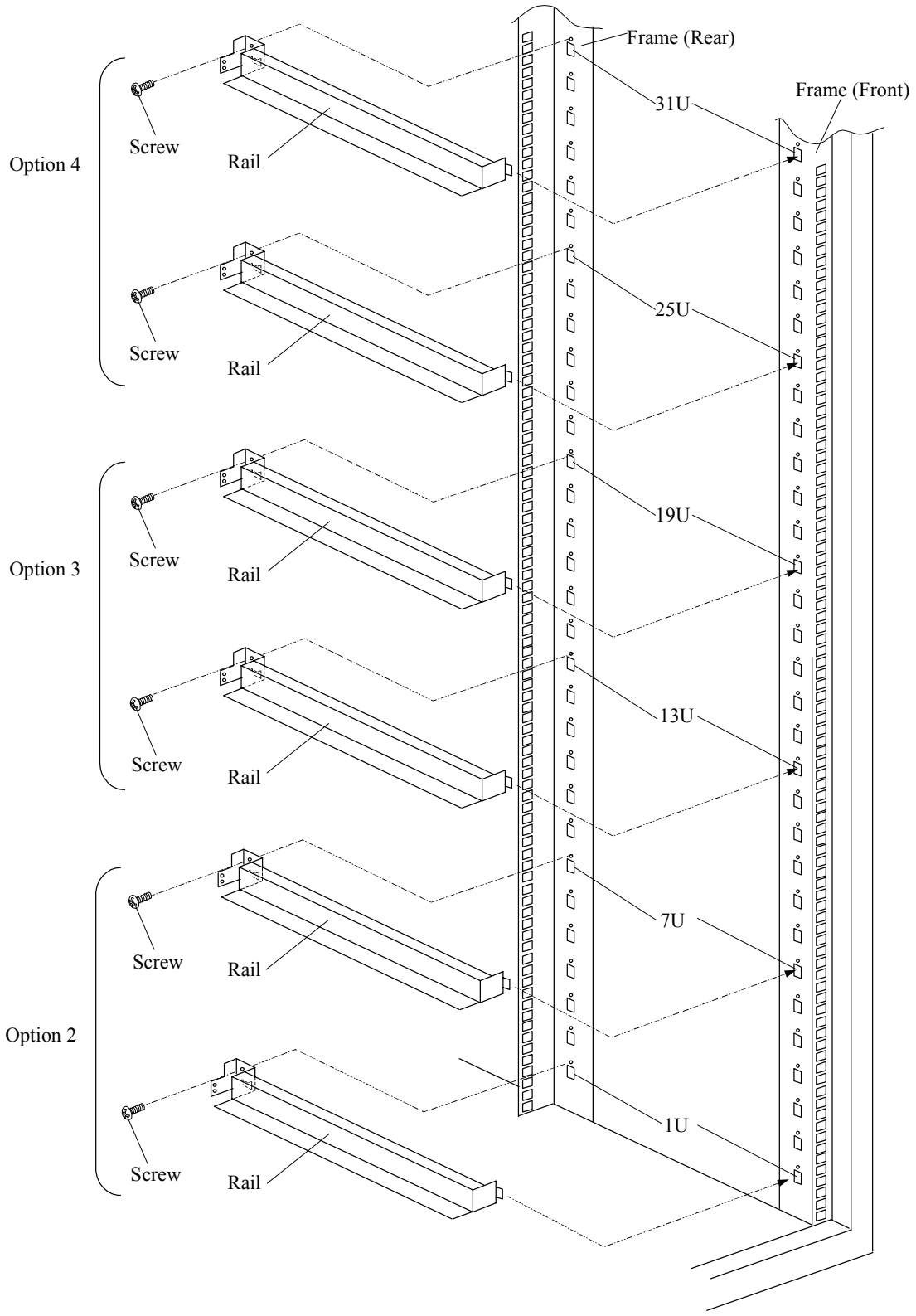


Fig. 4.2.4.2-13 Removal of Rails (Extension Rack)

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6. Removal of Nameplate and labels
   a. Remove the nameplate and three labels from the lower HDD BOX cover.

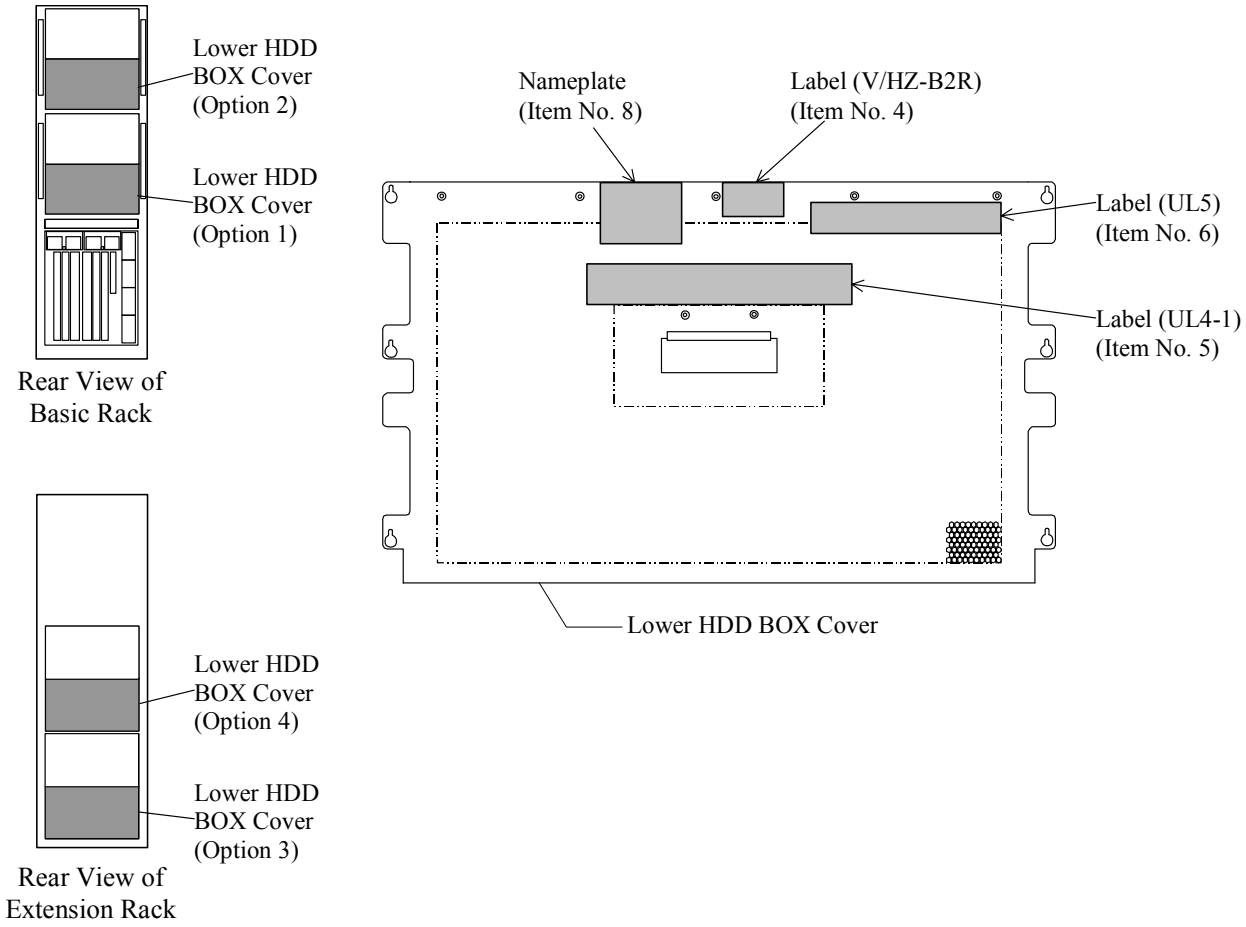


Fig. 4.2.4.2-14 Removal of Nameplate and Labels

   b. Return to the working table and do the rest of the work. (INST02-60)

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4.3 De-Installation of Shared Memory and Cache Memory

4.3.1 De-Installation of Additional Shared Memory (DKC-F510I-S1G/S1GR/S2GR, DKC-F515I-LGABR)

Note: When two control frames (DKCs) are installed in the Disk-less configuration, check the serial number of target DKC on the SVP screen and beware of a removal position to prevent mistakes. (See "5.2.4 Refer Configuration 3. <DKC Configuration window>" [INST05-410].)

Table 4.3.1-1 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKC-F510I-S1G	SH341-A	5524235-A	2	
		SH341-C	5524235-C		
2	DKC-F510I-S1GR	SH341-C	5524235-C	2	
		Nameplate (HDS)	2751038-17	1	RSD
			2751040-17/217		HICAM/HICEF
		Nameplate (HP)	2751038-117	1	RSD
			2751040-117/317		HICAM/HICEF
3	DKC-F510I-S2GR	SH341-D	5524237-C	2	
		Nameplate (HDS)	2751038-98	1	RSD
			2751040-98/298		HICAM/HICEF
		Nameplate (HP)	2751038-198	1	RSD
			2751040-198/398		HICAM/HICEF
4	DKC-F515I-LGABR	Battery Box	5527959-C	2	
		Screw	5513661-425	4	
		Nameplate (HDS)	2751038-44	1	RSD
			2751040-44/244		HICAM/HICEF
		Nameplate (HP)	2751038-144	1	RSD
			2751040-144/344		HICAM/HICEF

■ Measure of maintenance time

Maintenance time changes with the Shared Memory capacity after maintenance.

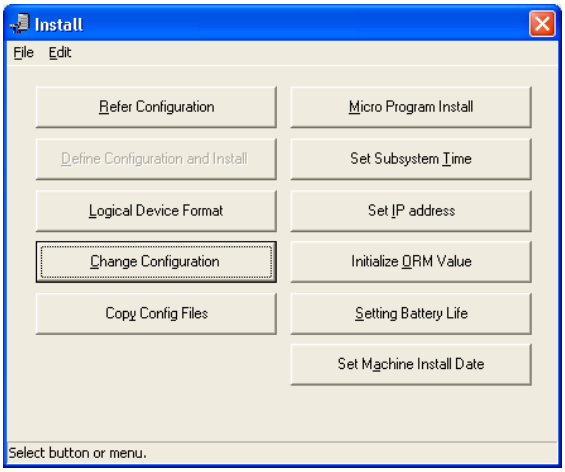
The number of shared memory module mounting after maintenance	Time	Destage time	Maintenance time
1 set	40 min	30 min ~ 120 min	70 min ~ 160 min
2 set	50 min	30 min ~ 120 min	80 min ~ 170 min
3 set	60 min	30 min ~ 120 min	90 min ~ 180 min
4 set	70 min	30 min ~ 120 min	100 min ~ 190 min
5 set	80 min	30 min ~ 120 min	110 min ~ 200 min
6 set	90 min	30 min ~ 120 min	120 min ~ 210 min

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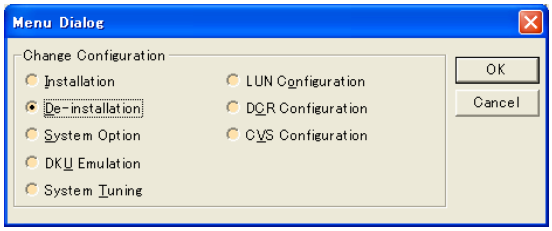
1. Setting up the New Device Structure Information

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

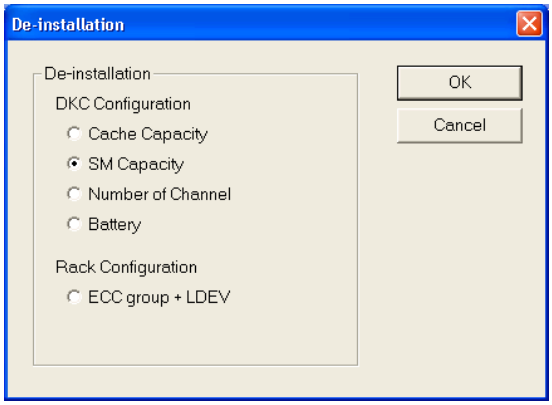
(2) <Start the 'Menu Dialog' screen>
Select (CL) [Change Configuration].



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



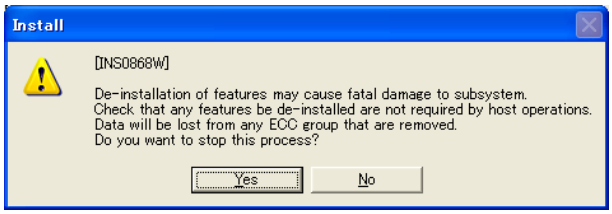
(4) <Select a part to be changed>
Select (CL) [SM Capacity], and select (CL) [OK].



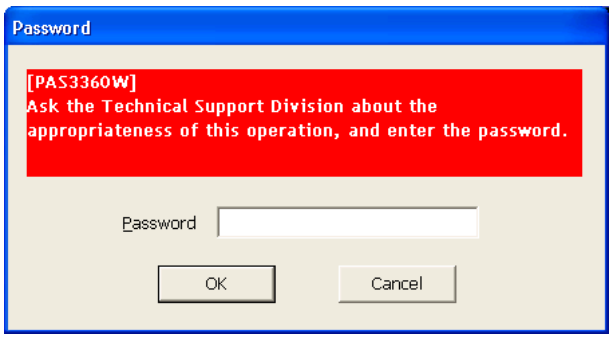
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(5)

Select (CL) [No] in response to "De-installation of features may cause fatal damage to subsystem. Check that any features be de-installed are not required by host operations. Data will be lost from any ECC group that are removed. Do you want to stop this process?".



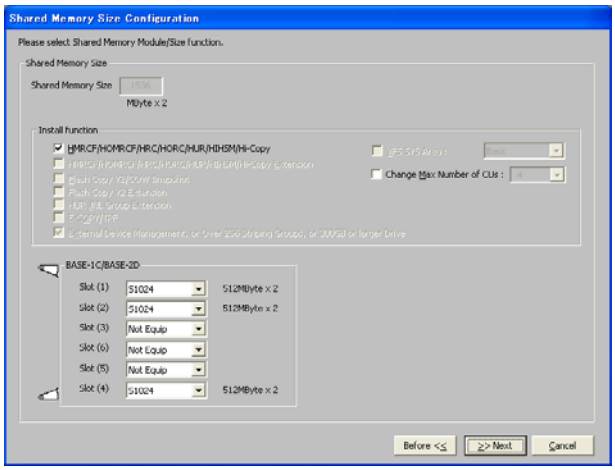
(6) <Input password>
Enter the password and select (CL) [OK].



Notice: This is a special (exceptional) operation that can cause a serious failure such as a system down or a data loss if a wrong part to be removed is selected, and requires an input of a password. Ask the technical support division about the appropriateness of the operation, and input the password after getting an approval of executing the operation.

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



Remove the check mark of the function to be reduced from
"HMRCF/HOMRCF/HRC/HORC/HUR/ HIHSM/Hi-Copy"
"HMRCF/HOMRCF/HRC/HORC/HUR/ HIHSM/Hi-Copy Extension"
"Flash Copy V2/COW Snapshot"
"Flash Copy V2 Extension"
"HUR JNL Group Extension"
"E-COPY/TPF"
"External Device Management, or Over 256 striping Group, or 300GB or larger Drive"
"VFS SYS Area"

When reducing the number of CUs, change the value after putting a check mark to "Change Max Number of CUs".

If the installed SM after the reduction conforms to installed pattern on the window, select (CL) the [>>Next] button.

---

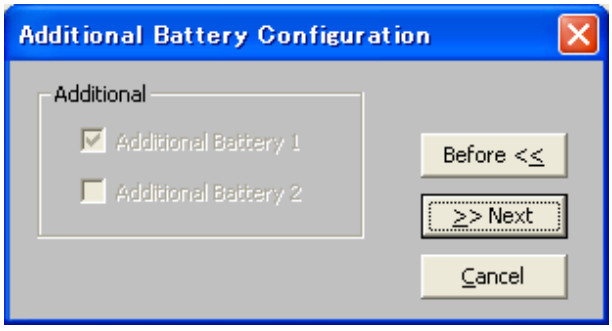
(8)

Make sure if the desired configuration (Current Configuration) is in the valid extent (Valid Extent).

In the valid extent : Select (CL) [OK].
Out of the valid extent : Select (CL) [Cancel].

---

(9) <Display Battery>
The 'Additional Battery Configuration' dialog box is displayed.
Select (CL) [>>Next].



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2. SVP pre procedure on the Cluster 1

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



If there is change in SM capacity, go to INST04-03A-50 step (2).
If there is no change in SM capacity, go to INST04-03A-390 step (3).

When [No] is selected (CL), returns to INST04-03A-20 step (3).

---

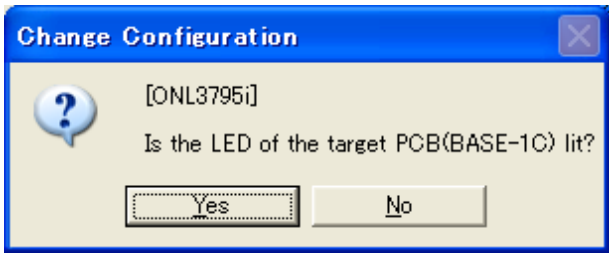
(2) <Memory blocking on one side>
When blocking of cluster 1 of shared memory is completed, "The Shared Memory PCB is being blocked..." is displayed.

---

(3)
"Lighting LED of the PCB..." is displayed.

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



(Eg. BASE-1C)

<Forcing shut down LED on>

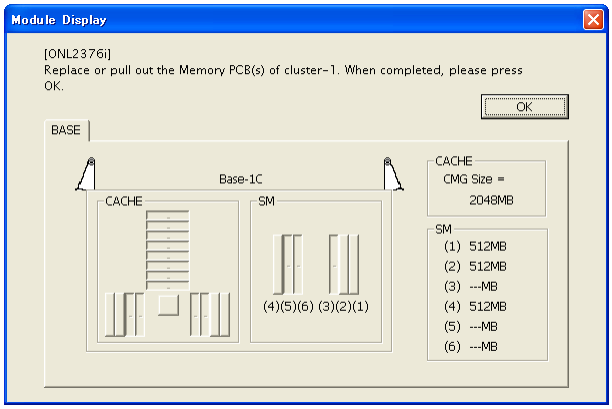
⚠ CAUTION
If the jumper is inserted in the wrong PCB, a system down may be caused.

If [No] is selected:
Insert a jumper in response to "Please insert the jumper into the target PCB(BASE-nn), then pull out the PCB without considering the status of the LED".
(Refer INST04-03A-70)

---

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

Make sure of the installation location of the module to be removed and remove the correct module.



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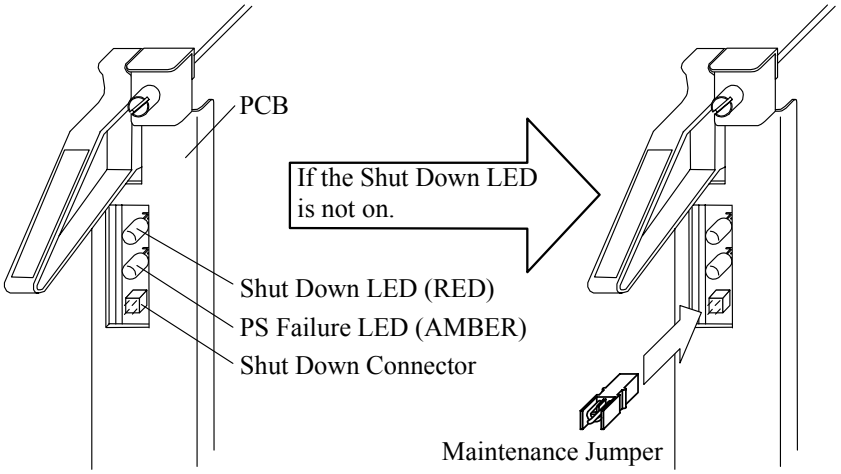
3. Remove the Shared Memory on the Cluster 1.
   Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

3-1 Remove the PCB.

a. While referring to Fig. 4.3.1-1 and Table 4.3.1-2 check the Shut Down LED on the Base PCB in the Logic Box. Connect the Maintenance Jumper to the Shut Down Connector if the Shut Down LED is not on.

⚠ CAUTION

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



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

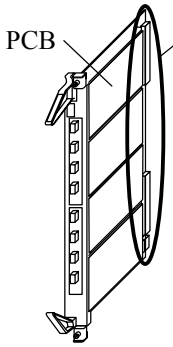
Fig. 4.3.1-1 Location of Shut Down LED

Table 4.3.1-2 Location of the Base PCB

Cluster	PCB Name	Box	Slot No.	Location No.	Remarks
1	WP535-A	Logic Box	1C	BASE-1C	

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b. Disconnect the cable from the Base PCB.
c. Remove the two screws and remove the Base PCB.



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

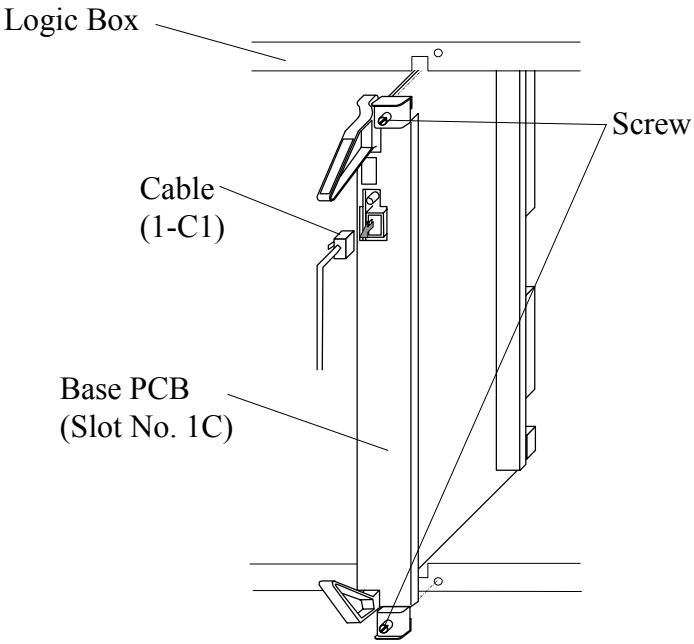


Fig. 4.3.1-2 Removal of the Base PCB

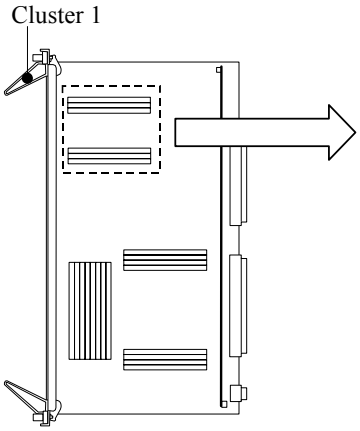
d. Remove the Maintenance Jumper if it is mounted.

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3-2. Remove the Shared Memory Modules.

a. Remove the extra Shared Memory Modules according to the required Shared Memory capacity referring to Fig. 4.3.1-3, Fig. 4.3.1-4 and Table 4.3.1-3 to Table 4.3.1-9.

b. Insert the dust covers into the vacant sockets.



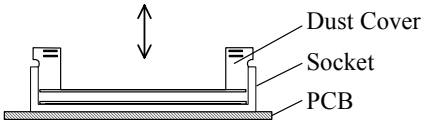
Shared Memory Module Location (DKC-F510I-S1G/S1GR)

①	SM00: SH341-A/C
②	SM01: SH341-A/C
③	SM02: SH341-A/C
⑥	SM05: SH341-A/C
⑤	SM04: SH341-A/C
④	SM03: SH341-A/C

Shared Memory Module Location (DKC-F510I-S2GR)

1	SM00: SH341-D
2	SM01: SH341-D
3	SM02: SH341-D
6	SM05: SH341-D
5	SM04: SH341-D
4	SM03: SH341-D

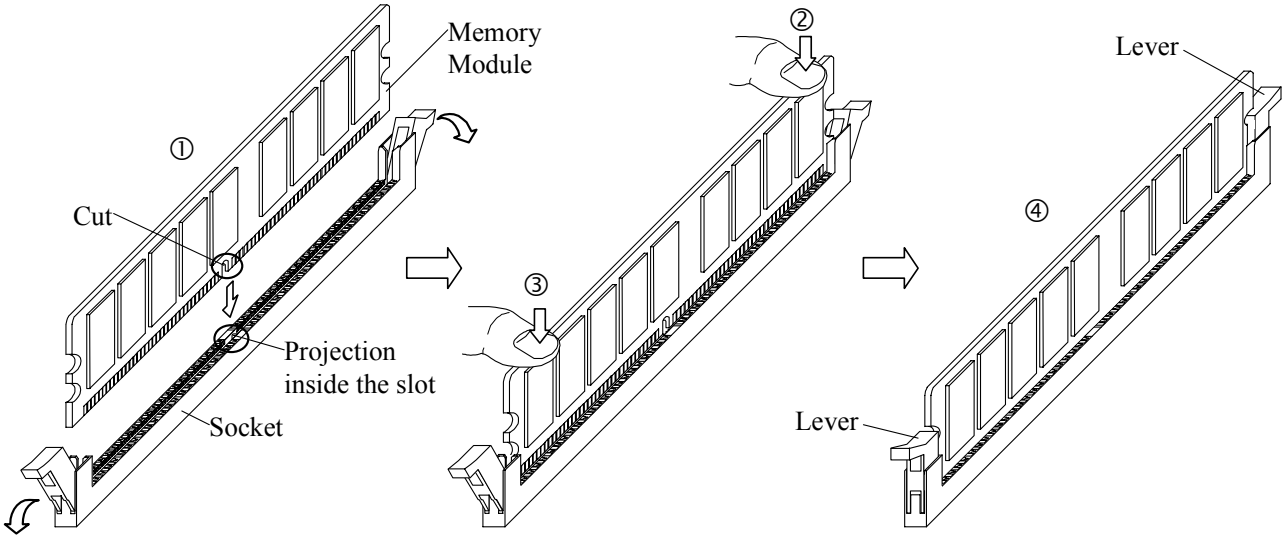
Removal/Insertion of Dust Cover



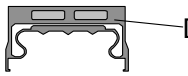
Viewed from A

Fig.4.3.1-3 Inserting Location of the Shared Memory Module

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Prohibition of Use:



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

Installation

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

Removal

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

Fig.4.3.1-4 Insertion/Removal of Memory Module

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Table 4.3.1-3 Reference Table of Shared Memory Capacity

No.	Program Product application situation			Number of CU	Reference Table
	True Copy or Shadow Image or Universal Replicator or Volume Migration or Hi-Copy (*1)	TPF or E-Copy	Flash Copy Version2 or COW Snapshot (*1)		
1	Not Applied	Not Applied	Not Applied	1-4 (to 1,024LDEV)	Table 4.3.1-5
				5-64 (to 16,384LDEV)	
2	Applied	Not Applied	Not Applied	1-4 (to 1,024LDEV)	Table 4.3.1-6
				5-64 (to 16,384LDEV)	
3	Not Applied	Applied	Not Applied	1-4 (to 1,024LDEV)	Table 4.3.1-7
				5-64 (to 16,384LDEV)	
4	Applied	Applied	Not Applied	1-4 (to 1,024LDEV)	Table 4.3.1-8
				5-64 (to 16,384LDEV)	
5	Applied	Not Applied	Applied	1-4 (to 1,024LDEV)	Table 4.3.1-9
				5-64 (to 16,384LDEV)	
6	Applied	Applied	Applied	1-4 (to 1,024LDEV)	Table 4.3.1-10
				5-64 (to 16,384LDEV)	

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

Please note that location of shared memory module varies according to the purpose such as additional cache installation or additional LDEV installation.
In the case of Disk-less configuration, please refer to the description of “External Storage support”.

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The following table shows the correspondence of items shown in the SVP Window and those in the Reference Table. Set the SM in the SVP window based on the table below.

Table 4.3.1-4 Correspondence Table of items shown in the SVP Window

No.	SVP Window		Reference Table
	Item	Check box	
1	HMRCF/HOMRCF/HRC/HORC/HUR/HIHSM/ Hi-Copy	OFF	TC/SI/UR/VM/Hi-Copy function not applied
		ON	TC/SI/UR/VM/Hi-Copy function applied
2	HMRCF/HOMRCF/HRC/HORC/HUR/HIHSM/ Hi-Copy Extension	OFF	TC/SI/UR/VM/Hi-Copy Basic
		ON	TC/SI/UR/VM/Hi-Copy Extension
3	Flash Copy V2 / COW Snapshot	OFF	FCV2/COW function not applied
		ON	FCV2/COW function applied
4	Flash Copy V2 Extension	OFF	No description *2
		ON	
5	VFS SYS Area *3	OFF	VFS SYS Area not applied
		ON	VFS SYS Area applied
6	E-COPY/TPF	OFF	TPF/E-Copy function not applied
		ON	TPF/E-Copy function applied
7	External Device Management, or Over 256 Striping Group, or 300GB or larger Drive	OFF	External Storage not support, and 300GB or larger HDD not equipped
		ON	External Storage support, or/and 300GB or larger HDD equipped
8	Change Max Number of CUs	*1	Number of CU: 1-4 (to 1024LDEV)
			Number of CU: 5-64 (to 16384LDEV)

*1: The check boxes are active only when SM is installed/uninstalled.

*2: There is no description in the reference table because the SM capacity does not change with ON/OFF of this item.
However, when you use the Flash Copy V2 Extension function, turn it ON.
You can turn it ON if VFS SYS Area is OFF.

*3: In case of using the COW Snapshot function, the VFS SYS Area is required.
You can turn ON the VFS SYS Area if the Flash Copy V2 Extension is OFF.

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Table 4.3.1-5 SM Capacity and Installing Location of SM Module (TC / SI / UR / VM / Hi-Copy function not applied, TPF / E-Copy function not applied, FCV2 / COW function not applied)

Cache Memory Capacity	Number of CU: 1-4 (to 1,024LDEV)				Number of CU: 5-64 (to 16,384LDEV)
	VFS SYS Area not applied			VFS SYS Area applied	Common (VFS SYS Area not applied/applied)
	External Storage not support		External Storage support *2	Common (External Storage Not support/ Support) *2	
	300GB or larger HDD Not use	300GB or larger HDD Use	Common (300GB or larger HDD Not use / Use)		
	Install Loc. *1 (SM Cap)	Install Loc. *1 (SM Cap)	Install Loc. *1 (SM Cap)	Install Loc. *1 (SM Cap)	Install Loc. *1 (SM Cap)
4GB to 24GB	① (1GB)	①④ (2GB) or [1][2] (4GB)	①④ (2GB) or [1][2] (4GB)	①④⑤ (3GB) or ①④[5] (4GB) or [1][2][3] (6GB)	①④⑤ (3GB) or ①④[5] (4GB) or [1][2][3] (6GB)
28GB to 64GB	①④ (2GB) or [1][2] (4GB)	①④ (2GB) or [1][2] (4GB)	①④ (2GB) or [1][2] (4GB)	①④⑤⑥ (4GB) or ①④[5] (4GB) or [1][2][3] (6GB)	①④⑤⑥ (4GB) or ①④[5] (4GB) or [1][2][3] (6GB)

*1: Location ① - ⑥ and [1] - [6] represent the Shared Memory Module locations shown in Fig. 4.3.1-3.

*2: In the case of Disk-less configuration, refer to the description of "External Storage support".

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Table 4.3.1-6 SM Capacity and Installing Location of SM Module (TC / SI / UR / VM / Hi-Copy function applied, TPF / E-Copy function not applied, FCV2 / COW function not applied)

Cache Memory Capacity	Number of CU: 1-4 (to 1,024LDEV)				Number of CU: 5-64 (to 16,384LDEV)	
	VFS SYS Area not applied		VFS SYS Area applied		Common (VFS SYS Area not applied/applied)	
	TC/SI/UR/VM/ Hi-Copy Basic	TC/SI/UR/VM/ Hi-Copy Extension	TC/SI/UR/VM/ Hi-Copy Basic	TC/SI/UR/VM/ Hi-Copy Extension	TC/SI/UR/VM/ Hi-Copy Basic	TC/SI/UR/VM/ Hi-Copy Extension
	Common (External Storage not support / External Storage support, 300GB or larger HDD Not use / Use) *2					
	Install Loc. *1 (SM Cap)	Install Loc. *1 (SM Cap)	Install Loc. *1 (SM Cap)	Install Loc. *1 (SM Cap)	Install Loc. *1 (SM Cap)	Install Loc. *1 (SM Cap)
4GB to 24GB	①②④ (3GB) or [1][2] (4GB)	①②③④ (4GB) or [1][2] (4GB)	①②④⑤ (4GB) or ①②④[5] (5GB) or [1][2][3] (6GB)	①②③④⑤ (5GB) or ①②③④[5] (6GB) or [1][2][3] (6GB)	①②④⑤ (4GB) or ①②④[5] (5GB) or [1][2][3] (6GB)	①②③④⑤ (5GB) or ①②③④[5] (6GB) or [1][2][3] (6GB)
28GB to 64GB	①②④ (3GB) or [1][2] (4GB)	①②③④ (4GB) or [1][2] (4GB)	①②④⑤⑥ (5GB) or ①②④[5] (5GB) or [1][2][3] (6GB)	①②③④⑤⑥ (6GB) or ①②③④[5] (6GB) or [1][2][3] (6GB)	①②④⑤⑥ (5GB) or ①②④[5] (5GB) or [1][2][3] (6GB)	①②③④⑤⑥ (6GB) or ①②③④[5] (6GB) or [1][2][3] (6GB)

*1: Location ① - ⑥ and [1] - [6] represent the Shared Memory Module locations shown in Fig. 4.3.1-3.

*2: In the case of Disk-less configuration, refer to the description of "External Storage support".

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Table 4.3.1-7 SM Capacity and Installing Location of SM Module (TC / SI / UR / VM / Hi-Copy function not applied, TPF / E-Copy function applied, FCV2 / COW function not applied)

Cache Memory Capacity	Number of CU: 1-4 (to 1,024LDEV)		Number of CU: 5-64 (to 16,384LDEV)
	VFS SYS Area not applied	VFS SYS Area applied	Common (VFS SYS Area not applied/applied)
	Common (External Storage not support / External Storage support, 300GB or larger HDD Not use / Use) *2		
	Install Loc. *1 (SM Cap)		Install Loc. *1 (SM Cap)
4GB to 24GB	①④ (2GB) or [1][2] (4GB)	①④⑤ (3GB) or ①④[5] (4GB) or [1][2][3] (6GB)	①④⑤ (3GB) or ①④[5] (4GB) or [1][2][3] (6GB)
28GB to 64GB	①④ (2GB) or [1][2] (4GB)	①④⑤⑥ (4GB) or ①④[5] (4GB) or [1][2][3] (6GB)	①④⑤⑥ (4GB) or ①④[5] (4GB) or [1][2][3] (6GB)

*1: Location ① - ⑥ and [1] - [6] represent the Shared Memory Module locations shown in Fig. 4.3.1-3.

*2: In the case of Disk-less configuration, refer to the description of "External Storage support".

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Table 4.3.1-8 SM Capacity and Installing Location of SM Module (TC / SI / UR / VM / Hi-Copy function applied, TPF / E-Copy function applied, FCV2 / COW function not applied)

Cache Memory Capacity	Number of CU: 1-4 (to 1,024LDEV)				Number of CU: 5-64 (to 16,384LDEV)	
	VFS SYS Area not applied		VFS SYS Area applied		Common (VFS SYS Area not applied/applied)	
	TC/SI/UR/VM/ Hi-Copy Basic	TC/SI/UR/VM/ Hi-Copy Extension	TC/SI/UR/VM/ Hi-Copy Basic	TC/SI/UR/VM/ Hi-Copy Extension	TC/SI/UR/VM/ Hi-Copy Basic	TC/SI/UR/VM/ Hi-Copy Extension
	Common (External Storage not support / External Storage support, 300GB or larger HDD Not use / Use) *2					
	Install Loc. *1 (SM Cap)	Install Loc. *1 (SM Cap)	Install Loc. *1 (SM Cap)	Install Loc. *1 (SM Cap)	Install Loc. *1 (SM Cap)	Install Loc. *1 (SM Cap)
4GB to 24GB	①②④ (3GB) or [1][2] (4GB)	①②③④ (4GB) or [1][2] (4GB)	①②④⑤ (4GB) or ①②④[5] (5GB) or [1][2][3] (6GB)	①②③④⑤ (5GB) or ①②③④[5] (6GB) or [1][2][3] (6GB)	①②④⑤ (4GB) or ①②④[5] (5GB) or [1][2][3] (6GB)	①②③④⑤ (5GB) or ①②③④[5] (6GB) or [1][2][3] (6GB)
28GB to 64GB	①②④ (3GB) or [1][2] (4GB)	①②③④ (4GB) or [1][2] (4GB)	①②④⑤⑥ (5GB) or ①②④[5] (5GB) or [1][2][3] (6GB)	①②③④⑤⑥ (6GB) or ①②③④[5] (6GB) or [1][2][3] (6GB)	①②④⑤⑥ (5GB) or ①②④[5] (5GB) or [1][2][3] (6GB)	①②③④⑤⑥ (6GB) or ①②③④[5] (6GB) or [1][2][3] (6GB)

*1: Location ① - ⑥ and [1] - [6] represent the Shared Memory Module locations shown in Fig. 4.3.1-3.

*2: In the case of Disk-less configuration, refer to the description of “External Storage support”.

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Table 4.3.1-9 SM Capacity and Installing Location of SM Module (TC / SI / UR / VM / Hi-Copy function applied, TPF / E-Copy function not applied, FCV2 / COW function applied)

Cache Memory Capacity	Number of CU: 1-4 (to 1,024LDEV)				Number of CU: 5-64 (to 16,384LDEV)	
	VFS SYS Area not applied		VFS SYS Area applied		Common (VFS SYS Area not applied/applied)	
	TC/SI/UR/VM/ Hi-Copy Basic	TC/SI/UR/VM/ Hi-Copy Extension	TC/SI/UR/VM/ Hi-Copy Basic	TC/SI/UR/VM/ Hi-Copy Extension	TC/SI/UR/VM/ Hi-Copy Basic	TC/SI/UR/VM/ Hi-Copy Extension
	Common (External Storage not support / External Storage support, 300GB or larger HDD Not use / Use) *2					
	Install Loc. *1 (SM Cap)	Install Loc. *1 (SM Cap)	Install Loc. *1 (SM Cap)	Install Loc. *1 (SM Cap)	Install Loc. *1 (SM Cap)	Install Loc. *1 (SM Cap)
4GB to 24GB	①②④⑤ (4GB) or ①②④[5] (5GB) or [1][2][3] (6GB)	①②③④⑤ (5GB) or ①②③④[5] (6GB) or [1][2][3] (6GB)	①②④⑤ (4GB) or ①②④[5] (5GB) or [1][2][3] (6GB)	①②③④⑤ (5GB) or ①②③④[5] (6GB) or [1][2][3] (6GB)	①②④⑤ (4GB) or ①②④[5] (5GB) or [1][2][3] (6GB)	①②③④⑤ (5GB) or ①②③④[5] (6GB) or [1][2][3] (6GB)
28GB to 64GB	①②④⑤ (4GB) or ①②④[5] (5GB) or [1][2][3] (6GB)	①②③④⑤ (5GB) or ①②③④[5] (6GB) or [1][2][3] (6GB)	①②④⑤⑥ (5GB) or ①②④[5] (5GB) or [1][2][3] (6GB)	①②③④⑤⑥ (6GB) or ①②③④[5] (6GB) or [1][2][3] (6GB)	①②④⑤⑥ (5GB) or ①②④[5] (5GB) or [1][2][3] (6GB)	①②③④⑤⑥ (6GB) or ①②③④[5] (6GB) or [1][2][3] (6GB)

*1: Location ① - ⑥ and [1] - [6] represent the Shared Memory Module locations shown in Fig. 4.3.1-3.

*2: In the case of Disk-less configuration, refer to the description of “External Storage support”.

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Table 4.3.1-10 SM Capacity and Installing Location of SM Module (TC / SI / UR / VM / Hi-Copy function applied, TPF / E-Copy function applied, FCV2 / COW function applied)

Cache Memory Capacity	Number of CU: 1-4 (to 1,024LDEV)				Number of CU: 5-64 (to 16,384LDEV)	
	VFS SYS Area not applied		VFS SYS Area applied		Common (VFS SYS Area not applied/applied)	
	TC/SI/UR/VM/ Hi-Copy Basic	TC/SI/UR/VM/ Hi-Copy Extension	TC/SI/UR/VM/ Hi-Copy Basic	TC/SI/UR/VM/ Hi-Copy Extension	TC/SI/UR/VM/ Hi-Copy Basic	TC/SI/UR/VM/ Hi-Copy Extension
	Common (External Storage not support / External Storage support, 300GB or larger HDD Not use / Use) *2					
	Install Loc. *1 (SM Cap)	Install Loc. *1 (SM Cap)	Install Loc. *1 (SM Cap)	Install Loc. *1 (SM Cap)	Install Loc. *1 (SM Cap)	Install Loc. *1 (SM Cap)
4GB to 24GB	①②④⑤ (4GB) or ①②④[5] (5GB) or [1][2][3] (6GB)	①②③④⑤ (5GB) or ①②③④[5] (6GB) or [1][2][3] (6GB)	①②④⑤ (4GB) or ①②④[5] (5GB) or [1][2][3] (6GB)	①②③④⑤ (5GB) or ①②③④[5] (6GB) or [1][2][3] (6GB)	①②④⑤ (4GB) or ①②④[5] (5GB) or [1][2][3] (6GB)	①②③④⑤ (5GB) or ①②③④[5] (6GB) or [1][2][3] (6GB)
28GB to 64GB	①②④⑤ (4GB) or ①②④[5] (5GB) or [1][2][3] (6GB)	①②③④⑤ (5GB) or ①②③④[5] (6GB) or [1][2][3] (6GB)	①②④⑤⑥ (5GB) or ①②④[5] (5GB) or [1][2][3] (6GB)	①②③④⑤⑥ (6GB) or ①②③④[5] (6GB) or [1][2][3] (6GB)	①②④⑤⑥ (5GB) or ①②④[5] (5GB) or [1][2][3] (6GB)	①②③④⑤⑥ (6GB) or ①②③④[5] (6GB) or [1][2][3] (6GB)

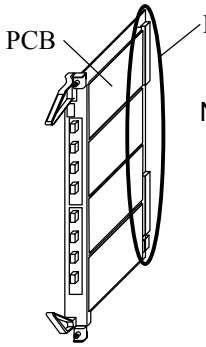
*1: Location ① - ⑥ and [1] - [6] represent the Shared Memory Module locations shown in Fig. 4.3.1-3.

*2: In the case of Disk-less configuration, refer to the description of “External Storage support”.

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3-3. Insert the PCB.

a. Insert the Base PCB into the Logic Box and fasten the two screws.



Note: 1. Check that the main edge connector of the PCB has no deformation, damage or sticking of dust before installing the PCB.

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

b. Connect the cable to the Base PCB.

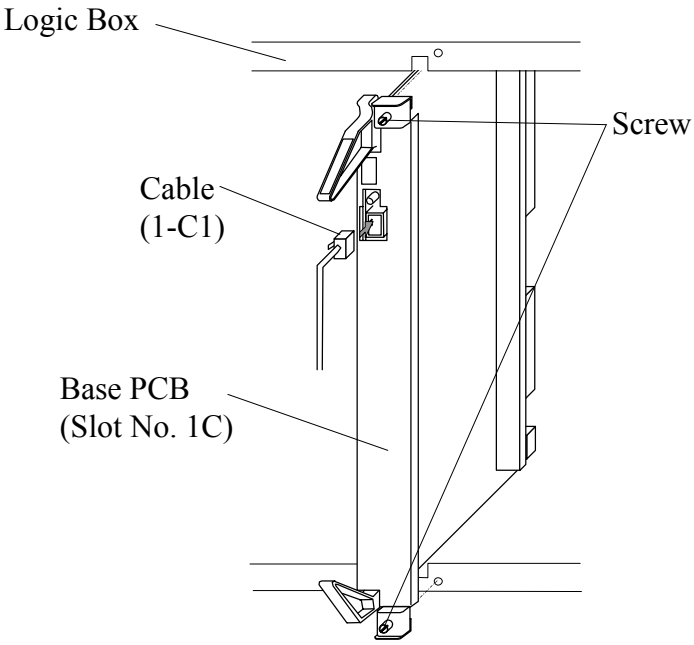
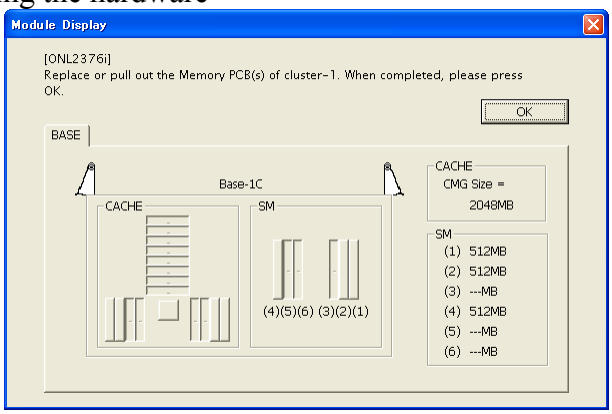


Fig.4.3.1-5 Insertion of Base PCB

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4. SVP post procedure on the Cluster 1 and pre procedure on the Cluster 2.

(1) <Making sure of completion of the work regarding the hardware>
After the hardware process of one of the sides of the shared memory is completed, select (CL) [OK] in response to a message, “Replace or pull out the Memory PCB(s) of cluster-1. When completed, please press OK.”.



(2) <Starting restoration process>
A restoration process starts automatically issuing the following message.

“Restoring the Shared Memory PCB...”

(3)
When the recovery processing is complete, processing proceeds to blocking of the cluster 2 of shared memory.

(4) <Memory blocking on cluster 2>
When blocking of cluster 2 of shared memory is completed, “The Shared Memory PCB is being blocked...” is displayed.

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(5)

"Lighting LED of the PCB..." is displayed.

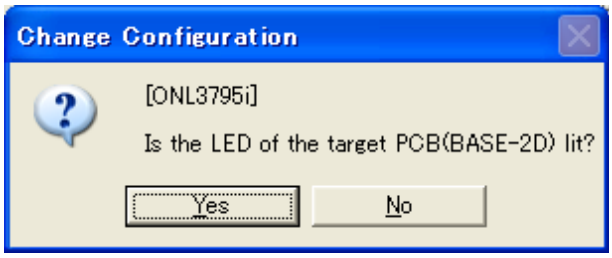
---

(6) <Check shut down LED>

Select (CL)

* [Yes] if LED is on
* [No] if LED is off

in response to "Is the LED of the target PCB(BASE-nn) lit?".



(Eg. BASE-2D)

<Forcing shut down LED on>

CAUTION

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

If [No] is selected:

Insert a jumper in response to "Please insert the jumper into the target PCB(BASE-nn), then pull out the PCB without considering the status of the LED".

(Refer INST04-03A-220)

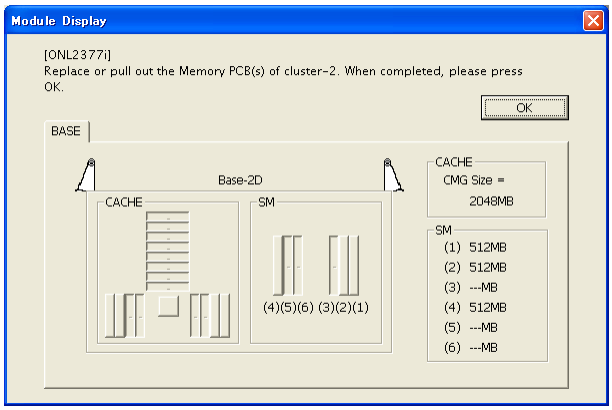
---

(7) <Perform cache hardware de-installation>

At this point refrain from pressing the [OK] button.

When "Replace or pull out the Memory PCB(s) of cluster-2. When completed, please press OK." is displayed, perform the hardware de-installation steps according to the cache hardware de-installation procedure.

Make sure of the installation location of the module to be removed and remove the correct module.



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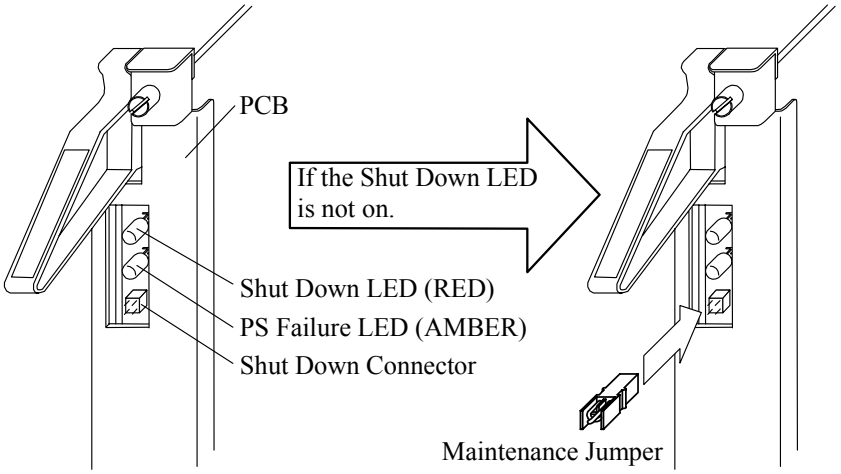
5. Install the Shared Memory on the Cluster 2.
   Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

5-1 Remove the PCB.

a. While referring to Fig. 4.3.1-6 and Table 4.3.1-11 check the Shut Down LED on the Base PCB in the Logic Box. Connect the Maintenance Jumper to the Shut Down Connector if the Shut Down LED is not on.

⚠ CAUTION

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



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

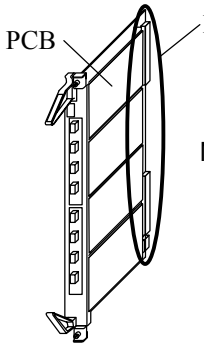
Fig.4.3.1-6 Location of Shut Down LED

Table 4.3.1-11 Location of the Base PCB

Cluster	PCB Name	Box	Slot No.	Location No.	Remarks
2	WP535-A	Logic Box	2D	BASE-2D	

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b. Disconnect the cable from the Base PCB.
c. Remove the two screws and remove the Base PCB.



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

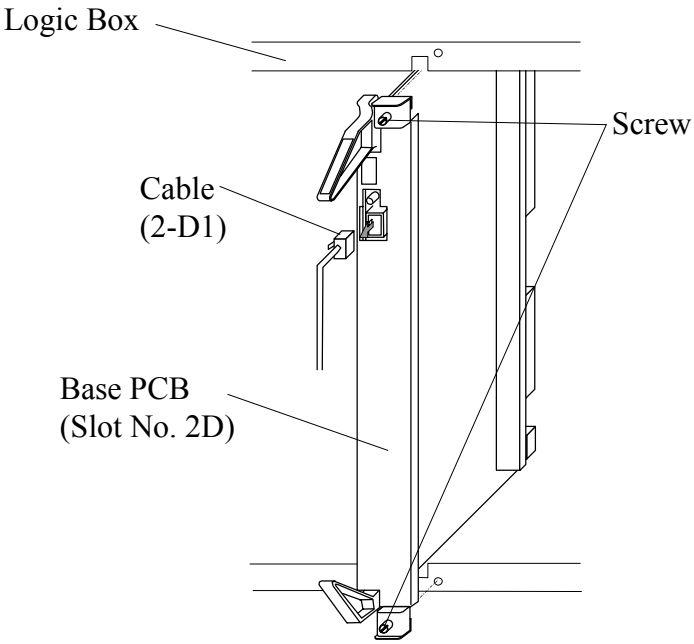


Fig. 4.3.1-7 Removal of the Base PCB

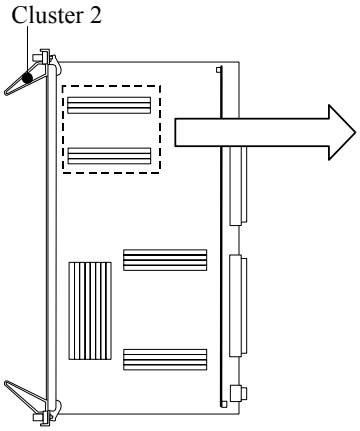
d. Remove the Maintenance Jumper if it is mounted.

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5-2. Remove the Shared Memory Modules.

a. Remove the extra Shared Memory Modules according to the required Shared Memory capacity referring to Fig. 4.3.1-8, Fig. 4.3.1-9 and Table 4.3.1-12.

b. Insert the dust covers into the vacant sockets.



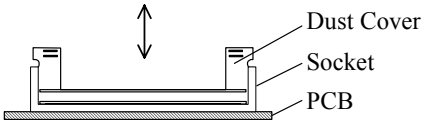
Shared Memory Module Location (DKC-F510I-S1G/S1GR)

① SM00: SH341-A/C
② SM01: SH341-A/C
③ SM02: SH341-A/C
⑥ SM05: SH341-A/C
⑤ SM04: SH341-A/C
④ SM03: SH341-A/C

Shared Memory Module Location (DKC-F510I-S2GR)

1 SM00: SH341-D
2 SM01: SH341-D
3 SM02: SH341-D
6 SM05: SH341-D
5 SM04: SH341-D
4 SM03: SH341-D

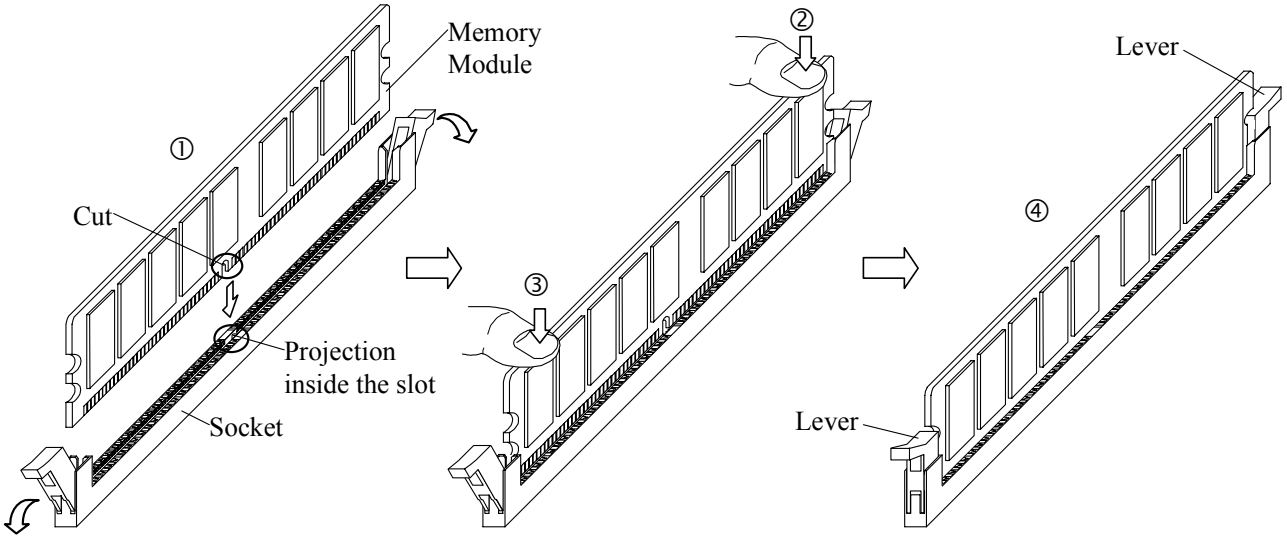
Removal/Insertion of Dust Cover



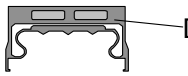
Viewed from A

Fig.4.3.1-8 Inserting Location of the Shared Memory Module

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Prohibition of Use:



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

Installation

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

Removal

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

Fig.4.3.1-9 Insertion/Removal of Memory Module

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Table 4.3.1-12 Reference Table of Shared Memory Capacity

No.	Program Product application situation			Number of CU	Reference Table
	True Copy or Shadow Image or Universal Replicator or Volume Migration or Hi-Copy (*1)	TPF or E-Copy	Flash Copy Version2 or COW Snapshot (*1)		
1	Not Applied	Not Applied	Not Applied	1-4 (to 1,024LDEV)	Table 4.3.1-5
				5-64 (to 16,384LDEV)	
2	Applied	Not Applied	Not Applied	1-4 (to 1,024LDEV)	Table 4.3.1-6
				5-64 (to 16,384LDEV)	
3	Not Applied	Applied	Not Applied	1-4 (to 1,024LDEV)	Table 4.3.1-7
				5-64 (to 16,384LDEV)	
4	Applied	Applied	Not Applied	1-4 (to 1,024LDEV)	Table 4.3.1-8
				5-64 (to 16,384LDEV)	
5	Applied	Not Applied	Applied	1-4 (to 1,024LDEV)	Table 4.3.1-9
				5-64 (to 16,384LDEV)	
6	Applied	Applied	Applied	1-4 (to 1,024LDEV)	Table 4.3.1-10
				5-64 (to 16,384LDEV)	

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

Please note that location of shared memory module varies according to the purpose such as additional cache installation or additional LDEV installation.
In the case of Disk-less configuration, please refer to the description of “External Storage support”.

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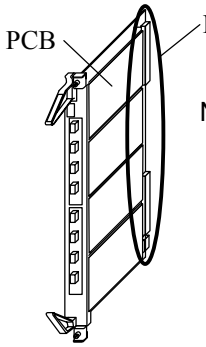
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Blank Sheet

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5-3 Insert the PCB.

a. Insert the Base PCB into the Logic Box and fasten the two screws.



Note: 1. Check that the main edge connector of the PCB has no deformation, damage or sticking of dust before installing the PCB.

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

b. Connect the cable to the Base PCB.

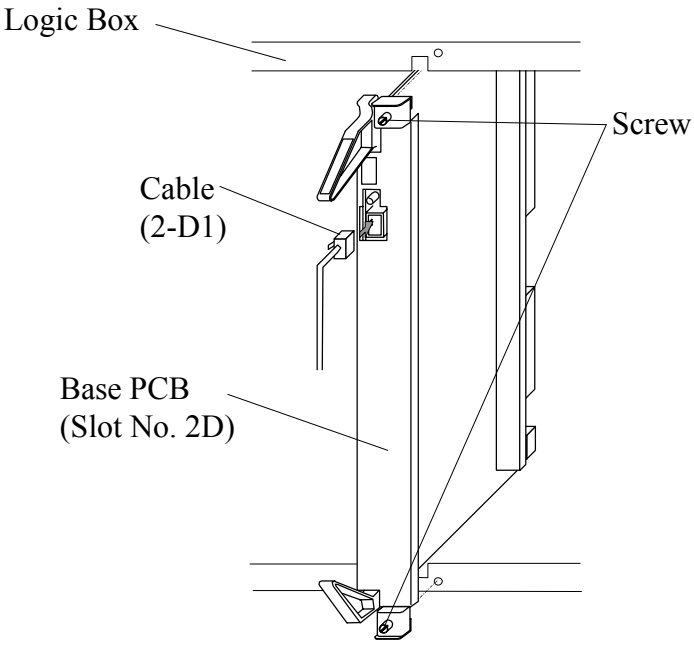


Fig.4.3.1-10 Insertion of Base PCB

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5-4 Change of nameplate

a. Remove the screw from the rack frame and remove the nameplate tags to be installed.
b. Affix a necessary portion of the Label (QTY)(Accessory of DKC; DWG No.3268905-1) in layers on the nameplate and paint out numbers less than the number concerned with black oil felt pen.
c. Attach all the nameplate tags with the screw.

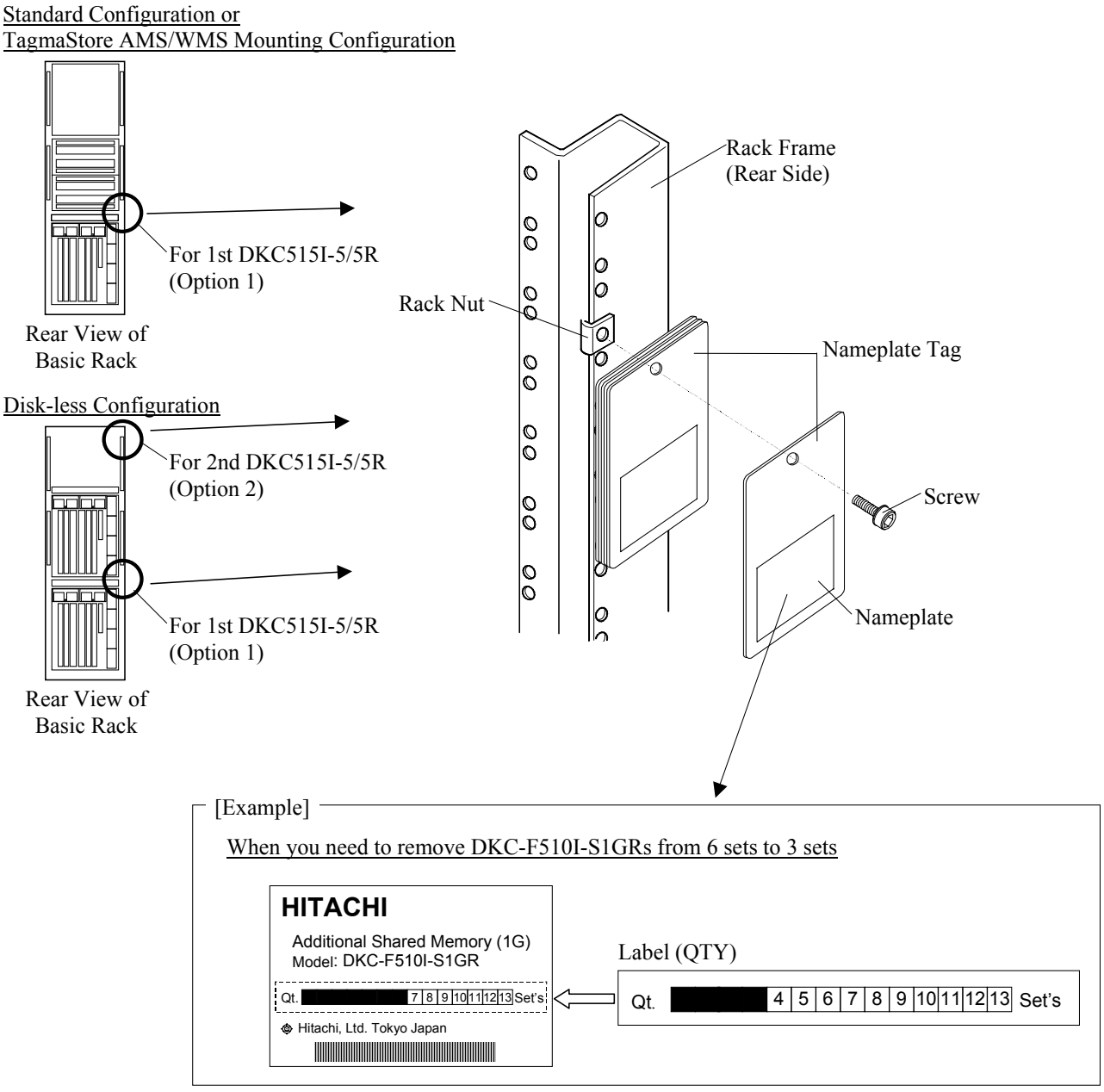
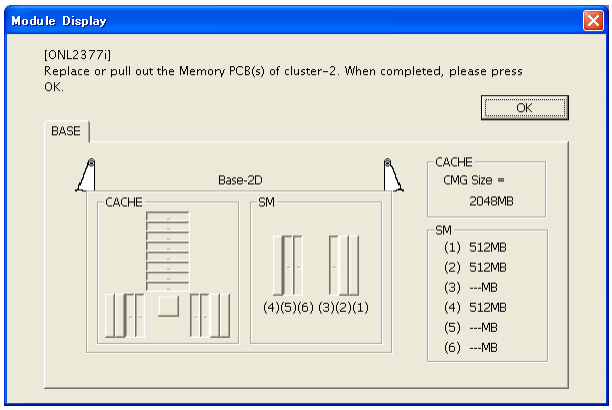


Fig.4.3.1-11 Change of Nameplate

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6. SVP post procedure

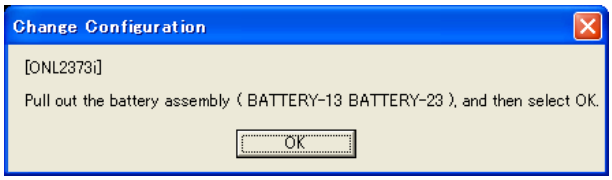
(1) <Making sure of completion of the hardware removal>
After the removal of the cache memory of the Cluster 2 is completed, select (CL) [OK] in response to a message, “Replace or pull out the Memory PCB(s) of cluster-2. When completed, please press OK.”.



(2) <Starting restoration>
A restoration starts automatically issuing the following message.

“Restoring the Shared Memory PCB...”

(3) <De-installation of the battery>
Do not press the [OK] button at this time yet. When de-installation of the battery is required, a message, “Pull out the battery assembly, and then select OK.” is displayed.



When the message is displayed, remove the hardware component following the procedure for removing the battery.
When the message is not displayed, go to Procedure 8, “SVP Post-Procedure (for Cluster 2)” on page INST04-03A-390 step (2).

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7. De-Installation Procedure of the Additional Battery

De-Installation Condition

Remove one set of the Additional Battery (DKC-F515I-LGABR) when it corresponds to all the following three conditions. (BATTERY12, 22)

- Shared Memory (DKC-F510I-S1G/S1GR/S2GR) quantity are 3 sets or less
- Cache Memory (DKC-F510I-C4G/C4GR/C8GR) quantity are 3 sets or less

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7-1 Removal of Battery boxes

a. Turn off the switches at the battery boxes (BATTERY12 and BATTERY22).
b. Loosen the screws and remove the battery boxes.

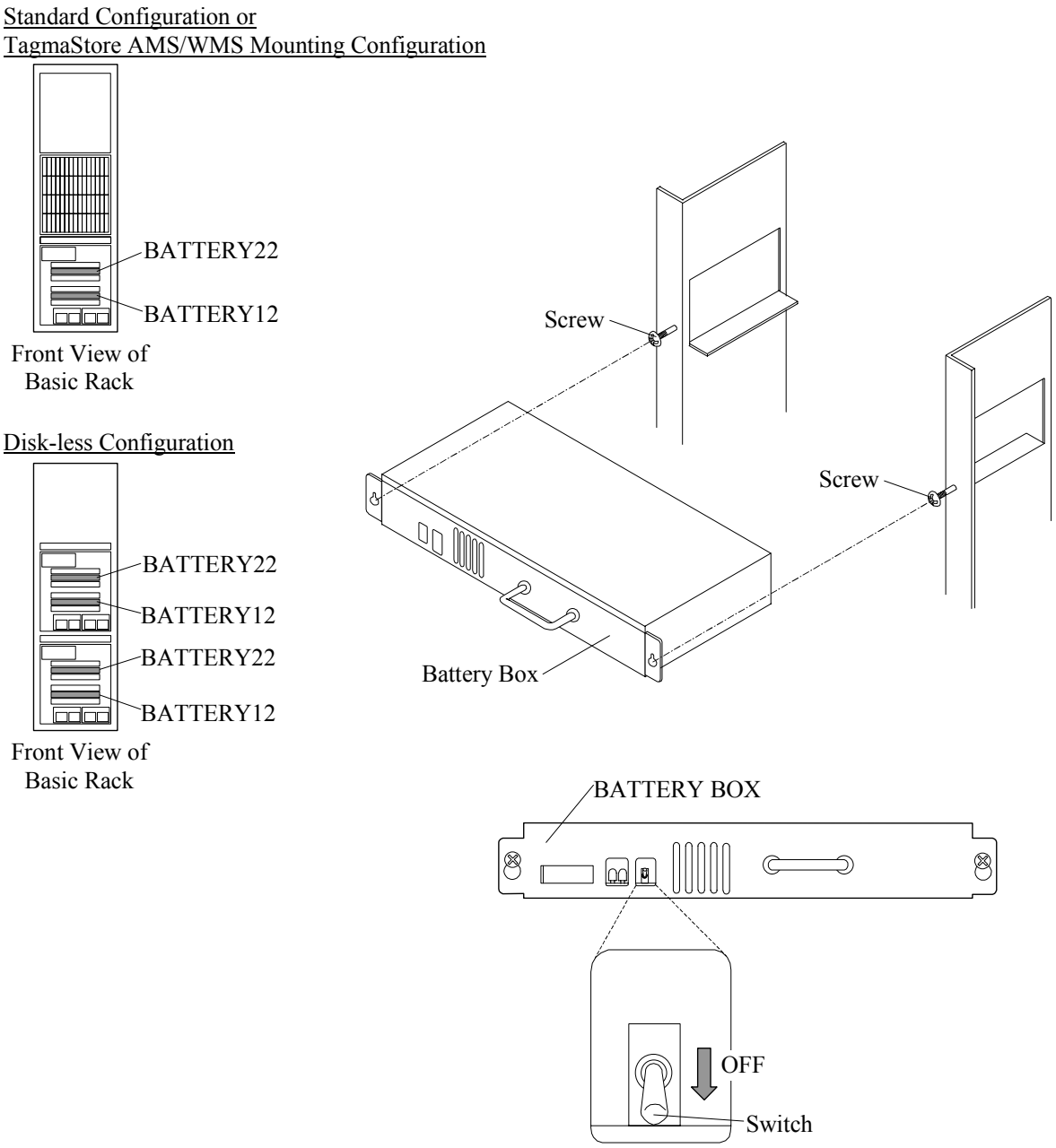


Fig.4.3.1-12 Removal of Battery Boxes

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7-2 Removal of nameplate

a. Remove the screw from the rack frame and remove the nameplate tags to be installed.
b. Remove the nameplate from the nameplate tag.
c. Attach the remaining nameplate tags with the screw.

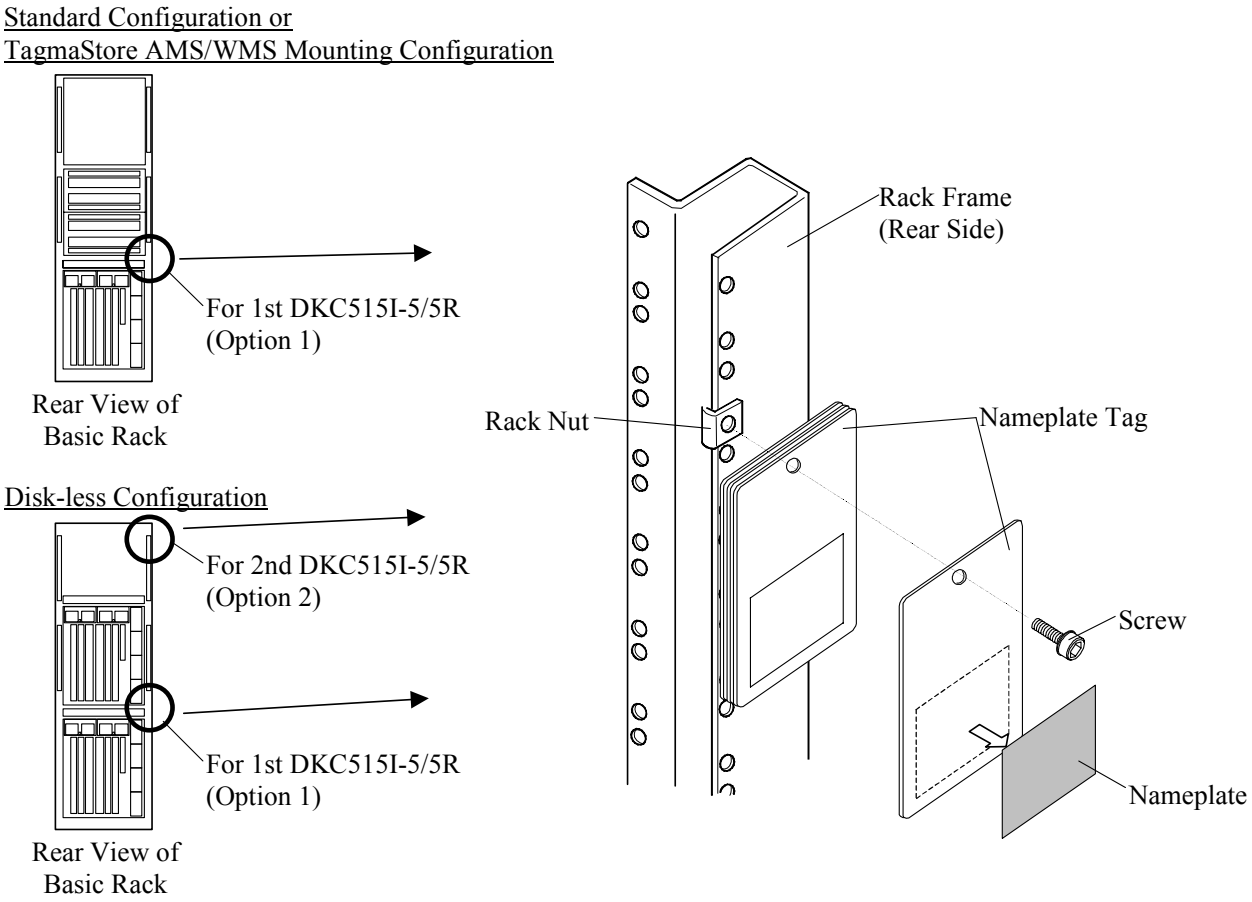
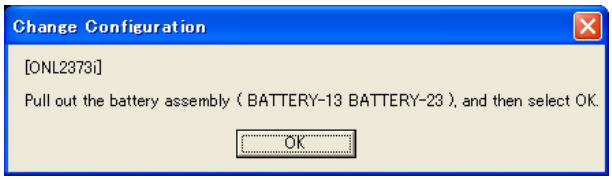


Fig. 4.3.1-13 Removal of Nameplate

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8. SVP post procedure on the Cluster2

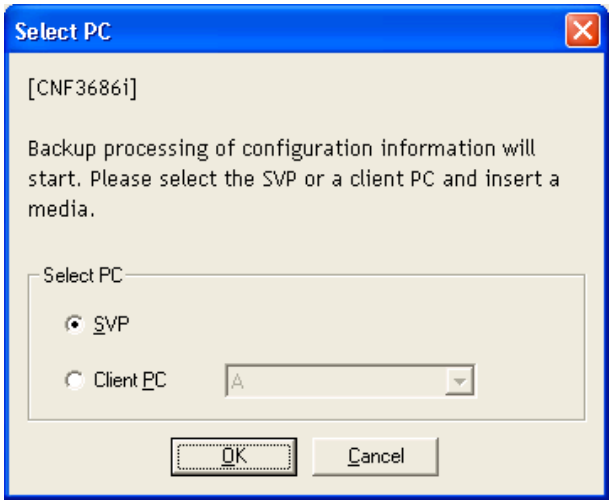
(1) <Making sure of completion of the hardware de-installation>
After the de-installation of the battery is completed, select (CL) [OK] in response to a message "Pull out the battery assembly, and then select OK.".



(2) <Check the end of de-installation procedure>
"Renewal process has completed. Please check subsystem status." shown in the right figure displayed. Select (CL) [OK] in response to this message.



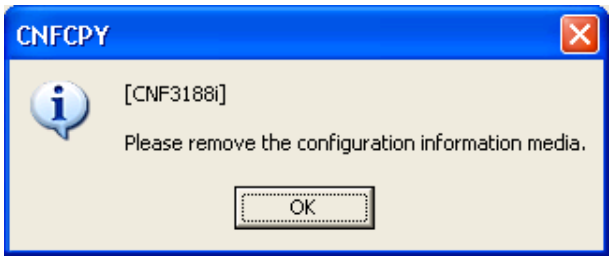
(3)
"Reading subsystem configuration data..." is displayed.
"Backup processing of configuration information will start. Please select the SVP or a client PC and insert a media." is displayed.
Insert the Config FD into FDD of selected PC, and select (CL) [OK].



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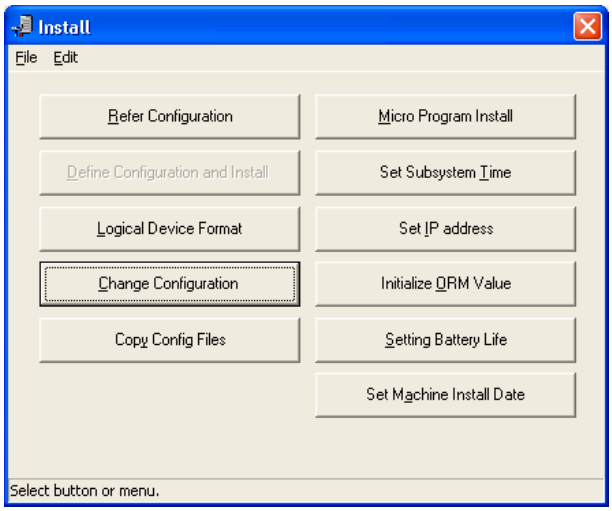
(4)

When this procedure is completed, the message “Please remove the configuration information media.” is displayed.
Remove the FD, and select (CL) [OK].



(5)

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



(6) <Mode Change>
Change the mode to View Mode.

Return to the working table and do the rest of the work. (INST02-60)

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4.3.2 De-Installation of Additional Cache Memory (DKC-F510I-C4G/C4GR/C8GR, DKC-F515I-LGABR)

Note: When two control frames (DKCs) are installed in the Disk-less configuration, check the serial number of target DKC on the SVP screen and beware of a removal position to prevent mistakes. (See "5.2.4 Refer Configuration 3. <DKC Configuration window>" [INST05-410].)

Table 4.3.2-1 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKC-F510I-C4G	SH342-A	5524236-A	4	
		SH342-C	5524236-C		
2	DKC-F510I-C4GR	SH342-C	5524236-C	4	
		Nameplate (HDS)	2751038-16	1	RSD
			2751040-16/216		HICAM/HICEF
		Nameplate (HP)	2751038-116	1	RSD
			2751040-116/316		HICAM/HICEF
3	DKC-F510I-C8GR	SH342-D	5524242-C	4	
		Nameplate (HDS)	2751038-97	1	RSD
			2751040-97/297		HICAM/HICEF
		Nameplate (HP)	2751038-197	1	RSD
			2751040-197/397		HICAM/HICEF
4	DKC-F515I-LGABR	Battery Box	5527959-C	2	
		Screw	5513661-425	4	
		Nameplate (HDS)	2751038-44	1	RSD
			2751040-44/244		HICAM/HICEF
		Nameplate (HP)	2751038-144	1	RSD
			2751040-144/344		HICAM/HICEF

■ Measure of maintenance time

Maintenance time changes with the Shared Memory capacity.

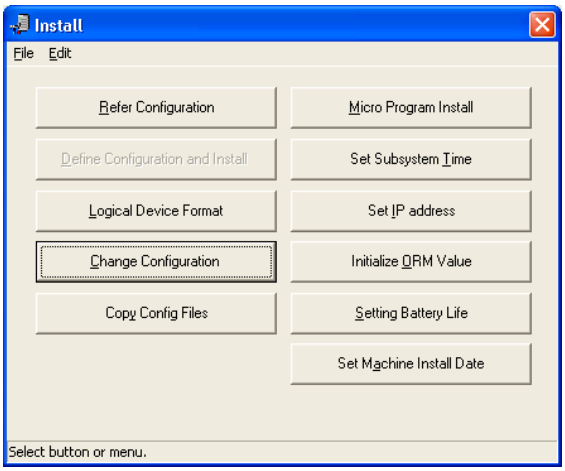
The number of shared memory module mounting	Time	Destage time	Maintenance time
1 set	40 min	30 min ~ 120 min	70 min ~ 160 min
2 set	50 min	30 min ~ 120 min	80 min ~ 170 min
3 set	60 min	30 min ~ 120 min	90 min ~ 180 min
4 set	70 min	30 min ~ 120 min	100 min ~ 190 min
5 set	80 min	30 min ~ 120 min	110 min ~ 200 min
6 set	90 min	30 min ~ 120 min	120 min ~ 210 min

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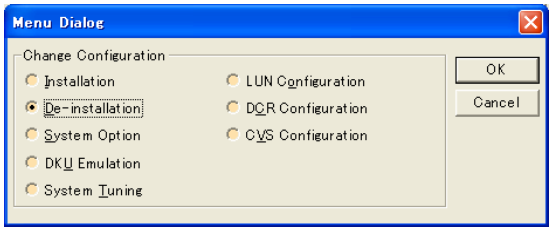
1. Setting up the New Device Structure Information

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

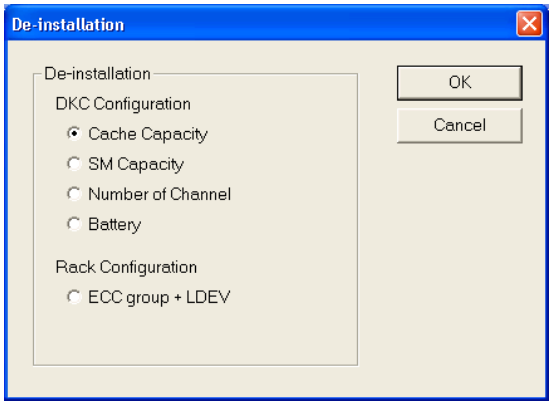
(2) <Start the 'Menu Dialog' screen>
Select (CL) [Change Configuration].



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



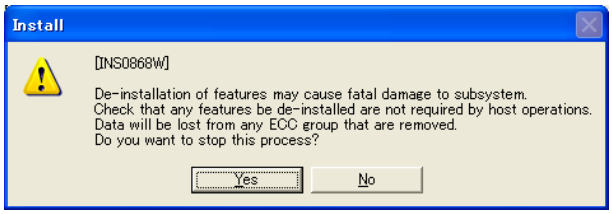
(4) <Select a part to be changed>
Select (CL) [Cache Capacity], and select (CL) [OK].



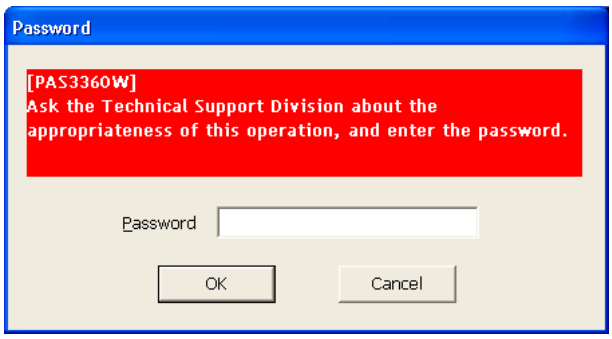
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(5)

Select (CL) [No] in response to "De-installation of features may cause fatal damage to subsystem. Check that any features be de-installed are not required by host operations. Data will be lost from any ECC group that are removed. Do you want to stop this process?".



(6) <Input password>
Enter the password and select (CL) [OK].



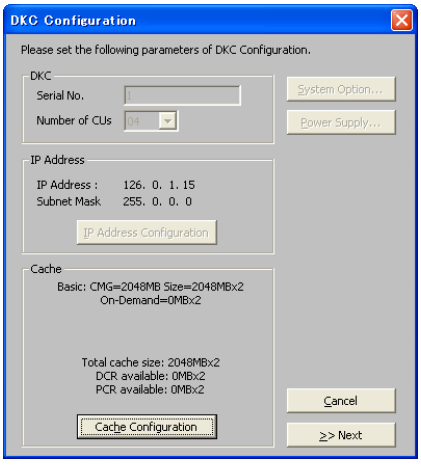
Notice: This is a special (exceptional) operation that can cause a serious failure such as a system down or a data loss if a wrong part to be removed is selected, and requires an input of a password. Ask the technical support division about the appropriateness of the operation, and input the password after getting an approval of executing the operation.

(7) <Update Configuration Information>
Select (CL) [Cache Configuration] in the 'DKC Configuration' window. (Go to step (7)-1.)

Note: It is not possible to install or de-install plural parts at the same time.

Make sure that all entered items are correct and select (CL) [>>Next].

Go to step (8).

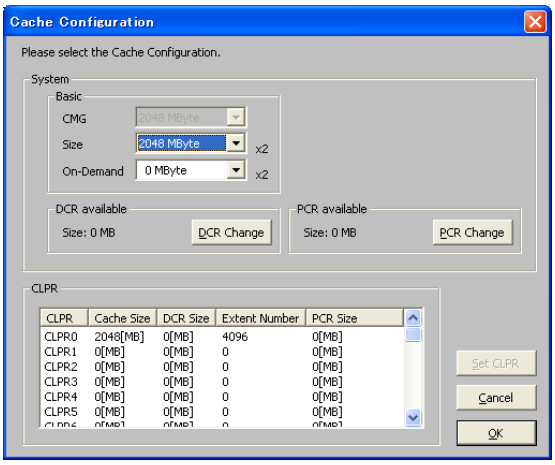


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(7)-1 <Define Cache>

Define each item in the 'Cache Configuration' window.
If you want to change the DCR available size, select (CL) [Change...] of DCR available to change it. Go to step (7)-2.
(See SSD Optional Function Section)
If you want to change the PCR available size, select (CL) [Change...] of PCR available to change it. Go to step (7)-3.

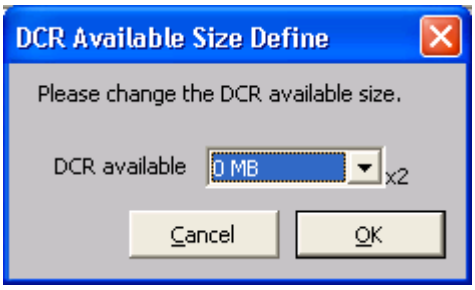
After setting up all items, select (CL) [OK].
Return to step (7).



(7)-2 <Define DCR Available Size>

Define the DCR available size in the 'DCR Available Size Define' dialog box.
And select (CL) [OK].

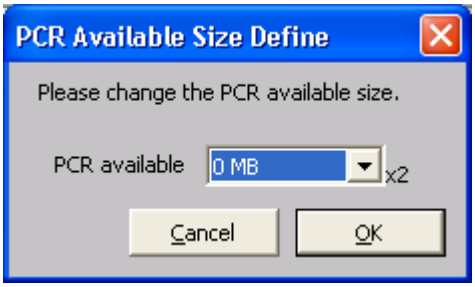
Return to step (7)-1.



(7)-3 <Define PCR Available Size>

Define the PCR available size in the 'PCR Available Size Define' dialog box.
And select (CL) [OK].

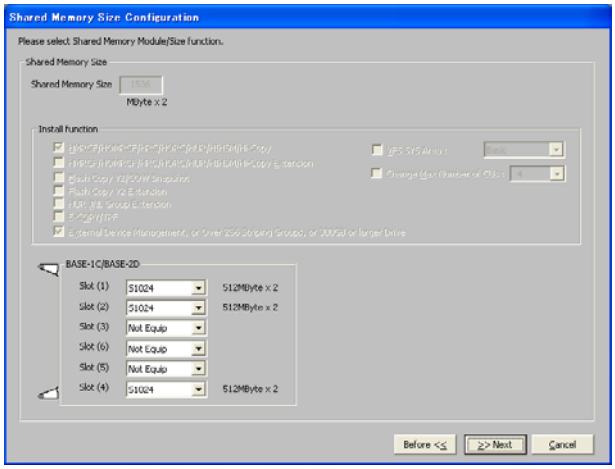
Return to step (7)-1.



(8) <Display SM size>

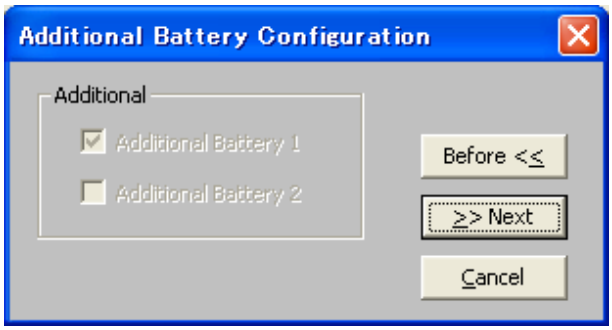
The 'Shared Memory Size Configuration' dialog box is displayed.

Select (CL) [>>Next].



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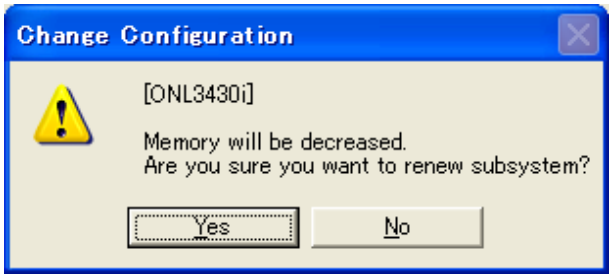
(9) <Display Battery>
The 'Additional Battery Configuration' dialog box is displayed.
Select (CL) [>>Next].



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2. SVP pre procedure on the cluster 1

(1) <Start de-installation>
Select (CL) [Yes] in response to “Memory will be decreased. Are you sure you want to renew subsystem?”.
When [No] is selected (CL), returns to INST04-03B-20 step (3).

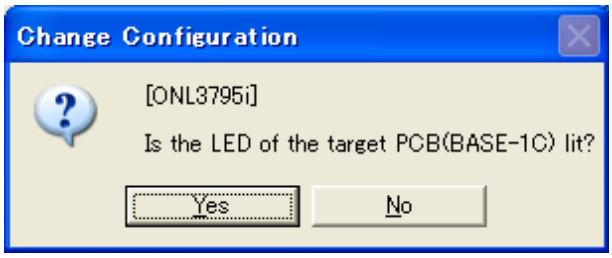


(2) <Memory blocking on cluster 1>
When blocking of cluster 1 of shared memory and Cache memory is completed, “The Cache Memory PCB is being blocked...” and “The Shared Memory PCB is being blocked...” are displayed.

(3)
“Lighting LED of the PCB...” is displayed.

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



(Eg. BASE-1C)

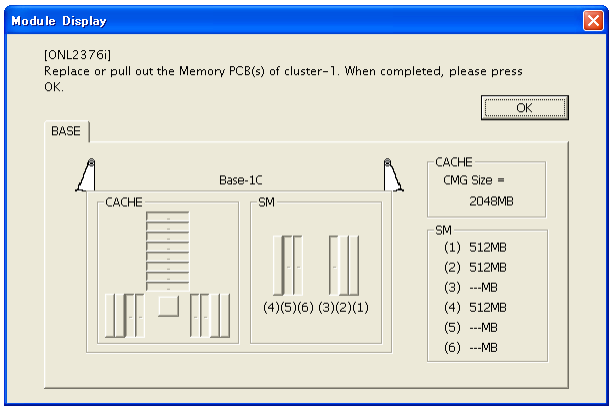
<Forcing shut down LED on>

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

If [No] is selected:
Insert a jumper in response to "Please insert the jumper into the target PCB(BASE-nn), then pull out the PCB without considering the status of the LED".
(Refer INST04-03B-70)

---

(5) <Perform cache hardware de-installation>
At this point refrain from pressing the [OK] button.
When "Replace or pull out the Memory PCB(s) of cluster-1. When completed, select OK." is displayed, perform the hardware de-installation steps according to the cache hardware de-installation procedure.



Make sure of the installation location of the module to be removed and remove the correct module.
(The Shared Memory capacity may be changed at the same time, depending on the set Cache Memory capacity.)

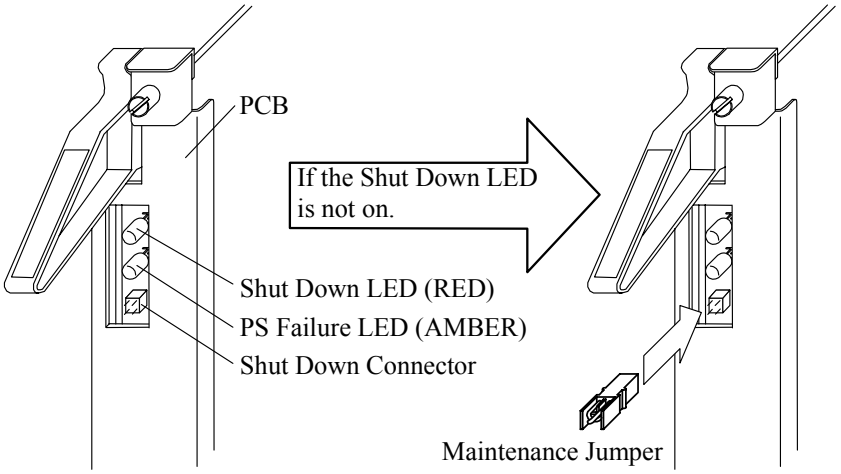
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3. Remove the Cache Memory on the cluster 1.
   Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

3-1. Remove the PCB.
   a. While referring to Fig. 4.3.2-1 and Table 4.3.2-2 check the Shut Down LED on the Base PCB. Connect the Maintenance Jumper to the Shut Down Connector if the Shut Down LED is not on.

⚠ CAUTION

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



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

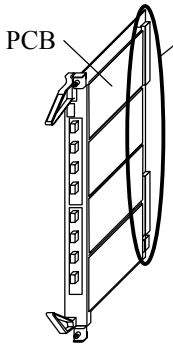
Fig. 4.3.2-1 Location of the Shut Down LED

Table 4.3.2-2 Location of the Base PCB

Cluster	PCB Name	Box	Slot No.	Location No.	Remarks
1	WP535-A	Logic Box	1C	BASE-1C	

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b. Disconnect the cable from the Base PCB.
c. Remove the two screws and remove the Base PCB.



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

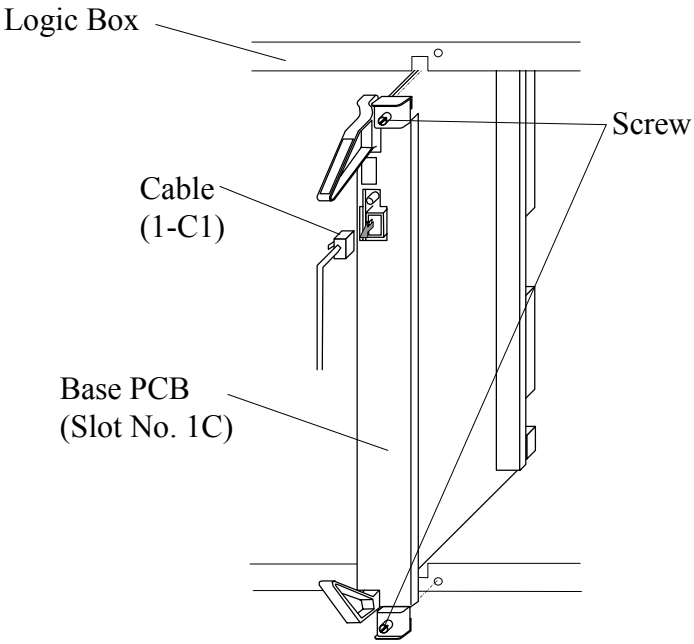


Fig. 4.3.2-2 Removal of the Base PCB

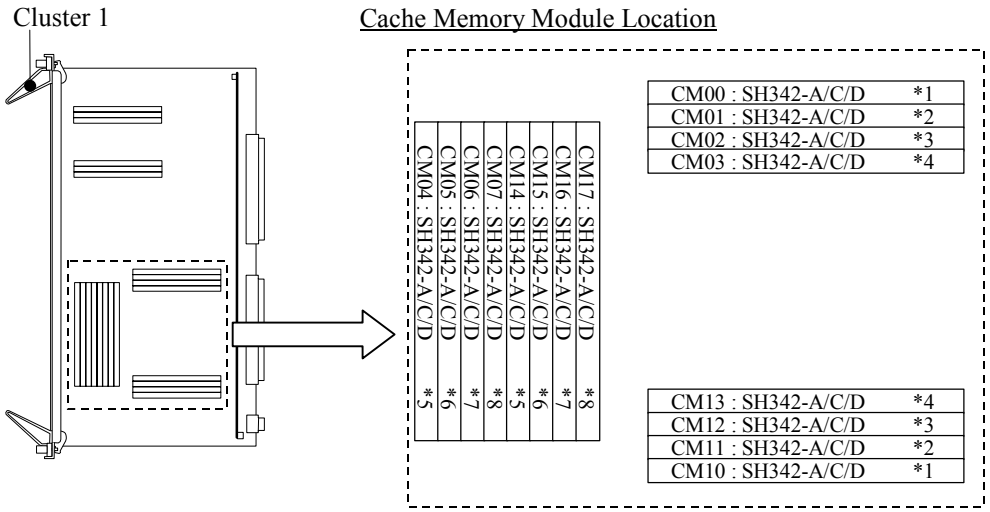
d. Remove the Maintenance Jumper if it is mounted.

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3-2. Remove the Cache Memory Modules.

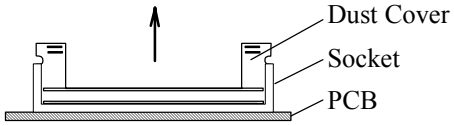
a. Remove the extra Cache Memory Modules according to the required Cache Memory capacity referring to Fig. 4.3.2-3, Fig. 4.3.2-4 and Table 4.3.2-3.

b. Insert the dust covers into the vacant sockets.



(Note) The cache memory module location
*1 through *8 correspond to the CM
Location listed in Table 4.3.2-3.

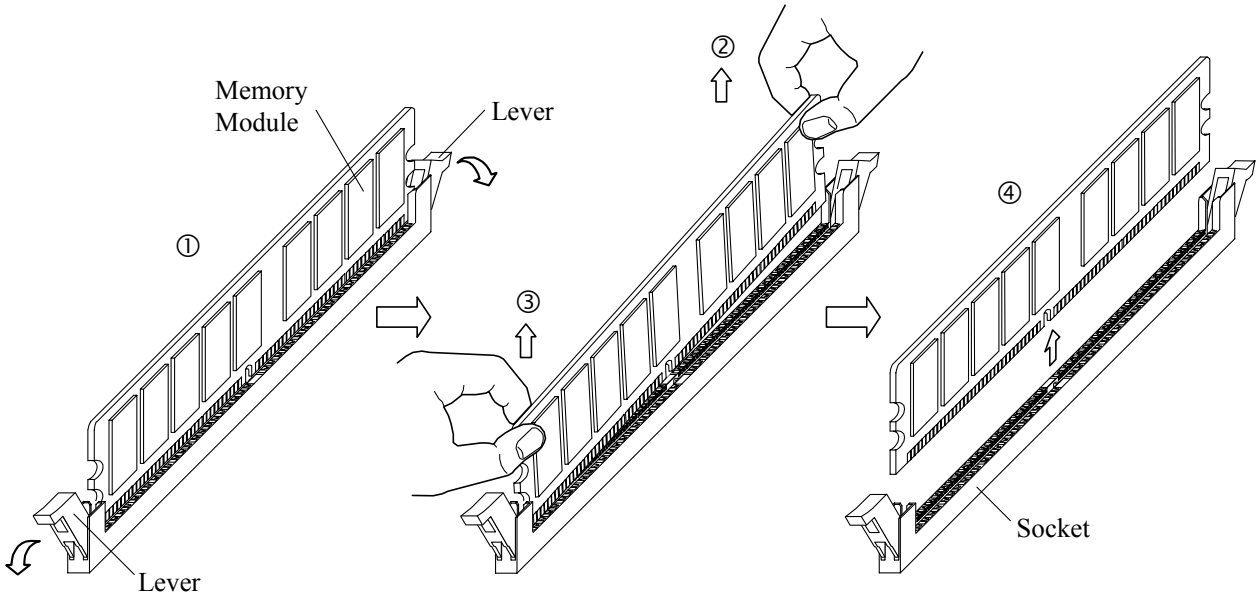
Removal of Dust Cover



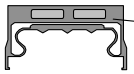
Viewed from A

Fig. 4.3.2-3 Inserting Location of the Cache Memory Module

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Prohibition of Use:



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

Removal

① Press the slot lever to outside.
② Pull out one side of the Cache Memory Module from the socket by holding the both sides with your fingers.
③ Pull out the other side of the Cache Memory Module from the socket by holding the both sides with your fingers.
④ Remove the Cache Memory Module from the socket.

Fig. 4.3.2-4 Removal of Memory Module

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Table 4.3.2-3 Cache memory capacity and number of necessary options

Cache Memory Capacity	DKC-F510I-C4G/C4GR		DKC-F510I-C8GR	
	Number of options	CM Location (Note)	Number of options	CM Location (Note)
4GB	1	*1	—	—
8GB	2	*2	1	*1
12GB	3	*3	—	—
16GB	4	*4	2	*2
20GB	5	*5	—	—
24GB	6	*6	3	*3
28GB	7	*7	—	—
32GB	8	*8	4	*4
40GB	—	—	5	*5
48GB	—	—	6	*6
56GB	—	—	7	*7
64GB	—	—	8	*8

Note 1: The above numbers (*1 through *8) represent the Cache Memory Module locations shown in Fig 4.3.2-3.

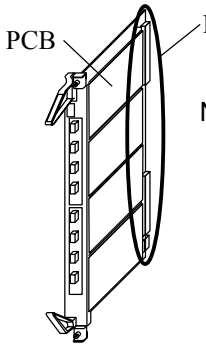
Note 2: A cache memory can't be set up in the '—' mark.

Note 3: DKC-F510I-C4G/C4GR (SH342-A/C) and DKC-F510I-C8GR (SH342-D) mixed mounting in the same PCB is inhibited.

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3-3 Insert the PCB.

a. Install the Base PCB and fasten the two screws.



Note: 1. Check that the main edge connector of the PCB has no deformation, damage or sticking of dust before installing the PCB.

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

b. Connect the cable to the Base PCB.

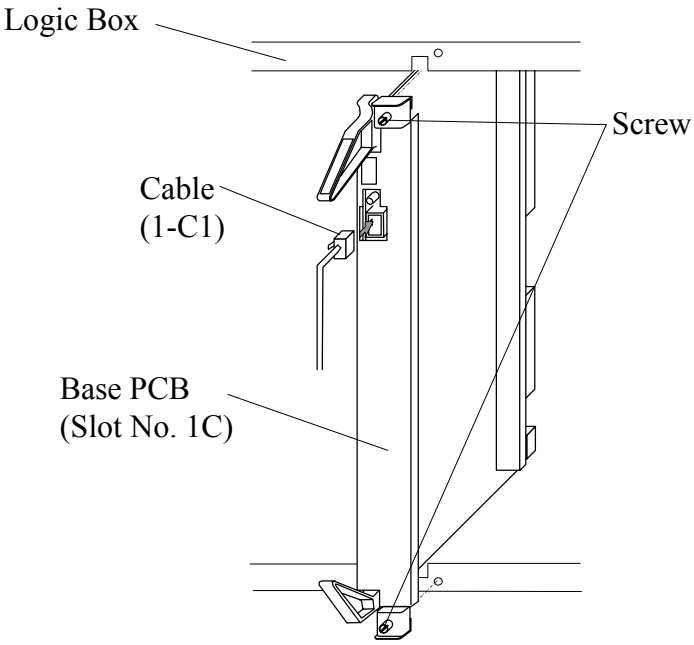


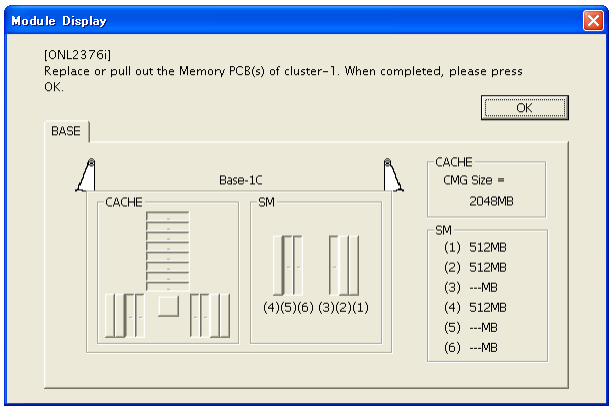
Fig. 4.3.2-5 Insertion of Base PCB

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4. SVP post procedure on the cluster 1 and pre procedure on the cluster 2.

(1)

After the hardware procedure for cluster 1 of cache memory is completed, select (CL) [OK] in response to “Replace or pull out the Memory PCBs of cluster-1. When completed, please press [OK].”.



(2) <Cache CUDG executes>
“INLINE CUDG is running...” is displayed.

(3)

When CUDG is completed, the recovery processing is automatically started with the messages.

“Restoring the Cache Memory PCB...”
“Shared memory renewal is in progress...”

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(4)

When the recovery processing is complete, processing proceeds to blocking of cluster 2 of shared memory.

---

(5) <Memory blocking on cluster 2>
When blocking of cluster 2 of shared memory and Cache memory is completed, “The Cache Memory PCB is being blocked...” and “The Shared Memory PCB is being blocked...” are displayed.

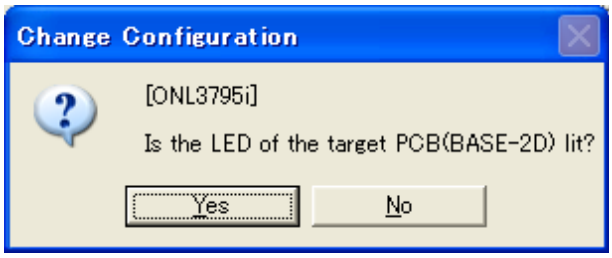
---

(6)

“Lighting LED of the PCB...” is displayed.

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



(Eg. BASE-2D)

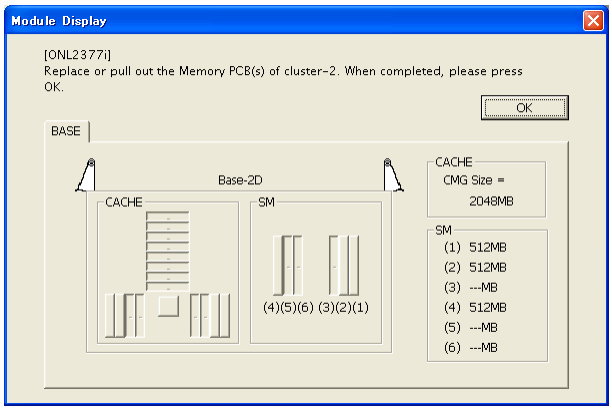
<Forcing shut down LED on>

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

If [No] is selected:
Insert a jumper in response to "Please insert the jumper into the target PCB(BASE-nn), then pull out the PCB without considering the status of the LED".
(Refer INST04-03B-160)

---

(8) <Perform cache hardware de-installation>
At this point refrain from pressing the [OK] button.
When "Replace or pull out the Memory PCB(s) of cluster-2. When completed, please press OK." is displayed, perform the hardware de-installation steps according to the cache hardware de-installation procedure.



Make sure of the installation location of the module to be removed and remove the correct module.
(The Shared Memory capacity may be changed at the same time, depending on the set Cache Memory capacity.)

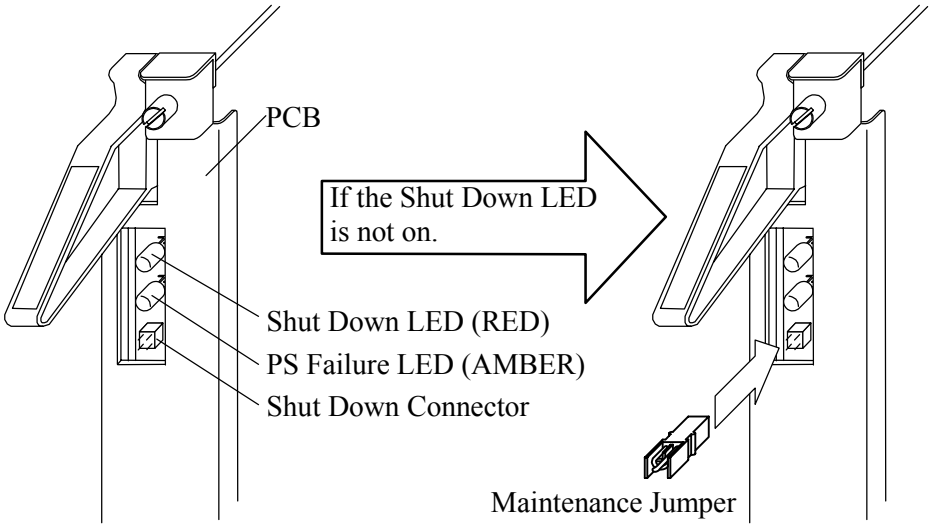
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5. Remove the Cache Memory on the cluster 2.
   Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

5-1. Remove the PCB.
   a. While referring to Fig. 4.3.2-6 and Table 4.3.2-4 check the Shut Down LED on the Base PCB. Connect the Maintenance Jumper to the Shut Down Connector if the Shut Down LED is not on.

⚠ CAUTION

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



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

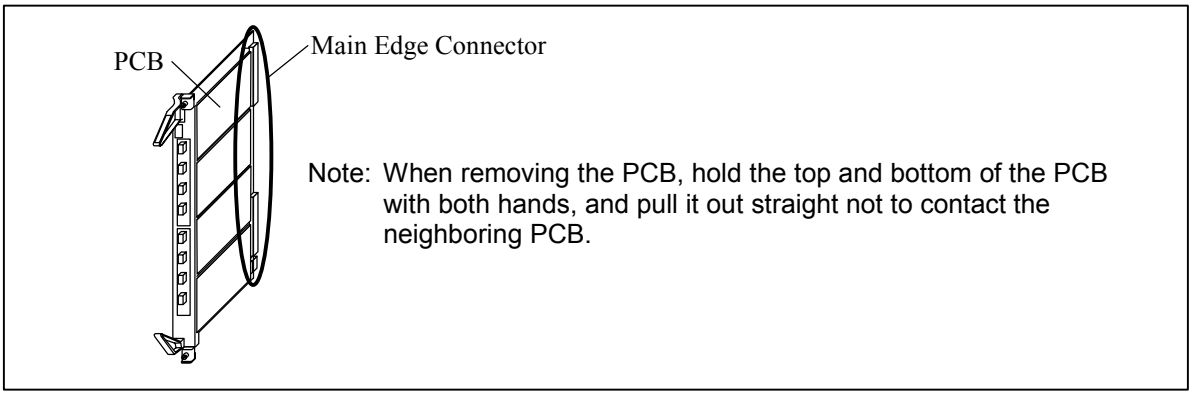
Fig. 4.3.2-6 Location of the Shut Down LED

Table 4.3.2-4 Location of the Base PCB

Cluster	PCB Name	Box	Slot No.	Location No.	Remarks
2	WP535-A	Logic Box	2D	BASE-2D	

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b. Disconnect the cable from the Base PCB.
c. Remove the two screws and remove the Base PCB.



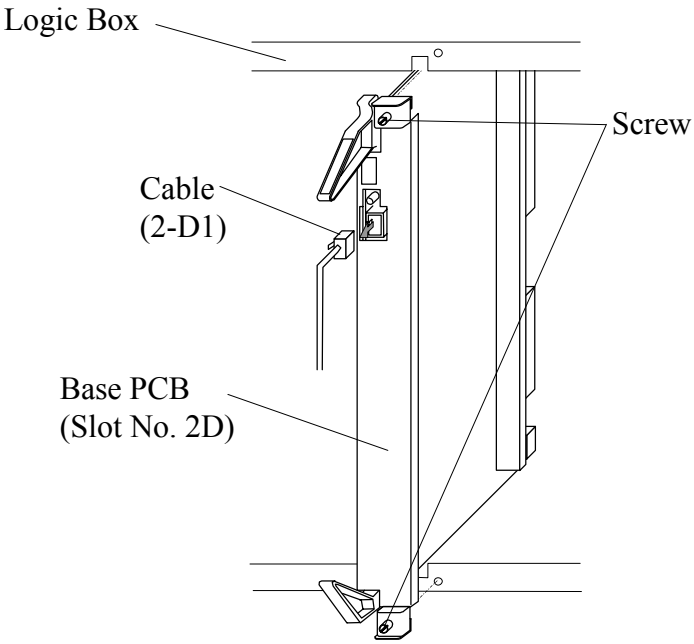


Fig. 4.3.2-7 Removal of the Base PCB

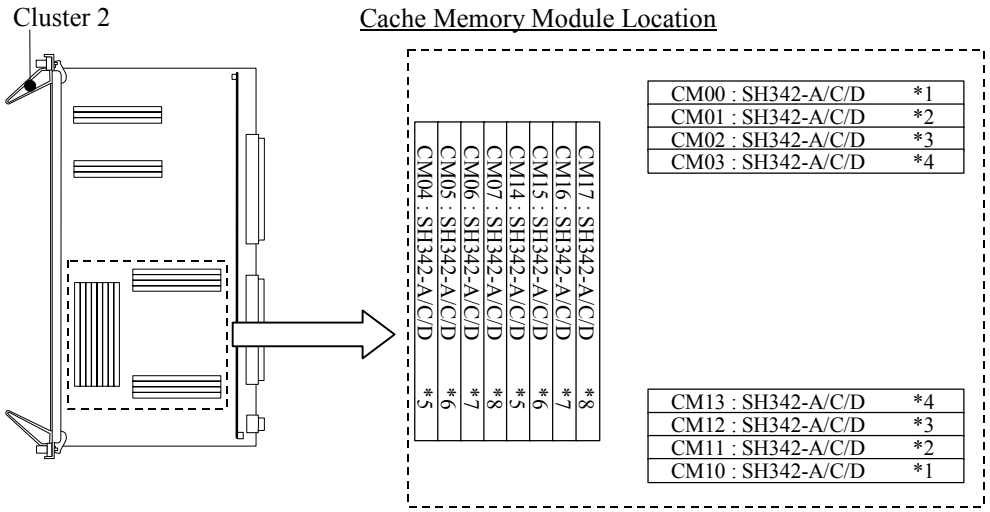
d. Remove the Maintenance Jumper if it is mounted.

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5-2. Remove the Cache Memory Modules.

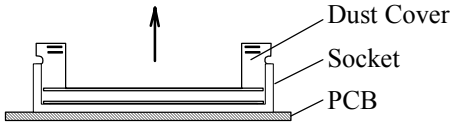
a. Remove the extra Cache Memory Modules according to the required Cache Memory capacity referring to Fig. 4.3.2-8, Fig. 4.3.2-9 and Table 4.3.2-5.

b. Insert the dust covers into the vacant sockets.



(Note) The cache memory module location
*1 through *8 correspond to the CM
Location listed in Table 4.3.2-5.

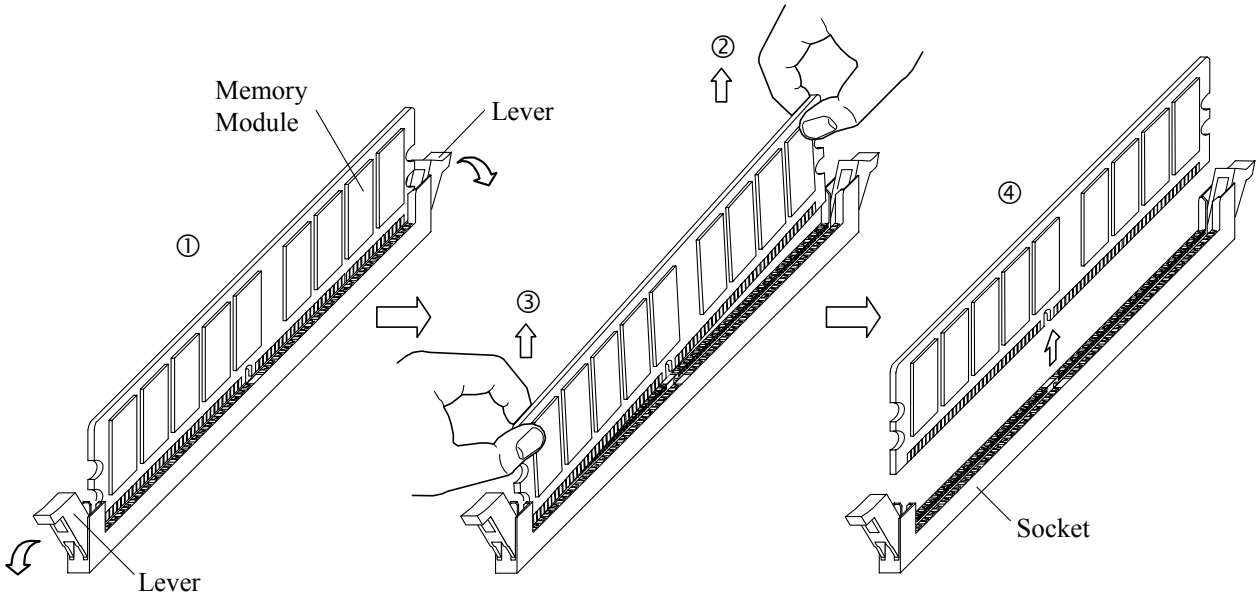
Removal of Dust Cover



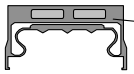
Viewed from A

Fig. 4.3.2-8 Inserting Location of the Cache Memory Module

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Prohibition of Use:



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

Removal

① Press the slot lever to outside.
② Pull out one side of the Cache Memory Module from the socket by holding the both sides with your fingers.
③ Pull out the other side of the Cache Memory Module from the socket by holding the both sides with your fingers.
④ Remove the Cache Memory Module from the socket.

Fig. 4.3.2-9 Removal of Memory Module

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Table 4.3.2-5 Cache memory capacity and number of necessary options

Cache Memory Capacity	DKC-F510I-C4G/C4GR		DKC-F510I-C8GR	
	Number of options	CM Location (Note)	Number of options	CM Location (Note)
4GB	1	*1	—	—
8GB	2	*2	1	*1
12GB	3	*3	—	—
16GB	4	*4	2	*2
20GB	5	*5	—	—
24GB	6	*6	3	*3
28GB	7	*7	—	—
32GB	8	*8	4	*4
40GB	—	—	5	*5
48GB	—	—	6	*6
56GB	—	—	7	*7
64GB	—	—	8	*8

Note 1: The above numbers (*1 through *8) represent the Cache Memory Module locations shown in Fig 4.3.2-8.

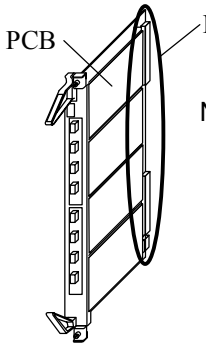
Note 2: A cache memory can't be set up in the '—' mark.

Note 3: DKC-F510I-C4G/C4GR (SH342-A/C) and DKC-F510I-C8GR (SH342-D) mixed mounting in the same PCB is inhibited.

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5-3 Insert the PCB.

a. Install the Base PCB and fasten the two screws.



Note: 1. Check that the main edge connector of the PCB has no deformation, damage or sticking of dust before installing the PCB.

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

b. Connect the cable to the Base PCB.

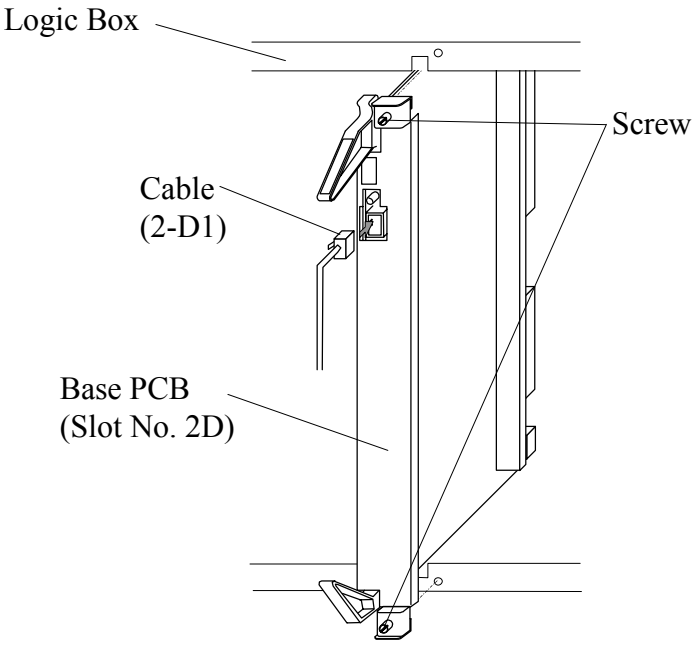


Fig. 4.3.2-10 Insertion of Base PCB

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5-4 Removal of nameplate

a. Remove the screw from the rack frame and remove the nameplate tags to be installed.
b. Affix a necessary portion of the Label (QTY)(Accessory of DKC; DWG No.3268905-1) in layers on the nameplate and paint out numbers less than the number concerned with black oil felt pen.
c. Attach all the nameplate tags with the screw.

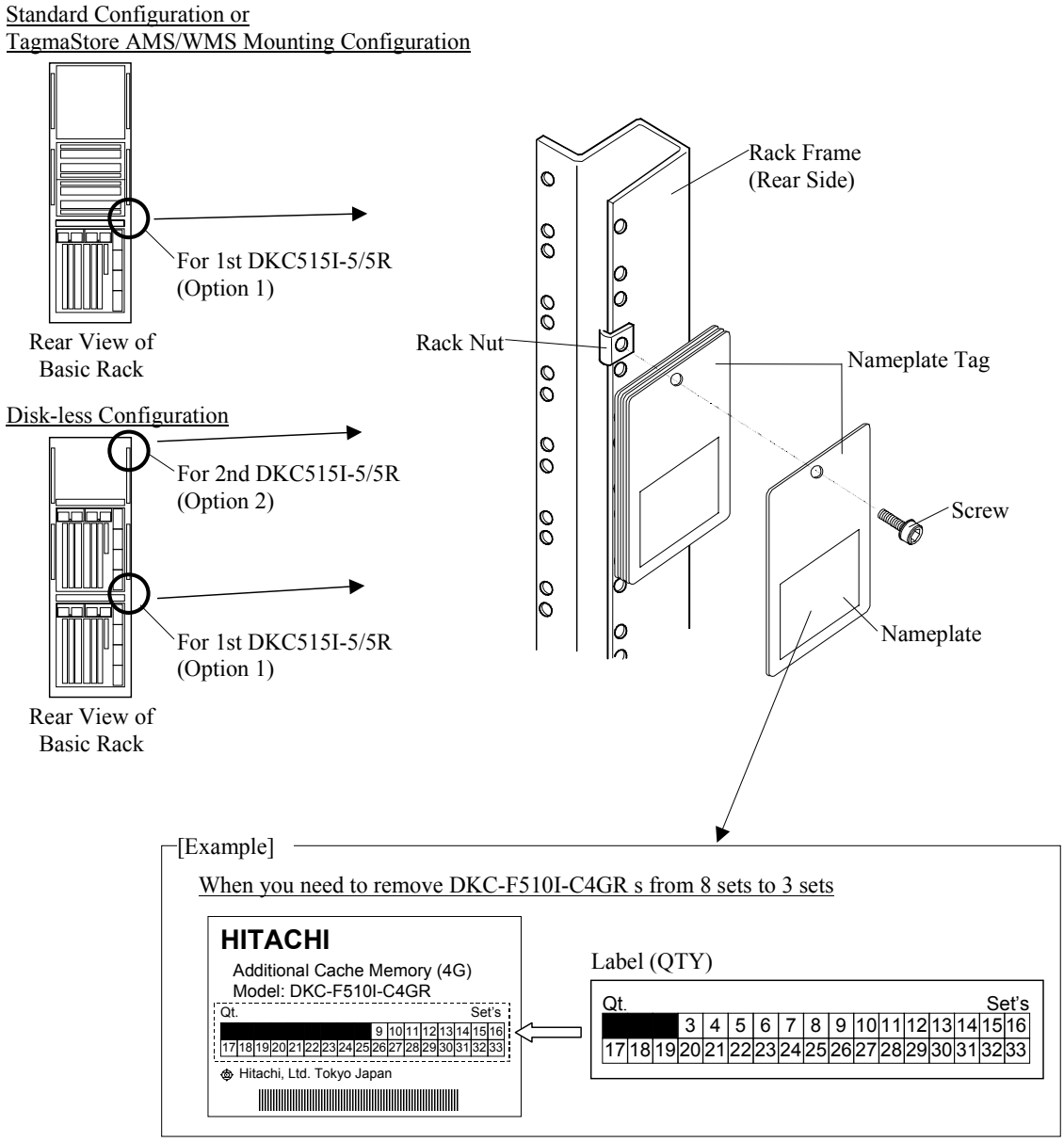


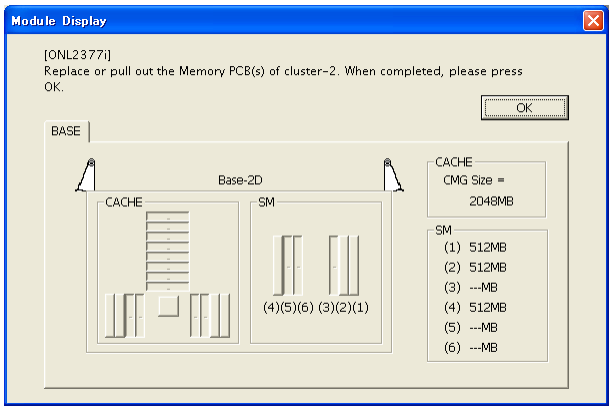
Fig. 4.3.2-11 Removal of Label (QTY)

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6. SVP post procedure on the Cluster2

(1) (A PCB to be added)
After the hardware procedure for one side of cache memory is completed, select (CL) [OK] in response to "Replace or pull out the Memory PCB(s) of cluster-2. When completed, please press OK.".

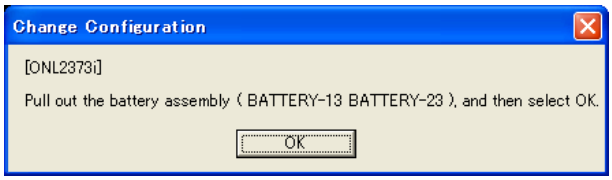
"INLINE CUDG is running..." is displayed.



(2)
When CUDG is completed, the recovery processing is automatically started with the messages.

"Restoring the Cache Memory PCB..."
"Restoring the Shared Memory PCB..."

(3) <Perform Battery hardware de-installation>
"Pull out the battery assembly, and then select OK." is displayed, when battery de-install is required.



When a message is displayed, perform the hardware de-installation steps according to the battery hardware de-installation procedure.

When a message is not displayed, go to INST04-03B-270 step (2) procedure 8. SVP post procedure on the Cluster2.

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7. De-Installation Procedure of the Additional Battery

De-Installation Condition

The Additional Battery (DKC-F515I-LGABR) is an indispensable option that is to be removed when the subsystem configuration is one of the following.

(1) Remove one set of this option when it corresponds to all the following two conditions (BATTERY12, 22)
- Shared Memory (DKC-F510I-S1G/S1GR/S2GR) quantity are 3 sets or less
- Cache Memory (DKC-F510I-C4G/C4GR/C8GR) quantity are 3 sets or less

(2) Remove one set of this option when it corresponds to the following a condition (BATTERY13, 23)
- Cache memory (DKC-F510I-C4G/C4GR/C8GR) quantity are 7 sets or less

7-1 Removal of battery boxes

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a. Turn off the switches at the battery boxes.
b. Loosen the screws and remove the battery boxes.

Table 4.3.2-6 Location List of Additional Battery

No.	Model Name	Location No.		Remarks
1	DKC-F515I-LGABR ×1set	BATTERY12	BATTERY22	
2	DKC-F515I-LGABR ×1set	BATTERY13	BATTERY23	

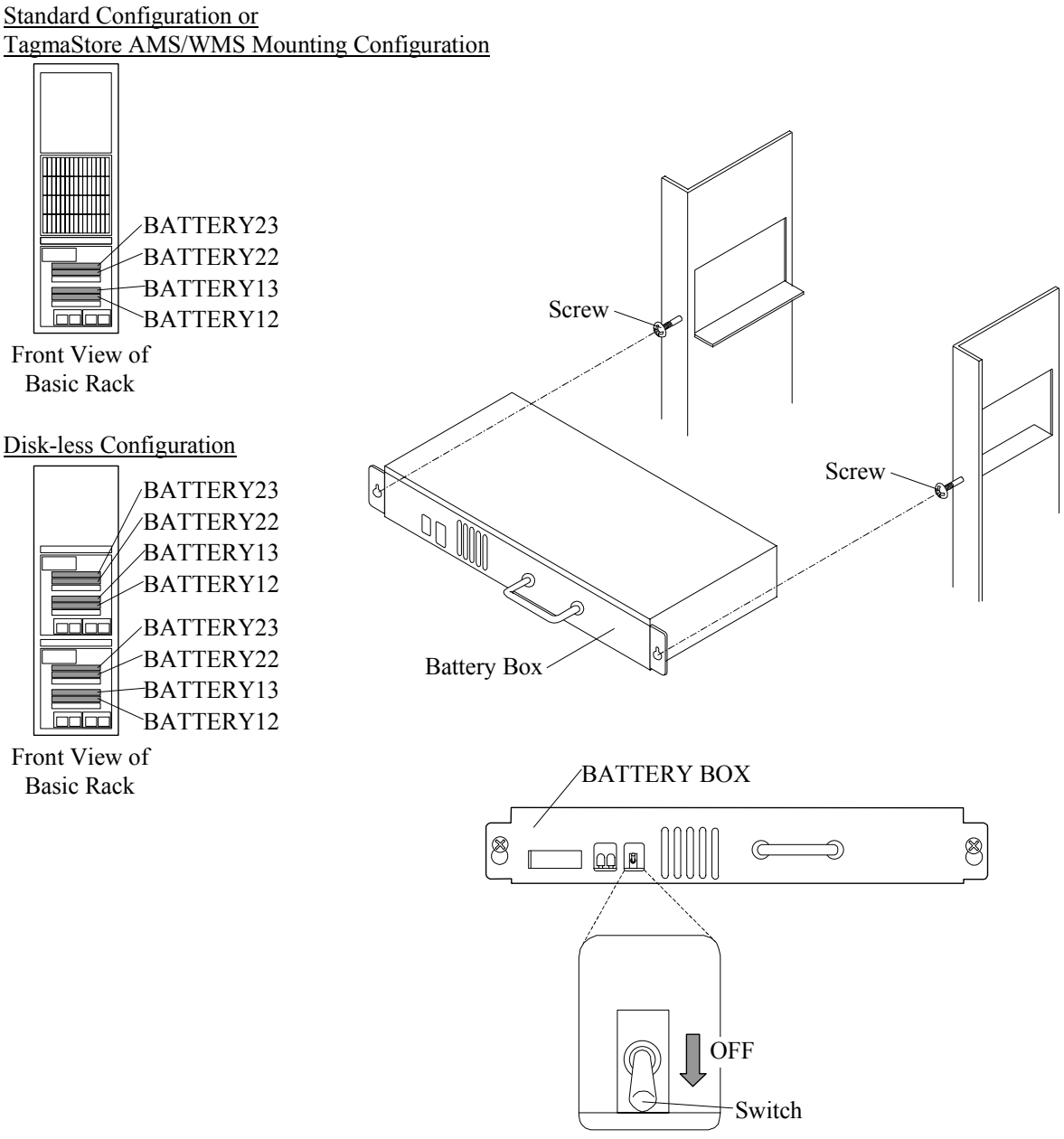


Fig.4.3.2-12 Removal of Battery Boxes

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7-2 Removal of nameplate

a. Remove the screw from the rack frame and remove the nameplate tags to be installed.
b. Remove the DKC-F515I-LGABR nameplate from the nameplate tag.
c. Attach the remaining nameplate tags with the screw.

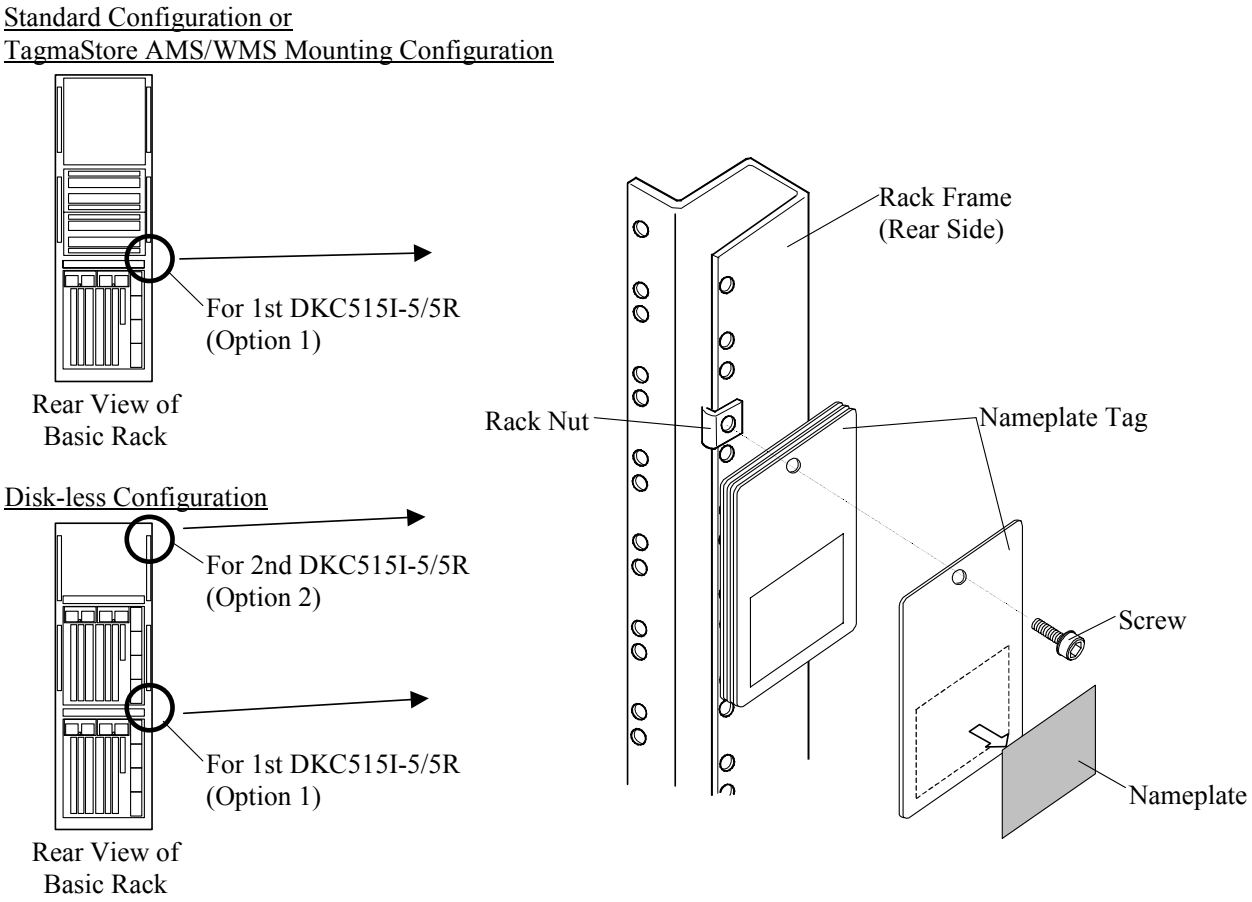


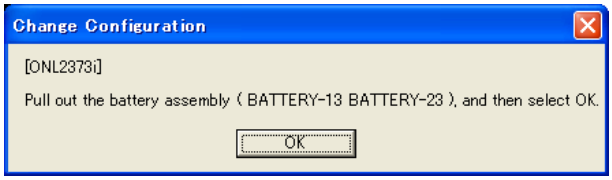
Fig. 4.3.2-13 Removal of Nameplate

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8. SVP post procedure on the Cluster2

(1)

After the hardware procedure for battery is completed, select (CL) [OK] in response to "Pull out the battery assembly, and then select OK.".

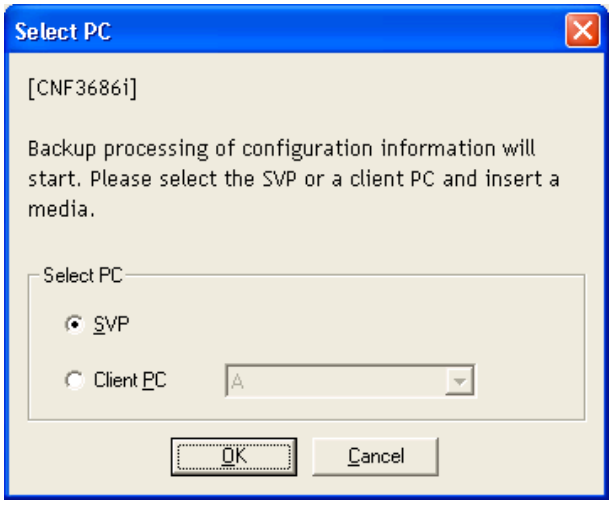


(2) <Check the end of de-installation procedure>
"Renewal process has completed. Please check subsystem status." shown in the right figure displayed. Select (CL) [OK] in response to this message.



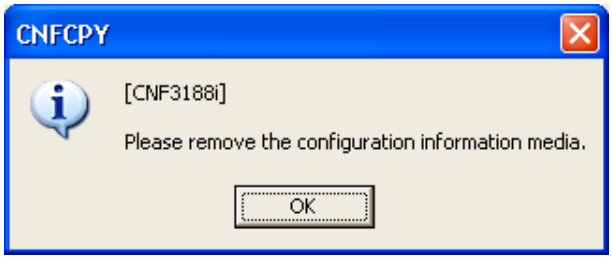
(3)

"Reading subsystem configuration data..." is displayed.
"Backup processing of configuration information will start. Please select the SVP or a client PC and insert a media." is displayed.
Insert the Config FD into FDD of selected PC, and select (CL) [OK].



(4)

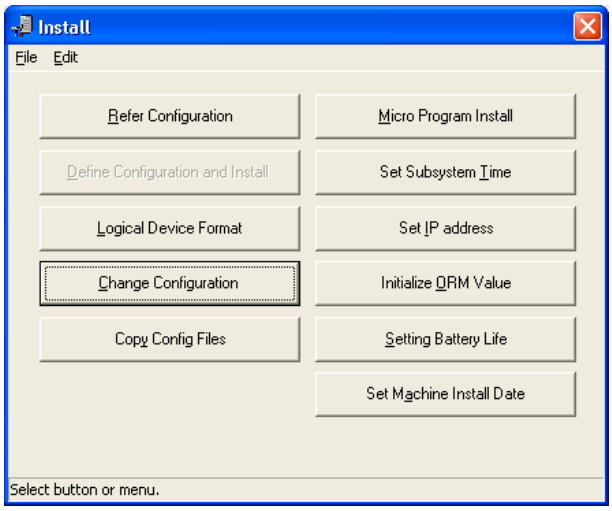
When this procedure is completed, the message "Please remove the configuration information media." is displayed.
Remove the FD, and select (CL) [OK].



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(5)

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



(6) <Mode Change>
Change the mode to View Mode.

Return to the working table and do the rest of the work. (INST02-60)

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4.4 De-Installation of Channel Adapter

4.4.1 De-Installation of Serial 16-port Adapter (DKC-F510I-16S/16SR)

Note: When two control frames (DKCs) are installed in the Disk-less configuration, check the serial number of target DKC on the SVP screen and beware of a removal position to prevent mistakes. (See “5.2.4 Refer Configuration 3. <DKC Configuration window>” [INST05-410].)

Table 4.4.1-1 Parts List

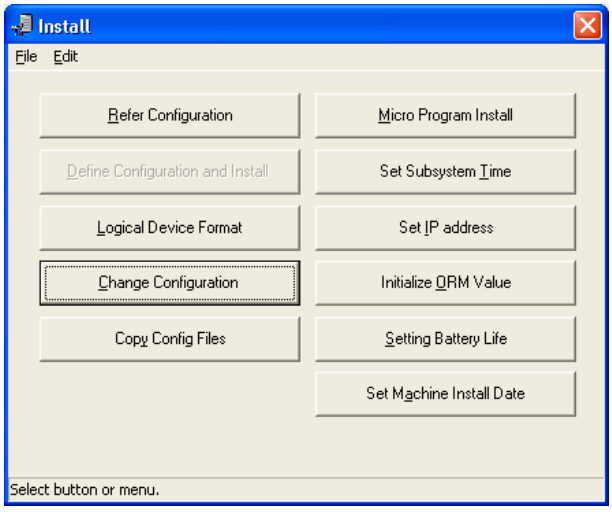
No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKC-F510I-16S	Serial 8-port Adapter PCB	5524263-A	2	
			5524263-C		
		Nameplate (HDS)	2106990-27	1	RSD
			2106992-27/227		HICAM/HICEF
		Nameplate (HP)	2106990-127	1	RSD
			2106992-127/327		HICAM/HICEF
2	DKC-F510I-16SR	Serial 8-port Adapter PCB	5524263-C	2	
		Nameplate (HDS)	2751038-27	1	RSD
			2751040-27/227		HICAM/HICEF
		Nameplate (HP)	2751038-127	1	RSD
			2751040-127/327		HICAM/HICEF

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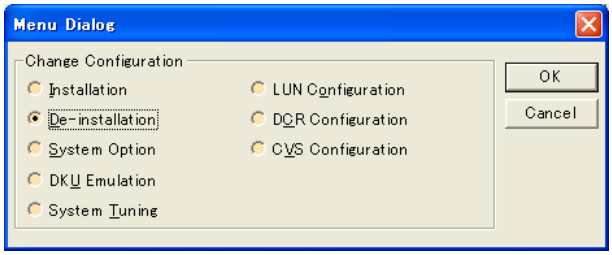
1. Setting up the New Device Structure Information

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

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

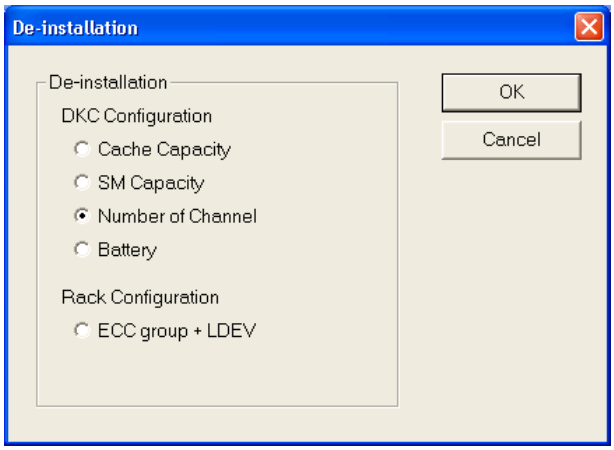


(3) <Start Device Structure Setup screen>
Select (CL) [De-installation] in the 'Menu Dialog' dialog box and select (CL) [OK].

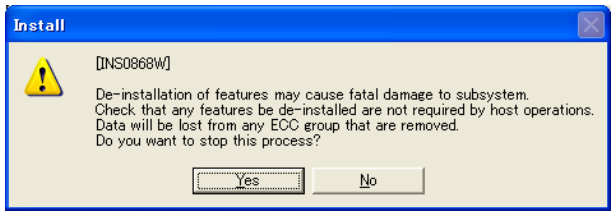


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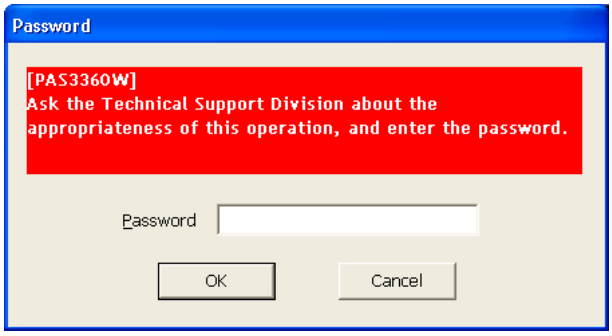
(4) <Select a part to be changed>
Select (CL) [Number of Channel], and select (CL) [OK].



(5)
Select (CL) [No] in response to "De-installation of features may cause fatal damage to subsystem. Check that any features be de-installed are not required by host operations. Data will be lost from any ECC group that are removed. Do you want to stop this process?".



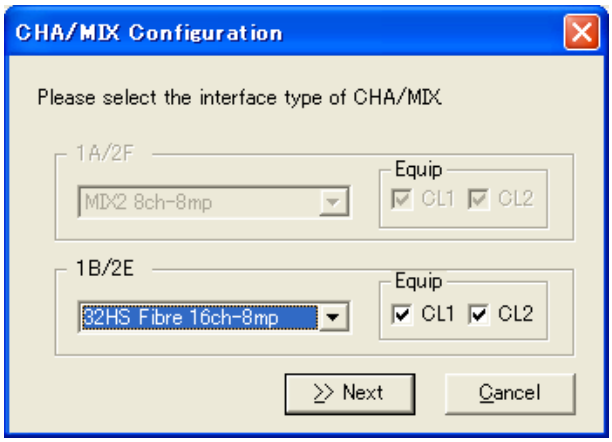
(6) <Input password>
Enter a password and select (CL) the [OK].



Notice: This is a special (exceptional) operation that can cause a serious failure such as a system down or a data loss if a wrong part to be removed is selected, and requires an input of a password. Ask the technical support division about the appropriateness of the operation, and input the password after getting an approval of executing the operation.

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(7) <Updating the configuration information>
In the 'CHA/MIX Configuration' window, select (CL) the [No Equip] for the location where the CHA is to be removed from or remove the check mark from the check box concerned.



Note: In the case of the multi-platform configuration

(1) When changing the configuration from multi-platform to open, remove the volume of the main frame first, and then remove the Channel PCB.

(2) When changing the configuration from multi-platform to main frame, remove the volume of the open first, and then remove the Channel PCB.

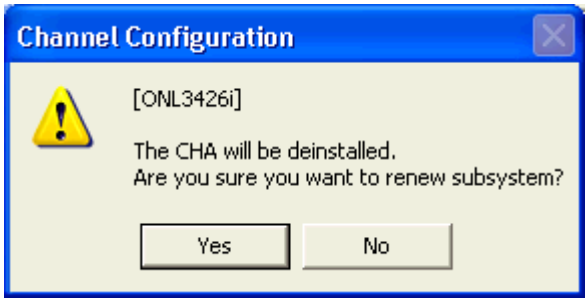
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2. SVP pre procedure

(1) <Start De-installation>

Select (CL) [Yes] in response to "The CHA will be deinstalled. Are you sure you want to renew subsystem?".

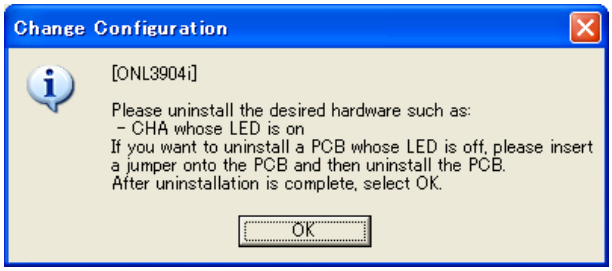
When [No] is selected (CL), returns to INST04-04A-20 step (2).



(2) <De-Install CHA>

At this point refrain from pressing the [OK] button.

"Please uninstall the desired hardware such as:
- CHA whose LED is on
If you want to uninstall a PCB whose LED is off, please insert a jumper onto the PCB and then uninstall the PCB. After uninstallation is complete, select OK." is displayed.



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3. De-Installation Procedure of Serial 16-port Adapter

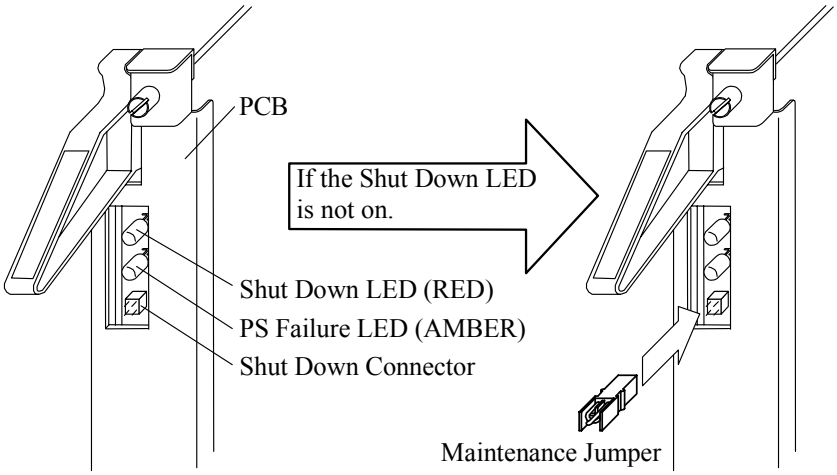
Note: Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

3-1 Confirmation of the Shut Down LED

a. While referring to Fig. 4.4.1-1 and Table 4.4.1-2 check the Shut Down LED on the PCB. Connect the Maintenance Jumper to the Shut Down Connector if the Shut Down LED is not on.

⚠ CAUTION

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



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

Fig. 4.4.1-1 Location of the Shut Down LED

Table 4.4.1-2 Inserting Location

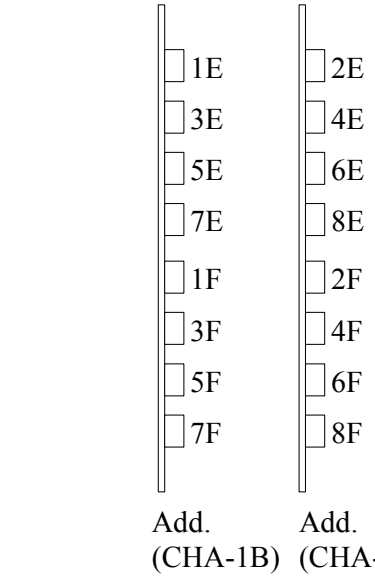
No.	Option Name	Location No.		Remarks
		Cluster 1	Cluster 2	
1	Add.	CHA-1B	CHA-2E	

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3-2 Disconnection of the optical fibre cables

a. Disconnect the optical fibre cables from the PCB.

CHA PCB (Logic Box)



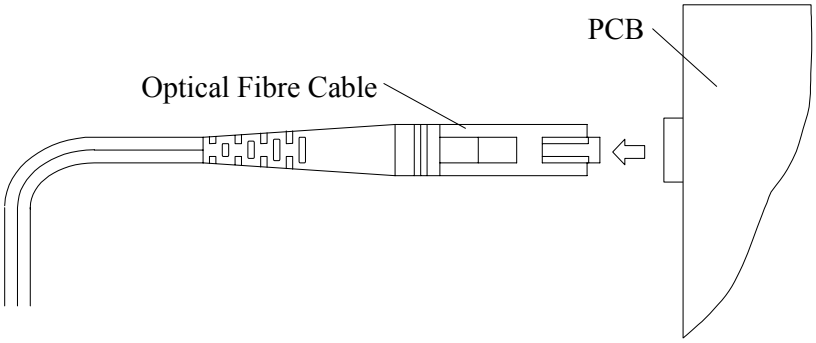


Fig. 4.4.1-2 Disconnection of Optical Fibre Cables

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b. Loosen the screw and remove the stopper.
c. Remove the two cores by pulling them toward you.
d. Unbind the binder of the each core and remove the optical fibre cables from grooves on the each core.
e. Install the cores each of which have the optical fibre cable for the MIX PCB left, and then fasten them with the stopper and a screw.

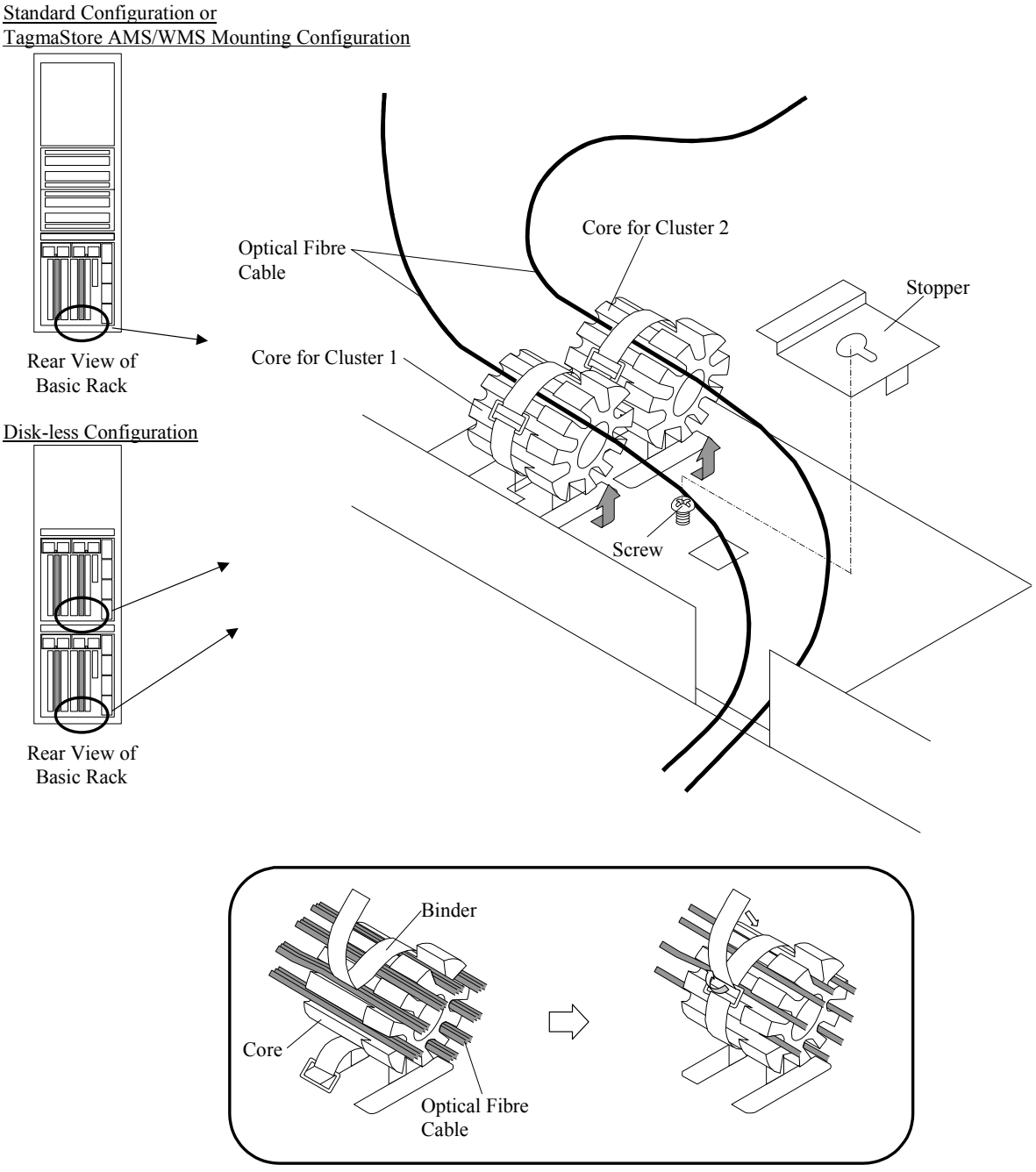


Fig. 4.4.1-3 Removal of Optical Fibre Cables

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f. When the optical fibre cables have been wired from the floor, draw out the cables from the opening, and go to step 3-3.
   When the optical fibre cables have been wired from the top cover, go to step g.
g. Loosen the two screws and open the slide cover.
h. Open the three repeat binder on the frame.
i. Draw out the optical fibre cable from the cable insertion hole of top cover.

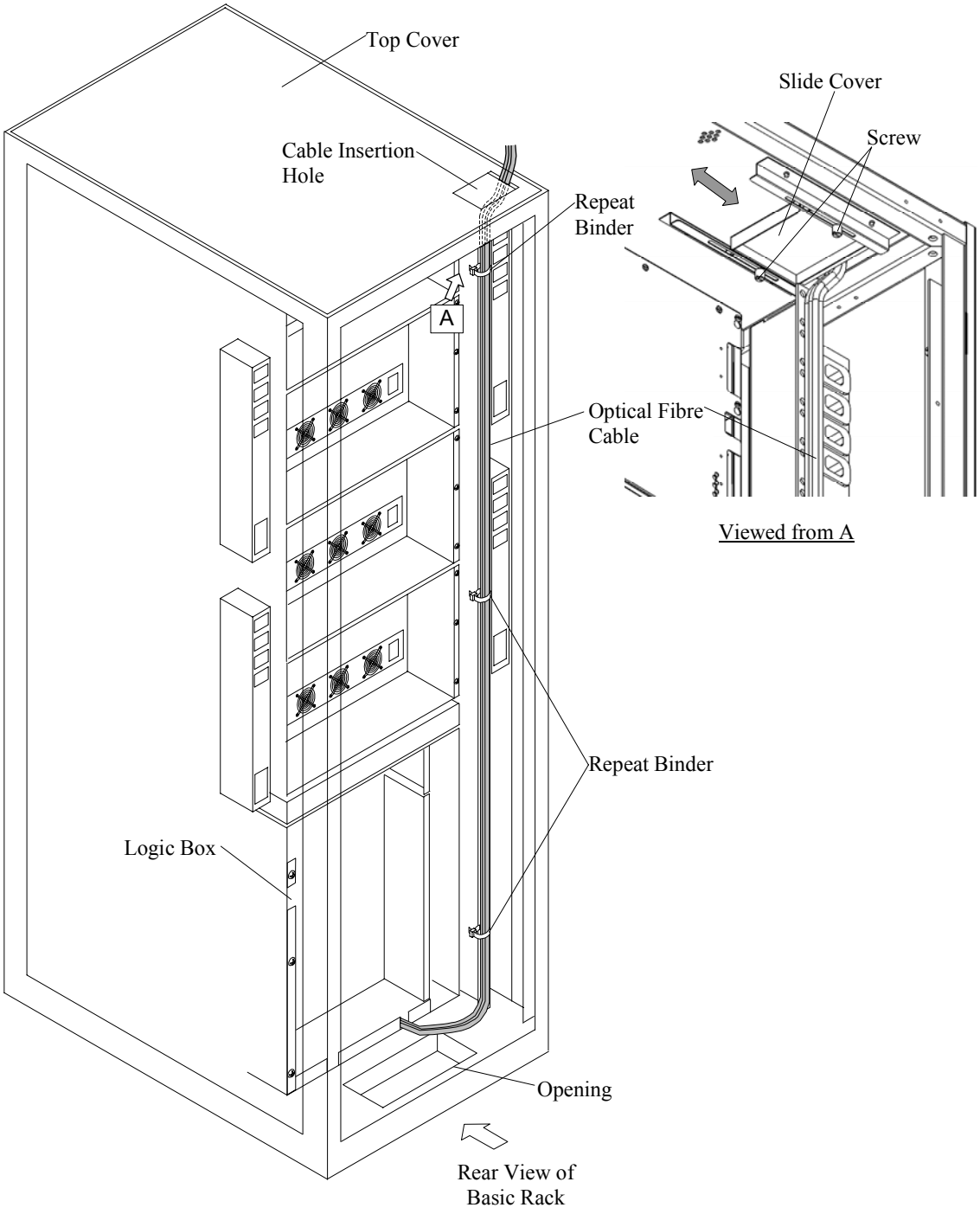
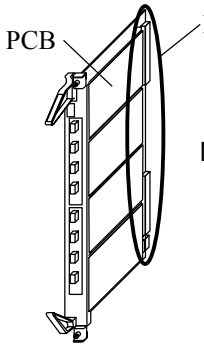


Fig. 4.4.1-4 Removal of Optical Fibre Cables

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3-3 Removal of the PCB

a. Loosen the screws and remove the PCBs from the Logic Box.



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

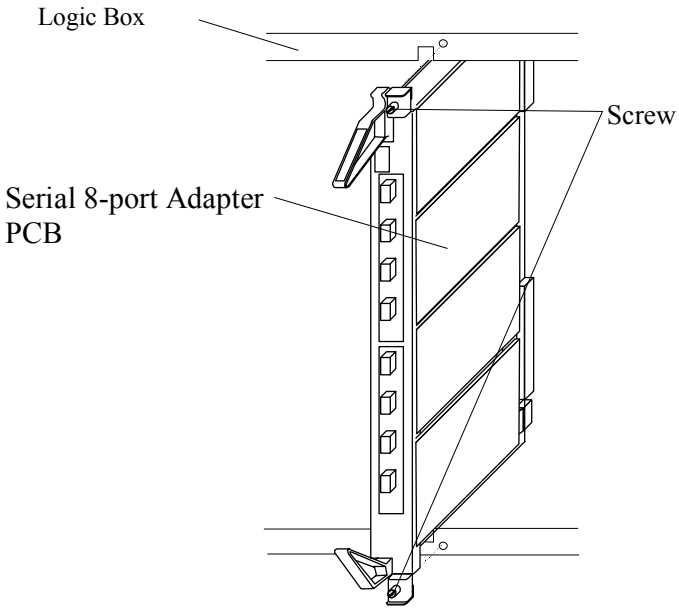


Fig. 4.4.1-5 Removal of PCB

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b. When the 19-inch Rack (DKC-F515I-FRMR) is installed, remove the dummy plates from the rear door.
   When the 19-inch Rack (DKC-F515I-FRMR) is not installed, go to step c.
c. Attach the dummy plate and fasten the screws.

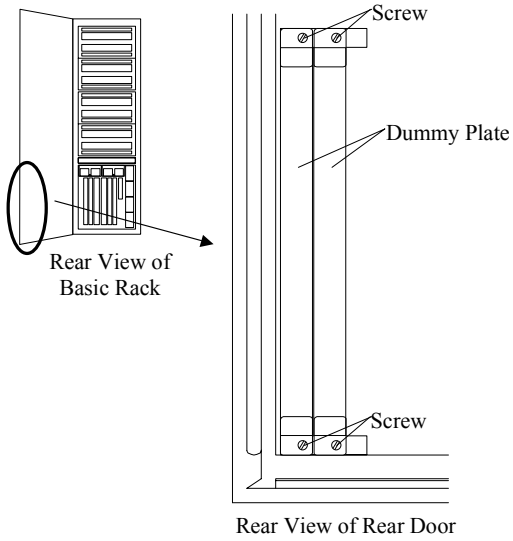


Fig. 4.4.1-6 Removal of Dummy Plate

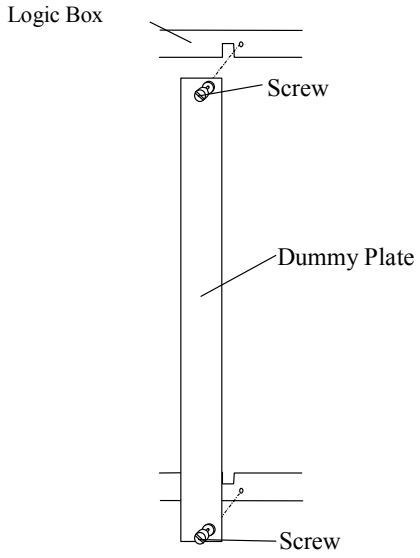


Fig. 4.4.1-7 Attachment of Dummy Plate

3-4 Removal of nameplate

a. Remove the screw from the rack frame and remove the nameplate tags to be installed.
b. Remove the DKC-F510I-16S/16SR nameplate from the nameplate tag.
c. Attach the remaining nameplate tags with the screw.

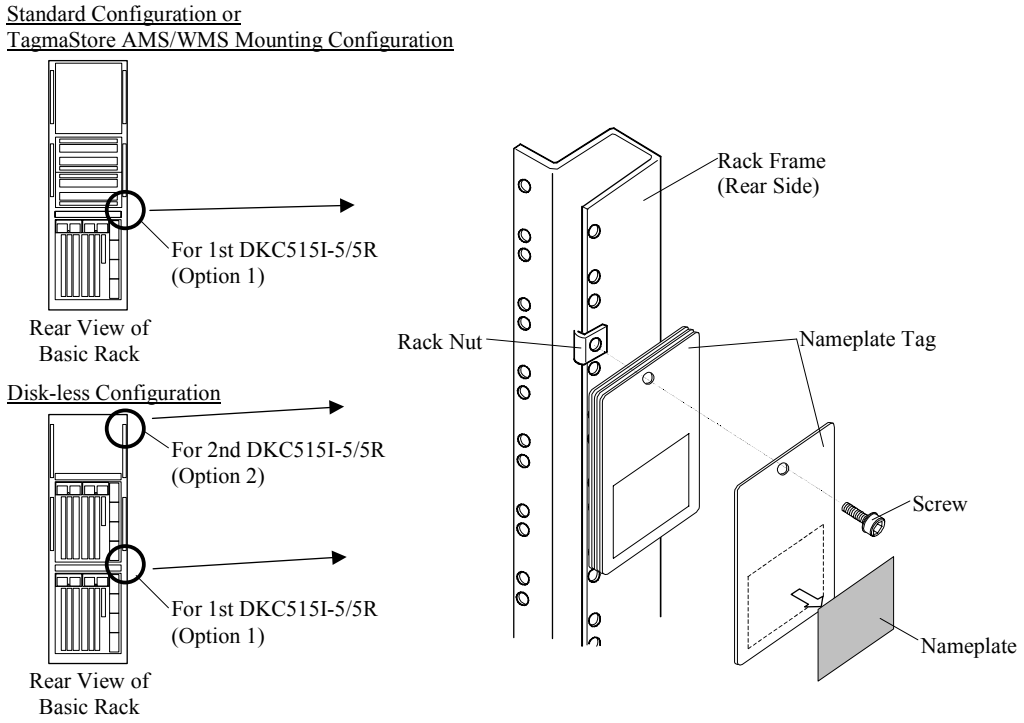


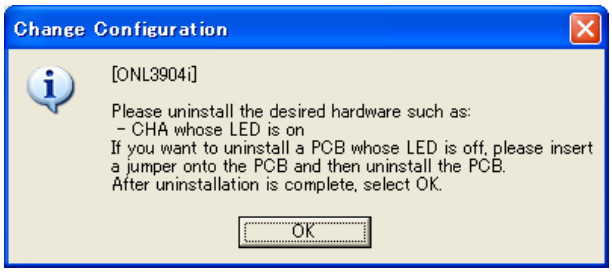
Fig. 4.4.1-8 Removal of Nameplate

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4. SVP procedure

(1) <Making sure of completion of the CHA removal>

In response to a message, “Please uninstall the desired hardware such as:
- CHA whose LED is on
If you want to uninstall a PCB whose LED is off, please insert a jumper onto the PCB and then uninstall the PCB. After uninstallation is complete, select OK.”, select (CL) [OK].



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5. SVP post procedure

(1)

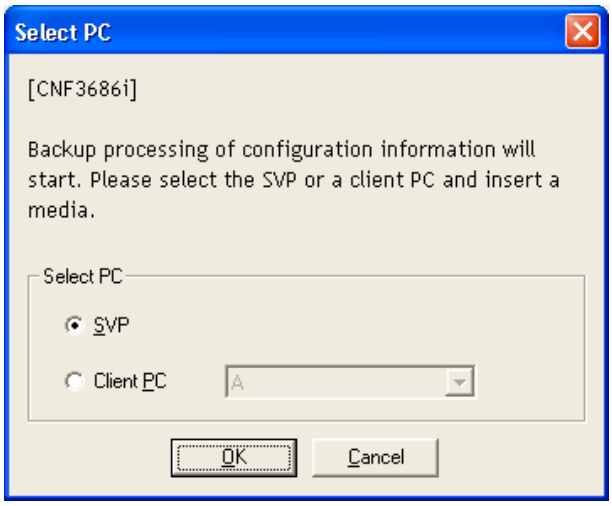
A message, “Renewal process has completed. Please check subsystem status.” is displayed. In response to the message, select (CL) [OK].



(2)

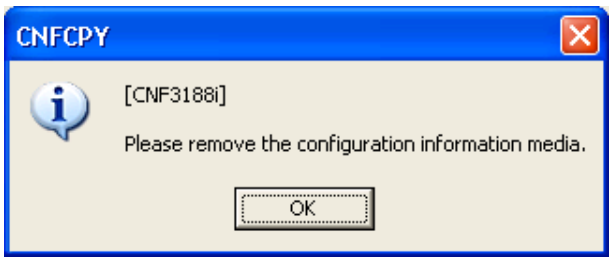
A message, “Backup processing of configuration information will start. Please select the SVP or a client PC and insert a media.” is displayed.

Set the Config FD in the FDD of the selected PC and select (CL) the [OK].



(3)

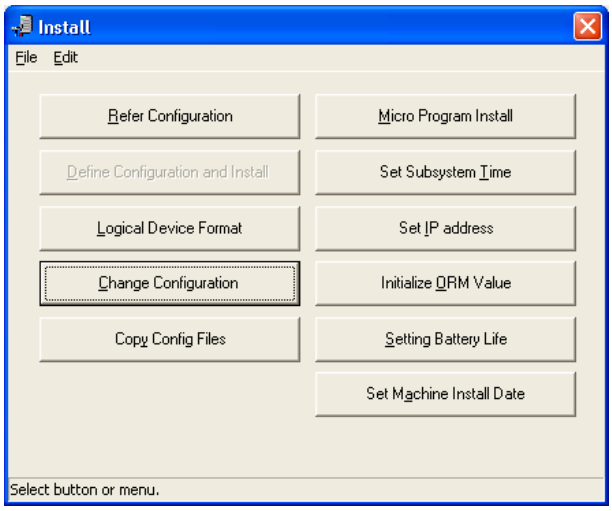
Since a message, “Please remove the configuration information media.” is displayed when the backup of the FD is completed, pull out the FD from the FDD and select (CL) the [OK].



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(4)

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



(5) <Mode Change>
Change the mode to View Mode.

Return to the working table and do the rest of the work. (INST02-60)

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4.4.2 De-Installation of Fibre 8/16/32-port High Performance Adapter (DKC-F510I-16HS/32HS/8HSR/16HSR/32HSR/32FSR/8FS2R/16FS2R/32FS2R)

Note: When two control frames (DKCs) are installed in the Disk-less configuration, check the serial number of target DKC on the SVP screen and beware of a removal position to prevent mistakes. (See “5.2.4 Refer Configuration 3. <DKC Configuration window>” [INST05-410].)

Table 4.4.2-1 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKC-F510I-16HS	Fibre 8-port Adapter PCB	5524257-A	2	
			5524257-C		
		Nameplate (HDS)	2106990-32	1	RSD
			2106992-32/232		HICAM/HICEF
		Nameplate (HP)	2106990-132	1	RSD
			2106992-132/332		HICAM/HICEF
2	DKC-F510I-32HS	Fibre 16-port Adapter PCB	5524258-A	2	
			5524258-C		
		Nameplate (HDS)	2106990-33	1	RSD
			2106992-33/233		HICAM/HICEF
		Nameplate (HP)	2106990-133	1	RSD
			2106992-133/333		HICAM/HICEF
3	DKC-F510I-16HSR	Fibre 8-port Adapter PCB	5524257-C	2	
		Nameplate (HDS)	2751038-32	1	RSD
			2751040-32/232		HICAM/HICEF
		Nameplate (HP)	2751038-132	1	RSD
			2751040-132/332		HICAM/HICEF
4	DKC-F510I-32HSR	Fibre 16-port Adapter PCB	5524258-C	2	
		Nameplate (HDS)	2751038-33	1	RSD
			2751040-33/233		HICAM/HICEF
		Nameplate (HP)	2751038-133	1	RSD
			2751040-133/333		HICAM/HICEF
5	DKC-F510I-32FSR	Fibre 16-port Adapter PCB	5524268-C	2	
		Nameplate (HDS)	2751038-64	1	RSD
			2751040-64/264		HICAM/HICEF
		Nameplate (HP)	2751038-164	1	RSD
			2751040-164/364		HICAM/HICEF

(To be continued.)

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(Continued from preceding sheet.)

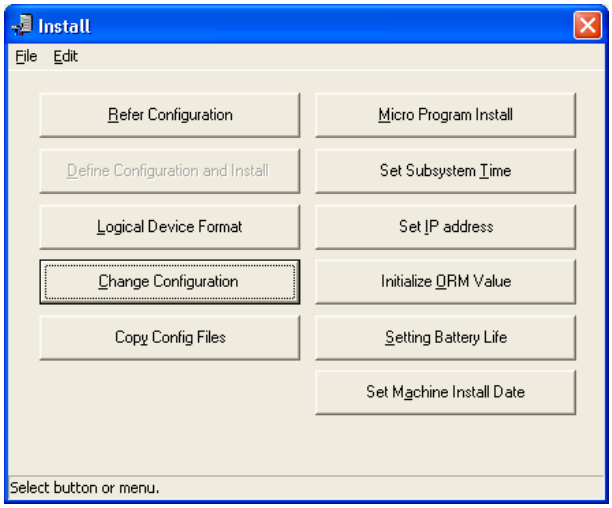
No.	Model Number	Part Name	Part No.	Quantity	Remarks
6	DKC-F510I-8HSR	Fibre 4-port Adapter PCB	5524281-C	2	
		Nameplate (HDS)	2751038-311	1	RSD
			2751040-411/611		HICAM/HICEF
		Nameplate (HP)	2751038-411	1	RSD
			2751040-511/711		HICAM/HICEF
7	DKC-F510I-8FS2R	Fibre 4-port Adapter PCB	5524282-C	2	
		Nameplate (HDS)	2751038-312	1	RSD
			2751040-412/612		HICAM/HICEF
		Nameplate (HP)	2751038-412	1	RSD
			2751040-512/712		HICAM/HICEF
8	DKC-F510I-16FS2R	Fibre 8-port Adapter PCB	5524222-C	2	
		Nameplate (HDS)	2751038-99	1	RSD
			2751040-99/299		HICAM/HICEF
		Nameplate (HP)	2751038-199	1	RSD
			2751040-199/399		HICAM/HICEF
9	DKC-F510I-32FS2R	Fibre 16-port Adapter PCB	5524228-C	2	
		Nameplate (HDS)	2751038-100	1	RSD
			2751040-100/300		HICAM/HICEF
		Nameplate (HP)	2751038-200	1	RSD
			2751040-200/400		HICAM/HICEF

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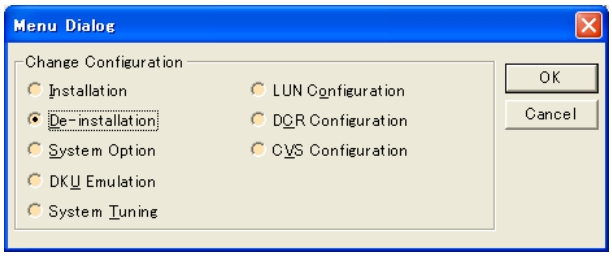
1. Setting up the New Device Structure Information

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

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

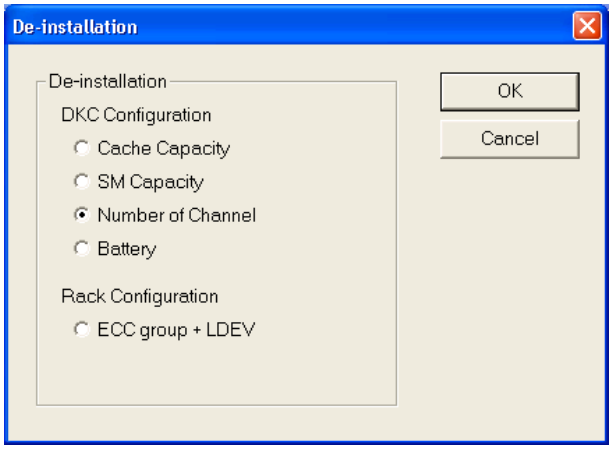


(3) <Start Device Structure Setup screen>
Select (CL) [De-installation] in the 'Menu Dialog' dialog box and select (CL) [OK].

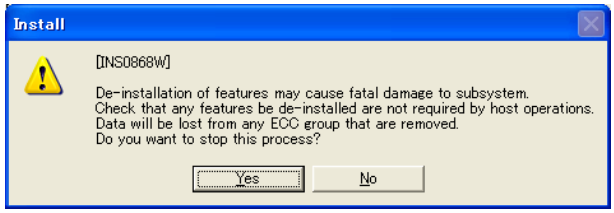


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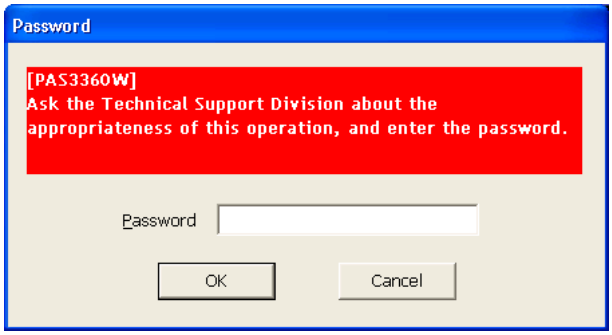
(4) <Select a part to be changed>
Select (CL) [Number of Channel], and select (CL) [OK].



(5)
Select (CL) [No] in response to "De-installation of features may cause fatal damage to subsystem. Check that any features be de-installed are not required by host operations. Data will be lost from any ECC group that are removed. Do you want to stop this process?".



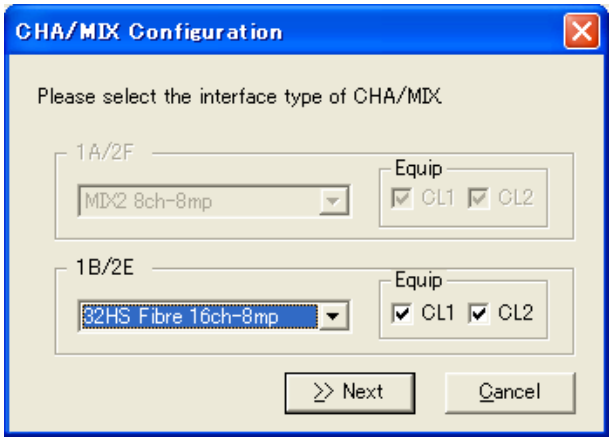
(6) <Input password>
Enter a password and select (CL) the [OK].



Notice: This is a special (exceptional) operation that can cause a serious failure such as a system down or a data loss if a wrong part to be removed is selected, and requires an input of a password. Ask the technical support division about the appropriateness of the operation, and input the password after getting an approval of executing the operation.

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(7) <Updating the configuration information>
In the 'CHA/MIX Configuration' window, select (CL) the [No Equip] for the location where the CHA is to be removed from or remove the check mark from the check box concerned.



Note: In the case of the multi-platform configuration

(1) When changing the configuration from multi-platform to open, remove the volume of the main frame first, and then remove the Channel PCB.

(2) When changing the configuration from multi-platform to main frame, remove the volume of the open first, and then remove the Channel PCB.

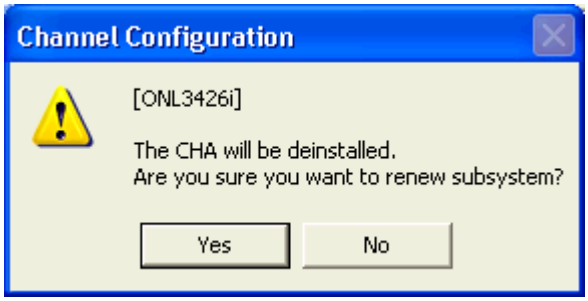
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2. SVP pre procedure

(1) <Start installation>

Select (CL) [Yes] in response to "The CHA will be deinstalled. Are you sure you want to renew subsystem?".

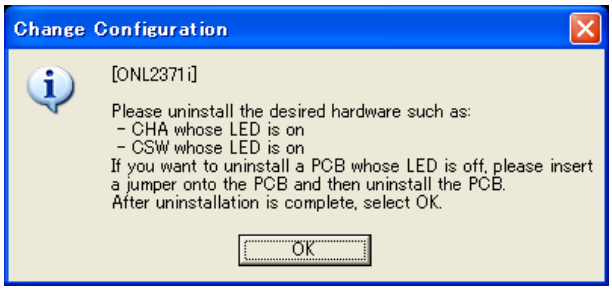
When [No] is selected (CL), returns to INST04-04B-20 step (2).



(2) <De-Install CHA>

At this point refrain from pressing the [OK] button.

"Please uninstall the desired hardware such as:
- CHA whose LED is on
- CSW whose LED is on
If you want to uninstall a PCB whose LED is off, please insert a jumper onto the PCB and then uninstall the PCB. After uninstallation is complete, select OK." is displayed.



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3. De-Installation Procedure of Fibre 8/16/32-port High Performance Adapter

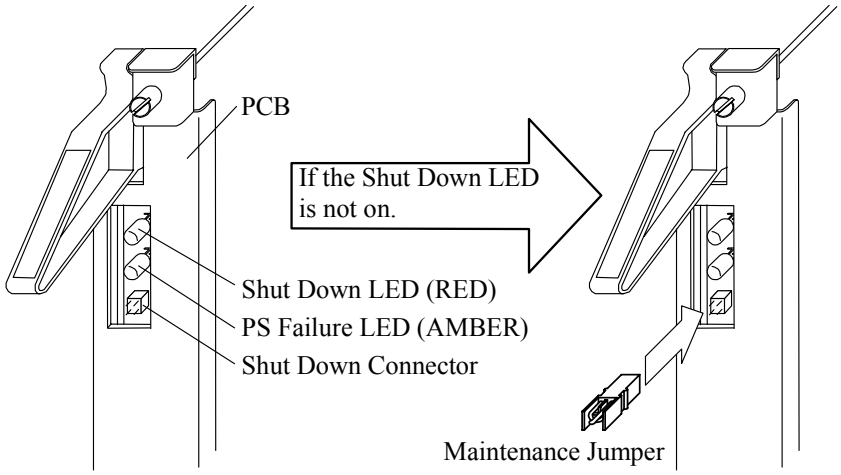
Note: Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

3-1 Confirmation of the Shut Down LED

a. While referring to Fig. 4.4.2-1 and Table 4.4.2-2 check the Shut Down LED on the PCB. Connect the Maintenance Jumper to the Shut Down Connector if the Shut Down LED is not on.

⚠ CAUTION

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



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

Fig. 4.4.2-1 Location of the Shut Down LED

Table 4.4.2-2 Inserting Location

No.	Option Name	Location No.		Remarks
		Cluster 1	Cluster 2	
1	Add.	CHA-1B	CHA-2E	

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3-2 Disconnection of the optical fibre cables

a. Disconnect the optical fibre cables from the PCB.

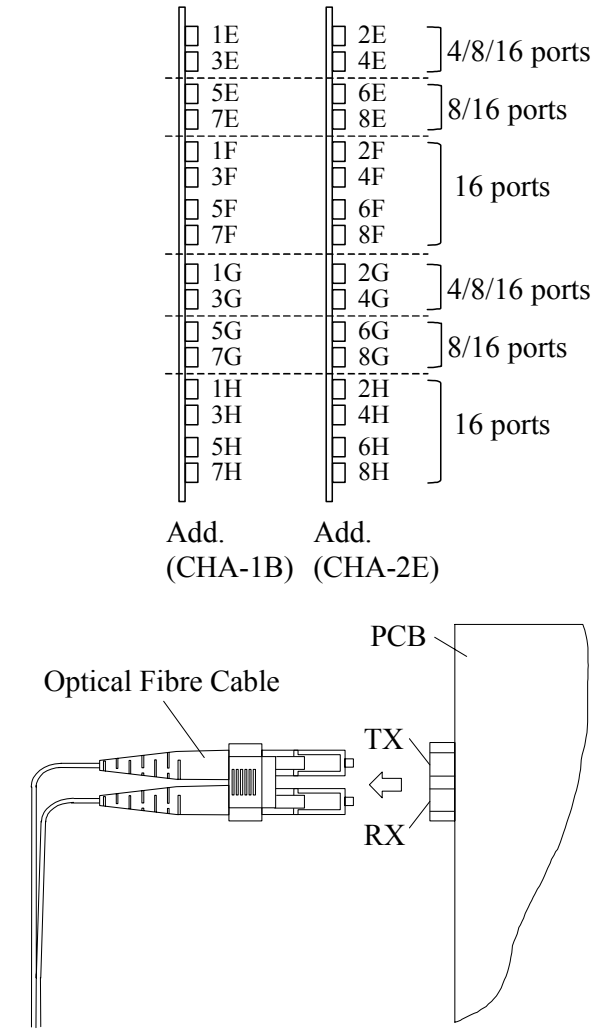


Fig. 4.4.2-2 Disconnection of Optical Fibre Cables

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b. Loosen the screw and remove the stopper.
c. Remove the two cores by pulling them toward you.
d. Unbind the binder of the each core and remove the optical fibre cables from grooves on the each core.
e. Install the cores each of which have the optical fibre cable for the MIX PCB left, and then fasten them with the stopper and a screw.

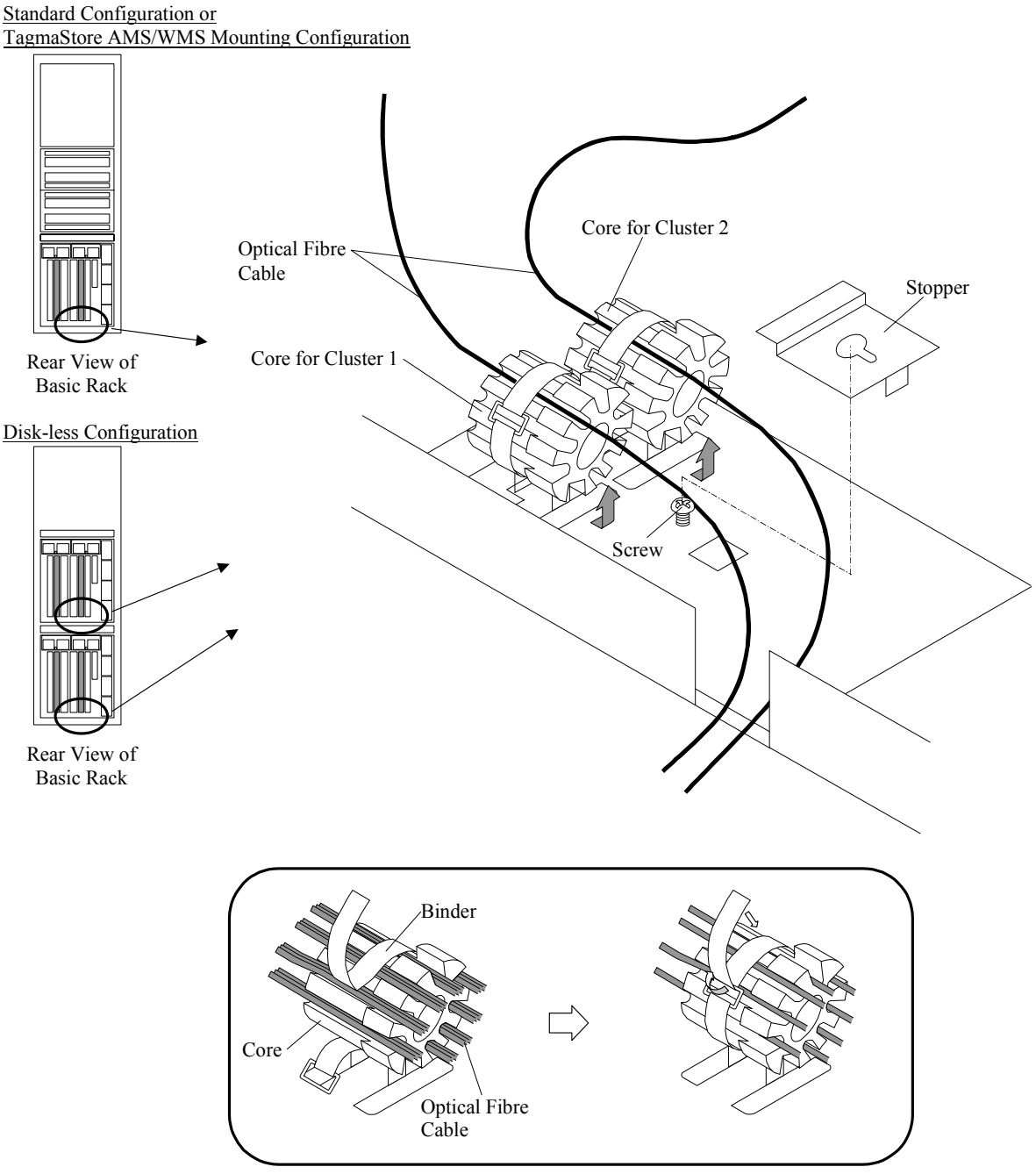


Fig. 4.4.2-3 Removal of Optical Fibre Cables

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f. When the optical fibre cables have been wired from the floor, draw out the cables from the opening, and go to step 3-3.
   When the optical fibre cables have been wired from the top cover, go to step g.
g. Loosen the two screws and open the slide cover.
h. Open the three repeat binder on the frame.
i. Draw out the optical fibre cable from the cable insertion hole of top cover.

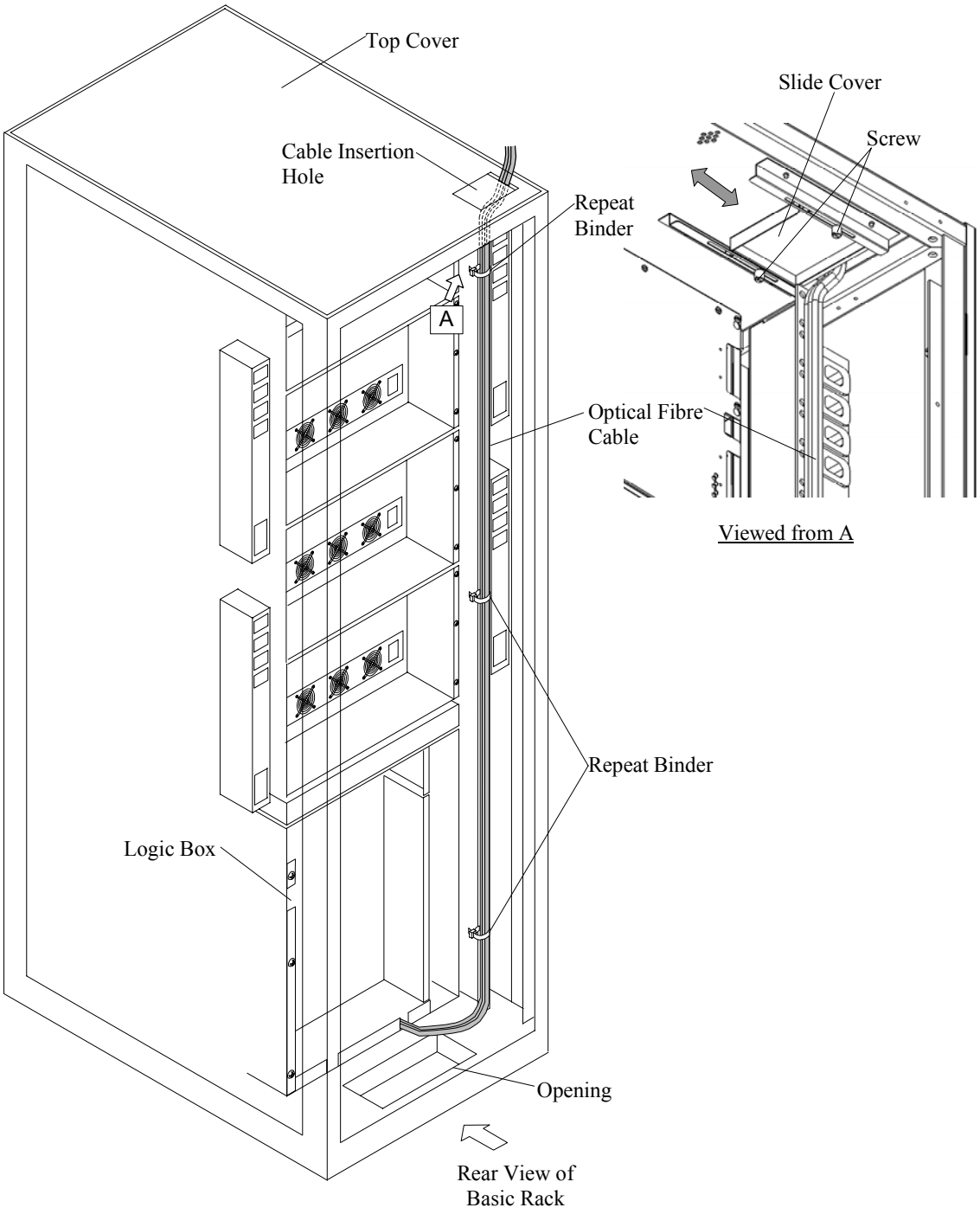
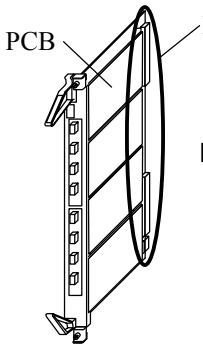


Fig. 4.4.2-4 Removal of Optical Fibre Cables

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3-3 Removal of the PCB

a. Loosen the screws and remove the PCBs from the Logic Box.



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

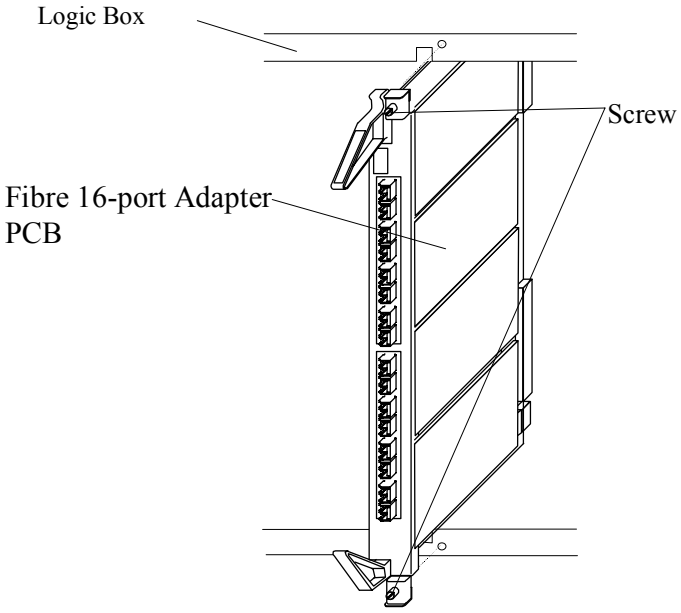


Fig. 4.4.2-5 Removal of PCB

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b. When the 19-inch Rack (DKC-F515I-FRMR) is installed, remove the dummy plates from the rear door.
   When the 19-inch Rack (DKC-F515I-FRMR) is not installed, go to step c.
c. Attach the dummy plate and fasten the screws.

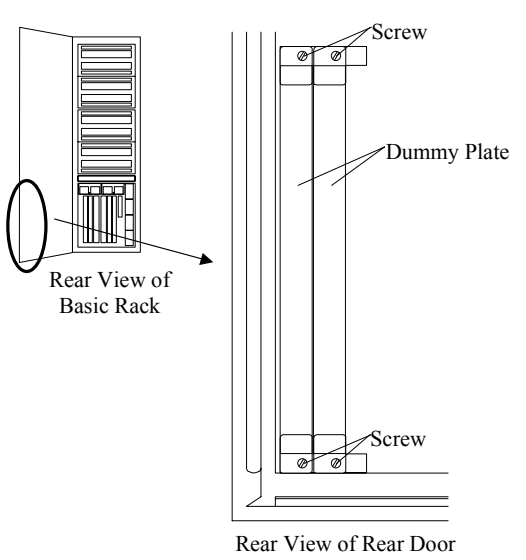


Fig. 4.4.2-6 Removal of Dummy Plate

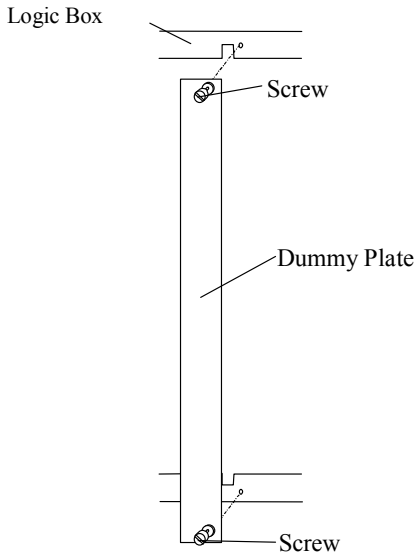


Fig. 4.4.2-7 Attachment of Dummy Plate

3-4 Removal of nameplate

a. Remove the screw from the rack frame and remove the nameplate tags to be installed.
b. Remove the nameplate from the nameplate tag.
c. Attach the remaining nameplate tags with the screw.

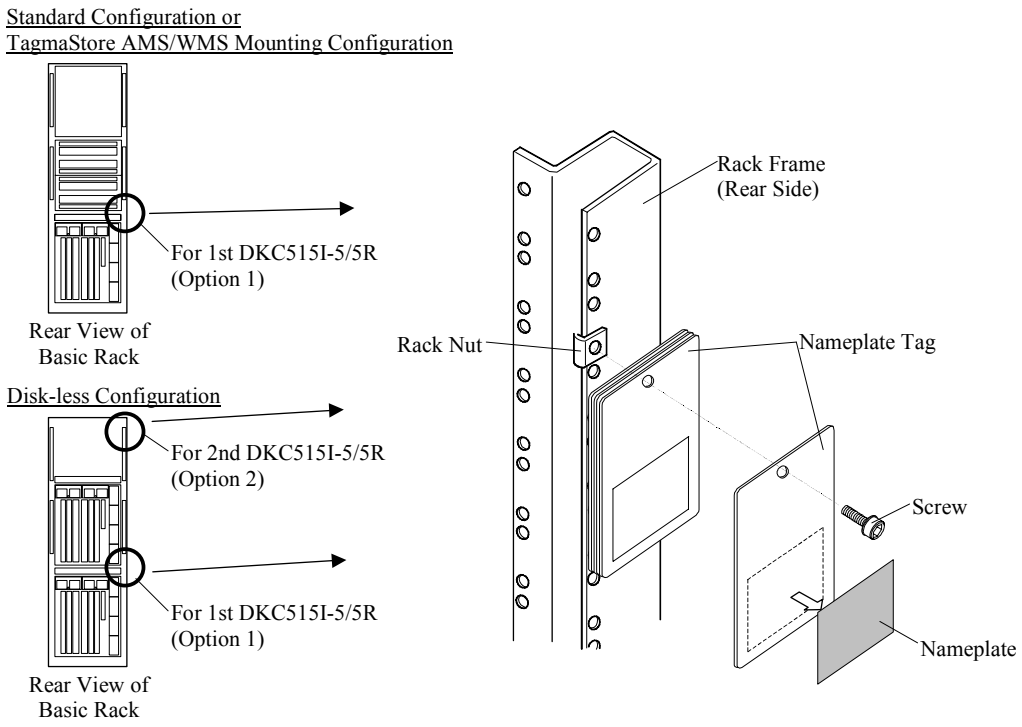
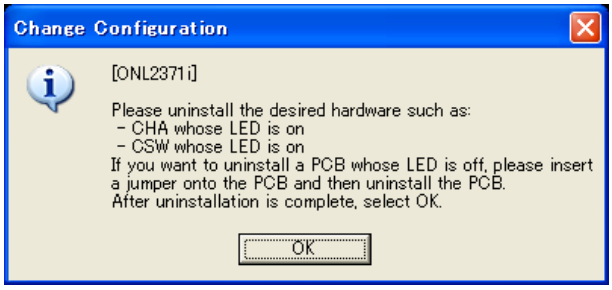


Fig. 4.4.2-8 Removal of Nameplate

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4. SVP procedure

(1) <Making sure of completion of the CHA/CSW removal>



In response to a message, “Please uninstall the desired hardware such as:
- CHA whose LED is on
- CSW whose LED is on
If you want to uninstall a PCB whose LED is off, please insert a jumper onto the PCB and then uninstall the PCB. After uninstallation is complete, select OK.”, select (CL) [OK].

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5. SVP post procedure

(1)

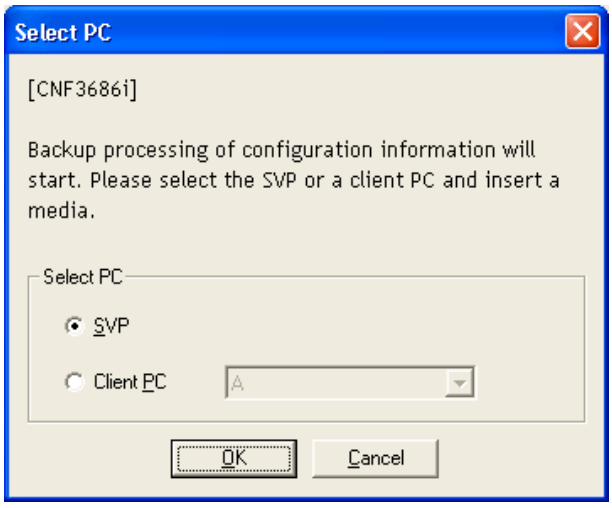
A message, “Renewal process has completed. Please check subsystem status.” is displayed. In response to the message, select (CL) [OK].



(2)

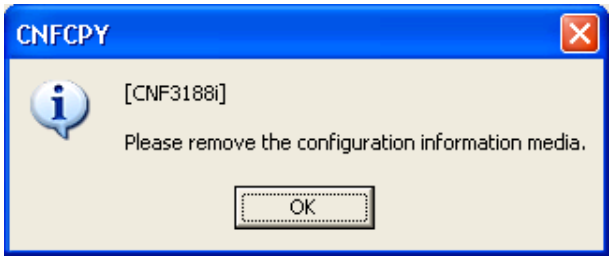
A message, “Backup processing of configuration information will start. Please select the SVP or a client PC and insert a media.” is displayed.

Set the Config FD in the FDD of the selected PC and select (CL) the [OK].



(3)

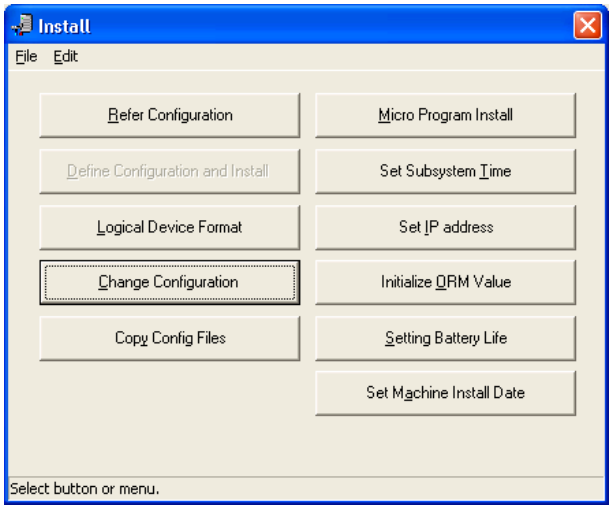
Since a message, “Please remove the configuration information media.” is displayed when the backup of the FD is completed, pull out the FD from the FDD and select (CL) the [OK].



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(4)

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



(5) <Mode Change>
Change the mode to View Mode.

Return to the working table and do the rest of the work. (INST02-60)

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4.4.3 De-Installation of Mainframe Fibre 8/16-port Adapter (DKC-F510I-8MS/8ML/8MSR/8MLR/16MSR/16MLR/16MFSR/16MFLR/16MFL4R)

Note: When two control frames (DKCs) are installed in the Disk-less configuration, check the serial number of target DKC on the SVP screen and beware of a removal position to prevent mistakes. (See "5.2.4 Refer Configuration 3. <DKC Configuration window>" [INST05-410].)

Table 4.4.3-1 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKC-F510I-8MS	Fibre 4-port Adapter PCB	5524259-A	2	
			5524259-C		
		Nameplate (HDS)	2106990-28	1	RSD
			2106992-28/228		HICAM/HICEF
		Nameplate (HP)	2106990-128	1	RSD
			2106992-128/328		HICAM/HICEF
2	DKC-F510I-8ML	Fibre 4-port Adapter PCB	5524260-A	2	
			5524260-C		
		Nameplate (HDS)	2106990-29	1	RSD
			2106992-29/229		HICAM/HICEF
		Nameplate (HP)	2106990-129	1	RSD
			2106992-129/329		HICAM/HICEF
3	DKC-F510I-8MSR	Fibre 4-port Adapter PCB	5524259-C	2	
		Nameplate (HDS)	2751038-28	1	RSD
			2751040-28/228		HICAM/HICEF
		Nameplate (HP)	2751038-128	1	RSD
			2751040-128/328		HICAM/HICEF
4	DKC-F510I-8MLR	Fibre 4-port Adapter PCB	5524260-C	2	
		Nameplate (HDS)	2751038-29	1	RSD
			2751040-29/229		HICAM/HICEF
		Nameplate (HP)	2751038-129	1	RSD
			2751040-129/329		HICAM/HICEF
5	DKC-F510I-16MSR	Fibre 8-port Adapter PCB	5524261-C	2	
		Nameplate (HDS)	2751038-30	1	RSD
			2751040-30/230		HICAM/HICEF
		Nameplate (HP)	2751038-130	1	RSD
			2751040-130/330		HICAM/HICEF

(To be continued.)

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(Continued from preceding sheet.)

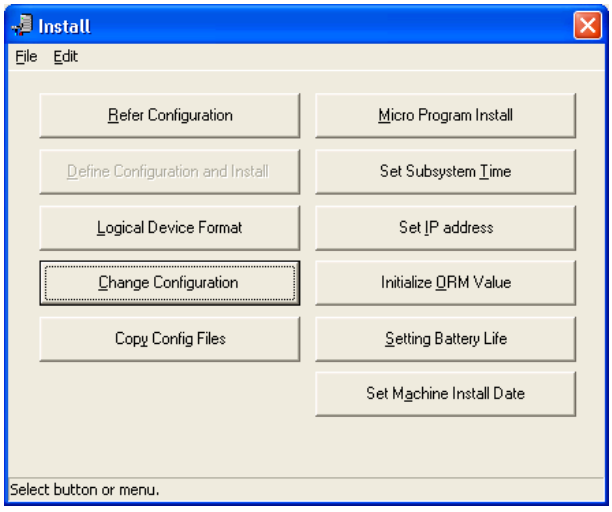
No.	Model Number	Part Name	Part No.	Quantity	Remarks
6	DKC-F510I-16MLR	Fibre 8-port Adapter PCB	5524262-C	2	
		Nameplate (HDS)	2751038-31	1	RSD
			2751040-31/231		HICAM/HICEF
		Nameplate (HP)	2751038-131	1	RSD
			2751040-131/331		HICAM/HICEF
7	DKC-F510I-16MFSR	Fibre 8-port Adapter PCB	5524248-C	2	
		Nameplate (HDS)	2751038-307	1	RSD
			2751040-407/607		HICAM/HICEF
		Nameplate (HP)	2751038-407	1	RSD
			2751040-507/707		HICAM/HICEF
8	DKC-F510I-16MFLR	Fibre 8-port Adapter PCB	5524250-C	2	
		Nameplate (HDS)	2751038-308	1	RSD
			2751040-408/608		HICAM/HICEF
		Nameplate (HP)	2751038-408	1	RSD
			2751040-508/708		HICAM/HICEF
9	DKC-F510I-16MFL4R	Fibre 8-port Adapter PCB	5535337-C	2	
		Nameplate (HDS)	2751038-331	1	RSD
			2751040-431/631		HICAM/HICEF
		Nameplate (HP)	2751038-431	1	RSD
			2751040-531/731		HICAM/HICEF

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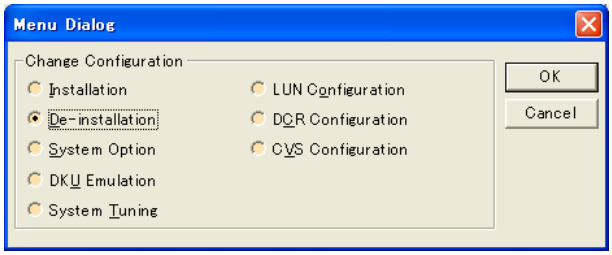
1. Setting up the New Device Structure Information

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

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



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

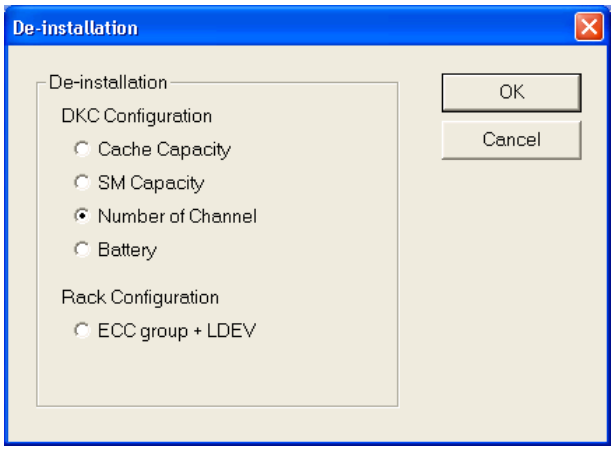


⚠ CAUTION

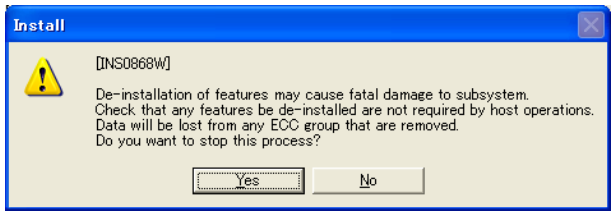
This is a special (exceptional) operation that can cause a serious failure such as a system down or a data loss if a wrong part to be removed is selected, and requires an input of a password. Ask the technical support division about the appropriateness of the operation, and input the password after getting an approval of executing the operation.

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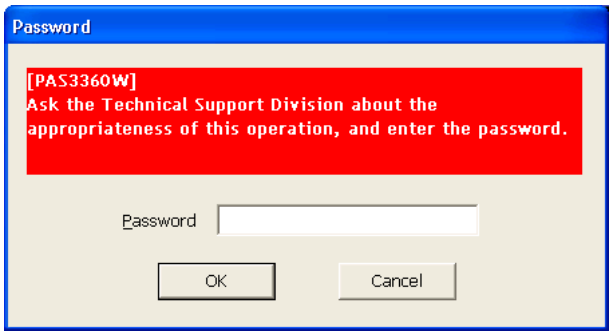
(4) <Select a part to be changed>
Select (CL) [Number of Channel], and select (CL) [OK].



(5)
Select (CL) [No] in response to "De-installation of features may cause fatal damage to subsystem. Check that any features be de-installed are not required by host operations. Data will be lost from any ECC group that are removed. Do you want to stop this process?".



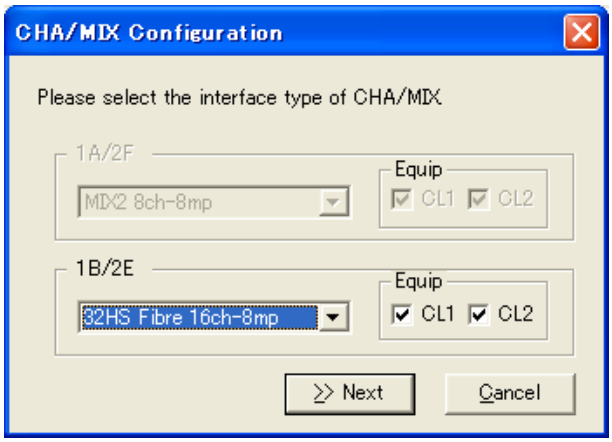
(6) <Input password>
Enter a password and select (CL) the [OK].



Notice: This is a special (exceptional) operation that can cause a serious failure such as a system down or a data loss if a wrong part to be removed is selected, and requires an input of a password. Ask the technical support division about the appropriateness of the operation, and input the password after getting an approval of executing the operation.

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(7) <Updating the configuration information>
In the 'CHA/MIX Configuration' window, select (CL) the [No Equip] for the location where the CHA is to be removed from or remove the check mark from the check box concerned.



Note: In the case of the multi-platform configuration

(1) When changing the configuration from multi-platform to open, remove the volume of the main frame first, and then remove the Channel PCB.

(2) When changing the configuration from multi-platform to main frame, remove the volume of the open first, and then remove the Channel PCB.

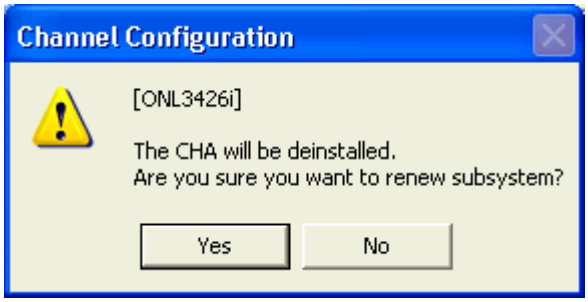
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2. SVP pre procedure

(1) <Start installation>

Select (CL) [Yes] in response to "The CHA will be deinstalled. Are you sure you want to renew subsystem?".

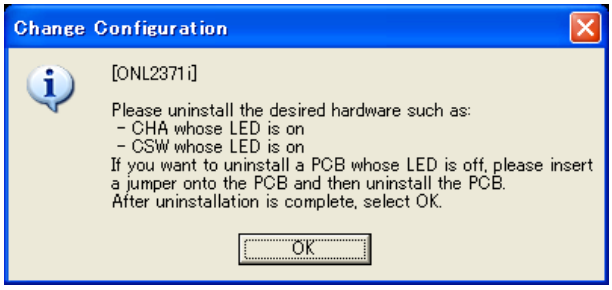
When [No] is selected (CL), returns to INST04-04C-20 step (2).



(2) <De-Install CHA>

At this point refrain from pressing the [OK] button.

"Please uninstall the desired hardware such as:
- CHA whose LED is on
- CSW whose LED is on
If you want to uninstall a PCB whose LED is off, please insert a jumper onto the PCB and then uninstall the PCB. After uninstallation is complete, select OK." is displayed.



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3. De-Installation Procedure of Mainframe Fibre 8/16-port Adapter

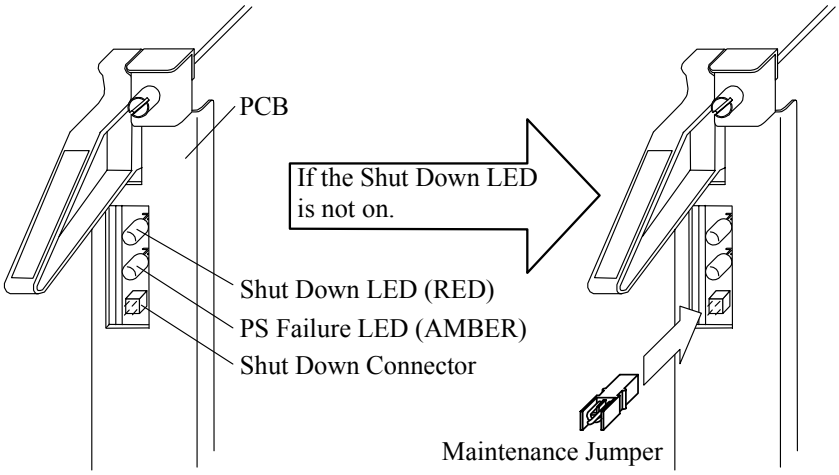
Note: Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

3-1 Confirmation of the Shut Down LED

a. While referring to Fig. 4.4.3-1 and Table 4.4.3-2 check the Shut Down LED on the PCB. Connect the Maintenance Jumper to the Shut Down Connector if the Shut Down LED is not on.

⚠ CAUTION

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



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

Fig. 4.4.3-1 Location of the Shut Down LED

Table 4.4.3-2 Inserting Location

No.	Option Name	Location No.		Remarks
		Cluster 1	Cluster 2	
1	Add.	CHA-1B	CHA-2E	

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3-2 Disconnection of the optical fibre cables

a. Disconnect the optical fibre cables from the PCB.

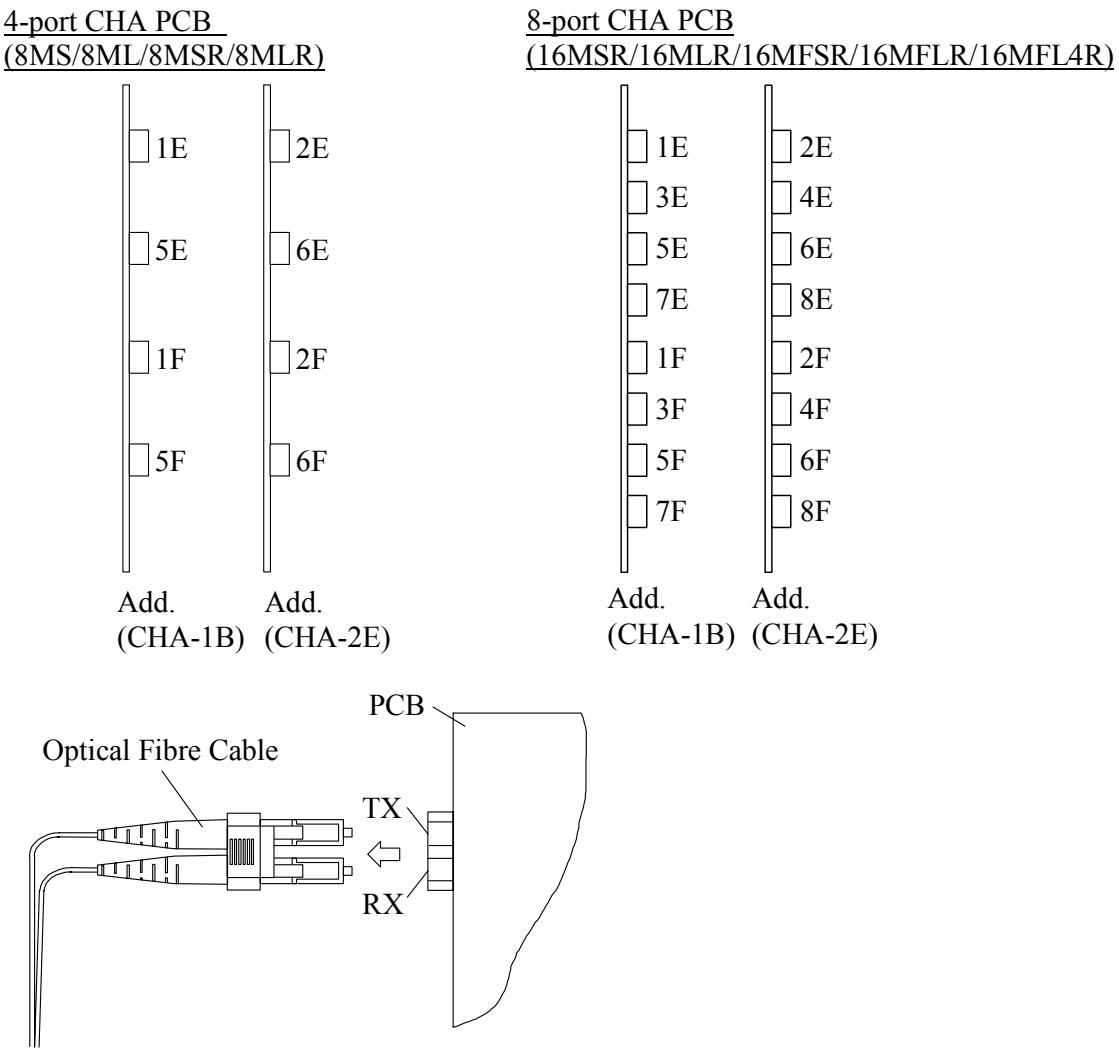


Fig. 4.4.3-2 Disconnection of Optical Fibre Cables

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b. Loosen the screw and remove the stopper.
c. Remove the two cores by pulling them toward you.
d. Unbind the binder of the each core and remove the optical fibre cables from grooves on the each core.
e. Install the cores each of which have the optical fibre cable for the MIX PCB left, and then fasten them with the stopper and a screw.

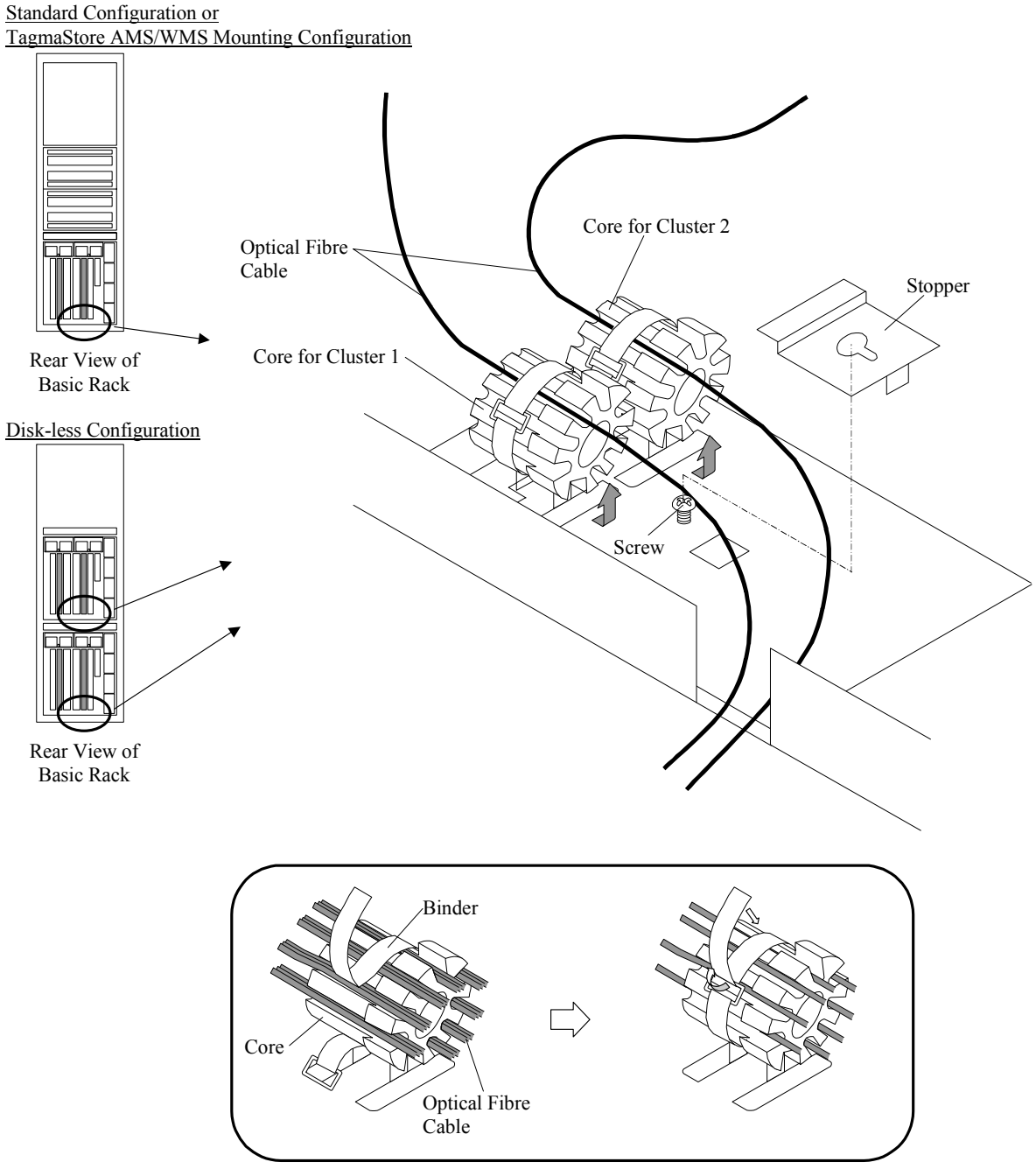


Fig. 4.4.3-3 Removal of Optical Fibre Cables

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f. When the optical fibre cables have been wired from the floor, draw out the cables from the opening, and go to step 3-3.
   When the optical fibre cables have been wired from the top cover, go to step g.
g. Loosen the two screws and open the slide cover.
h. Open the three repeat binder on the frame.
i. Draw out the optical fibre cable from the cable insertion hole of top cover.

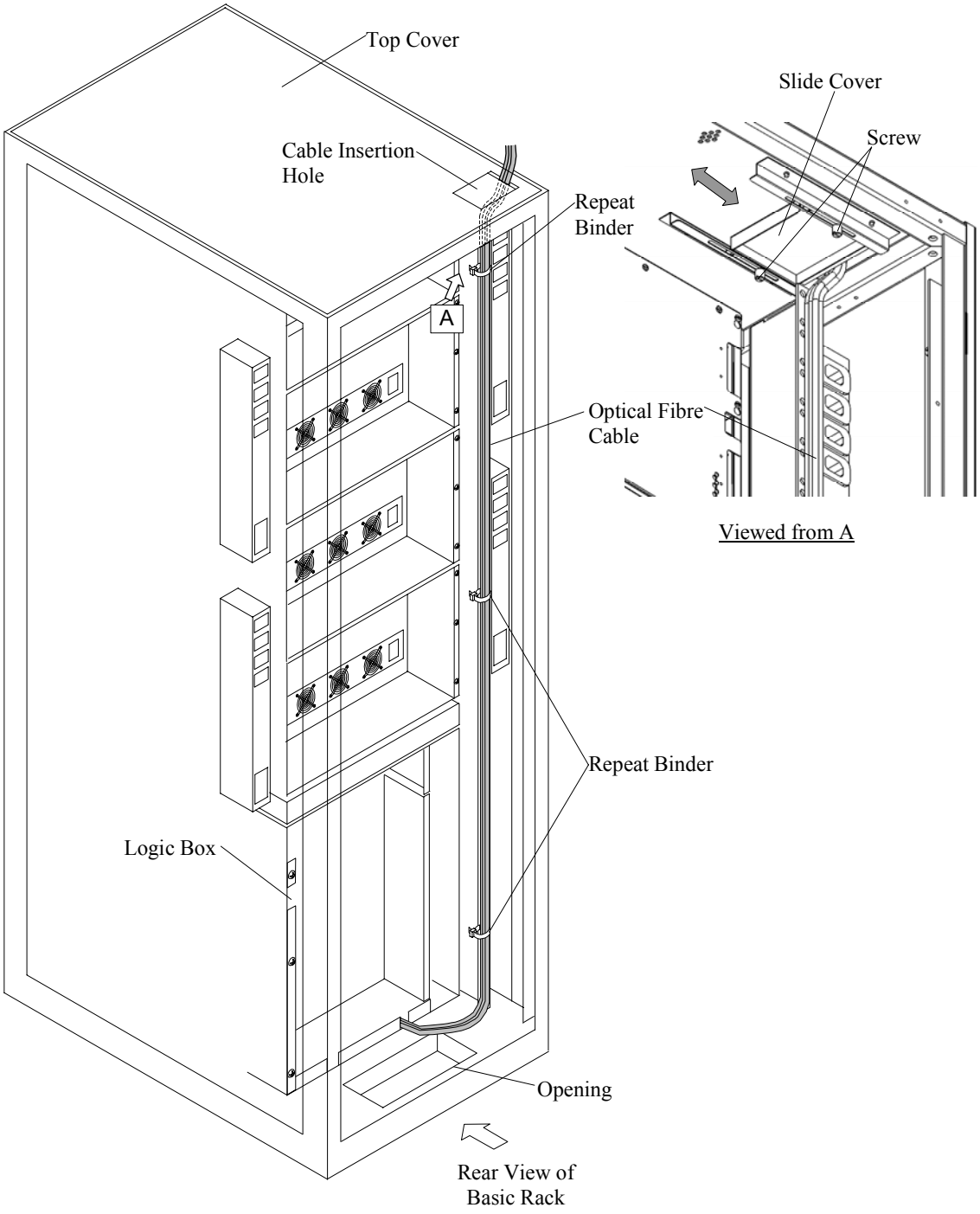
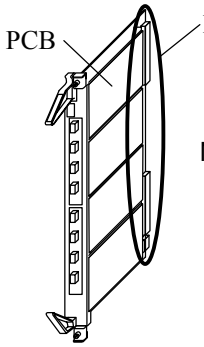


Fig. 4.4.3-4 Removal of Optical Fibre Cables

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3-3 Removal of the PCB

a. Loosen the screws and remove the PCBs from the Logic Box.



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

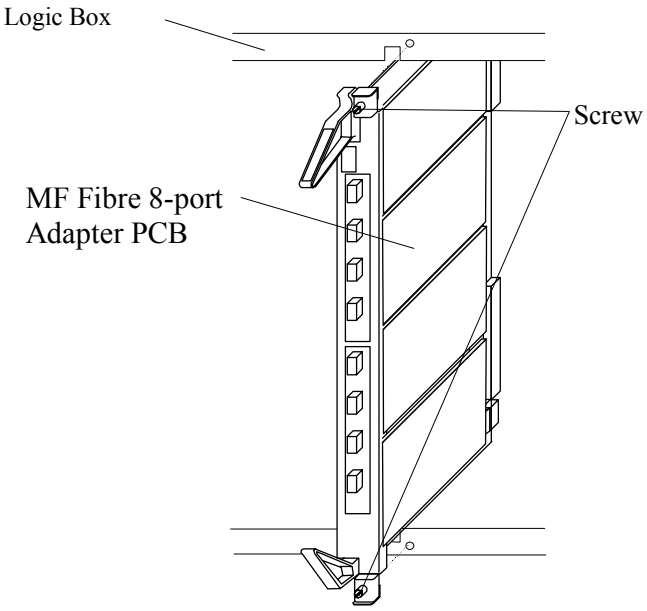


Fig. 4.4.3-5 Removal of PCB

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b. When the 19-inch Rack (DKC-F515I-FRMR) is installed, remove the dummy plates from the rear door.
   When the 19-inch Rack (DKC-F515I-FRMR) is not installed, go to step c.
c. Attach the dummy plate and fasten the screws.

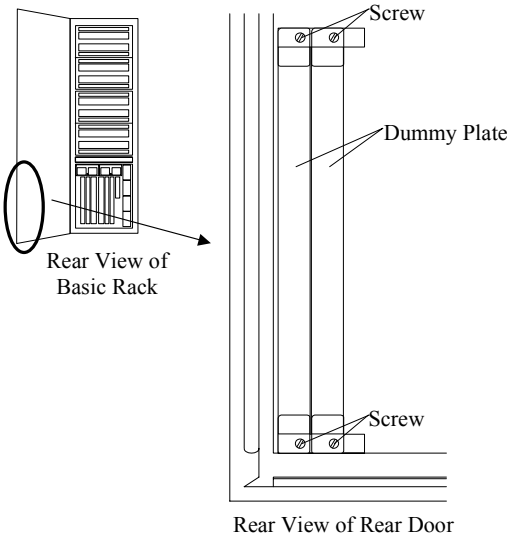


Fig. 4.4.3-6 Removal of Dummy Plate

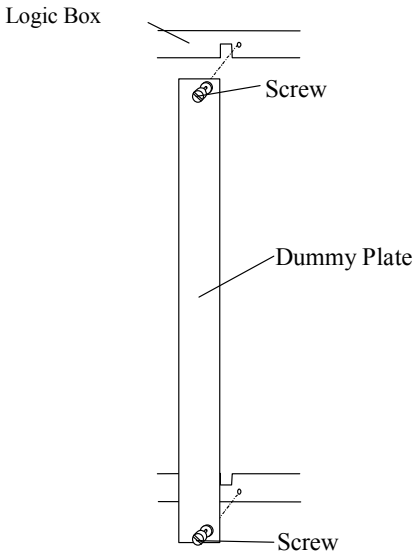


Fig. 4.4.3-7 Attachment of Dummy Plate

3-4 Removal of nameplate

a. Remove the screw from the rack frame and remove the nameplate tags to be installed.
b. Remove the nameplate from the nameplate tag.
c. Attach the remaining nameplate tags with the screw.

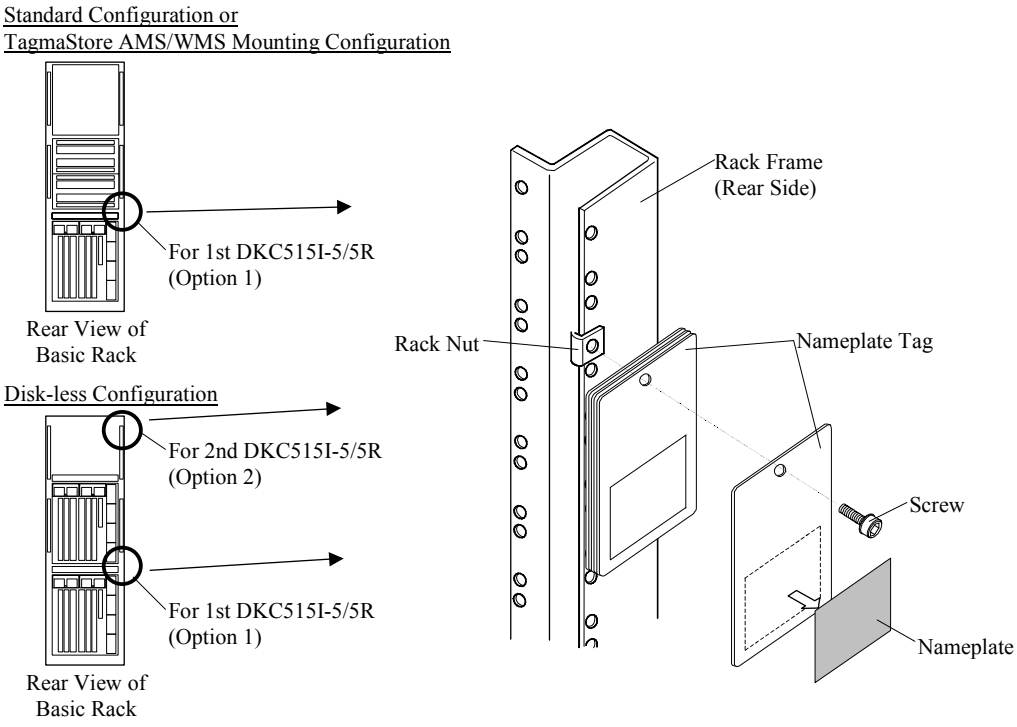
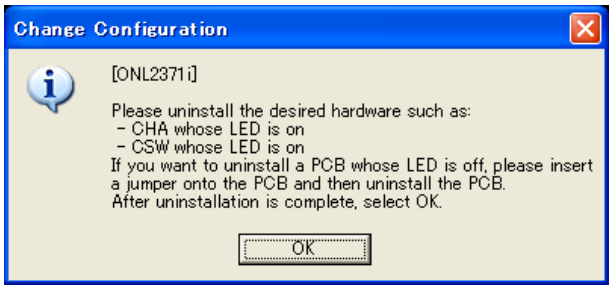


Fig. 4.4.3-8 Removal of Nameplate

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4. SVP procedure

(1) <Making sure of completion of the CHA/CSW removal>



In response to a message, “Please uninstall the desired hardware such as:
- CHA whose LED is on
- CSW whose LED is on
If you want to uninstall a PCB whose LED is off, please insert a jumper onto the PCB and then uninstall the PCB. After uninstallation is complete, select OK.”, select (CL) [OK].

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5. SVP post procedure

(1)

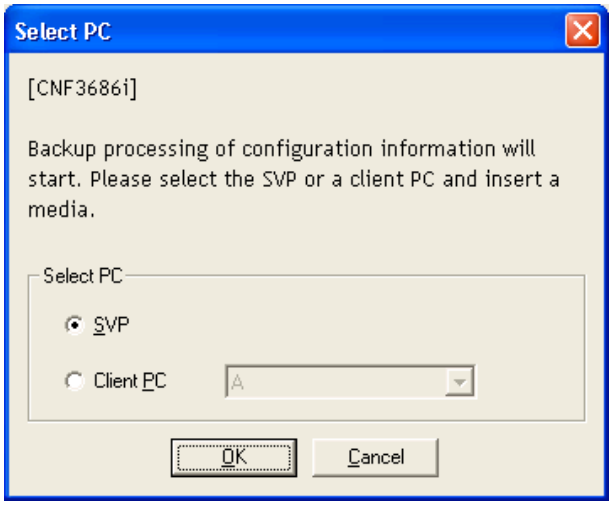
A message, “Renewal process has completed. Please check subsystem status.” is displayed. In response to the message, select (CL) [OK].



(2)

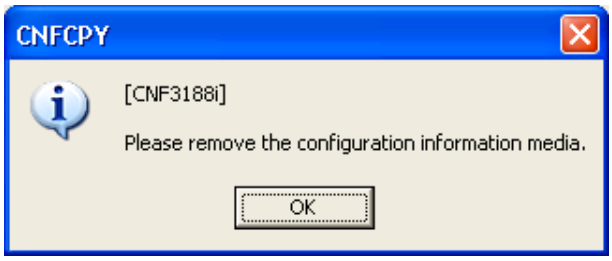
A message, “Backup processing of configuration information will start. Please select the SVP or a client PC and insert a media.” is displayed.

Set the Config FD in the FDD of the selected PC and select (CL) the [OK].



(3)

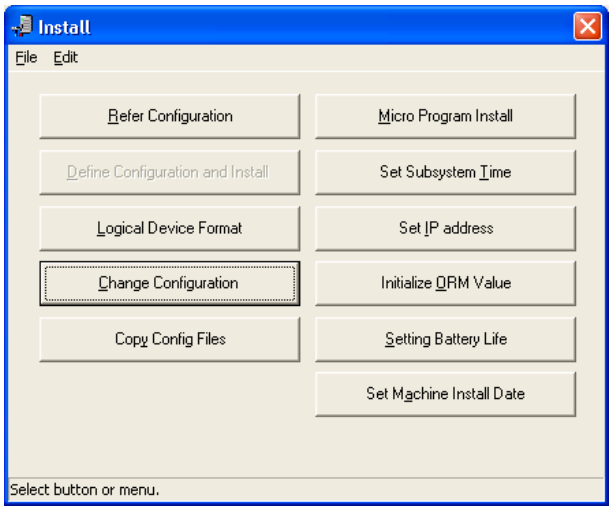
Since a message, “Please remove the configuration information media.” is displayed when the backup of the FD is completed, pull out the FD from the FDD and select (CL) the [OK].



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(4)

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



(5) <Mode Change>
Change the mode to View Mode.

Return to the working table and do the rest of the work. (INST02-60)

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4.4.4 De-Installation of NAS 8-port Adapter (DKC-F510I-8NS/8NSR)

Note: When two control frames (DKCs) are installed in the Disk-less configuration, check the serial number of target DKC on the SVP screen and beware of a removal position to prevent mistakes. (See “5.2.4 Refer Configuration 3. <DKC Configuration window>” [INST05-410].)

Table 4.4.4-1 Parts List

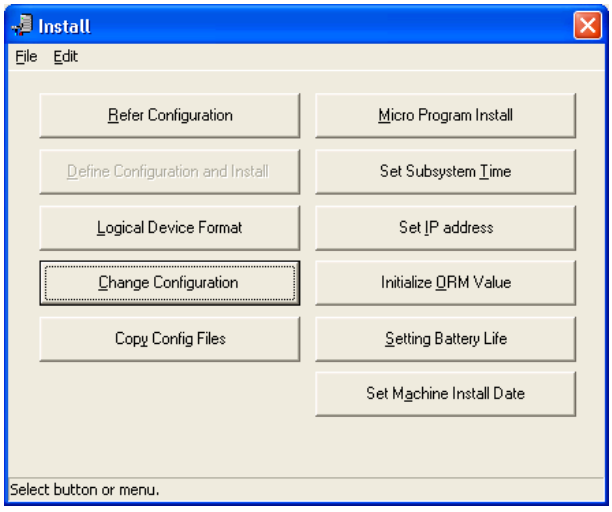
No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKC-F510I-8NS	NAS 4-port Adapter PCB	5524264-A	2	
			5524264-C		
		NAS Dummy Plate	3269786-A	2	
		8NS COVER INST	3269851-1	1	Installation manual of NAS dummy plate
		Nameplate (HDS)	2106990-36	1	RSD
			2106992-36/236		HICAM/HICEF
		Nameplate (HP)	2106990-136	1	RSD
			2106992-136/336		HICAM/HICEF
2	DKC-F510I-8NSR	NAS 4-port Adapter PCB	5524264-C	2	
		NAS Dummy Plate	3269786-A	2	
		8NS COVER INST	3269851-1	1	Installation manual of NAS dummy plate
		Nameplate (HDS)	2751038-36	1	RSD
			2751040-36/236		HICAM/HICEF
		Nameplate (HP)	2751038-136	1	RSD
			2751040-136/336		HICAM/HICEF

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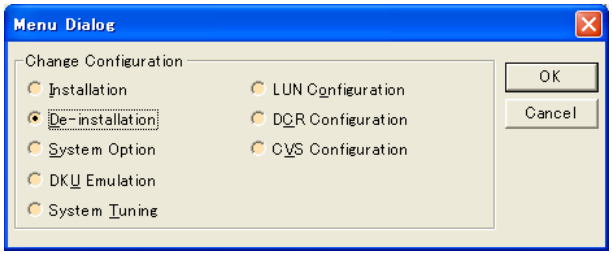
1. Setting up the New Device Structure Information

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

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

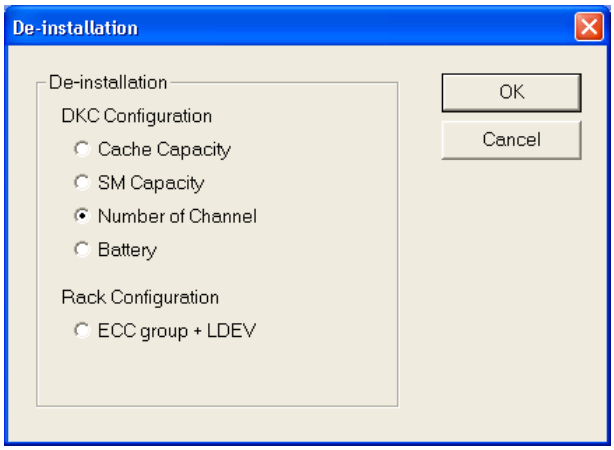


(3) <Start Device Structure Setup screen>
Select (CL) [De-installation] in the 'Menu Dialog' dialog box and select (CL) [OK].

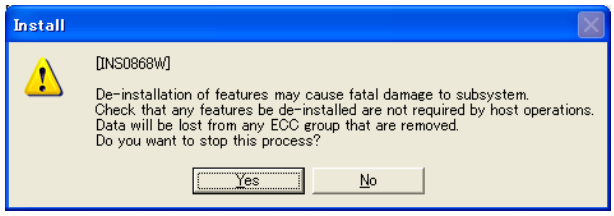


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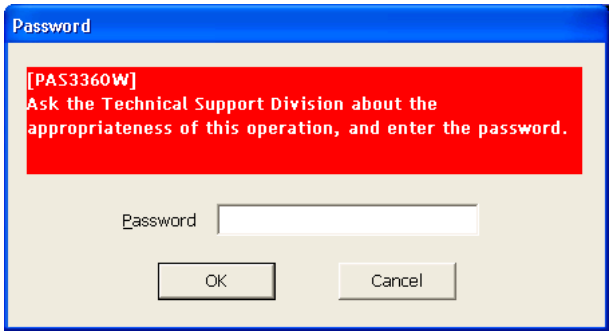
(4) <Select a part to be changed>
Select (CL) [Number of Channel], and select (CL) [OK].



(5)
Select (CL) [No] in response to "De-installation of features may cause fatal damage to subsystem. Check that any features be de-installed are not required by host operations. Data will be lost from any ECC group that are removed. Do you want to stop this process?".



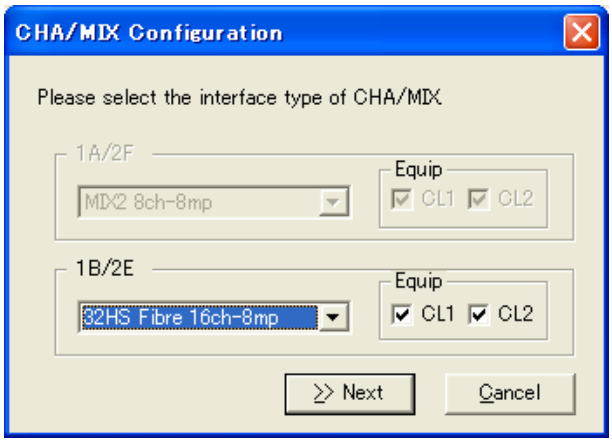
(6) <Input password>
Enter a password and select (CL) the [OK].



Notice: This is a special (exceptional) operation that can cause a serious failure such as a system down or a data loss if a wrong part to be removed is selected, and requires an input of a password. Ask the technical support division about the appropriateness of the operation, and input the password after getting an approval of executing the operation.

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(7) <Updating the configuration information>
In the 'CHA/MIX Configuration' window, select (CL) the [No Equip] for the location where the CHA is to be removed from or remove the check mark from the check box concerned.



Note: In the case of the multi-platform configuration

(1) When changing the configuration from multi-platform to open, remove the volume of the main frame first, and then remove the Channel PCB.

(2) When changing the configuration from multi-platform to main frame, remove the volume of the open first, and then remove the Channel PCB.

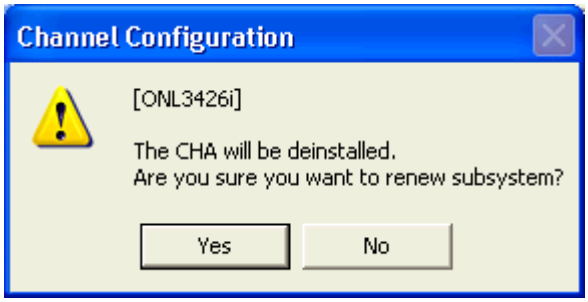
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2. SVP pre procedure

(1) <Start installation>

Select (CL) [Yes] in response to "The CHA will be deinstalled. Are you sure you want to renew subsystem?".

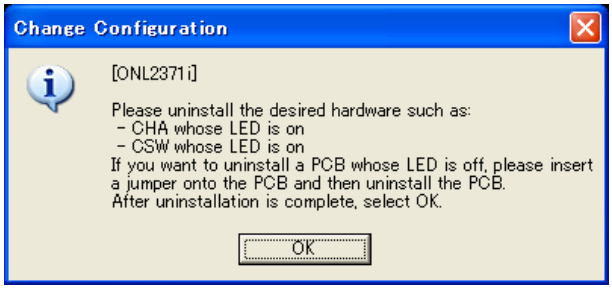
When [No] is selected (CL), returns to INST04-04D-20 step (2).



(2) <De-Install CHA>

At this point refrain from pressing the [OK] button.

"Please uninstall the desired hardware such as:
- CHA whose LED is on
- CSW whose LED is on
If you want to uninstall a PCB whose LED is off, please insert a jumper onto the PCB and then uninstall the PCB. After uninstallation is complete, select OK." is displayed.



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3. De-Installation Procedure of NAS 8-port Adapter for SX

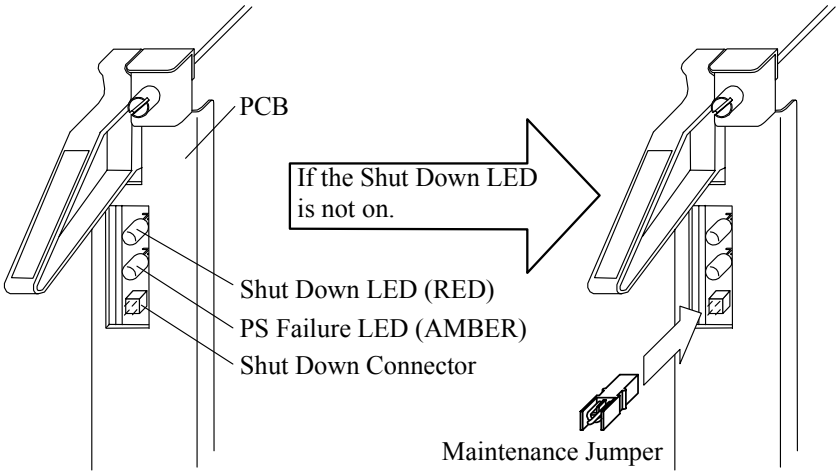
Note: Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

3-1 Confirmation of the Shut Down LED

a. While referring to Fig. 4.4.4-1 and Table 4.4.4-2 check the Shut Down LED on the PCB. Connect the Maintenance Jumper to the Shut Down Connector if the Shut Down LED is not on.

⚠ CAUTION

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



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

Fig. 4.4.4-1 Location of the Shut Down LED

Table 4.4.4-2 Inserting Location

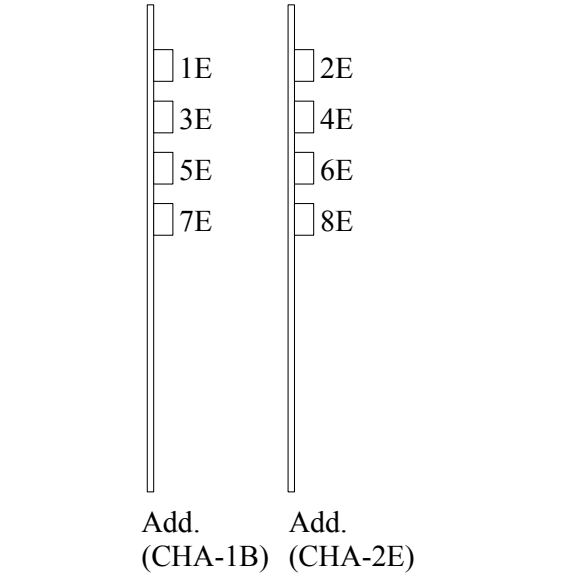
No.	Option Name	Location No.		Remarks
		Cluster 1	Cluster 2	
1	Add.	CHA-1B	CHA-2E	

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3-2 Disconnection of the optical fibre cables

a. Disconnect the optical fibre cables from the PCB.

CHA PCB (Logic Box)



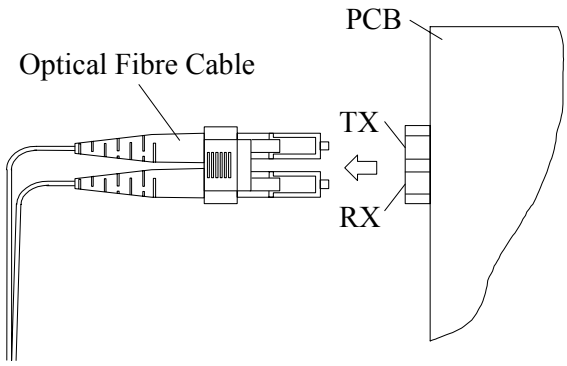


Fig. 4.4.4-2 Disconnection of Optical Fibre Cables

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b. Loosen the screw and remove the stopper.
c. Remove the two cores by pulling them toward you.
d. Unbind the binder of the each core and remove the optical fibre cables from grooves on the each core.
e. Install the cores each of which have the optical fibre cable for the MIX PCB left, and then fasten them with the stopper and a screw.

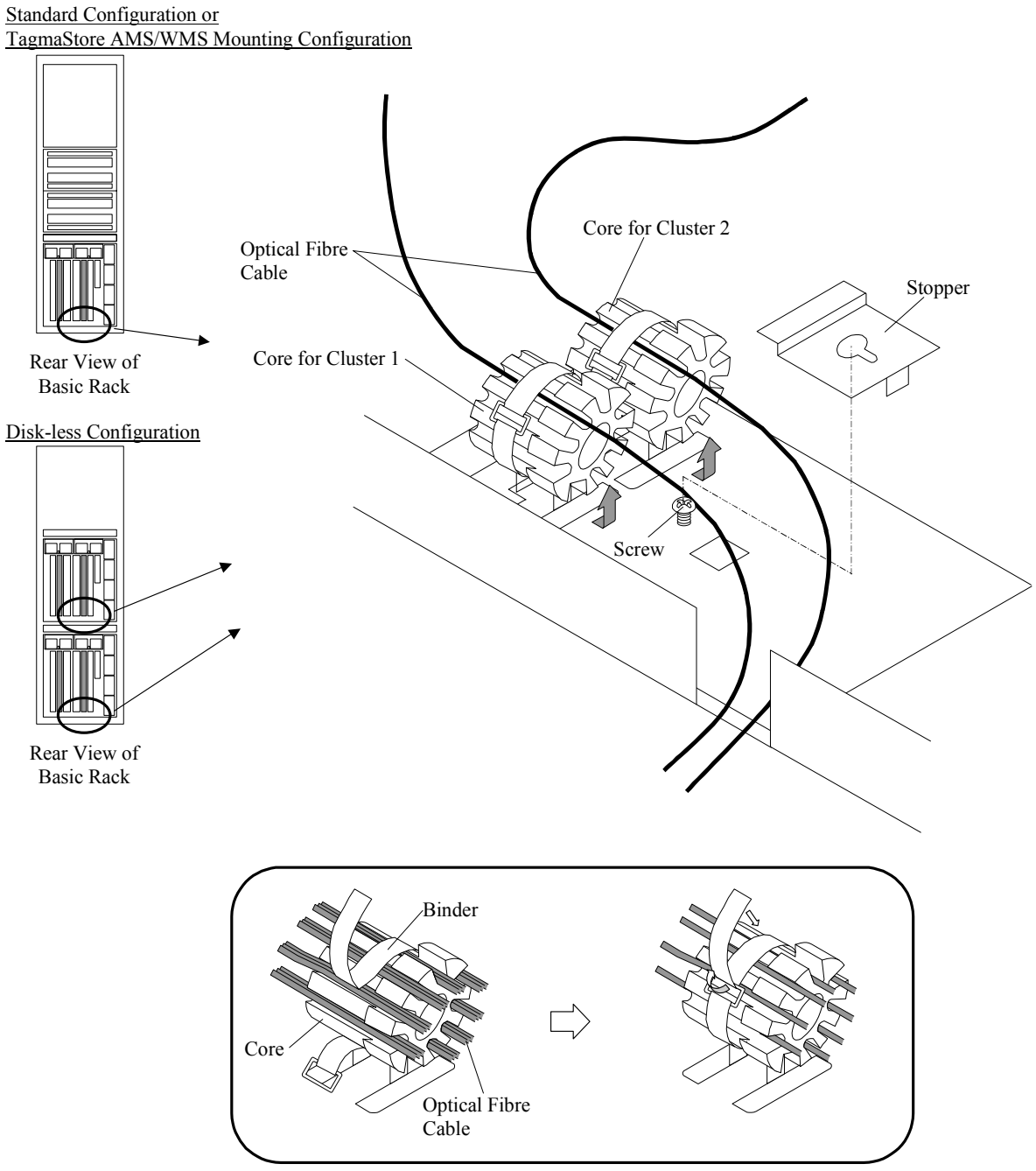


Fig. 4.4.4-3 Removal of Optical Fibre Cables

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f. When the optical fibre cables have been wired from the floor, draw out the cables from the opening, and go to step 3-3.
   When the optical fibre cables have been wired from the top cover, go to step g.
g. Loosen the two screws and open the slide cover.
h. Open the three repeat binder on the frame.
i. Draw out the optical fibre cable from the cable insertion hole of top cover.

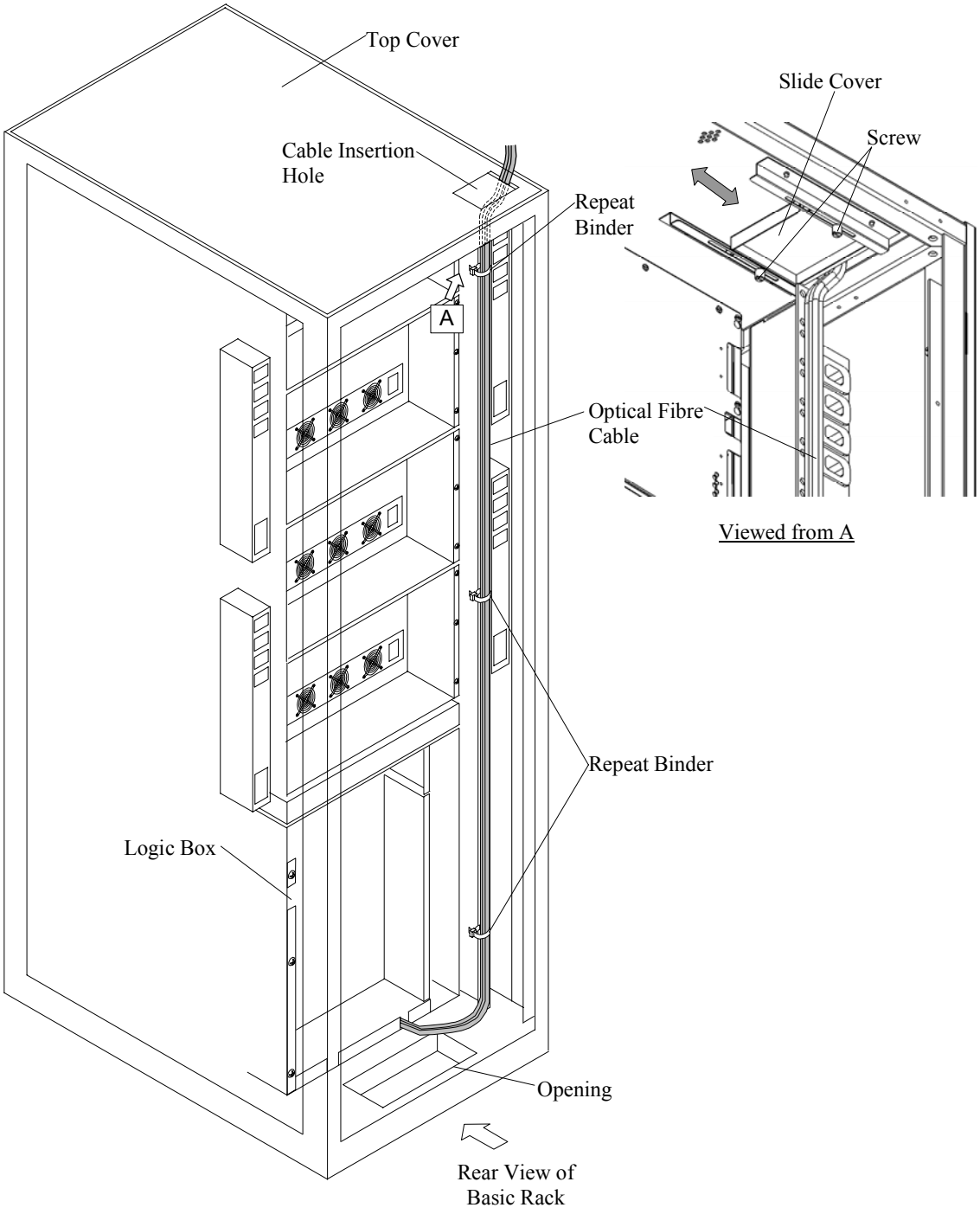
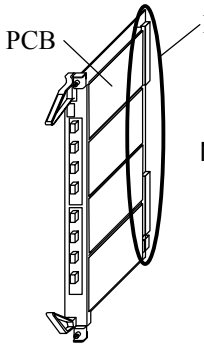


Fig. 4.4.4-4 Removal of Optical Fibre Cables

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3-3 Removal of the PCB

a. Loosen the screws and remove the PCBs from the Logic Box.



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

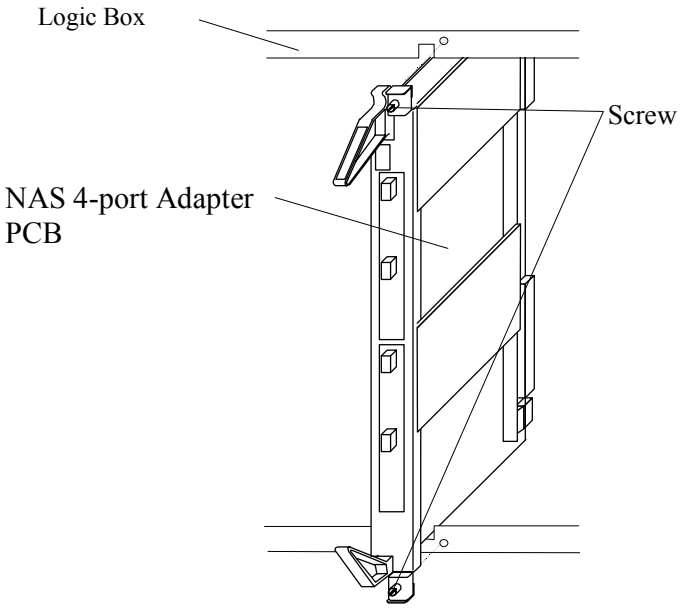


Fig. 4.4.4-5 Removal of PCB

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b. When the 19-inch Rack (DKC-F515I-FRMR) is installed, remove the dummy plates from the rear door.
   When the 19-inch Rack (DKC-F515I-FRMR) is not installed, go to step c.
c. Attach the dummy plate and fasten the screws.

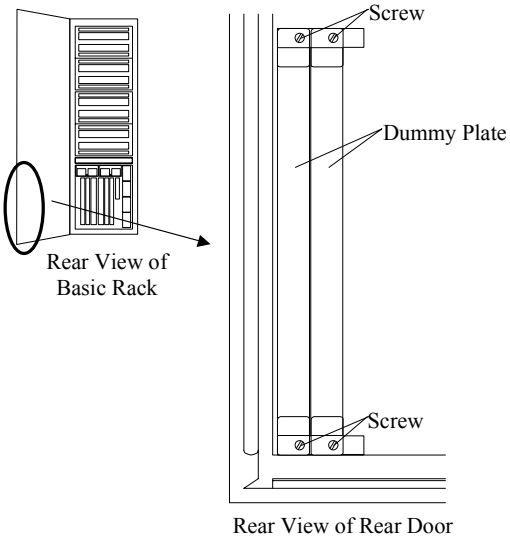


Fig. 4.4.4-6 Removal of Dummy Plate

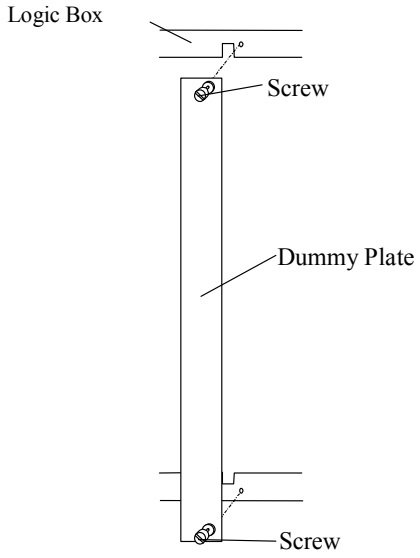


Fig. 4.4.4-7 Attachment of Dummy Plate

3-4 Removal of nameplate

a. Remove the screw from the rack frame and remove the nameplate tags to be installed.
b. Remove the DKC-F510I-8NS/8NSR nameplate from the nameplate tag.
c. Attach the remaining nameplate tags with the screw.

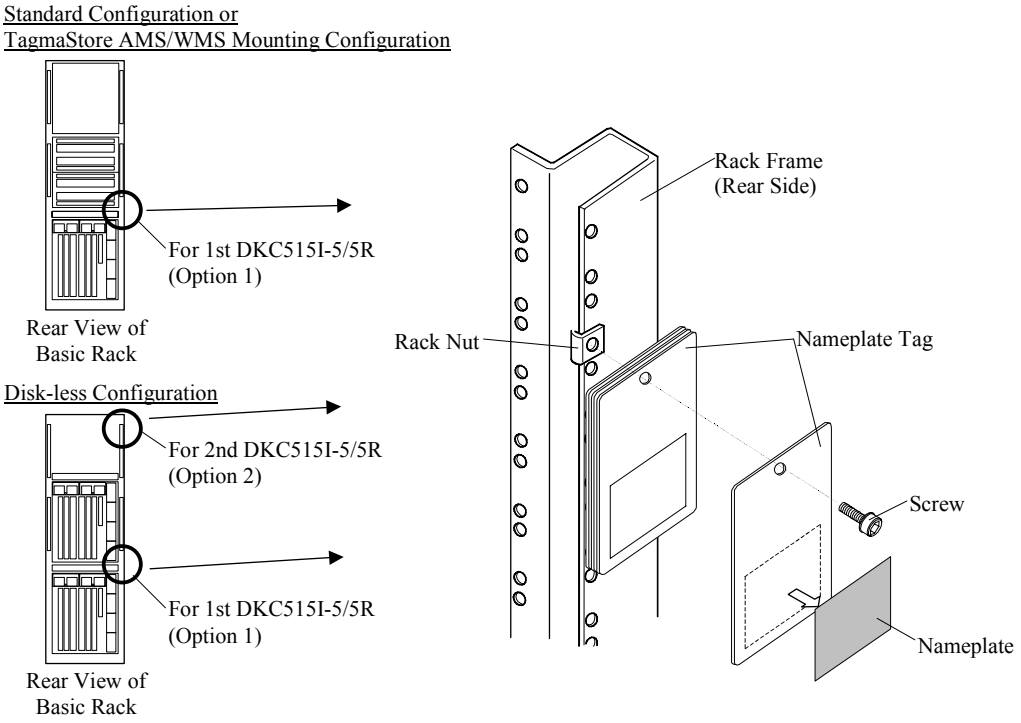


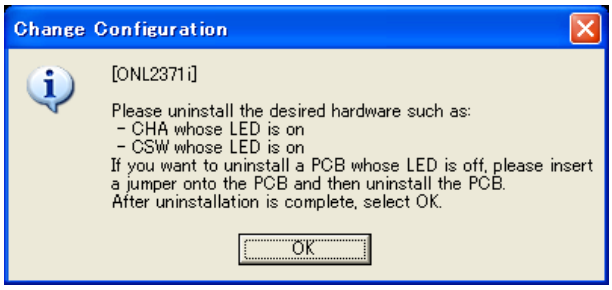
Fig. 4.4.4-8 Removal of Nameplate

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4. SVP procedure

(1) <Making sure of completion of the CHA/CSW removal>

In response to a message, “Please uninstall the desired hardware such as:
- CHA whose LED is on
- CSW whose LED is on
If you want to uninstall a PCB whose LED is off, please insert a jumper onto the PCB and then uninstall the PCB. After uninstallation is complete, select OK.”, select (CL) [OK].



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5. SVP post procedure

(1)

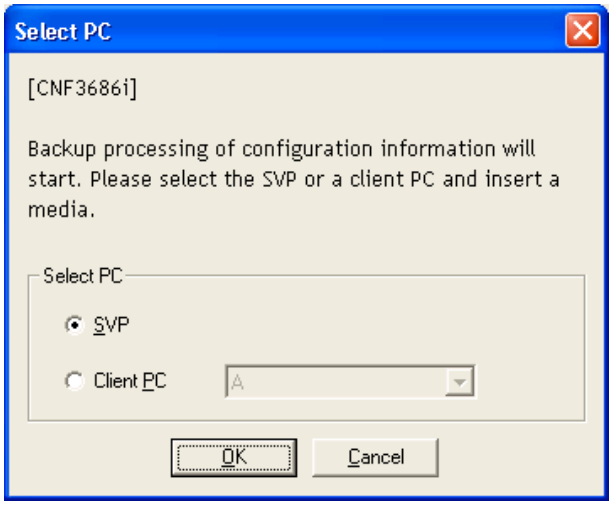
A message, “Renewal process has completed. Please check subsystem status.” is displayed. In response to the message, select (CL) [OK].



(2)

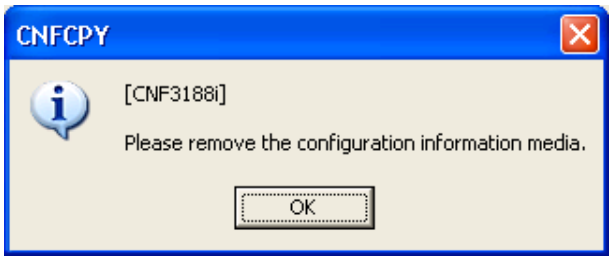
A message, “Backup processing of configuration information will start. Please select the SVP or a client PC and insert a media.” is displayed.

Set the Config FD in the FDD of the selected PC and select (CL) the [OK].



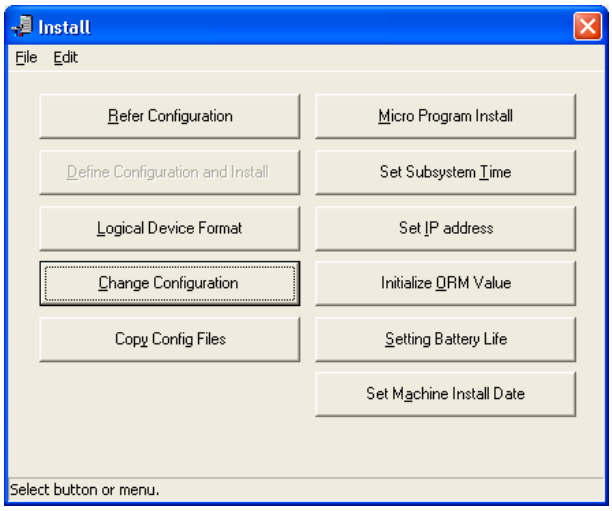
(3)

Since a message, “Please remove the configuration information media.” is displayed when the backup of the FD is completed, pull out the FD from the FDD and select (CL) the [OK].



(4)

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



(5) <Mode Change>
Change the mode to View Mode.

Return to the working table and do the rest of the work. (INST02-60)

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4.4.5 De-Installation of iSCSI 8-port Adapter (DKC-F510I-8ISR)

Note: When two control frames (DKCs) are installed in the Disk-less configuration, check the serial number of target DKC on the SVP screen and beware of a removal position to prevent mistakes. (See “5.2.4 Refer Configuration 3. <DKC Configuration window>” [INST05-410].)

Table 4.4.5-1 Parts List

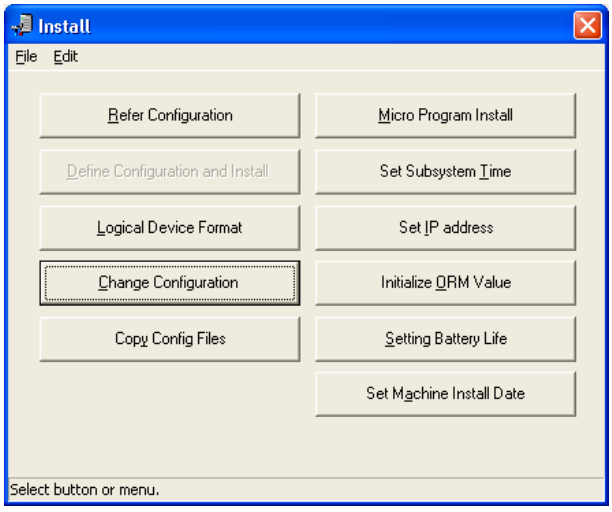
No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKC-F510I-8ISR	iSCSI 4-port Adapter PCB	5524265-C	2	
		Nameplate (HDS)	2751038-67	1	RSD
			2751040-67/267		HICAM/HICEF
		Nameplate (HP)	2751038-167	1	RSD
			2751040-167/367		HICAM/HICEF

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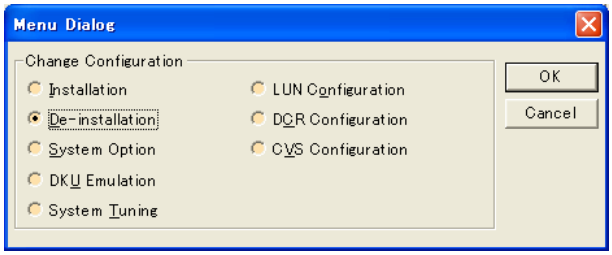
1. Setting up the New Device Structure Information

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

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

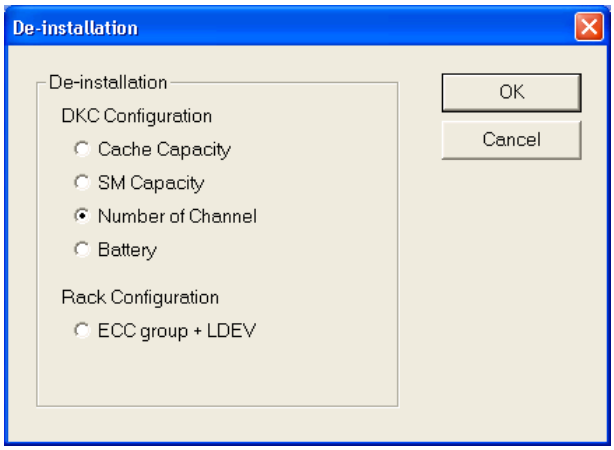


(3) <Start Device Structure Setup screen>
Select (CL) [De-installation] in the 'Menu Dialog' dialog box and select (CL) [OK].

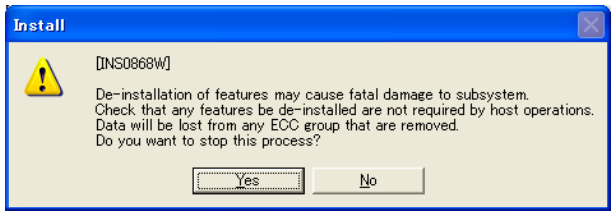


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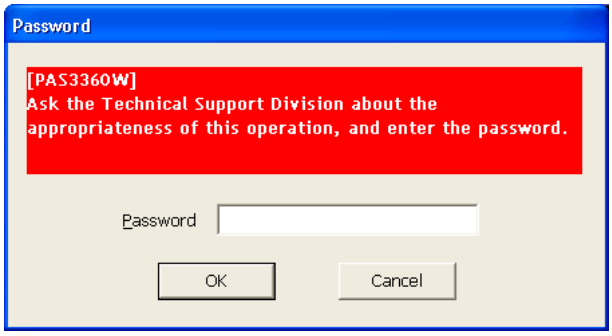
(4) <Select a part to be changed>
Select (CL) [Number of Channel], and select (CL) [OK].



(5)
Select (CL) [No] in response to "De-installation of features may cause fatal damage to subsystem. Check that any features be de-installed are not required by host operations. Data will be lost from any ECC group that are removed. Do you want to stop this process?".



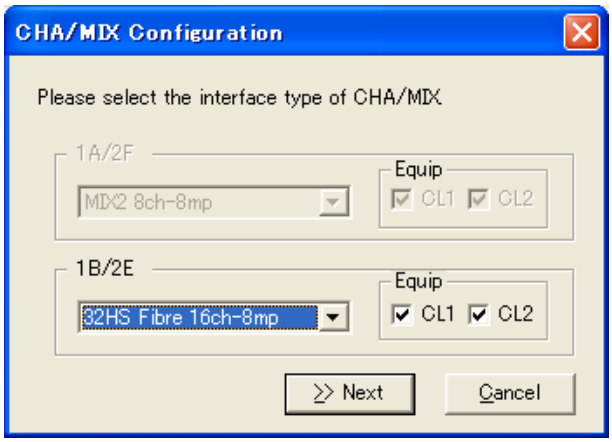
(6) <Input password>
Enter a password and select (CL) the [OK].



Notice: This is a special (exceptional) operation that can cause a serious failure such as a system down or a data loss if a wrong part to be removed is selected, and requires an input of a password. Ask the technical support division about the appropriateness of the operation, and input the password after getting an approval of executing the operation.

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(7) <Updating the configuration information>
In the 'CHA/MIX Configuration' window, select (CL) the [No Equip] for the location where the CHA is to be removed from or remove the check mark from the check box concerned.



Note: In the case of the multi-platform configuration

(1) When changing the configuration from multi-platform to open, remove the volume of the main frame first, and then remove the Channel PCB.

(2) When changing the configuration from multi-platform to main frame, remove the volume of the open first, and then remove the Channel PCB.

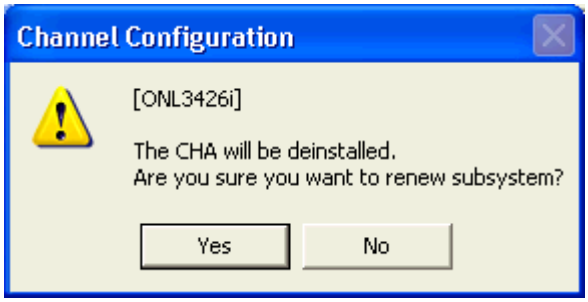
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2. SVP pre procedure

(1) <Start installation>

Select (CL) [Yes] in response to "The CHA will be deinstalled. Are you sure you want to renew subsystem?".

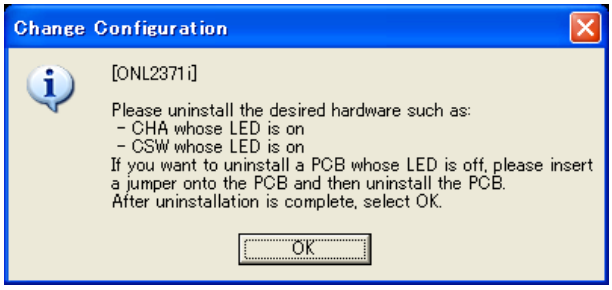
When [No] is selected (CL), returns to INST04-04E-20 step (2).



(2) <De-Install CHA>

At this point refrain from pressing the [OK] button.

"Please uninstall the desired hardware such as:
- CHA whose LED is on
- CSW whose LED is on
If you want to uninstall a PCB whose LED is off, please insert a jumper onto the PCB and then uninstall the PCB. After uninstallation is complete, select OK." is displayed.



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3. De-Installation Procedure of iSCSI 8-port Adapter

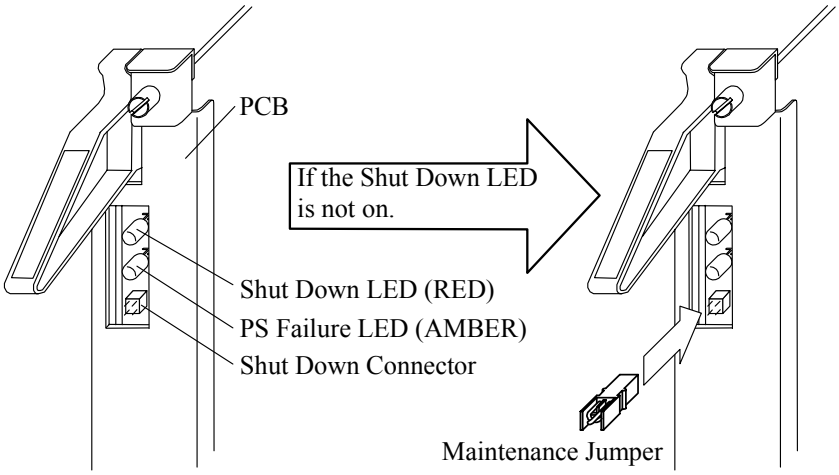
Note: Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

3-1 Confirmation of the Shut Down LED

a. While referring to Fig. 4.4.5-1 and Table 4.4.5-2 check the Shut Down LED on the PCB. Connect the Maintenance Jumper to the Shut Down Connector if the Shut Down LED is not on.

⚠ CAUTION

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



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

Fig. 4.4.5-1 Location of the Shut Down LED

Table 4.4.5-2 Inserting Location

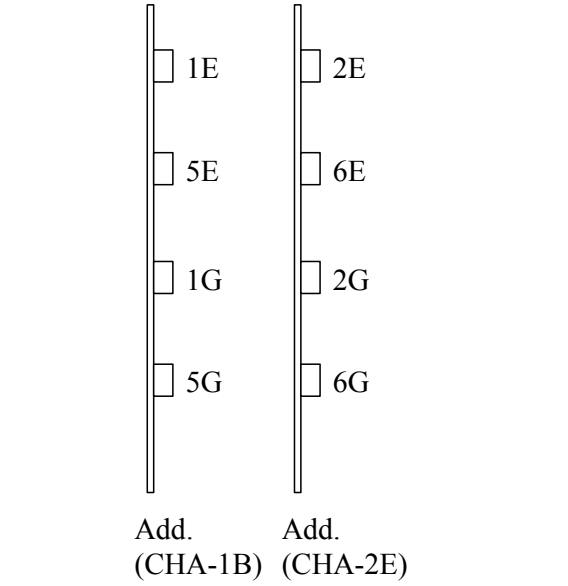
No.	Option Name	Location No.		Remarks
		Cluster 1	Cluster 2	
1	Add.	CHA-1B	CHA-2E	

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3-2 Disconnection of the optical fibre cables

a. Disconnect the optical fibre cables from the PCB.

CHA PCB (Logic Box)



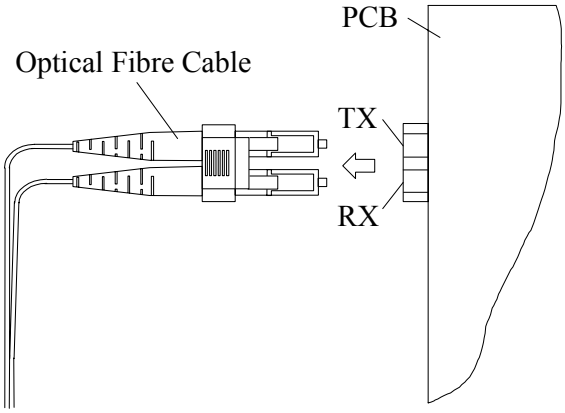


Fig. 4.4.5-2 Disconnection of Optical Fibre Cables

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b. Loosen the screw and remove the stopper.
c. Remove the two cores by pulling them toward you.
d. Unbind the binder of the each core and remove the optical fibre cables from grooves on the each core.
e. Install the cores each of which have the optical fibre cable for the MIX PCB left, and then fasten them with the stopper and a screw.

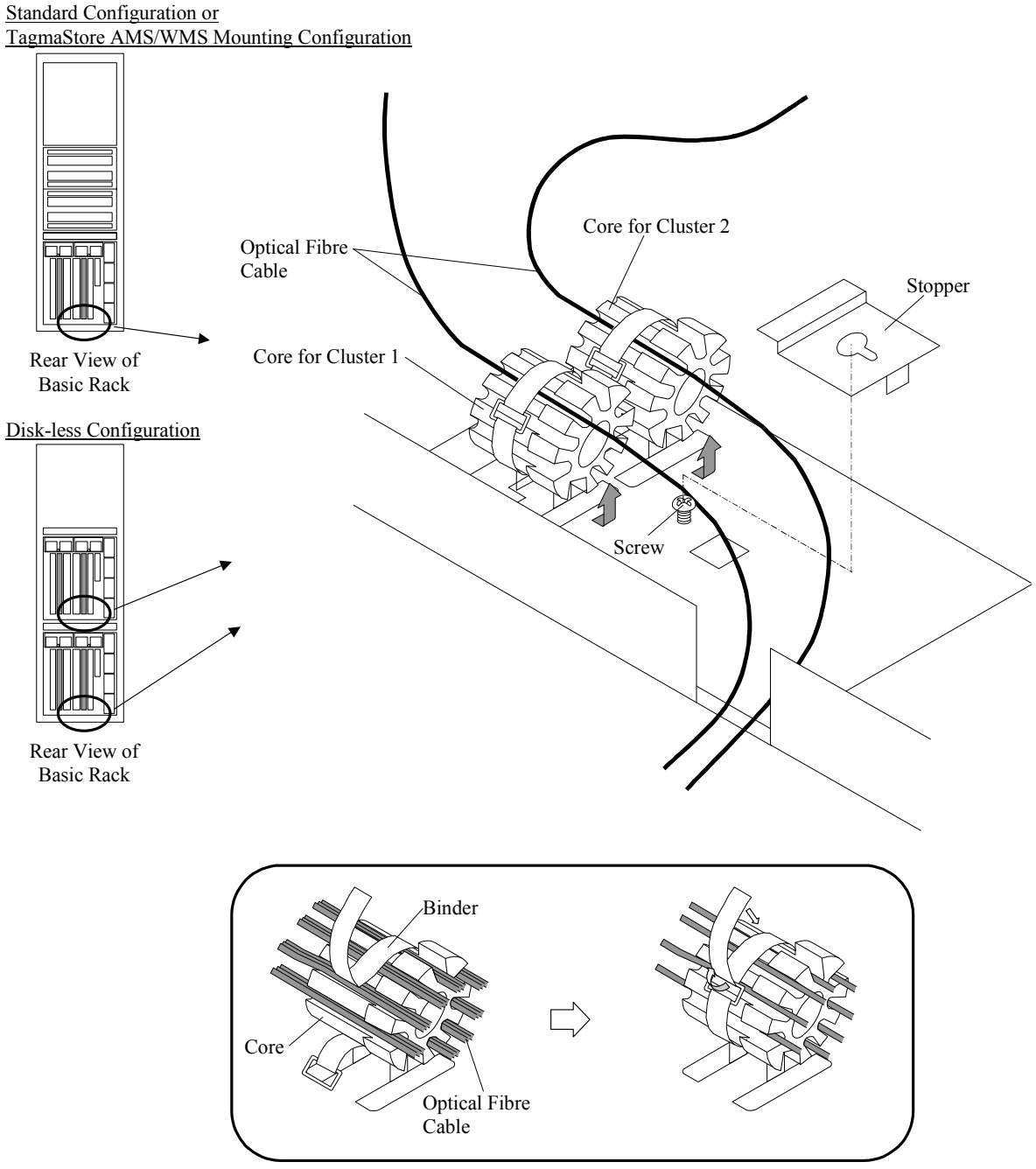


Fig. 4.4.5-3 Removal of Optical Fibre Cables

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f. When the optical fibre cables have been wired from the floor, draw out the cables from the opening, and go to step 3-3.
   When the optical fibre cables have been wired from the top cover, go to step g.
g. Loosen the two screws and open the slide cover.
h. Open the three repeat binder on the frame.
i. Draw out the optical fibre cable from the cable insertion hole of top cover.

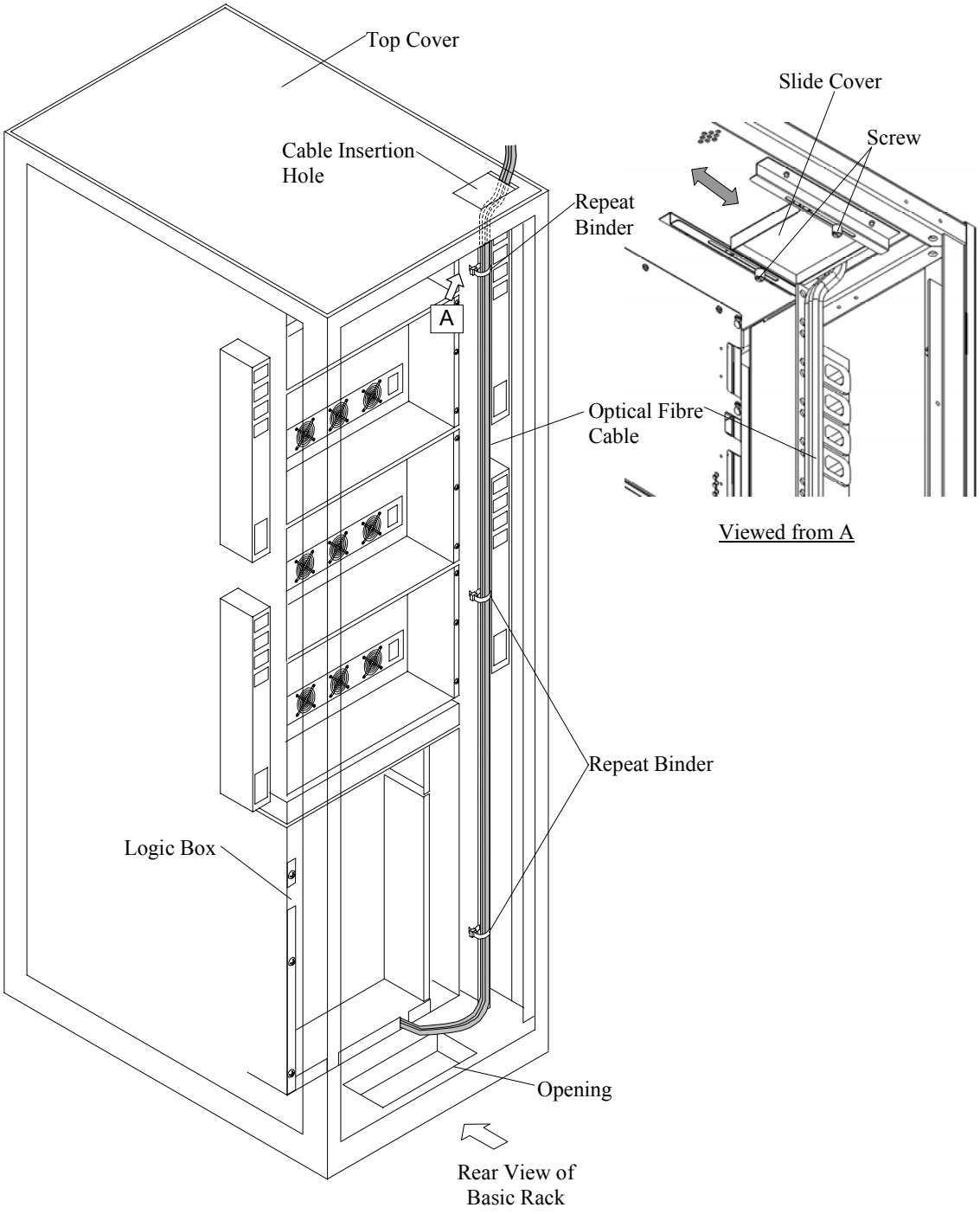
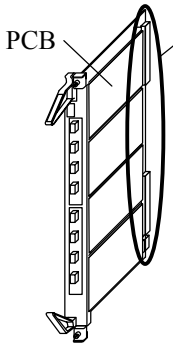


Fig. 4.4.5-4 Removal of Optical Fibre Cables

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3-3 Removal of the PCB

a. Loosen the screws and remove the PCBs from the Logic Box.



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

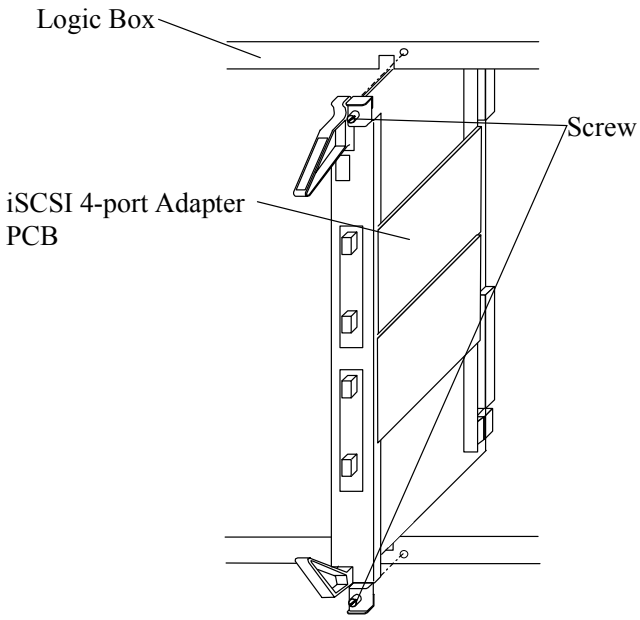


Fig. 4.4.5-5 Removal of PCB

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b. When the 19-inch Rack (DKC-F515I-FRMR) is installed, remove the dummy plates from the rear door.
   When the 19-inch Rack (DKC-F515I-FRMR) is not installed, go to step c.
c. Attach the dummy plate and fasten the screws.

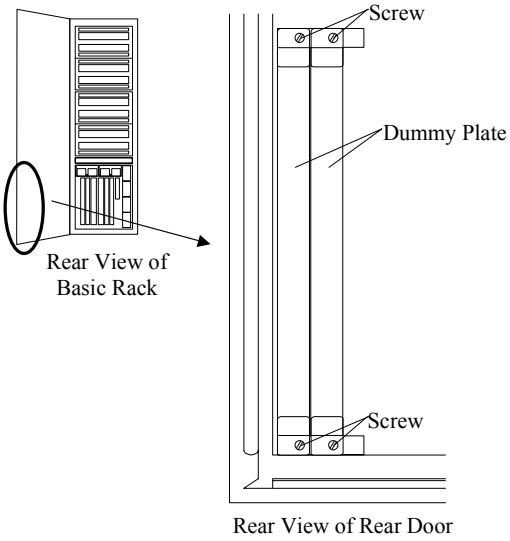


Fig. 4.4.5-6 Removal of Dummy Plate

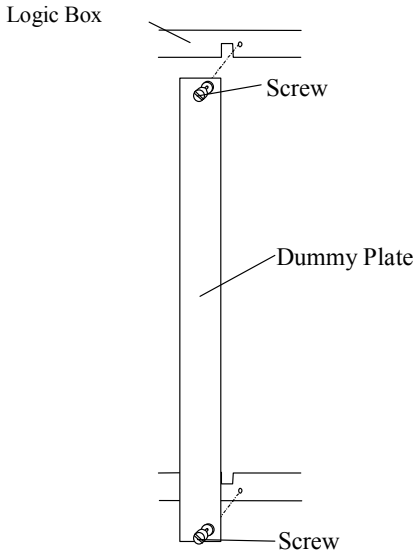


Fig. 4.4.5-7 Attachment of Dummy Plate

3-4 Removal of nameplate

a. Remove the screw from the rack frame and remove the nameplate tags to be installed.
b. Remove the nameplate from the nameplate tag.
c. Attach the remaining nameplate tags with the screw.

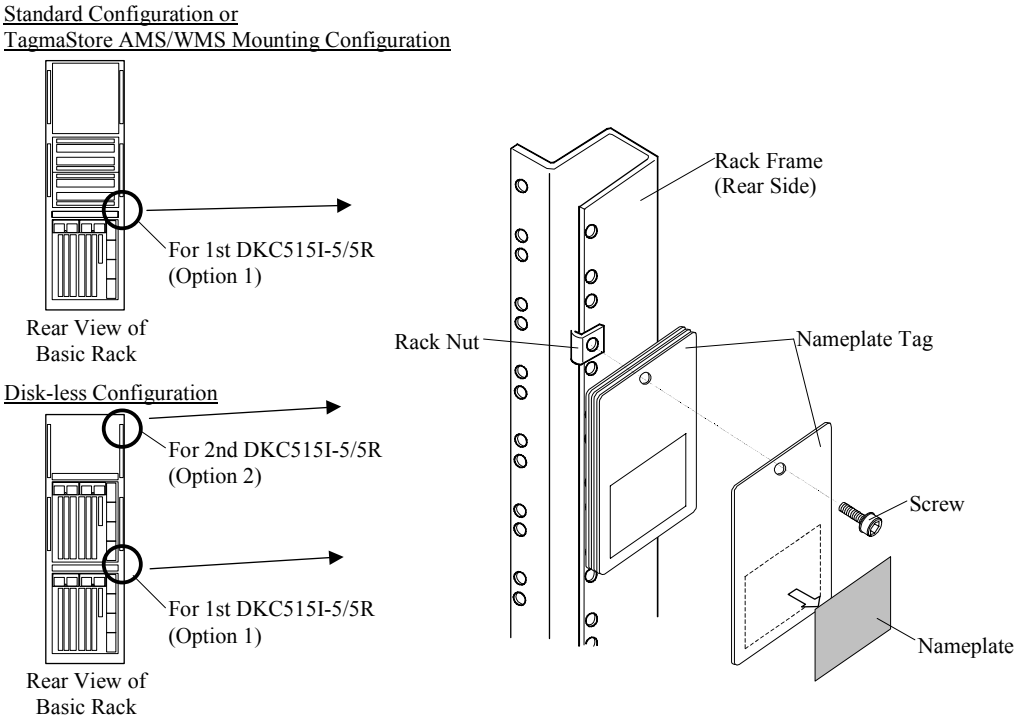
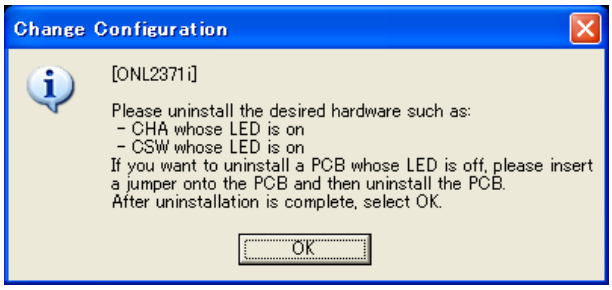


Fig. 4.4.5-8 Removal of Nameplate

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4. SVP procedure

(1) <Making sure of completion of the CHA/CSW removal>



In response to a message, “Please uninstall the desired hardware such as:
- CHA whose LED is on
- CSW whose LED is on
If you want to uninstall a PCB whose LED is off, please insert a jumper onto the PCB and then uninstall the PCB. After uninstallation is complete, select OK.”, select (CL) [OK].

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5. SVP post procedure

(1)

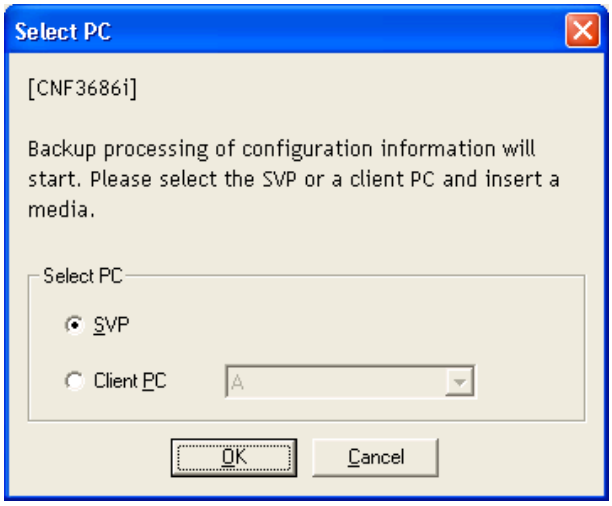
A message, “Renewal process has completed. Please check subsystem status.” is displayed. In response to the message, select (CL) [OK].



(2)

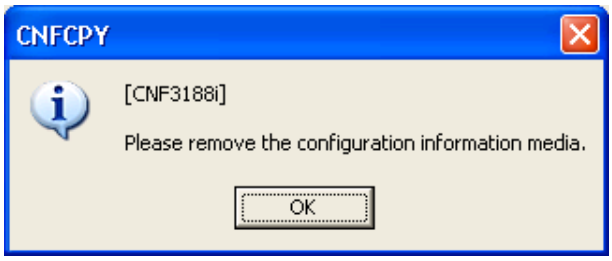
A message, “Backup processing of configuration information will start. Please select the SVP or a client PC and insert a media.” is displayed.

Set the Config FD in the FDD of the selected PC and select (CL) the [OK].



(3)

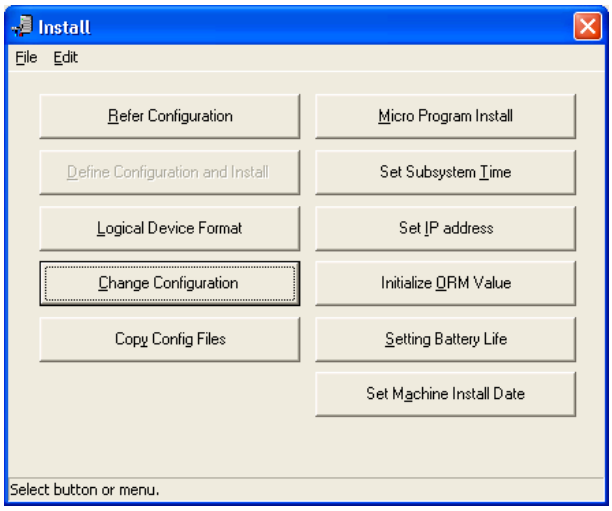
Since a message, “Please remove the configuration information media.” is displayed when the backup of the FD is completed, pull out the FD from the FDD and select (CL) the [OK].



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(4)

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



(5) <Mode Change>
Change the mode to View Mode.

Return to the working table and do the rest of the work. (INST02-60)

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4.5 De-Installation of Control Frame (DKC515I-5/5R)

4.5.1 Parts List

Table 4.5.1-1 Parts List of DKC515I-5/5R

Item No.	Part Name	Part No.	Quantity	Remarks
1	Logic Box	3272924-A	1	
2	SVP ASSY	5527951-C	1	
3	Cable ASSY (PS INLET)	3272976-E	1	
4	Repeat Binder	5409042-3	12	
5	HU Jumper	5521578-1	4	Maintenance Jumper
6	Label (V/Hz/PH.)	3264271-1	1	
7	Label (QTY)	3268905-1	1	
8	EMI Core	5513535-1	1	
9	Repeat Binder	5409042-2	1	
10	Label (REV)	3239458-1	1	
11	Label (PATENT-515)	3274177-1	1	
12	Label (KOREN-MIC)	3274178-1	1	For HDS
13	Label-NOISE (FCC-CSA)	3269890-1	1	
14	Label (VCCI)	5409106-1	1	
15	Label (BSMI-D3300)	3265644-2	1	For HDS
		3265644-4		
16	Label (UL4-1)	5529984-1	1	
17	Label (V/Hz-BASIC)	3274138-1	1	For HDS
18	Label (UL5)	3264272-1	1	
19	—	—	—	
20	Label (UL3)	5515795-1	1	
21	Label (BSMI)	3269907-1	1	For HP
22	Label (V/Hz-FRMR)	3274155-1	1	For HP
23	Packing Nameplate Kit	5529843-A	1	
24	Nameplate (HDS) *1	2106989-17	1	RSD
	(DKC515I-5)	2106991-17/117		HICAM/HICEF
	Nameplate (HDS) *2	2751037-17	1	RSD
	(DKC515I-5R)	2751039-17/117		HICAM/HICEF
25	Nameplate (HDS) *1	2106990-16	1	RSD
	(DKC-F510I-C4G)	2106992-16/216		HICAM/HICEF
	Nameplate (HDS) *2	2751038-16	1	RSD
	(DKC-F510I-C4GR)	2751040-16/216		HICAM/HICEF

(To be continued)

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(Continued from preceding page)

Item No.	Part Name	Part No.	Quantity	Remarks
26	Nameplate (HDS) *1	2106990-17	1	RSD
	(DKC-F510I-S1G)	2106992-17/217		HICAM/HICEF
	Nameplate (HDS) *2	2751038-17	1	RSD
	(DKC-F510I-S1GR)	2751040-17/217		HICAM/HICEF
27	Nameplate (HDS) *1	2106990-34	1	RSD
	(DKC-F510I-1HL)	2106992-34/234		HICAM/HICEF
	Nameplate (HDS) *2	2751038-34	1	RSD
	(DKC-F510I-1HLR)	2751040-34/234		HICAM/HICEF
28	Nameplate (HDS) *1	2106990-35	1	RSD
	(DKC-F510I-1HS)	2106992-35/235		HICAM/HICEF
	Nameplate (HDS) *2	2751038-35	1	RSD
	(DKC-F510I-1HSR)	2751040-35/235		HICAM/HICEF
29	—	—	—	
30	Nameplate (HDS) *2	2751038-65	1	RSD
	(DKC-F510I-1FSR)	2751040-65/265		HICAM/HICEF
31	Nameplate (HP)	2106989-26	1	RSD
	(AE102A)	2106991-26/126		HICAM/HICEF
32	Nameplate (HP)	2106989-34	1	RSD
	(AE071-63001)	2106991-34/134		HICAM/HICEF
33	Nameplate (HP) *1	2106990-116	1	RSD
	(AE025AX)	2106992-116/316		HICAM/HICEF
	Nameplate (HP) *2	2751038-116	1	RSD
	(AE025AX)	2751040-116/316		HICAM/HICEF
34	Nameplate (HP) *1	2106990-117	1	RSD
	(AE030AX)	2106992-117/317		HICAM/HICEF
	Nameplate (HP) *2	2751038-117	1	RSD
	(AE030AX)	2751040-117/317		HICAM/HICEF
35	Nameplate (HP) *1	2106990-134	1	RSD
	(AE008AX)	2106992-134/314		HICAM/HICEF
	Nameplate (HP) *2	2751038-134	1	RSD
	(AE008AX)	2751040-134/314		HICAM/HICEF

(To be continued)

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(Continued from preceding page)

Item No.	Part Name	Part No.	Quantity	Remarks
36	Nameplate (HP) *1	2106990-135	1	RSD
	(AE009AX)	2106992-135/335		HICAM/HICEF
	Nameplate (HP) *2	2751038-135	1	RSD
	(AE009AX)	2751040-135/335		HICAM/HICEF
37	Nameplate (HP) *2	2751038-165	1	RSD
		2751040-165/365		HICAM/HICEF
38	Bundle ID Label		1	

*1: DKC515I-5
*2: DKC515I-5R

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Table 4.5.1-2 Parts List of DKC-F515I-BCHR/BCSR

Item No.	Part Name	Part No.	Quantity	Remarks
100	Bezel (12U) ASSY	2751646-A	1	For DKC-F515I-BCHR
		2751191-B		For DKC-F515I-BCSR
101	Bezel (4U) ASSY	2751649-A	1	For DKC-F515I-BCHR
		2751192-B		For DKC-F515I-BCSR
102	Bracket (L)	3274066-1	1	
103	Bracket (L)	3274066-2	1	
104	Bracket (U)	3274067-1	4	
105	Screw	SB305N	4	
106	Screw	SB306N	8	
107	L/G Rail (HDS)	2751615-1	1	
108	L/G Rail (HDS)	2751615-2	1	
109	SVP Rail (HDS)	2751616-1	1	
110	SVP Rail (HDS)	2751616-2	1	
111	L/G Stopper (HDS)	5529966-1	2	
112	SVP Stopper (HDS)	5529967-1	2	
113	WA Socket Bolt	3261959-306	4	
114	WA Socket Bolt	3261959-408	6	
115	Screw	SB408N	2	
116	Nameplate (HDS)	2751038-71	1	RSD
	(DKC-F515I-BCHR)	2751040-71/271		HICAM/HICEF
	Nameplate (SUN)	2751038-73		RSD
	(DKC-F515I-BCSR)	2751040-73/273		HICAM/HICEF

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Table 4.5.1-3 Parts List of DKC-F515I-BCPR

Item No.	Part Name	Part No.	Quantity	Remarks
200	Bezel (12U) ASSY	2751650-A	1	
201	Bezel (4U) ASSY	2751651-A	1	
202	Bracket (L)	3274066-1	1	
203	Bracket (L)	3274066-2	1	
204	Bracket (U)	3274067-1	4	
205	Screw	SB305N	4	
206	Screw	SB306N	8	
207	Rail (L/G)	3272911-101	2	
208	Stopper (R)	5529494-1	2	
209	Rail (RK-SVP)	3269758-1	1	
210	Rail (RK-SVP)	3269758-2	1	
211	Stopper (SVP-R)	5524949-1	2	
212	WA Socket Bolt	3261959-516	16	
213	Screw	SB510N	8	
214	WA Socket Bolt	3261959-408	12	
215	Screw	SB408N	2	
216	Rack Nut	5510146-1	24	
217	MODEM Card	5524212-C	1	
218	Nameplate (HDS)	2751038-69	1	RSD
		2751040-69/269		HICAM/HICEF

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4.5.2 De-Installation Procedure of Bezel

1. Removal of Bezel (12U) and Bezel (4U)

⚠ CAUTION

The stopper of Bezel is unlocked and released easily at the 60 degree rotation, stop point, of the hexagon socket head screw Latch toward clockwise, and Bezel can remove by pull in to front.
Over force/torque to the Latch might become the cause of Latch damage.

a. Put the wrench in the access hole of the Bezel.
b. Swing the wrench clockwise and remove Bezel.

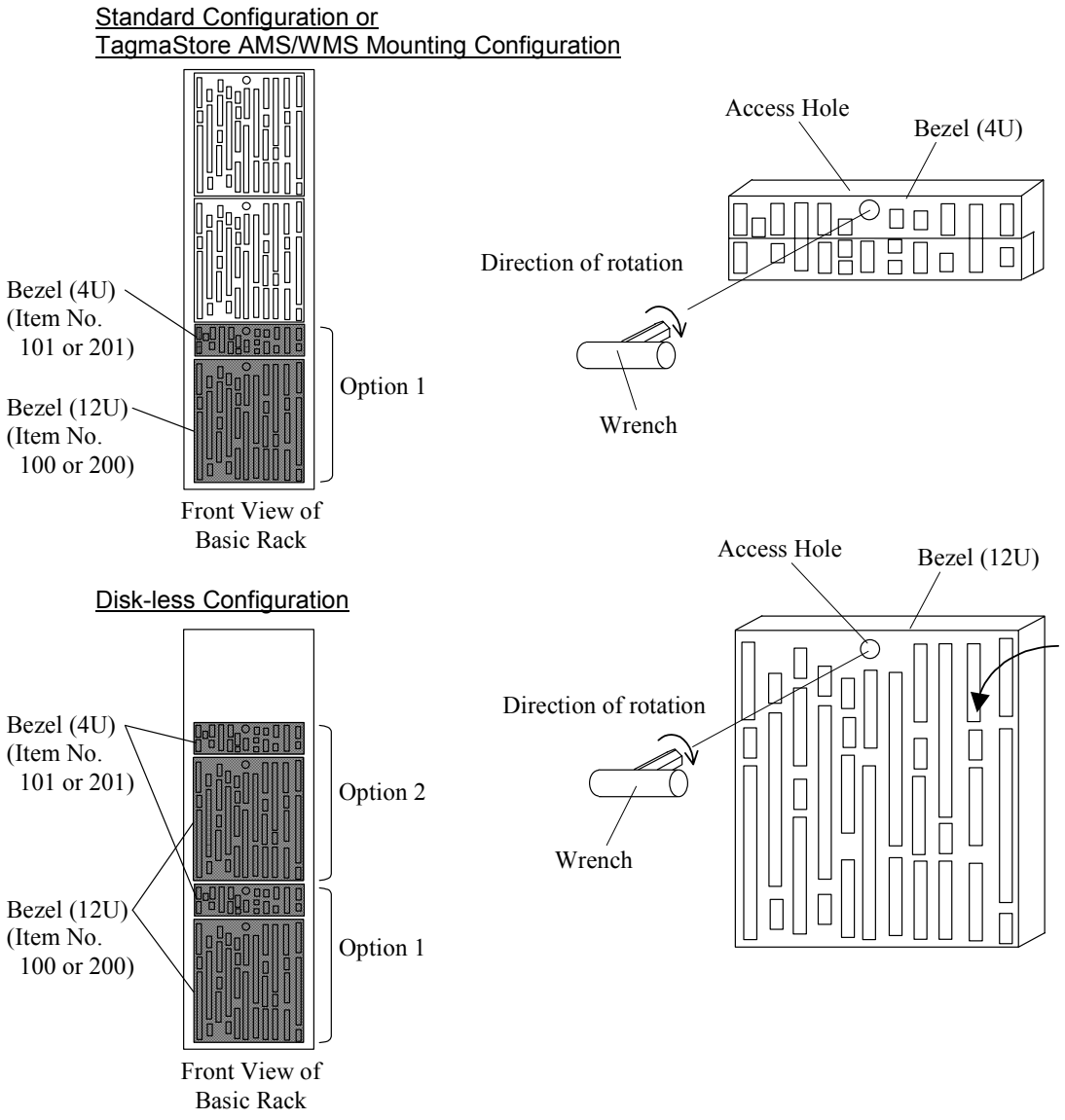


Fig. 4.5.2-1 Removal of Bezels

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2. Removal of Brackets
   a. Remove the screws and remove the four brackets (U) from the front side of the Logic Box.
   b. Remove the screws and remove the two brackets (L) from the front side of the Logic Box.

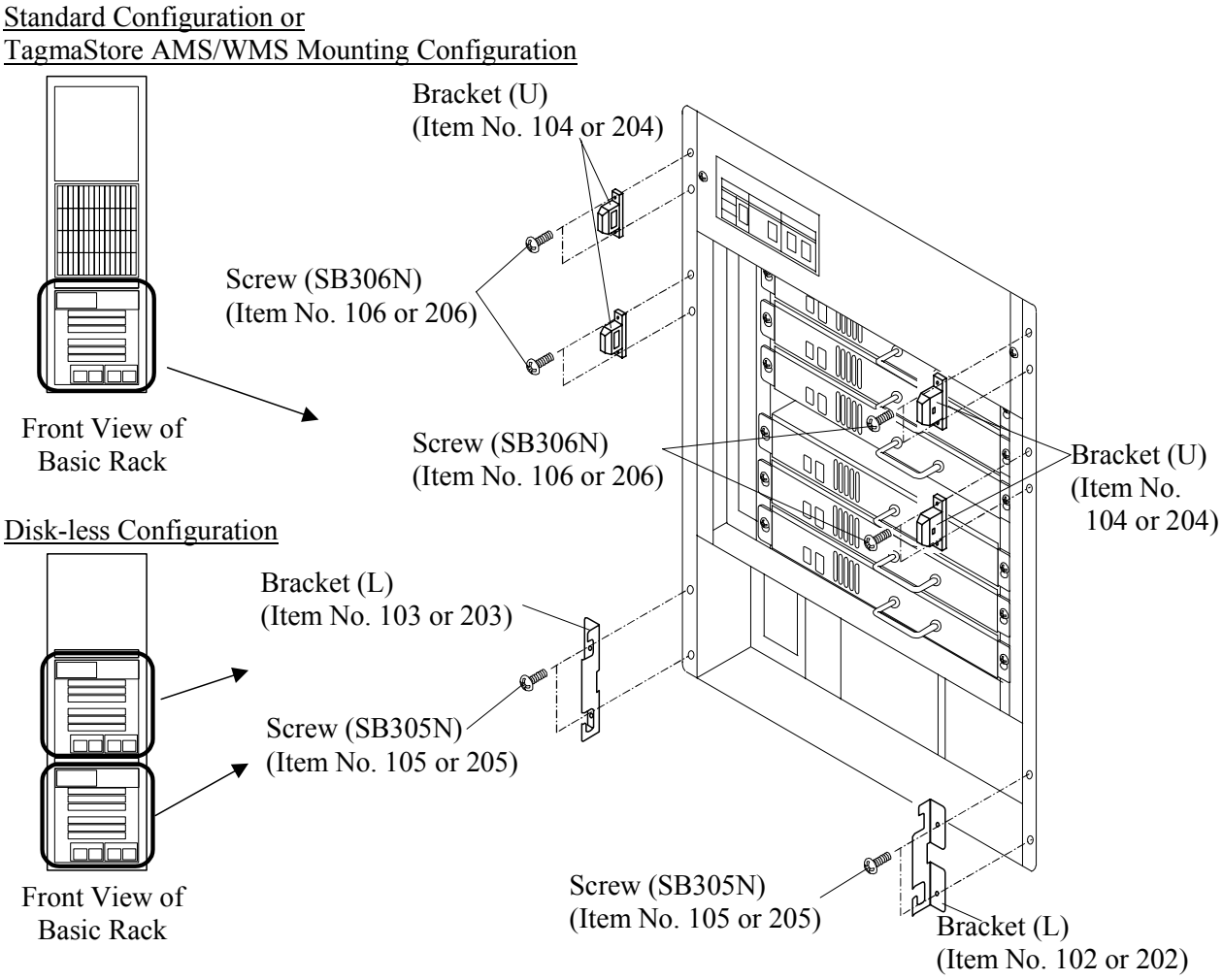


Fig. 4.5.2-2 Removal of Brackets

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3. Removal of Nameplate
   a. Remove the screw from the rack frame and remove the nameplate tags to be installed.
   b. Remove the nameplate from the nameplate tag.
   c. Attach the nameplate tags with the screw.

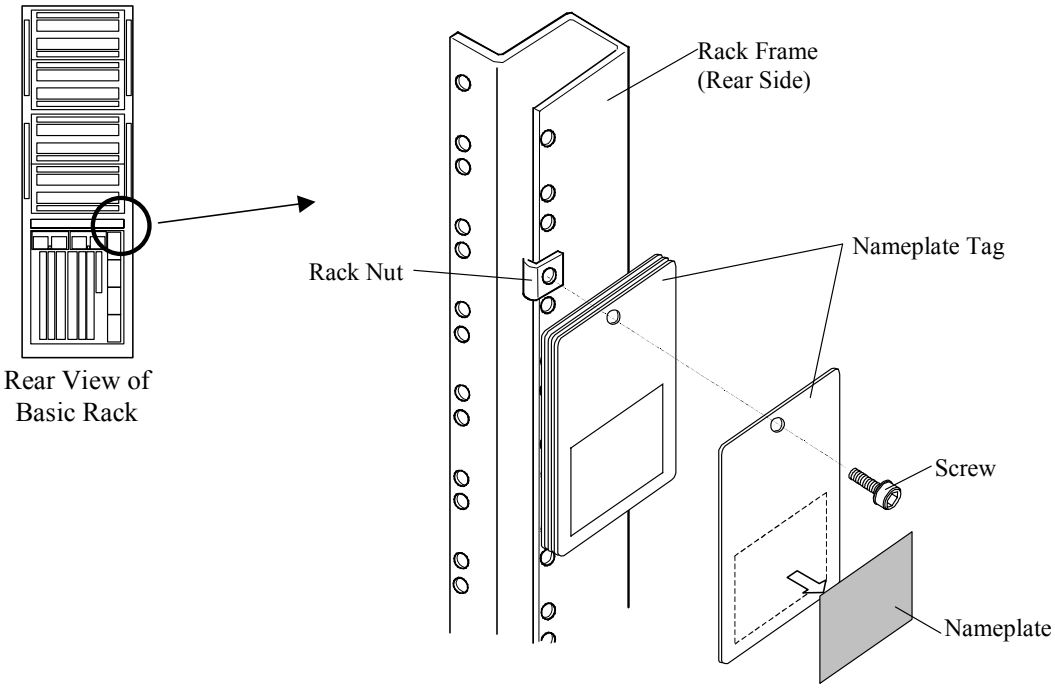


Fig. 4.5.2-3 Removal of Nameplate

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4.5.3 De-Installation Procedure of Control Frame (RSD Rack Frame)

1. Removal of the cables
   a. Open the connector stopper and disconnect the power cables (PDU00-P101, PDU00-P102, PDU00-P103, PDU01-P101 and PDU01-P102) from the PDUs. Refer to Fig. 4.5.3-1 or Fig. 4.5.3-2.

Option 1

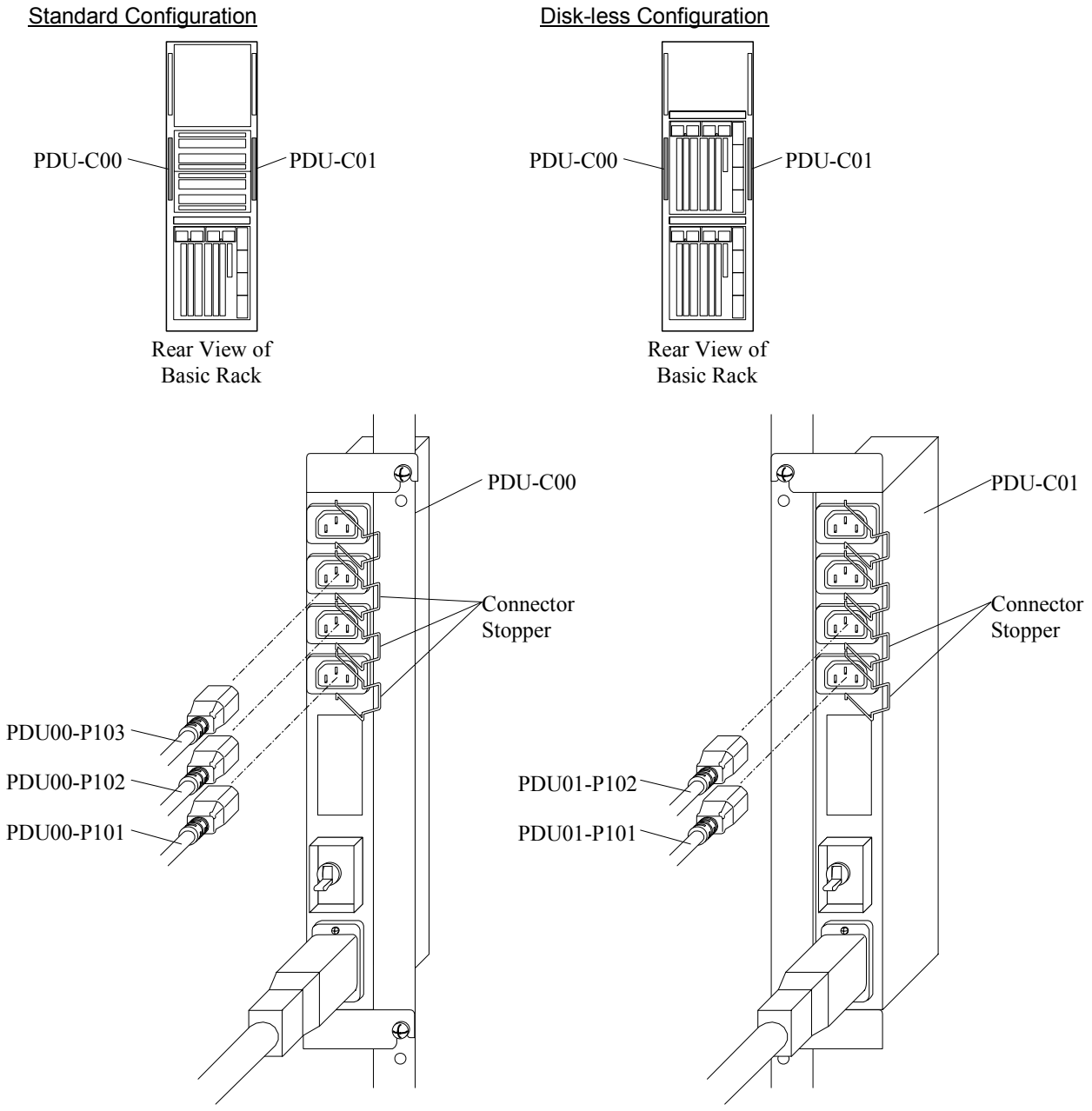
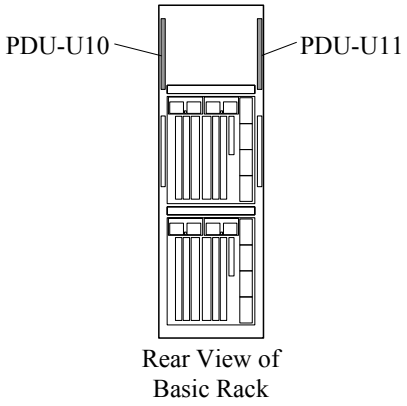


Fig. 4.5.3-1 Disconnection of Power Cables (Option 1)

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Option 2

Disk-less Configuration



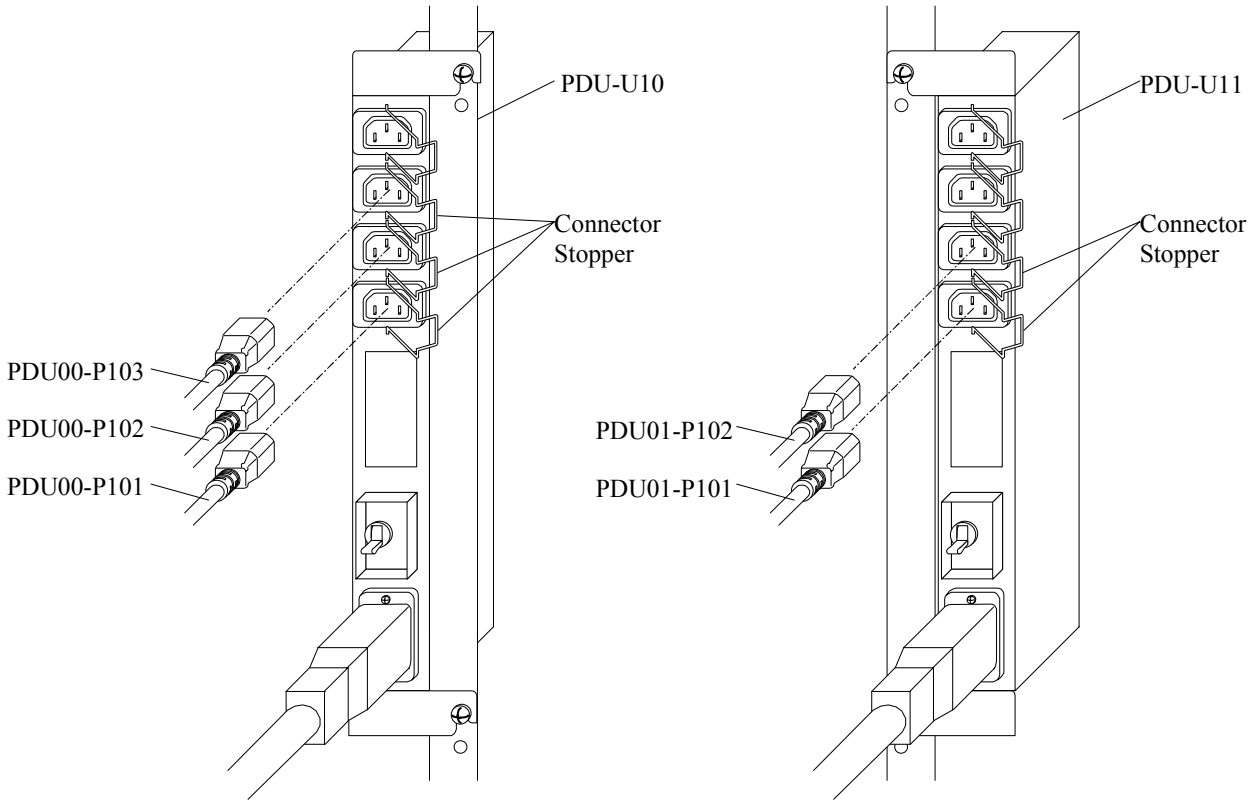


Fig. 4.5.3-2 Disconnection of Power Cables (Option 2)

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b. Loosen the screw and remove the clamp. Disconnect the cable (P86) from the SVP.
c. Disconnect the cables (P81-1, P83-1, P84-1) from the SVP.

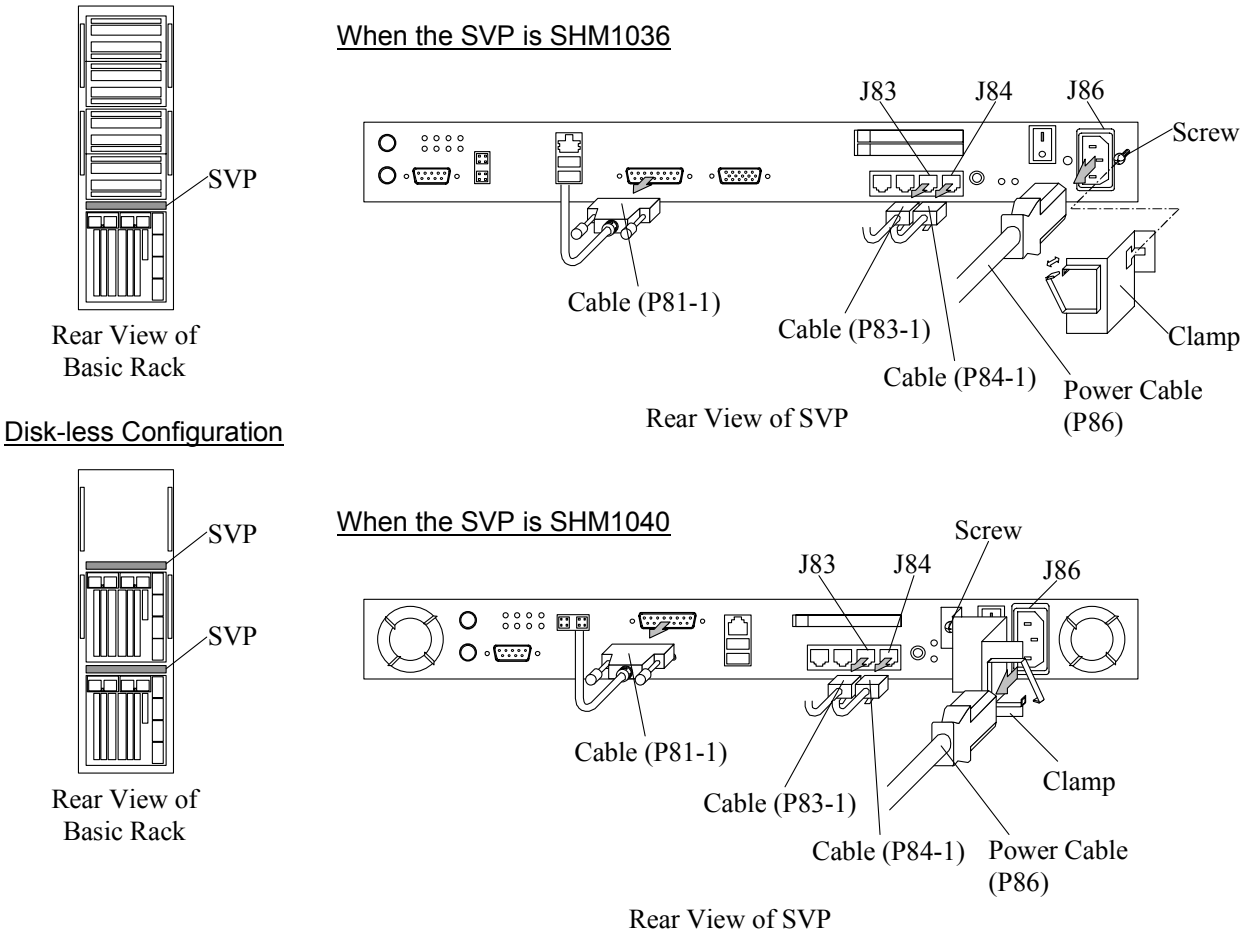


Fig. 4.5.3-3 Disconnection of Cables

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d. Open the repeat binders and remove the cable assemblies from the fibre cable (DKC-F515I-UC0R).

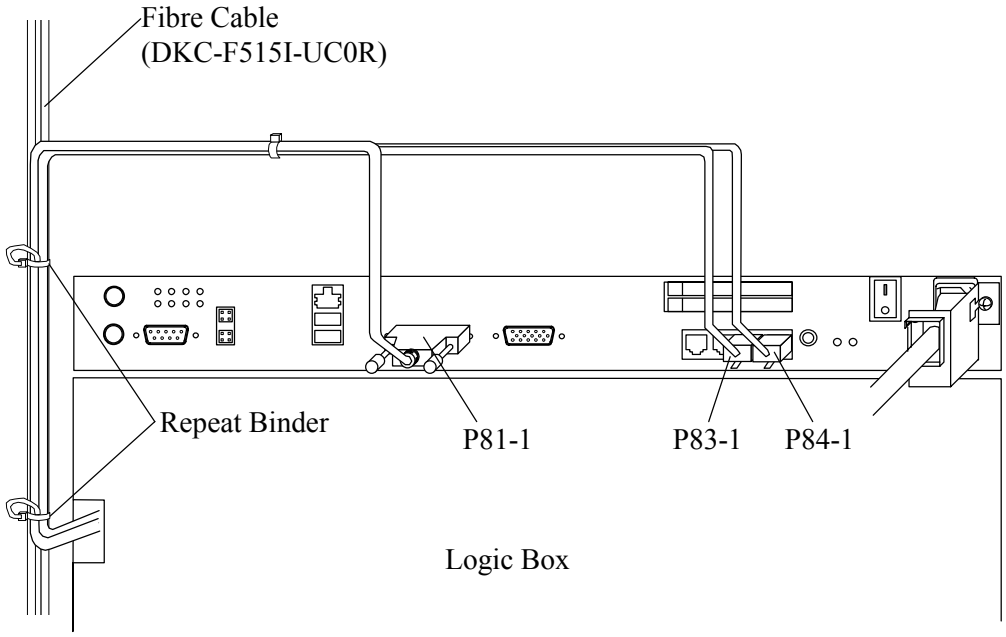


Fig. 4.5.3-4 Removal of Cables

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e. Open the repeat binders and remove the cable assemblies from the rack frame. Refer to Fig. 4.5.3-5 or Fig. 4.5.3-6.

Option 1

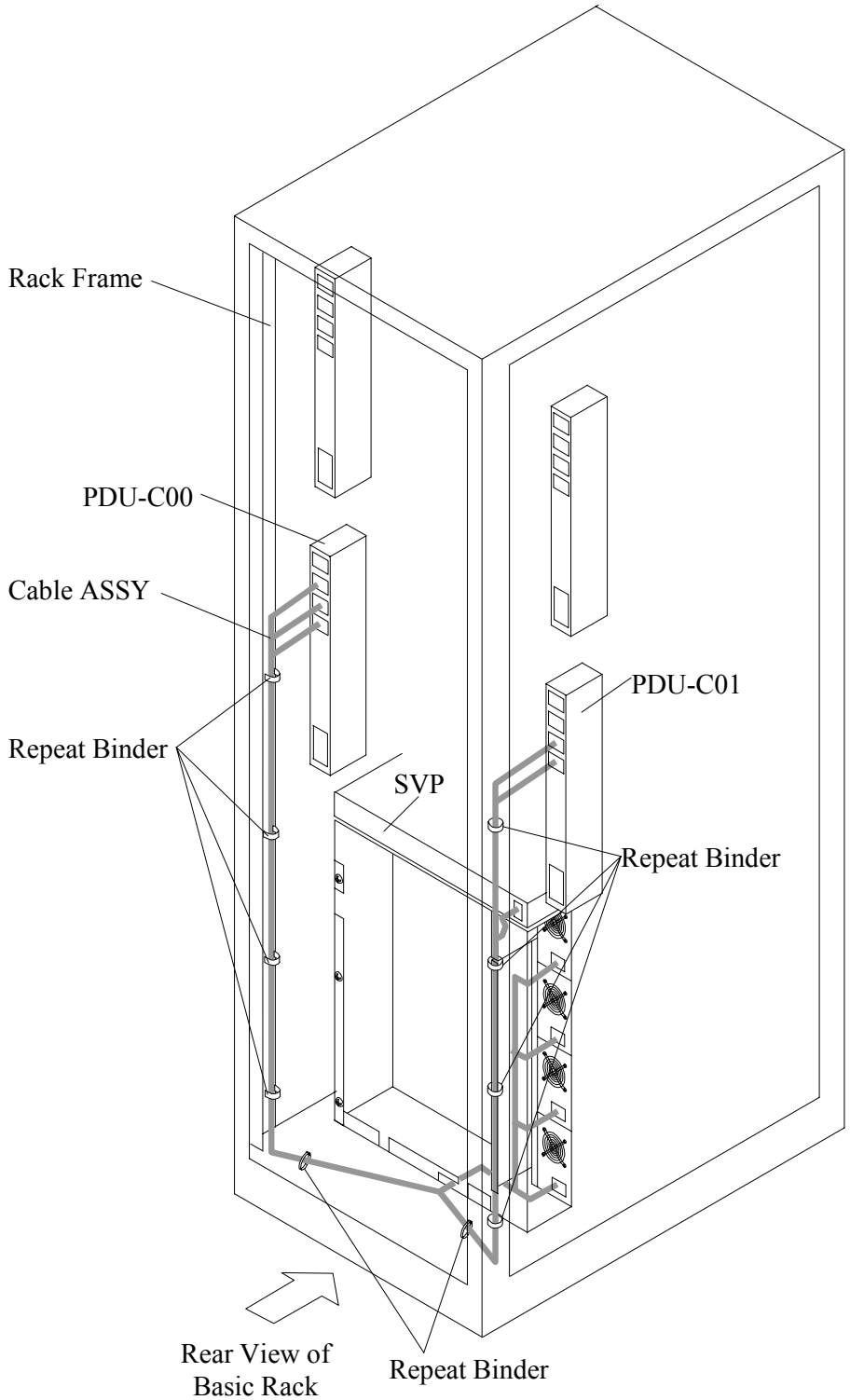


Fig. 4.5.3-5 Removal of Cable Assemblies (Option 1)

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Option 2

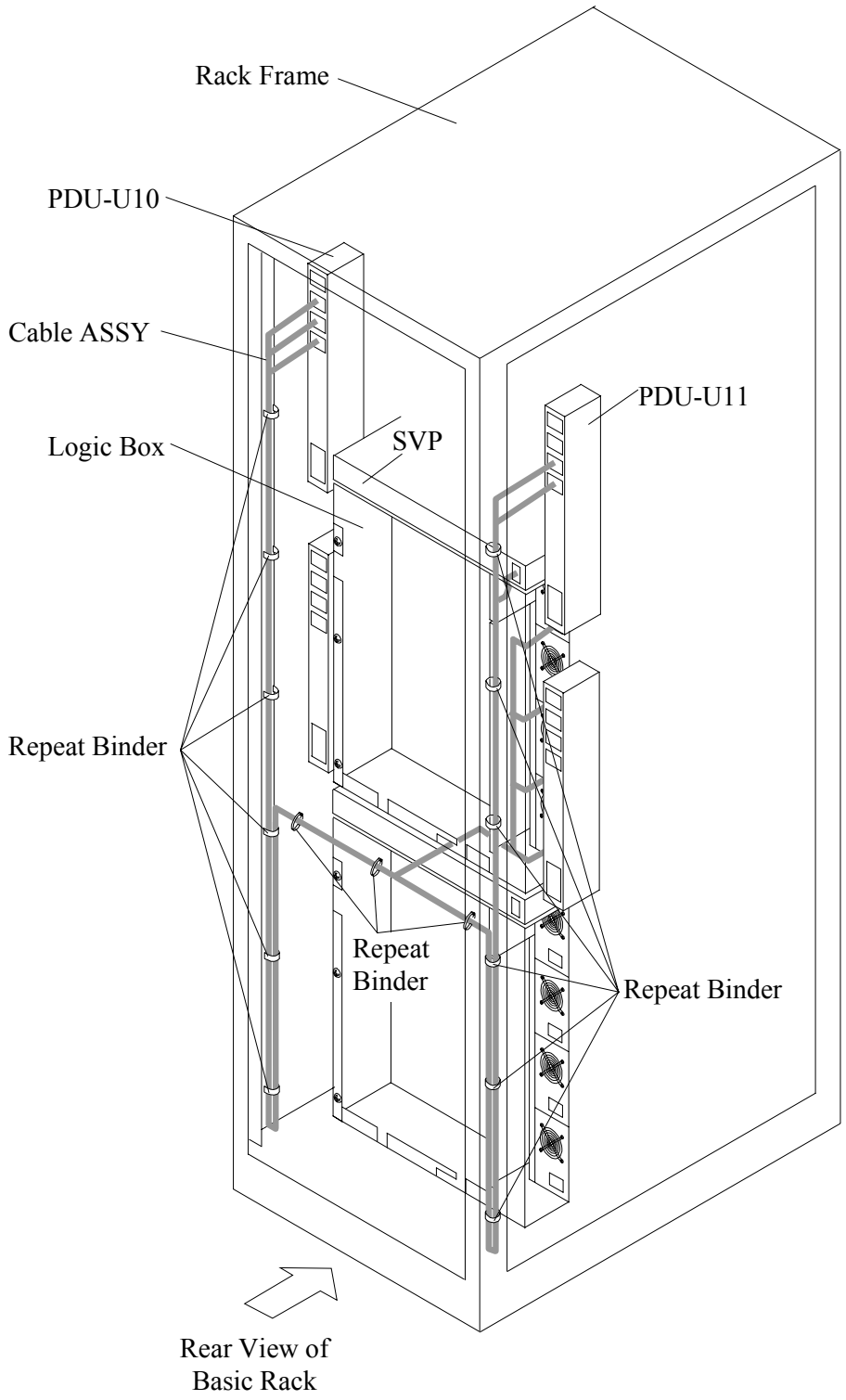


Fig. 4.5.3-6 Removal of Cable Assemblies (Option 2)

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2. Removal of the Logic Box and SVP
   a. Remove the screw and stoppers on the rear side of Logic Box.

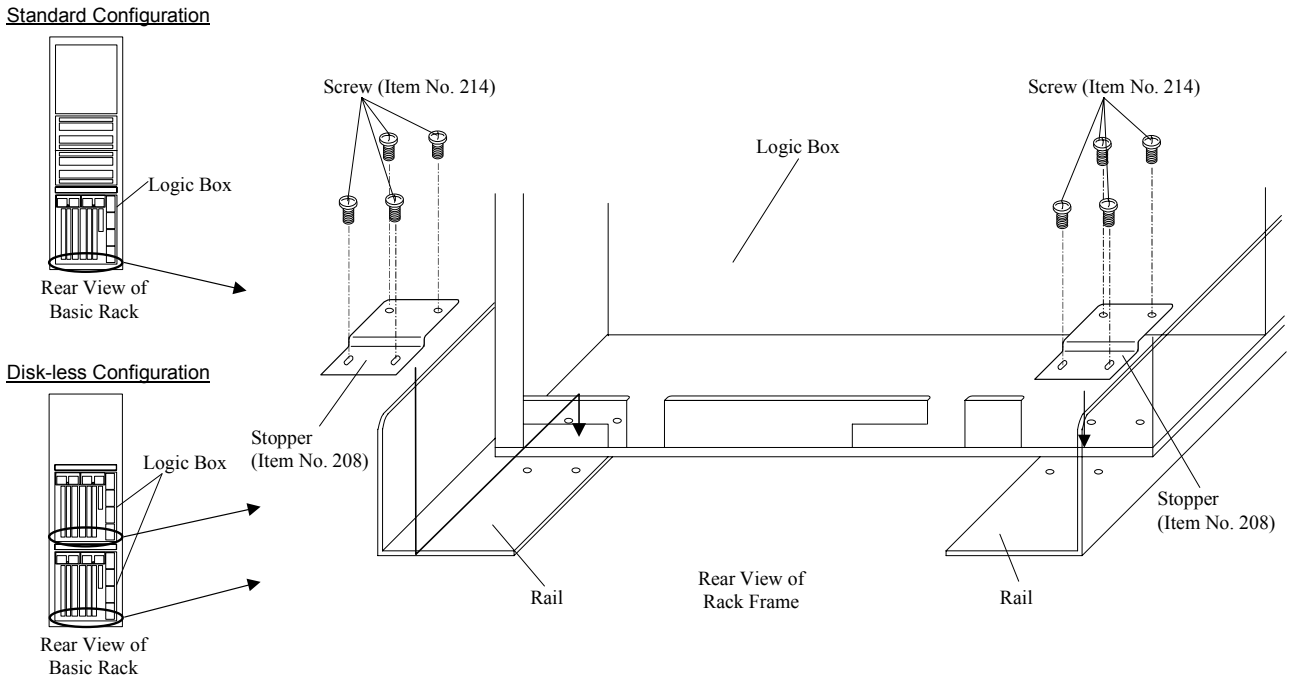


Fig. 4.5.3-7 Removal of Stoppers

   b. Remove the screws and stoppers on the rear side of SVP.

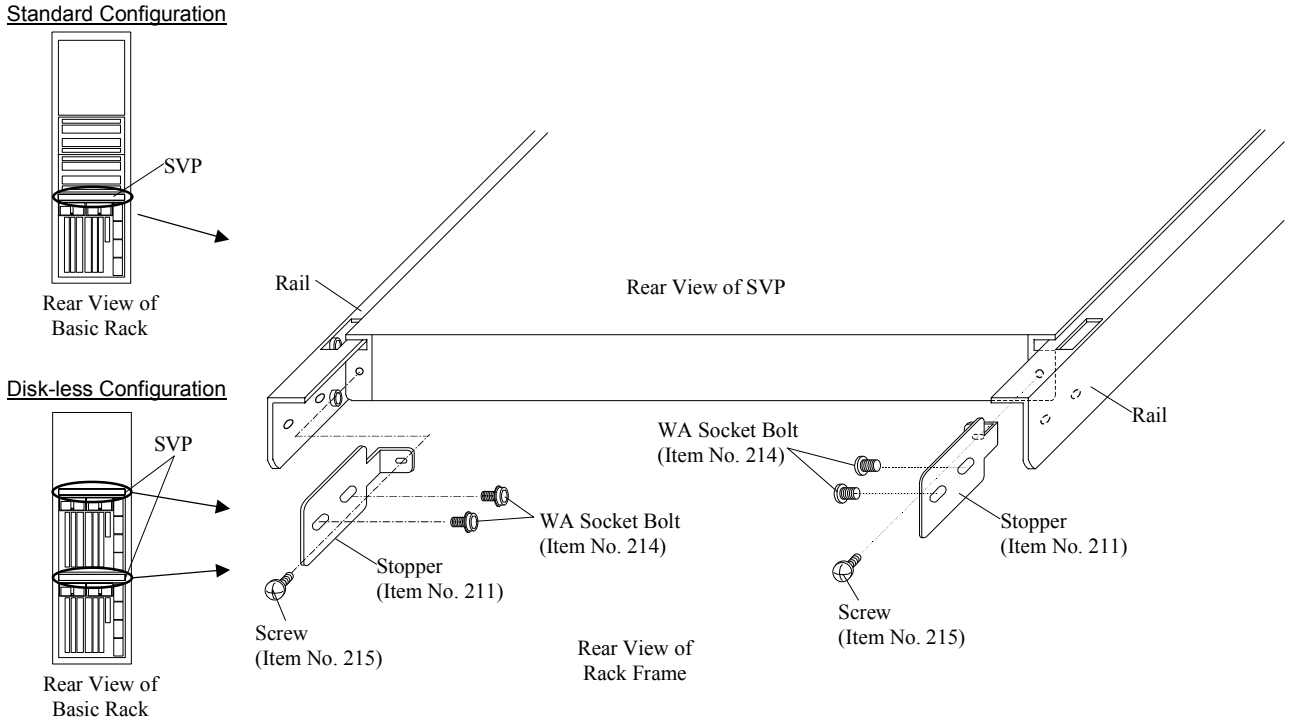


Fig. 4.5.3-8 Removal of Stoppers

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⚠ CAUTION

Paying attention to falls:
Work carefully because the mass of the single Logic Box is about 70 kg and SVP is about 15 kg.

c. Remove the four screws and de-install the SVP from the Rack frame.
d. Remove the six screws and de-install the Logic Box from the Rack frame referring to mounting procedure using the special lifter. (See INST03-13-10 through 40.)

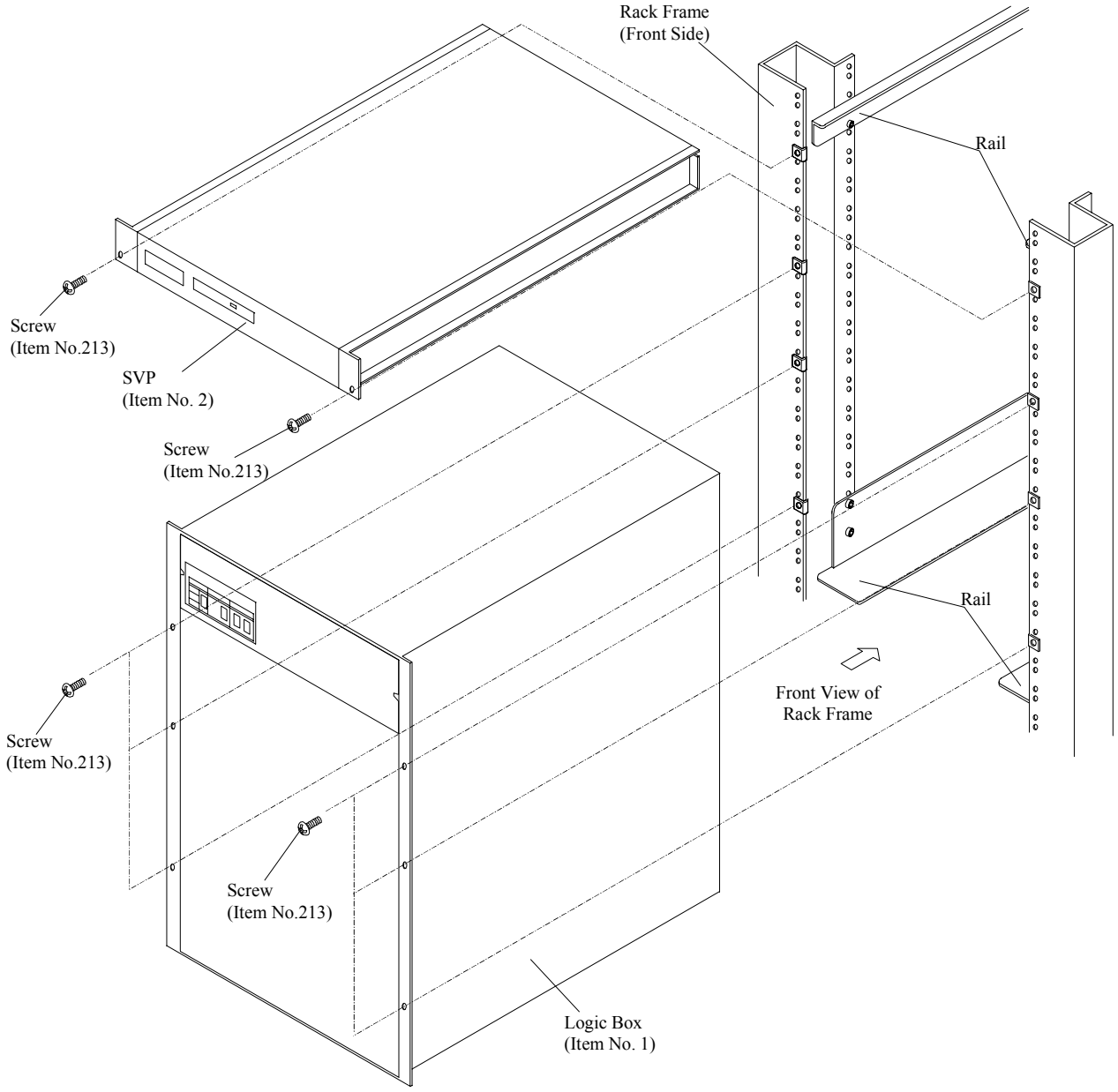
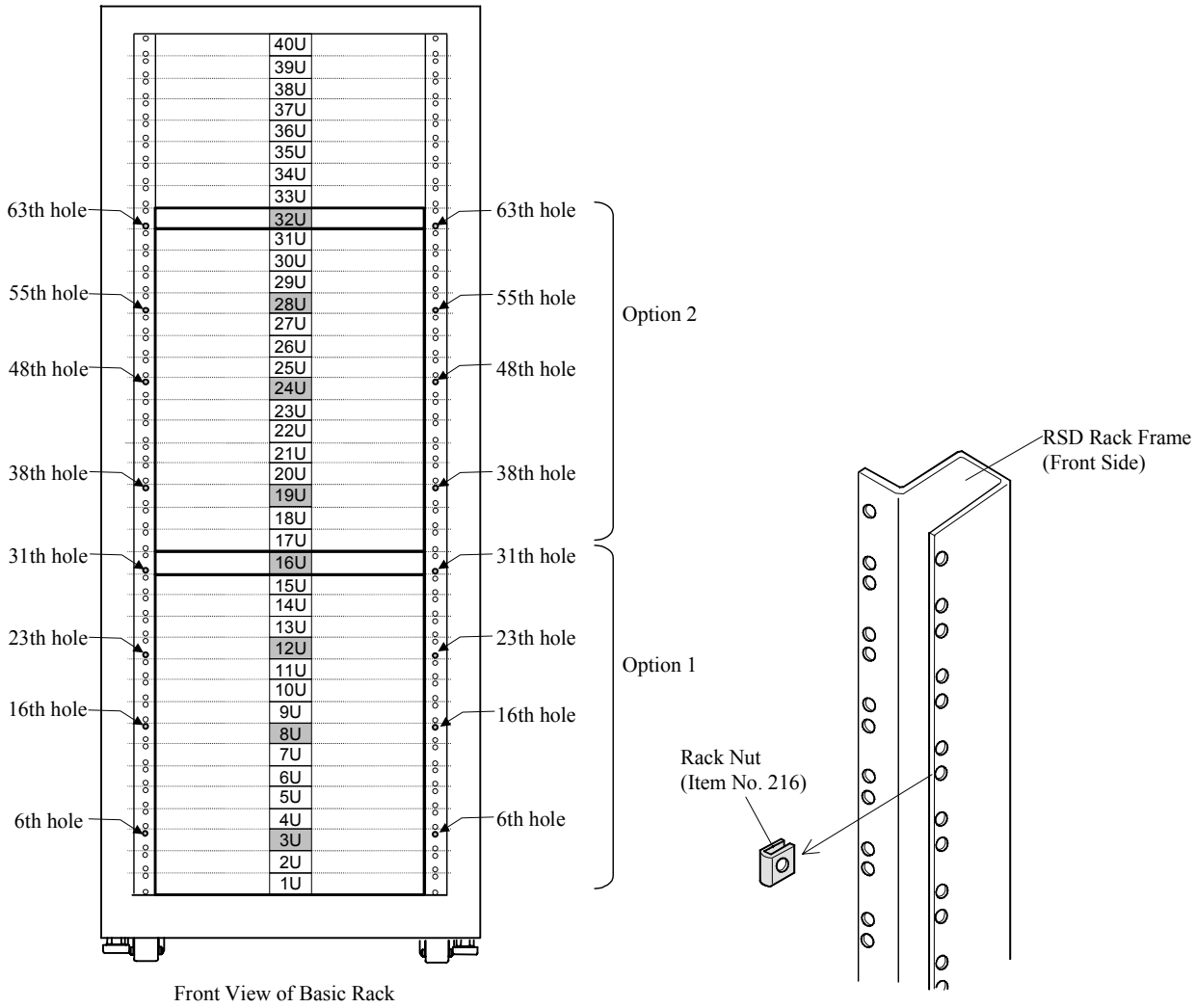


Fig. 4.5.3-9 Removal of Logic Box and SVP

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3. Removal of rack nuts on the front side of the rack frame
   a. Remove the four rack nuts from each of the right and left beams on the front side of the rack frame.

RSD Rack Frame



Front View of Basic Rack

No.	Part	Location		Remark
Option 2	SVP	32U	Lower	63th hole
	Logic Box	28U	Lower	55th hole
		24U	Upper	48th hole
		19U	Upper	38th hole
Option 1	SVP	16U	Lower	31th hole
	Logic Box	12U	Lower	23th hole
		8U	Upper	16th hole
		3U	Upper	6th hole

Fig. 4.5.3-10 Removal of Rack Nuts

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4. Removal of Rails
   a. Remove the four screws and de-install the Rail (R).
   b. Remove the four rack nuts from the rack frame.
   c. Remove the Rail (L) from the rack frame in the same way.

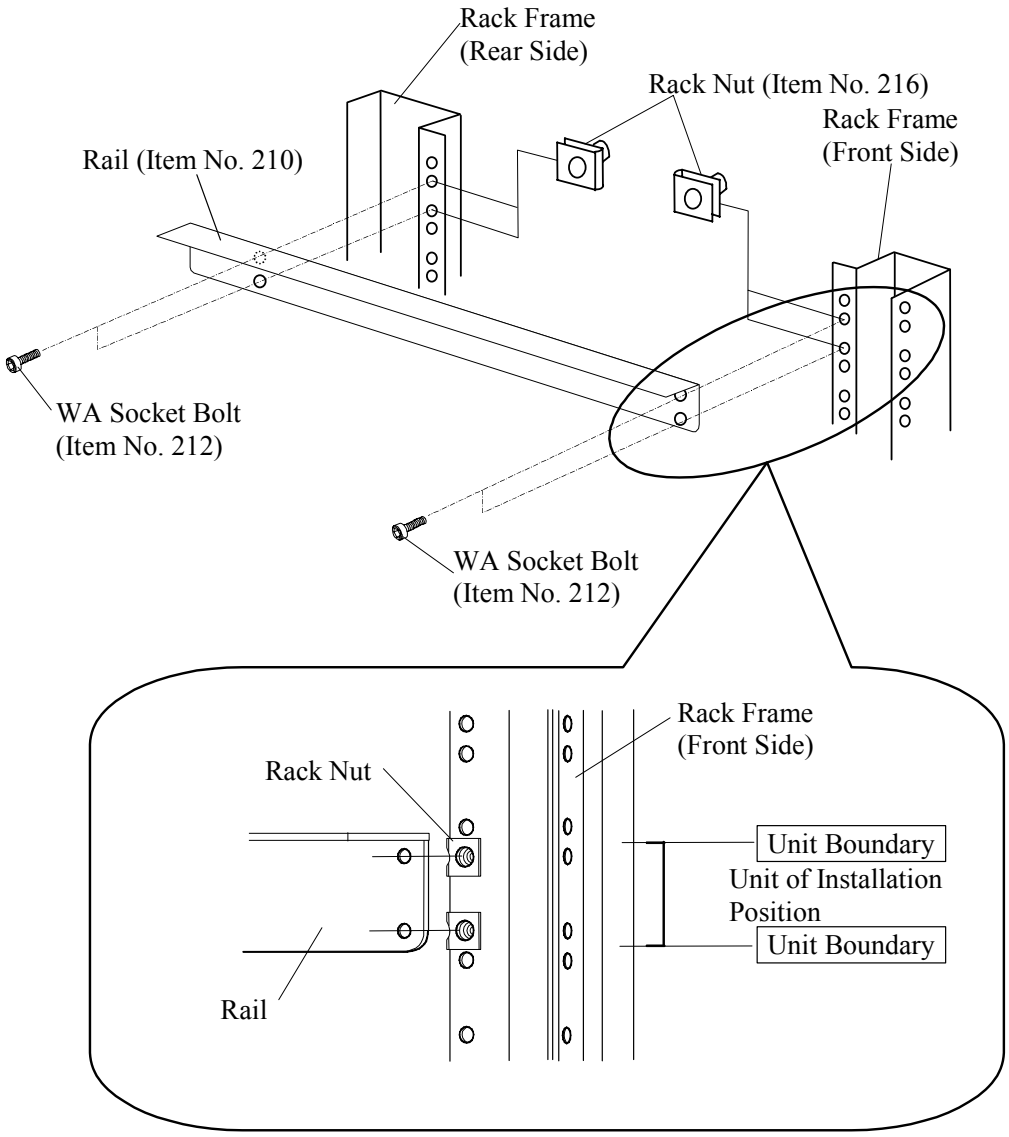


Fig. 4.5.3-11 Removal of Rails

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d. Remove the four screws and de-install the Rail (R).
e. Remove the four rack nuts from the rack frame.
f. Remove the Rail (L) from the rack frame in the same way.

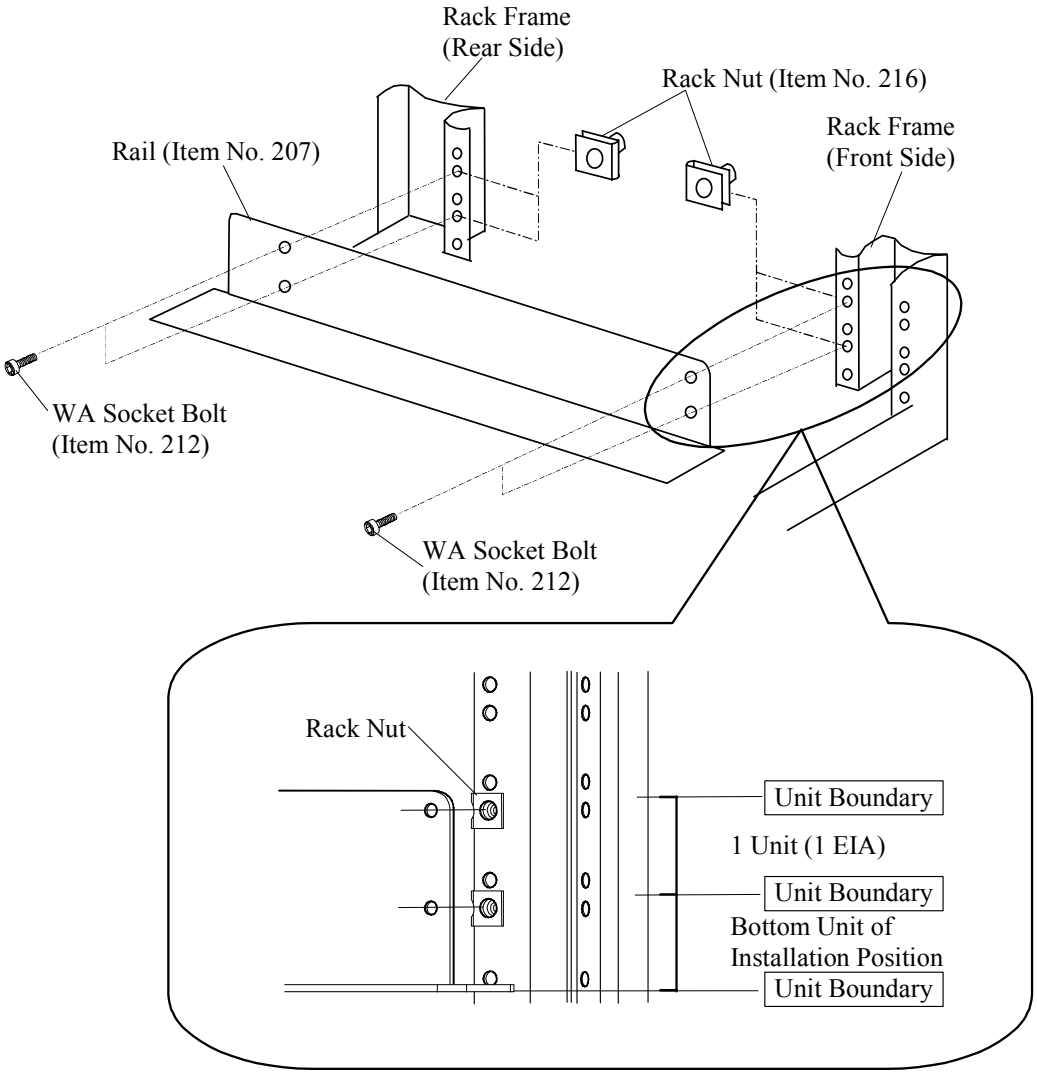


Fig. 4.5.3-12 Removal of Rails

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5. Removal of Nameplate and labels

In case of AE102A

a. Remove the seven labels from the rear door.
b. Remove the three labels and the nameplate from the frame bottom base.

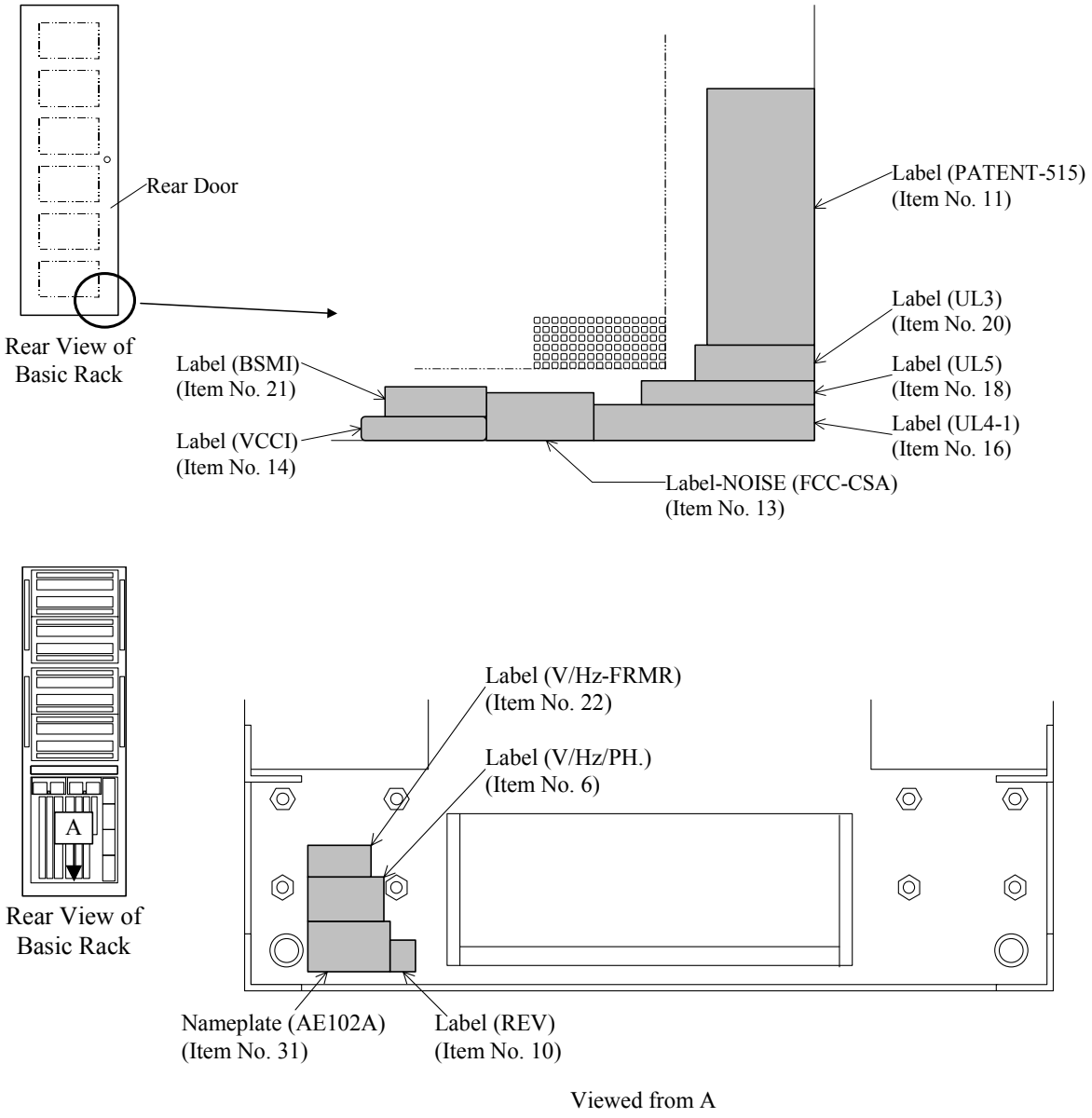


Fig. 4.5.3-13 Removal of Labels

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In case of AE071-63001

a. When the control frame (AE071-63001) is option 1, remove the seven labels from the rear door.
   When the control frame (AE071-63001) is option 2, go to step c.
b. Remove the label (V/Hz-FRMR) from the frame bottom base.

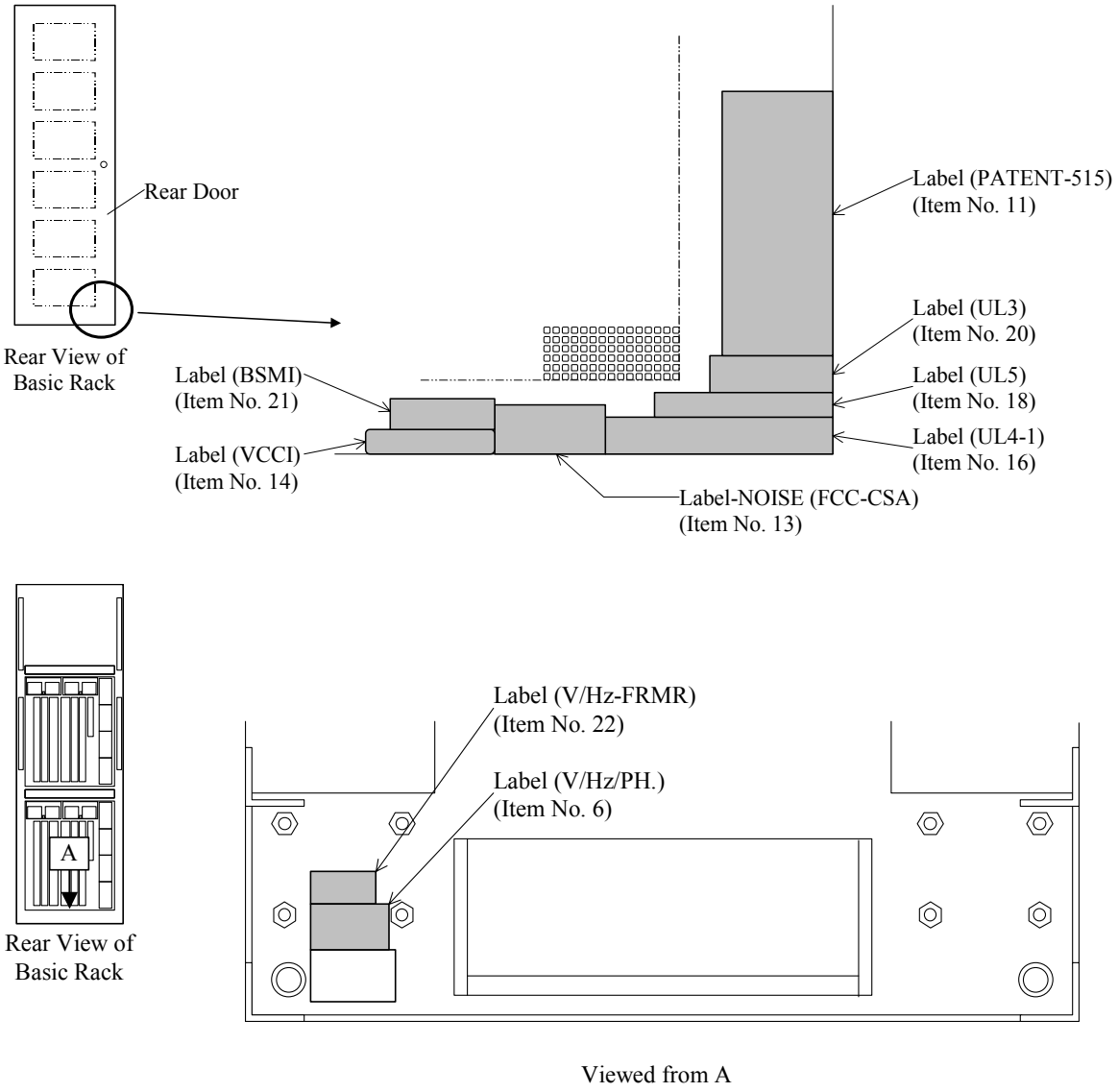


Fig. 4.5.3-14 Removal of Labels (Option 1)

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c. Remove the three labels and the nameplate from the Rear Logic Box cover.

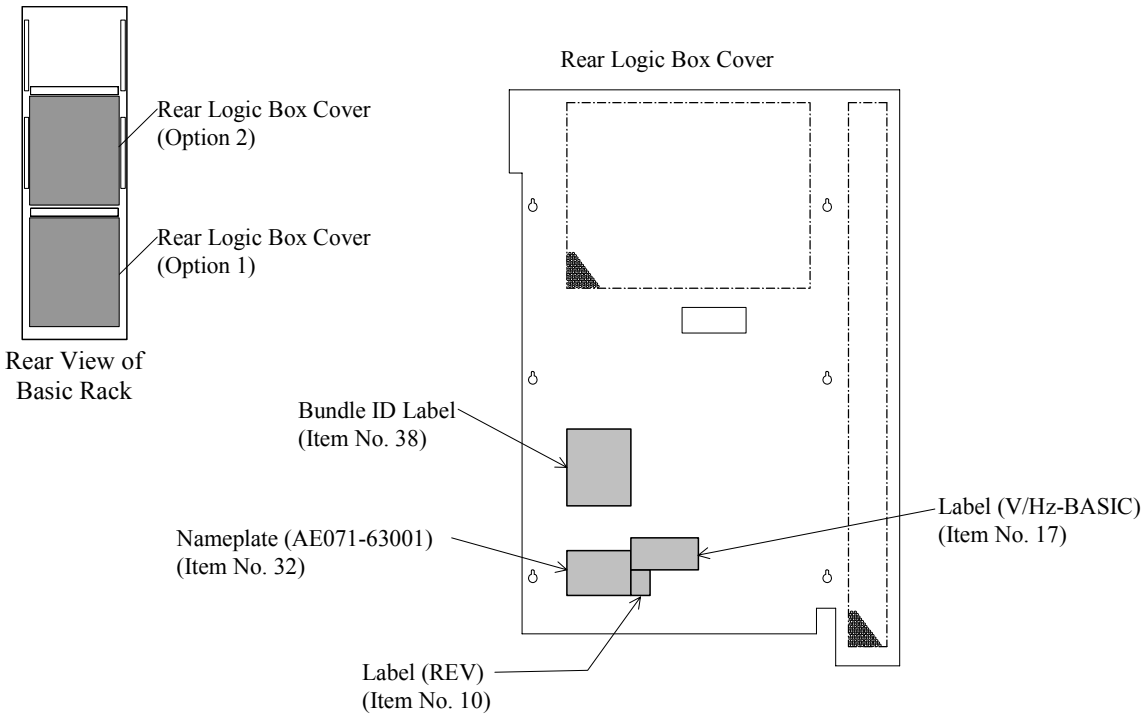


Fig. 4.5.3-15 Removal of Labels (Option 1/Option 2)

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6. Removal of Nameplate
   a. Remove the screw from the rack frame and remove the nameplate tags.
   b. Remove the rack nut from the rack frame.

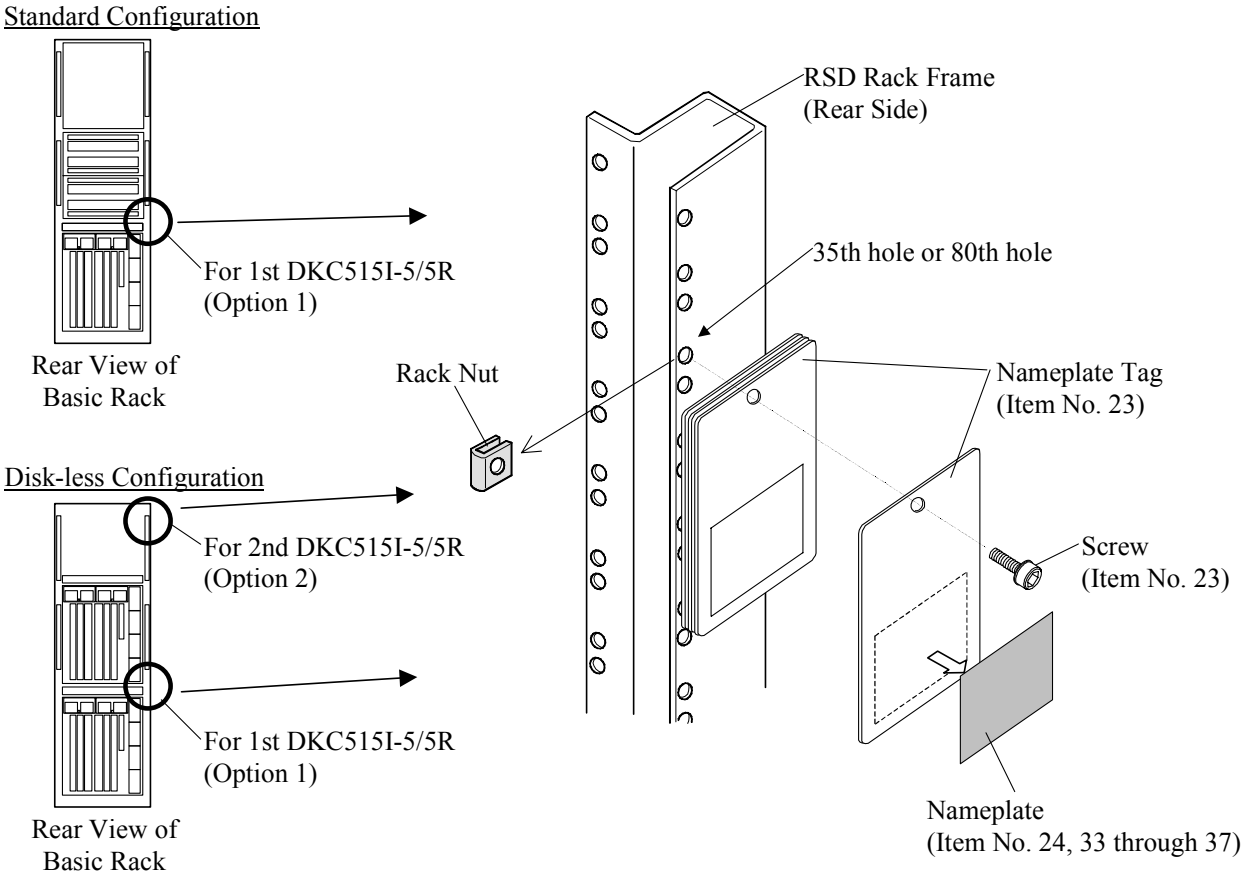


Fig. 4.5.3-16 Removal of Nameplate

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4.5.4 De-Installation Procedure of Control Frame (HDS Rack Frame)

1. Removal of the cables
   a. Disconnect the power cables (PDU00-P101, PDU00-P102, PDU00-P103, PDU01-P101 and PDU01-P102) from the PDUs.

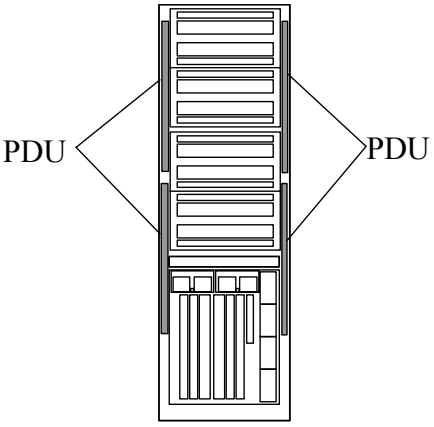


Fig. 4.5.4-1 Disconnection of Power Cables

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b. Loosen the screw and remove the clamp. Disconnect the cable (P86) from the SVP.
c. Disconnect the cables (P81-1, P83-1, P84-1) from the SVP.

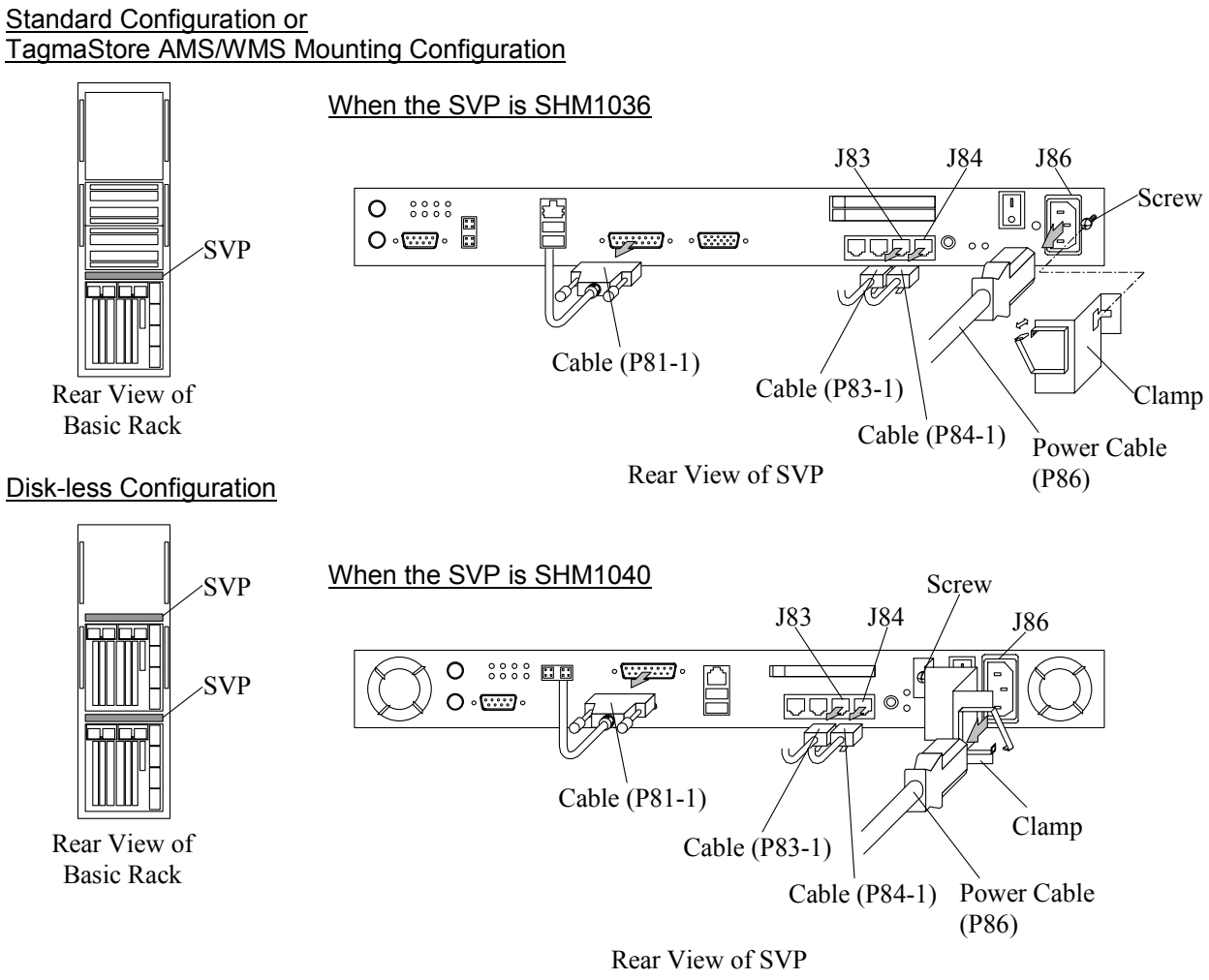


Fig. 4.5.4-2 Disconnection of Cables

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d. Open the repeat binders and remove the cable assemblies from the fibre cable (DKC-F515I-UC0R).

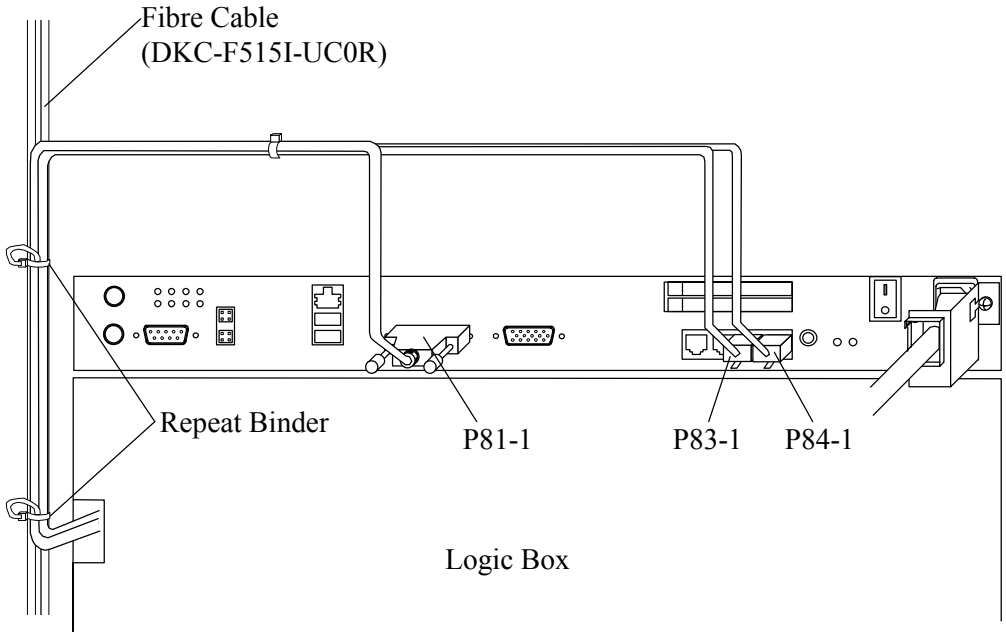


Fig. 4.5.4-3 Removal of Cables

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e. Open the repeat binders and remove the cable assemblies from the rack frame. Refer to Fig. 4.5.4-4 or Fig. 4.5.4-5.

Option 1

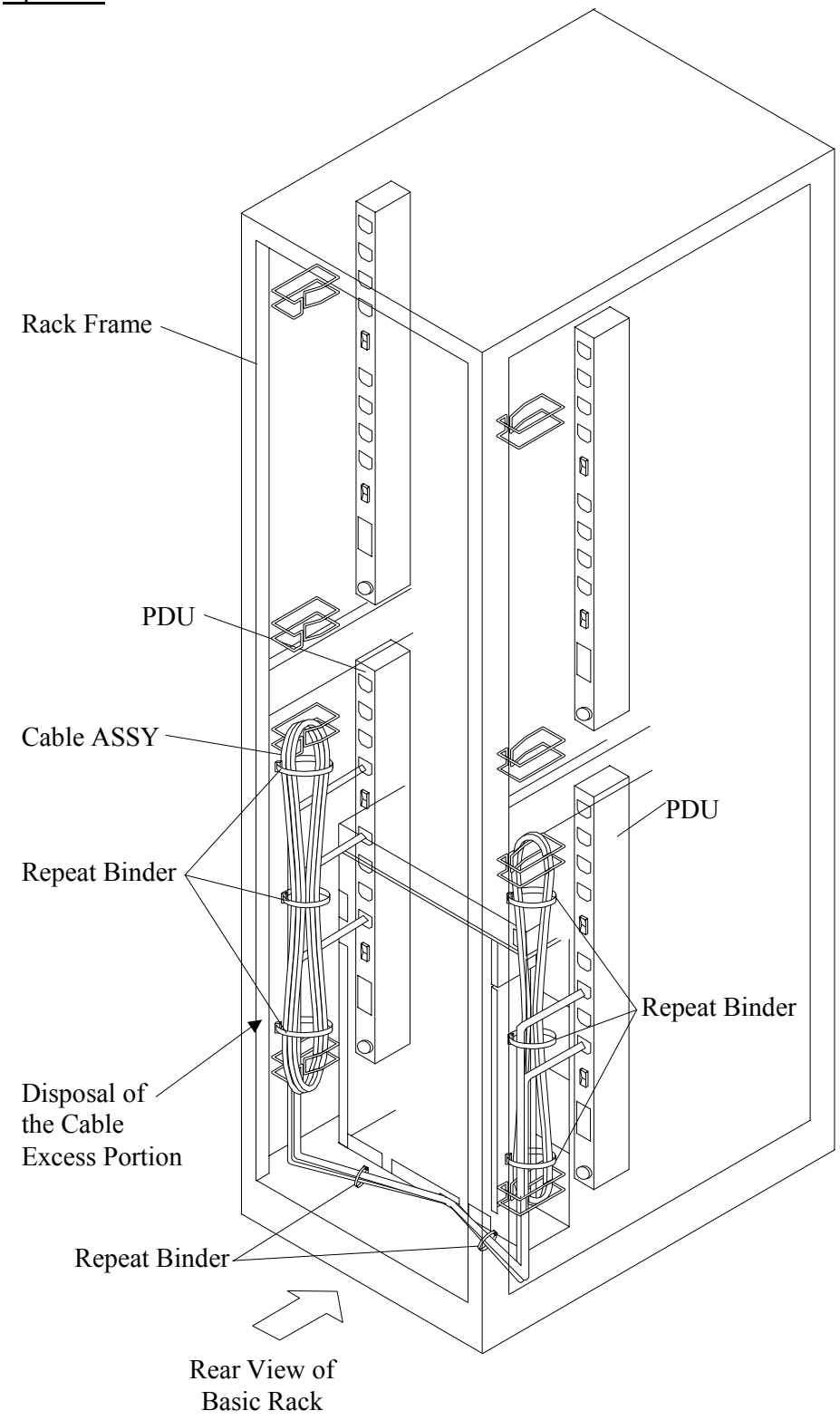


Fig. 4.5.4-4 Removal of Cable Assemblies (Option 1)

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Option 2

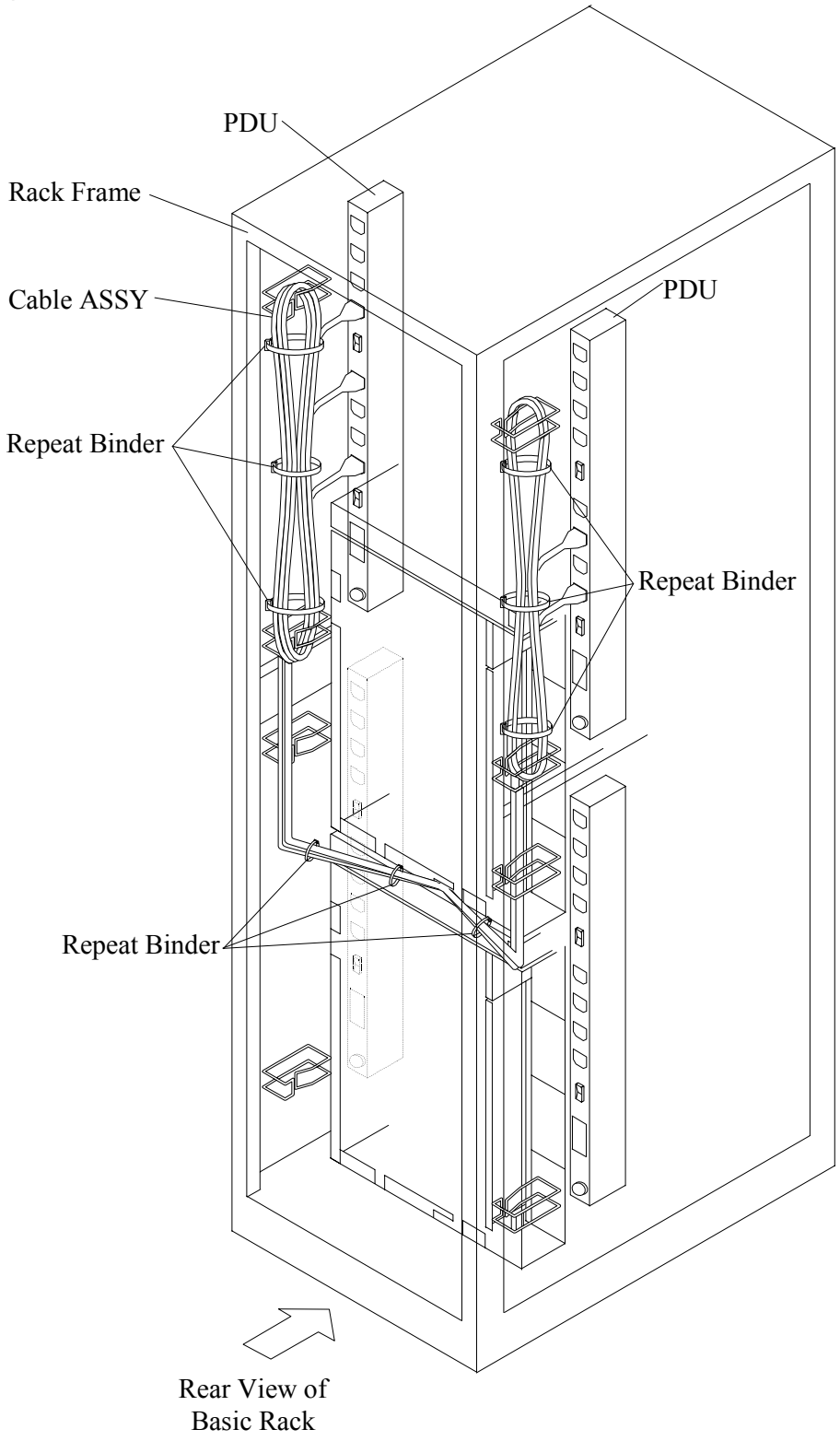


Fig. 4.5.4-5 Removal of Cable Assemblies (Option 2)

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2. Removal of the Logic Box and SVP
   a. Remove the screw and stoppers on the rear side of Logic Box.

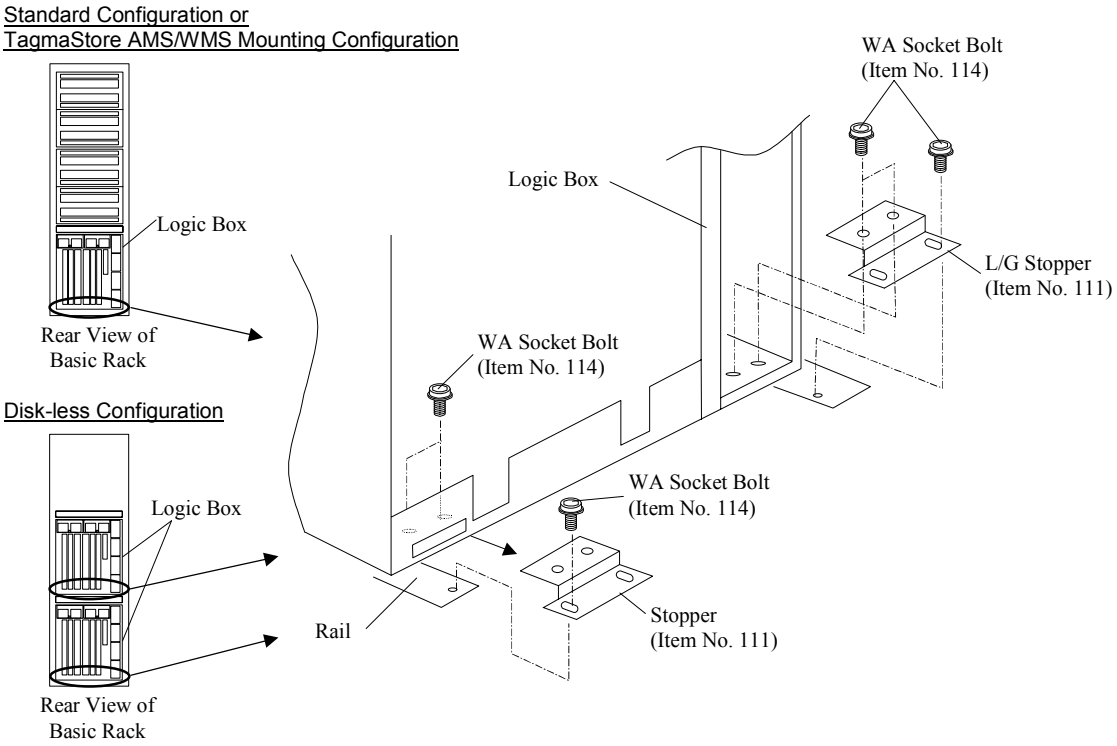


Fig. 4.5.4-6 Removal of Stoppers

   b. Remove the screws and stoppers on the rear side of SVP.

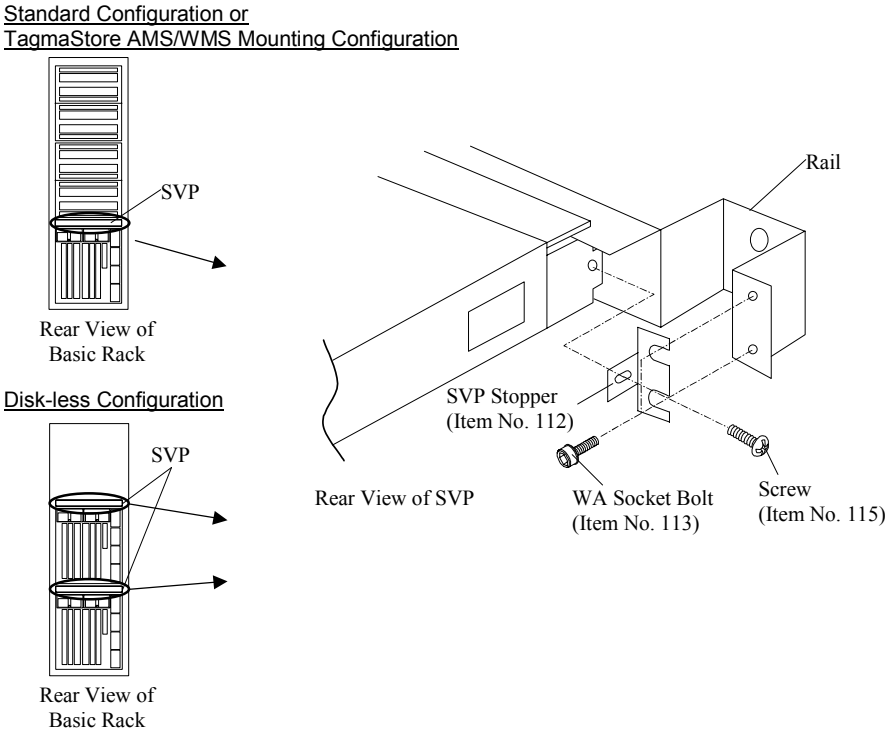


Fig. 4.5.4-7 Removal of Stoppers

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⚠ CAUTION

Paying attention to falls:
Work carefully because the mass of the single Logic Box is about 70 kg and SVP is about 15 kg.

c. Remove the two screws and de-install the SVP from the Rack frame.
d. Remove the six screws and de-install the Logic Box from the Rack frame referring to mounting procedure using the special lifter. (See INST03-13-10 through 40.)

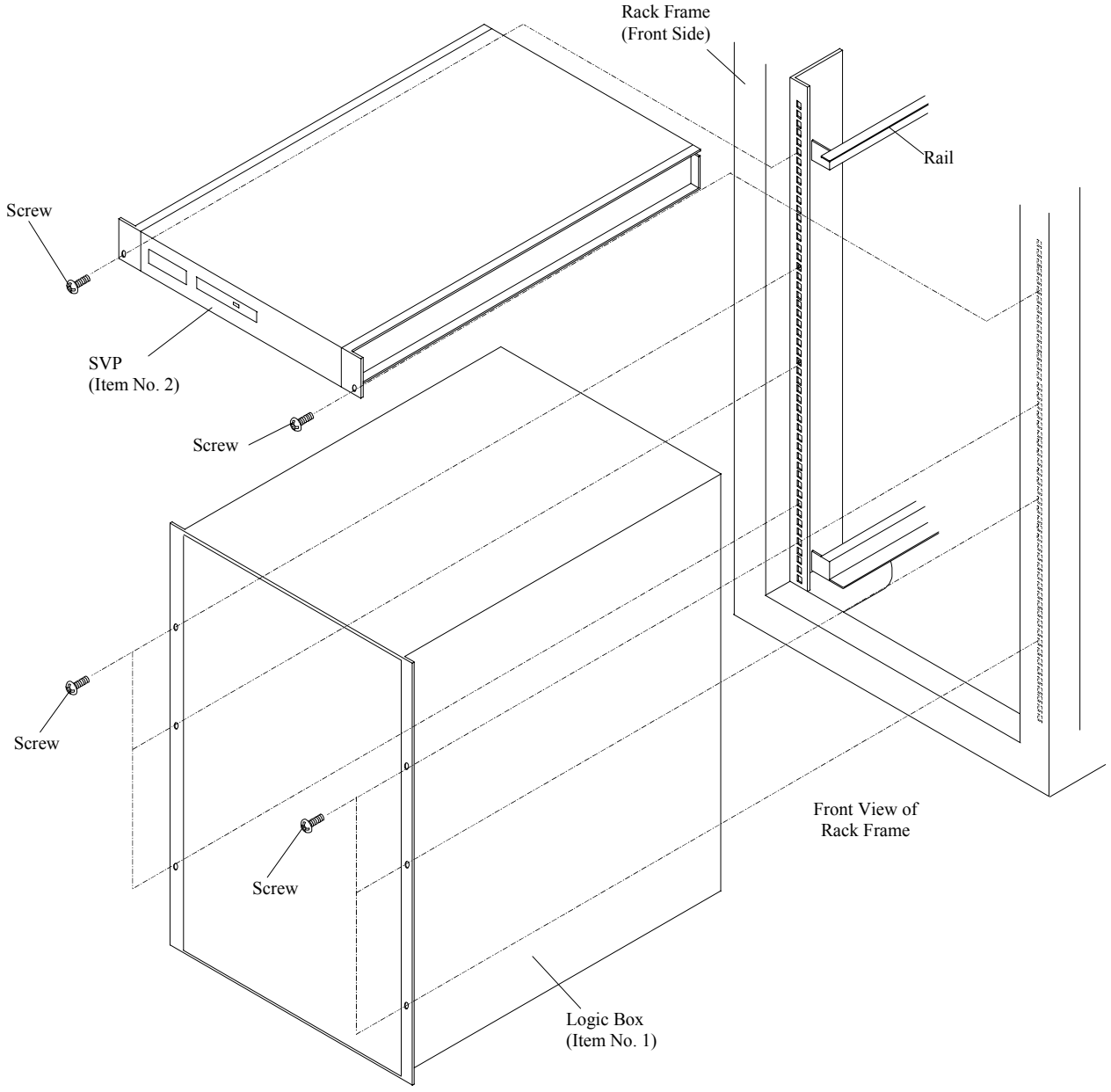
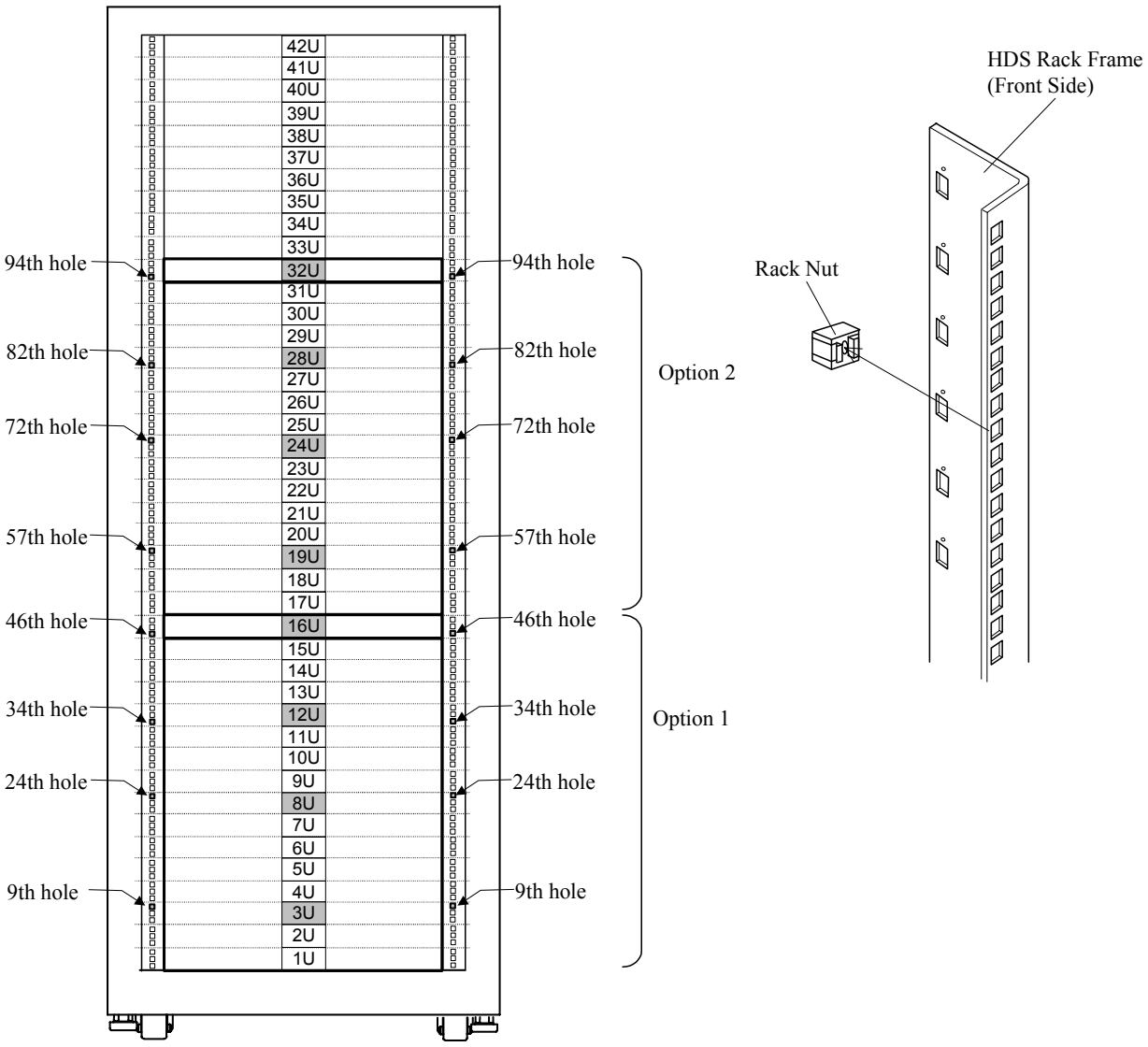


Fig. 4.5.4-8 Removal of Logic Box and SVP

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3. Removal of rack nuts on the front side of the rack frame
   a. Remove the four rack nuts from each of the right and left beams on the front side of the rack frame.

HDS Rack Frame



Front View of Basic Rack

No.	Part	Location		Remark
Option 2	SVP	32U	Lower	94th hole
	Logic Box	28U	Lower	82th hole
		24U	Upper	72th hole
		19U	Upper	57th hole
Option 1	SVP	16U	Lower	46th hole
	Logic Box	12U	Lower	34th hole
		8U	Upper	24th hole
		3U	Upper	9th hole

Fig. 4.5.4-9 Removal of Rack Nuts

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4. Removal of Rails
   a. Remove the L/G Rail (R) from the right side of the rack frame using the screw (at a place on the rear side.).
   b. Install the L/G Rail (L) to the rack frame in the same way.
   c. Remove the SVP Rail (R) from the right side of the rack frame using the screw (at a place on the rear side.).
   d. Install the SVP Rail (L) to the rack frame in the same way.

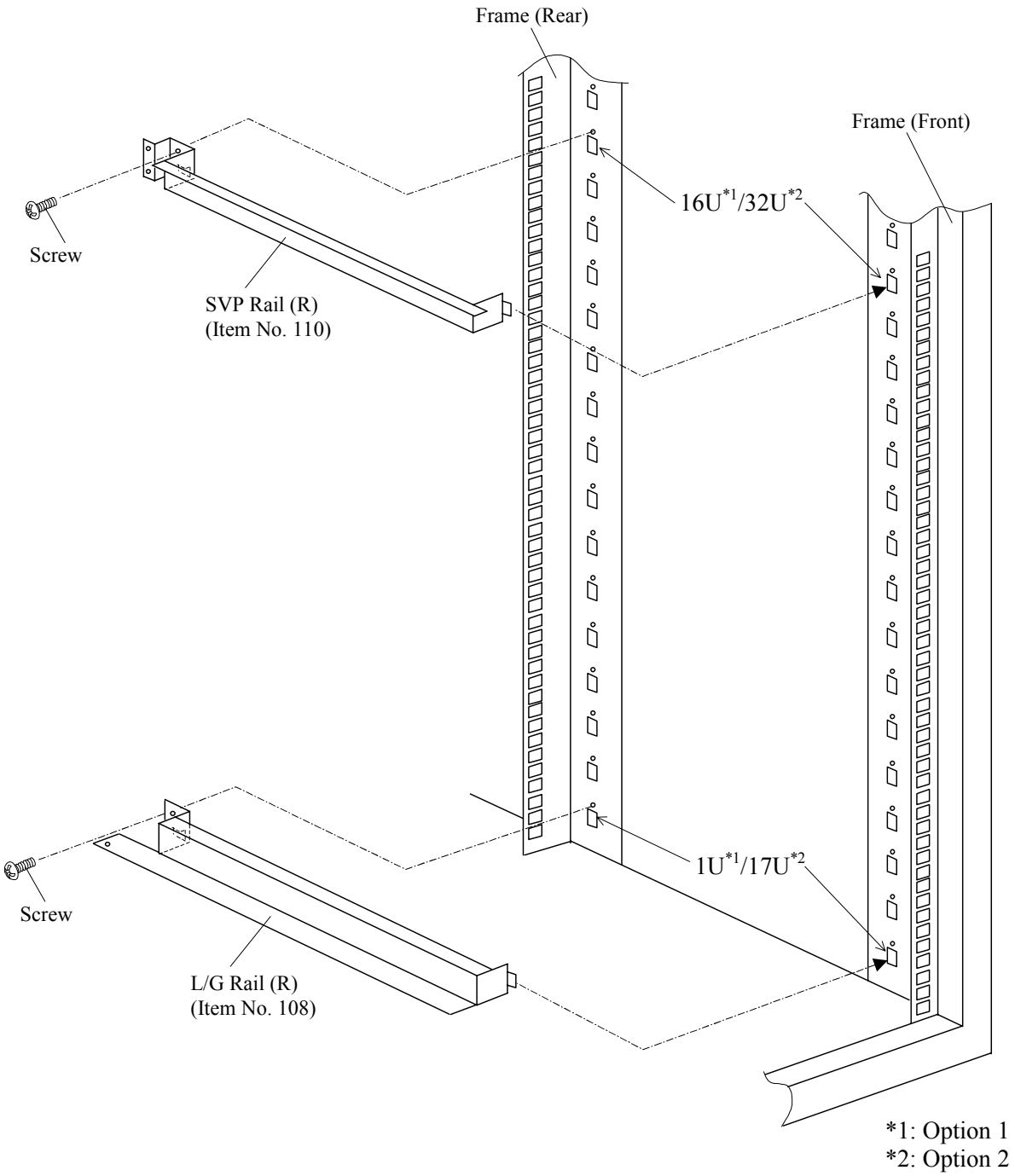


Fig. 4.5.4-10 Removal of Rails

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5. Removal of Nameplate and labels
   a. When the Control Frame (DKC515I-5/5R) is option 1, remove the six labels from the rear door.
      When the Control Frame (DKC515I-5/5R) is option 2, go to step b.
   b. Remove the five labels and the nameplate from the Rear Logic Box cover.

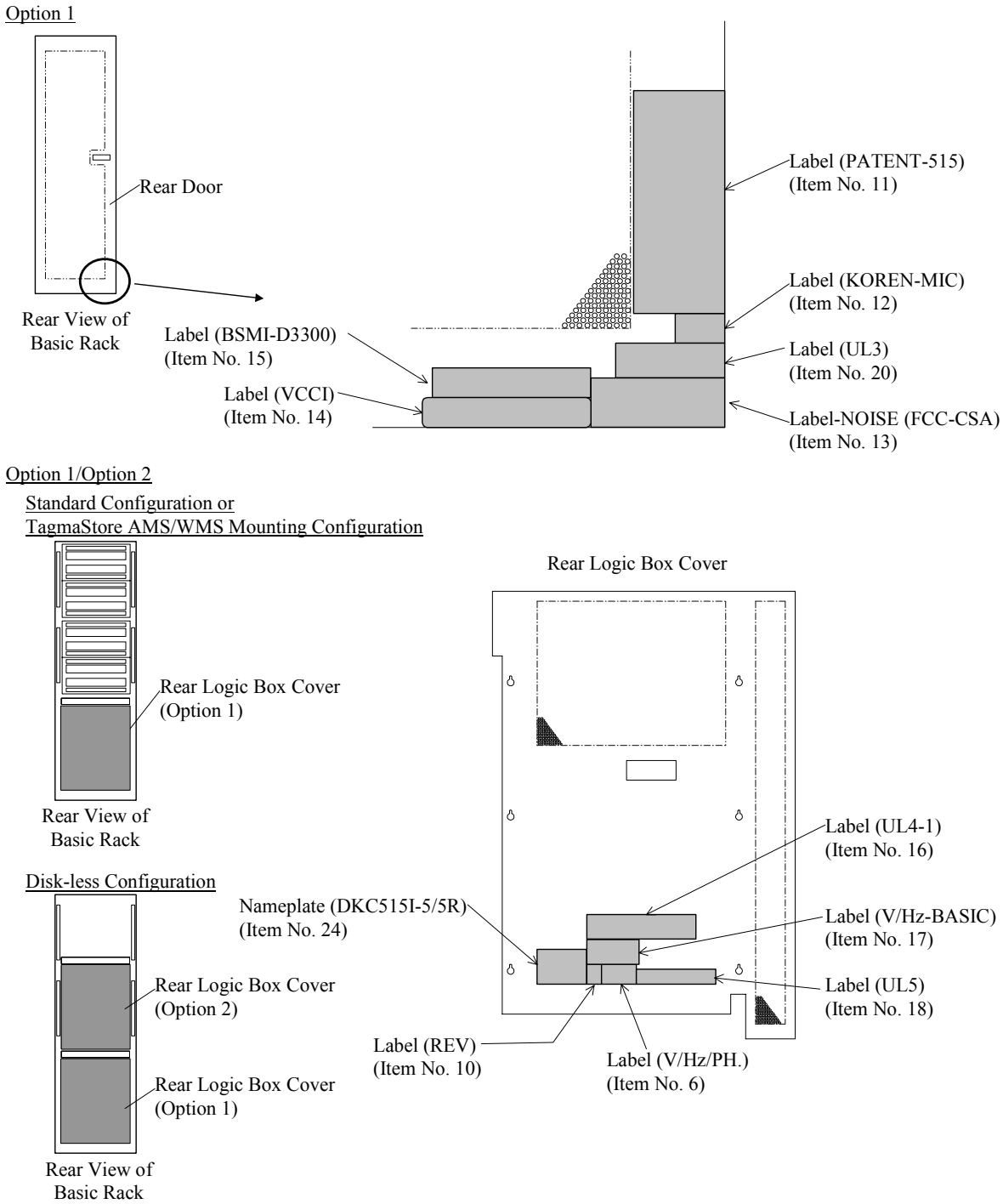


Fig. 3.4.3-11 Attachment of Labels

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c. Remove the screw from the rack frame and remove the nameplate tags.
d. Remove the rack nut from the rack frame.

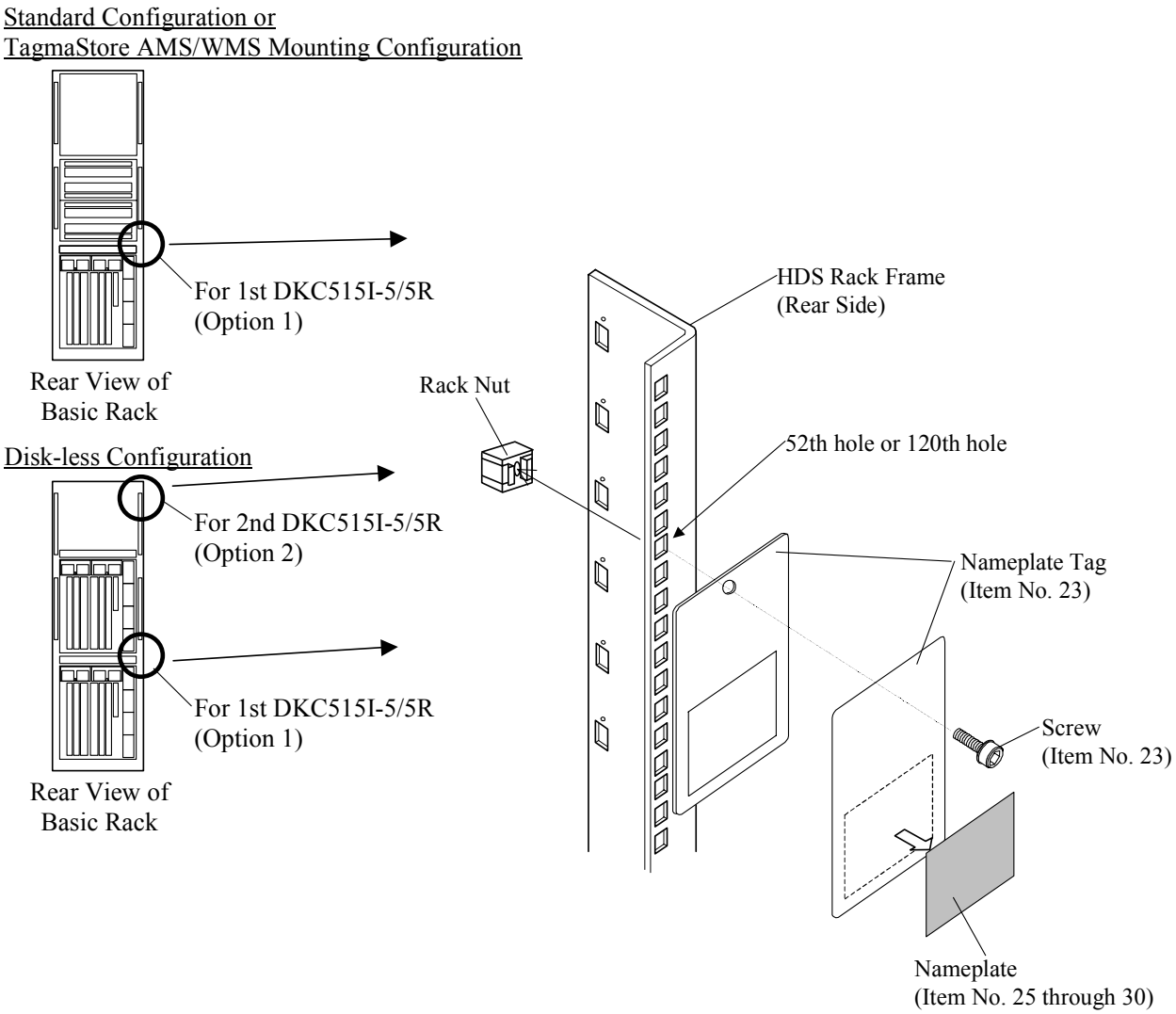


Fig. 4.5.4-12 Removal of Nameplate

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4.6 De-Installation of 19-inch Rack (DKC-F515I-FRMR)

4.6.1 Parts List

Table 4.6.1-1 Parts List of DKC-F515I-FRMR

Item No.	Part Name	Part No.	Quantity	Remarks
1	Frame	2751008-1	1	
2	Bolt Head HEX	BH816N	3	
3	Washer	WP008N	3	
4	Fall Prevent Leg	5526204-2	1	
5	Nameplate (HDS)	2751038-51	1	RSD
		2751040-51/251		HICAM/HICEF
6	Nameplate (HP)	2106989-35	1	RSD
	(AE072A)	2106991-35/135		HICAM/HICEF

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4.6.2 De-Installation Procedure of 19-inch Rack

1. Power OFF of Rack Frame being De-Installed
   a. Turn off the circuit breaker on the PDUs.

Table 4.6.2-1 De-Installed Rack Frame

No.	De-Installed Rack Frame	PDU	Remarks
1	Basic Rack	PDU-C00, PDU-C01, PDU-U10, PDU-U11	
2	Extension Rack	PDU-U20, PDU-U21, PDU-U30, PDU-U31	

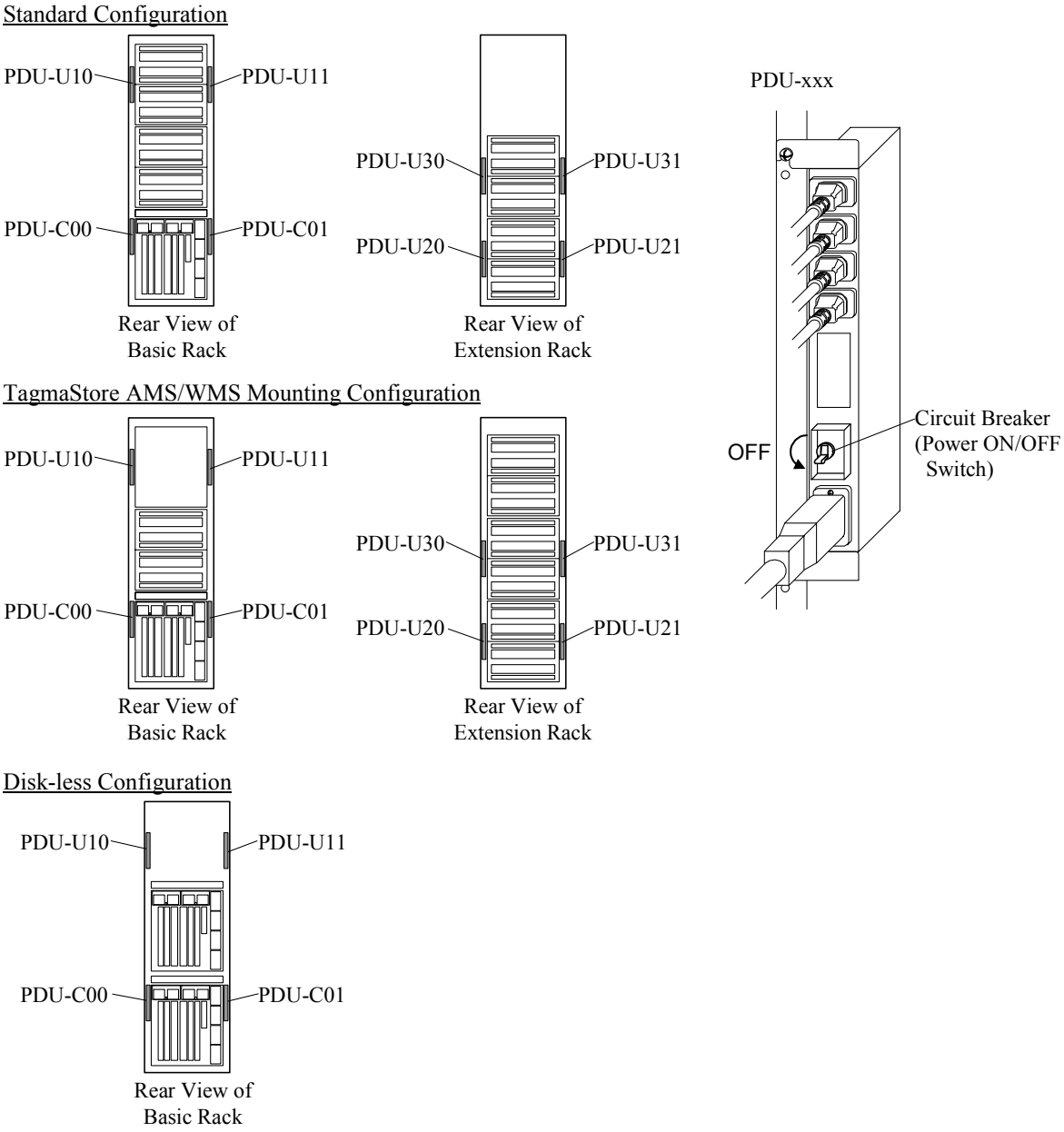


Fig. 4.6.2-1 Circuit Breaker on PDB

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2. Removal of Fall Prevent Leg
   a. Remove the washer and bolts.
   b. Remove the Fall Prevent Leg from the rack frame.

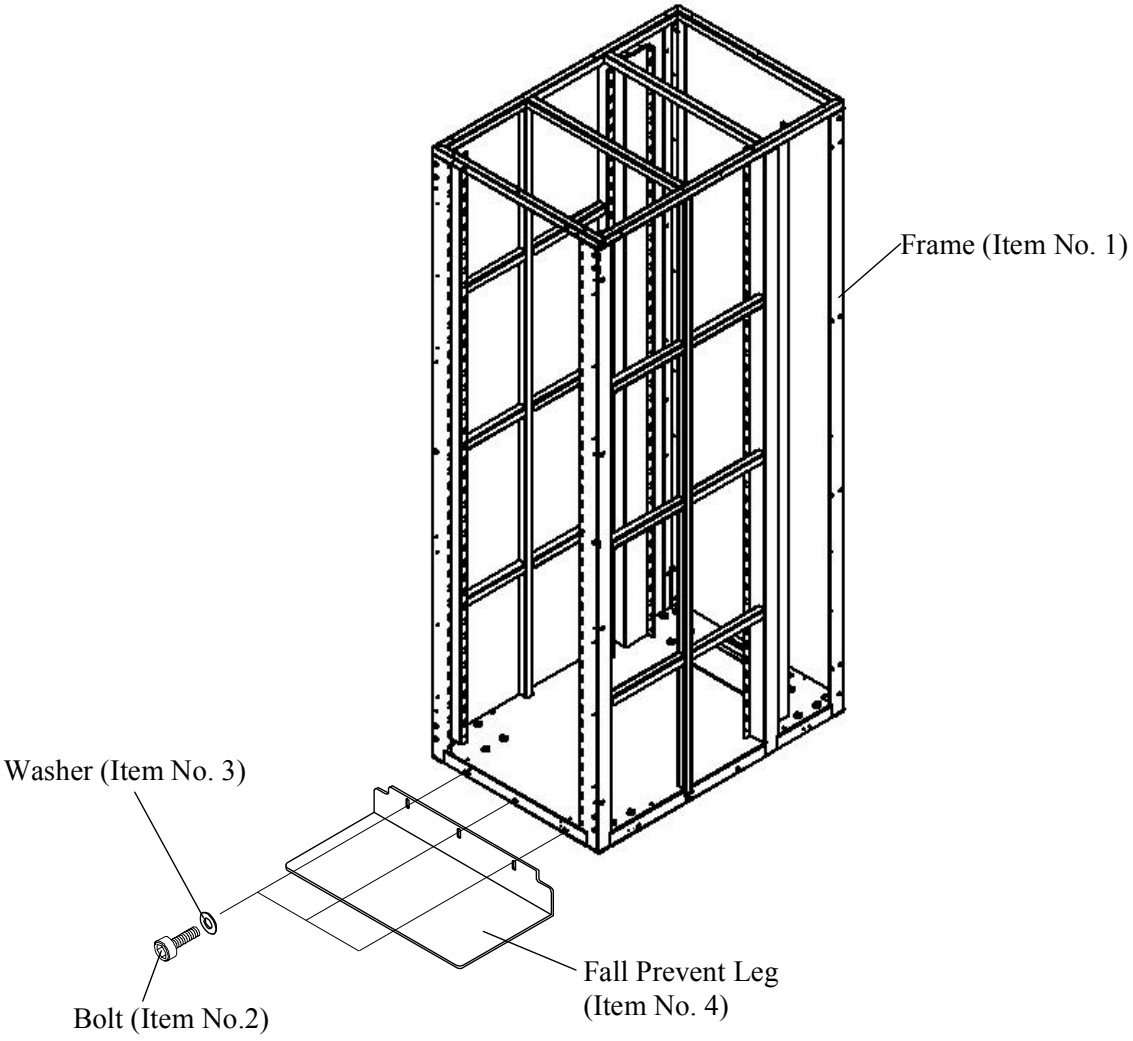


Fig. 4.6.2-2 Removal of Fall Prevent Leg

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Blank Sheet

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Blank Sheet

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3. Removal of Nameplate
   a. When the model name is AE072A, remove the nameplate from the frame bottom base. When the model name is not AE072A, go to step b.

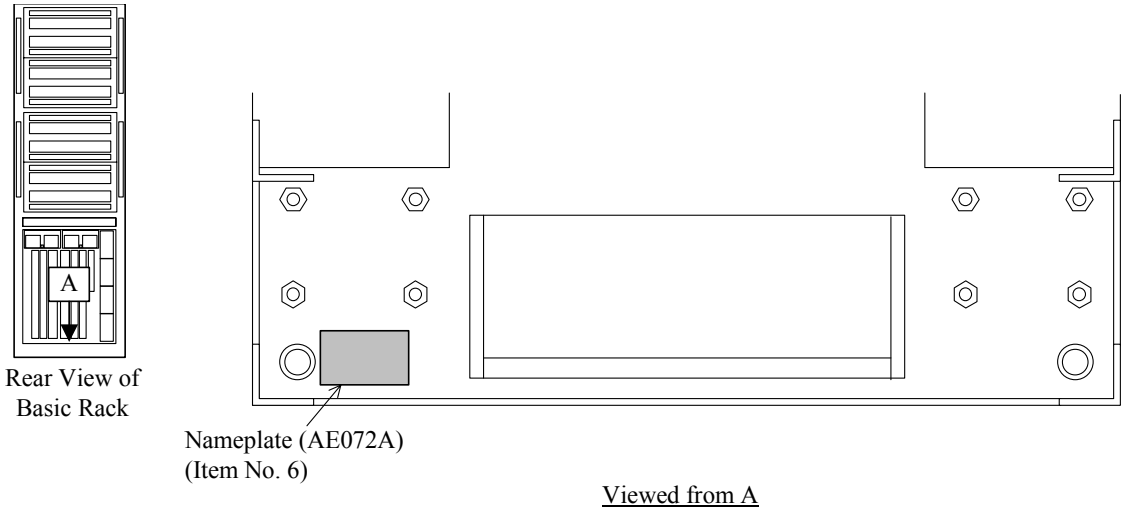


Fig. 4.6.2-3 Removal of Nameplate

   b. Remove the screw from the rack frame and remove the nameplate tags installed.
   c. Remove the nameplate from the nameplate tag.
   d. Attach the remaining nameplate tags with the screw.

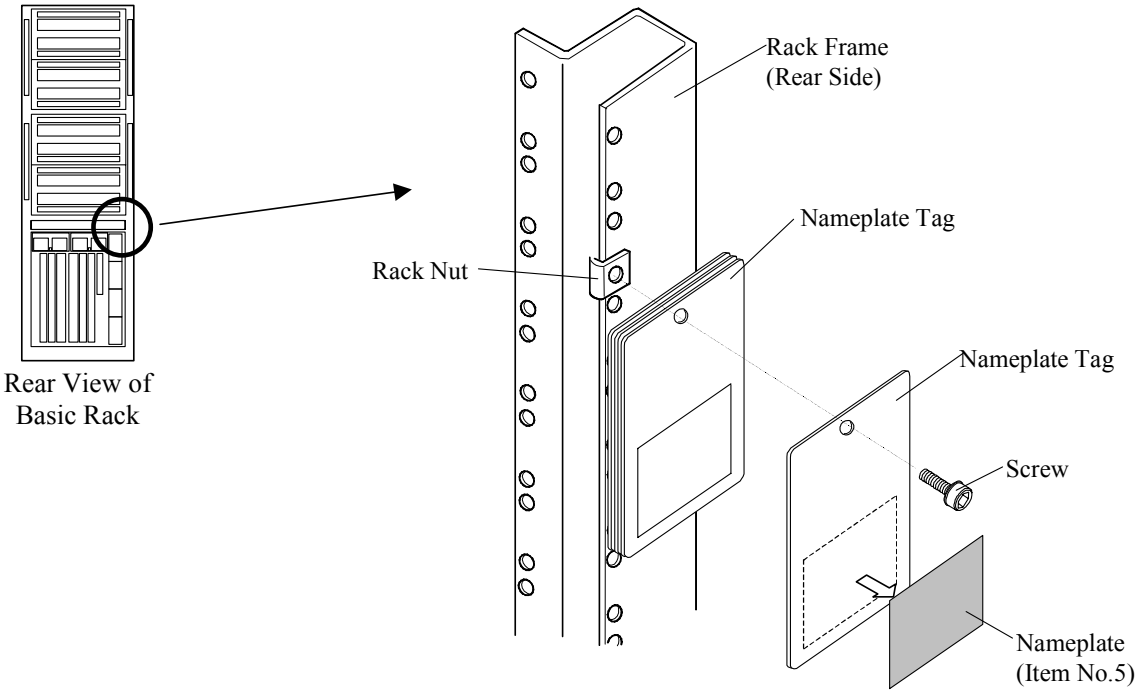


Fig. 4.6.2-4 Removal of Nameplate

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4.7 De-Installation of Modem Card for Remote Maintenance (DKC-F510I-MDMR)

Note: When two control frames (DKCs) are installed in the Disk-less configuration, check the serial number of target DKC on the SVP screen and beware of a removal position to prevent mistakes. (See “5.2.4 Refer Configuration 3. <DKC Configuration window>” [INST05-410].)

4.7.1 Parts List

Table 4.7.1-1 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKC-F510I-MDMR	MODEM Card	5524212-C	1	
		Nameplate (HDS)	2751038-39	1	RSD
			2751040-39/239		HICAM/HICEF
		Nameplate (HP)	2751038-139	1	RSD
			2751040-139/339		HICAM/HICEF

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4.7.2 De-Installation Procedure of Modem Card for Remote Maintenance

1. SVP Power OFF
   a. Loosen the screw and swing the plate by a right angle.
   b. Insert the maintenance jumper into JP1 on the SVP.

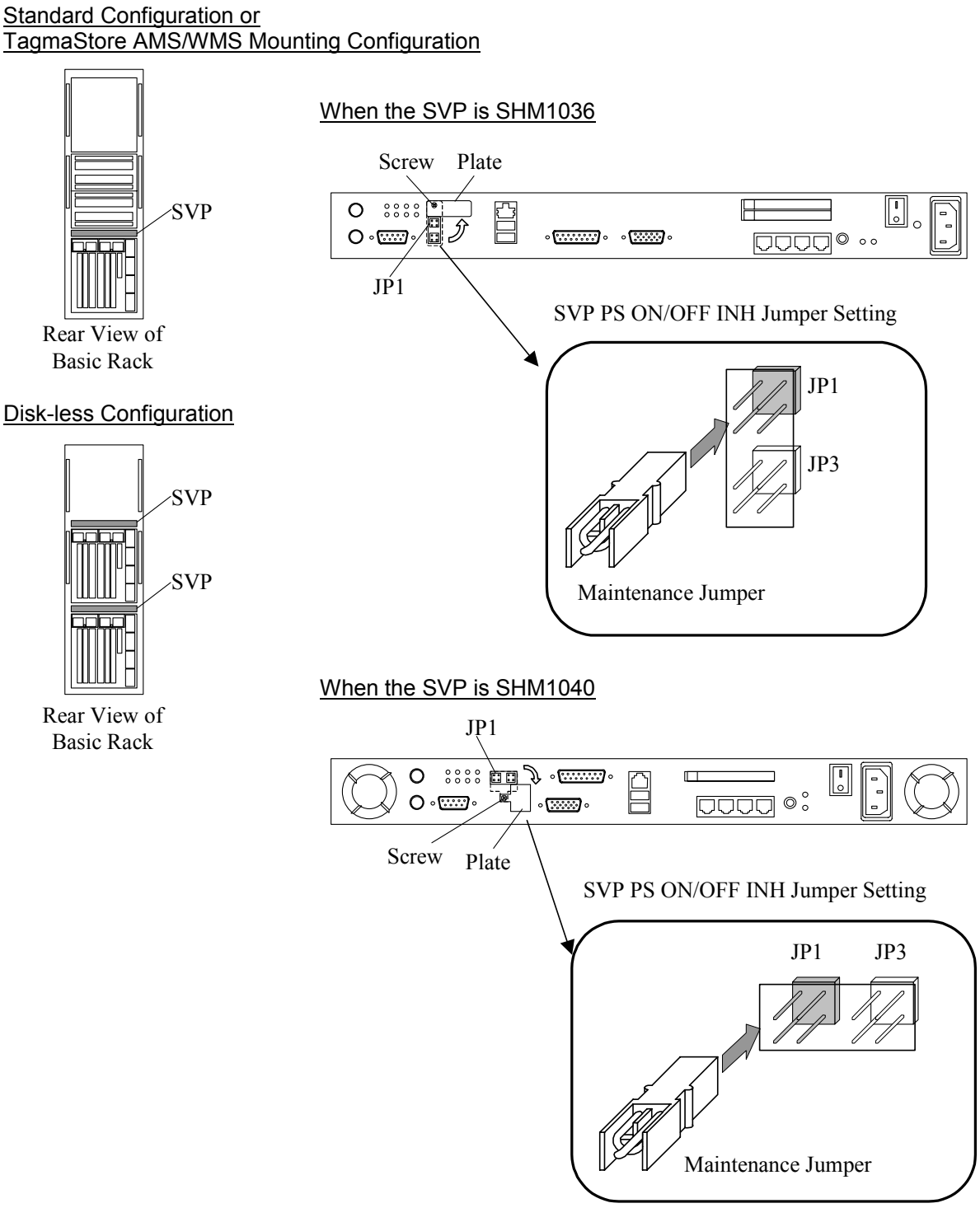
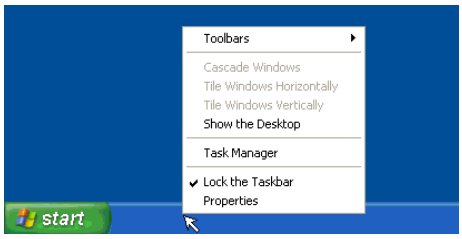


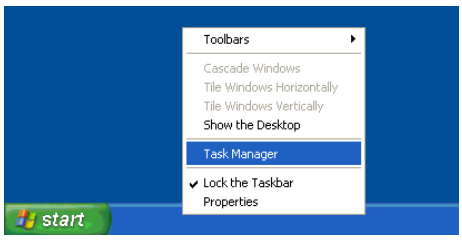
Fig. 4.7.2-1 Insertion of Maintenance Jumper

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c. Click the right button of a mouse on a taskbar.

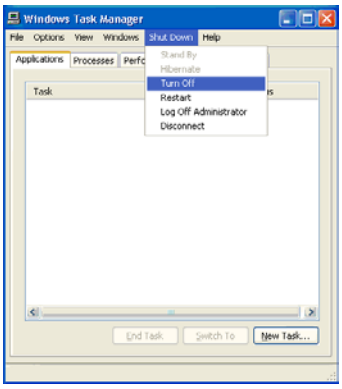


d. Select (CL) the [Task Manager].

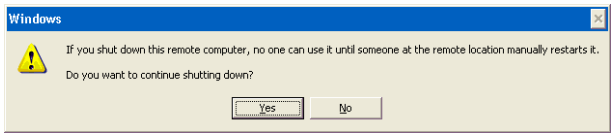


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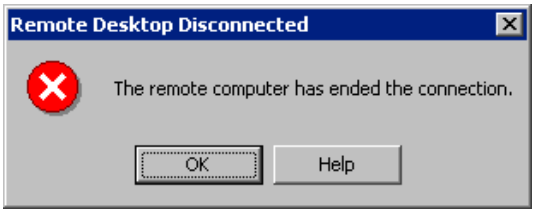
e. Select (CL) [Shut Down], and then select (CL) the [Turn Off].



f. Select (CL) the [Yes] button.

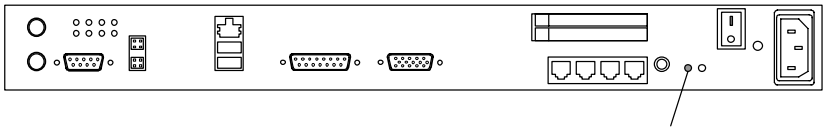


g. Select (CL) the [OK] button.



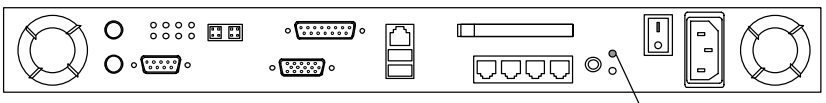
h. It waits until SVP POWER LED puts out the light.

When the SVP is SHM1036



Rear View of SVP

When the SVP is SHM1040



Rear View of SVP

Fig. 4.7.2-2 Location of SVP POWER LED

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2. Removal of MODEM Card
   a. Disconnect the cable from the modem cable coupler.
   b. Open the repeat binder and remove the core from the MODEM cable.
   c. Push the card IN/OUT button on the SVP.
   d. Push the card IN/OUT button to remove MODEM Card from the SVP.

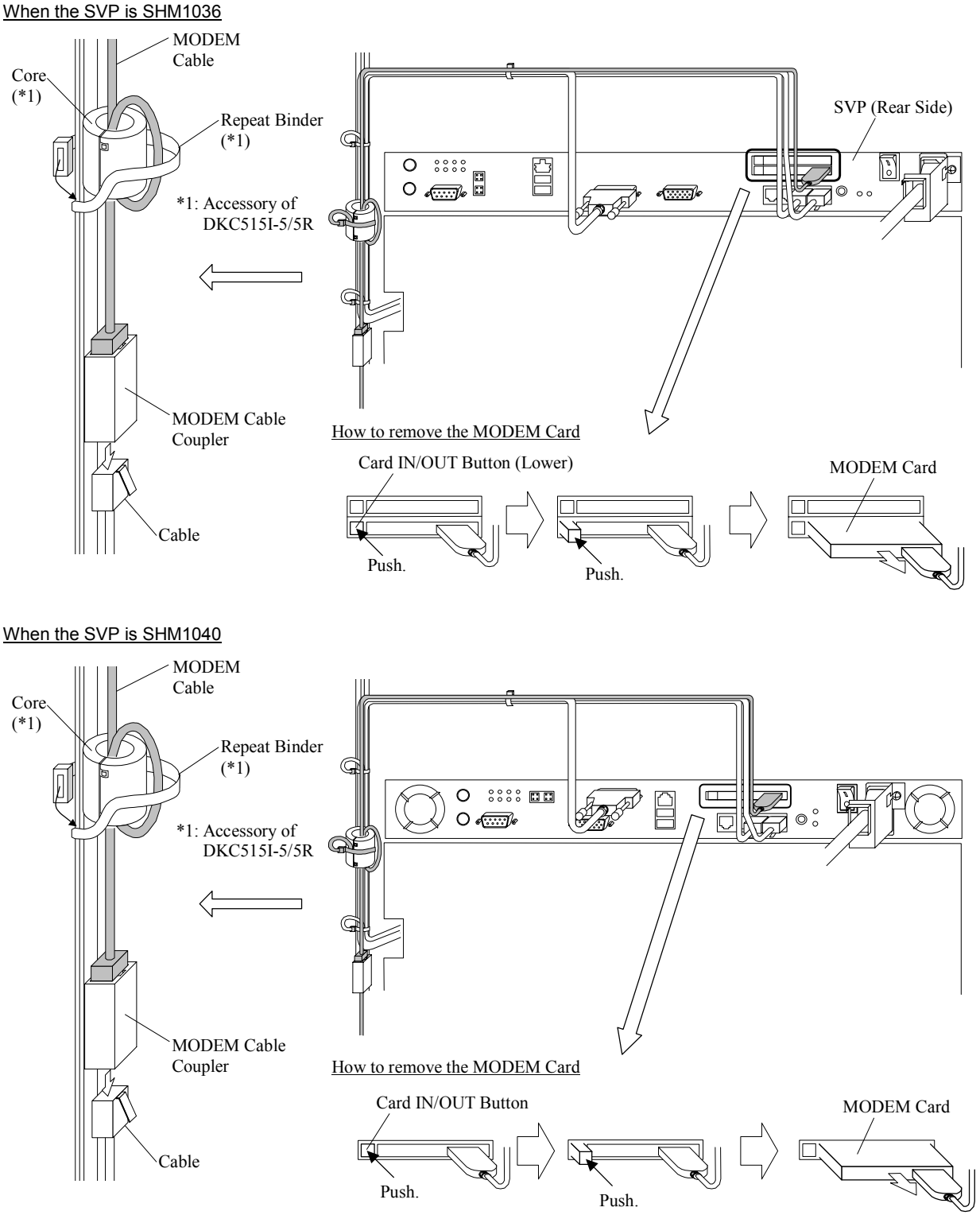
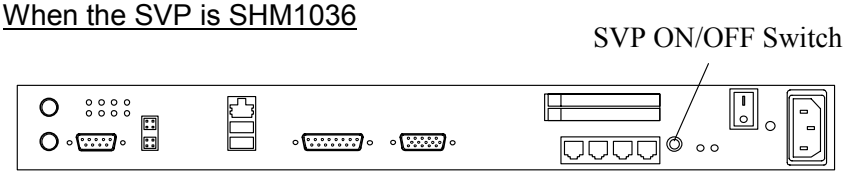


Fig. 4.7.2-3 Removal of MODEM Card

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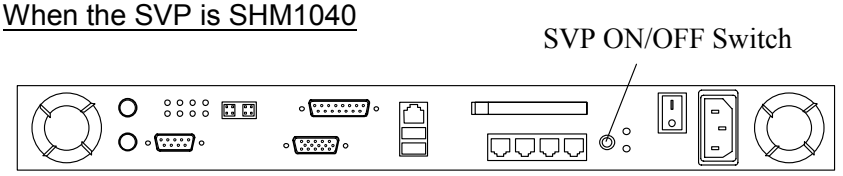
3. SVP Power ON
   a. Press the SVP ON/OFF Switch on the SVP.

When the SVP is SHM1036



Rear View of SVP

When the SVP is SHM1040



Rear View of SVP

Fig. 4.7.2-4 SVP ON/OFF Switch

   b. Wait for a few minutes until the Windows system starts up.

   c. Select (CL) [Search] of the SVP Connect Utility through the Console PC.
   Make sure that the SVP concerned is displayed in the list. (See SVP01-60.)
   [Connection destination]
   xxx.xxx.xxx.15

   d. Remove the maintenance jumper of the JP1 on the SVP. Return the plate to original position and fasten the screw. Refer to Fig. 4.7.2-1.

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4. Removal of the nameplate
   a. Remove the screw from the rack frame and remove the nameplate tags to be installed.
   b. Remove the DKC-F510I-MDMR nameplate from the nameplate tag.
   c. Attach the remaining nameplate tags with the screw.

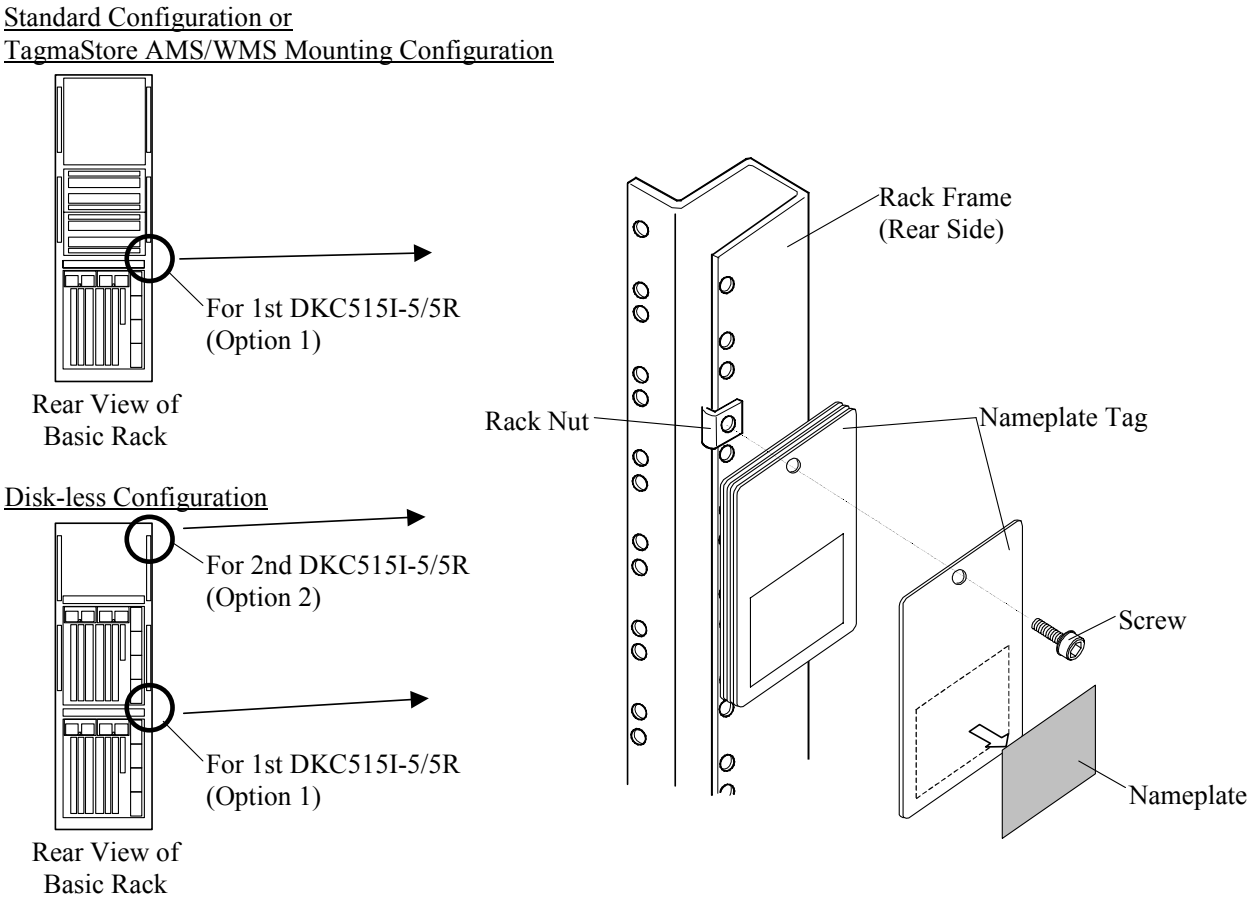


Fig. 4.7.2-5 Removal of Nameplate

   d. Return to the working table and do the rest of the work. (INST02-70)

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4.8 De-Installation of 1U Filler Panel (DKC-F515I-FIPR)

Table 4.8-1 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKC-F515I-FIPR	HP Filler (1U) ASSY	3274290-A	1	
		Nameplate (HP)	2751038-174	1	RSD
			2751040-174/374		HICAM/HICEF

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4.8.1 De-Installation Procedure of 1U Filler Panel

1. Removal of Filler Panel
   a. Remove the filler panel from the beams on the front side of the rack frame.

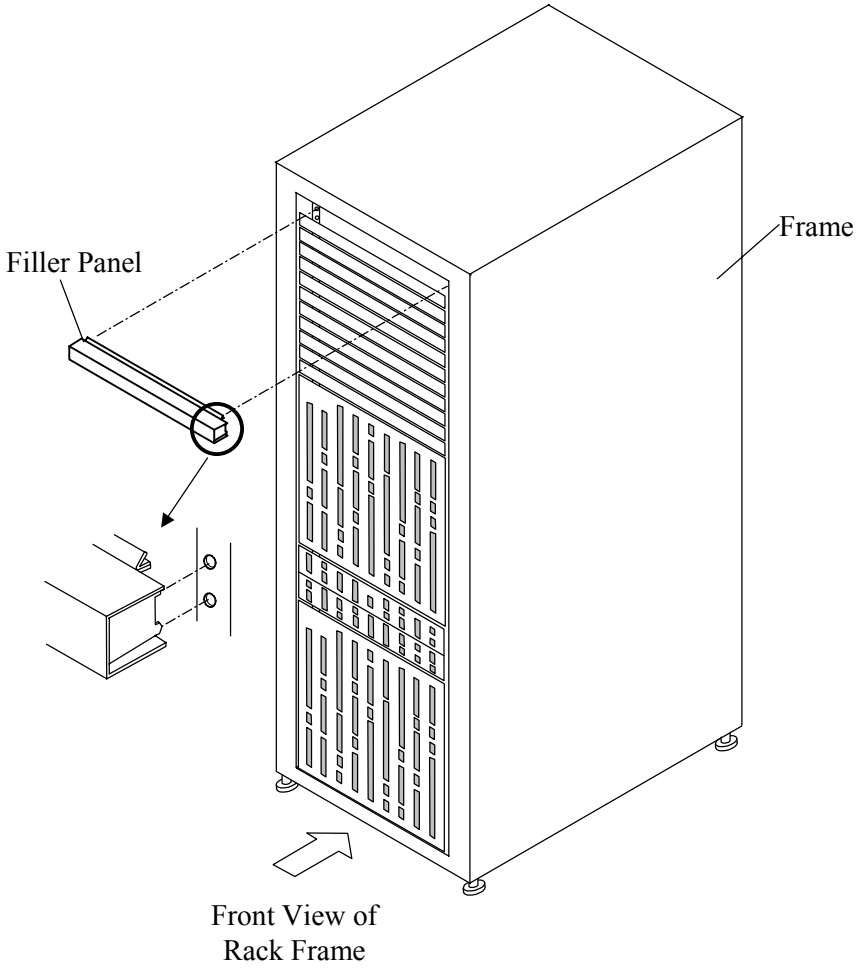


Fig. 4.8.1-1 Removal of Filler Panel

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2. Change the nameplate.
   a. Remove the screw from the rack frame and remove the nameplate tags to be installed.
   b. Affix a necessary portion of the Label (QTY)(Accessory of Control Frame; DWG No.3268905-1) in layers on the nameplate and paint out numbers by black oil felt pen.
   c. Attach all the nameplate tags with the screw.

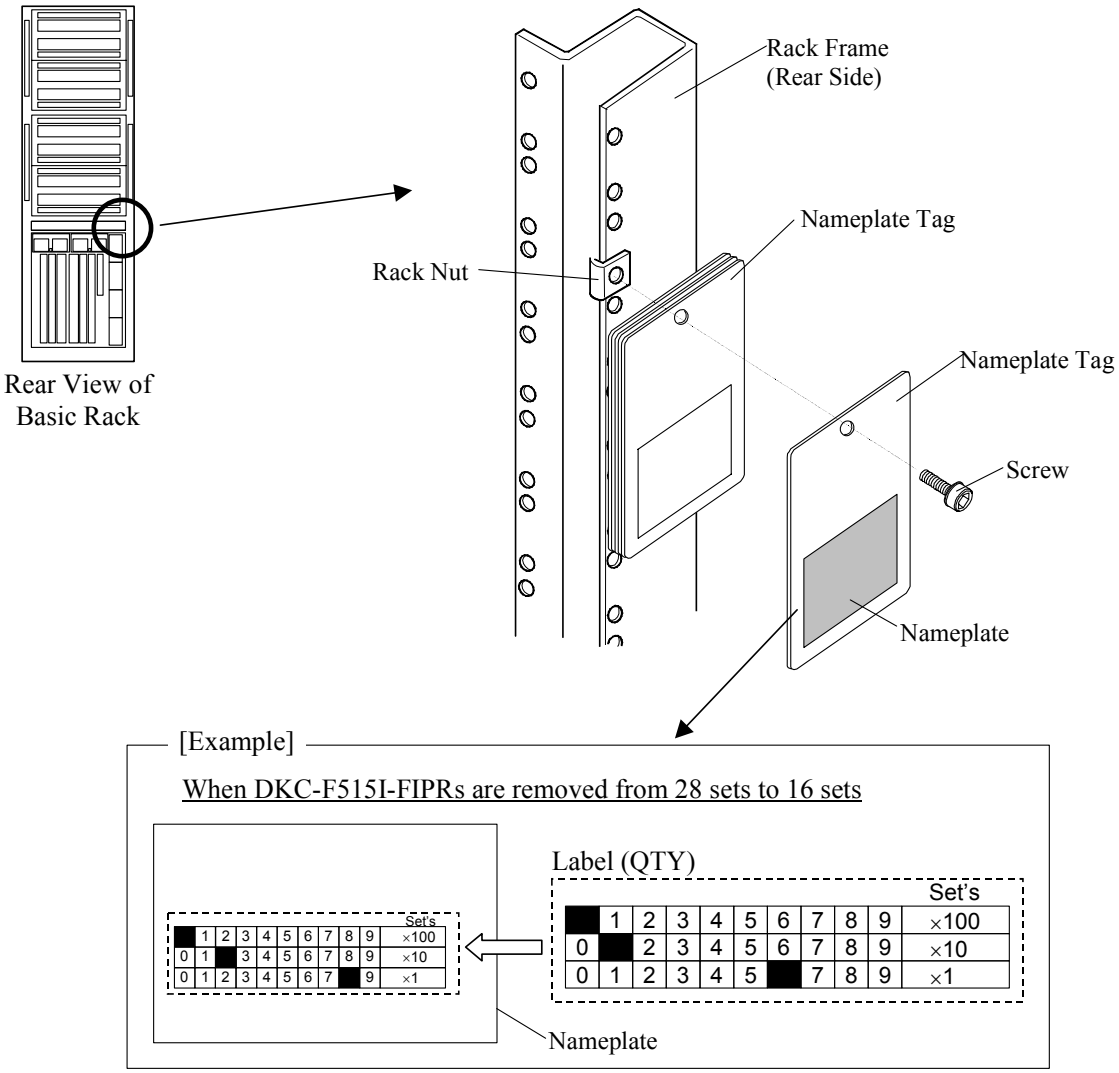


Fig. 4.8.1-2 Change of Nameplate

d. Return to the working table and do the rest of the work. (INST02-60)

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4.9 De-Installation of Additional Battery (DKC-F515I-LGABR)

Table 4.9-1 Parts List

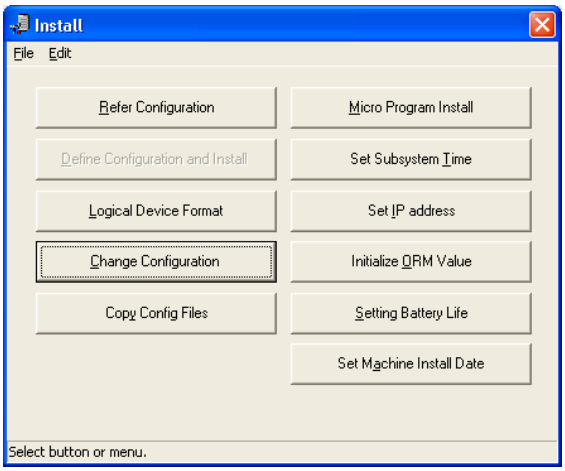
No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKC-F515I-LGABR	Battery Box	5527959-C	2	
		Screw	5513661-425	4	
		Nameplate (HDS)	2751038-44	1	RSD
			2751040-44/244		HICAM/HICEF
		Nameplate (HP)	2751038-144	1	RSD
			2751040-144/344		HICAM/HICEF

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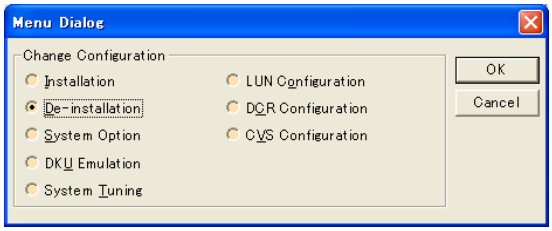
1. Setting up the New Device Structure Information

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

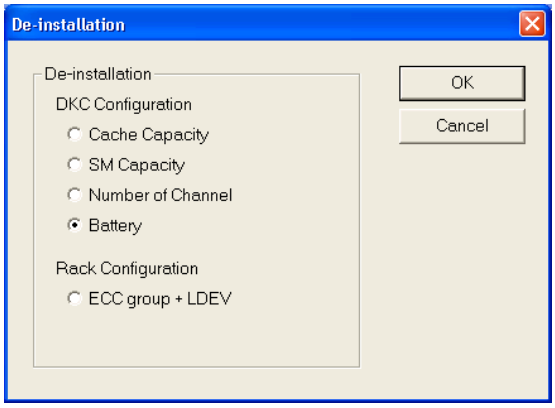
(2) <Start the 'Menu Dialog' screen>
Select (CL) [Change Configuration].



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



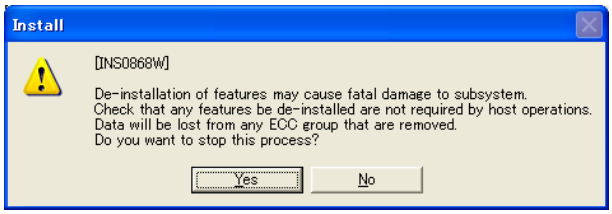
(4) <Select a part to be changed>
Select (CL) [Battery], and select (CL) [OK].



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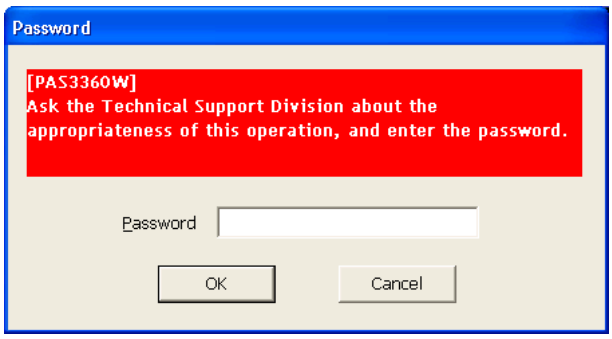
(5)

Select (CL) [No] in response to "De-installation of features may cause fatal damage to subsystem. Check that any features be de-installed are not required by host operations. Data will be lost from any ECC group that are removed. Do you want to stop this process?".



---

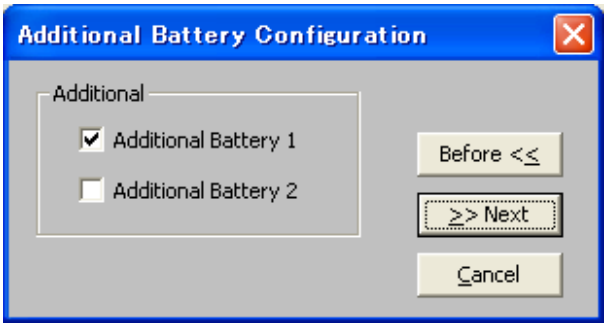
(6) <Input password>
Enter the password and select (CL) [OK].



Notice: This is a special (exceptional) operation that can cause a serious failure such as a system down or a data loss if a wrong part to be removed is selected, and requires an input of a password. Ask the technical support division about the appropriateness of the operation, and input the password after getting an approval of executing the operation.

---

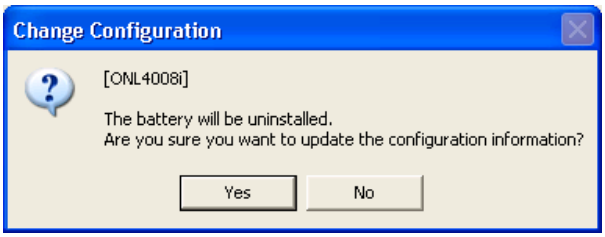
(7) <Define Battery>
Define the Battery equipment in the 'Additional Battery Configuration' dialog box.
After the setting is made, select (CL) the [>>Next].



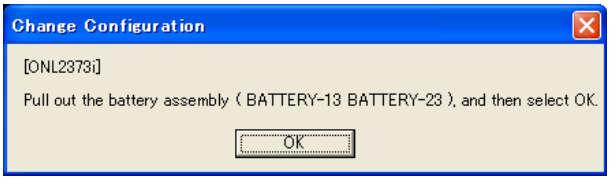
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2. SVP pre procedure

(1) <Start de-installation>
Select (CL) [Yes] in response to "The battery will be uninstalled. Are you sure you want to update the configuration information?".
When [No] is selected (CL), returns to INST04-09-20 step (2).



(2) <Perform Battery hardware de-installation>
At this point refrain from pressing the [OK] button.
When "Pull out the battery assembly (BATTERY-nn BATTERY-nn), and then select OK." is displayed, perform the hardware de-installation steps according to the battery hardware de-installation procedure.



(Eg. BATTERY-13, BATTERY-23)

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3. De-Installation Procedure of the Additional Battery

3-1 Removal of battery boxes

a. Turn off the switches at the battery boxes.
b. Loosen the screws and remove the battery boxes.

Table 4.9-2 Location List of Additional Battery

No.	Model Name	Location No.		Remarks
1	DKC-F515I-LGABR ×1set	BATTERY12	BATTERY22	
2	DKC-F515I-LGABR ×1set	BATTERY13	BATTERY23	

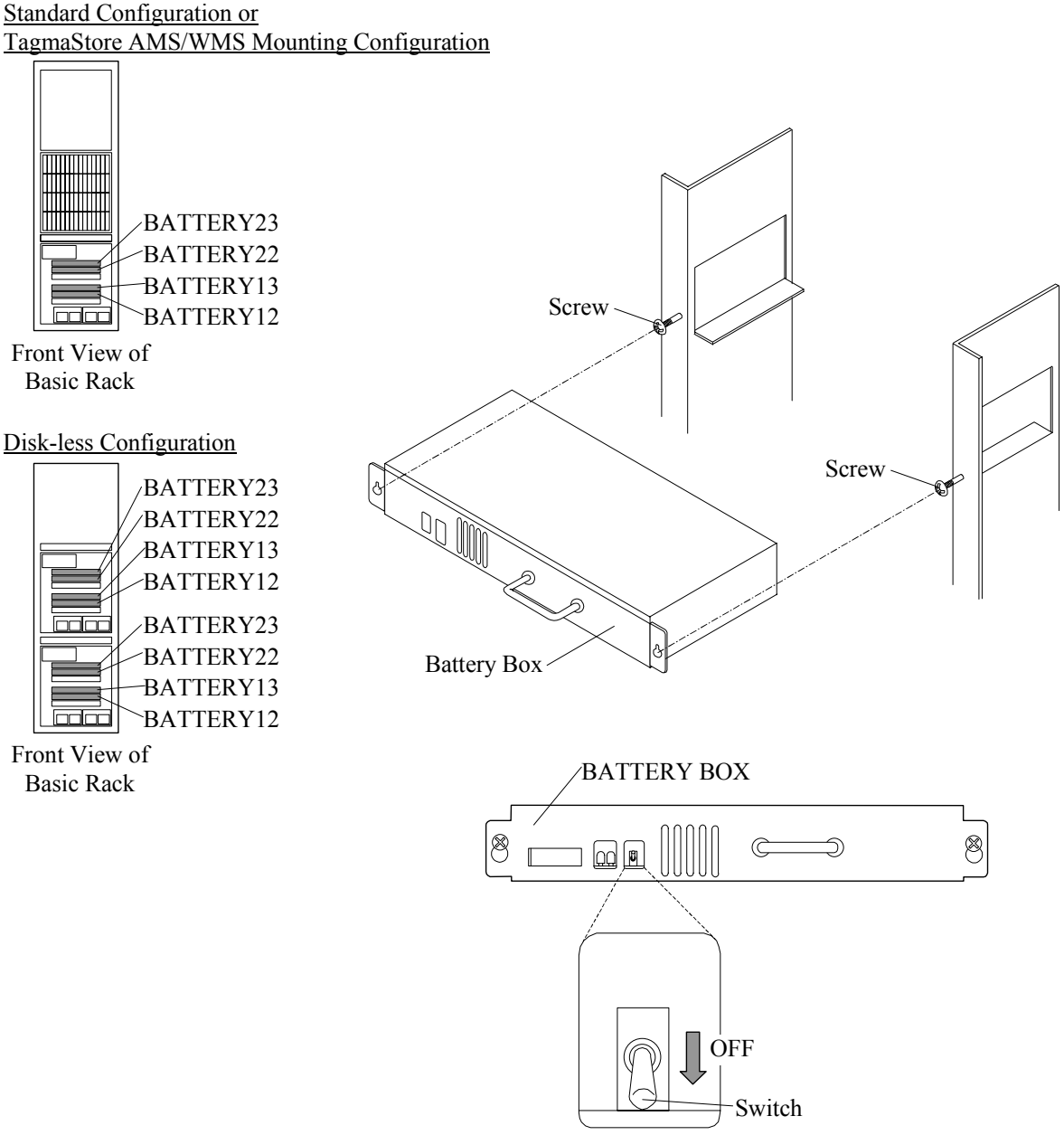


Fig.4.9-1 Removal of Battery Boxes

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3-2 Removal of nameplate

a. Remove the screw from the rack frame and remove the nameplate tags to be installed.
b. Remove the DKC-F515I-LGABR nameplate from the nameplate tag.
c. Attach the remaining nameplate tags with the screw.

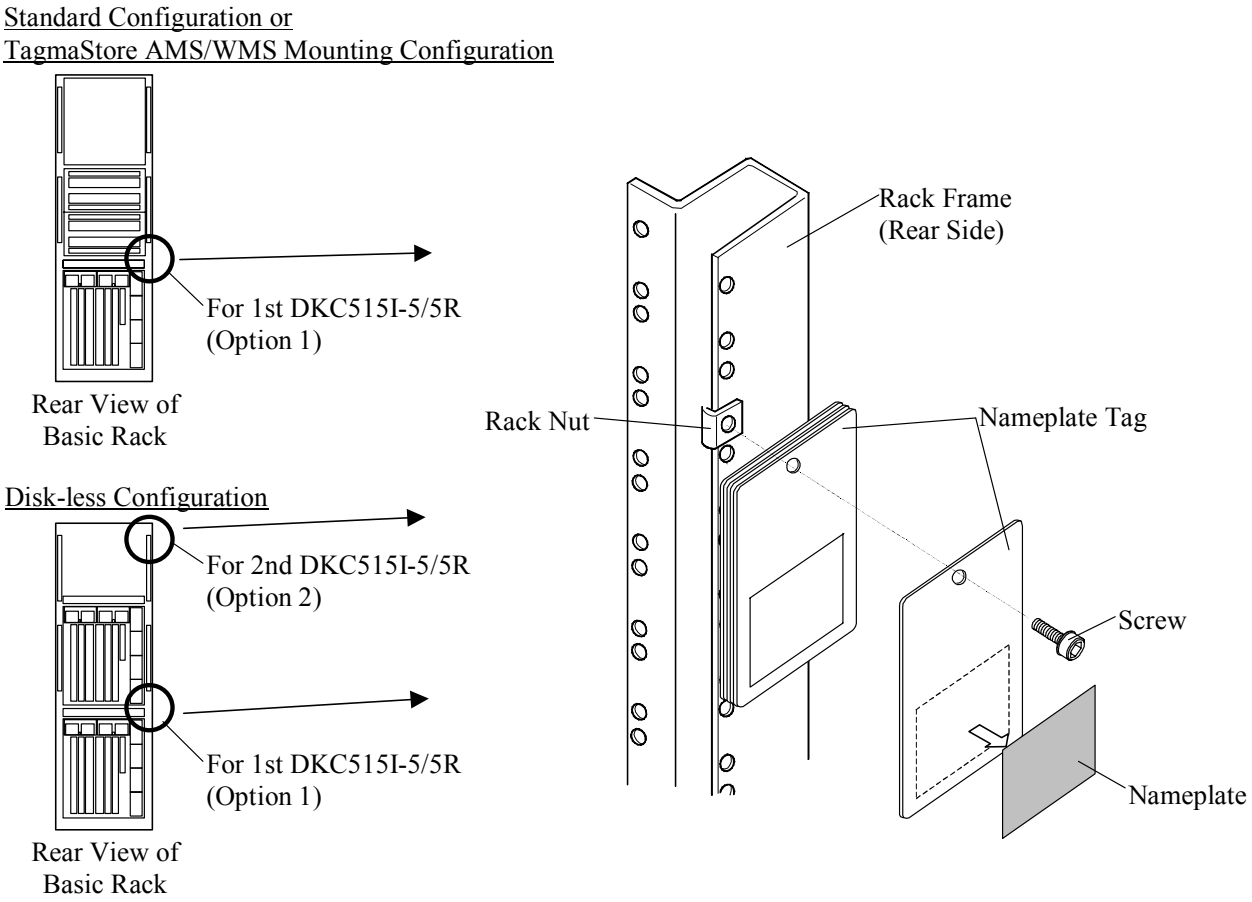


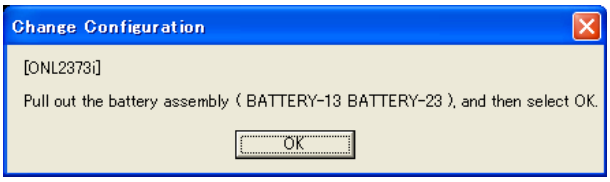
Fig. 4.9-2 Removal of Nameplate

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4. SVP post procedure

(1)

After the hardware procedure for battery is completed, select (CL) [OK] in response to "Pull out the battery assembly (BATTERY-nn BATTERY-nn), and then select OK.".



(Eg. BATTERY-13, BATTERY-23)

---

(2) <Check the end of de-installation procedure>

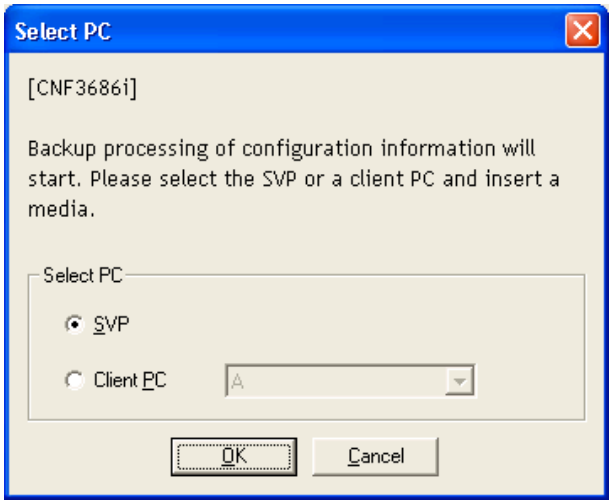
"Renewal process has completed. Please check subsystem status." shown in the right figure displayed. Select (CL) [OK] in response to this message.



---

(3)

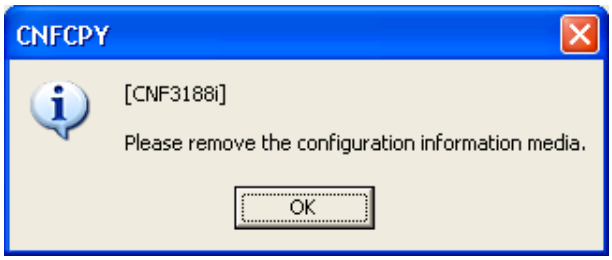
"Reading subsystem configuration data..." is displayed.
"Backup processing of configuration information will start. Please select the SVP or a client PC and insert a media." is displayed.
Insert the Config FD into FDD of selected PC, and select (CL) [OK].



---

(4)

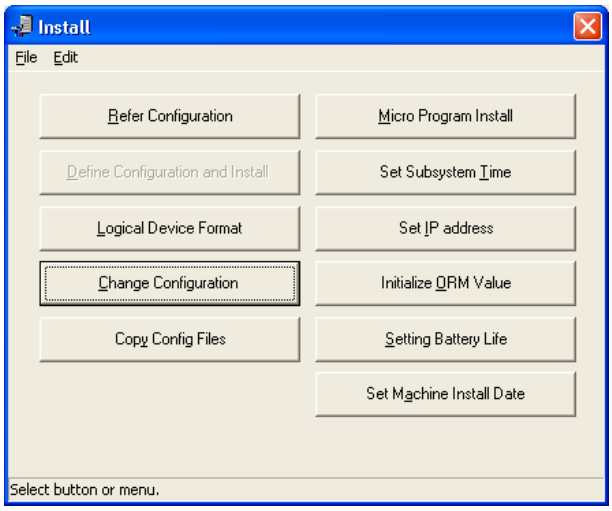
When this procedure is completed, the message "Please remove the configuration information media." is displayed.
Remove the FD, and select (CL) [OK].



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(5)

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



(6) <Mode Change>
Change the mode to View Mode.

Return to the working table and do the rest of the work. (INST02-70)

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5. SVP procedure

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5.4.1 System Tuning INST05-1640

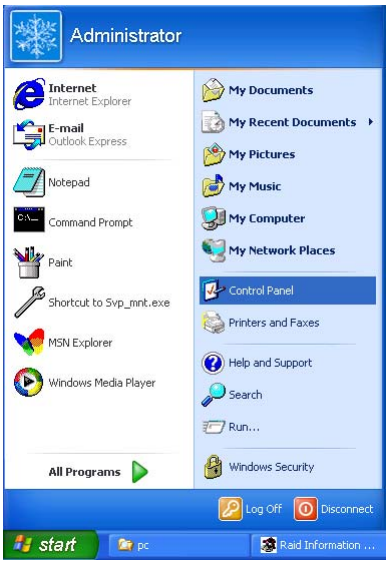
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5.2 New Installation SVP Procedure

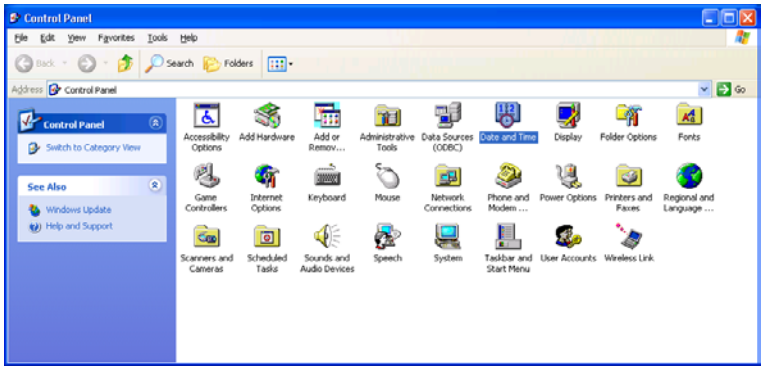
5.2.1 TOD Setting and Set IP Address

[1] TOD Setting (Turn on subsystem power before TOD Setting)

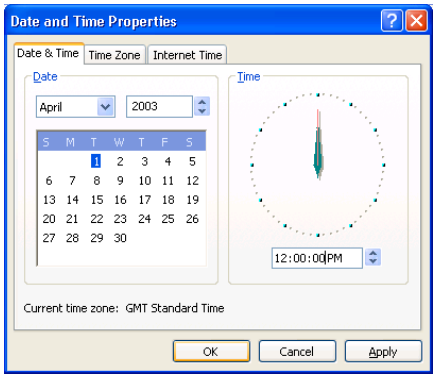
1. <Open [Control Panel]>
   Select (DR) [Settings] and then [Control Panel] from [Start].



2. <Open [Date and Time]>
   Select (DC) [Date and Time] from [Control Panel].

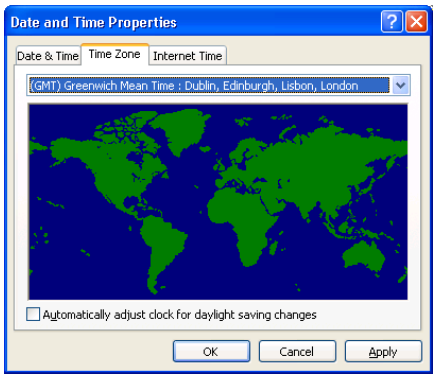


3. <Select [Time Zone]>
   Select (CL) [Time Zone].

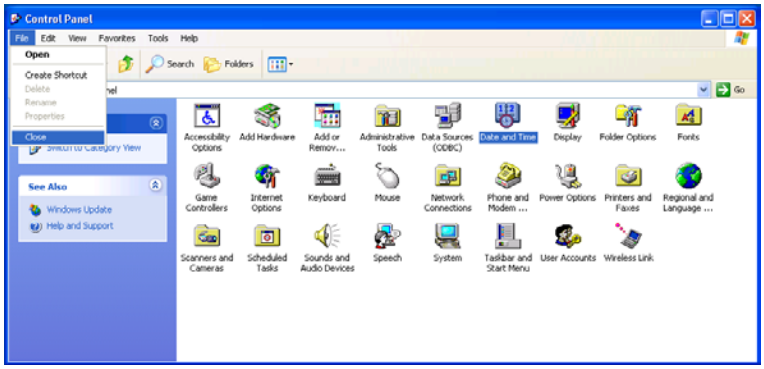


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4. <Check the setting of [Time Zone]>
   Make sure that the setting of [Time Zone] is "[GMT] Greenwich Mean Time; Dublin, Edinburgh, Lisbon, London". Also, make sure that a check box on the left of "Automatically adjust clock for daylight saving changes" is ☐ (without a check mark). Then, press [OK] (CL).



5. <Close [Control Panel]>
   Select (DR) [File] and then [Close] from [Control Panel].



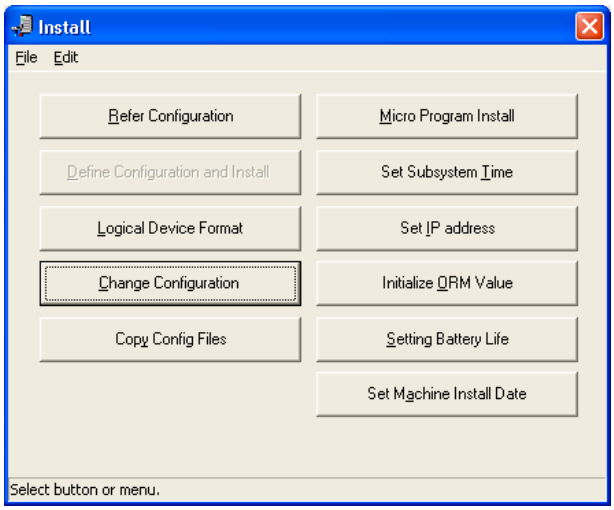
6. Change the mode to [Modify Mode] from [View Mode] (CL).

7. Select (CL) [Install].

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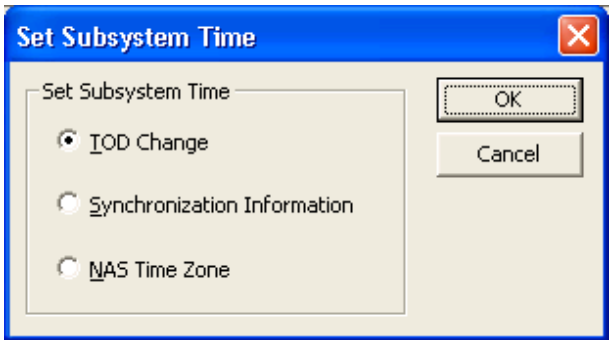
8.

Select (CL) [Set Subsystem Time] in the 'Install' window.



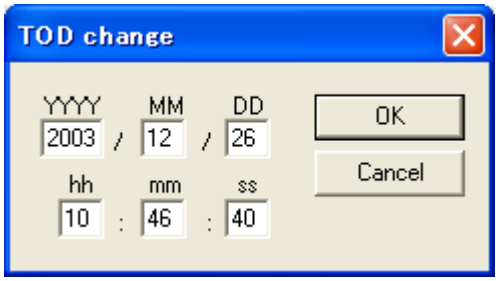
9.

Select (CL) [TOD Change] in the 'Set Subsystem Time' window, and then select (CL) [OK].



10.

Specify the date (year, month and day) and time (hour, minute and second) and select (CL) [OK].



11.

Close the 'Install' window.

In case of New Installation, go to INST02-300 step (5).

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[2] Set IP Address

1.

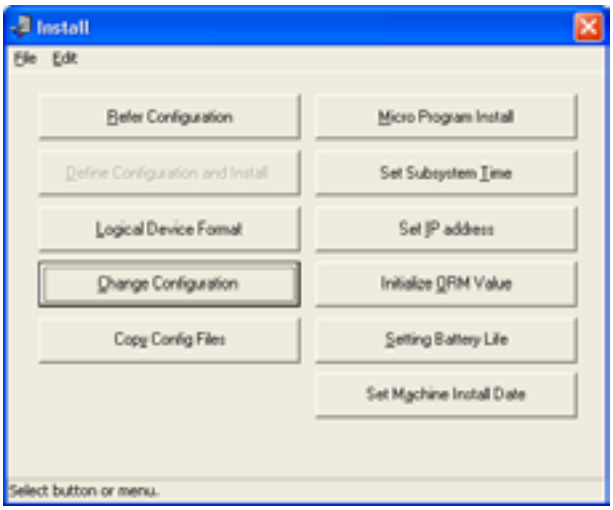
Change the mode to [Modify Mode] from [View Mode] (CL).

2.

Select (CL) [Install].

3.

Select (CL) [Set IP address] in the 'Install' window.



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4. <Change the IP Address>

(1)

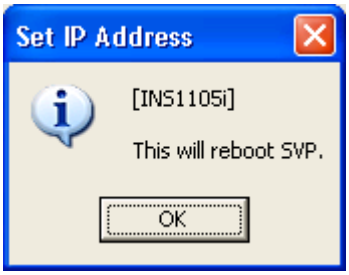
Select (CL) [SVP] and then select (CL) [OK] after setting IP Address and Subnet Mask of an Internal IP Address, and an External IP Address.



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(2)

In response to the message “This will reboot SVP.”, select (CL) [OK].



Change the IP Address is abnormally terminated if the message “Failed to change the IP address.” is displayed.
Identify the error cause according to the procedure shown in “TROUBLE SHOOTING SECTION”. (Refer to TRBL05-600)

Note:
If the remote connection to the Client PC is disconnected during the operation, reconnect by changed IP address it to continue the operation. Please perform a remote desktop reconnection after more than five minutes from pushing down the [OK] button of a [INS1105i] message. (Operation for connection to SVP, refer to SVP01-60.)

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[3] Setting Web Console

Make a setting of the Web Console according to [Web Console] section 1. (WEB01-10)

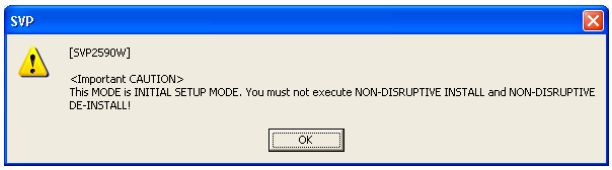
Copyright © 2005, Hitachi, Ltd.

5.2.2 Configuration Information Definition

⚠ CAUTION

This operation is necessary only when a subsystem is newly installed. It is not performed afterward. If it is performed by mistake, a system down or a data loss may be caused.

1. <Mode Change>
   Change the mode to [INITIAL SETUP Mode].
   Select "Shift" + "Ctrl" + "I".



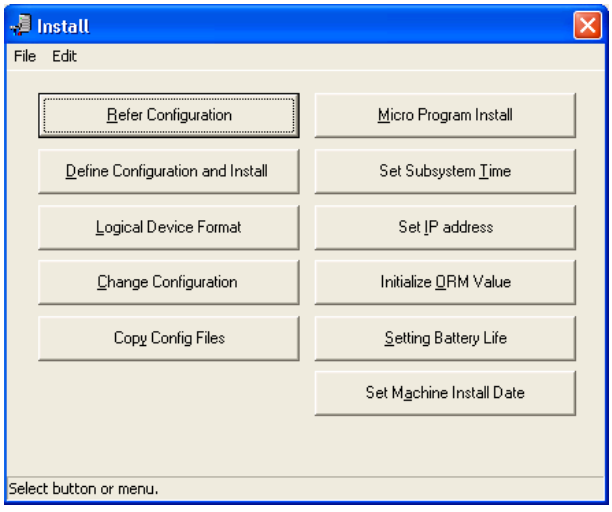
   Enter the password and select (CL) [OK].

   Select (CL) [OK] in response to the confirmation message
   "<Important CAUTION>
   This MODE is INITIAL SETUP MODE. You must not execute NON-DISRUPTIVE INSTALL and NON-DISRUPTIVE DE-INSTALL!"

   Please call Technical Support Division for asking the password.
   Select (CL) [Install].

2.

   Select (CL) [Define Configuration and Install...].



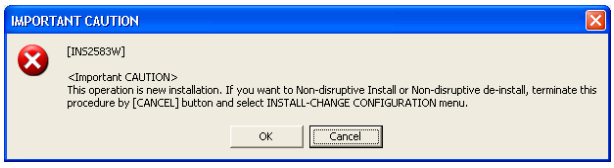
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CAUTION

This is a special (exceptional) operation that can cause a serious failure such as a system down or a data loss if executed in an occasion other than the new subsystem installation, and requires an input of a password. Ask the technical support division about the appropriateness of the operation, and input the password after getting an approval of executing the operation.

3.

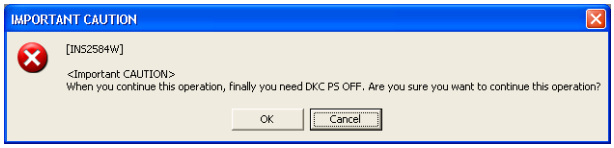
(1)



Select (CL) [OK] in response to the confirmation message
"<Important CAUTION>
This operation is new installation. If you want to Non-disruptive Install or Non-disruptive de-install, terminate this procedure by [CANCEL] button and select INSTALL-CHANGE CONFIGURATION menu.".

---

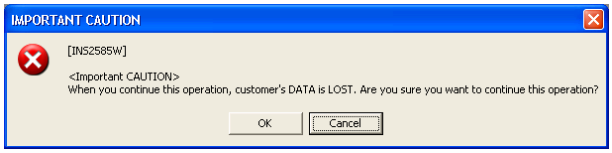
(2)



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

---

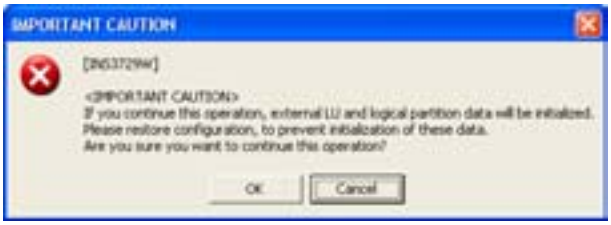
(3)



Select (CL) [OK] in response to the confirmation message
"<Important CAUTION>
When you continue this operation, customer's DATA is LOST. Are you sure you want to continue this operation?".

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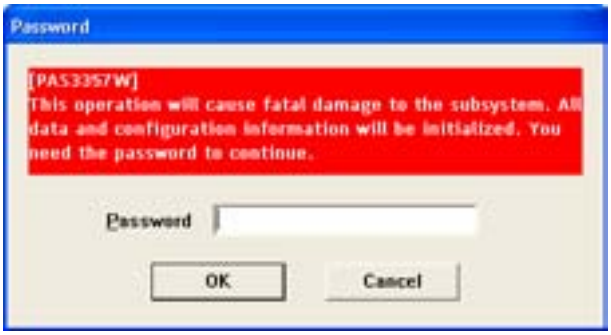
(4)



Select (CL) [OK] in response to the confirmation message "<IMPORTANT CAUTION> If you continue this operation, external LU and logical partition data will be initialized. Please restore configuration, to prevent initialization of these data. Are you sure you want to continue this operation?".

---

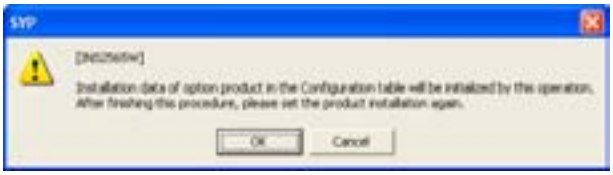
(5)



Enter the password and select (CL) [OK]. Entering the password is required in this operation.
Please call Technical Support Division for asking it.

---

(6)

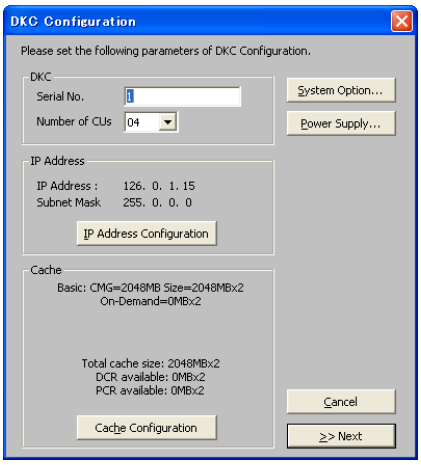


Select (CL) [OK] in response to the confirmation message "Installation data of option product in the Configuration table will be initialized by this operation. After finishing this procedure, please set the product installation again.".

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4. <DKC Configuration window>

Set the configuration information following the subsystem configuration information worksheet.



[IP Address Configuration]:
The 'IP Address Configuration' window is displayed.
(Refer to Step 4-1.)

[Cache Configuration]:
The 'Cache Configuration' window is displayed.
(Refer to Step 4-2.)

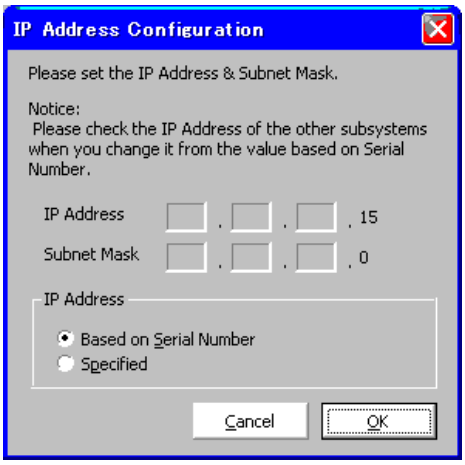
[System Option]:
The 'System Option' window is displayed.
(Refer to Step 4-3.)

[Power Supply]:
The 'Power Supply' window is displayed.
(Refer to Step 4-4.)

When the setting of all the entry items is completed, select (CL) the [>>Next] button. (The routine goes to Step 5.)
A selection (CL) of the [Cancel] button completes this operation procedure.

4-1 <IP Address Configuration window>

Set the configuration information following the subsystem configuration information worksheet.



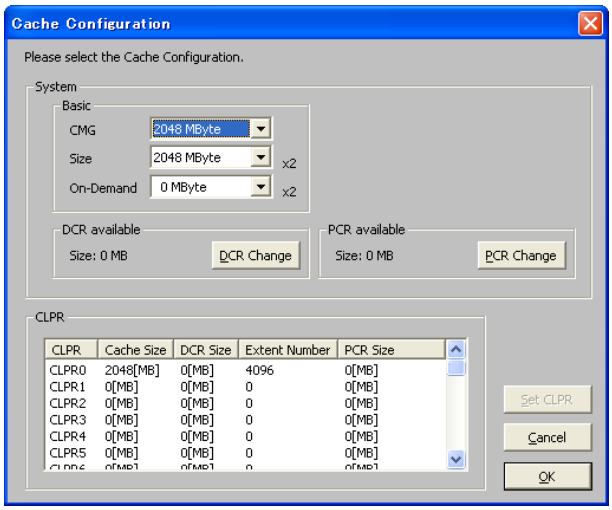
Set the IP address and the subnet mask.

After the setting is completed, select (CL) the [OK] button. (The routine returns to Step 4.)
Select (CL) the [Cancel] button. (The routine returns to Step 4.)

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4-2 <Cache Configuration window>

Set the configuration information following the subsystem configuration information worksheet.



Set the cache and on-demand capacities.

[DCR Change]:

The 'DCR Available Size Define' dialog box is displayed. (Refer to Step 4-2-1.)

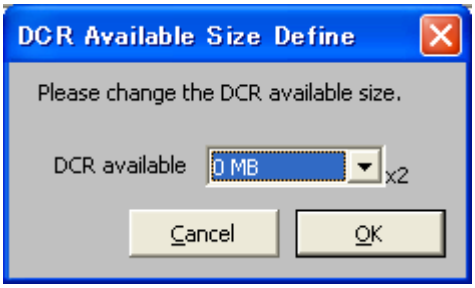
[PCR Change]:

The 'PCR Available Size Define' dialog box is displayed. (The routine returns to Step 4-2-2.)

After the setting is completed, select (CL) the [OK] button. (Refer to Step 4.)
Select (CL) the [Cancel] button. (The routine returns to Step 4.)

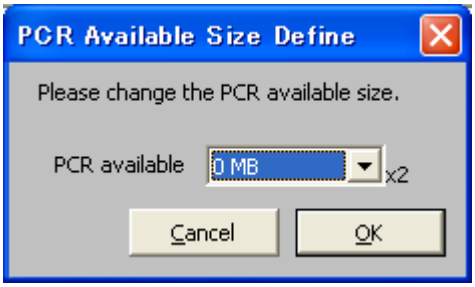
4-2-1 <DCR Available Size Define window>

Set the DCR Available size in the 'DCR Available Size Define' window and select (CL) the [OK] button.
Return to Step 4-2.



4-2-2 <PCR Available Size Define window>

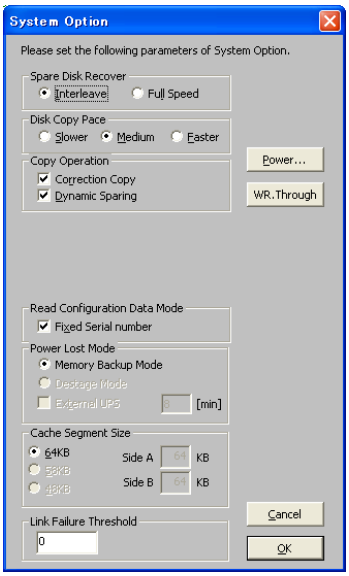
Set the PCR Available size in the 'PCR Available Size Define' window and select (CL) the [OK] button.
Return to Step 4-2.



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4-3 <System Option window>

Set the configuration information following the subsystem configuration information worksheet.



Set the system option information.

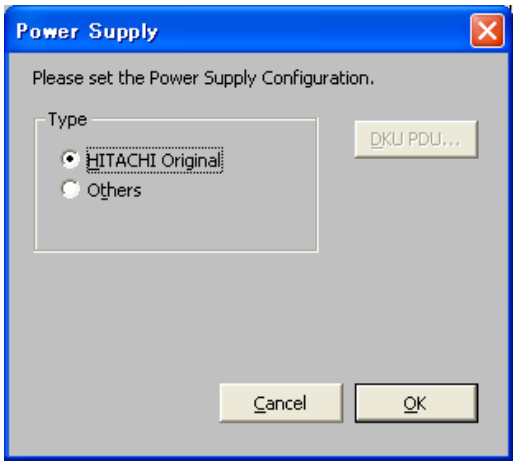
If select (CL) [Power...], 'Power Supply' windows is displayed. (Refer to Step 4-4.)

If select (CL) [WR.Trough], 'Synchronous Destage Mode Define' windows is displayed. (Refer to Step 4-5.)

After setting all the items, select (CL) the [OK] button. (The routine returns to Step 4.)
Select (CL) the [Cancel] button. (The routine returns to Step 4.)

4-4 <Power Supply window>

Set the configuration information following the subsystem configuration information worksheet.



Set the PDU information.

After setting the items, select (CL) the [OK] button. (The routine returns to Step 4 or Step 4-3.)
Select (CL) the [Cancel] button. (The routine returns to Step 4 or Step 4-3.)

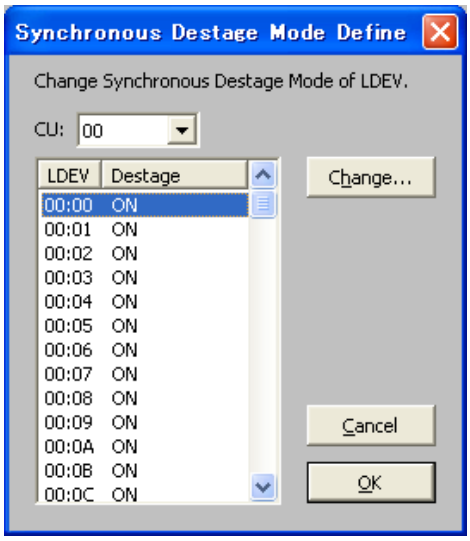
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4-5 <Synchronous Destage Mode Define Window>

Set the configuration information following the system configuration information worksheet.

After setting all the items, select (CL) [OK]. (Return to Step 4-3.)

If you do not want to reflect the setting, select (CL) [Cancel]. (Return to Step 4-3.)



5. <CHA/MIX Configuration window>

Set the PCB type following the subsystem configuration information worksheet.

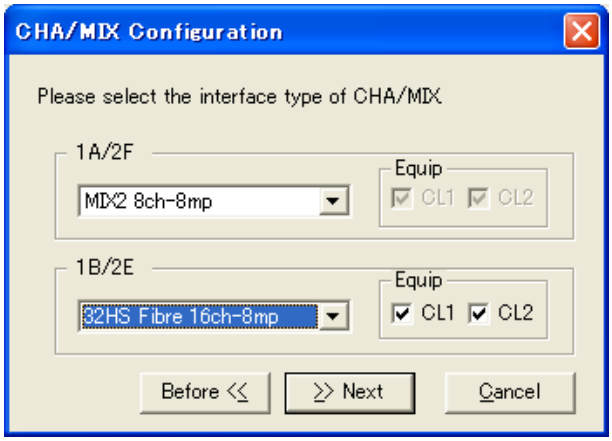
After setting all the items, Select (CL) the [>>Next] button.

When [Fibre*]/[MIX*] is selected:

The 'Fibre PCB Configuration' window is displayed. (Refer to Step 5-1.)

When [Serial*]/[MFibre*] is selected:

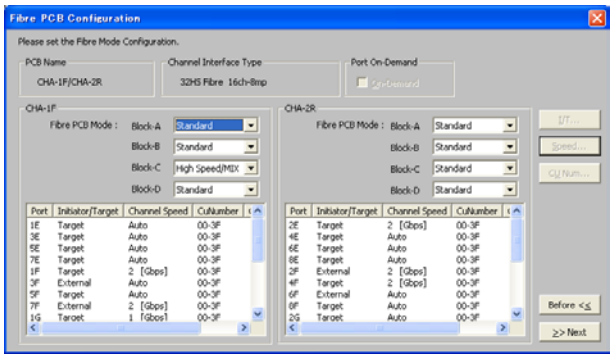
The 'Mainframe PCB Configuration' window is displayed. (Refer to Step 5-2.)



When the [Before<<] button is selected (CL), the window is returned to the preceding window.

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5-1 <Fibre PCB Configuration window>



Fibre PCB Mode :

Set the Standard, High Speed/MIX for every Block.
(In 8HS/16HS/MIX 8MP, only Block-A/Block-B can be set.
In MIX 4MP, only Block-A can be set.)

[I/T…]:

Makes a setting of the 'Initiator / External / Target / RCU Target'. (Refer to Step 5-1-1.)

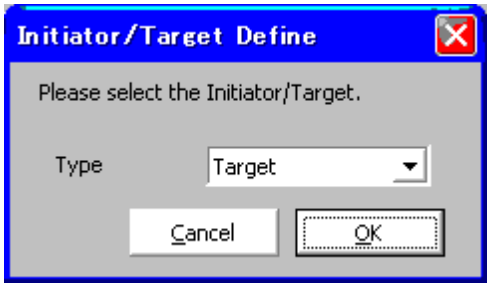
[Speed…]:

Sets the channel speed. (Refer to Step 5-1-2.)

After the setting is completed, select (CL) the [>>Next] button.
Go to the window for setting the next CHA. (For the Fibre/MIX PCB, refer to Step 5-1; for the Maintenance PCB, refer to Step 5-2.)
When the setting of all the CHAs is completed, go to Step 6.
When the [Before<<] button is selected (CL), the window is returned to the preceding window.

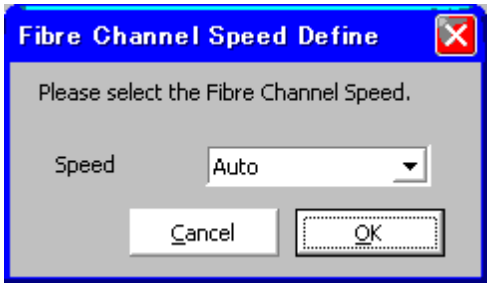
5-1-1 <Initiator/Target Define window>

Make a setting of the 'Initiator / External / Target / RCU Target' and select (CL) the [OK] button. (The routine returns to Step 5-1.)
Select (CL) the [Cancel] button. (The routine returns to Step 5-1.)



5-1-2 <Fibre Channel Speed Define window>

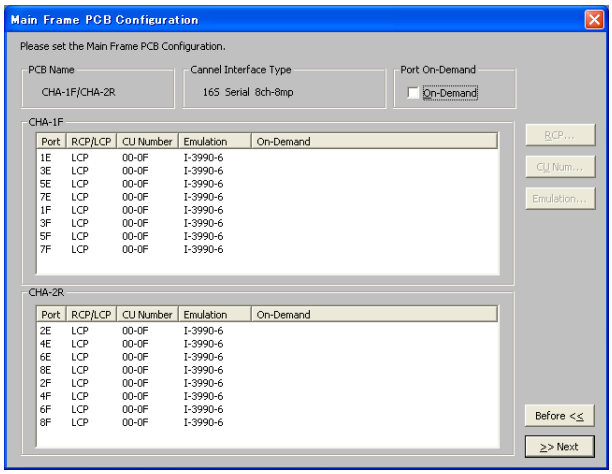
Set the channel speed and select (CL) the [OK] button. (The routine returns to Step 5-1.)
Select (CL) the [Cancel] button. (The routine returns to Step 5-1.)



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5-2 <Mainframe PCB Configuration window>

Set the configuration information following the subsystem configuration information worksheet.

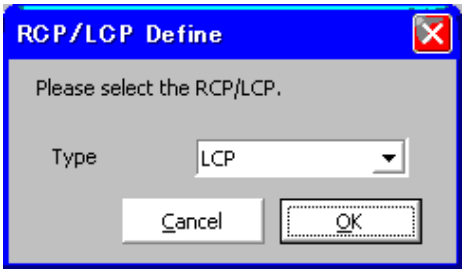


[RCP…]: Makes a setting of an RCP/LCP only when setting the HRC/HORC. (Refer to Step 5-2-1.)
[CU Num…]: Sets the valid CU number. (Refer to Step 5-2-2.)
[Emulation...]: Sets the DKC Emulation. (Refer to Step 5-2-3.)

After the setting is completed, select (CL) the [>>Next] button.
Go to the window for setting the next CHA. (For the Fibre/MIX PCB, refer to Step 5-1; for the Maintenance PCB, refer to Step 5-2.)
When the setting of all the CHAs is completed, go to Step 6.
When the [Before<<] button is selected (CL), the window is returned to the preceding window.

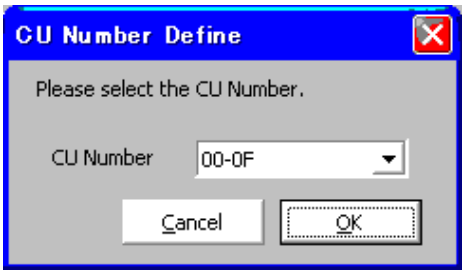
5-2-1 <RCP/LCP Define window>

Make a setting of the RCP/LCP and select (CL) the [OK] button. (The routine returns to Step 5-2.)
Select (CL) the [Cancel] button. (The routine returns to Step 5-2.)



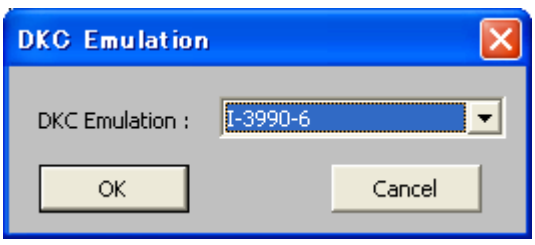
5-2-2 <CU Number Define window>

Set the valid CU number and select (CL) the [OK] button. (The routine returns to Step 5-2.)
Select (CL) the [Cancel] button. (The routine returns to Step 5-2.)



5-2-3 <DKC Emulation window>

Set the DKC Emulation and select (CL) the [OK] button. (The routine returns to Step 5-2.)
Select (CL) the [Cancel] button. (The routine returns to Step 5-2.)



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5-2-4 <SVP message>

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

Note: This windows is displayed when Serial (16S) Channel is installed.

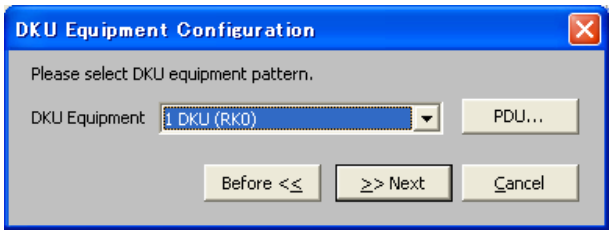


---

6. <DKU Equipment Configuration window>

Set the configuration information following the subsystem configuration information worksheet.

Set the DKU equipment pattern.



After the setting is completed, select (CL) the [>>Next] button. (The routine goes to Step 7.)
However, if you want to set "Not Equip", select (CL) [>>Next]. Go to step 12.
When the [Before<<] button is selected (CL), the window is returned to the preceding window.
This operation is completed when the [Cancel] button is selected (CL).

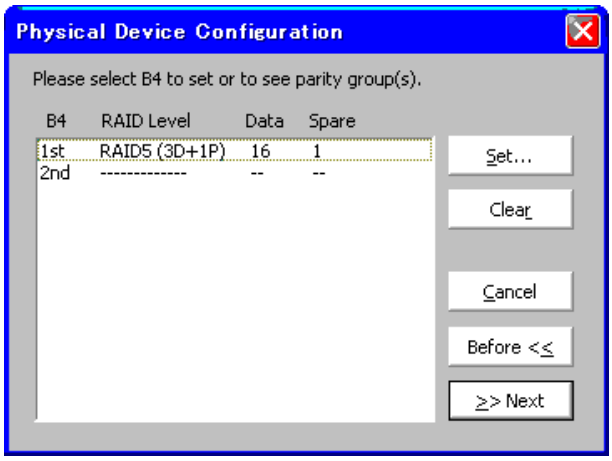
---

7. <Physical Device Configuration window>

Set the configuration information following the subsystem configuration information worksheet.

[Set…]:
Defines the parity group(s) or the spare disk in the specified B4. (The routine goes to Step 7-1.)

[Clear…]:
Cancels the setting of the B4.

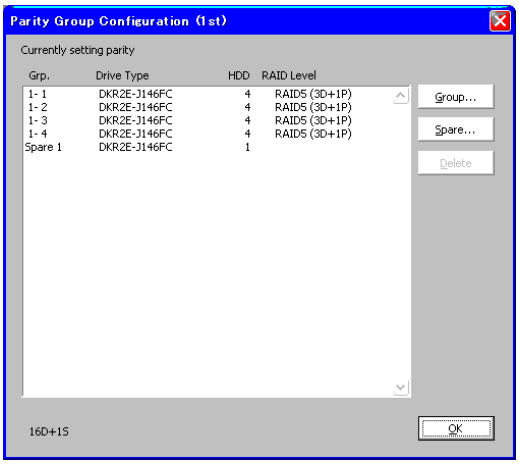


After setting all the items, select (CL) the [>>Next] button. (The routine goes to Step 8.)
However, if you don't want to set any parity group or spare disk, select (CL) [>>Next]. Go to Step 12.
When the [Before<<] button is selected, the routine is returned to Step 6.
This operation is completed when the [Cancel] button is selected (CL).

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7-1 <Parity Group Configuration window>

Set the configuration information following the subsystem configuration information worksheet.



[Group…]:
Sets the parity group(s). (Refer to Step 7-1-1.)
[Spare…]:
Sets the spare drive.
[Delete]:
Deletes the item.

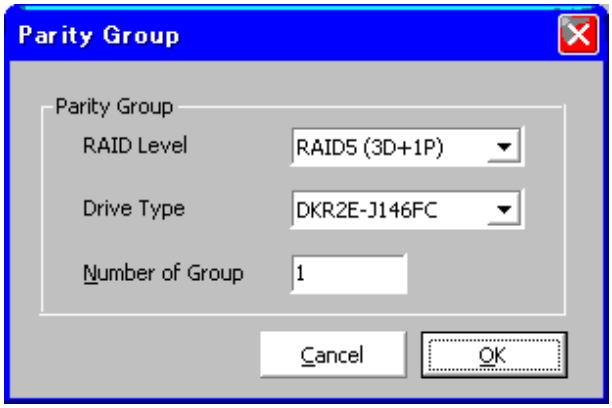
Grp*: A parity group for which the RAID connection has been set

Note: When you want to set the spare drive, make the setting of it first.

After setting all the items, select (CL) the [OK] button. Return to Step 7.

7-1-1 <Parity Group window>

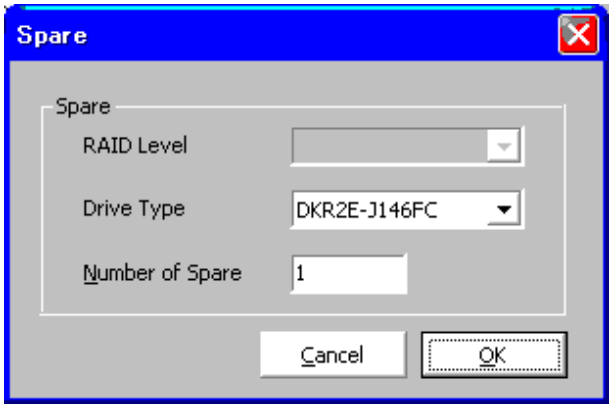
Set the RAID level, the drive capacity, and the number of parity groups.



Then select (CL) the [OK] button. (The routine returns to Step 7-1.)
Select (CL) the [Cancel] button. (The routine returns to Step 7-1.)

7-1-2 <Spare window>

Set the drive capacity and the number of spare drives.



Then select (CL) the [OK] button. (The routine returns to Step 7-1.)
Select (CL) the [Cancel] button. (The routine returns to Step 7-1.)

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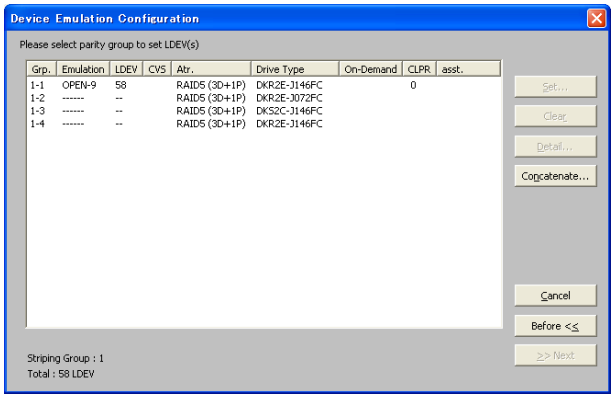
8. <Setting DKU emulation>

After setting up all items for definition of Device Emulation, select (CL) [>>Next]. Selecting (CL) [Before<<] returns you to the previous screen.

8-1. <Setting emulation>

(1)

In the 'Device Emulation Configuration' window, select (CL) the parity group, and then select (CL) the [Set…] button. Go to Item (2).



This operation is completed when the [Cancel] button is selected (CL).

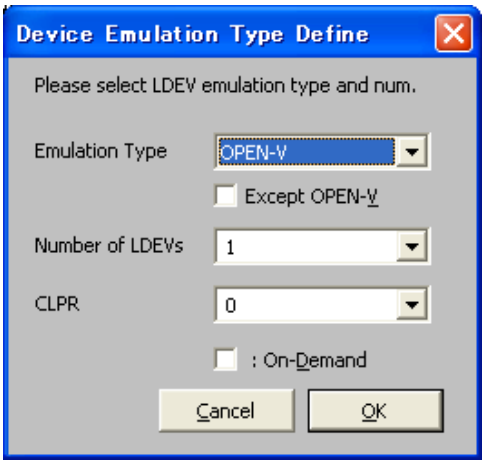
(CVS): A parity group for which the CVS has been set

Grp*: A parity group for which the RAID connection has been set

---

(2)

After setting all items in the 'Device Emulation Type Define' window, select (CL) the [OK] button. (The routine returns to Step 8-1 (1).)
Select (CL) the [Cancel] button. (The routine returns to Step 8-1 (1).)



Note: OPEN-V is a recommended OPEN volume. To set other than OPEN-V, please select "Except OPEN-V".

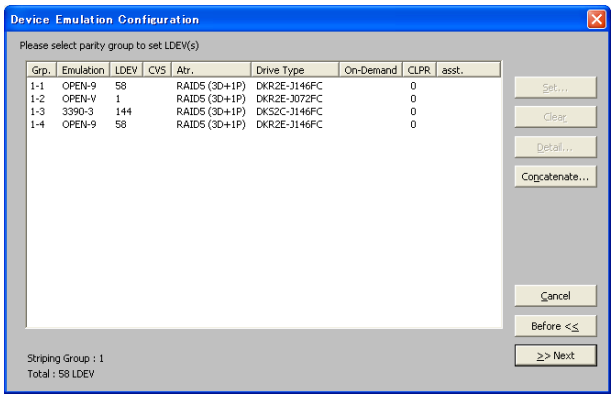
Note: "0" can be set to the value of Number of LDEVs for all the emulation types.
If you don't know the LDEV size you will use, set "0". You can save time by setting "0" because LDEV format will not run.
When you set "0", please make LDEVs later using the CVS function.

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8-2 <Setting RAID concatenation>

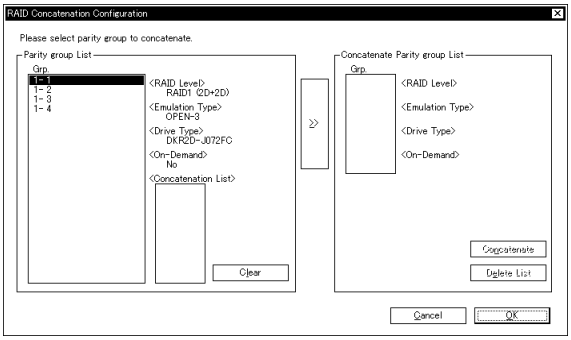
(1)

After setting the LDEV emulation type and a number of LDEVs, select (CL) the [Concatenate...].
This operation is terminated when the [Cancel] is selected (CL).
(CVS): A parity group where CVS is installed.
Grp*: A parity group where RAID Concatenation is installed.



(2)

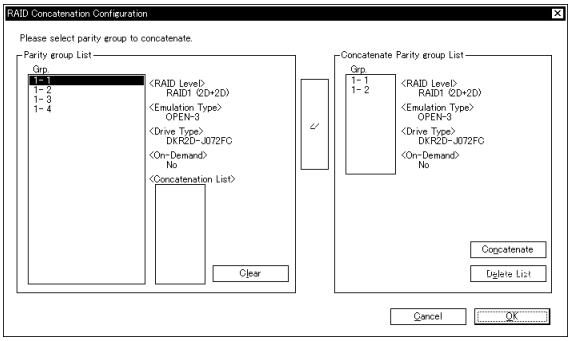
Parity groups to which the RAID concatenation can be applied are displayed in the Parity group List.
Select (CL) parity groups to which you want to apply the RAID concatenation and press (CL) the [>>] button.



(3)

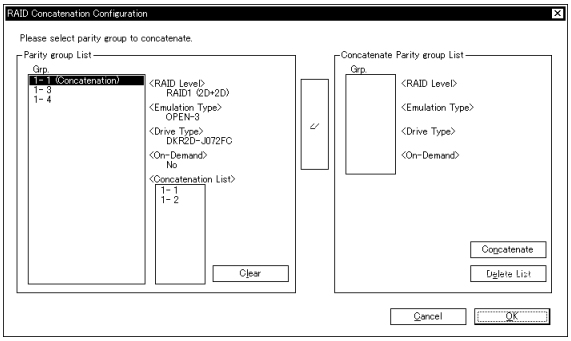
The selected parity groups are registered in the Concatenate Parity group List. Then press (CL) the [Concatenate] button.

Note: The [Concatenate] button cannot be pressed if the concatenation does not meet a condition of the RAID concatenation. Adjust the number of the parity groups in the Concatenate Parity group List.



(4)

When the RAID concatenation is completed, "(Concatenation)" is displayed in the Parity group List. Selecting the "(Concatenation)" displays the concatenated parity groups in the Concatenation List. Pressing the [Clear] button cancels the RAID concatenation.



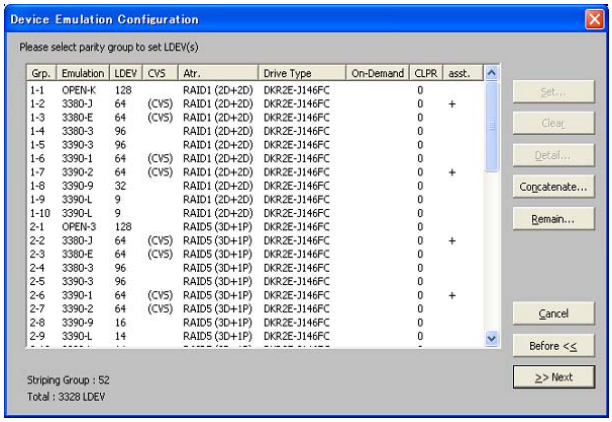
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(5)

When all the settings of the RAID concatenation are completed, press (CL) the [OK] button. Pressing (CL) the [Cancel] button returns the routine to Step 8-2 (1).

8-3 <Defining of Customized Volume Size (CVS)>

(1)



Select (CL) a parity group for which the LDEV emulation type and the number of LDEVs have been set on the 'Device Emulation Configuration' window and select (CL) [Detail…].
This procedure is terminated by selecting (CL) [Cancel].

(CVS): A parity group where CVS is installed.

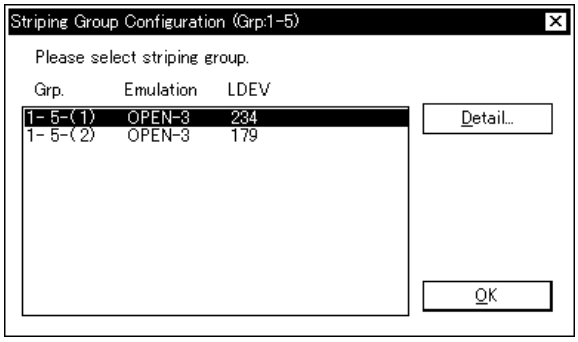
Grp*: A parity group where RAID Concatenation is installed.

asst. A parity group where the Initialize/Make Volume process cannot be performed because it includes the LDEV in which Path/LUSE/Pool-VOL is set.

Note: Even if a parity group includes the LDEV in which the journal volume is set, "+" is not displayed.

---

(2)



When there are two or more striping groups, the 'Striping Group Configuration' window is displayed. Select (CL) a striping group, and then select (CL) the [Detail…].

- When you select a striping group other than OPEN-V, the routine goes to Step (3).
- When you select OPEN-V, the routine goes to Step (4).

When you select (CL) the [OK], the preceding window returns. (The routine returns to Step (1).)

Note: When there is only one striping group, the Striping Group Configuration window is not displayed.

- When you select a striping group other than OPEN-V, the routine goes to Step (3).
- When you select OPEN-V, the routine goes to Step (4).

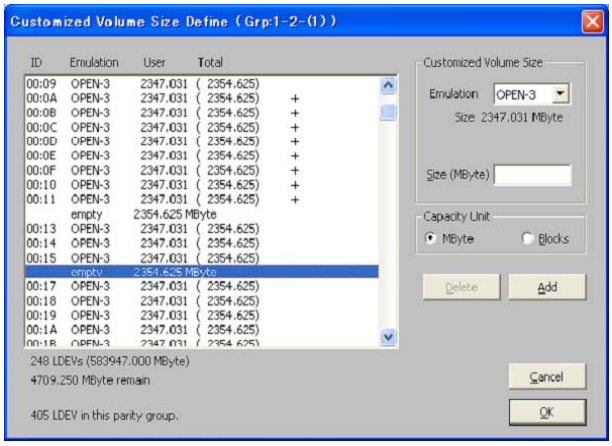
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(3)

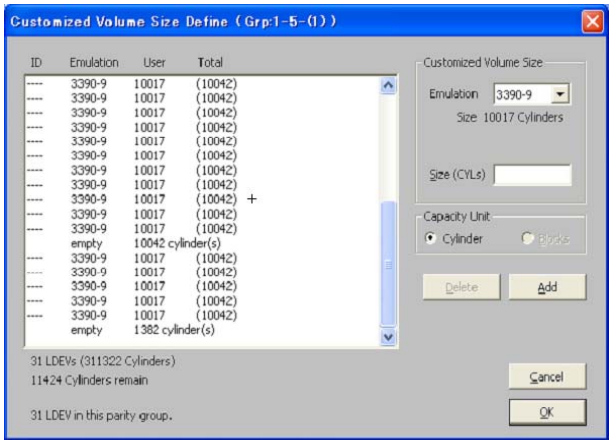
A volume other than OPEN-V can be added or deleted in the "Customized Volume Size Define" window.
A volume can be deleted by selecting (CL) the volume from the LDEV list box and selecting (CL) [Delete].
A volume can be added by entering the LDEV emulation type and the user size (Mbyte/Blocks or Cylinder) of the customized volume (CV) and selecting [Add].
(It can be added in the optional space "empty" by selecting (CL) "empty" from the LDEV list box.)

The routine returns to the preceding window by selecting (CL) [Cancel].
The routine returns to the preceding window and the change is reflected by selecting (CL) [OK].

(When the emulation type is Open System)



(When the emulation type is Mainframe System)



Note: The case where the [Delete] button cannot be pressed is shown below.
① The last CV is selected.
② The volume with SCSI path ("+" indicated) is selected.
③ The volume with LUSE ("+" indicated) is selected.
④ The volume with Pool-VOL ("+" indicated) is selected.

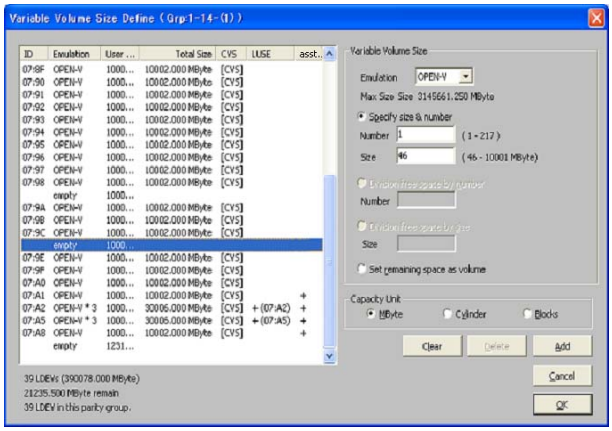
(3-1)

The CV registered by mistake can be deleted by selecting (CL) it from the LDEV list box and then selecting (CL) [Delete].

Note: One or more CVs can be selected.

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(4) <Definition of OPEN-V>



Open-V can be defined in the “Variable Volume Size Define” window.
All the volumes in the LDEV list box can be deleted by selecting (CL) [Clear].
The volume can be deleted by selecting (CL) [Delete] in the state (CL) of selecting (CL) the volume in the LDEV list box.
It can be added by selecting (CL) Variable Volume Size from the status “select (CL) ‘empty’” or “no selection” in the LDEV list box and selecting (CL) [Add].
Adding or deleting operation can be done for any number of times. The last setting is reflected by selecting (CL) [OK].

- Variable Volume Size
  “Specify Size & number” : Defines the specified number of the specified user size.
  “Division free space by number” : Defines the volume divided by the specified number. However, this can be selected only when all the volumes have been deleted.
  “Division free space by size” : Defines the volumes whose user sizes are all specified. However, this can be selected only when all the volumes have been deleted.
  “Set remaining space as Volume” : Defines the volume in the remaining space (empty).
- Capacity Unit
  “MByte” : Makes data displayed or entered by [Mbyte].
  “Cylinder” : Makes data displayed or entered by the [Cylinder].
  “Blocks” : Makes data displayed or entered by the [Blocks].
- LUSE : When the LUSE is connected, “+” is displayed.
- asst. : When Path/LUSE/Pool-VOL is defined, “+” is displayed.

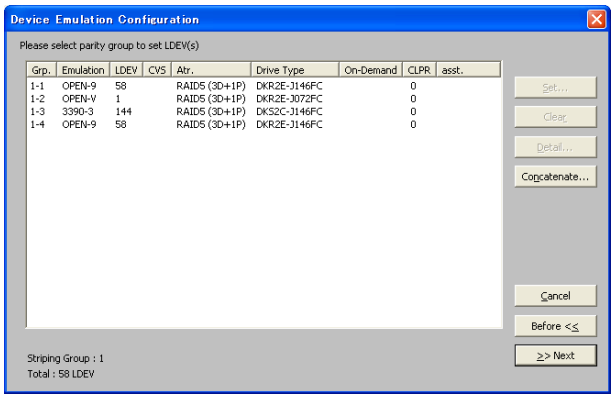
[Clear] : Deletes all the volumes.
[Delete] : Deletes all the selected volumes.
[Add] : Adds volumes.
[Cancel] : Invalidates the setting, and returns to the preceding window. The routine returns to Step (1).
[OK] : Confirms the setting, and returns to the preceding window. The routine returns to Step (1).

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8-4 <Canceling emulation>

Select (CL) the parity group and select (CL) the [Clear] button.
This operation is completed when the [Cancel] button is selected (CL).

(CVS): A parity group for which the CVS has been set
Grp*: A parity group for which the RAID connection has been set



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9. <Define LDEV ID>

After setting up all items, select (CL) [>>Next]. Selecting (CL) [Before<<] returns you to the previous screen.

9-1 <Definition Screen for LDEV ID>

Select (CL) the parity group to be defined and select (CL) a function from the [LDEV ID] list box.

[Linear...]:

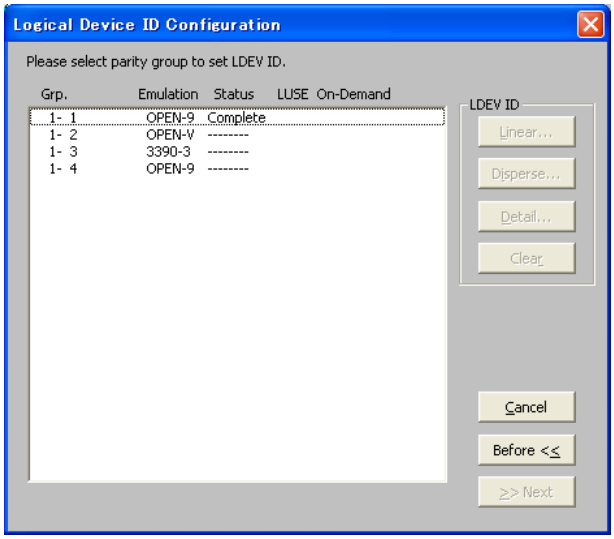
LDEV ID is assigned to LDEV in the order of parity group. See step 9-3.

[Disperse...]:

LDEV is assigned discretely in the order of parity group. See step 9-3.

[Detail...]:

A screen to define LDEV in detail is displayed. See step 9-2.



- '-----' is displayed in CU area and ID area for the parity group to which LDEV ID is not assigned.
- 'xxxxx' is displayed in ID area for the parity group to which any LDEV ID is not assigned.

This procedure is terminated by selecting (CL) [Cancel].

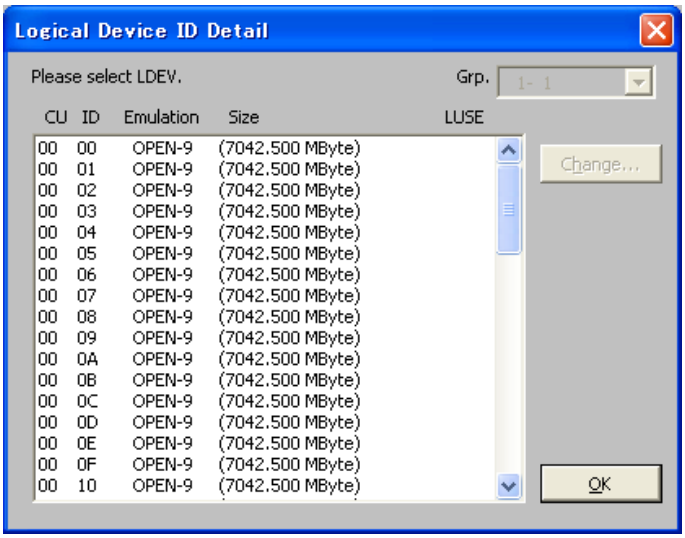
9-2 <Detailed Definition Screen for LDEV ID>

LDEV ID is defined in detail for each LDEV in the parity group.

Select (CL) [LEDV] from the list box and select (CL) [Change...].

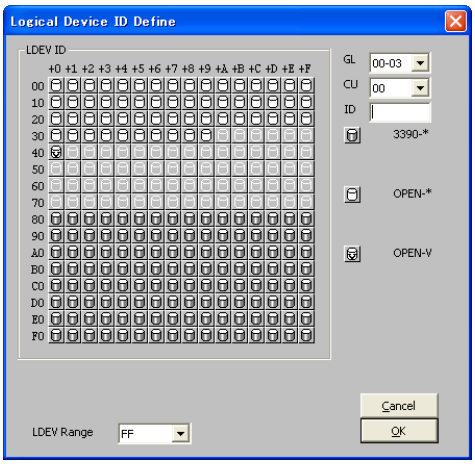
The screen for LDEV ID input is displayed.

Note: In the case of a RAID Concatenation Group, LDEV of the parity group selected by the "Grp List" is displayed.



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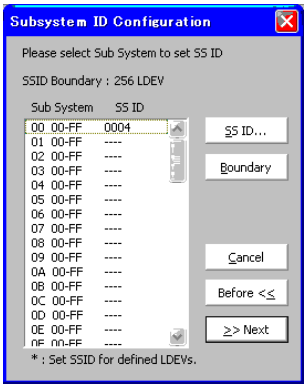
9-3 <Input LDEV ID>



Select CU ID in the CU combo box.
The status of usage of ID in the CU is displayed in the LDEV ID panel.
White disk of panel: not used
Black disk of panel: using
Input LDEV ID you want to set or head LDEV ID in the ID Edit box.
After setting, select (CL) [OK]. Return to step 9.

Note: The definition range (terminal) is decided with LDEV Range.
For example, if LEDV Range is defined as 7F, LDEV ID is assigned only within the range of 00 to 7F.

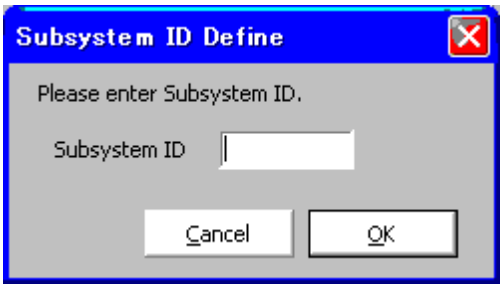
10. <Subsystem ID Configuration window>



Set the subsystem ID and the SSID boundary type.
[SSID…]: The 'Subsystem ID Define' window is displayed. (Refer to Step 10-1.)
[Boundary]: The 'SSID Boundary Define' window is displayed. (Refer to Step 10-2.)

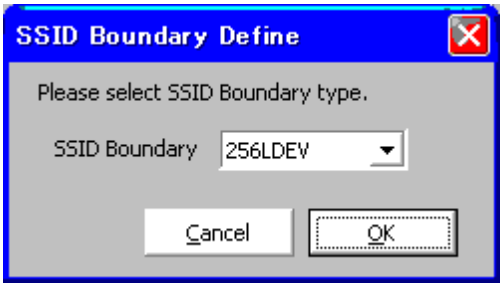
After the setting is completed, select (CL) the [>>Next] button.
This operation is completed when the [Cancel] button is selected (CL).

10-1



Set the subsystem ID and select (CL) the [OK] button. (The routine returns to Step 10.)

10-2 <SSID Boundary Define window>



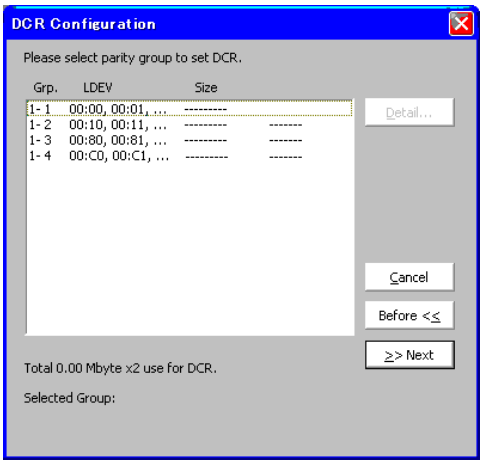
Set the boundary of the subsystem ID and select (CL) the [OK] button. (The routine returns to Step 10.)

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11. <Defining DCR>

(1)

Select (CL) a parity group having LDEV(s) for which the DCR is to be set on the "DCR Configuration" screen and press (CL) the [Detail...] button.

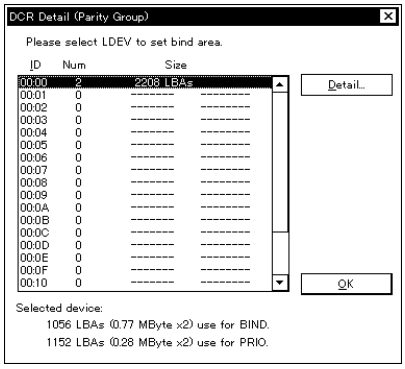


Total cache memory size which DCR area use is displayed.

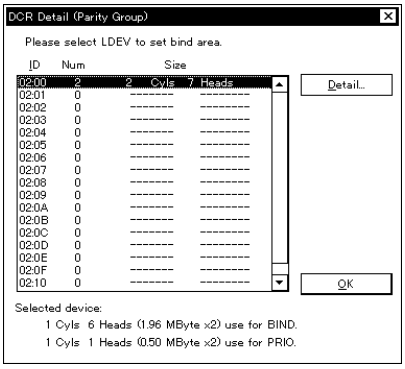
If the selected parity group has a DCR area, the BIND size and to PRIO size are displayed under the "DCR Configuration" screen.

After setting above, select (CL) [>>Next].

This procedure is terminated by selecting (CL) [Cancel].



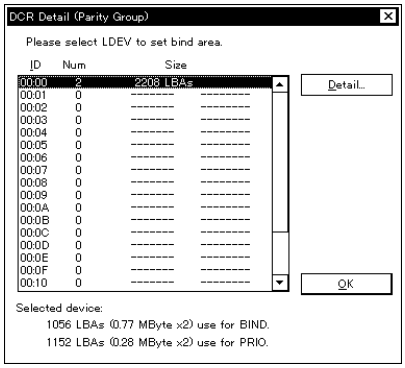
(For open system)



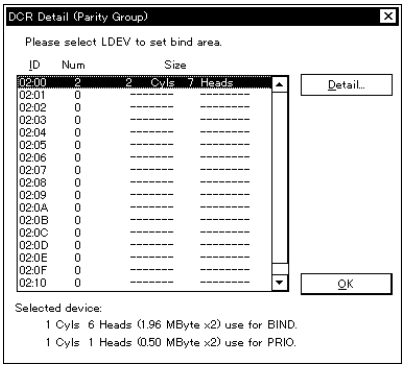
(For Mainframe system)

(2)

Select (CL) an LDEV where the DCR is to be set on the "DCR Detail (Parity Group)" screen and press (CL) the [Detail...] button.
If the selected LDEV has a DCR area, the BIND size and the PRIO size are displayed under the "DCR Detail (Parity Group)" screen.



(For open system)

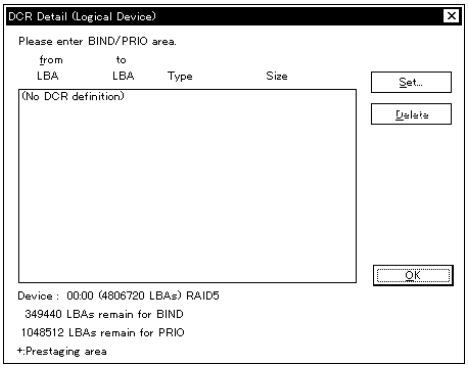


(For Mainframe system)

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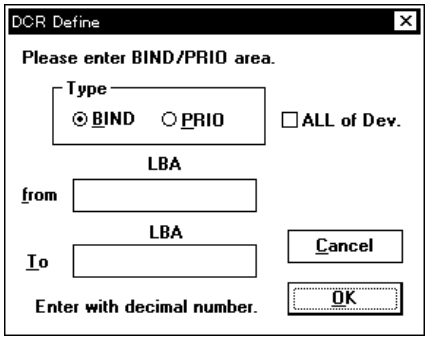
(3)

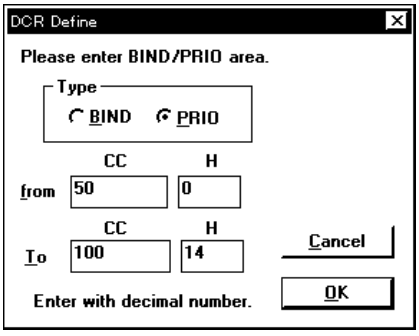
Confirm the LDEV size and the number of slots allowed to be set for each type on the "DCR Detail (Logical Device)" screen. Press (CL) the [Set...] button to set the DCR area.



(4)

Enter the type, starting cylinder number, starting head number, ending cylinder number, and ending head number (for Mainframe system. Refer to the screen on the right.) or the type, starting LBA, and ending LBA (for open system. Refer to the screen on the left.) on the "DCR Define" screen and select (CL) [OK].
For open system, all items are allowed to be set.

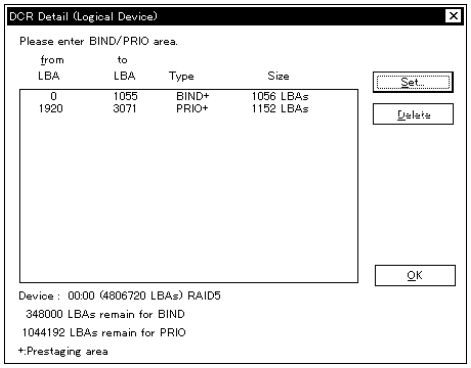




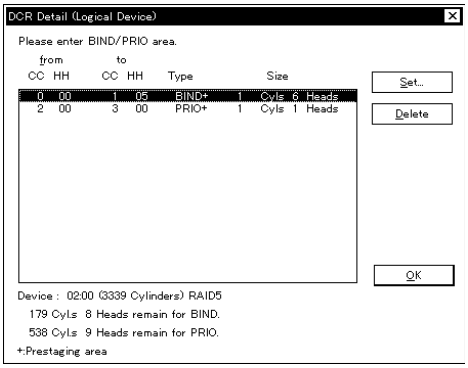
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(5)

When the screen is returned to the “DCR Detail (Logical Device)” screen, the entrance result is displayed.



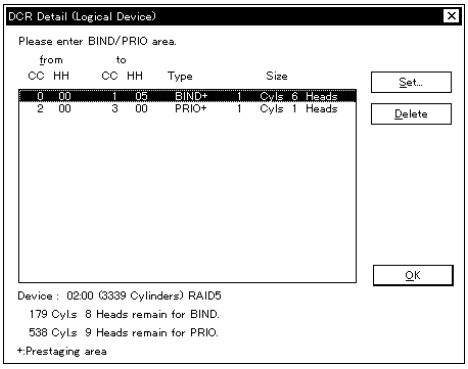
(For open system)



(For Mainframe system)

(6)

When an item in the list box is selected (CL) and the [Delete] button is pressed (CL) on the “DCR Detail (Logical Device)” screen, the DCR setting is deleted. When the setting is completed, press (CL) [OK].



(7)

If you want to set other LDEV(s) in the parity group which you selected, repeat steps (2) to (6) for the LDEV(s).

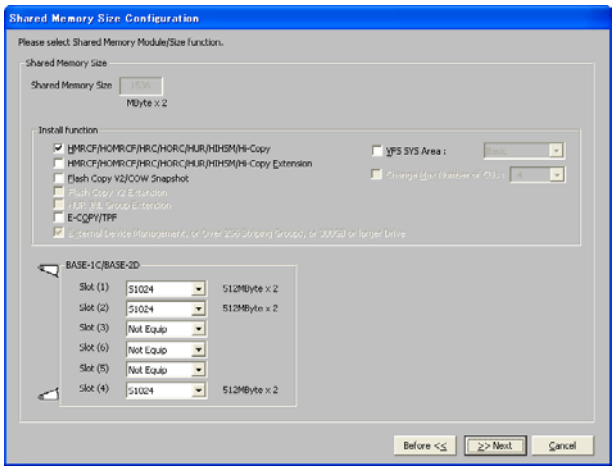
(8)

If you want to set other LDEV(s) in other parity group, repeat steps (1) to (6) for the LDEV(s).

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12. <Shared Memory Size Configuration window>

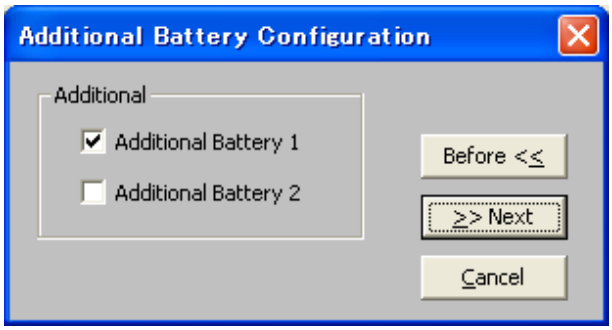
Define the shared memory module size in the 'Shared Memory Size Configuration' dialog box.
Select (CL) [>>Next].
This procedure is terminated by selecting (CL) [Cancel].



13. <Additional Battery Configuration window>

Define the Battery equipment in the 'Additional Battery Configuration' dialog box.
Select (CL) [>>Next].
This procedure is terminated by selecting (CL) [Cancel].

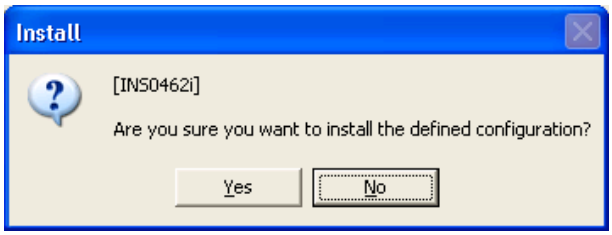
Go to INST05-850.



14. <Include configuration information>

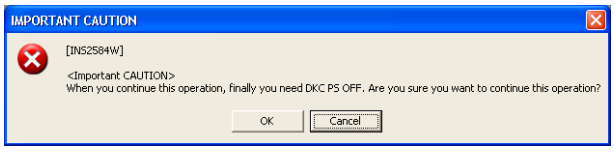
(1)

Select (CL) [Yes] in response to the confirmation message "Are you sure you want to install the defined configuration?".
Selecting (CL) [No] suppresses the configuration inclusion processing and terminates the installation procedure.



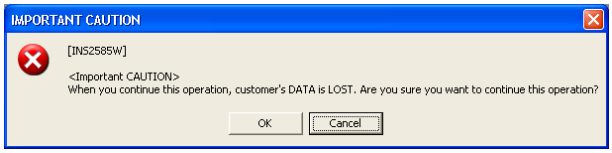
(2)

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



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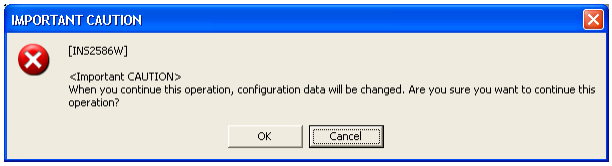
(3)



Select (CL) [OK] in response to the confirmation message
"<Important CAUTION>
When you continue this operation, customer's DATA is LOST. Are you sure you want to continue this operation?".

---

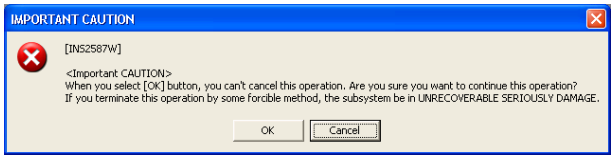
(4)



Select (CL) [OK] in response to the confirmation message
"<Important CAUTION>
When you continue this operation, configuration data will be changed. Are you sure you want to continue this operation?".

---

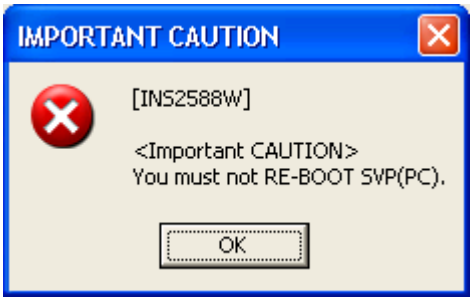
(5)



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

---

(6)

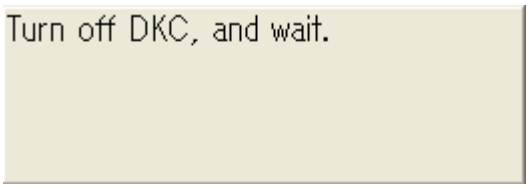


Select (CL) [OK] in response to the confirmation message
"<Important CAUTION>
You must not RE-BOOT SVP(PC).".

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15. <Power off DKC P/S>

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



16.

This step allows the contents of the SVP HD to be loaded into SM and FM.
When this procedure is completed, “Battery Life Warning SIM” is displayed.

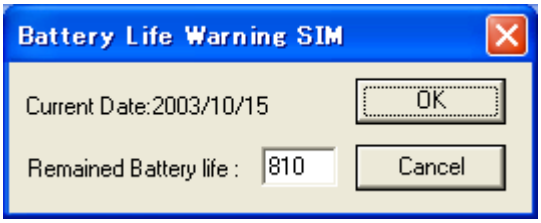
17.

Select [Set...] applying the check to ‘Battery Life Warning SIM’.



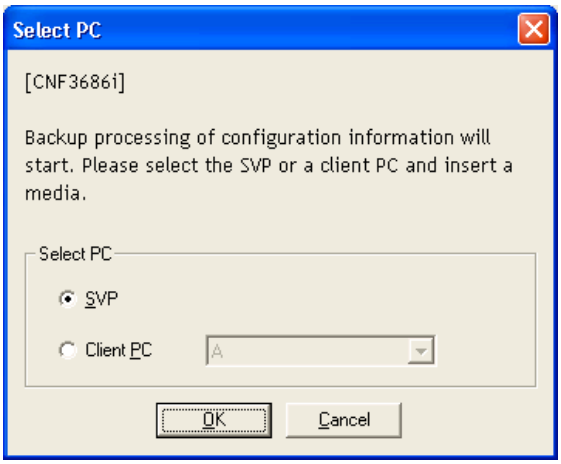
18.

Select (CL) [OK] after inputting the remainder days by reporting on warning SIM.



19.

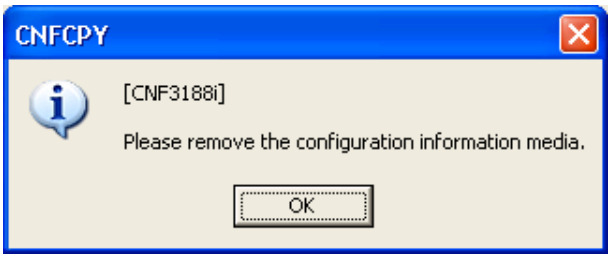
Insert the Config FD into FDD of selected PC, and select (CL) [OK].



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20.

When this procedure is completed, the message “Please remove the configuration information media.” is displayed.
Remove the FD, and then select (CL) [OK].



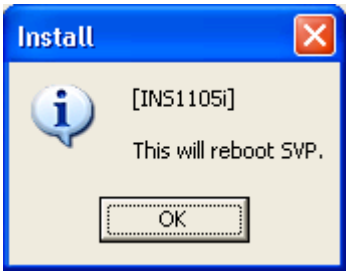
21.

After making sure that the DKC power is turned off, select (CL) [OK] in response to “Installation was finished. Make sure that PS-ON LED at DKC-PANEL is off, and then select [OK].”.



Select (CL) [OK] in response to “This will reboot SVP.”.

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



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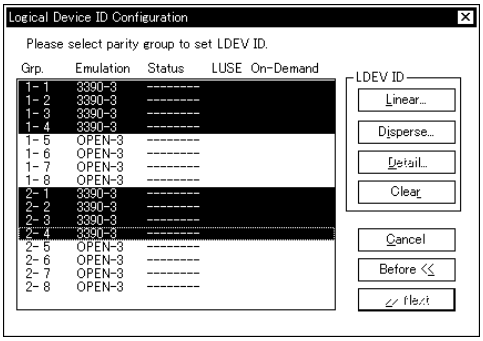
5.2.2.1 LDEV ID setting procedure when the emulation types of different systems coexist

5.2.2.1.1 Coexistence in units of parity group

The LDEV ID setting procedure is explained using an example of a case in which both the 3390 system LDEV and OPEN system LDEV are set in the same subsystem. This example shows the ID setting procedure when the B4-1/B4-2 is fully equipped with RAID5 (3D+1P), and the B4-1 and the B4-2 are defined as the 3390-3/OPEN-3 and the 3390-9/OPEN-3 respectively. Since systems other than the 3390 system and the 3390-3R cannot coexist in the parity group, the ID can be defined in this procedure.

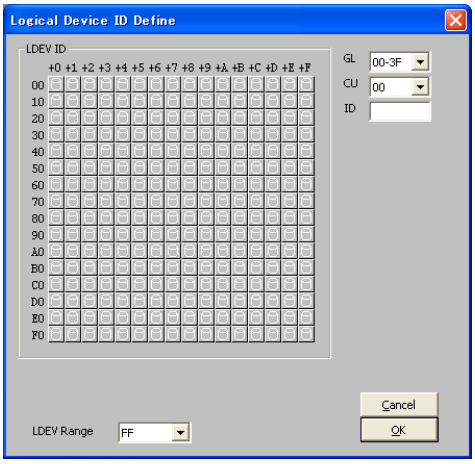
1.

Select only the parity group for which the 3390 system emulation type has been defined.



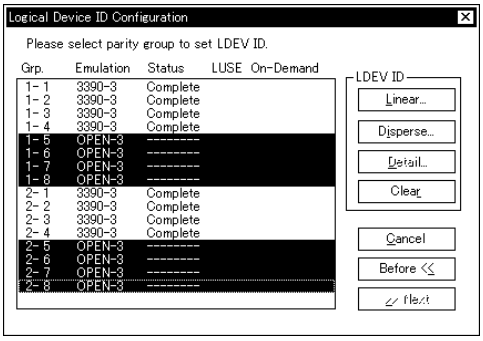
2.

Press the Linear or Disperse button to open the LDEV ID input screen and input the LDEV ID. (In the example, the Disperse button is pressed.)



3.

Next, select only the parity group for which the OPEN system emulation type has been set.

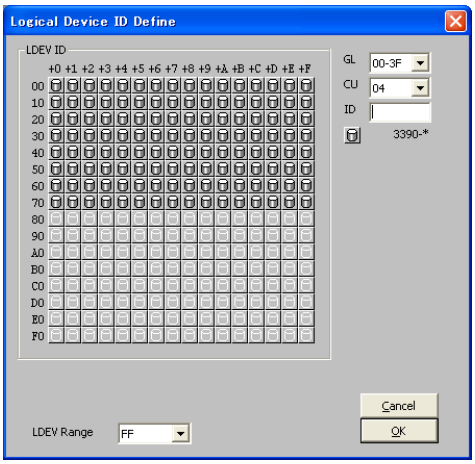


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4.

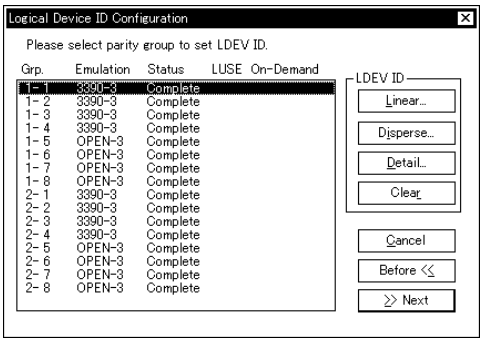
Press the Linear or Disperse button to open the LDEV ID input screen and input the LDEV ID. In this case, take care not to make a coexistence occur in the block. In the example, 0:a0 and the subsequent are unused blocks. Therefore, input a0.

Note: The definition range (terminal) is decided with LDEV Range.
For example, if LEDV Range is defined as 7F, LDEV ID is assigned only within the range of 00 to 7F.



5.

Setting is completed.



Needless to say, the setting sequence of steps (1) and (3) may reversed.
If emulation types of different systems are selected at the same time, the guarding function works to prevent the setting by making the Linear and Dispense buttons unselect able.

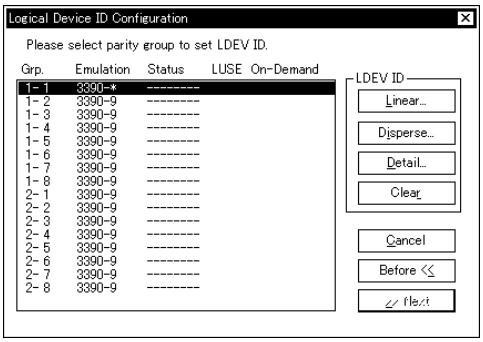
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5.2.2.1.2 Coexistence in a parity group

The 3390-3R can be set as a CV in the 3390 system parity group. The 3390 system LDEV can also be set as a CV in the 3390-3R parity group. If the ID is set in the procedure explained in Section 3.1 when this emulation setting has been performed, an intra-block coexistence setting violation occurs. To prevent the coexistence violation, set the ID following the procedure below.

1.

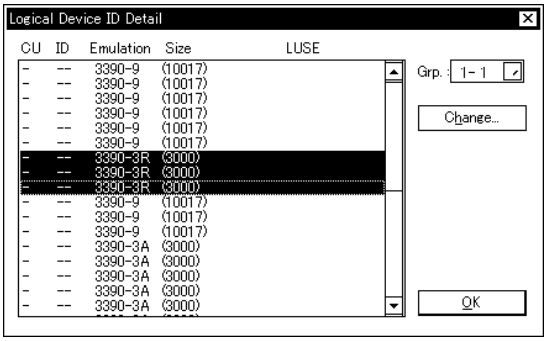
For the parity group for which definitions of the 3390 system and 3390-3R coexist, the emulation type is displayed as "3390-*". Select one parity group defining the 3390-3R as the CV and press the Detail button to open the screen displaying the LDEV definition detail in the parity group.



2.

Select the 3390-3R on the detail screen and define the LDEV ID.

Note: In the case of a RAID Concatenation Group, LDEV of the parity group selected by the "Grp List" is displayed.

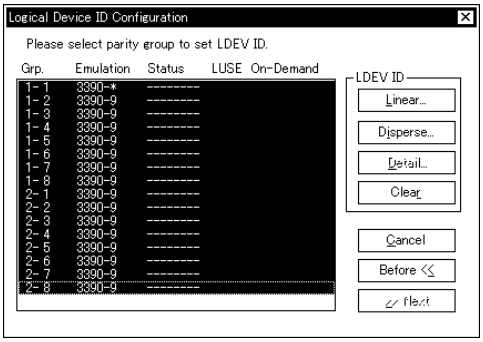


3.

Repeat (1) and (2) until the definition of the 3390-3R LDEV ID is finished. In the example, the 3390-3R is assigned to IDs starting from ID 0:80.

4.

When the definition of the 3390-3R is completed, select the parity group defining emulation type of the same system and define the LDEV ID in the same way as that Section 3.1.



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5.2.3 Check Procedure

> **⚠ CAUTION**
> This operation is necessary only when a subsystem is newly installed. It is not performed afterward. If it is performed by mistake, a system down or a data loss may be caused.

1. <Execute Power-on CUDG>
   Perform the power-on procedure from the DKC-PANEL.
   (See INST03-12-10)
   Power-on CUDG is automatically executed on the DKC logic circuitry.
   If an error occurs, SIM Log, SSB Log has logging.
   (See SVP02-30)

---

2. <Execute DKU Path inline test>
   Perform DKU Path inline tests on all DKAs installed during the new installation procedure to check the validity of the drives.
   Please carry out A6 routine and A3 routine.
   See DIAGNOSIS SECTION for the test procedure. (DIAG04-150)

   Note: Before carrying out the DKU Path inline test, switch the current application to the program manager and have the SVP initial screen (which is shown in the right figure) displayed.

---

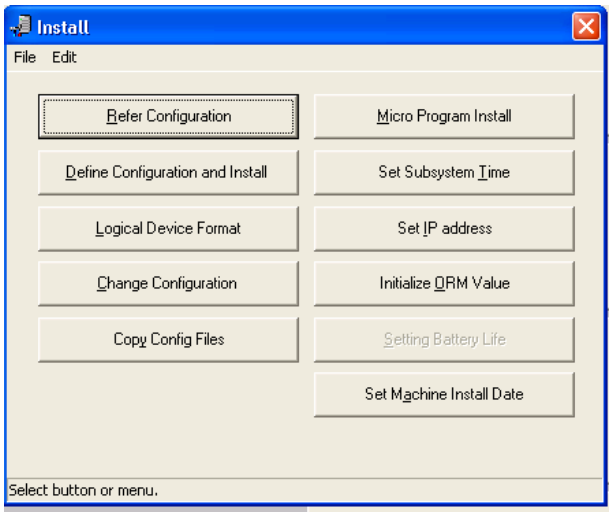
3. <Check subsystem status and all MPs micro-version>
   Check the subsystem Status and all MPs micro-version.
   (See SVP03-10 and SVP03-260)

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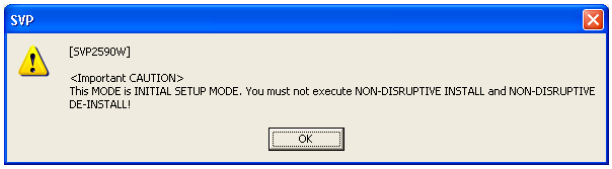
4. <Format LDEV>

> **⚠ CAUTION**
>
> This is a special (exceptional) operation that can cause a serious failure such as a system down or a data loss if executed in an occasion other the new subsystem installation, and requires an input of a password. Ask the technical support division about the appropriateness of the operation, and input the password after getting an approval of executing the operation.

Change the mode to [INITIAL SETUP Mode].
Select "Shift" + "Ctrl" + "I".
Enter the password and select (CL) [OK].
Please call Technical Support Division for asking the password.



Select (CL) [OK] in response to the confirmation message "<Important CAUTION> This MODE is INITIAL SETUP MODE. You must not execute NON-DISRUPTIVE INSTALL and NON-DISRUPTIVE DE-INSTALL!".



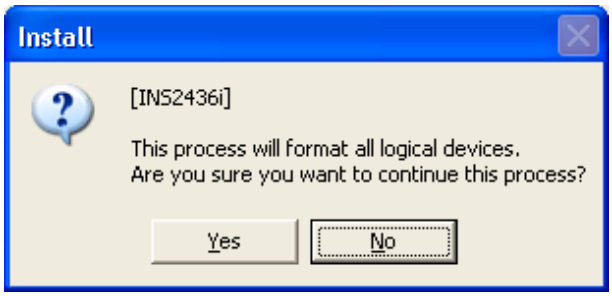
Select (CL) [Install].

Select (CL) [Logical Device Format].

Note: Execute Format Logical Device after confirming all Logical Device is blocked.

4.1

Select (CL) [Yes] in response to "This process will format all logical devices. Are you sure you want to continue this process?".

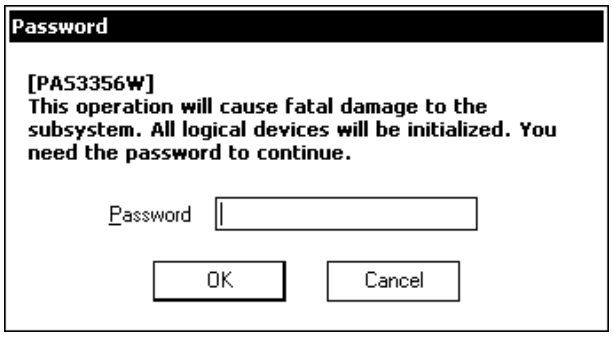


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4.2

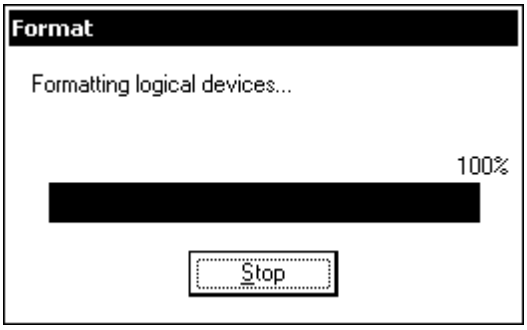
> **⚠ CAUTION**
>
> This is a special (exceptional) operation that can cause a serious failure such as a system down or a data loss if executed in an occasion other than the new subsystem installation, and requires an input of a password. Ask the technical support division about the appropriateness of the operation, and input the password after getting an approval of executing the operation.

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



4.3

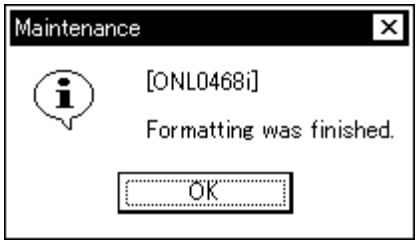
When LDEV Formatting is complete, “Formatting logical devices...” shown in the right figure disappears and “Formatting was finished.” is displayed.



4.4

Select (CL) [OK] in response to “Formatting was finished.”.

LDEV formatting is abnormally terminated if the message “Formatting logical devices rejected by DKC.” or “Formatting the logical device is failed.” is displayed.
Identify the error cause according to the procedure shown in “TROUBLE SHOOTING SECTION”.



4.5 <Check logical device status>

Check if Logical Devices are normal by with referring to the ‘Logical Device Status’ display.

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5. <Check subsystem status>
   Check if all parts are normal by referring to 'Maintenance'.

6. <Check system interlock operation>
   Start the test program from the host to check for normal subsystem's interlocked operation with the host.

7. <Delete error log>
   Power ON/OFF the subsystem to make sure that the subsystem starts normally (neither ALARM nor MESSAGE indicators should light).

   Delete all error log information from the SVP and transfer the subsystem to the user.
   See SVP02-180.

   Go to INST02-330.

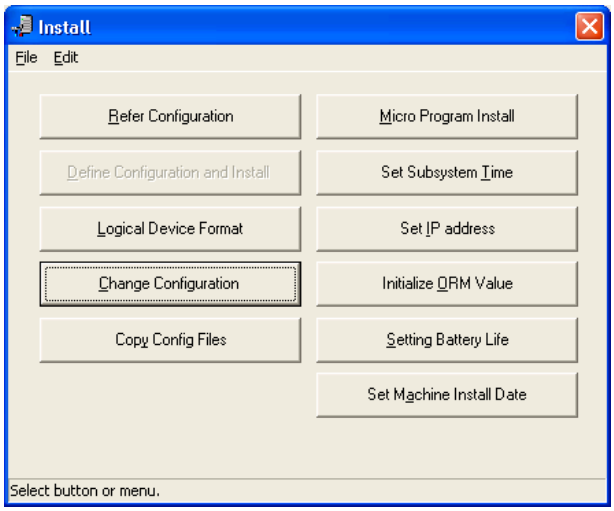
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5.2.4 Refer Configuration

1. <Start [Install]>
   Select (CL) [Install] from 'SVP'.

---

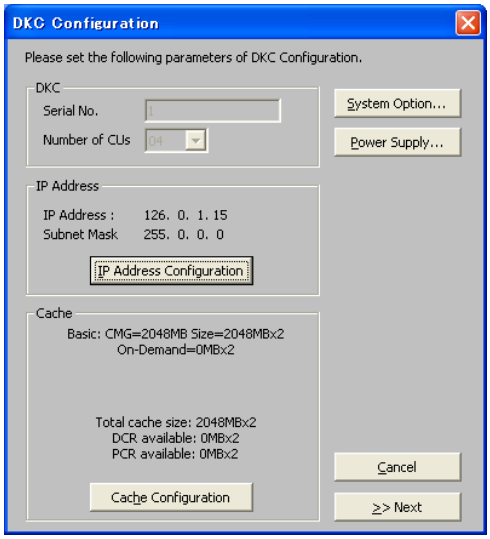
2. Select (CL) [Refer Configuration].



---

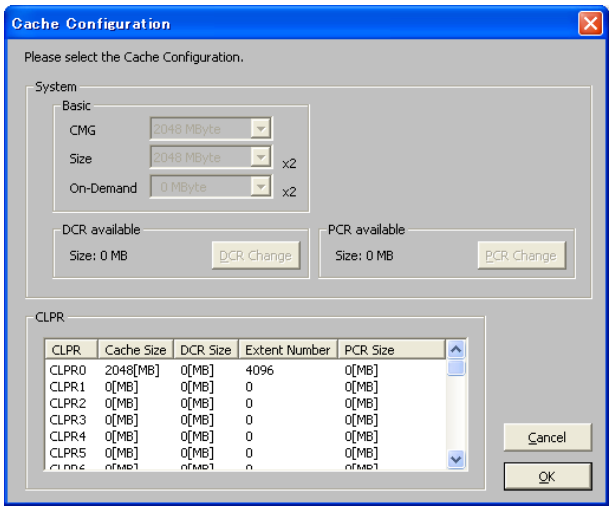
3. <DKC Configuration window>
   [Cache Configuration]: The 'Cache Configuration' window is displayed. (Refer to Step 4.)
   [System Option]: The 'System Option' window is displayed. (Refer to Step 5.)
   [Power Supply]: The 'Power Supply' window is displayed. (Refer to Step 6.)

   When the [>>Next] button is selected (CL), the routine goes to Step 7.
   This procedure is completed when the [Cancel] button is selected (CL).



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4. <Cache Configuration window>
Select (CL) [OK] or [Cancel].
(Return to Step 3.)

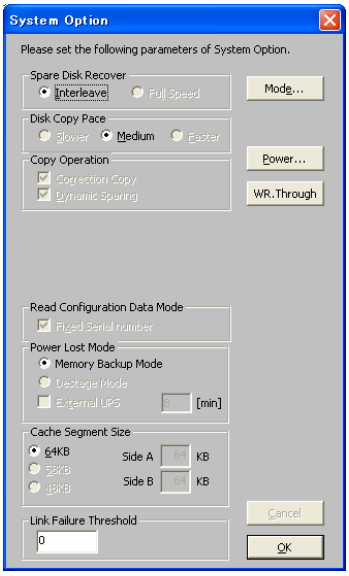


5. <System Option window>
When the [Mode...] is selected (CL), the 'Mode' window is displayed. (Refer to Step 5-1.)

When the [Power...] is selected (CL), the 'Power Supply' window is displayed. (Refer to Step 6.)

When the [WR.Trough] is selected (CL), the 'Synchronous Destage Mode Define' window is displayed. (Refer to Step 5-2.)

Selecting (CL) [OK] returns the screen to step 3.

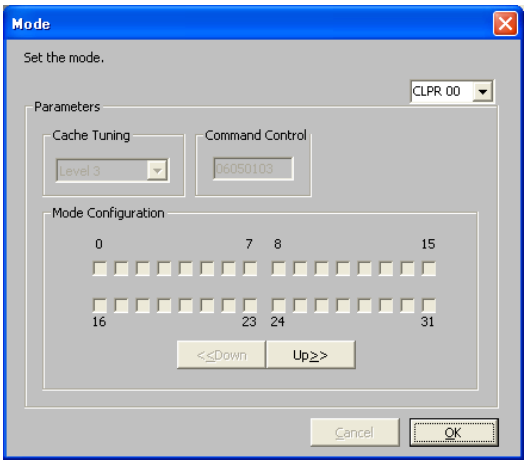


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5-1 <Mode window>

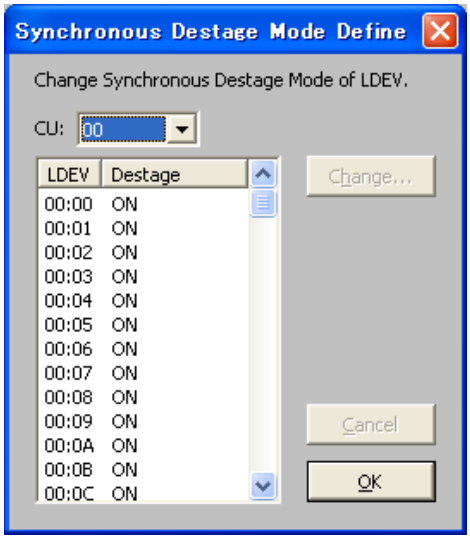
Change the display of Mode Configuration by pressing the [UP>>] or [>>Down] button.

Select (CL) the [OK] button. (The routine returns to Step 5.)



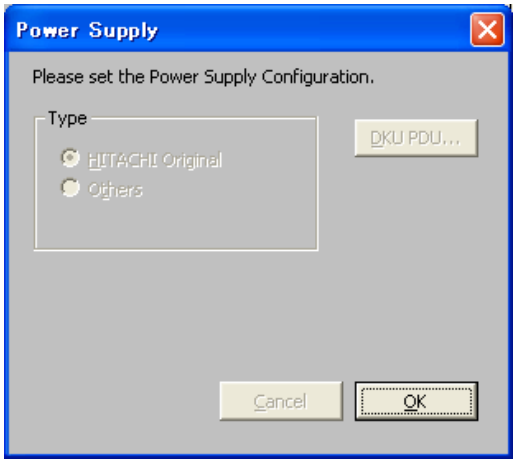
5-2 <Synchronous Destage Mode Define window>

Select (CL) the [OK] button. (The routine returns to Step 5.)



6. <Setting Power Supply>

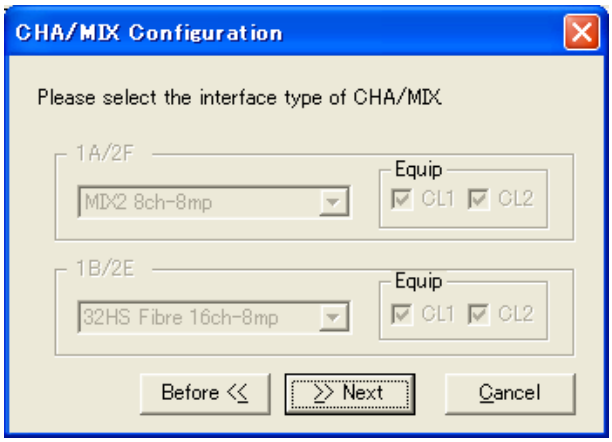
Selecting (CL) [OK]. (Return to Step 3 or Step 5.)



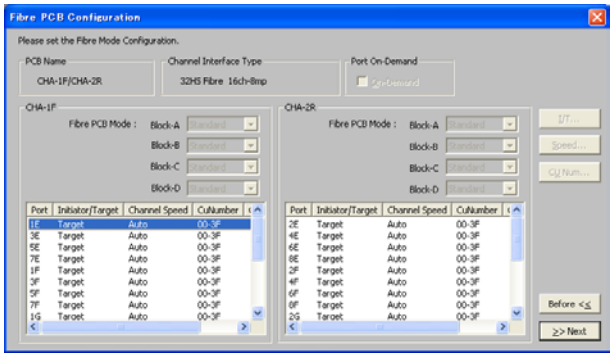
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7. <CHA/MIX Configuration window>
After checking the display, select (CL) the [>>Next] button.
When [Fibre*]/[MIX*] is selected:
The 'Fibre PCB Configuration' window is displayed. (Refer to Step 8.)
When [Serial*] or [MFibre*] is selected:
The 'Mainframe PCB Configuration' window is displayed. (Refer to Step 9.)

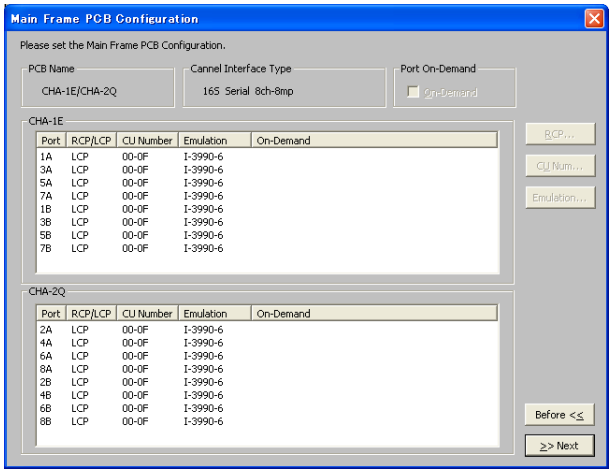
When the [Before<<] button is selected (CL), the window is returned to the preceding window.



8. <Fibre PCB Configuration window>
After checking the display, select (CL) the [>>Next] button.
Go to the window for setting the next CHA. (For the Fibre/MIX PCB, refer to Step 8; for the Mainframe PCB, refer to Step 9.)
When the setting of all the CHAs is completed, go to Step 10.
When the [Before<<] button is selected (CL), the window is returned to the preceding window.



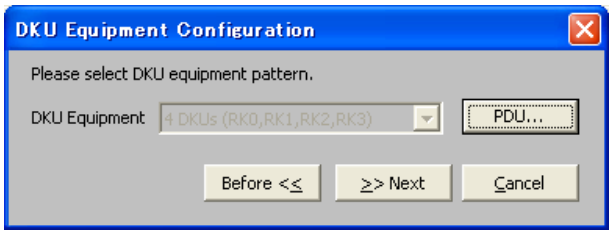
9. <Mainframe PCB Configuration window>
After checking the display, select (CL) the [>>Next] button.
Go to the window for setting the next CHA. (For the Fibre/MIX PCB, refer to Step 8; for the Mainframe PCB, refer to Step 9.)
When the setting of all the CHAs is completed, go to Step 10.
When the [Before<<] button is selected (CL), the window is returned to the preceding window.



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10. <DKU Equipment Configuration window>

The DKU equipment pattern is displayed.
Select (CL) the [>>Next] button. (The routine goes to Step 11.)
This operation is completed when the [Cancel] button is selected (CL).



11. <Physical Device Configuration window>

[Detail…]:

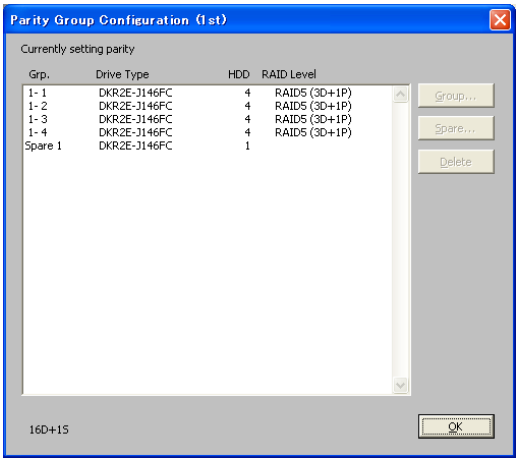
Refers to details of parity group(s) or the spare drive in the B4. (The routine goes to Step 11-1.)

Select (CL) the [>>Next] button. (The routine goes to Step 12.)
This operation is completed when the [Cancel] button is selected (CL).



11-1 <Parity Group Configuration window>

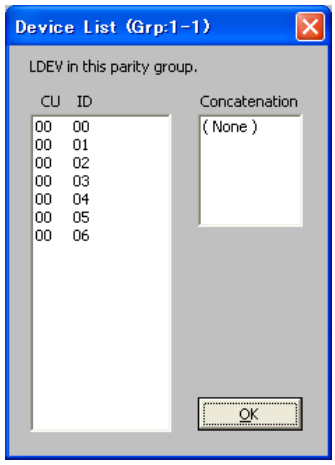
When the parity group is selected (CL) and double clicked, the detailed window is displayed. (The routine goes to Step 11-2.)
Select (CL) the [OK] button. (The routine returns to Step 11.)



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11-2 <Parity Group Configuration window>

Select (CL) the [OK] button. (The routine returns to Step 11.)



12. <Setting device emulation>

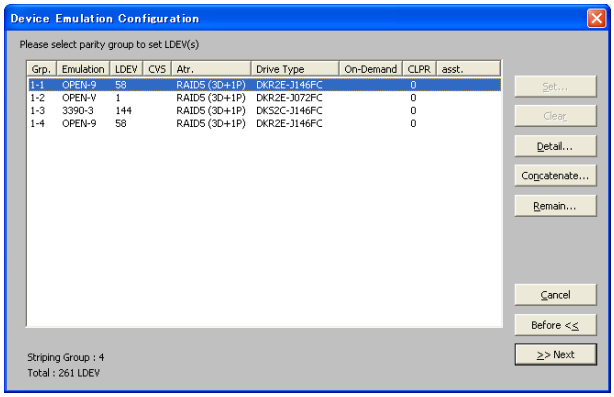
The 'Device Emulation Configuration' window is displayed.

Select (CL) the parity group and select (CL) the [Detail…] button. (The routine goes to Step 12-1.)

Select (CL) the [Concatenate…] button. (The routine goes to Step 12-4.)

Select (CL) the [>>Next] button. (The routine goes to Step 13.)

This operation is completed when the [Cancel] button is selected (CL).



(CVS): A parity group for which the CVS has been set

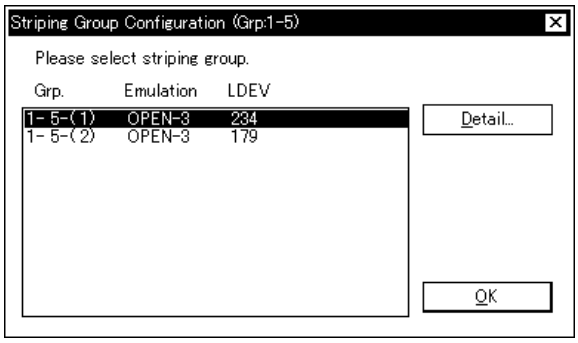
Grp*: A parity group for which the RAID connection has been set

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12-1 <Striping Group Configuration window>

When there are two or more striping groups, the Striping Group Configuration window is displayed. Select (CL) a striping group, and then select (CL) the [Detail…].

- When you select a striping group other than OPEN-V, the routine goes to Step 12-2.
- When you select OPEN-V, the routine goes to Step 12-3.



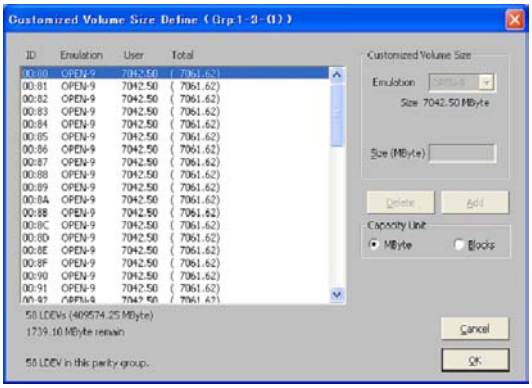
When you select (CL) the [OK], the preceding window returns. The routine returns to Step 12.

Note: When there is only one striping group, the Striping Group Configuration window is not displayed.

- When you select a striping group other than OPEN-V, the routine goes to Step 12-2.
- When you select OPEN-V, the routine goes to Step 12-3.

12-2 <Customized Volume Size Define>

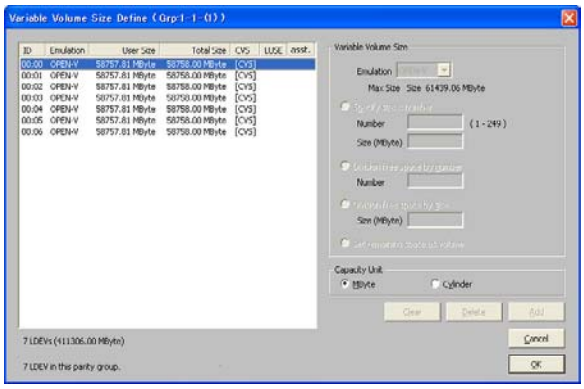
Customized Volume Size Define is displayed. Select (CL) [OK]. Return to Step 12 or 12-1.



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12-3 <Variable Volume Size Define window>

The 'Variable Volume Size Define' window is displayed.



- Capacity Unit
  - "MByte" : Makes data displayed by the Mbyte.
  - "Cylinder": Makes data displayed by the cylinder.
- LUSE : When the LUSE connection is made, a symbol "+" and a number of the volume at the top are displayed.
- asst. : When Path/LUSE/Pool-VOL is defined, "+" is displayed.

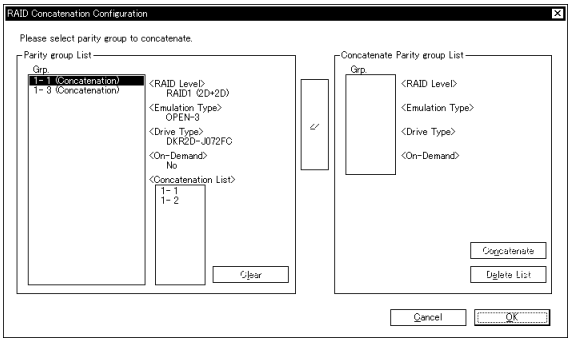
  Note: Even if the journal volume is defined, "+" is not displayed.

[Cancel] : Invalidates the setting and makes the preceding window return. The routine is returned to Step 12 or 12-1.

[OK] : Fixes the setting and makes the preceding window return. The routine is returned to Step 12 or 12-1.

12-4 <RAID Concatenation Configuration window>

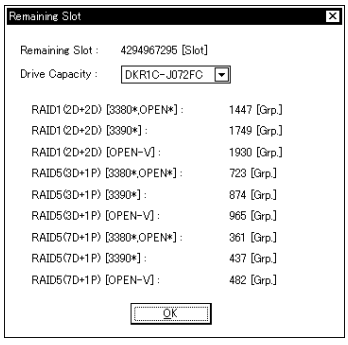
The 'RAID Concatenation Configuration' window is displayed.
When the "(Concatenation)" displayed in the Parity group List is selected (CL), parity groups that have been concatenated are displayed in the Concatenation List.



Select (CL) the [OK]. The routine returns to Step 12.

12-5 <Remaining Slot window>

The 'Remaining Slot' window is displayed.
An allowable number of times of PDEV addition corresponding to the specified drive type is displayed.

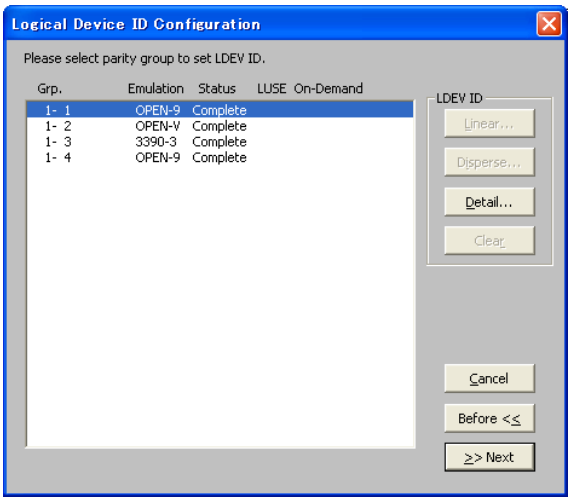


Select (CL) the [OK]. The routine returns to Step 12.

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13. <Logical Device ID Configuration window>

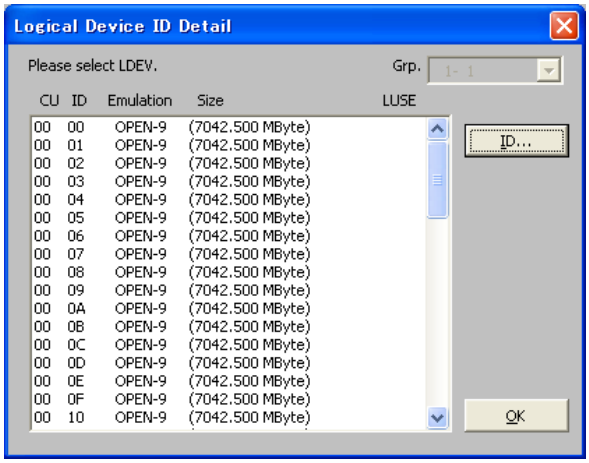
Logical Device ID Configuration is displayed.
Select (CL) a parity group and select (CL) [Detail...].
Select (CL) [>> Next]. Go to Step 13-1.
This procedure is terminated by selecting (CL) [Cancel].
Grp*: The top parity group where RAID Concatenation is installed.



13-1

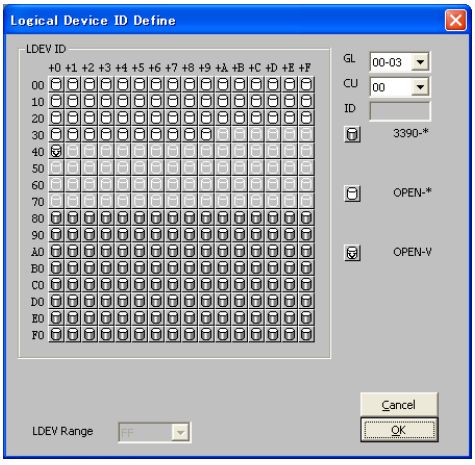
Logical Device ID Detail is displayed.
Select (CL) [ID...].
Select (CL) [OK]. Return to Step 13.

Note: In the case of a RAID Concatenation Group, LDEV of the parity group selected by the "Grp List" is displayed.



13-2

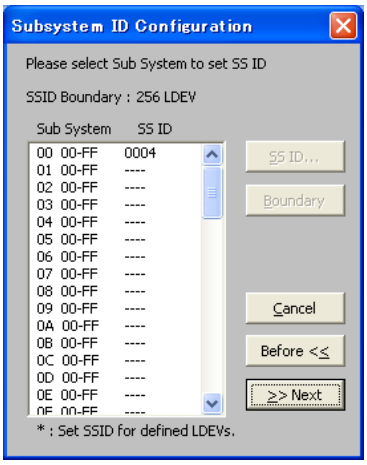
Logical Device ID allocation is displayed.
Select (CL) [OK] or [Cancel]. Return to Step 13-1.



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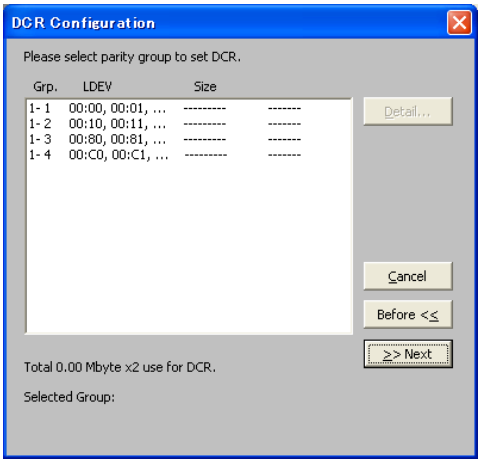
14. <Set Subsystem ID>

Subsystem ID Configuration is displayed.
Select (CL) [>> Next].
This procedure is terminated by selecting (CL) [Cancel].



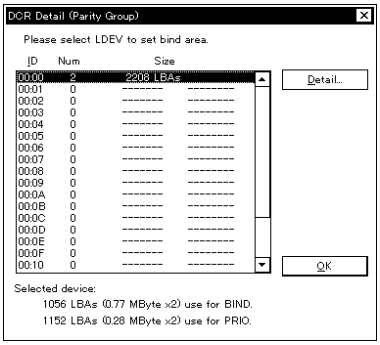
15. <DCR Configuration windows>

When the parity group is selected (CL), and then the [Detail…] button is selected (CL), the routine goes to Step 15-1.
Select (CL) the [>>Next] button.
This operation is completed when the [Cancel] button is selected (CL).



15-1 <DCR detail (Parity group) window>

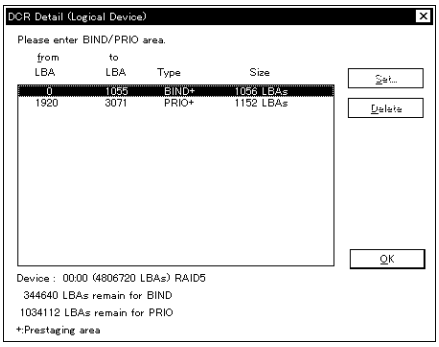
DCR detail (Parity group) is displayed.
Select (CL) an LDEV and select [Detail...]. Go to step 15-2
Select (CL) [OK]. Return to step 15.



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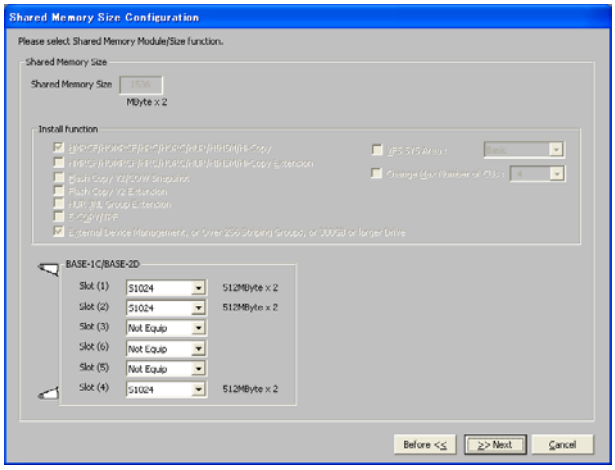
15-2 <DCR detail (Logical device) window>

DCR detail (Logical device) is displayed.
Select (CL) [OK]. Return to step 15-1.



16. <Shared Memory Size Configuration window>

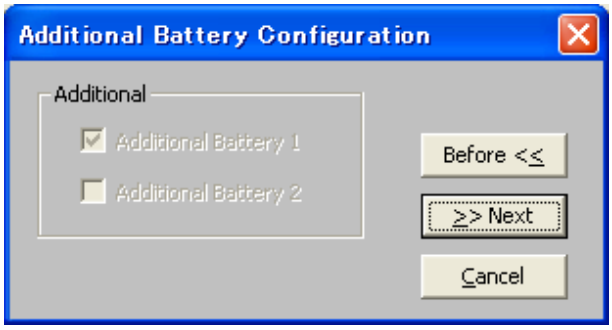
Shared Memory Size Configuration is displayed.
Select (CL) [>> Next].
This procedure is terminated by selecting (CL) [Cancel].



17. <Additional Battery Configuration window>

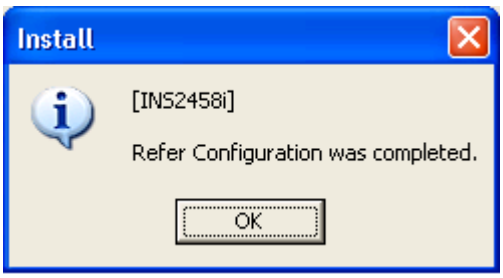
Additional Battery Configuration is displayed.
Select (CL) [>>Next].
This procedure is terminated by selecting (CL) [Cancel].

Go to INST05-850.



18.

Select (CL) [OK].
Close the 'Install' window.



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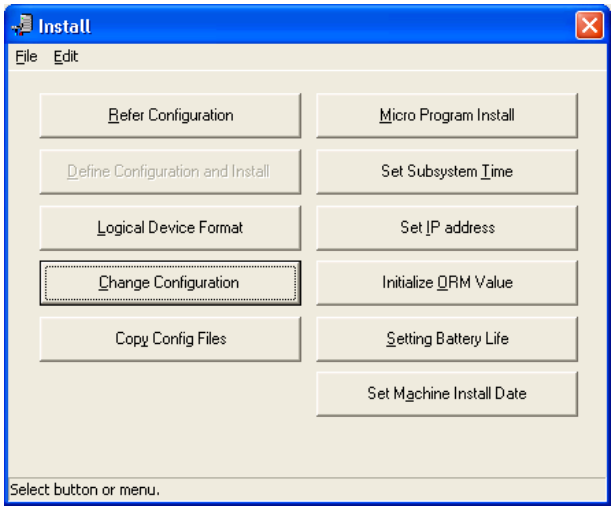
5.3 Change Configuration SVP Procedure

5.3.1 Setting up the New Device Structure Information

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

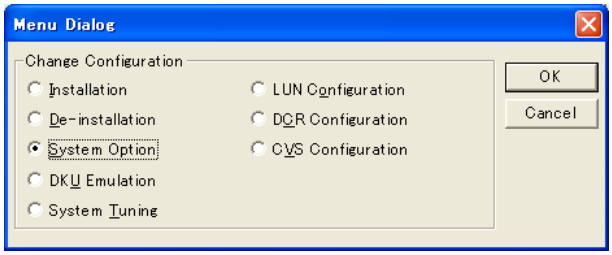
---

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



---

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



Function	Menu Item	
• System Option	System Option	(INST05-530)
• DCR Configuration	DCR Configuration	(INST05-560)
• CVS Configuration	CVS Configuration	(INST05-610)
• LUN Management	LUN Configuration	(INST05-850)

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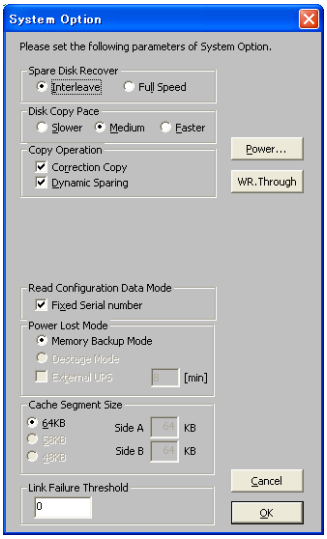
5.3.1.1 System Option

1. <Definition of System Option>
   Define the system option information in the 'System Option' window.

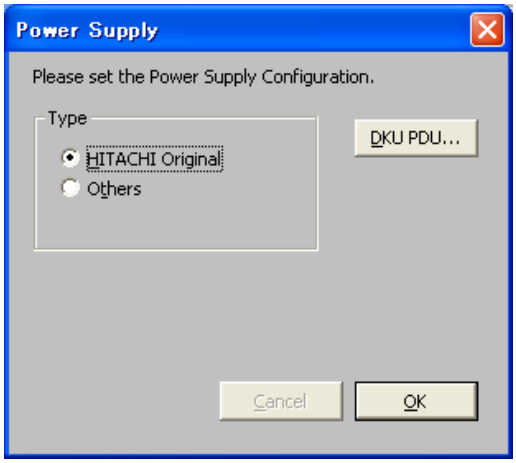
   When [Power...] is selected (CL), go to Item 2.

   When [WR.Through] is selected (CL), go to Item 4.

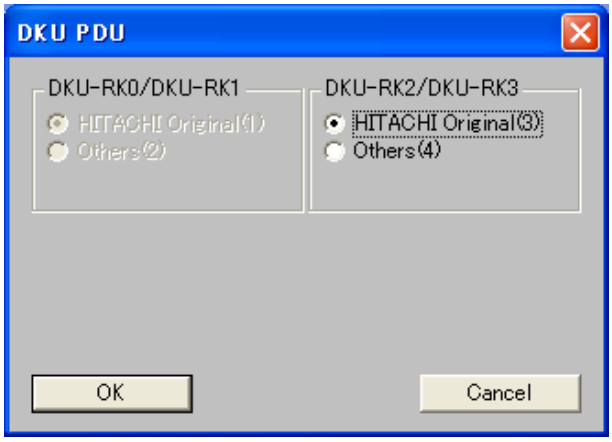
   After all the items are set, select (CL) [OK].
   Go to Item 5.



2. <Definition of PDU Types>
   Define the PDU information in the 'Power Supply' window.
   When [DKU PDU...] is selected (CL), go to Item 3.
   When [OK] is selected (CL), return to Item 1.
   When [Cancel] is selected (CL), return to Item 1 without reflecting the setting.



3. <Definition of PDU of Frame>
   Define PDU types of the frame in the 'DKU PDU' window.
   When [OK] is selected (CL), return to Item 2.
   When [Cancel] is selected (CL), return to Item 2 without reflecting the setting.

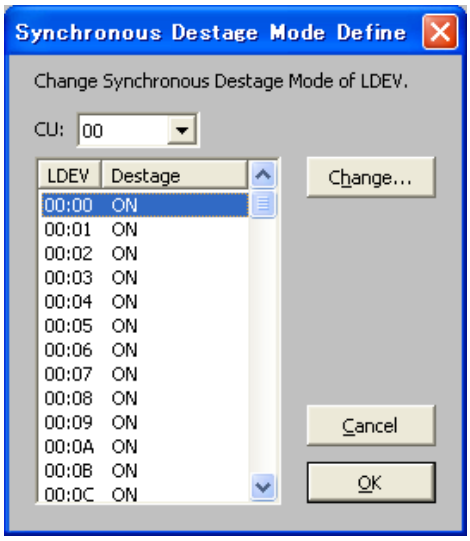


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4. <Setting Destage Mode>
Set the destage mode in the 'Synchronous Destage Mode Define' window.

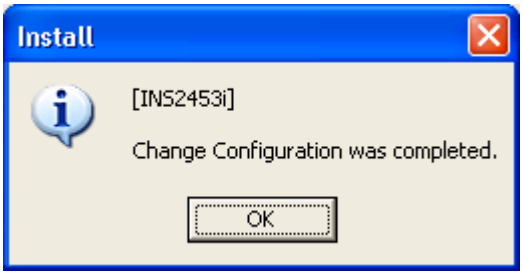
When [OK] is selected (CL), return to Item 1.

When [Cancel] is selected (CL), return to Item 1. without reflecting the setting.



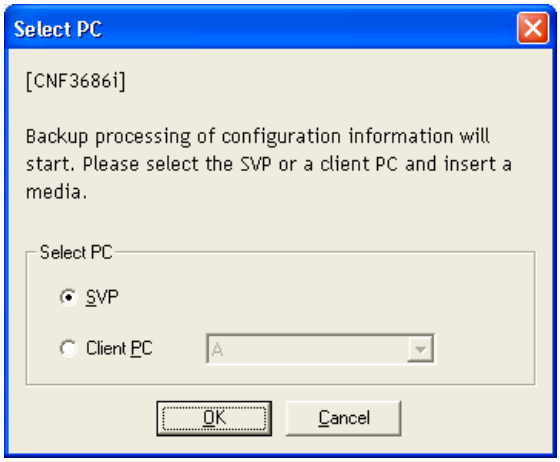
5.

"Change Configuration was completed." is displayed.
Selection (CL) [OK].



6.

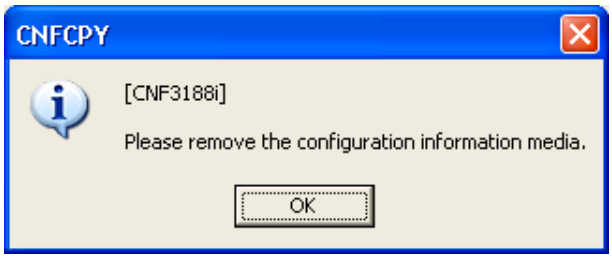
"Reading subsystem configuration data..." is displayed.
"Backup processing of configuration information will start. Please select the SVP or a client PC and insert a media." is displayed.
Insert the Config FD into FDD of selected PC, and select (CL) [OK].



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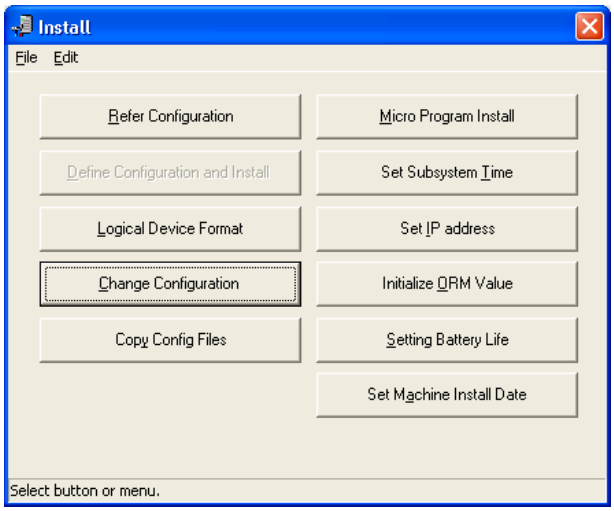
7.

When this procedure is completed, the message “Please remove the configuration information media.” is displayed.
Remove the FD, select (CL) [OK].



8.

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



9.

Change the Mode from [Modify Mode] to [View Mode].

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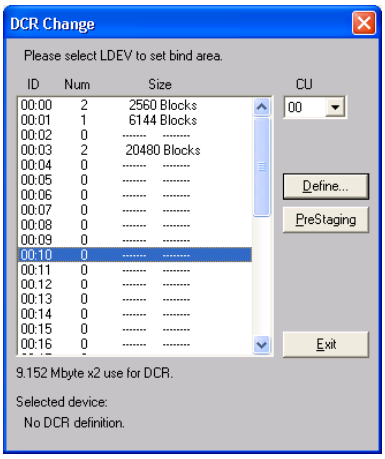
5.3.1.2 DCR Configuration

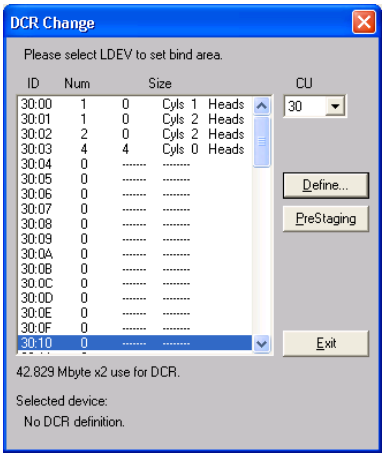
(1)

The “DCR Change” screen appears and the contents of the entered setting are displayed. When the CU is selected (DR) in the combo box, installed LDEV(s) and contents of the DCR definition are updated. Select (CL) LDEV to change the setting, then press (CL) the [Define...] button.

Total cache memory size occupied by the DCR area is displayed.

If the selected LDEV has a DCR area, the BIND size and the PRIO size are displayed under the “DCR Change” screen.



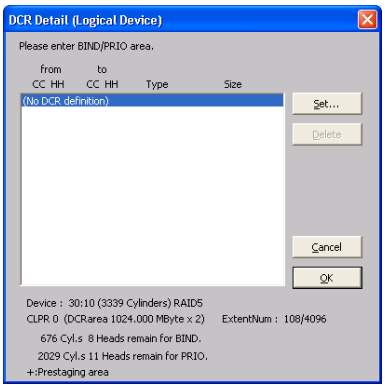


CAUTION

To use DCR function, you should install DCR program product (P-242R-J9641) for mainframe volumes or Open DCR program product (P-242R-J9642) for open volumes into the DKC. Do not set DCR function to Remote Command Device.

(2)

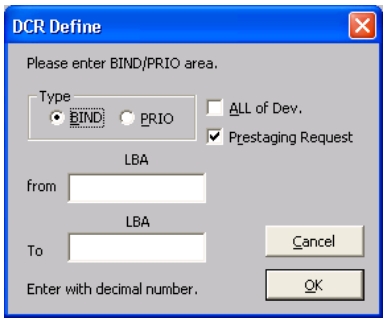
The “DCR Detail (Logical Device)” screen appears and the setting of the DCR in the LDEV is displayed.
To add a new setting, press (CL) the [Set...] button.



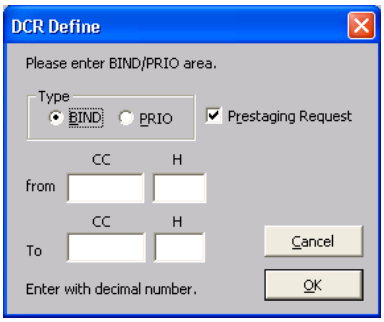
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(3)

When the [Set...] button is pressed (CL) on the "DCR Detail (Logical Device)" screen, the "DCR Define" screen appears. To register new data in the DCR area, enter the type, starting cylinder number, starting head number, ending cylinder number, and ending head number (In the case of Mainframe, refer to the screen on the right) or the type, starting LBA, and ending LBA (In the case of the open system, refer to the screen on the left).
If you want to stage the data on the cache, check the Prestaging Request box.
When the entry is completed, return the screen to the "DCR Detail (Logical Device)" screen by pressing (CL) the [OK] button.



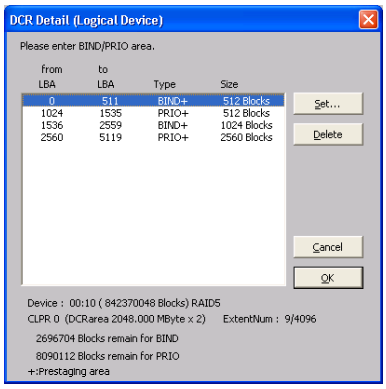
(In the case of open system)



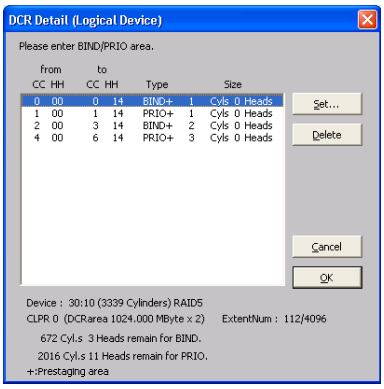
(In the case of Mainframe system)

(4)

Contents of the entered setting are displayed in the list box on the "DCR Detail (Logical Device)" screen.



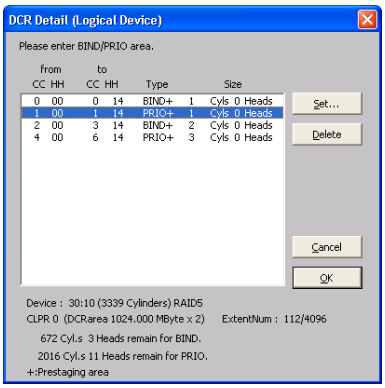
(In the case of open system)



(In the case of Mainframe system)

(5)

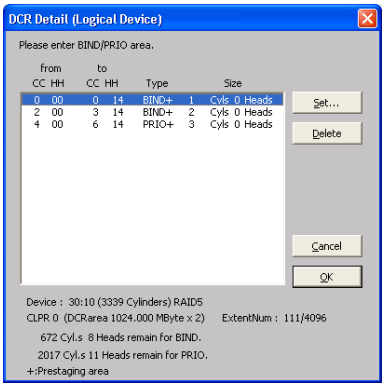
To delete a set item, select (CL) the DCR setting to be deleted and press (CL) the [Delete] button on the "DCR Detail (Logical Device)" screen.



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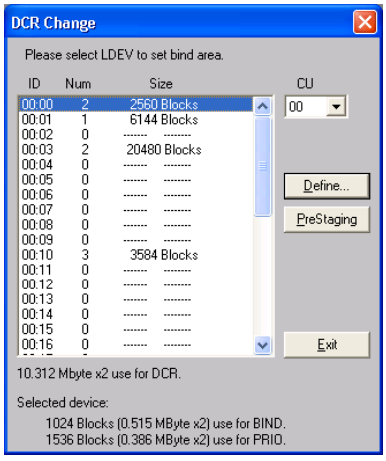
(6)

By pressing (CL) the [OK] button on the "DCR Detail (Logical Device)" screen after the new setting is entered, a process to change the setting for the LDEV is executed.
When no change is required, press (CL) the [Cancel] button.

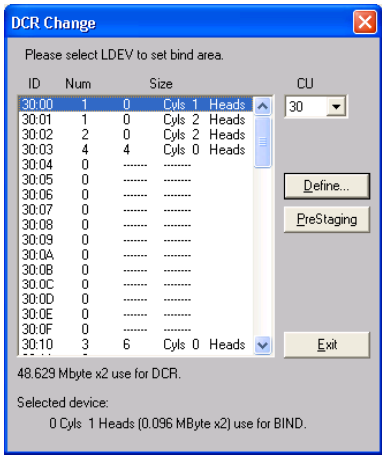


(7)

The screen returns to the "DCR Change" screen after the processing is completed. The changed setting is displayed in the list box.



(In the case of open system)



(In the case of Mainframe system)

(8)

Repeat steps (1) through (7) for the LDEV(s) of which you want to change the setting.

(9)

When you want to set DCR PreStaging, select (CL) [PreStaging].
The [PreStaging] button begins the Pre-staging processing only for the "PreStaging Request" specified data.

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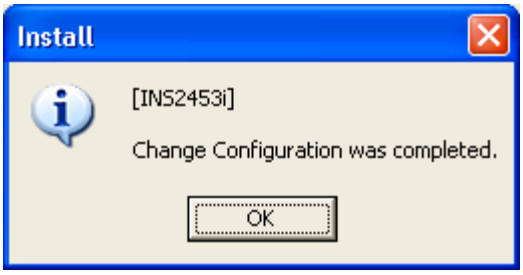
(10)

When the changing operation is completed, quit the “DCR Change” screen by pressing (CL) the [Exit] button.

---

(11)

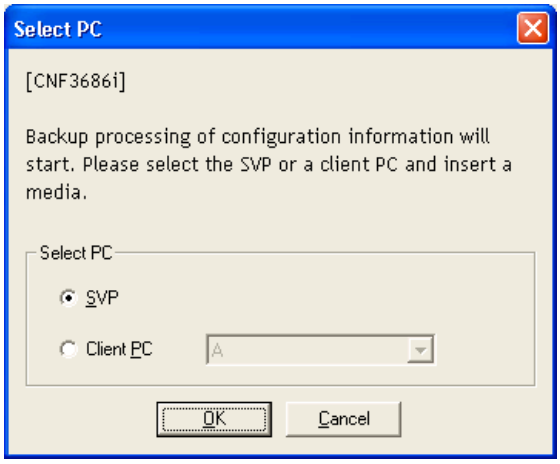
“Change Configuration was completed.” is displayed.
Selection (CL) [OK].



---

(12)

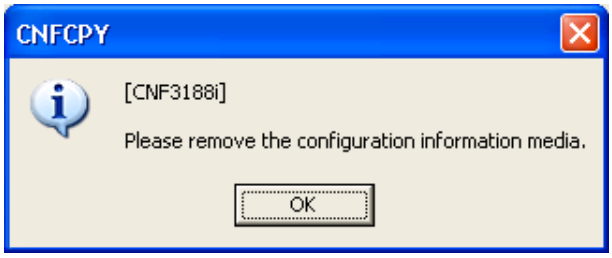
“Reading subsystem configuration data...” is displayed.
“Backup processing of configuration information will start. Please select the SVP or a client PC and insert a media.” is displayed.
Insert the Config FD into FDD of selected PC, and select (CL) [OK].



---

(13)

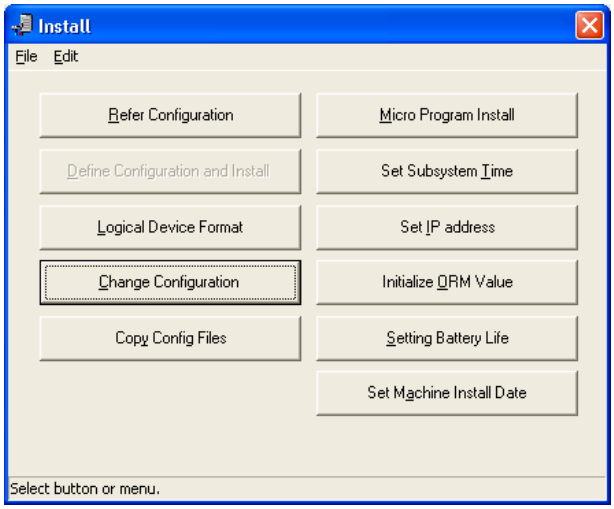
When this procedure is completed, the message “Please remove the configuration information media.” is displayed.
Remove the FD, select (CL) [OK].



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(14)

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



(15)

Change the Mode from [Modify Mode] to [View Mode].

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5.3.1.3 CVS Configuration

- Volume to Space ---------- Go to step 1.
- LDEV (CVS) Installation---------- Go to step 2.
- Volume Initialize---------- Go to step 3.

1. <Volume to Space>

CAUTION

When you set HMDE volumes to customized volumes and reset them to the normal volume again, these volumes could not be set as HMDE volumes. Please refer to the following table.

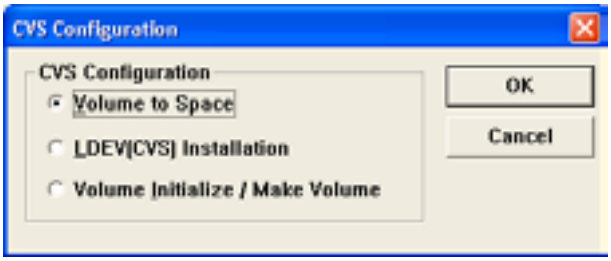
Emulation Types for HMDE volumes	Emulation types after changing from Customized volume to normal volume
3390-3A	3390-3
3390-3B	
3390-3C	

If you want to reset these volumes as HMDE, please call technical support division to set them to HMDE volumes by SVP.

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(1)

Select (CL) [Volume to Space] and select (CL) [OK].



⚠ CAUTION

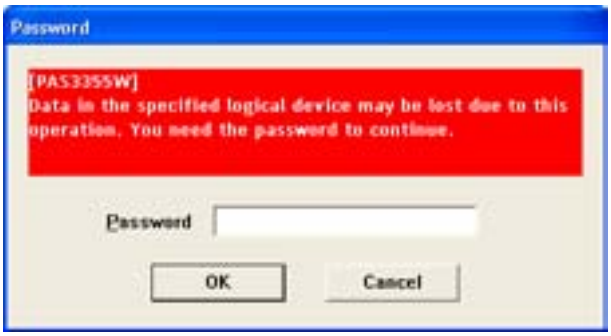
To use CVS function, you should install CVS program product (P-242R-J9541) for mainframe volumes or Open CVS program product (P-242R-J9542) for open volumes into the DKC.

⚠ CAUTION

This is a special (exceptional) operation that can cause a serious failure such as a system down or a data loss and requires an input of a password. Ask the technical support division about the appropriateness of the operation, and input the password after getting an approval of executing the operation.

Note: When the Volume to Space function is performed, the alias information which is set to the specified LDEV is also deleted.
If you set the alias to the LDEV, you must migrate the alias information to another LDEV before the Volume to Space function is performed, or you must reconfigure the alias after the Volume to Space function is performed.

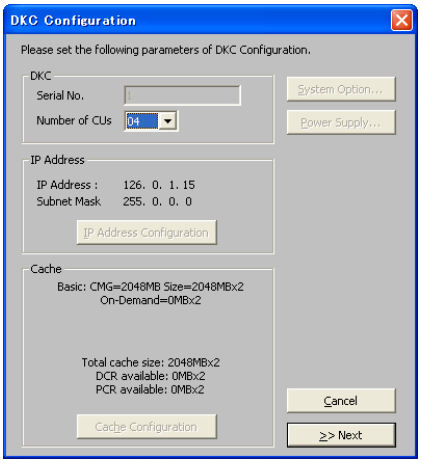
Enter the password and select (CL) [OK].



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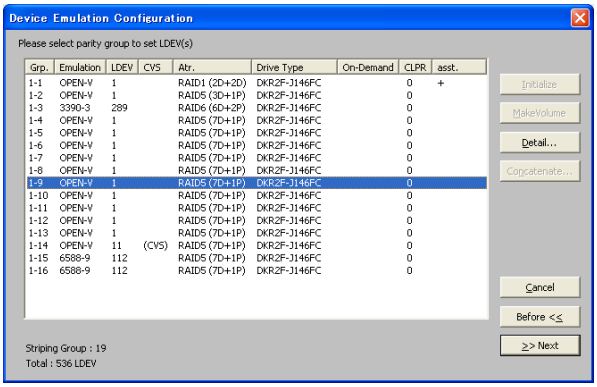
(1-1)

Define the number of CU in DKC in the 'DKC Configuration' window.
Make sure that the entered item is correct and select (CL) [>>Next].



(2)

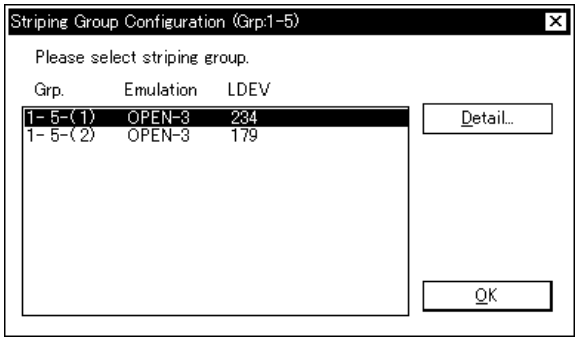
Select (CL) a parity group with Volume(s) to be changed on the "Device Emulation Configuration" screen and press (CL) the [Detail...] button.
(CVS): A parity group where CVS is installed.
Grp*: A parity group where RAID Concatenation is installed.



(2-1)

When there are two or more striping groups, the Striping Group Configuration window is displayed. Select (CL) a striping group, and then select (CL) the [Detail…].

- When you select a striping group other than OPEN-V, the routine goes to Step (3).
- When you select OPEN-V, the routine goes to Step (3-1).



When you select (CL) the [OK], the preceding window returns. The routine returns to Step (2).

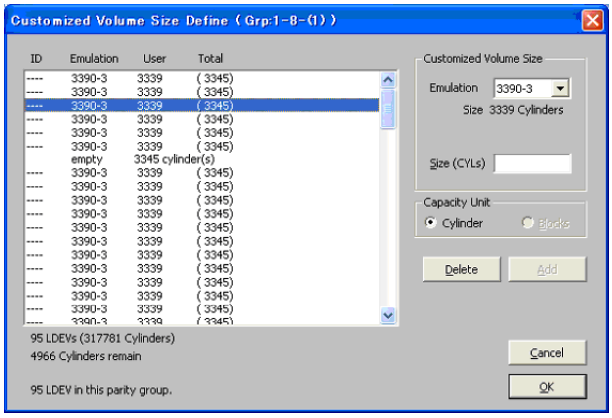
Note: When there is only one striping group, the Striping Group Configuration window is not displayed.

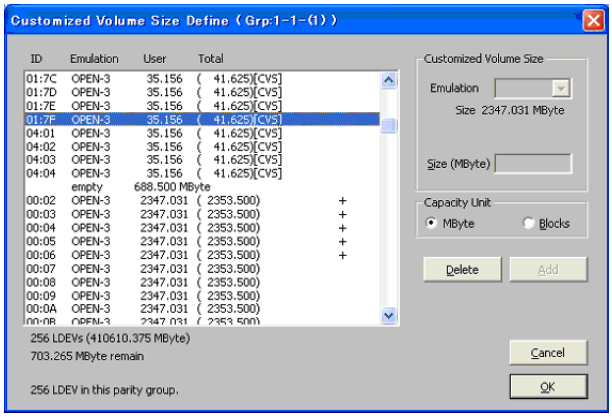
- When you select a striping group other than OPEN-V, the routine goes to Step (3).
- When you select OPEN-V, the routine goes to Step (3-1).

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(3)

When the Volume(s) to be deleted is selected (CL) on the 'Customized Volume Size Define' window and the [Delete] button is pressed (CL), the Volume(s) is deleted. When the operation fails, the screen can be returned to the preceding one by pressing (CL) the [Cancel] button.





- Capacity Unit
  - "MByte" : Makes data displayed or entered by the Mbyte.
  - "Cylinder" : Makes data displayed or entered by the Cylinder.
  - "Blocks" : Makes data displayed or entered by the Blocks.

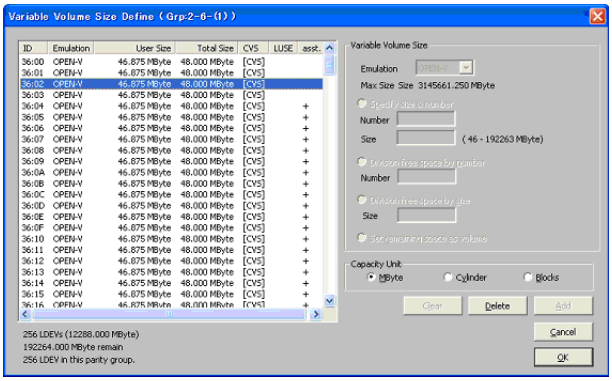
(When a volume for mainframe host is selected, it became selection of only "Cylinder".)

Note: In the following case, the [Delete] button is not available.

① The last CV is selected.
② Volume with SCSI path(s) ("+" indicated) is selected.
③ Volume with LUSE ("+" indicated) is selected.
④ Volume with Pool-VOL ("+" indicated) is selected.
⑤ Volume with the journal volume ("+" indicated) is selected.

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(3-1) Definition of OPEN-V



When you select a volume you want to delete in the 'Variable Volume Size Define' window and select (CL) the [Delete], the volume is deleted.
The two or more volumes can be selected and deleted. However, the last one volume cannot be de deleted.

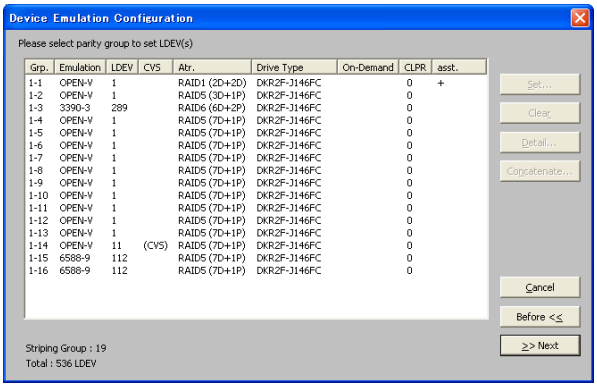
- Capacity Unit
  "MByte" : Makes data displayed or entered by the Mbyte.
  "Cylinder" : Makes data displayed or entered by the Cylinder.
  "Blocks" : Makes data displayed or entered by the Blocks.
- LUSE : When the LUSE connection is made, a symbol "+" and a number of the volume at the top are displayed.
- asst. : When Path/LUSE/Pool-VOL/the journal volume is defined, "+" is displayed.

[Delete] : Deletes a selected volume.
[Cancel] : Invalidates the setting and makes the preceding window return. The routine is returned to Step (2) or (2-1).
[OK] : Fixes the setting and makes the preceding window return. The routine is returned to Step (2) or (2-1).

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(4)

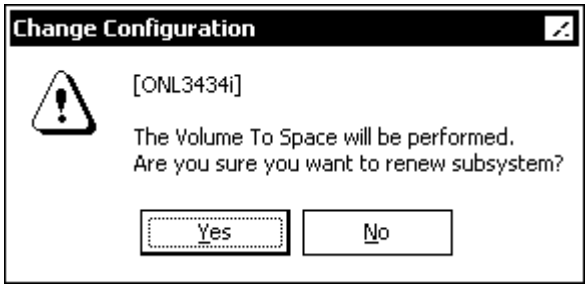
When the screen is returned to the "Device Emulation Configuration" screen by pressing (CL) the [OK] button and the[>>Next] button is pressed (CL), the definition of reduction is decided.
(CVS): A parity group where CVS is installed.
Grp*: A parity group where RAID Concatenation is installed.



(5)

Select (CL) [Yes] in response to "The Volume To Space will be performed. Are you sure you want to renew subsystem?".

When [No] is selected (CL), returns to INST05-520 step 2.



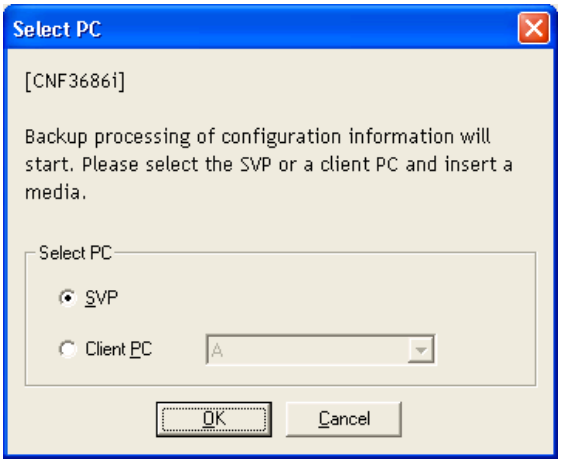
(6)

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



(7)

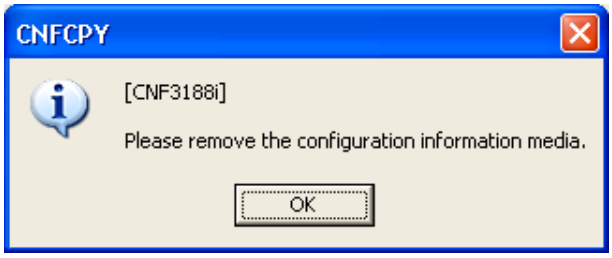
"Reading subsystem configuration data..." is displayed.
"Backup processing of configuration information will start. Please select the SVP or a client PC and insert a media." is displayed.
Insert the Config FD into FDD of selected PC, and select (CL) [OK].



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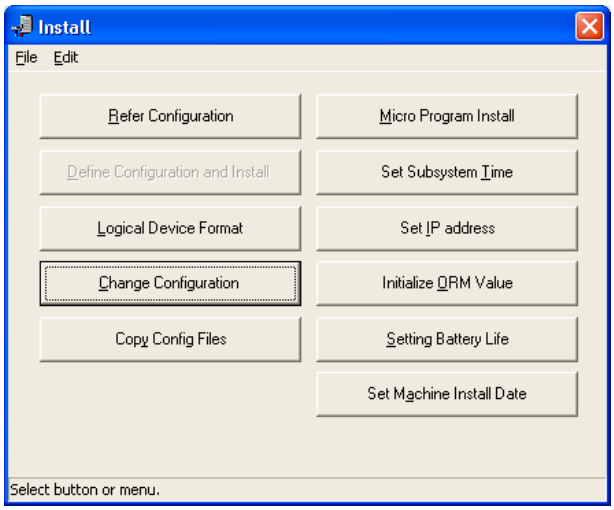
(8)

When this procedure is completed, the message “Please remove the configuration information media.” is displayed.
Remove the FD, select (CL) [OK].



(9)

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



(10)

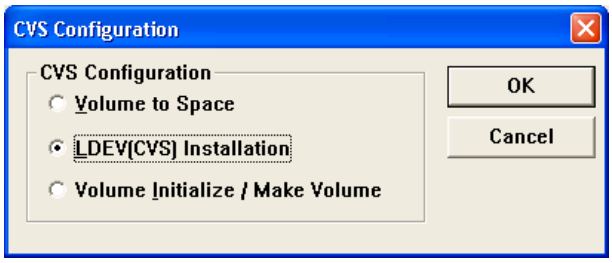
Change the mode to View Mode.

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2. <LDEV(CVS) Installation>

(1)

Select (CL) [LDEV(CVS) Installation] and select (CL) [OK].

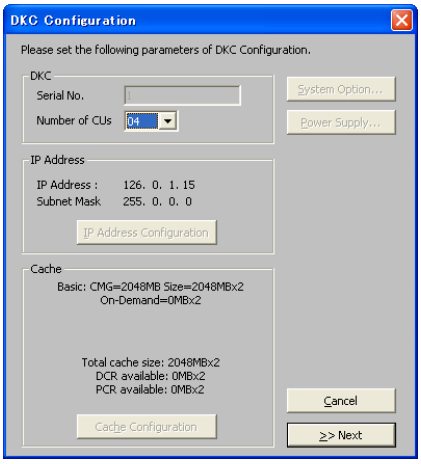


(1-1)

Define the number of CUs in DKC in the 'DKC Configuration' window.

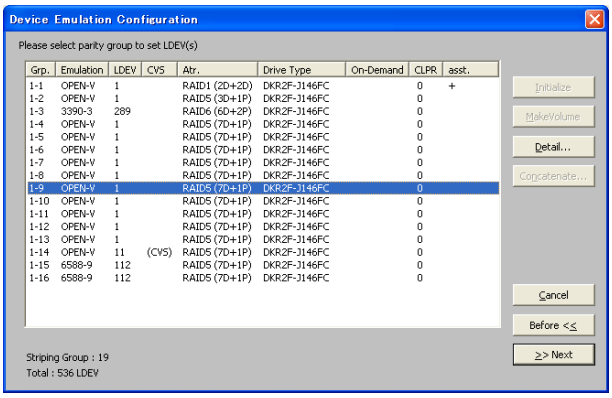
When no alteration was made on the number of CUs owing to the addition of the LDEV (CVS), select (CL) [>>Next].

Make sure that the entered item is correct and select (CL) [>>Next].



(2)

Select (CL) a parity group to which the CV(s) is to be added on the "Device Emulation Configuration" screen and press (CL) the [Detail] button.
(CVS): A parity group where CVS is installed.
Grp*: A parity group where RAID Concatenation is installed.

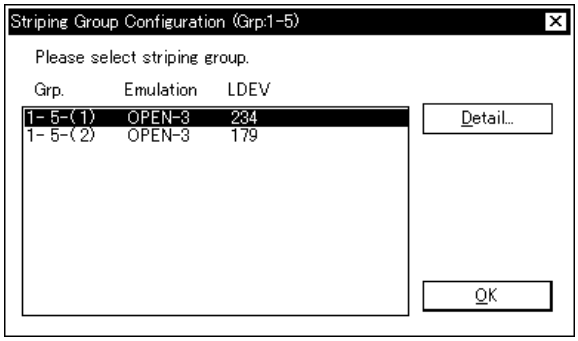


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(2-1)

When there are two or more striping groups, the Striping Group Configuration window is displayed. Select (CL) a striping group, and then select (CL) the [Detail…].

- When you select a striping group other than OPEN-V, the routine goes to Step (3).
- When you select OPEN-V, the routine goes to Step (4-1).



When you select (CL) the [OK], the preceding window returns. The routine returns to Step (2).

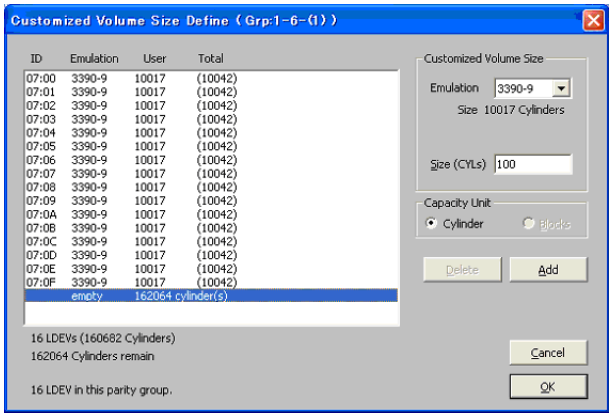
Note: When there is only one striping group, the Striping Group Configuration window is not displayed.

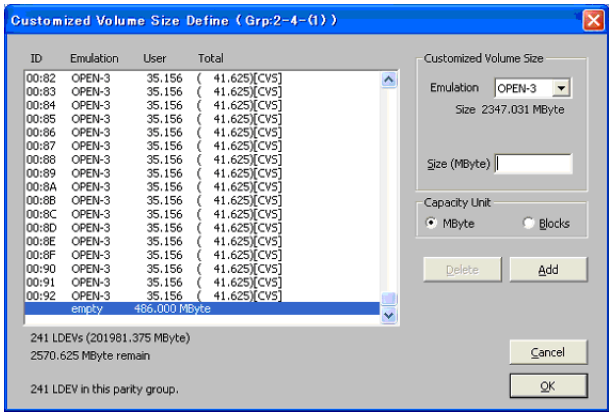
- When you select a striping group other than OPEN-V, the routine goes to Step (3).
- When you select OPEN-V, the routine goes to Step (4-1).

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(3)

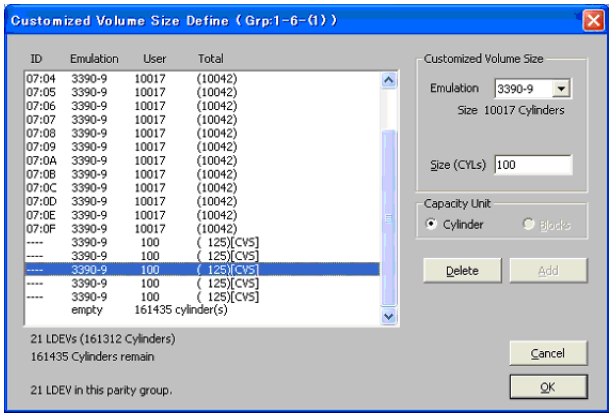
Register the CV to be added by selecting (CL) the CV's emulation type of it, entering the number of cylinders, and selecting (CL) [Add] on the "Customized Volume Size Define" screen. The two or more CVs can be registered when the operation above is performed repeatedly.

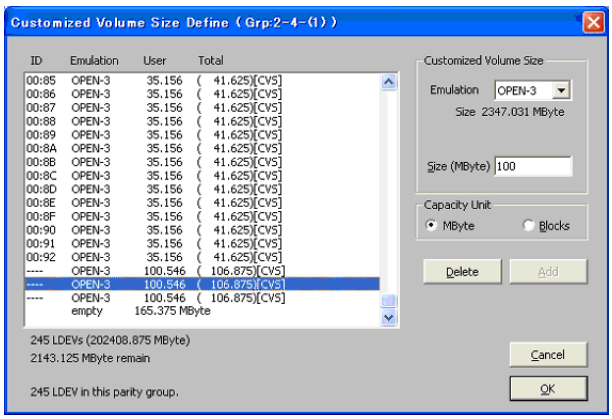




(4)

The contents registered are displayed in the list box.
The deletion can be made only for the added CV(s). When the addition is made incorrectly, select (CL) [Cancel] to make the setting invalid and perform the setting again.

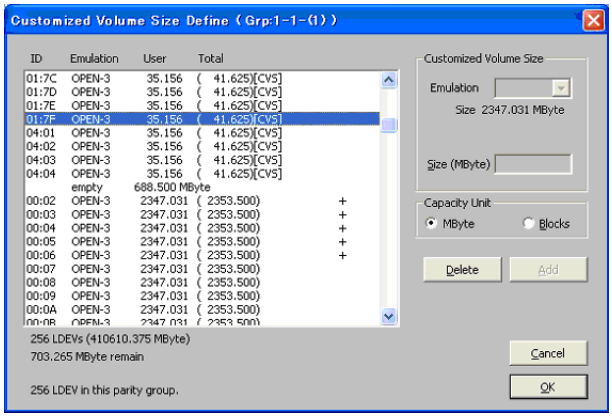




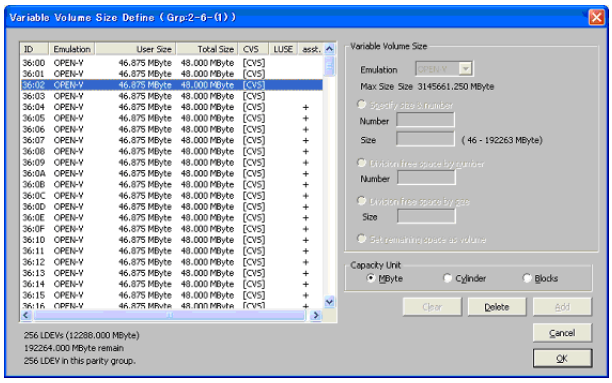
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(4-1) Definition of OPEN-V

After selecting the “Specify Size & number” in the ‘Variable Volume Size Define’ window and entering user size and number of volumes to be added, register a volume by selecting (CL) the [Add].



The volume that have been registered are displayed in the list box. Only the added volume can be deleted.



• Variable Volume Size

“Specify Size & number” : Defines the specified number of the specified user size.

“Division free space by number” : Defines the volume divided by the specified number. However, this can be selected only when all the volumes have been deleted.

“Division free space by size” : Defines the volumes whose user sizes are all specified. However, this can be selected only when all the volumes have been deleted.

“Set remaining space as Volume” : This can not select.

• Capacity Unit

“MByte” : Makes data displayed or entered by the Mbyte.

“Cylinder” : Makes data displayed or entered by the cylinder.

“Blocks” : Makes data displayed or entered by the Blocks.

• LUSE : When the LUSE connection is made, a symbol “+” and a number of the volume at the top are displayed.

• asst. : When Path/LUSE/Pool-VOL/the journal volume is defined, “+” is displayed.

[Delete] : Deletes a selected volume.

[Add] : Adds a volume.

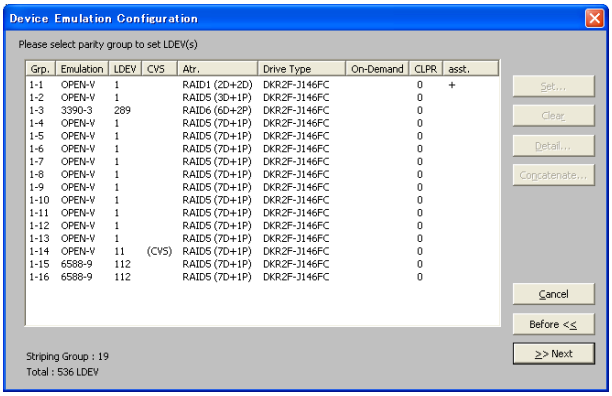
[Cancel] : Invalidates the setting and makes the preceding window return. The routine is returned to Step (2) or (2-1).

[OK] : Fixes the setting and makes the preceding window return. The routine is returned to Step (2) or (2-1).

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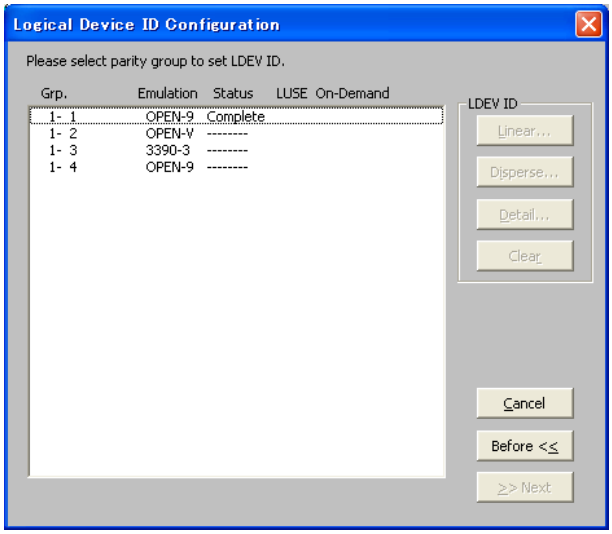
(5)

When the screen is returned to the "Device Emulation Configuration" screen by a pressing (CL) of the [OK] button, the setting result is displayed.
The LDEV status is displayed as [CVS] for the parity group for which the CV was set.
(CVS): A parity group where CVS is installed.
Grp*: A parity group where RAID Concatenation is installed.



(6)

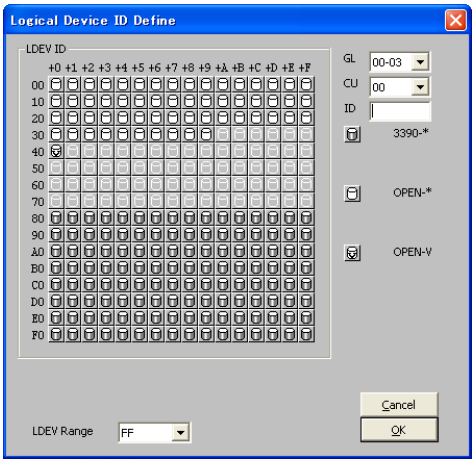
When the [>>Next] button is pressed (CL), the LDEV ID setting screen appears.
Set LDEV ID(s) for the added CV(s). For the parity group having the added CV(s), the status which shows the ID allocation is indicated as "---------". Therefore, select (CL) such a parity group.
When [Linear...] or [Disperse...] was selected (CL), the routine proceeds to Step (7).
When [Detail...] is selected (CL), the routine proceeds to Step (7)-1.
Grp*: The top parity group where RAID Concatenation is installed.



(7)

Press (CL) the [Linear...] button and enter an LDEV ID you want to allocate on the "Logical Device ID Define" screen.

Note: The definition range (terminal) is decided with LDEV Range.
For example, if LEDV Range is defined as 7F, LDEV ID is assigned only within the range of 00 to 7F.

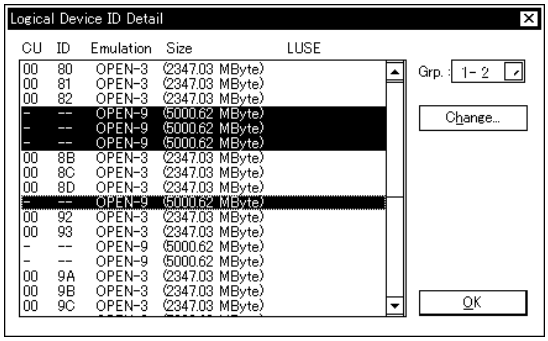


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(7)-1

When the [Detail...] is pressed (CL), the [Logical Device ID Detail] screen is displayed. Select an emulation type for which the CU and ID status are displayed as "- --" and select (CL) [Change...]. When you want to register successive IDs, you can select the two or more emulation types.

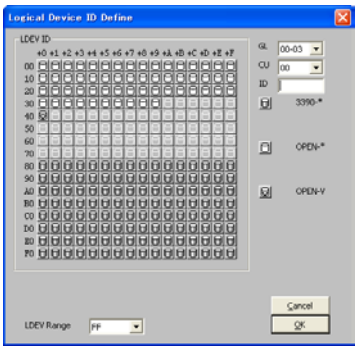
Note: In the case of a RAID Concatenation Group, LDEV of the parity group selected by the "Grp List" is displayed.



(7)-2

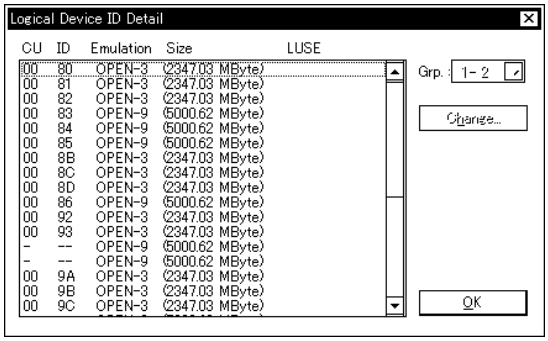
Enter a CU and LDEV ID you want to allocate on the "Logical Device ID Define" screen. Then, select (CL) [OK].
Go to Step (7)-3.

Note: The definition range (terminal) is decided with LDEV Range.
For example, if LEDV Range is defined as 7F, LDEV ID is assigned only within the range of 00 to 7F.



(7)-3

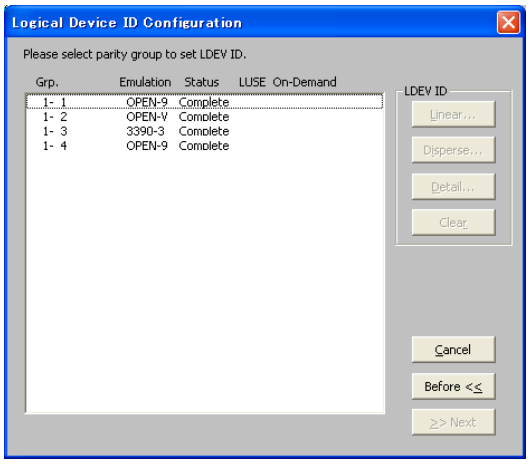
Make sure that the CU(s) and ID(s) have been registered.
If there is any emulation type for which the CU and ID status are displayed as "- --", return to Step (7)-1.
If all the settings have been made, select (CL) [OK].
Go to Step (8).



(8)

When the screen is returned to the "Logical Device ID Configuration" screen by pressing (CL) the [OK] button, the
setting result is displayed.

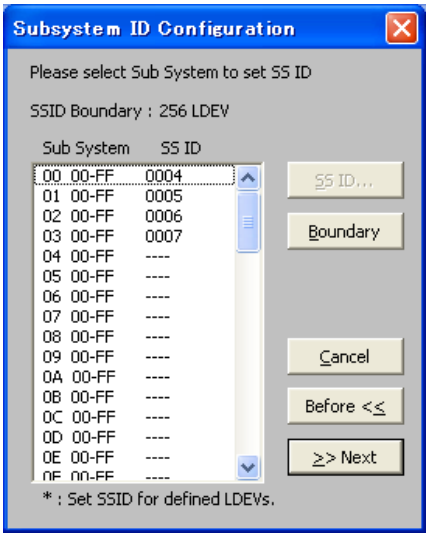
Grp*: The top parity group where RAID Concatenation is installed.



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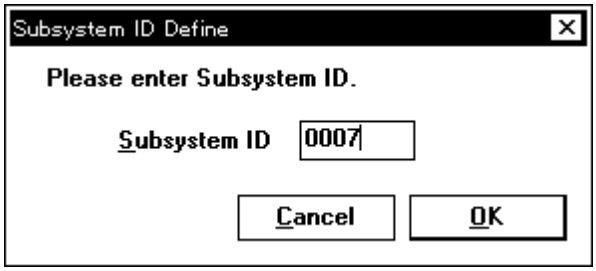
(9)

When the [>>Next] button is pressed (CL), the "Subsystem ID Configuration" screen is opened. If a new SS ID is required as a result of defining an LDEV ID, define the new SS ID. Select (CL) a subsystem where the SS ID is to be newly defined and press (CL) the [SS ID...] button.
When no subsystem ID is to be defined, go to Step (13) by selecting [>>Next].



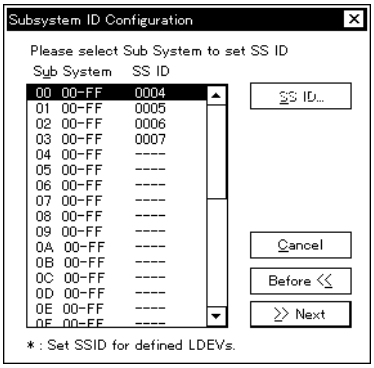
(10)

Enter the SS ID on the "Subsystem ID Define" screen and select (CL) [OK].



(11)

When the screen is returned to the "Subsystem ID Configuration" screen by pressing (CL) the [OK] button, the set contents are displayed.



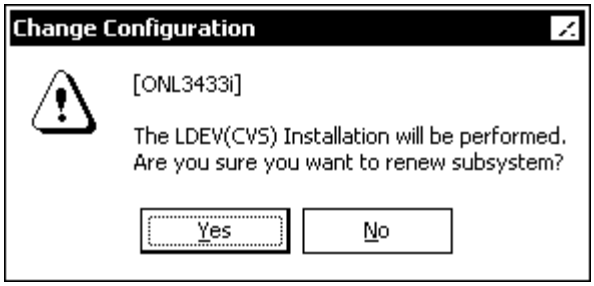
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(12)

When [>>Next] is selected (CL), the definition of the addition ends. (Additional process starts.)

---

(13)



Select (CL) [Yes] in response to "The LDEV(CVS) Installation will be performed. Are you sure you want to renew subsystem?".

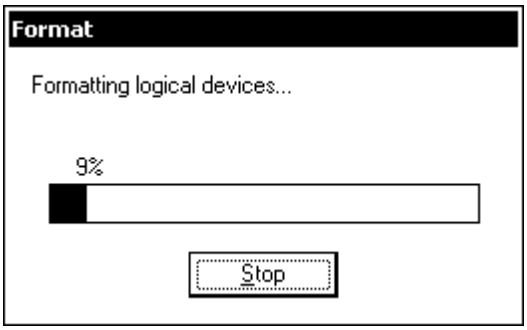
When [No] is selected (CL), returns to INST05-520 step 2.

Note: When System Option 503 is set, LDEV Format is not executed and the message "The newly installed LDEV has not been formatted. Please format the newly installed LDEV after the maintenance operation has completed." is displayed." is displayed.
If [OK] is selected (CL) for this message, it goes to Step (15).

---

(14)

"Formatting logical devices..." is displayed.



---

(15)

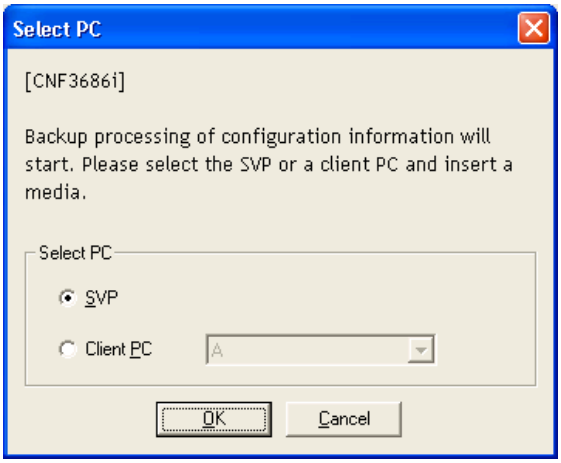
"Renewal process has completed. Please check the subsystem status." is displayed when recovery processing on all installed components is completed. Select (CL) [OK] in response to this message.



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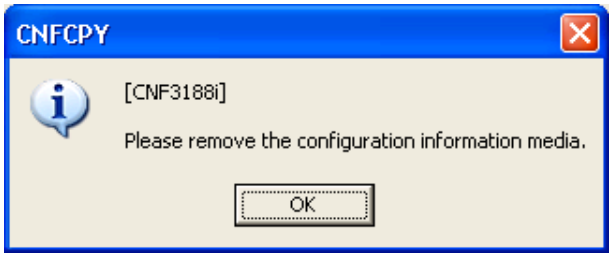
(16)

"Reading subsystem configuration data..." is displayed.
"Backup processing of configuration information will start. Please select the SVP or a client PC and insert a media." is displayed.
Insert the Config FD into FDD of selected PC, and select (CL) [OK].



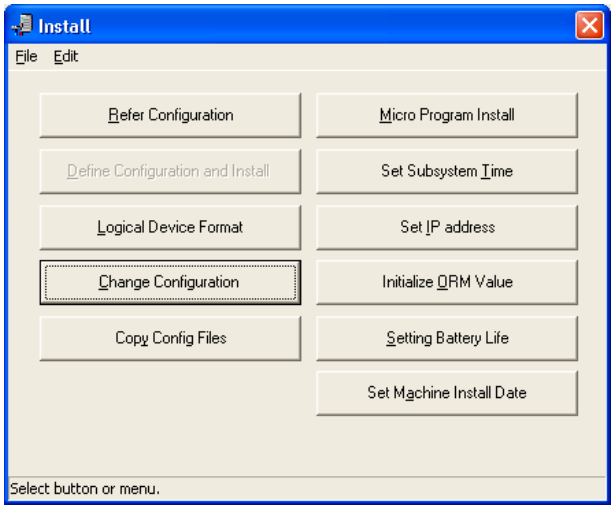
(17)

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



(18)

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



(19)

Change the mode to View Mode.

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CAUTION

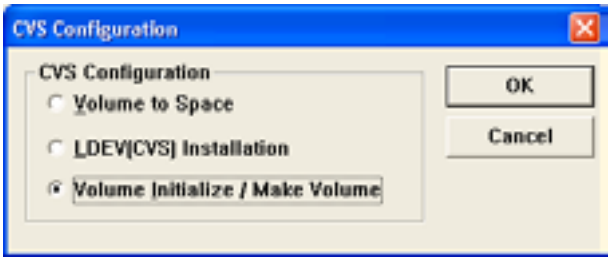
When you set HMDE volumes to customized volumes and reset them to the normal volume again, these volumes could not be set as HMDE volumes. Please refer to the following table.

Emulation Types for HMDE volumes	Emulation types after changing from Customized volume to normal volume
3390-3A	3390-3
3390-3B	
3390-3C	

If you want to reset these volumes as HMDE, please call technical support division to set them to HMDE volumes by SVP.

3. <Volume Initialize>

(1) Select (CL) [Volume Initialize/Make Volume], then select (CL) [OK].

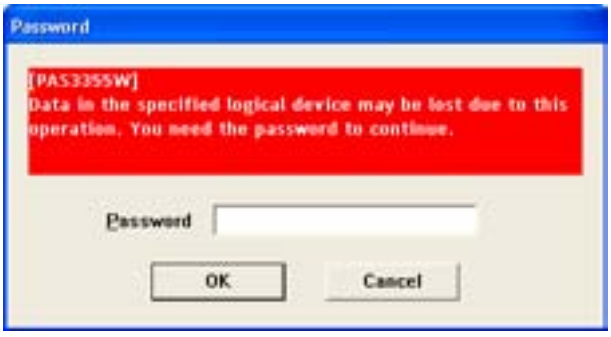


CAUTION

This is a special (exceptional) operation that can cause a serious failure such as a system down or a data loss and requires an input of a password. Ask the technical support division about the appropriateness of the operation, and input the password after getting an approval of executing the operation.

Note: When the Volume Initialize function or Make Volume function is performed, the alias information which is set to the recreated LDEV by these operations is also deleted. If you set the alias to the LDEV, you must migrate the alias information to another LDEV before the Volume Initialize function or Make Volume function is performed, or you must reconfigure the alias after the Volume Initialize function or Make Volume function is performed.

Enter the password and select (CL) [OK].

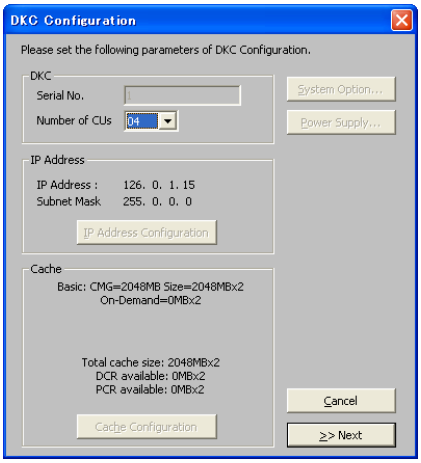


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(1-1)

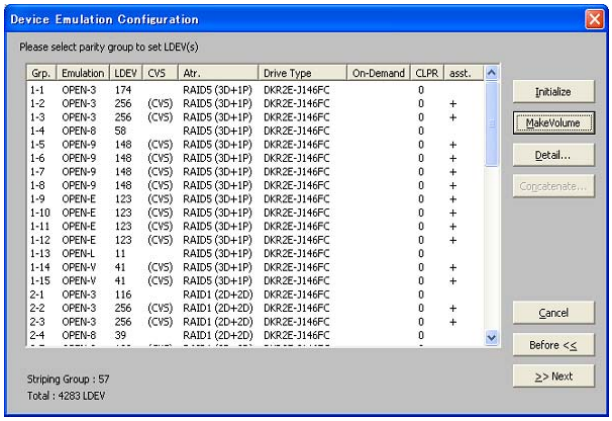
Define the number of CU in DKC in the ‘DKC Configuration’ window.

Make sure that the entered item is correct and select (CL) [>>Next].



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(2)



Select (CL) a CV from the list box on the 'Customized Volume Size Define' window, press (CL) the [Initialize] button to delete the CV, and return it to a normal volume. When the operation fails, the screen can be returned to the preceding one by pressing (CL) the [Cancel] button.
All the volumes are deleted by selecting (CL) [Make Volume].

(CVS): A parity group where CVS is installed.

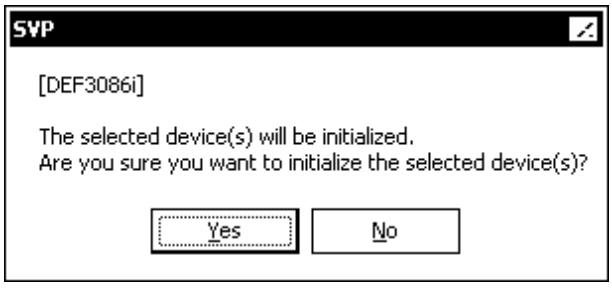
Grp*: A parity group where RAID Concatenation is installed.

asst.: A parity group where the Initialize/Make Volume process cannot be performed because it includes the LDEV in which Path/LUSE/Pool-VOL/the journal volumes is set.

Note: In the following case, the [Initialize] button is not available.

① The parity group including the volume with SCSI path is selected.
② The parity group including the volume with LUSE is selected.
③ The parity group including the volume with Pool-VOL is selected.
④ The parity group including the volume with the journal volumes is selected.

(2-1)



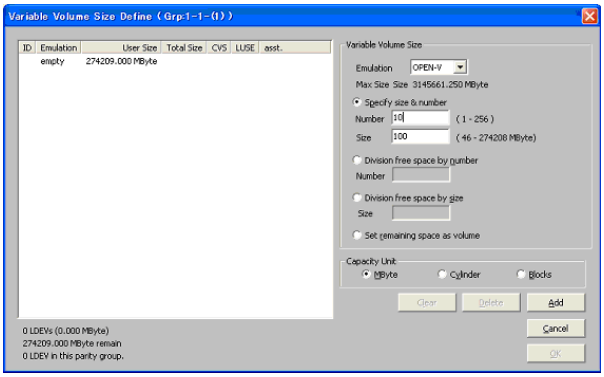
A message, "This operation initializes the logical device (CVS) that has been selected in the list box. Do you want to continue the operation?" is displayed. Select (CL) [Yes].

- When selecting [Initialize], go to Step (3).
- When selecting [Make Volume], go to Step (2-2).

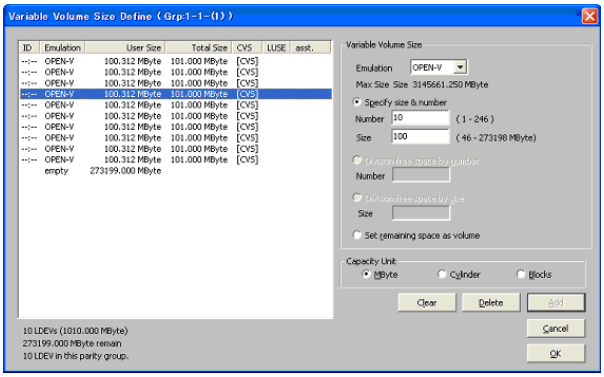
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(2-2) Definition of OPEN-V

Select (CL) Variable Volume Size and then select (CL) the [Add] in the 'Variable Volume Size Define' window.



The volume that has been registered is displayed in the list box. Only the added volume can be deleted.



- Variable Volume Size
  "Specify Size & number" : Defines specified number of specified user sizes.
  "Division free space by number : Defines a volume divided into specified number of portions. However, this can be selected only when all the volumes have been deleted.
  "Division free space by size : Defines volumes whose sizes are all specified ones. However, this can be selected only when all the volumes have been deleted.
  "Set remaining space as volume": Defines an empty space as a volume.
- Capacity Unit
  "MByte" : Makes data displayed or entered by the Mbyte.
  "Cylinder" : Makes data displayed or entered by the cylinder.
  "Blocks" : Makes data displayed or entered by the Blocks.
- LUSE : When the LUSE connection is made, a symbol "+" and a number of the volume at the top are displayed.
- asst. : When Path/LUSE/Pool-VOL/the journal volume is defined, "+" is displayed.

[Clear] : Deletes all the volumes.
[Delete] : Deletes a selected volume.
[Add] : Adds a volume.
[Cancel] : Invalidates the setting and makes the preceding window return. The routine is returned to Step (2).
[OK] : Fixes the setting and makes the preceding window return. The routine is returned to Step (2).

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(3)

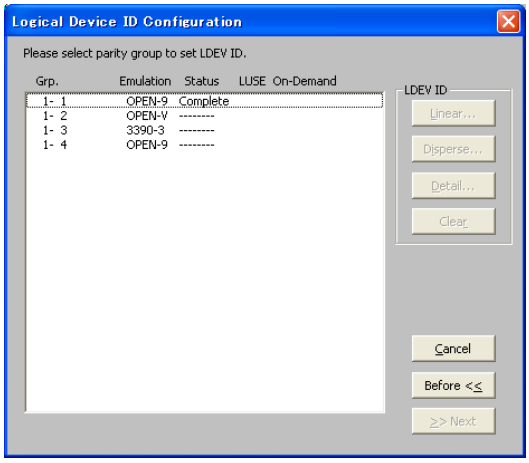
To return the volume(s) in other parity group(s) to the normal LDEV(s), repeat steps (2).

---

(4)

Press (CL) the [>>Next] button to change the screen to the “Logical Device ID Configuration” screen. Since the normal LDEV returned from the base volume is a newly defined LDEV, define the ID. Select (CL) the parity group having the LDEV(s) for which the ID(s) has not been set, then select (CL) [Linear...]. Two or more parity groups can be selected.

Grp*: The top parity group where RAID Concatenation is installed.

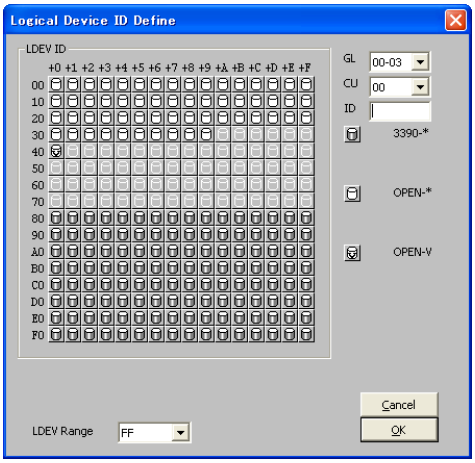


---

(5)

Select CU ID in the CU combo box.
Input LDEV ID you want to set in the ID edit box.
After setting, select (CL) [OK].

Note: The definition range (terminal) is decided with LDEV Range.
For example, if LEDV Range is defined as 7F, LDEV ID is assigned only within the range of 00 to 7F.

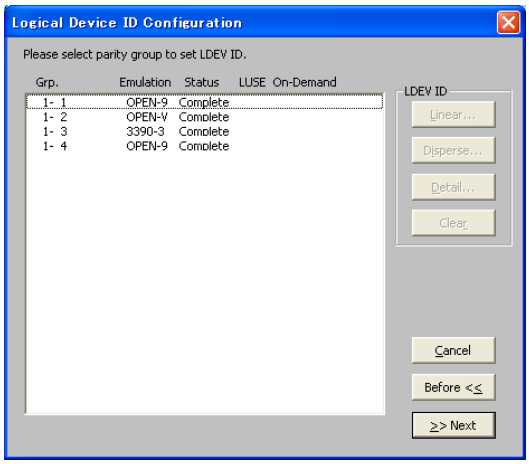


---

(6)

Status of the parity group whose setting is completed changes to “Complete”.
Press (CL) the [>>Next] button.

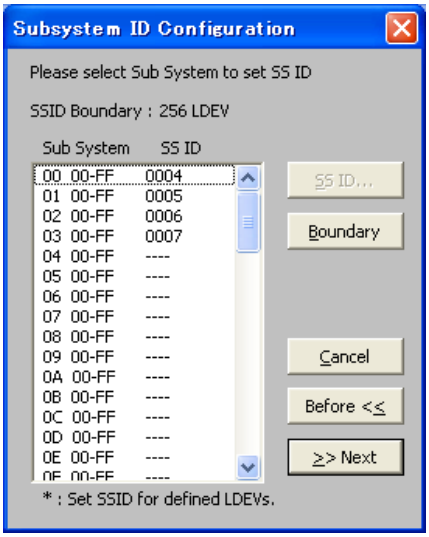
Grp*: The top parity group where RAID Concatenation is installed.



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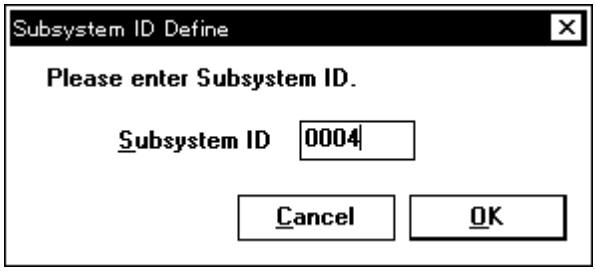
(7)

When it is necessary to set a new SS ID, define the SS ID. Select (CL) a subsystem whose SS ID is not defined, then select (CL) [SS ID...].



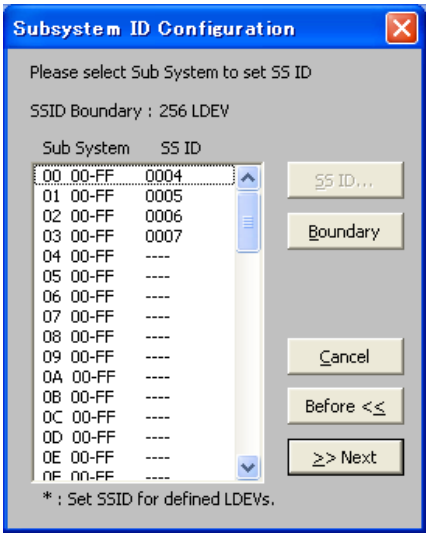
(8)

Enter an SS ID on the "Subsystem ID Define" screen and select (CL) [OK].



(9)

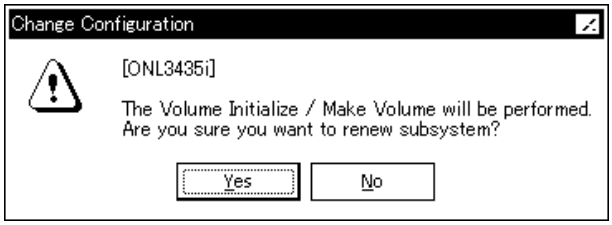
When the screen is returned to the "Subsystem ID Configuration" screen, the registered SS ID is displayed. Press (CL) the [>>Next] button to quit the definition screen.



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(10)

Select (CL) [Yes] in response to "The Volume Initialize/Make Volume will be performed. Are you sure you want to renew subsystem?".



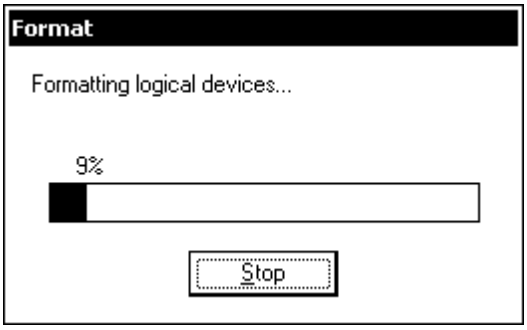
When [No] is selected (CL), returns to INST05-520 step 2.

Note: When System Option 503 is set, LDEV Format is not executed and the message "The newly installed LDEV has not been formatted. Please format the newly installed LDEV after the maintenance operation has completed." is displayed." is displayed.
If [OK] is selected (CL) for this message, it goes to Step (12).

---

(11)

"Formatting logical devices..." is displayed when LDEV Format is necessary.



---

(12)

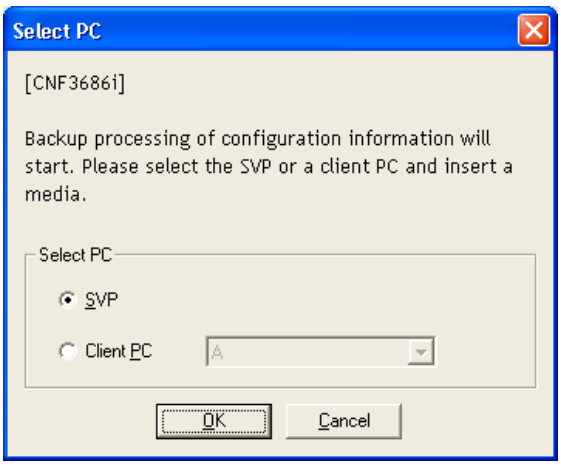
"Renewal process has completed. Please check the subsystem status." is displayed when recovery processing on all installed components is completed. Select (CL) [OK] in response to this message.



---

(13)

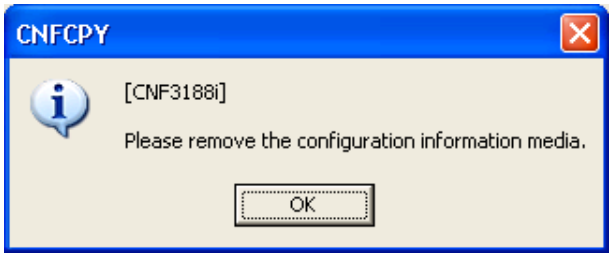
"Reading subsystem configuration data..." is displayed.
"Backup processing of configuration information will start. Please select the SVP or a client PC and insert a media." is displayed.
Insert the Config FD into FDD of selected PC, and select (CL) [OK].



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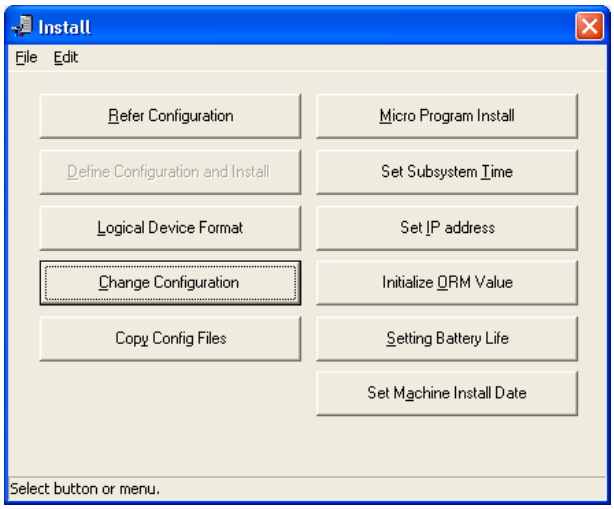
(14)

When this procedure is completed, the message “Please remove the configuration information media.” is displayed.
Remove the FD, select (CL) [OK].



(15)

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



(16)

Change the mode to View Mode.

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5.3.1.4 LUN Management

(1) Outline

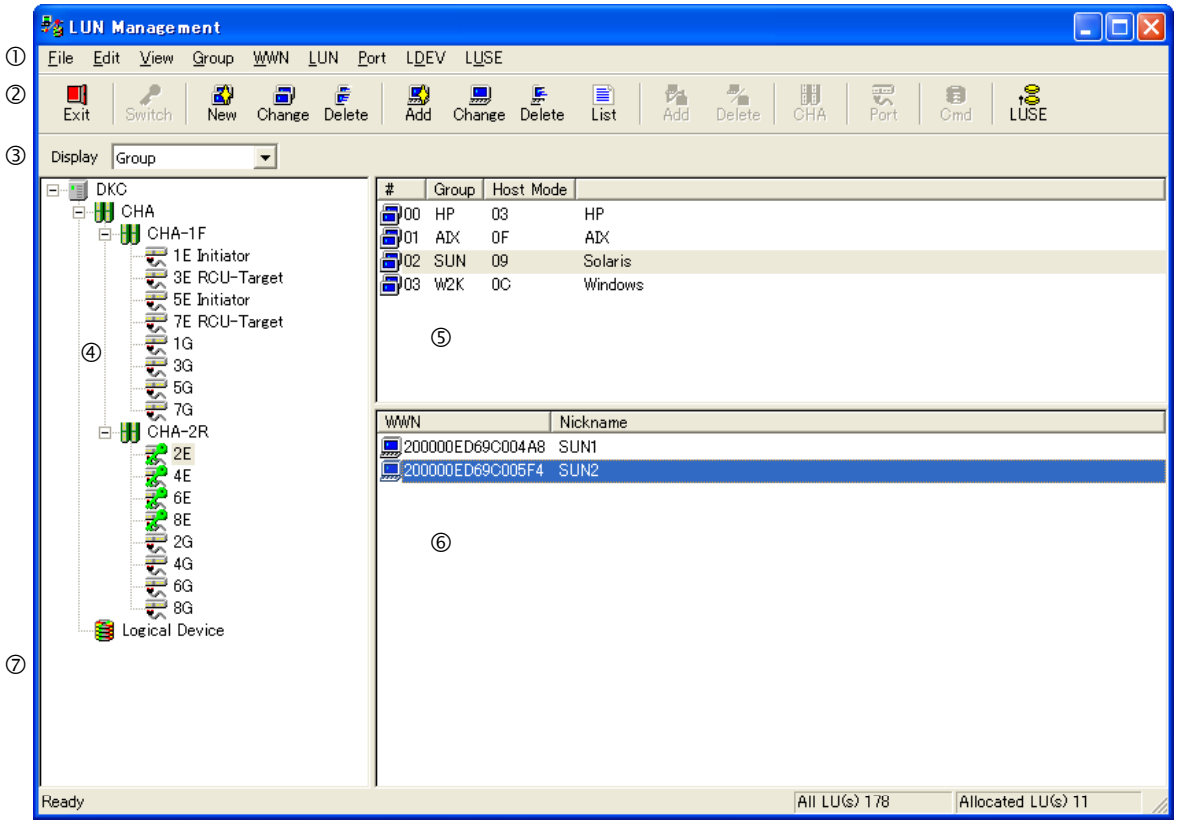


Figure 5.3.1.4-1-1 Main Window

The Main window consists of the following elements.

Table 5.3.1.4-1-1 Outline of Main Window Elements

No.	Item	Description
①	Menu	Menu of items operable by this function.
②	Tool bar	Part of the menu enabled to be operable by buttons.
③	Switch	When “Switch” displayed in the tree view is selected(Port), the status of the switch is selectable. The setting of the groups or LUN is selectable.
④	Tree	The structure that it is conscious of the hardware construction. (A port type is attached to a port.)
⑤	Upper right list	Displays the details of an item selected from the tree.
⑥	Lower right list	Displays the details of an item selected from the upper list, if any.
⑦	Status bar	Displays outlined function of each item on the menu and tool bar when the mouse is positioned on it. Also it displays the all of the LU figures and the LU figures with the pass definition.

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Note: If the error has occurred by the setting of LUN Management/LUSE that was started from Change Configuration, refer to “27. LUN Management/LUSE Error Recovery on SVP Change Configuration” (TRBL27-10) of the TROUBLE SHOOTING section.

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Menu items and their details are shown below.

Table 5.3.1.4-1-2 List of Menu Items

Menu	Submenu		Description	Tool bar
File	Exit		• Closes the window.	"Exit"
	Backup		• Creates a backup of the LUN configuration.	None
	Restore	Refer	Displays the stored backup of the LUN configuration in the window.	None
		Execute	Reflects the configuration displayed when the menu items [Restore] and [Refer] are selected.	None
		Cancel	Cancels the state induced by the selection of the menu items [Restore] and [Refer].	None
Edit	Copy		• Copies group / WWN / LUN to the clip board.	None
	Paste		• Pastes the information of the clip board.	None
View	Toolbar		• Makes the tool bar displayed or not.	None
	Status Bar		• Makes the status bar displayed or not.	None
	LDEV Size		• Changes the unit of LDEV size to be displayed to MB or GB.	None
	Host Mode Option		• Displays/does not display the Host Mode Option in the group list.	None
	LUN Status		• Displays/does not display the LUN status (including the Host reserve status) in the LUN list.	None
Group	New		• Creates a new group.	"New"
	Change		• Changes a group name or adds a member.	"Change"
	Delete		• Deletes a group.	"Delete"
WWN/ iSCSI (Note)	Add		• Adds a WWN/iSCSI Name and its nickname.	"Add"
	Change...		• Changes a WWN/iSCSI Name and its nickname.	"Change"
	Delete		• Deletes a WWN/iSCSI Name.	"Delete"
	Login List		The hosts identified by the following WWN/iSCSI Name login to the DKC. (Only WWN has the deletion function.)	"List"
LUN	Add		• Adds a LUN.	"Add"
	Delete		• Deletes a LUN.	"Delete"
	Command Device		• Changes command device and command device security information.	"Cmd"
	Force Reset		• Cancels the Host reserve status of the selected LUN. (When the [View] – [LUN Status] menu cannot be selected, this menu does not exist.)	None

(To be continued)

Note: When the iSCSI port is selected from the tree, it is changed to WWN → iSCSI.

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(Continued from the preceding page)

Menu	Submenu	Description	Tool bar
Port	Parameter	• Changes a port parameter.	 "Port"
	Security Switch	• Sets whether to use the security function or not.	 "Switch"
	CHA PCB Mode...	• Changes a CHA PCB Mode.	 "CHA"
LDEV	Command Device	• Changes command device and command device security information.	 "Cmd"
	Alternate	• Refers to LUN information from LDEV. Besides, it is possible to eliminate a LUN through the "Alternate" window started.	None
LUSE	LU Size Expansion	• Activates the LU Size Expansion window.	 "LUSE"

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Restriction item

1. LUN and Group Configuration executable check item

Table 5.3.1.4-1-3 System operating condition, and change of configuration

#	Item	Operation	Host I/O	E-Copy*1 I/O	E-Copy*1 Group	Pair Status
1	Group	Add	—	—	—	—
2		Delete	A	A	B	—
3	Group Name/ Target name/ Target alias	Modify	—	—	—	—
4	Host Mode	Modify	C	C	—	—
5	WWN/ iSCSI Name	Add	—	—	—	—
6		Delete	—	—	—	—
7		Modify	—	—	—	—
8	LUN	Add	—	—	—	—
9		Delete	D	D	—	E

A: When the specified group has LUN and the LUN is reserved by the host or executing the I/O, the specified group cannot be deleted.

B: When the specified group is registered to the Port Group, the specified group cannot be deleted.

C: When the specified group has LUN and the LUN is reserved by the host or executing the I/O, the specified Host Mode of the group cannot be modified.

D: When the specified group has LUN and the LUN is reserved by the host or executing the I/O, the specified LUN cannot be deleted.

E: When the pair volume of HORC/HOMRCF(including the reserve volume of HOMRCF) has no LUN by deleting LUN, the specified LUN cannot be deleted.

*1: E-COPY: Extended Copy Command

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2. Fibre Channel High Performance Mode executable check item

Table 5.3.1.4-1-4 System operating condition, and change of configuration

#	Item	Operation	Host I/O	E-Copy*1 I/O	Remaining pass MCU-RCU	Remaining Copy Volume	AL-PA	Topology	Channel Speed	I/T
1	High Performance Mode	To Standard	A	A	B	C	—	—	—	—
2		To High Speed	A	A	B	C	D	E	F	G

A: When the LUN in the specified CHA is reserved by the host or executing the I/O, the mode cannot be modified.

B: When the path between MCU and RCU of the HORC is formed with the port of the CHT, the mode cannot be modified.

C: When the copy volume of RCU of the HORC exists in the CHT, the mode cannot be modified.

D: When the AL-PA overlaps at the High Speed mode unit, the mode cannot be modified to the High Speed mode.

E: When the topology is mixed at the High Speed mode unit or is set as 'Point to Point', the mode cannot be modified to the High Speed mode.

F: When the channel speed is mixed at the High Speed mode unit, the mode cannot be modified to the High Speed mode.

G: When the Initiator/RCU-Target/Target is mixed at the High Speed mode unit, the mode cannot be modified to the High Speed mode.

*1: E-COPY: Extended Copy Command

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3. Port parameter check item

Table 5.3.1.4-1-5 System operating condition, and change of configuration

#	Item	Operation	Host I/O	E-Copy*1 I/O	E-Copy*1 Group	Remaining pass MCU-RCU	Remaining Copy Volume	Channel Speed
1	AL-PA	Modify	A	A	—	B	C	—
2	Topology	Modify	A	A	—	B	C	D
3	Channel Speed	Modify	A	A	—	—	—	—
4	Security Switch	Modify	—	—	E	—	—	—

A: When the LUN in the specified port is reserved by the host or is executing the I/O, the parameter cannot be modified.

B: When the path between MCU and RCU of the HORC is formed with the port of the CHT, the parameter cannot be modified.

C: When the copy volume of RCU of the HORC exists in the port, the parameter cannot be modified.

D: When the CHT which has the specified port is in High Speed mode, topology cannot be set to the 'Point to Point'*2.

E: When the group which is in the specified port is in the Port Group, the security switch cannot be set to 'Off'.

*1: E-COPY: Extended Copy Command

*2: The host command through one port is distributed to the plural ports in High Speed mode. If 'Point to Point' is set, this distribution process cannot be executed.

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4. Command device check item

Table 5.3.1.4-1-6 System operating condition, and change of configuration

#	Item	Operation	Host I/O	E-Copy*1 I/O	Pair Status	Guard Status
1	Cmd. Dev.	Set	A	A	B	D
2		Clear	C	—	—	—
3	Cmd. Dev. Sec.	Set	C	—	—	—
4		Clear	C	—	—	—

A: When the LUN to the specified volume is reserved by the host or is executing the I/O, the Command Device cannot be set.

B: When the specified volume is HORC/HOMRCF volume, the Command Device cannot be set.

C: R/W has to be stopped when this parameter is modified.

D: A volume with an attribute other than R/W, or VMA setting volume cannot be defined as a command device

*1: E-COPY: Extended Copy Command

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(2) Setting Security Switch

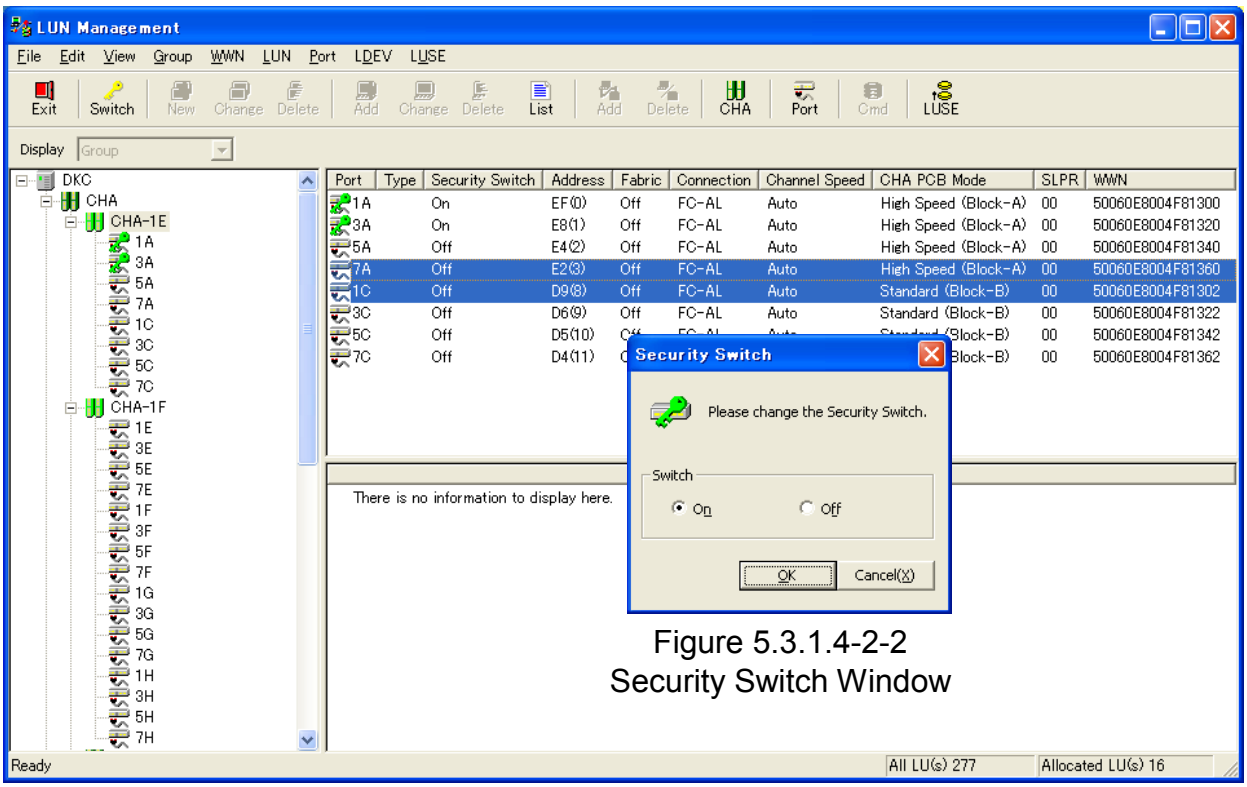


Figure 5.3.1.4-2-2
Security Switch Window

Figure 5.3.1.4-2-1 Main Window

When each CHA location in the tree view is selected (CL), installed ports information supported by this function are displayed in the upper right list.

Setting of a Security Switch is made in the following procedure.

① Select (CL) a port for which you want to set the security switch from the upper right list.
② Select (DR) [Security Switch...] from the [Port] menu.
③ Since the Security Switch window (Figure 5.3.1.4-2-2) is displayed, check On or Off box and select (CL) the [OK] button.
④ The status of the security switch that has been set is reflected in the Main window (Figure 5.3.1.4-2-1).

Details of the Main window (Figure 5.3.1.4-2-1) and the Security Switch window (Figure 5.3.1.4-2-2) are shown below.

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Table 5.3.1.4-2-1 Details and Operation of Main Window (Switch)

Item	Description
Upper list	Displays statuses of the security switches that have been set.
	Provided with a sorting function.
Lower list	Displays nothing.
“Port – Security Switch...” menu	Selectable when an item has been selected from the upper list. Displays the Security Switch window.
Pop-up menu	Enables a clicking of the right mouse button to select “Security Switch” provided that an item has been selected from the upper list.

Table 5.3.1.4-2-2 Details and Operation of Security Switch Window

Item	Description
On/Off radio button	Displays a status setting of the Security Switch that has been selected in the Main window.(If On and Off of the switch have been selected in the Main window, the radio buttons of ON and OFF are not selected in this window, and [OK] button cannot be selected.)
OK button	Closes the window after reflecting the setting that has been made.
	Not selectable when neither of the statuses has been selected.
Cancel button	Closes the window without reflecting the setting that has been made.

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(3) Setting Group

(3-1) Adding Group

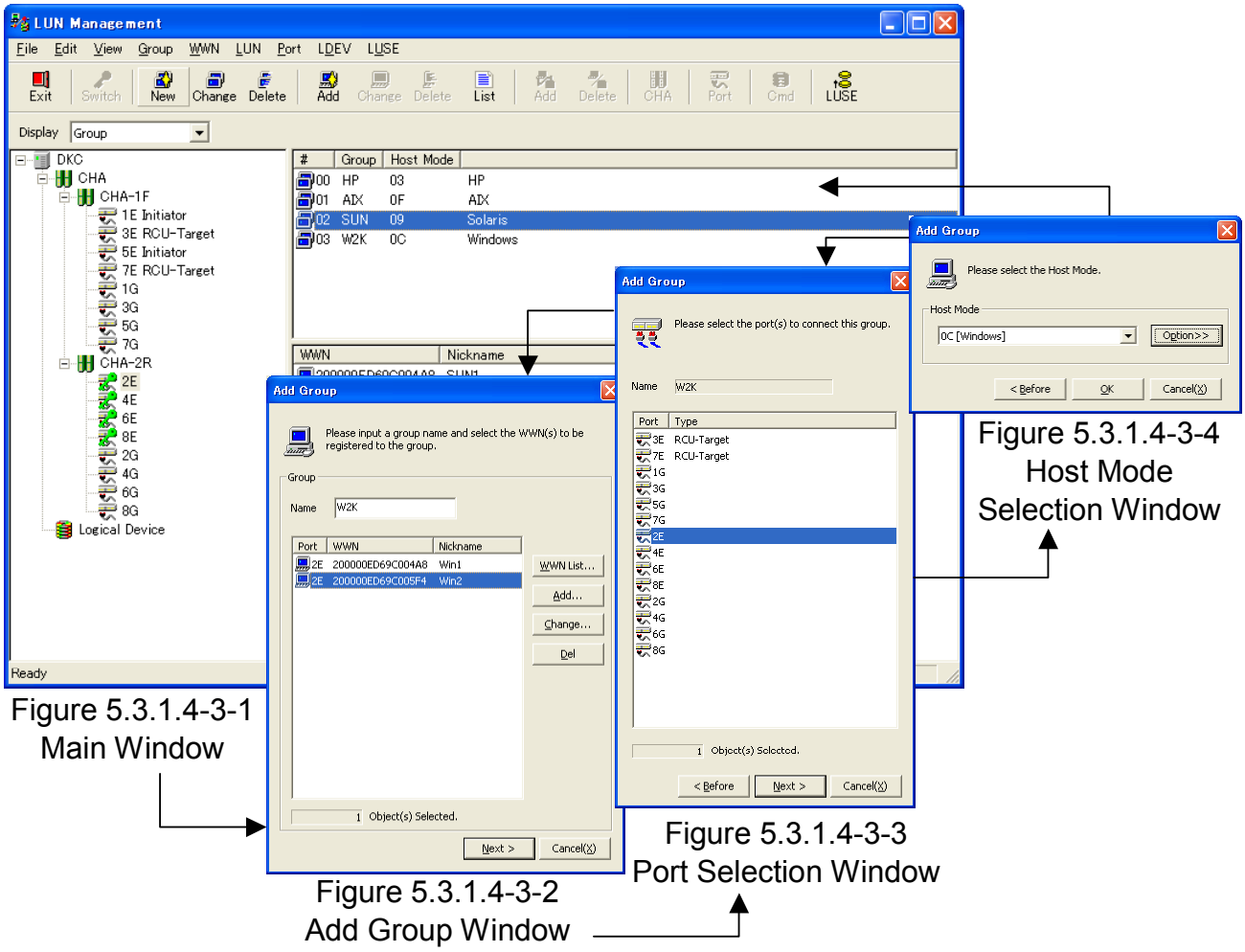


Figure 5.3.1.4-3-1 Main Window

Figure 5.3.1.4-3-2 Add Group Window

Figure 5.3.1.4-3-3 Port Selection Window

Figure 5.3.1.4-3-4 Host Mode Selection Window

When “Port” in the tree view is selected, “Group” is set on the Display. Displays the group setting in the port that has been selected in the upper right list.

Addition of a group is done in the following procedure.

① Select (DR) [New...] from the [Group] menu in the Main window (Figure 5.3.1.4-3-1).

② Since the Add Group window (Figure 5.3.1.4-3-2) is displayed, enter a group name, register a WWN, and select (CL) the [Next>] button.

③ Since the Port Selection window (Figure 5.3.1.4-3-3) is displayed, select (CL) a port for connecting a new group and select (CL) the [Next>] button.

④ Set a host mode for the new group in the Host Mode Selection window (Figure 5.3.1.4-3-4). If you need to select an Option, see INST05-1000 and set the bit, and then select (CL) [OK].

⑤ Information on the group that has been newly registered is reflected in the Main window (Figure 5.3.1.4-3-1).

Details of the Main window (Figure 5.3.1.4-3-1) and the other windows are shown on the following page.

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Table 5.3.1.4-3-1 Details and Operation of Main Window (Group)

Item	Description
Upper list	Displays groups connected with the port that has been selected from the tree.
	Provided with a sorting function.
"Group – New..." menu	Selectable when "Port" has been selected from the tree.
	Displays the Add Group window.
Pop-up menu	Makes the "New" menu selectable when the right mouse button is clicked in the upper list.

Table 5.3.1.4-3-2 Details and Operation of Add Group Window

Item	Description
Name	Enter a name of a group to be added in this box (using up to 32 characters).
List	Displays a list of WWNs to be registered.
Add button	Activates a window for manually registering a WWN. Makes the registration to be reflected on the list after it is completed.
WWN List button	Selects a WWN wanted to be registered from the Login WWN List. Makes the registration to be reflected on the list after it is completed.
Change button	Changes a selected WWN and its nickname. (Only one WWN can be selected.)
Delete button	Deletes a selected WWN from the list.
Next button	Closes the window and activates a window for selecting a port to which the group concerned is to be connected.
Cancel button	Returns the window to the main window without doing anything.

Table 5.3.1.4-3-3 Details and Operation of Port Selection Window

Item	Description
Name	Displays the group name that has been entered in the preceding window.
List	To be used for selecting a port to be connected.
Before button	Returns you to the preceding window.
Next button	Closes the window and activates a window for selecting a host mode for the group concerned.
Cancel button	Returns you to the Main window without doing anything.

Table 5.3.1.4-3-4 Details and Operation of Host Mode Window

Item	Description
Host Mode	Displays host modes that can be set.
Before button	Returns you to the preceding window.
OK button	Closes the window after registering the group and returns you to the Main window.
Cancel button	Returns you to the Main window without doing anything.
Option button	When this button is set to On, setting of the options from 0 to 31 becomes possible. When the Host Mode is changed, the setting of the option is cleared.

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(3-2) Changing Group

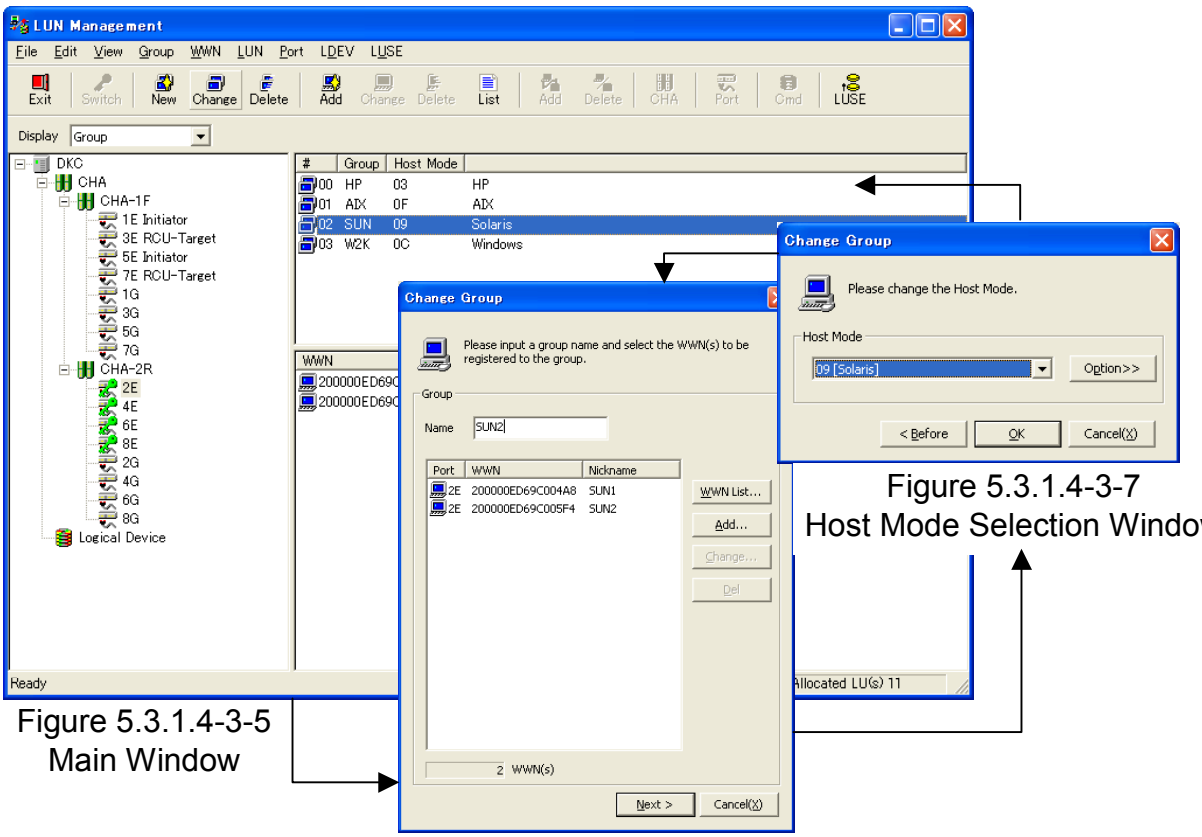


Figure 5.3.1.4-3-5
Main Window

Figure 5.3.1.4-3-7
Host Mode Selection Window

Figure 5.3.1.4-3-6 Change Group Window

When “Port” in the tree view is selected, “Group” is set on the Display. Displays the group setting in the port that has been selected in the upper right list. In the lower right list, details of a group that has been selected from the upper right list are displayed.

A change of a group is made in the following procedure.

① Select (CL) one group you want to change from the upper right list.
② Select (DR) [Change...] from the [Group] menu in the Main window (Figure 5.3.1.4-3-5).
③ Since the Change Group window (Figure 5.3.1.4-3-6) is displayed, change the group name and select (CL) the [Next>] button.
④ Set a host mode for the group to be changed in the Host Mode Selection window (Figure 5.3.1.4-3-7). If you need to select an Option, see INST05-1000 and set the bit, and then select (CL) [OK].
⑤ Information on the group that has been changed is reflected in the Main window (Figure 5.3.1.4-3-5).

In case of changing the group against the port of the Security Switch off, the Change Group window (Figure 5.3.1.4-3-6) is not displayed.

Details of the Main window (Figure 5.3.1.4-3-5) and the other windows are shown on the following page.

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Table 5.3.1.4-3-5 Details and Operation of Main Window (Group)

Item	Description
Upper list	Displays groups connected with the port that has been selected from the tree.
	Provided with a sorting function.
Lower list	Displays details of a group that has been selected from the upper list.(Displays nothing when no item to be selected exists in the upper list or more than one item has been selected.)
	Provided with a sorting function.
“Group – Change...” menu	Selectable when a single group has been selected from the upper list.
	Displays the Change Group window.
Pop-up menu	Makes the “Change” menu selectable when a single group is selected from the upper list and the right mouse button is clicked there.

Table 5.3.1.4-3-6 Details and Operation of Change Group Window

Item	Description
Name	Enter a name of a group to be added in this box (using up to 32 characters).
List	Displays a list of WWNs to be registered.
Add button	Activates a window for manually registering a WWN. Makes the registration to be reflected on the list after it is completed.
WWN List button	Selects a WWN wanted to be registered from the Login WWN List. Makes the registration to be reflected on the list after it is completed.
Change button	Changes a selected WWN and its nickname. (Only one WWN can be selected.)
Delete button	Deletes a selected WWN from the list.
Next button	Closes the window and activates a window for selecting a port to which the group concerned is to be connected.
Cancel button	Returns the window to the main window without doing anything.

Table 5.3.1.4-3-7 Details and Operation of Host Mode Selection Window

Item	Description
Host Mode	Displays host modes that can be set.
Before button	Returns you to the preceding window.
OK button	Closes the window after changing the group and returns you to the Main window.
Cancel button	Returns you to the Main window without doing anything.
Option button	When this button is set to On, setting of the options from 0 to 31 becomes possible. When the Host Mode is changed, the setting of the option is cleared.

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(3-3) Deleting Group

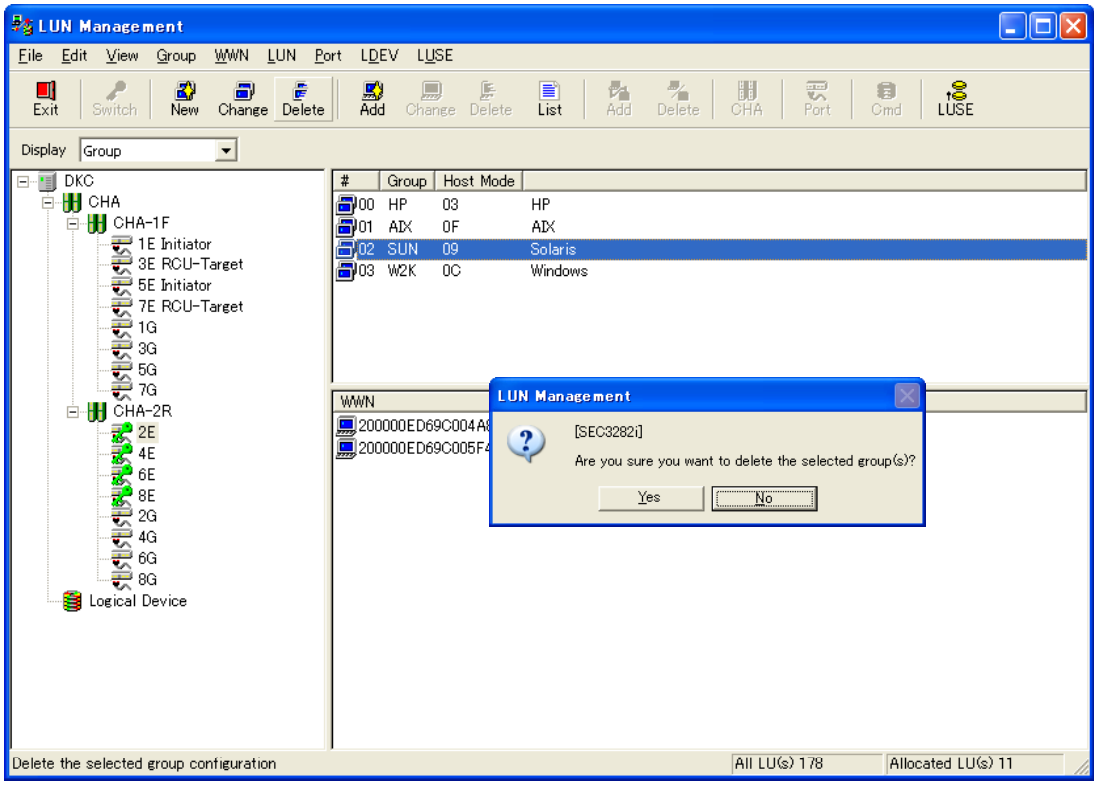


Figure 5.3.1.4-3-8 Main Window

When “Port” in the tree view is selected, “Group” is set on the Display. Displays the group setting in the port that has been selected in the upper right list. In the lower right list, details of a group that has been selected from the upper right list are displayed.

Deletion of a group is done in the following procedure.

① Select (CL) a group you want to delete from the upper right list.
② Select (DR) [Delete] from the [Group] menu in the Main window (Figure 5.3.1.4-3-8).
③ Since a message asking for a confirmation is displayed, select (CL) the [Yes] button.
④ Information on the group that has been selected from the upper right list is deleted. Moreover, the details of the group information (WWN/LUN) is also deleted.

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Table 5.3.1.4-3-8 Details and Operation of Main Window (Group)

Item	Description
Upper list	Displays groups connected with the port that has been selected from the tree.
	Provided with a sorting function.
Lower list	Displays details of a group that has been selected from the upper list.(Displays nothing when no item to be selected exists in the upper list or more than one item has been selected.)
	Provided with a sorting function.
“Group – Delete” tool bar	Selectable when a group has been selected from the upper list.
	Displays a message asking for a confirmation.
Pop-up menu	Displays “Delete” menu when the right mouse button is clicked on the item in the upper list.

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(3-4) Set and Change Host Mode Options

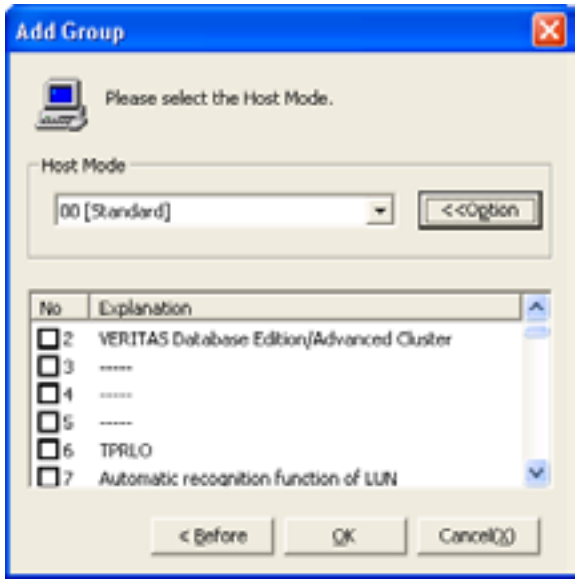


Figure 5.3.1.4-3-9
Host Mode Option window

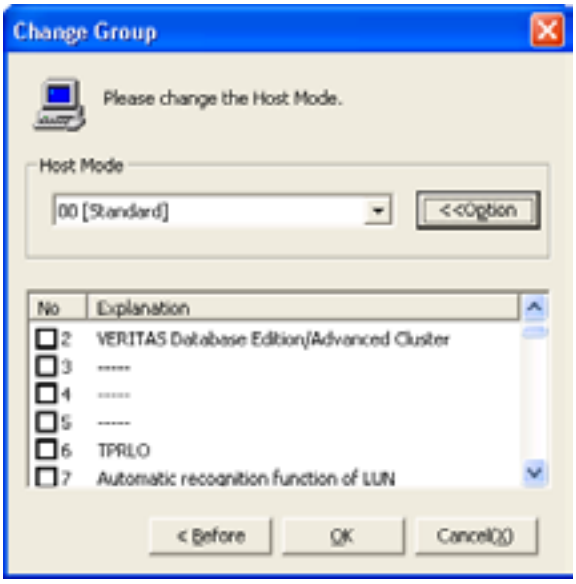


Figure 5.3.1.4-3-10
Host Mode Option window

When adding a new group, set options in the window shown in Figure 5.3.1.4-3-9. When changing a group, set options in the window shown in Figure 5.3.1.4-3-10.
Do not set the check mark to the numbers other than the host mode option in Table 5.3.1.4-3-9.
Also, the items other than the Table 5.3.1.4-3-9 are displayed with “----”.

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Table 5.3.1.4-3-9 Names and details of bits for Host Mode Options

Host mode option	Feature	Scope	Host mode	Criteria for Application (*1)	Host offline
2	For Veritas VCS	Apply this when Veritas DBE/AC for RAC and VCS4.0 or later (IO Fencing feature) are used.	Common	Mandatory	None
6	For Windows TPRLO	The Emulex FC adapter is used with SCSI Miniport driver on windows. And the driver parameter is set that TPRLO=2.	0C,2C	Mandatory	None
7	For automatic device discovery when adding LUN	Apply this for SUN StorEdge SAN Foundation Software Version 4.2 or later. It makes the host to recognize the increase and decrease of the devices automatically when a SUN generic HBA is connected.	00,09	Option	None
12	For deleting Ghost LUN when HP-UX is connected	Apply this when you want to prevent unmounted devices from creating device files in case where HP-UX is connected.	03,08 (*2)	Option (*4)	None
13	For reporting SIM when a link failure occurs	It reports SIM when a link failure occurs. However, do not set this unless instructed.	Common	Cannot be set (*3)	None
14	For TruCluster in the TrueCopy configuration	Apply this when setting clusters for P-VOL and S-VOL each in case where TrueCopy is used.	07	Mandatory	None
15	For HACMP	Apply this when HACMP are used. HACMP5.1 Version 5.1.0.4 or later/ HACMP4.5 Version 4.5.0.13 or later/ HACMP5.2 or later.	0F	Mandatory	None
19	For VMWare	Apply this when VMware are used.	0A,0C (*5)	Mandatory	None
22	For Veritas Cluster Server	Apply this when Veritas Cluster Server are used.	0F	Mandatory	None
23	REC command support	It is applied when shortening the host recovery time at the time of the data transfer failure.	Common	Option	None
24	2TB or Larger LUN Support	1. Use 2TB or Larger LU. 2. Use the following OS version. AIX 5.2 TL08, AIX 5.3 TL04 or later Windows 2003 SP1 or later RedHat Linux AS4 update1 or later	Common	Mandatory	Required
27	iSCSI Delayed ACK improvement	Apply this when iSCSI are used.	Common	Mandatory	None

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*1: Set the option when the configuration satisfies the description in Scope.

*2: In the H12000 series, it is enabled by Host mode 08. In other models, it is enabled only by Host mode 03.

*3: Set this only when you are requested to do so.

*4: The setting is mandatory for iSCSI.

*5: In the H12000 series, it is enabled by Host mode 0C. In other models, it is enabled only by Host mode 0A.

Note: You do not need to turn on or off the power supply of the disk subsystem when you change host mode options.

Note: To obtain the latest detailed information including minimal microcode levels and any restrictions associated with these modes please acquire the latest copy of the RAID500 Public Mode List from your support organization's database or contact the support organization directly.

(3-5) Adding Target name/Target Alias

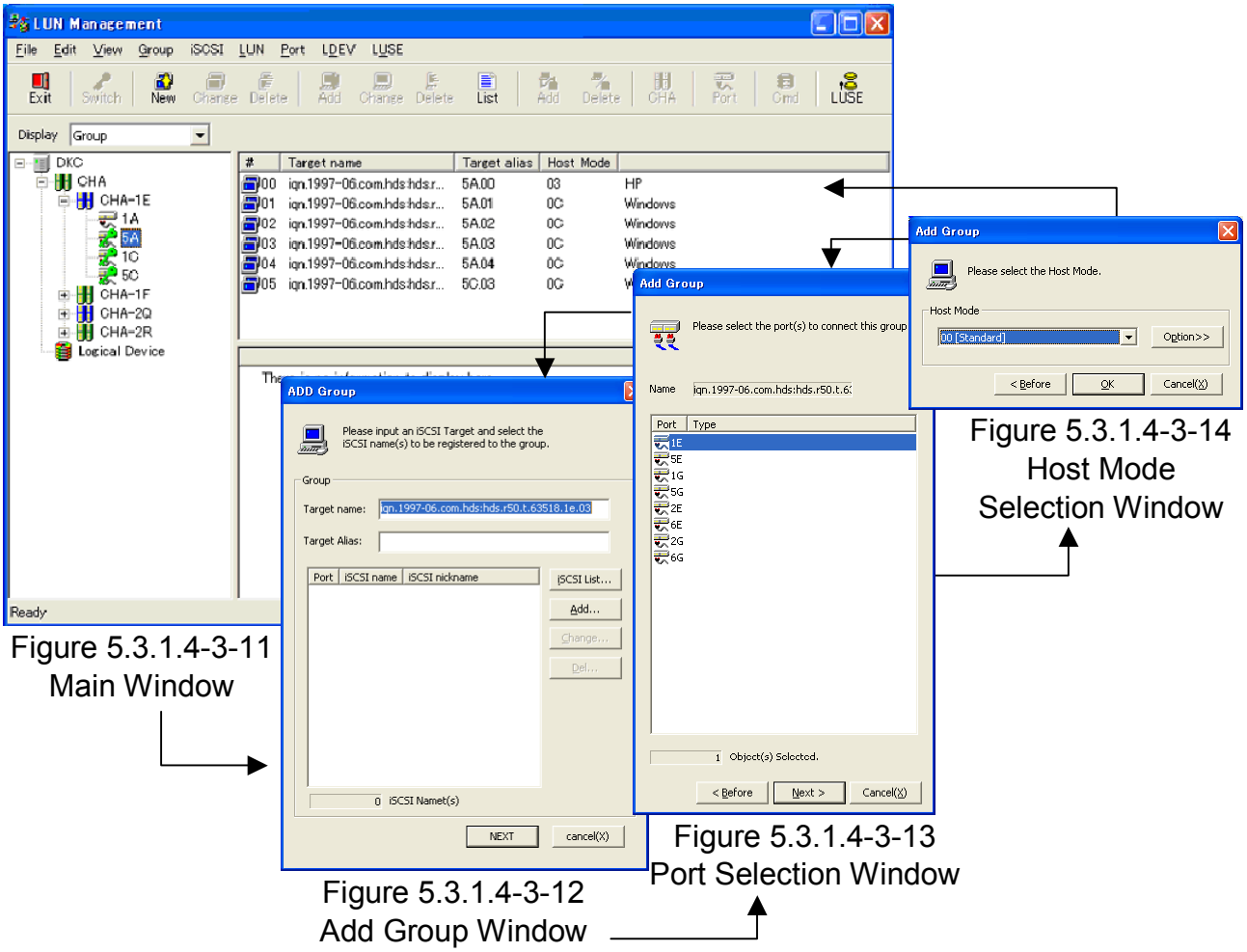


Figure 5.3.1.4-3-11
Main Window

Figure 5.3.1.4-3-12
Add Group Window

Figure 5.3.1.4-3-13
Port Selection Window

Figure 5.3.1.4-3-14
Host Mode
Selection Window

When iSCSI Port in the tree view is selected, “Group” is set on the Display. Displays the Target group setting in the port that has been selected in the upper right list.

Addition of a group is done in the following procedure.

① Select (DR) [New...] from the [Group] menu in the Main window (Figure 5.3.1.4-3-11).
② Since the Add Group window (Figure 5.3.1.4-3-12) is displayed, register a Target name, Target Alias, and select (CL) the [NEXT] button.
③ Since the Port Selection window (Figure 5.3.1.4-3-13) is displayed, select (CL) a port for connecting a new group and select (CL) the [Next>] button.
④ Set a host mode for the new group in the Host Mode Selection window (Figure 5.3.1.4-3-14). If you need to select an Option, see INST05-1000 and set the bit, and then select (CL) [OK].
⑤ Information on the group that has been newly registered is reflected in the Main window (Figure 5.3.1.4-3-11).

Details of the Main window (Figure 5.3.1.4-3-11) and the other windows are shown on the following page.

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Table 5.3.1.4-3-11 Details and Operation of Main Window (Group)

Item	Description
Upper list	Displays groups connected with the port that has been selected from the tree.
	Provided with a sorting function.
"Group – New..." menu	Selectable when "Port" has been selected from the tree.
	Displays the Add Group window.
Pop-up menu	Makes the "New" menu selectable when the right mouse button is clicked in the upper list.

Table 5.3.1.4-3-12 Details and Operation of Add Group Window

Item	Description
Target name	Enters a Target name. (eui. form: 20 characters iqn. form: Maximum of 232 characters) Displays a unique character string from subsystem serial number and the port number in iqn. form as a default name. The default name may not be displayed when 64 Target names are registered in the same port or the subsystem serial number is illegal.
Target Alias	Enters a Target Alias. (Maximum of 32 characters)
List	Displays a list of iSCSI Name to be registered.
iSCSI List button	Selects a iSCSI Name wanted to be registered from the Login iSCSI Name List. Makes the registration to be reflected on the list after it is completed.
Add button	Activates a window for manually registering a WWN. Makes the registration to be reflected on the list after it is completed.
Change button	Changes a selected iSCSI Name and its nickname. (Only one iSCSI Name can be selected.)
Delete button	Deletes a selected iSCSI Name from the list.
NEXT button	Closes the window and activates a window for selecting a port to which the group concerned is to be connected.
cancel button	Returns the window to the main window without doing anything.

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Table 5.3.1.4-3-13 Details and Operation of Port Selection Window

Item	Description
Name	Displays the group name that has been entered in the preceding window.
List	To be used for selecting a port to be connected.
Before button	Returns you to the preceding window.
Next button	Closes the window and activates a window for selecting a host mode for the group concerned.
Cancel button	Returns you to the Main window without doing anything.

Table 5.3.1.4-3-14 Details and Operation of Host Mode Window

Item	Description
Host Mode	Displays host modes that can be set.
Option button	When this button is set to On, setting of the options from 0 to 31 becomes possible. When the Host Mode is changed, the setting of the option is cleared.
Before button	Returns you to the preceding window.
OK button	Closes the window after registering the group and returns you to the Main window.
Cancel button	Returns you to the Main window without doing anything.

(3-6) Changing Target name/Target Alias

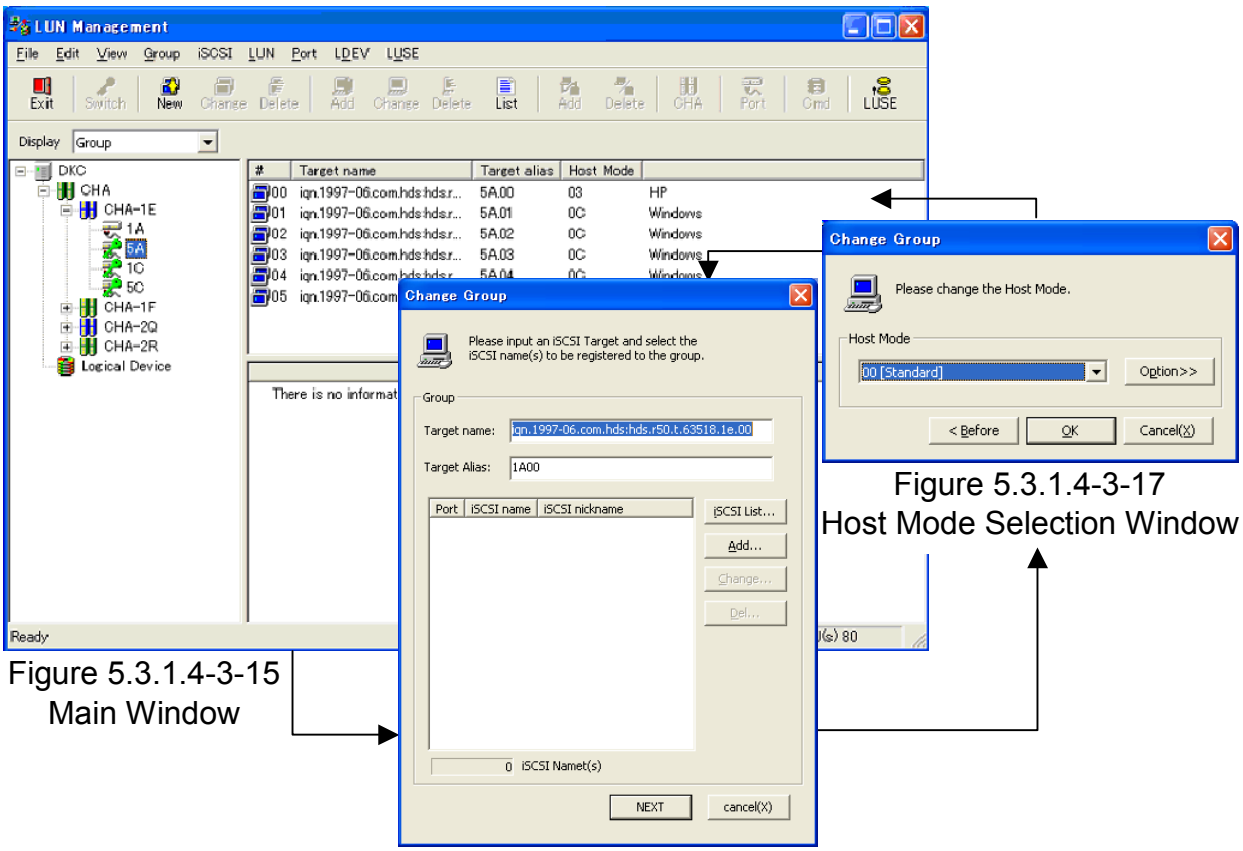


Figure 5.3.1.4-3-15
Main Window

Figure 5.3.1.4-3-16 Change Group Window

Figure 5.3.1.4-3-17
Host Mode Selection Window

When iSCSI Port in the tree view is selected, “Group” is set on the Display. Displays the group setting in the port that has been selected in the upper right list. In the lower right list, details of a group that has been selected from the upper right list are displayed.

A change of a Target name/Target Alias is made in the following procedure.

① Select (CL) one Target name you want to change from the upper right list.
② Select (DR) [Change...] from the [Group] menu in the Main window (Figure 5.3.1.4-3-15).
③ Since the Change Group window (Figure 5.3.1.4-3-16) is displayed, change the Target name/Target Alias and iSCSI Name select (CL) the [NEXT>] button.
④ Set a host mode for the group to be changed in the Host Mode Selection window (Figure 5.3.1.4-3-17). If you need to select an Option, see INST05-1000 and set the bit, and then select (CL) [OK].
⑤ Information on the group that has been changed is reflected in the Main window (Figure 5.3.1.4-3-15).

In case of changing the group against the port of the Security Switch off, the Change Group window (Figure 5.3.1.4-3-16) is not displayed.

Details of the Main window (Figure 5.3.1.4-3-15) and the other windows are shown on the following page.

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Table 5.3.1.4-3-15 Details and Operation of Main Window (Group)

Item	Description
Upper list	Displays groups connected with the port that has been selected from the tree.
	Provided with a sorting function.
Lower list	Displays details of a group that has been selected from the upper list.(Displays nothing when no item to be selected exists in the upper list or more than one item has been selected.)
	Provided with a sorting function.
“Group – Change...” menu	Selectable when a single group has been selected from the upper list.
	Displays the Change Group window.
Pop-up menu	Makes the “Change” menu selectable when a single group is selected from the upper list and the right mouse button is clicked there.

Table 5.3.1.4-3-16 Details and Operation of Change Target name/Target Alias Window

Item	Description
Target name	Enters a Target name. (eui. form: 20 characters iqn. form: Maximum of 232 characters)
Target Alias	Enters a Target Alias. (Maximum of 32 characters)
List	Displays a list of iSCSI Name to be registered.
iSCSI List button	Selects a iSCSI Name wanted to be registered from the Login iSCSI Name List. Makes the registration to be reflected on the list after it is completed.
Add button	Activates a window for manually registering a WWN. Makes the registration to be reflected on the list after it is completed.
Change button	Changes a selected iSCSI Name and its nickname. (Only one iSCSI Name can be selected.)
Delete button	Deletes a selected iSCSI Name from the list.
NEXT button	Closes the window and activates a window for selecting a port to which the group concerned is to be connected.
cancel button	Returns the window to the main window without doing anything.

Table 5.3.1.4-3-17 Details and Operation of Host Mode Selection Window

Item	Description
Host Mode	Displays host modes that can be set.
Option button	When this button is set to On, setting of the options from 0 to 31 becomes possible. When the Host Mode is changed, the setting of the option is cleared.
Before button	Returns you to the preceding window.
OK button	Closes the window after changing the group and returns you to the Main window.
Cancel button	Returns you to the Main window without doing anything.

(3-7) Deleting Target name

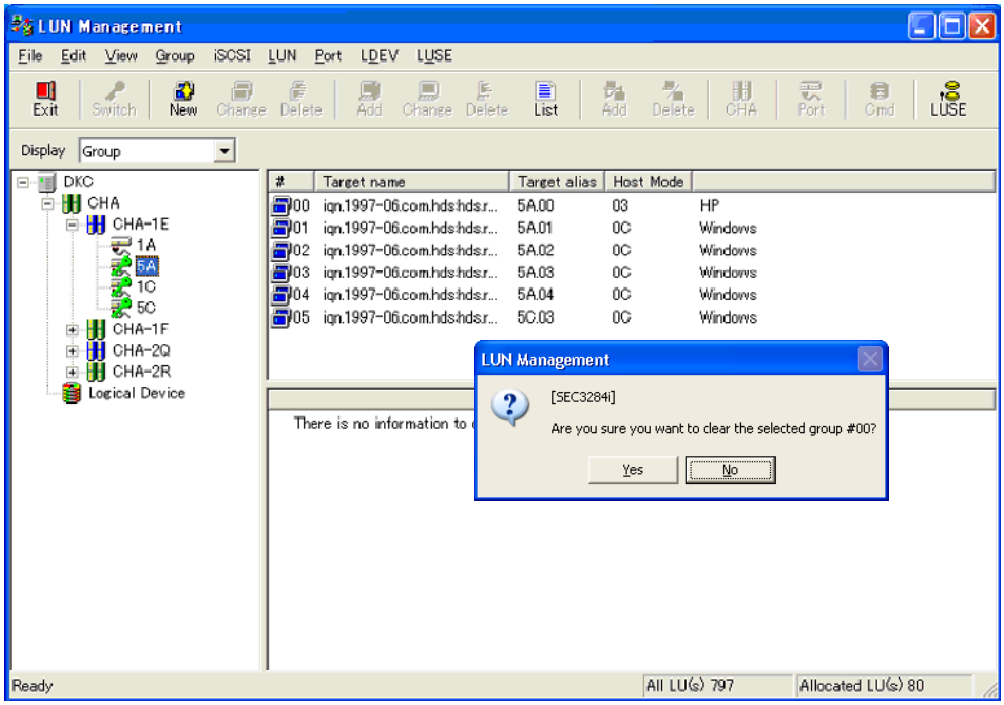


Figure 5.3.1.4-3-18 Main Window

When iSCSI Port in the tree view is selected, “Group” is set on the Display. Displays the Target name setting in the port that has been selected in the upper right list. In the lower right list, details of a Target name that has been selected from the upper right list are displayed.

Deletion of a Target name is done in the following procedure.

① Select (CL) a Target name you want to delete from the upper right list.
② Select (DR) [Delete] from the [Group] menu in the Main window (Figure 5.3.1.4-3-18).
③ Since a message asking for a confirmation is displayed, select (CL) the [Yes] button.
④ Information on the Target name that has been selected from the upper right list is deleted. Moreover, the details of the Target Alias and Target name information (iSCSI Name/LUN) is also deleted.

Details of the Main window (Figure 5.3.1.4-3-18) is shown on the following page.

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Table 5.3.1.4-3-18 Details and Operation of Main Window (Group)

Item	Description
Upper list	Displays groups connected with the port that has been selected from the tree.
	Provided with a sorting function.
Lower list	Displays details of a group that has been selected from the upper list.(Displays nothing when no item to be selected exists in the upper list or more than one item has been selected.)
	Provided with a sorting function.
“Group – Delete” tool bar	Selectable when a group has been selected from the upper list.
	Displays a message asking for a confirmation.
Pop-up menu	Displays “Delete” menu when the right mouse button is clicked on the item in the upper list.

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(4) Setting WWN

(4-1) Adding WWN

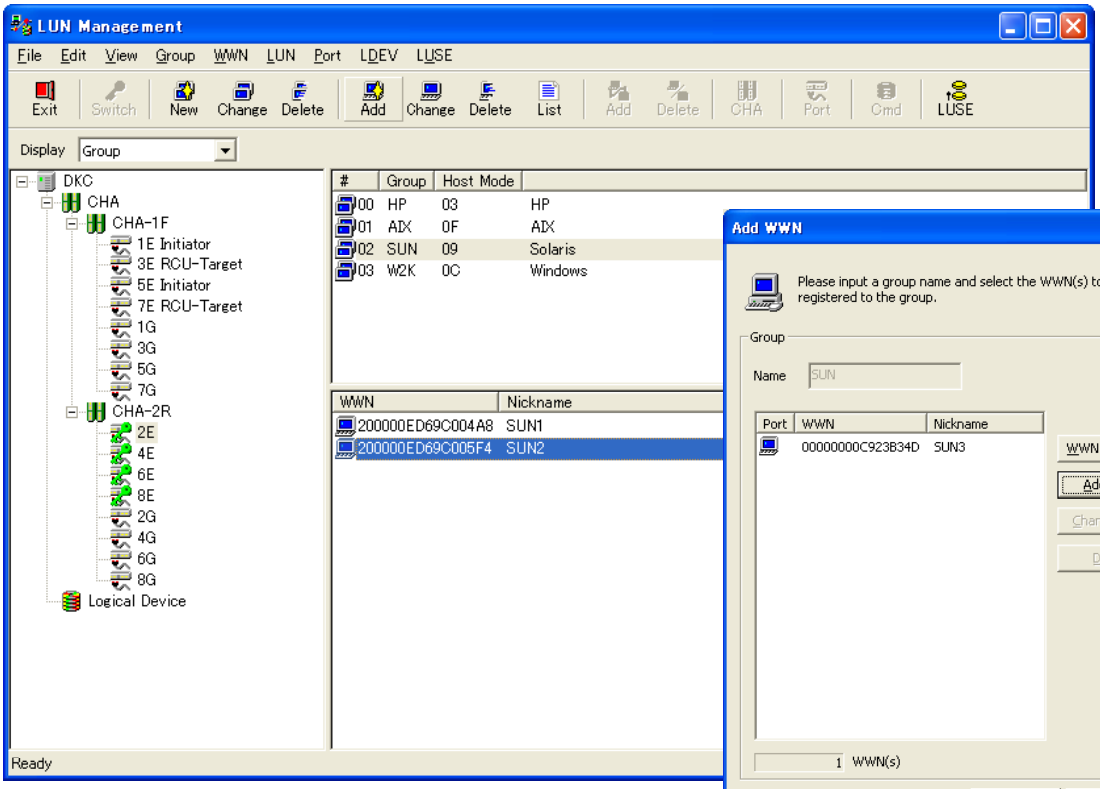


Figure 5.3.1.4-4-1 Main window

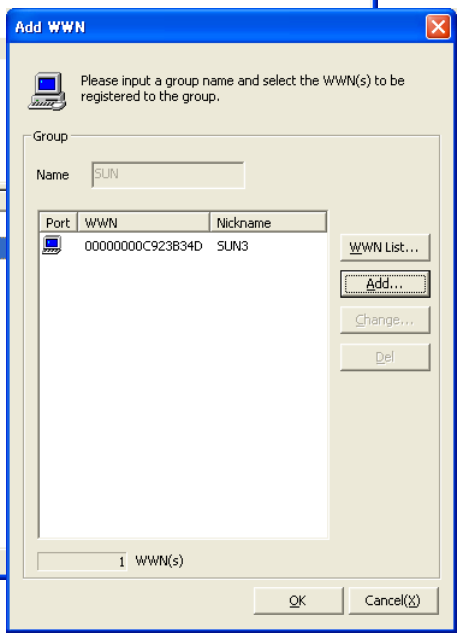


Figure 5.3.1.4-4-2
Add WWN Window

When “Port” in the tree view is selected, “Group” is set on the Display. Displays the group setting in the port that has been selected in the upper right list. In the lower right list, details of a group that has been selected from the upper right list are displayed.

Addition of a WWN is made in the following procedure.

① Select (CL) a group to which you want to add a WWN from the upper right list.
② Select (DR) [Add] from the [WWN] menu in the Main window (Figure 5.3.1.4-4-1).
③ Since the Add WWN window (Figure 5.3.1.4-4-2) is displayed, select(CL) “WWN” registering from the list, and select (CL) the [OK] button.
④ The WWN that has been newly added is reflected in the lower right list.

Details of the Main Window(Figure 5.3.1.4-4-1) and the other windows are shown on the following page.

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Table 5.3.1.4-4-1 Details and Operation of Main Window (WWN)

Item	Description
Upper list	Displays groups connected with the port that has been selected from the tree.
	Provided with a sorting function.
Lower list	Displays details of a group that has been selected from the upper list.(Displays nothing when no item to be selected exists in the upper list or more than one item has been selected.)
	Provided with a sorting function.
“WWN – Add” menu	Selectable when a single group has been selected from the upper list.
	Displays the Add WWN window.
Pop-up menu	Displays the “Add” menu when the right mouse button is clicked in the lower list.

Table 5.3.1.4-4-2 Detail and Operation of Add WWN Registration Window

Item	Description
Name	Displays a group name. (The name is not allowed to be changed.)
List	Displays a list of WWNs to be added. (WWNs that have been registered are not displayed.)
Add button	Activates a window for manually registering a WWN. Makes the registration to be reflected on the list after it is completed.
WWN List button	Selects a WWN wanted to be registered from the Login WWN List. Makes the registration to be reflected on the list after it is completed.
Change button	Changes a selected WWN and its nickname. (Only one WWN can be selected.)
Delete button	Deletes a selected WWN from the list.
Next button	Closes the window and activates a window for selecting a port to which the group concerned is to be connected.
Cancel button	Returns the window to the main window without doing anything.

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(4-2) Changing WWN

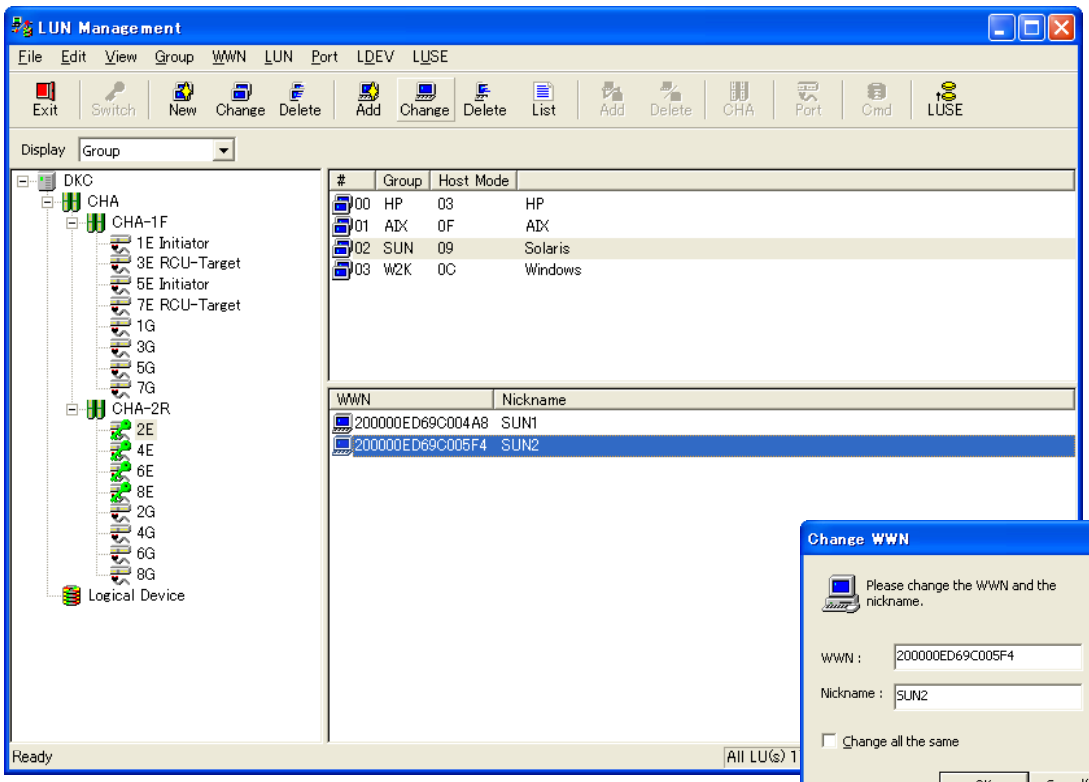


Figure 5.3.1.4-4-3 Main Window



Figure 5.3.1.4-4-4
Change WWN Window

When “Port” in the tree view is selected, “Group” is set on the Display. Displays the group setting in the port that has been selected in the upper right list. In the lower right list, details of a group that has been selected from the upper right list are displayed.

A change of a WWN is made in the following procedure.
① Select (CL) one WWN you want to change from the lower right list.
② Select (DR) [Change...] from the [WWN] menu in the Main window (Figure 5.3.1.4-4-3).
③ Since the Change WWN window (Figure 5.3.1.4-4-4) is displayed, change the “WWN” and its “Nickname”, and select (CL) the [OK] button.
④ The WWN that has been changed is reflected in the lower right list.

Details of the Main Window(Figure 5.3.1.4-4-3) and the other windows are shown on the following page.

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Table 5.3.1.4-4-3 Details and Operation of Main Window (WWN)

Item	Description
Upper list	Displays groups connected with the port that has been selected from the tree.
	Provided with a sorting function.
Lower list	Displays details of a group that has been selected from the upper list.(Displays nothing when no item to be selected exists in the upper list or more than one item has been selected.)
	Provided with a sorting function.
“WWN – Change” menu	Selectable when a single group has been selected from the lower list.
	Displays the Change WWN window.
Pop-up menu	Displays the “Change” menu when the right mouse button is clicked on the item in the lower list.

Table 5.3.1.4-4-4 Details and Operation of Change WWN Window

Item	Description
WWN	To be used for entering a WWN (16 hexadecimal digits).
Nick name	Used for entering a nickname (up to 32 characters).
Change all the same button	In case of checking it, the change should be executed for the same WWN including in the group of the other ports.
OK button	Selectable only when the WWN has been entered correctly.
	Closes the window after registering the WWN and nickname, and returns you to the Main window.
Cancel button	Returns you to the Main window without doing anything.

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(4-3) Deleting WWN

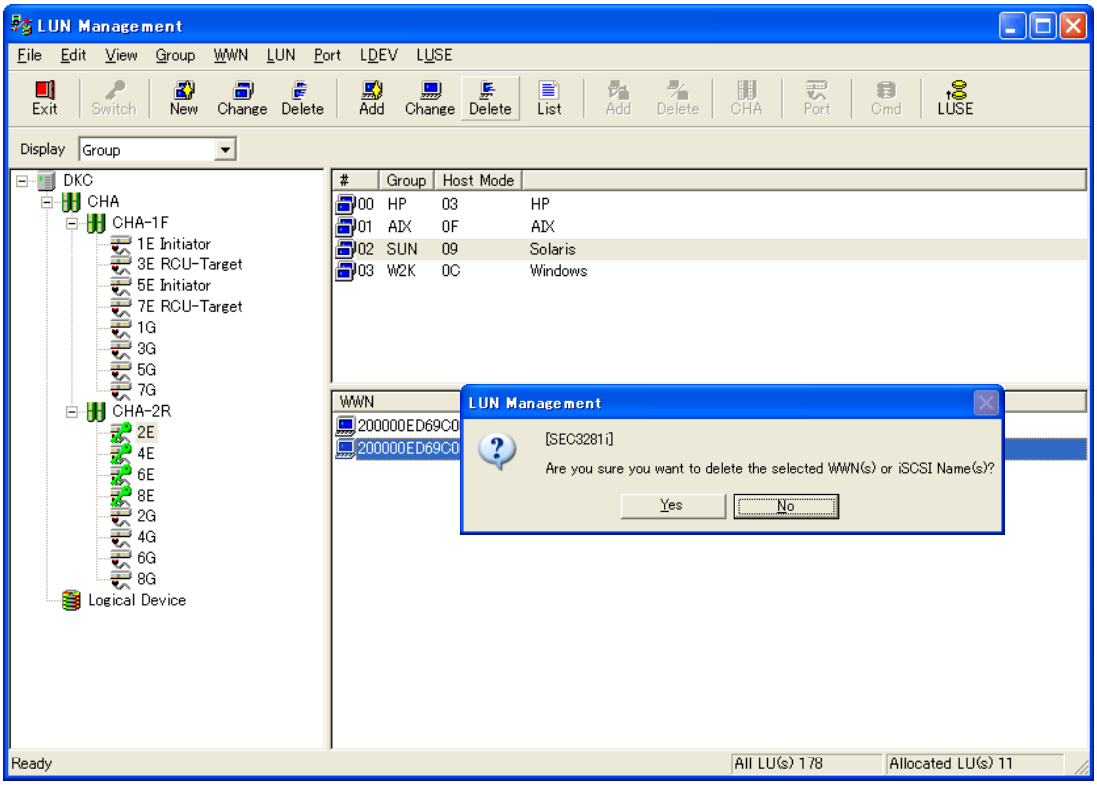


Figure 5.3.1.4-4-5 Main Window

When “Port” in the tree view is selected, “Group” is set on the Display. Displays the group setting in the port that has been selected in the upper right list. In the lower right list, details of a group that has been selected from the upper right list are displayed.

Deletion of a WWN is done in the following procedure.
① Select (CL) a WWN you want to delete from the lower right list.
② Select (DR) [Delete] from the [WWN] menu in the Main window (Figure 5.3.1.4-4-5).
③ Since a message asking for a confirmation is displayed, select (CL) the [Yes] button.
④ The WWN that has been selected from the lower right list is deleted.

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Table 5.3.1.4-4-5 Details and Operation of Main Window (Group)

Item	Description
Upper list	Displays groups connected with the port that has been selected from the tree.
	Provided with a sorting function.
Lower list	Displays details of a group that has been selected from the upper list.(Displays nothing when no item to be selected exists in the upper list or more than one item has been selected.)
	Provided with a sorting function.
“WWN – Delete” menu	Selectable when a WWN has been selected from the lower list.
	Displays a message asking for a confirmation.
Pop-up menu	Displays “Delete” menu when the right mouse button is clicked on the item in the upper list.

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(4-4) Deleting WWN of the host linked DKC

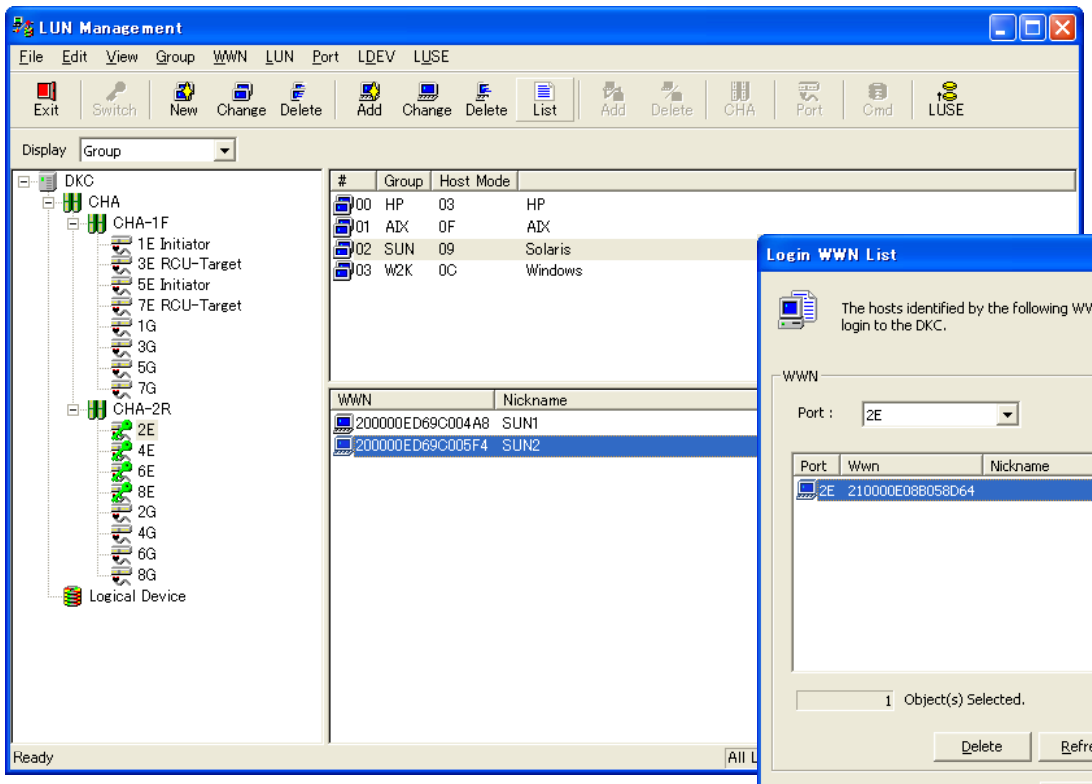


Figure 5.3.1.4-4-6 Main Window

Figure 5.3.1.4-4-7
Login WWN List Window

Deletion of a WWN of the host linked to DKC is done in the following procedure.

① Select (DR) [Login List] form the [WWN] menu in the Main Window (Figure 5.3.1.4-4-6).
② Select (CL) the [Refresh] button is redraws the WWN list.
③ Since the Login WWN List window (Figure 5.3.1.4-4-7) is displayed, selected (CL) the WWNs and select (CL) the [Delete] button.
④ Select (CL) the [Close] button is close window returns you to the Main Window.

Table 5.3.1.4-4-6 Details and Operation Login WWN List window

Item	Description
Port	Specifies a port of the WWN to be displayed in the list. When “All Port” is selected, all WWNs in the list are displayed.
List	Displays a WWN list.
Delete button	Deletes a selected WWN.
Refresh button	Redraws the list.
Close button	Returns you the Main window.

(4-5) Adding iSCSI Name

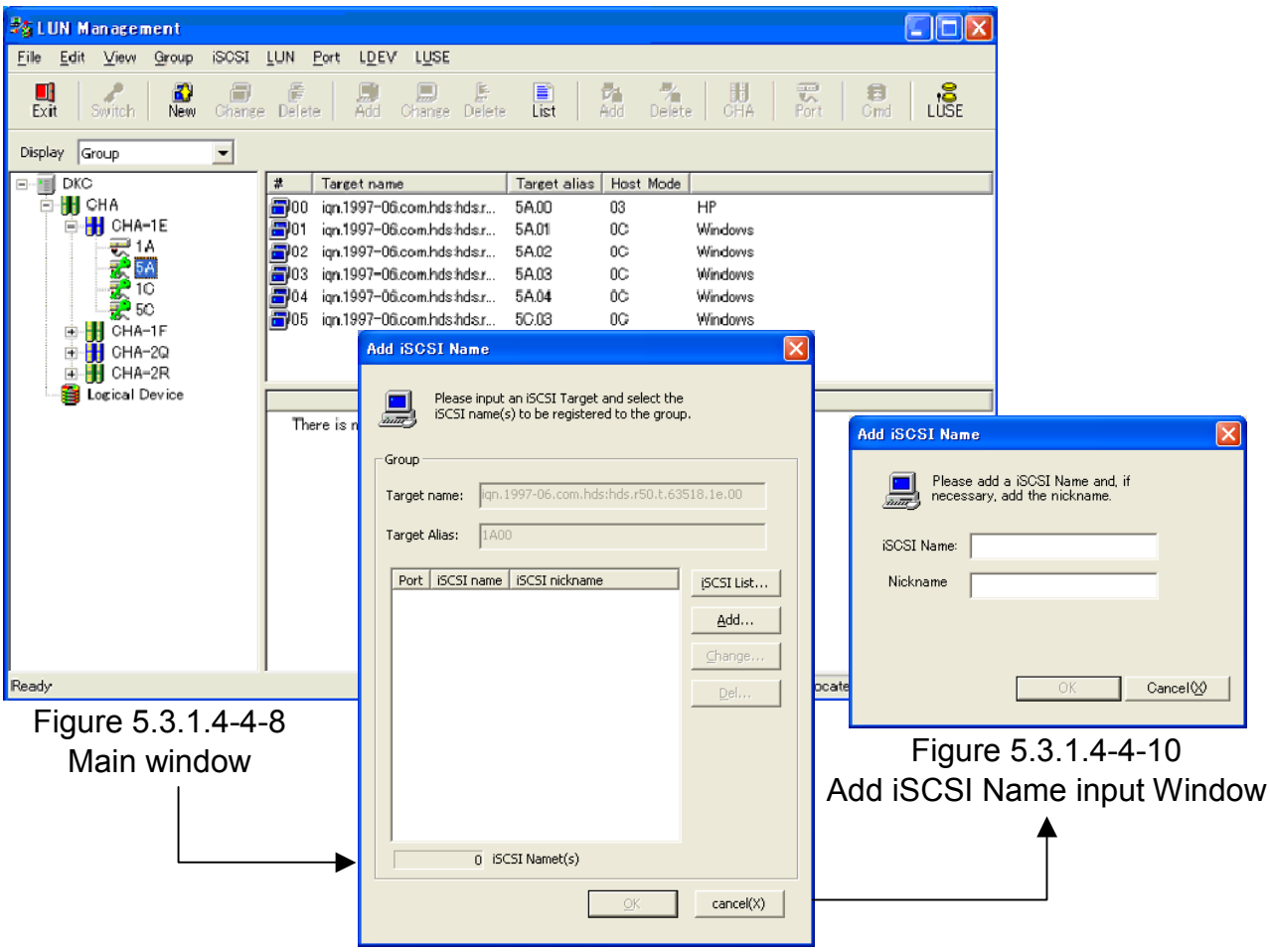


Figure 5.3.1.4-4-8
Main window

Figure 5.3.1.4-4-10
Add iSCSI Name input Window

Figure 5.3.1.4-4-9 Add iSCSI Name Window

When iSCSI Port in the tree view is selected, "Group" is set on the Display. Displays the Target name setting in the port that has been selected in the upper right list. In the lower right list, details of a Target name that has been selected from the upper right list are displayed.

Addition of a iSCSI Name is made in the following procedure.

① Select (CL) a Target name to which you want to add a iSCSI Name from the upper right list.
② Select (DR) [Add] from the [iSCSI] menu in the Main window (Figure 5.3.1.4-4-8).
③ Since the Add iSCSI Name window (Figure 5.3.1.4-4-9) is displayed, select (DR) [Add].
④ Since the Add iSCSI Name input window (Figure 5.3.1.4-4-10) is displayed, enter iSCSI Name/Nickname, and select (CL) the [OK] button.
⑤ The iSCSI Name that has been newly added is reflected in the lower right list.

Details of the Main window (Figure 5.3.1.4-4-8) and the other windows are shown on the following page.

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Table 5.3.1.4-4-8 Details and Operation of Main Window (Group)

Item	Description
Upper list	Displays groups connected with the port that has been selected from the tree.
	Provided with a sorting function.
Lower list	Displays details of a group that has been selected from the upper list.(Displays nothing when no item to be selected exists in the upper list or more than one item has been selected.)
	Provided with a sorting function.
"iSCSI – Add" menu	Selectable when a single group has been selected from the upper list.
	Displays the Add iSCSI Name window.
Pop-up menu	Displays the "Add" menu when the right mouse button is clicked in the lower list.

Table 5.3.1.4-4-9 Detail and Operation of Add iSCSI Name Window

Item	Description
Target name	Displays a Target name. (The name is not allowed to be changed.)
Target Alias	Displays a Target Alias. (The name is not allowed to be changed.)
List	Displays a list of iSCSI Name to be added. (iSCSI Name that have been registered are not displayed.)
iSCSI List button	Selects a iSCSI Name wanted to be registered from the Login iSCSI Name List. Makes the registration to be reflected on the list after it is completed.
Add button	Activates a window for manually registering a iSCSI Name. Makes the registration to be reflected on the list after it is completed.
Change button	Changes a selected iSCSI Name and its nickname. (Only one iSCSI Name can be selected.)
Delete button	Deletes a selected iSCSI Name from the list.
OK button	Closes the window and activates a window for selecting a port to which the group concerned is to be connected.
cancel button	Returns the window to the main window without doing anything.

Table 5.3.1.4-4-10 Detail and Operation of Add iSCSI Name input Window

Item	Description
iSCSI Name	Enters a Target name. (eui. form: 20 characters iqn. form: Maximum of 232 characters)
Nickname	Enters a Nickname. (Maximum of 32 characters)
List	Displays a list of iSCSI Name to be added. (iSCSI Name that have been registered are not displayed.)
OK button	Can be selected only when the iSCSI Name is entered correctly.
	Closes the window after registering the iSCSI Name and nickname, and returns to the Main window of the Add iSCSI Name window. Reflects the entered items in the list.
Cancel button	Returns the window to the main window without doing anything.

(4-6) Changing iSCSI Name

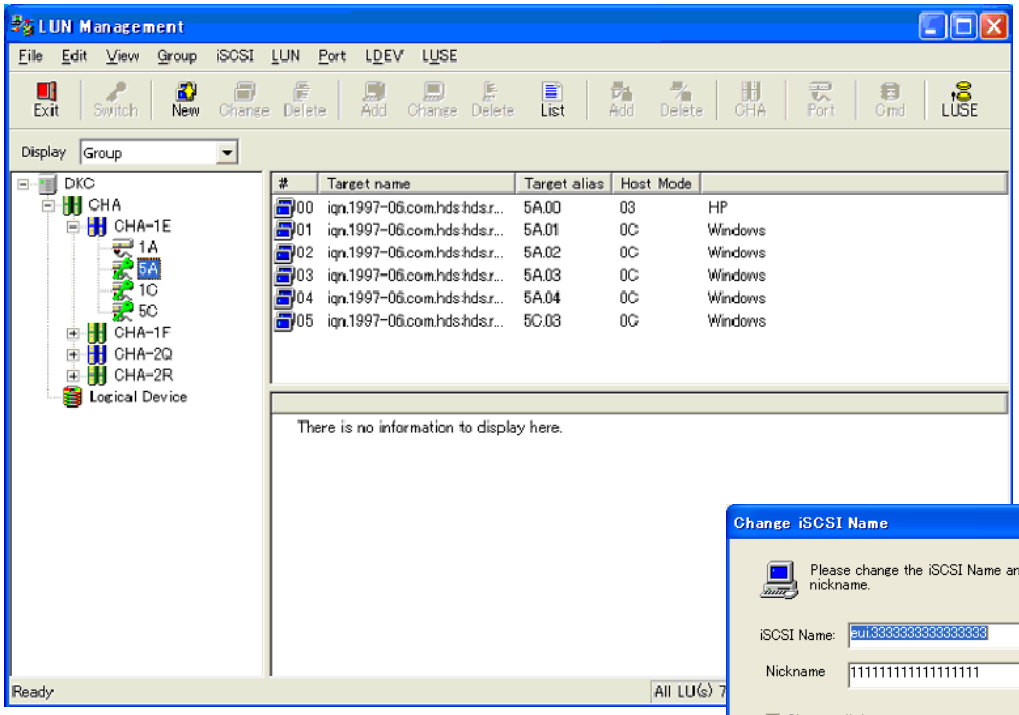


Figure 5.3.1.4-4-11 Main Window

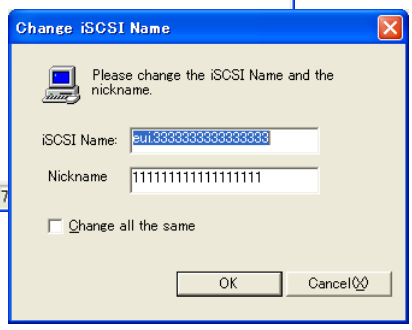


Figure 5.3.1.4-4-12
Change iSCSI Name Window

When iSCSI Port in the tree view is selected, "Group" is set on the Display. Displays the Target name setting in the port that has been selected in the upper right list. In the lower right list, details of a Target name that has been selected from the upper right list are displayed.

A change of a iSCSI Name is made in the following procedure.
① Select (CL) one iSCSI Name you want to change from the lower right list.
② Select (DR) [Change...] from the [iSCSI] menu in the Main window (Figure 5.3.1.4-4-11).
③ Since the Change iSCSI Name window (Figure 5.3.1.4-4-12) is displayed, change the "iSCSI Name" and its "Nickname", and select (CL) the [OK] button.
④ The iSCSI Name that has been changed is reflected in the lower right list.

Details of the Main window (Figure 5.3.1.4-4-11) and the other windows are shown on the following page.

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Table 5.3.1.4-4-11 Details and Operation of Main Window (Group)

Item	Description
Upper list	Displays groups connected with the port that has been selected from the tree.
	Provided with a sorting function.
Lower list	Displays details of a group that has been selected from the upper list.(Displays nothing when no item to be selected exists in the upper list or more than one item has been selected.)
	Provided with a sorting function.
"iSCSI – Change" menu	Selectable when a single group has been selected from the lower list.
	Displays the Change iSCSI Name window.
Pop-up menu	Displays the "Change" menu when the right mouse button is clicked on the item in the lower list.

Table 5.3.1.4-4-12 Details and Operation of Change iSCSI Name Window

Item	Description
iSCSI Name	Changes an iSCSI Name. (eui. form: 20 characters iqn. form: Maximum of 232 characters)
Nickname	Used for entering a Nickname (up to 32 characters).
Change all the same button	In case of checking it, the change should be executed for the same iSCSI Name including in the group of the other ports.
OK button	Selectable only when the iSCSI Name has been entered correctly.
	Closes the window after registering the iSCSI Name and nickname, and returns you to the Main window.
Cancel button	Returns you to the Main window without doing anything.

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(4-7) Deleting iSCSI Name

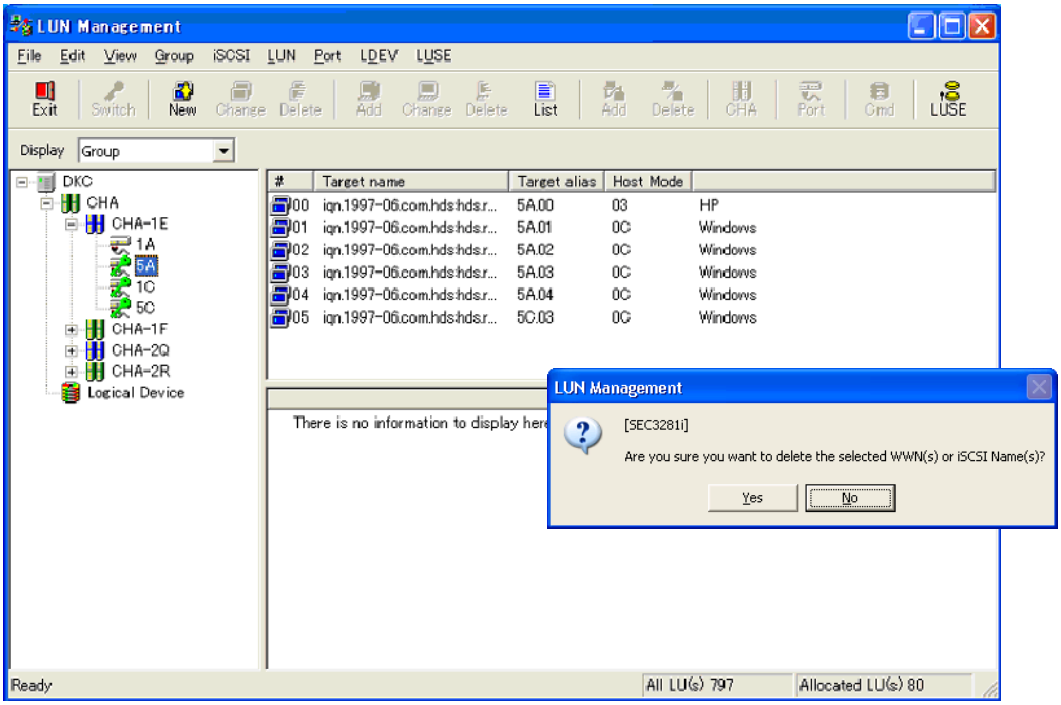


Figure 5.3.1.4-4-13 Main Window

When iSCSI Port in the tree view is selected, “Group” is set on the Display. Displays the group setting in the port that has been selected in the upper right list. In the lower right list, details of a group that has been selected from the upper right list are displayed.

Deletion of a iSCSI Name is done in the following procedure.
① Select (CL) a iSCSI Name you want to delete from the lower right list.
② Select (DR) [Delete] from the [iSCSI] menu in the Main window (Figure 5.3.1.4-4-13).
③ Since a message asking for a confirmation is displayed, select (CL) the [Yes] button.
④ The iSCSI Name that has been selected from the lower right list is deleted.

Details of the Main window (Figure 5.3.1.4-4-13) is shown on the following page.

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Table 5.3.1.4-4-13 Details and Operation of Main Window (Group)

Item	Description
Upper list	Displays groups connected with the port that has been selected from the tree.
	Provided with a sorting function.
Lower list	Displays details of a group that has been selected from the upper list. (Displays nothing when no item to be selected exists in the upper list or more than one item has been selected.)
	Provided with a sorting function.
“iSCSI – Delete” menu	Selectable when a iSCSI Name has been selected from the lower list.
	Displays a message asking for a confirmation.
Pop-up menu	Displays “Delete” menu when the right mouse button is clicked on the item in the upper list.

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(4-8) Displaying Login iSCSI Name List of the host linked DKC

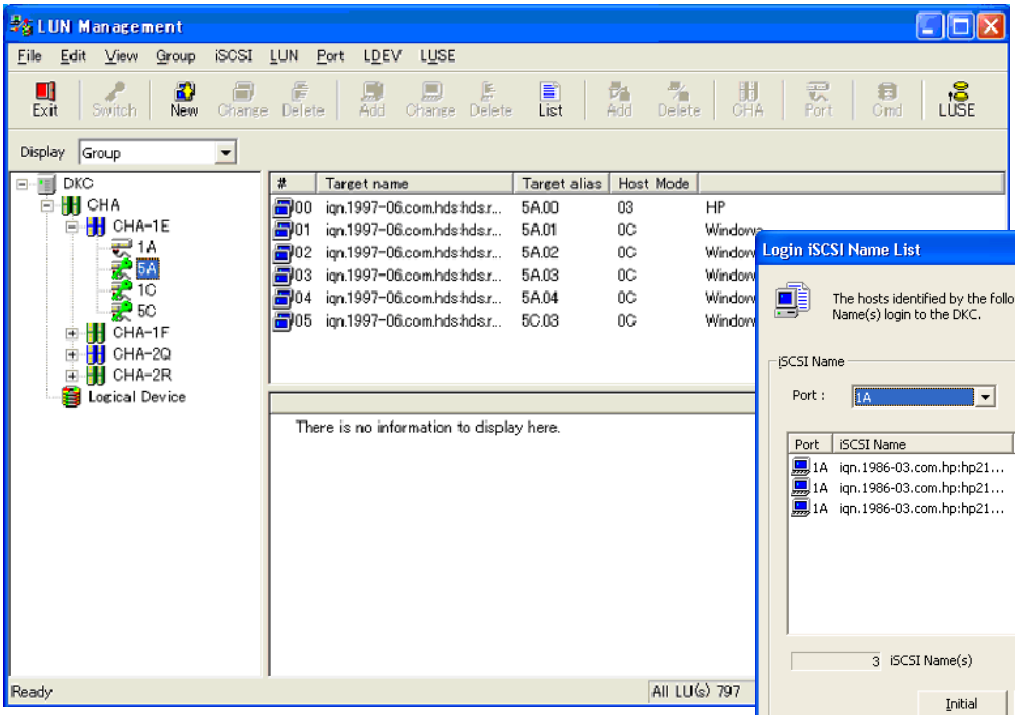


Figure 5.3.1.4-4-14 Main Window

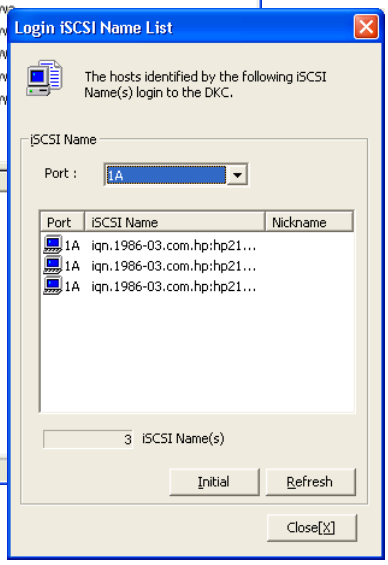


Figure 5.3.1.4-4-15
Login iSCSI Name List Window

Details of the 'Login iSCSI Name List' window (Figure 5.3.1.4-4-15) is shown on the following page.

Table 5.3.1.4-4-15 Details and Operation Login iSCSI Name List window

Item	Description
Port	Specifies a port of the iSCSI Name to be displayed in the list. When "All Port" is selected, all iSCSI Names in the list are displayed.
List	Displays a iSCSI Name list.
Initial button	All iSCSI Name not connected with iSCSI Target is deleted.
Refresh button	Redraws the list.
Close button	Returns you the Main window.

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Notes: Only iSCSI name by which Initiator issued the login command to Target is displayed in the list. Latest 64 careers of iSCSI name which accepts the login command of each port are displayed in the list regardless of session (Discovery, Normal) or result (Accept, Reject). However, iSCSI name that the acceptance of the command overlaps is not displayed. It is time when it registers iSCSI name, and register to Target by using this career, please before registered target iSCSI Name is deleted from the list when registering bringing two or more clients together in one port. Please execute the login command from Initiator again when registered target iSCSI Name it is time when has been deleted, and wants to display corresponding iSCSI name from the list again. At this time, please do not add iSCSI name that registration is unnecessary to the list by operating only Initiator for which login is necessary for a target port.

(5) Setting LUN

(5-1) Adding LUN

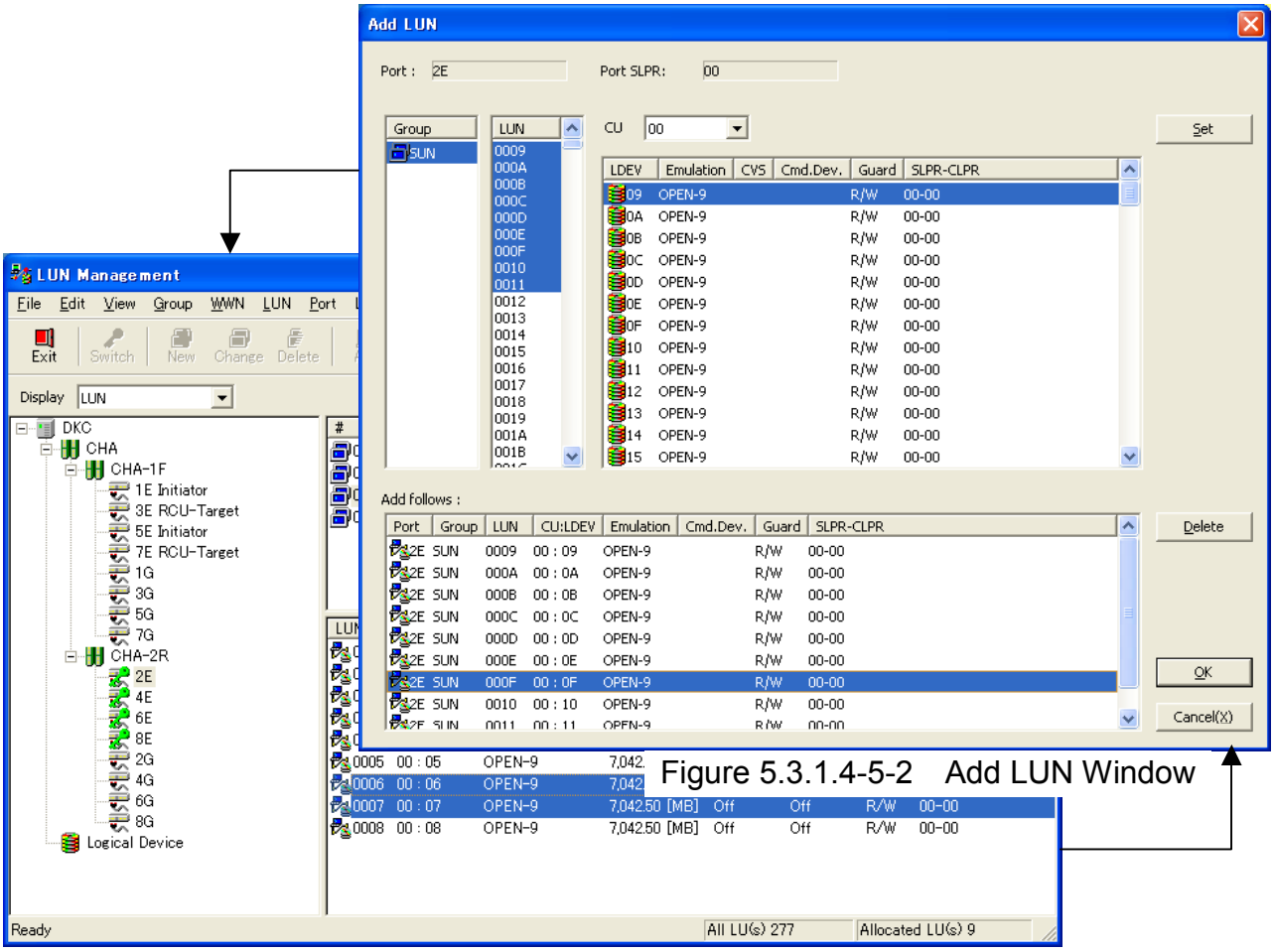


Figure 5.3.1.4-5-2 Add LUN Window

Figure 5.3.1.4-5-1 Main Window

When "Port" in the tree view is selected, "LUN" is set on the Display. Displays the group setting in the port that has been selected in the upper right list. In the lower right list, details of a group that has been selected from the upper right list are displayed.

Addition of a LUN is done in the following procedure.

① Change the Display to "LUN."
② Select (CL) a group to which a LUN is to be added from the upper right list.
③ Select (DR) [Add] from the [LUN] menu in the Main window (Figure 5.3.1.4-5-1).
④ Since the LUN Registration window (Figure 5.3.1.4-5-2) is displayed, select (CL) the LUN and CU:LDEV and select (CL) the [SET] button. The LUN that has been set is displayed in the "Add follows list."
⑤ When the [OK] button is selected (CL), items displayed in the "Add follows" list is newly registered and the window is changed to the Main window (Figure 5.3.1.4-5-1).

Details of the Main Window (Figure 5.3.1.4-5-1) and the other windows are shown on the following page.

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Table 5.3.1.4-5-1 Details and Operation of Main Window (LUN)

Item	Description
Upper list	Displays groups connected with the port that has been selected from the tree.
	Provided with a sorting function.
Lower list	Displays LUN's defined as being contained in the group that has been selected from the upper list. (Displays nothing when no item to be selected exists in the upper list or more than one item has been selected.) (Note) The following symbols may be added to CU:LDEV #. Each meaning is shown. '+' : One LUN is set in other host groups. '++' : Two or more LUNs are set in other host groups. '#' : An external volume is shown. 'V' : A virtual volume is shown.
	Provided with a sorting function.
"LUN – Add..." menu	Selectable when a port subordinate to the LUN has been selected from the tree.
	Displays the Add LUN window.
Pop-up menu	Displays the "Add" menu when the right mouse button is clicked on the item in the upper list.

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Table 5.3.1.4-5-2 Details and Operation of Add LUN Window

Item	Description
Port	Displays a name of a port that has been selected from the tree in the Main window.
Group list	Displays all groups registered as being connected with the port concerned.
LUN list	Displays unused LUN's in the group concerned according to the group selection that has been made.
CU list	Displays CU numbers of all mounted LDEV's supported by this function.
LDEV list	Displays unused LDEV's in the group concerned according to the group selection that has been made. (Note) The following symbols may be added to CU:LDEV #. Each meaning is shown. '+' : One LUN is set. '++' : Two or more LUNs are set. '#' : An external volume is shown. 'V' : A virtual volume is shown.
Add follows list	Displays a LUN (path) to be added.
Set button	Selectable only when the group, LUN, and CU:LDEV have been selected.
	The LUN that has been added is displayed in the "Add follows" list.
Delete button	Excepts a LUN from LUNs to be added.
OK button	Selectable only when the LUN'(s) is/are in the "Add follows" list.
	Closes the window after adding the LUN and returns you to the Main window.
Cancel button	Closes the window without doing anything and returns you to the Main window.

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(5-2) Deleting LUN

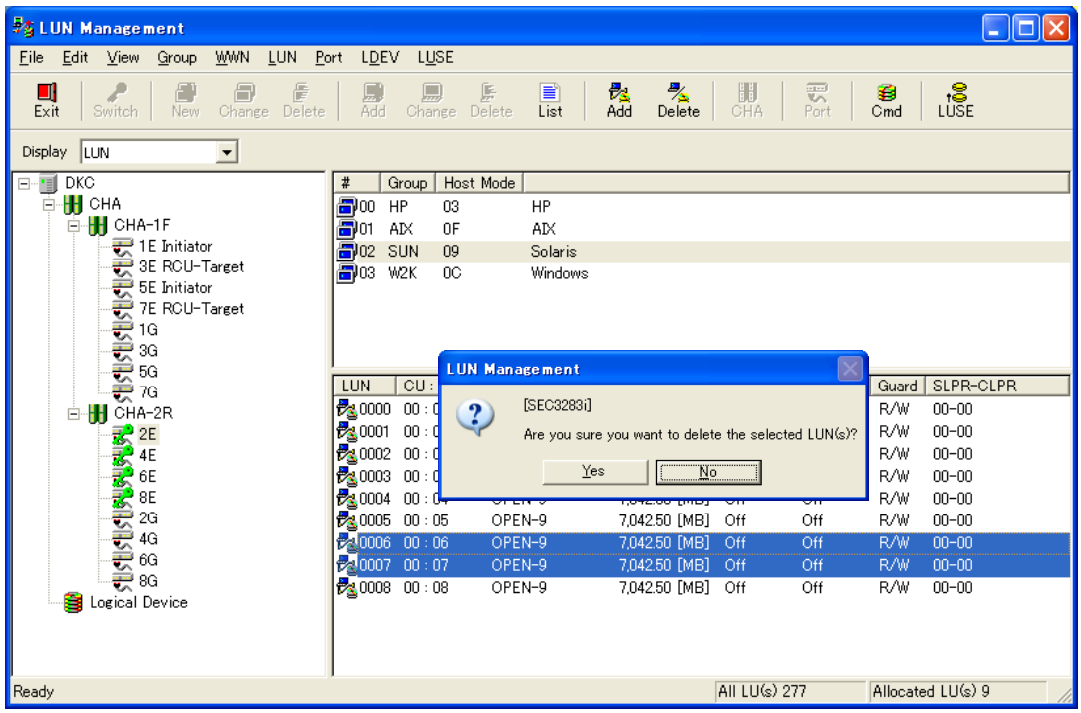


Figure 5.3.1.4-5-3 Main Window

When “Port” in the tree view is selected, groups connected with the port that has been selected from the tree are displayed in the upper right list. In the lower right list, details of a group that has been selected from the upper right list are displayed.

Deletion of a LUN is done in the following procedure.
① Select (CL) a LUN from the upper right list.
② Select (DR) [Delete] from the [LUN] menu in the Main window (Figure 5.3.1.4-5-3).
③ Since a message asking for a confirmation is displayed, select (CL) the [Yes] button.
④ Information on the LUN that has been selected from the lower right list is deleted.

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Table 5.3.1.4-5-3 Details and Operation of Main Window (LUN)

Item	Description
Upper list	Displays groups connected with the port that has been selected from the tree.
	Provided with a sorting function.
Lower list	Displays LUNs defined for a group selected from the upper list.(Displays nothing when no item to be selected exists in the upper list or more than one item has been selected.) (Note) The following symbols may be added to CU:LDEV #. Each meaning is shown. '+' : One LUN is set in other host groups. '++' : Two or more LUNs are set in other host groups. '#' : An external volume is shown. 'V' : A virtual volume is shown.
	Provided with a sorting function.
"LUN – Delete..." menu	Selectable when a LUN has been selected from the lower list.
	Displays a message asking for a confirmation.
Pop-up menu	Displays "Delete" menu when the right mouse button is clicked on the item in the lower list.

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(5-3) Changing Command Device from the LUN list

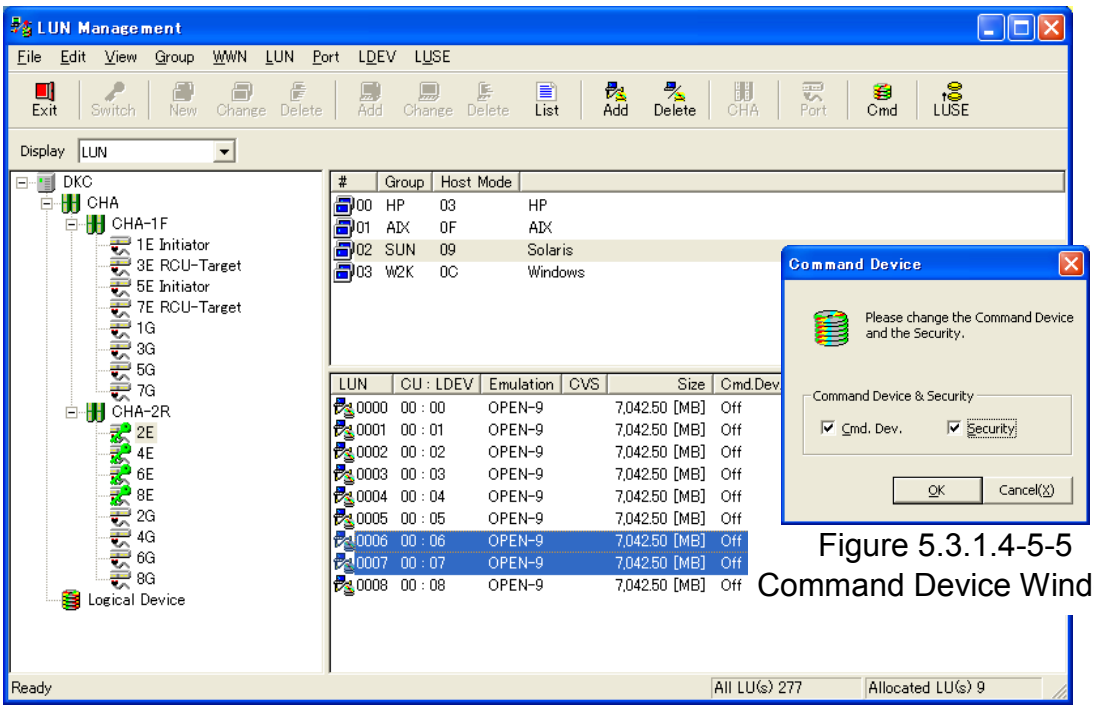


Figure 5.3.1.4-5-5
Command Device Window

Figure 5.3.1.4-5-4 Main Window

When " Port" in the tree view is selected, groups connected with the port that has been selected from the tree are displayed in the upper right list. In the lower right list, details of a group that has been selected from the upper right list are displayed.

Setting of a Command Device form the LUN list is made in the following procedure.

① Select (CL) LUN from the lower right list.
② Select (DR) [Command Device] from the [LUN] menu in the Main window (Figure 5.3.1.4-5-4).
③ Change "Command Device" in the Command Device Window(Figure 5.3.1.4-5-5), and select (CL) the [OK] button.
④ Information on the LUN that has been selected from the lower right list is reflected.

When changing the command device from the LDEV list, refer to page INST05-1200.

Note: 'On*' shows the remote command device.
It is possible to change for the remote command device.

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Table 5.3.1.4-5-4 Details and Operation of Main Window (LUN)

Item	Description
Upper list	Displays groups connected with the port that has been selected from the tree.
	Provided with a sorting function.
Lower list	Displays LUN's defined as being contained in the group that has been selected from the upper list.(Displays nothing when no item to be selected exists in the upper list or more than one item has been selected.) (Note) The following symbols may be added to CU:LDEV #. Each meaning is shown. '+' : One LUN is set in other host groups. '++' : Two or more LUNs are set in other host groups. '#' : An external volume is shown. 'V' : A virtual volume is shown.
	Provided with a sorting function.
"LUN – Command Device..." menu	Selectable when a LUN has been selected from the lower list.
	Displays the Command Device window.
Pop-up menu	Displays the "Command Device" menu when the right mouse button is clicked on the item in the lower list.

Table 5.3.1.4-5-5 Details and Operation of Add LUN Window

Item	Description
Cmd.Dev.	Displays the command device of LUN selection.
	When it is checked, the command device is on.
Security	Displays a status of command device security of the LUN that has been selected.
	Enables a command device to be checked provided that the Cmd. Dev. has been set for it.
	When it is checked, the security of the command device is on.
OK button	Closes the window after changing the parameter and returns you to the Main window.
Cancel button	Closes the window without doing anything and returns you to the Main window.

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(6) Changing the operation mode

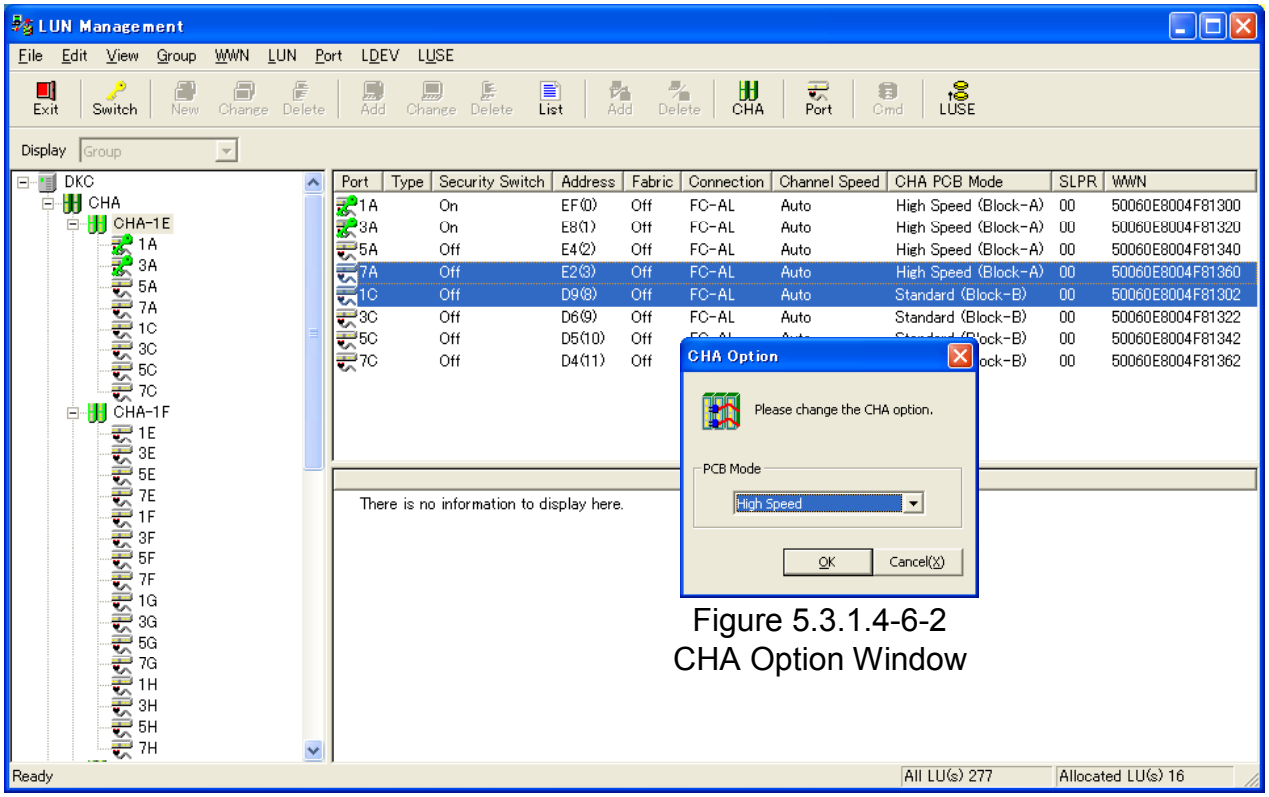


Figure 5.3.1.4-6-2
CHA Option Window

Figure 5.3.1.4-6-1 Main Window

When each CHA location in the tree view is selected (CL), information on the installed port(s) (including the operation mode of the CHA(s)) is displayed in the upper right list.

A change of a CHA PCB Mode is made in the following procedure.

① Select (CL) the Port from the upper right list.
② Select (DR) [CHA PCB Mode...] from the [Port] menu in the Main window (Figure 5.3.1.4-6-1).
③ Since the CHA Option window (Figure 5.3.1.4-6-2) is displayed, select (CL) a “PCB Mode” and select (CL) the [OK] button.
④ An operational mode of a PCB of the CHA that has been set in the upper right list is changed.

Notice: When the CHA PCB mode is changed, modes of all the ports related to the selected port are changed to the same CHA PCB mode.

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Table 5.3.1.4-6-1 Details and Operation of Main Window (CHA)

Item	Description
Upper list	Displays information on the installed ports and their CHA PCB modes.
	Provided with a sorting function.
Lower list	Displays no item.
“Port-CHA PCB Mode” menu	Selectable when a CHA has been selected from the upper list. However, if CHA is not to be changed in CHA PCB Mode, the menu cannot be selected.
Pop-up menu	Displays the “Change” menu when the right mouse button is clicked on the item in the upper list. However, if CHA is not to be changed in CHA PCB Mode, the menu cannot be selected.

Table 5.3.1.4-6-2 Details and Operation of Main Window (WWN)

Item	Description
PCB Mode	Displays the CHA PCB mode of the selected port. When the two modes coexists, the display is made in the state in which none of the modes has been selected.
OK button	Selectable only when the PCB Mode has been selected.
	Closes the window after changing the parameter, and returns you to the Main window.
Cancel button	Returns you to the Main window without doing anything.

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(7) Changing Port

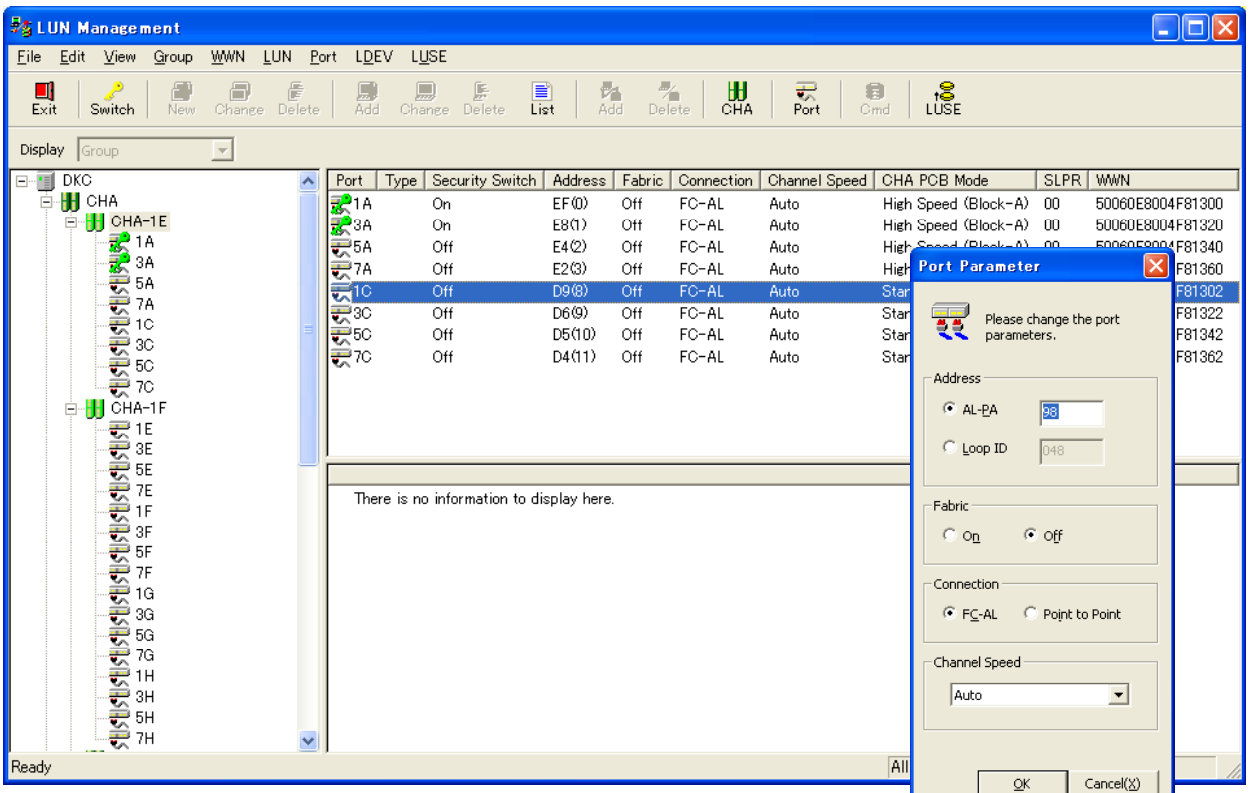


Figure 5.3.1.4-7-1 Main Window

Figure 5.3.1.4-7-2
Port Parameter Window

When “Port” in the tree view is selected (CL), installed ports supported by this function are displayed in the upper right list.

A change of a Port Parameter is made in the following procedure.
① Select (CL) a port from the upper right list.
② Select (DR) [Parameter...] from the [Port] menu in the Main window (Figure 5.3.1.4-7-1).
③ Since the Port Parameter window (Figure 5.3.1.4-7-2) is displayed, set each item and select (CL) the [OK] button.
④ You can change information on the port that has been selected from the upper right list.

Notice: When the CHA PCB mode of the selected item includes High Speed mode, “Point to Point” of the “Connection” box cannot be selected.

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Table 5.3.1.4-7-1 Details and Operation of Main Window (Port)

Item	Description
Upper list	Displays installed ports supported by this function.
	Provided with a sorting function.
Lower list	Displays no item.
"Port – Change" menu	Selectable when a port has been selected from the upper list.
	Displays the Port Parameter window.
Pop-up menu	Displays the "Change" menu when the right mouse button is clicked on the item in the upper list.

Table 5.3.1.4-7-2 Details and Operation of Port Parameter Window

Item	Description
AL-PA	Displays an AL-PA value of a fibre port address.
Loop ID	Displays a loop ID value of a fibre port address.
Fabric	Displays whether to use (On) or not to use (Off) the fabric
Connection	Displays which is to be used: FC-AL or Point to Point.
Channel Speed	Displays 1 GB/s, 2 GB/s, 4 GB/s *1, or Auto.
OK button	Closes the window after changing the parameter(s), and returns you to the Main window.
Cancel button	Returns you to the Main window without doing anything.

Note:
If 2Gbps HBA and Switch are used, please set the transfer speed of the CHF port as 2Gbps.
If 1Gbps HBA and Switch are used, please set the transfer speed of the CHF port as 1Gbps.
Linkup may become improper at Server reboot when Auto Negotiation setting is a must, please check a channel lamp. If it is blinking, please remove and re-insert the cable. The signal synchronization and Link UP will be performed.

*1: 4 GB/s can be set up only when CHA is "32FSR Fibre 16ch-8mp" or "16FSR Fibre 8ch-4mp".

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Fibre port addresses (AL-PA's and loop ID's) are shown below.

Table 5.3.1.4-7-3 Fibre Port Addresses (AL-PA's and Loop ID's)

AL AP	Loop ID	AL AP	Loop ID	AL AP	Loop ID	AL AP	Loop ID	AL AP	Loop ID	AL AP	Loop ID	AL AP	Loop ID	AL AP	Loop ID
EF	0	CD	16	B2	32	98	48	72	64	55	80	3A	96	25	112
E8	1	CC	17	B1	33	97	49	71	65	54	81	39	97	23	113
E4	2	CB	18	AE	34	90	50	6E	66	53	82	36	98	1F	114
E2	3	CA	19	AD	35	8F	51	6D	67	52	83	35	99	1E	115
E1	4	C9	20	AC	36	88	52	6C	68	51	84	34	100	1D	116
E0	5	C7	21	AB	37	84	53	6B	69	4E	85	33	101	1B	117
DC	6	C6	22	AA	38	82	54	6A	70	4D	86	32	102	18	118
DA	7	C5	23	A9	39	81	55	69	71	4C	87	31	103	17	119
D9	8	C3	24	A7	40	80	56	67	72	4B	88	2E	104	10	120
D6	9	BC	25	A6	41	7C	57	66	73	4A	89	2D	105	0F	121
D5	10	BA	26	A5	42	7A	58	65	74	49	90	2C	106	08	122
D4	11	B9	27	A3	43	79	59	63	75	47	91	2B	107	04	123
D3	12	B6	28	9F	44	76	60	5C	76	46	92	2A	108	02	124
D2	13	B5	29	9E	45	75	61	5A	77	45	93	29	109	01	125
D1	14	B4	30	9D	46	74	62	59	78	43	94	27	110		
CE	15	B3	31	9B	47	73	63	56	79	3C	95	26	111		

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(8) LDEV List

(8-1) Changing Command Device from LDEV list

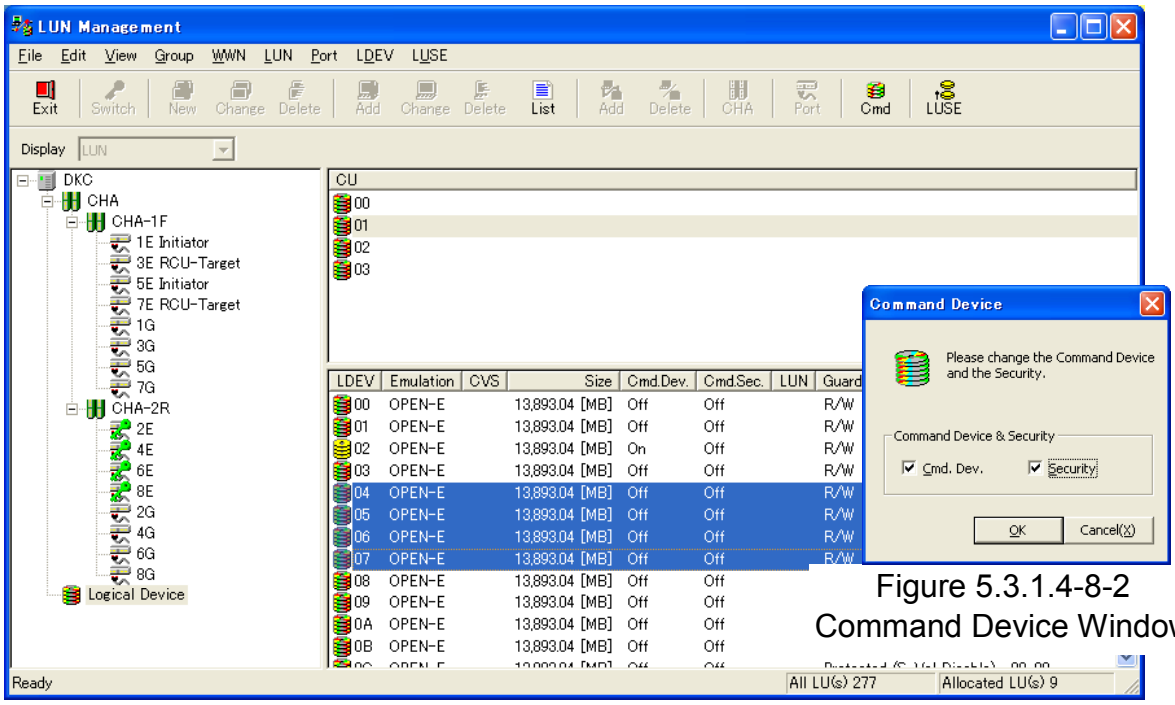


Figure 5.3.1.4-8-2
Command Device Window

Figure 5.3.1.4-8-1 Main Window

When “Command Device” in the tree view is selected (CL), CU numbers of installed LDEV’s supported by this function are displayed in the upper right list. In the lower right list, details of a CU selected from the upper right list are displayed.

A change of a command device is made in the following procedure.

① Select (CL) an LDEV you want to change from the lower right list.
② Select (DR) [Change...] from the [Device] menu in the Main window (Figure 5.3.1.4-8-1).
③ Since the Command Device window (Figure 5.3.1.4-8-2) is displayed, change the “Command Device” and select (CL) the [OK] button.
④ Information that has been set is reflected in the LDEV that has been selected from the lower right list.

Note: ‘On*’ shows the remote command device.
It is not possible to change for the remote command device.

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Table 5.3.1.4-8-1 Details and Operation of Main Window (Command Device)

Item	Description
Upper list	Displays CU numbers of installed LDEV's supported by this function.
	Provided with a sorting function.
Lower list	Displays details of a CU selected from the upper list.(Displays nothing when no item to be selected exists in the upper list or more than one item has been selected.) (Note) The following symbols may be added to LDEV #. Each meaning is shown. '#' : An external volume is shown. 'V' : A virtual volume is shown.
	Provided with a sorting function.
"Device – Change" menu	Selectable only when an LDEV that is given a definition of LUN has been selected from the lower list.
	Displays the Command Device window.
Pop-up menu	Displays the "Change" menu when the right mouse button is clicked on the item in the lower list.

Table 5.3.1.4-8-2 Details and Operation of Command Device Window

Item	Description
Cmd.Dev.	Displays a status of a command device of the LUN that has been elected.
	When it is checked, the command device is on.
Security	Displays a status of command device security of the LUN that has been selected.
	Enables a command device to be checked provided that the Cmd. Dev. has been set for it.
	When it is checked, the command device security is on.
OK Button	Closes the window after changing the parameters, and returns you to the Main window.
Cancel Button	Returns you to the Main window without doing anything.

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(8-2) Deleting LUN from LDEV

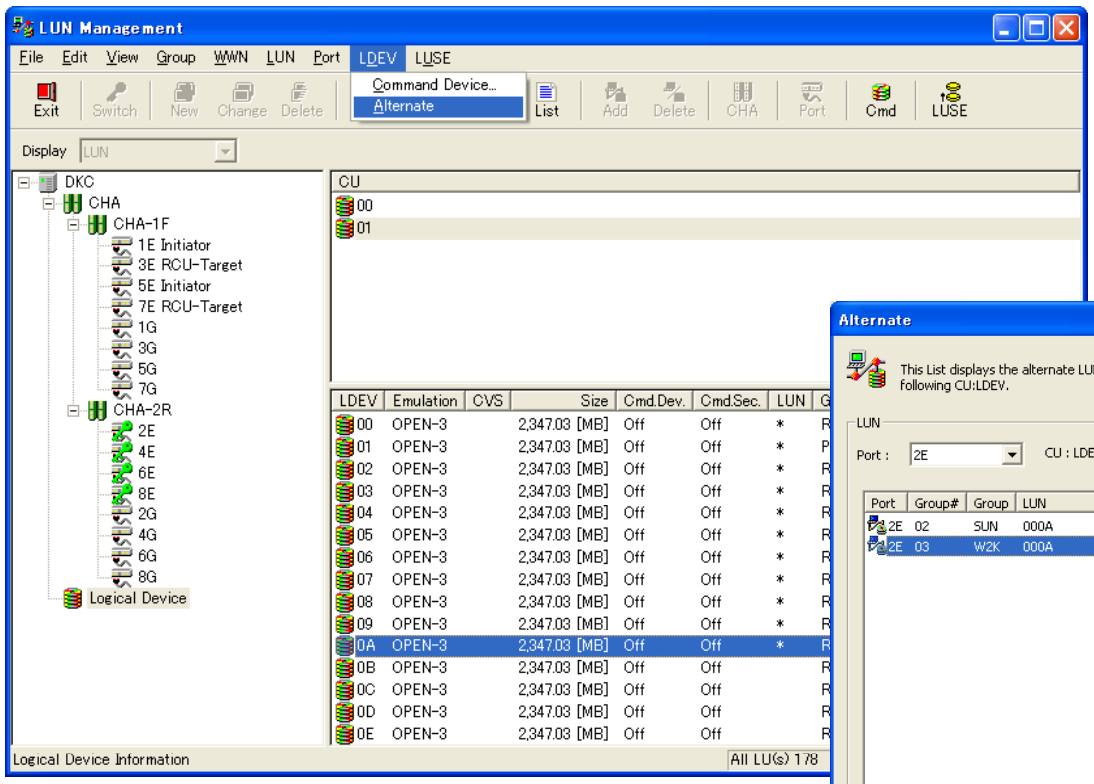


Figure 5.3.1.4-8-3 Main Window

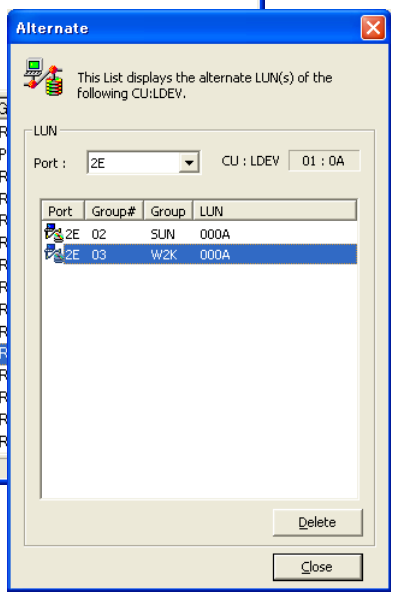


Figure 5.3.1.4-8-4
Alternate LUN Window

When “Logical Device” is selected (CL) from the tree, CU numbers of the installed LDEV conforming to this function are displayed in the upper right list. In the lower right list, detail of the CU selected from the upper right list is displayed.

Deletion of a LUN from the LDEV list is to be done in the following procedure.

① Select (CL) a single LDEV to which you want to refer for the set information on the LUN from the lower right list.
② Select (DR) [Alternate LUN…] from the [LDEV] menu in the main window (Figure 5.3.1.4-8-1).
③ Select the LUN you want to delete from the list in the Alternate LUN window (Figure 5.3.1.4-8-2) and select (CL) the [Delete] button.
④ When the [Close] button is selected (CL) in the Alternate LUN window (Figure 5.3.1.4-8-2), the window is returned to the main window (Figure 5.3.1.4-8-1).

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Table 5.3.1.4-8-3 Detail and Operation of Main Window (Logical Device)

Item	Description
Upper list	Displays CU numbers of the installed LDEV conforming to this function.
	This list has a sorting function.
Lower list	Displays detail of the CU selected from the upper list. (Nothing is displayed when no CU has been selected or two or more CUs have been selected.) (Note) The following symbols may be added to LDEV #. Each meaning is shown. '#' : An external volume is shown. 'V' : A virtual volume is shown.
	This list has a sorting function.
"Device – Alternate LUN" menu	This menu is selectable only when a single LDEV has been selected from the lower list.
	Displays the Alternate LUN window.
Pop-up menu	Displays the "Alternate LUN" menu when an item in the lower list is clicked by the right mouse button.

Table 5.3.1.4-8-4 Detail and Operation of Alternate LUN Window

Item	Description
Cmd.Dev.	Displays the CU: LDEV selected.
Port combo box	Specify a port you want to display in the LUN list. When All Port is specified, all ports of the LUN are displayed in the LUN list.
LUN ist	Displays LUNs assigned to the LDEV concerned.
Delete button	Deletes the LUN that as been selected from the list.
Cancel button	Returns the window to the main window.

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(9) Setting an LUSE

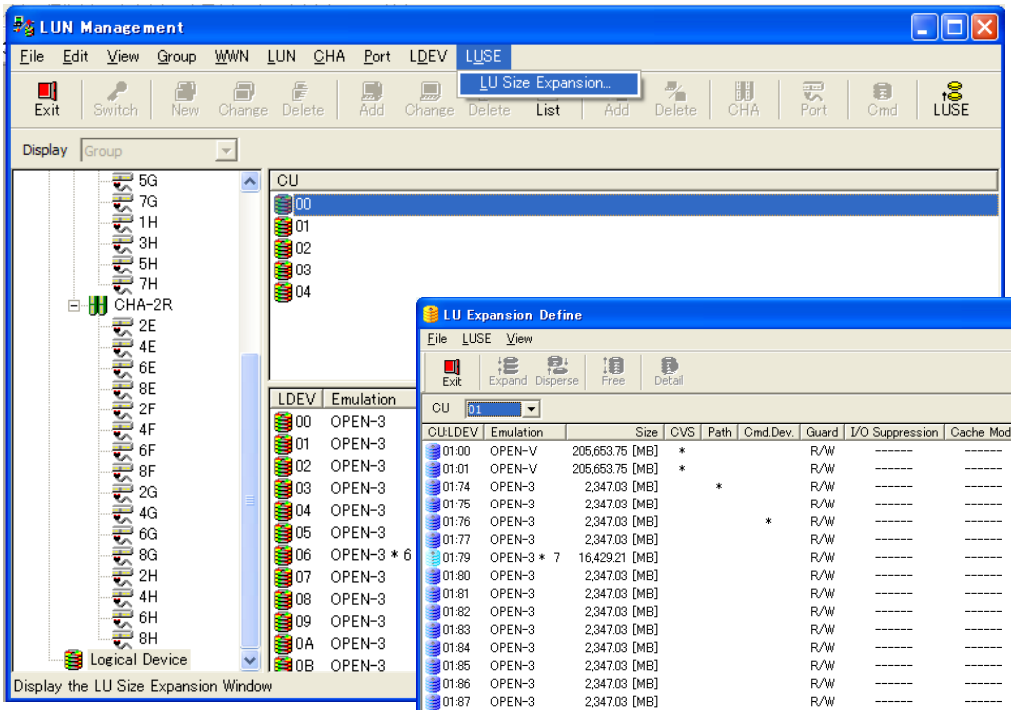


Figure 5.3.1.4-9-1
Main Window

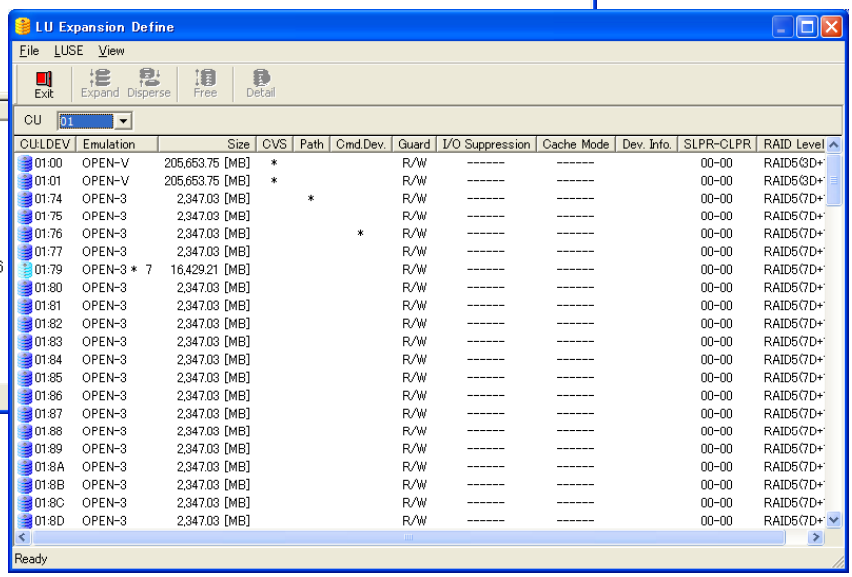


Figure 5.3.1.4-9-2 LU Expansion Define Window

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A change of an LUSE is to be done in the following procedure. For further details, refer to page INST05-1260.

① Select (DR) [LU Size Expansion …] from the [LUSE] menu in the main window (Figure 5.3.1.4-9-1).

② Since the 'LU Expansion Define' window is displayed, set the each item following the work sheet and select (CL) the [OK] button. (Because the [Close] button is displayed instead of the [OK] and [Cancel] buttons when the routine is started from the Change Configuration, select (CL) the [Close] button.

③ Information that has been set is reflected on the main window (Figure 5.3.1.4-9-1).

⚠ CAUTION

Connectable LUs satisfy the following conditions.

(1) LU without path definition (except for being the head of LUSE)

(2) LU without command device definition

(3) LU with the same emulation type

(4) LU of which Open LDEV Guard attribution is other than R/W (for Change Configuration)

(5) LU without remote copy pair definition

(6) LU of the internal volume of the own system if the selected LU is the internal volume of the own subsystem.

(7) LU of the internal volume mapping the external volume if the selected LU is the internal volume mapping the external volume.

(8) LU in the same I/O Suppression status if the selected LU is the internal volume mapping the external volume.

(9) LU in the same Cache Mode if the selected LU is the internal volume mapping the external volume.

(10) LU with the same device type.

(11) LU of the Virtual Volume if the selected LU is the Virtual Volume.

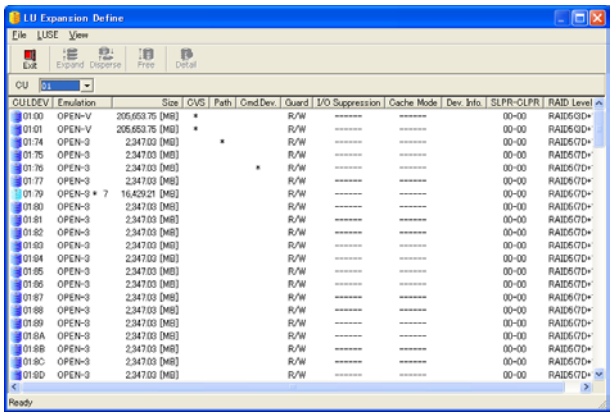
(12) LU of the non-Virtual Volume if the selected LU is the non-Virtual Volume.

(13) LU of the normal volume if the selected LU is a normal volume with path definition.

(14) LU with Path definition in groups which Host Mode is not 01 or 0C if a head LU of LUSE is defined as a path.

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The LU Expansion Define window



There are two kinds of LUSE making depending on the form of LUs used: making of an LUSE using continuous LUs and that using dispersive LUs.

- When making an LUSE using continuous LUs, go to (9-1).
- When making an LUSE using dispersive LUs, go to (9-2).
- When dissolving an LUSE, go to (9-3).

The main window consists of the following elements.

Table 5.3.1.4-9-1 Outline of each item in LU Expansion Define window

Category	Description
Menu	Menu of items that can be operated with this function.
Tool bar	Consists of buttons for operating some of the functions in the menu.
CU list	A list of CUs having LUs to be used for an LUSE.
LU list	A list showing statuses of LUSEs made under the CU selected from the CU list Menu items and their functions are shown below.

Menu items and their functions are shown below.

Table 5.3.1.4-9-2 List of Menu Items

Menu	Submenu	Description	Tool bar
File	Exit	Closes the window.	Exit "Exit"
LUSE	Expand	Makes an LUSE using continuous LUs.	Expand "Expand"
	Expand (Disperse)	Makes an LUSE using dispersive LUs.	Disperse "Disperse"
	Free	Dissolves an LUSE.	Free "Free"
	Detail	Refers to status of connection of LUSEs.	Detail "Detail"
View	Toolbar	Displays/does not display the tool bar.	None
	Status Bar	Displays/ does not display the status bar.	None

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Explanation of each column in the LU list is shown below.

Table 5.3.1.4-9-3 Details of the LU List and Operation Method

Item	Description
CU: LDEV	CU: LDEVs, which are objects of the LUSE function, are displayed. Add "#" if the LU is the internal volume mapping the external volume. Add "V" if the LU is the Virtual Volume.
Emulation	An emulation type is displayed. When the LUs are connected, a number of the LUs connected is displayed as "[Emulation type]*n (n=2-36)."
Size	An LU size is displayed.
CVS	When a CVS is included, an asterisk (*) is displayed.
Path	When a path is defined, an asterisk (*) is displayed. Add "**" if Host Mode has path definition for 01 or 0C.
Cmd.Dev.	When a command device is defined, an asterisk (*) is displayed.
Guard	Display the LU Guard status. See Table 5.3.1.4-9-4 for description.
I/O Suppression	Displays the I/O Suppression status ("Enabled"/"Disabled") of the LU of the internal volume mapping the external volume.
Cache Mode	Displays the Cache Mode of the LU of the internal volume mapping the external volume.
Dev. Info.	When a device type is not FC drive, an asterisk (*) is displayed.
CLPR	Displays the CLPR number.
RAID Level	Displays the RAID level.

Table 5.3.1.4-9-4 Details of LU Guard Status

Function	Displayed Character Line	Description
Define Configuration & Install Refer Configuration	-----	Not displayed
Change Configuration Maintenance	R/W	Read/Write
	R/W (S-Vol Disable)	Read/Write with S-Vol Disable
	Protect (S-Vol Disable)	Protected
	R.O. (S-Vol Disable)	Read Only
	?????	Invalid state

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(9-1) Making an LUSE (‘LU Expansion’ window)

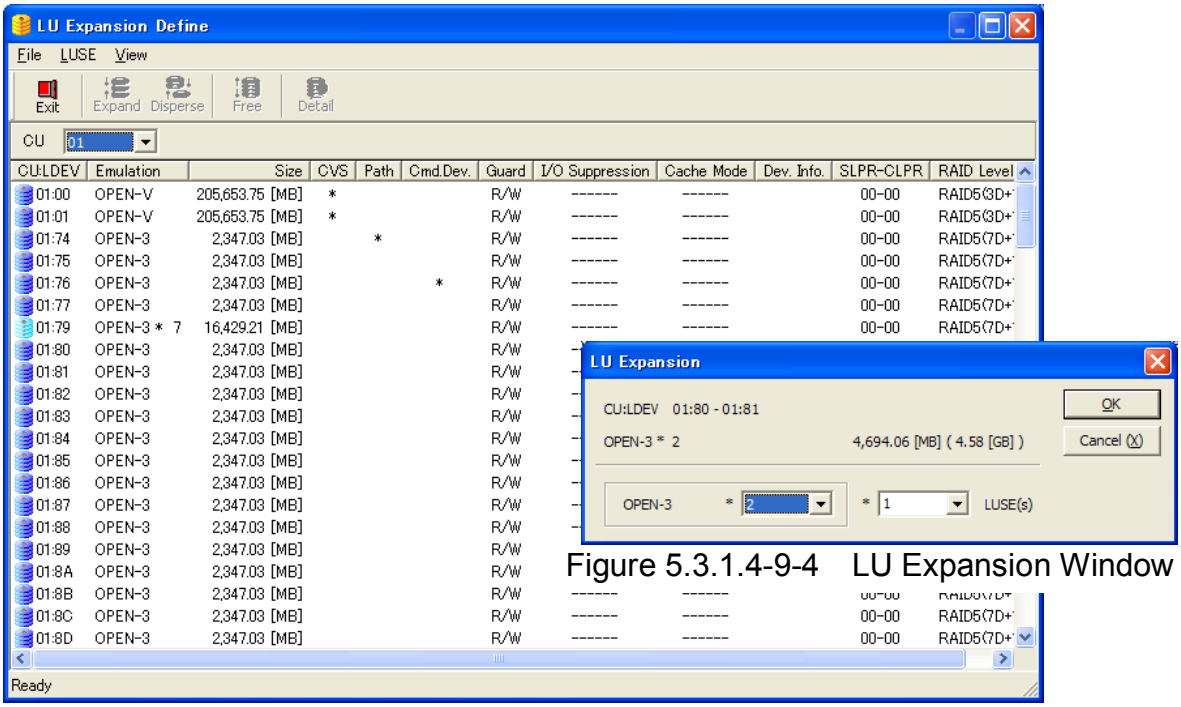


Figure 5.3.1.4-9-4 LU Expansion Window

Figure 5.3.1.4-9-3 Main Window

Making of an LUSE using continuous LUs is done in the following procedure.

① Select LUs to be used to set an LUSE in the ‘LU Expansion Define’ window following the work sheet and select (DR) [Expand …] from the [LUSE] menu. Compose an LUSE setting the selected LU at the top.

② Since the ‘LU Expansion’ window (Figure 5.3.1.4-9-4) is displayed, select a number of Lus to be connected and select (CL) the [OK] button.

③ A status of the LUSE that has been set is reflected on the main window (Figure 5.3.1.4-9-3).

Detail of the ‘LU Expansion’ window (Figure 5.3.1.4-9-4) is shown below.

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Table 5.3.1.4-9-5 Detail and Operation of LU Expansion Window

Item	Description
CU:LDEV	Displays the LU (LU to be set at the top) selected in the main window and the last LU of the LUSE to be produced.
"[Emulation type]*n"	Displays a status of the connection.
"xxxx.xx[MB](yy.yy[GB])"	Displays a size of an LUSE to be produced.
Combo box (left)	A number of LUs (2 through 36) to be connected is selected.
Combo box (right)	A number of LUSEs to be produced is selected. It is possible to enter the number directly.
OK button	Closes the window after reflecting the setting on it.
	This button cannot be selected if an illegal number of LUSEs has been entered.
Cancel button	Closes the window without reflecting the setting on it.

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(9-2) Making an LUSE ('LU Expansion (Disperse)' window)

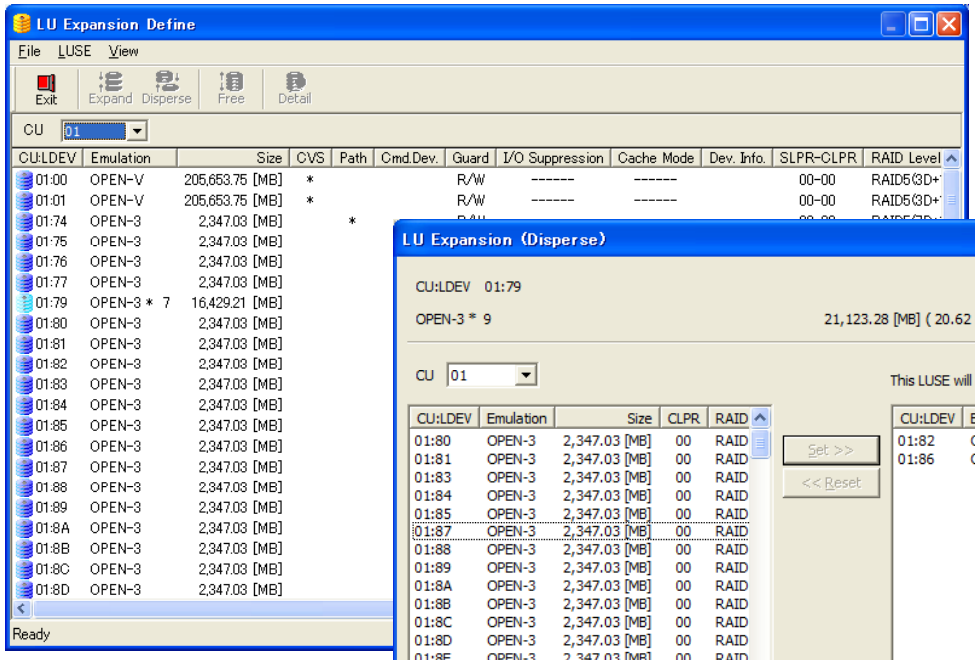


Figure 5.3.1.4-9-5
Main Window

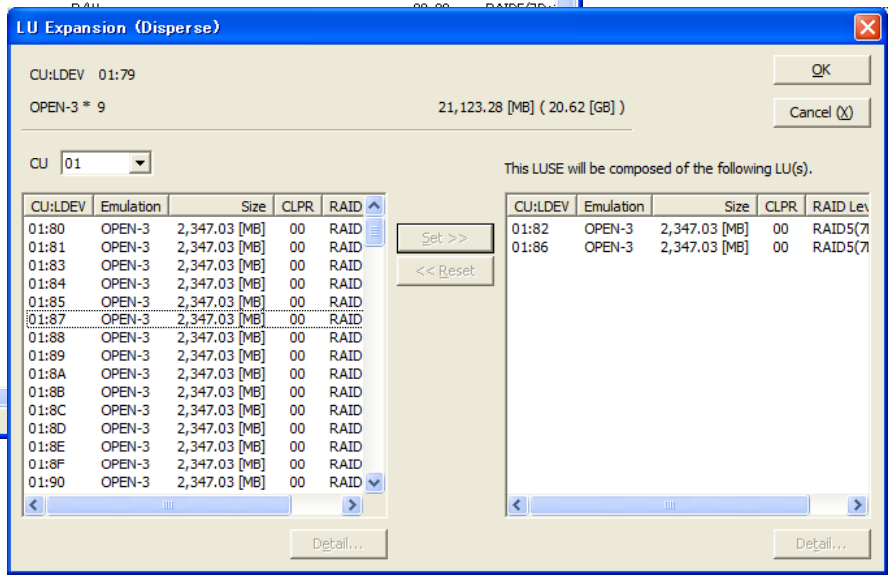


Figure 5.3.1.4-9-6 LU Expansion (Disperse) Window

Making of an LUSE using dispersive LUs is done in the following procedure.

① Select LUs to be used to make an LUSE in the 'LU Expansion Define' window following the work sheet and select (DR) [Expand (Disperse) …] from the [LUSE] menu. Compose an LUSE setting the selected LU at the top.

② Since the 'LU Expansion (Disperse)' window (Figure 5.3.1.4-9-6) is displayed, register Lus to be connected and select (CL) the [OK] button.

③ A status of the LUSE that has been set is reflected on the main window (Figure 5.3.1.4-9-5).

Detail of the 'LU Expansion (Disperse)' window (Figure 5.3.1.4-9-6) is shown below.

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Table 5.3.1.4-9-6 Detail and Operation of LU Expansion (Disperse) Window

Item	Description
CU:LDEV	Displays an LU (LU to be set at the top) selected in the main window.
"[Emulation type]*n"	Displays a status of the connection.
"xxxx.xx[MB](yy.yy[GB])"	Displays a size of an LUSE to be produced.
Combo box	A list of CUs having connectable LUs
List (left)	Displays connectable LUs under the CU selected in the combo box.
List (right)	Displays LUs to be connected.
Set button	Moves LUs selected from the list (left) to the list (right) to make them LUs to be connected.
Reset button	Moves LUs selected from the list (right) to the list (left) to remove them from LUs to be connected.
OK button	Closes the window after reflecting the setting on it.
	This button cannot be selected when no LU exists in the list (right).
Cancel button	Closes the window without reflecting the setting on it.
Detail button (left)	Can refer to a connection status of the LUs selected from the list (left).
	This button cannot be selected when two or more LUs have been selected.
Detail button (right)	Can refer to a connection status of the LUs selected from the list (right).
	This button cannot be selected when two or more LUs have been selected.

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(9-3) Dissolving an LUSE

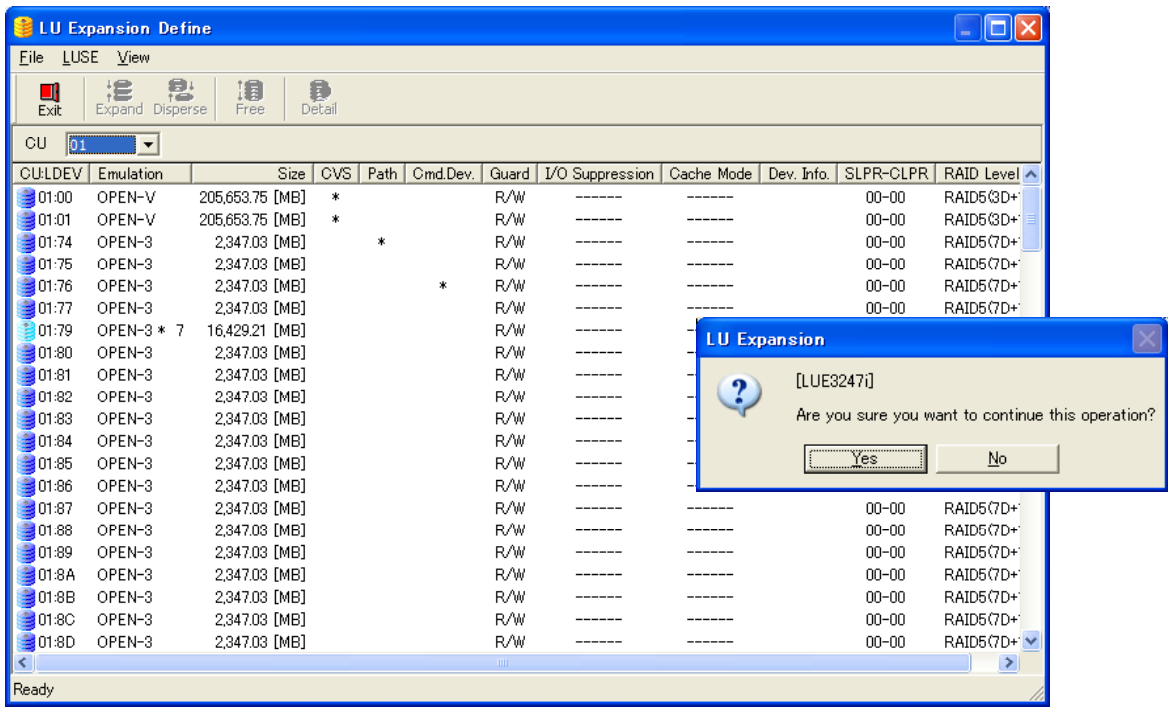


Figure 5.3.1.4-9-7 Main Window

An LUSE is dissolve in the following procedure.

① Select LU (or LUs) to be removed following the work sheet in the 'LU Expansion Define' window and select (DR) [Free] from the [LUSE] menu.

② Since a message asking for a confirmation is displayed, select (CL) the [Yes] button.

③ A status in which the selected LUSE has been dissolved is reflected on the main window (Figure 5.3.1.4-9-7).

A dissolvable LUSE is that satisfies all of the following conditions.

- An LUSE made through connection of two or more LDEVs
- An LUSE for which no path is defined
- An LUSE for which no command device is defined
- An LUSE whose attribute of the Open LDEV Guard is R/W

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(9-4) Referring to a connection status of an LUSE

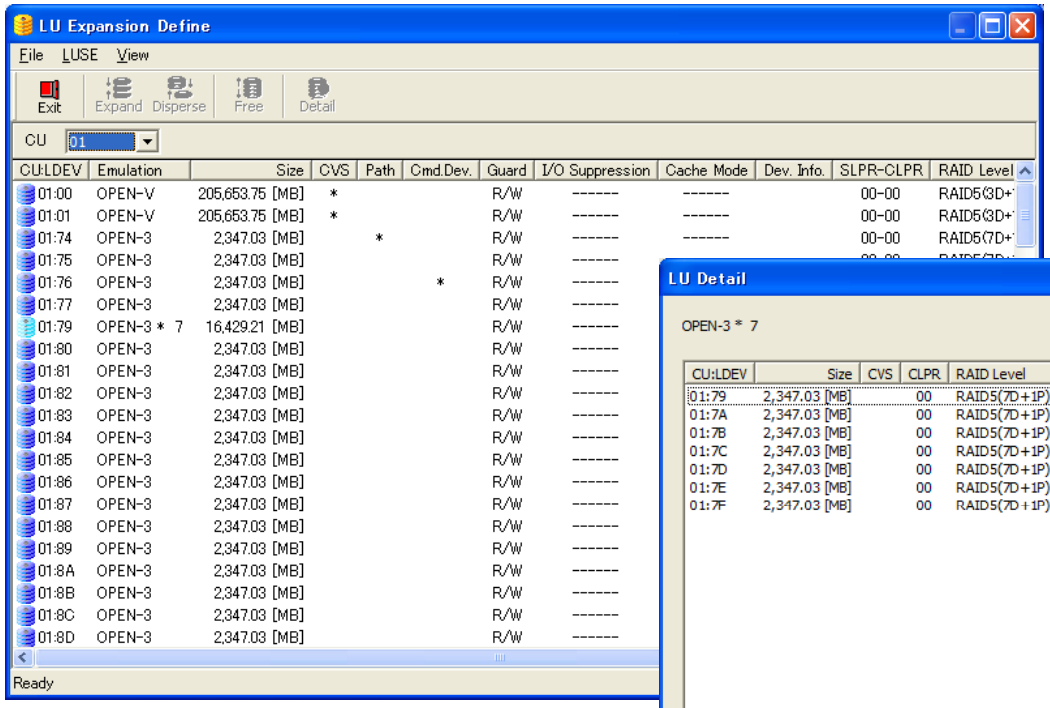


Figure 5.3.1.4-9-8 Main Window

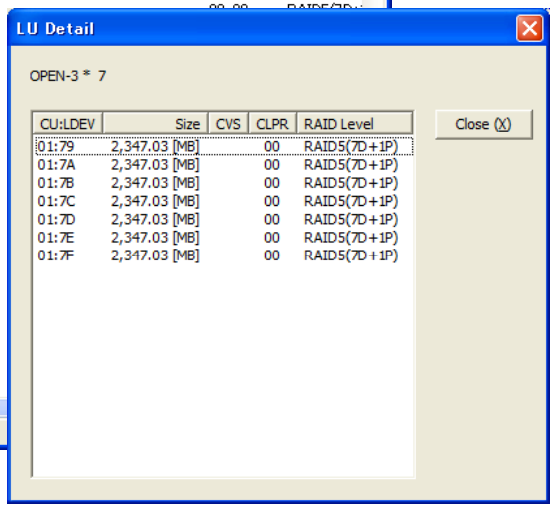


Figure 5.3.1.4-9-9 LU Detail Window

Reference to a connection status of an LUSE is done in the following procedure.

① Select an LUSE, whose connection status is to be referred to, in the 'LU Expansion Define' window or 'LU Expansion (Disperse)' window and select (DR) [Detail …] from the [LUSE] menu.

② Since the 'LU Detail' window (Figure 5.3.1.4-9-9) is displayed, refer to a status of the LU connection.

Detail of the 'LU Detail' window (Figure 5.3.1.4-9-9) is shown below.

Table 5.3.1.4-9-7 Detail and Operation of LU Detail Window

Item		Description
"[Emulation type]*n"		Displays a status of the LU connection.
List	CU:LDEV	Displays all the CU: LDEV's composing an LUSE concerned.
	Size	Display the size of LDEV which configures the LUSE concerned.
	CVS	In the case of a CVS, displays an asterisk (*).
	CLPR	Displays the CLPR number.
	RAID Level	Displays the RAID level.
Close button		Closes the window.

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(9-5) Changing of the unit for expressing an LU size

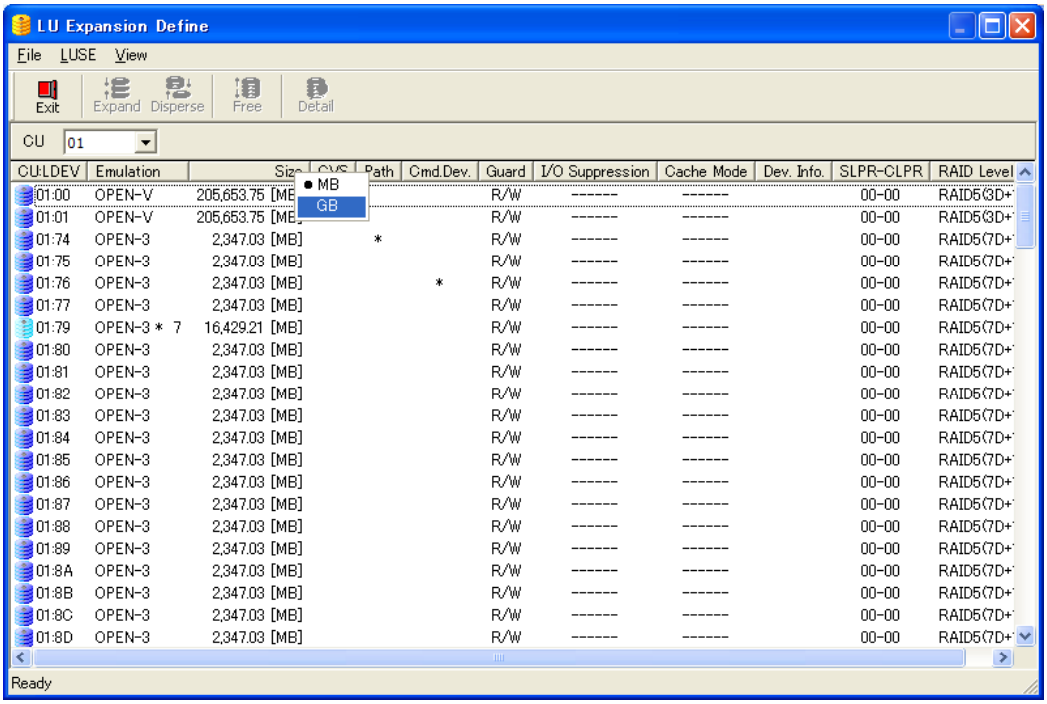


Figure 5.3.1.4-9-10 Main Window

Change of a unit for indicating an LU size is made in the following procedure.

① In the ‘LU Expansion Define’ window, ‘LU Expansion (Disperse)’ window, or ‘LU Detail’ window click on [Size] which is a heading in a list for changing the expression unit with the right mouse button.

② Since a pop-up menu is displayed, select (DR) a unit you want to use.

③ The LU size is displayed in the unit that has been selected.

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(10) Backup/Restore

(10-1) Backup

A backup can be created only when the configuration allows the system operation.
The backup cannot be created in the following cases where the configuration information is contradictory.

- When the PCB is in the high-speed mode and addresses are duplicate (This is a state that can be temporarily induced while the configuration is changed.).
- When the PCB is in the high-speed mode and the topology is different (This is a state that cannot be induced actually.).
- When the PCB is in the high-speed mode and the channel speed is different (This is a state that cannot be induced actually.).

The backup of the configuration information is executed when [Backup] is selected from the [File] menu.

(10-2) Restore

Restoration can be done only for a CHA whose all ports have no LUN defined.
Items to be restored are the following.

- LUN information
- Group information (including information on the WWN, security switch, and host mode)
- Address/topology information
- Channel speed information
- CHA PCB operation mode information

How to operate each menu of the [Restore] is explained below.

- Refer
  Selecting [Restore] and [Refer] from the [File] menu in this order reflects the configuration information, which is stored as a backup, in the window. While the [Refer] is selected, any configuration change cannot be made.

- Execute
  Selecting [Restore] and [Execute] from the [File] menu in this order while the [Refer] is selected applies the configuration information displayed in the window.
  These menu items cannot be selected unless the [Refer] has been selected.

- Cancel
  Selecting [Restore] and [Cancel] from the [File] menu in this order while the [Refer] is selected cancels the state induced by the selection of the [Refer] is selected.
  These menu items cannot be selected unless the [Refer] has been selected.

Go to next page

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(11) Definition of NAS LUN
(11-1) NAS System LUN
(11-1-1) Definition of NAS System LUN

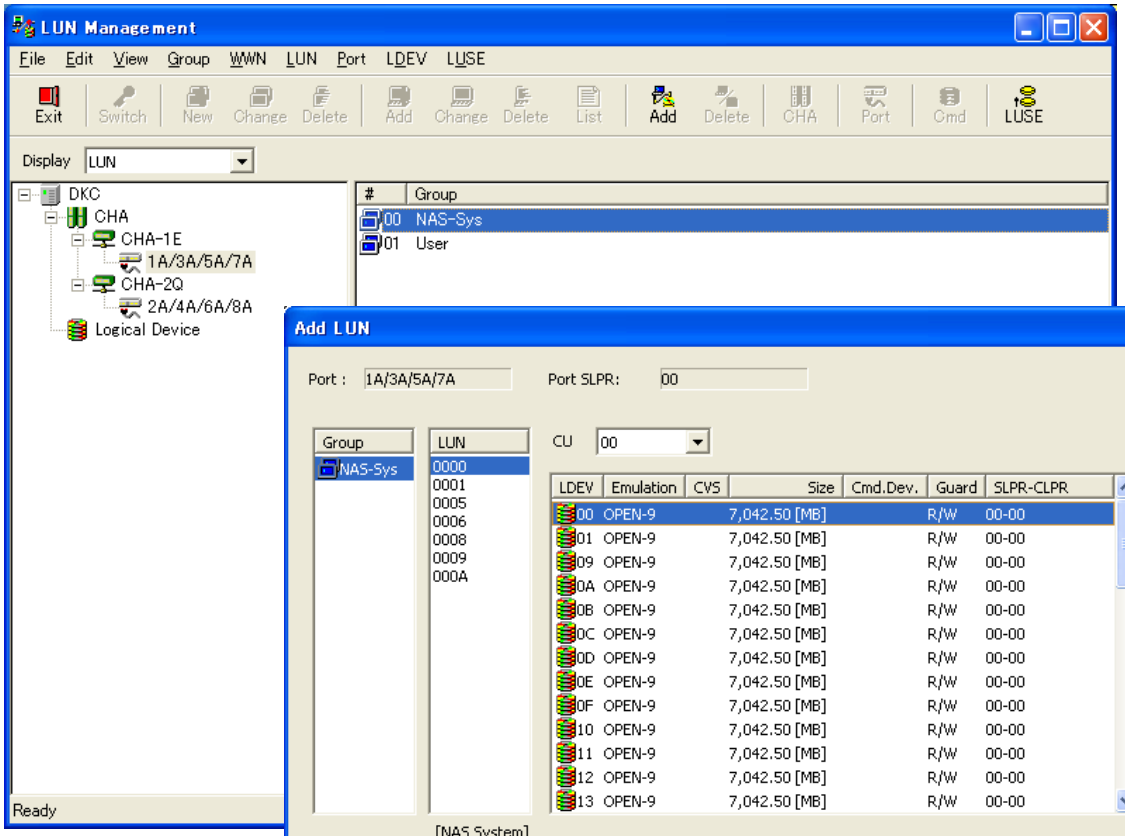


Figure 5.3.1.4-11-1 Main Window

Figure 5.3.1.4-11-2 LUN Registration Window

When the port of “NAS” in the tree view is selected (CL) and the Display is set as “LUN”, “NAS-Sys” of the Group#00 and “User” of the Group#01 are set with default in the upper right list. Select “NAS-Sys” of the Group#00. (In an example shown in Figure 5.3.1.4-11-1, select the NAS port, 1A/3A/5A/7A from the tree diagram.)

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Addition of a System LUN is done in the following procedure.

① Select (CL) “NAS-Sys” of the Group#00 from the upper right list.

② Select (DR) [Add…] from the [LUN] menu in the Main window (Figure 5.3.1.4-11-1).

③ Since the LUN Registration window (Figure 5.3.1.4-11-2) is displayed, select the LUN and CU: LDEV, and then select (CL) the [Set] button. The LUN information that has been set is displayed in the “Add follows” list.
Prior to this if any other System LUN settings for other CHNs are already done, the NAS System LU and NAS Dump Info LU of the other CHN are displayed. They are set automatically in order to allow the other CHN to collect information on a self CHN failure when the failure occurs.

④ When the [OK] button is selected, items displayed in the “Add follows” list are newly registered and the window is returned to the Main window (Figure 5.3.1.4-11-1).

(Since a message [SEC3454i] is displayed when a command device is not set for the LDEV of the LUN#05, select (CL) [Yes].)

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Definition of the system LU numbers (LUN#), 00, 01, 05, 06, 08, 09, and 0A is indispensable for each CHN. When the system LU numbers (LUN#), 05, 06, 08, 09, and 0A have already been defined for another CHN, system LU numbers (LUN#), 05, 06, 08, 09, and 0A of the CHN concerned can be selected by the same LDEV only. Besides, system LU numbers (LUN#) following 0B are to be defined for the other CHNs. They are set automatically in order to allow the other CHN to collect information on a self CHN failure when the failure occurs. They cannot be defined through the window shown in Figure 5.3.1.4-11-2 because they are set automatically when system LUNs of the other CHNs are defined. (For the system LUN, refer to Tables 5.3.1.4-11-3 and 5.3.1.4-11-4.)

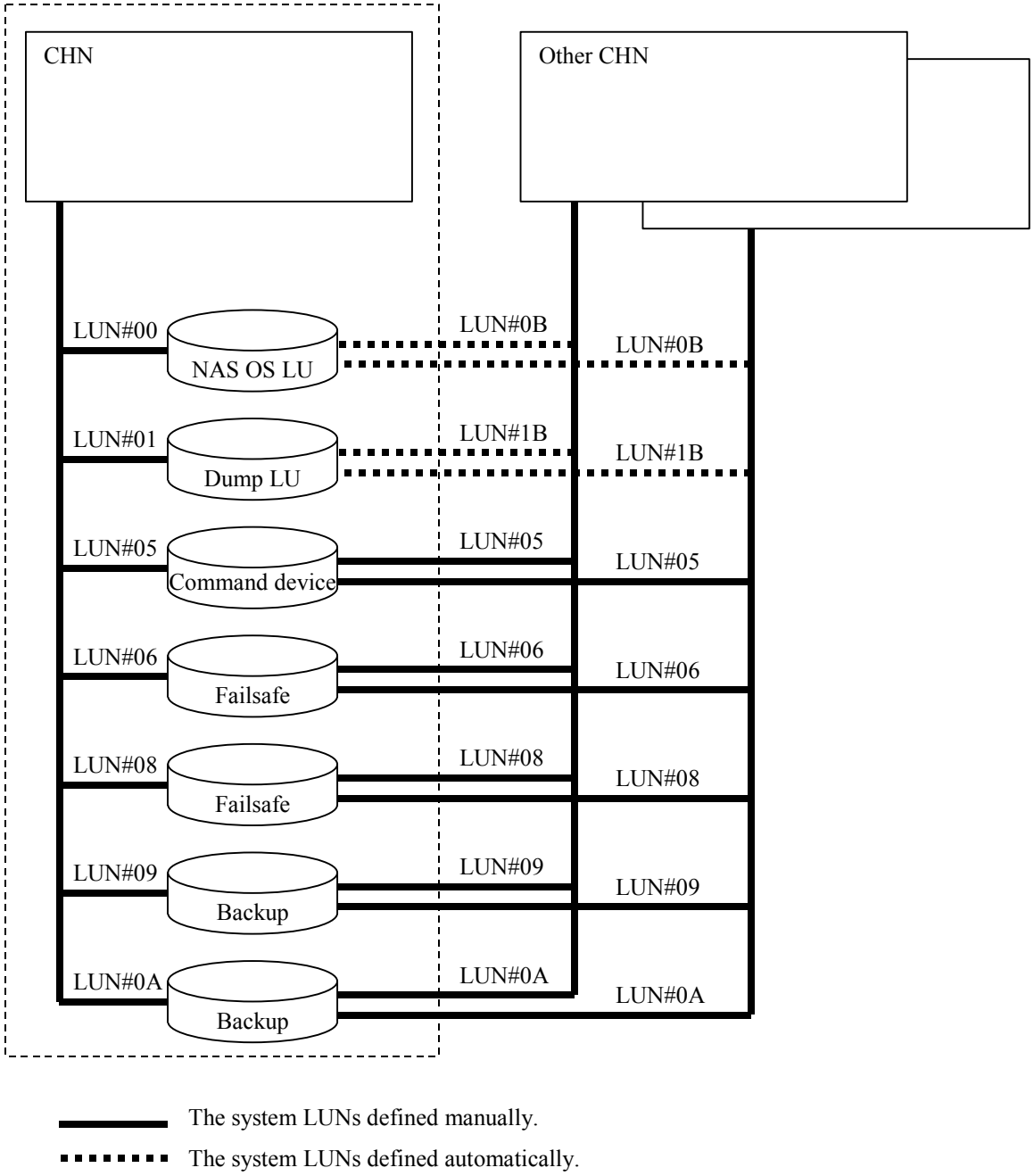


Figure 5.3.1.4-11-3 System LUN concept figure

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Details of each window are shown below.

Notice:

Among the System LUNs for the other CHNs, those that show the own PCB are not defined. (In the example shown in Figure 5.3.1.4-11-1, the LUN#0B and LUN#1B are not defined for the NAS-Sys group of the NAS (1A/3A/5A/7A) port.)

Table 5.3.1.4-11-1 Details and Operation of Main Window (LUN)

Item	Description
Upper list	Displays groups connected with the E-NAS port that has been selected from the tree. (Select "NAS-Sys.")
	Provided with a sorting function.
Lower list	Displays LUNs defined as being included in the NAS-Sys of the Group#00.
	Provided with a sorting function.
"LUN-Add" menu	Selectable when the NAS-Sys of the Group#00 has been selected.
	Displays the Add LUN window.
"Add" tool bar	Selectable when the NAS-Sys of the Group#00 has been selected.
	Displays the Add LUN window.
Pop-up menu	Displays the "Add" menu when the NAS-Sys of the Group#00 is selected and the right mouse button is clicked.

Table 5.3.1.4-11-2 Details and Operation of LUN Registration Window

Item	Description
Port	Displays a name of the port that has been selected from the tree in the Main window.
Group list	Displays the NAS-Sys.
LUN list	Displays settable LUNs in the NAS-Sys of the group concerned.
	Only one LUN can be selected.
CU list	Displays CU numbers of all the installed LDEVs supported by this function.
LDEV list	Displays settable LUNs only.
Add follows list	Displays the LUNs (paths) to be added.
Set button	Selectable only when all of the Group, LUN, CU: LDEV have been selected.
	The LUNs that have been added are displayed in the "Add follows" list.
Delete button	Excepts LUNs from those to be added.
OK button	Selectable only when at least one LUN is in the "Add follows" list.
	Closes the window after adding the LUN and returns you to the Main window.
Cancel button	Closes the window without doing anything and returns the window to the Main window.

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Table 5.3.1.4-11-3 System LUNs of Own CHN

LUN#	System LUN	Content	Minimum capacity
00	LU for OS	NAS System	6667 MB
01	Dump LU	NAS Dump Info	4926 MB
05	Command device	NAS Cmd.Device	35 MB
06	Failure information storage	NAS Error Info	4195 MB
08	Fail-safe + Operation management	NAS Fail Safe	2537 MB
09	Backup data	NAS Backup	2537 MB
0A	Backup data	NAS Backup	2537 MB

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Table 5.3.1.4-11-4 System LUNs of the Other CHNs

LUN#	System LUN	Content	Minimum capacity
0C	NAS OS LU for CHA-1B	NAS System	6667MB
10	NAS OS LU for CHA-2E	NAS System	6667MB
1C	Dump LU for CHA-1B	NAS Dump Info	4926MB
20	Dump LU for CHA-2E	NAS Dump Info	4926MB

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In addition, numbers of system LUNs required for the settings are shown in Table 5.3.1.4-11-5.

Notice:
One each of the LUs for the command device, for failure information storage, for failsafe, for backup data ①, for backup data ② are required for a subsystem.

Table 5.3.1.4-11-5 Number of System LUNs That Must Be Defined

CHA Location	NAS OS LU	Dump LU	Command Device	Failure Information storage	Fail-safe + Operation management	Backup data ①	Backup data ②
CHA-1B	1	1	1	1	1	1	1
CHA-2E	1	1					

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(11-1-2) Deleting NAS System LUN

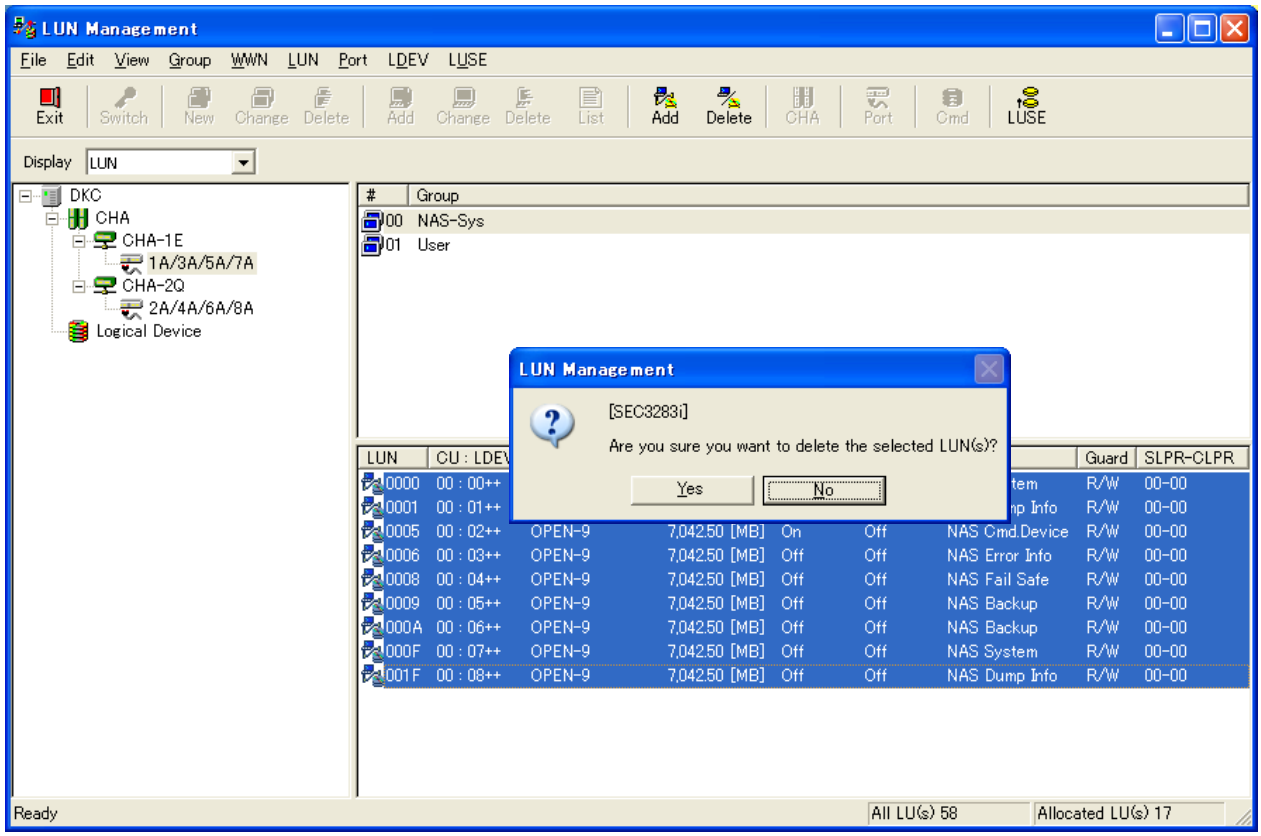


Figure 5.3.1.4-11-4 Main Window

When the port of “NAS” in the tree view is selected (CL) and the Display is set as “LUN”, “NAS-Sys” of the Group#00 and “User” of the Group#01 are displayed in the upper right list. Select “NAS-Sys” of the Group#00. (In an example shown in Figure 5.3.1.4-11-4, select the NAS port, 1A/3A/5A/7A from the tree diagram.)

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Deletion of a System LUN is done in the following procedure.

Notices:

- When eliminating a LUN from the “NAS-Sys”, it is a pre-condition that no LUN of the “User” exists.
- When the LUNs 00, 01, 05, 06, 08, 09, and 0A were eliminated from LUNs, paths (LUNs) lead from the other CHN using the LUNs are eliminated automatically.
- When a LUN other than the LUNs 00, 01, 05, 06, 08, 09, and 0A is eliminated from LUNs, the path (LUN) that leads to the LDEV concerned from the other CHN is left assigned because the LUN is a path leading to the system LU and/or the dump LU of the other CHN. That is because there may be a case where the LDEV concerned is operating as a system LU or dump LU of the other CHN.
  When eliminating a path (LUN) to the LDEV concerned as a system LU for the reason that the LDEV concerned is no longer used as a system LU, a path (LUN) leads from the other CHN to the LDEV concerned must be eliminated also manually. In this case, LUNs defined as leading from all the CHNs to the LDEV concerned are eliminated automatically when the LUN concerned that leads from the CHN, which defines the LDEV concerned as the LUN 00 or LUN 01, is eliminated.

① Select (CL) “NAS-Sys” of the Group#00 from the upper right list.
② Select (CL) a LUN from the lower right list.
③ Select (DR) [Delete] from the [LUN] menu in the Main window (Figure 5.3.1.4-11-4).
④ Since a message asking for a confirmation is displayed, select (CL) the [Yes] button.
⑤ Information on the LUN that has been selected from the lower right list is deleted.

Besides, NAS OS must be shut down before deleting the NAS system LUN. (NAS03-790)

Table 5.3.1.4-11-6 Details and Operation of Main Window (LUN)

Item	Description
Upper list	Displays groups connected with the E-NAS port that has been selected from the tree. (Select “NAS-Sys.”)
	Provided with a sorting function.
Lower list	Displays LUNs defined as being included in the NAS-Sys of the Group#00.
	Provided with a sorting function.
“LUN-Delete” menu	Selectable when “LUN” has been selected.
	Displays a message asking for a confirmation.
“Delete” tool bar	Selectable when “LUN” has been selected.
	Displays a message asking for a confirmation.
Pop-up menu	Displays the “Delete” menu when “LUN” is selected and the right mouse button is clicked on the item.

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(11-2) NAS User LUN

(11-2-1) Definition of NAS User LUN

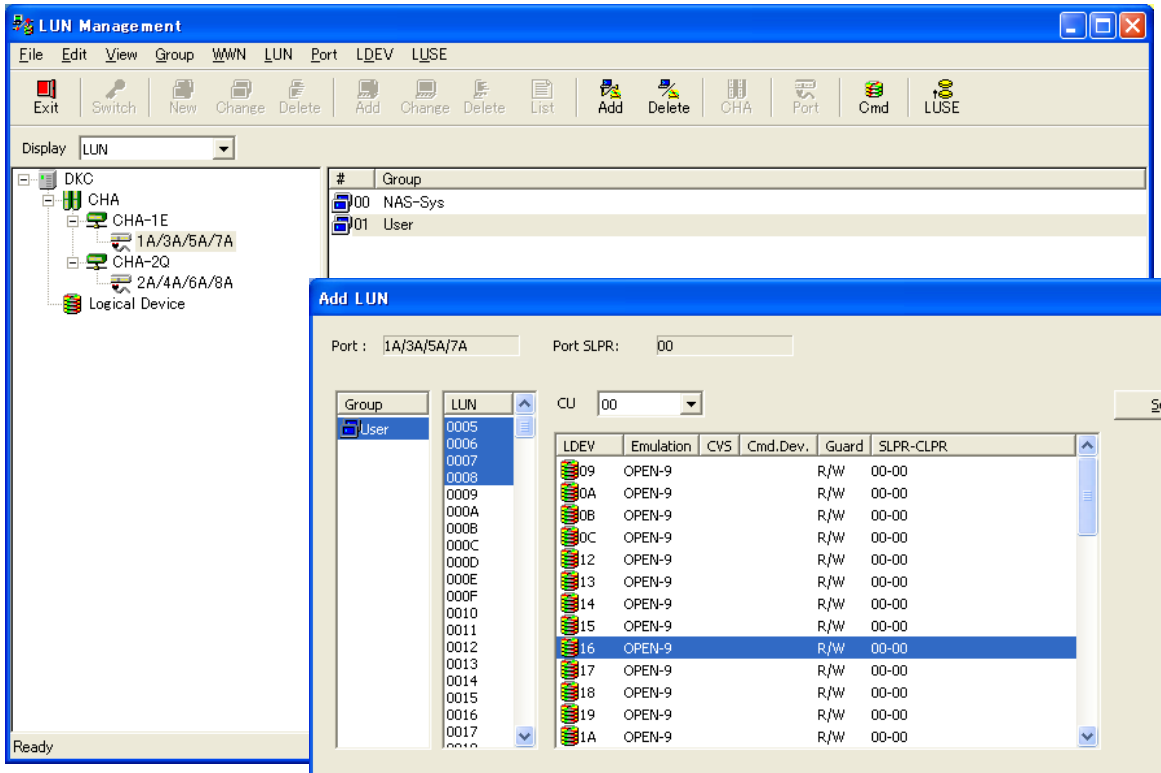


Figure 5.3.1.4-11-5 Main Window

Figure 5.3.1.4-11-6 LUN Registration Window

When the port of “NAS” in the tree view is selected (CL) and the Display is set as “LUN”, “NAS-Sys” of the Group#00 and “User” of the Group#01 are displayed in the upper right list. Select “User” of the Group#01. (In an example shown in Figure 5.3.1.4-11-5, select the NAS port, 1A/3A/5A/7A from the tree diagram.)

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Addition of a User LUN is done in the following procedure.

Notices:
When defining the User LUN, LUNs of the NAS-Sys with numbers 00, 01, 05, 06, 08, 09, and 0A must have been set.

① Select (CL) “User” of the Group#01 from the upper right list.
② Select (DR) [Add…] from the [LUN] menu in the Main window (Figure 5.3.1.4-11-5).
③ Since the LUN Registration window (Figure 5.3.1.4-11-6) is displayed, select the LUN and CU: LDEV, and then select (CL) the [Set] button. The LUN information that has been set is displayed in the “Add follows” list.
④ When the [OK] button is selected, items displayed in the “Add follows” list are newly registered and the window is returned to the Main window (Figure 5.3.1.4-11-5).

Moreover, each User LUN should be shared in two NAS packages where the cluster is composed and path should be defined with the same LUN in both NAS packages.

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Details of each window are shown below.

Table 5.3.1.4-11-7 Details and Operation of Main Window (LUN)

Item	Description
Upper list	Displays groups connected with the E-NAS port that has been selected from the tree. (Select User.)
	Provided with a sorting function.
Lower list	Displays LUNs defined as being included in the User of the Group#01.
	Provided with a sorting function.
“LUN-Add” menu	Selectable when the User of the Group#01 has been selected.
	Displays the Add LUN window.
“Add” tool bar	Selectable when the User of the Group#01 has been selected.
	Displays the Add LUN window.
Pop-up menu	Displays the “Add” menu when the User of the Group#01is selected and the right mouse button is clicked.

Table 5.3.1.4-11-8 Details and Operation of LUN Registration Window

Item	Description
Port	Displays a name of the port that has been selected from the tree in the Main window.
Group list	Displays the NAS-Sys.
LUN list	Displays settable LUNs in the User of the group concerned.
CU list	Displays CU numbers of all the installed LDEVs supported by this function.
LDEV list	Displays LUNs unused in the group concerned. No LDEV of the System LUN is displayed.
Add follows list	Displays the LUNs (paths) to be added.
Set button	Selectable only when all of the Group, LUN, CU: LDEV have been selected.
	The LUNs that have been added are displayed in the “Add follows” list.
Delete button	Excepts LUNs from those to be added.
OK button	Selectable only when at least one LUN is in the “Add follows” list.
	Closes the window after adding the LUN and returns you to the Main window.
Cancel button	Closes the window without doing anything and returns the window to the Main window.

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(11-2-2) Deleting NAS User LUN

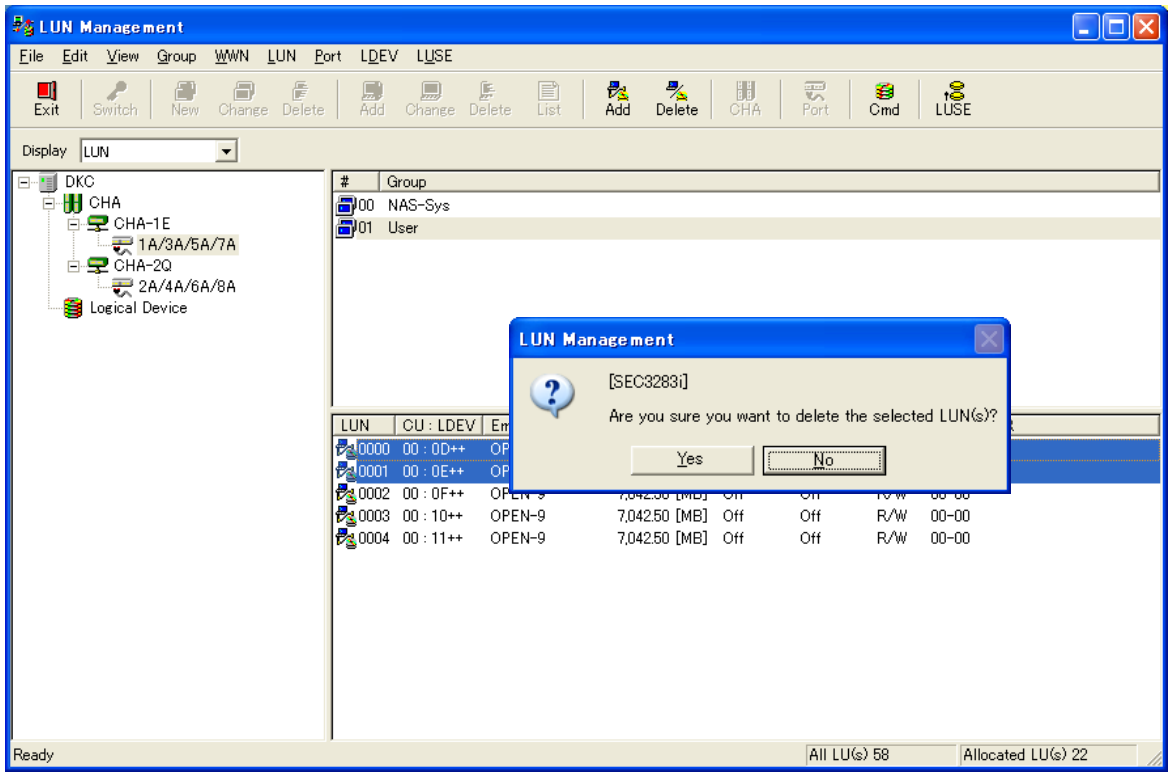


Figure 5.3.1.4-11-7 Main Window

When the port of “NAS” in the tree view is selected (CL) and the Display is set as “LUN”, “NAS-Sys” of the Group#00 and “User” of the Group#01 are displayed in the upper right list. Select “User” of the Group#01. (In an example shown in Figure 5.3.1.4-11-7, select the NAS port, 1A/3A/5A/7A from the tree diagram.)

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Deletion of a User LUN is done in the following procedure.

Notices:
When User LUN is being deleted, it is necessary to do the following operation to the User LUN.
- Deletion of sharing of file
- Anmount of file system
- Deletion of file system

After the operation of the above-mentioned is requested to the system administrator, and the operation end is confirmed, User LUN can be deleted.

Notices:
To delete LU paths to User LUNs are reserved for device files as destinations of file system copy, ask a system administrator to release these reservations of device file first. After that, ask the system administrator to confirm that no LU paths to LUNs to be deleted are not reserved, then delete those LU paths.

① Select (CL) “User” of the Group#01 from the upper right list.
② Select (CL) a LUN from the lower right list.
③ Select (DR) [Delete] from the [LUN] menu in the Main window (Figure 5.3.1.4-11-7).
④ Since a message asking for a confirmation is displayed, select (CL) the [Yes] button.
⑤ Information on the LUN that has been selected from the lower right list is deleted.

Table 5.3.1.4-11-9 Details and Operation of Main Window (LUN)

Item	Description
Upper list	Displays groups connected with the E-NAS port that has been selected from the tree. (Select “User.”)
	Provided with a sorting function.
Lower list	Displays LUNs defined as being included in the User of the Group#01.
	Provided with a sorting function.
“LUN-Delete” menu	Selectable when “LUN” has been selected.
	Displays a message asking for a confirmation.
“Delete” tool bar	Selectable when “LUN” has been selected.
	Displays a message asking for a confirmation.
Pop-up menu	Displays the “Delete” menu when “LUN” has been selected and the right mouse button is clicked on the item.

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(11-3) Other Windows
(11-3-1) CHA List window

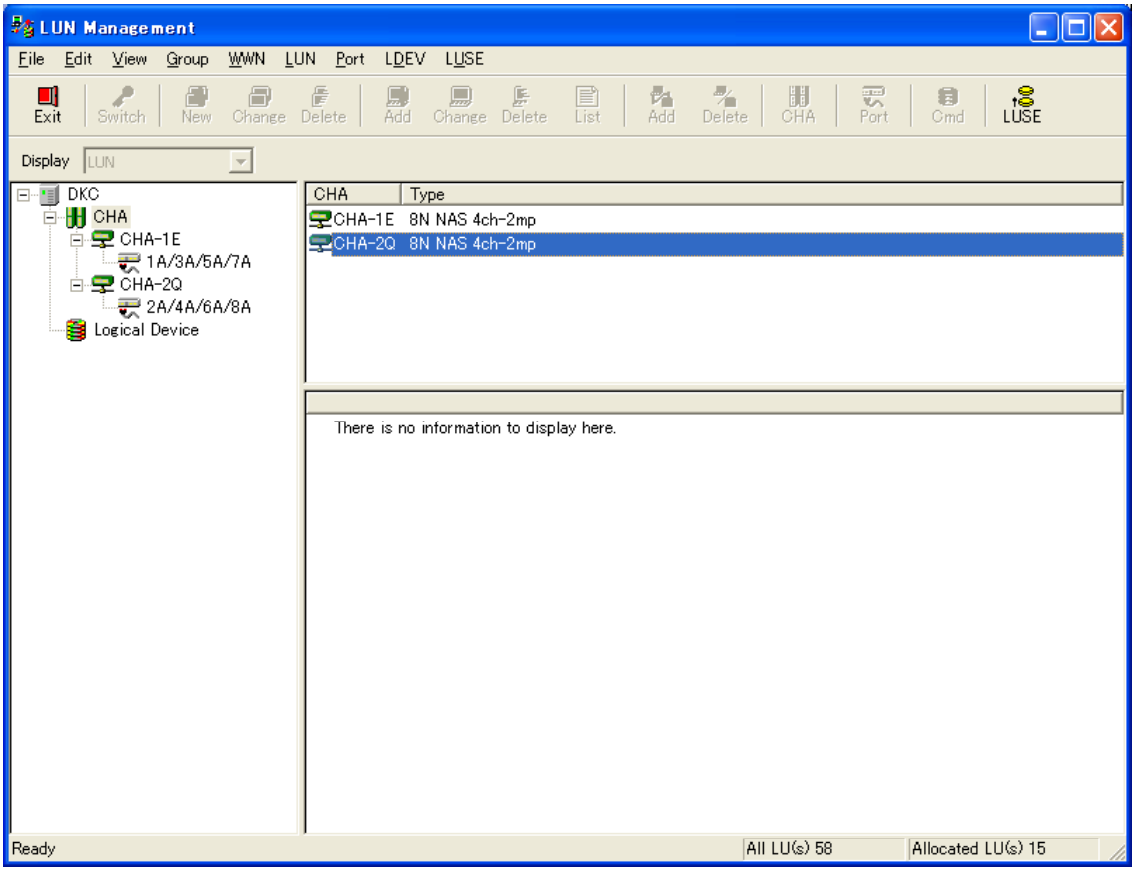


Figure 5.3.1.4-11-8 CHA List Window

When “CHA” in the tree view is selected (CL), the CHAs installed is displayed in the upper right list. When the E-NAS (CHN) is installed then, “8N NAS 4ch-2mp” is displayed in the Type column.

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(11-3-2) Port List window

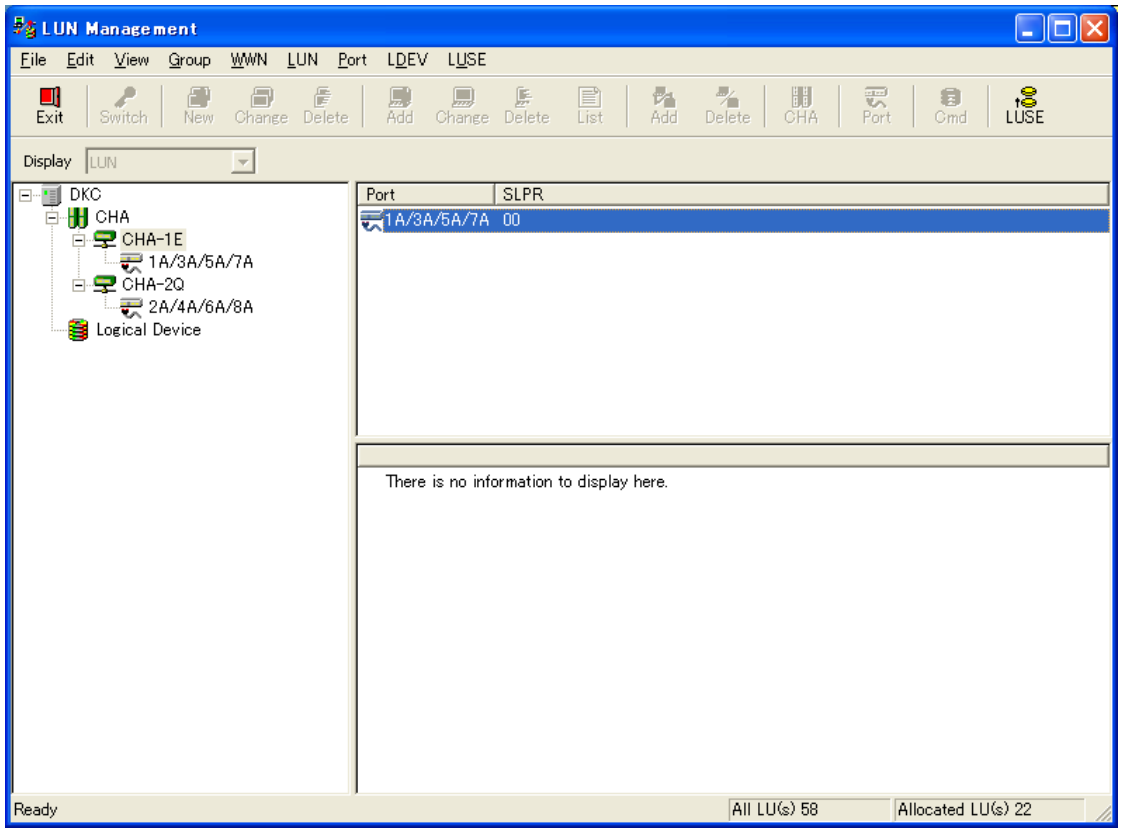


Figure 5.3.1.4-11-9 Port List Window

When a CHA location of “NAS” in the tree view is selected (CL), names of the ports installed are displayed in the upper right list. There is no setting of information on the port of the NAS.

Table 5.3.1.4-11-10 Details and Operation of Port List Window

Item	Description
Upper list	Displays port(s) of the NAS.
Lower list	Displays nothing.
Other	The port parameter and the security switch cannot be changed.

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(11-3-3) Group List window

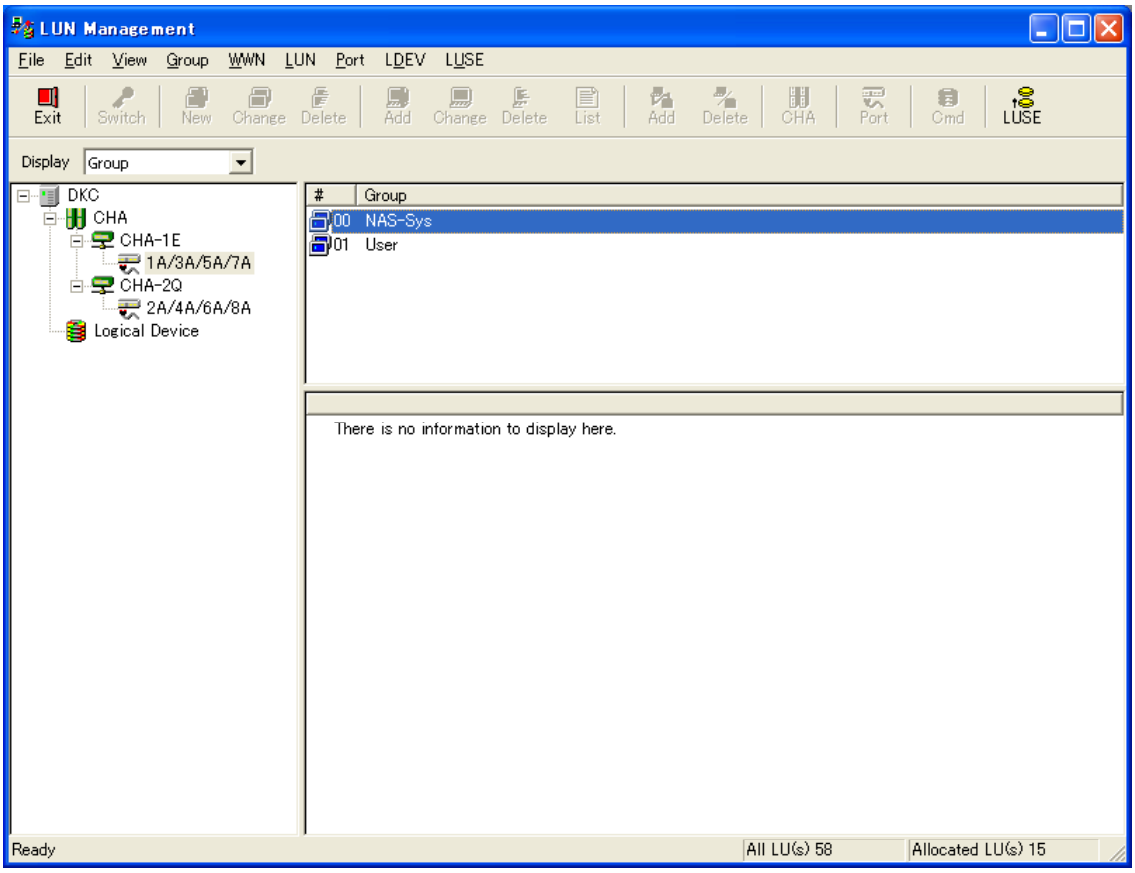


Figure 5.3.1.4-11-10 Group List Window

When the port of "NAS" in the tree view is selected (CL) and the Display is set as "Group," "NAS-Sys" of the Group#00 and "User" of the Group#01 are displayed in the upper right list. This group information cannot be changed. (In an example shown in Figure 5.3.1.4-11-10, select the NAS port, 1A/3A/5A/7A from the tree diagram.)

Table 5.3.1.4-11-11 Details and Operation of Group List Window

Item	Description
Upper list	Displays "NAS-Sys" of the Group#00 and "User" of the Group#01.
Lower list	Displays nothing.
Group setting	No group can be added, changed, or deleted.
WWN setting	No WWN can be added, changed, or deleted.

(11-3-4) LDEV List window

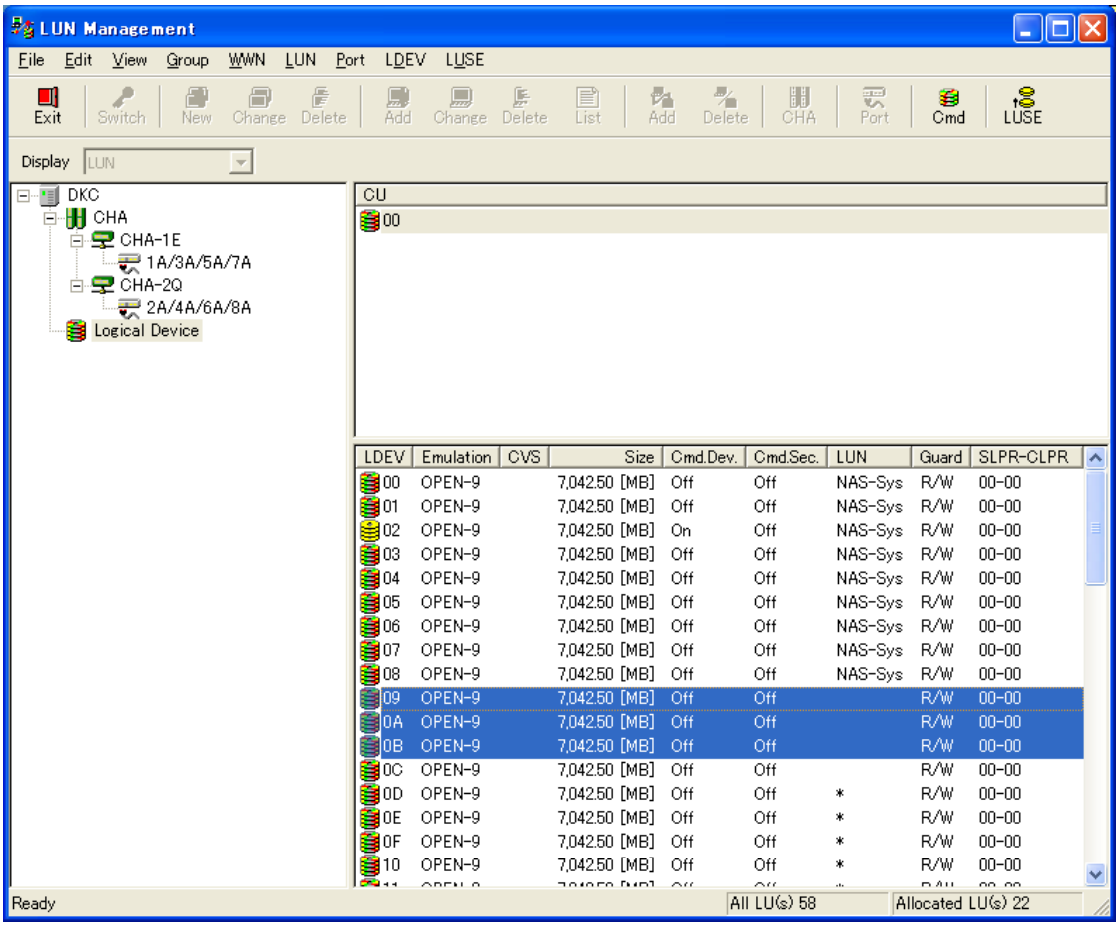


Figure 5.3.1.4-11-11 LDEV List Window

When “Logical Device” in the tree view is selected (CL), the CU numbers of installed LDEVs supported by this function are displayed. At this time, “NAS-Sys” is displayed in the LUN column for the LDEV assigned to the NAS-Sys. For the LDEV assigned to the NAS-Sys, no command device can be set.
(However, the command device can be set for the LUN#05 of the NAS-Sys only.)

Table 5.3.1.4-11-12 Details and Operation of LDEV List Window

Item	Description
Upper list	Displays numbers of the CUs installed.
Lower list	Displays detailed information of CUs selected.
“LDEV-Command Device”	Selectable only when an LDEV has been selected. However, when an LDEV of the NAS-Sys is selected and a command device is set, a message [SEC3457E] is displayed and this item becomes selectable. (A command device can be set for the LUN#05 of the NAS-Sys only.)

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(11-3-5) System LUN List window

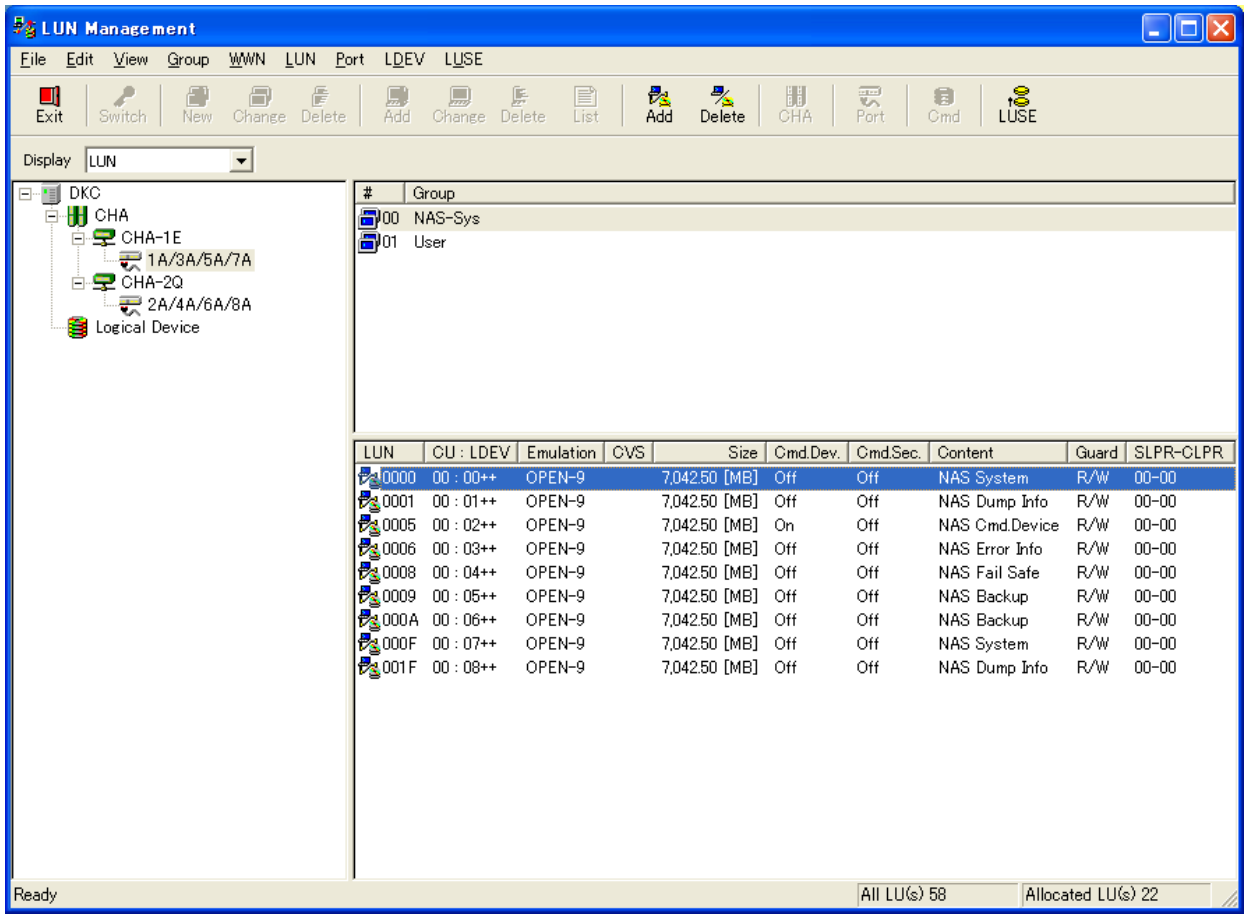


Figure 5.3.1.4-11-12 System LUN List Window

When the port of “NAS” in the tree view is selected (CL) and the Display is set as “LUN”, “NAS-Sys” of the Group#00 and “User” of the Group#01 are displayed in the upper right list. Select “NAS-Sys” of the Group#00.

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Table 5.3.1.4-11-13 System LUN List Window

Item	Description
Upper list	Displays “NAS-Sys” of the Group#00 and “User” of the Group#01.
Lower list	Displays “System LUN” of the Group#00 is selected.

Table 5.3.1.4-11-14 Meaning of Content

Item	Description
NAS System	LU for OS
NAS Dump Info	Dump LU
NAS Cmd.Device	NAS command device
NAS Error Info	Failure information storage LU
NAS Fail Safe	Fail-safe + Operation management
NAS Backup	Backup data

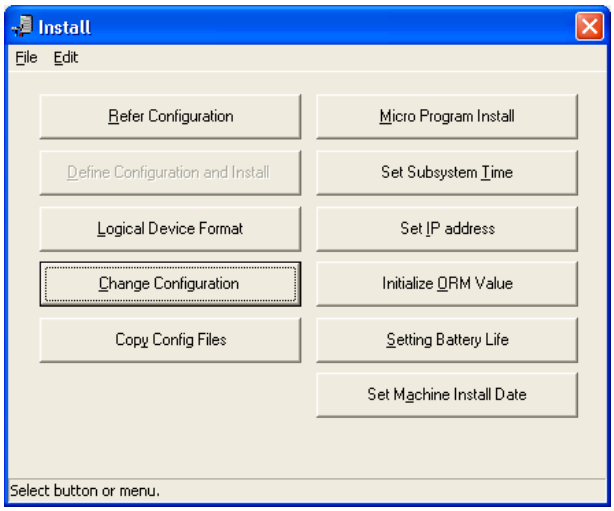
Note: Among the System LUNs for the other CHNs, those that show the own PCB are not defined. (In the example shown in Figure 5.3.1.4-11-12, the LUN#0B and LUN#1B are not defined for the NAS-Sys group of the NAS (1A/3A/5A/7A) port.)

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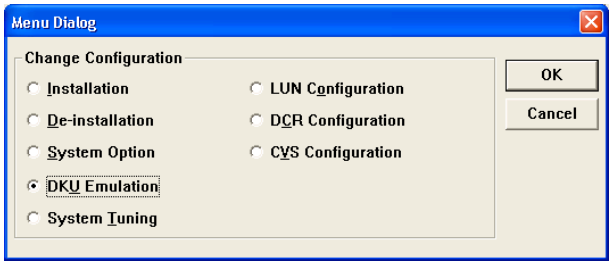
5.3.2 Emulation Type Change

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

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



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



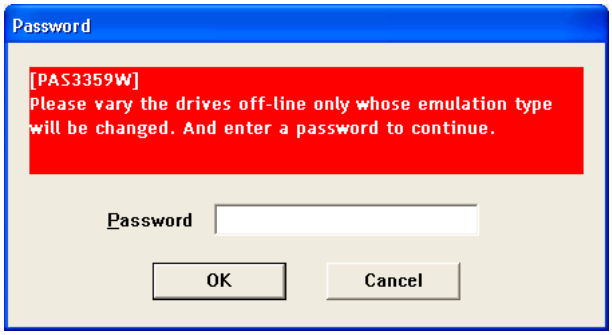
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4. <Input password>

CAUTION

This is a special (exceptional) operation that can cause a serious failure such as a system down or a data loss if a wrong drive for which the emulation type is to be changed is selected, and requires an input of a password. Ask the technical support division about the appropriateness of the operation, and input the password after getting an approval of executing the operation.

Enter the password and select (CL) [OK].



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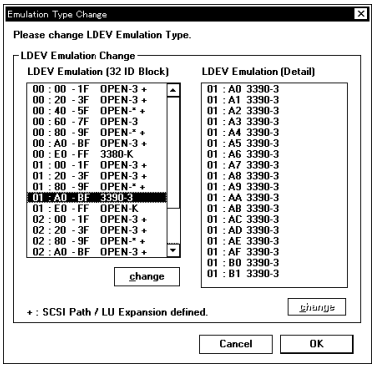
5. Emulation Change Procedure

- Emulation Type Change for Single Block ---------- Go to step 5.1.
- Emulation Type Change for Single LDEV ---------- Go to step 5.2.
- Emulation Type Change for Multiple Blocks ---------- Go to step 5.3.
- Individual Emulation Type Change for Multiple LDEVs --------- Go to step 5.4.

5.1 Emulation Type Change for Single Block

(1)

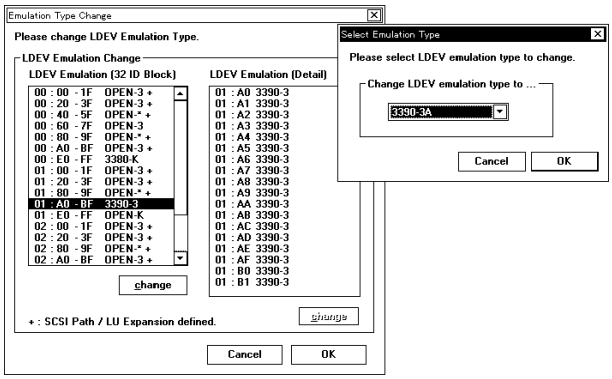
Select (CL) a block including an LDEV of which you want to change the emulation type in the LDEV Emulation (32 ID Block) list box.



---

(2)

Select (CL) [change] beneath the LDEV Emulation (32 ID Block) list box to open the dialog box for (choosing) the emulation type to be changed, and select (CL) the changed emulation type.



In the following case, the [change] button is not available. (It's concerned with a "+" indicated LDEV.)

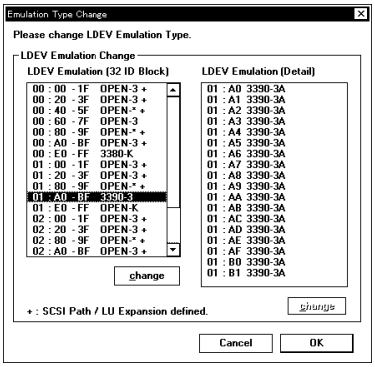
(a) A block including volumes with SCSI path is selected.

(b) A block including LU Expanded volumes is selected.

---

(3)

Select (CL) [OK] to set the changed emulation type.
Then, the LDEV (selected in step (1)) having the emulation type to be changed varies to the one specified in step (2). When selecting the same LDEV block after setting the change, you can check details of the changes in the LDEV Emulation (Detail) list box. Go to step 6.

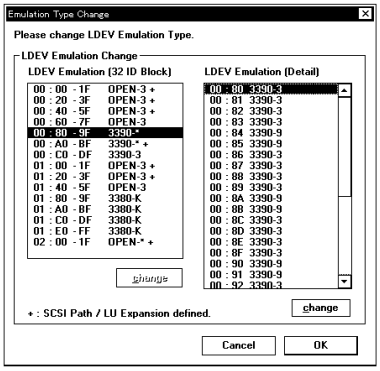


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5.2 Emulation Type Change for Single LDEV

(1)

Select (CL) a block including an LDEV of which you want to change the emulation type in the LDEV Emulation (32 ID Block) list box.



---

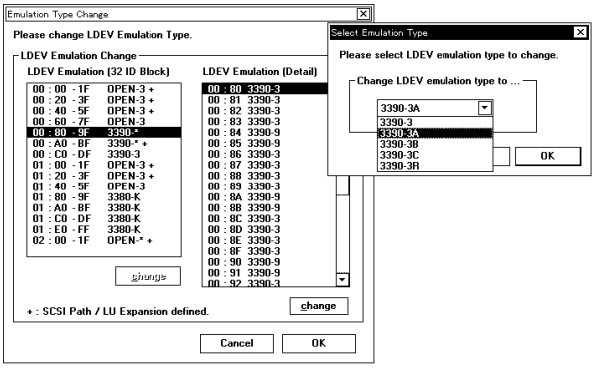
(2)

In the LDEV Emulation (Detail) list box, select (CL) an LDEV whose emulation type to be changed.

---

(3)

Select (CL) [change] beneath the LDEV Emulation (Detail) list box to open the dialog box for (choosing) the emulation type to be changed, and select (CL) the changed emulation type.



In the following case, the [change] button is not available. (It's concerned with a "+" indicated LDEV.)

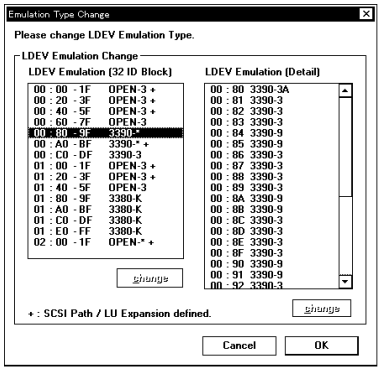
(a) A volume with SCSI path is selected.

(b) An LU expanded volume is selected.

---

(4)

Select (CL) [OK] to set the changed emulation type. Then, the LDEV (selected in step (2)) varies to the one specified in step (3). Go to step 6.

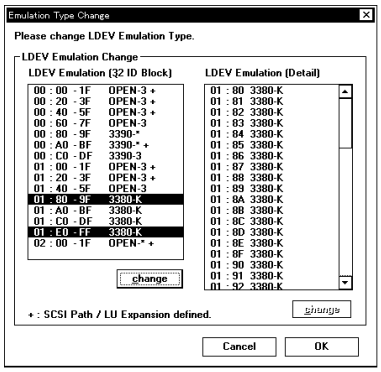


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5.3 Emulation Type Change for Multiple Blocks

(1)

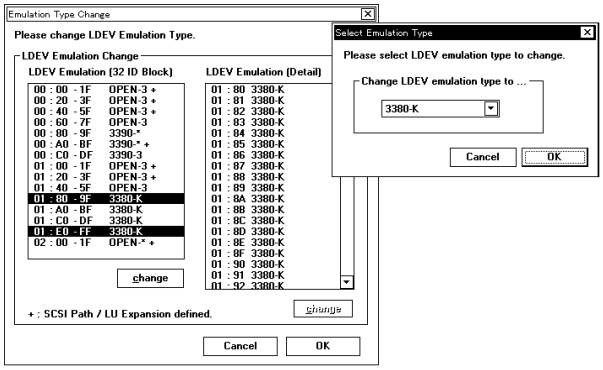
Select (CL) blocks including an LDEV of which you want to change the emulation type in the LDEV Emulation (32 ID Block) list box.



---

(2)

Select (CL) [change] beneath the LDEV Emulation (32 ID Block) list box to open the dialog box for (choosing) the emulation type to be changed, and select (CL) the changed emulation type.



In the following case, the [change] button is not available. (It's concerned with a "+" indicated LDEV.)

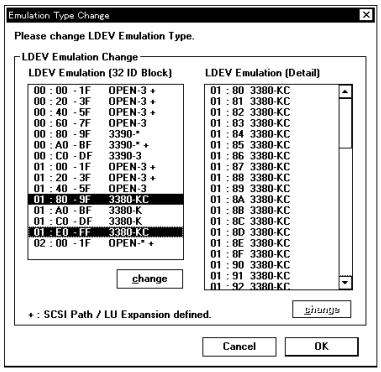
(a) Blocks including volumes with SCSI path are selected.

(b) Blocks including LU expanded volumes are selected.

---

(3)

Select (CL) [OK] to set the changed emulation type.
Then, the LDEV (selected in step (1)) having the emulation type to be changed varies to the one specified in step (2). When selecting the same LDEV block after setting the change, you can check details of the changes in the emulation LDEV Emulation (Detail) list box. Go to step 6.

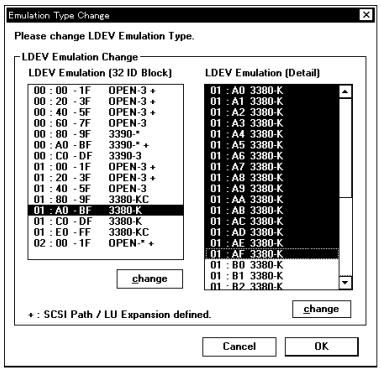


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5.4 Individual Emulation Type Change for Multiple LDEVs

(1)

Select (CL) a block including LDEVs of which you want to change the emulation type in the LDEV Emulation (32 ID Block) list box.



---

(2)

In the LDEV Emulation (Detail) list box, select (CL) LDEVs whose emulation types are to be changed.

---

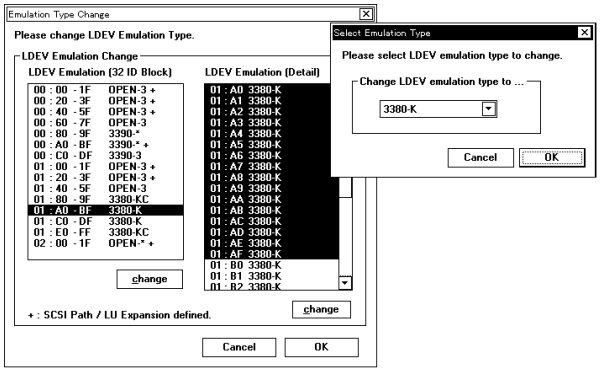
(3)

Select (CL) [change] beneath the LDEV Emulation (Detail) list box to open the dialog box for (choosing) the emulation type to be changed, and select (CL) the changed emulation type.

In the following case, the [change] button is not available. (It's concerned with a "+" indicated LDEV.)

(a) Volumes with SCSI path are selected.

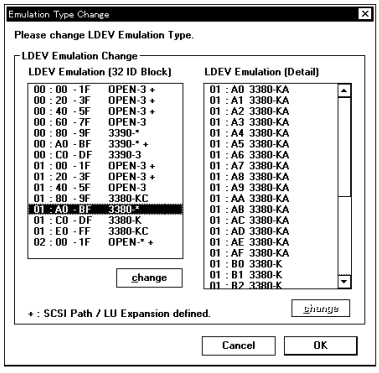
(b) LU expanded volumes are selected.



---

(4)

Select (CL) [OK] to set the changed emulation type.
Then, the LDEV (selected in step (2)) varies to the one specified in step (3). Go to step 6.



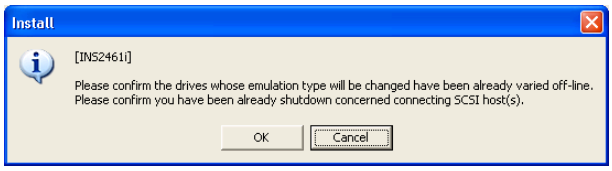
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6.

Select (CL) [OK] to fix the emulation type change.
Select (CL) [Cancel] to cancel the operation.

7.

Before changing the emulation type, make sure that the drive has already been set to Vary Off-line and that the SCSI host concerned has been shut down, and then select (CL) [OK].



When [Cancel] is selected (CL), the processing is aborted.

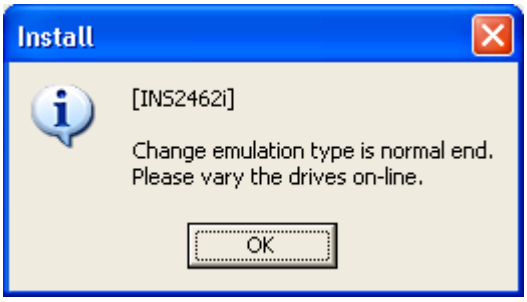
8.

"Changing DKU Emulation" is displayed.

---

9. <Drive Vary On-line>

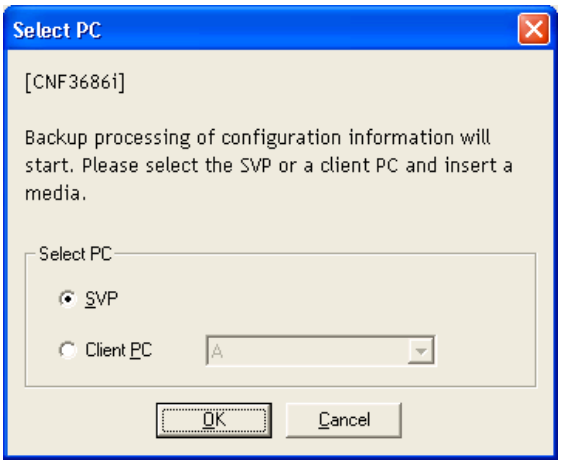
When the emulation type change processing terminates normally, the message "Change emulation type is normal end. Please vary the drives on-line." is displayed.
Vary the drive on-line and select (CL) [OK].



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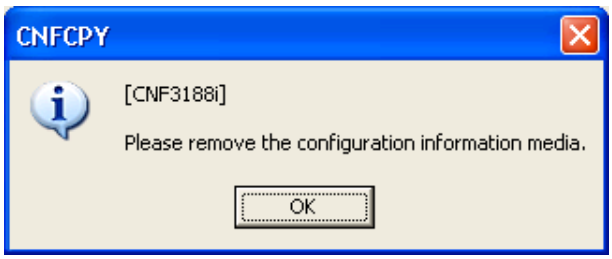
10.

"Reading subsystem configuration data..." is displayed.
"Backup processing of configuration information will start. Please select the SVP or a client PC and insert a media." is displayed.
Insert the Config FD into FDD of selected PC, and select (CL) [OK].



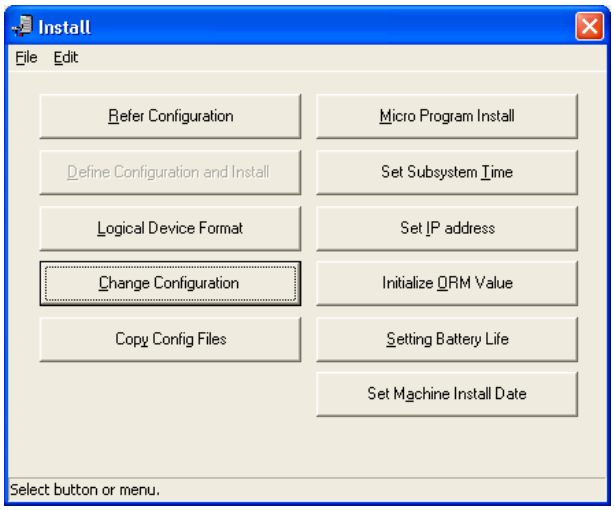
11.

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



12.

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



13. <Mode Change>
Change the Mode from [Modify Mode] to [View Mode].

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5.4 System Tuning SVP Procedure

5.4.1 System Tuning

> **⚠ CAUTION**
> Powering off/on is required owing to the performance of this operation.

Overview
This function modifies the part of established subsystem configuration data.
The data to be modified is control data closely related to a host device, so the data can not be modified on on-line.
After modification of the data, power DKC off and on.
The data to be modified is listed below.

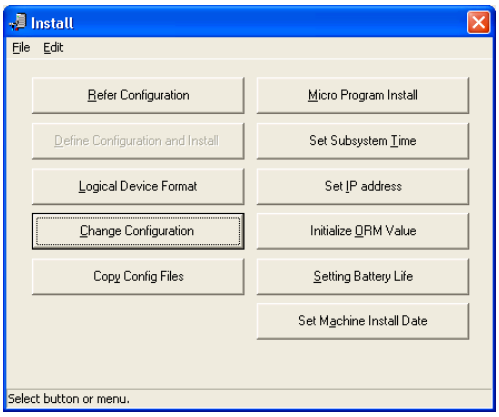
'DKC Configuration' ---------- DKC Serial Number
'IP Address Configuration' ---------- IP address
'Power Supply' ---------- Power Supply Type
'DKC Emulation Configuration' --------- DKC Emulation Type
'CU Number' ---------- CU number of each channel port
'Set SSID Boundary' ---------- Sub System ID Boundary
'Subsystem ID Configuration' ---------- Sub System ID

1. <Start [Install]>
   Change the Mode from [View Mode] to [Modify Mode].
   Select [Install] from 'SVP' (CL).

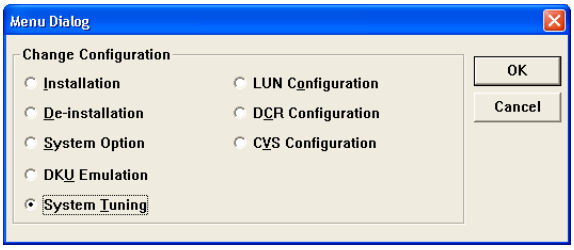
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2.

Select [Change Configuration] (CL) from 'Install'.



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



4.

⚠ CAUTION

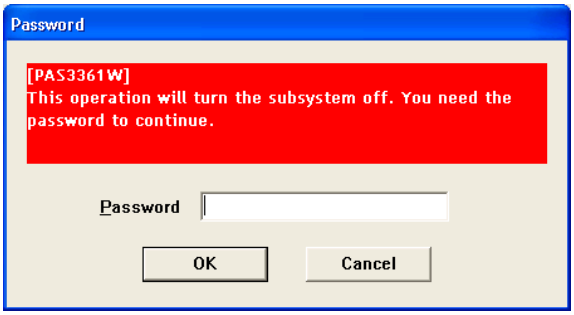
Powering off/on is required owing to the performance of this operation.

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

(1)

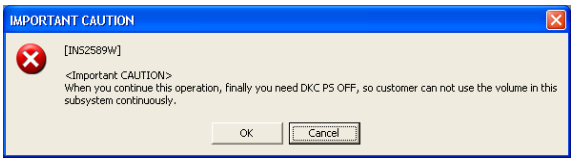
Enter the password and select [OK] (CL).
Password is needed for this operation.
Please call Technical Support Division to obtain a password and authorization.

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



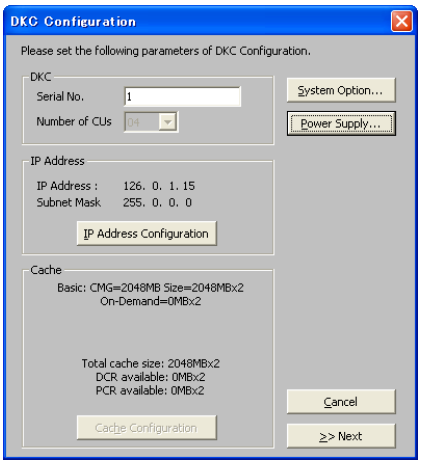
(2)

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



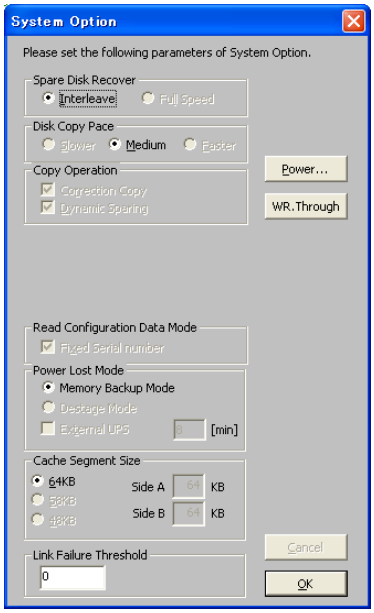
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5. <DKC Configuration window>
Define the configuration information following the subsystem configuration worksheet.



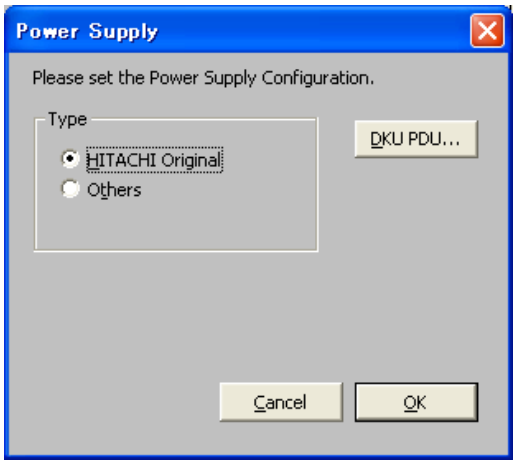
[System Option…]: Makes a setting of the WDCP/DDUMP. The routine goes to Item 6.
[Power Supply…]: Makes a setting of the power supply type. The routine goes to Item 7.
[IP Address Configuration]: Makes a setting of the IP address. The routine goes to Item 8.
[>>Next]: Makes the other settings. The routine goes to Item 9.

6. <System Option window>
Define the configuration information following the subsystem configuration worksheet.



After setting all the items, select (CL) the [OK] button. Return to Item 5.
When the [Cancel] button is selected (CL), the 'System Option' window is closed and the 'DKC Configuration' window is displayed again. Return to Item 5.
When the [Power...] button is selected (CL), the 'Power Supply' window is displayed. Go to Item 7.

7. <Power Supply window>
Define the configuration information following the subsystem configuration worksheet.



Set the PDU information and select (CL) the [OK] button. Return to Item 5 or Item 6.

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8. <IP Address Configuration window>

Define the configuration information following the subsystem configuration worksheet.

Set the IP address and the subnet mask, and then select (CL) the [OK] button. Return to Item 5.

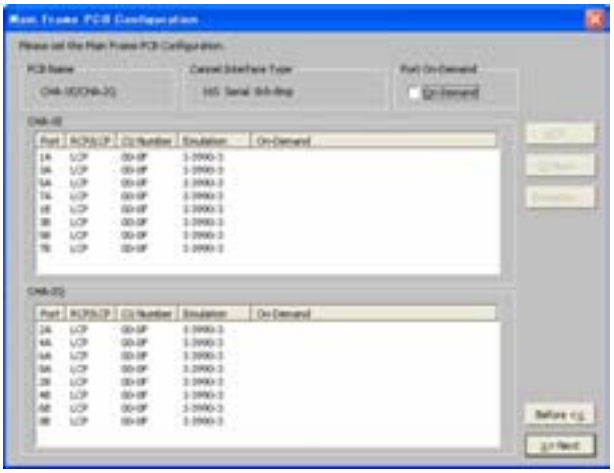


9. <Mainframe PCB Configuration window>

Define the configuration information following the subsystem configuration worksheet.

DKC Emulation: Sets the DKC emulation.
[CU Num…]: Sets the CU number of each port. Go to Item 9-1.

Select (CL) the [>>Next] button. Go to Item 10.
When the [Before<<] button is selected (CL), the routine returns to Item 5.



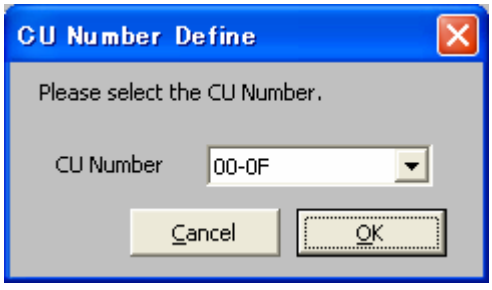
Note: This is displayed only when the Serial (16S) channel is installed.

Note: When you select 2107 DKC Emulation, power-on and POR (Power off/on) of SOM493 are required in advance.

9-1 <CU Number Define window>

A window for setting the CU number of the specified port is displayed.

After the setting is completed, select (CL) the [>>Next] button.
When the [Before<<] button is selected (CL), the window is returned to that of Item 9.

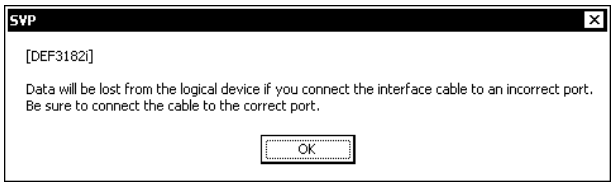


Note: This is displayed only when the Serial (85) channel is installed.

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9-2 <SVP message>

Select (CL) [OK] in response to the confirmation message “Data will be lost from the logical device if you connect the interface cable to an incorrect port. Be sure to connect the cable to the correct port.”.
Returns to step 9.



Note: This windows is displayed when Serial (16S) Channel is installed.

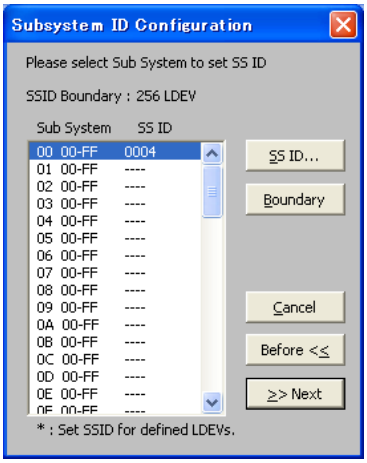
---

10. <Subsystem ID Configuration window>

Define the configuration information following the subsystem configuration worksheet.

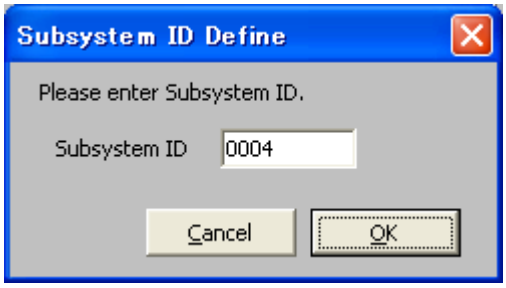
[SSID]: Makes definition of the subsystem ID. Go to Item 10-1.
[Boundary]: Makes definition of the subsystem ID boundary. Go to Item 10-2.

After the setting is completed, select (CL) the [>>Next] button. Go to Item 12.
This operation procedure is completed when the [Cancel] button is selected (CL).



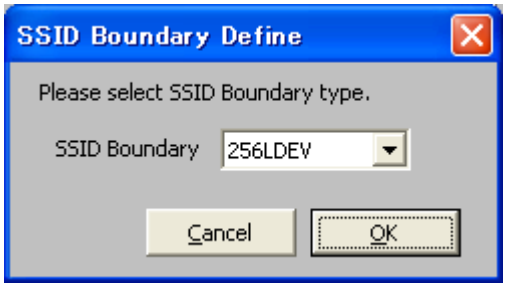
10-1 <Subsystem ID Define window>

Define the subsystem ID and select (CL) the [OK] button. Return to Item 10.



10-2 <SSID Boundary Define window>

Define the subsystem ID boundary and select (CL) the [OK] button. Return to Item 10.

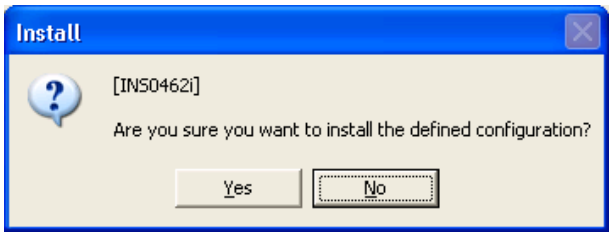


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11. <Include configuration information>

(1)

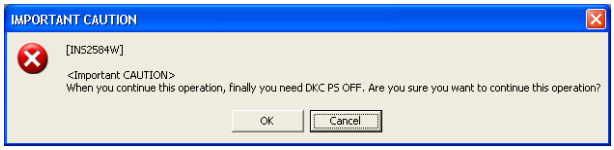
Select (CL) [Yes] in response to the confirmation message "Are you sure you want to install the defined configuration?". Selecting (CL) [No] suppresses the configuration inclusion processing and terminates the installation procedure.



---

(2)

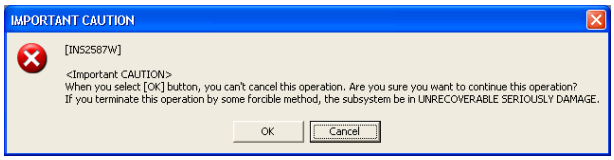
Select (CL) [OK] in response to the confirmation message "<Important CAUTION> When you continue this operation, finally you need DKC PS OFF. Are you sure you want to continue this operation?".



---

(3)

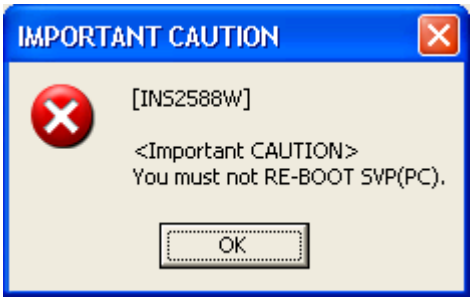
Select (CL) [OK] in response to the confirmation message "<Important CAUTION> When you select [OK] button, you can't cancel this operation. Are you sure you want to continue this operation? If you terminate this operation by some forcible method, the subsystem be in UNRECOVERABLE SERIOUSLY DAMAGE.".



---

(4)

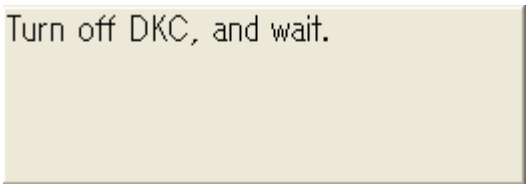
Select (CL) [OK] in response to the confirmation message "<Important CAUTION> You must not RE-BOOT SVP(PC).".



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12.

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

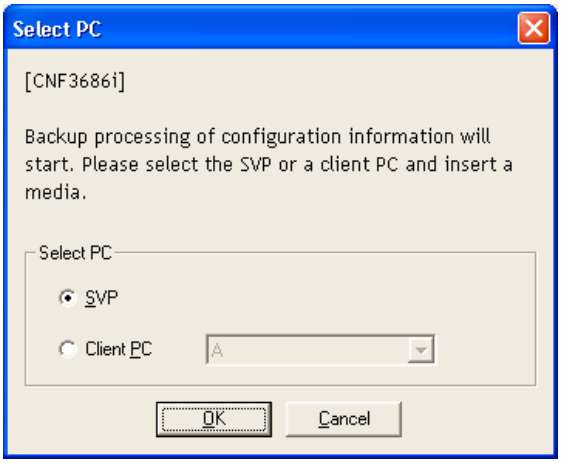


13.

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

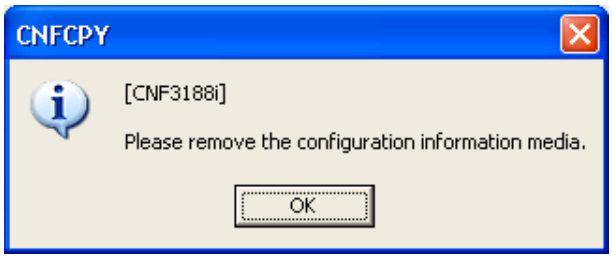
14.

Insert the Config FD into FDD of selected PC, and select [OK].



15.

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



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16.

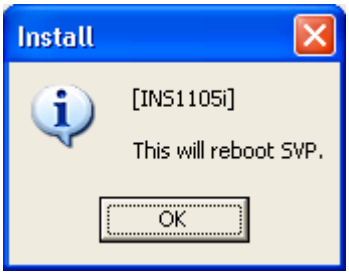
After making sure that the DKC power is turned off, select [OK] (CL) in response to "System Tuning has finished. Make sure that PS-ON LED at DKC-PANEL is off, and then select [OK].".



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

17.

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



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6. TPF Installation procedures

6.1 Preparations

(a) Get additional SM parts by the number you need according to INST07-20.
(b) Get the “Configuration” floppy disk which supports the MPLF/RC (or TPF) function from T.S.D.

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6.2 Operations

(a) Exchanging Micro-programs of the latest version.
- Exchange all Micro-programs which are different from currently installed version. (Refer to MICRO-FC SECTION.)

(b) Executing Config Version Up.
- Set the "Configuration" floppy disk.
- Execute Config Version Up. (Refer to MICRO-FC08-10 (Config Exchange Procedure "8.1 Config Version Up".)

(c) Switching "TPF-mode" on.
- Execute "Define Configuration and install". (Refer to INST05-80 (Configuration information Definition).)

(d) Attaching additional SM parts.
- Turn off the DKC power switch.
- With reference to INST07-20, install the required number of additional SM parts.

(e) Starting TPF Micro-program.
- Turn on the DKC power switch.

(f) Confirming the TPF MODE.
- Confirm that the "CONFIG" version is "XX-XX-XX/50" by using version display function after "Maintenance" is opened on SVP. (Refer to "3.14 Version of Microprogram" (SVP03-260).)

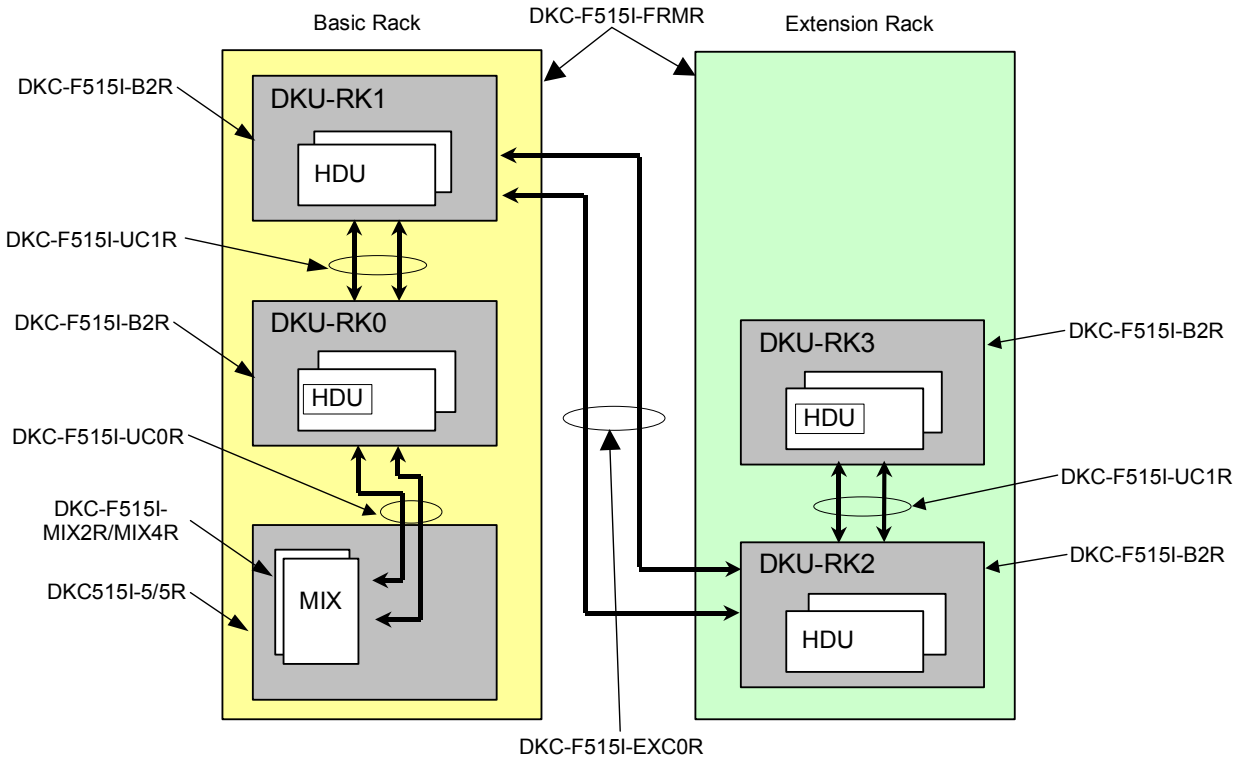
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7. Appendix: Storage Capacity and Cache Capacity, and the number of required options

7.1 Standard Configuration

Although DKC515I can construct various subsystem configurations, an appendix shows the relation of the storage capacity and cache capacity and the number of required options when installing a frame in the order shown below.

The standard installation order of a subsystem is shown below.
The appendixes are based below.



The rack layout and required options are shown in the following table.

No.	Required Number of Options								
	(DKC-F515I-FRMR)		DKC515I -5/5R	DKC-F515I-					HDD *1
	Basic Rack	Extension Rack		MIX2R/ MIX4R	B2R	UC0R	UC1R	EXC0R	
1	1	—	1	1	1	1	0	0	60
2	1	—	1	1	2	1	1	0	120
3	1	1	1	1	3	1	1	1	180
4	1	1	1	1	4	1	2	1	240

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

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7.2 Required SM Capacity and Installing Location of SM Module

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.
Required shared memory capacity is determined with reference to the table indicated at the following table.

No.	Program Product application situation			Number of CU	Reference Table	
	True Copy or Shadow Image or Universal Replicator or Volume Migration or Hi-Copy (*1)	TPF or E-Copy	Flash Copy Version2 or COW Snapshot (*1)		Page	Table number
1	Not Applied	Not Applied	Not Applied	1-4 (to 1,024LDEV)	INST07-40	Table 7.2-1
				5-64 (to 16,384LDEV)		
2	Applied	Not Applied	Not Applied	1-4 (to 1,024LDEV)	INST07-50	Table 7.2-2
				5-64 (to 16,384LDEV)		
3	Not Applied	Applied	Not Applied	1-4 (to 1,024LDEV)	INST07-60	Table 7.2-3
				5-64 (to 16,384LDEV)		
4	Applied	Applied	Not Applied	1-4 (to 1,024LDEV)	INST07-70	Table 7.2-4
				5-64 (to 16,384LDEV)		
5	Applied	Not Applied	Applied	1-4 (to 1,024LDEV)	INST07-80	Table 7.2-5
				5-64 (to 16,384LDEV)		
6	Applied	Applied	Applied	1-4 (to 1,024LDEV)	INST07-90	Table 7.2-6
				5-64 (to 16,384LDEV)		

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

Please note that location of shared memory module varies according to the purpose such as additional cache installation or additional LDEV installation.
In the case of Disk-less configuration, please refer to the description of “External Storage support”.

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The following table shows the correspondence of items shown in the SVP Window and those in the Reference Table. Set the SM in the SVP window based on the table below.

No.	SVP Window		Reference Table
	Item	Check box	
1	HMRCF/HOMRCF/HRC/HORC/HUR/HIHSM/ Hi-Copy	OFF	TC/SI/UR/VM/Hi-Copy function not applied
		ON	TC/SI/UR/VM/Hi-Copy function applied
2	HMRCF/HOMRCF/HRC/HORC/HUR/HIHSM/ Hi-Copy Extension	OFF	TC/SI/UR/VM/Hi-Copy Basic
		ON	TC/SI/UR/VM/Hi-Copy Extension
3	Flash Copy V2 / COW Snapshot	OFF	FCV2/COW function not applied
		ON	FCV2/COW function applied
4	Flash Copy V2 Extension	OFF	No description *2
		ON	
5	VFS SYS Area *3	OFF	VFS SYS Area not applied
		ON	VFS SYS Area applied
6	E-COPY/TPF	OFF	TPF/E-Copy function not applied
		ON	TPF/E-Copy function applied
7	External Device Management, or Over 256 Striping Group, or 300GB or larger Drive	OFF	External Storage not support, and 300GB or larger HDD not equipped
		ON	External Storage support, or/and 300GB or larger HDD equipped
8	Change Max Number of CUs	*1	Number of CU: 1-4 (to 1024LDEV)
			Number of CU: 5-64 (to 16384LDEV)

*1: The check boxes are active only when SM is installed/uninstalled.

*2: There is no description in the reference table because the SM capacity does not change with ON/OFF of this item.
However, when you use the Flash Copy V2 Extension function, turn it ON.
You can turn it ON if VFS SYS Area is OFF.

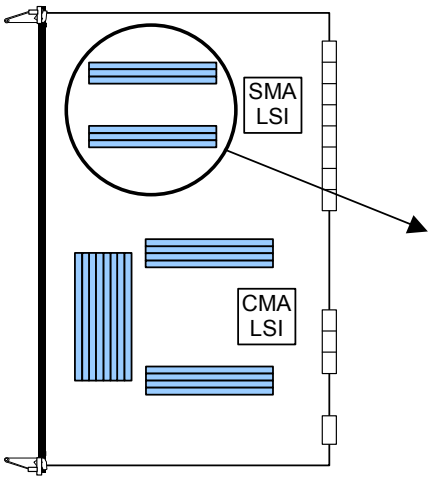
*3: In case of using the COW Snapshot function, the VFS SYS Area is required.
You can turn ON the VFS SYS Area if the Flash Copy V2 Extension is OFF.

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Table 7.2-1 SM Capacity and Installing Location of SM Module (TC / SI / UR / VM / Hi-Copy function not applied, TPF / E-Copy function not applied, FCV2 / COW function not applied)

Cache Memory Capacity	Number of CU: 1-4 (to 1,024LDEV)				Number of CU: 5-64 (to 16,384LDEV)
	VFS SYS Area not applied			VFS SYS Area applied	Common (VFS SYS Area not applied/applied)
	External Storage not support		External Storage support *2	Common (External Storage Not support/ Support) *2	
	300GB or larger HDD Not use	300GB or larger HDD Use	Common (300GB or larger HDD Not use / Use)		
	Install Loc. *1 (SM Cap)	Install Loc. *1 (SM Cap)	Install Loc. *1 (SM Cap)	Install Loc. *1 (SM Cap)	Install Loc. *1 (SM Cap)
4GB to 24GB	① (1GB)	①④ (2GB) or [1][2] (4GB)	①④ (2GB) or [1][2] (4GB)	①④⑤ (3GB) or ①④[5] (4GB) or [1][2][3] (6GB)	①④⑤ (3GB) or ①④[5] (4GB) or [1][2][3] (6GB)
28GB to 64GB	①④ (2GB) or [1][2] (4GB)	①④ (2GB) or [1][2] (4GB)	①④ (2GB) or [1][2] (4GB)	①④⑤⑥ (4GB) or ①④[5] (4GB) or [1][2][3] (6GB)	①④⑤⑥ (4GB) or ①④[5] (4GB) or [1][2][3] (6GB)

*1: Location ① - ⑥ and [1] - [6] shows actual location of shared memory module on BASE PCB. (Refer to following figure)



BASE PCB (WP535-A)

Shared Memory Module Location (DKC-F510I-S1G/S1GR)

①SM00: SH341-A/C
②SM01: SH341-A/C
③SM02: SH341-A/C

⑥SM05: SH341-A/C
⑤SM04: SH341-A/C
④SM03: SH341-A/C

Shared Memory Module Location (DKC-F510I-S2GR)

[1]SM00: SH341-D
[2]SM01: SH341-D
[3]SM02: SH341-D

[6]SM05: SH341-D
[5]SM04: SH341-D
[4]SM03: SH341-D

Actual location of shared memory module

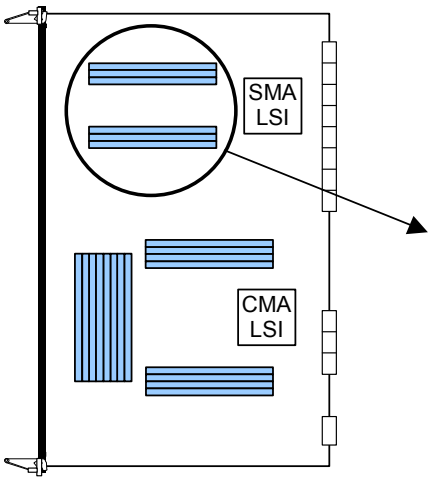
*2: In the case of Disk-less configuration, refer to the description of "External Storage support".

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Table 7.2-2 SM Capacity and Installing Location of SM Module (TC / SI / UR / VM / Hi-Copy function applied, TPF / E-Copy function not applied, FCV2 / COW function not applied)

Cache Memory Capacity	Number of CU: 1-4 (to 1,024LDEV)				Number of CU: 5-64 (to 16,384LDEV)	
	VFS SYS Area not applied		VFS SYS Area applied		Common (VFS SYS Area not applied/applied)	
	TC/SI/UR/VM/ Hi-Copy Basic	TC/SI/UR/VM/ Hi-Copy Extension	TC/SI/UR/VM/ Hi-Copy Basic	TC/SI/UR/VM/ Hi-Copy Extension	TC/SI/UR/VM/ Hi-Copy Basic	TC/SI/UR/VM/ Hi-Copy Extension
	Common (External Storage not support / External Storage support, 300GB or larger HDD Not use / Use) *2					
	Install Loc. *1 (SM Cap)	Install Loc. *1 (SM Cap)	Install Loc. *1 (SM Cap)	Install Loc. *1 (SM Cap)	Install Loc. *1 (SM Cap)	Install Loc. *1 (SM Cap)
4GB to 24GB	①②④ (3GB) or [1][2] (4GB)	①②③④ (4GB) or [1][2] (4GB)	①②④⑤ (4GB) or ①②④[5] (5GB) or [1][2][3] (6GB)	①②③④⑤ (5GB) or ①②③④[5] (6GB) or [1][2][3] (6GB)	①②④⑤ (4GB) or ①②④[5] (5GB) or [1][2][3] (6GB)	①②③④⑤ (5GB) or ①②③④[5] (6GB) or [1][2][3] (6GB)
28GB to 64GB	①②④ (3GB) or [1][2] (4GB)	①②③④ (4GB) or [1][2] (4GB)	①②④⑤⑥ (5GB) or ①②④[5] (5GB) or [1][2][3] (6GB)	①②③④⑤⑥ (6GB) or ①②③④[5] (6GB) or [1][2][3] (6GB)	①②④⑤⑥ (5GB) or ①②④[5] (5GB) or [1][2][3] (6GB)	①②③④⑤⑥ (6GB) or ①②③④[5] (6GB) or [1][2][3] (6GB)

*1: Location ① - ⑥ and [1] - [6] shows actual location of shared memory module on BASE PCB. (Refer to following figure)



BASE PCB (WP535-A)

Shared Memory Module Location (DKC-F510I-S1G/S1GR)

①SM00: SH341-A/C
②SM01: SH341-A/C
③SM02: SH341-A/C

⑥SM05: SH341-A/C
⑤SM04: SH341-A/C
④SM03: SH341-A/C

Shared Memory Module Location (DKC-F510I-S2GR)

[1] SM00: SH341-D
[2] SM01: SH341-D
[3] SM02: SH341-D

[6] SM05: SH341-D
[5] SM04: SH341-D
[4] SM03: SH341-D

Actual location of shared memory module

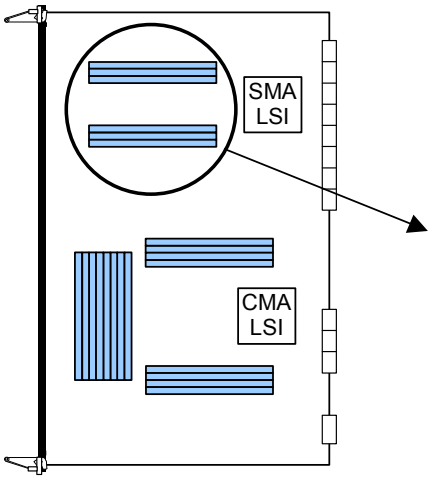
*2: In the case of Disk-less configuration, refer to the description of "External Storage support".

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Table 7.2-3 SM Capacity and Installing Location of SM Module (TC / SI / UR / VM / Hi-Copy function not applied, TPF / E-Copy function applied, FCV2 / COW function not applied)

Cache Memory Capacity	Number of CU: 1-4 (to 1,024LDEV)		Number of CU: 5-64 (to 16,384LDEV)
	VFS SYS Area not applied	VFS SYS Area applied	Common (VFS SYS Area not applied/applied)
	Common (External Storage not support / External Storage support, 300GB or larger HDD Not use / Use) *2		
	Install Loc. *1 (SM Cap)		Install Loc. *1 (SM Cap)
4GB to 24GB	①④ (2GB) or [1][2] (4GB)	①④⑤ (3GB) or ①④[5] (4GB) or [1][2][3] (6GB)	①④⑤ (3GB) or ①④[5] (4GB) or [1][2][3] (6GB)
28GB to 64GB	①④ (2GB) or [1][2] (4GB)	①④⑤⑥ (4GB) or ①④[5] (4GB) or [1][2][3] (6GB)	①④⑤⑥ (4GB) or ①④[5] (4GB) or [1][2][3] (6GB)

*1: Location ① - ⑥ and [1] - [6] shows actual location of shared memory module on BASE PCB. (Refer to following figure)



BASE PCB (WP535-A)

Shared Memory Module Location (DKC-F510I-S1G/S1GR)

①SM00: SH341-A/C
②SM01: SH341-A/C
③SM02: SH341-A/C

⑥SM05: SH341-A/C
⑤SM04: SH341-A/C
④SM03: SH341-A/C

Shared Memory Module Location (DKC-F510I-S2GR)

[1]SM00: SH341-D
[2]SM01: SH341-D
[3]SM02: SH341-D

[6]SM05: SH341-D
[5]SM04: SH341-D
[4]SM03: SH341-D

Actual location of shared memory module

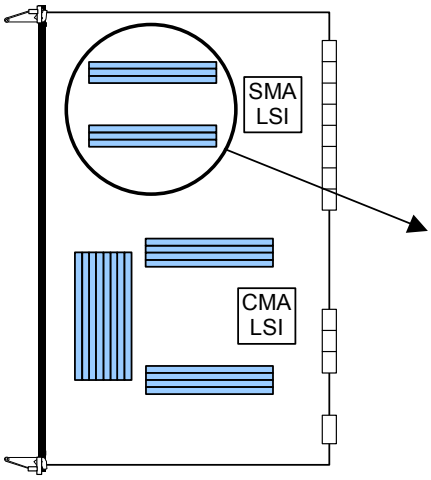
*2: In the case of Disk-less configuration, refer to the description of "External Storage support".

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Table 7.2-4 SM Capacity and Installing Location of SM Module (TC / SI / UR / VM / Hi-Copy function applied, TPF / E-Copy function applied, FCV2 / COW function not applied)

Cache Memory Capacity	Number of CU: 1-4 (to 1,024LDEV)				Number of CU: 5-64 (to 16,384LDEV)	
	VFS SYS Area not applied		VFS SYS Area applied		Common (VFS SYS Area not applied/applied)	
	TC/SI/UR/VM/ Hi-Copy Basic	TC/SI/UR/VM/ Hi-Copy Extension	TC/SI/UR/VM/ Hi-Copy Basic	TC/SI/UR/VM/ Hi-Copy Extension	TC/SI/UR/VM/ Hi-Copy Basic	TC/SI/UR/VM/ Hi-Copy Extension
	Common (External Storage not support / External Storage support, 300GB or larger HDD Not use / Use) *2					
	Install Loc. *1 (SM Cap)	Install Loc. *1 (SM Cap)	Install Loc. *1 (SM Cap)	Install Loc. *1 (SM Cap)	Install Loc. *1 (SM Cap)	Install Loc. *1 (SM Cap)
4GB to 24GB	①②④ (3GB) or [1][2] (4GB)	①②③④ (4GB) or [1][2] (4GB)	①②④⑤ (4GB) or ①②④[5] (5GB) or [1][2][3] (6GB)	①②③④⑤ (5GB) or ①②③④[5] (6GB) or [1][2][3] (6GB)	①②④⑤ (4GB) or ①②④[5] (5GB) or [1][2][3] (6GB)	①②③④⑤ (5GB) or ①②③④[5] (6GB) or [1][2][3] (6GB)
28GB to 64GB	①②④ (3GB) or [1][2] (4GB)	①②③④ (4GB) or [1][2] (4GB)	①②④⑤⑥ (5GB) or ①②④[5] (5GB) or [1][2][3] (6GB)	①②③④⑤⑥ (6GB) or ①②③④[5] (6GB) or [1][2][3] (6GB)	①②④⑤⑥ (5GB) or ①②④[5] (5GB) or [1][2][3] (6GB)	①②③④⑤⑥ (6GB) or ①②③④[5] (6GB) or [1][2][3] (6GB)

*1: Location ① - ⑥ and [1] - [6] shows actual location of shared memory module on BASE PCB. (Refer to following figure)



BASE PCB (WP535-A)

Shared Memory Module Location (DKC-F510I-S1G/S1GR)

①SM00: SH341-A/C
②SM01: SH341-A/C
③SM02: SH341-A/C

⑥SM05: SH341-A/C
⑤SM04: SH341-A/C
④SM03: SH341-A/C

Shared Memory Module Location (DKC-F510I-S2GR)

[1] SM00: SH341-D
[2] SM01: SH341-D
[3] SM02: SH341-D

[6] SM05: SH341-D
[5] SM04: SH341-D
[4] SM03: SH341-D

Actual location of shared memory module

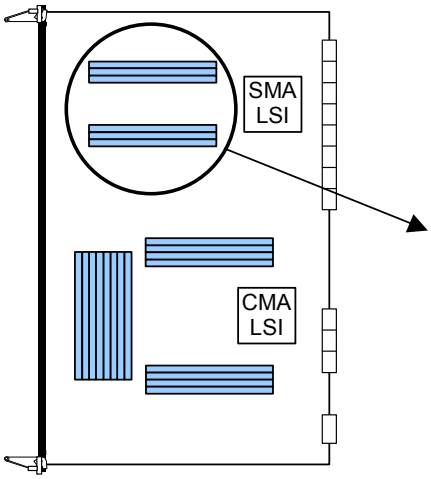
*2: In the case of Disk-less configuration, refer to the description of “External Storage support”.

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Table 7.2-5 SM Capacity and Installing Location of SM Module (TC / SI / UR / VM / Hi-Copy function applied, TPF / E-Copy function not applied, FCV2 / COW function applied)

Cache Memory Capacity	Number of CU: 1-4 (to 1,024LDEV)				Number of CU: 5-64 (to 16,384LDEV)	
	VFS SYS Area not applied		VFS SYS Area applied		Common (VFS SYS Area not applied/applied)	
	TC/SI/UR/VM/ Hi-Copy Basic	TC/SI/UR/VM/ Hi-Copy Extension	TC/SI/UR/VM/ Hi-Copy Basic	TC/SI/UR/VM/ Hi-Copy Extension	TC/SI/UR/VM/ Hi-Copy Basic	TC/SI/UR/VM/ Hi-Copy Extension
	Common (External Storage not support / External Storage support, 300GB or larger HDD Not use / Use) *2					
	Install Loc. *1 (SM Cap)	Install Loc. *1 (SM Cap)	Install Loc. *1 (SM Cap)	Install Loc. *1 (SM Cap)	Install Loc. *1 (SM Cap)	Install Loc. *1 (SM Cap)
4GB to 24GB	①②④⑤ (4GB) or ①②④[5] (5GB) or [1][2][3] (6GB)	①②③④⑤ (5GB) or ①②③④[5] (6GB) or [1][2][3] (6GB)	①②④⑤ (4GB) or ①②④[5] (5GB) or [1][2][3] (6GB)	①②③④⑤ (5GB) or ①②③④[5] (6GB) or [1][2][3] (6GB)	①②④⑤ (4GB) or ①②④[5] (5GB) or [1][2][3] (6GB)	①②③④⑤ (5GB) or ①②③④[5] (6GB) or [1][2][3] (6GB)
28GB to 64GB	①②④⑤ (4GB) or ①②④[5] (5GB) or [1][2][3] (6GB)	①②③④⑤ (5GB) or ①②③④[5] (6GB) or [1][2][3] (6GB)	①②④⑤⑥ (5GB) or ①②④[5] (5GB) or [1][2][3] (6GB)	①②③④⑤⑥ (6GB) or ①②③④[5] (6GB) or [1][2][3] (6GB)	①②④⑤⑥ (5GB) or ①②④[5] (5GB) or [1][2][3] (6GB)	①②③④⑤⑥ (6GB) or ①②③④[5] (6GB) or [1][2][3] (6GB)

*1: Location ① - ⑥ and [1] - [6] shows actual location of shared memory module on BASE PCB. (Refer to following figure)



BASE PCB (WP535-A)

Shared Memory Module Location (DKC-F510I-S1G/S1GR)

①SM00: SH341-A/C
②SM01: SH341-A/C
③SM02: SH341-A/C

⑥SM05: SH341-A/C
⑤SM04: SH341-A/C
④SM03: SH341-A/C

Shared Memory Module Location (DKC-F510I-S2GR)

[1] SM00: SH341-D
[2] SM01: SH341-D
[3] SM02: SH341-D

[6] SM05: SH341-D
[5] SM04: SH341-D
[4] SM03: SH341-D

Actual location of shared memory module

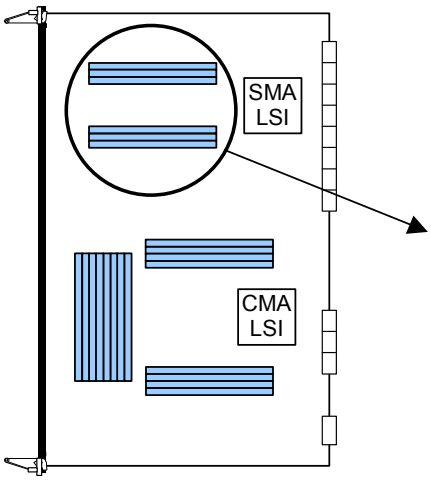
*2: In the case of Disk-less configuration, refer to the description of "External Storage support".

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Table 7.2-6 SM Capacity and Installing Location of SM Module (TC / SI / UR / VM / Hi-Copy function applied, TPF / E-Copy function applied, FCV2 / COW function applied)

Cache Memory Capacity	Number of CU: 1-4 (to 1,024LDEV)				Number of CU: 5-64 (to 16,384LDEV)	
	VFS SYS Area not applied		VFS SYS Area applied		Common (VFS SYS Area not applied/applied)	
	TC/SI/UR/VM/ Hi-Copy Basic	TC/SI/UR/VM/ Hi-Copy Extension	TC/SI/UR/VM/ Hi-Copy Basic	TC/SI/UR/VM/ Hi-Copy Extension	TC/SI/UR/VM/ Hi-Copy Basic	TC/SI/UR/VM/ Hi-Copy Extension
	Common (External Storage not support / External Storage support, 300GB or larger HDD Not use / Use) *2					
	Install Loc. *1 (SM Cap)	Install Loc. *1 (SM Cap)	Install Loc. *1 (SM Cap)	Install Loc. *1 (SM Cap)	Install Loc. *1 (SM Cap)	Install Loc. *1 (SM Cap)
4GB to 24GB	①②④⑤ (4GB) or ①②④[5] (5GB) or [1][2][3] (6GB)	①②③④⑤ (5GB) or ①②③④[5] (6GB) or [1][2][3] (6GB)	①②④⑤ (4GB) or ①②④[5] (5GB) or [1][2][3] (6GB)	①②③④⑤ (5GB) or ①②③④[5] (6GB) or [1][2][3] (6GB)	①②④⑤ (4GB) or ①②④[5] (5GB) or [1][2][3] (6GB)	①②③④⑤ (5GB) or ①②③④[5] (6GB) or [1][2][3] (6GB)
28GB to 64GB	①②④⑤ (4GB) or ①②④[5] (5GB) or [1][2][3] (6GB)	①②③④⑤ (5GB) or ①②③④[5] (6GB) or [1][2][3] (6GB)	①②④⑤⑥ (5GB) or ①②④[5] (5GB) or [1][2][3] (6GB)	①②③④⑤⑥ (6GB) or ①②③④[5] (6GB) or [1][2][3] (6GB)	①②④⑤⑥ (5GB) or ①②④[5] (5GB) or [1][2][3] (6GB)	①②③④⑤⑥ (6GB) or ①②③④[5] (6GB) or [1][2][3] (6GB)

*1: Location ① - ⑥ and [1] - [6] shows actual location of shared memory module on BASE PCB. (Refer to following figure)



BASE PCB (WP535-A)

Shared Memory Module Location (DKC-F510I-S1G/S1GR)

①SM00: SH341-A/C
②SM01: SH341-A/C
③SM02: SH341-A/C

⑥SM05: SH341-A/C
⑤SM04: SH341-A/C
④SM03: SH341-A/C

Shared Memory Module Location (DKC-F510I-S2GR)

[1] SM00: SH341-D
[2] SM01: SH341-D
[3] SM02: SH341-D

[6] SM05: SH341-D
[5] SM04: SH341-D
[4] SM03: SH341-D

Actual location of shared memory module

*2: In the case of Disk-less configuration, refer to the description of "External Storage support".

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(1) Open System Storage Capacity Upgrade Table (72GB 15Kmin^{-1} HDD)..... INST07-110
(2) Mainframe Storage Capacity Upgrade Table (72GB 15Kmin^{-1} HDD)..... INST07-130
(3) Open System Storage Capacity Upgrade Table (146GB 10Kmin^{-1}/15Kmin^{-1} HDD) INST07-150
(4) Mainframe Storage Capacity Upgrade Table (146GB 10Kmin^{-1}/15Kmin^{-1} HDD) INST07-170
(5) Open System Storage Capacity Upgrade Table (300GB 10Kmin^{-1}/15Kmin^{-1} HDD) INST07-181
(6) Mainframe Storage Capacity Upgrade Table (300GB 10Kmin^{-1}/15Kmin^{-1} HDD) INST07-183
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(8) Mainframe Storage Capacity Upgrade Table (400GB 10Kmin^{-1} HDD)..... INST07-187

7.3.2 Standard Configuration for RAID1 (2D+2D)

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(2) Mainframe Storage Capacity Upgrade Table (72GB 15Kmin^{-1} HDD)..... INST07-210
(3) Open System Storage Capacity Upgrade Table (146GB 10Kmin^{-1}/15Kmin^{-1} HDD) INST07-230
(4) Mainframe Storage Capacity Upgrade Table (146GB 10Kmin^{-1}/15Kmin^{-1} HDD) INST07-250
(5) Open System Storage Capacity Upgrade Table (300GB 10Kmin^{-1}/15Kmin^{-1} HDD) INST07-261
(6) Mainframe Storage Capacity Upgrade Table (300GB 10Kmin^{-1}/15Kmin^{-1} HDD) INST07-263
(7) Open System Storage Capacity Upgrade Table (400GB 10Kmin^{-1} HDD)..... INST07-265
(8) Mainframe Storage Capacity Upgrade Table (400GB 10Kmin^{-1} HDD)..... INST07-267

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7.3.3 Standard Configuration for RAID6 (6D+2P)

(1) Open System Storage Capacity Upgrade Table (72GB 15Kmin^{-1} HDD)..... INST07-270
(2) Mainframe Storage Capacity Upgrade Table (72GB 15Kmin^{-1} HDD)..... INST07-280
(3) Open System Storage Capacity Upgrade Table
(146GB 10Kmin^{-1}/15Kmin^{-1} HDD)..... INST07-290
(4) Mainframe Storage Capacity Upgrade Table
(146GB 10Kmin^{-1}/15Kmin^{-1} HDD)..... INST07-300
(5) Open System Storage Capacity Upgrade Table
(300GB 10Kmin^{-1}/15Kmin^{-1} HDD) INST07-310
(6) Mainframe Storage Capacity Upgrade Table
(300GB 10Kmin^{-1}/15Kmin^{-1} HDD) INST07-320
(7) Open System Storage Capacity Upgrade Table (400GB 10Kmin^{-1} HDD)..... INST07-321
(8) Mainframe Storage Capacity Upgrade Table (400GB 10Kmin^{-1} HDD)..... INST07-322

7.3.4 Standard Configuration for RAID5 (7D+1P)

(1) Open System Storage Capacity Upgrade Table (72GB 15Kmin^{-1} HDD)..... INST07-330
(2) Mainframe Storage Capacity Upgrade Table (72GB 15Kmin^{-1} HDD)..... INST07-340
(3) Open System Storage Capacity Upgrade Table
(146GB 10Kmin^{-1}/15Kmin^{-1} HDD)..... INST07-350
(4) Mainframe Storage Capacity Upgrade Table
(146GB 10Kmin^{-1}/15Kmin^{-1} HDD)..... INST07-360
(5) Open System Storage Capacity Upgrade Table
(300GB 10Kmin^{-1}/15Kmin^{-1} HDD) INST07-370
(6) Mainframe Storage Capacity Upgrade Table
(300GB 10Kmin^{-1}/15Kmin^{-1} HDD) INST07-380
(7) Open System Storage Capacity Upgrade Table (400GB 10Kmin^{-1} HDD)..... INST07-381
(8) Mainframe Storage Capacity Upgrade Table (400GB 10Kmin^{-1} HDD)..... INST07-382

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7.3.1 Standard Configuration for RAID5 (3D+1P)

(1) Open System Storage Capacity Upgrade Table (72GB 15Kmin^{-1} HDD)

RAID group	Cache (GB)	Storage Capacity (GB)										Number of necessary options								
		Emulation Type										Cache DIMM		DKU-F505I-72KS/72KSR (*2)	DKC-F515I-					RACK
		OPEN-3 (2.461GB)		OPEN-9 (7.384GB)		OPEN-E (14.568GB)		OPEN-L (36.450GB)		OPEN-V (*3) (214.488GB)		DKC-F510I-								
		VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	C4G/ C4GR	C8GR		MIX2R/ MIX4R	B2R	UC0R	UC1R	EXCR	
1	4	86	212	28	207	14	204	5	182	1	214	1	1	4	1	1	1			1
2	4	172	423	56	414	28	408	10	365	2	429	1	1	8	1	1	1			1
3	4	258	635	84	620	42	612	15	547	3	643	1	1	12	1	1	1			1
4	8	344	847	112	827	56	816	20	729	4	858	2	1	16	1	1	1			1
5	8	430	1,058	140	1,034	70	1,020	25	911	5	1,072	2	1	20	1	1	1			1
6	8	516	1,270	168	1,241	84	1,224	30	1,094	6	1,287	2	1	24	1	1	1			1
7	8	602	1,482	196	1,447	98	1,428	35	1,276	7	1,501	2	1	28	1	1	1			1
8	8	688	1,693	224	1,654	112	1,632	40	1,458	8	1,716	2	1	32	1	1	1			1
9	8	774	1,905	252	1,861	126	1,836	45	1,640	9	1,930	2	1	36	1	1	1			1
10	8	860	2,116	280	2,068	140	2,040	50	1,823	10	2,145	2	1	40	1	1	1			1
11	8	946	2,328	308	2,274	154	2,243	55	2,005	11	2,359	2	1	44	1	1	1			1
12	8	1,032	2,540	336	2,481	168	2,447	60	2,187	12	2,574	2	1	48	1	1	1			1
13	8	1,118	2,751	364	2,688	182	2,651	65	2,369	13	2,788	2	1	52	1	1	1			1
14	12	1,204	2,963	392	2,895	196	2,855	70	2,552	14	3,003	3	2	56	1	1	1			1
15	12	1,290	3,175	420	3,101	210	3,059	75	2,734	15	3,217	3	2	60	1	2	1	1		1
16	12	1,376	3,386	448	3,308	224	3,263	80	2,916	16	3,432	3	2	64	1	2	1	1		1
17	12	1,462	3,598	476	3,515	238	3,467	85	3,098	17	3,646	3	2	68	1	2	1	1		1
18	12	1,548	3,810	504	3,722	252	3,671	90	3,281	18	3,861	3	2	72	1	2	1	1		1
19	12	1,634	4,021	532	3,928	266	3,875	95	3,463	19	4,075	3	2	76	1	2	1	1		1
20	12	1,720	4,233	560	4,135	280	4,079	100	3,645	20	4,290	3	2	80	1	2	1	1		1
21	12	1,806	4,445	588	4,342	294	4,283	105	3,827	21	4,504	3	2	84	1	2	1	1		1
22	12	1,892	4,656	616	4,549	308	4,487	110	4,010	22	4,719	3	2	88	1	2	1	1		1
23	12	1,978	4,868	644	4,755	322	4,691	115	4,192	23	4,933	3	2	92	1	2	1	1		1
24	12	2,064	5,080	672	4,962	336	4,895	120	4,374	24	5,148	3	2	96	1	2	1	1		1
25	12	2,150	5,291	700	5,169	350	5,099	125	4,556	25	5,362	3	2	100	1	2	1	1		1
26	12	2,236	5,503	728	5,376	364	5,303	130	4,739	26	5,577	3	2	104	1	2	1	1		1
27	12	2,322	5,714	756	5,582	378	5,507	135	4,921	27	5,791	3	2	108	1	2	1	1		1
28	12	2,408	5,926	784	5,789	392	5,711	140	5,103	28	6,006	3	2	112	1	2	1	1		1
29	12	2,494	6,138	812	5,996	406	5,915	145	5,285	29	6,220	3	2	116	1	2	1	1		1
30	12	2,580	6,349	840	6,203	420	6,119	150	5,468	30	6,435	3	2	120	1	3	1	1	1	2
31	12	2,666	6,561	868	6,409	434	6,323	155	5,650	31	6,649	3	2	124	1	3	1	1	1	2
32	12	2,752	6,773	896	6,616	448	6,526	160	5,832	32	6,864	3	2	128	1	3	1	1	1	2
33	12	2,838	6,984	924	6,823	462	6,730	165	6,014	33	7,078	3	2	132	1	3	1	1	1	2
34	12	2,924	7,196	952	7,030	476	6,934	170	6,197	34	7,293	3	2	136	1	3	1	1	1	2
35	12	3,010	7,408	980	7,236	490	7,138	175	6,379	35	7,507	3	2	140	1	3	1	1	1	2
36	12	3,096	7,619	1,008	7,443	504	7,342	180	6,561	36	7,722	3	2	144	1	3	1	1	1	2
37	12	3,182	7,831	1,036	7,650	518	7,546	185	6,743	37	7,936	3	2	148	1	3	1	1	1	2
38	12	3,268	8,043	1,064	7,857	532	7,750	190	6,926	38	8,151	3	2	152	1	3	1	1	1	2
39	12	3,354	8,254	1,092	8,063	546	7,954	195	7,108	39	8,365	3	2	156	1	3	1	1	1	2
40	16	3,440	8,466	1,120	8,270	560	8,158	200	7,290	40	8,580	4	2	160	1	3	1	1	1	2
41	16	3,526	8,677	1,148	8,477	574	8,362	205	7,472	41	8,794	4	2	164	1	3	1	1	1	2
42	16	3,612	8,889	1,176	8,684	588	8,566	210	7,655	42	9,008	4	2	168	1	3	1	1	1	2
43	16	3,698	9,101	1,204	8,890	602	8,770	215	7,837	43	9,223	4	2	172	1	3	1	1	1	2
44	16	3,784	9,312	1,232	9,097	616	8,974	220	8,019	44	9,437	4	2	176	1	3	1	1	1	2
45	16	3,870	9,524	1,260	9,304	630	9,178	225	8,201	45	9,652	4	2	180	1	4	1	2	1	2
46	16	3,956	9,736	1,288	9,511	644	9,382	230	8,384	46	9,866	4	2	184	1	4	1	2	1	2
47	16	4,042	9,947	1,316	9,717	658	9,586	235	8,566	47	10,081	4	2	188	1	4	1	2	1	2
48	16	4,128	10,159	1,344	9,924	672	9,790	240	8,748	48	10,295	4	2	192	1	4	1	2	1	2
49	16	4,214	10,371	1,372	10,131	686	9,994	245	8,930	49	10,510	4	2	196	1	4	1	2	1	2
50	16	4,300	10,582	1,400	10,338	700	10,198	250	9,113	50	10,724	4	2	200	1	4	1	2	1	2

(To be continued)

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(Continued from preceding sheet)

RAID group	Cache (GB)	Storage Capacity (GB)										Number of necessary options								
		Emulation Type										Cache DIMM		DKU-F505I-72KS/72KSR (*2)	DKC-F515I-					RACK
		OPEN-3 (2.461GB)		OPEN-9 (7.384GB)		OPEN-E (14.568GB)		OPEN-L (36.450GB)		OPEN-V (*3) (214.488GB)		DKC-F510I-								
		VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	C4G/ C4GR	C8GR		MIX2R/ MIX4R	B2R	UC0R	UC1R	EXCR	
51	16	4,386	10,794	1,428	10,544	714	10,402	255	9,295	51	10,939	4	2	204	1	4	1	2	1	2
52	16	4,472	11,006	1,456	10,751	728	10,606	260	9,477	52	11,153	4	2	208	1	4	1	2	1	2
53	16	4,558	11,217	1,484	10,958	742	10,809	265	9,659	53	11,368	4	2	212	1	4	1	2	1	2
54	16	4,644	11,429	1,512	11,165	756	11,013	270	9,842	54	11,582	4	2	216	1	4	1	2	1	2
55	16	4,730	11,641	1,540	11,371	770	11,217	275	10,024	55	11,797	4	2	220	1	4	1	2	1	2
56	16	4,816	11,852	1,568	11,578	784	11,421	280	10,206	56	12,011	4	2	224	1	4	1	2	1	2
57	16	4,902	12,064	1,596	11,785	798	11,625	285	10,388	57	12,226	4	2	228	1	4	1	2	1	2
58	16	4,988	12,275	1,624	11,992	812	11,829	290	10,571	58	12,440	4	2	232	1	4	1	2	1	2
59	16	5,074	12,487	1,652	12,198	826	12,033	295	10,753	59	12,655	4	2	236	1	4	1	2	1	2

*1: In addition to the options listed in above table as necessary parts, the Additional Shared Memory Module [Note 1] are required.

Note 1: The number of the Shard Memory Module (DKC-F510I-S1G/S1GR/S2GR) necessary is refer to table 7.2-1 to 7.2-6.
Please note that location of shared memory varies according to the purpose such as additional cache installation or additional LDEV installation.

*2: The number of HDD options is only the number of data disks, and the number of spare disks is not included.
The relation between disk capacity and the number of required options differs according to the number of spare disk installing.

*3: OPEN-V is volume based on CVS. A customer can set up the volume capacity of OPEN-V freely from 48.1MB among almost 1 RAID group capacity. This volume capacity is the default value and is nearly equals to RAID group capacity.

*4: This table was created, presupposing that it installs always a spare disk.

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(2) Mainframe Storage Capacity Upgrade Table (72GB 15Kmin^{-1} HDD)

RAID group	Cache (GB)	Storage Capacity (GB)										Number of necessary options								
		Emulation Type										Cache DIMM		DKU-F505I-72KS/72KSR (*2)	DKC-F515I-					RACK
		3380-3 (2.377GB)		3390-3/3R (2.838GB)		3390-9 (8.514GB)		3390-L (27.844GB)		3390-M (55.689GB)		DKC-F510I-			MIX2R/ MIX4R	B2R	UC0R	UC1R	EXCR	
		VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	C4G/ C4GR	C8GR							
1	4	86	204	71	201	23	196	7	195	3	167	1	1	4	1	1	1			1
2	4	172	409	142	403	46	392	14	390	6	334	1	1	8	1	1	1			1
3	4	258	613	213	604	69	587	21	585	9	501	1	1	12	1	1	1			1
4	8	344	818	284	806	92	783	28	780	12	668	2	1	16	1	1	1			1
5	8	430	1,022	355	1,007	115	979	35	975	15	835	2	1	20	1	1	1			1
6	8	516	1,227	426	1,209	138	1,175	42	1,169	18	1,002	2	1	24	1	1	1			1
7	8	602	1,431	497	1,410	161	1,371	49	1,364	21	1,169	2	1	28	1	1	1			1
8	8	688	1,635	568	1,612	184	1,567	56	1,559	24	1,337	2	1	32	1	1	1			1
9	8	774	1,840	639	1,813	207	1,762	63	1,754	27	1,504	2	1	36	1	1	1			1
10	8	860	2,044	710	2,015	230	1,958	70	1,949	30	1,671	2	1	40	1	1	1			1
11	8	946	2,249	781	2,216	253	2,154	77	2,144	33	1,838	2	1	44	1	1	1			1
12	8	1,032	2,453	852	2,418	276	2,350	84	2,339	36	2,005	2	1	48	1	1	1			1
13	8	1,118	2,657	923	2,619	299	2,546	91	2,534	39	2,172	2	1	52	1	1	1			1
14	12	1,204	2,862	994	2,821	322	2,742	98	2,729	42	2,339	3	2	56	1	1	1			1
15	12	1,290	3,066	1,065	3,022	345	2,937	105	2,924	45	2,506	3	2	60	1	2	1	1		1
16	12	1,376	3,271	1,136	3,224	368	3,133	112	3,119	48	2,673	3	2	64	1	2	1	1		1
17	12	1,462	3,475	1,207	3,425	391	3,329	119	3,313	51	2,840	3	2	68	1	2	1	1		1
18	12	1,548	3,680	1,278	3,627	414	3,525	126	3,508	54	3,007	3	2	72	1	2	1	1		1
19	12	1,634	3,884	1,349	3,828	437	3,721	133	3,703	57	3,174	3	2	76	1	2	1	1		1
20	12	1,720	4,088	1,420	4,030	460	3,916	140	3,898	60	3,341	3	2	80	1	2	1	1		1
21	12	1,806	4,293	1,491	4,231	483	4,112	147	4,093	63	3,508	3	2	84	1	2	1	1		1
22	12	1,892	4,497	1,562	4,433	506	4,308	154	4,288	66	3,675	3	2	88	1	2	1	1		1
23	12	1,978	4,702	1,633	4,634	529	4,504	161	4,483	69	3,843	3	2	92	1	2	1	1		1
24	12	2,064	4,906	1,704	4,836	552	4,700	168	4,678	72	4,010	3	2	96	1	2	1	1		1
25	12	2,150	5,111	1,775	5,037	575	4,896	175	4,873	75	4,177	3	2	100	1	2	1	1		1
26	12	2,236	5,315	1,846	5,239	598	5,091	182	5,068	78	4,344	3	2	104	1	2	1	1		1
27	12	2,322	5,519	1,917	5,440	621	5,287	189	5,263	81	4,511	3	2	108	1	2	1	1		1
28	12	2,408	5,724	1,988	5,642	644	5,483	196	5,457	84	4,678	3	2	112	1	2	1	1		1
29	12	2,494	5,928	2,059	5,843	667	5,679	203	5,652	87	4,845	3	2	116	1	2	1	1		1
30	12	2,580	6,133	2,130	6,045	690	5,875	210	5,847	90	5,012	3	2	120	1	3	1	1	1	2
31	12	2,666	6,337	2,201	6,246	713	6,070	217	6,042	93	5,179	3	2	124	1	3	1	1	1	2
32	12	2,752	6,542	2,272	6,448	736	6,266	224	6,237	96	5,346	3	2	128	1	3	1	1	1	2
33	12	2,838	6,746	2,343	6,649	759	6,462	231	6,432	99	5,513	3	2	132	1	3	1	1	1	2
34	12	2,924	6,950	2,414	6,851	782	6,658	238	6,627	102	5,680	3	2	136	1	3	1	1	1	2
35	12	3,010	7,155	2,485	7,052	805	6,854	245	6,822	105	5,847	3	2	140	1	3	1	1	1	2
36	12	3,096	7,359	2,556	7,254	828	7,050	252	7,017	108	6,014	3	2	144	1	3	1	1	1	2
37	12	3,182	7,564	2,627	7,455	851	7,245	259	7,212	111	6,181	3	2	148	1	3	1	1	1	2
38	12	3,268	7,768	2,698	7,657	874	7,441	266	7,407	114	6,349	3	2	152	1	3	1	1	1	2
39	12	3,354	7,972	2,769	7,858	897	7,637	273	7,601	117	6,516	3	2	156	1	3	1	1	1	2
40	12	3,440	8,177	2,840	8,060	920	7,833	280	7,796	120	6,683	3	2	160	1	3	1	1	1	2
41	12	3,526	8,381	2,911	8,261	943	8,029	287	7,991	123	6,850	3	2	164	1	3	1	1	1	2
42	16	3,612	8,586	2,982	8,463	966	8,225	294	8,186	126	7,017	4	2	168	1	3	1	1	1	2
43	16	3,698	8,790	3,053	8,664	989	8,420	301	8,381	129	7,184	4	2	172	1	3	1	1	1	2
44	16	3,784	8,995	3,124	8,866	1,012	8,616	308	8,576	132	7,351	4	2	176	1	3	1	1	1	2
45	16	3,870	9,199	3,195	9,067	1,035	8,812	315	8,771	135	7,518	4	2	180	1	4	1	2	1	2
46	16	3,956	9,403	3,266	9,269	1,058	9,008	322	8,966	138	7,685	4	2	184	1	4	1	2	1	2
47	16	4,042	9,608	3,337	9,470	1,081	9,204	329	9,161	141	7,852	4	2	188	1	4	1	2	1	2
48	16	4,128	9,812	3,408	9,672	1,104	9,399	336	9,356	144	8,019	4	2	192	1	4	1	2	1	2
49	16	4,214	10,017	3,479	9,873	1,127	9,595	343	9,550	147	8,186	4	2	196	1	4	1	2	1	2
50	16	4,300	10,221	3,550	10,075	1,150	9,791	350	9,745	150	8,353	4	2	200	1	4	1	2	1	2

(To be continued)

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(Continued from preceding sheet)

RAID group	Cache (GB)	Storage Capacity (GB)										Number of necessary options								
		Emulation Type										Cache DIMM		DKU-F505I-72KS/72KSR (*2)	DKC-F515I-					RACK
		3380-3 (2.377GB)		3390-3/3R (2.838GB)		3390-9 (8.514GB)		3390-L (27.844GB)		3390-M (55.689GB)		DKC-F510I-								
		VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	C4G/ C4GR	C8GR		MIX2R/ MIX4R	B2R	UC0R	UC1R	EXCR	
51	16	4,386	10,426	3,621	10,276	1,173	9,987	357	9,940	153	8,520	4	2	204	1	4	1	2	1	2
52	16	4,472	10,630	3,692	10,478	1,196	10,183	364	10,135	156	8,687	4	2	208	1	4	1	2	1	2
53	16	4,558	10,834	3,763	10,679	1,219	10,379	371	10,330	159	8,855	4	2	212	1	4	1	2	1	2
54	16	4,644	11,039	3,834	10,881	1,242	10,574	378	10,525	162	9,022	4	2	216	1	4	1	2	1	2
55	16	4,730	11,243	3,905	11,082	1,265	10,770	385	10,720	165	9,189	4	2	220	1	4	1	2	1	2
56	16	4,816	11,448	3,976	11,284	1,288	10,966	392	10,915	168	9,356	4	2	224	1	4	1	2	1	2
57	16	4,902	11,652	4,047	11,485	1,311	11,162	399	11,110	171	9,523	4	2	228	1	4	1	2	1	2
58	16	4,988	11,856	4,118	11,687	1,334	11,358	406	11,305	174	9,690	4	2	232	1	4	1	2	1	2
59	16	5,074	12,061	4,189	11,888	1,357	11,553	413	11,500	177	9,857	4	2	236	1	4	1	2	1	2

*1: In addition to the options listed in above table as necessary parts, the Additional Shared Memory Module [Note 1] are required.

Note 1: The number of the Shard Memory Module (DKC-F510I-S1G/S1GR/S2GR) necessary is refer to table 7.2-1 to 7.2-6.
Please note that location of shared memory varies according to the purpose such as additional cache installation or additional LDEV installation.

*2: The number of HDD options is only the number of data disks, and the number of spare disks is not included.
The relation between disk capacity and the number of required options differs according to the number of spare disk installing.

*3: This table was created, presupposing that it installs always a spare disk.

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(3) Open System Storage Capacity Upgrade Table (146GB 10Kmin^{-1}/15Kmin^{-1} HDD)

RAID group	Cache (GB)	Storage Capacity (GB)										Number of necessary options								
		Emulation Type										Cache DIMM		DKU-F505-146JS/146JSR /146KSR (*2)	DKC-F515I-					RACK
		OPEN-3 (2.461GB)		OPEN-9 (7.384GB)		OPEN-E (14.568GB)		OPEN-L (36.450GB)		OPEN-V (*3) (431.294GB)		DKC-F510I-								
		VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	C4G/ C4GR	C8GR		MIX2R/ MIX4R	B2R	UC0R	UC1R	EXCR	
1	4	174	428	58	428	29	422	11	401	1	431	1	1	4	1	1	1			1
2	8	348	856	116	857	58	845	22	802	2	863	2	1	8	1	1	1			1
3	8	522	1,285	174	1,285	87	1,267	33	1,203	3	1,294	2	1	12	1	1	1			1
4	8	696	1,713	232	1,713	116	1,690	44	1,604	4	1,725	2	1	16	1	1	1			1
5	8	870	2,141	290	2,141	145	2,112	55	2,005	5	2,156	2	1	20	1	1	1			1
6	8	1,044	2,569	348	2,570	174	2,535	66	2,406	6	2,588	2	1	24	1	1	1			1
7	12	1,218	2,997	406	2,998	203	2,957	77	2,807	7	3,019	3	2	28	1	1	1			1
8	12	1,392	3,426	464	3,426	232	3,380	88	3,208	8	3,450	3	2	32	1	1	1			1
9	12	1,566	3,854	522	3,854	261	3,802	99	3,609	9	3,882	3	2	36	1	1	1			1
10	12	1,740	4,282	580	4,283	290	4,225	110	4,010	10	4,313	3	2	40	1	1	1			1
11	12	1,914	4,710	638	4,711	319	4,647	121	4,410	11	4,744	3	2	44	1	1	1			1
12	12	2,088	5,139	696	5,139	348	5,070	132	4,811	12	5,176	3	2	48	1	1	1			1
13	12	2,262	5,567	754	5,568	377	5,492	143	5,212	13	5,607	3	2	52	1	1	1			1
14	12	2,436	5,995	812	5,996	406	5,915	154	5,613	14	6,038	3	2	56	1	1	1			1
15	12	2,610	6,423	870	6,424	435	6,337	165	6,014	15	6,469	3	2	60	1	2	1	1		1
16	12	2,784	6,851	928	6,852	464	6,760	176	6,415	16	6,901	3	2	64	1	2	1	1		1
17	12	2,958	7,280	986	7,281	493	7,182	187	6,816	17	7,332	3	2	68	1	2	1	1		1
18	12	3,132	7,708	1,044	7,709	522	7,604	198	7,217	18	7,763	3	2	72	1	2	1	1		1
19	12	3,306	8,136	1,102	8,137	551	8,027	209	7,618	19	8,195	3	2	76	1	2	1	1		1
20	16	3,480	8,564	1,160	8,565	580	8,449	220	8,019	20	8,626	4	2	80	1	2	1	1		1
21	16	3,654	8,992	1,218	8,994	609	8,872	231	8,420	21	9,057	4	2	84	1	2	1	1		1
22	16	3,828	9,421	1,276	9,422	638	9,294	242	8,821	22	9,488	4	2	88	1	2	1	1		1
23	16	4,002	9,849	1,334	9,850	667	9,717	253	9,222	23	9,920	4	2	92	1	2	1	1		1
24	16	4,176	10,277	1,392	10,279	696	10,139	264	9,623	24	10,351	4	2	96	1	2	1	1		1
25	16	4,350	10,705	1,450	10,707	725	10,562	275	10,024	25	10,782	4	2	100	1	2	1	1		1
26	16	4,524	11,134	1,508	11,135	754	10,984	286	10,425	26	11,214	4	2	104	1	2	1	1		1
27	16	4,698	11,562	1,566	11,563	783	11,407	297	10,826	27	11,645	4	2	108	1	2	1	1		1
28	16	4,872	11,990	1,624	11,992	812	11,829	308	11,227	28	12,076	4	2	112	1	2	1	1		1
29	16	5,046	12,418	1,682	12,420	841	12,252	319	11,628	29	12,508	4	2	116	1	2	1	1		1
30	16	5,220	12,846	1,740	12,848	870	12,674	330	12,029	30	12,939	4	2	120	1	3	1	1	1	2
31	16	5,394	13,275	1,798	13,276	899	13,097	341	12,429	31	13,370	4	2	124	1	3	1	1	1	2
32	16	5,568	13,703	1,856	13,705	928	13,519	352	12,830	32	13,801	4	2	128	1	3	1	1	1	2
33	20	5,742	14,131	1,914	14,133	957	13,942	363	13,231	33	14,233	5	3	132	1	3	1	1	1	2
34	20	5,916	14,559	1,972	14,561	986	14,364	374	13,632	34	14,664	5	3	136	1	3	1	1	1	2
35	20	6,090	14,987	2,030	14,990	1,015	14,787	385	14,033	35	15,095	5	3	140	1	3	1	1	1	2
36	20	6,264	15,416	2,088	15,418	1,044	15,209	396	14,434	36	15,527	5	3	144	1	3	1	1	1	2
37	20	6,438	15,844	2,146	15,846	1,073	15,631	407	14,835	37	15,958	5	3	148	1	3	1	1	1	2
38	20	6,612	16,272	2,204	16,274	1,102	16,054	418	15,236	38	16,389	5	3	152	1	3	1	1	1	2
39	20	6,786	16,700	2,262	16,703	1,131	16,476	429	15,637	39	16,820	5	3	156	1	3	1	1	1	2
40	20	6,960	17,129	2,320	17,131	1,160	16,899	440	16,038	40	17,252	5	3	160	1	3	1	1	1	2
41	20	7,134	17,557	2,378	17,559	1,189	17,321	451	16,439	41	17,683	5	3	164	1	3	1	1	1	2
42	20	7,308	17,985	2,436	17,987	1,218	17,744	462	16,840	42	18,114	5	3	168	1	3	1	1	1	2
43	20	7,482	18,413	2,494	18,416	1,247	18,166	473	17,241	43	18,546	5	3	172	1	3	1	1	1	2
44	20	7,656	18,841	2,552	18,844	1,276	18,589	484	17,642	44	18,977	5	3	176	1	3	1	1	1	2
45	20	7,830	19,270	2,610	19,272	1,305	19,011	495	18,043	45	19,408	5	3	180	1	4	1	2	1	2
46	24	8,004	19,698	2,668	19,701	1,334	19,434	506	18,444	46	19,840	6	3	184	1	4	1	2	1	2
47	24	8,178	20,126	2,726	20,129	1,363	19,856	517	18,845	47	20,271	6	3	188	1	4	1	2	1	2
48	24	8,352	20,554	2,784	20,557	1,392	20,279	528	19,246	48	20,702	6	3	192	1	4	1	2	1	2
49	24	8,526	20,982	2,842	20,985	1,421	20,701	539	19,647	49	21,133	6	3	196	1	4	1	2	1	2
50	24	8,700	21,411	2,900	21,414	1,450	21,124	550	20,048	50	21,565	6	3	200	1	4	1	2	1	2

(To be continued)

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(Continued from preceding sheet)

RAID group	Cache (GB)	Storage Capacity (GB)										Number of necessary options							
		Emulation Type										Cache DIMM		DKU-F505-146JS/146JSR /146KSR (*2)	DKC-F515I-				RACK
		OPEN-3 (2.461GB)		OPEN-9 (7.384GB)		OPEN-E (14.568GB)		OPEN-L (36.450GB)		OPEN-V (*3) (431.294GB)		DKC-F510I-							
		VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	C4G/ C4GR	C8GR		MIX2R/ MIX4R	B2R	UC0R	UC1R	EXCR	
51	24	8,874	21,839	2,958	21,842	1,479	21,546	561	20,448	51	21,996	6	3	204	1	4	1	2	1	2
52	24	9,048	22,267	3,016	22,270	1,508	21,969	572	20,849	52	22,427	6	3	208	1	4	1	2	1	2
53	24	9,222	22,695	3,074	22,698	1,537	22,391	583	21,250	53	22,859	6	3	212	1	4	1	2	1	2
54	24	9,396	23,124	3,132	23,127	1,566	22,813	594	21,651	54	23,290	6	3	216	1	4	1	2	1	2
55	24	9,570	23,552	3,190	23,555	1,595	23,236	605	22,052	55	23,721	6	3	220	1	4	1	2	1	2
56	24	9,744	23,980	3,248	23,983	1,624	23,658	616	22,453	56	24,152	6	3	224	1	4	1	2	1	2
57	24	9,918	24,408	3,306	24,412	1,653	24,081	627	22,854	57	24,584	6	3	228	1	4	1	2	1	2
58	24	10,092	24,836	3,364	24,840	1,682	24,503	638	23,255	58	25,015	6	3	232	1	4	1	2	1	2
59	24	10,266	25,265	3,422	25,268	1,711	24,926	649	23,656	59	25,446	6	3	236	1	4	1	2	1	2

*1: In addition to the options listed in above table as necessary parts, the Additional Shared Memory Module [Note 1] are required.

Note 1: The number of the Shard Memory Module (DKC-F510I-S1G/S1GR/S2GR) necessary is refer to table 7.2-1 to 7.2-6.
Please note that location of shared memory varies according to the purpose such as additional cache installation or additional LDEV installation.

*2: The number of HDD options is only the number of data disks, and the number of spare disks is not included.
The relation between disk capacity and the number of required options differs according to the number of spare disk installing.

*3: OPEN-V is volume based on CVS. A customer can set up the volume capacity of OPEN-V freely from 48.1MB among almost 1 RAID group capacity. This volume capacity is the default value and is nearly equals to RAID group capacity.

*4: This table was created, presupposing that it installs always a spare disk.

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(4) Mainframe Storage Capacity Upgrade Table (146GB 10Kmin^{-1}/15Kmin^{-1} HDD)

RAID group	Cache (GB)	Storage Capacity (GB)										Number of necessary options								
		Emulation Type										Cache DIMM		DKU-F505I-146JS/146JSR/146KSR (*2)	DKC-F515I-					RACK
		3380-3 (2.377GB)		3390-3/3R (2.838GB)		3390-9 (8.514GB)		3390-L (27.844GB)		3390-M (55.689GB)		DKC-F510I-								
												C4G/C4GR	C8GR		MIX2R/MIX4R	B2R	UC0R	UC1R	EXCR	
		VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap									
1	4	174	414	144	409	48	409	14	390	7	390	1	1	4	1	1	1			1
2	8	348	827	288	817	96	817	28	780	14	780	2	1	8	1	1	1			1
3	8	522	1,241	432	1,226	144	1,226	42	1,169	21	1,169	2	1	12	1	1	1			1
4	8	696	1,654	576	1,635	192	1,635	56	1,559	28	1,559	2	1	16	1	1	1			1
5	8	870	2,068	720	2,043	240	2,043	70	1,949	35	1,949	2	1	20	1	1	1			1
6	8	1,044	2,482	864	2,452	288	2,452	84	2,339	42	2,339	2	1	24	1	1	1			1
7	12	1,218	2,895	1,008	2,861	336	2,861	98	2,729	49	2,729	3	2	28	1	1	1			1
8	12	1,392	3,309	1,152	3,269	384	3,269	112	3,119	56	3,119	3	2	32	1	1	1			1
9	12	1,566	3,722	1,296	3,678	432	3,678	126	3,508	63	3,508	3	2	36	1	1	1			1
10	12	1,740	4,136	1,440	4,087	480	4,087	140	3,898	70	3,898	3	2	40	1	1	1			1
11	12	1,914	4,550	1,584	4,495	528	4,495	154	4,288	77	4,288	3	2	44	1	1	1			1
12	12	2,088	4,963	1,728	4,904	576	4,904	168	4,678	84	4,678	3	2	48	1	1	1			1
13	12	2,262	5,377	1,872	5,313	624	5,313	182	5,068	91	5,068	3	2	52	1	1	1			1
14	12	2,436	5,790	2,016	5,721	672	5,721	196	5,457	98	5,458	3	2	56	1	1	1			1
15	12	2,610	6,204	2,160	6,130	720	6,130	210	5,847	105	5,847	3	2	60	1	2	1	1		1
16	12	2,784	6,618	2,304	6,539	768	6,539	224	6,237	112	6,237	3	2	64	1	2	1	1		1
17	12	2,958	7,031	2,448	6,947	816	6,947	238	6,627	119	6,627	3	2	68	1	2	1	1		1
18	12	3,132	7,445	2,592	7,356	864	7,356	252	7,017	126	7,017	3	2	72	1	2	1	1		1
19	12	3,306	7,858	2,736	7,765	912	7,765	266	7,407	133	7,407	3	2	76	1	2	1	1		1
20	12	3,480	8,272	2,880	8,173	960	8,173	280	7,796	140	7,796	3	2	80	1	2	1	1		1
21	16	3,654	8,686	3,024	8,582	1,008	8,582	294	8,186	147	8,186	4	2	84	1	2	1	1		1
22	16	3,828	9,099	3,168	8,991	1,056	8,991	308	8,576	154	8,576	4	2	88	1	2	1	1		1
23	16	4,002	9,513	3,312	9,399	1,104	9,399	322	8,966	161	8,966	4	2	92	1	2	1	1		1
24	16	4,176	9,926	3,456	9,808	1,152	9,808	336	9,356	168	9,356	4	2	96	1	2	1	1		1
25	16	4,350	10,340	3,600	10,217	1,200	10,217	350	9,745	175	9,746	4	2	100	1	2	1	1		1
26	16	4,524	10,754	3,744	10,625	1,248	10,625	364	10,135	182	10,135	4	2	104	1	2	1	1		1
27	16	4,698	11,167	3,888	11,034	1,296	11,034	378	10,525	189	10,525	4	2	108	1	2	1	1		1
28	16	4,872	11,581	4,032	11,443	1,344	11,443	392	10,915	196	10,915	4	2	112	1	2	1	1		1
29	16	5,046	11,994	4,176	11,851	1,392	11,851	406	11,305	203	11,305	4	2	116	1	2	1	1		1
30	16	5,220	12,408	4,320	12,260	1,440	12,260	420	11,694	210	11,695	4	2	120	1	3	1	1	1	2
31	16	5,394	12,822	4,464	12,669	1,488	12,669	434	12,084	217	12,085	4	2	124	1	3	1	1	1	2
32	16	5,568	13,235	4,608	13,078	1,536	13,078	448	12,474	224	12,474	4	2	128	1	3	1	1	1	2
33	16	5,742	13,649	4,752	13,486	1,584	13,486	462	12,864	231	12,864	4	2	132	1	3	1	1	1	2
34	16	5,916	14,062	4,896	13,895	1,632	13,895	476	13,254	238	13,254	4	2	136	1	3	1	1	1	2
35	20	6,090	14,476	5,040	14,304	1,680	14,304	490	13,644	245	13,644	5	3	140	1	3	1	1	1	2
36	20	6,264	14,890	5,184	14,712	1,728	14,712	504	14,033	252	14,034	5	3	144	1	3	1	1	1	2
37	20	6,438	15,303	5,328	15,121	1,776	15,121	518	14,423	259	14,423	5	3	148	1	3	1	1	1	2
38	20	6,612	15,717	5,472	15,530	1,824	15,530	532	14,813	266	14,813	5	3	152	1	3	1	1	1	2
39	20	6,786	16,130	5,616	15,938	1,872	15,938	546	15,203	273	15,203	5	3	156	1	3	1	1	1	2
40	20	6,960	16,544	5,760	16,347	1,920	16,347	560	15,593	280	15,593	5	3	160	1	3	1	1	1	2
41	20	7,134	16,958	5,904	16,756	1,968	16,756	574	15,982	287	15,983	5	3	164	1	3	1	1	1	2
42	20	7,308	17,371	6,048	17,164	2,016	17,164	588	16,372	294	16,373	5	3	168	1	3	1	1	1	2
43	20	7,482	17,785	6,192	17,573	2,064	17,573	602	16,762	301	16,762	5	3	172	1	3	1	1	1	2
44	20	7,656	18,198	6,336	17,982	2,112	17,982	616	17,152	308	17,152	5	3	176	1	3	1	1	1	2
45	20	7,830	18,612	6,480	18,390	2,160	18,390	630	17,542	315	17,542	5	3	180	1	4	1	2	1	2
46	20	8,004	19,026	6,624	18,799	2,208	18,799	644	17,932	322	17,932	5	3	184	1	4	1	2	1	2
47	20	8,178	19,439	6,768	19,208	2,256	19,208	658	18,321	329	18,322	5	3	188	1	4	1	2	1	2
48	24	8,352	19,853	6,912	19,616	2,304	19,616	672	18,711	336	18,712	6	3	192	1	4	1	2	1	2
49	24	8,526	20,266	7,056	20,025	2,352	20,025	686	19,101	343	19,101	6	3	196	1	4	1	2	1	2
50	24	8,700	20,680	7,200	20,434	2,400	20,434	700	19,491	350	19,491	6	3	200	1	4	1	2	1	2

(To be continued)

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RAID group	Cache (GB)	Storage Capacity (GB)										Number of necessary options								
		Emulation Type										Cache DIMM		DKU-F505I-146JS/146JSR/146KSR (*2)	DKC-F515I-					RACK
		3380-3 (2.377GB)		3390-3/3R (2.838GB)		3390-9 (8.514GB)		3390-L (27.844GB)		3390-M (55.689GB)		DKC-F510I-								
												C4G/ C4GR	C8GR		MIX2R/ MIX4R	B2R	UC0R	UC1R	EXCR	
		VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap									
51	24	8,874	21,093	7,344	20,842	2,448	20,842	714	19,881	357	19,881	6	3	204	1	4	1	2	1	2
52	24	9,048	21,507	7,488	21,251	2,496	21,251	728	20,270	364	20,271	6	3	208	1	4	1	2	1	2
53	24	9,222	21,921	7,632	21,660	2,544	21,660	742	20,660	371	20,661	6	3	212	1	4	1	2	1	2
54	24	9,396	22,334	7,776	22,068	2,592	22,068	756	21,050	378	21,050	6	3	216	1	4	1	2	1	2
55	24	9,570	22,748	7,920	22,477	2,640	22,477	770	21,440	385	21,440	6	3	220	1	4	1	2	1	2
56	24	9,744	23,161	8,064	22,886	2,688	22,886	784	21,830	392	21,830	6	3	224	1	4	1	2	1	2
57	24	9,918	23,575	8,208	23,294	2,736	23,294	798	22,220	399	22,220	6	3	228	1	4	1	2	1	2
58	24	10,092	23,989	8,352	23,703	2,784	23,703	812	22,609	406	22,610	6	3	232	1	4	1	2	1	2
59	24	10,266	24,402	8,496	24,112	2,832	24,112	826	22,999	413	23,000	6	3	236	1	4	1	2	1	2

*1: In addition to the options listed in above table as necessary parts, the Additional Shared Memory Module [Note 1] are required.

Note 1: The number of the Shard Memory Module (DKC-F510I-S1G/S1GR/S2GR) necessary is refer to table 7.2-1 to 7.2-6.
Please note that location of shared memory varies according to the purpose such as additional cache installation or additional LDEV installation.

*2: The number of HDD options is only the number of data disks, and the number of spare disks is not included.
The relation between disk capacity and the number of required options differs according to the number of spare disk installing.

*3: This table was created, presupposing that it installs always a spare disk.

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(5) Open System Storage Capacity Upgrade Table (300GB 10kmin^{-1}/15kmin^{-1} HDD)

RAID group	Cache (GB)	Storage Capacity (GB)										Number of necessary options								
		Emulation Type										Cache DIMM		DKU-F505I-300JSR/300KSR (*2)	DKC-F515I-					RACK
		OPEN-3 (2.461GB)		OPEN-9 (7.384GB)		OPEN-E (14.568GB)		OPEN-L (36.450GB)		OPEN-V (*3) (864.590GB)		DKC-F510I-								
		VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	C4G/C4GR	C8GR		MIX2R/MIX4R	B2R	UC0R	UC1R	EXCR	
1	8	250	615	116	857	59	860	23	838	1	865	2	1	4	1	1	1			1
2	8	500	1,231	232	1,713	118	1,719	46	1,677	2	1,729	2	1	8	1	1	1			1
3	8	750	1,846	348	2,570	177	2,579	69	2,515	3	2,594	2	1	12	1	1	1			1
4	12	1,000	2,461	464	3,426	236	3,438	92	3,353	4	3,458	3	2	16	1	1	1			1
5	12	1,250	3,076	580	4,283	295	4,298	115	4,192	5	4,323	3	2	20	1	1	1			1
6	12	1,500	3,692	696	5,139	354	5,157	138	5,030	6	5,188	3	2	24	1	1	1			1
7	12	1,750	4,307	812	5,996	413	6,017	161	5,868	7	6,052	3	2	28	1	1	1			1
8	12	2,000	4,922	928	6,852	472	6,876	184	6,707	8	6,917	3	2	32	1	1	1			1
9	12	2,250	5,537	1,044	7,709	531	7,736	207	7,545	9	7,781	3	2	36	1	1	1			1
10	16	2,500	6,153	1,160	8,565	590	8,595	230	8,384	10	8,646	4	2	40	1	1	1			1
11	16	2,750	6,768	1,276	9,422	649	9,455	253	9,222	11	9,510	4	2	44	1	1	1			1
12	16	3,000	7,383	1,392	10,279	708	10,314	276	10,060	12	10,375	4	2	48	1	1	1			1
13	16	3,250	7,998	1,508	11,135	767	11,174	299	10,899	13	11,240	4	2	52	1	1	1			1
14	16	3,500	8,614	1,624	11,992	826	12,033	322	11,737	14	12,104	4	2	56	1	1	1			1
15	16	3,750	9,229	1,740	12,848	885	12,893	345	12,575	15	12,969	4	2	60	1	2	1	1		1
16	16	4,000	9,844	1,856	13,705	944	13,752	368	13,414	16	13,833	4	2	64	1	2	1	1		1
17	20	4,250	10,459	1,972	14,561	1,003	14,612	391	14,252	17	14,698	5	3	68	1	2	1	1		1
18	20	4,500	11,075	2,088	15,418	1,062	15,471	414	15,090	18	15,563	5	3	72	1	2	1	1		1
19	20	4,750	11,690	2,204	16,274	1,121	16,331	437	15,929	19	16,427	5	3	76	1	2	1	1		1
20	20	5,000	12,305	2,320	17,131	1,180	17,190	460	16,767	20	17,292	5	3	80	1	2	1	1		1
21	20	5,250	12,920	2,436	17,987	1,239	18,050	483	17,605	21	18,156	5	3	84	1	2	1	1		1
22	20	5,500	13,536	2,552	18,844	1,298	18,909	506	18,444	22	19,021	5	3	88	1	2	1	1		1
23	24	5,750	14,151	2,668	19,701	1,357	19,769	529	19,282	23	19,886	6	3	92	1	2	1	1		1
24	24	6,000	14,766	2,784	20,557	1,416	20,628	552	20,120	24	20,750	6	3	96	1	2	1	1		1
25	24	6,250	15,381	2,900	21,414	1,475	21,488	575	20,959	25	21,615	6	3	100	1	2	1	1		1
26	24	6,500	15,997	3,016	22,270	1,534	22,347	598	21,797	26	22,479	6	3	104	1	2	1	1		1
27	24	6,750	16,612	3,132	23,127	1,593	23,207	621	22,635	27	23,344	6	3	108	1	2	1	1		1
28	24	7,000	17,227	3,248	23,983	1,652	24,066	644	23,474	28	24,209	6	3	112	1	2	1	1		1
29	24	7,250	17,842	3,364	24,840	1,711	24,926	667	24,312	29	25,073	6	3	116	1	2	1	1		1
30	24	7,500	18,458	3,480	25,696	1,770	25,785	690	25,151	30	25,938	6	3	120	1	3	1	1	1	2
31	24	7,750	19,073	3,596	26,553	1,829	26,645	713	25,989	31	26,802	6	3	124	1	3	1	1	1	2
32	24	8,000	19,688	3,712	27,409	1,888	27,504	736	26,827	32	27,667	6	3	128	1	3	1	1	1	2
33	24	8,250	20,303	3,828	28,266	1,947	28,364	759	27,666	33	28,531	6	3	132	1	3	1	1	1	2
34	24	8,500	20,919	3,944	29,122	2,006	29,223	782	28,504	34	29,396	6	3	136	1	3	1	1	1	2
35	24	8,750	21,534	4,060	29,979	2,065	30,083	805	29,342	35	30,261	6	3	140	1	3	1	1	1	2
36	24	9,000	22,149	4,176	30,836	2,124	30,942	828	30,181	36	31,125	6	3	144	1	3	1	1	1	2
37	24	9,250	22,764	4,292	31,692	2,183	31,802	851	31,019	37	31,990	6	3	148	1	3	1	1	1	2
38	24	9,500	23,380	4,408	32,549	2,242	32,661	874	31,857	38	32,854	6	3	152	1	3	1	1	1	2
39	24	9,750	23,995	4,524	33,405	2,301	33,521	897	32,696	39	33,719	6	3	156	1	3	1	1	1	2
40	24	10,000	24,610	4,640	34,262	2,360	34,380	920	33,534	40	34,584	6	3	160	1	3	1	1	1	2
41	24	10,250	25,225	4,756	35,118	2,419	35,240	943	34,372	41	35,448	6	3	164	1	3	1	1	1	2
42	24	10,500	25,841	4,872	35,975	2,478	36,100	966	35,211	42	36,313	6	3	168	1	3	1	1	1	2
43	24	10,750	26,456	4,988	36,831	2,537	36,959	989	36,049	43	37,177	6	3	172	1	3	1	1	1	2
44	24	11,000	27,071	5,104	37,688	2,596	37,819	1,012	36,887	44	38,042	6	3	176	1	3	1	1	1	2
45	24	11,250	27,686	5,220	38,544	2,655	38,678	1,035	37,726	45	38,907	6	3	180	1	4	1	2	1	2
46	24	11,500	28,302	5,336	39,401	2,714	39,538	1,058	38,564	46	39,771	6	3	184	1	4	1	2	1	2
47	24	11,750	28,917	5,452	40,258	2,773	40,397	1,081	39,402	47	40,636	6	3	188	1	4	1	2	1	2
48	24	12,000	29,532	5,568	41,114	2,832	41,257	1,104	40,241	48	41,500	6	3	192	1	4	1	2	1	2
49	24	12,250	30,147	5,684	41,971	2,891	42,116	1,127	41,079	49	42,365	6	3	196	1	4	1	2	1	2
50	24	12,500	30,763	5,800	42,827	2,950	42,976	1,150	41,918	50	43,230	6	3	200	1	4	1	2	1	2

(To be continued)

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(Continued from preceding sheet)

RAID group	Cache (GB)	Storage Capacity (GB)										Number of necessary options								
		Emulation Type										Cache DIMM		DKU-F505I-300JSR/ 300KSR (*2)	DKC-F515I-					RACK
		OPEN-3 (2.461GB)		OPEN-9 (7.384GB)		OPEN-E (14.568GB)		OPEN-L (36.450GB)		OPEN-V (*3) (864.590GB)		DKC-F510I-								
		VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	C4G/ C4GR	C8GR		MIX2R/ MIX4R	B2R	UC0R	UC1R	EXCR	
51	24	12,750	31,378	5,916	43,684	3,009	43,835	1,173	42,756	51	44,094	6	3	204	1	4	1	2	1	2
52	24	13,000	31,993	6,032	44,540	3,068	44,695	1,196	43,594	52	44,959	6	3	208	1	4	1	2	1	2
53	24	13,250	32,608	6,148	45,397	3,127	45,554	1,219	44,433	53	45,823	6	3	212	1	4	1	2	1	2
54	24	13,500	33,224	6,264	46,253	3,186	46,414	1,242	45,271	54	46,688	6	3	216	1	4	1	2	1	2
55	24	13,750	33,839	6,380	47,110	3,245	47,273	1,265	46,109	55	47,552	6	3	220	1	4	1	2	1	2
56	24	14,000	34,454	6,496	47,966	3,304	48,133	1,288	46,948	56	48,417	6	3	224	1	4	1	2	1	2
57	24	14,250	35,069	6,612	48,823	3,363	48,992	1,311	47,786	57	49,282	6	3	228	1	4	1	2	1	2
58	24	14,500	35,685	6,728	49,680	3,422	49,852	1,334	48,624	58	50,146	6	3	232	1	4	1	2	1	2
59	24	14,750	36,300	6,844	50,536	3,481	50,711	1,357	49,463	59	51,011	6	3	236	1	4	1	2	1	2

*1: In addition to the options listed in above table as necessary parts, the Additional Shared Memory Module [Note 1] are required.

Note 1: The number of the Shard Memory Module (DKC-F510I-S1G/S1GR/S2GR) necessary is refer to table 7.2-1 to 7.2-6.
Please note that location of shared memory varies according to the purpose such as additional cache installation or additional LDEV installation.

*2: The number of HDD options is only the number of data disks, and the number of spare disks is not included.
The relation between disk capacity and the number of required options differs according to the number of spare disk installing.

*3: OPEN-V is volume based on CVS. A customer can set up the volume capacity of OPEN-V freely from 48.1MB among almost 1 RAID group capacity. This volume capacity is the default value and is nearly equals to RAID group capacity.

*4: This table was created, presupposing that it installs always a spare disk.

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(6) Mainframe Storage Capacity Upgrade Table (300GB 10kmin^{-1}/15kmin^{-1} HDD)

RAID group	Cache (GB)	Storage Capacity (GB)										Number of necessary options								
		Emulation Type										Cache DIMM		DKU-F505I-300JSR/300KSR (*2)	DKC-F515I-					RACK
		3380-3 (2.377GB)		3390-3/3R (2.838GB)		3390-9 (8.514GB)		3390-L (27.844GB)		3390-M (55.689GB)		DKC-F510I-			MIX2R/MIX4R	B2R	UC0R	UC1R	EXCR	
		VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	C4G/C4GR	C8GR							
1	8	250	594	250	710	96	817	29	807	14	780	2	1	4	1	1	1			1
2	8	500	1,189	500	1,419	192	1,635	58	1,615	28	1,559	2	1	8	1	1	1			1
3	8	750	1,783	750	2,129	288	2,452	87	2,422	42	2,339	2	1	12	1	1	1			1
4	12	1,000	2,377	1,000	2,838	384	3,269	116	3,230	56	3,119	3	2	16	1	1	1			1
5	12	1,250	2,971	1,250	3,548	480	4,087	145	4,037	70	3,898	3	2	20	1	1	1			1
6	12	1,500	3,566	1,500	4,257	576	4,904	174	4,845	84	4,678	3	2	24	1	1	1			1
7	12	1,750	4,160	1,750	4,967	672	5,721	203	5,652	98	5,458	3	2	28	1	1	1			1
8	12	2,000	4,754	2,000	5,676	768	6,539	232	6,460	112	6,237	3	2	32	1	1	1			1
9	12	2,250	5,348	2,250	6,386	864	7,356	261	7,267	126	7,017	3	2	36	1	1	1			1
10	12	2,500	5,943	2,500	7,095	960	8,173	290	8,075	140	7,796	3	2	40	1	1	1			1
11	16	2,750	6,537	2,750	7,805	1,056	8,991	319	8,882	154	8,576	4	2	44	1	1	1			1
12	16	3,000	7,131	3,000	8,514	1,152	9,808	348	9,690	168	9,356	4	2	48	1	1	1			1
13	16	3,250	7,725	3,250	9,224	1,248	10,625	377	10,497	182	10,135	4	2	52	1	1	1			1
14	16	3,500	8,320	3,500	9,933	1,344	11,443	406	11,305	196	10,915	4	2	56	1	1	1			1
15	16	3,750	8,914	3,750	10,643	1,440	12,260	435	12,112	210	11,695	4	2	60	1	2	1	1		1
16	16	4,000	9,508	4,000	11,352	1,536	13,078	464	12,920	224	12,474	4	2	64	1	2	1	1		1
17	16	4,250	10,102	4,250	12,062	1,632	13,895	493	13,727	238	13,254	4	2	68	1	2	1	1		1
18	20	4,500	10,697	4,500	12,771	1,728	14,712	522	14,535	252	14,034	5	3	72	1	2	1	1		1
19	20	4,750	11,291	4,750	13,481	1,824	15,530	551	15,342	266	14,813	5	3	76	1	2	1	1		1
20	20	5,000	11,885	5,000	14,190	1,920	16,347	580	16,150	280	15,593	5	3	80	1	2	1	1		1
21	20	5,250	12,479	5,250	14,900	2,016	17,164	609	16,957	294	16,373	5	3	84	1	2	1	1		1
22	20	5,500	13,074	5,500	15,609	2,112	17,982	638	17,764	308	17,152	5	3	88	1	2	1	1		1
23	20	5,750	13,668	5,750	16,319	2,208	18,799	667	18,572	322	17,932	5	3	92	1	2	1	1		1
24	20	6,000	14,262	6,000	17,028	2,304	19,616	696	19,379	336	18,712	5	3	96	1	2	1	1		1
25	24	6,250	14,856	6,250	17,738	2,400	20,434	725	20,187	350	19,491	6	3	100	1	2	1	1		1
26	24	6,500	15,451	6,500	18,447	2,496	21,251	754	20,994	364	20,271	6	3	104	1	2	1	1		1
27	24	6,750	16,045	6,750	19,157	2,592	22,068	783	21,802	378	21,050	6	3	108	1	2	1	1		1
28	24	7,000	16,639	7,000	19,866	2,688	22,886	812	22,609	392	21,830	6	3	112	1	2	1	1		1
29	24	7,250	17,233	7,250	20,576	2,784	23,703	841	23,417	406	22,610	6	3	116	1	2	1	1		1
30	24	7,500	17,828	7,500	21,285	2,880	24,520	870	24,224	420	23,389	6	3	120	1	3	1	1	1	2
31	24	7,750	18,422	7,750	21,995	2,976	25,338	899	25,032	434	24,169	6	3	124	1	3	1	1	1	2
32	24	8,000	19,016	8,000	22,704	3,072	26,155	928	25,839	448	24,949	6	3	128	1	3	1	1	1	2
33	24	8,250	19,610	8,250	23,414	3,168	26,972	957	26,647	462	25,728	6	3	132	1	3	1	1	1	2
34	24	8,500	20,205	8,500	24,123	3,264	27,790	986	27,454	476	26,508	6	3	136	1	3	1	1	1	2
35	24	8,750	20,799	8,750	24,833	3,360	28,607	1,015	28,262	490	27,288	6	3	140	1	3	1	1	1	2
36	24	9,000	21,393	9,000	25,542	3,456	29,424	1,044	29,069	504	28,067	6	3	144	1	3	1	1	1	2
37	24	9,250	21,987	9,250	26,252	3,552	30,242	1,073	29,877	518	28,847	6	3	148	1	3	1	1	1	2
38	24	9,500	22,582	9,500	26,961	3,648	31,059	1,102	30,684	532	29,627	6	3	152	1	3	1	1	1	2
39	24	9,750	23,176	9,750	27,671	3,744	31,876	1,131	31,492	546	30,406	6	3	156	1	3	1	1	1	2
40	24	10,000	23,770	10,000	28,380	3,840	32,694	1,160	32,299	560	31,186	6	3	160	1	3	1	1	1	2
41	24	10,250	24,364	10,250	29,090	3,936	33,511	1,189	33,107	574	31,965	6	3	164	1	3	1	1	1	2
42	24	10,500	24,959	10,500	29,799	4,032	34,328	1,218	33,914	588	32,745	6	3	168	1	3	1	1	1	2
43	24	10,750	25,553	10,750	30,509	4,128	35,146	1,247	34,721	602	33,525	6	3	172	1	3	1	1	1	2
44	24	11,000	26,147	11,000	31,218	4,224	35,963	1,276	35,529	616	34,304	6	3	176	1	3	1	1	1	2
45	24	11,250	26,741	11,250	31,928	4,320	36,780	1,305	36,336	630	35,084	6	3	180	1	4	1	2	1	2
46	24	11,500	27,336	11,500	32,637	4,416	37,598	1,334	37,144	644	35,864	6	3	184	1	4	1	2	1	2
47	24	11,750	27,930	11,750	33,347	4,512	38,415	1,363	37,951	658	36,643	6	3	188	1	4	1	2	1	2
48	24	12,000	28,524	12,000	34,056	4,608	39,233	1,392	38,759	672	37,423	6	3	192	1	4	1	2	1	2
49	24	12,250	29,118	12,250	34,766	4,704	40,050	1,421	39,566	686	38,203	6	3	196	1	4	1	2	1	2
50	24	12,500	29,713	12,500	35,475	4,800	40,867	1,450	40,374	700	38,982	6	3	200	1	4	1	2	1	2

(To be continued)

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(Continued from preceding sheet)

RAID group	Cache (GB)	Storage Capacity (GB)										Number of necessary options								
		Emulation Type										Cache DIMM		DKU-F505I-300JSR/ 300KSR (*2)	DKC-F515I-					RACK
		3380-3 (2.377GB)		3390-3/3R (2.838GB)		3390-9 (8.514GB)		3390-L (27.844GB)		3390-M (55.689GB)		DKC-F510I-								
												C4G/ C4GR	C8GR		MIX2R/ MIX4R	B2R	UC0R	UC1R	EXCR	
		VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap									
51	24	12,750	30,307	12,750	36,185	4,896	41,685	1,479	41,181	714	39,762	6	3	204	1	4	1	2	1	2
52	24	13,000	30,901	13,000	36,894	4,992	42,502	1,508	41,989	728	40,542	6	3	208	1	4	1	2	1	2
53	24	13,250	31,495	13,250	37,604	5,088	43,319	1,537	42,796	742	41,321	6	3	212	1	4	1	2	1	2
54	24	13,500	32,090	13,500	38,313	5,184	44,137	1,566	43,604	756	42,101	6	3	216	1	4	1	2	1	2
55	24	13,750	32,684	13,750	39,023	5,280	44,954	1,595	44,411	770	42,881	6	3	220	1	4	1	2	1	2
56	24	14,000	33,278	14,000	39,732	5,376	45,771	1,624	45,219	784	43,660	6	3	224	1	4	1	2	1	2
57	24	14,250	33,872	14,250	40,442	5,472	46,589	1,653	46,026	798	44,440	6	3	228	1	4	1	2	1	2
58	24	14,500	34,467	14,500	41,151	5,568	47,406	1,682	46,834	812	45,219	6	3	232	1	4	1	2	1	2
59	24	14,750	35,061	14,750	41,861	5,664	48,223	1,711	47,641	826	45,999	6	3	236	1	4	1	2	1	2

*1: In addition to the options listed in above table as necessary parts, the Additional Shared Memory Module [Note 1] are required.

Note 1: The number of the Shard Memory Module (DKC-F510I-S1G/S1GR/S2GR) necessary is refer to table 7.2-1 to 7.2-6.
Please note that location of shared memory varies according to the purpose such as additional cache installation or additional LDEV installation.

*2: The number of HDD options is only the number of data disks, and the number of spare disks is not included.
The relation between disk capacity and the number of required options differs according to the number of spare disk installing.

*3: This table was created, presupposing that it installs always a spare disk.

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(7) Open System Storage Capacity Upgrade Table (400GB 10Kmin^{-1} HDD)

RAID group	Cache (GB)	Storage Capacity (GB)										Number of necessary options								
		Emulation Type										Cache DIMM DKC-F510I-		DKU-F505I-400JSR (*2)	DKC-F515I-					RACK
		OPEN-3 (2.461GB)		OPEN-9 (7.384GB)		OPEN-E (14.567GB)		OPEN-L (36.450GB)		OPEN-V (*3) (1181.5GB)		C4G/ C4GR	C8GR		MIX2R/ MIX4R	B2R	UC0R	UC1R	EXC0R	
		VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap									
1	8	250	615	159	1,174	81	1,180	32	1,166	1	1,182	2	1	4	1	1	1			1
2	8	500	1,231	318	2,348	162	2,360	64	2,333	2	2,363	2	1	8	1	1	1			1
3	12	750	1,846	477	3,522	243	3,540	96	3,499	3	3,545	3	2	12	1	1	1			1
4	12	1,000	2,461	636	4,696	324	4,720	128	4,666	4	4,726	3	2	16	1	1	1			1
5	12	1,250	3,076	795	5,870	405	5,900	160	5,832	5	5,908	3	2	20	1	1	1			1
6	12	1,500	3,692	954	7,044	486	7,080	192	6,998	6	7,089	3	2	24	1	1	1			1
7	12	1,750	4,307	1,113	8,218	567	8,259	224	8,165	7	8,271	3	2	28	1	1	1			1
8	16	2,000	4,922	1,272	9,392	648	9,439	256	9,331	8	9,452	4	2	32	1	1	1			1
9	16	2,250	5,537	1,431	10,567	729	10,619	288	10,498	9	10,634	4	2	36	1	1	1			1
10	16	2,500	6,153	1,590	11,741	810	11,799	320	11,664	10	11,815	4	2	40	1	1	1			1
11	16	2,750	6,768	1,749	12,915	891	12,979	352	12,830	11	12,997	4	2	44	1	1	1			1
12	16	3,000	7,383	1,908	14,089	972	14,159	384	13,997	12	14,178	4	2	48	1	1	1			1
13	20	3,250	7,998	2,067	15,263	1,053	15,339	416	15,163	13	15,360	5	3	52	1	1	1			1
14	20	3,500	8,614	2,226	16,437	1,134	16,519	448	16,330	14	16,541	5	3	56	1	1	1			1
15	20	3,750	9,229	2,385	17,611	1,215	17,699	480	17,496	15	17,723	5	3	60	1	2	1	1		1
16	20	4,000	9,844	2,544	18,785	1,296	18,879	512	18,662	16	18,904	5	3	64	1	2	1	1		1
17	20	4,250	10,459	2,703	19,959	1,377	20,059	544	19,829	17	20,086	5	3	68	1	2	1	1		1
18	24	4,500	11,075	2,862	21,133	1,458	21,239	576	20,995	18	21,267	6	3	72	1	2	1	1		1
19	24	4,750	11,690	3,021	22,307	1,539	22,419	608	22,162	19	22,449	6	3	76	1	2	1	1		1
20	24	5,000	12,305	3,180	23,481	1,620	23,599	640	23,328	20	23,630	6	3	80	1	2	1	1		1
21	24	5,250	12,920	3,339	24,655	1,701	24,778	672	24,494	21	24,812	6	3	84	1	2	1	1		1
22	24	5,500	13,536	3,498	25,829	1,782	25,958	704	25,661	22	25,993	6	3	88	1	2	1	1		1
23	24	5,750	14,151	3,657	27,003	1,863	27,138	736	26,827	23	27,175	6	3	92	1	2	1	1		1
24	24	6,000	14,766	3,816	28,177	1,944	28,318	768	27,994	24	28,356	6	3	96	1	2	1	1		1
25	24	6,250	15,381	3,975	29,351	2,025	29,498	800	29,160	25	29,538	6	3	100	1	2	1	1		1
26	24	6,500	15,997	4,134	30,525	2,106	30,678	832	30,326	26	30,719	6	3	104	1	2	1	1		1
27	24	6,750	16,612	4,293	31,700	2,187	31,858	864	31,493	27	31,901	6	3	108	1	2	1	1		1
28	24	7,000	17,227	4,452	32,874	2,268	33,038	896	32,659	28	33,082	6	3	112	1	2	1	1		1
29	24	7,250	17,842	4,611	34,048	2,349	34,218	928	33,826	29	34,264	6	3	116	1	2	1	1		1
30	24	7,500	18,458	4,770	35,222	2,430	35,398	960	34,992	30	35,445	6	3	120	1	3	1	1	1	2
31	24	7,750	19,073	4,929	36,396	2,511	36,578	992	36,158	31	36,627	6	3	124	1	3	1	1	1	2
32	24	8,000	19,688	5,088	37,570	2,592	37,758	1,024	37,325	32	37,808	6	3	128	1	3	1	1	1	2
33	24	8,250	20,303	5,247	38,744	2,673	38,938	1,056	38,491	33	38,990	6	3	132	1	3	1	1	1	2
34	24	8,500	20,919	5,406	39,918	2,754	40,118	1,088	39,658	34	40,171	6	3	136	1	3	1	1	1	2
35	24	8,750	21,534	5,565	41,092	2,835	41,297	1,120	40,824	35	41,353	6	3	140	1	3	1	1	1	2
36	24	9,000	22,149	5,724	42,266	2,916	42,477	1,152	41,990	36	42,534	6	3	144	1	3	1	1	1	2
37	24	9,250	22,764	5,883	43,440	2,997	43,657	1,184	43,157	37	43,716	6	3	148	1	3	1	1	1	2
38	24	9,500	23,380	6,042	44,614	3,078	44,837	1,216	44,323	38	44,897	6	3	152	1	3	1	1	1	2
39	24	9,750	23,995	6,201	45,788	3,159	46,017	1,248	45,490	39	46,079	6	3	156	1	3	1	1	1	2
40	24	10,000	24,610	6,360	46,962	3,240	47,197	1,280	46,656	40	47,260	6	3	160	1	3	1	1	1	2
41	24	10,250	25,225	6,519	48,136	3,321	48,377	1,312	47,822	41	48,442	6	3	164	1	3	1	1	1	2
42	24	10,500	25,841	6,678	49,310	3,402	49,557	1,344	48,989	42	49,623	6	3	168	1	3	1	1	1	2
43	24	10,750	26,456	6,837	50,484	3,483	50,737	1,376	50,155	43	50,805	6	3	172	1	3	1	1	1	2
44	24	11,000	27,071	6,996	51,658	3,564	51,917	1,408	51,322	44	51,986	6	3	176	1	3	1	1	1	2
45	24	11,250	27,686	7,155	52,833	3,645	53,097	1,440	52,488	45	53,168	6	3	180	1	4	1	2	1	2
46	24	11,500	28,302	7,314	54,007	3,726	54,277	1,472	53,654	46	54,349	6	3	184	1	4	1	2	1	2
47	24	11,750	28,917	7,473	55,181	3,807	55,457	1,504	54,821	47	55,531	6	3	188	1	4	1	2	1	2
48	24	12,000	29,532	7,632	56,355	3,888	56,636	1,536	55,987	48	56,712	6	3	192	1	4	1	2	1	2
49	24	12,250	30,147	7,791	57,529	3,969	57,816	1,568	57,154	49	57,894	6	3	196	1	4	1	2	1	2
50	24	12,500	30,763	7,950	58,703	4,050	58,996	1,600	58,320	50	59,075	6	3	200	1	4	1	2	1	2

(To be continued)

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(Continued from preceding sheet)

RAID group	Cache (GB)	Storage Capacity (GB)										Number of necessary options								
		Emulation Type										Cache DIMM DKC-F510I-		DKU-F505I-400JSR (*2)	DKC-F515I-					RACK
		OPEN-3 (2.461GB)		OPEN-9 (7.384GB)		OPEN-E (14.567GB)		OPEN-L (36.450GB)		OPEN-V (*3) (1181.5GB)		C4G/ C4GR	C8GR		MIX2R/ MIX4R	B2R	UC0R	UC1R	EXC0R	
		VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap									
51	24	12,750	31,378	8,109	59,877	4,131	60,176	1,632	59,486	51	60,257	6	3	204	1	4	1	2	1	2
52	24	13,000	31,993	8,268	61,051	4,212	61,356	1,664	60,653	52	61,438	6	3	208	1	4	1	2	1	2
53	24	13,250	32,608	8,427	62,225	4,293	62,536	1,696	61,819	53	62,620	6	3	212	1	4	1	2	1	2
54	24	13,500	33,224	8,586	63,399	4,374	63,716	1,728	62,986	54	63,801	6	3	216	1	4	1	2	1	2
55	24	13,750	33,839	8,745	64,573	4,455	64,896	1,760	64,152	55	64,983	6	3	220	1	4	1	2	1	2
56	24	14,000	34,454	8,904	65,747	4,536	66,076	1,792	65,318	56	66,164	6	3	224	1	4	1	2	1	2
57	24	14,250	35,069	9,063	66,921	4,617	67,256	1,824	66,485	57	67,346	6	3	228	1	4	1	2	1	2
58	24	14,500	35,685	9,222	68,095	4,698	68,436	1,856	67,651	58	68,527	6	3	232	1	4	1	2	1	2
59	24	14,750	36,300	9,381	69,269	4,779	69,616	1,888	68,818	59	69,709	6	3	236	1	4	1	2	1	2

*1: In addition to the options listed in above table as necessary parts, the Additional Shared Memory Module [Note 1] are required.

Note 1: The number of the Shard Memory Module (DKC-F510I-S1G/S1GR/S2GR) necessary is refer to table 7.2-1 to 7.2-6.
Please note that location of shared memory varies according to the purpose such as additional cache installation or additional LDEV installation.

*2: The number of HDD options is only the number of data disks, and the number of spare disks is not included.
The relation between disk capacity and the number of required options differs according to the number of spare disk installing.

*3: OPEN-V is volume based on CVS. A customer can set up the volume capacity of OPEN-V freely from 48.1MB among almost 1 RAID group capacity. This volume capacity is the default value and is nearly equals to RAID group capacity.

*4: This table was created, presupposing that it installs always a spare disk.

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(8) Mainframe Storage Capacity Upgrade Table (400GB 10Kmin^{-1} HDD)

RAID group	Cache (GB)	Storage Capacity (GB)										Number of necessary options								
		Emulation Type										Cache DIMM		DKU-F505I-400JSR (*2)	DKC-F515I-					RACK
		3380-3 (2.377GB)		3390-3/3R (2.838GB)		3390-9 (8.514GB)		3390-L (27.844GB)		3390-M (55.689GB)		DKC-F510I-								
												C4G/ C4GR	C8GR		MIX2R/ MIX4R	B2R	UC0R	UC1R	EXC0R	
		VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap									
1	8	250	594	250	710	132	1,124	40	1,114	20	1,114	2	1	4	1	1	1			1
2	8	500	1,189	500	1,419	264	2,248	80	2,228	40	2,228	2	1	8	1	1	1			1
3	12	750	1,783	750	2,129	396	3,372	120	3,341	60	3,341	3	2	12	1	1	1			1
4	12	1,000	2,377	1,000	2,838	528	4,495	160	4,455	80	4,455	3	2	16	1	1	1			1
5	12	1,250	2,971	1,250	3,548	660	5,619	200	5,569	100	5,569	3	2	20	1	1	1			1
6	12	1,500	3,566	1,500	4,257	792	6,743	240	6,683	120	6,683	3	2	24	1	1	1			1
7	12	1,750	4,160	1,750	4,967	924	7,867	280	7,796	140	7,796	3	2	28	1	1	1			1
8	16	2,000	4,754	2,000	5,676	1,056	8,991	320	8,910	160	8,910	4	2	32	1	1	1			1
9	16	2,250	5,348	2,250	6,386	1,188	10,115	360	10,024	180	10,024	4	2	36	1	1	1			1
10	16	2,500	5,943	2,500	7,095	1,320	11,238	400	11,138	200	11,138	4	2	40	1	1	1			1
11	16	2,750	6,537	2,750	7,805	1,452	12,362	440	12,251	220	12,252	4	2	44	1	1	1			1
12	16	3,000	7,131	3,000	8,514	1,584	13,486	480	13,365	240	13,365	4	2	48	1	1	1			1
13	20	3,250	7,725	3,250	9,224	1,716	14,610	520	14,479	260	14,479	5	3	52	1	1	1			1
14	20	3,500	8,320	3,500	9,933	1,848	15,734	560	15,593	280	15,593	5	3	56	1	1	1			1
15	20	3,750	8,914	3,750	10,643	1,980	16,858	600	16,706	300	16,707	5	3	60	1	2	1	1		1
16	20	4,000	9,508	4,000	11,352	2,112	17,982	640	17,820	320	17,820	5	3	64	1	2	1	1		1
17	20	4,250	10,102	4,250	12,062	2,244	19,105	680	18,934	340	18,934	5	3	68	1	2	1	1		1
18	24	4,500	10,697	4,500	12,771	2,376	20,229	720	20,048	360	20,048	6	3	72	1	2	1	1		1
19	24	4,750	11,291	4,750	13,481	2,508	21,353	760	21,161	380	21,162	6	3	76	1	2	1	1		1
20	24	5,000	11,885	5,000	14,190	2,640	22,477	800	22,275	400	22,276	6	3	80	1	2	1	1		1
21	24	5,250	12,479	5,250	14,900	2,772	23,601	840	23,389	420	23,389	6	3	84	1	2	1	1		1
22	24	5,500	13,074	5,500	15,609	2,904	24,725	880	24,503	440	24,503	6	3	88	1	2	1	1		1
23	24	5,750	13,668	5,750	16,319	3,036	25,849	920	25,616	460	25,617	6	3	92	1	2	1	1		1
24	24	6,000	14,262	6,000	17,028	3,168	26,972	960	26,730	480	26,731	6	3	96	1	2	1	1		1
25	24	6,250	14,856	6,250	17,738	3,300	28,096	1,000	27,844	500	27,845	6	3	100	1	2	1	1		1
26	24	6,500	15,451	6,500	18,447	3,432	29,220	1,040	28,958	520	28,958	6	3	104	1	2	1	1		1
27	24	6,750	16,045	6,750	19,157	3,564	30,344	1,080	30,072	540	30,072	6	3	108	1	2	1	1		1
28	24	7,000	16,639	7,000	19,866	3,696	31,468	1,120	31,185	560	31,186	6	3	112	1	2	1	1		1
29	24	7,250	17,233	7,250	20,576	3,828	32,592	1,160	32,299	580	32,300	6	3	116	1	2	1	1		1
30	24	7,500	17,828	7,500	21,285	3,960	33,715	1,200	33,413	600	33,413	6	3	120	1	3	1	1	1	2
31	24	7,750	18,422	7,750	21,995	4,092	34,839	1,240	34,527	620	34,527	6	3	124	1	3	1	1	1	2
32	24	8,000	19,016	8,000	22,704	4,224	35,963	1,280	35,640	640	35,641	6	3	128	1	3	1	1	1	2
33	24	8,250	19,610	8,250	23,414	4,356	37,087	1,320	36,754	660	36,755	6	3	132	1	3	1	1	1	2
34	24	8,500	20,205	8,500	24,123	4,488	38,211	1,360	37,868	680	37,869	6	3	136	1	3	1	1	1	2
35	24	8,750	20,799	8,750	24,833	4,620	39,335	1,400	38,982	700	38,982	6	3	140	1	3	1	1	1	2
36	24	9,000	21,393	9,000	25,542	4,752	40,459	1,440	40,095	720	40,096	6	3	144	1	3	1	1	1	2
37	24	9,250	21,987	9,250	26,252	4,884	41,582	1,480	41,209	740	41,210	6	3	148	1	3	1	1	1	2
38	24	9,500	22,582	9,500	26,961	5,016	42,706	1,520	42,323	760	42,324	6	3	152	1	3	1	1	1	2
39	24	9,750	23,176	9,750	27,671	5,148	43,830	1,560	43,437	780	43,437	6	3	156	1	3	1	1	1	2
40	24	10,000	23,770	10,000	28,380	5,280	44,954	1,600	44,550	800	44,551	6	3	160	1	3	1	1	1	2
41	24	10,250	24,364	10,250	29,090	5,412	46,078	1,640	45,664	820	45,665	6	3	164	1	3	1	1	1	2
42	24	10,500	24,959	10,500	29,799	5,544	47,202	1,680	46,778	840	46,779	6	3	168	1	3	1	1	1	2
43	24	10,750	25,553	10,750	30,509	5,676	48,325	1,720	47,892	860	47,893	6	3	172	1	3	1	1	1	2
44	24	11,000	26,147	11,000	31,218	5,808	49,449	1,760	49,005	880	49,006	6	3	176	1	3	1	1	1	2
45	24	11,250	26,741	11,250	31,928	5,940	50,573	1,800	50,119	900	50,120	6	3	180	1	4	1	2	1	2
46	24	11,500	27,336	11,500	32,637	6,072	51,697	1,840	51,233	920	51,234	6	3	184	1	4	1	2	1	2
47	24	11,750	27,930	11,750	33,347	6,204	52,821	1,880	52,347	940	52,348	6	3	188	1	4	1	2	1	2
48	24	12,000	28,524	12,000	34,056	6,336	53,945	1,920	53,460	960	53,461	6	3	192	1	4	1	2	1	2
49	24	12,250	29,118	12,250	34,766	6,468	55,069	1,960	54,574	980	54,575	6	3	196	1	4	1	2	1	2
50	24	12,500	29,713	12,500	35,475	6,600	56,192	2,000	55,688	1,000	55,689	6	3	200	1	4	1	2	1	2

(To be continued)

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(Continued from preceding sheet)

RAID group	Cache (GB)	Storage Capacity (GB)										Number of necessary options								
		Emulation Type										Cache DIMM		DKU-F505I-400JSR (*2)	DKC-F515I-					RACK
		3380-3 (2.377GB)		3390-3/3R (2.838GB)		3390-9 (8.514GB)		3390-L (27.844GB)		3390-M (55.689GB)		DKC-F510I-								
												C4G/ C4GR	C8GR		MIX2R/ MIX4R	B2R	UC0R	UC1R	EXC0R	
		VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap									
51	24	12,750	30,307	12,750	36,185	6,732	57,316	2,040	56,802	1,020	56,803	6	3	204	1	4	1	2	1	2
52	24	13,000	30,901	13,000	36,894	6,864	58,440	2,080	57,916	1,040	57,917	6	3	208	1	4	1	2	1	2
53	24	13,250	31,495	13,250	37,604	6,996	59,564	2,120	59,029	1,060	59,030	6	3	212	1	4	1	2	1	2
54	24	13,500	32,090	13,500	38,313	7,128	60,688	2,160	60,143	1,080	60,144	6	3	216	1	4	1	2	1	2
55	24	13,750	32,684	13,750	39,023	7,260	61,812	2,200	61,257	1,100	61,258	6	3	220	1	4	1	2	1	2
56	24	14,000	33,278	14,000	39,732	7,392	62,935	2,240	62,371	1,120	62,372	6	3	224	1	4	1	2	1	2
57	24	14,250	33,872	14,250	40,442	7,524	64,059	2,280	63,484	1,140	63,485	6	3	228	1	4	1	2	1	2
58	24	14,500	34,467	14,500	41,151	7,656	65,183	2,320	64,598	1,160	64,599	6	3	232	1	4	1	2	1	2
59	24	14,750	35,061	14,750	41,861	7,788	66,307	2,360	65,712	1,180	65,713	6	3	236	1	4	1	2	1	2

*1: In addition to the options listed in above table as necessary parts, the Additional Shared Memory Module [Note 1] are required.

Note 1: The number of the Shard Memory Module (DKC-F510I-S1G/S1GR/S2GR) necessary is refer to table 7.2-1 to 7.2-6.
Please note that location of shared memory varies according to the purpose such as additional cache installation or additional LDEV installation.

*2: The number of HDD options is only the number of data disks, and the number of spare disks is not included.
The relation between disk capacity and the number of required options differs according to the number of spare disk installing.

*3: This table was created, presupposing that it installs always a spare disk.

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7.3.2 Standard Configuration for RAID1 (2D+2D)

(1) Open System Storage Capacity Upgrade Table (72GB 15Kmin^{-1} HDD)

RAID group	Cache (GB)	Storage Capacity (GB)										Number of necessary options								
		Emulation type										Cache DIMM		DKU-F505I-72KS/72KSR (*2)	DKC-F515I-					RACK
		OPEN-3 (2.461GB)		OPEN-9 (7.384GB)		OPEN-E (14.568GB)		OPEN-L (36.450GB)		OPEN-V (*3) (142.992GB)		DKC-F510I-								
		VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	C4G/ C4GR	C8GR		MIX2R/ MIX4R	B2R	UC0R	UC1R	EXCR	
1	4	57	140	19	140	9	131	3	109	1	143	1	1	4	1	1	1			1
2	4	114	281	38	281	18	262	6	219	2	286	1	1	8	1	1	1			1
3	4	171	421	57	421	27	393	9	328	3	429	1	1	12	1	1	1			1
4	4	228	561	76	561	36	524	12	437	4	572	1	1	16	1	1	1			1
5	8	285	701	95	701	45	656	15	547	5	715	2	1	20	1	1	1			1
6	8	342	842	114	842	54	787	18	656	6	858	2	1	24	1	1	1			1
7	8	399	982	133	982	63	918	21	765	7	1,001	2	1	28	1	1	1			1
8	8	456	1,122	152	1,122	72	1,049	24	875	8	1,144	2	1	32	1	1	1			1
9	8	513	1,262	171	1,263	81	1,180	27	984	9	1,287	2	1	36	1	1	1			1
10	8	570	1,403	190	1,403	90	1,311	30	1,094	10	1,430	2	1	40	1	1	1			1
11	8	627	1,543	209	1,543	99	1,442	33	1,203	11	1,573	2	1	44	1	1	1			1
12	8	684	1,683	228	1,684	108	1,573	36	1,312	12	1,716	2	1	48	1	1	1			1
13	8	741	1,824	247	1,824	117	1,704	39	1,422	13	1,859	2	1	52	1	1	1			1
14	8	798	1,964	266	1,964	126	1,836	42	1,531	14	2,002	2	1	56	1	1	1			1
15	8	855	2,104	285	2,104	135	1,967	45	1,640	15	2,145	2	1	60	1	2	1	1		1
16	8	912	2,244	304	2,245	144	2,098	48	1,750	16	2,288	2	1	64	1	2	1	1		1
17	8	969	2,385	323	2,385	153	2,229	51	1,859	17	2,431	2	1	68	1	2	1	1		1
18	8	1,026	2,525	342	2,525	162	2,360	54	1,968	18	2,574	2	1	72	1	2	1	1		1
19	8	1,083	2,665	361	2,666	171	2,491	57	2,078	19	2,717	2	1	76	1	2	1	1		1
20	12	1,140	2,806	380	2,806	180	2,622	60	2,187	20	2,860	3	2	80	1	2	1	1		1
21	12	1,197	2,946	399	2,946	189	2,753	63	2,296	21	3,003	3	2	84	1	2	1	1		1
22	12	1,254	3,086	418	3,087	198	2,884	66	2,406	22	3,146	3	2	88	1	2	1	1		1
23	12	1,311	3,226	437	3,227	207	3,016	69	2,515	23	3,289	3	2	92	1	2	1	1		1
24	12	1,368	3,367	456	3,367	216	3,147	72	2,624	24	3,432	3	2	96	1	2	1	1		1
25	12	1,425	3,507	475	3,507	225	3,278	75	2,734	25	3,575	3	2	100	1	2	1	1		1
26	12	1,482	3,647	494	3,648	234	3,409	78	2,843	26	3,718	3	2	104	1	2	1	1		1
27	12	1,539	3,787	513	3,788	243	3,540	81	2,952	27	3,861	3	2	108	1	2	1	1		1
28	12	1,596	3,928	532	3,928	252	3,671	84	3,062	28	4,004	3	2	112	1	2	1	1		1
29	12	1,653	4,068	551	4,069	261	3,802	87	3,171	29	4,147	3	2	116	1	2	1	1		1
30	12	1,710	4,208	570	4,209	270	3,933	90	3,281	30	4,290	3	2	120	1	3	1	1	1	2
31	12	1,767	4,349	589	4,349	279	4,064	93	3,390	31	4,433	3	2	124	1	3	1	1	1	2
32	12	1,824	4,489	608	4,489	288	4,196	96	3,499	32	4,576	3	2	128	1	3	1	1	1	2
33	12	1,881	4,629	627	4,630	297	4,327	99	3,609	33	4,719	3	2	132	1	3	1	1	1	2
34	12	1,938	4,769	646	4,770	306	4,458	102	3,718	34	4,862	3	2	136	1	3	1	1	1	2
35	12	1,995	4,910	665	4,910	315	4,589	105	3,827	35	5,005	3	2	140	1	3	1	1	1	2
36	12	2,052	5,050	684	5,051	324	4,720	108	3,937	36	5,148	3	2	144	1	3	1	1	1	2
37	12	2,109	5,190	703	5,191	333	4,851	111	4,046	37	5,291	3	2	148	1	3	1	1	1	2
38	12	2,166	5,331	722	5,331	342	4,982	114	4,155	38	5,434	3	2	152	1	3	1	1	1	2
39	12	2,223	5,471	741	5,472	351	5,113	117	4,265	39	5,577	3	2	156	1	3	1	1	1	2
40	12	2,280	5,611	760	5,612	360	5,244	120	4,374	40	5,720	3	2	160	1	3	1	1	1	2
41	12	2,337	5,751	779	5,752	369	5,376	123	4,483	41	5,863	3	2	164	1	3	1	1	1	2
42	12	2,394	5,892	798	5,892	378	5,507	126	4,593	42	6,006	3	2	168	1	3	1	1	1	2
43	12	2,451	6,032	817	6,033	387	5,638	129	4,702	43	6,149	3	2	172	1	3	1	1	1	2
44	12	2,508	6,172	836	6,173	396	5,769	132	4,811	44	6,292	3	2	176	1	3	1	1	1	2
45	12	2,565	6,312	855	6,313	405	5,900	135	4,921	45	6,435	3	2	180	1	4	1	2	1	2
46	12	2,622	6,453	874	6,454	414	6,031	138	5,030	46	6,578	3	2	184	1	4	1	2	1	2
47	12	2,679	6,593	893	6,594	423	6,162	141	5,139	47	6,721	3	2	188	1	4	1	2	1	2
48	12	2,736	6,733	912	6,734	432	6,293	144	5,249	48	6,864	3	2	192	1	4	1	2	1	2
49	12	2,793	6,874	931	6,875	441	6,424	147	5,358	49	7,007	3	2	196	1	4	1	2	1	2
50	12	2,850	7,014	950	7,015	450	6,556	150	5,468	50	7,150	3	2	200	1	4	1	2	1	2

(To be continued)

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RAID group	Cache (GB)	Storage Capacity (GB)										Number of necessary options							
		Emulation type										Cache DIMM		DKU-F505I-72KS/72KSR (*2)	DKC-F515I-				RACK
		OPEN-3 (2.461GB)		OPEN-9 (7.384GB)		OPEN-E (14.568GB)		OPEN-L (36.450GB)		OPEN-V (*3) (142.992GB)		DKC-F510I-							
		VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	C4G/ C4GR	C8GR		MIX2R/ MIX4R	B2R	UC0R	UC1R	EXCR	
51	12	2,907	7,154	969	7,155	459	6,687	153	5,577	51	7,293	3	2	204	1	4	1	2	1	2
52	12	2,964	7,294	988	7,295	468	6,818	156	5,686	52	7,436	3	2	208	1	4	1	2	1	2
53	12	3,021	7,435	1,007	7,436	477	6,949	159	5,796	53	7,579	3	2	212	1	4	1	2	1	2
54	12	3,078	7,575	1,026	7,576	486	7,080	162	5,905	54	7,722	3	2	216	1	4	1	2	1	2
55	12	3,135	7,715	1,045	7,716	495	7,211	165	6,014	55	7,865	3	2	220	1	4	1	2	1	2
56	12	3,192	7,856	1,064	7,857	504	7,342	168	6,124	56	8,008	3	2	224	1	4	1	2	1	2
57	12	3,249	7,996	1,083	7,997	513	7,473	171	6,233	57	8,151	3	2	228	1	4	1	2	1	2
58	12	3,306	8,136	1,102	8,137	522	7,604	174	6,342	58	8,294	3	2	232	1	4	1	2	1	2
59	12	3,363	8,276	1,121	8,277	531	7,736	177	6,452	59	8,437	3	2	236	1	4	1	2	1	2

*1: In addition to the options listed in above table as necessary parts, the Additional Shared Memory Module [Note 1] are required.

Note 1: The number of the Shard Memory Module (DKC-F510I-S1G/S1GR/S2GR) necessary is refer to table 7.2-1 to 7.2-6.
Please note that location of shared memory varies according to the purpose such as additional cache installation or additional LDEV installation.

*2: The number of HDD options is only the number of data disks, and the number of spare disks is not included.
The relation between disk capacity and the number of required options differs according to the number of spare disk installing.

*3: OPEN-V is volume based on CVS. A customer can set up the volume capacity of OPEN-V freely from 48.1MB among almost 1 RAID group capacity. This volume capacity is the default value and is nearly equals to RAID group capacity.

*4: This table was created, presupposing that it installs always a spare disk.

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(2) Mainframe Storage Capacity Upgrade Table (72GB 15Kmin^{-1} HDD)

RAID group	Cache (GB)	Storage Capacity (GB)										Number of necessary options								
		Emulation type										Cache DIMM		DKU-F505I-72KS/72KSR (*2)	DKC-F515I-					RACK
		3380-3 (2.377GB)		3390-3/3R (2.838GB)		3390-9 (8.514GB)		3390-L (27.844GB)		3390-M (55.689GB)		DKC-F510I-								
												C4G/ C4GR	C8GR		MIX2R/ MIX4R	B2R	UC0R	UC1R	EXCR	
		VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap									
1	4	57	135	47	133	15	128	4	111	2	111	1	1	4	1	1	1			1
2	4	114	271	94	267	30	255	8	223	4	223	1	1	8	1	1	1			1
3	4	171	406	141	400	45	383	12	334	6	334	1	1	12	1	1	1			1
4	4	228	542	188	534	60	511	16	446	8	446	1	1	16	1	1	1			1
5	4	285	677	235	667	75	639	20	557	10	557	1	1	20	1	1	1			1
6	8	342	813	282	800	90	766	24	668	12	668	2	1	24	1	1	1			1
7	8	399	948	329	934	105	894	28	780	14	780	2	1	28	1	1	1			1
8	8	456	1,084	376	1,067	120	1,022	32	891	16	891	2	1	32	1	1	1			1
9	8	513	1,219	423	1,200	135	1,149	36	1,002	18	1,002	2	1	36	1	1	1			1
10	8	570	1,355	470	1,334	150	1,277	40	1,114	20	1,114	2	1	40	1	1	1			1
11	8	627	1,490	517	1,467	165	1,405	44	1,225	22	1,225	2	1	44	1	1	1			1
12	8	684	1,626	564	1,601	180	1,533	48	1,337	24	1,337	2	1	48	1	1	1			1
13	8	741	1,761	611	1,734	195	1,660	52	1,448	26	1,448	2	1	52	1	1	1			1
14	8	798	1,897	658	1,867	210	1,788	56	1,559	28	1,559	2	1	56	1	1	1			1
15	8	855	2,032	705	2,001	225	1,916	60	1,671	30	1,671	2	1	60	1	2	1	1		1
16	8	912	2,168	752	2,134	240	2,043	64	1,782	32	1,782	2	1	64	1	2	1	1		1
17	8	969	2,303	799	2,268	255	2,171	68	1,893	34	1,893	2	1	68	1	2	1	1		1
18	8	1,026	2,439	846	2,401	270	2,299	72	2,005	36	2,005	2	1	72	1	2	1	1		1
19	8	1,083	2,574	893	2,534	285	2,426	76	2,116	38	2,116	2	1	76	1	2	1	1		1
20	8	1,140	2,710	940	2,668	300	2,554	80	2,228	40	2,228	2	1	80	1	2	1	1		1
21	12	1,197	2,845	987	2,801	315	2,682	84	2,339	42	2,339	3	2	84	1	2	1	1		1
22	12	1,254	2,981	1,034	2,934	330	2,810	88	2,450	44	2,450	3	2	88	1	2	1	1		1
23	12	1,311	3,116	1,081	3,068	345	2,937	92	2,562	46	2,562	3	2	92	1	2	1	1		1
24	12	1,368	3,252	1,128	3,201	360	3,065	96	2,673	48	2,673	3	2	96	1	2	1	1		1
25	12	1,425	3,387	1,175	3,335	375	3,193	100	2,784	50	2,784	3	2	100	1	2	1	1		1
26	12	1,482	3,523	1,222	3,468	390	3,320	104	2,896	52	2,896	3	2	104	1	2	1	1		1
27	12	1,539	3,658	1,269	3,601	405	3,448	108	3,007	54	3,007	3	2	108	1	2	1	1		1
28	12	1,596	3,794	1,316	3,735	420	3,576	112	3,119	56	3,119	3	2	112	1	2	1	1		1
29	12	1,653	3,929	1,363	3,868	435	3,704	116	3,230	58	3,230	3	2	116	1	2	1	1		1
30	12	1,710	4,065	1,410	4,002	450	3,831	120	3,341	60	3,341	3	2	120	1	3	1	1	1	2
31	12	1,767	4,200	1,457	4,135	465	3,959	124	3,453	62	3,453	3	2	124	1	3	1	1	1	2
32	12	1,824	4,336	1,504	4,268	480	4,087	128	3,564	64	3,564	3	2	128	1	3	1	1	1	2
33	12	1,881	4,471	1,551	4,402	495	4,214	132	3,675	66	3,675	3	2	132	1	3	1	1	1	2
34	12	1,938	4,607	1,598	4,535	510	4,342	136	3,787	68	3,787	3	2	136	1	3	1	1	1	2
35	12	1,995	4,742	1,645	4,669	525	4,470	140	3,898	70	3,898	3	2	140	1	3	1	1	1	2
36	12	2,052	4,878	1,692	4,802	540	4,598	144	4,010	72	4,010	3	2	144	1	3	1	1	1	2
37	12	2,109	5,013	1,739	4,935	555	4,725	148	4,121	74	4,121	3	2	148	1	3	1	1	1	2
38	12	2,166	5,149	1,786	5,069	570	4,853	152	4,232	76	4,232	3	2	152	1	3	1	1	1	2
39	12	2,223	5,284	1,833	5,202	585	4,981	156	4,344	78	4,344	3	2	156	1	3	1	1	1	2
40	12	2,280	5,420	1,880	5,335	600	5,108	160	4,455	80	4,455	3	2	160	1	3	1	1	1	2
41	12	2,337	5,555	1,927	5,469	615	5,236	164	4,566	82	4,566	3	2	164	1	3	1	1	1	2
42	12	2,394	5,691	1,974	5,602	630	5,364	168	4,678	84	4,678	3	2	168	1	3	1	1	1	2
43	12	2,451	5,826	2,021	5,736	645	5,492	172	4,789	86	4,789	3	2	172	1	3	1	1	1	2
44	12	2,508	5,962	2,068	5,869	660	5,619	176	4,901	88	4,901	3	2	176	1	3	1	1	1	2
45	12	2,565	6,097	2,115	6,002	675	5,747	180	5,012	90	5,012	3	2	180	1	4	1	2	1	2
46	12	2,622	6,232	2,162	6,136	690	5,875	184	5,123	92	5,123	3	2	184	1	4	1	2	1	2
47	12	2,679	6,368	2,209	6,269	705	6,002	188	5,235	94	5,235	3	2	188	1	4	1	2	1	2
48	12	2,736	6,503	2,256	6,403	720	6,130	192	5,346	96	5,346	3	2	192	1	4	1	2	1	2
49	12	2,793	6,639	2,303	6,536	735	6,258	196	5,457	98	5,458	3	2	196	1	4	1	2	1	2
50	12	2,850	6,774	2,350	6,669	750	6,386	200	5,569	100	5,569	3	2	200	1	4	1	2	1	2

(To be continued)

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(Continued from preceding sheet)

RAID group	Cache (GB)	Storage Capacity (GB)										Number of necessary options								
		Emulation type										Cache DIMM		DKU-F505I-72KS/72KSR (*2)	DKC-F515I-					RACK
		3380-3 (2.377GB)		3390-3/3R (2.838GB)		3390-9 (8.514GB)		3390-L (27.844GB)		3390-M (55.689GB)		DKC-F510I-								
		VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	C4G/ C4GR	C8GR		MIX2R/ MIX4R	B2R	UC0R	UC1R	EXCR	
51	12	2,907	6,910	2,397	6,803	765	6,513	204	5,680	102	5,680	3	2	204	1	4	1	2	1	2
52	12	2,964	7,045	2,444	6,936	780	6,641	208	5,792	104	5,792	3	2	208	1	4	1	2	1	2
53	12	3,021	7,181	2,491	7,069	795	6,769	212	5,903	106	5,903	3	2	212	1	4	1	2	1	2
54	12	3,078	7,316	2,538	7,203	810	6,896	216	6,014	108	6,014	3	2	216	1	4	1	2	1	2
55	12	3,135	7,452	2,585	7,336	825	7,024	220	6,126	110	6,126	3	2	220	1	4	1	2	1	2
56	12	3,192	7,587	2,632	7,470	840	7,152	224	6,237	112	6,237	3	2	224	1	4	1	2	1	2
57	12	3,249	7,723	2,679	7,603	855	7,279	228	6,348	114	6,349	3	2	228	1	4	1	2	1	2
58	12	3,306	7,858	2,726	7,736	870	7,407	232	6,460	116	6,460	3	2	232	1	4	1	2	1	2
59	12	3,363	7,994	2,773	7,870	885	7,535	236	6,571	118	6,571	3	2	236	1	4	1	2	1	2

*1: In addition to the options listed in above table as necessary parts, the Additional Shared Memory Module [Note 1] are required.

Note 1: The number of the Shard Memory Module (DKC-F510I-S1G/S1GR/S2GR) necessary is refer to table 7.2-1 to 7.2-6.
Please note that location of shared memory varies according to the purpose such as additional cache installation or additional LDEV installation.

*2: The number of HDD options is only the number of data disks, and the number of spare disks is not included.
The relation between disk capacity and the number of required options differs according to the number of spare disk installing.

*3: This table was created, presupposing that it installs always a spare disk.

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(3) Open System Storage Capacity Upgrade Table (146GB 10Kmin^{-1}/15Kmin^{-1} HDD)

RAID group	Cache (GB)	Storage Capacity (GB)										Number of necessary options								
		Emulation type										Cache DIMM		DKU-F505I-146JS/146JSR/146KSR (*2)	DKC-F515I-					RACK
		OPEN-3 (2.461GB)		OPEN-9 (7.384GB)		OPEN-E (14.568GB)		OPEN-L (36.450GB)		OPEN-V (*3) (287.529GB)		DKC-F510I-								
												C4G/C4GR	C8GR		MIX2R/MIX4R	B2R	UC0R	UC1R	EXCR	
		VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap									
1	4	116	285	38	281	19	277	7	255	1	288	1	1	4	1	1	1			1
2	4	232	571	76	561	38	554	14	510	2	575	1	1	8	1	1	1			1
3	8	348	856	114	842	57	830	21	765	3	863	2	1	12	1	1	1			1
4	8	464	1,142	152	1,122	76	1,107	28	1,021	4	1,150	2	1	16	1	1	1			1
5	8	580	1,427	190	1,403	95	1,384	35	1,276	5	1,438	2	1	20	1	1	1			1
6	8	696	1,713	228	1,684	114	1,661	42	1,531	6	1,725	2	1	24	1	1	1			1
7	8	812	1,998	266	1,964	133	1,938	49	1,786	7	2,013	2	1	28	1	1	1			1
8	8	928	2,284	304	2,245	152	2,214	56	2,041	8	2,300	2	1	32	1	1	1			1
9	8	1,044	2,569	342	2,525	171	2,491	63	2,296	9	2,588	2	1	36	1	1	1			1
10	12	1,160	2,855	380	2,806	190	2,768	70	2,552	10	2,875	3	2	40	1	1	1			1
11	12	1,276	3,140	418	3,087	209	3,045	77	2,807	11	3,163	3	2	44	1	1	1			1
12	12	1,392	3,426	456	3,367	228	3,322	84	3,062	12	3,450	3	2	48	1	1	1			1
13	12	1,508	3,711	494	3,648	247	3,598	91	3,317	13	3,738	3	2	52	1	1	1			1
14	12	1,624	3,997	532	3,928	266	3,875	98	3,572	14	4,025	3	2	56	1	1	1			1
15	12	1,740	4,282	570	4,209	285	4,152	105	3,827	15	4,313	3	2	60	1	2	1	1		1
16	12	1,856	4,568	608	4,489	304	4,429	112	4,082	16	4,600	3	2	64	1	2	1	1		1
17	12	1,972	4,853	646	4,770	323	4,705	119	4,338	17	4,888	3	2	68	1	2	1	1		1
18	12	2,088	5,139	684	5,051	342	4,982	126	4,593	18	5,176	3	2	72	1	2	1	1		1
19	12	2,204	5,424	722	5,331	361	5,259	133	4,848	19	5,463	3	2	76	1	2	1	1		1
20	12	2,320	5,710	760	5,612	380	5,536	140	5,103	20	5,751	3	2	80	1	2	1	1		1
21	12	2,436	5,995	798	5,892	399	5,813	147	5,358	21	6,038	3	2	84	1	2	1	1		1
22	12	2,552	6,280	836	6,173	418	6,089	154	5,613	22	6,326	3	2	88	1	2	1	1		1
23	12	2,668	6,566	874	6,454	437	6,366	161	5,868	23	6,613	3	2	92	1	2	1	1		1
24	12	2,784	6,851	912	6,734	456	6,643	168	6,124	24	6,901	3	2	96	1	2	1	1		1
25	12	2,900	7,137	950	7,015	475	6,920	175	6,379	25	7,188	3	2	100	1	2	1	1		1
26	12	3,016	7,422	988	7,295	494	7,197	182	6,634	26	7,476	3	2	104	1	2	1	1		1
27	12	3,132	7,708	1,026	7,576	513	7,473	189	6,889	27	7,763	3	2	108	1	2	1	1		1
28	12	3,248	7,993	1,064	7,857	532	7,750	196	7,144	28	8,051	3	2	112	1	2	1	1		1
29	12	3,364	8,279	1,102	8,137	551	8,027	203	7,399	29	8,338	3	2	116	1	2	1	1		1
30	16	3,480	8,564	1,140	8,418	570	8,304	210	7,655	30	8,626	4	2	120	1	3	1	1	1	2
31	16	3,596	8,850	1,178	8,698	589	8,581	217	7,910	31	8,913	4	2	124	1	3	1	1	1	2
32	16	3,712	9,135	1,216	8,979	608	8,857	224	8,165	32	9,201	4	2	128	1	3	1	1	1	2
33	16	3,828	9,421	1,254	9,260	627	9,134	231	8,420	33	9,488	4	2	132	1	3	1	1	1	2
34	16	3,944	9,706	1,292	9,540	646	9,411	238	8,675	34	9,776	4	2	136	1	3	1	1	1	2
35	16	4,060	9,992	1,330	9,821	665	9,688	245	8,930	35	10,064	4	2	140	1	3	1	1	1	2
36	16	4,176	10,277	1,368	10,101	684	9,965	252	9,185	36	10,351	4	2	144	1	3	1	1	1	2
37	16	4,292	10,563	1,406	10,382	703	10,241	259	9,441	37	10,639	4	2	148	1	3	1	1	1	2
38	16	4,408	10,848	1,444	10,662	722	10,518	266	9,696	38	10,926	4	2	152	1	3	1	1	1	2
39	16	4,524	11,134	1,482	10,943	741	10,795	273	9,951	39	11,214	4	2	156	1	3	1	1	1	2
40	16	4,640	11,419	1,520	11,224	760	11,072	280	10,206	40	11,501	4	2	160	1	3	1	1	1	2
41	16	4,756	11,705	1,558	11,504	779	11,348	287	10,461	41	11,789	4	2	164	1	3	1	1	1	2
42	16	4,872	11,990	1,596	11,785	798	11,625	294	10,716	42	12,076	4	2	168	1	3	1	1	1	2
43	16	4,988	12,275	1,634	12,065	817	11,902	301	10,971	43	12,364	4	2	172	1	3	1	1	1	2
44	16	5,104	12,561	1,672	12,346	836	12,179	308	11,227	44	12,651	4	2	176	1	3	1	1	1	2
45	16	5,220	12,846	1,710	12,627	855	12,456	315	11,482	45	12,939	4	2	180	1	4	1	2	1	2
46	16	5,336	13,132	1,748	12,907	874	12,732	322	11,737	46	13,226	4	2	184	1	4	1	2	1	2
47	16	5,452	13,417	1,786	13,188	893	13,009	329	11,992	47	13,514	4	2	188	1	4	1	2	1	2
48	16	5,568	13,703	1,824	13,468	912	13,286	336	12,247	48	13,801	4	2	192	1	4	1	2	1	2
49	20	5,684	13,988	1,862	13,749	931	13,563	343	12,502	49	14,089	5	3	196	1	4	1	2	1	2
50	20	5,800	14,274	1,900	14,030	950	13,840	350	12,758	50	14,376	5	3	200	1	4	1	2	1	2

(To be continued)

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(Continued from preceding sheet)

RAID group	Cache (GB)	Storage Capacity (GB)										Number of necessary options							
		Emulation type										Cache DIMM		DKU-F505I-146JS/146JSR /146KSR (*2)	DKC-F515I-				RACK
		OPEN-3 (2.461GB)		OPEN-9 (7.384GB)		OPEN-E (14.568GB)		OPEN-L (36.450GB)		OPEN-V (*3) (287.529GB)		DKC-F510I-							
		VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	C4G/ C4GR	C8GR		MIX2R/ MIX4R	B2R	UC0R	UC1R	EXCR	
51	20	5,916	14,559	1,938	14,310	969	14,116	357	13,013	51	14,664	5	3	204	1	4	1	2	1	2
52	20	6,032	14,845	1,976	14,591	988	14,393	364	13,268	52	14,952	5	3	208	1	4	1	2	1	2
53	20	6,148	15,130	2,014	14,871	1,007	14,670	371	13,523	53	15,239	5	3	212	1	4	1	2	1	2
54	20	6,264	15,416	2,052	15,152	1,026	14,947	378	13,778	54	15,527	5	3	216	1	4	1	2	1	2
55	20	6,380	15,701	2,090	15,433	1,045	15,224	385	14,033	55	15,814	5	3	220	1	4	1	2	1	2
56	20	6,496	15,987	2,128	15,713	1,064	15,500	392	14,288	56	16,102	5	3	224	1	4	1	2	1	2
57	20	6,612	16,272	2,166	15,994	1,083	15,777	399	14,544	57	16,389	5	3	228	1	4	1	2	1	2
58	20	6,728	16,558	2,204	16,274	1,102	16,054	406	14,799	58	16,677	5	3	232	1	4	1	2	1	2
59	20	6,844	16,843	2,242	16,555	1,121	16,331	413	15,054	59	16,964	5	3	236	1	4	1	2	1	2

*1: In addition to the options listed in above table as necessary parts, the Additional Shared Memory Module [Note 1] are required.

Note 1: The number of the Shard Memory Module (DKC-F510I-S1G/S1GR/S2GR) necessary is refer to table 7.2-1 to 7.2-6.
Please note that location of shared memory varies according to the purpose such as additional cache installation or additional LDEV installation.

*2: The number of HDD options is only the number of data disks, and the number of spare disks is not included.
The relation between disk capacity and the number of required options differs according to the number of spare disk installing.

*3: OPEN-V is volume based on CVS. A customer can set up the volume capacity of OPEN-V freely from 48.1MB among almost 1 RAID group capacity. This volume capacity is the default value and is nearly equals to RAID group capacity.

*4: This table was created, presupposing that it installs always a spare disk.

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(4) Mainframe Storage Capacity Upgrade Table (146GB 10Kmin^{-1}/15Kmin^{-1} HDD)

RAID group	Cache (GB)	Storage Capacity (GB)										Number of necessary options								
		Mainframe System										Cache DIMM		DKU-F505I-146JS/146JSR/146KSR (*2)	DKC-F515I-					RACK
		3380-3 (2.377GB)		3390-3/3R (2.838GB)		3390-9 (8.514GB)		3390-L (27.844GB)		3390-M (55.689GB)		DKC-F510I-								
												C4G/C4GR	C8GR		MIX2R/MIX4R	B2R	UC0R	UC1R	EXCR	
		VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap									
1	4	116	276	96	272	32	272	9	251	4	223	1	1	4	1	1	1			1
2	4	232	551	192	545	64	545	18	501	8	446	1	1	8	1	1	1			1
3	8	348	827	288	817	96	817	27	752	12	668	2	1	12	1	1	1			1
4	8	464	1,103	384	1,090	128	1,090	36	1,002	16	891	2	1	16	1	1	1			1
5	8	580	1,379	480	1,362	160	1,362	45	1,253	20	1,114	2	1	20	1	1	1			1
6	8	696	1,654	576	1,635	192	1,635	54	1,504	24	1,337	2	1	24	1	1	1			1
7	8	812	1,930	672	1,907	224	1,907	63	1,754	28	1,559	2	1	28	1	1	1			1
8	8	928	2,206	768	2,180	256	2,180	72	2,005	32	1,782	2	1	32	1	1	1			1
9	8	1,044	2,482	864	2,452	288	2,452	81	2,255	36	2,005	2	1	36	1	1	1			1
10	8	1,160	2,757	960	2,724	320	2,724	90	2,506	40	2,228	2	1	40	1	1	1			1
11	12	1,276	3,033	1,056	2,997	352	2,997	99	2,757	44	2,450	3	2	44	1	1	1			1
12	12	1,392	3,309	1,152	3,269	384	3,269	108	3,007	48	2,673	3	2	48	1	1	1			1
13	12	1,508	3,585	1,248	3,542	416	3,542	117	3,258	52	2,896	3	2	52	1	1	1			1
14	12	1,624	3,860	1,344	3,814	448	3,814	126	3,508	56	3,119	3	2	56	1	1	1			1
15	12	1,740	4,136	1,440	4,087	480	4,087	135	3,759	60	3,341	3	2	60	1	1	1			1
16	12	1,856	4,412	1,536	4,359	512	4,359	144	4,010	64	3,564	3	2	64	1	1	1			1
17	12	1,972	4,687	1,632	4,632	544	4,632	153	4,260	68	3,787	3	2	68	1	1	1			1
18	12	2,088	4,963	1,728	4,904	576	4,904	162	4,511	72	4,010	3	2	72	1	2	1	1		1
19	12	2,204	5,239	1,824	5,177	608	5,177	171	4,761	76	4,232	3	2	76	1	2	1	1		1
20	12	2,320	5,515	1,920	5,449	640	5,449	180	5,012	80	4,455	3	2	80	1	2	1	1		1
21	12	2,436	5,790	2,016	5,721	672	5,721	189	5,263	84	4,678	3	2	84	1	2	1	1		1
22	12	2,552	6,066	2,112	5,994	704	5,994	198	5,513	88	4,901	3	2	88	1	2	1	1		1
23	12	2,668	6,342	2,208	6,266	736	6,266	207	5,764	92	5,123	3	2	92	1	2	1	1		1
24	12	2,784	6,618	2,304	6,539	768	6,539	216	6,014	96	5,346	3	2	96	1	2	1	1		1
25	12	2,900	6,893	2,400	6,811	800	6,811	225	6,265	100	5,569	3	2	100	1	2	1	1		1
26	12	3,016	7,169	2,496	7,084	832	7,084	234	6,515	104	5,792	3	2	104	1	2	1	1		1
27	12	3,132	7,445	2,592	7,356	864	7,356	243	6,766	108	6,014	3	2	108	1	2	1	1		1
28	12	3,248	7,720	2,688	7,629	896	7,629	252	7,017	112	6,237	3	2	112	1	2	1	1		1
29	12	3,364	7,996	2,784	7,901	928	7,901	261	7,267	116	6,460	3	2	116	1	2	1	1		1
30	12	3,480	8,272	2,880	8,173	960	8,173	270	7,518	120	6,683	3	2	120	1	2	1	1		1
31	16	3,596	8,548	2,976	8,446	992	8,446	279	7,768	124	6,905	4	2	124	1	2	1	1		1
32	16	3,712	8,823	3,072	8,718	1,024	8,718	288	8,019	128	7,128	4	2	128	1	2	1	1		1
33	16	3,828	9,099	3,168	8,991	1,056	8,991	297	8,270	132	7,351	4	2	132	1	3	1	1	1	2
34	16	3,944	9,375	3,264	9,263	1,088	9,263	306	8,520	136	7,574	4	2	136	1	3	1	1	1	2
35	16	4,060	9,651	3,360	9,536	1,120	9,536	315	8,771	140	7,796	4	2	140	1	3	1	1	1	2
36	16	4,176	9,926	3,456	9,808	1,152	9,808	324	9,021	144	8,019	4	2	144	1	3	1	1	1	2
37	16	4,292	10,202	3,552	10,081	1,184	10,081	333	9,272	148	8,242	4	2	148	1	3	1	1	1	2
38	16	4,408	10,478	3,648	10,353	1,216	10,353	342	9,523	152	8,465	4	2	152	1	3	1	1	1	2
39	16	4,524	10,754	3,744	10,625	1,248	10,625	351	9,773	156	8,687	4	2	156	1	3	1	1	1	2
40	16	4,640	11,029	3,840	10,898	1,280	10,898	360	10,024	160	8,910	4	2	160	1	3	1	1	1	2
41	16	4,756	11,305	3,936	11,170	1,312	11,170	369	10,274	164	9,133	4	2	164	1	3	1	1	1	2
42	16	4,872	11,581	4,032	11,443	1,344	11,443	378	10,525	168	9,356	4	2	168	1	3	1	1	1	2
43	16	4,988	11,856	4,128	11,715	1,376	11,715	387	10,776	172	9,579	4	2	172	1	3	1	1	1	2
44	16	5,104	12,132	4,224	11,988	1,408	11,988	396	11,026	176	9,801	4	2	176	1	3	1	1	1	2
45	16	5,220	12,408	4,320	12,260	1,440	12,260	405	11,277	180	10,024	4	2	180	1	3	1	1	1	2
46	16	5,336	12,684	4,416	12,533	1,472	12,533	414	11,527	184	10,247	4	2	184	1	3	1	1	1	2
47	16	5,452	12,959	4,512	12,805	1,504	12,805	423	11,778	188	10,470	4	2	188	1	3	1	1	1	2
48	16	5,568	13,235	4,608	13,078	1,536	13,078	432	12,029	192	10,692	4	2	192	1	4	1	2	1	2
49	16	5,684	13,511	4,704	13,350	1,568	13,350	441	12,279	196	10,915	4	2	196	1	4	1	2	1	2
50	16	5,800	13,787	4,800	13,622	1,600	13,622	450	12,530	200	11,138	4	2	200	1	4	1	2	1	2

(To be continued)

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RAID group	Cache (GB)	Storage Capacity (GB)										Number of necessary options							
		Mainframe System										Cache DIMM		DKU-F505I-146JS/146JSR/146KSR (*2)	DKC-F515I-				RACK
		3380-3 (2.377GB)		3390-3/3R (2.838GB)		3390-9 (8.514GB)		3390-L (27.844GB)		3390-M (55.689GB)		DKC-F510I-							
		VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	C4G/ C4GR	C8GR		MIX2R/ MIX4R	B2R	UC0R	UC1R	EXCR	
51	16	5,916	14,062	4,896	13,895	1,632	13,895	459	12,780	204	11,361	4	2	204	1	4	1	2	1	2
52	20	6,032	14,338	4,992	14,167	1,664	14,167	468	13,031	208	11,583	5	3	208	1	4	1	2	1	2
53	20	6,148	14,614	5,088	14,440	1,696	14,440	477	13,282	212	11,806	5	3	212	1	4	1	2	1	2
54	20	6,264	14,890	5,184	14,712	1,728	14,712	486	13,532	216	12,029	5	3	216	1	4	1	2	1	2
55	20	6,380	15,165	5,280	14,985	1,760	14,985	495	13,783	220	12,252	5	3	220	1	4	1	2	1	2
56	20	6,496	15,441	5,376	15,257	1,792	15,257	504	14,033	224	12,474	5	3	224	1	4	1	2	1	2
57	20	6,612	15,717	5,472	15,530	1,824	15,530	513	14,284	228	12,697	5	3	228	1	4	1	2	1	2
58	20	6,728	15,992	5,568	15,802	1,856	15,802	522	14,535	232	12,920	5	3	232	1	4	1	2	1	2
59	20	6,844	16,268	5,664	16,074	1,888	16,074	531	14,785	236	13,143	5	3	236	1	4	1	2	1	2

*1: In addition to the options listed in above table as necessary parts, the Additional Shared Memory Module [Note 1] are required.

Note 1: The number of the Shard Memory Module (DKC-F510I-S1G/S1GR/S2GR) necessary is refer to table 7.2-1 to 7.2-6.
Please note that location of shared memory varies according to the purpose such as additional cache installation or additional LDEV installation.

*2: The number of HDD options is only the number of data disks, and the number of spare disks is not included.
The relation between disk capacity and the number of required options differs according to the number of spare disk installing.

*3: This table was created, presupposing that it installs always a spare disk.

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(5) Open System Storage Capacity Upgrade Table (300GB 10Kmin^{-1}/15kmin^{-1} HDD)

RAID group	Cache (GB)	Storage Capacity (GB)										Number of necessary options								
		Emulation type										Cache DIMM		DKU-F505I-300JSR/300KSR (*2)	DKC-F515I-					RACK
		OPEN-3 (2.461GB)		OPEN-9 (7.384GB)		OPEN-E (14.568GB)		OPEN-L (36.450GB)		OPEN-V (*3) (576.393GB)		DKC-F510I-								
		VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	C4G/ C4GR	C8GR		MIX2R/ MIX4R	B2R	UC0R	UC1R	EXCR	
1	4	233	573	77	569	39	568	15	547	1	576	1	1	4	1	1	1			1
2	8	466	1,147	154	1,137	78	1,136	30	1,094	2	1,153	2	1	8	1	1	1			1
3	8	699	1,720	231	1,706	117	1,704	45	1,640	3	1,729	2	1	12	1	1	1			1
4	8	932	2,294	308	2,274	156	2,273	60	2,187	4	2,306	2	1	16	1	1	1			1
5	12	1,165	2,867	385	2,843	195	2,841	75	2,734	5	2,882	3	2	20	1	1	1			1
6	12	1,398	3,440	462	3,411	234	3,409	90	3,281	6	3,458	3	2	24	1	1	1			1
7	12	1,631	4,014	539	3,980	273	3,977	105	3,827	7	4,035	3	2	28	1	1	1			1
8	12	1,864	4,587	616	4,549	312	4,545	120	4,374	8	4,611	3	2	32	1	1	1			1
9	12	2,097	5,161	693	5,117	351	5,113	135	4,921	9	5,188	3	2	36	1	1	1			1
10	12	2,330	5,734	770	5,686	390	5,682	150	5,468	10	5,764	3	2	40	1	1	1			1
11	12	2,563	6,308	847	6,254	429	6,250	165	6,014	11	6,340	3	2	44	1	1	1			1
12	12	2,796	6,881	924	6,823	468	6,818	180	6,561	12	6,917	3	2	48	1	1	1			1
13	12	3,029	7,454	1,001	7,391	507	7,386	195	7,108	13	7,493	3	2	52	1	1	1			1
14	12	3,262	8,028	1,078	7,960	546	7,954	210	7,655	14	8,070	3	2	56	1	1	1			1
15	16	3,495	8,601	1,155	8,529	585	8,522	225	8,201	15	8,646	4	2	60	1	2	1	1		1
16	16	3,728	9,175	1,232	9,097	624	9,090	240	8,748	16	9,222	4	2	64	1	2	1	1		1
17	16	3,961	9,748	1,309	9,666	663	9,659	255	9,295	17	9,799	4	2	68	1	2	1	1		1
18	16	4,194	10,321	1,386	10,234	702	10,227	270	9,842	18	10,375	4	2	72	1	2	1	1		1
19	16	4,427	10,895	1,463	10,803	741	10,795	285	10,388	19	10,951	4	2	76	1	2	1	1		1
20	16	4,660	11,468	1,540	11,371	780	11,363	300	10,935	20	11,528	4	2	80	1	2	1	1		1
21	16	4,893	12,042	1,617	11,940	819	11,931	315	11,482	21	12,104	4	2	84	1	2	1	1		1
22	16	5,126	12,615	1,694	12,508	858	12,499	330	12,029	22	12,681	4	2	88	1	2	1	1		1
23	16	5,359	13,188	1,771	13,077	897	13,067	345	12,575	23	13,257	4	2	92	1	2	1	1		1
24	16	5,592	13,762	1,848	13,646	936	13,636	360	13,122	24	13,833	4	2	96	1	2	1	1		1
25	20	5,825	14,335	1,925	14,214	975	14,204	375	13,669	25	14,410	5	3	100	1	2	1	1		1
26	20	6,058	14,909	2,002	14,783	1,014	14,772	390	14,216	26	14,986	5	3	104	1	2	1	1		1
27	20	6,291	15,482	2,079	15,351	1,053	15,340	405	14,762	27	15,563	5	3	108	1	2	1	1		1
28	20	6,524	16,056	2,156	15,920	1,092	15,908	420	15,309	28	16,139	5	3	112	1	2	1	1		1
29	20	6,757	16,629	2,233	16,488	1,131	16,476	435	15,856	29	16,715	5	3	116	1	2	1	1		1
30	20	6,990	17,202	2,310	17,057	1,170	17,045	450	16,403	30	17,292	5	3	120	1	3	1	1	1	2
31	20	7,223	17,776	2,387	17,626	1,209	17,613	465	16,949	31	17,868	5	3	124	1	3	1	1	1	2
32	20	7,456	18,349	2,464	18,194	1,248	18,181	480	17,496	32	18,445	5	3	128	1	3	1	1	1	2
33	20	7,689	18,923	2,541	18,763	1,287	18,749	495	18,043	33	19,021	5	3	132	1	3	1	1	1	2
34	20	7,922	19,496	2,618	19,331	1,326	19,317	510	18,590	34	19,597	5	3	136	1	3	1	1	1	2
35	24	8,155	20,069	2,695	19,900	1,365	19,885	525	19,136	35	20,174	6	3	140	1	3	1	1	1	2
36	24	8,388	20,643	2,772	20,468	1,404	20,453	540	19,683	36	20,750	6	3	144	1	3	1	1	1	2
37	24	8,621	21,216	2,849	21,037	1,443	21,022	555	20,230	37	21,327	6	3	148	1	3	1	1	1	2
38	24	8,854	21,790	2,926	21,606	1,482	21,590	570	20,777	38	21,903	6	3	152	1	3	1	1	1	2
39	24	9,087	22,363	3,003	22,174	1,521	22,158	585	21,323	39	22,479	6	3	156	1	3	1	1	1	2
40	24	9,320	22,937	3,080	22,743	1,560	22,726	600	21,870	40	23,056	6	3	160	1	3	1	1	1	2
41	24	9,553	23,510	3,157	23,311	1,599	23,294	615	22,417	41	23,632	6	3	164	1	3	1	1	1	2
42	24	9,786	24,083	3,234	23,880	1,638	23,862	630	22,964	42	24,209	6	3	168	1	3	1	1	1	2
43	24	10,019	24,657	3,311	24,448	1,677	24,431	645	23,510	43	24,785	6	3	172	1	3	1	1	1	2
44	24	10,252	25,230	3,388	25,017	1,716	24,999	660	24,057	44	25,361	6	3	176	1	3	1	1	1	2
45	24	10,485	25,804	3,465	25,586	1,755	25,567	675	24,604	45	25,938	6	3	180	1	4	1	2	1	2
46	24	10,718	26,377	3,542	26,154	1,794	26,135	690	25,151	46	26,514	6	3	184	1	4	1	2	1	2
47	24	10,951	26,950	3,619	26,723	1,833	26,703	705	25,697	47	27,090	6	3	188	1	4	1	2	1	2
48	24	11,184	27,524	3,696	27,291	1,872	27,271	720	26,244	48	27,667	6	3	192	1	4	1	2	1	2
49	24	11,417	28,097	3,773	27,860	1,911	27,839	735	26,791	49	28,243	6	3	196	1	4	1	2	1	2
50	24	11,650	28,671	3,850	28,428	1,950	28,408	750	27,338	50	28,820	6	3	200	1	4	1	2	1	2

(To be continued)

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(Continued from preceding sheet)

RAID group	Cache (GB)	Storage Capacity (GB)										Number of necessary options							
		Emulation type										Cache DIMM		DKU-F505I-300JSR/ 300KSR (*2)	DKC-F515I-				RACK
		OPEN-3 (2.461GB)		OPEN-9 (7.384GB)		OPEN-E (14.568GB)		OPEN-L (36.450GB)		OPEN-V (*3) (576.393GB)		DKC-F510I-							
												C4G/ C4GR	C8GR		MIX2R/ MIX4R	B2R	UC0R	UC1R	EXCR	
		VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap								
51	24	11,883	29,244	3,927	28,997	1,989	28,976	765	27,884	51	29,396	6	3	204	1	4	1	2	1	2
52	24	12,116	29,817	4,004	29,566	2,028	29,544	780	28,431	52	29,972	6	3	208	1	4	1	2	1	2
53	24	12,349	30,391	4,081	30,134	2,067	30,112	795	28,978	53	30,549	6	3	212	1	4	1	2	1	2
54	24	12,582	30,964	4,158	30,703	2,106	30,680	810	29,525	54	31,125	6	3	216	1	4	1	2	1	2
55	24	12,815	31,538	4,235	31,271	2,145	31,248	825	30,071	55	31,702	6	3	220	1	4	1	2	1	2
56	24	13,048	32,111	4,312	31,840	2,184	31,817	840	30,618	56	32,278	6	3	224	1	4	1	2	1	2
57	24	13,281	32,685	4,389	32,408	2,223	32,385	855	31,165	57	32,854	6	3	228	1	4	1	2	1	2
58	24	13,514	33,258	4,466	32,977	2,262	32,953	870	31,712	58	33,431	6	3	232	1	4	1	2	1	2
59	24	13,747	33,831	4,543	33,546	2,301	33,521	885	32,258	59	34,007	6	3	236	1	4	1	2	1	2

*1: In addition to the options listed in above table as necessary parts, the Additional Shared Memory Module [Note 1] are required.

Note 1: The number of the Shard Memory Module (DKC-F510I-S1G/S1GR/S2GR) necessary is refer to table 7.2-1 to 7.2-6.
Please note that location of shared memory varies according to the purpose such as additional cache installation or additional LDEV installation.

*2: The number of HDD options is only the number of data disks, and the number of spare disks is not included.
The relation between disk capacity and the number of required options differs according to the number of spare disk installing.

*3: OPEN-V is volume based on CVS. A customer can set up the volume capacity of OPEN-V freely from 48.1MB among almost 1 RAID group capacity. This volume capacity is the default value and is nearly equals to RAID group capacity.

*4: This table was created, presupposing that it installs always a spare disk.

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(6) Mainframe Storage Capacity Upgrade Table (300GB 10Kmin^{-1}/15kmin^{-1} HDD)

RAID group	Cache (GB)	Storage Capacity (GB)										Number of necessary options								
		Mainframe System										Cache DIMM		DKU-F505I-300JSR/300KSR (*2)	DKC-F515I-					RACK
		3380-3 (2.377GB)		3390-3/3R (2.838GB)		3390-9 (8.514GB)		3390-L (27.844GB)		3390-M (55.689GB)		DKC-F510I-			MIX2R/MIX4R	B2R	UC0R	UC1R	EXCR	
		VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	C4G/C4GR	C8GR							
1	4	233	554	193	548	64	545	19	529	9	501	1	1	4	1	1	1			1
2	8	466	1,108	386	1,095	128	1,090	38	1,058	18	1,002	2	1	8	1	1	1			1
3	8	699	1,662	579	1,643	192	1,635	57	1,587	27	1,504	2	1	12	1	1	1			1
4	8	932	2,215	772	2,191	256	2,180	76	2,116	36	2,005	2	1	16	1	1	1			1
5	8	1,165	2,769	965	2,739	320	2,724	95	2,645	45	2,506	2	1	20	1	1	1			1
6	12	1,398	3,323	1,158	3,286	384	3,269	114	3,174	54	3,007	3	2	24	1	1	1			1
7	12	1,631	3,877	1,351	3,834	448	3,814	133	3,703	63	3,508	3	2	28	1	1	1			1
8	12	1,864	4,431	1,544	4,382	512	4,359	152	4,232	72	4,010	3	2	32	1	1	1			1
9	12	2,097	4,985	1,737	4,930	576	4,904	171	4,761	81	4,511	3	2	36	1	1	1			1
10	12	2,330	5,538	1,930	5,477	640	5,449	190	5,290	90	5,012	3	2	40	1	1	1			1
11	12	2,563	6,092	2,123	6,025	704	5,994	209	5,819	99	5,513	3	2	44	1	1	1			1
12	12	2,796	6,646	2,316	6,573	768	6,539	228	6,348	108	6,014	3	2	48	1	1	1			1
13	12	3,029	7,200	2,509	7,121	832	7,084	247	6,877	117	6,516	3	2	52	1	1	1			1
14	12	3,262	7,754	2,702	7,668	896	7,629	266	7,407	126	7,017	3	2	56	1	1	1			1
15	12	3,495	8,308	2,895	8,216	960	8,173	285	7,936	135	7,518	3	2	60	1	2	1	1		1
16	16	3,728	8,861	3,088	8,764	1,024	8,718	304	8,465	144	8,019	4	2	64	1	2	1	1		1
17	16	3,961	9,415	3,281	9,311	1,088	9,263	323	8,994	153	8,520	4	2	68	1	2	1	1		1
18	16	4,194	9,969	3,474	9,859	1,152	9,808	342	9,523	162	9,022	4	2	72	1	2	1	1		1
19	16	4,427	10,523	3,667	10,407	1,216	10,353	361	10,052	171	9,523	4	2	76	1	2	1	1		1
20	16	4,660	11,077	3,860	10,955	1,280	10,898	380	10,581	180	10,024	4	2	80	1	2	1	1		1
21	16	4,893	11,631	4,053	11,502	1,344	11,443	399	11,110	189	10,525	4	2	84	1	2	1	1		1
22	16	5,126	12,185	4,246	12,050	1,408	11,988	418	11,639	198	11,026	4	2	88	1	2	1	1		1
23	16	5,359	12,738	4,439	12,598	1,472	12,533	437	12,168	207	11,528	4	2	92	1	2	1	1		1
24	16	5,592	13,292	4,632	13,146	1,536	13,078	456	12,697	216	12,029	4	2	96	1	2	1	1		1
25	16	5,825	13,846	4,825	13,693	1,600	13,622	475	13,226	225	12,530	4	2	100	1	2	1	1		1
26	20	6,058	14,400	5,018	14,241	1,664	14,167	494	13,755	234	13,031	5	3	104	1	2	1	1		1
27	20	6,291	14,954	5,211	14,789	1,728	14,712	513	14,284	243	13,532	5	3	108	1	2	1	1		1
28	20	6,524	15,508	5,404	15,337	1,792	15,257	532	14,813	252	14,034	5	3	112	1	2	1	1		1
29	20	6,757	16,061	5,597	15,884	1,856	15,802	551	15,342	261	14,535	5	3	116	1	2	1	1		1
30	20	6,990	16,615	5,790	16,432	1,920	16,347	570	15,871	270	15,036	5	3	120	1	3	1	1	1	2
31	20	7,223	17,169	5,983	16,980	1,984	16,892	589	16,400	279	15,537	5	3	124	1	3	1	1	1	2
32	20	7,456	17,723	6,176	17,527	2,048	17,437	608	16,929	288	16,038	5	3	128	1	3	1	1	1	2
33	20	7,689	18,277	6,369	18,075	2,112	17,982	627	17,458	297	16,540	5	3	132	1	3	1	1	1	2
34	20	7,922	18,831	6,562	18,623	2,176	18,526	646	17,987	306	17,041	5	3	136	1	3	1	1	1	2
35	20	8,155	19,384	6,755	19,171	2,240	19,071	665	18,516	315	17,542	5	3	140	1	3	1	1	1	2
36	24	8,388	19,938	6,948	19,718	2,304	19,616	684	19,045	324	18,043	6	3	144	1	3	1	1	1	2
37	24	8,621	20,492	7,141	20,266	2,368	20,161	703	19,574	333	18,544	6	3	148	1	3	1	1	1	2
38	24	8,854	21,046	7,334	20,814	2,432	20,706	722	20,103	342	19,046	6	3	152	1	3	1	1	1	2
39	24	9,087	21,600	7,527	21,362	2,496	21,251	741	20,632	351	19,547	6	3	156	1	3	1	1	1	2
40	24	9,320	22,154	7,720	21,909	2,560	21,796	760	21,161	360	20,048	6	3	160	1	3	1	1	1	2
41	24	9,553	22,707	7,913	22,457	2,624	22,341	779	21,690	369	20,549	6	3	164	1	3	1	1	1	2
42	24	9,786	23,261	8,106	23,005	2,688	22,886	798	22,220	378	21,050	6	3	168	1	3	1	1	1	2
43	24	10,019	23,815	8,299	23,553	2,752	23,431	817	22,749	387	21,552	6	3	172	1	3	1	1	1	2
44	24	10,252	24,369	8,492	24,100	2,816	23,975	836	23,278	396	22,053	6	3	176	1	3	1	1	1	2
45	24	10,485	24,923	8,685	24,648	2,880	24,520	855	23,807	405	22,554	6	3	180	1	4	1	2	1	2
46	24	10,718	25,477	8,878	25,196	2,944	25,065	874	24,336	414	23,055	6	3	184	1	4	1	2	1	2
47	24	10,951	26,031	9,071	25,743	3,008	25,610	893	24,865	423	23,556	6	3	188	1	4	1	2	1	2
48	24	11,184	26,584	9,264	26,291	3,072	26,155	912	25,394	432	24,058	6	3	192	1	4	1	2	1	2
49	24	11,417	27,138	9,457	26,839	3,136	26,700	931	25,923	441	24,559	6	3	196	1	4	1	2	1	2
50	24	11,650	27,692	9,650	27,387	3,200	27,245	950	26,452	450	25,060	6	3	200	1	4	1	2	1	2

(To be continued)

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(Continued from preceding sheet)

RAID group	Storage Capacity (GB)											Number of necessary options								
	Cache (GB)	Mainframe System										Cache DIMM		DKU-F505I-300JSR/ 300KSR (*2)	DKC-F515I-					RACK
		3380-3 (2.377GB)		3390-3/3R (2.838GB)		3390-9 (8.514GB)		3390-L (27.844GB)		3390-M (55.689GB)		DKC-F510I-								
												C4G/ C4GR	C8GR		MIX2R/ MIX4R	B2R	UC0R	UC1R	EXCR	
		VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap									
51	24	11,883	28,246	9,843	27,934	3,264	27,790	969	26,981	459	25,561	6	3	204	1	4	1	2	1	2
52	24	12,116	28,800	10,036	28,482	3,328	28,335	988	27,510	468	26,062	6	3	208	1	4	1	2	1	2
53	24	12,349	29,354	10,229	29,030	3,392	28,879	1,007	28,039	477	26,564	6	3	212	1	4	1	2	1	2
54	24	12,582	29,907	10,422	29,578	3,456	29,424	1,026	28,568	486	27,065	6	3	216	1	4	1	2	1	2
55	24	12,815	30,461	10,615	30,125	3,520	29,969	1,045	29,097	495	27,566	6	3	220	1	4	1	2	1	2
56	24	13,048	31,015	10,808	30,673	3,584	30,514	1,064	29,626	504	28,067	6	3	224	1	4	1	2	1	2
57	24	13,281	31,569	11,001	31,221	3,648	31,059	1,083	30,155	513	28,568	6	3	228	1	4	1	2	1	2
58	24	13,514	32,123	11,194	31,769	3,712	31,604	1,102	30,684	522	29,070	6	3	232	1	4	1	2	1	2
59	24	13,747	32,677	11,387	32,316	3,776	32,149	1,121	31,213	531	29,571	6	3	236	1	4	1	2	1	2

*1: In addition to the options listed in above table as necessary parts, the Additional Shared Memory Module [Note 1] are required.

Note 1: The number of the Shard Memory Module (DKC-F510I-S1G/S1GR/S2GR) necessary is refer to table 7.2-1 to 7.2-6.
Please note that location of shared memory varies according to the purpose such as additional cache installation or additional LDEV installation.

*2: The number of HDD options is only the number of data disks, and the number of spare disks is not included.
The relation between disk capacity and the number of required options differs according to the number of spare disk installing.

*3: This table was created, presupposing that it installs always a spare disk.

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(7) Open System Storage Capacity Upgrade Table (400GB 10Kmin^{-1} HDD)

RAID group	Cache (GB)	Storage Capacity (GB)										Number of necessary options								
		Emulation Type										Cache DIMM		DKU-F505I-400JSR (*2)	DKC-F515I-					RACK
		OPEN-3 (2.461GB)		OPEN-9 (7.384GB)		OPEN-E (14.567GB)		OPEN-L (36.450GB)		OPEN-V (*3) (787.6GB)		DKC-F510I-								
		VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	C4G/ C4GR	C8GR		MIX2R/ MIX4R	B2R	UC0R	UC1R	EXC0R	
1	8	250	615	106	783	54	787	21	765	1	788	2	1	4	1	1	1			1
2	8	500	1,231	212	1,565	108	1,573	42	1,531	2	1,575	2	1	8	1	1	1			1
3	8	750	1,846	318	2,348	162	2,360	63	2,296	3	2,363	2	1	12	1	1	1			1
4	12	1,000	2,461	424	3,131	216	3,146	84	3,062	4	3,150	3	2	16	1	1	1			1
5	12	1,250	3,076	530	3,914	270	3,933	105	3,827	5	3,938	3	2	20	1	1	1			1
6	12	1,500	3,692	636	4,696	324	4,720	126	4,593	6	4,726	3	2	24	1	1	1			1
7	12	1,750	4,307	742	5,479	378	5,506	147	5,358	7	5,513	3	2	28	1	1	1			1
8	12	2,000	4,922	848	6,262	432	6,293	168	6,124	8	6,301	3	2	32	1	1	1			1
9	12	2,250	5,537	954	7,044	486	7,080	189	6,889	9	7,088	3	2	36	1	1	1			1
10	12	2,500	6,153	1,060	7,827	540	7,866	210	7,655	10	7,876	3	2	40	1	1	1			1
11	16	2,750	6,768	1,166	8,610	594	8,653	231	8,420	11	8,664	4	2	44	1	1	1			1
12	16	3,000	7,383	1,272	9,392	648	9,439	252	9,185	12	9,451	4	2	48	1	1	1			1
13	16	3,250	7,998	1,378	10,175	702	10,226	273	9,951	13	10,239	4	2	52	1	1	1			1
14	16	3,500	8,614	1,484	10,958	756	11,013	294	10,716	14	11,026	4	2	56	1	1	1			1
15	16	3,750	9,229	1,590	11,741	810	11,799	315	11,482	15	11,814	4	2	60	1	2	1	1		1
16	16	4,000	9,844	1,696	12,523	864	12,586	336	12,247	16	12,602	4	2	64	1	2	1	1		1
17	16	4,250	10,459	1,802	13,306	918	13,373	357	13,013	17	13,389	4	2	68	1	2	1	1		1
18	16	4,500	11,075	1,908	14,089	972	14,159	378	13,778	18	14,177	4	2	72	1	2	1	1		1
19	20	4,750	11,690	2,014	14,871	1,026	14,946	399	14,544	19	14,964	5	3	76	1	2	1	1		1
20	20	5,000	12,305	2,120	15,654	1,080	15,732	420	15,309	20	15,752	5	3	80	1	2	1	1		1
21	20	5,250	12,920	2,226	16,437	1,134	16,519	441	16,074	21	16,540	5	3	84	1	2	1	1		1
22	20	5,500	13,536	2,332	17,219	1,188	17,306	462	16,840	22	17,327	5	3	88	1	2	1	1		1
23	20	5,750	14,151	2,438	18,002	1,242	18,092	483	17,605	23	18,115	5	3	92	1	2	1	1		1
24	20	6,000	14,766	2,544	18,785	1,296	18,879	504	18,371	24	18,902	5	3	96	1	2	1	1		1
25	20	6,250	15,381	2,650	19,568	1,350	19,665	525	19,136	25	19,690	5	3	100	1	2	1	1		1
26	24	6,500	15,997	2,756	20,350	1,404	20,452	546	19,902	26	20,478	6	3	104	1	2	1	1		1
27	24	6,750	16,612	2,862	21,133	1,458	21,239	567	20,667	27	21,265	6	3	108	1	2	1	1		1
28	24	7,000	17,227	2,968	21,916	1,512	22,025	588	21,433	28	22,053	6	3	112	1	2	1	1		1
29	24	7,250	17,842	3,074	22,698	1,566	22,812	609	22,198	29	22,840	6	3	116	1	2	1	1		1
30	24	7,500	18,458	3,180	23,481	1,620	23,599	630	22,964	30	23,628	6	3	120	1	3	1	1	1	2
31	24	7,750	19,073	3,286	24,264	1,674	24,385	651	23,729	31	24,416	6	3	124	1	3	1	1	1	2
32	24	8,000	19,688	3,392	25,047	1,728	25,172	672	24,494	32	25,203	6	3	128	1	3	1	1	1	2
33	24	8,250	20,303	3,498	25,829	1,782	25,958	693	25,260	33	25,991	6	3	132	1	3	1	1	1	2
34	24	8,500	20,919	3,604	26,612	1,836	26,745	714	26,025	34	26,778	6	3	136	1	3	1	1	1	2
35	24	8,750	21,534	3,710	27,395	1,890	27,532	735	26,791	35	27,566	6	3	140	1	3	1	1	1	2
36	24	9,000	22,149	3,816	28,177	1,944	28,318	756	27,556	36	28,354	6	3	144	1	3	1	1	1	2
37	24	9,250	22,764	3,922	28,960	1,998	29,105	777	28,322	37	29,141	6	3	148	1	3	1	1	1	2
38	24	9,500	23,380	4,028	29,743	2,052	29,891	798	29,087	38	29,929	6	3	152	1	3	1	1	1	2
39	24	9,750	23,995	4,134	30,525	2,106	30,678	819	29,853	39	30,716	6	3	156	1	3	1	1	1	2
40	24	10,000	24,610	4,240	31,308	2,160	31,465	840	30,618	40	31,504	6	3	160	1	3	1	1	1	2
41	24	10,250	25,225	4,346	32,091	2,214	32,251	861	31,383	41	32,292	6	3	164	1	3	1	1	1	2
42	24	10,500	25,841	4,452	32,874	2,268	33,038	882	32,149	42	33,079	6	3	168	1	3	1	1	1	2
43	24	10,750	26,456	4,558	33,656	2,322	33,825	903	32,914	43	33,867	6	3	172	1	3	1	1	1	2
44	24	11,000	27,071	4,664	34,439	2,376	34,611	924	33,680	44	34,654	6	3	176	1	3	1	1	1	2
45	24	11,250	27,686	4,770	35,222	2,430	35,398	945	34,445	45	35,442	6	3	180	1	4	1	2	1	2
46	24	11,500	28,302	4,876	36,004	2,484	36,184	966	35,211	46	36,230	6	3	184	1	4	1	2	1	2
47	24	11,750	28,917	4,982	36,787	2,538	36,971	987	35,976	47	37,017	6	3	188	1	4	1	2	1	2
48	24	12,000	29,532	5,088	37,570	2,592	37,758	1,008	36,742	48	37,805	6	3	192	1	4	1	2	1	2
49	24	12,250	30,147	5,194	38,352	2,646	38,544	1,029	37,507	49	38,592	6	3	196	1	4	1	2	1	2
50	24	12,500	30,763	5,300	39,135	2,700	39,331	1,050	38,273	50	39,380	6	3	200	1	4	1	2	1	2

(To be continued)

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(Continued from preceding sheet)

RAID group	Cache (GB)	Storage Capacity (GB)										Number of necessary options								
		Emulation Type										Cache DIMM DKC-F510I-		DKU-F505I-400JSR (*2)	DKC-F515I-					RACK
		OPEN-3 (2.461GB)		OPEN-9 (7.384GB)		OPEN-E (14.567GB)		OPEN-L (36.450GB)		OPEN-V (*3) (787.6GB)		C4G/ C4GR	C8GR		MIX2R/ MIX4R	B2R	UC0R	UC1R	EXC0R	
		VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap									
51	24	12,750	31,378	5,406	39,918	2,754	40,118	1,071	39,038	51	40,168	6	3	204	1	4	1	2	1	2
52	24	13,000	31,993	5,512	40,701	2,808	40,904	1,092	39,803	52	40,955	6	3	208	1	4	1	2	1	2
53	24	13,250	32,608	5,618	41,483	2,862	41,691	1,113	40,569	53	41,743	6	3	212	1	4	1	2	1	2
54	24	13,500	33,224	5,724	42,266	2,916	42,477	1,134	41,334	54	42,530	6	3	216	1	4	1	2	1	2
55	24	13,750	33,839	5,830	43,049	2,970	43,264	1,155	42,100	55	43,318	6	3	220	1	4	1	2	1	2
56	24	14,000	34,454	5,936	43,831	3,024	44,051	1,176	42,865	56	44,106	6	3	224	1	4	1	2	1	2
57	24	14,250	35,069	6,042	44,614	3,078	44,837	1,197	43,631	57	44,893	6	3	228	1	4	1	2	1	2
58	24	14,500	35,685	6,148	45,397	3,132	45,624	1,218	44,396	58	45,681	6	3	232	1	4	1	2	1	2
59	24	14,750	36,300	6,254	46,180	3,186	46,410	1,239	45,162	59	46,468	6	3	236	1	4	1	2	1	2

*1: In addition to the options listed in above table as necessary parts, the Additional Shared Memory Module [Note 1] are required.

Note 1: The number of the Shard Memory Module (DKC-F510I-S1G/S1GR/S2GR) necessary is refer to table 7.2-1 to 7.2-6.
Please note that location of shared memory varies according to the purpose such as additional cache installation or additional LDEV installation.

*2: The number of HDD options is only the number of data disks, and the number of spare disks is not included.
The relation between disk capacity and the number of required options differs according to the number of spare disk installing.

*3: OPEN-V is volume based on CVS. A customer can set up the volume capacity of OPEN-V freely from 48.1MB among almost 1 RAID group capacity. This volume capacity is the default value and is nearly equals to RAID group capacity.

*4: This table was created, presupposing that it installs always a spare disk.

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(8) Mainframe Storage Capacity Upgrade Table (400GB 10Kmin^{-1} HDD)

RAID group	Cache (GB)	Storage Capacity (GB)										Number of necessary options								
		Emulation Type										Cache DIMM		DKU-F505I-400JSR (*2)	DKC-F515I-					RACK
		3380-3 (2.377GB)		3390-3/3R (2.838GB)		3390-9 (8.514GB)		3390-L (27.844GB)		3390-M (55.689GB)		DKC-F510I-								
												C4G/ C4GR	C8GR		MIX2R/ MIX4R	B2R	UC0R	UC1R	EXC0R	
		VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap									
1	8	250	594	250	710	88	749	26	724	13	724	2	1	4	1	1	1			1
2	8	500	1,189	500	1,419	176	1,498	52	1,448	26	1,448	2	1	8	1	1	1			1
3	8	750	1,783	750	2,129	264	2,248	78	2,172	39	2,172	2	1	12	1	1	1			1
4	12	1,000	2,377	1,000	2,838	352	2,997	104	2,896	52	2,896	3	2	16	1	1	1			1
5	12	1,250	2,971	1,250	3,548	440	3,746	130	3,620	65	3,620	3	2	20	1	1	1			1
6	12	1,500	3,566	1,500	4,257	528	4,495	156	4,344	78	4,344	3	2	24	1	1	1			1
7	12	1,750	4,160	1,750	4,967	616	5,245	182	5,068	91	5,068	3	2	28	1	1	1			1
8	12	2,000	4,754	2,000	5,676	704	5,994	208	5,792	104	5,792	3	2	32	1	1	1			1
9	12	2,250	5,348	2,250	6,386	792	6,743	234	6,515	117	6,516	3	2	36	1	1	1			1
10	12	2,500	5,943	2,500	7,095	880	7,492	260	7,239	130	7,240	3	2	40	1	1	1			1
11	12	2,750	6,537	2,750	7,805	968	8,242	286	7,963	143	7,964	3	2	44	1	1	1			1
12	16	3,000	7,131	3,000	8,514	1,056	8,991	312	8,687	156	8,687	4	2	48	1	1	1			1
13	16	3,250	7,725	3,250	9,224	1,144	9,740	338	9,411	169	9,411	4	2	52	1	1	1			1
14	16	3,500	8,320	3,500	9,933	1,232	10,489	364	10,135	182	10,135	4	2	56	1	1	1			1
15	16	3,750	8,914	3,750	10,643	1,320	11,238	390	10,859	195	10,859	4	2	60	1	2	1	1		1
16	16	4,000	9,508	4,000	11,352	1,408	11,988	416	11,583	208	11,583	4	2	64	1	2	1	1		1
17	16	4,250	10,102	4,250	12,062	1,496	12,737	442	12,307	221	12,307	4	2	68	1	2	1	1		1
18	16	4,500	10,697	4,500	12,771	1,584	13,486	468	13,031	234	13,031	4	2	72	1	2	1	1		1
19	16	4,750	11,291	4,750	13,481	1,672	14,235	494	13,755	247	13,755	4	2	76	1	2	1	1		1
20	20	5,000	11,885	5,000	14,190	1,760	14,985	520	14,479	260	14,479	5	3	80	1	2	1	1		1
21	20	5,250	12,479	5,250	14,900	1,848	15,734	546	15,203	273	15,203	5	3	84	1	2	1	1		1
22	20	5,500	13,074	5,500	15,609	1,936	16,483	572	15,927	286	15,927	5	3	88	1	2	1	1		1
23	20	5,750	13,668	5,750	16,319	2,024	17,232	598	16,651	299	16,651	5	3	92	1	2	1	1		1
24	20	6,000	14,262	6,000	17,028	2,112	17,982	624	17,375	312	17,375	5	3	96	1	2	1	1		1
25	20	6,250	14,856	6,250	17,738	2,200	18,731	650	18,099	325	18,099	5	3	100	1	2	1	1		1
26	20	6,500	15,451	6,500	18,447	2,288	19,480	676	18,823	338	18,823	5	3	104	1	2	1	1		1
27	24	6,750	16,045	6,750	19,157	2,376	20,229	702	19,546	351	19,547	6	3	108	1	2	1	1		1
28	24	7,000	16,639	7,000	19,866	2,464	20,978	728	20,270	364	20,271	6	3	112	1	2	1	1		1
29	24	7,250	17,233	7,250	20,576	2,552	21,728	754	20,994	377	20,995	6	3	116	1	2	1	1		1
30	24	7,500	17,828	7,500	21,285	2,640	22,477	780	21,718	390	21,719	6	3	120	1	3	1	1	1	2
31	24	7,750	18,422	7,750	21,995	2,728	23,226	806	22,442	403	22,443	6	3	124	1	3	1	1	1	2
32	24	8,000	19,016	8,000	22,704	2,816	23,975	832	23,166	416	23,167	6	3	128	1	3	1	1	1	2
33	24	8,250	19,610	8,250	23,414	2,904	24,725	858	23,890	429	23,891	6	3	132	1	3	1	1	1	2
34	24	8,500	20,205	8,500	24,123	2,992	25,474	884	24,614	442	24,615	6	3	136	1	3	1	1	1	2
35	24	8,750	20,799	8,750	24,833	3,080	26,223	910	25,338	455	25,338	6	3	140	1	3	1	1	1	2
36	24	9,000	21,393	9,000	25,542	3,168	26,972	936	26,062	468	26,062	6	3	144	1	3	1	1	1	2
37	24	9,250	21,987	9,250	26,252	3,256	27,722	962	26,786	481	26,786	6	3	148	1	3	1	1	1	2
38	24	9,500	22,582	9,500	26,961	3,344	28,471	988	27,510	494	27,510	6	3	152	1	3	1	1	1	2
39	24	9,750	23,176	9,750	27,671	3,432	29,220	1,014	28,234	507	28,234	6	3	156	1	3	1	1	1	2
40	24	10,000	23,770	10,000	28,380	3,520	29,969	1,040	28,958	520	28,958	6	3	160	1	3	1	1	1	2
41	24	10,250	24,364	10,250	29,090	3,608	30,719	1,066	29,682	533	29,682	6	3	164	1	3	1	1	1	2
42	24	10,500	24,959	10,500	29,799	3,696	31,468	1,092	30,406	546	30,406	6	3	168	1	3	1	1	1	2
43	24	10,750	25,553	10,750	30,509	3,784	32,217	1,118	31,130	559	31,130	6	3	172	1	3	1	1	1	2
44	24	11,000	26,147	11,000	31,218	3,872	32,966	1,144	31,854	572	31,854	6	3	176	1	3	1	1	1	2
45	24	11,250	26,741	11,250	31,928	3,960	33,715	1,170	32,577	585	32,578	6	3	180	1	4	1	2	1	2
46	24	11,500	27,336	11,500	32,637	4,048	34,465	1,196	33,301	598	33,302	6	3	184	1	4	1	2	1	2
47	24	11,750	27,930	11,750	33,347	4,136	35,214	1,222	34,025	611	34,026	6	3	188	1	4	1	2	1	2
48	24	12,000	28,524	12,000	34,056	4,224	35,963	1,248	34,749	624	34,750	6	3	192	1	4	1	2	1	2
49	24	12,250	29,118	12,250	34,766	4,312	36,712	1,274	35,473	637	35,474	6	3	196	1	4	1	2	1	2
50	24	12,500	29,713	12,500	35,475	4,400	37,462	1,300	36,197	650	36,198	6	3	200	1	4	1	2	1	2

(To be continued)

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(Continued from preceding sheet)

RAID group	Cache (GB)	Storage Capacity (GB)										Number of necessary options								
		Emulation Type										Cache DIMM		DKU-F505I-400JSR (*2)	DKC-F515I-					RACK
		3380-3 (2.377GB)		3390-3/3R (2.838GB)		3390-9 (8.514GB)		3390-L (27.844GB)		3390-M (55.689GB)		DKC-F510I-								
												C4G/ C4GR	C8GR		MIX2R/ MIX4R	B2R	UC0R	UC1R	EXC0R	
		VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap									
51	24	12,750	30,307	12,750	36,185	4,488	38,211	1,326	36,921	663	36,922	6	3	204	1	4	1	2	1	2
52	24	13,000	30,901	13,000	36,894	4,576	38,960	1,352	37,645	676	37,646	6	3	208	1	4	1	2	1	2
53	24	13,250	31,495	13,250	37,604	4,664	39,709	1,378	38,369	689	38,370	6	3	212	1	4	1	2	1	2
54	24	13,500	32,090	13,500	38,313	4,752	40,459	1,404	39,093	702	39,094	6	3	216	1	4	1	2	1	2
55	24	13,750	32,684	13,750	39,023	4,840	41,208	1,430	39,817	715	39,818	6	3	220	1	4	1	2	1	2
56	24	14,000	33,278	14,000	39,732	4,928	41,957	1,456	40,541	728	40,542	6	3	224	1	4	1	2	1	2
57	24	14,250	33,872	14,250	40,442	5,016	42,706	1,482	41,265	741	41,266	6	3	228	1	4	1	2	1	2
58	24	14,500	34,467	14,500	41,151	5,104	43,455	1,508	41,989	754	41,990	6	3	232	1	4	1	2	1	2
59	24	14,750	35,061	14,750	41,861	5,192	44,205	1,534	42,713	767	42,713	6	3	236	1	4	1	2	1	2

*1: In addition to the options listed in above table as necessary parts, the Additional Shared Memory Module [Note 1] are required.

Note 1: The number of the Shard Memory Module (DKC-F510I-S1G/S1GR/S2GR) necessary is refer to table 7.2-1 to 7.2-6.
Please note that location of shared memory varies according to the purpose such as additional cache installation or additional LDEV installation.

*2: The number of HDD options is only the number of data disks, and the number of spare disks is not included.
The relation between disk capacity and the number of required options differs according to the number of spare disk installing.

*3: This table was created, presupposing that it installs always a spare disk.

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7.3.3 Standard Configuration for RAID6 (6D+2P)

(1) Open System Storage Capacity Upgrade Table (72GB 15Kmin^{-1} HDD)

RAID group	Cache (GB)	Storage Capacity (GB)										Number of necessary options								
		Emulation type										Cache DIMM		DKU-F505I-72KS/72KSR (*2)	DKC-F515I-					RACK
		OPEN-3 (2.461GB)		OPEN-9 (7.384GB)		OPEN-E (14.568GB)		OPEN-L (36.450GB)		OPEN-V (*3) (428.977GB)		DKC-F510I-								
		VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	C4G/ C4GR	C8GR		MIX2R/ MIX4R	B2R	UC0R	UC1R	EXCR	
1	4	173	426	57	421	29	422	11	401	1	429	1	1	8	1	1	1			1
2	8	346	852	114	842	58	845	22	802	2	858	2	1	16	1	1	1			1
3	8	519	1,277	171	1,263	87	1,267	33	1,203	3	1,287	2	1	24	1	1	1			1
4	8	692	1,703	228	1,684	116	1,690	44	1,604	4	1,716	2	1	32	1	1	1			1
5	8	865	2,129	285	2,104	145	2,112	55	2,005	5	2,145	2	1	40	1	1	1			1
6	8	1,038	2,555	342	2,525	174	2,535	66	2,406	6	2,574	2	1	48	1	1	1			1
7	12	1,211	2,980	399	2,946	203	2,957	77	2,807	7	3,003	3	2	56	1	1	1			1
8	12	1,384	3,406	456	3,367	232	3,380	88	3,208	8	3,432	3	2	64	1	2	1	1		1
9	12	1,557	3,832	513	3,788	261	3,802	99	3,609	9	3,861	3	2	72	1	2	1	1		1
10	12	1,730	4,258	570	4,209	290	4,225	110	4,010	10	4,290	3	2	80	1	2	1	1		1
11	12	1,903	4,683	627	4,630	319	4,647	121	4,410	11	4,719	3	2	88	1	2	1	1		1
12	12	2,076	5,109	684	5,051	348	5,070	132	4,811	12	5,148	3	2	96	1	2	1	1		1
13	12	2,249	5,535	741	5,472	377	5,492	143	5,212	13	5,577	3	2	104	1	2	1	1		1
14	12	2,422	5,961	798	5,892	406	5,915	154	5,613	14	6,006	3	2	112	1	2	1	1		1
15	12	2,595	6,386	855	6,313	435	6,337	165	6,014	15	6,435	3	2	120	1	3	1	1	1	2
16	12	2,768	6,812	912	6,734	464	6,760	176	6,415	16	6,864	3	2	128	1	3	1	1	1	2
17	12	2,941	7,238	969	7,155	493	7,182	187	6,816	17	7,293	3	2	136	1	3	1	1	1	2
18	12	3,114	7,664	1,026	7,576	522	7,604	198	7,217	18	7,722	3	2	144	1	3	1	1	1	2
19	12	3,287	8,089	1,083	7,997	551	8,027	209	7,618	19	8,151	3	2	152	1	3	1	1	1	2
20	16	3,460	8,515	1,140	8,418	580	8,449	220	8,019	20	8,580	4	2	160	1	3	1	1	1	2
21	16	3,633	8,941	1,197	8,839	609	8,872	231	8,420	21	9,009	4	2	168	1	3	1	1	1	2
22	16	3,806	9,367	1,254	9,260	638	9,294	242	8,821	22	9,437	4	2	176	1	4	1	2	1	2
23	16	3,979	9,792	1,311	9,680	667	9,717	253	9,222	23	9,866	4	2	184	1	4	1	2	1	2
24	16	4,152	10,218	1,368	10,101	696	10,139	264	9,623	24	10,295	4	2	192	1	4	1	2	1	2
25	16	4,325	10,644	1,425	10,522	725	10,562	275	10,024	25	10,724	4	2	200	1	4	1	2	1	2
26	16	4,498	11,070	1,482	10,943	754	10,984	286	10,425	26	11,153	4	2	208	1	4	1	2	1	2
27	16	4,671	11,495	1,539	11,364	783	11,407	297	10,826	27	11,582	4	2	216	1	4	1	2	1	2
28	16	4,844	11,921	1,596	11,785	812	11,829	308	11,227	28	12,011	4	2	224	1	4	1	2	1	2

*1: In addition to the options listed in above table as necessary parts, the Additional Shared Memory Module [Note 1] are required.

Note 1: The number of the Shard Memory Module (DKC-F510I-S1G/S1GR/S2GR) necessary is refer to table 7.2-1 to 7.2-6.
Please note that location of shared memory varies according to the purpose such as additional cache installation or additional LDEV installation.

*2: The number of HDD options is only the number of data disks, and the number of spare disks is not included.
The relation between disk capacity and the number of required options differs according to the number of spare disk installing.

*3: OPEN-V is volume based on CVS. A customer can set up the volume capacity of OPEN-V freely from 48.1MB among almost 1 RAID group capacity. This volume capacity is the default value and is nearly equals to RAID group capacity.

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(2) Mainframe Storage Capacity Upgrade Table (72GB 15Kmin^{-1} HDD)

RAID group	Cache (GB)	Storage Capacity (GB)										Number of necessary options								
		Emulation type										Cache DIMM		DKU-F505I-72KS/72KSR (*2)	DKC-F515I-					RACK
		3380-3 (2.377GB)		3390-3/3R (2.838GB)		3390-9 (8.514GB)		3390-L (27.844GB)		3390-M (55.689GB)		DKC-F510I-								
												C4G/ C4GR	C8GR		MIX2R/ MIX4R	B2R	UC0R	UC1R	EXCR	
		VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap									
1	4	173	411	143	406	47	400	14	390	7	390	1	1	8	1	1	1			1
2	8	346	822	286	812	94	800	28	780	14	780	2	1	16	1	1	1			1
3	8	519	1,234	429	1,218	141	1,200	42	1,169	21	1,169	2	1	24	1	1	1			1
4	8	692	1,645	572	1,623	188	1,601	56	1,559	28	1,559	2	1	32	1	1	1			1
5	8	865	2,056	715	2,029	235	2,001	70	1,949	35	1,949	2	1	40	1	1	1			1
6	8	1,038	2,467	858	2,435	282	2,401	84	2,339	42	2,339	2	1	48	1	1	1			1
7	12	1,211	2,879	1,001	2,841	329	2,801	98	2,729	49	2,729	3	2	56	1	1	1			1
8	12	1,384	3,290	1,144	3,247	376	3,201	112	3,119	56	3,119	3	2	64	1	2	1	1		1
9	12	1,557	3,701	1,287	3,653	423	3,601	126	3,508	63	3,508	3	2	72	1	2	1	1		1
10	12	1,730	4,112	1,430	4,058	470	4,002	140	3,898	70	3,898	3	2	80	1	2	1	1		1
11	12	1,903	4,523	1,573	4,464	517	4,402	154	4,288	77	4,288	3	2	88	1	2	1	1		1
12	12	2,076	4,935	1,716	4,870	564	4,802	168	4,678	84	4,678	3	2	96	1	2	1	1		1
13	12	2,249	5,346	1,859	5,276	611	5,202	182	5,068	91	5,068	3	2	104	1	2	1	1		1
14	12	2,422	5,757	2,002	5,682	658	5,602	196	5,457	98	5,458	3	2	112	1	2	1	1		1
15	12	2,595	6,168	2,145	6,088	705	6,002	210	5,847	105	5,847	3	2	120	1	2	1	1	1	2
16	12	2,768	6,580	2,288	6,493	752	6,403	224	6,237	112	6,237	3	2	128	1	3	1	1	1	2
17	12	2,941	6,991	2,431	6,899	799	6,803	238	6,627	119	6,627	3	2	136	1	3	1	1	1	2
18	12	3,114	7,402	2,574	7,305	846	7,203	252	7,017	126	7,017	3	2	144	1	3	1	1	1	2
19	12	3,287	7,813	2,717	7,711	893	7,603	266	7,407	133	7,407	3	2	152	1	3	1	1	1	2
20	12	3,460	8,224	2,860	8,117	940	8,003	280	7,796	140	7,796	3	2	160	1	3	1	1	1	2
21	16	3,633	8,636	3,003	8,523	987	8,403	294	8,186	147	8,186	4	2	168	1	3	1	1	1	2
22	16	3,806	9,047	3,146	8,928	1,034	8,803	308	8,576	154	8,576	4	2	176	1	4	1	2	1	2
23	16	3,979	9,458	3,289	9,334	1,081	9,204	322	8,966	161	8,966	4	2	184	1	4	1	2	1	2
24	16	4,152	9,869	3,432	9,740	1,128	9,604	336	9,356	168	9,356	4	2	192	1	4	1	2	1	2
25	16	4,325	10,281	3,575	10,146	1,175	10,004	350	9,745	175	9,746	4	2	200	1	4	1	2	1	2
26	16	4,498	10,692	3,718	10,552	1,222	10,404	364	10,135	182	10,135	4	2	208	1	4	1	2	1	2
27	16	4,671	11,103	3,861	10,958	1,269	10,804	378	10,525	189	10,525	4	2	216	1	4	1	2	1	2
28	16	4,844	11,514	4,004	11,363	1,316	11,204	392	10,915	196	10,915	4	2	224	1	4	1	2	1	2

*1: In addition to the options listed in above table as necessary parts, the Additional Shared Memory Module [Note 1] are required.

Note 1: The number of the Shard Memory Module (DKC-F510I-S1G/S1GR/S2GR) necessary is refer to table 7.2-1 to 7.2-6.
Please note that location of shared memory varies according to the purpose such as additional cache installation or additional LDEV installation.

*2: The number of HDD options is only the number of data disks, and the number of spare disks is not included.
The relation between disk capacity and the number of required options differs according to the number of spare disk installing.

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(3) Open System Storage Capacity Upgrade Table (146GB 10Kmin^{-1}/15Kmin^{-1} HDD)

RAID group	Cache (GB)	Storage Capacity (GB)										Number of necessary options								
		Emulation type										Cache DIMM		DKU-F505I-146JS/146JSR /146KSR (*2)	DKC-F515I-					RACK
		OPEN-3 (2.461GB)		OPEN-9 (7.384GB)		OPEN-E (14.568GB)		OPEN-L (36.450GB)		OPEN-V (*3) (862.587GB)		DKC-F510I-								
		VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	C4G/ C4GR	C8GR		MIX2R/ MIX4R	B2R	UC0R	UC1R	EXCR	
1	8	349	859	116	857	59	860	23	838	1	863	2	1	8	1	1	1			1
2	8	698	1,718	232	1,713	118	1,719	46	1,677	2	1,725	2	1	16	1	1	1			1
3	8	1,047	2,577	348	2,570	177	2,579	69	2,515	3	2,588	2	1	24	1	1	1			1
4	12	1,396	3,436	464	3,426	236	3,438	92	3,353	4	3,450	3	2	32	1	1	1			1
5	12	1,745	4,294	580	4,283	295	4,298	115	4,192	5	4,313	3	2	40	1	1	1			1
6	12	2,094	5,153	696	5,139	354	5,157	138	5,030	6	5,176	3	2	48	1	1	1			1
7	12	2,443	6,012	812	5,996	413	6,017	161	5,868	7	6,038	3	2	56	1	1	1			1
8	12	2,792	6,871	928	6,852	472	6,876	184	6,707	8	6,901	3	2	64	1	2	1	1		1
9	12	3,141	7,730	1,044	7,709	531	7,736	207	7,545	9	7,763	3	2	72	1	2	1	1		1
10	16	3,490	8,589	1,160	8,565	590	8,595	230	8,384	10	8,626	4	2	80	1	2	1	1		1
11	16	3,839	9,448	1,276	9,422	649	9,455	253	9,222	11	9,488	4	2	88	1	2	1	1		1
12	16	4,188	10,307	1,392	10,279	708	10,314	276	10,060	12	10,351	4	2	96	1	2	1	1		1
13	16	4,537	11,166	1,508	11,135	767	11,174	299	10,899	13	11,214	4	2	104	1	2	1	1		1
14	16	4,886	12,024	1,624	11,992	826	12,033	322	11,737	14	12,076	4	2	112	1	2	1	1		1
15	16	5,235	12,883	1,740	12,848	885	12,893	345	12,575	15	12,939	4	2	120	1	3	1	1	1	2
16	16	5,584	13,742	1,856	13,705	944	13,752	368	13,414	16	13,801	4	2	128	1	3	1	1	1	2
17	20	5,933	14,601	1,972	14,561	1,003	14,612	391	14,252	17	14,664	5	3	136	1	3	1	1	1	2
18	20	6,282	15,460	2,088	15,418	1,062	15,471	414	15,090	18	15,527	5	3	144	1	3	1	1	1	2
19	20	6,631	16,319	2,204	16,274	1,121	16,331	437	15,929	19	16,389	5	3	152	1	3	1	1	1	2
20	20	6,980	17,178	2,320	17,131	1,180	17,190	460	16,767	20	17,252	5	3	160	1	3	1	1	1	2
21	20	7,329	18,037	2,436	17,987	1,239	18,050	483	17,605	21	18,114	5	3	168	1	3	1	1	1	2
22	20	7,678	18,896	2,552	18,844	1,298	18,909	506	18,444	22	18,977	5	3	176	1	4	1	2	1	2
23	24	8,027	19,754	2,668	19,701	1,357	19,769	529	19,282	23	19,840	6	3	184	1	4	1	2	1	2
24	24	8,376	20,613	2,784	20,557	1,416	20,628	552	20,120	24	20,702	6	3	192	1	4	1	2	1	2
25	24	8,725	21,472	2,900	21,414	1,475	21,488	575	20,959	25	21,565	6	3	200	1	4	1	2	1	2
26	24	9,074	22,331	3,016	22,270	1,534	22,347	598	21,797	26	22,427	6	3	208	1	4	1	2	1	2
27	24	9,423	23,190	3,132	23,127	1,593	23,207	621	22,635	27	23,290	6	3	216	1	4	1	2	1	2
28	24	9,772	24,049	3,248	23,983	1,652	24,066	644	23,474	28	24,152	6	3	224	1	4	1	2	1	2

*1: In addition to the options listed in above table as necessary parts, the Additional Shared Memory Module [Note 1] are required.

Note 1: The number of the Shard Memory Module (DKC-F510I-S1G/S1GR/S2GR) necessary is refer to table 7.2-1 to 7.2-6.
Please note that location of shared memory varies according to the purpose such as additional cache installation or additional LDEV installation.

*2: The number of HDD options is only the number of data disks, and the number of spare disks is not included.
The relation between disk capacity and the number of required options differs according to the number of spare disk installing.

*3: OPEN-V is volume based on CVS. A customer can set up the volume capacity of OPEN-V freely from 48.1MB among almost 1 RAID group capacity. This volume capacity is the default value and is nearly equals to RAID group capacity.

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(4) Mainframe Storage Capacity Upgrade Table (146GB 10Kmin^{-1}/15Kmin^{-1} HDD)

RAID group	Cache (GB)	Storage Capacity (GB)										Number of necessary options								
		Emulation type										Cache DIMM		DKU-F505I-146JS/146JSR /146KSR (*2)	DKC-F515I-					RACK
		3380-3 (2.377GB)		3390-3/3R (2.838GB)		3390-9 (8.514GB)		3390-L (27.844GB)		3390-M (55.689GB)		DKC-F510I-								
												C4G/ C4GR	C8GR		MIX2R/ MIX4R	B2R	UC0R	UC1R	EXCR	
		VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap									
1	8	349	830	289	820	96	817	29	807	14	780	2	1	8	1	1	1			1
2	8	698	1,659	578	1,640	192	1,635	58	1,615	28	1,559	2	1	16	1	1	1			1
3	8	1,047	2,489	867	2,461	288	2,452	87	2,422	42	2,339	2	1	24	1	1	1			1
4	12	1,396	3,318	1,156	3,281	384	3,269	116	3,230	56	3,119	3	2	32	1	1	1			1
5	12	1,745	4,148	1,445	4,101	480	4,087	145	4,037	70	3,898	3	2	40	1	1	1			1
6	12	2,094	4,977	1,734	4,921	576	4,904	174	4,845	84	4,678	3	2	48	1	1	1			1
7	12	2,443	5,807	2,023	5,741	672	5,721	203	5,652	98	5,458	3	2	56	1	1	1			1
8	12	2,792	6,637	2,312	6,561	768	6,539	232	6,460	112	6,237	3	2	64	1	2	1	1		1
9	12	3,141	7,466	2,601	7,382	864	7,356	261	7,267	126	7,017	3	2	72	1	2	1	1		1
10	12	3,490	8,296	2,890	8,202	960	8,173	290	8,075	140	7,796	3	2	80	1	2	1	1		1
11	16	3,839	9,125	3,179	9,022	1,056	8,991	319	8,882	154	8,576	4	2	88	1	2	1	1		1
12	16	4,188	9,955	3,468	9,842	1,152	9,808	348	9,690	168	9,356	4	2	96	1	2	1	1		1
13	16	4,537	10,784	3,757	10,662	1,248	10,625	377	10,497	182	10,135	4	2	104	1	2	1	1		1
14	16	4,886	11,614	4,046	11,483	1,344	11,443	406	11,305	196	10,915	4	2	112	1	2	1	1		1
15	16	5,235	12,444	4,335	12,303	1,440	12,260	435	12,112	210	11,695	4	2	120	1	3	1	1	1	2
16	16	5,584	13,273	4,624	13,123	1,536	13,078	464	12,920	224	12,474	4	2	128	1	3	1	1	1	2
17	20	5,933	14,103	4,913	13,943	1,632	13,895	493	13,727	238	13,254	5	3	136	1	3	1	1	1	2
18	20	6,282	14,932	5,202	14,763	1,728	14,712	522	14,535	252	14,034	5	3	144	1	3	1	1	1	2
19	20	6,631	15,762	5,491	15,583	1,824	15,530	551	15,342	266	14,813	5	3	152	1	3	1	1	1	2
20	20	6,980	16,591	5,780	16,404	1,920	16,347	580	16,150	280	15,593	5	3	160	1	3	1	1	1	2
21	20	7,329	17,421	6,069	17,224	2,016	17,164	609	16,957	294	16,373	5	3	168	1	3	1	1	1	2
22	20	7,678	18,251	6,358	18,044	2,112	17,982	638	17,764	308	17,152	5	3	176	1	4	1	2	1	2
23	20	8,027	19,080	6,647	18,864	2,208	18,799	667	18,572	322	17,932	5	3	184	1	4	1	2	1	2
24	24	8,376	19,910	6,936	19,684	2,304	19,616	696	19,379	336	18,712	6	3	192	1	4	1	2	1	2
25	24	8,725	20,739	7,225	20,505	2,400	20,434	725	20,187	350	19,491	6	3	200	1	4	1	2	1	2
26	24	9,074	21,569	7,514	21,325	2,496	21,251	754	20,994	364	20,271	6	3	208	1	4	1	2	1	2
27	24	9,423	22,398	7,803	22,145	2,592	22,068	783	21,802	378	21,050	6	3	216	1	4	1	2	1	2
28	24	9,772	23,228	8,092	22,965	2,688	22,886	812	22,609	392	21,830	6	3	224	1	4	1	2	1	2

*1: In addition to the options listed in above table as necessary parts, the Additional Shared Memory Module [Note 1] are required.

Note 1: The number of the Shard Memory Module (DKC-F510I-S1G/S1GR/S2GR) necessary is refer to table 7.2-1 to 7.2-6.
Please note that location of shared memory varies according to the purpose such as additional cache installation or additional LDEV installation.

*2: The number of HDD options is only the number of data disks, and the number of spare disks is not included.
The relation between disk capacity and the number of required options differs according to the number of spare disk installing.

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(5) Open System Storage Capacity Upgrade Table (300GB 10Kmin^{-1}/15kmin^{-1} HDD)

RAID group	Cache (GB)	Storage Capacity (GB)										Number of necessary options								
		Emulation type										Cache DIMM		DKU-F505I-300JSR/300KSR (*2)	DKC-F515I-					RACK
		OPEN-3 (2.461GB)		OPEN-9 (7.384GB)		OPEN-E (14.568GB)		OPEN-L (36.450GB)		OPEN-V (*3) (1729.178GB)		DKC-F510I-								
		VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	C4G/C4GR	C8GR		MIX2R/MIX4R	B2R	UC0R	UC1R	EXCR	
1	8	500	1,231	233	1,720	118	1,719	47	1,713	1	1,729	2	1	8	1	1	1			1
2	12	1,000	2,461	466	3,441	236	3,438	94	3,426	2	3,458	3	2	16	1	1	1			1
3	12	1,500	3,692	699	5,161	354	5,157	141	5,139	3	5,188	3	2	24	1	1	1			1
4	12	2,000	4,922	932	6,882	472	6,876	188	6,853	4	6,917	3	2	32	1	1	1			1
5	16	2,500	6,153	1,165	8,602	590	8,595	235	8,566	5	8,646	4	2	40	1	1	1			1
6	16	3,000	7,383	1,398	10,323	708	10,314	282	10,279	6	10,375	4	2	48	1	1	1			1
7	16	3,500	8,614	1,631	12,043	826	12,033	329	11,992	7	12,104	4	2	56	1	1	1			1
8	16	4,000	9,844	1,864	13,764	944	13,752	376	13,705	8	13,833	4	2	64	1	2	1	1		1
9	20	4,500	11,075	2,097	15,484	1,062	15,471	423	15,418	9	15,563	5	3	72	1	2	1	1		1
10	20	5,000	12,305	2,330	17,205	1,180	17,190	470	17,132	10	17,292	5	3	80	1	2	1	1		1
11	20	5,500	13,536	2,563	18,925	1,298	18,909	517	18,845	11	19,021	5	3	88	1	2	1	1		1
12	24	6,000	14,766	2,796	20,646	1,416	20,628	564	20,558	12	20,750	6	3	96	1	2	1	1		1
13	24	6,500	15,997	3,029	22,366	1,534	22,347	611	22,271	13	22,479	6	3	104	1	2	1	1		1
14	24	7,000	17,227	3,262	24,087	1,652	24,066	658	23,984	14	24,208	6	3	112	1	2	1	1		1
15	24	7,500	18,458	3,495	25,807	1,770	25,785	705	25,697	15	25,938	6	3	120	1	3	1	1	1	2
16	24	8,000	19,688	3,728	27,528	1,888	27,504	752	27,410	16	27,667	6	3	128	1	3	1	1	1	2
17	24	8,500	20,919	3,961	29,248	2,006	29,223	799	29,124	17	29,396	6	3	136	1	3	1	1	1	2
18	24	9,000	22,149	4,194	30,968	2,124	30,942	846	30,837	18	31,125	6	3	144	1	3	1	1	1	2
19	24	9,500	23,380	4,427	32,689	2,242	32,661	893	32,550	19	32,854	6	3	152	1	3	1	1	1	2
20	24	10,000	24,610	4,660	34,409	2,360	34,380	940	34,263	20	34,584	6	3	160	1	3	1	1	1	2
21	24	10,500	25,841	4,893	36,130	2,478	36,100	987	35,976	21	36,313	6	3	168	1	3	1	1	1	2
22	24	11,000	27,071	5,126	37,850	2,596	37,819	1,034	37,689	22	38,042	6	3	176	1	4	1	2	1	2
23	24	11,500	28,302	5,359	39,571	2,714	39,538	1,081	39,402	23	39,771	6	3	184	1	4	1	2	1	2
24	24	12,000	29,532	5,592	41,291	2,832	41,257	1,128	41,116	24	41,500	6	3	192	1	4	1	2	1	2
25	24	12,500	30,763	5,825	43,012	2,950	42,976	1,175	42,829	25	43,229	6	3	200	1	4	1	2	1	2
26	24	13,000	31,993	6,058	44,732	3,068	44,695	1,222	44,542	26	44,959	6	3	208	1	4	1	2	1	2
27	24	13,500	33,224	6,291	46,453	3,186	46,414	1,269	46,255	27	46,688	6	3	216	1	4	1	2	1	2
28	24	14,000	34,454	6,524	48,173	3,304	48,133	1,316	47,968	28	48,417	6	3	224	1	4	1	2	1	2

*1: In addition to the options listed in above table as necessary parts, the Additional Shared Memory Module [Note 1] are required.

Note 1: The number of the Shard Memory Module (DKC-F510I-S1G/S1GR/S2GR) necessary is refer to table 7.2-1 to 7.2-6.
Please note that location of shared memory varies according to the purpose such as additional cache installation or additional LDEV installation.

*2: The number of HDD options is only the number of data disks, and the number of spare disks is not included.
The relation between disk capacity and the number of required options differs according to the number of spare disk installing.

*3: OPEN-V is volume based on CVS. A customer can set up the volume capacity of OPEN-V freely from 48.1MB among almost 1 RAID group capacity. This volume capacity is the default value and is nearly equals to RAID group capacity.

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(6) Mainframe Storage Capacity Upgrade Table (300GB 10Kmin^{-1}/15kmin^{-1} HDD)

RAID group	Cache (GB)	Storage Capacity (GB)										Number of necessary options								
		Emulation type										Cache DIMM		DKU-F505I-300JSR/ 300KSR (*2)	DKC-F515I-					RACK
		3380-3 (2.377GB)		3390-3/3R (2.838GB)		3390-9 (8.514GB)		3390-L (27.844GB)		3390-M (55.689GB)		DKC-F510I-								
												C4G/ C4GR	C8GR		MIX2R/ MIX4R	B2R	UC0R	UC1R	EXCR	
		VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap									
1	8	500	1,189	500	1,419	193	1,643	59	1,643	29	1,615	2	1	8	1	1	1			1
2	12	1,000	2,377	1,000	2,838	386	3,286	118	3,286	58	3,230	3	2	16	1	1	1			1
3	12	1,500	3,566	1,500	4,257	579	4,930	177	4,928	87	4,845	3	2	24	1	1	1			1
4	12	2,000	4,754	2,000	5,676	772	6,573	236	6,571	116	6,460	3	2	32	1	1	1			1
5	12	2,500	5,943	2,500	7,095	965	8,216	295	8,214	145	8,075	3	2	40	1	1	1			1
6	16	3,000	7,131	3,000	8,514	1,158	9,859	354	9,857	174	9,690	4	2	48	1	1	1			1
7	16	3,500	8,320	3,500	9,933	1,351	11,502	413	11,500	203	11,305	4	2	56	1	1	1			1
8	16	4,000	9,508	4,000	11,352	1,544	13,146	472	13,142	232	12,920	4	2	64	1	2	1	1		1
9	20	4,500	10,697	4,500	12,771	1,737	14,789	531	14,785	261	14,535	5	3	72	1	2	1	1		1
10	20	5,000	11,885	5,000	14,190	1,930	16,432	590	16,428	290	16,150	5	3	80	1	2	1	1		1
11	20	5,500	13,074	5,500	15,609	2,123	18,075	649	18,071	319	17,765	5	3	88	1	2	1	1		1
12	24	6,000	14,262	6,000	17,028	2,316	19,718	708	19,714	348	19,380	6	3	96	1	2	1	1		1
13	24	6,500	15,451	6,500	18,447	2,509	21,362	767	21,356	377	20,995	6	3	104	1	2	1	1		1
14	24	7,000	16,639	7,000	19,866	2,702	23,005	826	22,999	406	22,610	6	3	112	1	2	1	1		1
15	24	7,500	17,828	7,500	21,285	2,895	24,648	885	24,642	435	24,225	6	3	120	1	3	1	1	1	2
16	24	8,000	19,016	8,000	22,704	3,088	26,291	944	26,285	464	25,840	6	3	128	1	3	1	1	1	2
17	24	8,500	20,205	8,500	24,123	3,281	27,934	1,003	27,928	493	27,455	6	3	136	1	3	1	1	1	2
18	24	9,000	21,393	9,000	25,542	3,474	29,578	1,062	29,570	522	29,070	6	3	144	1	3	1	1	1	2
19	24	9,500	22,582	9,500	26,961	3,667	31,221	1,121	31,213	551	30,685	6	3	152	1	3	1	1	1	2
20	24	10,000	23,770	10,000	28,380	3,860	32,864	1,180	32,856	580	32,300	6	3	160	1	3	1	1	1	2
21	24	10,500	24,959	10,500	29,799	4,053	34,507	1,239	34,499	609	33,915	6	3	168	1	3	1	1	1	2
22	24	11,000	26,147	11,000	31,218	4,246	36,150	1,298	36,142	638	35,530	6	3	176	1	4	1	2	1	2
23	24	11,500	27,336	11,500	32,637	4,439	37,794	1,357	37,784	667	37,145	6	3	184	1	4	1	2	1	2
24	24	12,000	28,524	12,000	34,056	4,632	39,437	1,416	39,427	696	38,760	6	3	192	1	4	1	2	1	2
25	24	12,500	29,713	12,500	35,475	4,825	41,080	1,475	41,070	725	40,375	6	3	200	1	4	1	2	1	2
26	24	13,000	30,901	13,000	36,894	5,018	42,723	1,534	42,713	754	41,990	6	3	208	1	4	1	2	1	2
27	24	13,500	32,090	13,500	38,313	5,211	44,366	1,593	44,355	783	43,604	6	3	216	1	4	1	2	1	2
28	24	14,000	33,278	14,000	39,732	5,404	46,010	1,652	45,998	812	45,219	6	3	224	1	4	1	2	1	2

*1: In addition to the options listed in above table as necessary parts, the Additional Shared Memory Module [Note 1] are required.

Note 1: The number of the Shard Memory Module (DKC-F510I-S1G/S1GR/S2GR) necessary is refer to table 7.2-1 to 7.2-6.
Please note that location of shared memory varies according to the purpose such as additional cache installation or additional LDEV installation.

*2: The number of HDD options is only the number of data disks, and the number of spare disks is not included.
The relation between disk capacity and the number of required options differs according to the number of spare disk installing.

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(7) Open System Storage Capacity Upgrade Table (400GB 10Kmin^{-1} HDD)

RAID group	Cache (GB)	Storage Capacity (GB)										Number of necessary options								
		Emulation Type										Cache DIMM DKC-F510I-		DKU-F505I-400JSR (*2)	DKC-F515I-					RACK
		OPEN-3 (2.461GB)		OPEN-9 (7.384GB)		OPEN-E (14.567GB)		OPEN-L (36.450GB)		OPEN-V (*3) (2363.0GB)		C4G/ C4GR	C8GR		MIX2R/ MIX4R	B2R	UC0R	UC1R	EXC0R	
		VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap									
1	8	500	1,231	319	2,355	162	2,360	64	2,333	1	2,363	2	1	8	1	1	1			1
2	12	1,000	2,461	638	4,711	324	4,720	128	4,666	2	4,726	3	2	16	1	1	1			1
3	12	1,500	3,692	957	7,066	486	7,080	192	6,998	3	7,089	3	2	24	1	1	1			1
4	16	2,000	4,922	1,276	9,422	648	9,439	256	9,331	4	9,452	4	2	32	1	1	1			1
5	16	2,500	6,153	1,595	11,777	810	11,799	320	11,664	5	11,815	4	2	40	1	1	1			1
6	16	3,000	7,383	1,914	14,133	972	14,159	384	13,997	6	14,178	4	2	48	1	1	1			1
7	20	3,500	8,614	2,233	16,488	1,134	16,519	448	16,330	7	16,541	5	3	56	1	1	1			1
8	20	4,000	9,844	2,552	18,844	1,296	18,879	512	18,662	8	18,904	5	3	64	1	2	1	1		1
9	24	4,500	11,075	2,871	21,199	1,458	21,239	576	20,995	9	21,267	6	3	72	1	2	1	1		1
10	24	5,000	12,305	3,190	23,555	1,620	23,599	640	23,328	10	23,630	6	3	80	1	2	1	1		1
11	24	5,500	13,536	3,509	25,910	1,782	25,958	704	25,661	11	25,993	6	3	88	1	2	1	1		1
12	24	6,000	14,766	3,828	28,266	1,944	28,318	768	27,994	12	28,356	6	3	96	1	2	1	1		1
13	24	6,500	15,997	4,147	30,621	2,106	30,678	832	30,326	13	30,719	6	3	104	1	2	1	1		1
14	24	7,000	17,227	4,466	32,977	2,268	33,038	896	32,659	14	33,082	6	3	112	1	2	1	1		1
15	24	7,500	18,458	4,785	35,332	2,430	35,398	960	34,992	15	35,445	6	3	120	1	3	1	1	1	2
16	24	8,000	19,688	5,104	37,688	2,592	37,758	1,024	37,325	16	37,808	6	3	128	1	3	1	1	1	2
17	24	8,500	20,919	5,423	40,043	2,754	40,118	1,088	39,658	17	40,171	6	3	136	1	3	1	1	1	2
18	24	9,000	22,149	5,742	42,399	2,916	42,477	1,152	41,990	18	42,534	6	3	144	1	3	1	1	1	2
19	24	9,500	23,380	6,061	44,754	3,078	44,837	1,216	44,323	19	44,897	6	3	152	1	3	1	1	1	2
20	24	10,000	24,610	6,380	47,110	3,240	47,197	1,280	46,656	20	47,260	6	3	160	1	3	1	1	1	2
21	24	10,500	25,841	6,699	49,465	3,402	49,557	1,344	48,989	21	49,623	6	3	168	1	3	1	1	1	2
22	24	11,000	27,071	7,018	51,821	3,564	51,917	1,408	51,322	22	51,986	6	3	176	1	4	1	2	1	2
23	24	11,500	28,302	7,337	54,176	3,726	54,277	1,472	53,654	23	54,349	6	3	184	1	4	1	2	1	2
24	24	12,000	29,532	7,656	56,532	3,888	56,636	1,536	55,987	24	56,712	6	3	192	1	4	1	2	1	2
25	24	12,500	30,763	7,975	58,887	4,050	58,996	1,600	58,320	25	59,075	6	3	200	1	4	1	2	1	2
26	24	13,000	31,993	8,294	61,243	4,212	61,356	1,664	60,653	26	61,438	6	3	208	1	4	1	2	1	2
27	24	13,500	33,224	8,613	63,598	4,374	63,716	1,728	62,986	27	63,801	6	3	216	1	4	1	2	1	2
28	24	14,000	34,454	8,932	65,954	4,536	66,076	1,792	65,318	28	66,164	6	3	224	1	4	1	2	1	2

*1: In addition to the options listed in above table as necessary parts, the Additional Shared Memory Module [Note 1] are required.

Note 1: The number of the Shard Memory Module (DKC-F510I-S1G/S1GR/S2GR) necessary is refer to table 7.2-1 to 7.2-6.
Please note that location of shared memory varies according to the purpose such as additional cache installation or additional LDEV installation.

*2: The number of HDD options is only the number of data disks, and the number of spare disks is not included.
The relation between disk capacity and the number of required options differs according to the number of spare disk installing.

*3: OPEN-V is volume based on CVS. A customer can set up the volume capacity of OPEN-V freely from 48.1MB among almost 1 RAID group capacity. This volume capacity is the default value and is nearly equals to RAID group capacity.

*4: This table was created, presupposing that it installs always a spare disk.

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(8) Mainframe Storage Capacity Upgrade Table (400GB 10Kmin^{-1} HDD)

RAID group	Cache (GB)	Storage Capacity (GB)										Number of necessary options								
		Emulation Type										Cache DIMM DKC-F510I-		DKU-F505I-400JSR (*2)	DKC-F515I-					RACK
		3380-3 (2.377GB)		3390-3/3R (2.838GB)		3390-9 (8.514GB)		3390-L (27.844GB)		3390-M (55.689GB)		C4G/ C4GR	C8GR		MIX2R/ MIX4R	B2R	UC0R	UC1R	EXC0R	
		VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap									
1	8	500	1,189	500	1,419	264	2,248	80	2,228	40	2,228	2	1	8	1	1	1			1
2	12	1,000	2,377	1,000	2,838	528	4,495	160	4,455	80	4,455	3	2	16	1	1	1			1
3	12	1,500	3,566	1,500	4,257	792	6,743	240	6,683	120	6,683	3	2	24	1	1	1			1
4	16	2,000	4,754	2,000	5,676	1,056	8,991	320	8,910	160	8,910	4	2	32	1	1	1			1
5	16	2,500	5,943	2,500	7,095	1,320	11,238	400	11,138	200	11,138	4	2	40	1	1	1			1
6	16	3,000	7,131	3,000	8,514	1,584	13,486	480	13,365	240	13,365	4	2	48	1	1	1			1
7	20	3,500	8,320	3,500	9,933	1,848	15,734	560	15,593	280	15,593	5	3	56	1	1	1			1
8	20	4,000	9,508	4,000	11,352	2,112	17,982	640	17,820	320	17,820	5	3	64	1	2	1	1		1
9	24	4,500	10,697	4,500	12,771	2,376	20,229	720	20,048	360	20,048	6	3	72	1	2	1	1		1
10	24	5,000	11,885	5,000	14,190	2,640	22,477	800	22,275	400	22,276	6	3	80	1	2	1	1		1
11	24	5,500	13,074	5,500	15,609	2,904	24,725	880	24,503	440	24,503	6	3	88	1	2	1	1		1
12	24	6,000	14,262	6,000	17,028	3,168	26,972	960	26,730	480	26,731	6	3	96	1	2	1	1		1
13	24	6,500	15,451	6,500	18,447	3,432	29,220	1,040	28,958	520	28,958	6	3	104	1	2	1	1		1
14	24	7,000	16,639	7,000	19,866	3,696	31,468	1,120	31,185	560	31,186	6	3	112	1	2	1	1		1
15	24	7,500	17,828	7,500	21,285	3,960	33,715	1,200	33,413	600	33,413	6	3	120	1	3	1	1	1	2
16	24	8,000	19,016	8,000	22,704	4,224	35,963	1,280	35,640	640	35,641	6	3	128	1	3	1	1	1	2
17	24	8,500	20,205	8,500	24,123	4,488	38,211	1,360	37,868	680	37,869	6	3	136	1	3	1	1	1	2
18	24	9,000	21,393	9,000	25,542	4,752	40,459	1,440	40,095	720	40,096	6	3	144	1	3	1	1	1	2
19	24	9,500	22,582	9,500	26,961	5,016	42,706	1,520	42,323	760	42,324	6	3	152	1	3	1	1	1	2
20	24	10,000	23,770	10,000	28,380	5,280	44,954	1,600	44,550	800	44,551	6	3	160	1	3	1	1	1	2
21	24	10,500	24,959	10,500	29,799	5,544	47,202	1,680	46,778	840	46,779	6	3	168	1	3	1	1	1	2
22	24	11,000	26,147	11,000	31,218	5,808	49,449	1,760	49,005	880	49,006	6	3	176	1	4	1	2	1	2
23	24	11,500	27,336	11,500	32,637	6,072	51,697	1,840	51,233	920	51,234	6	3	184	1	4	1	2	1	2
24	24	12,000	28,524	12,000	34,056	6,336	53,945	1,920	53,460	960	53,461	6	3	192	1	4	1	2	1	2
25	24	12,500	29,713	12,500	35,475	6,600	56,192	2,000	55,688	1,000	55,689	6	3	200	1	4	1	2	1	2
26	24	13,000	30,901	13,000	36,894	6,864	58,440	2,080	57,916	1,040	57,917	6	3	208	1	4	1	2	1	2
27	24	13,500	32,090	13,500	38,313	7,128	60,688	2,160	60,143	1,080	60,144	6	3	216	1	4	1	2	1	2
28	24	14,000	33,278	14,000	39,732	7,392	62,935	2,240	62,371	1,120	62,372	6	3	224	1	4	1	2	1	2

*1: In addition to the options listed in above table as necessary parts, the Additional Shared Memory Module [Note 1] are required.

Note 1: The number of the Shard Memory Module (DKC-F510I-S1G/S1GR/S2GR) necessary is refer to table 7.2-1 to 7.2-6.
Please note that location of shared memory varies according to the purpose such as additional cache installation or additional LDEV installation.

*2: The number of HDD options is only the number of data disks, and the number of spare disks is not included.
The relation between disk capacity and the number of required options differs according to the number of spare disk installing.

*3: This table was created, presupposing that it installs always a spare disk.

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7.3.4 Standard Configuration for RAID5 (7D+1P)

(1) Open System Storage Capacity Upgrade Table (72GB 15Kmin^{-1} HDD)

RAID group	Cache (GB)	Storage Capacity (GB)										Number of necessary options								
		Emulation type										Cache DIMM		DKU-F505I-72KS/72KSR (*2)	DKC-F515I-					RACK
		OPEN-3 (2.461GB)		OPEN-9 (7.384GB)		OPEN-E (14.568GB)		OPEN-L (36.450GB)		OPEN-V (*3) (500.473GB)		DKC-F510I-								
		VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	C4G/ C4GR	C8GR		MIX2R/ MIX4R	B2R	UC0R	UC1R	EXCR	
1	4	202	497	67	495	34	495	13	474	1	500	1	1	8	1	1	1			1
2	8	404	994	134	989	68	991	26	948	2	1,001	2	1	16	1	1	1			1
3	8	606	1,491	201	1,484	102	1,486	39	1,422	3	1,501	2	1	24	1	1	1			1
4	8	808	1,988	268	1,979	136	1,981	52	1,895	4	2,002	2	1	32	1	1	1			1
5	8	1,010	2,486	335	2,474	170	2,477	65	2,369	5	2,502	2	1	40	1	1	1			1
6	12	1,212	2,983	402	2,968	204	2,972	78	2,843	6	3,003	3	2	48	1	1	1			1
7	12	1,414	3,480	469	3,463	238	3,467	91	3,317	7	3,503	3	2	56	1	1	1			1
8	12	1,616	3,977	536	3,958	272	3,962	104	3,791	8	4,004	3	2	64	1	2	1	1		1
9	12	1,818	4,474	603	4,453	306	4,458	117	4,265	9	4,504	3	2	72	1	2	1	1		1
10	12	2,020	4,971	670	4,947	340	4,953	130	4,739	10	5,005	3	2	80	1	2	1	1		1
11	12	2,222	5,468	737	5,442	374	5,448	143	5,212	11	5,505	3	2	88	1	2	1	1		1
12	12	2,424	5,965	804	5,937	408	5,944	156	5,686	12	6,006	3	2	96	1	2	1	1		1
13	12	2,626	6,463	871	6,431	442	6,439	169	6,160	13	6,506	3	2	104	1	2	1	1		1
14	12	2,828	6,960	938	6,926	476	6,934	182	6,634	14	7,007	3	2	112	1	2	1	1		1
15	12	3,030	7,457	1,005	7,421	510	7,430	195	7,108	15	7,507	3	2	120	1	3	1	1	1	2
16	12	3,232	7,954	1,072	7,916	544	7,925	208	7,582	16	8,008	3	2	128	1	3	1	1	1	2
17	16	3,434	8,451	1,139	8,410	578	8,420	221	8,055	17	8,508	4	2	136	1	3	1	1	1	2
18	16	3,636	8,948	1,206	8,905	612	8,916	234	8,529	18	9,009	4	2	144	1	3	1	1	1	2
19	16	3,838	9,445	1,273	9,400	646	9,411	247	9,003	19	9,509	4	2	152	1	3	1	1	1	2
20	16	4,040	9,942	1,340	9,895	680	9,906	260	9,477	20	10,009	4	2	160	1	3	1	1	1	2
21	16	4,242	10,440	1,407	10,389	714	10,402	273	9,951	21	10,510	4	2	168	1	3	1	1	1	2
22	16	4,444	10,937	1,474	10,884	748	10,897	286	10,425	22	11,010	4	2	176	1	4	1	2	1	2
23	16	4,646	11,434	1,541	11,379	782	11,392	299	10,899	23	11,511	4	2	184	1	4	1	2	1	2
24	16	4,848	11,931	1,608	11,873	816	11,887	312	11,372	24	12,011	4	2	192	1	4	1	2	1	2
25	16	5,050	12,428	1,675	12,368	850	12,383	325	11,846	25	12,512	4	2	200	1	4	1	2	1	2
26	16	5,252	12,925	1,742	12,863	884	12,878	338	12,320	26	13,012	4	2	208	1	4	1	2	1	2
27	16	5,454	13,422	1,809	13,358	918	13,373	351	12,794	27	13,513	4	2	216	1	4	1	2	1	2
28	16	5,656	13,919	1,876	13,852	952	13,869	364	13,268	28	14,013	4	2	224	1	4	1	2	1	2

*1: In addition to the options listed in above table as necessary parts, the Additional Shared Memory Module [Note 1] are required.

Note 1: The number of the Shard Memory Module (DKC-F510I-S1G/S1GR/S2GR) necessary is refer to table 7.2-1 to 7.2-6.
Please note that location of shared memory varies according to the purpose such as additional cache installation or additional LDEV installation.

*2: The number of HDD options is only the number of data disks, and the number of spare disks is not included.
The relation between disk capacity and the number of required options differs according to the number of spare disk installing.

*3: OPEN-V is volume based on CVS. A customer can set up the volume capacity of OPEN-V freely from 48.1MB among almost 1 RAID group capacity. This volume capacity is the default value and is nearly equals to RAID group capacity.

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(2) Mainframe Storage Capacity Upgrade Table (72GB 15Kmin^{-1} HDD)

RAID group	Cache (GB)	Storage Capacity (GB)										Number of necessary options								
		Emulation type										Cache DIMM		DKU-F505I-72KS/72KSR (*2)	DKC-F515I-					RACK
		3380-3 (2.377GB)		3390-3/3R (2.838GB)		3390-9 (8.514GB)		3390-L (27.844GB)		3390-M (55.689GB)		DKC-F510I-								
												C4G/ C4GR	C8GR		MIX2R/ MIX4R	B2R	UC0R	UC1R	EXCR	
		VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap									
1	4	202	480	167	474	55	468	17	473	8	446	1	1	8	1	1	1			1
2	8	404	960	334	948	110	937	34	947	16	891	2	1	16	1	1	1			1
3	8	606	1,440	501	1,422	165	1,405	51	1,420	24	1,337	2	1	24	1	1	1			1
4	8	808	1,921	668	1,896	220	1,873	68	1,893	32	1,782	2	1	32	1	1	1			1
5	8	1,010	2,401	835	2,370	275	2,341	85	2,367	40	2,228	2	1	40	1	1	1			1
6	12	1,212	2,881	1,002	2,844	330	2,810	102	2,840	48	2,673	3	2	48	1	1	1			1
7	12	1,414	3,361	1,169	3,318	385	3,278	119	3,313	56	3,119	3	2	56	1	1	1			1
8	12	1,616	3,841	1,336	3,792	440	3,746	136	3,787	64	3,564	3	2	64	1	2	1	1		1
9	12	1,818	4,321	1,503	4,266	495	4,214	153	4,260	72	4,010	3	2	72	1	2	1	1		1
10	12	2,020	4,802	1,670	4,739	550	4,683	170	4,733	80	4,455	3	2	80	1	2	1	1		1
11	12	2,222	5,282	1,837	5,213	605	5,151	187	5,207	88	4,901	3	2	88	1	2	1	1		1
12	12	2,424	5,762	2,004	5,687	660	5,619	204	5,680	96	5,346	3	2	96	1	2	1	1		1
13	12	2,626	6,242	2,171	6,161	715	6,088	221	6,154	104	5,792	3	2	104	1	2	1	1		1
14	12	2,828	6,722	2,338	6,635	770	6,556	238	6,627	112	6,237	3	2	112	1	2	1	1		1
15	12	3,030	7,202	2,505	7,109	825	7,024	255	7,100	120	6,683	3	2	120	1	2	1	1	1	2
16	12	3,232	7,682	2,672	7,583	880	7,492	272	7,574	128	7,128	3	2	128	1	3	1	1	1	2
17	12	3,434	8,163	2,839	8,057	935	7,961	289	8,047	136	7,574	3	2	136	1	3	1	1	1	2
18	16	3,636	8,643	3,006	8,531	990	8,429	306	8,520	144	8,019	4	2	144	1	3	1	1	1	2
19	16	3,838	9,123	3,173	9,005	1,045	8,897	323	8,994	152	8,465	4	2	152	1	3	1	1	1	2
20	16	4,040	9,603	3,340	9,479	1,100	9,365	340	9,467	160	8,910	4	2	160	1	3	1	1	1	2
21	16	4,242	10,083	3,507	9,953	1,155	9,834	357	9,940	168	9,356	4	2	168	1	3	1	1	1	2
22	16	4,444	10,563	3,674	10,427	1,210	10,302	374	10,414	176	9,801	4	2	176	1	4	1	2	1	2
23	16	4,646	11,044	3,841	10,901	1,265	10,770	391	10,887	184	10,247	4	2	184	1	4	1	2	1	2
24	16	4,848	11,524	4,008	11,375	1,320	11,238	408	11,360	192	10,692	4	2	192	1	4	1	2	1	2
25	16	5,050	12,004	4,175	11,849	1,375	11,707	425	11,834	200	11,138	4	2	200	1	4	1	2	1	2
26	16	5,252	12,484	4,342	12,323	1,430	12,175	442	12,307	208	11,583	4	2	208	1	4	1	2	1	2
27	16	5,454	12,964	4,509	12,797	1,485	12,643	459	12,780	216	12,029	4	2	216	1	4	1	2	1	2
28	16	5,656	13,444	4,676	13,270	1,540	13,112	476	13,254	224	12,474	4	2	224	1	4	1	2	1	2

*1: In addition to the options listed in above table as necessary parts, the Additional Shared Memory Module [Note 1] are required.

Note 1: The number of the Shard Memory Module (DKC-F510I-S1G/S1GR/S2GR) necessary is refer to table 7.2-1 to 7.2-6.
Please note that location of shared memory varies according to the purpose such as additional cache installation or additional LDEV installation.

*2: The number of HDD options is only the number of data disks, and the number of spare disks is not included.
The relation between disk capacity and the number of required options differs according to the number of spare disk installing.

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(3) Open System Storage Capacity Upgrade Table (146GB 10Kmin^{-1}/15Kmin^{-1} HDD)

RAID group	Cache (GB)	Storage Capacity (GB)										Number of necessary options								
		Emulation type										Cache DIMM		DKU-F505I-146JS/146JSR /146KSR (*2)	DKC-F515I-					RACK
		OPEN-3 (2.461GB)		OPEN-9 (7.384GB)		OPEN-E (14.568GB)		OPEN-L (36.450GB)		OPEN-V (*3) (1006.352GB)		DKC-F510I-								
		VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	C4G/ C4GR	C8GR		MIX2R/ MIX4R	B2R	UC0R	UC1R	EXCR	
1	8	407	1,002	135	997	69	1,005	27	984	1	1,006	2	1	8	1	1	1			1
2	8	814	2,003	270	1,994	138	2,010	54	1,968	2	2,013	2	1	16	1	1	1			1
3	12	1,221	3,005	405	2,991	207	3,016	81	2,952	3	3,019	3	2	24	1	1	1			1
4	12	1,628	4,007	540	3,987	276	4,021	108	3,937	4	4,025	3	2	32	1	1	1			1
5	12	2,035	5,008	675	4,984	345	5,026	135	4,921	5	5,032	3	2	40	1	1	1			1
6	12	2,442	6,010	810	5,981	414	6,031	162	5,905	6	6,038	3	2	48	1	1	1			1
7	12	2,849	7,011	945	6,978	483	7,036	189	6,889	7	7,044	3	2	56	1	1	1			1
8	12	3,256	8,013	1,080	7,975	552	8,042	216	7,873	8	8,051	3	2	64	1	2	1	1		1
9	16	3,663	9,015	1,215	8,972	621	9,047	243	8,857	9	9,057	4	2	72	1	2	1	1		1
10	16	4,070	10,016	1,350	9,968	690	10,052	270	9,842	10	10,064	4	2	80	1	2	1	1		1
11	16	4,477	11,018	1,485	10,965	759	11,057	297	10,826	11	11,070	4	2	88	1	2	1	1		1
12	16	4,884	12,020	1,620	11,962	828	12,062	324	11,810	12	12,076	4	2	96	1	2	1	1		1
13	16	5,291	13,021	1,755	12,959	897	13,067	351	12,794	13	13,083	4	2	104	1	2	1	1		1
14	20	5,698	14,023	1,890	13,956	966	14,073	378	13,778	14	14,089	5	3	112	1	2	1	1		1
15	20	6,105	15,024	2,025	14,953	1,035	15,078	405	14,762	15	15,095	5	3	120	1	3	1	1	1	2
16	20	6,512	16,026	2,160	15,949	1,104	16,083	432	15,746	16	16,102	5	3	128	1	3	1	1	1	2
17	20	6,919	17,028	2,295	16,946	1,173	17,088	459	16,731	17	17,108	5	3	136	1	3	1	1	1	2
18	20	7,326	18,029	2,430	17,943	1,242	18,093	486	17,715	18	18,114	5	3	144	1	3	1	1	1	2
19	20	7,733	19,031	2,565	18,940	1,311	19,099	513	18,699	19	19,121	5	3	152	1	3	1	1	1	2
20	24	8,140	20,033	2,700	19,937	1,380	20,104	540	19,683	20	20,127	6	3	160	1	3	1	1	1	2
21	24	8,547	21,034	2,835	20,934	1,449	21,109	567	20,667	21	21,133	6	3	168	1	3	1	1	1	2
22	24	8,954	22,036	2,970	21,930	1,518	22,114	594	21,651	22	22,140	6	3	176	1	4	1	2	1	2
23	24	9,361	23,037	3,105	22,927	1,587	23,119	621	22,635	23	23,146	6	3	184	1	4	1	2	1	2
24	24	9,768	24,039	3,240	23,924	1,656	24,125	648	23,620	24	24,152	6	3	192	1	4	1	2	1	2
25	24	10,175	25,041	3,375	24,921	1,725	25,130	675	24,604	25	25,159	6	3	200	1	4	1	2	1	2
26	24	10,582	26,042	3,510	25,918	1,794	26,135	702	25,588	26	26,165	6	3	208	1	4	1	2	1	2
27	24	10,989	27,044	3,645	26,915	1,863	27,140	729	26,572	27	27,172	6	3	216	1	4	1	2	1	2
28	24	11,396	28,046	3,780	27,912	1,932	28,145	756	27,556	28	28,178	6	3	224	1	4	1	2	1	2

*1: In addition to the options listed in above table as necessary parts, the Additional Shared Memory Module [Note 1] are required.

Note 1: The number of the Shard Memory Module (DKC-F510I-S1G/S1GR/S2GR) necessary is refer to table 7.2-1 to 7.2-6.
Please note that location of shared memory varies according to the purpose such as additional cache installation or additional LDEV installation.

*2: The number of HDD options is only the number of data disks, and the number of spare disks is not included.
The relation between disk capacity and the number of required options differs according to the number of spare disk installing.

*3: OPEN-V is volume based on CVS. A customer can set up the volume capacity of OPEN-V freely from 48.1MB among almost 1 RAID group capacity. This volume capacity is the default value and is nearly equals to RAID group capacity.

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(4) Mainframe Storage Capacity Upgrade Table (146GB 10Kmin^{-1}/15Kmin^{-1} HDD)

RAID group	Cache (GB)	Storage Capacity (GB)										Number of necessary options								
		Emulation type										Cache DIMM		DKU-F505I-146JS/146JSR /146KSR (*2)	DKC-F515I-					RACK
		3380-3 (2.377GB)		3390-3/3R (2.838GB)		3390-9 (8.514GB)		3390-L (27.844GB)		3390-M (55.689GB)		DKC-F510I-								
												C4G/ C4GR	C8GR		MIX2R/ MIX4R	B2R	UC0R	UC1R	EXCR	
		VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap									
1	8	407	967	337	956	112	954	34	947	17	947	2	1	8	1	1	1			1
2	8	814	1,935	674	1,913	224	1,907	68	1,893	34	1,893	2	1	16	1	1	1			1
3	12	1,221	2,902	1,011	2,869	336	2,861	102	2,840	51	2,840	3	2	24	1	1	1			1
4	12	1,628	3,870	1,348	3,826	448	3,814	136	3,787	68	3,787	3	2	32	1	1	1			1
5	12	2,035	4,837	1,685	4,782	560	4,768	170	4,733	85	4,734	3	2	40	1	1	1			1
6	12	2,442	5,805	2,022	5,738	672	5,721	204	5,680	102	5,680	3	2	48	1	1	1			1
7	12	2,849	6,772	2,359	6,695	784	6,675	238	6,627	119	6,627	3	2	56	1	1	1			1
8	12	3,256	7,740	2,696	7,651	896	7,629	272	7,574	136	7,574	3	2	64	1	2	1	1		1
9	16	3,663	8,707	3,033	8,608	1,008	8,582	306	8,520	153	8,520	4	2	72	1	2	1	1		1
10	16	4,070	9,674	3,370	9,564	1,120	9,536	340	9,467	170	9,467	4	2	80	1	2	1	1		1
11	16	4,477	10,642	3,707	10,520	1,232	10,489	374	10,414	187	10,414	4	2	88	1	2	1	1		1
12	16	4,884	11,609	4,044	11,477	1,344	11,443	408	11,360	204	11,361	4	2	96	1	2	1	1		1
13	16	5,291	12,577	4,381	12,433	1,456	12,396	442	12,307	221	12,307	4	2	104	1	2	1	1		1
14	16	5,698	13,544	4,718	13,390	1,568	13,350	476	13,254	238	13,254	4	2	112	1	2	1	1		1
15	20	6,105	14,512	5,055	14,346	1,680	14,304	510	14,200	255	14,201	5	3	120	1	3	1	1	1	2
16	20	6,512	15,479	5,392	15,302	1,792	15,257	544	15,147	272	15,147	5	3	128	1	3	1	1	1	2
17	20	6,919	16,446	5,729	16,259	1,904	16,211	578	16,094	289	16,094	5	3	136	1	3	1	1	1	2
18	20	7,326	17,414	6,066	17,215	2,016	17,164	612	17,041	306	17,041	5	3	144	1	3	1	1	1	2
19	20	7,733	18,381	6,403	18,172	2,128	18,118	646	17,987	323	17,988	5	3	152	1	3	1	1	1	2
20	20	8,140	19,349	6,740	19,128	2,240	19,071	680	18,934	340	18,934	5	3	160	1	3	1	1	1	2
21	24	8,547	20,316	7,077	20,085	2,352	20,025	714	19,881	357	19,881	6	3	168	1	3	1	1	1	2
22	24	8,954	21,284	7,414	21,041	2,464	20,978	748	20,827	374	20,828	6	3	176	1	4	1	2	1	2
23	24	9,361	22,251	7,751	21,997	2,576	21,932	782	21,774	391	21,774	6	3	184	1	4	1	2	1	2
24	24	9,768	23,219	8,088	22,954	2,688	22,886	816	22,721	408	22,721	6	3	192	1	4	1	2	1	2
25	24	10,175	24,186	8,425	23,910	2,800	23,839	850	23,667	425	23,668	6	3	200	1	4	1	2	1	2
26	24	10,582	25,153	8,762	24,867	2,912	24,793	884	24,614	442	24,615	6	3	208	1	4	1	2	1	2
27	24	10,989	26,121	9,099	25,823	3,024	25,746	918	25,561	459	25,561	6	3	216	1	4	1	2	1	2
28	24	11,396	27,088	9,436	26,779	3,136	26,700	952	26,507	476	26,508	6	3	224	1	4	1	2	1	2

*1: In addition to the options listed in above table as necessary parts, the Additional Shared Memory Module [Note 1] are required.

Note 1: The number of the Shard Memory Module (DKC-F510I-S1G/S1GR/S2GR) necessary is refer to table 7.2-1 to 7.2-6.
Please note that location of shared memory varies according to the purpose such as additional cache installation or additional LDEV installation.

*2: The number of HDD options is only the number of data disks, and the number of spare disks is not included.
The relation between disk capacity and the number of required options differs according to the number of spare disk installing.

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(5) Open System Storage Capacity Upgrade Table (300GB 10Kmin^{-1}/15kmin^{-1} HDD)

RAID group	Cache (GB)	Storage Capacity (GB)										Number of necessary options								
		Emulation type										Cache DIMM		DKU-F505I-300JSR/300KSR (*2)	DKC-F515I-					RACK
		OPEN-3 (2.461GB)		OPEN-9 (7.384GB)		OPEN-E (14.568GB)		OPEN-L (36.450GB)		OPEN-V (*3) (2017.377GB)		DKC-F510I-								
		VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	C4G/ C4GR	C8GR		MIX2R/ MIX4R	B2R	UC0R	UC1R	EXCR	
1	8	500	1,231	272	2,008	138	2,010	55	2,005	1	2,017	2	1	8	1	1	1			1
2	12	1,000	2,461	544	4,017	276	4,021	110	4,010	2	4,035	3	2	16	1	1	1			1
3	12	1,500	3,692	816	6,025	414	6,031	165	6,014	3	6,052	3	2	24	1	1	1			1
4	12	2,000	4,922	1,088	8,034	552	8,042	220	8,019	4	8,070	3	2	32	1	1	1			1
5	16	2,500	6,153	1,360	10,042	690	10,052	275	10,024	5	10,087	4	2	40	1	1	1			1
6	16	3,000	7,383	1,632	12,051	828	12,062	330	12,029	6	12,104	4	2	48	1	1	1			1
7	20	3,500	8,614	1,904	14,059	966	14,073	385	14,033	7	14,122	5	3	56	1	1	1			1
8	20	4,000	9,844	2,176	16,068	1,104	16,083	440	16,038	8	16,139	5	3	64	1	2	1	1		1
9	20	4,500	11,075	2,448	18,076	1,242	18,093	495	18,043	9	18,156	5	3	72	1	2	1	1		1
10	24	5,000	12,305	2,720	20,084	1,380	20,104	550	20,048	10	20,174	6	3	80	1	2	1	1		1
11	24	5,500	13,536	2,992	22,093	1,518	22,114	605	22,052	11	22,191	6	3	88	1	2	1	1		1
12	24	6,000	14,766	3,264	24,101	1,656	24,125	660	24,057	12	24,209	6	3	96	1	2	1	1		1
13	24	6,500	15,997	3,536	26,110	1,794	26,135	715	26,062	13	26,226	6	3	104	1	2	1	1		1
14	24	7,000	17,227	3,808	28,118	1,932	28,145	770	28,067	14	28,243	6	3	112	1	2	1	1		1
15	24	7,500	18,458	4,080	30,127	2,070	30,156	825	30,071	15	30,261	6	3	120	1	3	1	1	1	2
16	24	8,000	19,688	4,352	32,135	2,208	32,166	880	32,076	16	32,278	6	3	128	1	3	1	1	1	2
17	24	8,500	20,919	4,624	34,144	2,346	34,177	935	34,081	17	34,295	6	3	136	1	3	1	1	1	2
18	24	9,000	22,149	4,896	36,152	2,484	36,187	990	36,086	18	36,313	6	3	144	1	3	1	1	1	2
19	24	9,500	23,380	5,168	38,161	2,622	38,197	1,045	38,090	19	38,330	6	3	152	1	3	1	1	1	2
20	24	10,000	24,610	5,440	40,169	2,760	40,208	1,100	40,095	20	40,348	6	3	160	1	3	1	1	1	2
21	24	10,500	25,841	5,712	42,177	2,898	42,218	1,155	42,100	21	42,365	6	3	168	1	3	1	1	1	2
22	24	11,000	27,071	5,984	44,186	3,036	44,228	1,210	44,105	22	44,382	6	3	176	1	4	1	2	1	2
23	24	11,500	28,302	6,256	46,194	3,174	46,239	1,265	46,109	23	46,400	6	3	184	1	4	1	2	1	2
24	24	12,000	29,532	6,528	48,203	3,312	48,249	1,320	48,114	24	48,417	6	3	192	1	4	1	2	1	2
25	24	12,500	30,763	6,800	50,211	3,450	50,260	1,375	50,119	25	50,434	6	3	200	1	4	1	2	1	2
26	24	13,000	31,993	7,072	52,220	3,588	52,270	1,430	52,124	26	52,452	6	3	208	1	4	1	2	1	2
27	24	13,500	33,224	7,344	54,228	3,726	54,280	1,485	54,128	27	54,469	6	3	216	1	4	1	2	1	2
28	24	14,000	34,454	7,616	56,237	3,864	56,291	1,540	56,133	28	56,487	6	3	224	1	4	1	2	1	2

*1: In addition to the options listed in above table as necessary parts, the Additional Shared Memory Module [Note 1] are required.

Note 1: The number of the Shard Memory Module (DKC-F510I-S1G/S1GR/S2GR) necessary is refer to table 7.2-1 to 7.2-6.
Please note that location of shared memory varies according to the purpose such as additional cache installation or additional LDEV installation.

*2: The number of HDD options is only the number of data disks, and the number of spare disks is not included.
The relation between disk capacity and the number of required options differs according to the number of spare disk installing.

*3: OPEN-V is volume based on CVS. A customer can set up the volume capacity of OPEN-V freely from 48.1MB among almost 1 RAID group capacity. This volume capacity is the default value and is nearly equals to RAID group capacity.

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(6) Mainframe Storage Capacity Upgrade Table (300GB 10Kmin^{-1}/15kmin^{-1} HDD)

RAID group	Cache (GB)	Storage Capacity (GB)										Number of necessary options								
		Emulation type										Cache DIMM		DKU-F505I-300JSR/ 300KSR (*2)	DKC-F515I-					RACK
		3380-3 (2.377GB)		3390-3/3R (2.838GB)		3390-9 (8.514GB)		3390-L (27.844GB)		3390-M (55.689GB)		DKC-F510I-								
		VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	C4G/ C4GR	C8GR		MIX2R/ MIX4R	B2R	UC0R	UC1R	EXCR	
1	8	500	1,189	500	1,419	225	1,916	69	1,921	34	1,893	2	1	8	1	1	1			1
2	12	1,000	2,377	1,000	2,838	450	3,831	138	3,842	68	3,787	3	2	16	1	1	1			1
3	12	1,500	3,566	1,500	4,257	675	5,747	207	5,764	102	5,680	3	2	24	1	1	1			1
4	12	2,000	4,754	2,000	5,676	900	7,663	276	7,685	136	7,574	3	2	32	1	1	1			1
5	16	2,500	5,943	2,500	7,095	1,125	9,578	345	9,606	170	9,467	4	2	40	1	1	1			1
6	16	3,000	7,131	3,000	8,514	1,350	11,494	414	11,527	204	11,361	4	2	48	1	1	1			1
7	16	3,500	8,320	3,500	9,933	1,575	13,410	483	13,449	238	13,254	4	2	56	1	1	1			1
8	20	4,000	9,508	4,000	11,352	1,800	15,325	552	15,370	272	15,147	5	3	64	1	2	1	1		1
9	20	4,500	10,697	4,500	12,771	2,025	17,241	621	17,291	306	17,041	5	3	72	1	2	1	1		1
10	20	5,000	11,885	5,000	14,190	2,250	19,157	690	19,212	340	18,934	5	3	80	1	2	1	1		1
11	24	5,500	13,074	5,500	15,609	2,475	21,072	759	21,134	374	20,828	6	3	88	1	2	1	1		1
12	24	6,000	14,262	6,000	17,028	2,700	22,988	828	23,055	408	22,721	6	3	96	1	2	1	1		1
13	24	6,500	15,451	6,500	18,447	2,925	24,903	897	24,976	442	24,615	6	3	104	1	2	1	1		1
14	24	7,000	16,639	7,000	19,866	3,150	26,819	966	26,897	476	26,508	6	3	112	1	2	1	1		1
15	24	7,500	17,828	7,500	21,285	3,375	28,735	1,035	28,819	510	28,401	6	3	120	1	3	1	1	1	2
16	24	8,000	19,016	8,000	22,704	3,600	30,650	1,104	30,740	544	30,295	6	3	128	1	3	1	1	1	2
17	24	8,500	20,205	8,500	24,123	3,825	32,566	1,173	32,661	578	32,188	6	3	136	1	3	1	1	1	2
18	24	9,000	21,393	9,000	25,542	4,050	34,482	1,242	34,582	612	34,082	6	3	144	1	3	1	1	1	2
19	24	9,500	22,582	9,500	26,961	4,275	36,397	1,311	36,503	646	35,975	6	3	152	1	3	1	1	1	2
20	24	10,000	23,770	10,000	28,380	4,500	38,313	1,380	38,425	680	37,869	6	3	160	1	3	1	1	1	2
21	24	10,500	24,959	10,500	29,799	4,725	40,229	1,449	40,346	714	39,762	6	3	168	1	3	1	1	1	2
22	24	11,000	26,147	11,000	31,218	4,950	42,144	1,518	42,267	748	41,655	6	3	176	1	4	1	2	1	2
23	24	11,500	27,336	11,500	32,637	5,175	44,060	1,587	44,188	782	43,549	6	3	184	1	4	1	2	1	2
24	24	12,000	28,524	12,000	34,056	5,400	45,976	1,656	46,110	816	45,442	6	3	192	1	4	1	2	1	2
25	24	12,500	29,713	12,500	35,475	5,625	47,891	1,725	48,031	850	47,336	6	3	200	1	4	1	2	1	2
26	24	13,000	30,901	13,000	36,894	5,850	49,807	1,794	49,952	884	49,229	6	3	208	1	4	1	2	1	2
27	24	13,500	32,090	13,500	38,313	6,075	51,723	1,863	51,873	918	51,123	6	3	216	1	4	1	2	1	2
28	24	14,000	33,278	14,000	39,732	6,300	53,638	1,932	53,795	952	53,016	6	3	224	1	4	1	2	1	2

*1: In addition to the options listed in above table as necessary parts, the Additional Shared Memory Module [Note 1] are required.

Note 1: The number of the Shard Memory Module (DKC-F510I-S1G/S1GR/S2GR) necessary is refer to table 7.2-1 to 7.2-6.
Please note that location of shared memory varies according to the purpose such as additional cache installation or additional LDEV installation.

*2: The number of HDD options is only the number of data disks, and the number of spare disks is not included.
The relation between disk capacity and the number of required options differs according to the number of spare disk installing.

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(7) Open System Storage Capacity Upgrade Table (400GB 10Kmin^{-1} HDD)

RAID group	Cache (GB)	Storage Capacity (GB)										Number of necessary options								
		Emulation Type										Cache DIMM DKC-F510I-		DKU-F505I-400JSR (*2)	DKC-F515I-					RACK
		OPEN-3 (2.461GB)		OPEN-9 (7.384GB)		OPEN-E (14.567GB)		OPEN-L (36.450GB)		OPEN-V (*3) (1181.5GB)		C4G/ C4GR	C8GR		MIX2R/ MIX4R	B2R	UC0R	UC1R	EXC0R	
		VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap									
1	8	500	1,231	372	2,747	189	2,753	75	2,734	1	2,757	2	1	8	1	1	1			1
2	12	1,000	2,461	744	5,494	378	5,506	150	5,468	2	5,514	3	2	16	1	1	1			1
3	12	1,500	3,692	1,116	8,241	567	8,259	225	8,201	3	8,271	3	2	24	1	1	1			1
4	16	2,000	4,922	1,488	10,987	756	11,013	300	10,935	4	11,028	4	2	32	1	1	1			1
5	16	2,500	6,153	1,860	13,734	945	13,766	375	13,669	5	13,785	4	2	40	1	1	1			1
6	20	3,000	7,383	2,232	16,481	1,134	16,519	450	16,403	6	16,541	5	3	48	1	1	1			1
7	20	3,500	8,614	2,604	19,228	1,323	19,272	525	19,136	7	19,298	5	3	56	1	1	1			1
8	24	4,000	9,844	2,976	21,975	1,512	22,025	600	21,870	8	22,055	6	3	64	1	2	1	1		1
9	24	4,500	11,075	3,348	24,722	1,701	24,778	675	24,604	9	24,812	6	3	72	1	2	1	1		1
10	24	5,000	12,305	3,720	27,468	1,890	27,532	750	27,338	10	27,569	6	3	80	1	2	1	1		1
11	24	5,500	13,536	4,092	30,215	2,079	30,285	825	30,071	11	30,326	6	3	88	1	2	1	1		1
12	24	6,000	14,766	4,464	32,962	2,268	33,038	900	32,805	12	33,083	6	3	96	1	2	1	1		1
13	24	6,500	15,997	4,836	35,709	2,457	35,791	975	35,539	13	35,840	6	3	104	1	2	1	1		1
14	24	7,000	17,227	5,208	38,456	2,646	38,544	1,050	38,273	14	38,597	6	3	112	1	2	1	1		1
15	24	7,500	18,458	5,580	41,203	2,835	41,297	1,125	41,006	15	41,354	6	3	120	1	3	1	1	1	2
16	24	8,000	19,688	5,952	43,950	3,024	44,051	1,200	43,740	16	44,110	6	3	128	1	3	1	1	1	2
17	24	8,500	20,919	6,324	46,696	3,213	46,804	1,275	46,474	17	46,867	6	3	136	1	3	1	1	1	2
18	24	9,000	22,149	6,696	49,443	3,402	49,557	1,350	49,208	18	49,624	6	3	144	1	3	1	1	1	2
19	24	9,500	23,380	7,068	52,190	3,591	52,310	1,425	51,941	19	52,381	6	3	152	1	3	1	1	1	2
20	24	10,000	24,610	7,440	54,937	3,780	55,063	1,500	54,675	20	55,138	6	3	160	1	3	1	1	1	2
21	24	10,500	25,841	7,812	57,684	3,969	57,816	1,575	57,409	21	57,895	6	3	168	1	3	1	1	1	2
22	24	11,000	27,071	8,184	60,431	4,158	60,570	1,650	60,143	22	60,652	6	3	176	1	4	1	2	1	2
23	24	11,500	28,302	8,556	63,178	4,347	63,323	1,725	62,876	23	63,409	6	3	184	1	4	1	2	1	2
24	24	12,000	29,532	8,928	65,924	4,536	66,076	1,800	65,610	24	66,166	6	3	192	1	4	1	2	1	2
25	24	12,500	30,763	9,300	68,671	4,725	68,829	1,875	68,344	25	68,923	6	3	200	1	4	1	2	1	2
26	24	13,000	31,993	9,672	71,418	4,914	71,582	1,950	71,078	26	71,679	6	3	208	1	4	1	2	1	2
27	24	13,500	33,224	10,044	74,165	5,103	74,335	2,025	73,811	27	74,436	6	3	216	1	4	1	2	1	2
28	24	14,000	34,454	10,416	76,912	5,292	77,089	2,100	76,545	28	77,193	6	3	224	1	4	1	2	1	2

*1: In addition to the options listed in above table as necessary parts, the Additional Shared Memory Module [Note 1] are required.

Note 1: The number of the Shard Memory Module (DKC-F510I-S1G/S1GR/S2GR) necessary is refer to table 7.2-1 to 7.2-6.
Please note that location of shared memory varies according to the purpose such as additional cache installation or additional LDEV installation.

*2: The number of HDD options is only the number of data disks, and the number of spare disks is not included.
The relation between disk capacity and the number of required options differs according to the number of spare disk installing.

*3: OPEN-V is volume based on CVS. A customer can set up the volume capacity of OPEN-V freely from 48.1MB among almost 1 RAID group capacity. This volume capacity is the default value and is nearly equals to RAID group capacity.

*4: This table was created, presupposing that it installs always a spare disk.

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(8) Mainframe Storage Capacity Upgrade Table (400GB 10Kmin^{-1} HDD)

RAID group	Cache (GB)	Storage Capacity (GB)										Number of necessary options								
		Emulation Type										Cache DIMM		DKU-F505I-400JSR (*2)	DKC-F515I-					RACK
		3380-3 (2.377GB)		3390-3/3R (2.838GB)		3390-9 (8.514GB)		3390-L (27.844GB)		3390-M (55.689GB)		DKC-F510I-								
		VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	C4G/ C4GR	C8GR		MIX2R/ MIX4R	B2R	UC0R	UC1R	EXC0R	
1	8	500	1,189	500	1,419	308	2,622	94	2,617	47	2,617	2	1	8	1	1	1			1
2	12	1,000	2,377	1,000	2,838	616	5,245	188	5,235	94	5,235	3	2	16	1	1	1			1
3	12	1,500	3,566	1,500	4,257	924	7,867	282	7,852	141	7,852	3	2	24	1	1	1			1
4	16	2,000	4,754	2,000	5,676	1,232	10,489	376	10,469	188	10,470	4	2	32	1	1	1			1
5	16	2,500	5,943	2,500	7,095	1,540	13,112	470	13,087	235	13,087	4	2	40	1	1	1			1
6	20	3,000	7,131	3,000	8,514	1,848	15,734	564	15,704	282	15,704	5	3	48	1	1	1			1
7	20	3,500	8,320	3,500	9,933	2,156	18,356	658	18,321	329	18,322	5	3	56	1	1	1			1
8	24	4,000	9,508	4,000	11,352	2,464	20,978	752	20,939	376	20,939	6	3	64	1	2	1	1		1
9	24	4,500	10,697	4,500	12,771	2,772	23,601	846	23,556	423	23,556	6	3	72	1	2	1	1		1
10	24	5,000	11,885	5,000	14,190	3,080	26,223	940	26,173	470	26,174	6	3	80	1	2	1	1		1
11	24	5,500	13,074	5,500	15,609	3,388	28,845	1,034	28,791	517	28,791	6	3	88	1	2	1	1		1
12	24	6,000	14,262	6,000	17,028	3,696	31,468	1,128	31,408	564	31,409	6	3	96	1	2	1	1		1
13	24	6,500	15,451	6,500	18,447	4,004	34,090	1,222	34,025	611	34,026	6	3	104	1	2	1	1		1
14	24	7,000	16,639	7,000	19,866	4,312	36,712	1,316	36,643	658	36,643	6	3	112	1	2	1	1		1
15	24	7,500	17,828	7,500	21,285	4,620	39,335	1,410	39,260	705	39,261	6	3	120	1	3	1	1	1	2
16	24	8,000	19,016	8,000	22,704	4,928	41,957	1,504	41,877	752	41,878	6	3	128	1	3	1	1	1	2
17	24	8,500	20,205	8,500	24,123	5,236	44,579	1,598	44,495	799	44,496	6	3	136	1	3	1	1	1	2
18	24	9,000	21,393	9,000	25,542	5,544	47,202	1,692	47,112	846	47,113	6	3	144	1	3	1	1	1	2
19	24	9,500	22,582	9,500	26,961	5,852	49,824	1,786	49,729	893	49,730	6	3	152	1	3	1	1	1	2
20	24	10,000	23,770	10,000	28,380	6,160	52,446	1,880	52,347	940	52,348	6	3	160	1	3	1	1	1	2
21	24	10,500	24,959	10,500	29,799	6,468	55,069	1,974	54,964	987	54,965	6	3	168	1	3	1	1	1	2
22	24	11,000	26,147	11,000	31,218	6,776	57,691	2,068	57,581	1,034	57,582	6	3	176	1	4	1	2	1	2
23	24	11,500	27,336	11,500	32,637	7,084	60,313	2,162	60,199	1,081	60,200	6	3	184	1	4	1	2	1	2
24	24	12,000	28,524	12,000	34,056	7,392	62,935	2,256	62,816	1,128	62,817	6	3	192	1	4	1	2	1	2
25	24	12,500	29,713	12,500	35,475	7,700	65,558	2,350	65,433	1,175	65,435	6	3	200	1	4	1	2	1	2
26	24	13,000	30,901	13,000	36,894	8,008	68,180	2,444	68,051	1,222	68,052	6	3	208	1	4	1	2	1	2
27	24	13,500	32,090	13,500	38,313	8,316	70,802	2,538	70,668	1,269	70,669	6	3	216	1	4	1	2	1	2
28	24	14,000	33,278	14,000	39,732	8,624	73,425	2,632	73,285	1,316	73,287	6	3	224	1	4	1	2	1	2

*1: In addition to the options listed in above table as necessary parts, the Additional Shared Memory Module [Note 1] are required.

Note 1: The number of the Shard Memory Module (DKC-F510I-S1G/S1GR/S2GR) necessary is refer to table 7.2-1 to 7.2-6.
Please note that location of shared memory varies according to the purpose such as additional cache installation or additional LDEV installation.

*2: The number of HDD options is only the number of data disks, and the number of spare disks is not included.
The relation between disk capacity and the number of required options differs according to the number of spare disk installing.

*3: This table was created, presupposing that it installs always a spare disk.

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7.4 Universal Volume Manager applied

It is necessary to install the cache memory capacity shown in the following table according to the external volume capacity in which the mapping is done.

Table 7.4-1 Relation between external volume capacity and cache memory capacity

External volume capacity (GB)*	Cache memory capacity (GB)*
Less than 720	4
720 or more	8
2,900 or more	12
8,650 or more	16
14,400 or more	20
20,160 or more	24
128,000 or more	28
146,000 or more	32
182,000 or more	40
218,000 or more	48
254,000 or more	56
290,000 or more	64

*: $1GB = 1{,}024^3$ bytes